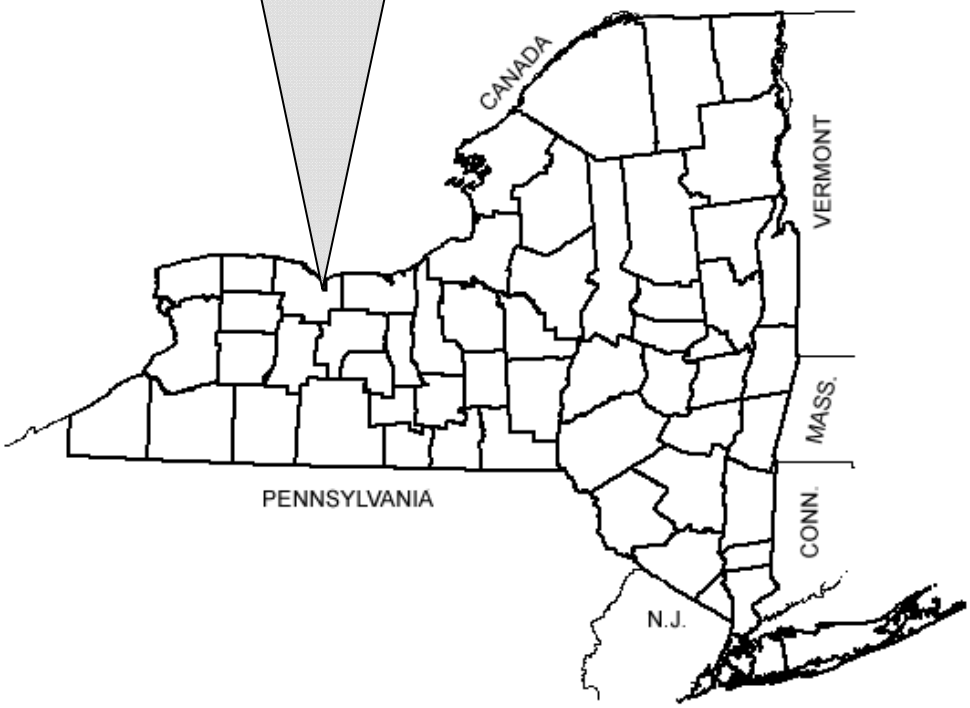
# TRANSPORTATION

# PROJECT REPORT

## *DRAFT*
## *PROJECT SCOPING REPORT/*
## *DRAFT DESIGN REPORT*

**November 2011**

Highland Park/Canalway Trail Project
P.I.N. 4754.08
Monroe County
Town of Brighton and
City of Rochester




U.S. Department of Transportation Federal Highway Administration

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Andrew M. Cuomo, Governor — Joan McDonald, Commissioner

CITY OF ROCHESTER
Thomas S. Richards, Mayor

TOWN OF BRIGHTON
Sandra L. Frankel, Town Supervisor

# PROJECT APPROVAL SHEET

(Pursuant to SAFETEA-LU Matrix)

**A.** IPP Approval:

The project cost and schedule are consistent with the Regional Capital Program. The IPP was signed by:

Regional Director, NYSDOT Region 4

**B.** Public Hearing Certification (23 USC 128):

A public hearing was not required. Public information meetings were held on July 1, 2009, October 18, 2011 and November 2, 2011.

**C.** Recommendation for Scoping & Design Approval:

The project cost and schedule are consistent with the Regional Capital Program.

Regional Program Manager, NYSDOT Region 4

**D.** Recommendation for Scoping, Design, & Nonstandard Feature Approval:

All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained.

Fisher Associates PE, LS, PC, Project Manager

**E.** Nonstandard Feature Approval:

The nonstandard features have been adequately justified and it is not prudent to eliminate them as part of this project.

Tim Keef, Commissioner of Public Works

**F.** Scoping & Design Approval:

The required environmental determinations have been made and the preferred alternative for this project is ready for final design.

Tim Keef, Commissioner of Public Works

# LIST OF PREPARERS

**Group Director Responsible for Production of the Design Approval Document:**

Roseann Schmid, P.E., Project Manager, Fisher Associates P.E., L.S., P.C.
Description of Work Performed by Firm: Directed the preparation of the Design Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

***Note:*** *It is a violation of law for any person, unless they are acting under the direction of a licensed professional engineer, architect, landscape architect, or land surveyor, to alter an item in any way. If an item bearing the stamp of a licensed professional is altered, the altering engineer, architect, landscape architect, or land surveyor shall stamp the document and include the notation "altered by" followed by their signature, the date of such alteration, and a specific description of the alteration.*

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# CHAPTER 1 - EXECUTIVE SUMMARY

## 1.1. Introduction

This report was prepared in accordance with the NYSDOT Project Development Manual, 17 NYCRR Part 15, and 23 CFR 771.

## 1.2. Purpose and Need

### 1.2.1. Where is the Project Located?

The Highland Park/Canalway Trail project is located in the southeast quadrant of Monroe County along the west side of the Town of Brighton and southeast quadrant of the City of Rochester. The project begins at Brighton Town Park, located southeast of Sawgrass Drive, and terminates at the Genesee Riverway Trail near the intersection of McLean Street and Wilson Boulevard for a total project length of 3.3 miles as shown in the figure below.

Highland Park/Canalway Trail Project
P.I.N. 4754.08
Monroe County
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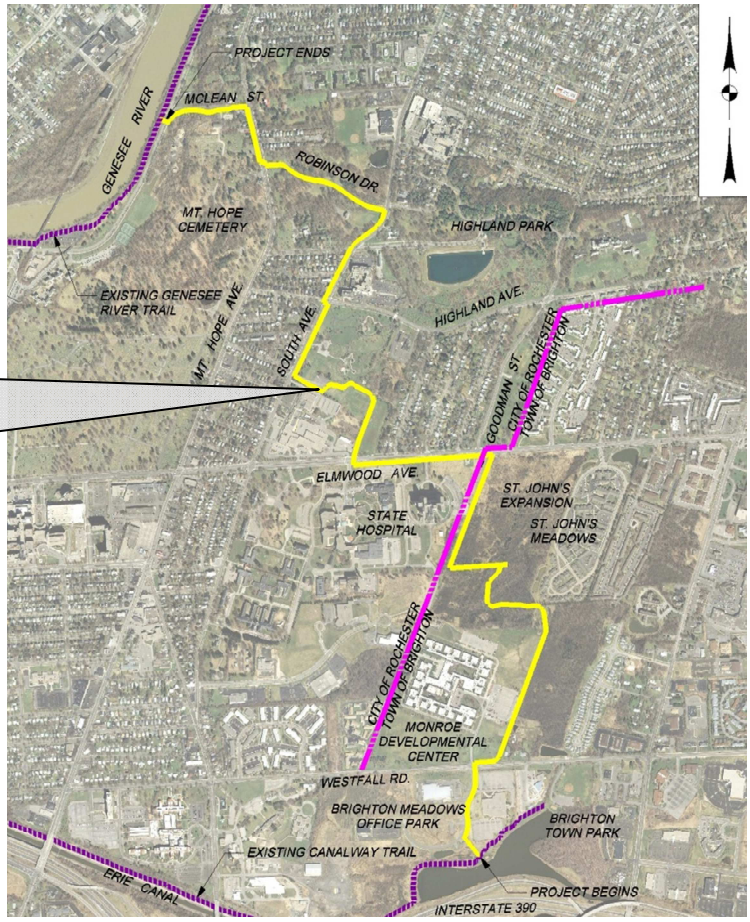


### 1.2.2. Why is the Project Needed?

The Genesee Riverway, Highland Park, and the Erie Canalway Trail are major recreational facilities for the area and should be accessible to all pedestrians and bicyclists as well as to residents of the adjacent communities.

There is currently no designated pedestrian/bicycle route connecting the Canalway Trail, Highland Park and Genesee Riverway Trail. A pedestrian or bicycle desiring access to any of these three facilities must use the existing roadway and sidewalk system in the Town of Brighton and the City of Rochester to access these three recreational destinations. In addition, there is no signage directing pedestrians and bicyclists to these facilities.

### 1.2.3. What are the Objectives/Purposes of the Project?

The following objectives have been established for this project:

- Construct a paved, multi-use trail, with an expected service life of 25 years, from the Erie Canalway Trail along municipal properties or municipal easements and build new (or upgrade existing) sidewalks and shoulders along existing roadways to the Genesee Riverway Trail and connect both the Erie Canalway Trail and Genesee Riverway Trail to Highland Park.
- Provide signage and pavement markings to facilitate access to and use of the identified facilities.
- Reduce the number of short trips taken by motor vehicles within the proposed project's corridor thereby improving air quality

## 1.3. What Alternative(s) are Being Considered?

The following alternatives were considered for this project:

Alternative 1: No Build "Null" Alternative
Alternative 2: Construct a Shared-Use Path utilizing Goodman Street
Alternative 3: Construct a Shared-Use Path utilizing Elmwood Avenue

Alternative 1 – Null Alternative: The Null Alternative retains the existing conditions with no improvements other than routine maintenance. All existing deficiencies would remain including a lack of connectivity among the Erie Canalway, Highland Park, and the Genesee Riverway Trail. This alternative does not address any of the project needs or meet any of the project objectives. Therefore, it was rejected as a feasible alternative. It is used in this Chapter for comparison of costs and impacts only.

Alternative 2 – Construct a Shared-Use Path utilizing Goodman Street: Alternative 2 consists of the construction of a shared-use trail. The trail will begin at the Brighton Town Park located southeast of Sawgrass Drive.

The off-road trail portion of the project (i.e., a designated shared-use trail) will head north along the west side of Sawgrass Drive, cross Westfall Road, traverse through the Monroe Developmental Center property along its southern, eastern, and northern property lines. It will then continue along the southern and western property line of the proposed expansion of the St. John's Community to Elmwood Avenue. It will then cross Elmwood Avenue at the unsignalized intersection with Goodman Street and continue north through Highland Park along the east side of Goodman Street to Highland Avenue.

The on-road portion of the project (i.e., use of existing sidewalks and shoulders or shared-use travel lanes) will then continue:

- west on Highland Avenue to South Avenue,
- north on South Avenue to Robinson Drive,
- west on Robinson Drive to Mt. Hope Avenue,
- north on Mt. Hope Avenue to McLean Street,
- west on McLean Street to Joseph C. Wilson Boulevard.
- Then crossing Joseph C. Wilson Boulevard terminating at the Genesee Riverway Trail

The majority of the off-road trail location will be cleared of vegetation and topsoil. The trail will consist of a crushed stone subbase and asphalt or concrete top course. The majority of the off-road section will be 10 feet wide with 2-foot wide graded grass shoulders on each side. Fixed objects within 3 feet from the edge of the trail will be cleared for safety, where possible.

The on-road section of the project will utilize the existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicycles. No road widening is proposed for any of the on-road sections. The addition of sharrow symbols will be implemented where appropriate in the shared-use travel lanes.

The sidewalks to be utilized as part of the trail system will be on south side of Robinson Drive and McLean Street and on the west side of South Avenue (between Highland Avenue and Robinson Dr.) and Mt. Hope Avenue (between Robinson Dr. and McLean St.) The south approach to the Highland Avenue/South Avenue intersection will be restriped to accommodate a left turn only lane and a shared thru/right travel lane. Additional restriping striping on the southern approach will permit the installation of designated bike lanes on both sides of South Ave. North of the intersection; South Avenue will be restriped to accommodate one travel lane in each direction and a minimum 5-foot-wide bike lane on each side of the roadway. Additional striping will be installed at the intersection of South Avenue and Reservoir Drive to better direct traffic at this intersection. Robinson Drive, an existing low volume park road, will not be striped. Mt. Hope Avenue was recently milled, resurfaced, and restriped to provide a more consistent shoulder width along this roadway. No additional improvements to Mt. Hope within the project limits are proposed. Bicyclists will continue to use the shoulders along Mt. Hope Avenue.

McLean Street will be maintained as a one way street traveling west from Mt. Hope Avenue to Wilson Boulevard. This roadway will be striped to accommodate a 14-foot-wide shared-use lane along the north side of the roadway. This lane will accommodate westbound vehicles and bicycles. A 5-foot-wide bicycle contraflow lane will be striped along the south side of the roadway to accommodate eastbound bicyclists. Appropriate signage will be installed directing bicycles and motorists along this roadway.

Amenities including landscaping and directional signage are also elements of this alternative. Typical Sections, Plans, Profiles, and Sketches of this alternative are included in Appendix A.

Alternative 2 is eliminated as a feasible alternative due to significant comments received from the public regarding concerns crossing at the unsignalized intersection of Elmwood Avenue and Goodman Street, as well as comments received from Monroe County Parks regarding use of the parkland along the east side of Goodman Street for the Lilac Festival, and their desire for the trail to pass through Highland Park South, a less utilized area of the park.

<u>Alternative 3 – Construct a Shared-Use Path utilizing Elmwood Avenue:</u> Alternative 3 consists of the construction of a shared-use trail. The trail will begin at the Brighton Town Park located southeast of Sawgrass Drive within the Brighton Meadows Office Park on the south side of Westfall Road.

The off-road trail portion of the project (i.e., a designated shared-use trail) will head north along the west side of Sawgrass Drive, cross Westfall Road, traverse through the Monroe Developmental Center property along its southern, eastern, and northern property lines. It will then continue along the southern and western property line of the proposed expansion of the St. John's Community to Elmwood Avenue. It will continue along the south side of Elmwood Avenue to the signal at the parking area for the Al Sigl

center where it will cross to the north side of Elmwood Avenue and enter Highland Park South. The trail will continue northwest through Highland Park South along an existing maintenance road and pathway and then north along the east side of South Avenue to Highland Avenue.

The on-road portion of the project (i.e., use of existing sidewalks and shoulders or shared-use travel lanes) will then continue:

- north on South Avenue to Robinson Drive,
- west on Robinson Drive to Mt. Hope Avenue,
- north on Mt. Hope Avenue to McLean Street,
- west on McLean Street to Wilson Boulevard.
- Then crossing Joseph C. Wilson Boulevard terminating at the Genesee Riverway Trail

The off-road trail location will be cleared of vegetation and topsoil. The trail will consist of a crushed stone subbase and asphalt or concrete top course. The majority of the off-road section will be 10 feet wide with 2-foot wide graded grass shoulders on each side. Fixed objects within 3 feet from the edge of the trail will be cleared for safety, where possible.

The on-road section of the project will utilize the existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicycles. No road widening is proposed for any of the on-road sections. The sidewalks to be utilized as part of the trail system will be on south side of Robinson Drive and McLean Street and on the west side of South Avenue (between Highland Ave. and Robinson Dr.) and Mt. Hope Avenue (between Robinson Dr. and McLean St.). The south approach to the Highland Avenue/South Avenue intersection will be restriped to accommodate a left turn only lane and a shared thru/right travel lane. Additional restriping striping on the southern approach will permit the installation of designated bike lanes on both sides of South Ave. North of the intersection; South Avenue will be restriped to accommodate one travel lane in each direction and a minimum 5-foot-wide bike lane on each side of the roadway. Additional striping will be installed at the intersection of South Avenue and Reservoir Drive to better direct traffic at this intersection as shown on drawing PL-12 in Appendix A. Robinson Drive, an existing low volume park road, will not be striped. Mt. Hope Avenue was recently milled, resurfaced, and restriped to provide a more consistent shoulder width along this roadway. No additional improvements to Mt. Hope within the project limits are proposed. Bicyclists will continue to use the shoulders along Mt. Hope Avenue.

McLean Street will be maintained as a one way street traveling west from Mt. Hope Avenue to Wilson Boulevard. This roadway will be striped to accommodate a 14-foot-wide shared-use lane along the north side of the roadway. This lane will accommodate westbound vehicles and bicycles. A 5-foot-wide bicycle contraflow lane will be striped along the south side of the roadway to accommodate eastbound bicyclists. Appropriate signage will be installed directing bicycles and motorists along this roadway.

Although the designated trail is off-road along Elmwood Ave. some restriping of Elmwood Ave is proposed allowing the installation of shared use lanes for more advanced bicyclists. The number of travel and turn lanes will not be reduced in this segment.

Amenities including landscaping and directional signage are also elements of this alternative. Typical Sections, Plans, Profiles, and Sketches of this alternative are included in Appendix A.

Alternative 3 is considered a feasible alternative because it meets the project objectives and is a cost effective solution. Refer the Section 1.7 for a more detailed description of this feasible alternative and engineering considerations.

## 1.4 Environmental Review

NEPA (National Environmental Policy Act):

This project is classified as a Class II Automatic Categorical under United States Department of Transportation (USDOT) National Environmental Policy Act (NEPA) Regulations, 23 CFR 771.117. A NEPA Checklist was prepared for the project and is included in Appendix B. The project complies with the requirements of 23 CFR 771.117(d) as a Categorical Exclusion; construction of bicycle and pedestrian lanes, paths, and facilities. The Federal Highway Administration (FHWA) will serve as Lead Agency under NEPA. It is noted that coordination with SHPO and NYSDEC is necessary for this project for impacts to historical/cultural resources and wetlands.

SEQRA (State Environmental Quality Review Act):

This project is classified as a Type I Action in accordance with 6NYCRR Part 617, State Environmental Quality Review (SEQR) Act due to the fact that it passes through the Mt. Hope Historic District. A Long Environmental Assessment Form (EAF) was completed for the project and is included in Appendix B. The Town of Brighton will request to be the SEQR Lead Agency.

## 1.5 How will the Alternatives Affect the Environment?

| Exhibit 1.5-1 | Comparison of Alternatives | |
|---|---|---|
| Category | Alternatives | |
| | Null | Alt. 3 |
| Wetland impacts | None | 0.01 acres |
| 100 year floodplain impact | None | None |
| Archaeological Sites Impacted | None | None[1] |
| Section 106/Section 4(f) impacts | None | No Adverse Effect[2] |
| Noise | None | None |
| Impact to forested areas | None | 0.97 acres |
| Noise Impacts | None | None |
| Property impacts[3] | None | 13 properties |
| Construction Cost | None | $1.37M |

[1]Fill will be placed in areas identified as potentially archaeologically sensitive
[2]A No Adverse Effect determination from SHPO is anticipated
[3]Refer to Section 2.3.3.12 for additional information

Anticipated Permits/Certifications/Coordination:

New York State Department of Environmental Conservation (NYSDEC):

- State Pollutant Discharge Elimination System (SPDES) Construction Permit including preparation of a Stormwater Pollution Prevention Plan (SWPPP) and filing of a Notice of Intent (NOI)
- Article 24 - Freshwater Wetlands Permit
- Section 401 Water Quality Certification

Army Corps of Engineers (USACE):

- Nationwide Permit #14 – Linear Transportation Project

Federal Highway Administration (FHWA):

- Programmatic Executive Order 11990 Wetlands Finding

Coordination

- Coordination with NYS Department of Environmental Conservation (NYSDEC)
- Coordination with Federal Highway Administration (FHWA)
- Coordination with New York State Historic Preservation Officer (SHPO)
- Coordination with the US Fish and Wildlife Service
- Coordination with the New York Natural Heritage Program
- Coordination with the City of Rochester
- Coordination with the Town of Brighton
- Coordination with Monroe County DOT and Monroe County Parks

Others

- Monroe County Highway Work Permit
- City of Rochester Work Permit

## 1.6 What are the Costs & Schedules?

Design Approval is scheduled for January of 2012. Construction is expected to begin in the spring 2012 and be complete by October 2012.

**Exhibit 1.6-1 - Project Schedule**

| **Activity** | **Date Occurred/*Tentative*** |
|---|---|
| Scope Approval | January 2009 |
| Public Informational Meeting | July 1, 2009 |
| Neighborhood Group Meeting | June 23, 2010 |
| Public Informational Meeting – City | *October 2011* |
| Public Informational Meeting – Town of Brighton | *October 2011* |
| Design Approval | *January 2012* |
| ROW Acquisition | *February 2012* |
| Construction Start | *June 2012* |

| Exhibit 1.6-1 - Project Schedule | |
|---|---|
| **Activity** | **Date Occurred/*Tentative*** |
| Construction Complete | *November 2012* |

| Exhibit 1.6-2 – Comparison of Alternatives' Project Costs (in millions) | | |
|---|---|---|
| **Activities** | **Null** | **Alternative 3** |
| Construction Costs | 0.000 | 0.790 |
| Wetland Mitigation | 0.000 | 0.000 |
| SPDES Permit Compliance | 0.000 | 0.000 |
| Incidentals (10%) | 0.000 | 0.079 |
| **Subtotal 1** | 0.000 | 0.869 |
| Subtotal 1 | 0.000 | 0.869 |
| Contingency (15% @ Design Approval) | 0.000 | 0.130 |
| **Subtotal 2** | 0.000 | 0.999 |
| Subtotal 2 | 0.000. | 0.999 |
| Field Change Order | 0.000 | .050 |
| **Subtotal 3** | 0.000 | 1.049 |
| Subtotal 3 | 0.000 | 1.049 |
| Mobilization (4%) | 0.000 | .042 |
| **Subtotal 4** | 0.000 | 1.091 |
| Subtotal 4 | 0.000 | 1.091 |
| Expected Award Amount (Inflated at 5%/yr. to midpoint of construction) | 0.000 | .055 |
| **Subtotal 5** | 0.000 | 1.146 |
| Subtotal 5 | 0.000 | 1.146 |
| Construction Inspection (9%) | 0.000 | .103 |
| **Subtotal 6** | 0.000 | 1.249 |

| | | |
|---|---|---|
| Subtotal 6 | 0.000 | 1.249 |
| ROW Costs | 0.000 | 0.120 |
| **Total Alternative Costs** | 0.000 | 1.369 |

## 1.7 Which Alternative is Preferred?

Alternative 3 – Construct a Multi-Use Trail utilizing Elmwood Avenue is the preferred alternative as it is meets the project needs and objectives. A decision to enter final design will not be made until after the environmental determination has been made and comments on this report, as well as comments received from the public, have been evaluated.

## 1.8 Who will decide Which Alternative is Chosen and How Can I Be Involved In This Decision?

The Town of Brighton and the City of Rochester have developed this joint effort to advance this project. In 2008, the Town of Brighton, as the project sponsor, applied for and obtained Federal funding through the Transportation Improvement Program to design and construct the Highland Park / Canalway Trail.

Coordination has continued through the preparation of this Design Report with the Town of Brighton and the City if Rochester to discuss alternatives and obtain information needed for the preparation of this report. Copies of pertinent project correspondence are included in Appendix B.

**Exhibit 1.8-1**
**Public Involvement Plan Schedule of Milestone Dates**

| Activity | Date Occurred/Tentative |
|---|---|
| Initial Environmental Findings | July 2011 |
| Scoping Meeting | January 2009 |
| Public Information Meeting | July 1, 2009 |
| Neighborhood Group Meeting | June 23, 2010 |
| Public Informational Meeting - City | October 18, 2011 |
| Public Informational Meeting – Town of Brighton | November 2, 2011 |
| Design Approval | *January 2012* |
| Current Project Letting date | *March 2012* |

There are a variety of ways you can provide your thoughts.

- Public meetings were held on October 18, 2011 (in the City of Rochester) and November 2, 2011 (in the Town of Brighton) where the public was given the opportunity to ask questions, talk to Department representatives or leave written comments.

- Please contact:

Mike Guyon, Town Engineer
Town of Brighton Department of Public Works
2300 Elmwood Avenue
Rochester, New York 14618
Telephone: (585) 784-5225
email: mike.guyon@townofbrighton.org

or

Jeff Mroczek
City of Rochester, Dept. of Environmental Services
City Hall Room 300B, 30 Church Street
Rochester, New York 14614
Telephone: (585) 428-7124
email: jeff,mroczek@cityofRochester.gov

Please include the six digit Project Identification Number (PIN) 4754.08

The deadline for submitting comments on this report is November 22, 2011.

The remainder of this report is a detailed technical evaluation of the existing conditions, the proposed alternatives, the impacts of the alternatives, copies of technical reports and plans and other supporting information.

# CHAPTER 2 – PROJECT INFORMATION

## 2.1 Local Plans for the Project Area

This project is on the approved Transportation Improvement Program (TIP) as project N05-01-MN1.

This project is consistent with the local master plans for the Town of Brighton and the City of Rochester and was identified as a near-term action on the Genesee Transportation Council's Regional Trails Initiative.

Expansion of the St. John's Senior Living Community has been approved by the Town of Brighton and is currently under construction. The location of the expansion is along Elmwood Avenue just east of Goodman Street. During the approval process for this expansion project, the Town of Brighton informed the developer of the proposed trail in this area and an easement was provided across the parcel to accommodate the trail.

## 2.2. Abutting Highway Segments and Future Plans for Abutting Highway Segments

The project termini connect to existing trail networks that have no future plans for improvements adjacent to the project area. The off-road trail crosses Sawgrass Drive, Westfall Road and Elmwood Avenue. The trail is then on-road along South Avenue, Robinson Drive, Mt. Hope Avenue, and Joseph C. Wilson Boulevard. Monroe County plans to reconstruct Westfall Road in the near future. Proposed improvements to this roadway include upgrades to the Westfall Road/Sawgrass Drive intersection to provide pedestrian signals and crosswalks and a 10-foot-wide sidewalk along the north side of Westfall Road from Sawgrass Drive to the eastern property boundary of the Monroe Developmental Center. This sidewalk will be used as part of the designated multi-use trail system.

Improvements to South Avenue are currently planned for construction in 2015 depending on available funding. The project is being funded by Monroe County and designed and built by the City of Rochester. The City would also fund tree lawn and sidewalk improvements. There are no other known plans for improvements to the roadways within the project limits within the next 10 years.

## 2.3 Transportation Conditions, Deficiencies and Engineering Considerations

### 2.3.1 Traffic and Safety and Maintenance Operations

#### 2.3.1.1 Functional Classification and National Highway System (NHS) –

The proposed off-road multi-use trail is not part of the State or National Highway Systems.

The proposed on-street portion of this project from the Highland Park area to the Genesee Riverway Trail is defined as a Signed Shared Roadway per the 1999 AASHTO *Guide for the Development of Bicycle Facilities* (ref. pages 7, 19-21). Refer to Exhibit 2.3.1.1-1 for the functional classifications of the proposed signed on-street bicycle route (i.e., signed shared roadway) within the City of Rochester.

| Exhibit 2.3.1.1-1<br>Classification Data | | | | | | |
|---|---|---|---|---|---|---|
| Route(s) | NYS Route 15 (Mt Hope Ave.) | Highland Ave. | Elmwood Ave. | South Ave. | Goodman St. | Westfall Rd. |
| Functional Classification | Urban Principal Arterial Other | Urban Collector | Urban Minor Arterial | | | |
| National Highway System (NHS) | Yes | No | | | | |
| Designated Truck Access Route | No | | | | | |
| Qualifying Highway | No | | | | | |
| Within 1 mile of a Qualifying Highway | Yes | No | Yes | No | | Yes |
| Within the 16 foot --vertical clearance network | Yes | No | | | | |

| Exhibit 2.3.1.1-2<br>Classification Data | | | | |
|---|---|---|---|---|
| Route(s) | Sawgrass Dr. | Robinson Dr. | McLean St. | Joseph C. Wilson Blvd. |
| Functional Classification | Urban Local | | | |
| National Highway System (NHS) | No | | | |
| Designated Truck Access Route | No | | | |
| Qualifying Highway | No | | | |
| Within 1 mile of a Qualifying Highway | Yes | No | No | Yes |
| Within the 16 foot vertical clearance network | No | | | |

### 2.3.1.2 Control of Access –

All roadways within the project limits have uncontrolled access. Access to the proposed off road trail segments will be controlled via bollards and/or gates that will limit use of the trail by unauthorized motorized vehicles.

### 2.3.1.3 Traffic Control Devices –

The following signalized intersections are located within the project limits:

- Westfall Road & Sawgrass Drive,
- Elmwood Avenue & Ali Sigl Center,
- Highland Avenue & South Avenue.

The following stop sign controlled intersections are located within the project limits:

- Robinson Drive at South Avenue,
- Robinson Drive at Mt. Hope Avenue,
- McLean Street at Wilson Boulevard

Pavement striping, speed limit signs and crosswalk warning signs exist within the project limits.

### 2.3.1.4 Traffic Volumes –

Exhibit 2.3.1.4-1 summarizes traffic volumes for the six roadways within the proposed project limits. Average Daily Traffic volumes were obtained from several sources (MCDOT, NYSDOT and Fisher Associates). Average Daily Traffic volumes were converted to Average Annual Daily Traffic (AADT) using axle adjustment and seasonal adjustment factors contained in NYSDOT's 2007 Traffic Data Report. All AADT and Design Hour Volume (DHV) values were adjusted by a 0.5% annual growth rate to represent 2009 traffic volume conditions.

**Exhibit 2.3.1.4-1**
**Roadway Volume Summary**

| Road Name | Segment | AADT | DHV |
|---|---|---|---|
| Highland Ave.[1] | Goodman St. to South Ave. | 7,260 | 664 |
| South Ave.[1] | Highland Ave. to Robinson Dr. | 15,079 | 1,251 |
| Robinson Rd.[2] | South Ave. to Mt. Hope Ave. | 561 | 66 |
| Mt. Hope Ave.[1] | Robinson Dr. to McLean St. | 19,769 | 1,664 |
| Mclean St.[2] | Mt. Hope Ave. to Wilson Blvd. | 1,098 | 141 |
| Elmwood Ave.[3] | Goodman St. to South Ave. | 25,622 | 3,033 |

1 – MCDOT Counts (2005/2006)
2 – Fisher Associates Counts (2008)
3 – NYSDOT Counts (2006)

### 2.3.1.5 Level of Service (LOS) & Gap Study –

**Level of Service Analysis – South Avenue and Highland Avenue**

As part of this project, it is proposed to restripe South Avenue between Elmwood Ave. and Robinson Drive. As part of these striping modifications, the northbound approach to the South Avenue/Highland Avenue intersection would be restriped to accommodate a shared through/left lane and a right turn lane. South Avenue north of the Highland Avenue intersection would be restriped to accommodate one travel lane in each direction and a 6-foot-wide bike lane on each side of the road.

To establish a baseline LOS for the intersection, turning movement counts and observations were conducted on Wednesday, January 26, 2011 from 7:00 to 9:00 AM and 3:45 to 5:45 PM. The peak hours were identified as 7:30 to 8:30 AM and 4:45 to 5:45 PM. Intersection analysis was conducted in Syncho 7.0. The analysis indicates that the intersection is operating at a LOS 'B' with individual turning movements operation at a LOS 'C' of better for both analysis periods.

Two geometric configurations for this intersection were considered:

- Option A – Northbound approach (South Avenue) geometry is modified from two shared through lanes to a shared left-through lane and a right turn lane
- Option B – Northbound and southbound approaches (South Avenue) geometry is modified from two shared through lanes to Shared right-through lanes and opposing left turn pockets.

The proposed analysis assumed current traffic volumes, timings and phasing. The results of the analysis indicate that both options will not have significant impact on intersection LOS (overall 'B' and individual movement 'C' or better) for both analysis periods. However, vehicular queue lengths on South Avenue in Option A are estimated to be shorter than those for Option B as depicted in Exhibit 2.3.1.5-1.

**Exhibit 2.3.1.5-1**
**Queue Length Summary**

| | 95th Percentile Queue Length (feet) | | | |
|---|---|---|---|---|
| | Northbound Through | | Southbound Through | |
| | Option A | Option B | Option A | Option B |
| Morning | 140 | 134 | 83 | 185 |
| Evening | 222 | 349+ | 105 | 202 |

Analysis printouts are included in Appendix C.

**Bicycle Level of Service**

Bicycle level of service as documented in the Rochester Bicycle Master Plan dated January of 2011 are tabulated in Exhibit 2.3.1.5-1.1.

**Exhibit 2.3.1.5-1.1**
**Bicycle Level of Service**

| Road Name | BLOS |
|---|---|
| Mt. Hope Avenue | D |
| South Avenue | E |
| Elmwood Avenue | E |

**Gap Study – Mount Hope Avenue and Robinson Drive**

A gap study was conducted for the existing roadway crossing on Mt. Hope Avenue at Robinson Drive to determine the number of acceptable gaps for pedestrians to cross the road. This crossing would be utilized as part of the on-road trail. At this location, Mt. Hope Avenue has one travel lane in each direction and westbound traffic on Robinson Drive is controlled via a stop sign. The proposed roadway crossing on Mt. Hope Avenue is located on the northbound approach to the Mt. Hope Avenue/Robinson Drive intersection.

The goal of the study was to collect existing pedestrian gap data during time periods when a notable number of pedestrians could be expected to be using the trail. Hence, pedestrian gap data was collected on Saturday, March 21st, 2009 from 11:30 AM to 1:30 PM and on Thursday, March 26th, 2009 from 4:00 to 6:00 PM.

Acceptable gaps are measured by the number of gaps per minute. The MCDOT Traffic Studies Procedure Manual states that if there is at least one gap per minute, they are considered adequate for pedestrians to cross safely and without excessive delay.

Exhibit 2.3.1.5-2 summarizes the number of acceptable gaps per minute for both two-hour study periods for the existing crosswalk.

| Exhibit 2.3.1.5-2<br>Gaps/Minute | | | |
|---|---|---|---|
| **Crosswalk Location** | **MCDOT Criteria** | **Weekday Evening** | **Weekend Midday** |
| Mt. Hope Avenue | 1.00 | 0.13 | 0.66 |

Pedestrian gap calculations and raw gap data are included in Appendix C.

The weekend midday period is the period that is expected to see the most traffic by trail users. Although the Monroe County criteria of 1.00 gap per minute is not met, the number of gaps is significantly better than during the weekday evening peak. Additional safety measures will be explored during final design to alert motorists to this pedestrian crossing location such as high visibility signs and enhanced crosswalk markings.

### 2.3.1.6 Work Zone Safety & Mobility –

A. Work Zone Traffic Control Plan -

The trail segments along Sawgrass Drive, Elmwood Avenue, and South Avenue will be 10-foot-wide multi-use trails parallel to these existing roadways. Construction of these trail segments may require temporary, short-term lane closures to allow trucks and equipment to be staged along the curbline for construction of these segments. Such lane closures will be implemented in accordance with the Manual of Uniform Traffic Control Devices. Flaggers will be utilized as necessary to properly direct traffic. Since the multi-use trail segments along Elmwood Avenue and South Avenue will replace existing sidewalks with 10-foot-wide trail sections, the existing sidewalks will be closed to pedestrian traffic during the period construction of these segments is being undertaken. Sidewalk detours will be provided. Efforts will be made to keep the project segments small and between logical terminal points to limit the amount of existing sidewalk that is out of service to users. Construction of the remaining off-road trail segments will not require any closures of travel lanes since they are not located along existing roadways.

Improvements for the on-road trail segments include striping along certain roadways and installation of trail signage. Temporary, short-term lane closures will be required for implementation of these improvements. Such lane closures will be implemented in accordance with the Manual of Uniform Traffic Control Devices. Flaggers will be utilized as necessary to properly direct traffic.

Routes for emergency vehicles will be maintained and open during construction. The details for the work zone traffic control will be prepared and evaluated during final design.

B. Special Provisions -

Due to the close proximity to residential homes and the ability to maintain traffic with acceptable delays during the daylight hours, night time construction will not be utilized. The use of time related provisions will be evaluated during final design. The work zone traffic control will need to be coordinated with local officials and residents.

C. Significant Projects (per 23 CFR 630.1010)

As defined in 23 CFR 630.1010 this project is not considered significant.

A Transportation Management Plan (TMP) will be prepared for the project consistent with 23 CFR 630.1012. The TMP will consist of a Temporary Traffic Control (TTC) plan. Transportation Operations (TO) and Public Information (PI) components of a TMP will be considered during final design.

### 2.3.1.7 Safety Considerations, Accident History and Analysis –

(1) Unsignalized Crossing Locations

An accident screening was conducted at the Mt. Hope Avenue/Robinson Drive intersection where an unsignalized crossing is proposed. The screening used accident data from the New York State Department of Transportation's (NYSDOT) Safety Information Management System (SIMS) for the three-year period from 01/01/05 to 12/31/07.

(a) Accident Severity

During the study period, five (5) accidents were documented at the Mt. Hope Avenue/Robinson Drive intersection. A summary of the accident severity for this intersection is presented in Exhibit 2.3.1.7-1.

**Exhibit 2.3.1.7-1**
**Accident Summary**

| SEGMENT | FATALITY | NON-FATAL INJURY | PROPERTY DAMAGE | NON-REPORTABLE | TOTAL |
|---|---|---|---|---|---|
| Mt. Hope Avenue & Robinson Drive | 0 | 3 | 0 | 2 | 5 |

b) Accident Rate

An accident rate was calculated for the unsignalized crossing at the Mt.Hope Avenue/Robinson Drive intersection and compared to the Monroe County Department of Transportation (MCDOT) average rate for similar locations in the City of Rochester. Exhibit 2.3.1.7-2 summarizes the accident rate for this location in comparison to the MCDOT average rate.

**Exhibit 2.3.1.7-2**
**Accident Rates**

| Intersection | Number of Accidents | Accident Rate | MCDOT Average Accident Rate |
|---|---|---|---|
| Mt. Hope Avenue & Robinson Drive | 5 | 0.22 | 0.08 |

(c) Accident Type

Accident types at the unsignalized intersection where the trail will cross were examined to identify accident patterns. Exhibits 2.3.1.7-3 summarizes the accident types for the Mt. Hope Avenue/Robinson Drive intersection.

**Exhibit 2.3.1.7-3**
**Accident Types**
**Mt. Hope Avenue & Robinson Drive**

| Accident Type | Number of Accidents | Percent of Total Accidents |
|---|---|---|
| Rear End | 5 | 100% |
| Total | 5 | 100% |

Exhibit 2.3.1.7-3 shows that rear end accidents were the predominant accident type at the Mt. Hope Avenue/Robinson Drive intersection, accounting for 100.0% (5/5) of the total accidents. Three of the rear end accidents involved northbound vehicles and two of the rear end accidents involved southbound vehicles. These vehicles rear ended vehicles that were stopped in traffic, yielding to make a left or right turn. The prevalent causes for the rear end accidents were following too closely and driver inattention. Based on field observations, long traffic volume platoons and high travel speeds are presumed to be a contributing factor. During final design, additional safety measures will be evaluated to improve driver's attention to the fact that a pedestrian crossing exists at this location, and that drivers may be stopping for pedestrians. These measures may include but are not limited to high visibility signs, enhanced cross walk markings, and radar speed signs.

(d) Stopping Sight Distance

Stopping sight distance at the Mt. Hope Avenue/Robinson Drive pedestrian crossing location was evaluated to ensure that vehicles have adequate sight distance to react and stop should a pedestrian be crossing the road at this location. To ensure the safety of a crossing pedestrian, a proposed crossing should have sufficient sight distance, which exceeds the minimum/desired stopping sight distance as defined in the 2004 Policy on Geometric Design of Highways and Streets by the American Association of State Highways and Transportation Officials (AASHTO). The minimum stopping sight distance was determined from Exhibit 3-1 and 3.2 in AASHTO using a 40 mph design speed (posted speed limit is 30 MPH). Grades and sight distances are graphically depicted on a figure contained in the Appendix C.

Results of this evaluation indicate that adequate stopping sight distance exists on Mt. Hope Avenue at Robinson Drive. To ensure that this location is the most suitable location for the unsignalized pedestrian crossing, the stopping sight distance was evaluated on Mt. Hope Avenue further north at the McLean Street intersection. Results of this evaluation indicate that adequate sight distance also exists at this location. However, the difference between the existing and desired sight distance for southbound vehicles is only 195 feet, making the crossing location at Robinson Drive the preferred location as the difference at this location is 795'.

| Exhibit 2.3.1.7-4<br>Stopping Sight Distance | | | | |
|---|---|---|---|---|
| **Crosswalk Location on Mt. Hope Avenue** | **Approach** | **Grades (Approx.)** | **Desired (feet)** | **Field Measured (feet)** |
| Robinson Drive | Northbound | -2 to -5 | 333 | 800 |
| | Southbound | +2 | 305 | 1,100 |
| McLean Street | Northbound | -1 to -2 | 315 | 1,340 |
| | Southbound | +0.5 | 305 | 500 |

(2) On-Road Trail Sections

A pedestrian/bicycle accident screening was conducted for three roadway segments which are proposed to be part of the on-road trail system:

- South Avenue (Highland Avenue to Robinson Drive)
- Mt. Hope Avenue (Robinson Drive to McLean Street)
- McLean Street (Mt. Hope Avenue to Wilson Boulevard)

The screening used accident data from the New York State Department of Transportation's (NYSDOT) Safety Information Management System (SIMS) for the three-year period from 01/01/05 to 12/31/07.

A total of two pedestrian accidents occurred on the three roadway segments evaluated, both at the South Avenue/Highland Avenue intersection. The first accident involved a westbound vehicle that was turning right on red hitting a southbound bicyclist traveling against traffic. The second accident involved an eastbound vehicle colliding with a pedestrian who was walking against the red light in the path of vehicle.

### 2.3.1.8 Ownership and Maintenance Jurisdiction –

Refer to the Exhibit 2.3.1.8-1 for Ownership and Maintenance Jurisdiction of roads and features within the project limits.

| Exhibit 2.3.1.8-1<br>Ownership and Maintenance Jurisdiction | | |
|---|---|---|
| **Feature** | **Owner** | **Maintenance** |
| Sawgrass Drive | Private | Private |
| Westfall Road (CR 239) | Monroe County | Monroe County |
| Monroe Developmental Center | State of New York | State of New York |
| St. John's Meadows | Private | Private |
| Elmwood Avenue (CR 87) | Monroe County & City of Rochester | Monroe County & City of Rochester |
| Highland Avenue | City of Rochester | City of Rochester |
| Highland Park | City of Rochester/ Monroe County | Monroe County |
| South Avenue | City of Rochester | City of Rochester |
| Robinson Drive | City of Rochester | City of Rochester |
| Mt. Hope Ave. | City of Rochester | City of Rochester |
| McLean Street-Roadway | City of Rochester | City of Rochester |
| McLean Street-Sidewalk | City of Rochester/ University of Rochester | City of Rochester/ University of Rochester |
| Joseph C. Wilson Boulevard | City of Rochester | City of Rochester |

Refer to Exhibit 2.3.1.8-2 for Ownership and Maintenance Jurisdiction of adjacent roads and features.

| Exhibit 2.3.1.8-2<br>Ownership and Maintenance Jurisdiction | | |
|---|---|---|
| **Feature** | **Owner** | **Maintenance** |
| Brighton Town Park | Town of Brighton | Town of Brighton |
| Laney Road | City of Rochester | City of Rochester |
| Azalea Road | City of Rochester | City of Rochester |
| Meadowbrook Road | City of Rochester | City of Rochester |
| Pavilion Street | City of Rochester | City of Rochester |
| Reservoir Avenue | City of Rochester | City of Rochester |
| Alpine Street | City of Rochester | City of Rochester |
| Menlo Place | City of Rochester | City of Rochester |
| Harmon Place | City of Rochester | City of Rochester |
| Mt. Hope Cemetery | City of Rochester | City of Rochester |

### 2.3.2 Multimodal

#### 2.3.2.1 Pedestrians –

This project is an enhancement and transportation project developed to improve the mobility and accessibility both locally and regionally for pedestrians. The project will improve the safety and mobility for pedestrians. The trail will typically be 10 feet wide and sidewalks will be a minimum of 5 feet wide. The trail will be ADA accessible. Improvements to the existing sidewalk system, including replacement of deteriorated panels and updating access ramps to meet current standards, will be made were feasible under the existing funding for the project.

#### 2.3.2.2 Bicyclists –

This project is an enhancement and transportation project developed to improve the mobility and accessibility both locally and regionally for bicyclists. The project will improve the safety and mobility for bicyclists. The trail will typically be 10 feet wide. The curves with non-standard radii will be posted with signs to notify bicyclists. On the on-road portions bicyclists will use the road shoulders, bike lanes or shared lanes on South Avenue, Robinson Drive, Mt. Hope Avenue, and McLean Street. Striping modifications will provide shared use lanes on Elmwood Avenue. Appropriate signage will be posted notifying motorists to share the road with bicyclists for the on-road segments of the trail system. The entire project will be accessible for use by bicycles.

### 2.3.3 Infrastructure

#### 2.3.3.1 Design Standards –

The following design criteria have been developed based on the following:

- AASHTO Guidelines for the Development of Bicycle Facilities, 1999
- AASHTO Policy on Geometric Design of Highways and Streets, 2004
- Selecting Roadway Design Treatments to Accommodate Bicycles, Federal Highway Administration, Publication No. FHWA-RD-92-073, January 1994
- NYSDOT Highway Design Manual (HDM)
- NYSDOT Bridge Manual
- Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, United States Access Board, July 23, 2004
- United Kingdom DOT "Contraflow Cycling" leaflet
- NCC Cycling Design Guide, 2006

**Exhibit 2.3.3.1-1**
**Design Criteria for Highland Park/Canalway Off-Road Trail Segments**

| | | | |
|---|---|---|---|
| PIN: | 4754.08 | NHS (Y/N): | No |
| Route No. & Name: | Highland Park/ Canalway Trail | Functional Classification: | Two-Way Shared Use Trail |
| Project Type: | Two-Way Shared-Use Trail | Design Classification: | Two-Way Shared Use Trail |
| % Trucks: | NA | Terrain: | Level/ Rolling |
| ADT: | NA | Truck Access/Qualifying Hwy. | Neither |

| | Element | Standard | Existing Condition | Proposed Condition |
|---|---|---|---|---|
| 1 | Design Speed | 20 mph (Bicycle) | N/A | 20 mph |
| 2 | Trail Surface | All-Weather Pavement Structure | Dirt/Grass | Concrete/Asphalt |
| 3 | Trail Width | 10.0 ft. Desirable – AASHTO 1999 | Varies | 10.0 ft. Max., 8 ft. Min. |
| 4 | Shoulder Width | 2.0 ft. – AASHTO 1999 | N/A | 2.0 ft. |
| 5 | Maximum Grade | 5% Max. – AASHTO 1999 | N/A | 5% Max. |
| 6 | Horizontal Curvature | Path: 100 ft. Min. – AASHTO 1999 | N/A | 20 ft. Min. * |
| 7 | Superelevation Rate | 3% Maximum – AASHTO | N/A | 3% Max. |
| 8 | Stopping Sight Distance | 140 ft. Min. – AASHTO 1999 | N/A | 140 ft. Min. |
| 9 | Horizontal Clearance | 3.0 ft.Minimum – AASHTO 1999 | N/A | 3.0 ft. |
| 10 | Vertical Clearance | 8.0 ft. Min., 10.0 ft. Desirable – AASHTO 1999 | N/A | Maintain Existing |
| 11 | Pavement Cross Slope | 1.5% Min. to 2% Max. - ADA | Varies | 2% Max. |
| 12 | Shoulder Cross Slope | 6.0% Max. | Varies | 6% Max. |
| 13 | Structural Capacity | 60 psf Live Load (ASCE 7 – Elevated Walkways) | 60 psf | 60 psf |
| 14 | Pedestrian Accommodation | ADA Accessibility Guidelines | Not ADA compliant | ADA compliant |
| 15 | Railing Height | 54 in. – HDM Section 17.5.2 | N/A | 54 in. |

* Refer to non-standard feature justification in Appendix D

**Exhibit 2.3.3.1-2**
**Design Criteria for Highland Park/ Canalway On-Road Trail Segments**

| | | | |
|---|---|---|---|
| PIN: | 4754.08 | NHS (Y/N): | See Exhibits 2.3.1.1-1&2 |
| Route No. & Name: | See Exhibits 2.3.1.1-1&2 | Functional Classification: | See Exhibits 2.3.1.1-1&2 |
| Project Type: | Highland Park/ Canalway | Design Classification: | See Exhibits 2.3.1.1-1&2 |
| % Trucks: | N/A | Terrain: | Level/ Rolling |
| ADT: | N/A | Truck Access/Qualifying Hwy. | Neither |

| | Element | Standard | Existing Condition | Proposed Condition |
|---|---|---|---|---|
| 1 | Design Speed<br>-City of Rochester Streets<br><br>-Urban Minor Arterial[1] | <br>30 mph<br><br>35 mph | <br>25-30 mph posted[2]<br>35 mph posted | Maintain Existing |
| 2 | Lane Width<br>- Urban Arterial Travel Lane<br>- Urban Arterial Shared-Use Lane<br>- Urban Collector Travel Lane<br>- Urban Local Travel Lane- (With Curbing)<br>- Urban Local Shared-Use Lane | <br>11 ft. Min.<br>12 ft. Min – 14 ft. desirable<br><br>10 ft. Min – 12 ft. desirable<br>10 ft. Min – 11 ft. desirable<br><br>12 ft. Min – 14 ft. desirable<br>HDM Section 2.7 | Varies[3] | Varies (See Typical Sections) |

| | | | | |
|---|---|---|---|---|
| 3 | Shoulder Width<br>- to Accommodate Bikes (Curbed) | 4.0 ft. Min.[4,5]<br>HDM Section 17.4.5 | Varies[3] | Varies (See Typical Sections) |
| 4 | Bridge Roadway Width | N/A | N/A | N/A |
| 5 | Maximum Grade<br>- Urban Arterial<br>- Urban Collector<br>- Urban Local | 8% Max. (35 mph)/ 9% Max. (30 mph)<br>11% Max. (30 mph)<br>15% Max.<br>HDM Section 2.7 | Varies | Maintain Existing |
| 6 | Horizontal Curvature<br>- Urban Arterial and Urban Collector<br>- Urban Local | 250 ft. Min. @ e=4.0% (30 mph)/<br>371 ft. Min. @ e=4.0% (35 mph)<br>154 ft. Min. @ e=4.0% (25 mph)/<br>282 ft. Min. @ e=4.0% (30 mph)<br>HDM Section 2.7 | Varies | Maintain Existing |
| 7 | Superelevation Rate | 4% Maximum<br>HDM Section 2.7 | Varies | Maintain Existing |
| 8 | Stopping Sight Distance<br>- Urban Arterial and Urban Collector<br>- Urban Local | 200 ft. Min.(30 mph)/250 ft. Min.(35 mph)<br>155 ft. Min.(25 mph)/200 ft. Min.(30 mph)<br>HDM Section 2.7 | Varies | Maintain Existing |
| 9 | Horizontal Clearance<br>- With Curb<br>- Without Curb<br>- At Intersection | 0 ft.<br>1.5 ft.<br>3 ft.<br>HDM Section 2.7 | Varies | Maintain Existing |
| 10 | Vertical Clearance<br>- NHS<br>- Non-NHS | 16 ft. Min., 16.5 ft. Desirable<br>14 ft. Min., 14.5 ft. Desirable<br>BM Section 2.4 | N/A | Unrestricted |
| 11 | Pavement Cross Slope<br>- Travel Lanes | 1.5% Min. to 2% Max.<br>HDM Section 2.7 | Varies | Maintain Existing |
| 12 | Rollover | 4% between lanes<br>HDM Section 2.7 | Varies | Maintain Existing |
| 13 | Structural Capacity | N/A | N/A | N/A |
| 14 | Pedestrian Accommodation | 5' Wide Sidewalk – HDM Section 18.6.5.1 | Varies[3] | 5' |
| 15 | Bike Lane | 5' Min – HDM Section 17.4.7 | N/A | 5' Min. |

(1) The design speed of Urban Minor Arterial outside the City of Rochester city limits.
(2) The posted speed limit for City of Rochester streets is 30 mph except for Robinson Avenue which is posted for 25 mph.
(3) Refer to Exhibit 2.3.3.4-1 for existing lane and sidewalk configuration and widths.
(4) A 0 to 4 ft minimum shoulder may be used where a wide outside travel lane (12 ft min) is provided
(5) A 5 ft. minimum width is required to mark as a designated bike lane

### 2.3.3.2 Critical Design Elements –

**Exhibit 2.3.3.2-1**
**Critical Design Elements for Highland Park/ Canalway On-Road Segments**

| Cross Walk | Type of Striping | Signing |
|---|---|---|
| Mt. Hope Avenue<br>Robinson Drive | Double Piano Key | 1. Standard Fluorescent Yellow-green *Advance* Sign<br>2. Standard Fluorescent Yellow-green *Crossing* Sign |

### 2.3.3.3 Other Design Parameters –

| Exhibit 2.3.3.3-1<br>Other Design Parameter: Design Vehicle | | |
|---|---|---|
| **Location** | **Design Vehicle** | **Vehicle Accommodated** |
| Trail | Bicycle | Bicycle |

### 2.3.3.4 Existing and Proposed Highway/Bridge Plan and Section –

The proposed trail segment between the Canalway Trail and Highland Avenue will be developed as a 10-foot-wide off-road multi-use trail. Use of the existing land on which the trail will be constructed is currently lawn and wooded areas, with the exception of along the south side of Elmwood Avenue and the east side of South Avenue where concrete sidewalks currently exist. These existing sidewalks will be replaced with a 10-foot-wide concrete multi-use trail.

The remaining segment of the trail system from Highland Avenue to the Genesee Riverway Trail will utilize the sidewalk for pedestrians and the roads for bicyclists. Refer to Exhibit 2.3.3.4-1 for Existing Road and Sidewalk Information.

| Exhibit 2.3.3.4-1<br>Existing Road and Sidewalk Information | | |
|---|---|---|
| **Feature** | **Road Data** | **Sidewalk Data** |
| Sawgrass Drive | 28 ft. (2-Lanes w/ Curb) | None |
| Westfall Road (CR 239) | 36 ft. (2-Travel Lanes, 1-Turning Lane, & 2-3 ft. Shoulders) | None[1] |
| Elmwood Avenue (CR 87) | 60 ft. (4-Travel Lanes & 1-Turning Lane w/ Curb) | 5 ft. Wide Both Sides |
| South Avenue<br>Highland Ave. To Reservoir Ave. | 40 ft. (3-Lanes w/ Curb)<br>(Additional turn lane at Highland Ave. intersection) | 4.5 ft. Wide Both Sides |
| South Avenue<br>Reservoir Ave. to Robinson Dr. | 40 ft. (2-Lanes w/ Curb) | 4.5 ft. Wide Both Sides |
| Robinson Drive | 24 ft. (2-Lanes w/ Curb) | 4.5 ft. to 5 ft. Wide on Both Sides |
| Mt. Hope Avenue | 37 ft. (2-Lanes, 1-Turning Lane, & 2' Shoulders w/ Curb) | 4.5 ft. to 5 ft. Wide on Both Sides |
| McLean Street | 19 ft. (1-Lane, 1-Way w/ Curb) | 6.5 ft. to 7 ft. on South Side |
| Joseph C. Wilson Boulevard | 28 ft. (2-Lanes w/ Curb) | 5 ft. on East Side |

[1]Westfall Road is scheduled for reconstruction and 1 10' wide concrete sidewalk along the north side of road between Sawgrass Drive and Monroe Developmental Center.

Within the wooded parcel just north of the Monroe Developmental Center, the existing wooden boardwalk structure will be refurbished to provide a new 10-foot-wide deck and standard railing system, and redirect the north end of the boardwalk and the adjoining new trail segment to the northwest, outside the limits of the existing wetland in this area.

Proposed typical sections and trail plans are contained in Appendix A.

### 2.3.3.5 Non-Standard/Non-Conforming Features –

Based on a design speed of 20 mph for bicycle use and 2 fps for pedestrians the following non-standard and non-conforming have been identified:

Non-Standard Features

Existing Non-Standard Features:

- There are a number of curb ramps do not meet ADA standards for slope and/or detectable warning.

Proposed Non-Standard Features:

- Curb ramps will be upgraded to where possible however it is anticipated that some will not be able to be improved to meet ADA standards due to existing constraints.
- Three curves on the multi-use trail will not meet the minimum required radius of 100 feet. Two of the curves are located in the St. John's expansion area where the trail is following the alignment of an existing hiking trail. The third location is where the trail exits the St. John's expansion area onto Elmwood Avenue and the radius at that location is limited by available right-of-way.

Justification for retaining these non-standard features can be found in Appendix D.

Non-Conforming Features

No existing or proposed non-conforming features have been identified.

### 2.3.3.6 Pavement and Shoulder Conditions –

The surfaces of the existing sidewalk and roads to be used as part of the trail network are comprised of concrete and asphalt, respectively. The concrete and asphalt treatments are in generally good condition. Pavement rehabilitation of existing roadways within the project limits utilized for the on-road segment of the trail system is not proposed as part of this project. The need for replacement of sections of sidewalk will be reviewed during detailed design.

The proposed pavement structure for this project is as noted below. Refer to Appendix A for Typical Sections and Plans.

- Off-Road Trail – 6 inch stone subbase, and 3 inch asphalt top course or 4 inch concrete top course
- Sidewalk Flag Replacement – 6 inch subbase and 4 inch concrete

### 2.3.3.7 Drainage Systems –

(1) The existing storm drainage along the project corridor consists of both open and closed systems.
(2) Condition/deterioration – the systems are in generally good condition.
(3) Deficiencies/needs – None.

The existing natural drainage patterns will generally be retained using new cross culverts under the off-road section as needed.

### 2.3.3.8 Geotechnical –

No significant soil problems are known to exist along the project corridor.

No unique soils or foundation problems are anticipated along the proposed trail. A few wet locations along the trail will require a geotextile fabric to be placed prior to placement of the subbase.

### 2.3.3.9 Structures –

There are no bridges or culverts that the proposed trail crosses. A portion of the trail will be carried by an existing boardwalk through the wooded parcel just south of the St. John's expansion area (i.e., Brickstone). The existing boardwalk will be widened to provide a 10' wide clear spacing between railings. In order to limit wetland disturbances, the north end of the existing boardwalk will be dead ended via installation of a new railing across the end to provide an overlook area. A new boardwalk section will be constructed, connecting to the existing and redirecting the boardwalk to the northeast – outside of the designated wetland area.

The existing boardwalk is not designed to support the loads of heavy maintenance vehicles or emergency vehicles. Since only the deck and railing of this boardwalk are being retrofitted for use as part of the Highland Trail and the foundations are not being replaced, the existing load capacity will be maintained. The boardwalk will support a small maintenance vehicle with a wheel load not exceeding 400 lb. such as a 4 wheel ATV or gator maintenance vehicle. Any emergency occurring north of the boardwalk could be accessed from the trail that passes through St. John's Expansion, while emergencies south of the boardwalk could be accessed from the trail through Monroe Developmental Center.

### 2.3.3.10 Hydraulics of Bridges and Culverts –

No hydrologic and hydraulic analysis was performed as no bridges or culverts exist within the project limits. Review of structure hydraulics is not required.

### 2.3.3.11 Utilities –

Multiple utilities including utility poles, natural gas, electric, water, telephone, cable and sanitary sewer lines are also located along the road right-of-ways.

The project will not significantly affect existing utilities. Efforts to coordinate with both private and public utilities will continue throughout the design phases of this project.

### 2.3.3.12 Right of Way –

Exhibit 2.3.3.12-1 provides the right of way widths and types for all roadways within the project limits.

**Exhibit 2.3.3.12-1**
**Right-of-Way**

| Feature | Type | Width |
|---|---|---|
| Sawgrass Drive | Private Right-of-Way | 60 ft. |
| Westfall Road (CR 239) | Public Right-of-way | 49.5 ft. |
| Elmwood Avenue (CR 87) | Public Right-of-way | 49.5 ft. |
| South Avenue | Public Right-of-way | 66 ft. |
| Robinson Drive | Public Right-of-way | 60 ft. |
| Mt. Hope Avenue | Public Right-of-way | 66 ft. |
| McLean Street- Roadway | Public Right-of-way | 39 ft. |
| Joseph C. Wilson Boulevard | Public Right-of-way | 75 ft. |

The proposed alternative will require acquisition of easements for the construction of the project. Property owners along the proposed trail alignment will be contacted to discuss the right of way needs across their property. Appraisals will be conducted to determine the fair market value of the required easements. Refer to Exhibit 2.3.3.12-2 for a summary of the right-of-way impacts to private property.

**Exhibit 2.3.3.12-2**
**Summary of Right-of-Way Impacts to Private Property**

| Owner | Location | Tax Map Number | Total Parcel Area (Acres) | Easement Area (Acres) | % of Total Parcel Impacted | Easement Type |
|---|---|---|---|---|---|---|
| Westfall Office Group | Along west side of Sawgrass Dr. | 149.06-1-2.411 | 7.53 | .015 | 0.20 | PE |
| Westfall Office Group | Along west side of Sawgrass Dr. | 149.06-1-2.522 | 2.46 | .03 | 1.22 | PE |
| VA Venture Rochester, LLC | Along west side of Sawgrass Dr. | 136.18-1-4 | 5.26 | .02 | 0.38 | PE |
| State of New York | Monroe Developmental Center | 136.18-1-1 | 65.60 | 1.10 | 1.67 | PE |
| St. John's Home For the Aging | Wooded Parcel | 136.14-1-2 | 7.14 | Existing easement in place | | |
| Sully's Trail Corp PK II, LLC | St. John's Expansion Parcel | 136.14-1-1.11 | 17.48 | Existing easement in place | | |
| SN Phelps Realty, LLC | Along south side of Elmwood Ave | 136.14-1-1.2 | 3.68 | .01 | 0.27 | PE |
| SN Phelps Realty, LLC | Along south side of Elmwood Ave | 136.56-1-1 | 17.70 | 0.21 | 1.19 | PE |
| City of Rochester | Along south side of Elmwood Ave (Pump Station) | 136.48-1-47.1 | 0.08 | .007 | 8.75 | PE |
| State of New York | Along souh side of Elmwood Ave | 136.55.1-2.004 | 18.21 | 0.10 | .06 | PE |

| | | | | | | |
|---|---|---|---|---|---|---|
| State of New York | Along south side of Elmwood Ave | 136.63-1-1.5 | 37.80 | 0.10 | 0.26 | PE |
| County of Monroe | Highland Park South | 136.47-1-1.001 | 25.92 | 0.93 | 3.59 | PE |
| County of Monroe | Highland Park South | 136.39-1-20.001 | 11.76 | 0.10 | 0.85 | PE |

Some additional TE's for construction access may be needed from some of the property owners in the above table. The location and size of any required TE's will be included in the final version of this report.

#### 2.3.3.13 Landscaping/Environmental Enhancement –

The visual environment along the project corridor is consistent with that of a suburban and urban landscape. The largest viewing audiences are the adjacent property owners.

The proposed trail passes through Highland Park South which was acquired at a later date and not part of the original Olmsted plan. However, additional landscaping should be minimized to maintain the existing park landscape.

Clearing and grubbing along the alignment of the off-road trail will be required to provide adequate width and to provide a 3-foot wide clear zone on both sides. Disturbed areas adjacent to the trail will be top soiled and seeded.

Some opportunity for additional landscaping exists at locations of the proposed informational kiosk areas. These areas will be located at key locations along the off-road trail system to direct trail users along the trail, and provide information about connecting trails. The locations of these areas will be determined during final design and will be located outside of areas that are historically sensitive.

No other opportunities exist to enhance existing natural or manmade environmental features.

## 2.4 Miscellaneous

There are no railroads within the project limits and no at-grade crossings within 0.6 mile that could impact traffic conditions.

The roads within the project limits have existing street lights that illuminate both the roadway and sidewalks. No new lighting will be provided along the trail corridor.

# Chapter 3 – Social, Economic and Environmental Considerations

## 3.1 National Environmental Policy Act (NEPA)

The project has been determined NEPA Class II, Categorical Exclusion per 23 CFR 771.117. The lead agency for NEPA is the Federal Highway Administration (FHWA). The NEPA checklist is provided in Appendix B. There are historic and cultural resources present that will require a determination of effect.

## 3.2 State Environmental Quality Review Act (SEQRA)

This project is classified as a Type 1 Action in accordance with 6NYCRR Part 617, State Environmental Quality Review (SEQR) Act. A Long Environmental Assessment Form (EAF) was completed for the project and is included in Appendix B. The Town of Brighton will be the SEQR Lead Agency.

Specifically, the project **does not** include or result in:

1. The acquisition of an occupied dwelling or business structure;

2. Significant changes in passenger or vehicle traffic volumes, vehicle mix, local travel patterns or access;

3. More than minor social, economic or environmental effects upon occupied dwelling units, businesses, abutting properties or other established human activities;

4. Significant inconsistency with current plans or goals that have been adopted by local government bodies;

5. Physical alteration of more than 1 ha (2.5 ac) of publicly owned or operated park land, recreational area or designated open space;

6. An effect on a district, building, structure or site eligible for, or listed on, the National Register of Historic Places; (a “No Adverse Effect” determination from SHPO is anticipated)

7. More than minor alteration of, or adverse effect upon, any property, protected area, or natural or man-made resource of national, State or local significance, including but not limited to:
   (i) Wetlands and associated areas;
   (ii) Floodplains;
   (iii) Prime or unique agricultural land;
   (iv) Agricultural districts, when more than one acre may be affected;
   (v) Water resources, including lakes, reservoirs, rivers and streams;
   (vi) Water supply sources;
   (vii) Designated wild, scenic and recreational rivers;
   (viii) Unique ecological, natural wooded or scenic areas;
   (ix) Rare, threatened or endangered species;
   (x) Any area designated as a critical environmental area;

8. Requirement for an indirect air source quality permit.

Refer to the Environmental Scoping Checklist found in Appendix B for information on all environmental issues for which the project was screened.

## 3.3 Additional Environmental Information

### 3.3.1 Social Consequences

During the development of the scope for the project, the client deemed studies regarding social consequences not necessary due to the nature of the project. Therefore no studies have been conducted. Multiple public meetings were held to inform the public of the project and solicit their input. Feedback received from these meetings and during the comment period of this report will be included in the Final Design Report.

### 3.3.2 Economic Consequences

During the development of the scope for the project, the client deemed studies regarding economic consequences not necessary due to the nature of the project. Therefore no studies have been conducted.

### 3.3.3 Environmental Consequences

The environmental consequences of the proposed project will not be significant. Most of the areas that will be affected by the project have been previously disturbed in association with the construction of local roads, new development, and infrastructure.

#### 3.3.3.1 Surface Waters/ Wetlands –

There are no navigable waters, as defined by the USACE or the United States Coast Guard in the project area. USGS Quadrangle, Rochester East, identifies the West Branch of Allen's Creek and an unnamed tributary to Allen's Creek within the project area. The West Branch and the unnamed tributary are identified as intermittent, and are classified as Class B (water quality Class B) and Class C (water quality Class C) by the NYSDEC as contained in 6 NYCRR, Chapter X Part 864, and 6 NYCRR Part 703, respectively.

The best use of Class B waters is recreation, including swimming and fishing. Some stream restrictions during construction within the banks of the West Branch of Allen's Creek may apply. The best use of Class C waters is fishing, and the waters are suitable for fish propagation and survival and are suitable for primary and secondary contact recreation. Based on the stream classifications for the unnamed tributary, the NYSDEC should not pose any restrictions when working within this stream.

The NYSDEC wetland map for Rochester East, NY Quadrangle was reviewed. A segment of the project is located within one (1) NYSDEC designated wetland (BR-10). BR-10 is forested and scrub/shrub wetland located on St. John's Property and is known as St. John's Meadows. Additionally, portions of the project will be within the designated 100-ft. buffer of wetland BR-10. Due to the location of the project within this wetland and adjacent area, an Article 24 Freshwater Wetlands Permit will be required.

A wetland delineation was completed in 2009 in accordance with the Army Corps of Engineers' Wetlands Delineation Manual, 1987. Approximately 0.5 acre of federal wetlands are anticipated to be impacted during the construction of the project. The Wetland Delineation Report is available as a separate supporting document. Coordination with the NYSDEC has occurred and will continue throughout design. A wetland determination has been made and is included in Appendix E.

**Executive Order 11990**

Federal Wetland BR-10 is within the limits of the project. A Programmatic Executive Order (EO) 11990 will be prepared for the project and will include the work done within federally jurisdictional wetlands as no major impact.

An Erosion and Sediment Control Plan and Joint Application for a USACE Nationwide Permit will be required for the disturbance of the federal wetlands required by the USACE.

Filing of a Notice of Intent (NOI) will be required for coverage under the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Construction since the total disturbed area exceeds the 0.405 hectare (1.0-acre) permitting threshold. In addition, the project will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP).

During construction, storm water runoff from exposed soil surfaces may flow into the existing surface water conveyance system and subsequently into adjacent surface water streams. These flows will be controlled by the use of sediment and erosion control techniques. These techniques will be part of a sediment and erosion control plan to be implemented during construction and will conform to the requirements of the NYS Department of Transportation Standard Specification for Temporary Soil Erosion and Water Pollution Control, The NYS Stormwater Management Design Manual and the NYS Guidelines for Urban Erosion and Sediment Control.

### 3.3.3.2 Water Source Quality –

This project is not located within the limits of a designated U.S. Environmental Protection Agency Sole Source Aquifer. Additionally, the area is not located over a Primary or Principal aquifer as designated by Snavely and Kantrowicz (1982). Therefore, based on the scope of the project and limited disturbance, no further processing is required under the Safe Drinking Water Act of 1974.

A majority of the area businesses, residences and public buildings are serviced by public water by the Monroe County Water Authority.

Erosion, sedimentation and water pollution controls will be employed throughout the duration of the project to minimize water quality impacts in groundwater recharge areas. Therefore, the overall quality of groundwater is not expected to be affected by this project.

### 3.3.3.3 Threatened and Endangered Species –

The New York State Department of Environmental Conservation (NYSDEC) Wildlife Resources Center Natural Heritage Program and the NYSDEC Region 8 Division of Fish, Wildlife and Marine Resources were contacted on March 07, 2011 regarding the presence of significant habitat areas and endangered and threatened species.

The NYSDEC Wildlife Resources Center Natural Heritage Program responded that they have “no records of rare or state-listed animals or plants, significant natural communities or other significant habitats, on or in the immediate vicinity of the project”. Region 8 responded that, in agreement with a 2009 site reconnaissance, there are no known state or federally endangered, threatened or rare species in the project corridor. They mentioned however, a species of concern, the Western Chorus Frog within the Town of Brighton. A portion of the trail will require a coordination with the Town of Brighton Convervation Board regarding protection of the Western Chorus Frog.

The United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service and the United States Department of the Interior Fish and Wildlife Service (USFWS) were contacted on March 07, 2011 regarding the possible presence of threatened and endangered species and habitat areas.

The USFWS responded that they are unable to reply to Threatened & Endangered Species list requests due to increasing workload and reduction of staff and referred inquiries to their website. Upon review of the USFWS website, it was revealed that one (1) Endangered Species; Bog turtle (*Clemmys [=Glyptemys] muhlenbergii* was listed for Monroe County. However, the turtle is not located in this portion of the County (only documented in Riga and Sweden Townships) and will not be impacted by the trail construction project. Therefore, it is anticipated that further coordination with the USFWS will not be required.

A response from NOAA indicated there are no threatened or endangered species within the immediate project area.

Copies of correspondence with these agencies can be found in Appendix B.

### 3.3.3.4 General Ecology and Wildlife –

The proposed Highland Park/Canalway Trail is located in the City of Rochester and the Town of Brighton, within the Lake Plains Region of New York. The topography consists of gently rolling hills to flat areas. The lands in the immediate vicinity of and adjacent to the proposed trail generally consist of mixed use commercial and residential areas and are mostly developed.

**Woodlot Study**

As part of the development of the trail design, it was noted that the project is located within a Woodlot Protection District. The trees within the project corridor that are identified to be removed have been located and mapped. A copy of the Woodlot Survey Map is included in Appendix B.

### 3.3.3.5 Historical and Cultural Resources –

The Highland Park/Canalway Trail Project location is in an archaeologically sensitive area, with eleven prehistoric and historic sites and six National Register listed or eligible properties or districts within one mile of the project location. Prehistoric site sensitivity is considered to be low, while historic site sensitivity is considered high to the north of Elmwood Ave. South of Elmwood Avenue historic sensitivity is considered low.

A Project Submittal Package (PSP) was sent to the NYSDOT's Regional Cultural Resources Coordinator (RCRC) for review. A copy of the PSP is included in Appendix B along with The RCRC's response that a Cultural Resource Survey and Finding Documentation package are required for the project.

Phase IA background research indicated that only the portion of the proposed trail located between the southern boundary of the St. John's Community expansion located on the south side of Elmwood Avenue and the eastern boundary of the Monroe Developmental Center parcel just north of Westfall Road was anticipated to have subsurface impacts and could not be demonstrated to have been previously disturbed. This area was subjected to Phase IB investigation.

Two sites; one prehistoric and one historic were identified by Phase IB shovel testing. These were designated the Rochester State Hospital Prehistoric Site and the Rochester State Hospital Historic Site. They are both located at the northeast property boundary of the Monroe Developmental Center parcel. The Rochester State Hospital Historic Site is a historic mid to late 19$^{th}$ century dump of domestic and architectural materials. This site lacks clear association with any known historic farm or residence in the vicinity, and therefore, has limited research potential. No further work is recommended with regard to this site.

The Rochester State Hospital Prehistoric Site is a small scale camp or resource procurement site of unknown prehistoric period. This site appears to have the potential to answer research questions concerning these site types in the region during the prehistoric period, an area currently under-

represented in research literature. A site examination is recommended to determine if the Rochester State Hospital Prehistoric Site is eligible for listing on the National Register if the site cannot be avoided.

The results of the Phase 1A research and Phase 1B shovel tests have been documented in a Cultural Resource Report which has been submitted to the RCRC for review. Final determination of the project's impacts on cultural resources will be included in the Final Design Report.

### 3.3.3.6 Visual Resources –

During the development of the scope for the project, the client deemed studies regarding visual resources not necessary given the nature of this project. Therefore no visual resource studies have been conducted.

### 3.3.3.7 Parks and Recreational Facilities –

The proposed trail will traverse property that is part of Highland Park, which is a publicly owned park, and therefore a Section 4(f) property. The trail will be located along an existing trail and designed to minimize harm to the park to the greatest extent possible. Therefore, it is assumed that Monroe County, as owner and operator of this park, respectively, will provide written approval needed for the applicability of FHWA's Section 4(f) Statement and Determination for Independent Bikeway or Walkway Construction Projects, and that an individual Section 4 (f) Evaluation will not be required for this project.

The project will not require acquisition of any recreational parks federally funded by the United States Department of the Interior. Therefore, Section 6(f) evaluations are not required.

### 3.3.3.8 Farmland Assessment –

The proposed project will not significantly impact State Farmland or Agricultural Districts nor will it significantly impact land designated as Federal Prime and Unique Farmland.

### 3.3.3.9 Air, Noise, and Energy –

During the development of the scope for the project, the client deemed studies regarding air, noise, and energy not necessary given the nature of the project. Therefore no studies have been conducted.

### 3.3.3.10 Contaminated Materials Assessment –

A Hazardous Waste/Contaminated Materials (HW/CM) Assessment was completed for the project corridor. The primary objective of this assessment is to render an opinion as to whether surface or historical evidence indicates the presence of recognized environmental conditions that could result in the presence of hazardous materials in the environment.

The HW/CM Assessment also includes a review of NYSDEC regulatory data files. In addition, a review of federal and state environmental databases provided by Toxics Targeting, Inc. of Ithaca, New York was conducted. Aerial photographs were reviewed as part of the screening. Exhibits 3.1 and 3.2 list the specific databases containing information obtained by Toxics Targeting for the project corridor.

| Exhibit 3.3.3.10-1<br>Federal Contamination Database Summary | |
|---|---|
| **Database** | **Radius Searched (ASTM E 1527-05) and Non-ASTM** |
| National Priorities List (NPL Database) | 1/8 mile |
| Delisted NPL Sites | 1/8 mile |
| Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS Database) | 1/8 mile |
| CERCLIS NFRAP (CERCLIS sites no further action) | 1/8 mile |
| Resource Conservation and Recovery Act (RCRA) | 1/8 mile |
| Federal Toxic Release Inventory Facilities | 1/8 mile |
| Federal Air Discharges | 1/8 mile |
| Federal Permit Compliance System Toxic Wastewater Discharges | 1/8 mile |
| Federal Civil and Administrative Enforcement Docket | 1/8 mile |
| Emergency Response Notification System (ERNS) | Property Only |

| Exhibit 3.3.3.10- 2<br>State Contamination Database Summary | |
|---|---|
| **Database** | **Radius Searched (ASTM E 1527-05) and Non-ASTM** |
| NYS Inactive Hazardous Waste Disposal Sites | 1/8 mile |
| NYS Inactive Hazardous Waste Disposal (Qualifying Sites) | 1/8 mile |
| NYS Brownfield Cleanup Sites | 1/8 mile |
| NYS Solid Waste Facility | 1/8 mile |
| NYS and Federal Hazardous Waste, Treatment, Storage or Disposal | 1/8 mile |
| UST Petroleum Bulk Storage | 1/8 mile |
| NYS and Federal Hazardous Waste Generators and Transporters | 1/8 mile |
| UST Chemical Bulk Storage Database | 1/8 mile |
| NYS Hazardous Substance Disposal Site Draft Study | 1/8 mile |
| NYS Major Oil Storage Facilities Data Base | 1/8 mile |
| NYS Toxic Spills | 1/8 mile |

A review of Toxics Targeting findings included fifty-nine (59) sites within one-eighth (1/8) mile radius including four (4) Closed Tank Failures, one (1) Closed Tank Test Failures, seventeen (17) Closed Spills-Unknown/Other causes, nineteen (19) Closed Spills-Misc causes, five (5) Local & State Petroleum Bulk Storage, nine (9) RCRA Haz Waste Generators & Transporters, one (1) NYS Chemical Bulk Storage, one (1) Air Discharge, one (1) Civil & Administrative Enforcement Docket Facilities, and one (1) Active Spill.

A Freedom of Information Act (FOIL) request for information about the Active Spill and other sites of interest was sent to the NYSDEC. It has been determined that the active site located at 1111 Elmwood Avenue is undergoing remediation and monitoring activities and based on the location of the site and distance from the proposed project corridor, the site should not be considered an environmental concern to the project. Furthermore, a review of NYSDEC records indicated that any other sites of concern have been remediated and closed and are not considered as environmental concerns to the project.

### 3.3.3.11 Construction Impact –

Construction activities will be short duration, minor in scale and temporary, and will not result in significant adverse effects. The contractor will be required to comply with all permits issued for the project. Additionally, the contractor will be responsible for conducting work and maintaining equipment in a manner that minimizes impacts from noise, dust, vibration, and erosion and sedimentation. As noted in section 3.3.3.1, a NYSDEC approved project specific Stormwater Pollution Plan (SWPPP) will be developed to protect surface waters and wetlands in or near the project area during construction.

### 3.3.3.12 Anticipated Permits, Approvals and Coordination –

Potential permits and approvals required for this project are summarized below:

- NYSDEC Article 24 Freshwater Wetlands Permit
- FHWA Programmatic Executive Order 11990 Wetlands Finding
- USACE Nationwide Permit (Section 404 Permit)
- NYSDEC Section 401 Water Quality Certification
- NYSDEC SPDES Construction Permit
- Woodlot EPOD Permit
- Stormwater Pollution Prevention Plan (SWPPP)
- Notice of Intent
- City of Rochester Work Permit
- Coordination with the State Historic Preservation Officer (SHPO)
- Coordination with Monroe County Parks Department
- Coordination with Monroe County Department of Transportation
- Coordination with the City of Rochester

The specific permitting and coordination activities are a function of the final trail configuration and design.

## 3.3.4 Indirect/Secondary and Cumulative Impacts

### 3.3.4.1 Indirect/Secondary Impacts –

Based on the proposed project's nature, function, compatibility with surrounding land uses, relatively small scale, and limited change in natural topography, indirect or secondary impacts are neglible. The proposed project meets the criteria of the Town's and City's zoning classification for the affected area. The proposed project is consistent with the adjacent corridor sections.

### 3.3.4.2 Cumulative Impacts –

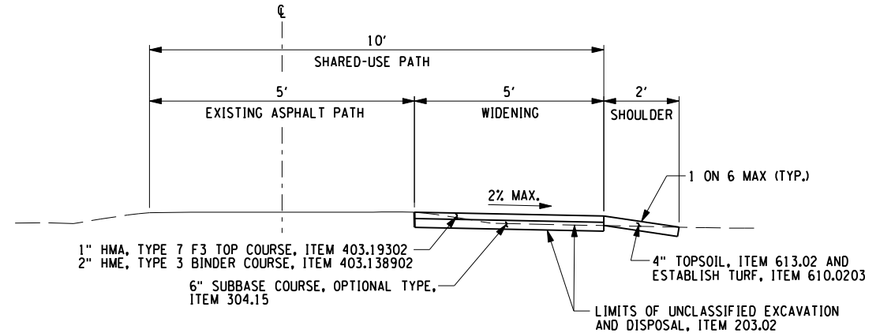
A primary objective of the proposed project is to further develop and interconnect the local and regional network of multi-use trails and parks/recreational facilities. Therefore, the proposed action will have a positive effect on the area's trail network system and parks/recreational facilities.

## 3.3.5 Public Participation and Outreach

One public meeting was held to on July 1, 2009. Modifications to the trail alignment have been made to address public and agency comments and concerns raised at the public meeting. A neighborhood meeting was held on June 23, 2010 with the residents of the Highland Avenue area, as requested by the neighborhood associations, to present modifications to the trail alignment. Additional public meetings were held in the City of Rochester on October 18, 2011 and in the Town of Brighton on November 2, 2011 to present the revised trail alignment to the general public and obtain additional public input on the proposed project.

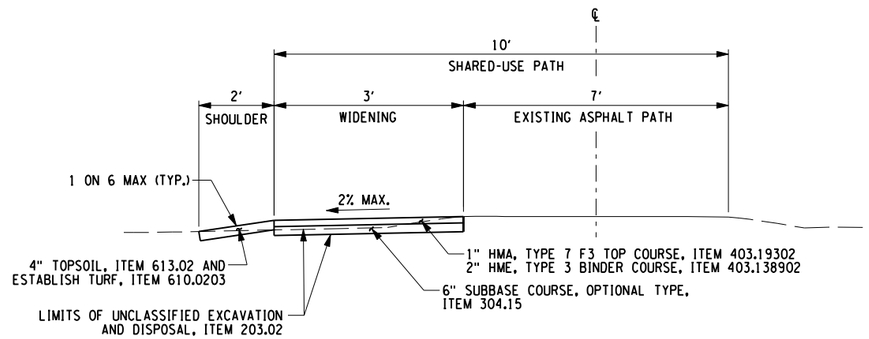
# APPENDICES

# APPENDIX A



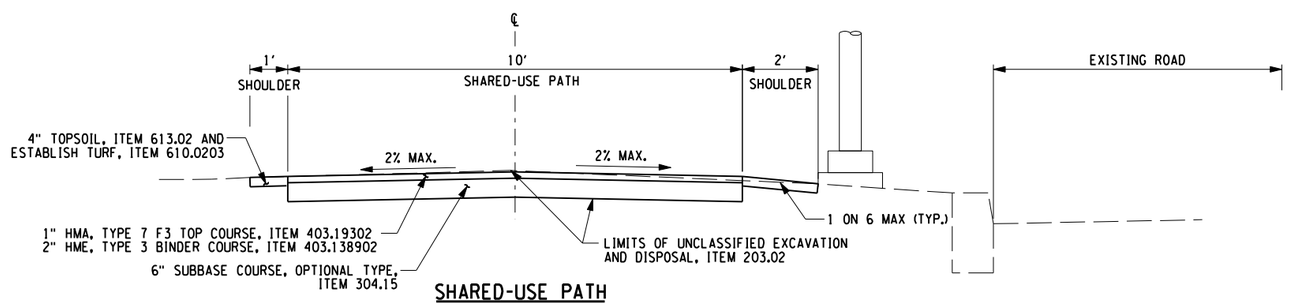

## ASPHALT PATH WIDENING

NOT TO SCALE
SAWGRASS DRIVE
STA. SG 0+00 TO STA. SG 1+42




## ASPHALT PATH WIDENING

NOT TO SCALE
SAWGRASS DRIVE
STA. SG 1+14 TO STA. SG 2+84




## SHARED-USE PATH

NOT TO SCALE
SAWGRASS DRIVE
STA. SG 3+50 TO STA. SG 11+43

| | DATE | BY |
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FA PROJECT NO.
091001
PROJECT MANAGER
ROSE ANN SCHMID

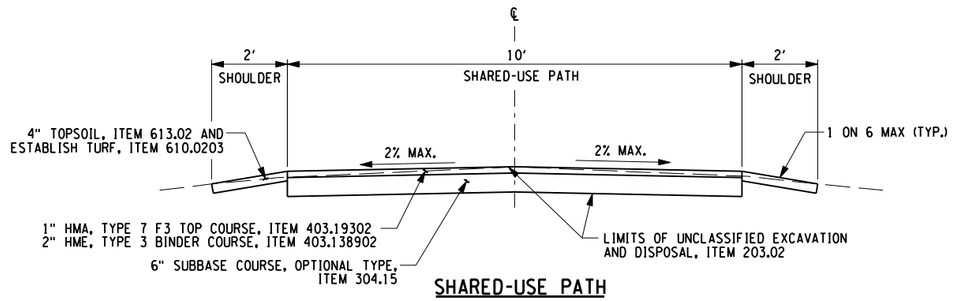
DRAWN BY
TIM DAVIS
SCALE
AS SHOWN
ISSUE DATE
JULY 2009

FISHER ASSOCIATES
135 Collins Road, Rochester, NY 14623
Phone: 585-334-1310

PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

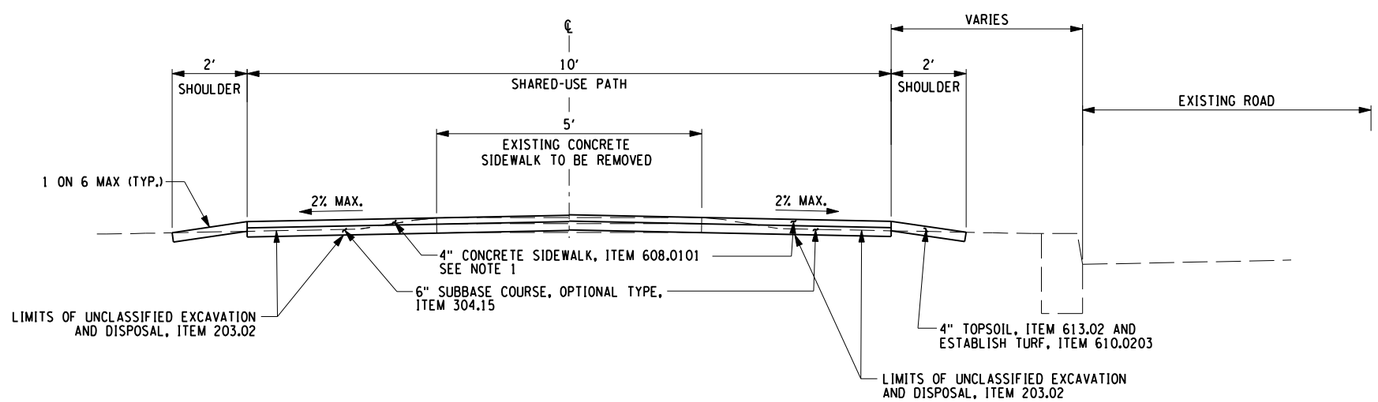
TITLE OF DRAWING
TYPICAL SECTIONS

PROJECT NO.
091001
DRAWING NO.
TYP-1
SHEET 1 OF 1




## SHARED-USE PATH

NOT TO SCALE
WESTFALL ROAD TO ELMWOOD AVENUE
STA. SJ 0+00 TO STA. SJ 51+00




## SHARED-USE PATH

NOT TO SCALE
ELMWOOD AVENUE
STA. EL 0+00 TO STA. EL 16+59

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FA PROJECT NO.
091001
PROJECT MANAGER
ROSEANN SCHMID

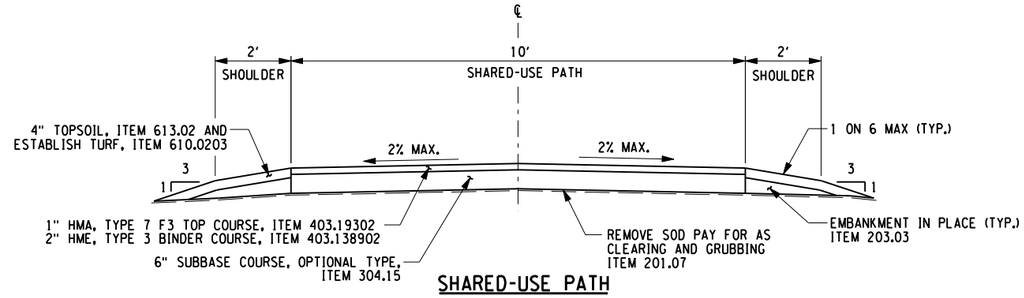
DRAWN BY
TIM DAVIS
SCALE
ISSUE DATE
JULY 2009

FISHER ASSOCIATES
135 Calkins Road, Rochester, NY 14623
Phone: 585-334-1310

PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

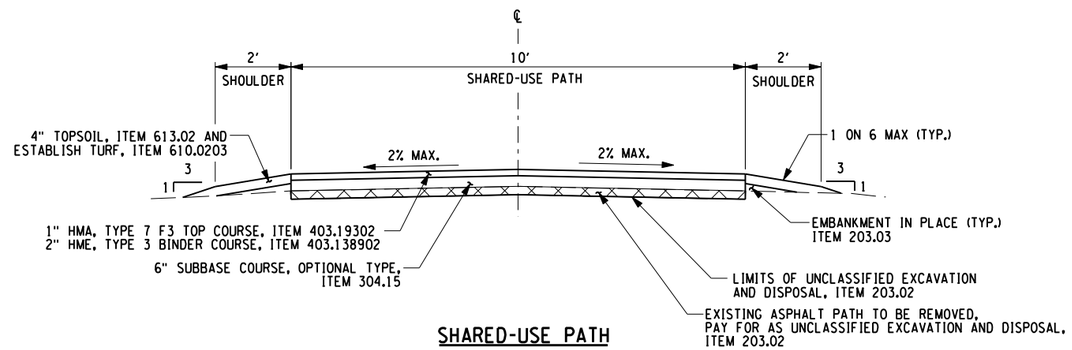
TITLE OF DRAWING
TYPICAL SECTIONS

PROJECT NO.
091001
DRAWING NO.
TYP-2
SHEET 1 OF 1



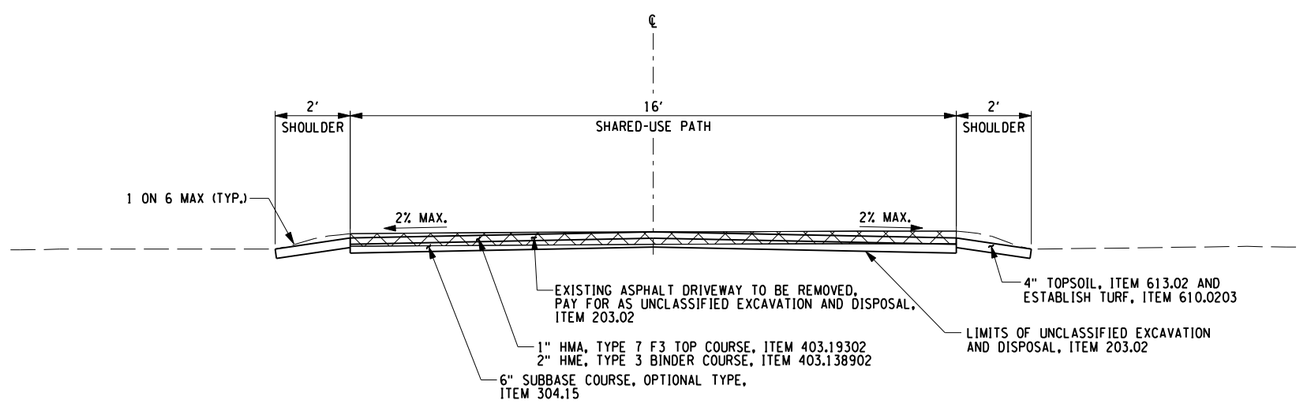

## SHARED-USE PATH

NOT TO SCALE
HIGHLAND PARK
STA. HL 0+00 TO STA. HL 8+72.50
STA. HL 13+29 TO STA. HL 16+16




## SHARED-USE PATH

NOT TO SCALE
HIGHLAND PARK
STA. 8+72.50 TO STA. HL 9+96




## ASPHALT SHARED-USE PATH

NOT TO SCALE
HIGHLAND PARK DRIVEWAY
STA. HD 0+00 TO STA. HD 2+36

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FA PROJECT NO.
091001
PROJECT MANAGER
ROSEANN SCHMID

DRAWN BY
TIM DAVIS
SCALE
ISSUE DATE
JULY 2009

FISHER ASSOCIATES
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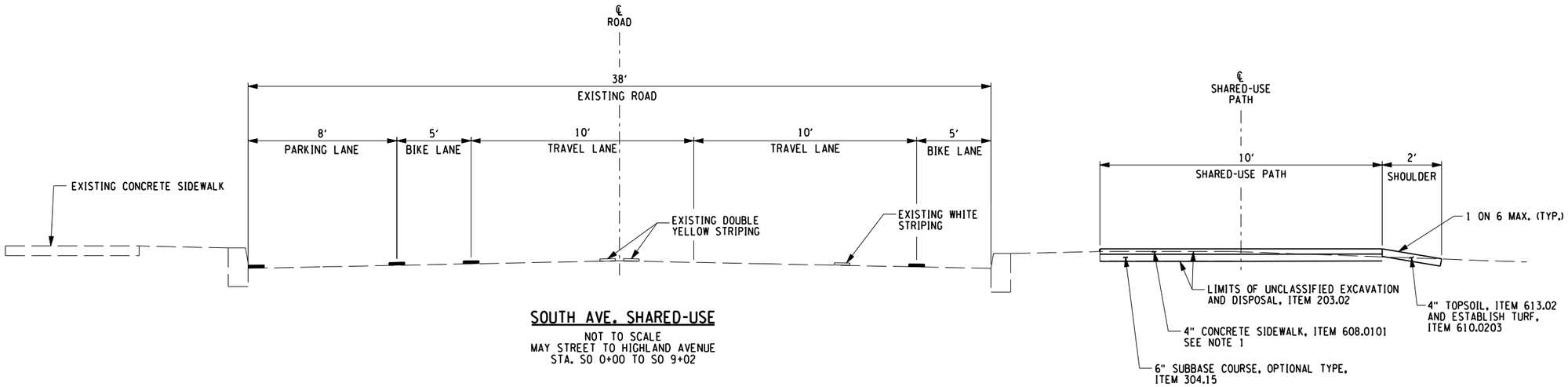
Phone: 585-334-1310

PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

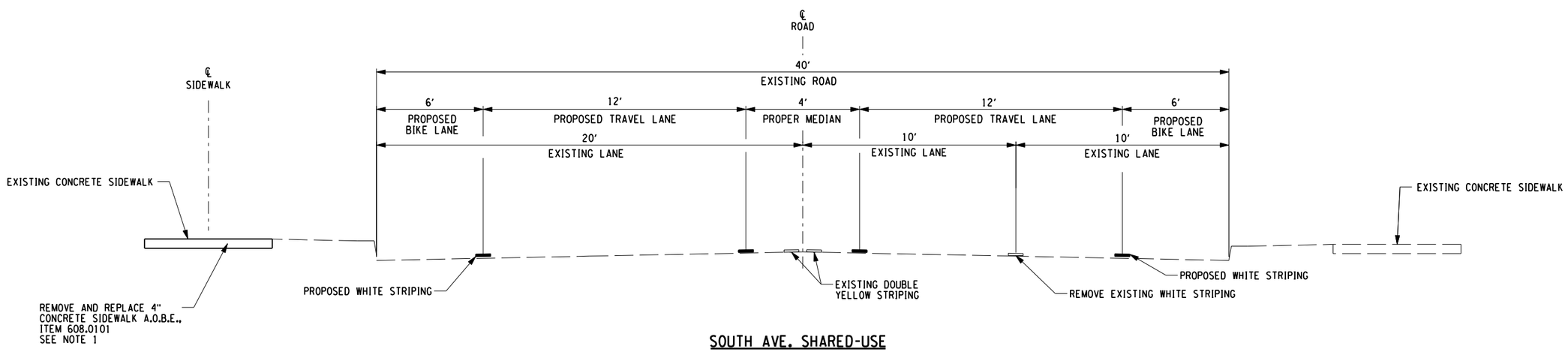
TITLE OF DRAWING
TYPICAL SECTIONS

PROJECT NO.
091001
DRAWING NO.
TYP-3
SHEET 1 OF 1




## SOUTH AVE. SHARED-USE

NOT TO SCALE
MAY STREET TO HIGHLAND AVENUE
STA. SO 0+00 TO SO 9+02




## SOUTH AVE. SHARED-USE

NOT TO SCALE
HIGHLAND AVENUE TO ROBINSON DRIVE
STA. SO 13+50 TO STA. SO 23+13

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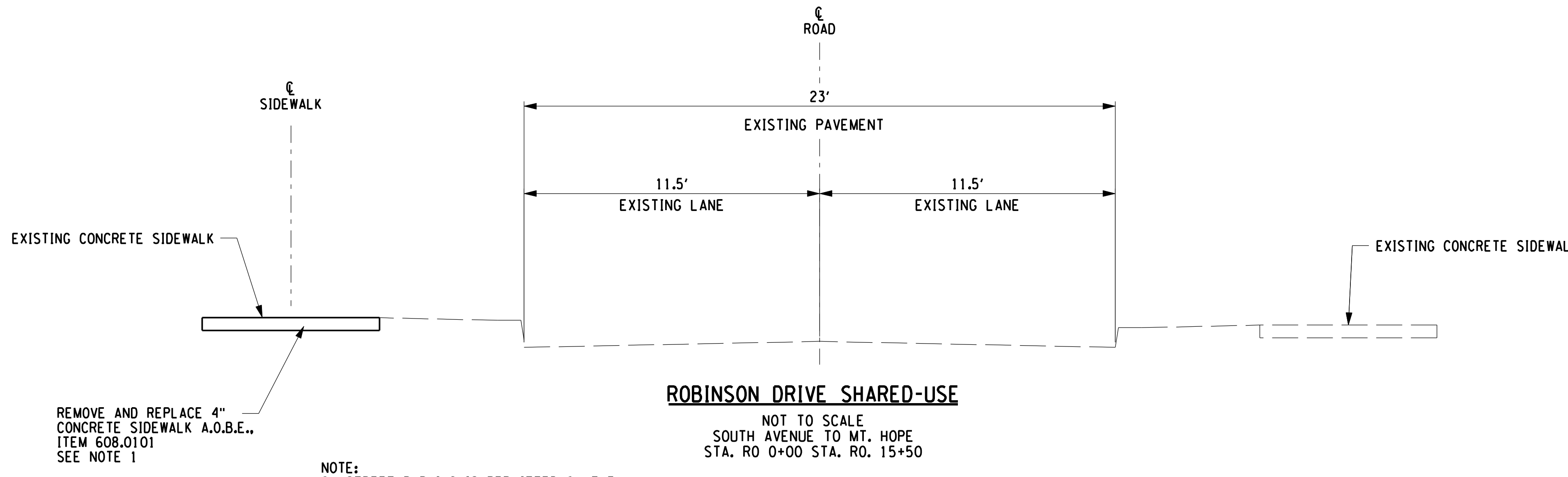
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
TYPICAL SECTIONS

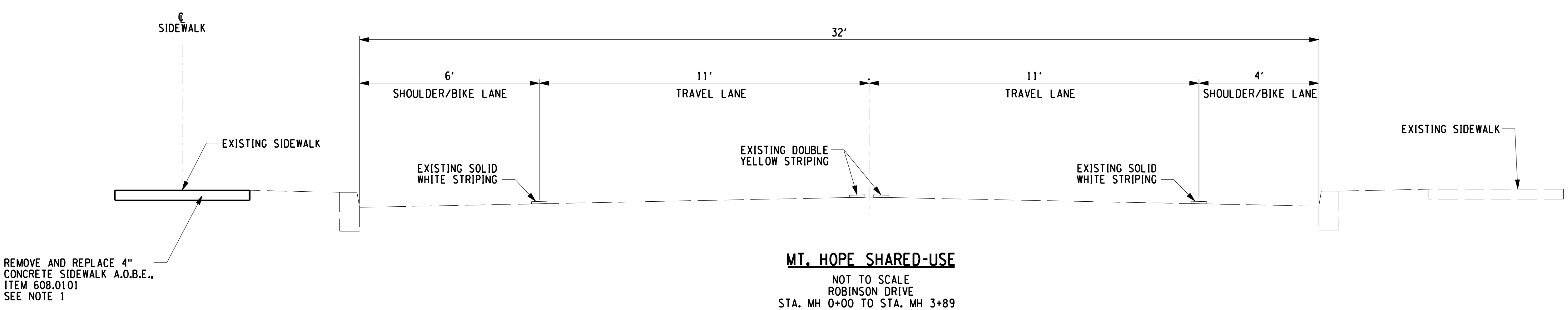
PROJECT NO.
091001
DRAWING NO.
TYP-4
SHEET 1 OF 1




## ROBINSON DRIVE SHARED-USE

NOT TO SCALE
SOUTH AVENUE TO MT. HOPE
STA. RO 0+00 STA. RO. 15+50

NOTE:
ON STREET PARKING IS PERMITTED ON THE SOUTH SIDE OF ROBINSON DRIVE.




## MT. HOPE SHARED-USE

NOT TO SCALE
ROBINSON DRIVE
STA. MH 0+00 TO STA. MH 3+89

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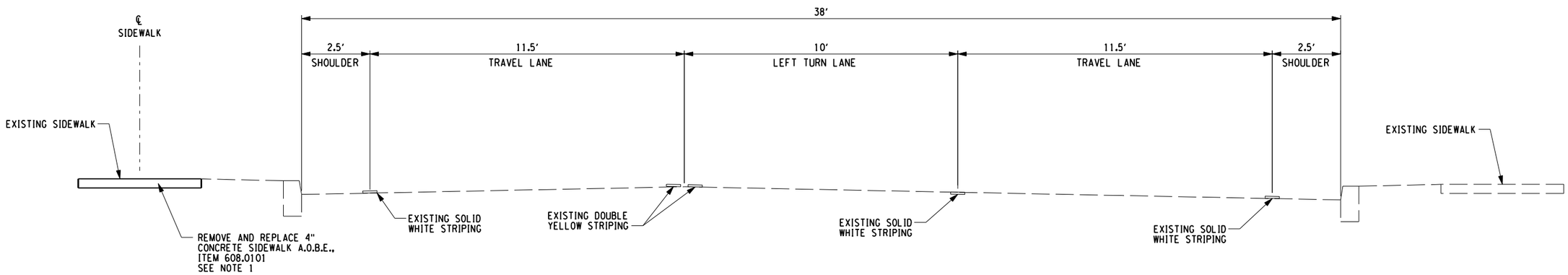
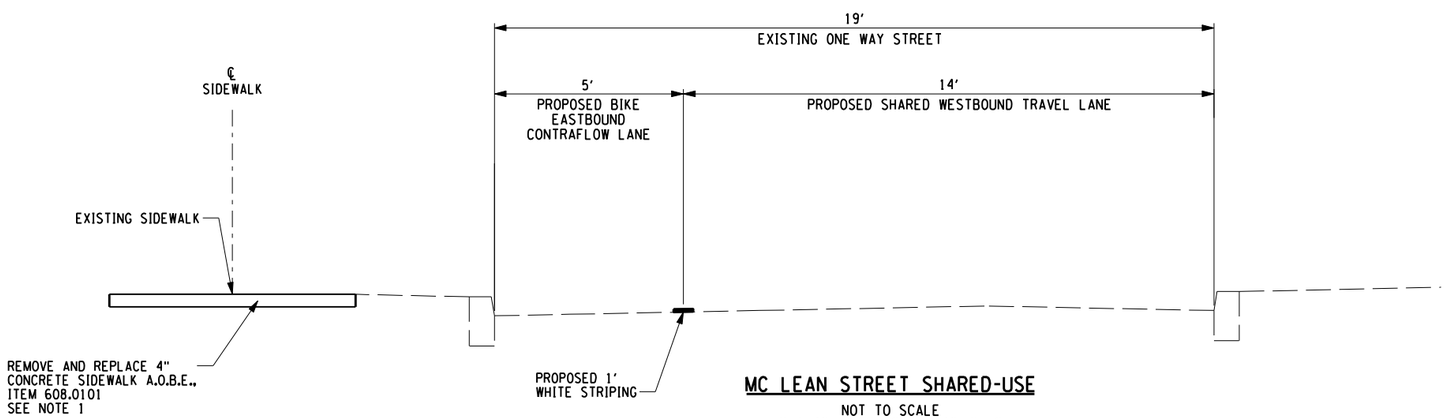
TITLE OF DRAWING
TYPICAL SECTIONS

PROJECT NO. 091001
DRAWING NO. TYP-5
SHEET 1 OF 1




## MT. HOPE SHARED-USE

NOT TO SCALE
MC LEAN STREET
STA. MH 3+89 TO STA. MH 7+13




## MC LEAN STREET SHARED-USE

NOT TO SCALE
STA. ML 0+00 TO STA. ML 8+38

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091001
PROJECT MANAGER
ROSE ANN SCHMID

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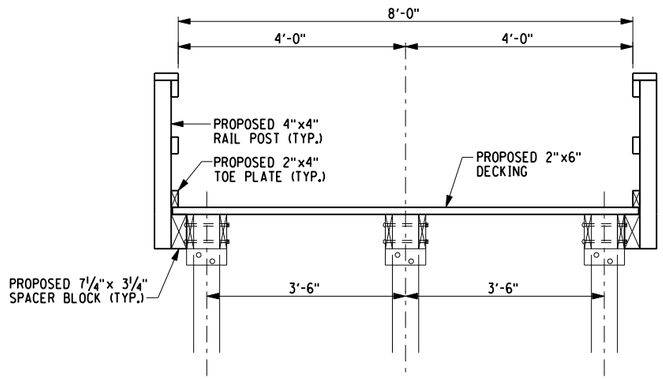
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

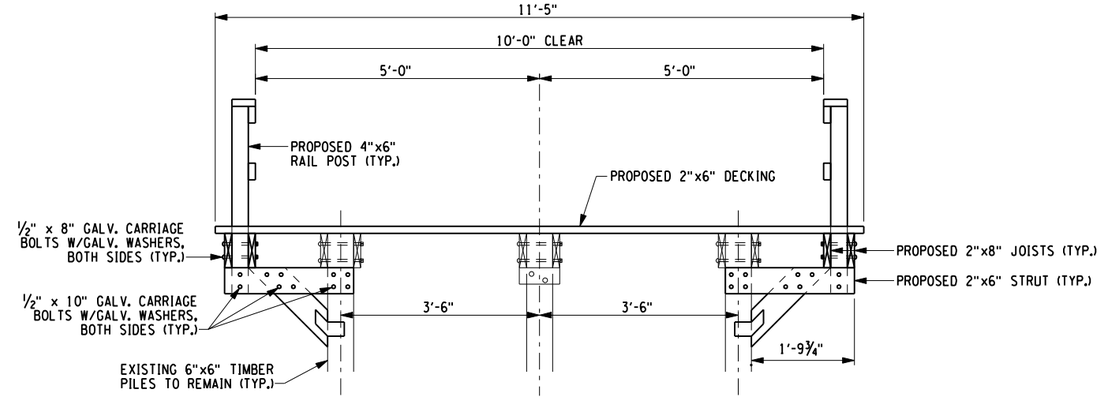
TITLE OF DRAWING
TYPICAL SECTIONS

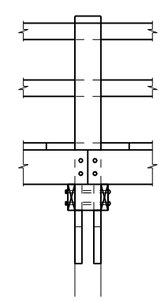
PROJECT NO.
091001
DRAWING NO.
TYP-6
SHEET 1 OF 1




PROPOSED BOARDWALK

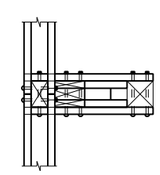
NOT TO SCALE



RAILING ELEVATION

NOT TO SCALE



RAILING PLAN

NOT TO SCALE

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PROJECT MANAGER
ROSEANN SCHMID

DRAWN BY
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SCALE
ISSUE DATE
JULY 2009

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Phone: 585-334-1310

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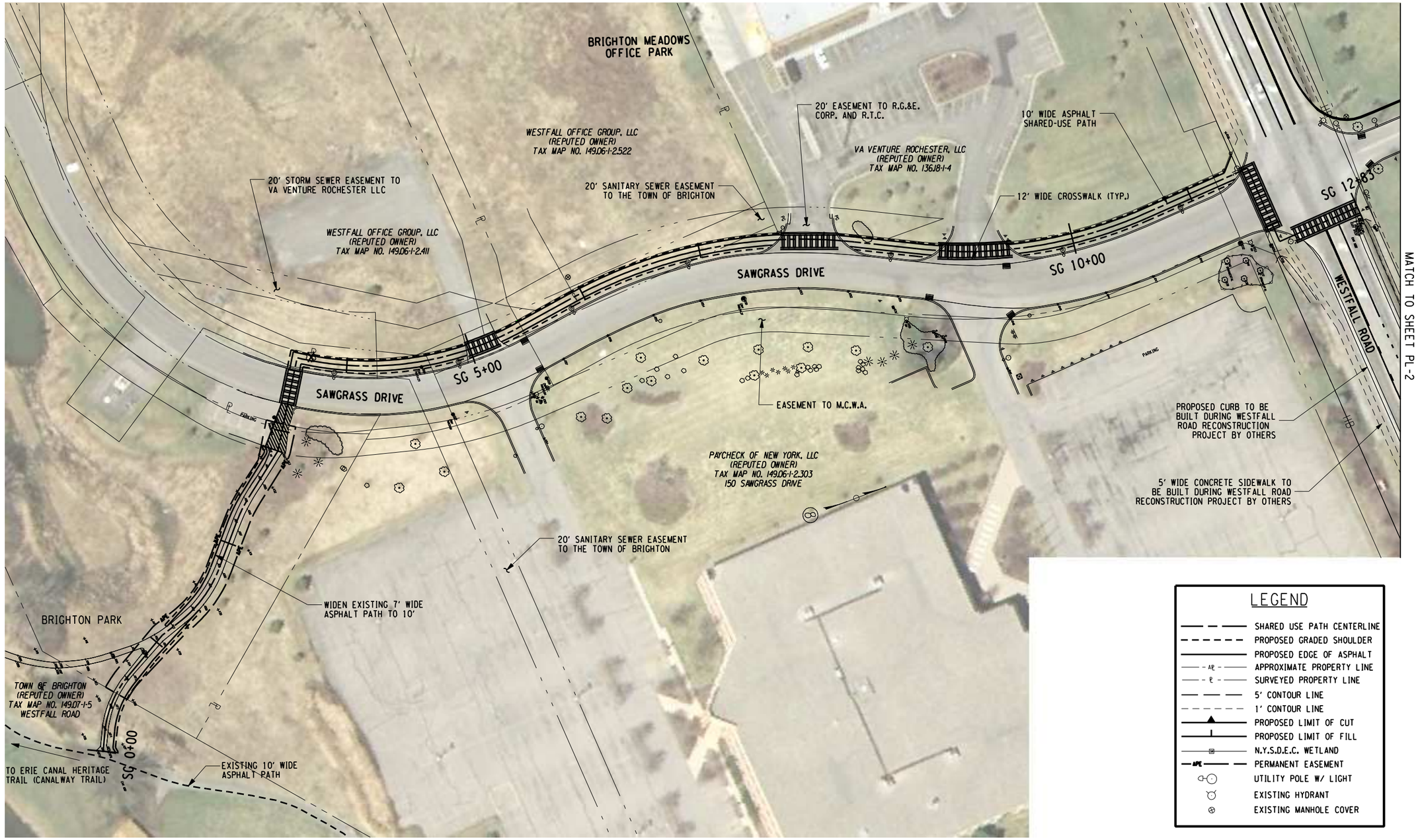
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
TYPICAL SECTIONS

PROJECT NO.
091001
DRAWING NO.
TYP-7
SHEET 1 OF 1




MATCH TO SHEET PL-2

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ISSUE DATE JULY 2009

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TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-1
SHEET 1 OF 1

## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
- PROPOSED LIMIT OF FILL
- N.Y.S.D.E.C. WETLAND
- PERMANENT EASEMENT
- UTILITY POLE W/ LIGHT
- EXISTING HYDRANT
- EXISTING MANHOLE COVER

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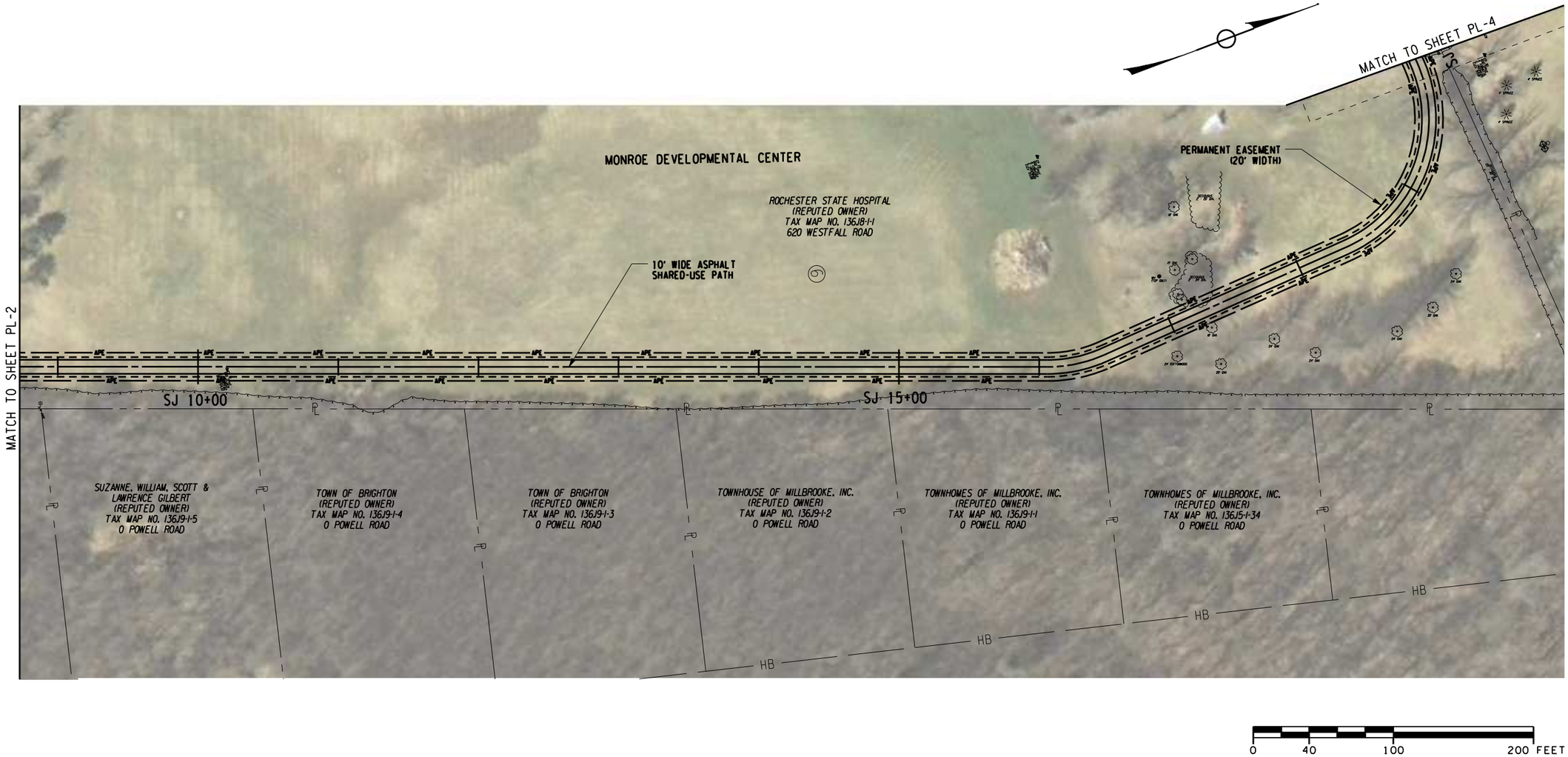
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-2
SHEET 1 OF 1




## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
- PROPOSED LIMIT OF FILL
- N.Y.S.D.E.C. WETLAND
- PERMANENT EASEMENT
- UTILITY POLE W/ LIGHT
- EXISTING HYDRANT
- EXISTING MANHOLE COVER

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091001
PROJECT MANAGER
ROSEANN SCHMID

DRAWN BY
TIM DAVIS
SCALE
1"=40'
ISSUE DATE
JULY 2009

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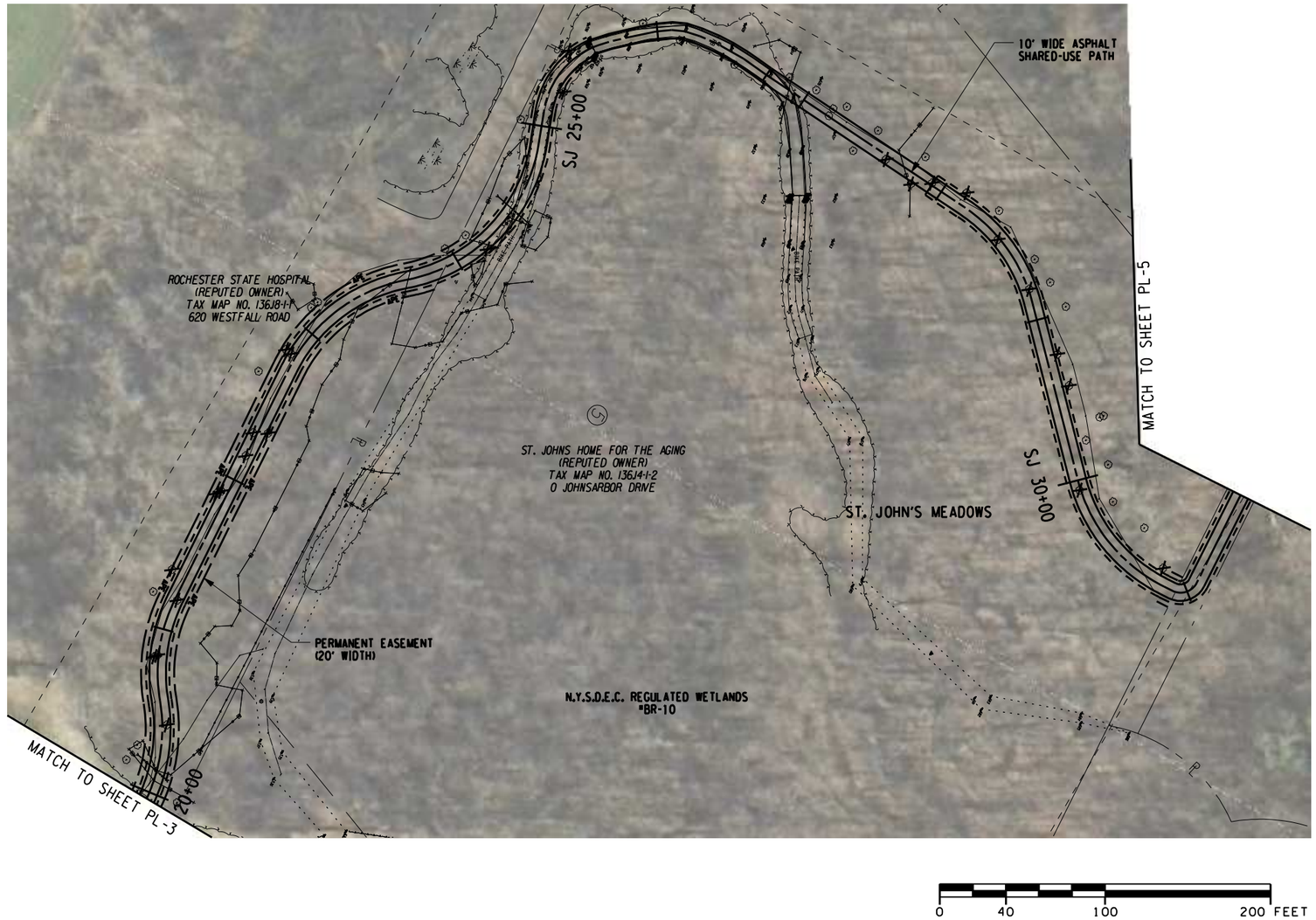
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
PL-3
SHEET 1 OF 1




0 40 100 200 FEET

## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
- PROPOSED LIMIT OF FILL
- N.Y.S.D.E.C. WETLAND
- PERMANENT EASEMENT
- UTILITY POLE W/ LIGHT
- EXISTING HYDRANT
- EXISTING MANHOLE COVER

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SCALE
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TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
PL-4
SHEET 1 OF 1

0 40 100 200 FEET

## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
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091001
PROJECT MANAGER
ROSE ANN SCHMID

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TIM DAVIS
SCALE
1"=40'
ISSUE DATE
JULY 2009

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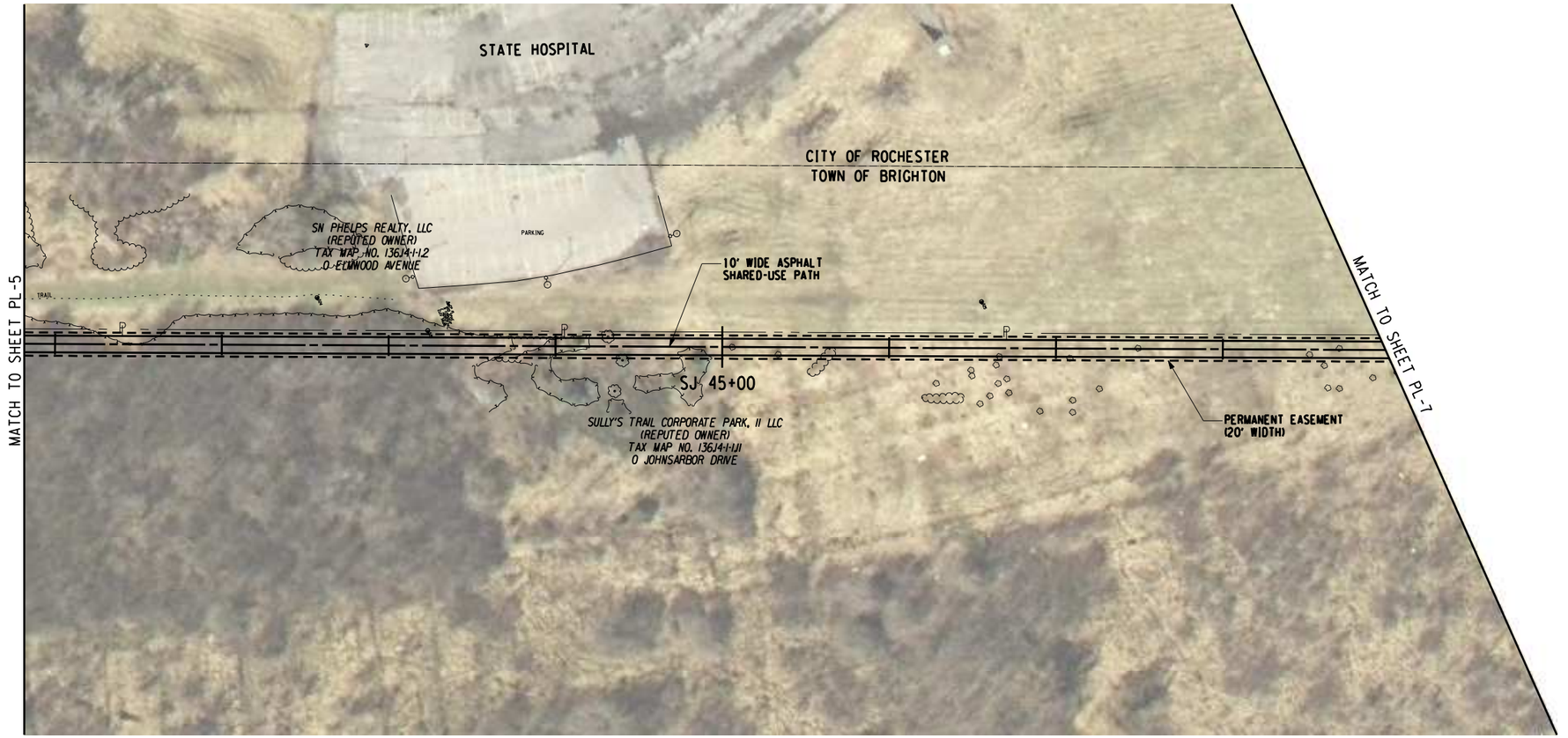
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
PL-5
SHEET 1 OF 1

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## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
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- EXISTING MANHOLE COVER

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091001
PROJECT MANAGER
ROSE ANN SCHMID

DRAWN BY
TIM DAVIS
SCALE
1"=40'
ISSUE DATE
JULY 2009

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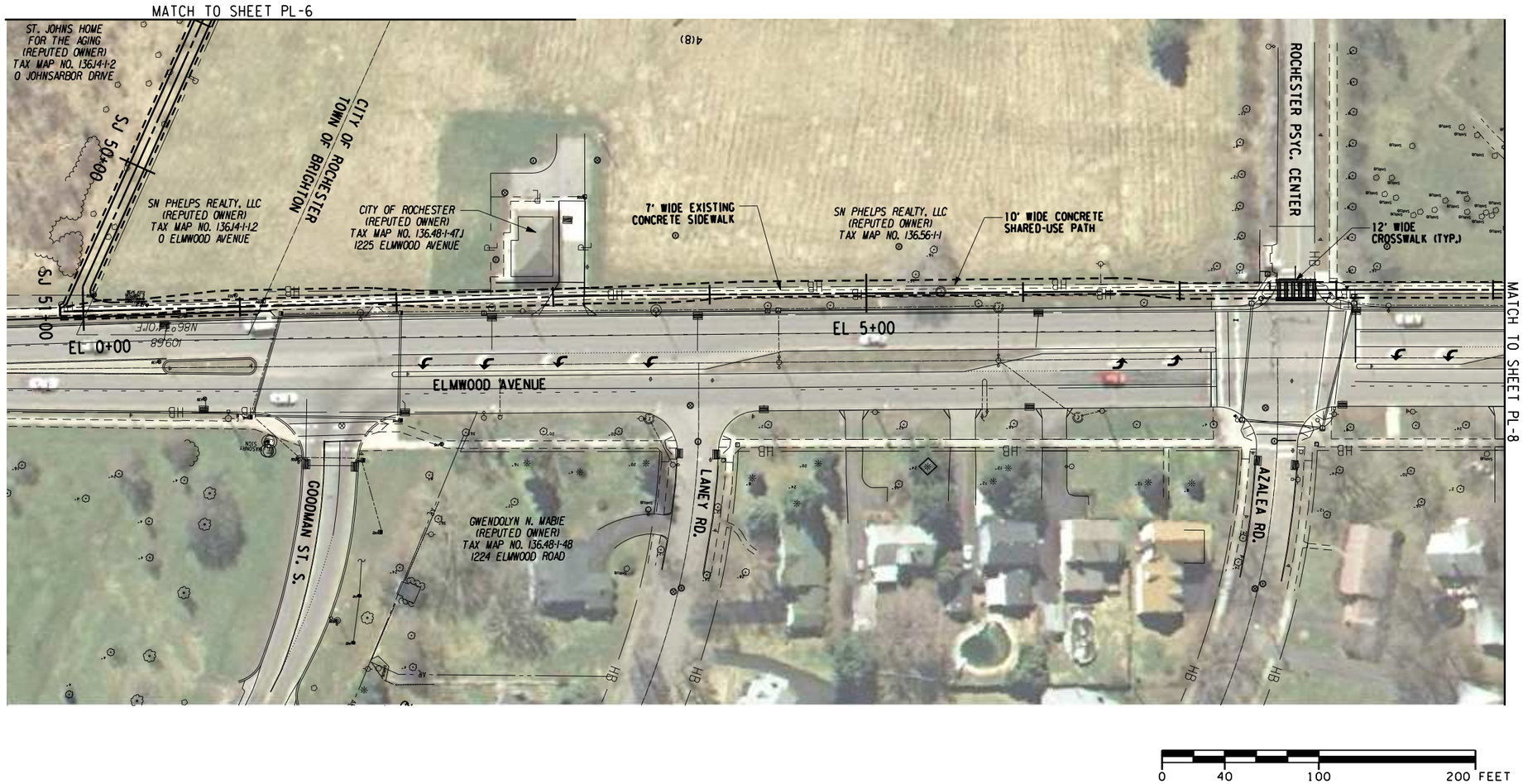
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
PL-6
SHEET 1 OF 1




## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
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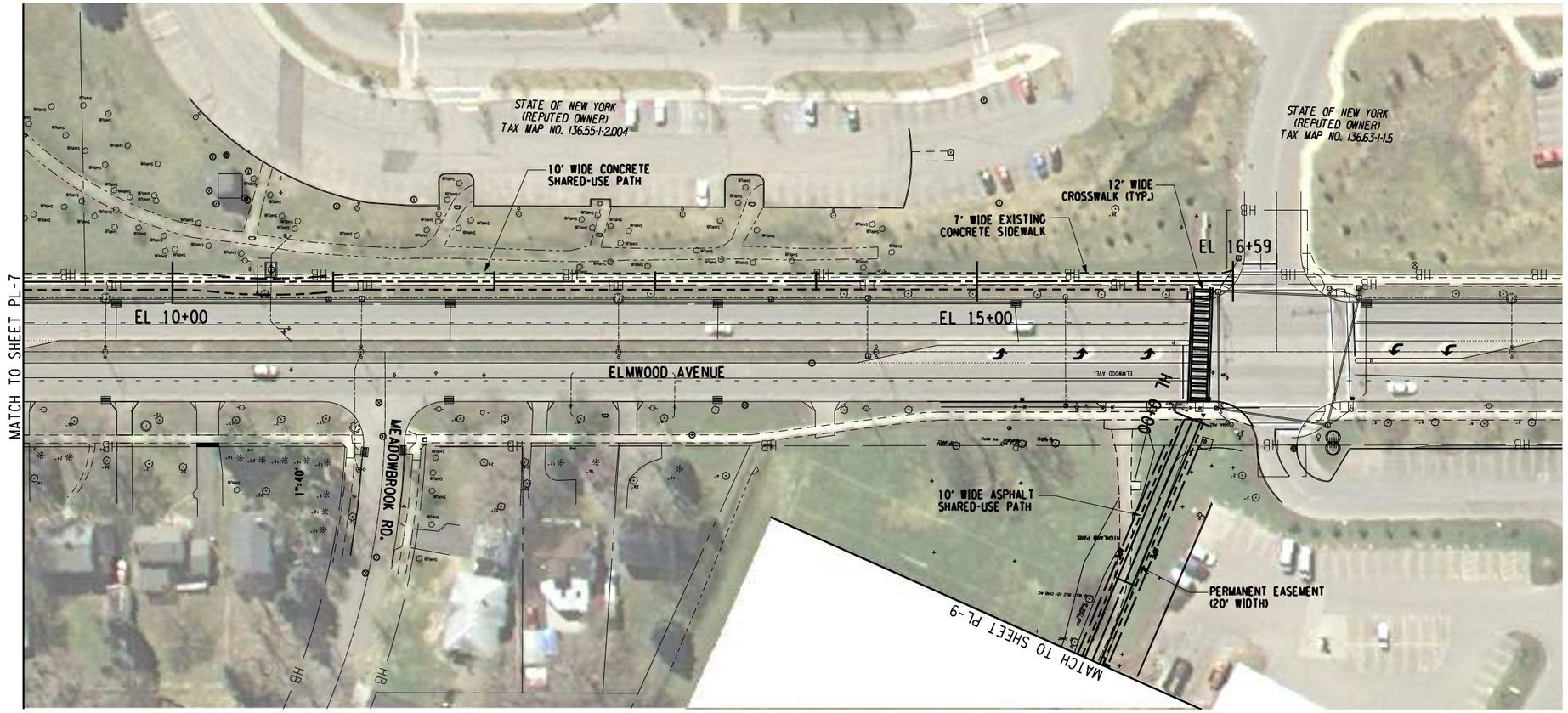
FA PROJECT NO. 091001
PROJECT MANAGER ROSEANN SCHMID
DRAWN BY TIM DAVIS
SCALE 1"=40'
ISSUE DATE JULY 2009

FISHER ASSOCIATES
135 Collins Road, Rochester, NY 14623
Phone: 585-334-1310

PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-7
SHEET 1 OF 1




## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
- PROPOSED LIMIT OF FILL
- N.Y.S.D.E.C. WETLAND
- PERMANENT EASEMENT
- UTILITY POLE W/ LIGHT
- EXISTING HYDRANT
- EXISTING MANHOLE COVER

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PROJECT MANAGER
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TIM DAVIS
SCALE
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DRAWING NO.
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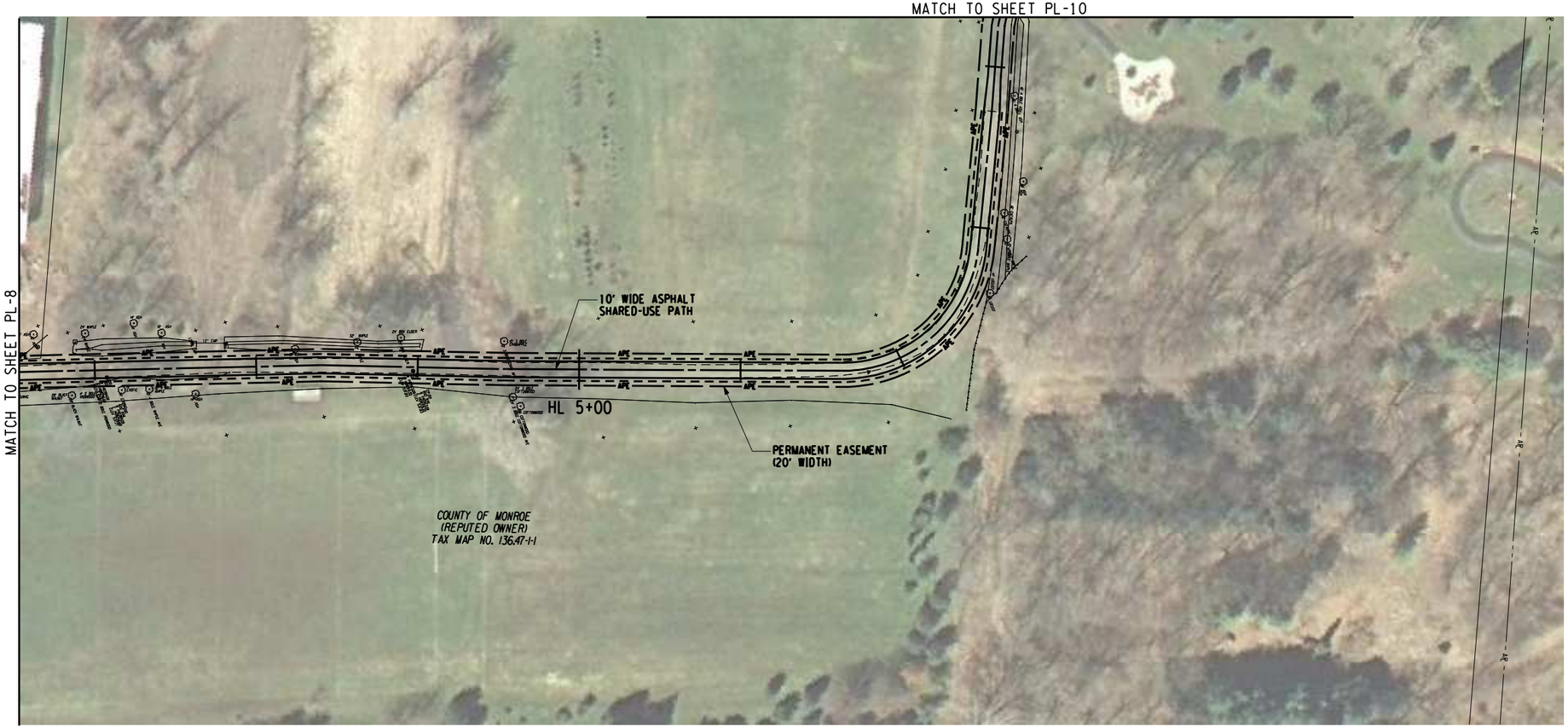
MATCH TO SHEET PL-10

MATCH TO SHEET PL-8

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## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
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091001
PROJECT MANAGER
ROSEANN SCHMID

DRAWN BY
TIM DAVIS
SCALE
1"=40'
ISSUE DATE
JULY 2009

FISHER ASSOCIATES
135 Collins Road, Rochester, NY 14623
Phone: 585-334-1310

PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
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## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
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ROSE ANN SCHMID

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PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

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PLAN

PROJECT NO.
091001
DRAWING NO.
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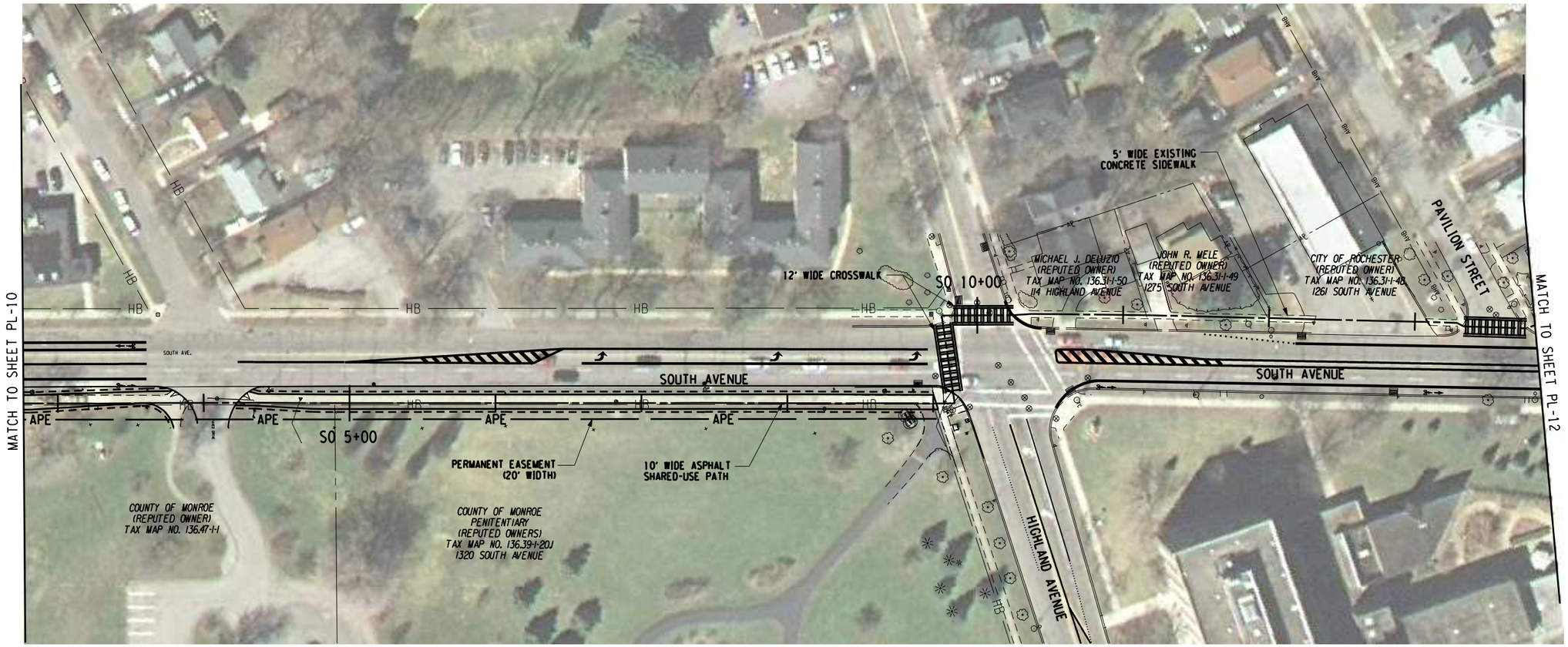


## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
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Phone: 585-334-1310

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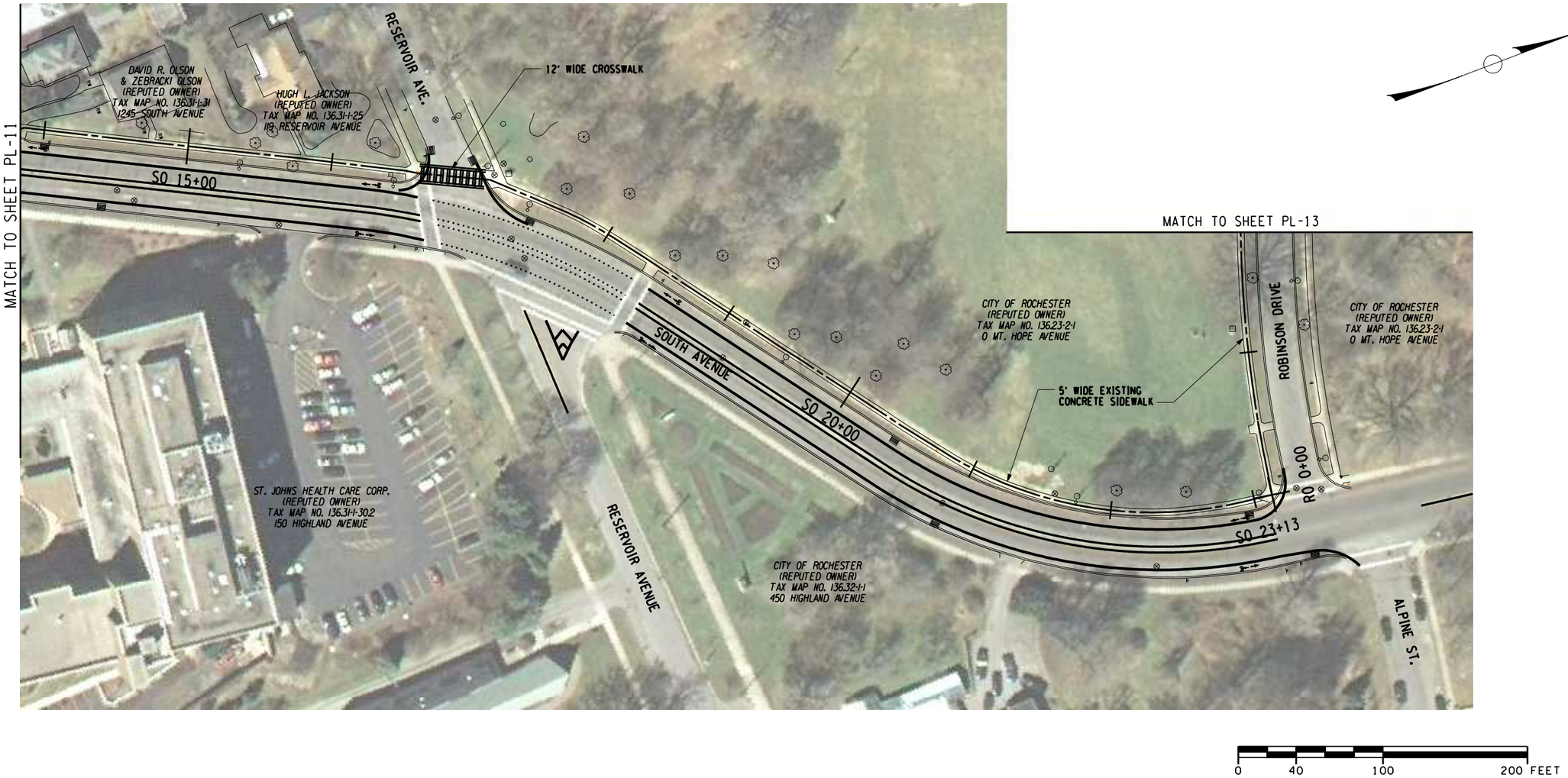
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-11
SHEET 1 OF 1




## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRADED SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
- SURVEYED PROPERTY LINE
- 5' CONTOUR LINE
- 1' CONTOUR LINE
- PROPOSED LIMIT OF CUT
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PROJECT MANAGER ROSE-ANN SCHMID
DRAWN BY TIM DAVIS
SCALE 1"=40'
ISSUE DATE JULY 2009

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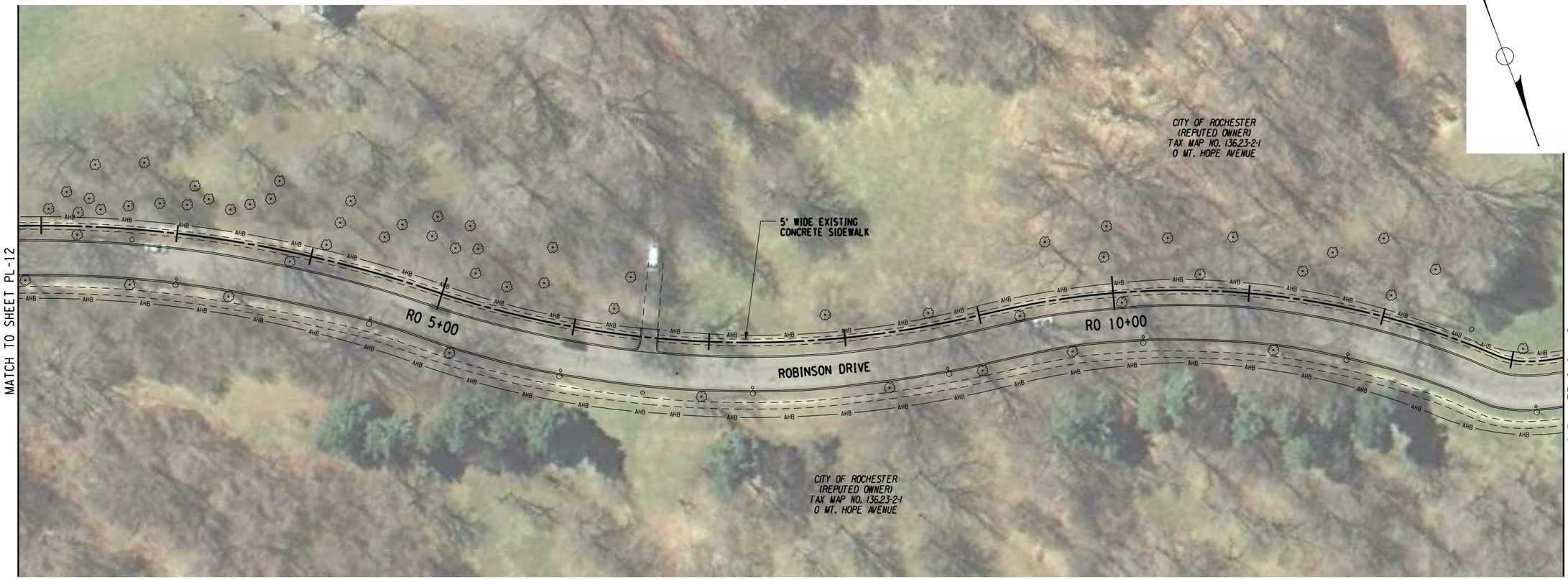
PROJECT
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-12
SHEET 1 OF 1




## LEGEND

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- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
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MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO.
091001
DRAWING NO.
PL-13
SHEET 1 OF 1

## LEGEND

- SHARED USE PATH CENTERLINE
- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
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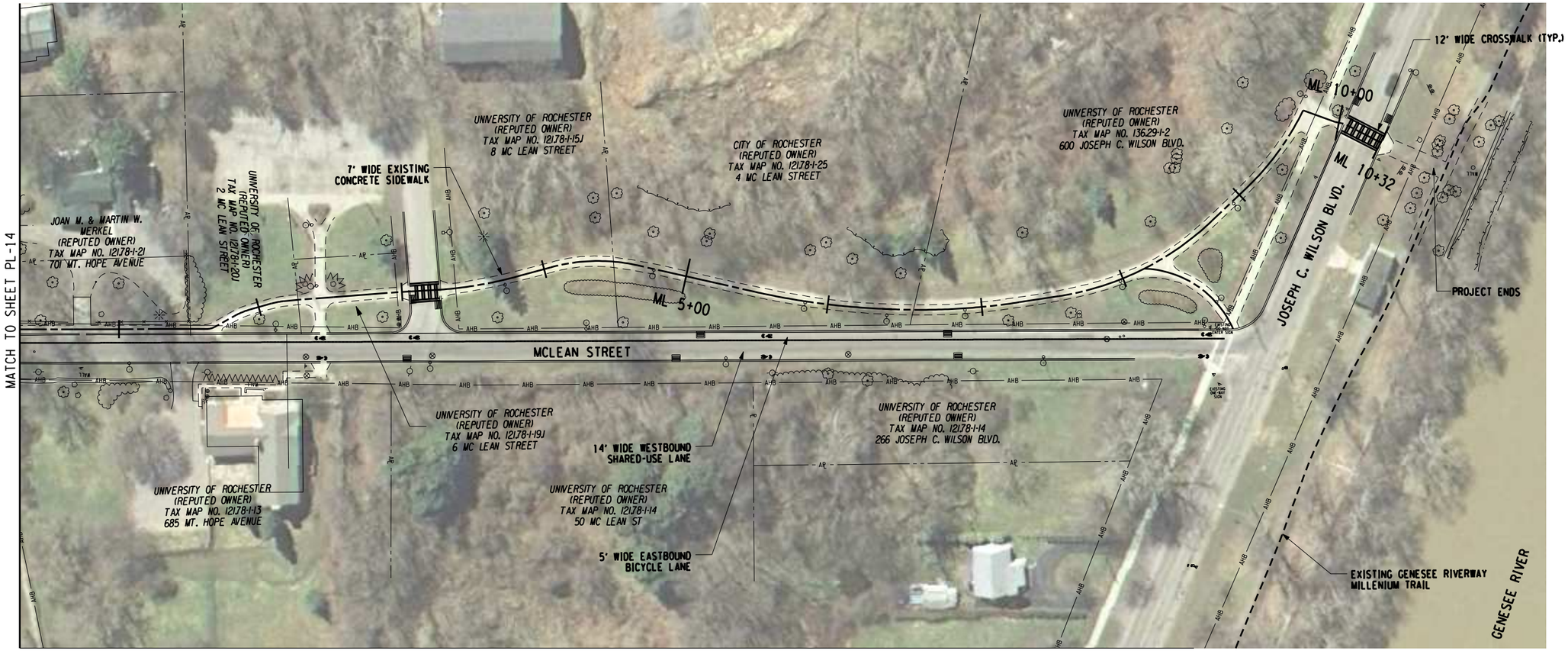
HIGHLAND PARK / CANALWAY TRAIL
TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

TITLE OF DRAWING
PLAN

PROJECT NO. 091001
DRAWING NO. PL-14
SHEET 1 OF 1




## LEGEND

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- PROPOSED GRAVEL SHOULDER
- PROPOSED EDGE OF ASPHALT
- APPROXIMATE PROPERTY LINE
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- 5' CONTOUR LINE
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TOWN OF BRIGHTON & CITY OF ROCHESTER
MONROE COUNTY, NEW YORK

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PROJECT NO. 091001
DRAWING NO. PL-15
SHEET 1 OF 1

# APPENDIX B

**NEPA ASSESSMENT CHECKLIST**
**Highland Park/Canalway Trail**
**November 2011**

Answer the following questions by checking YES or NO.

| I. **THRESHOLD QUESTION** | **YES** | **NO** |
|---|---|---|
| 1. Does the project involve unusual circumstances as described in 23 CFR §771.117(b)? | | ✔ |

- If YES, the project does not qualify as a Categorical Exclusion and an EA or EIS is required. You may STOP COMPLETING THE CHECKLIST.

- If NO, go on.

| II. **AUTOMATIC CATEGORICAL EXCLUSION** | **YES** | **NO** |
|---|---|---|
| 2. Is the project an action listed as an Automatic Categorical Exclusion in 23 CFR §771.117(c) (C List) and/or is the project an element-specific project classified by FHWA as a Categorical Exclusion on July 22, 1996? | ✔ | |

- If YES to question 2, the project qualifies for a C List Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo is to be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report). A copy of the CATEGORICAL EXCLUSION DETERMINATION memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).

  (Note - Even if YES to question 2, there may be specific environmental issues that still require an action such as an EO 11990 Wetland Finding or a determination of effect on cultural resources. The project is still an Automatic Categorical Exclusion but the necessary action must be taken, such as obtaining FHWA's signature on the wetland finding. Refer to the appropriate section of the Environmental Procedures Manual for guidance.)

- If NO to question 2, go on.

| III. **PROGRAMMATIC CATEGORICAL EXCLUSION** | **YES** | **NO** |
|---|---|---|
| 3. Is the project on new location or does it involve a change in the functional classification or added mainline capacity (add through-traffic lanes)? | | |

| | YES | NO |
|---|---|---|
| 4. Is this a Type I project under 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise and Construction"? | _____ | _____ |
| 5. If the project is located within the limits of a designated sole source aquifer area or the associated stream flow source area, is the drainage pattern altered? | _____ | _____ |
| 6. Does the project involve changes in travel patterns? | _____ | _____ |
| 7. Does the project involve the acquisition of more than minor amounts of temporary or permanent right-of-way (a minor amount of right-of-way is defined as not more than 10 percent of a parcel for parcels under 4 ha (10 acres) in size, 0.4 ha (1 acre) of a parcel 4 ha to 40.5 ha (10 to 100 acres) in size and 1 percent of a parcel for parcels greater than 40.5 ha (100 acres) in size? | _____ | _____ |
| 8. Does the project require a Section 4(f) evaluation and determination in accordance with the FHWA guidance? | _____ | _____ |
| 9. Does the project involve commercial or residential displacement? | _____ | _____ |
| 10. If Section 106 applies, does FHWA's determination indicate an opinion of adverse effect? | _____ | _____ |
| 11. Does the project involve any work in wetlands requiring a Nationwide Wetland Permit #23? | _____ | _____ |
| 12. Does the project involve any work in wetlands requiring an individual Executive Order 11990 Wetland Finding? | _____ | _____ |
| 13. Has it been determined that the project will significantly encroach upon a flood plain based on preliminary hydraulic analysis and consideration of EO 11988 criteria as appropriate? | _____ | _____ |
| 14. Does the project involve construction in, across or adjacent to a river designated as a component proposed for or included in the National System of Wild and Scenic Rivers? | _____ | _____ |
| 15. Does the project involve any change in access control | _____ | _____ |

| | YES | NO |
|---|---|---|
| 16. Does the project involve any known hazardous materials sites or previous land uses with potential for hazardous material remains within the right-of-way? | _____ | _____ |
| 17. Does the project occur in an area where there are Federally listed endangered or threatened species or critical habitat? | _____ | _____ |
| 18. Is the project, pursuant to EPM Chapter 1A and Table 2 and Table 3 of 40 CFR Parts 51 and 93, non-exempt or does it exceed any ambient air quality standard? | _____ | _____ |
| 19. Does the project lack consistency with the New York State Coastal Zone Management Plan and policies of the Department of State, Office of Coastal Zone Management? | _____ | _____ |
| 20. Does the project impact or acquire any Prime or Unique Farmland as defined in 7 CFR Part 657 of the Federal Farmland Protection Policy Act and are there outstanding compliance activities necessary? (Note: Interpret compliance activity to mean completion of Form AD 1006.) | _____ | _____ |

- If NO for questions, 3-20, go on to answer question 21.
- If YES to any question 3-20, project will not qualify as a Programmatic Categorical Exclusion. Answer questions 21 and 22 for documentation only and go on to question 23.

| | YES | NO |
|---|---|---|
| 21. Does the project involve the use of a temporary road, detour or ramp closure? | _____ | _____ |

- If NO to questions 3-20 and NO to question 21, the project qualifies as a Programmatic Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo is to be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report). A copy of the Categorical Exclusion memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).
- If YES to question 21, preparer should complete question 22 (i-v). If questions 3-20 are NO and 21 is YES, the project will still qualify as a Programmatic Categorical Exclusion if questions 22 (i-v) are YES.

| | YES | NO |
|---|---|---|
| 22. Since the project involves the use of temporary road, detour or ramp closure, will all of the following conditions be met: | _____ | _____ |
| i. Provisions will be made for pedestrian access, where warranted, and access by local traffic and so posted. | _____ | _____ |
| ii. Through-traffic dependent business will not be adversely affected. | _____ | _____ |
| iii. The detour or ramp closure, to the extent possible, will not interfere with any local special event or festival. | _____ | _____ |
| iv. The temporary road, detour or ramp closure does not substantially change the environmental consequences of the action | _____ | _____ |
| v. There is no substantial controversy associated with the temporary road, detour or ramp closure. | _____ | _____ |

- If questions 3-20 are NO, 21 is YES and 22 (i-v) are YES, the project qualifies for a Programmatic Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo should be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report.) A copy of the CATEGORICAL EXCLUSION DETERMINATION memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).

- If questions 3-20 are NO, 21 is YES and any part of 22 is NO, go on to question 23.

| | YES | NO |
|---|---|---|
| 23. Is the project section listed in 23 CFR §771.117(d) (D List) or is the project an action similar to those listed in 23 CFR §771.117(d)? | _____ | _____ |

For those questions which precluded a Programmatic Categorical Exclusion, documentation should be provided for any YES response to questions 3-20 or for a NO response to any part of questions 22 (i-v). This documentation, as well as the checklist, should be included in the Design Approval Document, i.e., Final Design Report, etc., to be submitted to the Main Office/FHWA Design liaison unit for submission to the FHWA Division for classification of the project as a D List Categorical Exclusion.

***617.20***
***Appendix A***
***State Environmental Quality Review***
# FULL ENVIRONMENTAL ASSESSMENT FORM

**Purpose:** The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

**Full EAF Components:** The full EAF is comprised of three parts:

**Part 1:** Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

**Part 2:** Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

**Part 3:** If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

---

## THIS AREA FOR LEAD AGENCY USE ONLY

## DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

**Identify the Portions of EAF completed for this project:** ☑ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which **will not** have a significant impact on the environment, therefore **a negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore **a CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore **a positive declaration will be prepared**.

*A Conditioned Negative Declaration is only valid for Unlisted Actions

The Highland Park/Canalway Trail

Name of Action

Town of Brighton

Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

website

Date



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## PART 1--PROJECT INFORMATION
### Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action The Highland Park/Canalway Trail

Location of Action (include Street Address, Municipality and County)

From Erie Canalway Trail in Brighton to Genesee Riverway Trail in Rochester

Name of Applicant/Sponsor Town of Brighton

Address 2300 Elmwood Avenue

City / PO Rochester State New York Zip Code 14618

Business Telephone 585-784-5250

Name of Owner (if different)

Address

City / PO State Zip Code

Business Telephone

Description of Action:

The new paved multi-use trail will begin at the parking area for the Erie Canalway Trail located on Sawgrass Drive within the Brighton Meadows Office Park. The trail will run north along the west side of Sawgrass Drive, cross Westfall Road, traverse through the Monroe Developmental Center property along its southern, eastern, and northern property lines. It will then pass through a wooded area where an informal walking trail and boardwalk currently exists. The trail through this area will be formalized and paved for use by both pedestrians and bicyclists. The boardwalk will be improved to widen it and make it ADA accessible. From this point, the trail will continue along the southern and western property lines of the proposed expansion of the St. John's Community to Elmwood Avenue. The trail will continue west along the south side of Elmwood Avenue to a signalized intersection at the parking lot to the Al Sigl Center. The trail will cross Elmwood Avenue at this existing signal and enter Highland Park South where is will continue north and west through Highland Park along existing improved roadways and pathways to South Avenue.

The 10-foot-wide trail will run north along the east side of South Avenue to Highland Avenue. From this point to the terminus at Wilson Boulevard, the trail will be on-road, i.e., utilizing existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicyclists.

The route of the on-road portion of the project is as follows: north on South Avenue to Robinson Drive, west on Robinson Drive to Mt. Hope Avenue, north on Mt. Hope Avenue to McLean Street, west on McLean Street to Wilson Boulevard, then crossing Wilson Boulevard terminating at the Genesee Riverway Trail.



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**Please Complete Each Question--Indicate N.A. if not applicable**

## A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: ☑ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
   ☐ Forest ☐ Agriculture ☑ Other Institutional

2. Total acreage of project area: 6.99 acres.

| APPROXIMATE ACREAGE | PRESENTLY | AFTER COMPLETION |
|---|---|---|
| Meadow or Brushland (Non-agricultural) | 3.54 acres | 2.89 acres |
| Forested | 2.00 acres | 1.03 acres |
| Agricultural (Includes orchards, cropland, pasture, etc.) | 0.0 acres | 0.0 acres |
| Wetland (Freshwater or tidal as per Articles 24,25 of ECL) | 0.07 acres | 0.06 acres |
| Water Surface Area | 0.0 acres | 0.0 acres |
| Unvegetated (Rock, earth or fill) | 0.42 acres | 0.0 acres |
| Roads, buildings and other paved surfaces | 0.90 acres | 2.95 acres |
| Other (Indicate type) Boardwalk | 0.06 acres | 0.06 acres |

3. What is predominant soil type(s) on project site? Urban Land (59%)
   a. Soil drainage: ☑ Well drained 0.1 % of site ☑ Moderately well drained 47 % of site.
   ☑ Poorly drained 52 % of site
   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? 1.1 acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ☐ Yes ■ No
   a. What is depth to bedrock >20 (in feet)

5. Approximate percentage of proposed project site with slopes:
   ☑ 0-10% 85 % ☑ 10- 15% 10 % ☑ 15% or greater 5 %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? ■ Yes ☐ No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? ☐ Yes ■ No

8. What is the depth of the water table? >5 (in feet)

9. Is site located over a primary, principal, or sole source aquifer? ■ Yes ☐ No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? ☐ Yes ■ No



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11. Does project site contain any species of plant or animal life that is identified as threatened or endangered? ☐ Yes ☒ No

According to:

USFWS, NYSDEC, NYSNHP

Identify each species:

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?

☐ Yes ☒ No

Describe:

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

☒ Yes ☐ No

If yes, explain:

Area is adjacent to Highland Park, Mt. Hope Cemetery, and the Erie Canal Trail. An informal wood chip surfaced walking trail and boardwalk currently exists within the wooded wetland area north of the Monroe Developmental Center.

14. Does the present site include scenic views known to be important to the community? ☐ Yes ☒ No

15. Streams within or contiguous to project area:

NA

a. Name of Stream and name of River to which it is tributary

16. Lakes, ponds, wetland areas within or contiguous to project area:

NYSDEC Wetland BR-10

b. Size (in acres):

0.10 in project area



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17. Is the site served by existing public utilities? ☒ Yes ☐ No

a. If **YES,** does sufficient capacity exist to allow connection? ☒ Yes ☐ No

b. If **YES**, will improvements be necessary to allow connection? ☐ Yes ☒ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☒ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? ☐ Yes ☒ No

20. Has the site ever been used for the disposal of solid or hazardous wastes? ☒ Yes ☐ No

**B. Project Description**

1. Physical dimensions and scale of project (fill in dimensions as appropriate).

a. Total contiguous acreage owned or controlled by project sponsor: 6.99 acres.

b. Project acreage to be developed: 6.99 acres initially; 6.99 acres ultimately.

c. Project acreage to remain undeveloped: 0.0 acres.

d. Length of project, in miles: 3.3 (if appropriate)

e. If the project is an expansion, indicate percent of expansion proposed. NA %

f. Number of off-street parking spaces existing NA ; proposed NA

g. Maximum vehicular trips generated per hour: NA (upon completion of project)?

h. If residential: Number and type of housing units:

| | One Family | Two Family | Multiple Family | Condominium |
|---|---|---|---|---|
| Initially | NA | | | |
| Ultimately | | | | |

i. Dimensions (in feet) of largest proposed structure: NA height; _____ width; _____ length.

j. Linear feet of frontage along a public thoroughfare project will occupy is? NA ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site? 30T tons/cubic yards.

3. Will disturbed areas be reclaimed ☒ Yes ☐ No ☐ N/A

a. If yes, for what intended purpose is the site being reclaimed?

Recreation and multi-use trail

b. Will topsoil be stockpiled for reclamation? ☒ Yes ☐ No

c. Will upper subsoil be stockpiled for reclamation? ☐ Yes ☒ No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 0.98 acres.



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5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?

☐ Yes ☒ No

6. If single phase project: Anticipated period of construction: 8 months, (including demolition)

7. If multi-phased:

   a. Total number of phases anticipated NA (number)

   b. Anticipated date of commencement phase 1: _____ month _____ year, (including demolition)

   c. Approximate completion date of final phase: _____ month _____ year.

   d. Is phase 1 functionally dependent on subsequent phases? ☐ Yes ☐ No

8. Will blasting occur during construction? ☐ Yes ☒ No

9. Number of jobs generated: during construction 10 ; after project is complete 0

10. Number of jobs eliminated by this project 0 .

11. Will project require relocation of any projects or facilities? ☐ Yes ☒ No

    If yes, explain:

12. Is surface liquid waste disposal involved? ☐ Yes ☒ No

    a. If yes, indicate type of waste (sewage, industrial, etc) and amount _____

    b. Name of water body into which effluent will be discharged _____

13. Is subsurface liquid waste disposal involved? ☐ Yes ☒ No Type _____

14. Will surface area of an existing water body increase or decrease by proposal? ☐ Yes ☒ No

    If yes, explain:

15. Is project or any portion of project located in a 100 year flood plain? ☒ Yes ☐ No

16. Will the project generate solid waste? ☒ Yes ☐ No During construction

    a. If yes, what is the amount per month? 5 tons

    b. If yes, will an existing solid waste facility be used? ☒ Yes ☐ No

    c. If yes, give name TBD ; location TBD

    d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? ☐ Yes ☒ No



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e. If yes, explain:

17. Will the project involve the disposal of solid waste? ☐ Yes ☒ No

    a. If yes, what is the anticipated rate of disposal? _____ tons/month.

    b. If yes, what is the anticipated site life? _____ years.

18. Will project use herbicides or pesticides? ☐ Yes ☒ No

19. Will project routinely produce odors (more than one hour per day)? ☐ Yes ☒ No

20. Will project produce operating noise exceeding the local ambient noise levels? ☐ Yes ☒ No

21. Will project result in an increase in energy use? ☐ Yes ☒ No

    If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity NA gallons/minute.

23. Total anticipated water usage per day NA gallons/day.

24. Does project involve Local, State or Federal funding? ☒ Yes ☐ No

    If yes, explain:

FHWA funding, Town of Brighton and City of Rochester funding



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**25. Approvals Required:**

| | | | Type | Submittal Date |
|---|---|---|---|---|
| City, Town, Village Board | ☐ Yes | ☒ No | | |
| City, Town, Village Planning Board | ☐ Yes | ☒ No | | |
| City, Town Zoning Board | ☐ Yes | ☒ No | | |
| City, County Health Department | ☐ Yes | ☒ No | | |
| Other Local Agencies | ☒ Yes | ☐ No | Town of Brighton<br>City of Rochester<br>Monroe County | |
| Other Regional Agencies | ☐ Yes | ☒ No | | |
| State Agencies | ☒ Yes | ☐ No | NYSDOT<br>NYSDEC<br>NYSOPRHP<br>NYS OPWDD (DDSO) | |
| Federal Agencies | ☒ Yes | ☐ No | FHWA<br>USACE | |

**C. Zoning and Planning Information**

1. Does proposed action involve a planning or zoning decision? ☐ Yes ☒ No

If Yes, indicate decision required:

☐ Zoning amendment ☐ Zoning variance ☐ New/revision of master plan ☐ Subdivision

☐ Site plan ☐ Special use permit ☐ Resource management plan ☐ Other



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2. What is the zoning classification(s) of the site?

BE-1 (Office and Office Park), RLB (Residential Low Density "B"), RHD-2 (Residential High Density "D-2"), RHD-1 (Residential High Density "D-1"), R-2 (Medium Density Residential), and O-S (Open Space)

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

Varies with zone. Project will be below maximum.

4. What is the proposed zoning of the site?

Same as current.

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

NA

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? ■ Yes ☐ No

The project has been in the conceptual stage for many years and is acceptable for the area proposed.

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

Residential, Institutional, Office Park, Commercial, Park, Recreational Facilities

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile? ■ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? NA

   a. What is the minimum lot size proposed? _____



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10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection?

☒ Yes ☐ No

a. If yes, is existing capacity sufficient to handle projected demand? ☒ Yes ☐ No

Potential increased demand for police and maintenance staff

12. Will the proposed action result in the generation of traffic significantly above present levels? ☐ Yes ☒ No

a. If yes, is the existing road network adequate to handle the additional traffic. ☐ Yes ☐ No

**D. Informational Details**

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

**E. Verification**

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name Town of Brighton Date _____

Signature _____

Title Project Manager, Fisher Associates (Design Consultant)

**If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.**



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# PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

**Responsibility of Lead Agency**

**General Information** (Read Carefully)

- **!** In completing the form the reviewer should be guided by the question: Have my responses and determinations been **reasonable?** The reviewer is not expected to be an expert environmental analyst.
- **!** The **Examples** provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.
- **!** The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.
- **!** The number of examples per question does not indicate the importance of each question.
- **!** In identifying impacts, consider long term, short term and cumulative effects.

**Instructions** (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer **Yes** if there will be **any** impact.

b. **Maybe** answers should be considered as **Yes** answers.

c. If answering **Yes** to a question then check the appropriate box(column 1 or 2)to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an Impact will be potentially large (column 2) does not mean that it is also necessarily **significant**. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the **Yes** box in column 3. A **No** response indicates that such a reduction is not possible. This must be explained in Part 3.

| | 1<br>Small to Moderate Impact | 2<br>Potential Large Impact | 3<br>Can Impact Be Mitigated by Project Change |
|---|---|---|---|
| **Impact on Land** | | | |
| 1. Will the Proposed Action result in a physical change to the project site?<br>NO ☐ YES ■ | | | |
| **Examples** that would apply to column 2 | | | |
| C Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%. | ☐ | ☐ | ☐ Yes ☐ No |
| C Construction on land where the depth to the water table is less than 3 feet. | ☐ | ☐ | ☐ Yes ☐ No |
| C Construction of paved parking area for 1,000 or more vehicles. | ☐ | ☐ | ☐ Yes ☐ No |
| C Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface. | ☐ | ☐ | ☐ Yes ☐ No |
| C Construction that will continue for more than 1 year or involve more than one phase or stage. | ☐ | ☐ | ☐ Yes ☐ No |
| C Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year. | ☐ | ☐ | ☐ Yes ☐ No |



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|
| C Construction or expansion of a santary landfill. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Construction in a designated floodway. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

Minor disturbance for the construction of the trail and replacement of sections of sidewalk.

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)

☒ NO ☐ YES

| | | | | |
|---|---|---|---|---|
| C Specific land forms: | ☐ | ☐ | ☐ Yes | ☐ No |

**Impact on Water**

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)

☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Developable area of site contains a protected water body. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Dredging more than 100 cubic yards of material from channel of a protected stream. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Extension of utility distribution facilities through a protected water body. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Construction in a designated freshwater or tidal wetland. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

4. Will Proposed Action affect any non-protected existing or new body of water?

☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Construction of a body of water that exceeds 10 acres of surface area. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|
| 5. Will Proposed Action affect surface or groundwater quality or quantity? ☐ NO ☒ YES | | | | |
| **Examples** that would apply to column 2 | | | | |
| C Proposed Action will require a discharge permit. | ☒ | ☐ | ☐ Yes | ☒ No |
| C Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Construction or operation causing any contamination of a water supply system. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will adversely affect groundwater. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action would use water in excess of 20,000 gallons per day. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will allow residential uses in areas without water and/or sewer services. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

Project will require a SPDES Permit for Construction and Notice of Intent (NOI)



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
   ■ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed Action would change flood water flows | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action may cause substantial erosion. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action is incompatible with existing drainage patterns. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will allow development in a designated floodway. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON AIR**

7. Will Proposed Action affect air quality?
   ■ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed Action will induce 1,000 or more vehicle trips in any given hour. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will result in the incineration of more than 1 ton of refuse per hour. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will allow an increase in the amount of land committed to industrial use. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will allow an increase in the density of industrial development within existing industrial areas. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON PLANTS AND ANIMALS**

8. Will Proposed Action affect any threatened or endangered species?
   ■ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site. | ☐ | ☐ | ☐ Yes | ☐ No |



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| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|
| C Removal of any portion of a critical or significant wildlife habitat. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Application of pesticide or herbicide more than twice a year, other than for agricultural purposes. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

9. Will Proposed Action substantially affect non-threatened or non-endangered species?

☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON AGRICULTURAL LAND RESOURCES**

10. Will Proposed Action affect agricultural land resources?

☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.) | ☐ | ☐ | ☐ Yes | ☐ No |
| C Construction activity would excavate or compact the soil profile of agricultural land. | ☐ | ☐ | ☐ Yes | ☐ No |
| C The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land. | ☐ | ☐ | ☐ Yes | ☐ No |



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|
| C The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff). | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON AESTHETIC RESOURCES**

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Project components that will result in the elimination or significant screening of scenic views known to be important to the area. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES**

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
☐ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places. | ☒ | ☐ | ☐ Yes | ☒ No |
| C Any impact to an archaeological site or fossil bed located within the project site. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory. | ☒ | ☐ | ☐ Yes | ☒ No |



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| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON OPEN SPACE AND RECREATION**

13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?

☒ NO ☐ YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C The permanent foreclosure of a future recreational opportunity. | ☐ | ☐ | ☐ Yes | ☐ No |
| C A major reduction of an open space important to the community. | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |

**IMPACT ON CRITICAL ENVIRONMENTAL AREAS**

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?

☒ NO ☐ YES

List the environmental characteristics that caused the designation of the CEA.

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C Proposed Action to locate within the CEA? | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will result in a reduction in the quantity of the resource? | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will result in a reduction in the quality of the resource? | ☐ | ☐ | ☐ Yes | ☐ No |
| C Proposed Action will impact the use, function or enjoyment of the resource? | ☐ | ☐ | ☐ Yes | ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes | ☐ No |



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|

**IMPACT ON TRANSPORTATION**

15. Will there be an effect to existing transportation systems?

☐ NO ☐ YES

**Examples** that would apply to column 2

- Alteration of present patterns of movement of people and/or goods. ☐ ☐ ☐ Yes ☐ No
- Proposed Action will result in major traffic problems. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No

**IMPACT ON ENERGY**

16. Will Proposed Action affect the community's sources of fuel or energy supply?

☐ NO ☐ YES

**Examples** that would apply to column 2

- Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality. ☐ ☐ ☐ Yes ☐ No
- Proposed Action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two family residences or to serve a major commercial or industrial use. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No

**NOISE AND ODOR IMPACT**

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

☐ NO ☐ YES

**Examples** that would apply to column 2

- Blasting within 1,500 feet of a hospital, school or other sensitive facility. ☐ ☐ ☐ Yes ☐ No
- Odors will occur routinely (more than one hour per day). ☐ ☐ ☐ Yes ☐ No
- Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures. ☐ ☐ ☐ Yes ☐ No
- Proposed Action will remove natural barriers that would act as a noise screen. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change | |
|---|---|---|---|---|

**IMPACT ON PUBLIC HEALTH**

18. Will Proposed Action affect public health and safety?
[■] NO [ ] YES

| | | | | |
|---|---|---|---|---|
| C Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.) | [ ] | [ ] | [ ] Yes | [ ] No |
| C Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Other impacts: | [ ] | [ ] | [ ] Yes | [ ] No |

**IMPACT ON GROWTH AND CHARACTER OF COMMUNITY OR NEIGHBORHOOD**

19. Will Proposed Action affect the character of the existing community?
[■] NO [ ] YES

**Examples** that would apply to column 2

| | | | | |
|---|---|---|---|---|
| C The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%. | [ ] | [ ] | [ ] Yes | [ ] No |
| C The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Proposed Action will conflict with officially adopted plans or goals. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Proposed Action will cause a change in the density of land use. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community. | [ ] | [ ] | [ ] Yes | [ ] No |
| C Development will create a demand for additional community services (e.g. schools, police and fire, etc.) | [ ] | [ ] | [ ] Yes | [ ] No |



Reset

| | 1 Small to Moderate Impact | 2 Potential Large Impact | 3 Can Impact Be Mitigated by Project Change |
|---|---|---|---|
| C Proposed Action will set an important precedent for future projects. | ☐ | ☐ | ☐ Yes ☐ No |
| C Proposed Action will create or eliminate employment. | ☐ | ☐ | ☐ Yes ☐ No |
| C Other impacts: | ☐ | ☐ | ☐ Yes ☐ No |

20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?

☒ NO ☐ YES

**If Any Action in Part 2 Is Identified as a Potential Large Impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3**



Reset

FISHERASSOCIATES

135 Calkins Road
Rochester, NY 14623
Phone: 585-334-1310
Fax: 585-334-1361
www.fisherassoc.com

March 07, 2011

Ms. Diane Rusanowsky
United States Department of Commerce
NOAA - National Marine Fisheries Service
Habitat Conservation Division
Milford Field Office, 212 Rogers Avenue
Milford, Connecticut 06460

**Construction of Highland Park/Canalway Trail: PIN 4754.08**
**Town of Brighton & City of Rochester, Monroe County, New York**

Dear Ms. Rusanowsky,

Fisher Associates, P.E., L.S., P.C. (Fisher Associates) is working with the Town of Brighton and City of Rochester on the above referenced project. As part of our site evaluation process, we would like to determine if there are any endangered, threatened, or rare terrestrial and aquatic species in the project area. We would appreciate a review of your files to determine if there are any records, or if there is a likelihood of occurrences of these species along or adjacent to the project corridor.

As noted, the project is located in the Town of Brighton and City of Rochester, Monroe County, New York. The location of the proposed trail construction project is shown on the enclosed Project Location Map, Figure No. 1.

Thank you in advance for your consideration and assistance. In the meantime, please contact me at Fisher Associates' Rochester, New York office if you have any questions or need additional information.

Sincerely,

FISHER ASSOCIATES, P.E., L.S., P.C.

Christina Beyer
Environmental Technician

encl. Project Location Map

091001

***National Marine Fisheries Service***
***Habitat Conservation Division***
***Milford Field Office, 212 Rogers Avenue***
***Milford, Connecticut 06460***

TO: Steven D. Wilkinson, P.E.
Project Engineer
Fisher Associates
135 Calkins Road
Rochester, NY 14623

DATE: 7 April 2009

SUBJECT: **EFH and Fish and Wildlife Coordination Act Species Information Request; Construction of Highland Park/Canalway Trail, PIN 4754.08; Town of Brighton & City of Rochester, Monroe County, NY**

Diane Rusanowsky
(Reviewing Biologist)

We have completed our review of the subject information request and offer the following preliminary comments pursuant to the Endangered Species Act, the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act:

**Endangered and Threatened Species**

__XX__ No endangered or threatened species under the jurisdiction of NOAA Fisheries Service in the immediate project area.

_____ Endangered or threatened species under the jurisdiction of NOAA Fisheries Service's jurisdiction may be present in the project area.

For details regarding what coordination may be necessary, please contact:

Ms. Mary Colligan
ARA for Protected Resources
55 Great Republic Drive
Gloucester, MA 01930

---

**Fish and Wildlife Coordination Act Species**

__XX__ The following may be present in the *general* project area: Diadromous and resident fish, forage and benthic species].

Habitat use by some species or life stages may be seasonal (e.g. over-wintering.)

---

**Essential Fish Habitat**

_____ Aquatic habitats in the project vicinity have been designated as Essential Fish Habitat (EFH) for one or more species. When details of the project are made available and permit applications have been made, conservation recommendations may be given. For a listing of EFH and further information, please go to our website at: http://www.nero.nmfs.gov/ro/doc/webintro.html . Based on the information provided to date, it is not possible to determine whether or not an EFH assessment will be necessary.

__XX__ No EFH presently designated in the immediate project area.

FISHERASSOCIATES

135 Calkins Road
Rochester, NY 14623
Phone: 585-334-1310
Fax: 585-334-1361
www.fisherassoc.com

March 07, 2011

Ms. Jean Petrusiak
NYS Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
625 Broadway, 5th Floor
Albany, New York 12233-4757

**Construction of Highland Park/Canalway Trail: PIN 4754.08**
**Town of Brighton & City of Rochester, Monroe County, New York**

Dear Ms. Petrusiak,

Fisher Associates, P.E., L.S., P.C. (Fisher Associates) is working with the Town of Brighton and City of Rochester on the above referenced project. As part of our site evaluation process, we would like to determine if there are any endangered, threatened, or rare terrestrial and aquatic species in the project area. We would appreciate a review of your files to determine if there are any records, or if there is a likelihood of occurrences of these species along or adjacent to the project corridor.

As noted, the project is located in the Town of Brighton and City of Rochester, Monroe County, New York. The location of the proposed trail construction project is shown on the enclosed Project Location Map, Figure No. 1.

Thank you in advance for your consideration and assistance. In the meantime, please contact me at Fisher Associates' Rochester, New York office if you have any questions or need additional information.

Sincerely,

FISHER ASSOCIATES, P.E., L.S., P.C.

Christina Beyer
Environmental Technician

encl. Project Location Map

091001

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**Division of Fish, Wildlife & Marine Resources**
**New York Natural Heritage Program**
625 Broadway, 5th Floor, Albany, New York 12233-4757
**Phone:** (518) 402-8935 • **Fax:** (518) 402-8925
**Website:** www.dec.ny.gov

Joe Martens
Commissioner

March 18, 2011

RECEIVED
MAR 21 2011
FISHER ASSOCIATES

Christina Beyer
Fisher Associates
135 Calkins Rd
Rochester, NY 14623

Dear Ms. Beyer:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed New Construction – Highland Park/Canalway Trail, PIN 4754.08, area as indicated on the map you provided, located in the City of Rochester/Brighton, Monroe County.

We have no records of rare or state-listed animals or plants, significant natural communities or other significant habitats, on or in the immediate vicinity of your site.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Tara Salerno

Tara Salerno, Information Services
New York Natural Heritage Program

Enc.
cc: Region 8

# 245

FISHERASSOCIATES

135 Calkins Road
Rochester, NY 14623
Phone: 585-334-1310
Fax: 585-334-1361
www.fisherassoc.com

March 07, 2011

Ms. Chris Setari
NYS Department of Environmental Conservation
Permits Department, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

**Construction of Highland Park/Canalway Trail: PIN 4754.08**
**Town of Brighton & City of Rochester, Monroe County, New York**

Dear Ms. Setari,

Fisher Associates, P.E., L.S., P.C. (Fisher Associates) is working with the Town of Brighton and City of Rochester on the above referenced project. As part of our site evaluation process, we would like to determine if there are any endangered, threatened, or rare terrestrial and aquatic species in the project area. We would appreciate a review of your files to determine if there are any records, or if there is a likelihood of occurrences of these species along or adjacent to the project corridor.

As noted, the project is located in the Town of Brighton and City of Rochester, Monroe County, New York. The location of the proposed trail construction project is shown on the enclosed Project Location Map, Figure No. 1

Thank you in advance for your consideration and assistance. In the meantime, please contact me at Fisher Associates' Rochester, New York office if you have any questions or need additional information.

Sincerely,

FISHER ASSOCIATES, P.E., L.S., P.C.

Christina Beyer
Environmental Technician

encl. Project Location Map

091001

Highland ParkCanalway Trail

From: "Chris Setari" <casetari@gw.dec.state.ny.us>
To: <cbeyer@fisherassoc.com>
Date: 3/11/2011 10:52 AM
Subject: Highland Park/Canalway Trail

In the fall of 2009, DEC program staff and myself met with Roseann Schmid and others from Fishers Assoc. to walk the section of trail located east of the DDSO facility. We have a file started for the project - DEC ID 8-2620-00167/00001.

There are no known state or federally endangered, threatened or rare species in the project corridor. However, there is a known population of Western Chorus Frogs which is of concern to the Town of Brighton that is located within the corridor of Buckland Creek. The section of trail that has received a construction permit from the DEC has special conditions regarding the protection and enhancement of amphibian habitat. The Town of Brighton should be able to share a copy of their permit with you.

An Article 24 permit will be required for the construction of the trail on property owned by St. John's.

FISHERASSOCIATES

135 Calkins Road
Rochester, NY 14623
Phone: 585-334-1310
Fax: 585-334-1361
www.fisherassoc.com

March 07, 2011

Mr. David Stillwell
United States Fish and Wildlife Service
3817 Luker Road
Cortland, New York 13045

**Construction of Highland Park/Canalway Trail: PIN 4754.08**
**Town of Brighton & City of Rochester, Monroe County, New York**

Dear Mr. Stillwell,

Fisher Associates, P.E., L.S., P.C. (Fisher Associates) is working with the Town of Brighton and City of Rochester on the above referenced project. As part of our site evaluation process, we would like to determine if there are any endangered, threatened, or rare terrestrial and aquatic species in the project area. We would appreciate a review of your files to determine if there are any records, or if there is a likelihood of occurrences of these species along or adjacent to the project corridor.

As noted, the project is located in the Town of Brighton and City of Rochester, Monroe County, New York. The location of the proposed trail construction project is shown on the enclosed Project Location Map, Figure No. 1.

Thank you in advance for your consideration and assistance. In the meantime, please contact me at Fisher Associates' Rochester, New York office if you have any questions or need additional information.

Sincerely,

FISHER ASSOCIATES, P.E., L.S., P.C.

Christina Beyer
Environmental Technician

encl. Project Location Map

091001

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo

Project Number: 90269

To: Christina Beyer Date: Mar 9, 2011

Regarding: Highland Park / Canalway Trail, PIN 4754.08

Town/County: Town of Brighton and City of Rochester / Monroe County

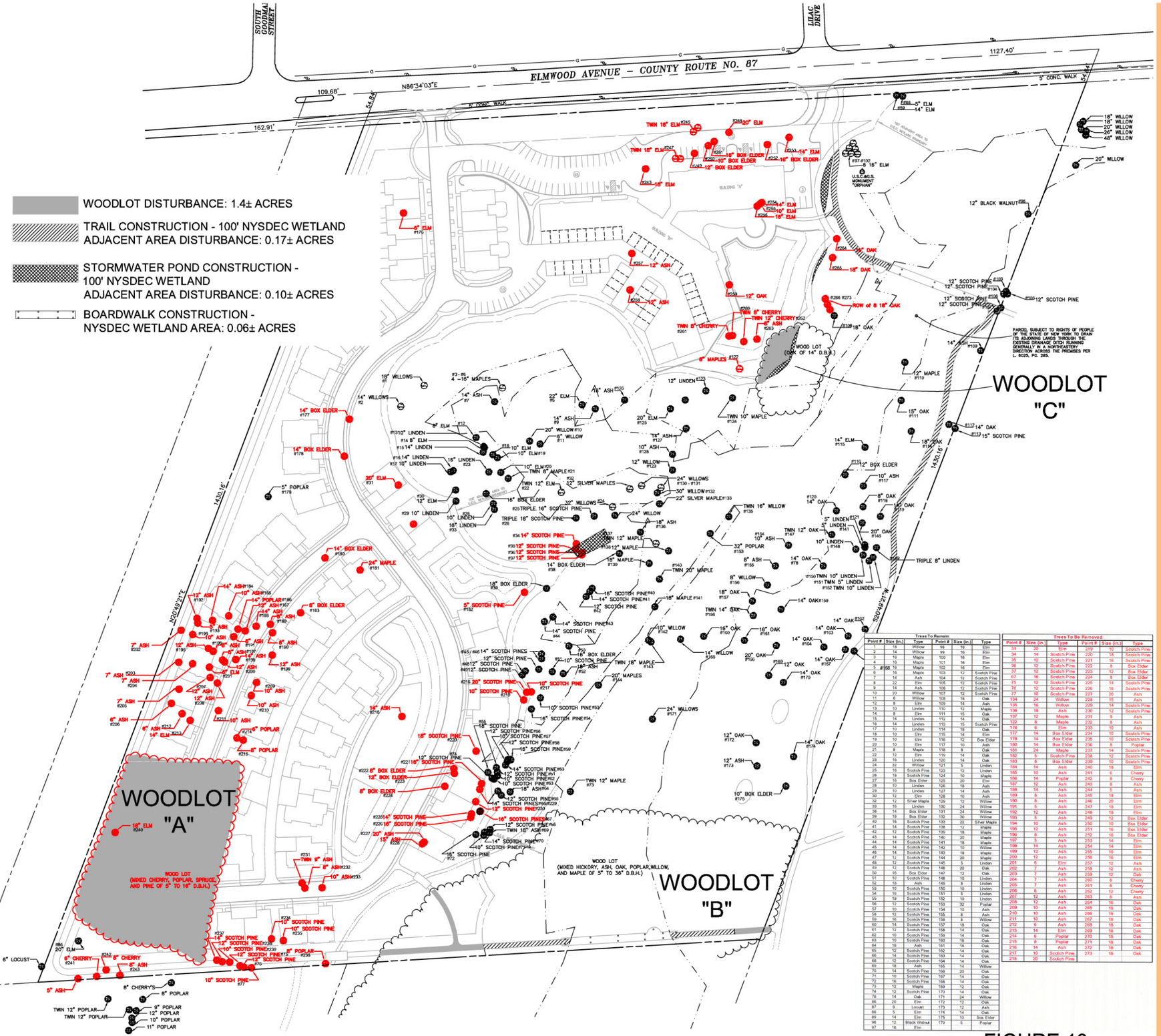
We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at http://www.fws.gov/northeast/nyfo/es/section7.htm. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran *Sandra Doran*

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to ***take*** (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.




| Trees To Remain | | | | | |
|---|---|---|---|---|---|
| Point # | Size (in.) | Type | Point # | Size (in.) | Type |
| 1 | 18 | Willow | 98 | 16 | Elm |
| 2 | 14 | Willow | 99 | 16 | Elm |
| 3 | 16 | Maple | 100 | 16 | Elm |
| 4 | 16 | Maple | 101 | 16 | Elm |
| 5 | 16 | Maple | 102 | 16 | Elm |
| 6 | 16 | Maple | 103 | 12 | Scotch Pine |
| 7 | 14 | Ash | 104 | 12 | Scotch Pine |
| 8 | 22 | Elm | 105 | 12 | Scotch Pine |
| 9 | 14 | Ash | 106 | 12 | Scotch Pine |
| 10 | 20 | Willow | 107 | 12 | Scotch Pine |
| 11 | 6 | Willow | 108 | 18 | Oak |
| 12 | 8 | Elm | 109 | 14 | Ash |
| 13 | 10 | Linden | 110 | 12 | Maple |
| 14 | 8 | Elm | 111 | 15 | Oak |
| 15 | 14 | Linden | 112 | 14 | Oak |
| 16 | 14 | Linden | 113 | 15 | Scotch Pine |
| 17 | 10 | Linden | 114 | 18 | Oak |
| 18 | 10 | Elm | 115 | 14 | Elm |
| 19 | 10 | Elm | 116 | 12 | Box Elder |
| 20 | 10 | Elm | 117 | 10 | Ash |
| 21 | 8 | Maple | 118 | 8 | Oak |
| 22 | 12 | Elm | 119 | 14 | Oak |
| 23 | 16 | Linden | 120 | 14 | Oak |
| 24 | 32 | Willow | 121 | 5 | Linden |
| 25 | 16 | Scotch Pine | 123 | 12 | Linden |
| 26 | 18 | Scotch Pine | 124 | 10 | Maple |
| 27 | 16 | Box Elder | 125 | 20 | Elm |
| 28 | 10 | Linden | 126 | 18 | Ash |
| 29 | 10 | Linden | 127 | 14 | Ash |
| 30 | 12 | Elm | 128 | 10 | Ash |
| 32 | 12 | Silver Maple | 129 | 12 | Willow |
| 33 | 16 | Linden | 130 | 24 | Willow |
| 38 | 14 | Box Elder | 131 | 24 | Willow |
| 39 | 18 | Box Elder | 132 | 30 | Willow |
| 40 | 18 | Scotch Pine | 133 | 22 | Silver Maple |
| 41 | 14 | Scotch Pine | 138 | 12 | Maple |
| 42 | 12 | Scotch Pine | 139 | 18 | Maple |
| 43 | 14 | Scotch Pine | 140 | 20 | Maple |
| 44 | 14 | Scotch Pine | 141 | 18 | Maple |
| 45 | 14 | Scotch Pine | 142 | 10 | Willow |
| 46 | 14 | Scotch Pine | 143 | 18 | Maple |
| 47 | 12 | Scotch Pine | 144 | 20 | Maple |
| 48 | 12 | Scotch Pine | 145 | 5 | Linden |
| 49 | 12 | Scotch Pine | 146 | 20 | Oak |
| 50 | 16 | Box Elder | 147 | 12 | Oak |
| 51 | 10 | Scotch Pine | 148 | 10 | Linden |
| 52 | 18 | Ash | 149 | 8 | Linden |
| 53 | 10 | Scotch Pine | 150 | 10 | Linden |
| 54 | 18 | Scotch Pine | 151 | 5 | Linden |
| 55 | 18 | Scotch Pine | 152 | 10 | Linden |
| 56 | 12 | Scotch Pine | 153 | 32 | Poplar |
| 57 | 10 | Scotch Pine | 154 | 10 | Ash |
| 58 | 12 | Scotch Pine | 155 | 8 | Ash |
| 59 | 16 | Scotch Pine | 156 | 8 | Willow |
| 60 | 14 | Scotch Pine | 157 | 18 | Oak |
| 61 | 12 | Scotch Pine | 158 | 14 | Oak |
| 62 | 10 | Scotch Pine | 159 | 14 | Oak |
| 63 | 10 | Scotch Pine | 160 | 16 | Oak |
| 64 | 18 | Ash | 161 | 16 | Oak |
| 65 | 12 | Scotch Pine | 162 | 14 | Oak |
| 66 | 14 | Scotch Pine | 163 | 14 | Oak |
| 68 | 12 | Scotch Pine | 164 | 14 | Oak |
| 69 | 18 | Ash | 165 | 14 | Willow |
| 70 | 14 | Scotch Pine | 166 | 20 | Oak |
| 71 | 10 | Scotch Pine | 167 | 14 | Oak |
| 72 | 16 | Scotch Pine | 168 | 14 | Oak |
| 73 | 12 | Maple | 169 | 12 | Oak |
| 74 | 12 | Scotch Pine | 170 | 14 | Oak |
| 76 | 14 | Oak | 171 | 24 | Willow |
| 86 | 20 | Elm | 172 | 12 | Oak |
| 87 | 8 | Locust | 173 | 12 | Ash |
| 88 | 5 | Elm | 174 | 14 | Oak |
| 89 | 14 | Elm | 176 | 10 | Box Elder |
| 96 | 12 | Black Walnut | 179 | 5 | Poplar |
| 97 | 16 | Elm | | | |

| Trees To Be Removed | | | | | |
|---|---|---|---|---|---|
| Point # | Size (in.) | Type | Point # | Size (in.) | Type |
| 31 | 20 | Elm | 219 | 10 | Scotch Pine |
| 34 | 14 | Scotch Pine | 220 | 18 | Scotch Pine |
| 35 | 12 | Scotch Pine | 221 | 16 | Scotch Pine |
| 36 | 12 | Scotch Pine | 222 | 8 | Box Elder |
| 37 | 12 | Scotch Pine | 223 | 12 | Box Elder |
| 67 | 16 | Scotch Pine | 224 | 8 | Box Elder |
| 75 | 12 | Scotch Pine | 225 | 14 | Scotch Pine |
| 76 | 12 | Scotch Pine | 226 | 16 | Scotch Pine |
| 77 | 10 | Scotch Pine | 227 | 20 | Ash |
| 134 | 24 | Willow | 228 | 15 | Ash |
| 135 | 16 | Willow | 229 | 14 | Scotch Pine |
| 136 | 18 | Ash | 230 | 12 | Scotch Pine |
| 137 | 12 | Maple | 231 | 9 | Ash |
| 122 | 8 | Maple | 232 | 8 | Ash |
| 176 | 6 | Elm | 233 | 10 | Ash |
| 177 | 14 | Box Elder | 234 | 10 | Scotch Pine |
| 178 | 14 | Box Elder | 235 | 10 | Scotch Pine |
| 180 | 14 | Box Elder | 236 | 8 | Poplar |
| 181 | 24 | Maple | 237 | 14 | Scotch Pine |
| 182 | 8 | Scotch Pine | 238 | 12 | Scotch Pine |
| 183 | 8 | Box Elder | 239 | 10 | Scotch Pine |
| 184 | 14 | Ash | 240 | 18 | Elm |
| 185 | 10 | Ash | 241 | 6 | Cherry |
| 186 | 14 | Poplar | 242 | 8 | Cherry |
| 187 | 12 | Ash | 243 | 8 | Ash |
| 188 | 14 | Ash | 244 | 5 | Ash |
| 189 | 8 | Ash | 245 | 18 | Elm |
| 190 | 8 | Ash | 246 | 20 | Elm |
| 191 | 5 | Ash | 247 | 18 | Elm |
| 192 | 12 | Ash | 248 | 18 | Elm |
| 193 | 5 | Ash | 249 | 12 | Box Elder |
| 194 | 10 | Ash | 250 | 10 | Box Elder |
| 195 | 12 | Ash | 251 | 16 | Box Elder |
| 196 | 8 | Ash | 252 | 18 | Box Elder |
| 197 | 5 | Ash | 253 | 14 | Elm |
| 198 | 14 | Ash | 254 | 14 | Elm |
| 199 | 12 | Ash | 255 | 10 | Elm |
| 200 | 12 | Ash | 256 | 16 | Elm |
| 201 | 6 | Elm | 257 | 12 | Ash |
| 202 | 7 | Ash | 258 | 12 | Ash |
| 203 | 7 | Ash | 259 | 12 | Oak |
| 204 | 7 | Ash | 260 | 8 | Cherry |
| 205 | 7 | Ash | 261 | 8 | Cherry |
| 206 | 6 | Ash | 262 | 12 | Cherry |
| 207 | 12 | Ash | 263 | 8 | Ash |
| 208 | 12 | Ash | 264 | 18 | Oak |
| 209 | 10 | Ash | 265 | 18 | Oak |
| 210 | 10 | Ash | 266 | 18 | Oak |
| 211 | 10 | Ash | 267 | 18 | Oak |
| 212 | 6 | Ash | 268 | 18 | Oak |
| 213 | 14 | Elm | 269 | 18 | Oak |
| 214 | 6 | Poplar | 270 | 18 | Oak |
| 215 | 8 | Poplar | 271 | 18 | Oak |
| 216 | 14 | Ash | 272 | 18 | Oak |
| 217 | 10 | Scotch Pine | 273 | 18 | Oak |
| 218 | 20 | Scotch Pine | | | |

FIGURE 13

Stantec Consulting Services Inc
2250 Brighton–Henrietta townline Rd.
Rochester NY U.S.A.
14623–2706
tel. 585.475.1440
fax. 585.424.5951
www.stantec.com

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LOCATION SKETCH
N.T.S.

N

0 50 100 150
SCALE IN FEET

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File Name: F C13 WOODLOT TERRESTRYAL HABITAT.dwg

| | Dwn. | Chkd. | Dsgn. | MOF | 07.11.08 |
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Perm1-Seal

Project/Client
ST. JOHN'S NEW COMMUNITY
Elmwood Avenue
Town of Brighton
Monroe County, New York

Title
WOODLOT & TERRESTRIAL HABITAT

Project No. 193510130
Scale
Drawing No.
Sheet of
Revision 0

# NEW YORK STATE DEPARTMENT OF TRANSPORTATION PROJECT SUBMITTAL PACKAGE
## Section 106 of the National Historic Preservation Act

## For Locally-Administered Federal-Aid Projects

A Project Submittal Package is prepared by the Local Project Sponsor (Sponsor) or their consultants for federal aid transportation projects to provide sufficient information for NYSDOT assessment of Section 106 obligations.

The Sponsor sends the package to the Regional Local Project Liaison (RLPL) for RCRC review. The RCRC will make recommendations to identify what is needed for Section 106 compliance for the project.

**DATE:** June 6, 2011 **PIN:** 4754.08 **BIN:** N/A

**IDENTIFICATION**

Project Name (if any): Highland Park/Canalway Trail Project

Project Area Boundaries: From the Erie Canal Heritage Trail (Canalway Trail) on Sawgrass Drive within Brighton Meadows Office Park (Town of Brighton) to the Genesee Riverway Trail adjacent to Joseph C. Wilson Boulevard (City of Rochester). The trail route is as follows: along west side of Sawgrass Drive, crossing Westfall Road and continuing east on the north side of Westfall Road, then turning north and traversing though the Monroe Developmental Center property, and northwest through a wooded parcel, then west and north along the property boundaries of the St. John's Meadows expansion parcel to Elmwood Ave. West on Elmwood Ave. then crossing Elmwood Avenue and entering Highland Park South and continuing north and west to South Ave. Then north on South Ave, west on Robinson Drive, north on Mt Hope Ave., and west on McLean Street, then crossing Wilson Boulevard to the Genesee Riverway Trail

County: Monroe Town/City: Town of Brighton, City of Rochester Village/Hamlet: N/A

Have you consulted the NYSHPO web site at *http://nysparks.state.ny.us to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes: ☒ Yes ☐ No

- Was the project site wholly or partially included within an identified archaeologically sensitive area? ☒ Yes ☐ No
- Does the project site involve or is it substantially contiguous to a National Register listed property? ☒ Yes ☐ No

*http://nysparks.state.ny.us then select **HISTORIC PRESERVATION** then **Historic Preservation Field Services Bureau** then **On Line Tools**

**ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING INFORMATION**

☒ **Project Description –** Attach a full description of the nature and extent of the work to be undertaken as part of this project. This should include, but not limited to, potential activities that might involve drainage, cutting, excavation, grading, filling, on-site detours, new sidewalks, right-of-way acquisition. Relevant portions of the project applications or environmental statements may be submitted. This could be from sections of the Draft Design Report/ Draft Scoping Document.

☒ **Location Maps -** Provide USGS Quad or DOT Planimetric map showing project area location. The map must clearly show street and road names surrounding the project area as well as all portions of the project.

☒ **Photos -** Provide clear, original color photographs of the entire project area keyed to a site plan. These photos should indicate:

- Buildings/structures more than 50 years old that are located along the property or on adjoining property
- Areas of prior ground disturbance (removal of original topsoil; filling and plowing are not considered disturbance)

**LOCAL SPONSOR CONTACT**

Name Mike Guyon Title Town Engineer

Firm/Agency Town of Brighton Department of Public Works

Address 2300 Elmwood Ave. City Rochester State NY Zip 14618

Phone 585-784-5225 E-Mail mikeguyon@townofbrighton.org Consultant Name & Phone Fisher Associates 585-334-1310

# Highland Park/Canalway Project Description

## 1.0 Introduction

The Genesee Riverway, Highland Park, and the Erie Canalway Trail are major recreational facilities for the Region and improved accessibility to these facilities is needed for pedestrians and bicyclists as well as to residents of the adjacent communities.

There is currently no designated pedestrian/bicycle route between Highland Park and either the Canalway or the Genesee Riverway Trail. A Canalway or Genesee Riverway Trail user must use the existing roadway system in the Town of Brighton or the roadway/sidewalk system in the City of Rochester to travel to/from Highland Park by non-motorized means. In addition, no signage exists directing pedestrians or bicyclists along the routes they must use.

## 2.0. Project Objectives

The following objectives have been established for this project:

- Construct a multi-use trail connecting the Genesee Riverway Trail, Highland Park and the Erie Canalway. The trail will consist of designated off-road segments comprised of a paved 10-foot-wide trail, and on-road segments comprised of sidewalks for pedestrians and shoulders or shared-use travel lanes for bicyclists.
- Provide signage and pavement markings to facilitate access to the identified recreational facilities.

## 3.0 Proposed Alternative

The proposed alternative consists of the construction of a shared-use trail. The new trail will be off-road or parallel to existing roadways from Sawgrass Drive within Brighton Meadows Office Park to Highland Avenue. From Highland Avenue to Wilson Boulevard, the trail will be comprised of existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicyclists (Refer to Figure No. 2). The off-road trail segments will generally be 10-feet-wide except in a few areas where there are obstructions that limit the width to 8 feet.

The new paved multi-use trail will begin at the parking area for the Erie Canalway Trail located on Sawgrass Drive within the Brighton Meadows Office Park. The trail will run north along the west side of Sawgrass Drive, cross Westfall Road, traverse through the Monroe Developmental Center property along its southern, eastern, and northern property lines. It will then pass through a wooded area where an informal walking trail and boardwalk currently exists. The trail through this area will be formalized and paved for use by both pedestrians and bicyclists. The boardwalk will be improved to widen it and make it ADA accessible. From this point, the trail will continue along the southern and western property lines of the proposed expansion of the St. John's Community to Elmwood Avenue. The trail will continue west along the south side of Elmwood Avenue to a signalized intersection at the parking lot to the Al Sigl Center. The trail will cross Elmwood Avenue at this existing signal and enter Highland Park South where is will continue north and west through Highland Park along existing improved roadways and pathways to South Avenue.

The 10-foot-wide trail will run north along the east side of South Avenue to Highland Avenue. From this point to the terminus at Wilson Boulevard, the trail will be on-road, i.e., utilizing existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicyclists.

The route of the on-road portion of the project is as follows:

- north on South Avenue to Robinson Drive,
- west on Robinson Drive to Mt. Hope Avenue,
- north on Mt. Hope Avenue to McLean Street,
- west on McLean Street to Wilson Boulevard.
- Then crossing Wilson Boulevard terminating at the Genesee Riverway Trail

Where necessary, deteriorated or heaved sidewalk panels will be replaced. However, no widening of the existing sidewalk is proposed. Signage indicating the trail route along the above roadways will be installed so trail users can follow the signed route to the connecting trails and park.

The off-road trail segments will be cleared of vegetation and topsoil. The trail will consist of a crushed stone subbase and asphalt top course. The majority of the off-road section will be 10 feet wide with 2-foot wide graded grass shoulders on each side. Fixed objects within 3 feet from the edge of the path will be cleared for safety, where possible.

The on-road section of the project will utilize the existing sidewalks for pedestrians and shoulders or shared-use travel lanes for bicycles. The sidewalks anticipated to be the most heavily used will be on the south side of Robinson Drive and McLean Street, on the west side of South Avenue between Robinson Drive and Highland Avenue, and on the west side of Mt. Hope Avenue between Robinson Drive and McLean Street. South Avenue from Highland Avenue to Robinson Drive will be re-striped to accommodate one travel lane in each direction and shoulders on each side for bicyclists. Robinson Drive is a low volume park road and bicyclists will continue to share this roadway with vehicles as they currently do. No striping proposed along this low volume park road.

Mt. Hope Avenue was recently milled and overlaid. As part of this project, efforts were made to make shoulder widths consistent along this roadway and new striping was installed. Therefore, no additional improvements to this roadway are proposed. Bicyclists will utilize the shoulders as constructed as part of this recent project.

McLean Street will be maintained as a one way street traveling west from Mt. Hope Avenue to Wilson Boulevard. A bicycle contraflow lane will be striped along the south side of McLean Street to accommodate eastbound bicyclists. Westbound bicyclists will share the westbound travel lane with motorists. Appropriate signage will be installed informing motorists and bicyclists of the contraflow bicycle lane. No road widening is proposed for any of the on-road sections.

Amenities including landscaping, informational kiosks, and directional signage are also elements of this alternative.

The existing natural drainage patterns along the off-road segments will generally be retained using new cross culverts under the trail as needed to minimize ponding and properly convey stormwater runoff. No changes to drainage structures located along existing roadways are proposed.

# APPENDIX C

# Appendix C

Highland Park Trial
Rochester, NY

## Table of Contents

A. Intersection Capacity Analysis
B. Gap Calculations
C. Accident Rate Calculation
D. Stopping Sight Distance

# Highland Park Trial

## A. Intersection Capacity Analysis
## Highland Ave & South Ave

### Existing Conditions
Morning Peak Hour
Evening Peak Hour

### Option A (NB L-T & R)
Morning Peak Hour
Evening Peak Hour

### Option B (NB/SB T-R & L)
Morning Peak Hour
Evening Peak Hour

# Highland Park Trial

## Existing Conditions

Morning Peak Hour

Evening Peak Hour

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 9 | 69 | 11 | 234 | 187 | 93 | 24 | 380 | 35 | 55 | 505 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 0.983 | | | 0.950 | | | 0.988 | | | 0.996 | |
| Flt Protected | | 0.995 | | 0.950 | | | | 0.997 | | | 0.995 | |
| Satd. Flow (prot) | 0 | 1841 | 0 | 1770 | 1756 | 0 | 0 | 3342 | 0 | 0 | 3390 | 0 |
| Flt Permitted | | 0.956 | | 0.701 | | | | 0.910 | | | 0.866 | |
| Satd. Flow (perm) | 0 | 1769 | 0 | 1304 | 1756 | 0 | 0 | 3049 | 0 | 0 | 2950 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 13 | | | 45 | | | 25 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 2 | | 2 | 9 | | 2 | 2 | | 9 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.91 | 0.91 | 0.91 | 0.79 | 0.79 | 0.79 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 2% | 1% | 5% | 83% | 2% | 0% | 9% | 5% | 7% |
| Adj. Flow (vph) | 12 | 88 | 14 | 257 | 205 | 102 | 30 | 481 | 44 | 59 | 537 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 114 | 0 | 257 | 307 | 0 | 0 | 555 | 0 | 0 | 612 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (s) | 23.0 | 23.0 | 0.0 | 23.0 | 23.0 | 0.0 | 37.0 | 37.0 | 0.0 | 37.0 | 37.0 | 0.0 |
| Total Split (%) | 38.3% | 38.3% | 0.0% | 38.3% | 38.3% | 0.0% | 61.7% | 61.7% | 0.0% | 61.7% | 61.7% | 0.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 32.0 | 32.0 | | 32.0 | 32.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 |
| Total Lost Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | | 18.1 | | 18.1 | 18.1 | | | 35.9 | | | 35.9 | |
| Actuated g/C Ratio | | 0.30 | | 0.30 | 0.30 | | | 0.60 | | | 0.60 | |
| v/c Ratio | | 0.21 | | 0.65 | 0.55 | | | 0.30 | | | 0.35 | |
| Control Delay | | 14.1 | | 26.5 | 18.4 | | | 6.6 | | | 7.2 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 14.1 | | 26.5 | 18.4 | | | 6.6 | | | 7.2 | |
| LOS | | B | | C | B | | | A | | | A | |
| Approach Delay | | 14.1 | | | 22.1 | | | 6.6 | | | 7.2 | |
| Approach LOS | | B | | | C | | | A | | | A | |
| Queue Length 50th (ft) | | 25 | | 76 | 73 | | | 46 | | | 55 | |
| Queue Length 95th (ft) | | 48 | | 144 | 138 | | | 60 | | | 84 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 598 | | 435 | 615 | | | 1837 | | | 1770 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.19 | | 0.59 | 0.50 | | | 0.30 | | | 0.35 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 56 (93%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 12.0 Intersection LOS: B
Intersection Capacity Utilization 66.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 163: Highland & South #1

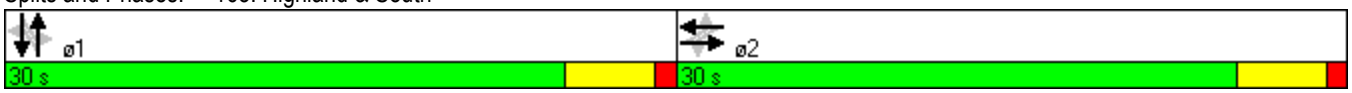
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 17 | 152 | 9 | 106 | 64 | 61 | 16 | 494 | 161 | 93 | 493 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 1.00 | | 1.00 | 0.99 | | | 0.99 | | | 1.00 | |
| Frt | | 0.993 | | | 0.927 | | | 0.964 | | | 0.997 | |
| Flt Protected | | 0.995 | | 0.950 | | | | 0.999 | | | 0.992 | |
| Satd. Flow (prot) | 0 | 1876 | 0 | 1805 | 1734 | 0 | 0 | 3429 | 0 | 0 | 3511 | 0 |
| Flt Permitted | | 0.961 | | 0.582 | | | | 0.937 | | | 0.752 | |
| Satd. Flow (perm) | 0 | 1812 | 0 | 1105 | 1734 | 0 | 0 | 3216 | 0 | 0 | 2661 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 5 | | | 70 | | | 86 | | | 5 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | 1 | 1 | | 5 | 5 | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.87 | 0.87 | 0.87 | 0.89 | 0.89 | 0.89 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 1% | 0% | 0% | 2% | 0% |
| Adj. Flow (vph) | 19 | 169 | 10 | 122 | 74 | 70 | 18 | 555 | 181 | 98 | 519 | 14 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 198 | 0 | 122 | 144 | 0 | 0 | 754 | 0 | 0 | 631 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (s) | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 |
| Total Split (%) | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% |
| Maximum Green (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | | 13.2 | | 13.2 | 13.2 | | | 36.8 | | | 36.8 | |
| Actuated g/C Ratio | | 0.22 | | 0.22 | 0.22 | | | 0.61 | | | 0.61 | |
| v/c Ratio | | 0.49 | | 0.50 | 0.33 | | | 0.38 | | | 0.39 | |
| Control Delay | | 23.1 | | 26.5 | 12.0 | | | 6.5 | | | 7.6 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 23.1 | | 26.5 | 12.0 | | | 6.5 | | | 7.6 | |
| LOS | | C | | C | B | | | A | | | A | |
| Approach Delay | | 23.1 | | | 18.7 | | | 6.5 | | | 7.6 | |
| Approach LOS | | C | | | B | | | A | | | A | |
| Queue Length 50th (ft) | | 62 | | 39 | 22 | | | 51 | | | 50 | |
| Queue Length 95th (ft) | | 98 | | 69 | 51 | | | 108 | | | 107 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 758 | | 460 | 763 | | | 2005 | | | 1633 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.26 | | 0.27 | 0.19 | | | 0.38 | | | 0.39 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 12 (20%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 71.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 163: Highland & South



# Highland Park Trial

## Option A (NB L-T & R)

Morning Peak Hour

Evening Peak Hour

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 9 | 69 | 11 | 234 | 187 | 93 | 24 | 380 | 35 | 55 | 505 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 0.98 | | 1.00 | |
| Frt | | 0.983 | | | 0.950 | | | | 0.850 | | 0.996 | |
| Flt Protected | | 0.995 | | 0.950 | | | | 0.997 | | | 0.995 | |
| Satd. Flow (prot) | 0 | 1841 | 0 | 1770 | 1756 | 0 | 0 | 1774 | 1615 | 0 | 3390 | 0 |
| Flt Permitted | | 0.956 | | 0.701 | | | | 0.952 | | | 0.875 | |
| Satd. Flow (perm) | 0 | 1769 | 0 | 1304 | 1756 | 0 | 0 | 1694 | 1578 | 0 | 2981 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 13 | | | 45 | | | | 44 | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 2 | | 2 | 9 | | 2 | 2 | | 9 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.91 | 0.91 | 0.91 | 0.79 | 0.79 | 0.79 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 2% | 1% | 5% | 83% | 2% | 0% | 9% | 5% | 7% |
| Adj. Flow (vph) | 12 | 88 | 14 | 257 | 205 | 102 | 30 | 481 | 44 | 59 | 537 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 114 | 0 | 257 | 307 | 0 | 0 | 511 | 44 | 0 | 612 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | 1 | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | 1 | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | |
| Total Split (s) | 23.0 | 23.0 | 0.0 | 23.0 | 23.0 | 0.0 | 37.0 | 37.0 | 37.0 | 37.0 | 37.0 | 0.0 |
| Total Split (%) | 38.3% | 38.3% | 0.0% | 38.3% | 38.3% | 0.0% | 61.7% | 61.7% | 61.7% | 61.7% | 61.7% | 0.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 |
| Total Lost Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | Lead | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | C-Max | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | | 18.1 | | 18.1 | 18.1 | | | 35.9 | 34.9 | | 35.9 | |
| Actuated g/C Ratio | | 0.30 | | 0.30 | 0.30 | | | 0.60 | 0.58 | | 0.60 | |
| v/c Ratio | | 0.21 | | 0.65 | 0.55 | | | 0.50 | 0.05 | | 0.34 | |
| Control Delay | | 14.1 | | 26.5 | 18.4 | | | 9.7 | 2.5 | | 7.1 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | | 14.1 | | 26.5 | 18.4 | | | 9.7 | 2.5 | | 7.1 | |
| LOS | | B | | C | B | | | A | A | | A | |
| Approach Delay | | 14.1 | | | 22.1 | | | 9.2 | | | 7.1 | |
| Approach LOS | | B | | | C | | | A | | | A | |
| Queue Length 50th (ft) | | 25 | | 76 | 73 | | | 102 | 0 | | 55 | |
| Queue Length 95th (ft) | | 48 | | 144 | 138 | | | 140 | 9 | | 83 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 598 | | 435 | 615 | | | 1015 | 937 | | 1788 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | | 0.19 | | 0.59 | 0.50 | | | 0.50 | 0.05 | | 0.34 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 69.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 163: Highland & South #1

# Highland Park Trial

## Option B (NB/SB T-R & L)

Morning Peak Hour

Evening Peak Hour

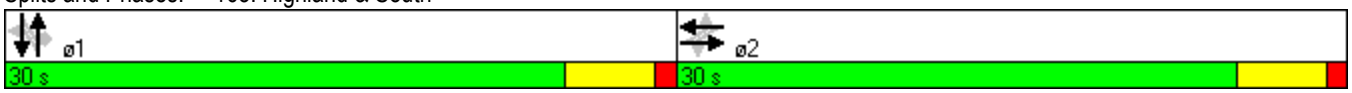
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 17 | 152 | 9 | 106 | 64 | 61 | 16 | 494 | 161 | 93 | 493 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 1.00 | | 1.00 | 0.99 | | | 1.00 | 0.97 | | 1.00 | |
| Frt | | 0.993 | | | 0.927 | | | | 0.850 | | 0.997 | |
| Flt Protected | | 0.995 | | 0.950 | | | | 0.998 | | | 0.992 | |
| Satd. Flow (prot) | 0 | 1876 | 0 | 1805 | 1734 | 0 | 0 | 1878 | 1615 | 0 | 3511 | 0 |
| Flt Permitted | | 0.961 | | 0.582 | | | | 0.976 | | | 0.792 | |
| Satd. Flow (perm) | 0 | 1812 | 0 | 1105 | 1734 | 0 | 0 | 1837 | 1572 | 0 | 2802 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 5 | | | 70 | | | | 181 | | 5 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | 1 | 1 | | 5 | 5 | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.87 | 0.87 | 0.87 | 0.89 | 0.89 | 0.89 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 1% | 0% | 0% | 2% | 0% |
| Adj. Flow (vph) | 19 | 169 | 10 | 122 | 74 | 70 | 18 | 555 | 181 | 98 | 519 | 14 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 198 | 0 | 122 | 144 | 0 | 0 | 573 | 181 | 0 | 631 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | 1 | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | 1 | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | |
| Total Split (s) | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 0.0 |
| Total Split (%) | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 0.0% |
| Maximum Green (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | Lead | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | C-Max | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | 0 | 0 | 0 | |
| Act Effct Green (s) | | 13.2 | | 13.2 | 13.2 | | | 36.8 | 36.8 | | 36.8 | |
| Actuated g/C Ratio | | 0.22 | | 0.22 | 0.22 | | | 0.61 | 0.61 | | 0.61 | |
| v/c Ratio | | 0.49 | | 0.50 | 0.33 | | | 0.51 | 0.18 | | 0.37 | |
| Control Delay | | 23.1 | | 26.5 | 12.0 | | | 9.7 | 1.9 | | 7.4 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | | 23.1 | | 26.5 | 12.0 | | | 9.7 | 1.9 | | 7.4 | |
| LOS | | C | | C | B | | | A | A | | A | |
| Approach Delay | | 23.1 | | | 18.7 | | | 7.8 | | | 7.4 | |
| Approach LOS | | C | | | B | | | A | | | A | |
| Queue Length 50th (ft) | | 62 | | 39 | 22 | | | 96 | 0 | | 48 | |
| Queue Length 95th (ft) | | 98 | | 69 | 51 | | | 222 | 24 | | 105 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 758 | | 460 | 763 | | | 1126 | 1034 | | 1719 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | | 0.26 | | 0.27 | 0.19 | | | 0.51 | 0.18 | | 0.37 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 12 (20%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 79.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 163: Highland & South



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 9 | 69 | 11 | 234 | 187 | 93 | 24 | 380 | 35 | 55 | 505 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.983 | | | 0.950 | | | 0.987 | | | 0.996 | |
| Flt Protected | | 0.995 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1839 | 0 | 1770 | 1756 | 0 | 986 | 1838 | 0 | 1656 | 1800 | 0 |
| Flt Permitted | | 0.956 | | 0.701 | | | 0.360 | | | 0.380 | | |
| Satd. Flow (perm) | 0 | 1767 | 0 | 1303 | 1756 | 0 | 372 | 1838 | 0 | 662 | 1800 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 13 | | | 45 | | | 13 | | | 4 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 2 | | 2 | 9 | | 2 | 2 | | 9 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.91 | 0.91 | 0.91 | 0.79 | 0.79 | 0.79 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 2% | 1% | 5% | 83% | 2% | 0% | 9% | 5% | 7% |
| Adj. Flow (vph) | 12 | 88 | 14 | 257 | 205 | 102 | 30 | 481 | 44 | 59 | 537 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 114 | 0 | 257 | 307 | 0 | 30 | 525 | 0 | 59 | 553 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (s) | 23.0 | 23.0 | 0.0 | 23.0 | 23.0 | 0.0 | 37.0 | 37.0 | 0.0 | 37.0 | 37.0 | 0.0 |
| Total Split (%) | 38.3% | 38.3% | 0.0% | 38.3% | 38.3% | 0.0% | 61.7% | 61.7% | 0.0% | 61.7% | 61.7% | 0.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 32.0 | 32.0 | | 32.0 | 32.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 | -2.0 | -2.0 | -1.0 |
| Total Lost Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | | 18.0 | | 18.0 | 18.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Actuated g/C Ratio | | 0.30 | | 0.30 | 0.30 | | 0.60 | 0.60 | | 0.60 | 0.60 | |
| v/c Ratio | | 0.21 | | 0.66 | 0.55 | | 0.13 | 0.47 | | 0.15 | 0.51 | |
| Control Delay | | 14.1 | | 26.6 | 18.4 | | 8.0 | 8.9 | | 7.3 | 9.6 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 14.1 | | 26.6 | 18.4 | | 8.0 | 8.9 | | 7.3 | 9.6 | |
| LOS | | B | | C | B | | A | A | | A | A | |
| Approach Delay | | 14.1 | | | 22.1 | | | 8.9 | | | 9.4 | |
| Approach LOS | | B | | | C | | | A | | | A | |
| Queue Length 50th (ft) | | 25 | | 76 | 73 | | 5 | 99 | | 9 | 110 | |
| Queue Length 95th (ft) | | 48 | | 144 | 138 | | 14 | 134 | | 25 | 185 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 598 | | 434 | 615 | | 223 | 1107 | | 397 | 1081 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.19 | | 0.59 | 0.50 | | 0.13 | 0.47 | | 0.15 | 0.51 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 163: Highland & South #1

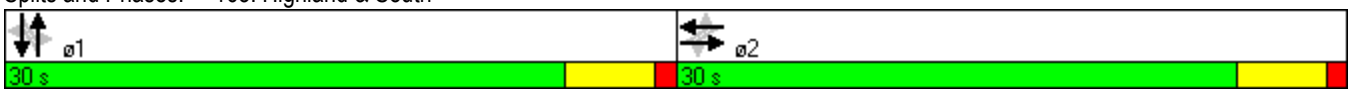
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 17 | 152 | 9 | 106 | 64 | 61 | 16 | 494 | 161 | 93 | 493 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | 25 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | 1.00 | | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Frt | | 0.993 | | | 0.927 | | | 0.963 | | | 0.996 | |
| Flt Protected | | 0.995 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1875 | 0 | 1805 | 1734 | 0 | 1805 | 1804 | 0 | 1805 | 1855 | 0 |
| Flt Permitted | | 0.961 | | 0.582 | | | 0.406 | | | 0.270 | | |
| Satd. Flow (perm) | 0 | 1811 | 0 | 1104 | 1734 | 0 | 771 | 1804 | 0 | 512 | 1855 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 5 | | | 70 | | | 34 | | | 3 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 908 | | | 524 | | | 2138 | | | 923 | |
| Travel Time (s) | | 20.6 | | | 11.9 | | | 48.6 | | | 21.0 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | 1 | 1 | | 5 | 5 | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.87 | 0.87 | 0.87 | 0.89 | 0.89 | 0.89 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 1% | 0% | 0% | 2% | 0% |
| Adj. Flow (vph) | 19 | 169 | 10 | 122 | 74 | 70 | 18 | 555 | 181 | 98 | 519 | 14 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 198 | 0 | 122 | 144 | 0 | 18 | 736 | 0 | 98 | 533 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 2 | | | 1 | | | 1 | |
| Permitted Phases | 2 | | | 2 | | | 1 | | | 1 | | |
| Detector Phase | 2 | 2 | | 2 | 2 | | 1 | 1 | | 1 | 1 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (s) | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 |
| Total Split (%) | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% |
| Maximum Green (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 4.0 |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lead | Lead | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | | 13.2 | | 13.2 | 13.2 | | 36.8 | 36.8 | | 36.8 | 36.8 | |
| Actuated g/C Ratio | | 0.22 | | 0.22 | 0.22 | | 0.61 | 0.61 | | 0.61 | 0.61 | |
| v/c Ratio | | 0.49 | | 0.50 | 0.33 | | 0.04 | 0.66 | | 0.31 | 0.47 | |
| Control Delay | | 23.0 | | 26.5 | 11.9 | | 6.8 | 12.6 | | 10.9 | 9.1 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 23.0 | | 26.5 | 11.9 | | 6.8 | 12.6 | | 10.9 | 9.1 | |
| LOS | | C | | C | B | | A | B | | B | A | |
| Approach Delay | | 23.0 | | | 18.6 | | | 12.5 | | | 9.4 | |
| Approach LOS | | C | | | B | | | B | | | A | |
| Queue Length 50th (ft) | | 62 | | 39 | 22 | | 2 | 134 | | 14 | 86 | |
| Queue Length 95th (ft) | | 98 | | 69 | 51 | | 11 | #349 | | 55 | 202 | |
| Internal Link Dist (ft) | | 828 | | | 444 | | | 2058 | | | 843 | |
| Turn Bay Length (ft) | | | | 125 | | | | | | | | |
| Base Capacity (vph) | | 758 | | 460 | 763 | | 472 | 1118 | | 314 | 1137 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.26 | | 0.27 | 0.19 | | 0.04 | 0.66 | | 0.31 | 0.47 | |

## Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 12 (20%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 163: Highland & South



# Highland Park Trial

## B. Gap Calculations

Mt Hope Ave Crossing

Weekday Evening Peak Hour Gap Calculation
Weekend Midday Peak Hour Gap Calculation

Weekday Evening Gap Study
Weekend Midday Gap Study

## Mt Hope Avenue Crossing
## Weekday Evening Gap Calculations

| | | |
|---|---|---|
| G = (W/S) + R | W (feet): | 32 |
| | S (ft/sec): | 3.5 |
| | R (sec): | 3 |

| | | |
|---|---|---|
| **Acceptable Gap** | **G (sec) =** | **12.1** |

| | |
|---|---|
| Total available gaps | 16 gaps / 2 hours<br>( 0.13 gaps / min) |

W: Length of crossing
S: pedestrian crossing speed*
R: reaction time*

* Note - MCDOT recommended average pedestrian walking speed is 3.5 ft/s. According to the ITE Traffic Engineering Handbook, 5th Edition, the average pedestrian reaction time (R) is 3 seconds.

## Mt Hope Avenue Crossing
## Weekend Midday Gap Calculations

| | | |
|---|---|---|
| G = (W/S) + R | W (feet): | 32 |
| | S (ft/sec): | 3.5 |
| | R (sec): | 3 |

| | | |
|---|---|---|
| **Acceptable Gap** | **G (sec) =** | **12.1** |

| | |
|---|---|
| Total available gaps | 79 gaps / 2 hours<br>( 0.66 gaps / min) |

W: Length of crossing
S: pedestrian crossing speed*
R: reaction time*

* Note - MCDOT pedestrian walking speed is 3.5 ft/s. According to the ITE Traffic Engineering Handbook, 5th Edition, the average pedestrian reaction time (R) is 3 seconds.

Highland Park / Canalway Trail
Gap study

File Name : Mt Hope & Robinson - Weekday PM
Site Code : 00000000
Start Date : 3/26/2009
Page No : 1

## Directions Printed: Combined

| Start Time | Volume | 2 - 3 | 4 - 5 | 6 - 7 | 8 - 9 | 10 - 11 | 12 - 13 | 14 - 15 | 16 - 17 | 18 - 19 | 20 - 21 | 22 - 23 | 24 - 25 | 26 - 27 | 28 - 29 | >29 | Int. Total | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04:00 PM | 0 | 104 | 31 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 149 | 2 - 3 |
| 04:15 PM | 0 | 75 | 20 | 10 | 5 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 116 | 2 - 3 |
| 04:30 PM | 0 | 88 | 22 | 9 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 | 2 - 3 |
| 04:45 PM | 0 | 81 | 13 | 9 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 2 - 3 |
| Total | 0 | 348 | 86 | 36 | 19 | 7 | 4 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 505 | 2 - 3 |
| 05:00 PM | 0 | 104 | 25 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 136 | 2 - 3 |
| 05:15 PM | 0 | 114 | 17 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 2 - 3 |
| 05:30 PM | 0 | 101 | 21 | 6 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 2 - 3 |
| 05:45 PM | 0 | 81 | 24 | 9 | 10 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 127 | 2 - 3 |
| Total | 0 | 400 | 87 | 23 | 19 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 535 | 2 - 3 |
| Grand Total | 0 | 748 | 173 | 59 | 38 | 8 | 5 | 1 | 3 | 1 | 2 | 0 | 0 | 1 x 2 | 0 | 1 x 2 | 1040 | 2 - 3 |
| Total % | | 71.9 | 16.6 | 5.7 | 3.7 | 0.8 | 0.5 | 0.1 | 0.3 | 0.1 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | | |

2 HR STUDY TOTAL: $\frac{16 \text{ GAPS}}{120 \text{ MIN}} = 0.13$ GAPS/MIN

Highland Park / Canalway Trail
Gap study

File Name : Mt Hope & Robinson - Sat MD
Site Code : 00000000
Start Date : 3/21/2009
Page No : 1

## Directions Printed: Combined

| Start Time | Volume | 2 - 3 | 4 - 5 | 6 - 7 | 8 - 9 | 10 - 11 | 12 - 13 | 14 - 15 | 16 - 17 | 18 - 19 | 20 - 21 | 22 - 23 | 24 - 25 | 26 - 27 | 28 - 29 | >29 | Int. Total | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:30 AM | 0 | 66 | 31 | 5 | 8 | 11 | 5 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 130 | 2 - 3 |
| 11:45 AM | 0 | 54 | 25 | 17 | 8 | 8 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 120 | 4 - 5 |
| Total | 0 | 120 | 56 | 22 | 16 | 19 | 10 | 2 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 250 | 4 - 5 |
| 12:00 PM | 0 | 64 | 22 | 12 | 5 | 7 | 3 | 3 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 121 | 2 - 3 |
| 12:15 PM | 0 | 62 | 27 | 12 | 6 | 3 | 7 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 122 | 2 - 3 |
| 12:30 PM | 0 | 82 | 31 | 18 | 3 | 8 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 146 | 2 - 3 |
| 12:45 PM | 0 | 60 | 21 | 15 | 9 | 1 | 2 | 4 | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 119 | 2 - 3 |
| Total | 0 | 268 | 101 | 57 | 23 | 19 | 14 | 9 | 3 | 6 | 3 | 2 | 2 | 0 | 0 | 1 | 508 | 2 - 3 |
| 01:00 PM | 0 | 78 | 29 | 14 | 7 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 136 | 2 - 3 |
| 01:15 PM | 0 | 64 | 24 | 17 | 5 | 3 | 3 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 123 | 2 - 3 |
| Grand Total | 0 | 530 | 210 | 110 | 51 | 44 | 29 | 12 | 9 | 7 | 3 | 5 | 2 X2 | 2 X 2 | 1 X 2 | 2 X 2 | 1017 | 2 - 3 |
| Total % | | 52.1 | 20.6 | 10.8 | 5.0 | 4.3 | 2.9 | 1.2 | 0.9 | 0.7 | 0.3 | 0.5 | 0.2 | 0.2 | 0.1 | 0.2 | | |

2 HR STUDY TOTAL: $\frac{79 \text{ GAPS}}{120 \text{ MIN}}$ = 0.66 GAPS/MIN

# Highland Park Trial

## C. Accident Rate Calculation

Mt Hope Ave & Robinson Dr

# ACCIDENT RATE CALCULATION

## EQUATIONS

Intersection Volume = (AADT Mainline + AADT Side Street) X 365

Intersection Accidents Per Year = Intersection Accidents / 3 years
(3 years is number of years of accident data)

Intersection Accident Rate = Intersection Accidents Per Year / Intersection Volume

## INTERSECTION RATE

**Mt Hope Avenue & Robinson Drive**

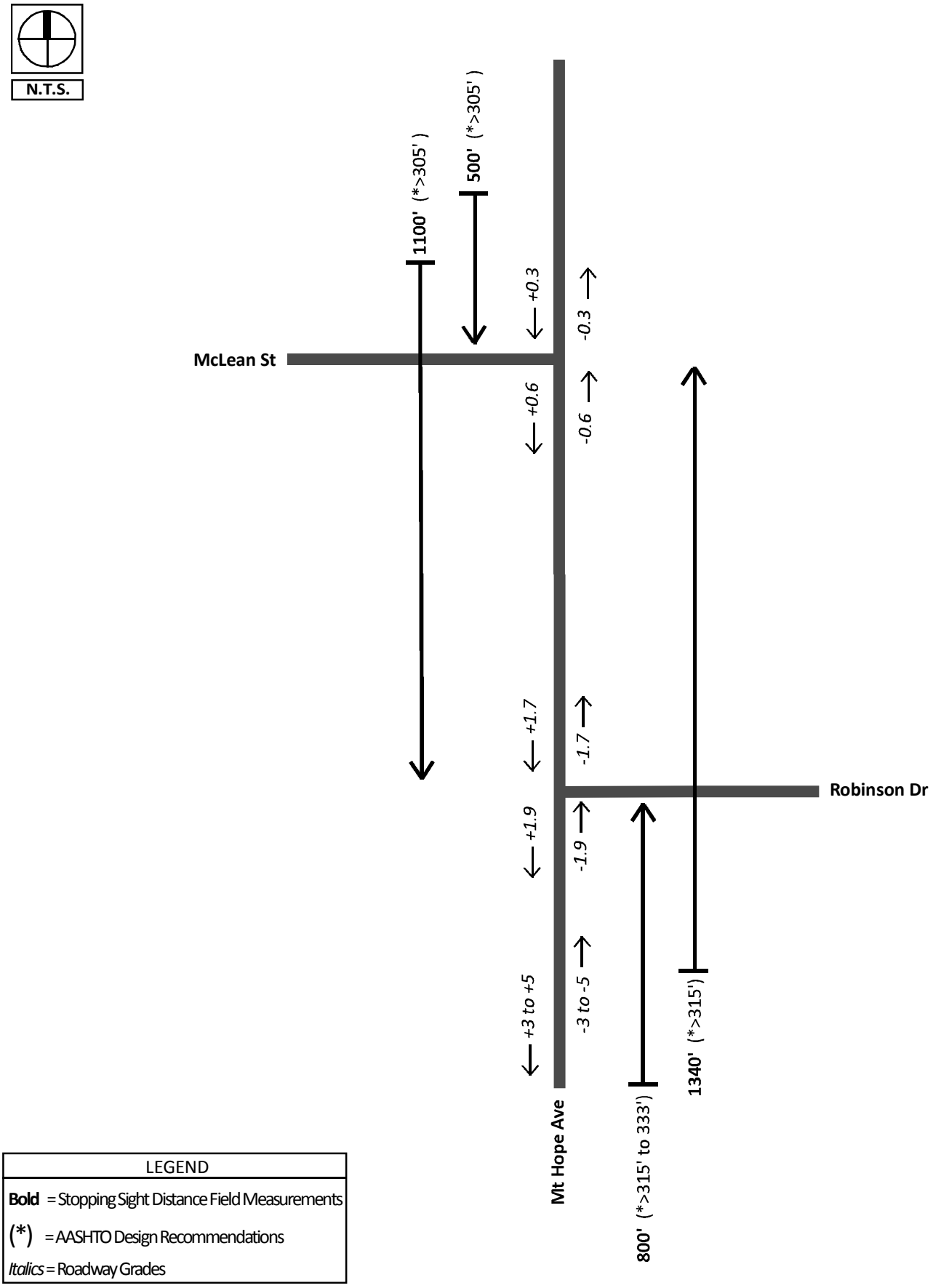
| | | |
|---|---|---|
| AADT Mt Hope Avenue | 19,769 | Vehicles |
| AADT Robinson Dr | 561 | Vehicles |
| Intersection AADT: | 20,330 | Vehicles |
| Intersection Volume: | 7.42 | MEV |
| Intersection Accidents: | 5 | Accidents |
| Intersection Accidents Per Year: | 1.67 | Acc/Yr |
| Intersection Accident Rate: | 0.22 | Acc/MEV |
| City Average Rate: | 0.08 | Acc/MEV |

# Highland Park Trial

## D. Stopping Sight Distance

Field Measurements of Mt Hope Ave at Robinson Dr & McLean St

AASHTO Exhibit 3-1
AASHTO Exhibit 3-2




FISHERASSOCIATES

**Stopping Sight Distance**
**Mt Hope Ave at Robinson Dr & McLean St**

| Metric | | | | | US Customary | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Design speed (km/h) | Brake reaction distance (m) | Braking distance on level (m) | Stopping sight distance Calculated (m) | Stopping sight distance Design (m) | Design speed (mph) | Brake reaction distance (ft) | Braking distance on level (ft) | Stopping sight distance Calculated (ft) | Stopping sight distance Design (ft) |
| 20 | 13.9 | 4.6 | 18.5 | 20 | 15 | 55.1 | 21.6 | 76.7 | 80 |
| 30 | 20.9 | 10.3 | 31.2 | 35 | 20 | 73.5 | 38.4 | 111.9 | 115 |
| 40 | 27.8 | 18.4 | 46.2 | 50 | 25 | 91.9 | 60.0 | 151.9 | 155 |
| 50 | 34.8 | 28.7 | 63.5 | 65 | 30 | 110.3 | 86.4 | 196.7 | 200 |
| 60 | 41.7 | 41.3 | 83.0 | 85 | 35 | 128.6 | 117.6 | 246.2 | 250 |
| 70 | 48.7 | 56.2 | 104.9 | 105 | 40 | 147.0 | 153.6 | 300.6 | 305 |
| 80 | 55.6 | 73.4 | 129.0 | 130 | 45 | 165.4 | 194.4 | 359.8 | 360 |
| 90 | 62.6 | 92.9 | 155.5 | 160 | 50 | 183.8 | 240.0 | 423.8 | 425 |
| 100 | 69.5 | 114.7 | 184.2 | 185 | 55 | 202.1 | 290.3 | 492.4 | 495 |
| 110 | 76.5 | 138.8 | 215.3 | 220 | 60 | 220.5 | 345.5 | 566.0 | 570 |
| 120 | 83.4 | 165.2 | 248.6 | 250 | 65 | 238.9 | 405.5 | 644.4 | 645 |
| 130 | 90.4 | 193.8 | 284.2 | 285 | 70 | 257.3 | 470.3 | 727.6 | 730 |
| | | | | | 75 | 275.6 | 539.9 | 815.5 | 820 |
| | | | | | 80 | 294.0 | 614.3 | 908.3 | 910 |

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 $m/s^2$ [11.2 $ft/s^2$] used to determine calculated sight distance.

**Exhibit 3-1. Stopping Sight Distance**

| Metric | | | | | | | US Customary | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Design speed (km/h) | Stopping sight distance (m) | | | | | | Design speed (mph) | Stopping sight distance (ft) | | | | | |
| | Downgrades | | | Upgrades | | | | Downgrades | | | Upgrades | | |
| | 3 % | 6 % | 9 % | 3 % | 6 % | 9 % | | 3 % | 6 % | 9 % | 3 % | 6 % | 9 % |
| 20 | 20 | 20 | 20 | 19 | 18 | 18 | 15 | 80 | 82 | 85 | 75 | 74 | 73 |
| 30 | 32 | 35 | 35 | 31 | 30 | 29 | 20 | 116 | 120 | 126 | 109 | 107 | 104 |
| 40 | 50 | 50 | 53 | 45 | 44 | 43 | 25 | 158 | 165 | 173 | 147 | 143 | 140 |
| 50 | 66 | 70 | 74 | 61 | 59 | 58 | 30 | 205 | 215 | 227 | 200 | 184 | 179 |
| 60 | 87 | 92 | 97 | 80 | 77 | 75 | 35 | 257 | 271 | 287 | 237 | 229 | 222 |
| 70 | 110 | 116 | 124 | 100 | 97 | 93 | 40 | 315 | 333 | 354 | 289 | 278 | 269 |
| 80 | 136 | 144 | 154 | 123 | 118 | 114 | 45 | 378 | 400 | 427 | 344 | 331 | 320 |
| 90 | 164 | 174 | 187 | 148 | 141 | 136 | 50 | 446 | 474 | 507 | 405 | 388 | 375 |
| 100 | 194 | 207 | 223 | 174 | 167 | 160 | 55 | 520 | 553 | 593 | 469 | 450 | 433 |
| 110 | 227 | 243 | 262 | 203 | 194 | 186 | 60 | 598 | 638 | 686 | 538 | 515 | 495 |
| 120 | 263 | 281 | 304 | 234 | 223 | 214 | 65 | 682 | 728 | 785 | 612 | 584 | 561 |
| 130 | 302 | 323 | 350 | 267 | 254 | 243 | 70 | 771 | 825 | 891 | 690 | 658 | 631 |
| | | | | | | | 75 | 866 | 927 | 1003 | 772 | 736 | 704 |
| | | | | | | | 80 | 965 | 1035 | 1121 | 859 | 817 | 782 |

**Exhibit 3-2. Stopping Sight Distance on Grades**

## Decision Sight Distance

Stopping sight distances are usually sufficient to allow reasonably competent and alert drivers to come to a hurried stop under ordinary circumstances. However, these distances are often inadequate when drivers must make complex or instantaneous decisions, when information is difficult to perceive, or when unexpected or unusual maneuvers are required. Limiting sight distances to those needed for stopping may preclude drivers from performing evasive maneuvers, which often involve less risk and are otherwise preferable to stopping. Even with an appropriate complement of standard traffic control devices in accordance with the MUTCD (**6**), stopping sight distances may not provide sufficient visibility distances for drivers to corroborate advance warning and to perform the appropriate maneuvers. It is evident that there are many locations where it would be prudent to provide longer sight distances. In these circumstances, decision sight distance provides the greater visibility distance that drivers need.

Decision sight distance is the distance needed for a driver to detect an unexpected or otherwise difficult-to-perceive information source or condition in a roadway environment that may be visually cluttered, recognize the condition or its potential threat, select an appropriate speed and path, and initiate and complete the maneuver safely and efficiently (**7**). Because decision sight distance offers drivers additional margin for error and affords them sufficient length to maneuver their vehicles at the same or reduced speed, rather than to just stop, its values are substantially greater than stopping sight distance.

Drivers need decision sight distances whenever there is a likelihood for error in either information reception, decision making, or control actions (**8**). Examples of critical locations where these kinds of errors are likely to occur, and where it is desirable to provide decision sight distance include interchange and intersection locations where unusual or unexpected maneuvers are required, changes in cross section such as toll plazas and lane drops, and areas of concentrated

# APPENDIX D

**NON-STANDARD FEATURE JUSTIFICATION**
**(in accordance with HDM §2.8)**

| | | | |
|---|---|---|---|
| PIN: | 4754.08 | NHS (Y/N): | No |
| Route No. & Name: | Highland Park/Canalway Trail | Functional Class: | Shared-Use Path |
| Project Type: | Path Construction | Design Classification: (AASHTO Class) | NA |
| % Trucks: | N/A | | |
| ADT: | N/A | Terrain: | Level |
| | | Truck Access Rte: | No |

## 1. - Description of Non-Standard Feature

| | | | |
|---|---|---|---|
| Type of Feature (e.g., horizontal curve radius): | Horizontal Curve Radius | | |
| Location: | Multiple Locations | | |
| Standard Value: | 100 feet | Design Speed: | 20 mph |
| Existing Value: | N/A | Safe Operating Speed: | N/A |
| Proposed Value: | Varies (20 to 60 feet) | Safe Operating Speed: | N/A |

## 2. - Accident Analysis

| | |
|---|---|
| Current Accident Rate: | N/A |
| Statewide Rate: | N/A |
| Is the non-standard feature a contributing factor? | N/A |
| Potential for Future Accidents and Accident Severity: | N/A |

## 3. - Cost Estimates

| | |
|---|---|
| Cost to Fully Meet Standards: | $ Unknown |
| Cost(s) For Incremental Improvements: | N/A |

## 4. - Mitigation (e.g., increased superelevation and speed change lane length for a non-standard ramp radius):

Warning signs to inform bicyclists of sharp turn ahead.

## 5. - Compatibility with Adjacent Segments & Future Plans:

N/A

## 6. - Other Factors (e.g., Social, Economic & Environmental):

Available easements and terrain dictate the need for reduced radii curves in some locations. 100' or larger radii curves have been provided wherever feasible.

## 7. - Proposed Treatment (i.e., Recommendation):

Provide reduced horizontal radii as needed.

**NON-STANDARD FEATURE JUSTIFICATION**
**(in accordance with HDM §2.8)**

| | | | |
|---|---|---|---|
| PIN: | 4754.08 | NHS (Y/N): | No |
| Route No. & Name: | Highland Park/Canalway Trail | Functional Class: | Shared-Use Path |
| Project Type: | Path Construction | Design Classification: (AASHTO Class) | NA |
| % Trucks: | N/A | | |
| ADT: | N/A | Terrain: | Level |
| | | Truck Access Rte: | No |

## 8. - Description of Non-Standard Feature

| | | | |
|---|---|---|---|
| Type of Feature (e.g., horizontal curve radius): | ADA Compliant Sidewalk Ramps | | |
| Location: | Multiple Locations | | |
| Standard Value: | N/A | Design Speed: | N/A |
| Existing Value: | N/A | Safe Operating Speed: | N/A |
| Proposed Value: | N/A | Safe Operating Speed: | N/A |

## 9. - Accident Analysis

| | |
|---|---|
| Current Accident Rate: | N/A |
| Statewide Rate: | N/A |
| Is the non-standard feature a contributing factor? | N/A |
| Potential for Future Accidents and Accident Severity: | N/A |

## 10. - Cost Estimates

| | |
|---|---|
| Cost to Fully Meet Standards: | $ Unknown |
| Cost(s) For Incremental Improvements: | N/A |

## 11. - Mitigation (e.g., increased superelevation and speed change lane length for a non-standard ramp radius):

None planned

## 12. - Compatibility with Adjacent Segments & Future Plans:

Not all sidewalks ramps surrounding the project area meet ADA standards. Future projects will be able to address those ramps as well as the ones not brought up to standard on this project.

## 13. - Other Factors (e.g., Social, Economic & Environmental):

ADA requirements dictate that if any sidewalk ramp at an intersection is improved to be ADA compliant then all remaining ramps must be brought up to the standard. Sufficient funding may not be available to improve ramps that are not directly impacted by the trail, therefore at those intersections no improvements will occur.

## 14. - Proposed Treatment (i.e., Recommendation):

Sidewalk ramps will be brought up to ADA standards wherever feasible. The remaining ramps will retain their existing configuration.

# APPENDIX E

FISHERASSOCIATES

135 Calkins Road
Rochester, NY 14623
Phone: 585-334-1310
Fax: 585-334-1361
www.fisherassoc.com

September 23, 2009

Christine Setari
Division of Environmental Permits
NYS Department of Environmental Conservation – Region 8
6274 E. Avon-Lima Road
Avon, New York 14414

**Highland Park/Canalway Connector Trail Project - Wetland Delineation Report**

Dear Christine:

Enclosed is the Wetland Delineation Report prepared for the Highland Park/Canalway Connector Trail, a .pdf of which was sent earlier today. As we have discussed, the proposed alignment of the trail passes through the wooded area to the south/southeast of St. John's proposed Brickstone development on Elmwood Avenue in the Town of Brighton. The trail then continues south along the eastern boundary of the property on which the Monroe Developmental Center is located, and north along the south and west property boundaries of the proposed Brickstone development.

The existing boardwalk within this wooded area would be improved and utilized as park of the proposed Highland Park/Canalway Connector Trail. Minor realignment of the existing trail and the northern end of the boardwalk would be needed to minimize impacts to the wetlands. The maps included in the enclosed report show the location of the existing trail and boardwalk as well as the proposed realignment.

After reviewing the report, please let me know when you are available for an onsite meeting. In the meantime, if you have any questions, please do not hesitate to call me at (585)334-1310 ext. 295 or e-mail me at rschmid@fisherassoc.com.

Sincerely,

**FISHER ASSOCIATES, P.E., L.S., P.C.**

Roseann B. Schmid, P.E.
Project Manager

cc: Tom.Low, Town of Brighton

Project #091001

**New York State Department of Environmental Conservation**
**Division of Fish, Wildlife and Marine Resources**
**Bureau of Habitat**
6274 E. Avon-Lima Road, Avon, New York 14414-9516
**Phone:** (585) 226-2466 • **Fax:** (585) 226-6323
**Website:** www.dec.ny.gov

**Alexander B. Grannis**
**Commissioner**

## Freshwater Wetlands Determination

| NAME | WETLAND ID# | DATE INVESTIGATION CONDUCTED |
|---|---|---|
| Robert Meyers | BR-10 | 10/1/09 |

| ORGANIZATION | WETLAND LOCATION |
|---|---|
| Fisher Associates | TOWN: Brighton County: Monroe |

| STREET ADDRESS |
|---|
| 135 Calkins Rd |

| CITY - VILLAGE - TOWN | STATE | ZIP CODE |
|---|---|---|
| Rochester | NY | 14623 |

RE:

**Highland Park/Canalway Trail Wetland Delineation Report (Fisher Associates, September 2009)**

This letter is in response to your inquiry regarding the applicability of Article 24 (Freshwater Wetland Act) regulations to the parcel of land in question. An investigation was conducted and, based on this determination, the Department of Environmental Conservation finds that the statements checked below apply to the subject property:

X A regulated Freshwater Wetland is located on or within 100 feet of this property, and regulated activities in the wetland or within the 100-foot adjacent area are subject to permit requirements.

☐ There is no currently-mapped regulated Freshwater Wetland on or within 100 feet of this property. No wetland permit is required at this time.

X The project, as described, is within 100 feet of a regulated wetland, and a wetland permit will be required prior to the commencement of the proposed project.

☐ The property contains a regulated wetland and/or is within 100 feet of a wetland boundary, but the described project is located outside the regulated area and will not require a wetland permit.

☐ Please contact the U.S. Army Corps of Engineers (Buffalo office) at 716-879-4330 regarding any federally protected wetlands in the vicinity.

X The boundary of the regulated wetland located on this property has been precisely delineated as follows:

**By Fisher Associates. The Department concurs with the wetland boundaries delineated by Fisher Associates. The 5 wetland areas (identified in the report A-F) are all a part of Freshwater Wetland BR-10. The proposed new trail and boardwalk corridor takes advantage of existing upland and non-wetland, historically filled areas (>50 years BP) to minimize direct wetland impacts.**
**The permit application should include an aerial photo showing the delineated wetlands.**

SIGNED: W. Scott Jones 10/2/09 **Scott Jones** TITLE: **Biologist I (Ecology)**

Department wetland field delineations remain in effect for a period of five years, after which they are subject to revision at the Department's discretion, due to changing site conditions. Measurements of the 100-foot adjacent area are done *horizontally* upland from the wetland boundary, not along the ground surface. The identification of the adjacent area boundary, if done, is the responsibility of the landowner or project sponsor.