APPENDIX A
PUBLIC INPUT SUMMARY

PUBLIC INFORMATION MEETING 1

This appendix summarizes public comments received as of May 13, 2015, including comments received at the first public information meeting held on March 26, 2015 at the Henrietta Town Hall.

MEETING FORMAT

The first public information meeting was held as an open house format with no formal presentation. Seven display stations were set up at the March 26th public information meeting to collect comments and information regarding the Active Transportation Plan.

STATION #1: WELCOME & BENEFITS OF ACTIVE TRANSPORTATION

The welcome station provided an area for attendees to sign in to the meeting as well as receive a brief description of the project background. 29 attendees signed into the meeting. The attendees were asked to rank their preferences related to the Benefits of Active Transportation (health, environmental, social, economic).

- Most support was received for benefits related to Social factors (28%).
- An equal amount of support was received for the benefits related to Health, Environmental, and Economic factors (24% each).

#2: INVENTORY OF EXISTING CONDITIONS MAPS

A large size map of the Town of Henrietta was provided with sticker dots, post-it notes, and pens to receive input on the existing issues, specific problem areas, and recommended improvements. The following comments were received:

- John Street at Jefferson Road - crossing beacon across John Street.
- Connecting to neighboring or adjacent space would be awesome - example Clover Road.
- Protected bike lane where asphalt exists - example Pinnacle near the thruway would be nice.
- More bike lanes throughout town – Calkins and Lehigh Station going east-west is particularly problematic.
- "Being comfortable on my bike, possibly shopping (recumbent bike) –afraid of not being seen."
- Lehigh Valley North Trail is a crucial connecting corridor between West Henrietta/RIT and U of R /city. This corridor should be improved and maintained in winter!
- Narrow bridges - have to move into (near) traffic when passing through.
- The trail needs to go behind the houses not down the residential street.
- Need to have sidewalk or shoulder expanded at Bailey/John Street intersection.
- Very narrow shoulder on Beckwith.
- Walking on Rt. 15 near 1-90 there are no sidewalks, walking can get dicey, what also makes it dangerous is walking near Brooks Rd and over I -90 is on the left side going north is that there is a right turn bleeder lane on the left side so "the shoulder" is a lane.

- I need a safe path on Brighton –Henrietta Town Line Road to get me from 15A to B.H.T.L. Rd to South Clinton – very dangerous.
- Lack of sidewalks universally - need more sidewalks - gaps in sidewalk network.
- Internal connections between stores. Sears and Best Buy are pretty close, but no way to safely walk. Same thing with Target and Lowes.
- Walking/biking route between center of RIT and Park Point is unnecessarily long and circuitous. More direct pathway is needed. I don't care about wetlands.
- Son wants to bike from Wildflower Dr. to Ruth Middle School safely!
- Wider shoulders and traffic calming on Castle Rd, busy road with pedestrians don't mix well.
- Drivers use shoulder as passing lane to get around cars turning left (all along Calkins) from Pinnacle to Henrietta to Pittsford Town Line Rd this puts bikers/cyclists/walkers/runners at risk.
- Drivers use sidewalks on Pinnacle and Calkins to pass cars turning left into neighborhoods.
- Would be good idea to make an active transportation friendly corridor from Pinnacle to Tinker Nature Center.
- Need for more sidewalks to promote walk-ability and increase access to parks and common spaces of Wegmans.
- "I want to go to but I can't because I don't feel safe , so I use a car (most frequently heard comment!)
- No little shoulder – Henrietta has an inherent advantage: many trips are entirely within the town (town resident traveling to town business or town facility), so active transportation infrastructure to facilitate that here makes sense. (although connectivity to the north with Brighton/Rochester and to the east to Pittsford
- Cyclists are more prone to ride on road than paved buffer (Pinnacle), possibly widen for dedicated infrastructure.
- Improve vehicle traffic/ride safety.
- Need universal bike lanes.
- This is a newfound off road bike/hike/nature path connecting RIT (and student shoppers) to the mall.
- Put in N/S sidewalk from St. – Patrick to Calkins
- Bicycles need a lane both sides of Hyland Dr. if RIT path goes through
- Castle Rd – busy cut through road to Pinnacle or E. Henrietta. Shoulders are narrow and there are no sidewalks
- Edgewood Ave access to JCC: no sidewalks and riskiness with train tracks
- Access to parks with more sidewalks available, save on gas if able to walk to parks
- Are neighborhoods prominent in Henrietta? What effect would more organized neighborhoods have on space utilization?

STATION #3: PEDESTRIAN AND BICYCLE LEVEL OF SERVICE & PRIORITY INTERSECTIONS

Pedestrian and Bicycle Level of Service Maps were provided. These maps showed the level of service on major roads within the Town of Henrietta. The Pedestrian Level of Service Model indicates how safe and/or comfortable pedestrians feel while walking alongside a particular roadway (the evaluation is based on user perceptions of a wide range of factors). The Bicycle Level of Service Model provides an evaluation of bicyclists' perceived safety and comfort with respect to motor vehicle traffic and roadway conditions. The following comments were received regarding these maps.

- Narrow shoulders, rolling hills, degraded shoulder.
- Need sidewalk connections(Stonewood Village).

STATION #4: MULTI-USE TRAIL ASSESSMENTS & RUSH HENRIETTA CENTRAL SCHOOLS

Three separate boards were provided for Roth Middle School, Burger Middle School and Vollmer Learning Center, and Rush Henrietta Senior High School. The boards depicted existing safety and connectivity issues, existing bicycling infrastructure, and best practices for walk-ability and bike-ability at schools. The following comments were received:

- Vollmer Learning Center becoming grades 4, 5, and 6.
- Connect neighborhoods west of Roth Access Road.
- Side walk gaps (Tinker Park).
- Sidewalk at Davies @ Finn, thruway Park.
- Children are walking to/from Roth Middle School.

One board/map was provided as an assessment of the Lehigh Valley Trail. The board depicted the limits of the trail within the Town of Henrietta and broke it down into three segments. Zone 1 encompasses the trail between Jefferson Road to Bailey Road along John Street, Zone 2 encompasses the trail between Bailey Road and Veterans Memorial Park, and Zone 3 encompasses the trail from Veterans Memorial Park to the Rush-Henrietta Townline.

- Mall road used by R.I.T. students.
- Lehigh Valley Trail: Reasonable Ratings.
- Agreement between Town and Belfry to block off trail access north of Rt. 90.

STATION #5: PUBLIC TRANSIT & PEDESTRIAN AND BICYCLE DEMAND ASSESSMENT

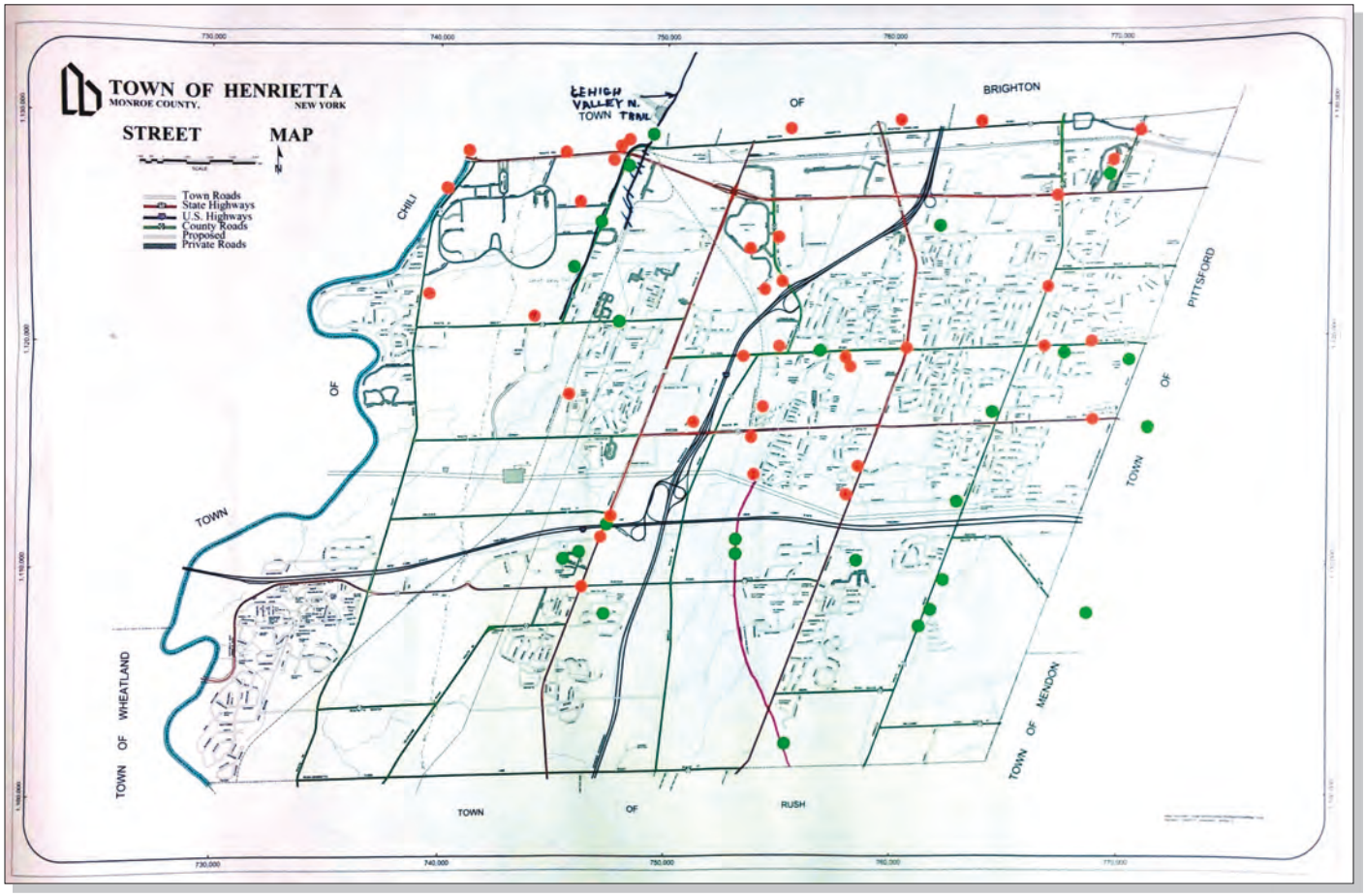
- Demand map Sams Club high, but mall is low, connections between RIT and Mall/Sams Club
- Lack of E/W bike lanes (Lehigh Station?)
- Transit stop improvement
- Transit different routes of frequency (times to certain locations)

STATION #6: ACTIVE TRANSPORTATION TOOLBOX

An active transportation toolbox was provided to show graphic representation of possible improvement options, including: pedestrian infrastructure, bicycle infrastructure, on-road improvements, and off-road improvements.

STATION #7: PARALLEL PROJECTS AND INITIATIVES

Graphics from parallel projects and initiatives were provided for the attendees to review relevant materials. Parallel projects include Town of Brighton Active Transportation Plan, Town of Chili Active Transportation Plan, Regional Bike Share Plan, Regional Trails Initiative Update, and Rochester Multi-Versity Concept.



PUBLIC INFORMATION MEETING 2

The following is a summary of public comments received as of June 11, 2015, including comments received at the second public information meeting held on June 09, 2015 at the Rochester Institute of Technology Golisano Institute for Sustainability. Comments heard outside of the second public meeting have been noted.

MEETING FORMAT

The second public information meeting was held as an open house format with no formal presentation. Preliminary recommendations, as well as existing conditions, were presented as a gallery display of figures at the June 9th public information meeting. The team welcomed feedback and comments regarding the Active Transportation Plan.

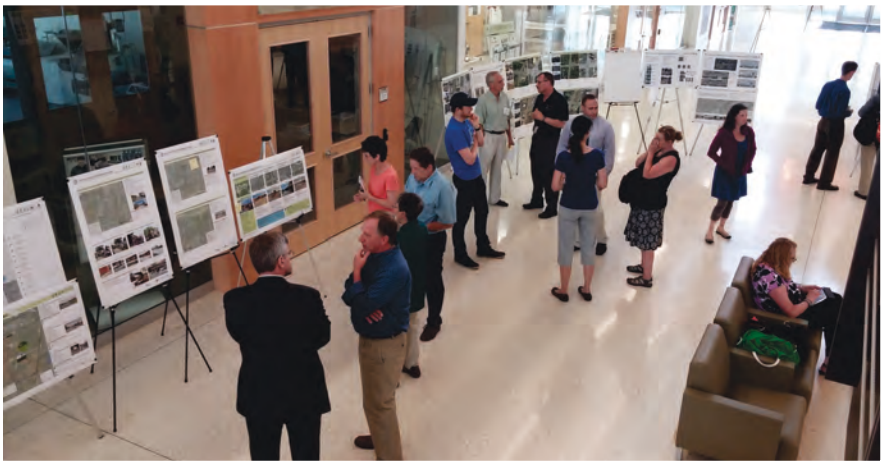
WELCOME AREA

The welcome area provided an area for attendees to sign in to the meeting as well as receive a brief description of the project background. Comment cards were provided to solicit input as well as flip charts strategically located throughout the gallery space. Over 30 attendees signed in and were directed to peruse and interact with the gallery of figures.

EXISTING CONDITIONS FIGURES

The following existing conditions figures were provided. Any recorded comments received during the meeting regarding the associated figures have been documented below.

- Benefits of Active Transportation
- Compilation of Public Information Meeting #1
- RIT Active Transportation Survey & Student Housing Connectivity
- Existing Transit Network
- Demand "Heat Map" Assessment
- Rush-Henrietta School District
- Pedestrian Level of Service Conditions
- Existing Conditions Assessment



Results

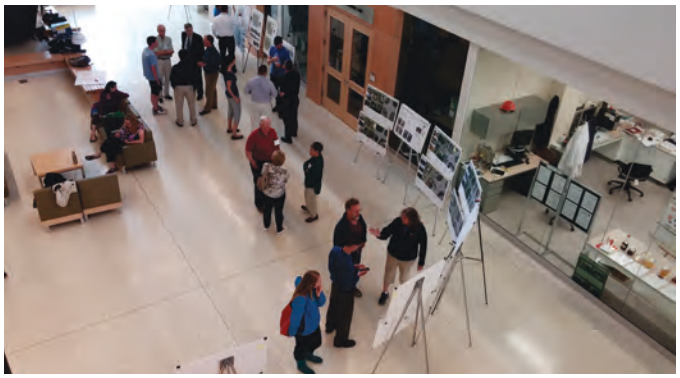
PRELIMINARY RECOMMENDATIONS FIGURES

The following preliminary recommendations figures were provided. Any recorded comments received during the meeting regarding the associated figures have been documented below.

- Priority Sidewalk Gaps
  - *Lack of sidewalks –East Henrietta near Brighton.*
  - *Look at sidewalks directly adjacent to roads (no shoulder) – how to make drivers stay off.*
  - *Badly needed – sidewalk on E. Henrietta Rd from trail to Lehigh St. Road. Neighborhoods have no choice - must bike and walk on E. Henrietta Rd (very dangerous).*
- Lehigh Valley Trail Recommendations

- *Work with Recreation Office and town to create programs/events (running and biking) to promote trails/routes in our town.*
- *Lehigh Valley Trails need to be made passable in winter, being impassable forces bicyclist to ride on Mt. Hope (dicey!).*
- *Winter maintenance LHVT (at least RIT – City) so it is a reliable route year round.*
- *Need to work with other towns/agencies to ensure LHVT is clear, for students and faculty to use.*
- *Utilize green epoxy paint to delineate LHVT- make it more prominent – contact the city.*

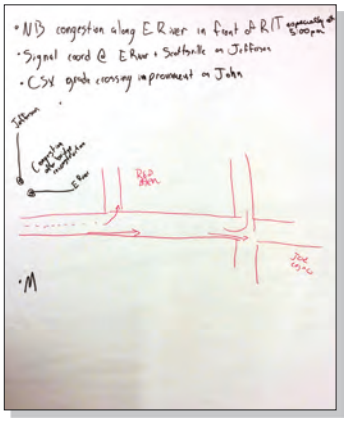
- Mass Transit Recommendations
  - *Bus Route from RIT to INN and Conference Center needs to be modified so students living in Hotel/motel north of there have a stop. So many students walking back up 15 – it's not safe especially at night without lights or sidewalk.*
  - *Bus stop (lack of) at Mt. Hope and Calkins.*
  - ***There are several RTS bus stops around the area of West Henrietta and Marketplace Mall that do not have a sidewalk or even a cement pad (let alone a shelter) where riders can stand while waiting for their bus, so on rainy days they are left to stand in the mud where the grass has been worn away. And worse, in the winter, the snow builds up on the grass, there is no sidewalk that has been cleared, and so riders have no choice but to stand in the busy road to await their bus.*
- East/West Multi-Modal Transportation Corridor: Lehigh Station
- School District Recommendations
  - *Increase amount of sidewalks around schools to encourage walking. At Sherman, many students take the bus even though they live within a 5 minute walking distance because no sidewalk to Lehigh.*
  - *Talk with Rush Henrietta Athletic Association (RHAA) and parents up at baseball fields to see how to reduce congestion and encourage walking/biking.*
  - *How to connect Eagle Ridge neighborhood to ball fields so kids can cross 15 safely?*
  - *Sherman will be redistricted to grades 4-6 in 2017.*
  - *Connect Myrtlewood to RH High School.*
- Priority Intersection Recommendations
- Calkins Road Road Diet
- North/South bike facilities need to be recommended also to connect to Rochester.
- FHWA Separated Bike Lanes
  - ***Some highways have rumble strips along their edge that make a lot of noise when one's car drifts onto the shoulder. I believe the main purpose is to wake up sleepy drivers before they go completely off the road. However, I imagine another benefit would be to alert drivers if they accidentally drifted into a designated biking/walking lane before they hit someone. Even better (though I'm sure more costly) would be little reflector bumps that divide the bike lane as I've seen in parts of Europe. These provide a visual as well as a sound cue to drivers who drift over.*
- Slip Lanes

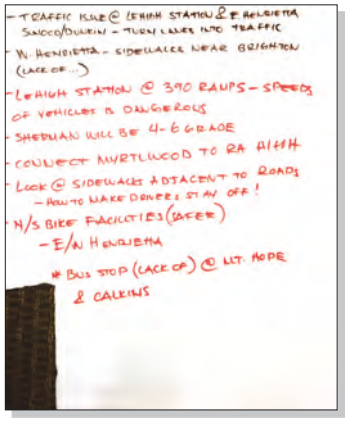


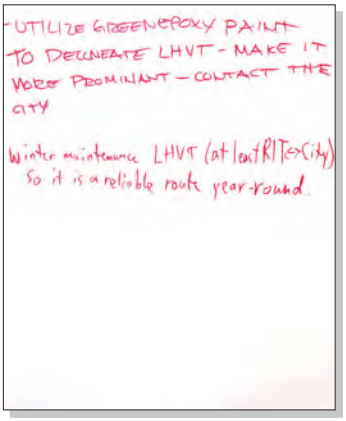
GENERAL COMMENTS

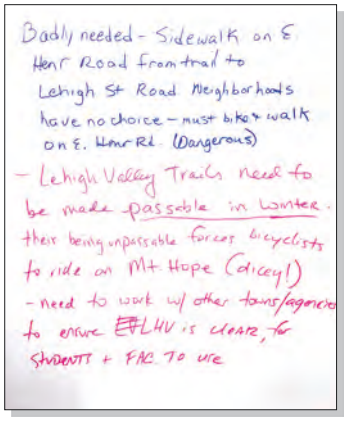
- *This is awesome keep the momentum going.*
- *Traffic issue at Lehigh Station and East Henrietta Sunoco/Dunkin – turn lanes into traffic.*
- *Lehigh Station at 390 ramps speeds of vehicles are dangerous.*
- *NB congestion along E. River in front of RIT especially at 5:00pm.*
- *Signal coordination at E. River and Scottsville on Jefferson.*
- *CSX grade crossing in pavement on John.*
- ***At Erie Station Road (Route 253) and East River Road, create a pedestrian plan that connects folks walking from Riverton to the 7-11/ER Veterinary Hospital mall and to the RTS bus stop on East River Road.*
- ***Create a pedestrian plan that helps people cross the roads at Calkins and Lehigh Station Road. This is a major intersection that links residential folks to commercial enterprise on both roads.*
- ***Collaborate with the Town of Brighton, the City of Rochester, the U of R, RIT, and Monroe County to create a dedicated, safe bicycle and pedestrian path along the Genesee River and, where the riverside is not nearby, along East River Road. This would be as much of a community, business, recreational, and tourist asset as the Erie Canal Path.*
- ***If a dedicated path is not possible, then at least create a bike lane that would be safer than the current, very dangerous route on the non-existent shoulder that bicyclists are forced to ride in the Rochester/Brighton section of East River Road.*
- ***Every city with a major river is taking advantage of their river front for pedestrian and bicycle traffic. Rochester should do the same and allow this natural, scenic beauty be an economic driver, just as Philadelphia, Cincinnati, and other cities are doing.*

** Denotes a comment made outside of the second public meeting









APPENDIX B

RIT ACTIVE TRANSPORTATION SURVEY & RESULTS

In addition, an active transportation survey was used to gather information reflecting the RIT community's current levels of walking and bicycling activity, their attitudes toward walking and bicycling, and their insight into barriers that exist. The content was developed in collaboration with the RIT and survey data was captured using a survey tool developed in-house at RIT. The survey received over 500 results from alumni (7), faculty and staff (176), and students (324). Refer to **Appendix C** for more information.

Town of Henrietta Active Transportation Plan

RIT Community Active Transportation Survey

Introduction

The Town of Henrietta is currently in the early stages of developing an Active Transportation Plan. This survey is designed to gather information reflecting current levels of bicycling and walking activity among RIT students/faculty/staff, their attitudes toward bicycling and walking, and their insight into barriers that presently exist. Thank you for helping shape Henrietta's efforts to become a more accommodating place to walk and ride!

1. Do you live on or off campus?

- □ On
- □ Off

2. If you live off campus, where do you live?

- □ Park Point/Province
- □ Racquet Club Apartments
- □ Rustic Village
- □ Bennington Hills
- □ RIT Inn & Conference Center
- □ Rochester 19th Ward
- □ Rochester East End
- □ Other (please specify) _____

3. Do you own an automobile?

- □ Yes
- □ No

4. Do you own a bicycle?

□ Yes

□ No

5. If you do not own a bicycle, would you be interested in an affordable semester bike rental?

□ Yes

□ No

6. Do you use the bus to get to and from the RIT campus?

□ Yes

□ No

7. If you ride the bus, how convenient do you find the bus service?

___ Very convenient

___ Somewhat convenient

___ Convenient

___ Somewhat inconvenient

___ Very inconvenient

8. Are you aware that you can take a bicycle on RTS busses?

□ Yes

□ No

9. Are you aware of the Erie Canalway Trail near the RIT campus?

□ Yes

□ No

10. Are you aware of the Lehigh Valley Trail near the RIT campus that connects with the Erie Canalway Trail?

□ Yes

□ No

11. Indicate which of the following best describes your personal bicycling experience level?

□ Advanced (you use a bicycle as you would a motor vehicle)

□ Basic (you prefer not to ride on roads with busy and fast motor vehicle traffic)

□ Child or novice

12. Tell us about how often and why you ride a bike:

In a typical week of the past year, how often have you ridden a bicycle for the following reasons? Choose all that apply.

	1 day/wk	**2 days/wk**	**3 days/wk**	**4 days/wk**	**5 days/wk**	**6 days/wk**	**7 days/wk**	**Average distance (round trip)**
Travel to Work	□	□	□	□	□	□	□	
Travel to Shopping	□	□	□	□	□	□	□	
Travel to School	□	□	□	□	□	□	□	
Physical Exercise	□	□	□	□	□	□	□	
Travel to Event / Social Destination	□	□	□	□	□	□	□	
Leisure (no specific destination)	□	□	□	□	□	□	□	

13. To what degree does your bicycling vary by season?

□ None

□ Somewhat

□ Significantly

14. Tell us about how often and why you walk:

In a typical week of the past year, how often have you walked for the following reasons?

Choose all that apply.

	1 day/wk	2 days/wk	3 days/wk	4 days/wk	5 days/wk	6 days/wk	7 days/wk	Average distance (round trip)
Travel to Work	□	□	□	□	□	□	□	
Travel to Shopping	□	□	□	□	□	□	□	
Travel to School	□	□	□	□	□	□	□	
Physical Exercise	□	□	□	□	□	□	□	
Travel to Event / Social Destination	□	□	□	□	□	□	□	
Leisure (no specific destination)	□	□	□	□	□	□	□	

15. To what degree does your walking activity vary by season?

- □ None
- □ Somewhat
- □ Significantly

16. For which of the following reasons do you choose to ride a bicycle:

Choose all that apply.

- □ Exercise/Personal Health
- □ Fuel Cost Savings
- □ Environmental Consciousness
- □ Convenience
- □ Cannot or Choose Not to Drive a Car
- □ Other (please specify) _____

17. For which of the following reasons do you choose to walk:

Choose all that apply.

- □ Exercise/Personal Health
- □ Fuel Cost Savings
- □ Environmental Consciousness
- □ Convenience
- □ Cannot or Choose Not to Drive a Car
- □ Other (please specify) _____

18. What do you consider to be the primary barriers to bicycling to in Henrietta that keeps you from bicycling more often (please rank as many as apply, with "1" representing the most significant barrier):

___ Travel time

___ Travel flexibility

___ Safety (with respect to motor vehicle traffic)

___ Personal security

___ Availability of secure, weather-protected bicycle parking

___ Availability of end-of-trip amenities (showers, lockers, etc.)

___ Winter surface conditions

___ Other (specify) _____

19. What do you consider to be the primary barriers to walking in Henrietta that prevent you from walking more often (please rank as many as apply, with "1" representing the most significant barrier):

___ Travel time

___ Travel flexibility

___ Safety (with respect to motor vehicle traffic)

___ Personal security

___ Availability of end-of-trip amenities (showers, lockers, etc.)

___ Winter surface conditions

___ Other (specify) _____

20. The provision of which facility types or amenities would be most likely to increase your current level of bicycling and/or walking activity (please rank as many as apply, with "1" representing the most desired facility/amenity type):

___ Signed bicycle routes

___ Bicycle boulevards (low-volume and low-speed streets that have been optimized for bicycle travel through treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments)

___ Designated (signed and marked) on-street bike lanes

___ Sidewalks

___ Improved sidewalk maintenance

___ Shared use paths (adjacent to road)

___ Shared use paths (not adjacent to road)

___ Pedestrian signals and crosswalks at intersections

___ Availability of secure, weather-protected bicycle parking

___ Availability of end-of-trip amenities (showers, lockers, etc.)

___ Availability of a bike share program

___ Other (specify) _____

21. Please list up to five roadway segments (name-from-to format - e.g., Jefferson Rd between Marketplace Mall and Park Point) within the Town of Henrietta which you feel would most benefit from a bicycle and/or pedestrian facility (sidewalk, bike lane, or shared use path) and indicate the needed facility type.

1.

2.

3.

4.

5.

22. Please list up to five specific locations in Henrietta where a spot-specific improvement (intersection improvement, mid-block crossing, maintenance issue, hazard, etc.) is needed to improve bicycling and/or walking conditions and specify the needed improvement type.

1.

2.

3.

4.

5.

23. Do you have any special needs that you would like to see addressed in the Town of Henrietta Active Transportation Plan?

_____

_____

_____

_____

_____

_____

_____

_____

_____

24. Other Comments

Please use the space below to provide any other comments you may have regarding bicycling and walking in Henrietta

_____

_____

_____

_____

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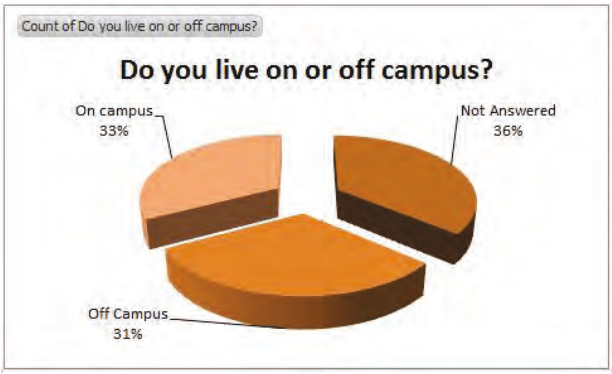
RIT ACTIVE TRANSPORTATION SURVEY RESULTS

Q.1



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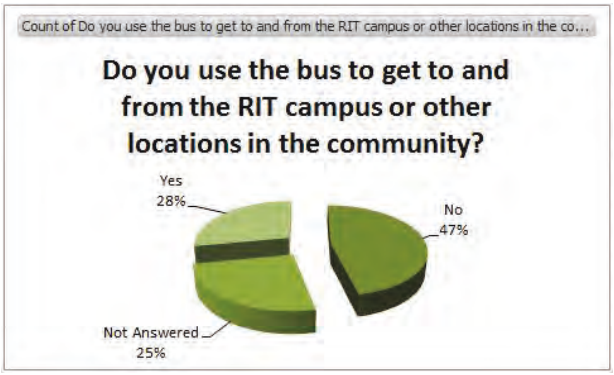

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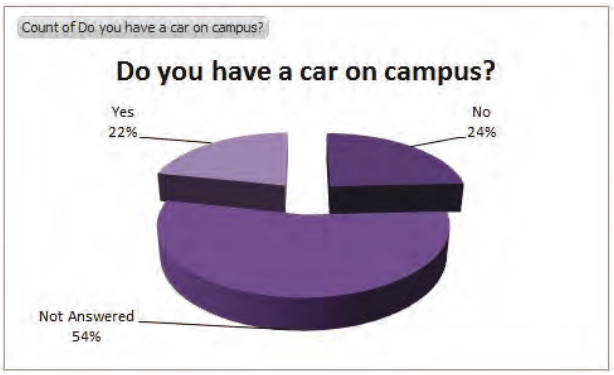

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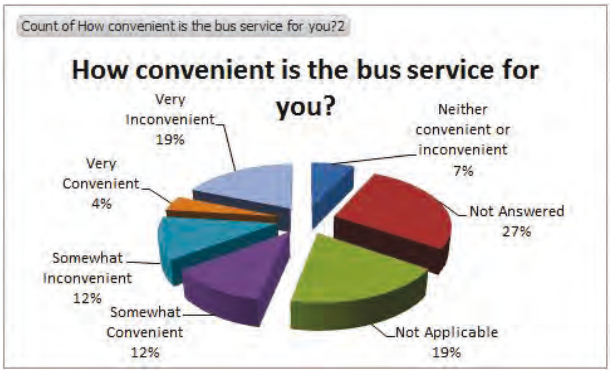

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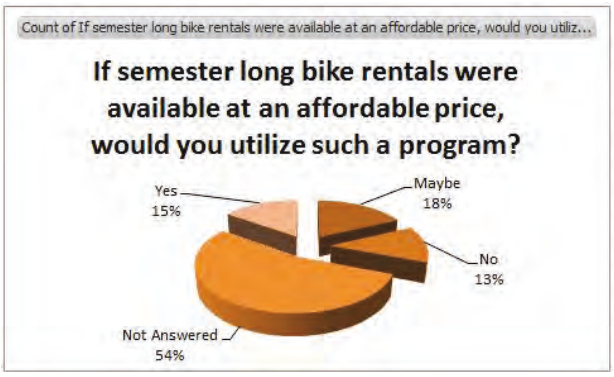
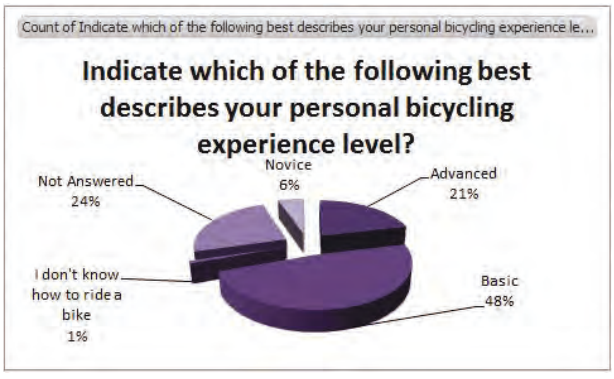
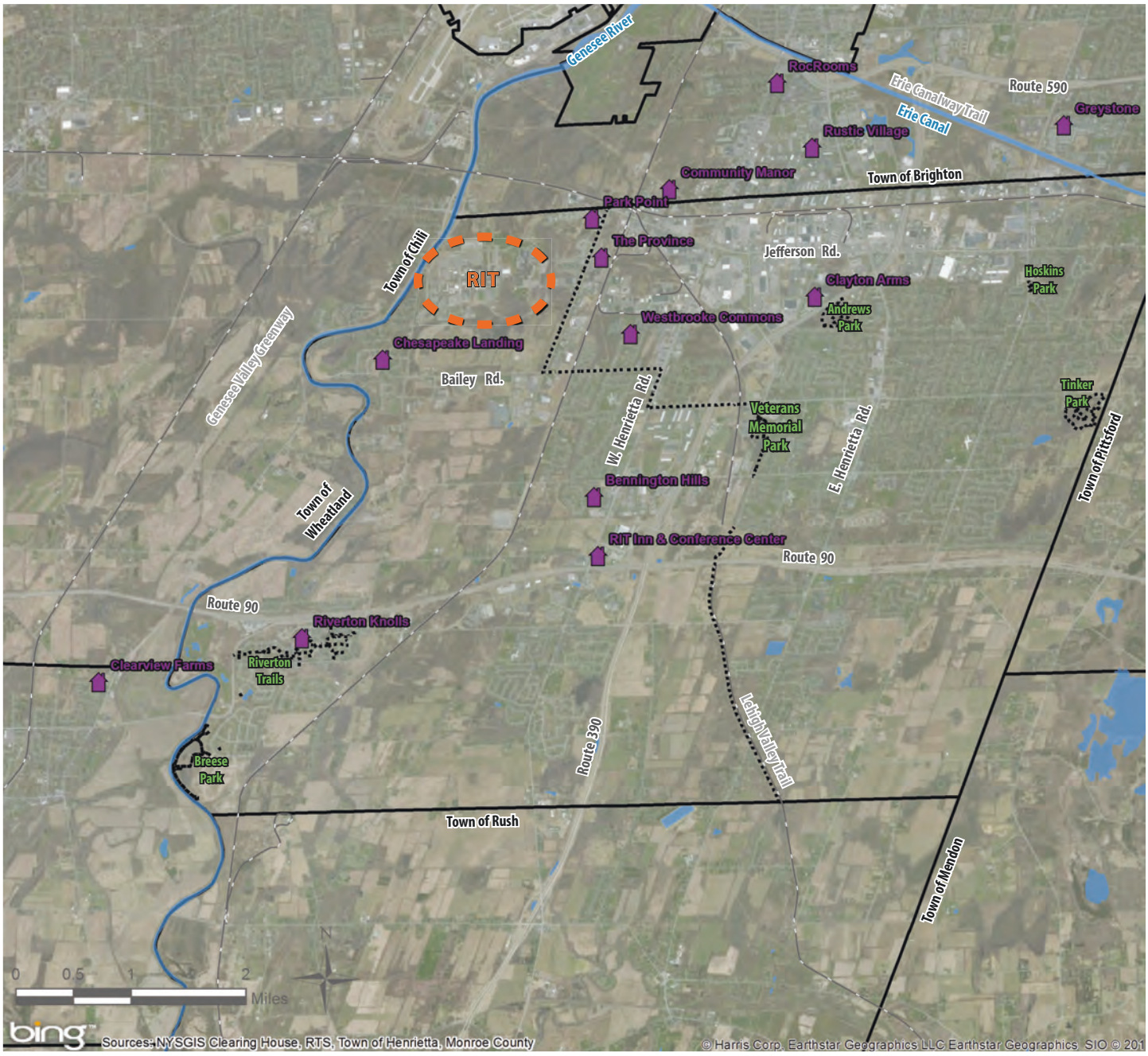


Q.11



RIT OFF CAMPUS HOUSING

LOCATIONS BASED ON SURVEY DATA RECEIVED FROM QUESTION #2



APPENDIX C
RIT TRANSPORTATION PETITIONS

From: Nicholas V. Giordano (Student Employee) [mailto:sgpres@rit.edu]
Sent: Wednesday, June 10, 2015 1:31 PM
Subject: RIT SG: Follow-Up from Open House

Hello,

This is Nick, the RIT Student Government President. Thanks for taking a few minutes to chat with me yesterday at the Open House! Glad to see the efforts underway to improve walking and bicycling infrastructure, it'll be a huge improvement in quality of life for RIT students.

Below is a list of petitions created by RIT students related to Parking, bicycling, pedestrians and Transportation that may be of use to you throughout your consulting and plan-making. Let me know if you have any questions or want to chat.

Regards,

Nick Giordano
President, Student Government
Rochester Institute of Technology
Email: sgpres@rit.edu
call/text: 585-402-3799

_____

List of some of the Parking/Transportation Petitions from RIT Students (from Sept 2014):

Buses/Shuttles:

- Buses #68, #67, #73
- Bus to Downtown
- RIT bus stop to U of R College Town
- Renew contract with RTS
- Late bus to RIT INN on weekends
- Send Another RIT Inn/Racquet Club Weekend Shuttle
- Send More RIT Weekend Shuttles
- Bus stop at the Gym/Field House
- Colony needs double buses in the morning
- Add early morning Rustic Village only shuttle
- A better Weekend Shuttle
- Early Morning Bus
- Bring Back the 9AM Bus
- Add bus stops in Bennington Hills
- Early Morning Bus Services.
- Add a Bus Stop near UC (Blue complexes)
- Shovel the sidewalks before 5AM or get a shuttle to run before 6
- Keep the RIT INN and Racquet Club Bus Routes Separate Unitl 10:00PM
- Free shuttle between 7.19pm and 8.33pm
- Regulate the RIT Bus System so that it is true to schedule
- Extended normal bus service to Colony and Province
- Extend the Night Shuttle for Commuters
- Two Express RIT INN Busses
- Revamp Shuttle service
- RIT and UoR Bus Shuttle Services Collaborates to Expand Travel Options

- Add stop for free buses at Crittenden
- Additional RIT shuttle/rideshare program

Pedestrian/Bicycles:

- Winter Bicycle Housing
- More Bike Racks
- Safer Conditions for Cyclists and Pedestrians

Parking/Facilities:

- Parking Passes for Student Employees
- Build Parking Garage
- Please fill the potholes that destroy our cars!
- Resurfacing loop around Perkins
- Repaving and Resurfacing of Roads and Parking Lots
- Make Crosswalks on campus more visible to Drivers

Taxi/Other Transport:

- End ties with "Apple Transportation" taxi service
- ZipCars on Campus (completed!)
- Provide New/Additional Cab Company
- Make a deal with a different taxi company

Priority Intersection Field Inspection – December 19, 2014

Winton Road (NB/SB)/Jefferson Road (EB/WB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgcnM2WmtuTXhuakE&usp=sharing)

- New sidewalk has been installed on the NE, NW, and SW corners of the intersection as a result of a corridor sidewalk installation project
- ADA pads are present
- Right-turn overlap signal phase for SB right traffic
- 7 second green + 22 second countdown for crosswalk timing
    - Pedestrian feedback when button has been activated
    - Pedestrian countdown signals on all approaches
- Crossing distances
    - SB approach: 83’
    - WB approach: 92’
    - NB approach: 76’
    - EB approach: 92’
- Standard crosswalk design
- High-volume intersection
- Jefferson Road: 45 MPH
- Winton Road SB: 40 MPH
- Winton Road NB: 35 MPH
- Turn radii consistent with heavy volume, large vehicle intersection
- Asphalt transitions to existing sidewalk on NE and NW corners

Jefferson Road (EB/WB)/John Street (NB/SB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgWVlyVHhqcU9Gbmc&usp=sharing)

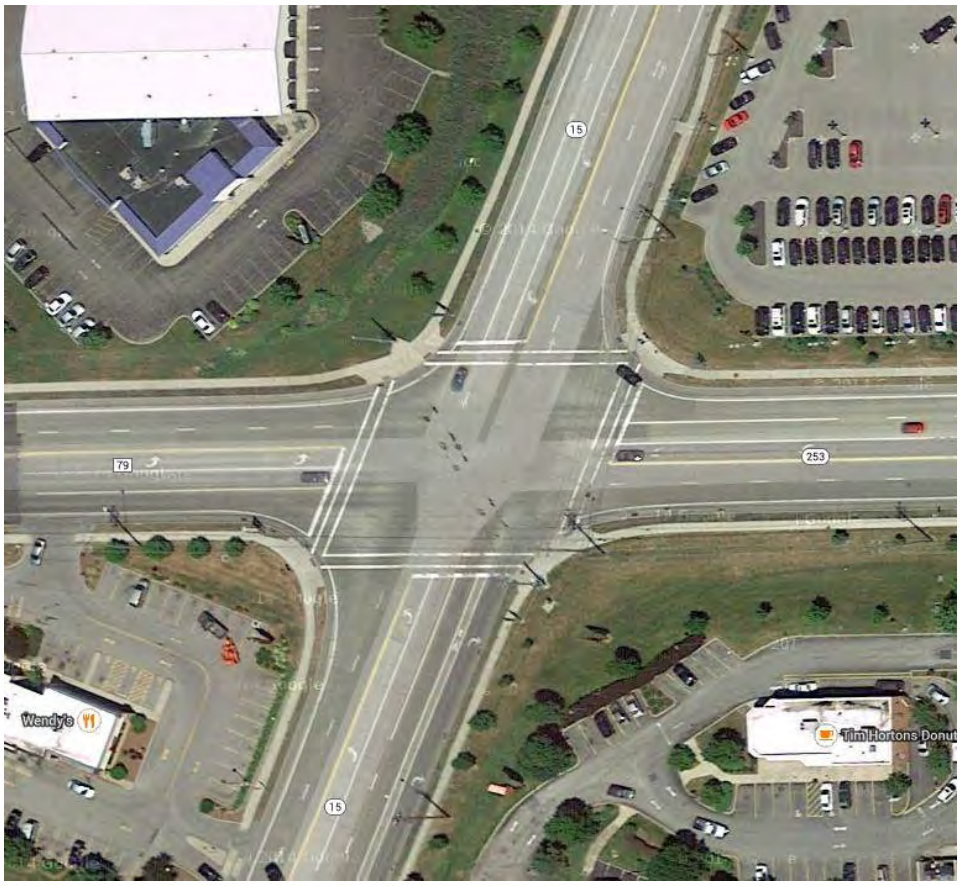
- No pedestrian signals for NB, WB, and SB approaches
- No sidewalk on NE corner
- ADA pads are present
- No distinct crossing design for Lehigh Valley Trail
- Skewed intersection creates large curb radii
- 7 second green + 20 second countdown for crosswalk timing
- Degraded pavement quality in front of curb ramps
- Bus stop without waiting pad
- Worn walking path on NB side of northbound approach
- Degraded sidewalk on EB approach
- Pedestrian actuation button location on NW corner may be tough to reach for people in wheelchairs
- Crossing distances
    - SB approach: 107’ (no crosswalk)
    - WB approach: 80’ (no crosswalk)
    - NB approach: 101’
    - EB approach: 80’
- Jefferson Road: 45 MPH
- John Street: 35 MPH
- When gates are down for train crossing, NB approach has a red light
    - Can creates NB queues over 450’
- No shoulder space for bicyclists

Bailey Road (EB/WB)/East River Road (NB/SB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgYXZHdnRuY1VGRGs&usp=sharing)

- No sidewalk on WB, SB, and NB approaches
- No pedestrian signals (signalized intersection)
- Adjacent expanding residential community
- Crossing distances
    - SB approach: 60’ (no crosswalk)
    - WB approach: 54’ (no crosswalk)
    - NB approach: 65’ (no crosswalk)
    - EB approach: 44’ (no crosswalk)
- Sidewalk approach intersection on EB approach on south side on roadway
- East River Road: 40 MPH
- Bailey Road: 35 MPH
- Student housing for RIT students south of intersection elevates the frequency of pedestrians/bicyclists
- Shoulder space is present for bicyclists to ride on and stop on waiting for traffic signal

Lehigh Station Road (EB/WB)/West Henrietta Road (NB/SB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgQTJseTJfeFdaX28&usp=sharing)

- Pedestrian countdown signals
    - East/West crosswalks: 7 seconds + 20 seconds
    - North/South crosswalks: 7 seconds + 18 seconds
- Pedestrian button on NE corner crossing Lehigh Station Road is not working
- Lack of pedestrian connections to Wendy's/Tim Hortons
- Standard crosswalk design
- Bus stops have waiting pads
- Crossing distances
    - SB approach: 118'
    - WB approach: 107'
    - NB approach: 124'
    - EB approach: 113'
- Skewed intersection creates large curb radii
    - May increase speeds of motorists turning onto approaches – must be aware of pedestrians/wheelchair users in crosswalks
- Northbound bike lane
    - Lack of signage indicating lane to motorists and bicyclists
- Lehigh Station Road: 40 MPH
- West Henrietta Road: 45 MPH
- Can be challenging for bicyclists to cross travel lanes to turn left – wide approaches
- Shoulder space for bicyclists to ride on
- Snow piles in front of curb ramps



Lehigh Station Road (EB/WB)/Middle Road (NB/SB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgYURnUHNlc0NpNjQ&usp=sharing)

- No pedestrian signals
- ADA pads at curb ramps
    - ADA pads are loose and degrading
- Sidewalk to nowhere on WB approach
- Worn walking paths slightly visible
- Adjacent I-390 ramps
- Atypical stop bar design on WB approach
    - Stop bar extends beyond curb ramp – pedestrians would essentially cross between vehicles
- No sidewalk on SB and NB approaches
- Crossing distances
    - SB approach: 72’ (no crosswalk)
    - WB approach: 71’-94’ (no crosswalk, depending on where pedestrian crosses)
    - NB approach: 83’ (no crosswalk)
    - EB approach: 110’ (no crosswalk)
- Skewed intersection creates large curb radii
- Lehigh Station Road: 40 MPH
- Middle Road: 45 MPH

Lehigh Station Road (EB/WB)/East Henrietta Road (NB/SB)
Photos (https://drive.google.com/folderview?id=0By7QCNWvtrsgVzFHYmFYX0FRQ0k&usp=sharing)

- Pedestrian countdown signals
    - East/West crosswalks: 10 seconds + 18 seconds
    - North/South crosswalks: 7 seconds + 18 seconds
- Nearby Rush-Henrietta HS contributes to higher volumes of school related pedestrian crossings
    - Pedestrian generators adjacent intersection may increase frequency for pedestrians
- ADA pads are present
- Red brick design next to sidewalk indicates an historically significant area
    - East Henrietta Village
- No Turn On Red restrictions on EB, WB, and NB approaches
    - Time dependent
    - EB/WB right-turn overlap phasing
- Old mile-marker posts half buried at the intersection corners
- No buffer space between sidewalk and roadway
- Opportunity to enhance the area's sense of place?
- Crossing distances
    - SB approach: 70'
    - WB approach: 90'
    - NB approach: 76'
    - EB approach: 80'
- Lehigh Station Road: 35 MPH
- Middle Road: 35 MPH
- NE traffic signal pole located in middle of sidewalk and in middle of curb ramp landing pad
- ADA pads are present

APPENDIX E
PEDESTRIAN AND BICYCLE LEVEL OF SERVICE MODELS

APPENDIX C: BICYCLE AND PEDESTRIAN LEVEL OF SERVICE MODELS

Bicycle Level of Service Model. The statistically-calibrated mathematical equation entitled the *Bicycle Level of Service*[1] *Model (Version 2.0)* was used as the foundation of Henrietta's existing bicycling conditions evaluation. This *Model* is the most accurate method of evaluating the bicycling conditions of shared roadway environments. It uses the same measurable traffic and roadway factors that transportation planners and engineers use for other travel modes. With statistical precision, the *Model* clearly reflects the effect on bicycling suitability or "compatibility" due to factors such as roadway width, bike lane widths and striping combinations, traffic volume, pavement surface conditions, motor vehicles speed and type, and on-street parking.

The *Bicycle LOS Model* is based on the proven research documented in *Transportation Research Record 1578* published by the Transportation Research Board of the National Academy of Sciences. It was developed with a background of over 100,000 miles of evaluated urban, suburban, and rural roads and streets across North America. It now forms the basis for the bicycle level of service methodology contained in the *Highway Capacity Manual*. Many urbanized area planning agencies and state highway departments are using this established method of evaluating their roadway networks. These include metropolitan areas across North America such as Atlanta GA, Baltimore MD, Birmingham AL, Philadelphia PA, San Antonio TX, Houston TX, Buffalo NY, Anchorage AK, Lexington KY, and Tampa FL as well as state departments of transportation such as, Delaware Department of Transportation (DelDOT), New York State Department of Transportation (NYDOT), Maine Department of Transportation (MeDOT) and others.

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[1] Landis, Bruce W. "Real-Time Human Perceptions: Toward a Bicycle Level of Service" *Transportation Research Record 1578*, Transportation Research Board, Washington DC 1997 (see Appendix A).

Widespread application of the original form of the *Bicycle LOS Model* has provided several refinements. Application of the *Bicycle LOS Model* in the metropolitan area of Philadelphia resulted in the final definition of the three effective width cases for evaluating roadways with on-street parking. Application of the *Bicycle LOS Model* in the rural areas surrounding the greater Buffalo region resulted in refinements to the "low traffic volume roadway width adjustment". A 1997 statistical enhancement to the *Model* (during statewide application in Delaware) resulted in better quantification of the effects of high-speed truck traffic [see the $SP_t(1+10.38HV)^2$ term]. As a result, *Version 2.0* (now with FDOT-approved truck volume adjustment factor included) has the highest correlation coefficient ($R^2 = 0.77$) of any form of the *Bicycle LOS Model*.

Version 2.0 of the *Bicycle LOS Model* has been employed to evaluate the roads and streets that comprise the TPO's study network. Its form is shown below:

$$\text{Bicycle LOS} = a_1 \ln (Vol_{15}/L_n) + a_2 SP_t(1+10.38HV)^2 + a_3(1/PR_5)^2 + a_4 (W_e)^2 + C$$

Where:

Vol_{15} = Volume of directional traffic in 15 minute time period

$$Vol_{15} = (ADT \times D \times K_d) / (4 \times PHF)$$

where:
ADT = Average Daily Traffic on the segment or link
D = Directional Factor
K_d = Peak to Daily Factor
PHF = Peak Hour Factor

L_n = Total number of directional *through* lanes

SP_t = Effective speed limit

$$SP_t = 1.1199 \ln(SP_p - 20) + 0.8103$$

where:
SP_p = Posted speed limit (a surrogate for average running speed)

HV = percentage of heavy vehicles (as defined in the *Highway Capacity Manual*)

PR_5 = FHWA's five point pavement surface condition rating

W_e = Average effective width of outside through lane:

where:

$W_e = W_v$ - (10 ft x % OSPA) and $W_l = 0$

$W_e = W_v + W_l$ (1 - 2 x % OSPA) and $W_l > 0$ & $W_{ps} = 0$

$W_e = W_v + W_l$ - 2 (10 x % OSPA) and $W_l > 0$ & $W_{ps} > 0$ and a bikelane exists

where:

W_t = total width of outside lane (and shoulder) pavement

OSPA = percentage of segment with occupied on-street parking

W_l = width of paving between the outside lane stripe and the edge of pavement

W_{ps} = width of pavement striped for on-street parking

W_v = Effective width as a function of traffic volume

and:

$W_v = W_t$ if ADT > 4,000veh/day

$W_v = W_t(2\text{-}0.00025 \times ADT)$ if ADT $\leq$ 4,000veh/day, and if the street/road is undivided and unstriped

a_1: 0.507 a_2: 0.199 a_3: 7.066 a_4: - 0.005 C: 0.760

(a_1 - a_4) are coefficients established by multi-variate regression analysis.

The *Bicycle LOS* score resulting from the final equation is stratified into service categories A, B, C, D, E, and F (according to the ranges shown in Table D1) to reflect users' perception of the road segment's level of service for bicycle travel.

TABLE D1 Bicycle Level of Service Categories

LEVEL OF SERVICE	BLOS SCORE
A	≤ 1.5
B	> 1.5 and ≤ 2.5
C	> 2.5 and ≤ 3.5
D	> 3.5 and ≤ 4.5
E	> 4.5 and ≤ 5.5
F	> 5.5

This stratification is in accordance with the linear scale established during the referenced research (i.e., the research project bicycle participants' aggregate response to roadway and traffic stimuli).

Data Collection/Inventory Guidelines

Following is the list of data required for computation of the *Bicycle LOS* scores as well as the associated guidelines for their collection and compilation into the programmed database.

Average Daily Traffic (ADT)

ADT is the average daily traffic volume on the segment or link. The programmed database will convert these volumes to Vol_{15} (volume of directional traffic every fifteen minutes) using the Directional Factor (D), Peak to Daily Factor (K_d) and Peak Hour Factor (PHF) for the road segment.

Percent Heavy Vehicles (HV)

Percent HV is the percentage of heavy vehicles (as defined in the *Highway Capacity Manual*).

Number of lanes of traffic (L)

L reflects the total number of *through* traffic lanes of the road segment and its configuration (D = Divided, U = Undivided, OW = One-Way, S = Two-Way Left Turn Lane). The programmed database converts these lanes into directional lanes.

Posted Speed Limit (S_p)

S_p is recorded as posted.

W_t - Total width of pavement

W_t is measured from the center of the road, yellow stripe, or (in the case of a multilane configuration) the lane separation striping to the edge of pavement or to the gutter pan of the curb.

W_l - Width of pavement between the outside lane stripe and the edge of pavement

W_l is measured from the outside lane stripe to the edge of pavement or to the gutter pan of the curb. When there is angled parking adjacent to the outside lane, W_l is measured from the outside lane stripe to the traffic-side end of the parking stall stripes.

Width of pavement is the pavement striped for on-street parking (W_{ps})

W_{ps} is recorded only if there is parking to the right of a striped bike lane (not if the striped parking area is immediately adjacent to the outside lane).

OSPA %

OSPA% is the estimated percentage of the segment (excluding driveways) along which there is occupied on-street parking at the time of survey.

Pavement Condition (PC)

PC is the pavement condition of the motor vehicle travel lane according to the FHWA's five-point pavement surface condition rating shown below in Figure D1.

Designated Bike Lane

A "Y" is coded if there is a signed and marked bike lane on the segment; otherwise "N" is entered.

RATING	PAVEMENT CONDITION
5.0 (Very Good)	Only new or nearly new pavements are likely to be smooth enough and free of cracks and patches to qualify for this category.
4.0 (Good)	Pavement, although not as smooth as described above, gives a first class ride and exhibits signs of surface deterioration
3.0 (Fair)	Riding qualities are noticeably inferior to those above; may be barely tolerable for high-speed traffic. Defects may include rutting, map cracking, and extensive patching.
2.0 (Poor)	Pavements have deteriorated to such an extent that they affect the speed of free-flow traffic. Flexible pavement has distress over 50 percent or more of the surface. Rigid pavement distress includes joint spalling, patching, etc.
1.0 (Very Poor)	Pavements that are in an extremely deteriorated condition. Distress occurs over 75 percent or more of the surface.

Source: U.S. Department of Transportation. Highway Performance Monitoring System-Field Manual. Federal Highway Administration. Washington, DC, 1987.

Figure D1 Pavement Condition Descriptions

The *Pedestrian Level of Service (Pedestrian LOS) Model*[1] will be used for the evaluation of walking conditions. This model is the most accurate method of evaluating the walking conditions within shared roadway environments. It uses the same measurable traffic and roadway factors that transportation planners and engineers use for other travel modes. With statistical precision, the *Model* clearly reflects the effect on walking suitability or "compatibility" due to factors such as roadway width, presence of sidewalks and intervening buffers, barriers within those buffers, traffic volume, motor vehicles speed, and on-street parking. The form of the *Pedestrian Level of Service Model*, and the definition of its terms are as follows:

$$\text{Ped LOS} = -1.2276 \ln (W_{ol} + W_l + f_p \times \%OSP + f_b \times W_b + f_{sw} \times W_s) + 0.0091 (Vol_{15}/L) + 0.0004 SPD^2 + 6.0468$$

Where:

W_{ol} = Width of outside lane (feet)
W_l = Width of shoulder or bike lane (feet)
f_p = On-street parking effect coefficient (=0.20)
%OSP = Percent of segment with on-street parking
f_b = Buffer area barrier coefficient (=5.37 for trees spaced 20 feet on center)
W_b = Buffer width (distance between edge of pavement and sidewalk, feet)
f_{sw} = Sidewalk presence coefficient
$= 6 - 0.3W_s$
W_s = Width of sidewalk (feet)
Vol_{15} = average traffic during a fifteen (15) minute period
L = total number of (through) lanes (for road or street)
SPD = Average running speed of motor vehicle traffic (mi/hr)

The Pedestrian LOS score resulting from the final equation is pre-stratified into service categories "A, B, C, D, E, and F", according to the ranges shown below, which reflect users' perception of the road segments level of service for pedestrian travel. This stratification is in accordance with the linear scale established during the research (i.e., the research project participants' aggregate response to roadway and traffic stimuli).

[1] Landis, B.W., V.R. Vattikitti, R.M. Ottenberg, D.S. McLeod, M. Guttenplan, Modeling the Roadside Walking Environment: Pedestrian LOS, *Transportation Research Record 1773*, Transportation Research Board, National Research Council, Washington, DC, 2001.

Pedestrian Level-of-Service Categories

LEVEL-OF-SERVICE	Pedestrian LOS Score
A	≤ 1.5
B	> 1.5 and ≤ 2.5
C	> 2.5 and ≤ 3.5
D	> 3.5 and ≤ 4.5
E	> 4.5 and ≤ 5.5
F	> 5.5

The *Pedestrian LOS Model* is used by planners and engineers throughout the United States in a variety of planning and design applications. The *Pedestrian LOS Model* can be used to conduct a benefits comparison among proposed sidewalk/roadway cross-sections, identify roadways that are candidates for reconfiguration for sidewalk improvements, and to prioritize and program roadways for sidewalk improvements.

Additional Data Collection and Inventory Guidelines

Following is the additional list of data used in the computation of the Pedestrian LOS scores (beyond those previously described for the bicycle mode). Also described are the associated guidelines for their collection and compilation into the database.

Width of Buffer (W_b) – is the width of a grass buffer. The width of the buffer is measured from the edge of pavement or back of curb to the beginning edge of the sidewalk. If a sidewalk has trees planted within its surface, then the horizontal width of the sidewalk occupied by the trees is considered the buffer width.

Width of Sidewalk (W_s) – is the width of the sidewalk, measured from either the edge of pavement, if a grass buffer is not present. If a grass buffer is present, the width is measured from the edge of the buffer to the back side of the sidewalk.

Sidewalk Percentage – is the percentage of sidewalk coverage (estimated in increments of 25%) of the segment; this is to be collected directionally

Tree Spacing in Buffer – is the spacing of trees within a buffer, measured from the center (width of spacing between trees). Trees can either be in a grass buffer or in sidewalk islands.

Cross-section – a “C” is recorded if there is a curb and gutter on the segment, an “S” if there is an open shoulder. Note: Indicate any ditches or swales adjacent to the edge of pavement of the segment in the comments field.

Roadside Profile Condition – This data item is collected to assist in determining the lateral area available for bicycle lane or paved shoulder and sidewalk construction. It is the area between the outside edge of the pavement and the right-of-way line. The profile condition assists in determining the type of facility, hence its cost [i.e., bicycle lane or paved shoulder or bike path]. Roadside profiles were classified as one of the three types illustrated below. Condition 1, buildable shoulder, is defined as an area adjoining the edge of pavement with a minimum width of seven feet and a maximum cross-slope of 6%. Condition 2 is a swale. Condition 3 is a ditch or canal. The ARC is to provide total right-of-way width.

APPENDIX F
PEDESTRIAN AND BICYCLE LEVEL OF SERVICE DATA SHEETS

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
1.0	Brighton-Henrietta Town Line Rd	Winton Rd	Clinton Ave	0.97	EB	4	U	15,752	3	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.34	D	4.61	E
1.0				0.97	WB	4	U	15,752	3	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.24	D	4.61	E
2.0	Brighton-Henrietta Town Line Rd	Clinton Ave	E Henrietta Rd	0.54	EB	4	U	26,069	3	35	11.0	0.0	0.0	0	4.0	-	8.0	0	50	5.0	4.60	E	4.47	D
2.0				0.54	WB	4	U	26,069	3	35	11.0	0.0	0.0	0	4.0	-	0.0	0	50	7.0	4.50	D	4.52	E
3.0	Brighton-Henrietta Town Line Rd	E Henrietta Rd	W Henrietta Rd	1.07	EB	4	S	16,792	3	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.38	D	4.68	E
3.0				1.07	WB	4	S	16,792	3	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.28	D	4.68	E
4.0	Brighton-Henrietta Town Line Rd	W Henrietta Rd	Jefferson Rd	1.05	EB	2	S	9,141	3	35	16.0	5.0	0.0	0	4.0	3.5	0.0	0	0	0.0	2.95	C	4.32	D
4.0				1.05	WB	2	S	9,141	3	35	16.0	5.0	0.0	0	4.0	3.5	0.0	0	100	6.0	2.85	C	3.15	C
5.0	Brighton Henrietta TL Rd/Jefferson Rd	John St	East River Rd	1.28	EB	4	S	27,404	3	45	14.0	2.0	0.0	0	3.5	3.5	3.0	0	100	4.0	4.31	D	4.23	D
5.0				1.28	WB	4	S	27,404	3	45	14.0	2.0	0.0	0	3.5	3.5	3.0	0	50	4.0	4.19	D	4.82	E
6.0	Jefferson Rd	John St	RR Crossing	0.27	EB	4	S	24,338	*4*	45	14.0	2.0	0.0	0	3.5	3.5	4.0	0	100	5.0	4.45	D	3.90	D
6.0				0.27	WB	4	S	24,338	*4*	45	14.0	2.0	0.0	0	3.5	3.5	0.0	0	0	0.0	4.45	D	5.20	E
7.0	Jefferson Rd	RR Crossing	South Town Plaza	0.32	EB	4	S	24,338	*4*	45	14.0	2.0	0.0	0	3.5	3.5	0.0	0	100	5.0	4.45	D	4.02	D
7.0				0.32	WB	4	S	24,338	*4*	45	14.0	2.0	0.0	0	3.5	3.5	0.0	0	0	0.0	4.45	D	5.20	E
8.0	Jefferson Rd (Eastbound Ramps)	South Town Plaza	W Henrietta Rd	0.34	EB	2	OW		*4*	45	17.0	3.0	0.0	0	4.0	4.0	5.0	0	100	5.0	err	err	err	err
8.0				0.34	WB								0.0					0			err	err	err	err
9.0	Jefferson Rd (Westbound Ramps)	South Town Plaza	W Henrietta Rd	0.34	EB								0.0					0			err	err	err	err
9.0				0.34	WB	2	OW			45	13.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	err	err	err	err
10.0	Jefferson Rd (Eastbound Ramps)	W Henrietta Rd	Split	0.22	EB	2	OW			45	13.0	3.0	0.0	0	4.0	4.0	3.0	0	100	5.0	err	err	err	err
10.0				0.22	WB								0.0					0			err	err	err	err
11.0	Jefferson Rd	Split in Ramps	Split in Ramps	0.50	EB	4	D	32,158	*4*	45	12.5	2.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.66	E	5.83	F
11.0				0.50	WB	4	D	32,158	*4*	45	12.5	2.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.66	E	5.83	F
12.0	Jefferson Rd (Westbound Ramps)	W Henrietta Rd	Split	0.20	EB								0.0					0			err	err	err	err
12.0				0.20	WB	2	OW			45	13.0	2.0	0.0	0	3.0	3.0	0.0	0	0	0.0	err	err	err	err
13.0	Jefferson Rd (Eastbound Ramps)	Split	Hylan Drive	0.13	EB	2	OW			45	13.0	0.0	0.0	0	3.0	-	0.0	0	0	0.0	err	err	err	err
13.0				0.13	WB								0.0					0			err	err	err	err
14.0	Jefferson Rd (Westbound Ramps)	Split	Hylan Drive	0.13	EB								0.0					0			err	err	err	err
14.0				0.13	WB	2	OW			45	15.0	3.0	0.0	0	3.0	3.0	5.0	0	100	5.0	err	err	err	err
15.0	Jefferson Rd	Hylan Drive	Sidewalk Buffer	0.16	EB	4	S	30,072	4	45	14.0	2.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.28	D	5.57	F
15.0				0.16	WB	4	S	30,072	4	45	14.0	2.0	0.0	0	4.0	4.0	0.0	0	100	7.0	4.51	E	4.25	D
16.0	Jefferson Rd	Sidewalk Buffer	Marketplace Drive	0.10	EB	4	S	30,072	4	45	13.0	2.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.43	D	5.67	F
16.0				0.10	WB	4	S	30,072	4	45	16.0	5.0	0.0	0	4.0	4.0	22.0	0	100	5.0	3.59	D	3.78	D
17.0	Jefferson Rd	Marketplace Drive	Clay Rd	0.36	EB	6	D	30,072	4	45	16.5	5.0	0.0	0	4.0	4.0	9.5	0	100	5.0	3.04	C	3.40	C
17.0				0.36	WB	6	D	30,072	4	45	16.5	5.0	0.0	0	4.0	4.0	9.5	0	100	5.0	3.27	C	3.40	C
18.0	Jefferson Rd	Clay Rd	Traffic Signal	0.16	EB	6	D	37,254	5	45	17.0	5.0	0.0	0	4.5	4.5	7.5	0	100	5.0	3.31	C	3.74	D
18.0				0.16	WB	6	D	37,254	4	45	17.0	5.0	0.0	0	4.5	4.5	0.0	0	100	7.0	3.15	C	3.81	D
19.0	Jefferson Rd	Traffic Signal	E Henrietta Rd	0.22	EB	6	D	37,254	5	45	17.5	5.0	0.0	0	4.5	4.5	7.5	0	100	7.0	3.20	C	3.61	D

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
19.0				0.22	WB	6	D	37,254	4	45	17.5	5.0	0.0	0	4.5	4.5	5.0	0	100	5.0	3.04	C	3.79	D
20.0	Jefferson Rd	E Henrietta Rd	Double Tree Driveway	0.09	EB	6	D	31,590	*4*	45	17.0	4.5	0.0	0	4.5	4.5	9.0	0	100	5.0	3.09	C	3.46	C
20.0				0.09	WB	6	D	31,590	*4*	45	16.0	4.5	0.0	0	4.5	4.5	8.5	0	100	5.0	3.30	C	3.50	C
21.0	Jefferson Rd	Double Tree Driveway	SB 390 Ramp	0.06	EB	6	D	31,590	*4*	45	17.5	5.5	0.0	0	4.5	4.5	9.5	0	100	5.0	2.76	C	3.43	C
21.0				0.06	WB	6	D	31,590	*4*	45	16.0	4.5	0.0	0	4.5	4.5	9.0	0	100	5.0	3.30	C	3.48	C
22.0	Jefferson Rd	SB 390 Ramp	NB 390 Ramp	0.11	EB	4	U	31,590	*4*	45	17.5	4.5	0.0	0	4.0	4.0	0.0	0	100	10.0	3.29	C	4.17	D
22.0				0.11	WB	6	U	31,590	*4*	45	17.5	5.0	0.0	0	4.0	4.0	0.0	0	100	10.0	2.97	C	3.48	C
23.0	Jefferson Rd	NB 390 Ramp	Ridgeland Rd	0.10	EB	4	U	29,999	5	45	16.0	4.5	0.0	0	4.5	4.5	10.0	0	100	4.5	3.73	D	4.08	D
23.0				0.10	WB	6	U	29,999	5	45	17.0	5.0	0.0	0	4.5	4.5	4.0	0	100	5.5	3.28	C	3.48	C
24.0	Jefferson Rd	Ridgeland Rd	Uncle Bob's Storage	0.13	EB	4	S	29,999	5	45	17.5	5.5	0.0	0	4.5	4.5	9.5	0	50	5.0	3.18	C	4.65	E
24.0				0.13	WB	6	S	29,999	5	45	17.0	5.5	0.0	0	4.5	4.5	9.0	0	100	5.0	3.17	C	3.39	C
25.0	Jefferson Rd	Uncle Bob's Storage	NYSDOT Offices	0.62	EB	4	S	29,999	*4*	45	14.0	2.0	0.0	0	4.0	4.0	4.5	0	100	5.0	4.41	D	4.25	D
25.0				0.62	WB	4	S	29,999	*4*	45	14.0	2.0	0.0	0	4.0	4.0	4.0	0	100	5.0	4.41	D	4.26	D
26.0	Jefferson Rd	NYSDOT Offices	Eagle Landing Exit-only	0.09	EB	4	S	27,467	*4*	45	14.0	2.0	0.0	0	4.0	4.0	5.0	0	100	5.0	4.36	D	4.06	D
26.0				0.09	WB	4	S	27,467	*4*	45	14.0	2.0	0.0	0	4.0	4.0	9.0	0	100	5.0	4.36	D	3.95	D
27.0	Jefferson Rd	Eagle Landing Exit-only	Winton Rd	0.13	EB	4	S	27,467	*4*	45	14.0	2.0	0.0	0	4.0	4.0	0.0	0	100	7.5	4.36	D	4.05	D
27.0				0.13	WB	4	S	27,467	*4*	45	14.0	2.0	0.0	0	4.0	4.0	9.0	0	100	5.0	4.36	D	3.95	D
28.0	Jefferson Rd	Winton Rd	Henrietta Town Line	1.16	EB	2	U	18,690	*4*	45	18.0	6.0	0.0	0	3.5	3.5	0.0	0	0	0.0	3.06	C	5.73	F
28.0				1.16	WB	2	U	18,690	*4*	45	18.0	6.0	0.0	0	3.5	3.5	0.0	0	0	0.0	3.06	C	5.73	F
29.0	Edgewood Ave	Henrietta Town Line	Winton Place	0.08	NB	2	U	4,447	*2*	35	19.5	7.5	0.0	0	4.0	4.0	0.0	0	100	4.0	0.54	A	2.60	C
29.0				0.08	SB	2	U	4,447	*2*	35	19.5	7.5	0.0	0	4.0	4.0	0.0	0	100	4.0	0.54	A	2.60	C
30.0	Edgewood Ave	Winton Place	Jefferson Rd	0.53	NB	2	U	4,447	*2*	35	14.5	3.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.56	C	3.81	D
30.0				0.53	SB	2	U	4,447	*2*	35	14.5	3.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.56	C	3.81	D
31.0	Pinnacle Rd	Jefferson Rd	Winton Rd	0.45	NB	2	U	1,100	*2*	30	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	1.97	B	3.05	C
31.0				0.45	SB	2	U	1,100	*2*	30	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	1.97	B	3.05	C
32.0	Winton Rd	Winton Place	Southbound Taper	0.39	NB	4	S	23,041	*4*	40	12.0	0.0	0.0	0	4.5	-	0.0	0	100	4.5	4.52	E	3.60	D
32.0				0.39	SB	4	S	23,041	*4*	40	13.0	0.0	0.0	0	4.5	-	0.0	0	0	0.0	4.39	D	4.75	E
33.0	Winton Rd	Southbound Taper	Jefferson Rd	0.20	NB	4	S	23,041	*4*	40	14.0	0.0	0.0	0	4.5	-	0.0	0	100	4.5	4.26	D	3.53	D
33.0				0.20	SB	4	S	23,041	*4*	40	14.0	0.0	0.0	0	4.5	-	0.0	0	80	4.5	4.26	D	3.75	D
34.0	Winton Rd	Jefferson Rd	Stone Rd	0.62	NB	4	U	16,531	*3*	35	12.5	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.26	D	4.77	E
34.0				0.62	SB	4	U	16,531	*3*	35	12.5	0.0	0.0	0	4.0	-	4.5	0	100	5.0	4.26	D	3.36	C
35.0	Pinnacle Rd	Stone Rd	Hollybrook Rd	0.05	NB	4	U	9,872	*2*	35	13.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	3.64	D	4.09	D
35.0				0.05	SB	4	U	9,872	*2*	35	11.0	0.0	0.0	0	3.5	-	4.5	0	100	4.5	3.88	D	2.81	C
36.0	Pinnacle Rd	Hollybrook Rd	Calkins Rd	0.64	NB	2	U	9,872	*2*	35	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.14	D	4.88	E
36.0				0.64	SB	2	U	9,872	*2*	35	12.0	1.0	0.0	0	4.0	4.0	14.0	0	100	5.0	4.14	D	3.16	C
37.0	Pinnacle Rd	Calkins Rd	Clearview Dr	0.27	NB	2	U	10,365	*3*	35	12.0	0.0	0.0	0	2.5	-	0.0	0	0	0.0	5.02	E	4.84	E
37.0				0.27	SB	2	U	10,365	*3*	35	12.0	0.0	0.0	0	3.0	-	14.0	0	100	5.0	4.66	E	3.12	C

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
38.0	Pinnacle Rd	Clearview Dr	Lehigh Station Rd	0.41	NB	2	U	10,365	*3*	35	12.0	1.0	0.0	0	4.0	4.0	14.0	0	100	4.0	4.33	D	3.21	C
38.0				0.41	SB	2	U	10,365	*3*	35	12.0	1.0	0.0	0	4.0	4.0	14.0	0	100	4.0	4.33	D	3.21	C
39.0	Pinnacle Rd	Lehigh Station Rd	Red Lion Rd	0.37	NB	2	S	4,484	*2*	35	17.6	5.4	0.0	0	4.0	4.0	5.0	0	100	4.0	1.66	B	2.62	C
39.0				0.37	SB	2	S	4,484	*2*	35	17.6	5.4	0.0	0	4.0	4.0	5.0	0	100	4.0	1.66	B	2.62	C
40.0	Pinnacle Rd	Red Lion Rd	Heather Dale Chase	0.12	NB	2	U	4,484	*2*	35	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.58	D	4.16	D
40.0				0.12	SB	2	U	4,484	*2*	35	12.0	1.0	0.0	0	4.0	4.0	14.0	0	100	4.0	3.58	D	2.52	C
41.0	Pinnacle Rd	Heather Dale Chase	Utility Lines	0.28	NB	2	U	4,484	*2*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.58	D	4.16	D
41.0				0.28	SB	2	U	4,484	*2*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.58	D	4.16	D
42.0	Pinnacle Rd	Utility Lines	South Side of Bridge	0.16	NB	2	U	4,484	*3*	40	16.0	4.0	0.0	0	5.0	4.0	0.0	0	0	0.0	2.62	C	3.95	D
42.0				0.16	SB	2	U	4,484	*3*	40	16.0	4.0	0.0	0	5.0	4.0	0.0	0	0	0.0	2.62	C	3.95	D
43.0	Pinnacle Rd	South Side of Bridge	Henrietta Town Line	2.03	NB	2	U	1,966	*3*	40	16.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	0.44	A	3.60	D
43.0				2.03	SB	2	U	1,966	*3*	40	16.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	0.44	A	3.60	D
44.0	Williams Rd	Pinnacle Rd	Henrietta Town Line	0.99	EB	2	U	827	*3*	45	11.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	1.57	B	3.30	C
44.0				0.99	WB	2	U	827	*3*	45	11.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	1.57	B	3.30	C
45.0	Ward Hill Rd	Pinnacle Rd	E Henrietta Rd	0.99	EB	2	U	888	*3*	40	11.3	1.0	0.0	0	3.5	3.0	0.0	0	0	0.0	1.88	B	3.23	C
45.0				0.99	WB	2	U	888	*3*	40	11.3	1.0	0.0	0	3.5	3.0	0.0	0	0	0.0	1.88	B	3.23	C
46.0	Reeves Rd	Pinnacle Rd	Tobin Rd	0.40	EB	2	U	1,319	*2*	35	11.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.16	B	3.27	C
46.0				0.40	WB	2	U	1,319	*2*	35	11.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.16	B	3.27	C
47.0	Tobin Rd	Reeves Rd	Henrietta Town Line	0.56	NB	2	U	893	*3*	40	11.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.94	B	3.30	C
47.0				0.56	SB	2	U	893	*3*	40	11.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.94	B	3.30	C
48.0	Blackwell Ln	Pinnacle Rd	Pittsford-Henrietta TL Rd	1.08	EB	2	U	*1,100*	*2*	30	10.0	0.0	0.0	0	5.0	-	0.0	0	0	0.0	1.66	B	3.05	C
48.0				1.08	WB	2	U	*1,100*	*2*	30	10.0	0.0	0.0	0	5.0	-	0.0	0	0	0.0	1.66	B	3.05	C
49.0	Pittsford-Henrietta TL Rd	Blackwell Ln	Lehigh Station Rd	0.76	NB	2	U	*1,100*	*2*	30	13.7	2.7	0.0	0	4.0	4.0	0.0	0	0	0.0	0.33	A	3.34	C
49.0				0.76	SB	2	U	*1,100*	*2*	30	13.7	2.7	0.0	0	4.0	4.0	0.0	0	0	0.0	0.33	A	3.34	C
50.0	Pittsford-Henrietta TL Rd	Lehigh Station Rd	Calkins Rd	0.67	NB	2	U	*1,100*	*3*	40	13.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.38	A	3.11	C
50.0				0.67	SB	2	U	*1,100*	*3*	40	13.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.38	A	3.11	C
51.0	Stone Rd	Pinnacle Rd	Henrietta Town Line	0.98	EB	2	U	4,975	*3*	40	17.0	5.0	0.0	0	5.0	5.0	0.0	0	0	0.0	2.26	B	4.03	D
51.0				0.98	WB	2	U	4,975	*3*	40	17.0	5.0	0.0	0	5.0	5.0	0.0	0	0	0.0	2.26	B	4.03	D
52.0	Hollybrook Rd	Pinnacle Rd	Pedestrian Crossing	0.40	EB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.84	A	3.41	C
52.0				0.40	WB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.84	A	3.41	C
53.0	Hollybrook Rd	Pedestrian Crossing	Faircrest Rd	0.10	EB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.84	A	3.41	C
53.0				0.10	WB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	4.0	0	100	5.0	0.84	A	2.07	B
54.0	Hollybrook Rd	Faircrest Rd	E Henrietta Rd	0.75	EB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.84	A	3.41	C
54.0				0.75	WB	2	U	*1,500*	*2*	30	13.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.84	A	3.41	C
55.0	Castle Rd	Winton Rd	E Henrietta Rd	1.28	EB	2	U	*4,000*	*2*	30	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	3.54	D	4.10	D
55.0				1.28	WB	2	U	*4,000*	*2*	30	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	3.54	D	4.10	D
56.0	Wildbriar Rd	E Henrietta Rd	Summer Sky Dr	0.90	EB	2	U	*2,500*	*2*	30	11.7	1.6	0.0	0	4.0	3.0	0.0	0	0	0.0	2.79	C	3.51	D

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Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
56.0				0.90	WB	2	U	*2,500*	*2*	30	11.7	1.6	0.0	0	4.0	3.0	0.0	0	0	0.0	2.79	C	3.51	D
57.0	Summer Sky Dr	Wildbriar Rd	Hylan Drive	0.40	NB	2	U	*2,500*	*2*	30	11.8	1.1	0.0	0	3.0	3.0	0.0	0	0	0.0	3.01	C	3.43	C
57.0				0.40	SB	2	U	*2,500*	*2*	30	11.8	1.1	0.0	0	3.0	3.0	0.0	0	0	0.0	3.01	C	3.43	C
58.0	Goodburlet Rd	E Henrietta Rd	Pinnacle Rd	0.98	EB	2	U	*500*	*2*	35	12.5	2.0	0.0	0	3.0	3.0	0.0	0	0	0.0	0.49	A	3.49	C
58.0				0.98	WB	2	U	*500*	*2*	35	12.5	2.0	0.0	0	3.0	3.0	0.0	0	0	0.0	0.49	A	3.49	C
59.0	E Henrietta Rd	Brighton-Henrietta TL Rd	Alliance Dr	0.29	NB	4	U	18,166	*4*	40	15.0	5.0	0.0	0	4.0	4.0	0.0	0	100	7.0	3.33	C	3.28	C
59.0				0.29	SB	4	U	18,166	*4*	40	15.0	5.0	0.0	0	4.0	4.0	0.0	0	100	7.0	3.33	C	3.28	C
60.0	E Henrietta Rd	Alliance Dr	Henrietta Plaza Driveway	0.14	NB	4	S	18,166	*4*	40	15.0	4.5	0.0	0	4.0	4.0	0.0	0	100	7.0	3.43	C	3.28	C
60.0				0.14	SB	4	S	18,166	*4*	40	15.0	4.5	0.0	0	4.0	4.0	0.0	0	100	7.0	3.43	C	3.28	C
61.0	E Henrietta Rd	Henrietta Plaza Driveway	Jefferson Rd	0.10	NB	4	D	18,166	*4*	40	15.5	5.0	0.0	0	4.0	4.0	0.0	0	100	7.5	3.23	C	3.23	C
61.0				0.10	SB	6	D	18,166	*4*	40	15.5	5.0	0.0	0	4.0	4.0	0.0	0	100	7.5	3.02	C	2.83	C
62.0	E Henrietta Rd	Jefferson Rd	SB 390 Ramp	0.17	NB	4	D	20,229	*4*	40	17.0	5.0	0.0	0	4.5	4.5	0.0	0	100	7.5	2.86	C	3.32	C
62.0				0.17	SB	6	D	20,229	*4*	40	16.0	0.0	0.0	0	4.5	-	0.0	0	100	7.5	3.80	D	2.91	C
63.0	E Henrietta Rd	SB 390 Ramp	NB 390 Ramp	0.08	NB	4	S	20,229	4	40	15.0	2.5	0.0	0	3.0	3.0	0.0	0	100	6.0	4.06	D	3.47	C
63.0				0.08	SB	4	S	20,229	3	40	15.0	2.5	0.0	0	3.0	3.0	0.0	0	100	6.0	3.92	D	3.47	C
64.0	E Henrietta Rd	NB 390 Ramp	Castle Rd	0.06	NB	4	U	19,808	4	40	19.0	2.0	0.0	0	3.0	3.0	0.0	0	100	5.5	3.38	C	3.35	C
64.0				0.06	SB	4	U	19,808	3	40	17.0	4.0	0.0	0	3.0	3.0	0.0	0	100	7.0	3.24	C	3.32	C
65.0	E Henrietta Rd	Castle Rd	Beers of the World Dwy	0.90	NB	4	S	19,808	4	40	16.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.41	C	3.34	C
65.0				0.90	SB	4	S	19,808	3	40	16.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.27	C	3.34	C
66.0	E Henrietta Rd	Beers of the World Dwy	Calkins Rd	0.08	NB	4	S	19,808	4	40	16.0	4.0	0.0	0	3.5	3.5	0.0	0	100	8.0	3.41	C	3.31	C
66.0				0.08	SB	4	S	19,808	3	40	14.0	2.0	0.0	0	3.5	3.5	0.0	0	100	8.0	3.99	D	3.35	C
67.0	E Henrietta Rd	Calkins Rd	Fair Ave	0.22	NB	4	S	15,292	*4*	40	16.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.39	C	3.05	C
67.0				0.22	SB	4	S	15,292	*4*	40	16.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.39	C	3.05	C
68.0	E Henrietta Rd	Fair Ave	Wright Rd	0.33	NB	4	U	15,292	*4*	40	14.0	4.0	0.0	0	3.5	3.5	0.0	0	100	8.0	3.77	D	3.06	C
68.0				0.33	SB	4	U	15,292	*4*	40	15.0	5.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.39	C	3.09	C
69.0	E Henrietta Rd	Wright Rd	Lehigh Station Rd	0.12	NB	2	U	15,292	*3*	35	14.0	4.0	0.0	0	4.0	4.0	0.0	0	100	8.0	3.62	D	3.90	D
69.0				0.12	SB	4	U	15,292	*3*	35	15.0	4.0	0.0	0	4.0	4.0	0.0	0	100	8.0	3.09	C	2.89	C
70.0	E Henrietta Rd	Lehigh Station Rd	Taper	0.12	NB	2	U	10,532	*3*	35	15.0	4.0	0.0	0	3.5	3.5	0.0	0	80	7.0	3.40	C	3.56	D
70.0				0.12	SB	4	U	10,532	*3*	35	15.0	4.0	0.0	0	3.5	3.5	0.0	0	20	7.0	2.90	C	3.64	D
71.0	E Henrietta Rd	Taper	Temple Rd	0.08	NB	2	U	10,532	*3*	35	19.0	7.0	0.0	0	3.0	3.0	0.0	0	0	0.0	2.00	B	4.29	D
71.0				0.08	SB	2	U	10,532	*3*	35	19.0	7.0	0.0	0	3.0	3.0	0.0	0	0	0.0	2.00	B	4.29	D
72.0	E Henrietta Rd	Temple Rd	Utility Lines	0.53	NB	2	U	10,532	*3*	35	16.0	4.0	0.0	0	3.5	2.5	0.0	0	0	0.0	3.43	C	4.50	D
72.0				0.53	SB	2	U	10,532	*3*	35	15.5	3.5	0.0	0	3.5	2.5	0.0	0	0	0.0	3.59	D	4.54	E
73.0	E Henrietta Rd	Utility Lines	Bridge Deck	0.07	NB	2	U	10,532	*3*	35	22.0	10.0	0.0	0	3.5	2.0	0.0	0	0	0.0	1.37	A	4.11	D
73.0				0.07	SB	2	U	10,532	*3*	35	22.0	10.0	0.0	0	3.5	2.0	0.0	0	0	0.0	1.37	A	4.11	D
74.0	E Henrietta Rd	Bridge Deck	Bridge Deck	0.12	NB	2	U	10,532	*4*	45	21.0	10.0	0.0	0	3.5	4.0	0.0	0	0	0.0	0.85	A	4.49	D
74.0				0.12	SB	2	U	10,532	*4*	45	21.0	10.0	0.0	0	3.5	4.0	0.0	0	0	0.0	0.85	A	4.49	D

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L) Th #	Lanes (L) Con	ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement W_t (ft)	Width of Pavement W_l (ft)	Width of Pavement W_{ps} (ft)	Occ. Park. (OSPA) (%)	Pavecon PC_t (1..5)	Pavecon PC_l (1..5)	Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS Score (0...7)	Bicycle LOS Grade (A...F)	Pedestrian LOS Value (0...7)	Pedestrian LOS Grade (A...F)
75.0	E Henrietta Rd	Bridge Deck	Spring Blossom Cir	0.11	NB	2	U	10,532	*4*	45	22.0	10.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.38	A	4.43	D
75.0				0.11	SB	2	U	10,532	*4*	45	22.0	10.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.38	A	4.43	D
76.0	E Henrietta Rd	Spring Blossom Cir	Erie Station Rd	0.32	NB	2	U	10,532	*4*	45	16.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.50	C	4.82	E
76.0				0.32	SB	2	U	10,532	*4*	45	15.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.88	D	4.90	E
77.0	E Henrietta Rd	Erie Station Rd	Henrietta Town Line	1.70	NB	2	U	10,532	*4*	45	16.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.50	C	4.82	E
77.0				1.70	SB	2	U	10,532	*4*	45	16.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.50	C	4.82	E
78.0	Middle Rd	Calkins Rd	Lehigh Station Rd	0.74	NB	2	U	5,004	12	45	18.0	6.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.87	E	3.90	D
78.0				0.74	SB	2	U	5,004	5	45	18.0	6.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.47	B	3.90	D
79.0	Middle Rd	Lehigh Station Rd	North of Thruway	0.75	NB	2	U	4,401	12	45	13.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	6.81	F	4.45	D
79.0				0.75	SB	2	U	4,401	5	45	13.5	2.5	0.0	0	4.0	3.0	0.0	0	0	0.0	4.28	D	4.40	D
80.0	Middle Rd	North of Thruway	South of Thruway	0.17	NB	2	U	4,401	12	45	13.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	6.81	F	4.45	D
80.0				0.17	SB	2	U	4,401	5	45	13.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	4.41	D	4.45	D
81.0	Middle Rd	South of Thruway	Erie Station Rd	0.43	NB	2	U	4,401	12	45	13.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	6.81	F	4.45	D
81.0				0.43	SB	2	U	4,401	5	45	13.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	4.41	D	4.45	D
82.0	Middle Rd	Erie Station Rd	Martin Rd	0.95	NB	2	U	1,930	*3*	40	14.5	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.21	A	3.75	D
82.0				0.95	SB	2	U	1,930	*3*	40	15.0	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.96	A	3.70	D
83.0	Middle Rd	Martin Rd	Henrietta Town Line	0.62	NB	2	U	1,930	*3*	40	11.5	1.0	0.0	0	4.0	3.0	0.0	0	0	0.0	2.80	C	3.62	D
83.0				0.62	SB	2	U	1,930	*3*	40	12.0	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	2.80	C	3.62	D
84.0	W Henrietta Rd	Brighton-Henrietta TL Road	Namaste	0.24	NB	4	S	34,072	4	40	12.0	0.0	0.0	0	3.5	-	0.0	0	100	5.0	4.98	E	4.55	E
84.0				0.24	SB	4	S	34,072	5	40	12.0	0.0	0.0	0	3.5	-	0.0	0	70	5.0	5.41	E	4.94	E
85.0	W Henrietta Rd	Namaste	Kohl's Driveway	0.05	NB	4	S	34,072	4	40	12.0	0.0	0.0	0	3.5	-	0.0	0	100	5.0	4.98	E	4.55	E
85.0				0.05	SB	4	S	34,072	5	40	12.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	5.41	E	5.85	F
86.0	W Henrietta Rd	Kohl's Driveway	Jefferson Rd (Westbound Ramps)	0.05	NB	4	S	34,072	4	40	21.0	10.0	0.0	0	3.5	3.5	0.0	0	100	5.0	0.90	A	4.27	D
86.0				0.05	SB	4	S	34,072	5	40	11.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	5.53	F	5.95	F
87.0	W Henrietta Rd	Jefferson Rd (Westbound Ramps)	Jefferson Rd (Eastbound Ramps)	0.07	NB	4	S	34,072	5	40	15.0	3.0	0.0	0	3.5	3.5	0.0	0	100	7.0	4.30	D	4.31	D
87.0				0.07	SB	4	S	34,072	4	40	15.0	3.0	0.0	0	3.5	3.5	0.0	0	100	7.0	4.25	D	4.31	D
88.0	W Henrietta Rd	Jefferson Rd (Eastbound Ramps)	Marketplace Mall	0.21	NB	4	S	23,073	5	40	16.0	4.0	0.0	0	4.0	4.0	0.0	0	100	7.0	3.58	D	3.56	D
88.0				0.21	SB	4	S	23,073	4	40	16.0	4.0	0.0	0	4.0	4.0	0.0	0	100	7.0	3.53	D	3.56	D
89.0	W Henrietta Rd	Marketplace Mall	Bailey Rd	0.90	NB	4	S	23,073	5	40	15.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.93	D	3.60	D
89.0				0.90	SB	4	S	23,073	4	40	15.0	4.0	0.0	0	3.5	3.5	0.0	0	100	7.0	3.88	D	3.60	D
90.0	W Henrietta Rd	Bailey Rd	Calkins Rd	0.34	NB	4	S	23,073	5	40	16.0	4.5	0.0	0	3.5	3.5	0.0	0	100	7.0	3.63	D	3.56	D
90.0				0.34	SB	4	S	23,073	4	40	16.0	4.5	0.0	0	3.5	3.5	0.0	0	100	7.0	3.58	D	3.56	D
91.0	W Henrietta Rd	Calkins Rd	Methodist Hill Dr	0.23	NB	4	S	15,386	6	45	17.5	5.5	0.0	0	4.0	3.0	0.0	0	0	0.0	3.68	D	4.35	D
91.0				0.23	SB	4	S	15,386	6	45	17.0	5.5	0.0	0	4.0	3.0	0.0	0	0	0.0	3.58	D	4.38	D
92.0	W Henrietta Rd	Methodist Hill Dr	Taper	0.23	NB	4	U	15,386	6	45	18.0	7.0	0.0	0	4.0	3.0	0.0	0	0	0.0	3.32	C	4.31	D
92.0				0.23	SB	4	U	15,386	6	45	18.0	6.0	0.0	0	4.0	3.0	0.0	0	0	0.0	3.28	C	4.31	D
93.0	W Henrietta Rd	Taper	Lehigh Station Rd	0.22	NB	4	S	15,386	6	45	17.0	6.0	0.0	0	4.0	4.0	4.5	0	100	5.0	3.38	C	3.22	C

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L) Th #	Lanes (L) Con	ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement W_t (ft)	Width of Pavement W_l (ft)	Width of Pavement W_{ps} (ft)	Occ. Park. (OSPA) (%)	Pavecon PC_t (1..5)	Pavecon PC_l (1..5)	Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS Score (0...7)	Bicycle LOS Grade (A...F)	Pedestrian LOS Value (0...7)	Pedestrian LOS Grade (A...F)
93.0				0.22	SB	4	S	15,386	6	45	17.0	6.0	0.0	0	4.0	4.0	4.5	0	100	5.0	3.17	C	3.22	C
94.0	W Henrietta Rd	Lehigh Station Rd	End of RT Lane (McDonalds)	0.18	NB	4	S	20,731	6	45	16.5	5.0	0.0	0	4.0	4.0	5.0	0	100	5.0	3.65	D	3.56	D
94.0				0.18	SB	4	S	20,731	6	45	17.5	5.5	0.0	0	4.0	4.0	5.0	0	100	5.0	3.38	C	3.53	D
95.0	W Henrietta Rd	End of RT Lane (McDonalds)	Utility Lines	0.17	NB	4	S	20,731	6	45	17.5	5.5	0.0	0	4.0	4.0	5.0	0	100	5.0	3.32	C	3.53	D
95.0				0.17	SB	4	S	20,731	6	45	17.5	5.5	0.0	0	4.0	4.0	5.0	0	100	5.0	3.38	C	3.53	D
96.0	W Henrietta Rd	Utility Lines	North of Thruway	0.38	NB	4	U	20,731	6	45	20.0	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.05	B	4.52	E
96.0				0.38	SB	4	U	20,731	6	45	20.0	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.10	B	4.52	E
97.0	W Henrietta Rd	North of Thruway	South of Thruway	0.11	NB	4	U	20,731	6	45	19.5	7.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.32	B	4.56	E
97.0				0.11	SB	4	U	20,731	6	45	19.5	7.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.38	B	4.56	E
98.0	W Henrietta Rd	South of Thruway	Thruway Park Dr	0.09	NB	4	U	10,121	6	40	20.0	9.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.90	B	3.66	D
98.0				0.09	SB	4	U	10,121	6	40	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.81	E	4.30	D
99.0	W Henrietta Rd	Thruway Park Dr	Taper	0.10	NB	4	U	10,121	4	40	14.5	2.5	0.0	0	4.0	4.0	0.0	0	0	0.0	3.66	D	4.06	D
99.0				0.10	SB	4	U	10,121	5	40	16.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.21	C	3.94	D
100.0	W Henrietta Rd	Taper	Erie Station Rd	0.31	NB	2	S	10,121	4	40	14.0	2.0	0.0	0	4.0	4.0	5.0	0	100	5.0	4.18	D	3.42	C
100.0				0.31	SB	4	S	10,121	5	40	13.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.36	D	4.20	D
101.0	W Henrietta Rd	Erie Station Rd	Rush-Henrietta TL Road	1.62	NB	2	U	5,476	*3*	40	16.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.69	C	4.00	D
101.0				1.62	SB	2	U	5,476	*3*	40	17.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.27	B	3.92	D
102.0	Telephone Rd	W Henrietta Rd	Timberline Dr	0.47	EB	2	U	707	*3*	40	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
102.0				0.47	WB	2	U	707	*3*	40	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
103.0	Telephone Rd	Timberline Dr	End of Bend	0.24	EB	2	U	707	*3*	40	12.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.00	A	3.75	D
103.0				0.24	WB	2	U	707	*3*	40	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
104.0	Telephone Rd	End of Bend	End of Gutter	0.04	NB	2	U	707	*3*	40	12.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.00	A	3.75	D
104.0				0.04	SB	2	U	707	*3*	40	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
105.0	Telephone Rd	End of Gutter	Martin Rd	0.65	NB	2	U	707	*3*	40	11.0	1.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
105.0				0.65	SB	2	U	707	*3*	40	11.0	1.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.70	B	3.24	C
106.0	Telephone Rd	Martin Rd	Rush-Henrietta TL Road	0.73	NB	2	U	707	*3*	45	10.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	1.75	B	3.41	C
106.0				0.73	SB	2	U	707	*3*	45	10.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	1.75	B	3.41	C
107.0	Rush-Henrietta TL Road	E River Rd	W Henrietta Rd	2.07	EB	2	U	140	*3*	40	11.0	0.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.63	A	3.00	C
107.0				2.07	WB	2	U	140	*3*	40	11.0	0.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.63	A	3.00	C
108.0	Rush-Henrietta TL Road	W Henrietta Rd	.54 miles east of W. Hen	0.54	EB	2	U	1,167	*3*	40	13.0	3.0	0.0	0	4.0	3.5	0.0	0	0	0.0	1.16	A	3.75	D
108.0				0.54	WB	2	U	1,167	*3*	40	11.0	1.0	0.0	0	4.0	3.5	0.0	0	0	0.0	2.28	B	3.41	C
109.0	Rush-Henrietta TL Road	.54 miles east of W. Hen	Middle Rd	0.37	EB	2	U	1,167	*3*	40	13.0	3.0	0.0	0	4.0	3.5	0.0	0	0	0.0	1.16	A	3.75	D
109.0				0.37	WB	2	U	1,167	*3*	40	11.0	1.0	0.0	0	4.0	3.5	0.0	0	0	0.0	2.28	B	3.41	C
110.0	Rush-Henrietta TL Road	Middle Rd	E Henrietta Rd	0.70	EB	2	U	941	*3*	40	11.0	1.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.85	B	3.28	C
110.0				0.70	WB	2	U	941	*3*	40	11.0	1.0	0.0	0	4.0	3.0	0.0	0	0	0.0	1.85	B	3.28	C
111.0	Martin Rd	Middle Rd	I-390 Bridge	0.26	EB	2	U	368	*2*	35	11.5	1.5	0.0	0	4.0	3.0	0.0	0	0	0.0	1.06	A	2.97	C
111.0				0.26	WB	2	U	368	*2*	35	12.0	2.0	0.0	0	4.0	3.0	0.0	0	0	0.0	0.33	A	3.55	D

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
112.0	Martin Rd	I-390 Bridge	I-390 Bridge	0.12	EB	2	U	368	*2*	35	24.5	13.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	2.66	C
112.0				0.12	WB	2	U	368	*2*	35	24.5	13.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	2.66	C
113.0	Martin Rd	I-390 Bridge	Start of Bridge Incline	0.03	EB	2	U	368	*2*	35	13.5	3.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.40	C
113.0				0.03	WB	2	U	368	*2*	35	13.5	3.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.40	C
114.0	Martin Rd	Start of Bridge Incline	Caitlin Trail	0.43	EB	2	U	368	*2*	35	14.5	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.31	C
114.0				0.43	WB	2	U	368	*2*	35	14.5	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.31	C
115.0	Martin Rd	Caitlin Trail	W Henrietta Rd	0.12	EB	2	U	*400*	*2*	35	14.5	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.31	C
115.0				0.12	WB	2	U	*400*	*2*	35	14.5	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.31	C
116.0	Martin Rd	W Henrietta Rd	Telephone Rd	0.90	EB	2	U	*400*	12	35	10.5	0.0	0.0	0	3.0	-	0.0	0	0	0.0	1.70	B	2.91	C
116.0				0.90	WB	2	U	*400*	15	35	10.5	0.0	0.0	0	3.0	-	0.0	0	0	0.0	2.08	B	2.91	C
117.0	Martin Rd	Telephone Rd	.54miles west of Telephone	0.54	EB	2	U	447	*3*	40	14.5	4.5	0.0	0	3.0	3.0	0.0	0	0	0.0	0.00	A	3.46	C
117.0				0.54	WB	2	U	447	*3*	40	13.5	3.5	0.0	0	3.0	3.0	0.0	0	0	0.0	0.00	A	3.55	D
118.0	Martin Rd	.54miles west of Telephone	E River Rd	0.44	EB	2	U	447	*3*	40	13.5	3.5	0.0	0	3.0	3.0	0.0	0	0	0.0	0.00	A	3.55	D
118.0				0.44	WB	2	U	447	*3*	40	13.5	3.5	0.0	0	3.0	3.0	0.0	0	0	0.0	0.00	A	3.55	D
119.0	Martin Rd	E River Rd	Moore Rd	0.49	EB	2	U	113	*2*	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.00	A	2.77	C
119.0				0.49	WB	2	U	113	*2*	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.00	A	2.77	C
120.0	Moore Rd	Martin Rd	Egret Dr	0.61	NB	2	U	460	*2*	35	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.36	C
120.0				0.61	SB	2	U	460	*2*	35	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.36	C
121.0	Moore Rd	Egret Dr	Scottsville-W Henrietta Rd	0.16	NB	2	U	460	*2*	35	13.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.46	C
121.0				0.16	SB	2	U	460	*2*	35	13.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.46	C
122.0	Scottsville-W Henrietta Rd	NY 253 (Erie Station Rd)	Farrell Rd	0.17	EB	2	U	1,060	*2*	30	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	1.92	B	3.03	C
122.0				0.17	WB	2	U	1,060	*2*	30	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	1.92	B	3.03	C
123.0	Scottsville-W Henrietta Rd	Farrell Rd	Countess Dr	0.59	EB	2	U	1,060	*2*	35	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.01	B	3.16	C
123.0				0.59	WB	2	U	1,060	*2*	35	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.01	B	3.16	C
124.0	Scottsville-W Henrietta Rd	Countess Dr	Creek	0.09	EB	2	U	1,060	*2*	35	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.01	B	3.16	C
124.0				0.09	WB	2	U	1,060	*2*	35	11.0	1.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.01	B	3.16	C
125.0	Scottsville-W Henrietta Rd	Creek	E River Rd	0.16	EB	2	U	1,060	*2*	35	18.0	7.0	0.0	0	3.5	3.5	0.0	0	0	0.0	0.00	A	3.13	C
125.0				0.16	WB	2	U	1,060	*2*	35	18.0	7.0	0.0	0	3.5	3.5	0.0	0	0	0.0	0.00	A	3.13	C
126.0	NY 253 (Erie Station Rd)	River	Harrogate Cr	0.18	EB	2	U	5,631	5	50	23.0	12.0	0.0	0	3.5	3.0	0.0	0	0	0.0	0.19	A	3.92	D
126.0				0.18	WB	2	U	5,631	5	50	23.0	12.0	0.0	0	3.5	3.0	0.0	0	0	0.0	0.19	A	3.92	D
127.0	NY 253 (Erie Station Rd)	Harrogate Cr	End of Taper	0.21	NB	2	S	5,631	5	50	23.0	11.0	0.0	0	3.5	3.5	0.0	0	0	0.0	0.00	A	3.92	D
127.0				0.21	SB	2	S	5,631	5	50	23.0	11.0	0.0	0	3.5	3.5	0.0	0	0	0.0	0.00	A	3.92	D
128.0	NY 253 (Erie Station Rd)	End of Taper	Rest stop Parking Lot	0.50	NB	2	U	5,631	5	50	21.0	10.0	0.0	0	3.5	3.0	0.0	0	0	0.0	1.35	A	4.04	D
128.0				0.50	SB	2	U	5,631	5	50	21.0	10.0	0.0	0	3.5	3.0	0.0	0	0	0.0	1.35	A	4.04	D
129.0	NY 253 (Erie Station Rd)	Rest stop Parking Lot	E River Rd	1.00	EB	2	U	5,631	5	50	21.8	10.5	0.0	0	3.5	3.5	0.0	0	0	0.0	0.51	A	3.99	D
129.0				1.00	WB	2	U	5,631	5	50	21.8	10.5	0.0	0	3.5	3.5	0.0	0	0	0.0	0.51	A	3.99	D
130.0	NY 253 (Erie Station Rd)	E River Rd	.6miles east of E River Rd	0.60	EB	2	U	6,756	5	50	15.5	4.5	0.0	0	3.5	3.5	0.0	0	0	0.0	3.82	D	4.56	E

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Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L) Th #	Lanes (L) Con	ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement W_t (ft)	Width of Pavement W_l (ft)	Width of Pavement W_{ps} (ft)	Occ. Park. (OSPA) (%)	Pavecon PC_t (1..5)	Pavecon PC_l (1..5)	Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS Score (0...7)	Bicycle LOS Grade (A...F)	Pedestrian LOS Value (0...7)	Pedestrian LOS Grade (A...F)
130.0				0.60	WB	2	U	6,756	5	50	14.5	3.5	0.0	0	3.5	3.5	0.0	0	0	0.0	4.20	D	4.64	E
131.0	NY 253 (Erie Station Rd)	.6miles east of E River Rd	Erie Station Rd	0.24	EB	2	U	6,756	5	50	17.5	5.5	0.0	0	4.0	4.0	0.0	0	0	0.0	3.02	C	4.41	D
131.0				0.24	WB	2	U	6,756	5	50	19.0	7.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.28	B	4.31	D
132.0	Erie Station Rd	NY 253 (Erie Station Rd)	Begin of Turn Lanes	0.09	EB	2	U	4,291	4	40	18.5	6.5	0.0	0	3.5	3.5	0.0	0	0	0.0	2.01	B	3.71	D
132.0				0.09	WB	4	U	4,291	3	40	19.0	6.5	0.0	0	3.5	3.5	0.0	0	0	0.0	0.00	A	3.39	C
133.0	Erie Station Rd	Begin of Turn Lanes	W Henrietta Rd	0.87	EB	2	U	4,291	4	40	14.0	3.0	0.0	0	3.0	3.0	0.0	0	0	0.0	3.86	D	4.06	D
133.0				0.87	WB	2	U	4,291	3	40	14.5	3.5	0.0	0	3.0	3.0	0.0	0	0	0.0	3.31	C	4.02	D
134.0	Erie Station Rd	W Henrietta Rd	I-390 Bridge	0.50	EB	2	U	4,291	2	35	13.5	2.5	0.0	0	4.5	4.5	0.0	0	0	0.0	2.86	C	3.95	D
134.0				0.50	WB	2	U	4,291	2	35	12.0	1.0	0.0	0	4.5	4.5	0.0	0	0	0.0	3.42	C	4.10	D
135.0	Erie Station Rd	I-390 Bridge	I-390 Bridge	0.06	EB	2	U	4,516	2	35	21.5	7.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.15	A	3.35	C
135.0				0.06	WB	2	U	4,516	2	35	23.0	12.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.26	C
136.0	Erie Station Rd	I-390 Bridge	Middle Rd	0.17	EB	2	U	4,741	2	35	13.5	2.5	0.0	0	4.5	4.5	0.0	0	0	0.0	2.92	C	4.01	D
136.0				0.17	WB	2	U	4,741	2	35	13.5	2.5	0.0	0	4.5	4.5	0.0	0	0	0.0	2.92	C	4.01	D
137.0	Erie Station Rd	Middle Rd	Start/End of Gutter	0.18	EB	2	U	3,733	2	35	17.5	6.5	0.0	0	4.5	4.5	0.0	0	0	0.0	0.94	A	3.51	D
137.0				0.18	WB	2	U	3,733	2	35	16.0	5.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.64	B	3.62	D
138.0	Erie Station Rd	Start/End of Gutter	Start/End of Gutter	0.41	EB	2	U	3,733	2	35	17.0	6.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.19	A	3.54	D
138.0				0.41	WB	2	U	3,733	2	35	17.0	6.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.19	A	3.54	D
139.0	Erie Station Rd	Start/End of Gutter	Windelin Dr	0.22	EB	2	U	3,733	2	35	16.5	6.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.30	A	3.58	D
139.0				0.22	WB	2	U	3,733	2	35	12.5	2.0	0.0	0	4.5	4.5	0.0	0	0	0.0	2.84	C	3.91	D
140.0	Erie Station Rd	Windelin Dr	Tradition Place	0.32	EB	2	U	3,733	2	35	13.5	3.0	0.0	0	4.5	4.5	0.0	0	0	0.0	2.52	C	3.83	D
140.0				0.32	WB	2	U	3,733	2	35	15.5	5.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.75	B	3.66	D
141.0	Erie Station Rd	Tradition Place	E Henrietta Rd	0.10	EB	2	U	3,733	2	35	16.5	6.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.30	A	3.58	D
141.0				0.10	WB	2	U	3,733	2	35	18.5	8.0	0.0	0	4.5	4.5	0.0	0	0	0.0	0.30	A	3.43	C
142.0	Thruway Park Dr	Erie Station Rd	W Henrietta Rd	1.18	EB	2	U	7,322	5	35	15.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.22	D	4.16	D
142.0				1.18	WB	2	U	7,322	5	35	15.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.22	D	4.16	D
143.0	E River Rd	Rush-Henrietta TL Rd	Erie Station Rd	1.42	NB	2	U	2,141	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.96	C	3.71	D
143.0				1.42	SB	2	U	2,141	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.96	C	3.71	D
144.0	E River Rd	Erie Station Rd	Start of Bridge Incline	0.07	NB	2	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.77	D	4.22	D
144.0				0.07	SB	4	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.70	C	3.58	D
145.0	E River Rd	Start of Bridge Incline	I-390 Bridge	0.04	NB	2	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.77	D	4.22	D
145.0				0.04	SB	2	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.77	D	4.22	D
146.0	E River Rd	I-390 Bridge	I-390 Bridge	0.08	NB	2	U	4,408	3	40	19.0	7.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.98	A	3.65	D
146.0				0.08	SB	2	U	4,408	3	40	19.0	7.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.98	A	3.65	D
147.0	E River Rd	I-390 Bridge	Start of Bridge Incline	0.08	NB	2	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.77	D	4.22	D
147.0				0.08	SB	2	U	4,408	3	40	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.77	D	4.22	D
148.0	E River Rd	Start of Bridge Incline	Brooks Rd	0.35	NB	2	U	7,764	3	40	12.5	1.5	0.0	0	4.0	4.0	0.0	0	0	0.0	4.41	D	5.00	E
148.0				0.35	SB	2	U	7,764	3	40	12.5	1.5	0.0	0	4.0	4.0	0.0	0	0	0.0	4.41	D	5.00	E

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149.0	E River Rd	Brooks Rd	Lehigh Station Rd	0.69	NB	2	U	7,764	*3*	40	16.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.98	C	4.71	E
149.0				0.69	SB	2	U	7,764	*3*	40	16.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.98	C	4.71	E
150.0	E River Rd	Lehigh Station Rd	Bend in Road	0.13	NB	2	S	11,085	*4*	40	19.0	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.05	B	5.51	F
150.0				0.13	SB	2	S	11,085	*4*	40	19.0	11.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.20	A	5.51	F
151.0	E River Rd	Bend in Road	Westminster Rd	0.50	NB	2	U	11,084	*4*	40	15.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.89	D	5.79	F
151.0				0.50	SB	2	U	11,084	*4*	40	15.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.89	D	5.79	F
152.0	E River Rd	Westminster Rd	Lucius Gordon Dr	0.14	NB	2	U	11,084	*4*	40	15.0	4.0	0.0	0	4.5	4.5	0.0	0	0	0.0	3.79	D	5.79	F
152.0				0.14	SB	2	U	11,084	*4*	40	15.0	4.0	0.0	0	4.5	4.5	0.0	0	0	0.0	3.79	D	5.79	F
153.0	E River Rd	Lucius Gordon Dr	Bailey Rd	0.18	NB	2	S	11,084	*4*	40	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.25	D	5.88	F
153.0				0.18	SB	2	S	11,084	*4*	40	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.25	D	5.88	F
154.0	E River Rd	Bailey Rd	Andrews Memorial Dr	0.84	NB	2	U	10,778	*4*	40	15.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	3.22	C	4.25	D
154.0				0.84	SB	2	U	10,778	*4*	40	15.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	3.22	C	4.25	D
155.0	E River Rd	Andrews Memorial Dr	Ward Rd	0.43	NB	2	U	10,778	*4*	40	15.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	3.22	C	4.25	D
155.0				0.43	SB	2	U	10,778	*4*	40	15.0	4.0	0.0	0	5.0	5.0	0.0	0	0	0.0	3.22	C	4.25	D
156.0	E River Rd	Ward Rd	Transition from 2 to 1 Lane	0.13	NB	2	S	10,778	*4*	40	16.0	5.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.87	C	4.18	D
156.0				0.13	SB	2	S	10,778	*4*	40	16.0	5.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.87	C	4.18	D
157.0	E River Rd	Transition from 2 to 1 Lane	Jefferson Rd	0.12	NB	2	U	10,778	*4*	40	17.0	6.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.54	C	4.10	D
157.0				0.12	SB	4	U	10,778	*4*	40	16.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.31	B	3.73	D
158.0	Brooks Rd	E River Rd	W Henrietta Rd	1.83	EB	2	U	1,076	*3*	40	11.0	1.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.85	B	3.32	C
158.0				1.83	WB	2	U	1,076	*3*	40	11.0	1.0	0.0	0	4.5	4.5	0.0	0	0	0.0	1.85	B	3.32	C
159.0	Bailey Rd	E River Rd	John St	1.20	EB	2	U	4,942	*2*	35	19.0	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.96	A	3.94	D
159.0				1.20	WB	2	U	4,942	*2*	35	19.0	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	0.96	A	3.94	D
160.0	Bailey Rd	John St	W Henrietta Rd	1.02	EB	2	U	10,924	*3*	35	19.5	8.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.48	A	4.95	E
160.0				1.02	WB	2	U	10,924	*3*	35	19.5	8.0	0.0	0	4.0	4.0	3.5	0	100	4.5	1.48	A	3.95	D
161.0	Calkins Rd	W Henrietta Rd	Verizon	0.34	EB	4	U	16,532	*4*	40	12.0	0.0	0.0	0	3.5	-	3.0	0	100	7.0	4.71	E	3.17	C
161.0				0.34	WB	4	U	16,532	*4*	40	12.0	0.0	0.0	0	3.5	-	0.0	0	100	7.0	4.71	E	3.26	C
162.0	Calkins Rd	Verizon	Middle Rd	0.34	EB	4	U	16,532	*4*	40	12.0	0.0	0.0	0	3.5	-	3.5	0	100	4.0	4.71	E	3.40	C
162.0				0.34	WB	4	U	16,532	*4*	40	12.0	0.0	0.0	0	3.5	-	3.5	0	100	4.0	4.71	E	3.40	C
163.0	Calkins Rd	Middle Rd	Red Creek Dr	0.15	EB	4	S	18,950	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.51	E	3.37	C
163.0				0.15	WB	4	S	18,950	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.51	E	4.77	E
164.0	Calkins Rd	Red Creek Dr	Hylan Drive	0.10	EB	4	S	18,468	*4*	40	13.0	0.0	0.0	0	4.0	-	7.0	0	100	7.0	4.54	E	3.28	C
164.0				0.10	WB	4	S	18,468	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.54	E	4.87	E
165.0	Calkins Rd	Hylan Drive	.07miles east of Town Hall	0.19	EB	4	U	14,276	*3*	35	13.0	0.0	0.0	0	3.0	-	5.0	0	100	5.0	4.24	D	2.83	C
165.0				0.19	WB	4	U	14,276	*3*	35	13.0	0.0	0.0	0	3.0	-	4.0	0	100	5.0	4.24	D	2.86	C
166.0	Calkins Rd	.07miles east of Town Hall	Lavender Cir	0.39	EB	4	U	14,276	*3*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	3.91	D	2.83	C
166.0				0.39	WB	4	U	14,276	*3*	35	12.0	0.0	0.0	0	4.0	-	5.0	0	100	5.0	4.04	D	2.86	C
167.0	Calkins Rd	Lavender Cir	E Henrietta Rd	0.40	EB	4	S	14,276	*3*	35	13.8	0.0	0.0	0	4.0	-	11.5	0	100	5.0	3.81	D	2.62	C

Town of Henrietta Bicycle and Pedestrian Level of Service Data Sheets

Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L)		ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement			Occ. Park. (OSPA) (%)	Pavecon		Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS		Pedestrian LOS	
						Th #	Con				W_t (ft)	W_l (ft)	W_{ps} (ft)		PC_t (1..5)	PC_l (1..5)					Score (0...7)	Grade (A...F)	Value (0...7)	Grade (A...F)
167.0				0.40	WB	4	S	14,276	*3*	35	13.8	0.0	0.0	0	4.0	-	5.0	0	100	5.0	3.81	D	2.81	C
168.0	Calkins Rd	E Henrietta Rd	Thompson Rd	0.16	EB	4	U	11,840	3	35	14.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.54	D	4.07	D
168.0				0.16	WB	2	U	11,840	4	35	14.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.33	D	3.51	D
169.0	Calkins Rd	Thompson Rd	Pinnacle Rd	0.83	EB	2	U	10,348	3	35	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.27	D	4.95	E
169.0				0.83	WB	2	U	10,348	4	35	12.0	1.0	0.0	0	4.0	4.0	0.0	0	0	0.0	4.57	E	4.95	E
170.0	Calkins Rd	Pinnacle Rd	Tumbleweed Dr	0.46	EB	2	U	5,500	*2*	35	16.7	5.7	0.0	0	4.0	4.0	0.0	0	0	0.0	1.84	B	3.78	D
170.0				0.46	WB	2	U	5,500	*2*	35	17.7	6.7	0.0	0	4.0	4.0	10.0	0	100	5.0	1.37	A	2.43	B
171.0	Calkins Rd	Tumbleweed Dr	Henrietta Town Line	0.54	EB	2	U	5,500	*2*	35	15.0	3.8	0.0	0	4.0	4.0	0.0	0	0	0.0	2.58	C	3.92	D
171.0				0.54	WB	2	U	5,500	*2*	35	15.0	3.8	0.0	0	4.0	4.0	0.0	0	0	0.0	2.58	C	3.92	D
172.0	John St	Lehigh Station Rd	Park Centre Dr	0.61	NB	2	U	3,417	*2*	35	15.0	3.2	0.0	0	5.0	5.0	0.0	0	0	0.0	2.63	C	4.45	D
172.0				0.61	SB	2	U	3,417	*2*	35	15.0	3.2	0.0	0	5.0	5.0	3.6	0	100	5.0	2.63	C	3.21	C
173.0	John St	Park Centre Dr	Bailey Rd	0.63	NB	2	U	3,417	*2*	35	16.8	5.4	0.0	0	5.0	5.0	0.0	0	0	0.0	1.75	B	4.31	D
173.0				0.63	SB	2	U	3,417	*2*	35	16.8	5.4	0.0	0	5.0	5.0	4.3	0	100	5.0	1.75	B	3.13	C
174.0	John St	Bailey Rd	Wilstie Dr	0.81	NB	2	U	8,787	*3*	40	16.0	4.0	0.0	0	3.0	3.0	0.0	0	0	0.0	3.37	C	4.35	D
174.0				0.81	SB	2	U	8,787	*3*	40	16.0	4.0	0.0	0	3.0	3.0	0.0	0	0	0.0	3.37	C	4.35	D
175.0	John St	Wilstie Dr	Perkins Rd	0.24	NB	2	U	11,242	*4*	40	12.5	1.5	0.0	0	4.0	4.0	0.0	0	0	0.0	4.59	E	4.86	E
175.0				0.24	SB	2	U	11,242	*4*	40	12.5	1.5	0.0	0	4.0	4.0	0.0	0	0	0.0	4.59	E	4.86	E
176.0	John St	Perkins Rd	Jefferson Rd	0.45	NB	2	U	11,242	*4*	40	20.0	9.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.17	A	4.29	D
176.0				0.45	SB	2	U	11,242	*4*	40	20.0	9.0	0.0	0	4.0	4.0	0.0	0	0	0.0	1.17	A	4.29	D
177.0	Beckwith Rd	Lehigh Station Rd	Bailey Rd	0.98	NB	2	U	1,875	*2*	30	11.8	1.8	0.0	0	5.0	5.0	0.0	0	0	0.0	2.45	B	3.39	C
177.0				0.98	SB	2	U	1,875	*2*	30	11.8	1.8	0.0	0	5.0	5.0	0.0	0	0	0.0	2.45	B	3.39	C
178.0	Vollmer Pkwy	Lehigh Station Rd	Rampart St	0.32	NB	2	U	*1,500*	*2*	30	10.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	2.13	B	3.17	C
178.0				0.32	SB	2	U	*1,500*	*2*	30	10.0	0.0	0.0	0	4.0	-	9.4	0	100	5.0	2.13	B	2.01	B
179.0	Vollmer Pkwy	Rampart St	Coachwood Ln	0.62	NB	2	U	*1,500*	*2*	30	10.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	2.13	B	3.17	C
179.0				0.62	SB	2	U	*1,500*	*2*	30	10.0	0.0	0.0	0	4.0	-	5.3	0	100	5.0	2.13	B	2.14	B
180.0	Vollmer Pkwy	Coachwood Ln	Bailey Rd	0.27	NB	2	U	*1,500*	*2*	30	15.5	4.5	0.0	0	4.0	4.0	0.0	0	0	0.0	0.00	A	3.23	C
180.0				0.27	SB	2	U	*1,500*	*2*	30	15.5	4.5	0.0	0	4.0	4.0	5.0	0	100	5.0	0.00	A	1.98	B
181.0	Lehigh Station Rd	E River Rd	Substation Driveway	0.38	EB	2	U	3,297	*3*	40	17.5	6.5	0.0	0	4.0	4.0	0.0	0	0	0.0	1.05	A	3.69	D
181.0				0.38	WB	2	U	3,297	*3*	40	14.5	3.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.42	B	3.93	D
182.0	Lehigh Station Rd	Substation Driveway	John St	0.29	EB	2	U	3,297	*3*	40	15.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.22	B	3.88	D
182.0				0.29	WB	2	U	3,297	*3*	40	15.0	4.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.22	B	3.88	D
183.0	Lehigh Station Rd	John St	Beckwith Rd	0.57	EB	2	U	5,347	*3*	40	16.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.51	C	4.01	D
183.0				0.57	WB	2	U	5,347	*3*	40	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.27	C	4.17	D
184.0	Lehigh Station Rd	Beckwith Rd	Bennington Hills Ct	0.40	EB	2	U	5,347	*3*	40	16.0	5.0	0.0	0	4.0	4.0	0.0	0	0	0.0	2.51	C	4.01	D
184.0				0.40	WB	2	U	5,347	*3*	40	14.0	3.0	0.0	0	4.0	4.0	0.0	0	0	0.0	3.27	C	4.17	D
185.0	Lehigh Station Rd	Bennington Hills Ct	W Henrietta Rd	0.24	EB	4	U	5,347	*3*	40	17.0	6.0	0.0	0	4.0	4.0	5.0	0	100	5.0	0.58	A	2.39	B
185.0				0.24	WB	4	U	5,347	*3*	40	17.0	6.0	0.0	0	4.0	4.0	4.0	0	60	5.0	0.58	A	2.88	C

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Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L) Th #	Lanes (L) Con	ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement W_t (ft)	Width of Pavement W_l (ft)	Width of Pavement W_{ps} (ft)	Occ. Park. (OSPA) (%)	Pavecon PC_t (1..5)	Pavecon PC_l (1..5)	Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS Score (0...7)	Bicycle LOS Grade (A...F)	Pedestrian LOS Value (0...7)	Pedestrian LOS Grade (A...F)
186.0	Lehigh Station Rd	W Henrietta Rd	Kenneth Dr	0.39	EB	4	S	23,577	*4*	40	17.0	7.0	0.0	0	4.0	4.0	5.0	0	100	4.0	2.58	C	3.65	D
186.0				0.39	WB	4	S	23,577	*4*	40	17.0	7.0	0.0	0	4.0	4.0	5.0	0	100	4.0	2.58	C	3.65	D
187.0	Lehigh Station Rd	Kenneth Dr	SB 390 Ramp	0.10	EB	4	S	23,577	*4*	40	16.5	4.5	0.0	0	4.0	4.0	4.0	0	100	5.0	3.25	C	3.60	D
187.0				0.10	WB	4	S	23,577	*4*	40	16.5	4.5	0.0	0	4.0	4.0	4.0	0	100	5.0	3.25	C	3.60	D
188.0	Lehigh Station Rd	SB 390 Ramp	Middle Rd	0.13	EB	4	S	13,653	*4*	40	16.0	2.0	0.0	0	4.0	4.0	0.0	0	100	5.0	3.57	D	3.10	C
188.0				0.13	WB	4	S	13,653	*4*	40	20.0	7.0	0.0	0	4.0	4.0	0.0	0	100	5.0	1.54	B	2.98	C
189.0	Lehigh Station Rd	Middle Rd	NYS Police Driveway	0.16	EB	2	U	13,653	*4*	40	24.0	12.0	0.0	0	4.0	4.0	0.0	0	0	4.0	0.00	A	4.56	E
189.0				0.16	WB	2	U	13,653	*4*	40	24.0	12.0	0.0	0	4.0	4.0	0.0	0	0	4.0	0.00	A	4.56	E
190.0	Lehigh Station Rd	NYS Police Driveway	RR Crossing	0.15	EB	2	U	9,213	*3*	40	24.0	12.0	0.0	0	4.0	3.5	0.0	0	0	0.0	0.00	A	3.98	D
190.0				0.15	WB	2	U	9,213	*3*	40	24.0	12.0	0.0	0	4.0	3.5	0.0	0	0	0.0	0.00	A	3.98	D
191.0	Lehigh Station Rd	RR Crossing	Nevins Rd	0.23	EB	2	U	9,213	*2*	35	18.0	6.0	0.0	0	3.5	3.5	0.0	0	10	7.5	2.02	B	4.07	D
191.0				0.23	WB	2	U	9,213	*2*	35	17.0	5.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.48	B	4.25	D
192.0	Lehigh Station Rd	Nevins Rd	Green Clover Dr	0.26	EB	2	U	9,213	*2*	35	16.0	5.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.69	C	4.33	D
192.0				0.26	WB	2	U	9,213	*2*	35	16.0	5.0	0.0	0	3.5	3.5	0.0	0	40	5.0	2.69	C	3.90	D
193.0	Lehigh Station Rd	Green Clover Dr	.07miles east of Michel Dr	0.42	EB	2	U	9,213	*2*	35	18.0	6.5	0.0	0	3.5	3.5	15.0	0	100	5.0	1.89	B	2.79	C
193.0				0.42	WB	2	U	9,213	*2*	35	17.5	6.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.13	B	4.22	D
194.0	Lehigh Station Rd	.07miles east of Michel Dr	E Henrietta Rd	0.15	EB	2	U	9,213	*2*	35	19.5	7.5	0.0	0	3.5	3.5	0.0	0	100	7.5	1.25	A	2.99	C
194.0				0.15	WB	2	U	9,213	*2*	35	18.5	6.5	0.0	0	3.5	3.5	0.0	0	0	0.0	1.77	B	4.14	D
195.0	Lehigh Station Rd	E Henrietta Rd	Rush-Henrietta Senior HS	0.24	EB	2	U	9,127	*2*	35	19.0	9.0	0.0	0	3.5	3.5	0.0	0	100	7.0	0.97	A	3.01	C
195.0				0.24	WB	4	U	9,127	*2*	35	14.0	4.0	0.0	0	3.5	3.5	0.0	0	0	0.0	2.76	C	3.89	D
196.0	Lehigh Station Rd	Rush-Henrietta Senior HS	Aleta Dr	0.16	EB	2	U	9,127	*2*	35	20.0	9.0	0.0	0	3.0	3.0	15.0	0	100	5.0	0.86	A	2.75	C
196.0				0.16	WB	2	U	9,127	*2*	35	18.0	7.0	0.0	0	3.0	3.0	0.0	0	0	0.0	1.94	B	4.17	D
197.0	Lehigh Station Rd	Aleta Dr	Sperry Dr	0.10	EB	2	U	9,127	*2*	35	20.0	9.0	0.0	0	3.0	3.0	15.0	0	30	5.0	0.86	A	3.65	D
197.0				0.10	WB	2	U	9,127	*2*	35	18.0	7.0	0.0	0	3.0	3.0	7.0	0	100	5.0	1.94	B	2.98	C
198.0	Lehigh Station Rd	Sperry Dr	Masthead Way	0.13	EB	2	U	9,127	*2*	35	20.0	9.0	0.0	0	3.0	3.0	14.0	0	100	5.0	0.86	A	2.77	C
198.0				0.13	WB	2	U	9,127	*2*	35	18.0	7.0	0.0	0	3.0	3.0	7.0	0	100	5.0	1.94	B	2.98	C
199.0	Lehigh Station Rd	Masthead Way	Strawbridge Rd	0.15	EB	2	U	9,127	*2*	35	20.5	10.5	0.0	0	3.0	3.0	14.0	0	100	5.0	0.26	A	2.76	C
199.0				0.15	WB	2	U	9,127	*2*	35	17.5	6.5	0.0	0	3.0	3.0	17.0	0	100	5.0	2.18	B	2.76	C
200.0	Lehigh Station Rd	Strawbridge Rd	Pinnacle Rd	0.20	EB	2	U	9,127	*2*	35	20.0	10.0	0.0	0	3.0	3.0	0.0	0	0	0.0	0.56	A	4.04	D
200.0				0.20	WB	2	U	9,127	*2*	35	18.0	7.0	0.0	0	3.0	3.0	13.0	0	100	5.0	1.94	B	2.83	C
201.0	Lehigh Station Rd	Pinnacle Rd	Fox Chapel Rd	0.43	EB	2	U	3,745	*3*	40	14.0	2.0	0.0	0	3.0	3.0	12.0	0	100	5.0	3.26	C	2.41	B
201.0				0.43	WB	2	U	3,745	*3*	40	14.0	2.0	0.0	0	3.0	3.0	0.0	0	0	0.0	3.26	C	3.93	D
202.0	Lehigh Station Rd	Fox Chapel Rd	Henrietta Town Line	0.57	EB	2	U	3,745	*3*	40	12.0	0.0	0.0	0	3.0	-	0.0	0	0	0.0	3.85	D	4.04	D
202.0				0.57	WB	2	U	3,745	*3*	40	12.0	0.0	0.0	0	3.0	-	0.0	0	0	0.0	3.85	D	4.04	D
203.0	St Patrick Dr	W Henrietta Rd	Palo Alto Dr	0.18	EB	2	U	*600*	*2*	30	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.54	A	2.68	C
203.0				0.18	WB	2	U	*600*	*2*	30	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.54	A	2.68	C
204.0	Palo Alto Dr	St Patrick Dr	Calkins Rd	0.38	NB	2	U	*600*	*2*	30	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.54	A	2.68	C

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Seg_ID	Road Name	From	To	Len-gth (Ls) (mi)	Dir. of Sur.	Lanes (L) Th #	Lanes (L) Con	ADT	Tks. (HV) (%)	Post. Spd. (SP_p) mph	Width of Pavement W_t (ft)	Width of Pavement W_l (ft)	Width of Pavement W_{ps} (ft)	Occ. Park. (OSPA) (%)	Pavecon PC_t (1..5)	Pavecon PC_l (1..5)	Buff. Width (BW) (ft)	Tree Spcg. in Buffer (ft/ctr)	% with Sidewalk	Swalk Width (Ws) (ft)	Bicycle LOS Score (0...7)	Bicycle LOS Grade (A...F)	Pedestrian LOS Value (0...7)	Pedestrian LOS Grade (A...F)
204.0				0.38	SB	2	U	*600*	*2*	30	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	0.54	A	2.68	C
205.0	Hylan Dr	Jefferson Rd	Marketplace Mall (north Dwy)	0.11	NB	4	S	20,338	*4*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.44	D	4.58	E
205.0				0.11	SB	4	S	20,338	*4*	35	11.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.55	E	4.67	E
206.0	Hylan Dr	Marketplace Mall (north Dwy)	Marketplace Mall (mdl Dwy)	0.16	NB	4	S	*15,000*	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.16	D	4.47	D
206.0				0.16	SB	4	S	*15,000*	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.16	D	4.47	D
207.0	Hylan Dr	Marketplace Mall (mdl Dwy)	Marketplace Mall (south Dwy)	0.20	NB	4	S	12,956	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.94	D	4.26	D
207.0				0.20	SB	4	S	12,956	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.94	D	4.26	D
208.0	Hylan Dr	Marketplace Mall (south Dwy)	Marketplace Dr	0.14	NB	4	S	23,020	*4*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.47	D	4.89	E
208.0				0.14	SB	6	S	23,020	*4*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.26	D	4.39	D
209.0	Hylan Dr	Marketplace Dr	SB 390 Ramp	0.14	NB	4	S	32,280	*4*	40	12.0	0.0	0.0	0	3.5	-	0.0	0	90	5.0	5.01	E	4.38	D
209.0				0.14	SB	4	S	32,280	*4*	40	13.0	0.0	0.0	0	3.5	-	0.0	0	0	0.0	4.88	E	5.46	E
210.0	Hylan Dr	SB 390 Ramp	NB 390 Ramp (on)	0.08	NB	4	S	19,560	*4*	40	12.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.65	E	3.46	C
210.0				0.08	SB	4	S	19,560	*4*	40	12.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.65	E	3.46	C
211.0	Hylan Dr	NB 390 Ramp (on)	NB 390 Ramp (on/off)	0.11	NB	4	S	28,511	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.71	E	3.99	D
211.0				0.11	SB	4	S	28,511	*4*	40	14.0	0.0	0.0	0	4.0	-	0.0	0	100	7.0	4.58	E	3.97	D
212.0	Hylan Dr	NB 390 Ramp (on/off)	Summer Sky Dr	0.05	NB	4	S	11,653	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	100	6.5	4.25	D	2.93	C
212.0				0.05	SB	4	S	11,653	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	100	6.5	4.25	D	2.93	C
213.0	Hylan Dr	Summer Sky Dr	Calkins Rd	0.36	NB	4	S	11,653	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.25	D	4.29	D
213.0				0.36	SB	4	S	11,653	*4*	40	13.0	0.0	0.0	0	4.0	-	0.0	0	100	6.5	4.25	D	2.93	C
214.0	Clay Rd	Brighton-Henrietta TL Road	Mushroom Blvd	0.28	NB	2	U	13,484	*3*	35	17.5	5.5	0.0	0	4.0	4.0	0.0	0	0	0.0	2.54	C	4.77	E
214.0				0.28	SB	2	U	13,484	*3*	35	16.5	4.5	0.0	0	4.0	4.0	0.0	0	100	7.0	2.98	C	3.64	D
215.0	Clay Rd	Mushroom Blvd	Home Depot Svc Access	0.11	NB	2	U	13,484	*3*	35	15.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.06	D	4.96	E
215.0				0.11	SB	2	U	13,484	*3*	35	15.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.06	D	4.96	E
216.0	Clay Rd	Home Depot Svc Access	Jefferson Rd	0.15	NB	2	U	13,484	*3*	35	13.5	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.27	D	5.09	E
216.0				0.15	SB	2	U	13,484	*3*	35	13.5	0.0	0.0	0	4.0	-	10.5	0	100	5.0	4.27	D	3.57	D
217.0	Clay Rd	Jefferson Rd	Strasenburgh Dr	0.40	NB	2	U	13,484	*3*	35	14.5	3.5	0.0	0	4.0	0.0	0.0	0	0	0.0	3.56	D	5.01	E
217.0				0.40	SB	2	U	13,484	*3*	35	13.5	2.5	0.0	0	4.0	0.0	0.0	0	0	0.0	3.90	D	5.09	E
218.0	Strasenburgh Dr	Clay Rd	Marketplace Dr	0.21	EB	2	S	*8,000*	*2*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.78	D	4.43	D
218.0				0.21	WB	2	S	*8,000*	*2*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	3.78	D	4.43	D
219.0	Marketplace Dr	Jefferson Rd	Strasenburgh Dr	0.39	NB	2	S	13,730	*3*	35	13.0	0.0	0.0	0	3.0	-	0.0	0	0	0.0	4.67	E	5.18	E
219.0				0.39	SB	2	S	13,730	*3*	35	12.0	0.0	0.0	0	3.0	-	0.0	0	0	0.0	4.80	E	5.28	E
220.0	Marketplace Dr	Strasenburgh Dr	Clay Rd	0.13	NB	2	S	13,730	*3*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.35	D	5.18	E
220.0				0.13	SB	2	S	13,730	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.47	D	5.28	E
221.0	Marketplace Dr	Clay Rd	Hylan Drive	0.20	NE	2	S	13,730	*3*	35	13.0	0.0	0.0	0	4.0	-	0.0	0	0	0.0	4.35	D	5.18	E
221.0				0.20	SW	2	S	13,730	*3*	35	12.0	0.0	0.0	0	4.0	-	0.0	0	100	6.5	4.47	D	3.84	D

APPENDIX G
SCHEMATIC COSTS FOR PEDESTRIAN AND BICYCLE INFRASTRUCTURE

Costs for Pedestrian and Bicycle Infrastructure Improvements

Source: Costs for Pedestrian and Bicycle Infrastructure Improvements *(http://www.pedbikeinfo.org/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf)*

Infrastructure	Description	Median	Average	Minimum Low	Maximum High	Cost Unit	Number of Sources (Observations)
Bicycle Parking	Bicycle Locker	$2,140	$2,090	$1,280	$2,680	Each	4 (5)
Bicycle Parking	Bicycle Rack	$540	$660	$64	$3,610	Each	19 (21)
Bikeway	Bicycle Lane	$89,470	$133,170	$5,360	$536,680	Mile	6 (6)
Bikeway	Signed Bicycle Route	$27,240	$25,070	$5,360	$64,330	Mile	3 (6)
Bikeway	Signed Bicycle Route with Improvements	$241,230	$239,440	$42,890	$536,070	Mile	1 (6)
Crosswalk	High Visibility Crosswalk	$3,070	$2,540	$600	$5,710	Each	4(4)
Crosswalk	Striped Crosswalk	$340	$770	$110	$2,090	Each	8 (8)
Crosswalk	Striped Crosswalk	$5.87	$8.51	$1.03	$26	Linear Foot	12 (48)
Crosswalk	Striped Crosswalk	$6.32	$7.38	$1.06	$31	Square Foot	5 (15)
Curb/Gutter	Curb	$18	$21	$1.05	$110	Linear Foot	16 (68)
Curb/Gutter	Curb and Gutter	$20	$21	$1.05	$120	Linear Foot	16 (108)
Curb/Gutter	Gutter	$23	$23	$10	$78	Linear Foot	4 (4)
Curb Ramp	Truncated Dome/Detectable Warning	$37	$42	$6.18	$260	Square Foot	9 (15)
Curb Ramp	Wheelchair Ramp	$740	$810	$89	$3,600	Each	16 (31)
Curb Ramp	Wheelchair Ramp	$12	$12	$3.37	$76	Square Foot	10 (43)
Flashing Beacon	Flashing Beacon	$5,170	$10,010	$360	$59,100	Each	16 (25)
Flashing Beacon	RRFB	$14,160	$22,250	$4,520	$52,310	Each	3 (4)
Gateway	Gateway Sign	$350	$340	$130	$520	Each	3 (4)
Island	Median Island	$10,460	$13,520	$2,140	$41,170	Each	17 (19)
Island	Median Island	$9.80	$10	$2.28	$26	Square Foot	6 (15)
Median	Median	$6.00	$7.26	$1.86	$44	Square Foot	9 (30)
Path	Multi-Use Trail - Paved	$261,000	$481,140	$64,710	$4,288,520	Mile	11 (42)
Path	Multi-Use Trail - Unpaved	$83,870	$121,390	$29,520	$412,720	Mile	3 (7)
Pavement Marking	Advance Stop/Yield Line	$380	$320	$77	$570	Each	3 (5)
Pavement Marking	Advance Stop/Yield Line	$10	$10	$4.46	$100	Square Foot	1 (4)
Pavement Marking	Island Marking	$1.49	$1.94	$0.41	$11	Square Foot	1 (4)
Pavement Marking Symbol	Pedestrian Crossing	$310	$360	$240	$1,240	Each	4 (6)
Pavement Marking Symbol	Shared Lane/Bicycle Marking	$160	$180	$22	$600	Each	15 (39)
Pavement Marking Symbol	School Crossing	$520	$470	$100	$1,150	Each	4 (18)
Signal	Audible Pedestrian Signal	$810	$800	$550	$990	Each	4 (4)
Signal	Countdown Timer Module	$600	$740	$190	$1,930	Each	14 (18)
Signal	Pedestrian Signal	$980	$1,480	$130	$10,000	Each	22 (33)
Signal	Signal Face	$490	$430	$130	$800	Each	3 (6)
Signal	Signal Head	$570	$550	$100	$1,450	Each	12 (26)
Signal	Signal Pedestal	$640	$800	$490	$1,160	Each	3 (5)
Pedestrian/Bike Detection	Furnish and Install Pedestrian Detector	$180	$390	$68	$1,330	Each	7 (14)
Pedestrian/Bike Detection	Push Button	$230	$350	$61	$2,510	Each	22 (34)
Raised Crossing	Raised Crosswalk	$7,110	$8,170	$1,290	$30,880	Each	14 (14)
Roundabout/ Traffic Circle	Roundabout/ Traffic Circle	$27,190	$85,370	$5,000	$523,080	Each	11 (14)
Sidewalk	Asphalt Paved Shoulder	$5.81	$5.56	$2.96	$7.65	Square Foot	1 (4)
Sidewalk	Asphalt Sidewalk	$16	$35	$6.02	$150	Linear Foot	7 (11)
Sidewalk	Concrete Sidewalk	$27	$32	$2.09	$410	Linear Foot	46 (164)
Sidewalk	Concrete Sidewalk - Patterned	$38	$36	$11	$170	Linear Foot	4 (5)
Sidewalk	Concrete Sidewalk - Stamped	$45	$45	$4.66	$160	Linear Foot	12 (17)
Sidewalk	Concrete Sidewalk + Curb	$170	$150	$23	$230	Linear Foot	4 (7)
Sidewalk	Sidewalk	$34	$45	$14	$150	Linear Foot	17 (24)
Sign	Stop/Yield Signs	$220	$300	$210	$560	Each	4 (4)
Speed Bump/Hump	Speed Table	$2,090	$2,400	$2,000	$4,180	Each	5 (5)
Street Furniture	Street Trees	$460	$430	$54	$940	Each	7(7)
Street Furniture	Bench	$1,660	$1,550	$220	$5,750	Each	15 (17)
Street Furniture	Bus Shelter	$11,490	$11,560	$5,230	$41,850	Each	4 (4)

Note: Costs for Pedestrian and Bicycle Infrastructure Improvements is for conceptual budgetting purposes only. Unit costs should be checked prior to estimating.

NYSDOT Quick Estimator Reference - Calculations - Upstate

Item	Unit	Unit Price	Included NYSDOT item numbers	Breakdown	Note
4' wide sidewalk	LF	33.00	608.0101 - CONCRETE SIDEWALKS AND DRIVEWAYS 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL 304.12 - SUBBASE COURSE TYPE II	ITEM 608.0101 **$23/LF** ITEM 203.02 **$5/LF** ITEM 304.12 **$5/LF**	Includes excavation, disposal, subbase material, compaction, construction of sidewalk and finish work. Does not include, sawcutting driveways, excavation to additional depth for driveways, curbing, grading, or turf establishment.
5' wide sidewalk	LF	39.00	608.0101 - CONCRETE SIDEWALKS AND DRIVEWAYS 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL 304.12 - SUBBASE COURSE TYPE II	ITEM 608.0101 **$27/LF** ITEM 203.02 **$6/LF** ITEM 304.12 **$6/LF**	Includes excavation, disposal, subbase material, compaction, construction of sidewalk and finish work. Does not include, sawcutting driveways, excavation to additional depth for driveways, curbing, grading, or turf establishment.
10' multiuse asphalt path	LF	74.00	608.020102 - HMA SIDEWALKS DRIVEWAYS AND BICYCLE PATHS	ITEM 608. 020102 **$74/LF**	Includes all prep of subgrade, sawcutting and tack coat. Doesn't include curbing, grading or turf establishment. NOTE: Prices have been volatile over the past 3 years.
ADA curb ramp	EA	1,250.00	608.0105nn15 - CONCRETE SIDEWALKS AND DRIVEWAYS	ITEM 608.0105nn15 **$1250/ EA**	Includes site survey, demolition, saw cutting, excavation, disposal, fill, subbase material, compaction, construction of ramp, landings and associated curbing, detectable warning units, repairs to affected asphaltm topsoil, establishing turf (to disturbed areas), and finish work. NOTE: Limited price history data in PIC: Ramp Types 1-13 not all reported .
LS Type crosswalk	EA	770.00	685.04 - WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MILS 635.0103-CLEANING AND PREPARATION OF PAVEMENT SURFACES	ITEM 685.04 **$0.42/LF** ITEM 635.0103 **$0.68/LF**	Assume 700 LF of 4" striping per crosswalk
Concrete Curbing	LF	53.00	609.04 CAST IN PLACE CONCRETE CURB 520.5014--08 SAW CUTTING (EDGE OF PAVEMENT PARALLEL TO CURB) 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL 203.03 - EMBANKMENT IN PLACE 304.12 -SUBBASE TYPE II 402.128102 - TOP COURSE 503.1010 - FOUNDATION CONCRETE	ITEM 609.04 **$ 32/LF** ITEM 520.5014--08 **$ 4/LF** ITEM 203.02 **$ 5/LF** ITEM 203.03 **$ 0.60/LF** ITEM 304.12 **$6 /LF** ITEM 402.128102 **$ 3.8 /LF** ITEM 503.1010 **$7.2/LF**	Includes excavation for curb, subbase, removing asphalt from existing roadway adjacen to proposed curb, patching asphalt adjacent to curb.
Asphalt Paved Snow Storage Area	SF	8.00	608.020102 - HMA SIDEWALKS DRIVEWAYS AND VEGETATION CONTROL STRIPS	ITEM 608.020102 **8/SF**	
Raised crosswalk	EA	15,000.00			
Mini roundabout	EA	175,000.00			
Small Single Post-Mounted Signs	EA	130.00	645.5201 or 645.5202 - GROUND MOUNTED SIGN PANELS 645.81 or 645.830502 - SIGN POST	ITEM 645.52xx **$ 30/EA** ITEM 645.8* **$ 100/EA**	Includes the cost of excavation and backfill and furnishing all labor, materials, and equipment necessary to complete the work
Solar powered radar speed sign	EA	7,000.00	645.80000001		Limited price data
Wooden Bollard - Fixed	EA	200.00	615.75 - TIMBER BOLLARDS FIXED	ITEM 615.75 **$ 200/EA**	Includes the cost of excavation and backfill and furnishing all labor, materials, and equipment necessary to complete the work
Wooden Bollard - Moveable	EA	500.00	615.76 TIMBER BOLLARDS MOVEABLE	ITEM 615.76 **$ 500/EA**	Includes the cost of excavation and backfill and furnishing all labor, materials, and equipment necessary to complete the work
Pedestrian push button on existing signal	EA	2,005.00	680.520108 - CONDUIT, METAL STEEL, ZINC COATED, 3 NPS 680.8142- PEDESTRIAN SIGNAL POST TOP MOUNTED ASSEMBLY 680.8225--10 PEDESTRIAN PUSHBUTTON AND SIGN-WITHOUT POST 680.730514 - SIGNAL CABLE, 5 CONDUCTOR, 14 AWG 680.8131 AUDIBLE PEDESTRIAN SIGNAL 680.813103 PEDESTRIAN SIGNAL SECTION, TYPE I, 1 ft 680.813104 INSTALL LED PEDESTRIAN SIGNAL MODULE	ITEM 680.520108 **$ 600/EA** ITEM 680.8142 **$150 /EA** ITEM 680.8225--10 **$190/EA** ITEM 680.730514 **$200 /EA** ITEM 680.8131 **$ 650/EA** ITEM 680.813103 **$ 165/EA** ITEM 680.813104 **$ 50/EA**	Includes demolition, saw cutting, excavation, disposal, fill, topsoil, establishing turf (to disturbed areas), repairs to affected asphalt and/or concrete as necessary, Pedestrian Signal Systems and components, (removed and or supplied / installed), Pedestrian Signal Systems wiring (removed and or supplied / installed), furnishing electrical service, finish work, and any required adjustments to utilities.
New signal with ped push buttons	EA	6,580.00	680.510501- PULLBOX, RECTANGULAR 680.520108 - CONDUIT, METAL STEEL, ZINC COATED, 3 NPS 680.8142- PEDESTRIAN SIGNAL POST TOP MOUNTED ASSEMBLY 680.8225--10 PEDESTRIAN PUSHBUTTON AND SIGN-WITHOUT POST 680.730514 - SIGNAL CABLE, 5 CONDUCTOR, 14 AWG 206.03 - CONDUIT EXCAVATION AND BACKFILL, INCLUDING SURFACE RESTORATION 680.6724-TRAFFIC SIGNAL POLE-TOP MOUNTED 8FT HIGH 680.8131 AUDIBLE PEDESTRIAN SIGNAL 680.813103 PEDESTRIAN SIGNAL SECTION, TYPE I, 1 ft 680.813104 INSTALL LED PEDESTRIAN SIGNAL MODULE	ITEM 680.510501 **$ 1100/EA** ITEM 680.520108 **$ 600/EA** ITEM 680.8142 **$ 150/EA** ITEM 680.8225--10 **$190/EA** ITEM 680.730514 **$ 200/EA** ITEM 206.03 **$ 2500/EA** ITEM 680.6724 **$ 975/EA** ITEM 680.8131 **$650 /EA** ITEM 680.813103 **$ 165/EA** ITEM 680.813104 **$ 50/EA**	Includes demolition, saw cutting, excavation, disposal, fill, topsoil, establishing turf (to disturbed areas), repairs to affected asphalt and/or concrete as necessary, Traffic Signal Systems, and components (removed and or supplied / installed), Traffic Signal Systems wiring, including vehicle detection (removed and or supplied / installed), furnishing electrical service, finish work, and any required adjustments to utilities.
Establish turf	SY	4.75	613.03-TOPSOIL- TYPE B 610.0203-ESTABLISH TURF	ITEM 613.03 **$ 4/SY** ITEM 610.0203 **$ 0.75/SY**	Assume 3" topsoil depth
Segmental block retaining wall	SF	40.00			Include the cost of furnishing the leveling pad, segmental precast concrete block units, backfill, unit fill, cap units, underdrain and geotextile and all labor,materials, and equipment necessary to satisfactorily complete the work. Does NOT include excavation. Very limited price data.
Alter Drainage Structure	EA	1,000.00			Ajust elevation of structure, alter structure to accept pipe.
% WZTC based on project complexity	5%	Percentage			
% for Incidentals, Inflation and Contingencies	20%	Percentage			
Total Construction Cost =					
% for Survey	10%	Percentage			
% for Design based on project complexity	5-15%	Percentage			
% for Construction Inspection	9%	Percentage			
Total Project Cost =					

Note: NYSDOT Quick Estimator Reference is for conceptual budgetting purposes only. Unit costs should be checked prior to estimating. Last updated: 06/11/2012

APPENDIX H
RIT ACTIVE TRANSPORTATION WHITE PAPER (JON SCHULL)

To: Bill Destler, President, RIT
From: Jon Schull, interim Director, Center for Student Innovation
Date: August 21, 2010

Dear Bill,

Last January you asked me to help "plan [bicycle] connections to off-campus apartment complexes and the two Greenway trails."

We now have some recommendations that could put RIT, UR, and downtown Rochester on a scenic and functional 6-mile "linear park" that would link the Genesee Valley Greenway to the Rochester Greenway. This would make Global Village and Park Point more attractive destinations, bolster property values, and increase quality of life for the neighborhood, on campus and off. It could also catalyze an alternative transportation network--*for pedestrians, joggers, and wheelchair users as well as cyclists*--that would benefit the Institute, the region, and the planet.

There are internal and external issues yet to explore, but prospects are good, and students, faculty, and collaborators on and off campus are pursuing them vigorously. ***So it would be a good time for you to provide guidance, cautions, and assistance.***

This whitepaper will provide background for the following ***recommendations***.

- ***Seek DEC and other permissions for River Meadow Crossing, Park Point promenade, and to explore a possible Marsh to Malls Nature Trail.***
- ***Reach out to Reidman Associates, real estate developers at River Meadow Crossing (perhaps via a Riedman family member on our Board of Trustees).***
- ***Help ensure that ongoing construction creates and preserves options for active transportation behind The Province.***
- ***Endorse and participate in "Town/Gown" discussions with UR, MCC, Brighton, Henrietta, and the City of Rochester regarding the development of inter-campus bikeways.***
- ***Endorse the Greater Rochester Active Transportation System brochure.***
- ***Endorse HR4722, the Active Community Transportation Act and help persuade our congressional representatives to co-sponsor it.***
- ***Make 2010-2011 RIT's Year of Active Transportation, celebrating (among other things) emerging on-campus bikeways and cross-country ski paths, and stimulating support for inter-campus bikeways.***

Glossary of Names and Acronyms

CSI Center for Student Innovation

DEC New York State Department of Environmental Conservation

RCA Rochester Cycling Alliance

NYSDOT New York State Department of Transportation

GTC Genesee Transportation Council

Scott Jones, Region 8 Department of Environmental Conservation

David Armanini, RIT's liaison to DEC

Steve Macintrye, Engineering Inspector, Henrietta Township

David Reidman, real estate developer at River Meadow Crossing

Brian Slack, ! "#" $"" %&'#(")*+, -" $*. " ('/ #, 0'10, ##'#(*2 / 3#4'5$*

Tom Robinson, trail planning consultant to RIT, UR, the City, and Brighton

Carl Lundgren, CSI Lead Faculty

Amanda Pardee, RIT Student Environmental Action League

Peter Robinson, VP and COO of Strong Medical Center and Strong Health

Scott Macrae, M.D. UR refractive surgeon, and RCA leader.

Sandra Frankel, Brighton Town Supervisor

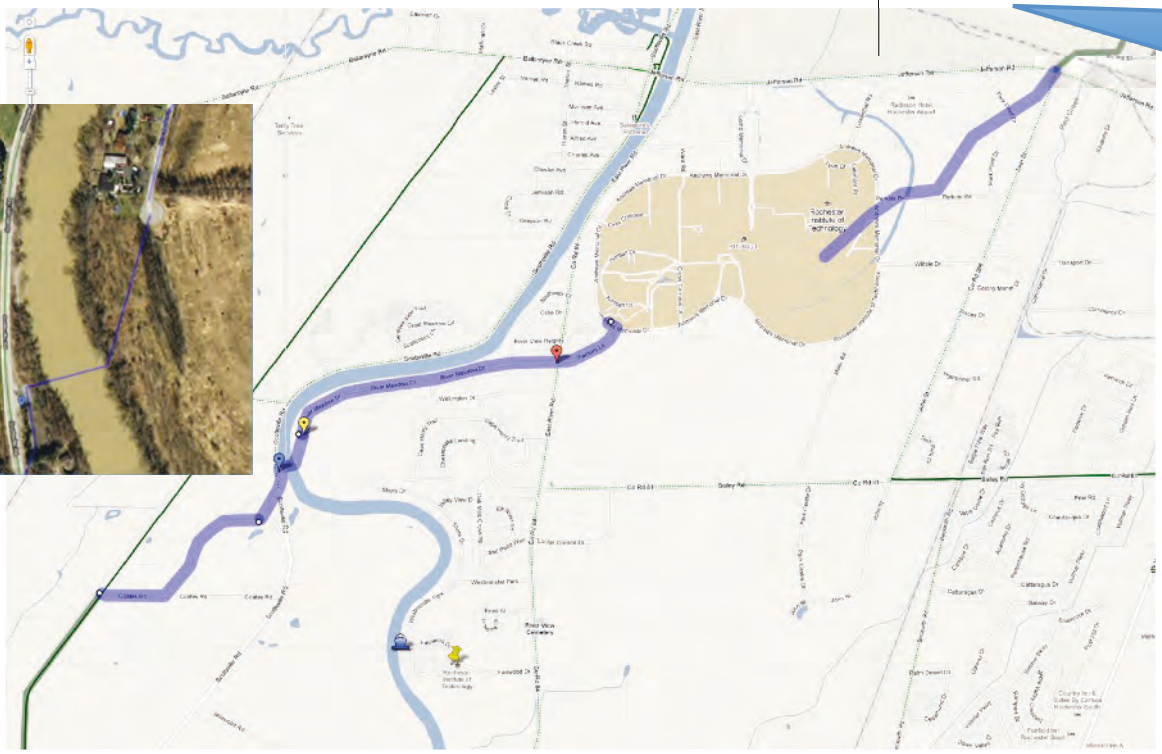
Connecting the Genesee Valley Greenway with the "Rochester Greenway"

This whitepaper focuses first on our neck of the woods and our immediate opportunity to do well by doing good. Then we broaden our perspective to show how RIT's leadership could help achieve a healthier, sustainable future.

The "RIT Tweenway" would build on existing assets to creating two scenic bikeways: "River Meadow Crossing" and "Park Point Promenade wodl linkthe Genesee Valley Greenway to the south with the Lehigh Valley North Trail to the north.

River Meadow Crossing would connect Farnum Lane with the Genesee Valley Greenway by way of River Meadow Drive.

Park Point Promenade would let dorm and apartment residents walk or bike from campus and Perkins Lane to Park Point without trekking on Jefferson or John St..
Park Point would then become a gateway to downtown, U of R, and MCC via the "Rochester Greenway".



"River Meadow Crossing (RMC)
is mapped here and discussed here.

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RIT

River Meadow Crossing

GVG

Here are the most significant issues to address next.

- **Permissions and cooperation.**
  - DEC permissions. **Scott Jones** of the Region 8 DEC has offered to facilitate a meeting with relevant DEC officials and with the Corps of Engineers. David Armanini is RIT's official liaison to DEC and is eager to help. ***We request your authorization.***

  - **Steve Macintyre**, Engineering Inspector at Henrietta Township is supportive of this plan and has forwarded it to the township Planning Board and to real estate developer **David Riedman** who owns the land adjacent to the crossing.

  - River Meadow Rd currently terminates at an open field that Riedman Associates is turning into a pond and nature preserve in connection with some new home development. ***We need help engaging Mr. Riedman who has not yet responded to voicemail or a proposal forwarded by Steve Macintyre, Engineering Inspector at Henrietta Township. Marge Bricks tells me a member of the Riedman family is an RIT alum and trustee.***

  - At the west side of the crossing '$*, #*, $HB, 0' 7*8 3)#9,)/ 3#7*8B, 8* 3$" 7*8' *I " *, *6 , 8')*8' $8#(*:, 4'08G*/ 6 #" 7*I GJ* " 6 *K/)-*E8, 8' <**L*)" $'7" #8, 00, #" *, #(0' $*4/ #?" #'" #8G:*)/ = *8B")" *8' *2 / , 8' $*. / , 7*, #7*8B" * ! " #" $$" " *F, 0' G!)" " #6 , G*! **"#$%&($)** * ;*, 38B/)*/ :*8B" * ! " #" $" " %&'#(")*+, -" $*. " ('/ #, 010, ##'#(*2 / 3#4'0$*)" 4" #8*M3" 6 , G* L#, 0G$$*. " H/)8*6 '00B" 0H*3$*, $$" $$*N/#'#(*, #7*/ 6 #")$B'H*$$3" $*6 B" #* B" *)" 83)#$*:)/ =* , *8)'H*, 8*8B" *" #7*/ :*O3G*CM3" 6 , G$*,)" *=3 089 3$" *)" 4)" , 8/ #, 06 , 8')6 , G$*, #, 0 (/ 3$*8' *( )" " #6 , G$B

  - P$'#(*" Q$8#(*, #7*H0, ##" 7*0' 6 98, ::'4*0, #" $*, #7*380G*/ , 7$;*8* $B/ 30*7*I " *)" 0, 8?" 0G* , $G8' *4)" , 8' *I '-" 6 , G$*)/ =* **+#, -"&+. %&$%/ & +01 2 3&4 53%-((& 5$6&7 5. 3- &** *I / 8B*. '?")*A " , 7/ 6 *2)/ $$#(;*, #7*8' * . RS*

- The Crossing
  - The site has 10-15 foot banks on either side ... the bank-to-b... bridge crossing ... rudime... opportu...

Park Point Promenade

- The northeast corner of campus is the gateway to Park Point, the Dorms, The Province, and the Lehigh Valley North Branch Trail to UofR and downtown Rochester. Current by-ways are well-designed for driving and parking, not walking or biking. ***We can establish scenic, direct, and traffic-free biking and walking routes from the dorms and Perkins Green to Park Point. Tom Robinson,*** one of the architects involved with our on-campus bikeway sketched some possible paths (below left; I added the solid purple line, which might be the most beneficial single-improvement option.) Robinson has designed and implement other DEC-approved board-walk style multi-use wetland trails.

North of Park point, the current route to the Lehigh Valley North Branch Trail is via Brighton Henrietta Town Line Rd. This is is an acceptable and already-marked trail**, but RIT-owned property directly across Jefferson Avenue from Park Point might make a more scenic and appealing connection**.

We're investigating.

Key Issues to address next.

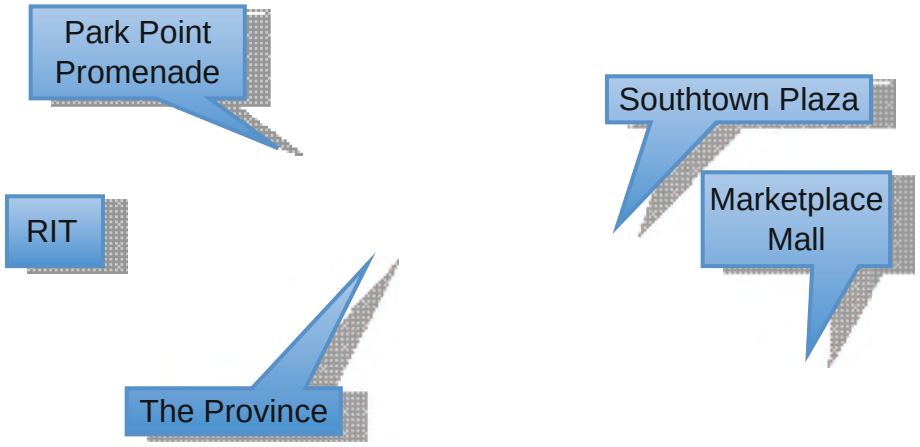
- Permissions. These trails traverse wetlands protected by the DEC. **Scott Jones** tells me that trails through these wetlands were near approval when Wilmorite took over Park Point. He provided the map below, and indicated that he thought pedestrian and bike trails could be approved.
  We seek your authorization for permitting requests.

A possible Marsh-to-Malls Nature Trail

One of the students working on this project (**Amanda Pardee** of the Student Environmental Action League) points out that there are potential nature trails and bikeways from The Province to the Market Place Mall(!). She writes,

> By starting from within, and reaching out to the immediate community, RIT can begin to spread its message and philosophy. The Province, Park Point, the RIT residence halls, and Colony Manor house a huge portion of RIT's students. Currently, the majority of destinations ideal for students off of campus are more conveniently gotten to by car. Jefferson Rd is a very busy road and the sidewalks in many places are virtually non-existent. If RIT were to invest in a path from John Street to Market Place Mall, somewhat parallel to Jefferson Road, the RIT campus community would have the privilege of being have the most efficient and clean means of transportation to major areas of interest.

Preliminary investigation suggests that much of the land behind The Province is owned by Rokel Development. **Scott Jones** (DEC) tells me landowners may be amenable because their development options are limited.



There is already a lovely North-South trail and pond along the eastern boundary of The Province.

The surface is too rough for biking, but it is still under construction.

This path should be made bike-friendly while construction is underway, for ways of preserving active transportation options.

Local Connections to the Rochester Greenway, UR, and MCC

North of Park Point, the the Lehigh Valley Trail crosses the Erie Canal and divides Genesee Valley Park from Brighton-owned parkland known as Lynch Woods, now under development with **Tom Robinson's** assistance. (Lynch Woods is roughly equidistant from UR, MCC, and RIT, and could become an interchange and a meeting place for the three schools.)

Peter Robinson (VP and COO of Strong Medical Center and Strong Health) has expressed enthusiasm in augmenting bikeable connections between our two campuses. J KE@T S*B, $*U3$8*6)'8" #*, *SR: >. *( ), #8*, H-H04, 8/ #*8 *"=H)/ ?" * 8B" *I)'7(" *8B, 8*4/ ##" 48$*8B" *#/)8B")#*" #7*/ :*8B" *+" B'(B*F, 0 G*J /)8B*M), #4B* 8 *P/ :. 5$*R#8")4, =H3$*@)'?" <**SB" G*$/ 04'8" 7*0" 8")$*/ :*$3H-H/)8:)/ =*. R$;*P. ;* M)'(B8 #;*, #7*8B" *. / 4B" $8")*2 G40#(*L 0, #4" *C 2 L D<

V' 8B*. R$*GB/ H" :30GD" #B, #4'#(*8B" *E/ 38B")#*" #7*/ :*8B" *J /)8B*M), #4B*, #7* M)'(B8 #*7" ?" 0 H#(*+G#4B*V/ / 7$*8 *8B" *>, $8;*8*$*, *H"):" 488= " *8 *$= / / 8B*, * :" 6 *)/ 3(B*$H/ 8$*#*8B" *=' 770 *, #7*7" 40)" *8B" *. / 4B" $8")*!)" " #6, G*, *)", 08G< ***As explained in the next section, it's time to get all parties to the table.***

Metropolitan connections

E'#4" */)(, #'N#(*0, $8T 48 I ")5$*. / 4B" $8)*2 G4'@(*E3==' 8;*8B" *2 " #8")*:/)* E837" #8R##/ ?, 8/ #*B, $*1 " 4/ = " *, *)" ('/ #, 0B/ 3(B80 , 7")*#*$3$8, '#, I 0 *, #7* , 48?" *9, #$H)8, 8/ #<*V " *B" 0H" 7*:/ 3#7*8B" *. / 4B" $8)*2 G4@#(*L0, #4" *C 2 LD;* B/ $8 7*8B" *. 2 L5$*= " " 8#($;*, #7*8B" *A, GWE3$8, '#, I 0 *A/ I '08G*&, ')*/ #*A, GW* , #7*7" =/ #$8, 8" 7*$/ =" *), 7'4, 0 I '4G40*7" $'(#$*, 8R=, ('#" . R<**R$")?" 7*/ #*8B" * 2 '8G$*4'8N"#*, 7?'$/)G * / ,)7*:/)*>)'" *X,)I /)*1 ,)-; *, #7*$")?" *, $*, #*, 0")#, 8" */ #* 8B" *City of Rochester's Bicycle Master Plan Advisory Committee.

The City's Bicycle Master Plan is bounded by the city limits, and it is focusing on on-street paths. However, the region's bicycle and pedestrian byways are not multi-modal and transcend the city limits. This creates a pressing opportunity to help neighboring municipalities and institutions develop plans that will complement and shape the City's deliberations. My RCA colleagues and I have been meeting officials of Monroe County, the Genesee Transportation Council (GTC), the Finger Lakes Planning Council, and the New York State Dept. of Transportation (NYSDOT), and the Brighton Town Supervisor Sandy Frankel to encourage planning that can complement the City's deliberations. Several promising developments have already ensued.

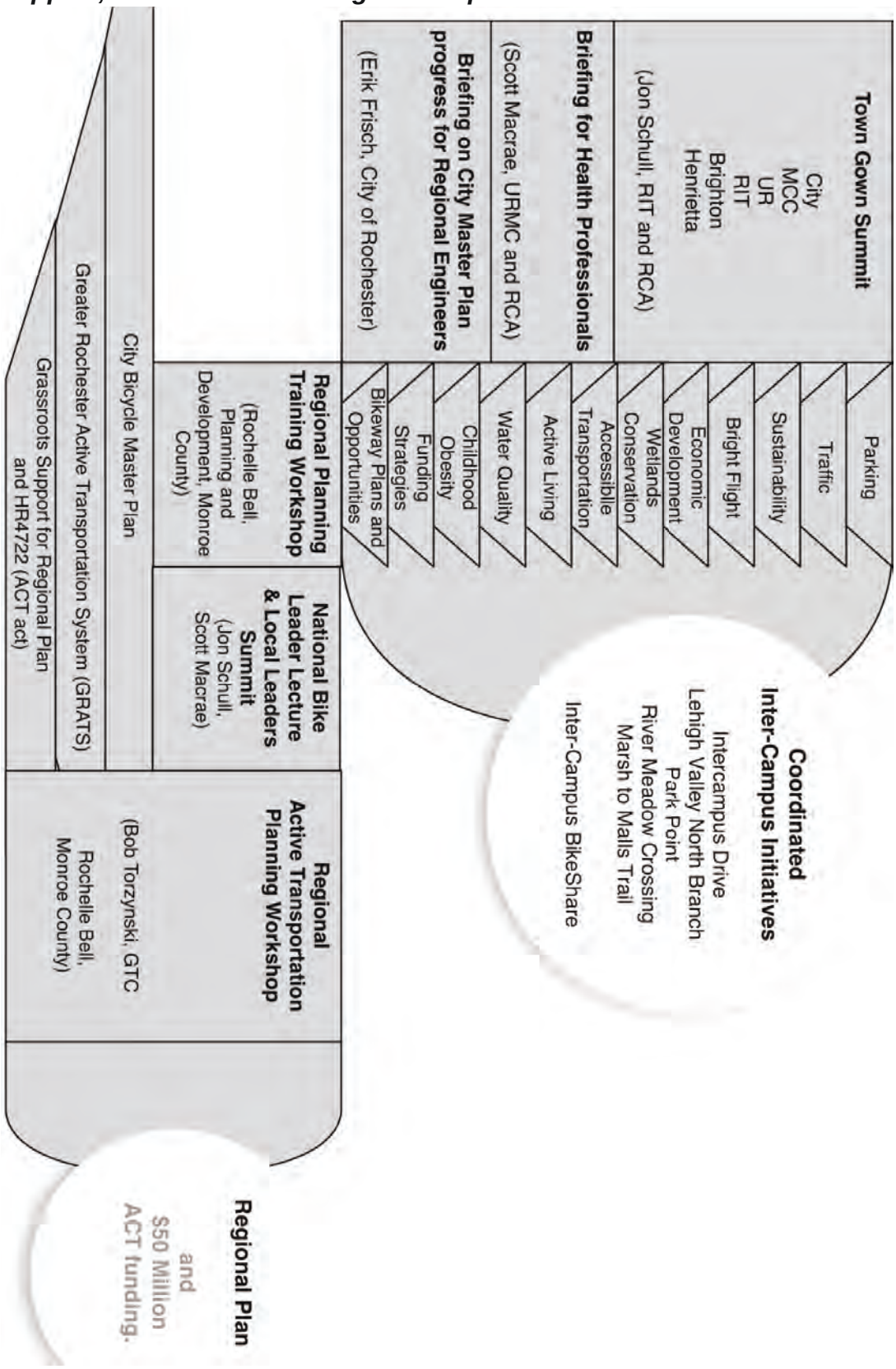
- Frankel is interested in contracting with the CSI for help with Brighton's Bicycle Planning process.

- With support and enthusiasm from Monroe County Health Director **Andrew Doneger,** and county planner **Rochelle Bell**, the GTC may sponsor a regional bicycle planning workshop in April or May.

- When it approved the Mortimer Street Bus Station in downtown Rochester, City Council stipulated that the facility accommodate bicyclists.

To help focus these activites, we are now promoting the concept of a Greater Rochester Active Transportation System (GRATS) ***and seek RIT's endorsement and logo to add to the brochure on the next page.***

An action plan is thus developing which could, ***with RIT leadership and support, have substantial regional impact.***



Three preliminary meetings in September-October would identify local and regional challenges and opportunities that can be addressed by developing active transportation alternatives.

- **A Town Gown Summit**, organized by **RIT and the CSI**, aimed at coordinating active transportation initiatives spanning the three campuse and the Town of Brighton. Town Supervisor Sandy Frankel has agreed to support this initiative. ***We seek RIT endorsement at this time.***

- **A Briefing for Health Professionals, organized by Scott Macrae** to raise professional awareness and garner support for active transportation initatives that can address numerous health issues.

- **A Briefing for Regional Engineers** on the City of Rochester's developing Bicycle Master Plan, that will allow them to anticipate and coordinate emerging connectivity options.

Each of these meetings would in turn inform a February

- **County-sponsored Training workshop** for regional planners in the winter that will show the remarkable convergence of challenges for which regional active transportation planning is a solution.

In the winter, RIT and UofR would also co-sponsor

- **a lecture by a visiting national Bike leader** (Cong. Earl Blumeauer, Cong. Jim Oberstar, or the Mayors of Minneapolis or Madison)

- **a Local Leaders Roundtable** with our guest, that will educate leaders of municipalities, universities, and organizations about extraordinary near term funding opportunities and long-term economic benefits that would come from development of a regional active transportation plan.

In parallel with all of this, bicycle advocates would be seeking endorsements for GRATS as a way of building grassroots support for a regional cooperation on a regional plan the consensus for which would hopefully be the outcome of a March-April

- **GTC-sponsored Regional Active Transportation Planning Workshop**.

RIT students will have a unique opportunity to participate in all of these activities, through Fall and Winter quarter courses that will help organize and monitor these socio-political activities. The students will also study trail-creation activities so prominent on our campus this Fall, and help with conceptual planning and prototyping of the proposed Park Point trail. The course is being organized by the CSI and the Center for Multi-Disciplinary Studies, and would be taught by landscape architect ***Tom Robinson****.*

Regional Connections

RIT's near-campus initiatives would not only develop a greater Rochester active transportation system, they would also help build the propossed Triple Divide Trail System now getting serious attention from trail planners in both NY and PA. As reported in RochesterEnvironment.com,

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National Connections

Federal Transportation Secretary Ray Lahood [has become a serious advocate](#) for a US Bicycle Route System.

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[If HR 4722, the Active Community Transportation Act of 2010](#) becomes law, 40 American Cities will receive $50 million dollars *each* for the development of bicycle infrastructures. We are currently working with the GTC and the [Rails to Trails Conservancy](#) to submit a case statement for Rochester. The initiatives outlined here would strengthen our case, and help establish RIT as thought leaders who can also bring home the bacon.

We recommend that RIT should endorse and help lobby for HR4722.

RIT, Rochester, Earth.

This whitepaper focuses on an immediate geo-political opportunity in our region, but the initiative is clearly part of a national and global trend. There is an active sustainable transportation revolution underway worldwide, and the wave is sweeping across American cities right now. In June, bicycle lanes were inaugurated on Pennsylvania Avenue. In April, Denver launched the nation's first full-scale bikeshare program. In two years, New York put 200 miles of bikeways on the ground.

RIT can help advance this important movement and burnish our reputation for sustainability and innovation. Our geography, demographics and climate make us a particularly attractive laboratory for the exploration of winterized bikeways dedicated to human- and electric-powered ultralight vehicles. Our greenways are also recreational waterways, sourced by watersheds imperiled by the possibility of hydrofracking. We are in a good position to frame the debate and help evaluate alternative regional development models.

2010-2011 The Year of Active Transportation.

CSI's Faculty Lead Carl Lundgren suggests that the converging opportunities here are so promising we should **declare academic year 2010-11 RIT's "Year of Active Transportation"** and roll out a number of curricular and extra-curricular initiatives that would become major themes for CSI and ImagineRIT 2011 (see Appendix).

- Sponsor bridge design and bike design competitions.
- Develop cross country ski trails to set the stage for summer bike trails
- Establish a bike repair and refurbishing, facility at Global Village. (Global Village managers Patty Spinelli and Mary Niedermaier point out that the bicycle trade might well compensate for reduced student populations in the summer.)
- Develop a grassroots bikeshare system based on refurbished bicycles along lines proposed by one of our FYE innovators in the innovation center this past Spring.
- Participate in all of the activities described above.

Your help tying the initiatives outlined in this whitepaper to other strategic initiatives at RIT such as the Golisano Institute of Sustainability and the new Architecture Program would be greatly appreciated.

Appendix

Center for Student Innovation
2010-2011 Academic Year

The CSI is becoming an integral part of RIT. After a full year of operation the Center has begun to be recognized by students and faculty as both a physical facility for innovation activities and a virtual hub that supports and facilitates innovation activities elsewhere. The next step is to construct a plan with measurable goals for the coming academic year and a vision going forward. In a real way the campus has tipped toward the CSI with the opening of Global Village. But also in other ways, the collocation of entrepreneurial and prototyping facilities close by both the CSI and student residential areas has physically embedded innovation in daily student life and the CSI is at the heart.

Fundamentally, the mission of the CSI is nourishing student creative activities, supporting ideas springing from students but also creating innovation opportunities from initiatives sponsored by the CSI. Common exploration of possible solutions to problems provides an opportunity to engage many more students and subsequently celebrating their technical or whimsical solutions further empowers students to pursue novel innovations. It is proposed that the CSI establish an annual theme (actually this is an original charge) collaborating with ImagineRIT. With the campus renovations for people movement, the increasing interest in alternative energy and virtually all things “green”; an overall theme of “human scale power” is proposed for 2010-2011. In addition quarterly design challenges around that theme will focus interest in the Center and provide an opportunity for incorporation into academic programming.

Without the support of diverse faculty and staff from around the University the CSI might be a significant, but much diminished, contributor to innovation initiatives around the campus. With the CSI collaborating with innovation activities around RIT, the CSI may fully achieve leadership in the University’s efforts. There are two additional constituencies to engage in Center activities; the alumni and the greater community. The CSI should provide leadership and mechanisms to achieve those connections.

Initiatives

A growing list of initiatives with metrics (where appropriate) for 2010-2011:

1. 100 projects involving 300 RIT students
2. 50 poster presentations associated with courses across the curriculum
3. 50 student/faculty collaborative scholarship disseminations
4. Develop an inventory and information access portal for innovation activities and capabilities on campus
5. Create a credit bearing option for students using the CSI for their innovation activities, within or in addition to Innovation or Entrepreneurship minors
6. Develop a “social media” tool to communicate innovation activities in the CSI in addition to formal methods (see #3)
7. Celebrate innovation and creativity through a variety of thematic activities, from design to completion

8. Forge a relationship with the prototyping and entrepreneurial initiatives in global village, supporting those activities by connecting students

Proposed Additional Student Programming 2010-2011

Fall quarter, to celebrate our rapidly evolving campus and its outdoors beauty three programming initiatives are proposed in an effort to bring students into the CSI activities:

1. Sponsor a “bicycle built for two” themed design/build challenge culminating operating trials

2. Layout possible bike/hike/cross country ski trails to Park Point

3. Start an RIT geo-caching effort around students’ “hidden gem” locations around campus

Winter quarter, the themes will attempt to reduce the winter “drag” and also go beyond boundaries with these activities:

1. Adaptive technology; identify opportunities, conceive and create solutions

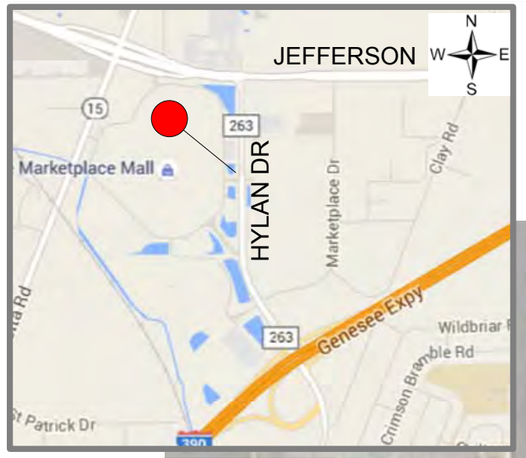
2. Winter and indoor gardens

3. Safety first winter personal transportation

Spring quarter, the focus is on assisting ImagineRIT student teams complete presentations plus creation of a Rube Goldberg style “machine” around the Innovation Center to celebrate the whimsical side of innovation for ImagineRIT

Summer quarter is once again centered on summer research fellows

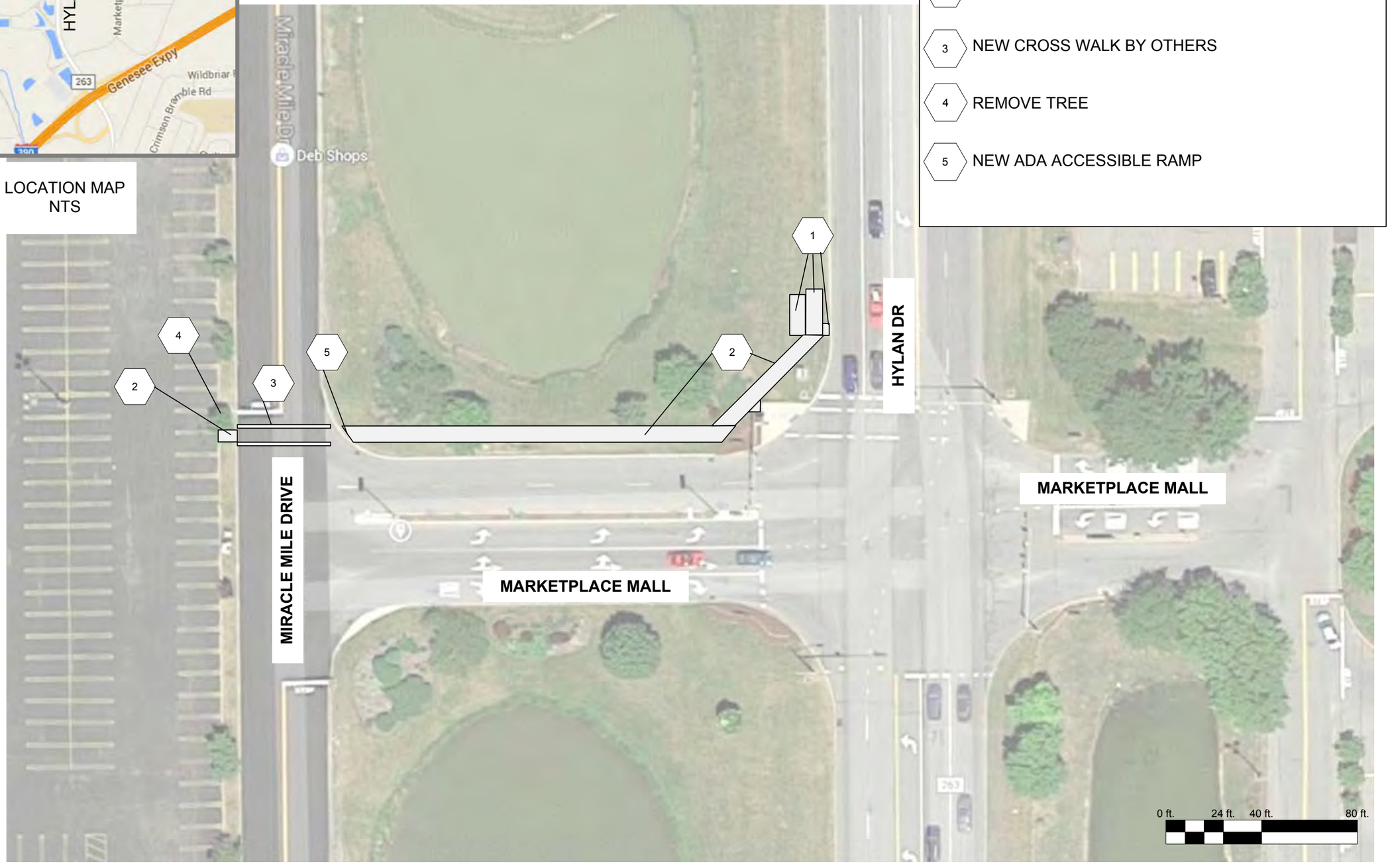
APPENDIX I
MARKETPLACE MALL SHELTER PLANS



LOCATION MAP
NTS

NOTES

1. NEW RTS SHELTER AND LANDING PADS
2. NEW ACCESSIBLE SIDEWALK BY OTHERS
3. NEW CROSS WALK BY OTHERS
4. REMOVE TREE
5. NEW ADA ACCESSIBLE RAMP



FILENAME 2015-07-20 MARKETPLACE SHELTER PLANS.VSD

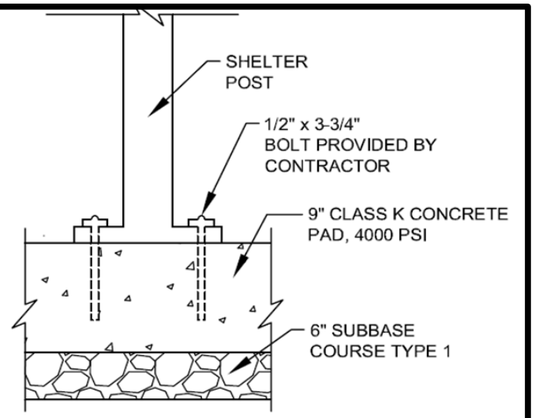
DATE July 2015

DRAWN BY EKM

DESCRIPTION RGRTA MARKETPLACE MALL SHELTER

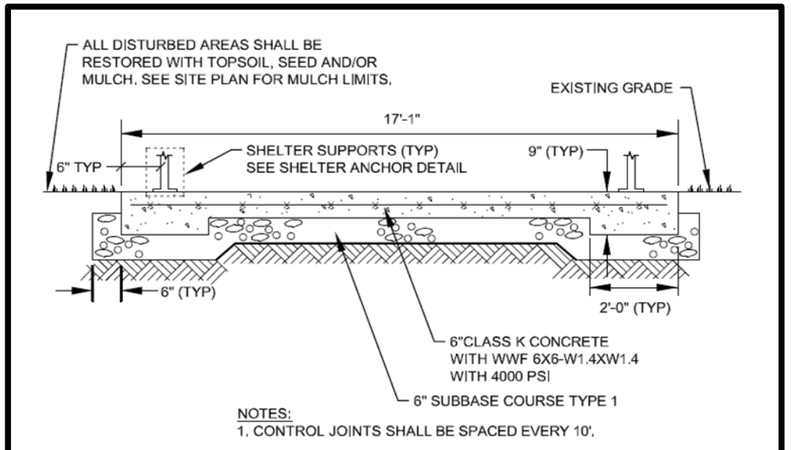
TITLE SITE PLAN

RTS



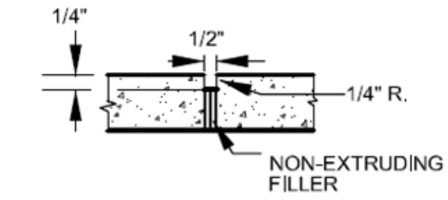
SHELTER ANCHOR DETAIL

N.T.S.

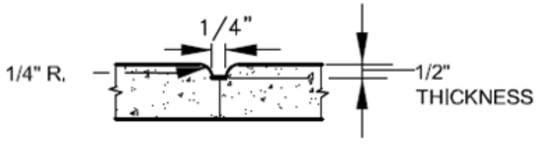


SECTION AA - SHELTER PAD DETAIL

N.T.S.



EXPANSION JOINT

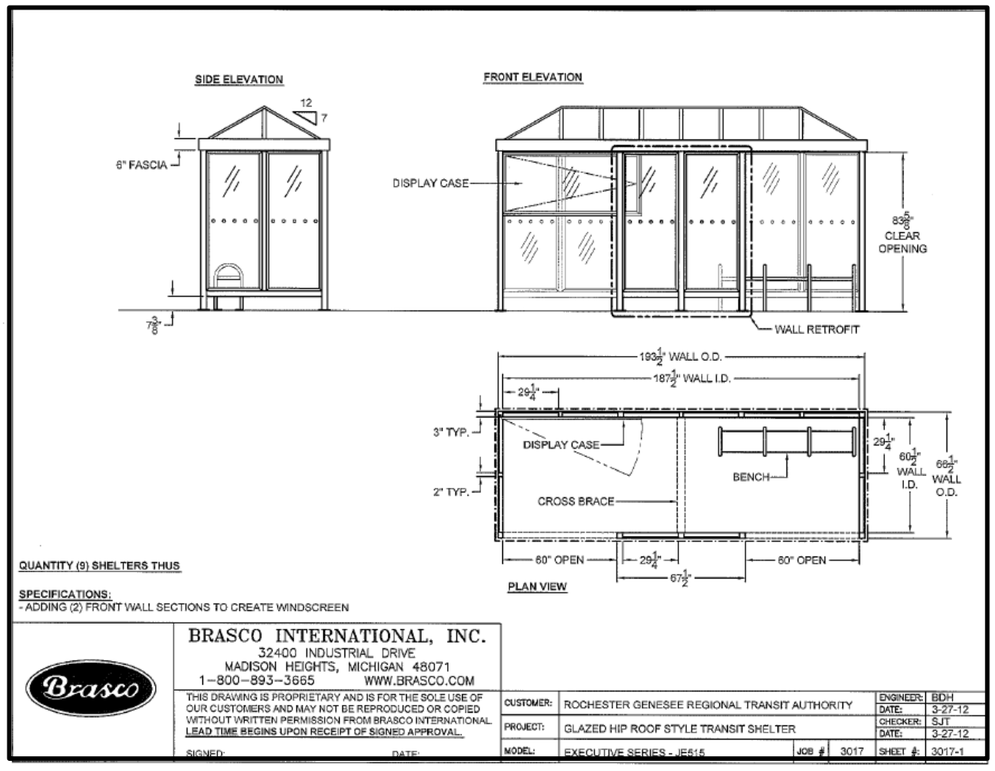


CONTRACTION JOINT

NOTE;
TOOLED JOINTS SHALL BE EMPLOYED.

JOINT DETAILS

N.T.S.



SHELTER DETAIL (FOR FUTURE INSTALLATION)

N.T.S.

FILENAME: 2015-07-20 MARKETPLACE SHELTER PLANS.VSD
DATE: July 2015
DRAWN BY: EKM
DESCRIPTION: RGRTA MARKETPLACE MALL SHELTER
TITLE: DETAILS

BUS STOP SIGN

MONROE COUNTY
TRAFFIC CONTROL
CABINET

MONROE COUNTY
TRAFFIC COVER

RTC

0 ft. 4 ft. 9.6 in. 8 ft. 16 ft.

FILENAME: 2015-07-20 MARKETPLACE SHELTER PLANS.VSD

DATE: July 2015

DRAWN BY: EKM

DESCRIPTION: RGRTA MARKETPLACE MALL SHELTER

TITLE: DETAIL PLAN

RTS

GENERAL NOTES

1) ALL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE EQUIPMENT INSTALLATION DRAWINGS AND SPECIFICATIONS.
2) CONTRACTOR SHALL PAY FOR AND SECURE ALL PERMITS AND UNDERWRITERS CERTIFICATES.
3) THE DRAWINGS ARE INTENDED TO REQUIRE AND TO INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR THE WORK AND REQUIRED BY CODE. ALL WORK AND SYSTEMS TO BE FURNISHED AND INSTALLED READY FOR OPERATION AND SERVICE. THE TERM "PROVIDE" DENOTES TO FURNISH AND INSTALL.
4) ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES AND REQUIREMENTS.
5) THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND SAFETY PROCEDURES. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR THEIR AGENTS OR EMPLOYEES OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK.
6) OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY REQUIREMENTS INCLUDING THE USE OF SAFETY GLASSES, HARD HATS, AND PROTECTION OF AREA. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY AT ALL TIMES.
7) COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS FOR INSTALLING PRODUCTS IN APPLICATIONS INDICATED.
8) INSTALL PRODUCTS AT THE TIME AND UNDER CONDITIONS THAT WILL ENSURE THE BEST POSSIBLE RESULTS. MAINTAIN CONDITIONS REQUIRED FOR PRODUCT PERFORMANCE UNTIL SUBSTANTIAL COMPLETION.
9) RECORD DRAWINGS: CONTRACTOR SHALL PROVIDE RED LINE DRAWINGS AT THE COMPLETION OF THE PROJECT INDICATING SHELTER AND CONCRETE SIDEWALK PAD LOCATION.
10) CAUTION- NOTICE TO CONTRACTOR: THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS TO LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS AS REQUIRED TO MEET EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT DIG SAFELY NY AT 1-800-962-7962 OR 811.
11) PROTECT ALL EXISTING ABOVE GROUND AND BELOW GROUND SITE FEATURES AND UTILITIES UNLESS OTHERWISE NOTED.
12) MAINTENANCE AND PROTECTION OF TRAFFIC ALONG WITH SECURING THE WORK AREA SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
13) ALL CONES, DRUMS, CONCRETE BARRIERS AND MARKERS ARE TO BE PLACED SO AS TO PROVIDE A MINIMUM 2' CLEARANCE TO THE TRAVELED WAY UNLESS OTHERWISE SHOWN ON THE PLANS AND/OR DIRECTED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL MAKE CERTAIN PLACEMENT OF CONES, DRUMS AND MARKERS OR BARRICADES SHALL NOT INTERFERE WITH SIGHT DISTANCE.
14) ALL DEBRIS AND SOILS DERIVED FROM THE CONTRACTOR'S OPERATIONS FOUND IN THE PUBLIC RIGHT-OF-WAY OR CAUSING NUISANCE TO OPERATIONS SHALL BE REMOVED ON A DAILY BASIS OR WHEN NOTIFIED BY THE OWNER'S REPRESENTATIVE AND DISPOSED OF OFFSITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS REGARDING DISPOSAL.

CONCRETE NOTES

1) SUBMITTALS
   a) SUBMIT CONCRETE MIX PROPORTIONS WITH SUPPORTING TEST DATA, MATERIAL CERTIFICATIONS AND PRODUCT DATA, TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS BELOW AND THE PROJECT SPECIFICATIONS.
2) COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
   a) ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR SITE WORK".
   b) ACI 305, ACI 306, ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
   c) ACI DETAILING MANUAL, LATEST EDITION.
   d) ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORM WORK".
   e) CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE".
   f) ACI 304 "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE".
3) MATERIALS:
   a) WELDED WIRE FABRIC (WWF) - ASTM A185, FLAT SHEETS.
   b) SUPPORTS FOR REINFORCEMENT:
      i) FOR SLABS-ON-GRADE USE CONCRETE BRICKS OR CHAIRS TO SUPPORT AND MAINTAIN PROPER LOCATION OF WWF AND REINFORCING BARS.
      ii) BOLSTERS, CHAIRS, SPACERS, ETC. SHALL BE WIRE BAR TYPE SUPPORTS COMPLYING WITH CRSI SPECS. FOR EXPOSED SURFACES WHERE SUPPORTS ARE IN CONTACT WITH FORMS, PROVIDE SUPPORTS WITH LEGS WHICH ARE PROTECTED BY PLASTIC OR STAINLESS STEEL.
   c) PORTLAND CEMENT – ASTM C150, TYPE II.
   d) AGGREGATES – ASTM C33.
   e) AIR ENTRAINING ADMIXTURE – ASTM C260, CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER REQUIRED ADMIXTURES.
   f) PROHIBITED ADMIXTURES – CALCIUM CHLORIDE THIOCYANATES OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE IONS ARE NOT PERMITTED.
4) PROPORTIONING AND DESIGN OF MIXES:
   a) PREPARE DESIGN MIXES OF CONCRETE BY EITHER LABORATORY TRIAL BATCH OR FIELD EXPERIENCE METHODS AS SPECIFIED IN ACI 318.
   b) NORMAL WEIGHT CONCRETE – MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI.
5) CONCRETE SHALL BE READY MIXED PER ASTM C94. JOB SITE MIXING SHALL NOT BE PERMITTED.
6) CONCRETE PLACEMENT:
   a) THE ADDITION OF WATER TO THE CONCRETE MIX AT THE JOB SITE IS
      i) NOT PERMITTED UNLESS SPECIFICALLY ALLOWED BY THE OWNER'S REPRESENTATIVE/RGRTA.
   b) PROTECT CONCRETE WORK FROM THE DETRIMENTAL EFFECTS OF COLD TEMPERATURES IN COMPLIANCE WITH ACI 306.
   c) PROTECT CONCRETE WORK FROM THE DETRIMENTAL EFFECTS OF HOT WEATHER OR WINDY CONDITIONS IN COMPLIANCE WITH ACI 305.
7) CONCRETE FINISHES:
   a) FORMED SURFACES EXPOSED TO VIEW- BROOM FINISH.
8) PROVIDE MOISTURE CURE TO SLAB SURFACES FOR 7 DAYS BY EITHER COVERING THE CONCRETE WITH WATER, APPLYING A CONTINUOUS WATER-FOG SPRAY, OR COVERING WITH AN ABSORPTIVE COVER.
9) THE OWNER WILL EMPLOY A TESTING AGENCY TO PERFORM SAMPLING AND TESTING AND SUBMIT TEST REPORTS.

DEMOLITION AND EARTHWORK

1) SEED ALL LAWN AREAS DISTURBED BY CONSTRUCTION OPERATIONS.
2) PERMANENT SEEDING (5 LBS./1000 SF)
   a) 25% MANHATTAN 4 PERENNIAL RYEGRASS
   b) 25% KENTUCKY BLUEGRASS (BARON)
   c) 25% JASPER II RED FESCUE
   d) 25% PIZZAZZ PERENNIAL RYEGRASS
   e) FERTILIZER: 25 LBS. PER 1000 SF
   f) MULCH: STRAW AT 75 LBS, PER 1000 SF
3) ALL AREAS OF LAWN REPAIR TO RECEIVE A MINIMUM OF 6" OF TOPSOIL (MODERATELY COMPACTED TO ENSURE THAT SETTLING DOES NOT OCCUR IN THE FUTURE), FINE RAKE, SEED AND MULCH WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4) REMOVE GRASS, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED PERMITTING INSTALLATION OF NEW CONSTRUCTION AND LEGALLY DISPOSING OF DEMOLISHED MATERIAL OFFSITE.
5) MATERIALS
   a) ENGINEERED FILL, BACKFILL AND SUBBASE MATERIAL SHALL BE A SOIL GRANULAR MATERIAL CONFIRMING NYSDOT ITEM 302.02.'
   b) SUBMIT TEST RESULTS VERIFYING MATERIALS TO BE USED MEET THE ABOVE REQUIREMENTS.
   c) STRIP TOPSOIL, ORGANIC MATERIAL, AND LOOSE SOILS INSIDE THE PROJECT AREA, DISPOSE OF EXCESS MATERIAL OFFSITE IN A LEGAL MANNER.
   d) MATERIALS EXCAVATED BELOW INDICATED SUBGRADE ELEVATIONS AND FOUNDATION BASES SHALL BE BACKFILLED WITH AUTHORIZED MATERIALS.
   e) EXCAVATIONS SHALL BE KEPT FREE OF WATER AND ANY UNDESIRABLE MATERIALS WHILE WORK IS IN PROGRESS. NOTIFY OWNER'S REPRESENTATIVE/RGRTA WHEN EXCAVATIONS HAS BEEN RECOMPACTED AND REINFORCING PLACED. DO NOT PLACE CONCRETE UNTIL DIRECTED TO DO SO.
   f) PLACE ENGINEERED FILL IN LIFTS NOT EXCEEDING 6 INCHES, COMPACT EACH LIFT TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D1557).
   g) COMPACT BACKFILL AFTER PLACING BELOW GRADE COMPONENTS TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D1557).
   h) PROTECT BOTTOM OF EXCAVATIONS AGAINST FREEZING WHEN TEMPERATURE IS LESS THAN 35°F.
   i) MAINTAIN EXISTING GRADE AND DRAINAGE PATTERNS.

FILENAME: 2015-07-20 MARKETPLACE SHELTER PLANS.VSD
DATE: July 2015
DRAWN BY: EKM
DESCRIPTION: RGRTA MARKETPLACE MALL SHELTER
TITLE: NOTES
RTS

APPENDIX J
ECONOMIC IMPACT OF TRAILS

Economic Impacts of Trails

http://www.americantrails.org/resources/economics/GreenwaySumEcon.html

Source: American Trails
Subject: Economic Impacts of Trails
Findings:

- "In the vicinity of Philadelphia's 1,300 acre Pennypack Park, property values correlate significantly with proximity to the park. In 1974, the park accounted for 33 percent of the value of land 40 feet away from the park, nine percent when located 1,000 feet away, and 4.2 percent at a distance of 2,500 feet." [Hammer, Coughlin and Horn, 1974]

Impacts of Trails and Trail Use

http://www.americantrails.org/resources/adjacent/sumadjacent.html

Source: American Trails
Subject: Impacts of Trails and Trail Use
Findings:

- "A 1978 study of property values in Boulder, Colorado, noted that housing prices declined an average of $4.20 for each foot of distance from a greenbelt up to 3,200 feet. In one neighborhood, this figure was $10.20 for each foot of distance. The same study determined that, other variables being equal, the average value of property adjacent to the greenbelt would be 32% higher than those 3,200 feet away."

Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas

http://128.175.63.72/projects/DOCUMENTS/bikepathfinal.pdf

Source: University of Delaware
Subject: Property Value Near Bike Paths
Findings:

- "The analysis indicates that the impact of proximity to a bike path on property prices is positive, controlling for the number of bedrooms, years since sale, acres, land, buildings, total number of rooms, total assessment. The properties within 50m of the bike paths show a positive significance of at least $8,800 and even higher when controlled for specific variables."

Bicycle Paths: Safety Concerns and Property Values

http://www.greenway.org/pdf/la_bikepath_safety.pdf

Source: Los Angeles County, Metropolitan Transportation Authority
Subject: Home sales near trails
Findings:

- "Homes sales were examined in the seven Massachusetts towns through which the Minuteman Bikeway and Nashua River Rail Trail run. Statistics on list and selling prices and on days on the market were analyzed. The analysis shows that homes near these rail trails sold at 99.3% of the list price as compared to 98.1% of the list price for other homes sold in these towns. The most significant feature of home sales near rail trails is that these homes sold in an average of 29.3 days as compared to

50.4 days for other homes." [*Home Sales Near Two Massachusetts Trails,* Jan. 25, 2006. Craig Della Penna]

Table 1. Home Sales near Rail Trails

Town	No. of Properties Sold	Average List Price	Average Sale Price	Ratio of Sale to List	Days on the Market
Arlington	10	$513,750	$509,690	99.2%	27.1
Lexington	10	$906,090	$907,040	100.1%	18.5
Bedford	3	$511,600	$500,833	97.9%	55.3
Ayer	1	$329,900	$317,500	96.2%	47.0
Groton	2	$689,900	$675,000	97.8%	22.0
Dunstable	1	$695,000	$685,000	98.6%	20.0
Pepperell	3	$385,833	$376,333	97.5%	48.3
Average		$643,180	$638,377	99.3%	29.3

Table 2. Home Sales not near Rail Trails

Town	No. of Properties Sold	Average List Price	Average Sale Price	Ratio of Sale to List	Days on the Market
Arlington	119	$558,775	$556,327	99.6%	28.3
Lexington	166	$871,533	$849,470	97.5%	54.4
Bedford	38	$633,912	$624,289	98.5%	42.4
Ayer	30	$344,677	$340,155	98.7%	73.0
Groton	53	$605,198	$584,689	96.6%	80.4
Dunstable	12	$587,946	$578,965	98.5%	83.2
Pepperell	57	$384,818	$379,482	98.6%	80.2
Average		$645,607	$633,072	98.1%	50.4

[*Home Sales Near Two Massachusetts Trails,* Jan. 25, 2006. Craig Della Penna]

- "Realizing the selling power of greenways, developers of the Shepherd's Vineyard housing development in Apex, North Carolina added $5,000 to the price of 40 homes adjacent to the regional greenway, Those homes were still the first to sell." [*Economic Benefits of Trails and Greenways,* Rails-to-Trails Conservancy, 2004]
- "The average price for all homes sold in greenway corridors was nearly 10 percent higher than the average price for all homes. Similarly, the average prices for all homes near greenways with trails and in conservation corridors were higher than the overall average sale price. For homes near the Monon Trail, the average sale price was 11 percent higher than for all homes that sold in 1999." [*Public Choices and Property Values: Evidence from Greenways in Indianapolis*, Center for Urban Policy and the Environment, December 2003]
- "A study of property values near greenbelts in Boulder, Colorado, noted that…other variables being equal, the average value of property adjacent to the greenbelt would be 32 percent higher than those 3,200 feet away." [*Economic Impacts of Rivers, Trails and Greenways: Property Values.* Resource Guide published by the National Parks Service, 1995]
- "A study completed by the Office of Planning in Seattle, Washington, for the 12 mile Burke-Gilman trail was based upon surveys of homeowners and real estate agents. The survey of real estate agents revealed that property near, but not immediately adjacent to the trail, sells for an average of 6 percent more." [*Economic Impacts of*

Rivers, Trails and Greenways: Property Values. Resource Guide published by the National Parks Service, 1995]

- "In a survey of adjacent landowners along the Luce Line rail-trail in Minnesota, 61 percent of the suburban residential owners noted an increase in their property value as a result of the trail. New owners felt the trail had a more positive effect on adjacent property values than did continuing owners. Appraisers and real estate agents claimed that trails were a positive selling point for suburban residential property." [*Economic Impacts of Rivers, Trails and Greenways: Property Values.* Resource Guide published by the National Parks Service, 1995]
- "A survey of Denver residential neighborhoods by the Rocky Mountain Research Institute shows the public's increasing interest in greenways and trails. From 1980 to 1990, those who said they would pay extra for greenbelts and parks in their neighborhood rose from 16 percent to 48 percent." [*Economic Impacts of Rivers, Trails and Greenways: Property Values.* Resource Guide published by the National Parks Service, 1995]
- "Recognizing what had happened, the realty companies decided to restructure the pricing of future lots located along the Mountain-Bay Trail. thus, in the addition of Highridge Estates, the average lot located along the rail was priced 26 percent higher than slightly larger lots not located along the trail." [*Perceptions of How the Presence of Greenway Trails Affects the Value of Proximate Properties.* Journal of Park and Recreation Administration, Fall 2001. John L. Crompton.]

A Study of Trail Impacts on Property Values, Noise and Crime

http://library.michigantrails.org/education-and-advocacy/a-study-of-trail-impacts-on-property-values-noise-andcrime/

Source: Michigan Trails
Subject: Trail Impacts on Property Values, Noise and Crime
Findings:

- For all trail segments studied, the median home sale prices adjacent to the trail are escalating faster than countywide. The rate of increase was particularly high in certain areas. The results indicated that the trail does not negatively impact property values and suggested that it may help increase property values by roughly 2 percent to 3 percent annually over inflation.
- Realtors were surveyed as well, and 90 percent said that home sales had increased significantly or increased somewhat in areas near the trail versus other areas in the market.

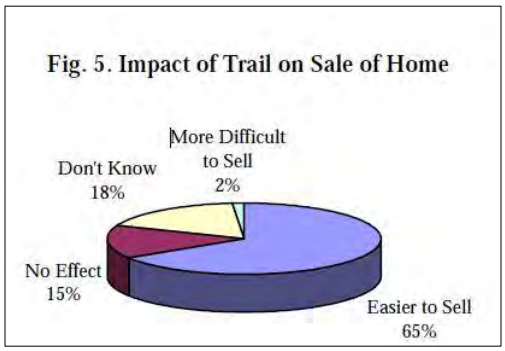
A Study of Trail Impacts on Property Values, Noise and Crime

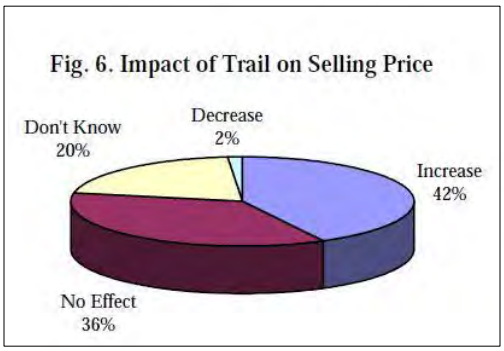
http://library.michigantrails.org/education-and-advocacy/a-study-of-trail-impacts-on-property-values-noise-andcrime/

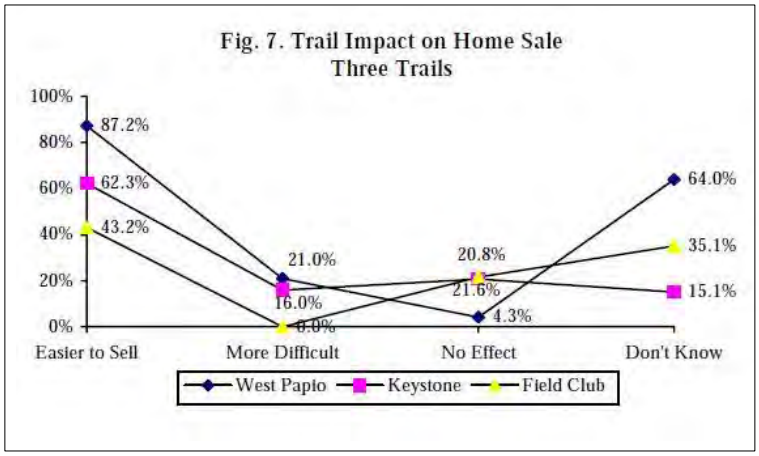
Source: Michigan Trails
Subject: Trail Impacts on Property Values, Noise and Crime
Findings:

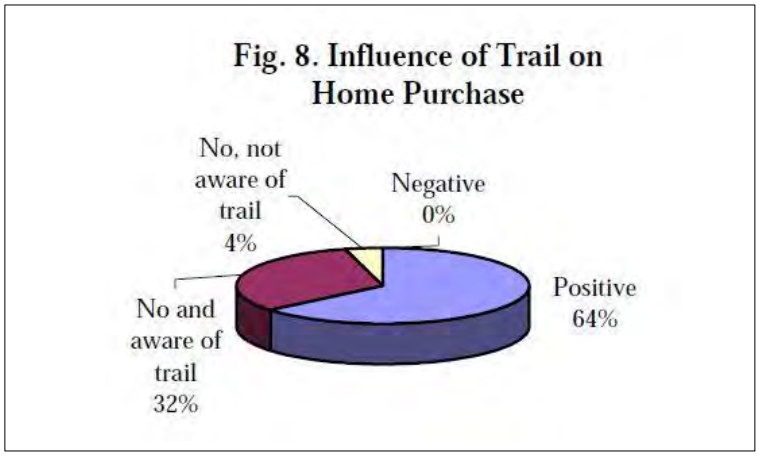
- "81% surveyed felt that the nearby trail's presence would have a positive effect or effect on the ease of sale of their homes." (Fig. 5)

- “The clear majority of residents (63.8%) who bought their homes after construction of the trails reported that the trail had positively influenced their purchase decision.” (Fig. 6)
- “West Papio showed stronger results than the other two trails on property values, ease of home sale, and quality of life. The differences may possibly be due to neighborhood demographics and characteristics of the trail themselves” (Fig. 7.)
- “Of the respondents who purchased their home after the trail existed, 63.8% indicated that the trail had positively influenced their purchase decision.









APPENDIX K

BICYCLE AND PEDESTRIAN FACILITY DESIGN FLEXIBILITY

FEDERAL HIGHWAY ADMINISTRATION - FHWA

U.S. Department of Transportation
Federal Highway Administration

Memorandum

SENT BY ELECTRONIC MAIL

Subject: **GUIDANCE:** Bicycle and Pedestrian Facility Design Flexibility Date: August 20, 2013

From: Gloria M. Shepherd
Associate Administrator for Planning, Environment and Realty

In Reply Refer To:
HEPH-10

Walter C. (Butch) Waidelich, Jr.
Associate Administrator for Infrastructure

Jeffrey A. Lindley
Associate Administrator for Operations

Tony T. Furst
Associate Administrator for Safety

To: Division Administrators
cc: Directors of Field Services

This memorandum expresses the Federal Highway Administration's (FHWA) support for taking a flexible approach to bicycle and pedestrian facility design. The American Association of State Highway and Transportation Officials (AASHTO) bicycle and pedestrian design guides are the primary national resources for planning, designing, and operating bicycle and pedestrian facilities. The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* and the Institute of Transportation Engineers (ITE) *Designing Urban Walkable Thoroughfares* guide builds upon the flexibilities provided in the AASHTO guides, which can help communities plan and design safe and convenient facilities for pedestrian and bicyclists. FHWA supports the use of these resources to further develop nonmotorized transportation networks, particularly in urban areas.

AASHTO Guides

AASHTO publishes two guides that address pedestrian and bicycle facilities:

- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, July 2004, (AASHTO Pedestrian Guide) provides guidelines for the planning, design, operation, and maintenance of pedestrian facilities, including signals and signing. The guide recommends methods for accommodating pedestrians, which vary among roadway and facility types, and addresses the effects of land use planning and site design on pedestrian mobility.

- *Guide for the Development of Bicycle Facilities 2012, Fourth Edition* (AASHTO Bike Guide) provides detailed planning and design guidelines on how to accommodate bicycle travel and operation in most riding environments. It covers the planning, design, operation,

maintenance, and safety of on-road facilities, shared use paths, and parking facilities. Flexibility is provided through ranges in design values to encourage facilities that are sensitive to local context and incorporate the needs of bicyclists, pedestrians, and motorists.

NACTO Guide

NACTO first released the *Urban Bikeway Design Guide* (NACTO Guide) in 2010 to address more recently developed bicycle design treatments and techniques. It provides options that can help create "complete streets" that better accommodate bicyclists. While not directly referenced in the AASHTO Bike Guide, many of the treatments in the NACTO Guide are compatible with the AASHTO Bike Guide and demonstrate new and innovative solutions for the varied urban settings across the country.

The vast majority of treatments illustrated in the NACTO Guide are either allowed or not precluded by the Manual on Uniform Traffic Control Devices (MUTCD). In addition, non-compliant traffic control devices may be piloted through the MUTCD experimentation process. That process is described in Section 1A.10 of the MUTCD and a table on the FHWA's bicycle and pedestrian design guidance Web page is regularly updated (FHWA Bicycle and Pedestrian Design Guidance), and explains what bicycle facilities, signs, and markings are allowed in accordance with the MUTCD. Other elements of the NACTO Guide's new and revised provisions will be considered in the rulemaking cycle for the next edition of the MUTCD.

ITE Guide

In 2010, FHWA supported production of the ITE Guide *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*. This guide is useful in gaining an understanding of the flexibility that is inherent in the AASHTO "Green Book," *A Policy on Geometric Design of Highways and Streets*. The chapters emphasize thoroughfares in "walkable communities" – compact, pedestrian-scaled villages, neighborhoods, town centers, urban centers, urban cores and other areas where walking, bicycling and transit are encouraged. It describes the relationship, compatibility and trade-offs that may be appropriate when balancing the needs of all users, adjoining land uses, environment and community interests when making decisions in the project development process.

Summary

FHWA encourages agencies to appropriately use these guides and other resources to help fulfill the aims of the *2010 US DOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* – "...DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate."

Accompanying this memo are the latest versions of the: 1) AASHTO Bike Guide, 2) NACTO Bike Guide; and 3) the ITE *Designing Walkable Urban Thoroughfares* Guide.

The attachments provide two examples that demonstrate the use of treatments illustrated in the NACTO Guide (i.e., buffered bike lanes and green colored pavement for bicycle lanes) by State or local DOTs, and a list of FHWA staff that can help with questions about pedestrian and bicycle design issues.

Attachments

Attachment 1 – Example 1 & 2

Example 1: Michigan DOT's Buffered Bike Lanes

One of the innovative bicycle facilities discussed in the NACTO *Urban Bikeway Design Guide* is buffered bike lanes. Buffered bike lanes create more space between motor vehicles and bicycles by delineating extra space between the bike lane and parked cars and/or a motor vehicle lane. Buffered bike lanes can be implemented if the pavement markings and channelizing devices are compliant with the MUTCD (see Bicycle Facilities and the Manual on Uniform Traffic Control Devices). Michigan DOT developed a video that describes their efforts to install buffered bike lanes in Oakland County (see Northwestern Highway Bicycle Lane: A Safer Place to Ride). Michigan DOT also developed a brochure that explains buffered bike lanes to the public (see What Every Michigan Driver Should Know About Bike Lanes).

Example 2: Missoula's Colored Bike Lanes

MUTCD experimentation is a methodology that analyzes innovative traffic control devices through field deployment for the purpose of testing or evaluating its application or manner of use. An approved request to experiment numbered and titled as Official Ruling "3(09)-3(E) – Colored Bike Lanes – Missoula, MT" illustrates a successful experiment. The City of Missoula submitted a request to experiment in January 2010 in accordance with all Items in Paragraph 11 of Section 1A.10 in the 2009 MUTCD.

The experiment was conducted for one year and revealed that approximately 70 percent of motorists noticed the color conspicuity enhancement to the bike lane. This was interpreted as an increased awareness by motorists of the potential presence of bicyclists at intersections where those motorists would be making a right turn.

The City also reported ancillary findings that were not anticipated in the original Evaluation Plan of the request to experiment. This included psychological discomfort of the cyclist with the lateral locations of the colored bicycle lane with respect to door zones in parallel parking corridors. In addition, the experiment revealed an unintended design weakness where colored bike lanes that achieve high compliance of little or no occupation of motorized vehicles can also be attractive to pedestrians who wish to use them to facilitate their travel in lieu of crowded sidewalks or to patronize parking meters. For these reasons, a successful experiment can reveal unanticipated findings, further demonstrating the value of official experimentation.

This particular experiment provided two conclusions that supported FHWA's decision to issue Interim Approval for green colored pavement for bicycle lanes in April 2011.

For more information see http://mutcd.fhwa.dot.gov/reqdetails.asp?id=1135.

Attachment 2

FHWA Bicycle and Pedestrian Staff Resources

Human Environment —Livability and Bicycle and Pedestrian Programs

- Shana Baker, Livability Team Leader, 202-366-4649, shana.baker@dot.gov: Livability, Context Sensitive Solutions
- Christopher Douwes, Trails and Enhancements Program Manager 202-366-5013, christopher.douwes@dot.gov: Transportation Alternatives Program/Enhancement Activities: Recreational Trails Program related activities; Bicycle and pedestrian policy and guidance
- Daniel Goodman, Transportation Specialist, 202-366-9064, daniel.goodman@dot.gov: Bicycle and pedestrian activities; Livability
- Wesley Blount, Program Manager, 202-366-0799, wesley.blount@dot.gov: Safe Routes to School, Discretionary programs

Planning

- Brian Gardner, 202-366-4061, brian.gardner@dot.gov: Modeling
- Jeremy Raw, 202-366-0986, jeremy.raw@dot.gov: Modeling
- Harlan Miller, 202-366-0847, harlan.miller@dot.gov: Planning Oversight
- Kenneth Petty, 202-366-6654 kenneth.petty@dot.gov: Planning Capacity Building

Policy

- Steven Jessberger, 202-366-5052, steven.jessberger@dot.gov, Traffic Monitoring Guide

Infrastructure — Design (including accessible design)

- Michael Matzke, 202-366-4658, michael.matzke@dot.gov

Resource Center— Design (including accessible design)

- Brooke Struve, Safety and Design Team, 720-963-3270, brooke.struve@dot.gov
- Peter Eun, Safety and Design Team, 360-753-9551, peter.eun@dot.gov

Operations — Manual on Uniform Traffic Control Devices

- Kevin Dunn, Transportation Specialist, 202-366-6054, kevin.dunn@dot.gov: MUTCD Team

Pedestrian and Bicycle Safety

- Gabe Rousseau, Safety Operations Team Leader, 202-366-8044, gabe.rousseau@dot.gov: Bicycle and pedestrian safety programs
- Tamara Redmon, Pedestrian Safety Program Manager, 202-366-4077, tamara.redmon@dot.gov: Pedestrian safety

Pedestrian and Bicyclist Safety Research

- Ann Do, 202-493-3319, ann.do@dot.gov
- Jim Shurbutt, 202-493-3420, jimmy.shurbutt@dot.gov

Civil Rights — Accessibility Policy and Compliance

- Patrick Gomez, Resource Center Civil Rights Team, 720-963-3269, patrick.gomez@dot.gov
- Candace Groudine, Director of External Civil Rights Programs, 202-366-4634, candace.groudine@dot.gov