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RTC/Market Area Mobility Study

RTC-Market Area Mobility Study

Syracuse Metropolitan Transportation Council



Final Report

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EXECUTIVE SUMMARY

RTC-Market Area Mobility Study

The City of Syracuse (City) wants to make it safer and easier for Northside residents to walk/bike across Hiawatha Boulevard and Park Street to access the Regional Market, the Regional Transportation Center, and Destiny USA. This planning effort builds upon a mobility project installed by the City – the Park Street Neighborhood Greenway.

The RTC-Market Area Mobility Study (Study) is a planning-level assessment that informs the community about potential options to improve mobility across Hiawatha Boulevard and Park Street. As a secondary focus, the Study identifies “big picture” ideas to improve connections to facilities that exist beyond the primary study area. These ideas will inform other planning efforts by the city, county, and state.

Mobility improvement options are based on a comprehensive planning-level assessment, which involved roadway owners (i.e., the City of Syracuse and the New York State Department of Transportation). Other involved agencies included the Syracuse-Onondaga County Planning Agency and Centro. Additionally, the SMTC met with several neighborhood groups and conducted public outreach at the market. In total, approximately 80-100 community members participated in these discussions. This collaborative process ensured that the options were well-vetted with the road owners and the community.

As shown in Figure A - the Study identifies four priority crossing locations for mobility improvements:

- Hiawatha Boulevard/Park Street
- Hiawatha Boulevard/Carbon Street
- Hiawatha Boulevard/Tex Simone Drive/First North Street
- Park Street/NBT Bank Parkway/Harborside Drive.

Detailed (planning-level) concept plans are presented in Chapter 8 that show how sidewalk, bike lanes, sharrows, and shared use paths (SUP) could link and improve mobility. Most options are compatible with each other and can be combined. Some options are complex and may require additional study and engineering expertise.

Two lane consolidation scenarios are presented for the Hiawatha Boulevard/Park Street intersection. A preliminary analysis suggested that the southbound exclusive left, thru, right lanes (and the eastbound exclusive left and thru lanes) could be combined. The northbound left-through lane is also modified as a left-only lane. Presented options, including the shared used path concept, may not require lane consolidation.

Chapter 8 also shows “big picture” mobility connection ideas to link the Market Area to the: Onondaga Creekwalk, Park Street Bikeway, the Beartrap Creek Trail, etc. These ideas are presented for informational purposes and may require further study.

EXECUTIVE SUMMARY

Figure A – Priority Intersection Context Map and Regional Mobility Improvement Ideas



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1 - Introduction

1.1 Overview

As part of the 2018-2019 Unified Planning Work Program (UPWP), the Syracuse Metropolitan Transportation Council (SMTC) agreed to complete a mobility study (Study) for the William F. Walsh Regional Transportation Center (RTC) and the Regional Farmers Market (Market) on behalf of the City of Syracuse (City).

Who is the SMTC?

The SMTC is the local Metropolitan Planning Organization (MPO) responsible for administering comprehensive, continuous, and cooperative transportation planning for the Greater Syracuse area. By federal law, a MPO is designated by the Governor for every urban area with at least 50,000 residents.

The SMTC acts as a clearinghouse where transportation planning decisions are made through a committee structure that uses models of consensus building and cooperative decision making. Committees are made up of “member agencies” from the local, county, regional, state, and federal level that have a vested interest in the planning and function of the transportation system. The planning process also provides community members an opportunity to participate in the discussion of specific transportation issues.

What is the Metropolitan Planning Area?

The SMTC planning jurisdiction, called the Metropolitan Planning Area (MPA), covers Onondaga County and portions of Madison and Oswego counties.

How is this study funded?

This document was prepared using federal transportation funds (not grants) that are designated specifically for planning activities. (Planning funds cannot be used for construction or other capital improvements.) MPO transportation planners provide technical and objective expertise at no cost to the local community.

What is a mobility study?

A mobility study is a planning-level (i.e., not engineering-level) assessment of roadways, sidewalks, bikeways, and transit facilities to help identify vehicle, bus, pedestrian, and bicycle amenity improvement options. Some options may require additional study, design, public review, and environmental assessment before a decision can be made.

Who decides to implement options?

MPOs do not own or control infrastructure. Roads within and around the RTC-Market Area are owned by the City of Syracuse, the New York State Department of Transportation (NYSDOT), and the Regional Market Authority (RMA). Road owners decide to implement or not to implement improvement options. As mentioned, some options may require study and design by a licensed engineer.

1.2 Problem Overview

The Market is a year-round source of fresh, locally-grown food for the region. Destiny USA (Destiny) is located within walking distance to the market and it serves as a major shopping destination for the northeast and as a large employer of local residents. The RTC is the area's hub for intercity and local travel via Centro (local bus); Greyhound, Megabus, Trailways (intercity bus), and Amtrak (intercity passenger train). As regional destinations, most patrons drive to these locations. Surrounding roadways have few, if any, pedestrian or bicycle amenities to accommodate those who walk or bike.

Google Maps estimates the walking time from the RTC to the Macy's wing of Destiny USA at nine minutes. Although these destinations are within walking distance of each other and to adjacent neighborhoods within the City's north side, they are difficult to visit by foot or by bike.

Insufficient bicycle and pedestrian amenities pose real challenges, especially for neighboring residents who may not drive or have access to a car, but need easy access to food and employment. Also, people who arrive by car, bus, or train may be less inclined to walk between destinations, which limits economic returns that may otherwise be realized.

As the primary Study objective, the City wants to identify where to add or improve existing bicycle and pedestrian amenities at

a location(s) where demand is the highest across Hiawatha Boulevard East as well as at the Park Street/NBT Bank Parkway intersection.

1.3 Background

In 2014, Syracuse received a Transportation Enhancement Program (TEP) financial award to fund the Park Street Neighborhood Greenway (Greenway) project. However, due to budget limitations, the City focused improvements along the portion of the Park Street corridor southeast of Washington Square Park, and not northwest to the City's municipal line.

In the foreseeable future, the RTC/Market Area could also experience new investment and development. For instance, in 2018, the SMTC completed the Syracuse Metropolitan Area Regional Transit Study – Phase 1 (*SMART 1 Study*), which recommended a bus rapid transit (BRT) system to the RTC. The upcoming redevelopment decision for I-81 will also create new issues and opportunities.

Additionally, in 2012, the City developed a Brownfield Opportunity Area plan (BOA) to identify land use improvements within the area to guide the (ongoing) ReZone Syracuse effort. The City is currently also coordinating with the Syracuse-Onondaga County Planning Agency (SOCPA) to prepare a Local Waterfront Revitalization Plan (LWRP) for the Lakefront and RTC/Market Area.

More information about these and other planning efforts are discussed in Chapter 2.

1.4 Purpose

The City requested that the SMTC identify and prioritize location(s) where improvements are most appropriate on Hiawatha Boulevard East between North Salina Street and 4th North Street. Additionally, the SMTC identified potential crossing improvements at the Park Street/NBT Bank Parkway/Harborside Drive intersection. To the extent practicable, potential improvements should meet the unique needs of the community.

As a secondary focus, the City requested that the SMTC identify a general list of ‘big picture’ issues and opportunities to enhance access and mobility within and around the RTC/Market Area in support of other current and future planning efforts identified in the second chapter (e.g., ReZone Syracuse, I-81, SMART 1 Study, Loop-the-Lake, etc.) Additional destinations located within walking/bicycling distance of the RTC/Market Area include:

- NBT Bank Stadium (AAA Minor League)
- Onondaga Lake
- Onondaga Creekwalk
- Loop-the-Lake Trail
- Route 370/Park Street Bikeway
- Bear Trap Creek Trail.

1.5 Study Area

As shown in Figure 1, the primary study area includes:

- Hiawatha Boulevard East (North Salina Street to 4th North Street)
- Park Street (City line to Hiawatha Boulevard East)
- Park Street/NBT Bank Parkway/Harborside Drive intersection.

The secondary study area consists of:

- Park Street (Hiawatha Boulevard East to Wolf Street)
- Hiawatha Boulevard West (Onondaga Creekwalk to North Salina Street)
- Hiawatha Boulevard East (4th North Street to 7th North Street)
- 7th North Street
- NBT Bank Parkway
- Harborside Drive
- Destiny USA Drive
- Tex Simone Drive
- Farmer’s Market Place.



1.6 Mobility Study Scope

To guide the study's planning process, the SMTC developed a scope in consultation with representatives from the City and SOCPA. The scope was approved in February 2019 and SMTC officially kicked off the study in March. A copy of the scope is provided in Appendix A.

1.7 Study Advisory Committee

To oversee this study's development, the SMTC established a Study Advisory Committee (SAC) comprised of representatives from the following agencies:

- City of Syracuse (City)
- Central New York Regional Transportation Authority (Centro)
- New York State Department of Transportation (NYSDOT)
- Syracuse-Onondaga County Planning Agency (SOCPA).

The SAC provides technical and procedural guidance throughout the planning process, but does not vote to approve or disapprove study-related products. The SAC reviewed the scope in April 2019.

1.8 Public Involvement Plan

The SMTC developed a Public Involvement Plan (Appendix B) in consultation with the SAC in April 2019 to guide the public outreach process. Chapter 7 - *Community Input* outlines the community outreach guidelines established in the PIP and summarizes comments received from the

community throughout the study's planning process.

1.9 Project Purpose Summary

The City sought input about what options exist to improve pedestrian and bicycle mobility between north side neighborhoods and the RTC/Market Area.

At the request of the City, the SMTC has undertaken this study to identify mobility options that add or improve pedestrian and bicycle amenities at priority crossing locations along Hiawatha Boulevard East and at the Park Street/NBT Bank Parkway/Harborside Drive intersection.

The SMTC also identified "big-picture" issues and opportunities for the secondary study area to guide current and future City, County, and State planning efforts that involve the RTC/Market Area.

2 - Local Planning Studies and Initiatives

The SMTC reviewed the following documents to determine what ideas have been developed and implemented to improve walkways and bikeways within and around the RTC-Market Area:

- Hiawatha-Lodi Brownfield Opportunity Area (BOA) Plan (2012)
- Draft ReZone Syracuse Initiative (Ongoing)
- Park Street Greenway Contract Plans (2017)
- Syracuse Bike Plan (2012)
- Bicycle Commuter Corridor Study (2013)
- Dunkin Donuts Project (2018)
- Inner Harbor Local Waterfront Revitalization Plan (LWRP) (2002)
- Lakefront LWRP (2019 ongoing)
- SMART 1 – BRT Study (2018)
- I-81 Opportunities.

These plans and studies illustrate the need, desire, and community-vetted ideas to improve bicycle and pedestrian mobility within and around the RTC-Market Area.

2.1 Hiawatha-Lodi BOA Plan

In 2012, the City of Syracuse commissioned a report on the Hiawatha-Lodi Brownfield Opportunity Area (BOA).

Over the course of two years, planners conducted community outreach. Community participants emphasized the need to improve safety, which includes personal safety, especially when walking or bicycling, especially at night.

Residents expressed concerns about the lack of sidewalks and pedestrian connections to the baseball stadium and Market. Additionally, residents believed that new bicycle and pedestrian facilities could encourage investment in the area.

Moreover, the report identified inaccessible bus stops and transit facilities due to the lack of sidewalks, the prevalence of sidewalks in poor condition, and the lack of snow removal during the winter.

The report encouraged the development of pedestrian and bike facilities and supported implementing the Syracuse Bike Plan 2040, which recommended the following improvements near the RTC/Market Area:

- Park Street Neighborhood Greenway (implemented) and the Lemoyne Avenue Neighborhood Greenway
- add bike lanes and “sharrows” along Lodi Street and Grant Boulevard.

The BOA also recommends the following improvements:

Park-Lodi

The Park-Lodi area is bounded by Park Street, Washington Square, Lodi Street, and Hiawatha Boulevard East. The plan envisions the adaptive reuse of historic industrial buildings similar to Armory Square. New sidewalks, street trees, and bike lanes would encourage pedestrian activity. As shown in Image 1, the BOA provides an example of how pedestrian amenity improvements could be made at the Park Street and Hiawatha Boulevard East intersection to connect the Market.



Image 1: Hiawatha-Lodi BOA – Park Street looking north west across Hiawatha Boulevard

Industrial Node

The Industrial Node includes the market, NBT Bank Stadium, and the industrial parcels northeast of the stadium. The plan envisions industrial uses, while maintaining pedestrian facilities. As shown in Image 2, Hiawatha Boulevard East and Tex Simone Drive could be enhanced as a walkable neighborhood gateway to the stadium.



Image 2: Hiawatha-Lodi BOA – Tex Simone Drive / 1st North Street looking south west across Hiawatha Boulevard East

2.2 Rezone Syracuse

The City of Syracuse is currently updating its zoning code. The proposed ordinance simplifies existing regulations and introduces new mixed-use zones that emphasize “pedestrian-friendly, transit-supportive” development. As shown in Image 3, several districts are proposed in the study area, which include the following:

Light Industrial (LI)

The LI zoning district would allow for industrial, commercial, retail and entertainment uses, and some multi-family residential development in mix-use structures.

Urban Core (MX-4)

The proposed MX-4 encourages large-scale commercial and retail uses as well as dense residential use up to three-to-eight stories.

Residential/Office (MX-3)

The residential/office district would allow for adaptive reuse of these structures in the form of two-to-six-story residential and office development, and seeks to maintain walkable infrastructure.

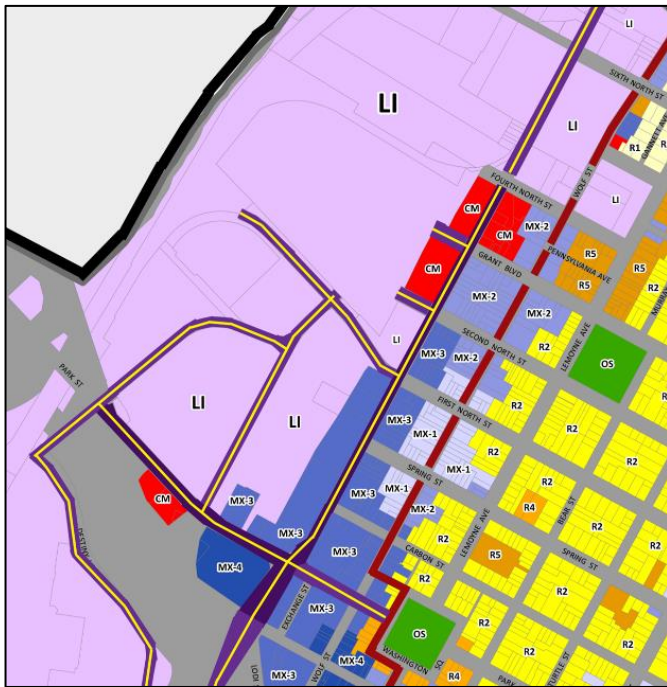


Image 3: Draft Proposed Zoning Map – ReZone Syracuse Initiative

Neighborhood Center (MX-2)

The Neighborhood Center district would allow residential and two-to four-story commercial development focused on businesses that are used at the local, neighborhood level.

Urban Neighborhood (MX-1)

The urban neighborhood district allows low-to medium-density residential development and neighborhood service businesses.

Commercial (CM)

The commercial district would allow for businesses that attract customers from the neighborhood and beyond.

Two-Family Residential (R2)

The two-family residential district would allow for one-and two-family homes.

2.3 Park Street Greenway

The City of Syracuse provided copies of the Park Street Greenway construction plans, which show the locations of where improvements were made along the corridor from Wolf Street to Oak Street. Bicycle and pedestrian facility improvements consisted of the following:

- Sharrows (Share the Road Pavement Markings) for bicyclists
- New curb cuts with detectable warnings at each intersection (sidewalk improvements were not made)
- High-visibility ladder crosswalks at each crossing (Stop Bars were painted at each Stop sign-controlled intersection).

2.4 Bike Commuter Corridor Study

The multi-jurisdictional Bike Commuter Corridor Study seeks to connect suburban towns and villages to Downtown Syracuse. The study informs NYSDOT, the Onondaga County Department of Transportation, and municipal road owners about how to develop a seamless multijurisdictional bike commuter corridor network by improving 77 roads as part of future roadway resurfacing, restoration, and reconstruction activities. The study recommends bike lanes along Park Street. As shown in Image 4, the study also suggests extending the Park Street Bikeway along the Onondaga Lake Parkway, Old Liverpool Road, and Buckley Road.



Image 4: Abandoned Park Street Bikeway (in yellow) connecting to envisioned bike lanes along the Onondaga Lake Parkway, Old Liverpool Road, Buckley Road.

2.5 Syracuse Bike Plan

The Syracuse Bike Plan’s recommendations include improving accessibility to two “regional attractions”: the market and the stadium. Three corridors were identified as good candidates for bicycle infrastructure improvements in this area:

Park Street (James Street to Wolf Street)

A neighborhood greenway was proposed because of the connection to Washington Square Park, low traffic volumes, and parallel adjacency to a main arterial, Lodi Street. (The City built the Greenway.)

Park Street (Wolf Street to City Limit)

Standard bike lanes were proposed due to higher speed and volume of cars.

Grant Boulevard

(Hiawatha Boulevard East to Oak Street)

Sharrows were suggested due to the narrow width of the street.

Harborside Drive

Standard bike lanes were suggested for this roadway and should connect to the Onondaga Creekwalk Trail.

Lodi Street (Isabella Street to Wolf Street)

Standard bike lanes were proposed.

Hiawatha Boulevard West (Erie Boulevard West to Destiny)

Standard bike lanes were proposed. A multi-use trail was proposed along the northbound side of this road as an “mid-term” improvement. (No recommendations are made for Hiawatha Boulevard East.)

2.6 Dunkin Donuts

During the development of this Mobility Study, a developer started construction of a new building at the northwest corner of Park Street/I-81 off ramp/Farmers Market Place. The City of Syracuse required that the developer provide pedestrian amenities across Park Street (along the southbound approach) to the market.

As part of the Park Street Greenway, the City recently made pedestrian improvements to the northbound approach that include a high-visibility ladder crosswalk, pedestrian signals with push buttons/countdown timers, and new curb cuts. Additionally, the city installed a bike rack along the sidewalk on the southeast corner of the intersection. In 2020, the NYSDOT will make additional improvements to this intersection as part of the state’s Pedestrian Safety Action Plan (PSAP) initiative.

Given the recent and anticipated improvements, the SMTC will not develop recommendations for this intersection.

2.7 Syracuse Lakefront Area LWRP

In 2000, the City of Syracuse developed a Local Waterfront Revitalization Program (LWRP) for the Onondaga Lake shoreline, the Inner Harbor, Onondaga Creek, and adjacent areas, such as Franklin Square. The RTC, the Farmer’s Market, and NBT Bank Stadium are all part of this study’s “secondary study area”.

Because this LWRP was developed in light of the proposed expansion of Carousel Mall to the south side of Hiawatha Boulevard West (a portion of which would be closed to traffic), it is based on the assumption that the mall’s internal circulation road, Harborside Drive, would be extended farther south, would likely be re-constructed, and would play a larger role in the area. The LWRP’s most relevant recommendation to the RTC/Market Area references this road:

“It is intended that Solar Street and the proposed Harborside Drive will provide integral vehicular and pedestrian linkages between the Stadium Market Center, Carousel Center, the Inner Harbor, Franklin Square, downtown, and the north side neighborhood.”

Because the expansion of the mall across a (closed) Hiawatha Boulevard West never took place, Harborside Drive continues to

function as a loop road around the mall and its role in moving people, bicycles, and vehicles across Park Street to the RTC/Market Area remains just what it was when the mall opened in 1990.

The LWRP also suggests improving shared-use pathway connections from the Market and stadium area to the future expansion of the Loop-the-Lake trail. A suggestion was also made to develop a public pier adjacent to the future trail to provide boater access to the RTC and the ballpark.

2.8 Lakefront LWRP

In 2019 the City and the SOCPA are updating the Lakefront LWRP, which includes the RTC/Market Area. During the Mobility Study’s scoping process, SOCPA asked the SMTC to include a secondary study area and identify “high-level” mobility issues and opportunities for reference purposes. Other improvements occurring the Lakefront area include the upcoming construction of a shared-use path pedestrian bridge over the CSX railroad (part of the Loop-the-Lake trail), and the development of the Lake Lounge, which is a public viewing area of the southern shore of Onondaga Lake at the Onondaga Creekwalk.

2.9 SMART 1 Study

The SMART 1 Study builds upon the analysis and findings of the 2014 Syracuse Transit System Analysis (STSA) completed by NYSDOT as part of *The I-81 Challenge*. As

shown in Image 5, the study considered two corridors; one linking the RTC to University Hill (UH). The study evaluated three service options (Base Build, Bus Rapid Transit, and Light Rail Transit) on each corridor. The study identifies the purple RTC/UH route with Bus Rapid Transit service as the locally preferred alternative.

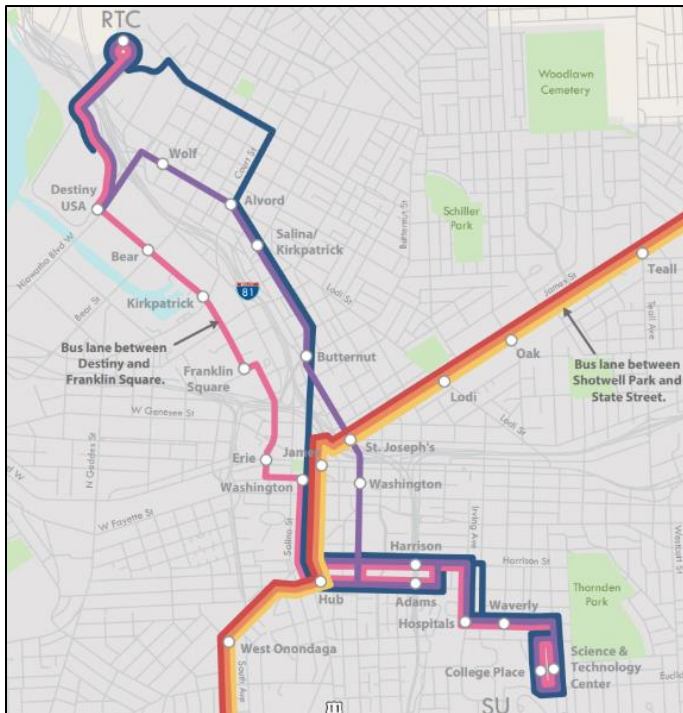


Image 5 – The Smart 1 Study selected bus rapid transit service along the purple route as the locally preferred alternative.

2.10 SMTC Pedestrian Model

In 2013, the SMTC developed a Pedestrian Demand Model (model) to assist with pedestrian planning studies. To determine possible pedestrian demand levels, the model assigns a score to an area using a combination of factors, such as proximity to schools, parks, and grocery stores, as well as population density, employment density and demographic characteristics, to identify

places that are “walkable” – generally within a half-mile.

North Salina Street and Park Street are identified as part of the city’s Pedestrian Priority Zone. Based on the relatively short distance (just over a half mile) between this Priority Zone and the market – one would expect a relatively high level of pedestrian travel between these areas. Image 6 shows a heat model that indicates pedestrian demand is the highest along Carbon Street, Spring Street, and 1st North Street.

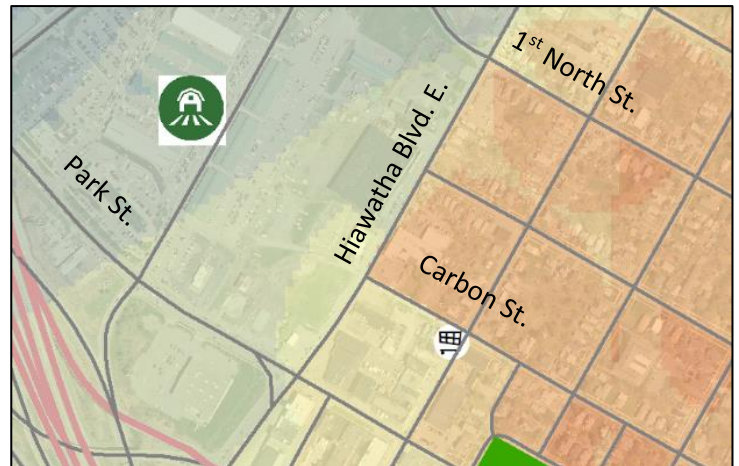


Image 6 – Pedestrian Model Heat Map model results indicate that the blocks between Carbon Street and 1st North Street are more likely to generate pedestrian traffic. (Green barn icon = RMA.)

2.11 NYSDOT - I-81 Viaduct Project Preliminary DEIS

According to the Preliminary Draft Environmental Impact Statement (PDEIS), the NYSDOT envisions a shared-use path on the city’s north side. Image 7 shows the location of the envisioned improvements. As described, NYSDOT would add the path south of Lodi Street:



Image 7 - NYSDOT’s Proposed Lodi Street Off-Road Bicycle Facility. Source: NYSDOT, I-81 Viaduct Project, Preliminary Draft Environmental Impact Statement, April 2019

“...a shared use path that would lead to an overlook with a view of the surrounding region. New sidewalks would be added around the site, providing new pedestrian connections to Hiawatha Boulevard. The path and overlook would have interpretive signage and would be accessible from Lodi Street, Bear Street, and Hiawatha Boulevard. In addition, sidewalks would be added on both sides of Bear Street between Solar and Lodi Streets.”¹

2.12 Summary of Plans & Initiatives

Several plans, studies, projects, and initiatives exist or are underway that support developing bicycle and pedestrian facilities within and around the RTC/Market Area. Envisioned improvements include:

- Park Street/Farmers Market Place intersection is being improved by a private developer, the City, and NYSDOT
- Bus Rapid Transit (BRT) between the RTC and University Hill (SMART 1 Study)

- Shared-Use path along I-81 south of Lodi Street from Bear Street to Hiawatha Boulevard West (PDEIS I-81)
- Carbon Street and 1st North Street pedestrian priority zone shows highest demand (Pedestrian Demand Model)
- Bike lanes suggested for Park Street from Wolf Street to city line; and for Harborside Drive from Park Street to Onondaga Creek (Syracuse Bike Plan)
- The 2000 LWRP envisions: bike lanes/shared-use path along Harborside Drive to connect the lake, RTC, market
- A public pier at lake and connect to the market via a shared-use path
- BOA study suggests improving bicycle and pedestrian infrastructure and gateways around RTC/Market Area
- Bike lanes along Park Street; connect Park Street Bikeway to Onondaga Lake Parkway, Old Liverpool Road, Buckley Road (Bike Commuter Corridor Study).

¹ Preliminary Draft Environmental Impact Statement, Chapter 3; NYSDOT, April 2019.

3 - Land Use, Demographics, and LEP

The SMTC assessed the community's land use and demographic patterns to provide insight into what amenities would best meet the community's needs to improve bicycle and pedestrian mobility.

3.1 Land Use

As shown in Figure 2, a large portion of the primary and secondary study area consists of land owned by the RMA, the RTC, Destiny USA, NBT Bank Stadium (Onondaga County Parks), CSX, and the NYSDOT (I-81 right-of-way - portions of: the CSX railroad corridor, Park Street, the Park Street bikeway, and Harborside Drive exist within the I-81 right-of-way beneath the elevated highway).

A Byrne Dairy "cold storage" facility also exists near the RMA, the RTC, and NBT Bank Stadium. Staff from the SMTC observed Byrne Dairy delivery trucks along Tex Simone Drive and Hiawatha Boulevard East during fieldwork observations. Other industrial and heavy commercial uses exist along Hiawatha Boulevard East northeast of NBT Bank Stadium. Railroad spurs continue to service some of these properties.

Residential neighborhoods exist southeast of Hiawatha Boulevard East from Park Street north to 4th North Street. These

neighborhoods consist primarily of detached structures with one or more dwelling units. Apartment buildings exist sporadically within the neighborhoods. Washington Square Park and the First Ward Cemetery provide open space, and Wolf Street serves as a commercial corridor.

Land Use along Primary Study Area Roads

Land along Hiawatha Boulevard East and Park Street includes a mixture of active and abandoned industrial and commercial uses.

Hiawatha Blvd./Park Street Intersection

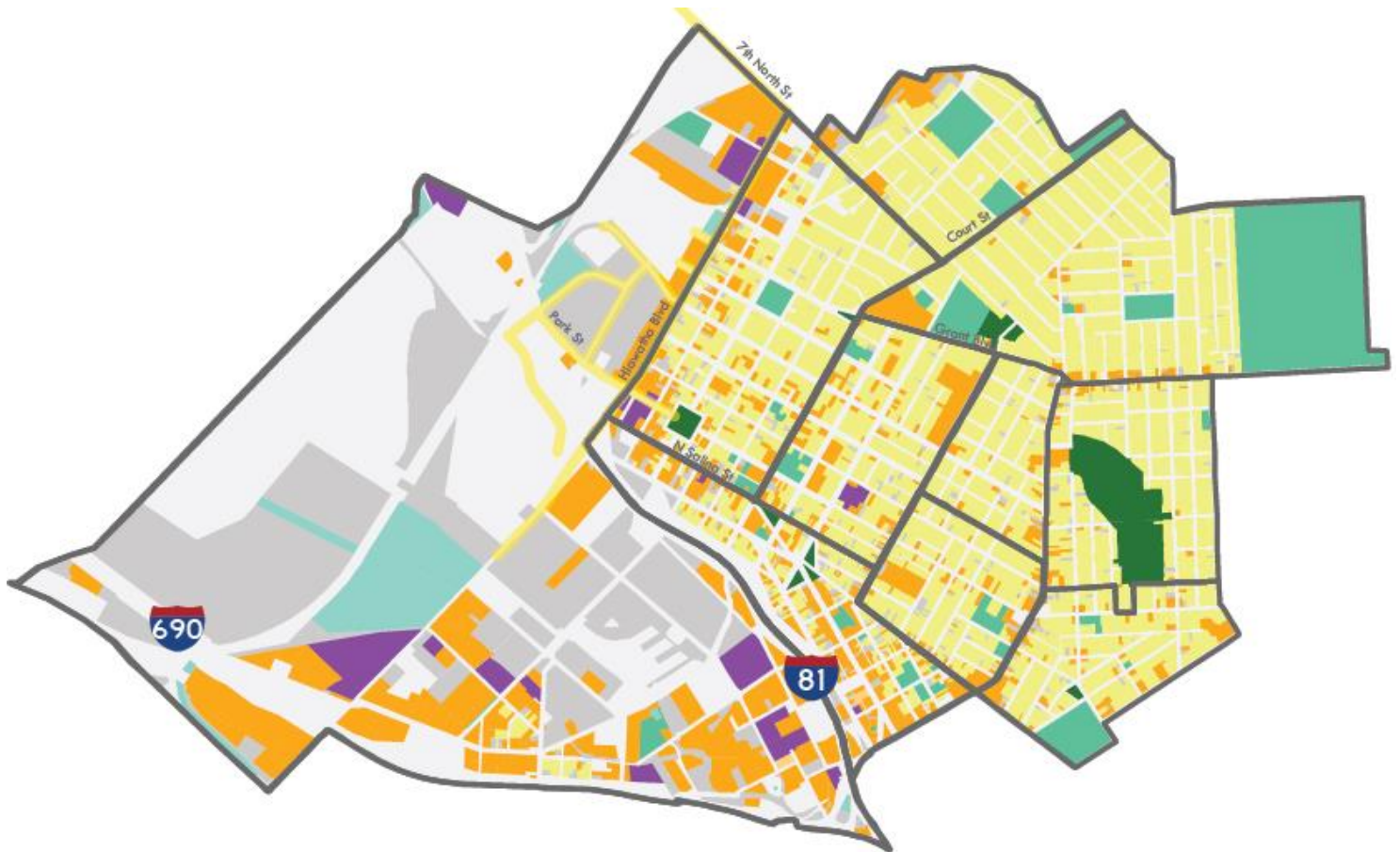
Many vacant and/or underutilized industrial buildings exist in the southeast corner between Park and North Salina Street. The low-to mid-rise brick buildings were used for manufacturing. Several abandoned railroad spurs exist in this area. Bodow Recycling, which fronts Hiawatha Boulevard East, appears to be in operation. In recent years, developers have expressed interest in repurposing the buildings for residential and commercial use, but no significant reinvestment has occurred.

Papa Sports (a clothing print shop) exists at the northeast corner, a small retail property exists at the northwest corner, and a former Babies-R-U's building (abandoned) exists at the southwest corner.

Hiawatha Blvd./Carbon Street Intersection

Commercial uses, vacant land, and a gravel driveway into the regional market exist at the Hiawatha Boulevard East/Carbon Street intersection.

Figure 2 – Northside & Lakefront Land Use



Land Use

None	Commercial	Industrial
Residential	Recreation/Entertainment	Public Services
Vacant Land	Community Services	Wild, Forested, or Park Lands

Hiawatha Blvd./Tex Simone Drive/1st North Street Intersection

Residential homes along 1st North Street abut land owned by an auto dealership along Hiawatha Boulevard East. A remodeling company exists at the southwest corner, and a moving company exists at the northwest corner.

Park Street/Harborside Drive/NBT Bank Parkway Intersection

This intersection exists under the I-81 overpass, so it is also within the I-81 right-of-way. Structures do not exist.

3.2 Demographics

This section summarizes pertinent demographic data for the northern section

of the City that is within walking or bicycling distance to the RTC/Regional Market.

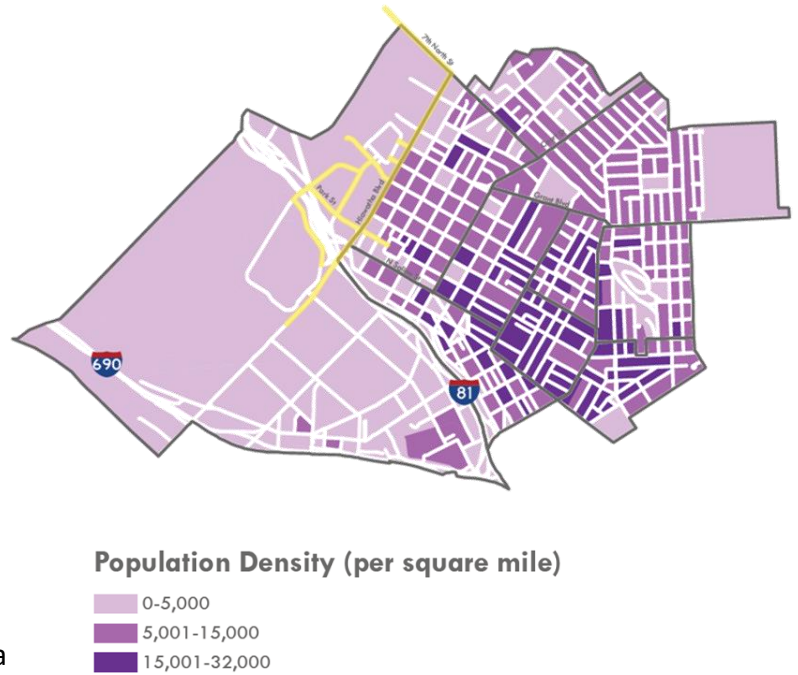
Staff reviewed the U.S. Census Bureau’s 2013-2017 American Community Survey (ACS) 5-year Estimate and the 2010 Decennial Census data for the following Census tracts: 1, 2, 3, 4, 5.01, 6, 7, 8, 14, and 15, which represent a reasonable “catchment area” of where walkers/ bicyclists originate. Note: ACS datasets may have higher-than-expected margins of error at the tract level, especially in low-population tracts.

The primary and secondary study areas (highlighted as orange and yellow, respectively) exist almost entirely within a single Census tract with a low population. This tract includes the Inner Harbor, vacant industrial land / buildings, Destiny USA, the RTC, the Regional Market, NBT bank Stadium, and active industrial uses. The other tracts represent the neighborhoods with the highest concentration of residents.

Population Density

Figure 3 shows the population density, in persons per square mile, for Census blocks in the study area. As mentioned, the area’s population is highest southeast of Hiawatha Boulevard East and northeast of I-81. Population density increases east and southeast of Court Street.

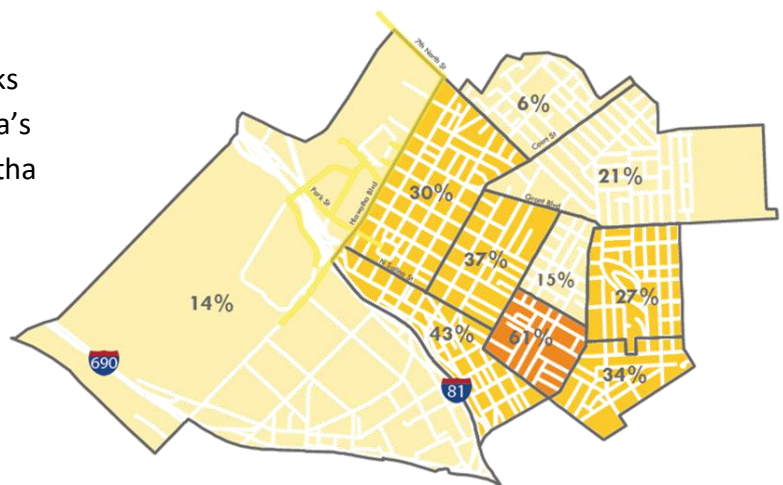
Figure 3: Population Density, by Census tract block group



Poverty

As shown in Figure 4, several Census tracts have a high percentage of individuals living below the poverty line, with 30% to 61% of individuals living in poverty. For comparison, the MPA poverty rate is 18%.

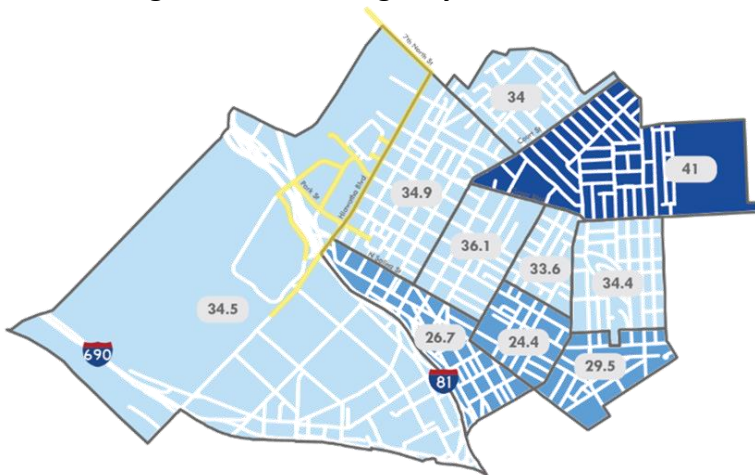
Figure 4: Poverty, by Census tract



Population by Age

As shown in Figure 5, the Census tracts have a median age of 33. The oldest population (median age: 41) exists in the northeast corner of the “catchment area” while the youngest population (median age 24) exists in the southeast. The remaining census tracts, except one at 26.7, are within 1 to 4 years of the average median age.

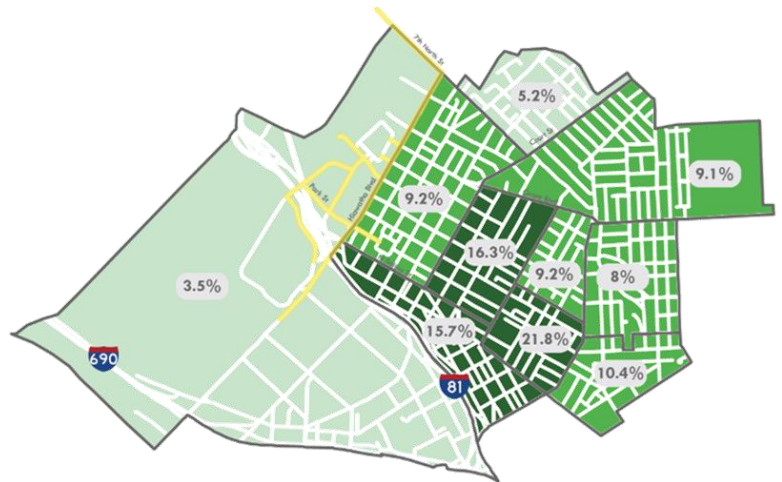
Figure 5: Median Age, by Census tract



Unemployment Rate

Figure 6 shows the unemployment rate for the analyzed Census tracts. The highest percentage of unemployed residents live in three Census tracts near North Salina Street. Unemployment within these tracts range from 15.7% to 21.8%. The unemployment rate in several tracts hover around 9%-10%. In comparison the MPA-average unemployment rate is (9.1%).

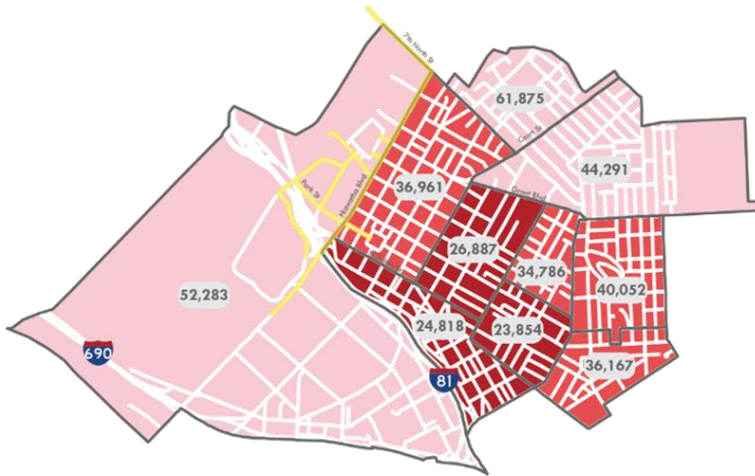
Figure 6: Unemployment Rate, by Census tract



Median Household Income

As shown in Figure 7, only one Census tract has a median household income of approximately \$62,000, which is higher than the MPA average of approximately \$53,000. The neighborhood southeast of Hiawatha Boulevard East has a median Household Income approx. \$37,000. East of Court Street, the median Household Income drops to about \$27,000 east of Court Street. The remaining tracts range from about \$24,000 to \$52,000.

Figure 7: Median Household Income, by Census tract



Households with No Vehicles

As shown in Figure 8, six tracts include neighborhoods where more than 30% of the households do not have vehicles. The greatest concentrations of households with no vehicles exist south of North Salina Street (50%), and east of Court Street (54%). The MPA average, by comparison, is 14%.

Figure 8: Percent Households with No Vehicle, by Census tract



Bike/Walk/Transit to Work

Figure 9 shows the percentage of people that bike, walk or take transit to work ranges from 5% to 27%. Approximately 10% of the households in the neighborhood southeast of Hiawatha Boulevard East walk, bike, or take transit to work. The MPA average, by comparison, is less than 5%.

Figure 9: Bike/Walk/Transit to Work, by Census Tract



3.3 Limited English Proficiency, Languages spoken at home, and Environmental Justice

This section summarizes pertinent demographic data pertaining to the SMTC’s Limited English Proficiency Plan (as part of SMTC’s 2015 Title VI & LEP Plan), and the SMTC’s 2018 Environmental Justice Report.

Additionally, based on conversations with community stakeholders (see Chapter 7), refugees from all over the world call the north side their home. However, residents

from the Washington Square Neighborhood Association (WSNA) indicated that there are few concentrations of refugees in the neighborhoods adjacent to Hiawatha Boulevard in the RTC-Market Area, but that concentrations of refugees exist to the east towards Butternut Street.

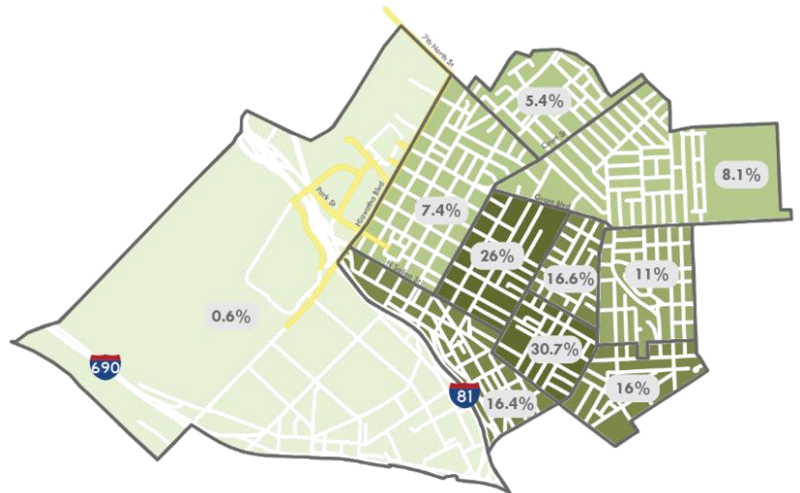
Limited English Proficiency

The SMTC documents areas in our MPA with a high concentration of populations with Limited English Proficiency (LEP).

Individuals who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English can be limited English proficient, or “LEP”. In the MPA, 3.46% of the population speaks English “less than very well” – a definition used in American Community Survey (ACS) data. In Onondaga County, that number is 3.70%. As such, Census tracts in Onondaga County with an LEP population greater than 3.70%, could be considered “concentrated.”

As shown in Figure 10, every Census tract except one, meets this definition of concentration.

Figure 10 – Limited English Proficiency



Languages Spoken

In addition to determining general LEP concentration, the SMTC has also documented languages spoken in concentrated LEP tracts. A tract is known as a “Safe Harbor” if LEP speakers of a certain language* consist of at least 5% of the overall tract population, using ACS data. As shown in Figure 11, three tracts have a concentrated LEP population and individual languages spoken by more than 5% of the population. Languages spoken in these tracts include Vietnamese and “other” Indo-European Languages. (*Haitian, Italian, Sicilian, Portuguese, Greek, Armenian, Persian, Gujarati, Hindi, Urdu, Punjabi, Bengali, Nepali, Marathi, other Indic languages, Albanian, Lithuanian, Pashto (Pushto), Romanian, Swedish, Telugu, Tamil, Malayalam, Kannada, other Dravidian languages.)

Figure 11 – Languages Spoken



Environmental Justice

As shown in Figure 12, Low, Medium, and High Priority Target Areas exist per SMTC’s 2018 Environmental Justice Report. This report identified target areas by combining information about median household income and minority concentrations.

Figure 12 – Environmental Justice



3.3 Demographic & Land Use Summary

Many properties exist within walking and bicycling distance to the RTC-Market Area; primarily southeast of Hiawatha Boulevard East and northeast of I-81. Abandoned/underutilized industrial properties exist near the Park/Hiawatha intersection and transition to residential neighborhoods south of Hiawatha Boulevard East.

Up to 54% of households within these neighborhoods do not have access to a vehicle. When compared to the MPA, most Census tracts have above average rates of residents who walk or bike to work.

In general, north side neighborhoods also tend to have higher than average poverty levels and unemployment rates.

Additionally, a concentration of residents within the north side have limited English-speaking and reading skills.

4 - Existing Railroad, Transit, Bicycle/Pathway Facilities

This chapter provides an overview of existing railroad, transit, and pathway facilities in the primary and secondary study areas. Figure 13 shows the location of existing facilities; it is referenced throughout the following sections.

4.1 Railroad Facilities

CSX owns the railroad corridor, which consists of two tracks behind the RTC; two mainline tracks that provide freight (CSX) and passenger (Amtrak) service. A third track is a siding to the Amtrak passenger platform.

Prior to the expansion of Destiny USA, community planners considered widening the CSX bridge over Park Street to incorporate a third track. The third track would extend local (OnTrack) passenger service into the RTC/Market Area. However, this concept was abandoned, and OnTrack service subsequently discontinued in 2007. As shown in Image 8, Amtrak operates a platform at the RTC.



Image 8 – Amtrak Passenger Platform, RTC, Syracuse, NY

Image 9 shows the abandoned OnTrack platform along Harborside Drive at Destiny.



Image 9 – Abandoned OnTrack passenger platform along Harborside Drive (right of the photo) opposite of Destiny USA

Image 10, shows the abandoned platform near market and stadium that did not receive service due to the CSX bridge.



Image 10 – Abandoned OnTrack Passenger Platform near NBT Bank Stadium behind the Regional Market

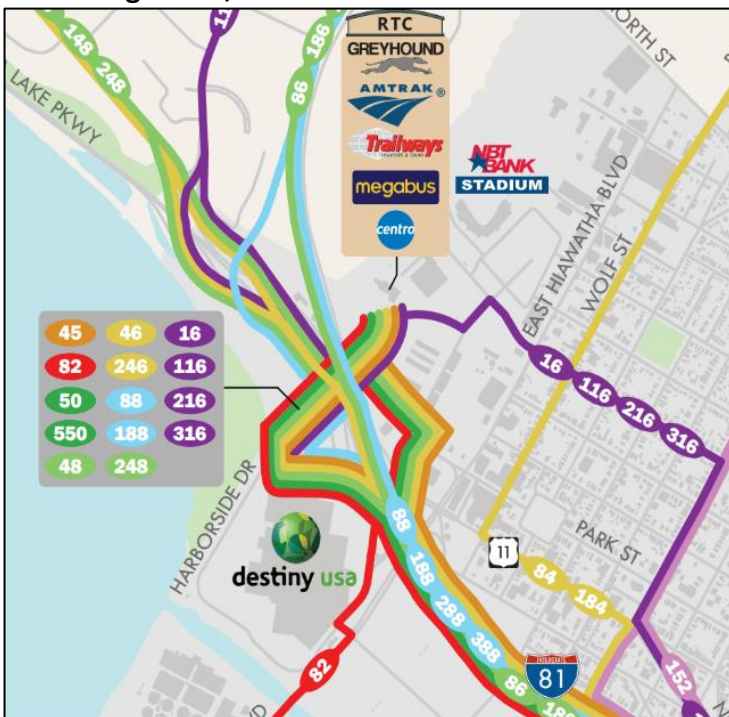
Figure 13: Existing Facilities
RTC/Market Area Mobility Study



4.2 Transit Facilities

Transit service is available to the RTC and to Destiny USA via I-81. Figure 14 shows the locations of the service routes in the greater study area. Bus routes also exist along Wolf Street and along 1st North Street to and along Tex Simone Drive and NBT Bank Parkway. In general, bus routes do not exist along Park Street and Hiawatha Boulevard East.

Figure 14, Centro Bus Service Routes



Source: www.centro.org

Figure 13 shows the locations of transit stops. Three Centro bus lines provide pick-ups and drop-offs at the RTC. They are:

- Sy 16 – North Salina St. / Buckley Road
Buses run from the Centro Transit Hub to Lockheed Martin, the OCM BOCES

complex, and other destinations in the Town of Salina.

- Sy 46 / Osw 46 – Liverpool / Route 57
Buses run from the Centro Transit Hub to the RTC, through the Village of Liverpool, the Town of Clay along Route 57, to the Wegmans on Route 31.
- Sy 50 – Destiny USA / RTC
Route 50 runs between the Centro Transit Hub and Destiny USA, with stops in Franklin Square and the Inner Harbor.

Additionally, there are four bus routes that run to Destiny USA, but not to the RTC:

- Sy 48 – Liverpool / Morgan Rd
Buses on this route run from the SU Hill to the Transit Hub and from there to the Civic Center, Destiny USA, the Village of Liverpool, and the Wegmans on Route 57.
- Sy 82 – Baldwinsville
Route 82 runs from the Transit Hub to Destiny USA and from there along the west side of Onondaga Lake, to Seneca Knolls Shopping Plaza, and the Village of Baldwinsville.
- Sy 88 – N. Syracuse / Cicero
Like Route 48, buses on this route run from the SU Hill to the Transit Hub and from there to the Civic Center and Destiny USA; after the mall, buses on this route use I-81 to reach North

Syracuse and the Route 11 commercial area.

- SU 45 – SU / Destiny USA (Friday and Saturday evenings)

This route operates on Friday and Saturday evenings when SU classes are in session. Buses on this route only make five stops: four on the SU Hill and one at Destiny USA. Buses run between 6:00 p.m. and 12:30 a.m.

RTC to Destiny

In most cases, both inbound (toward the Transit Hub) and outbound buses (originating at the Transit Hub) stop at the RTC and then at Destiny USA; on weekdays, 76 bus trips run between the RTC and Destiny throughout the day. On weekdays, the average wait time for a bus from the RTC to Destiny USA is 13 minutes. During the morning commute period (7:00 a.m. to 9:00 a.m.) this wait time is higher, averaging 25 minutes. But during the midday period (11:00 a.m. to 1:00 p.m.) and evening commute hours (4:00 p.m. to 6:00 p.m.), average wait times are 10 minutes and 7 minutes, respectively.

There are fewer bus trips on Saturdays: throughout the day, 43 bus trips make this run, with an average headway throughout the day of 22 minutes. During the morning commute period, the wait time is much higher: 80 minutes. But in the midday and evening peak periods, wait times fall to 19 and 10 minutes, respectively.

Destiny USA to RTC

Because of the way buses are routed, fewer buses run from Destiny USA to the RTC: on weekdays, only 17 buses make the trip in this direction and the average headway is 54 minutes. The best time to look for a bus making this trip is in the evening peak period when headways get as low as 16 minutes. More buses make this trip on Saturdays: 25 bus trips run from Destiny to the RTC, with an average headway of 39 minutes. Nine buses make this trip between 2:54 p.m. and 4:54 p.m., with headways in this period averaging 20 minutes, but may be as low as three minutes.

Boardings and Alightings

Centro tracks the number of passengers who board (get on) and alight (get off) buses at its stops on weekdays. Centro's data for the period from October 1, 2018 to November 4, 2018 indicates a weekday average of 56 boardings and 38 alightings daily at the RTC (Stop #47).

Destiny USA (Stop # 7755) is one of the most popular destinations for transit riders in the Syracuse area. There is an average of 355 boardings and 390 alightings daily at Destiny USA.

4.3 Bicycle and Pedestrian Facilities

There are several off-road bicycle and pedestrian facilities that exist within the greater study area. These facilities include:

- Park Street Greenway
- Park Street (Ley Creek) Bikeway

- Onondaga Creekwalk
- Harborside Drive pathway
- Beartrap Creek Trail.

Additionally, Onondaga County continues to extend the existing Loop-the-Lake trail towards the Onondaga Creekwalk and beyond. A brief summary of each facility is provided in the following sections.

Park Street Greenway

As mentioned, the City of Syracuse recently completed the Park Street Greenway project. The Park Street Greenway extends from Wolf Street to Oak Street, although a crossing improvement was made at the Farmer’s Market intersection. As shown in Appendix C, the project installed the following types of improvements, which can be viewed in Image 11:

- New curb cuts with detectable warnings at every intersection
- High-visibility Ladder Crosswalks
- Shared Lane Markings (a.k.a., “sharrows”).



Image 11 – Park Street Greenway Improvements (Sharrows, Ladder Crosswalks, Curb Ramps) – Park Street at Turtle Street.

Route 370/Park Street (Ley Creek) Bikeway

Very little information exists for this bikeway, which appears unkempt and abandoned. As shown on Figure 13, the bikeway connects the Onondaga Lake Parkway (Route 370) to Park Street. As shown in Image 12, the path crosses Park Street and the navigates under several elevated I-81 highway bridges.



Image 12, Abandoned Park Street Bikeway

The bikeway includes a bridge over Ley Creek, which is located behind the Park Street Car Wash under an I-81 overpass. The bikeway does not connect to any other bicycle facilities and terminates in a grass lawn along the Onondaga Lake Parkway, and at Park Street on the north side of the CSX railroad bridge.

Onondaga Creekwalk

The Onondaga Creekwalk is a 2.5 mile shared-use pathway that generally follows Onondaga Creek from Armory Square in Downtown Syracuse northward to Onondaga Lake. The creekwalk passes through a variety of landscape environments from wooded (see Image 13) to urban within the City of Syracuse.



Image 13 – Onondaga Creekwalk near the Syracuse Inner Harbor.

The creekwalk is currently under construction to extend it south from Armory Square to Kirk Park. Moreover, Onondaga County has finalized plans to connect the Loop-the-Lake trail to the Creekwalk at Hiawatha Boulevard West.

As shown in Figure 13, the Onondaga Creekwalk crosses Hiawatha Boulevard West south of Destiny USA, or about 0.5 miles (a 10-minute walk) from the Park Street/Hiawatha Boulevard East intersection. The expanding network of shared-use trails that connect to the Creekwalk link to major employment centers (e.g., Destiny, Downtown), and offers non-motorized commute options.

Harborside Drive Pathway

A narrow 5-foot wide paved pathway exists along the southern side of Harborside Drive between Park Street to Destiny USA Drive. Although the pathway is in relatively poor condition, staff observed it being used by several pedestrians while conducted fieldwork in the area.

As shown in Image 14, the pathway travels under the elevated highways and connects into an outer Macy’s parking lot. Pedestrian facilities do not exist from the parking lot to the mall entrance.



Image 14 – Harborside Drive Pathway from Macy’s parking lot looking northeast.

As shown in Image 15, the pathway connects to Park Street at grade, but curb ramps, detectable warnings, crosswalks, and pedestrian signals do not exist.



Image 15 – The Harborside Drive Pathway as it connects to Park Street under the I-81 overpass.

Harborside Drive is owned by the City of Syracuse. However, based on an initial records search, it is not clear if the path exists within the Harborside Drive right-of-

way owned by the City, or within the I-81 right-of-way owned by the NYSDOT.

Beartrap Creek Trail

The Beartrap Creek Trail is a 1.7-mile shared use pathway that exists within the I-81 right-of-way. Two main trailheads with parking exist; the northern trailhead is located behind the K-Mart Plaza in Mattydale, and the southern trail is located at Ley Creek Drive/7th North Street intersection. As shown in Image 16, a trail entrance also exists at the corner of Gould Place and Richfield Boulevard in Mattydale.



Image 16 – Beartrap Creek Trail entrance at the corner of Gould Place and Richfield Boulevard (Town of Salina).

The pathway is protected (i.e., it does not cross roads) and provides grade-separation over the NYS Thruway via a dedicated bridge. Based on conversations with committee members and SMTC staff, observations of the trail suggest that it may be underutilized by bicyclists and pedestrians.

During the scoping process for this study, the committee members expressed interest

in the concept of extending the Beartrap Creek Trail along the I-81 right-of-way to the abandoned Park Street Bikeway near the RTC/Market Area. This would require crossing 7th North Street and Ley Creek (using the existing Park Street bikeway bridge beneath I-81), and going under the CSX railroad bridge at Park Street. Extending the Beartrap Creek Trail to the RTC/Market Area could, by extension, improve non-motorized access and mobility to Destiny USA, the Onondaga Creekwalk, the Loop-the-Lake Trail extension, Onondaga Lake, and downtown Syracuse.

NYS Bike Route 11

According to the NYSDOT’s bicycle website:

“State Bicycle Route 11 is a signed on-road bicycle route that extends 320 miles from the Pennsylvania state line near Binghamton to Rouses Point on the New York – Quebec border. This route connects with Pennsylvania State Bicycle Route L and the Velo Quebec cycling routes in Quebec and eastern Canada. It also intersects with State Bicycle Routes 5, 9 and 17, and NYS Canalway Trail.”

NYS Bike Route 11 parallels Hiawatha Boulevard East along Wolf Street (US 11) from North Salina Street to the City’s municipal boundary (to the northeast). Bike Route 11 travels south from Wolf Street onto North Salina Street and travels along US 11.

As shown in Image 17, there are no facilities such as bike lanes or sharrows along Wolf Street or North Salina Street, and exists as a signed route only within this area.

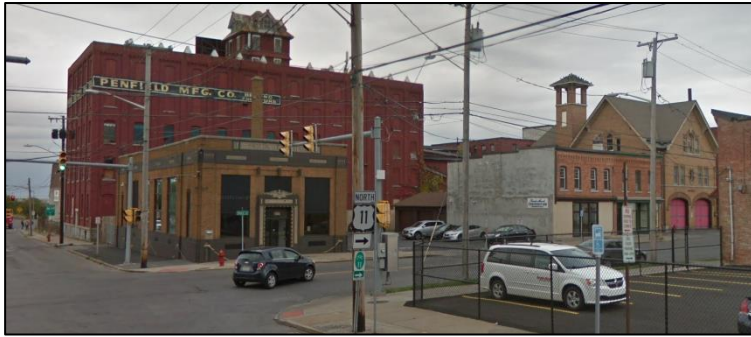


Image 17 – NYS Bike Route 11 at North Salina Street/Wolf Road Intersection

Onondaga Lake and beyond; one links to the Onondaga Lake Parkway, but is abandoned and not maintained; one links to Destiny, but is falling into disrepair; and one links to Mattydale, but is underutilized.

Newer bikeways, such as the Park Street Neighborhood Greenway and NYS Bike Route 11 have recently been incorporated by the city and state into the greater study area.

4.3 Summary of Railroad, Transit, and Bicycle/Pathway Facilities

The RTC serves as an active hub for Amtrak passenger rail service, intercity bus service, and local bus service, but there are inadequate bicycle and pedestrian facilities to accommodate non-vehicular mobility options to the market area, Destiny, and the adjacent neighborhoods.

The RTC-Market Area has many multi-modal resources that often act independently of each other, or in some cases, may be underutilized, abandoned, and/or forgotten.

Three passenger train platforms exist within the greater study area, two of which are abandoned.

There are four shared-use pathways that act independent of each other; one links directly to downtown, the inner harbor,

5 - Road Facilities and Crash Assessment

This chapter provides an overview of existing road, sidewalk, and on-road bicycle facilities. A summary crash assessment is also provided. This chapter outlines the data collection process, methodology, findings, and highlights conditions pertaining to primary study area roadways.

5.1 Data Collection

The SMTC collected physical condition information about the primary and secondary study area roadways, which includes: lane, shoulder, and sidewalk widths; roadway ownership and functional classification; curb and curb-cut locations, sidewalk locations; traffic lights and pedestrian signals; and other noteworthy observations such as indications of where people walk (e.g., as evidenced by worn dirt paths in grass areas and direct observations of people walking). Pavement ratings and traffic volumes are also provided for federal aid eligible roads.

Pavement Rating Score Overview

The SMTC assembled pavement rating scores for portions of the federal aid eligible road network in the MPA as part of its *Bridge and Pavement Condition Management System* annual report. The report uses a rating scale of 1-10 that

evaluates the distress of the pavement. A summary of these scores are:

- Poor (1-5): Distress is frequent and may be severe
- Fair (6): Distress is clearly visible
- Good (7-8): Distress symptoms are beginning to show
- Excellent (9-10): No pavement distress.

Traffic Volumes and Functional Classification Overview

Traffic volume information is available on the NYSDOT Traffic Data Viewer website, which displays Annual Average Daily Traffic (AADT) for Federal Aid Eligible roads. The Federal Highway Administration (FHWA) indicates typical AADT ranges based on functional classification:

- Principal Arterial (Other): 7,000 – 27,000
- Minor Arterial: 3,000 – 14,000
- Major Collector: 1,100 – 6,300
- Local: 80 – 700.

Generally, traffic volumes on primary study area roadways fall within their functional classification.

Crash Assessment Methodology Overview

The New York State Department of Transportation maintains a database, the Accident Location Information System (ALIS), which catalogues information about crashes happening throughout the state. The SMTC used this information to provide a summary of the study area's crash history.

For summary purposes, the SMTC sorted crashes as “intersection” or “non-intersection” crashes.

Two signalized intersections within the primary study area have multiple lanes/turn bays and are wider than the other intersections. They include: Hiawatha Blvd. E./Park St.; Park Street/NBT Bank Parkway/Harborside Drive. The SMTC identified crashes in the two large intersections as those that occurred within the area confined by the painted stop bars. For the smaller intersections, the SMTC identified crashes that occurred within 10 meters of the center of the intersection. Non-intersection crashes represent crashes that occurred along road segments exclusive of intersection crashes.

The SMTC also identified crashes that occurred within the RMA and RTC parking lots as well as any bicycle and pedestrian crashes that occurred in the greater study area.

For classification purposes, the Department of Motor Vehicles (NYSDMV) classifies crashes as either “reportable” or “non-reportable”. Reportable events include four sub categories by severity: fatal; injury; property damage (at least \$1,000) and injury; and property damage only (at least \$1,000). Crashes that do not meet these criteria are considered non-reportable.

The summary also identifies “serious injury” crashes as a subset of injury crashes. An

injury crash may be denoted as a “serious injury” crash if it involves: severe lacerations, broken or distorted limbs, skull fractures, crushed chest, internal injuries, unconscious when taken from the crash scene, and unable to leave crash scene without assistance.

Contributing Factors and Collision Types

Crashes are also assigned at least one apparent human, vehicular, and/or environmental contributing factor. Collision types, such as rear-end collisions, are also documented. An overview of the top three contributing factors and collision types are provided for the study area.

5.2 Crash Assessment Findings

“Study area” crashes include those on primary and secondary study area roads and within the parking lots the RTC and RMA. (They do not include crashes on I-81). Primary study area road crash trends are compared with trends in the greater study area.

Crash Overview

A total of 644 crashes occurred during the five-year period. The crashes include the following crash types:

- Fatal (1)
- Injury (67)
- Property Damage and Injury (67)
- Property Damage Only (246)
- Non-Reportable (263).

Contributing Factors

The top three contributing factors for all crashes during the five-year period include: following too closely, failure to yield the right-of-way, and driver inattention.

Collision Types

The top three collision types for all crashes during the five-year period include: rear end, overtaking, and right-angle.

Fatal Crashes

As shown in Figure 15, one fatal crash occurred along Hiawatha Boulevard West near Solar Street within the secondary study area. No fatal crashes occurred within the primary study area.

Serious Injury Crashes

Figure 15 also shows the location of the 21 serious injury crashes. Of the 134 crashes in the study area that resulted in injuries, 21 were classified as serious injury crashes. Including intersections, six serious injury crashes occurred along Park Street, and four occurred along Hiawatha Boulevard East (including one that occurred at the Hiawatha/Park Street intersection.)

Intersection vs. Non-Intersection Crashes

Figure 16 identifies the range of crashes that occurred on segments and at intersections. Of the 644 crashes:

- 51 percent occurred at intersections
- Park Street experiences more non-intersection crashes than Hiawatha, with most occurring between Farmers Market Place and NBT Bank Parkway

- Hiawatha Boulevard East northeast of Park Street experienced the least amount of crashes.

Table 1 shows the number of crashes, injury crashes, and serious injury crashes that occurred at primary study area intersections. As shown in Table 1, the Park/NBT Bank/Harborside experienced the highest number of total crashes (58), injury crashes (12), and serious injury crashes (2).

Table 1 –Primary Study Area Intersection Crashes

Primary Study Area Intersection	No. Crashes	No. Crashes w/ Injuries	Serious Injury Crashes
Park / NBT Bank / Harborside	58	12	2
Hiawatha / North Salina / I-81	44	6	2
Park / Hiawatha	29	6	1
Park / Farmers Market / I-81	29	5	0
Hiawatha / Tex Simone / 1st North	14	1	0
Hiawatha / Grant	5	1	0
Hiawatha / Carbon	4	3	0
Hiawatha / 2nd North	3	1	0
Hiawatha / 4th North	4	1	0
Hiawatha / Spring	0	0	0

Bicycle and Pedestrian Crashes

As shown in Figure 17, five crashes involved a bicyclist and 20 involved a pedestrian. All bicycle and pedestrian crashes resulted in an injury (19) or a serious injury (6). Three pedestrian crashes occurred on Park Street; two pedestrian crashes occurred on Hiawatha Boulevard East. One of the pedestrian crashes at the Hiawatha / Park Street intersection. No bicycle crashes occurred along either road corridor.

Figure 15: Fatal and Serious Injury Crashes
RTC/Market Area Access Study



Figure 16: Intersection and Non-Intersection Crashes
RTC/Market Area Access Study



Figure 17: Bicycle and Pedestrian Crashes
RTC/Market Area Access Study



Intersections in the primary study area did not involve a crash with a bicyclist, but three involved one pedestrian crash:

- Park/Hiawatha
- Park/Farmers Market/I-81
- Hiawatha/Carbon.

The following bike and pedestrian crashes also occurred within and immediately adjacent to the market and the RTC:

- One bike crash occurred near Park Street at Farmers Market Place
- One pedestrian crash occurred near the RTC driveway on NBT Bank Parkway
- One pedestrian crash occurred at NBT Bank Parkway/Tex Simone Drive
- Two pedestrian crashes occurred within the Regional Market’s parking lots.

5.3 Hiawatha Boulevard East

Hiawatha Boulevard East does not carry a route designation number. The city owns the road, which is functionally classified as an Urban Major Collector northeast of Park Street and as a Principal Arterial (Other) southwest of Park Street.

Hiawatha Boulevard East is a two-lane road northeast of Park Street with a 4,324 AADT. Hiawatha Boulevard East widens to six lanes where the AADT is 16,187 southwest of Park Street. The road is a northeast-southwest route, with primarily a “good condition” pavement condition rating, but some blocks closer to Grant Avenue that are rated “fair” to “poor”. It connects the

surrounding area with Interstate 81, Park Street, and 7th North Street.

Granite curbs exist along the entire length of Hiawatha Boulevard East within the primary study area. A speed limit is not posted along Hiawatha Boulevard East, but the limit is understood to be 30 MPH. (Hiawatha Boulevard West is posted as 35 MPH in both directions.) As previously shown in Figure 13, few sidewalks exist, and bicycle and transit facilities do not exist.

As shown in Figure 18 and Figure 19, the road is approximately 34 feet wide between Carbon Street and 7th North Street, and the right-of-way varies from 70 to 82 feet. The road widens to 69 feet northeast of Park Street and to 89 feet southwest of Park Street. The right-of-way also varies from 104 feet to 196 feet, respectively.

5.3 Park Street

Park Street serves as a significant gateway into the City, the RTC/Market Area, and Destiny USA from the Town of Salina. It is functionally classified as a Principal Arterial (Other) west of Hiawatha and as an Urban Minor Arterial east of Hiawatha.

Park Street is owned by the City of Syracuse and carries the designation of NY370. The road serves as a northwest/southeast route that connects to Hiawatha Boulevard East, I-81 (off-ramp only), the RTC/Market Area, and to the city’s north side neighborhoods.

Figure 18: Existing Conditions
RTC/Market Area Access Study

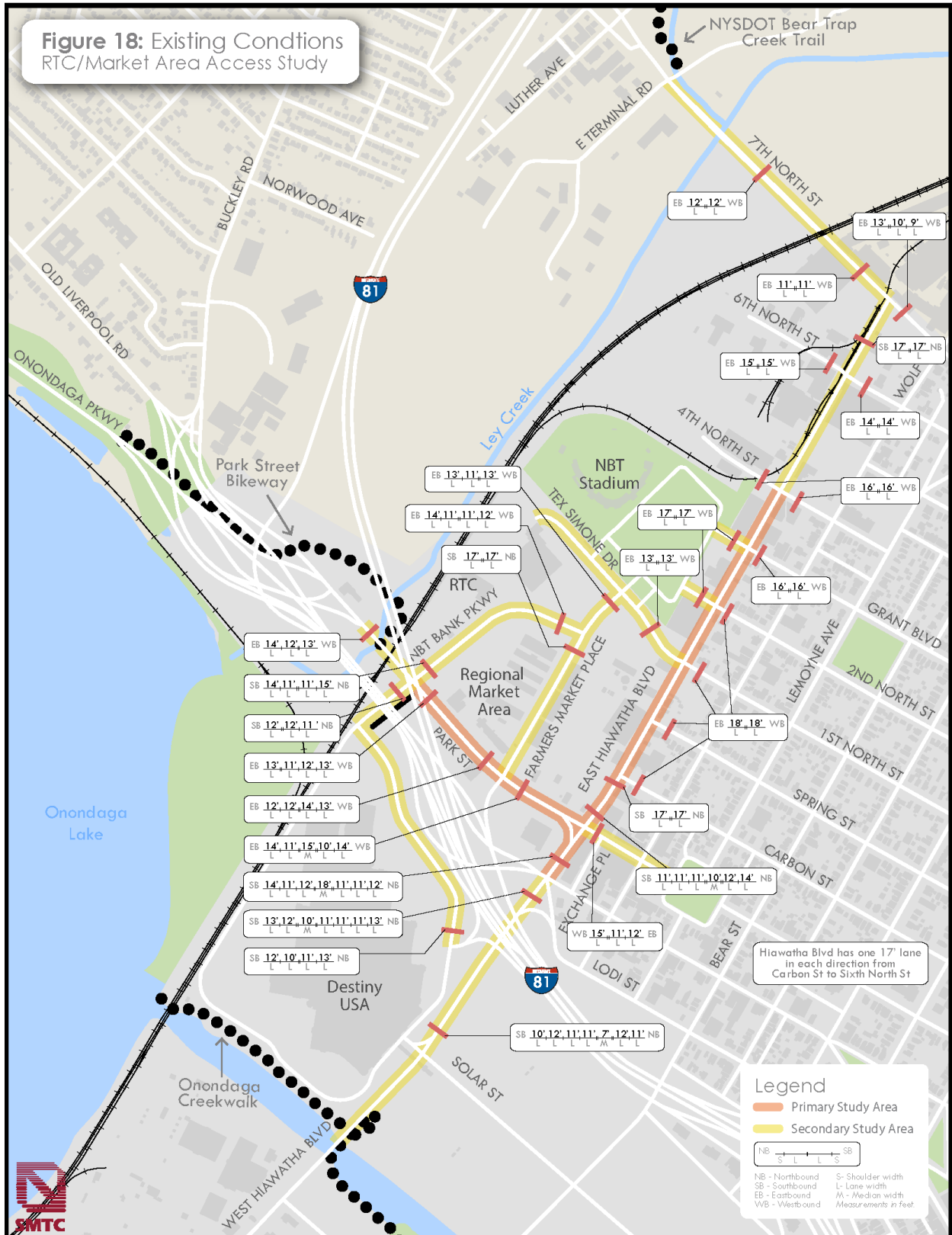


Figure 19: Approximate Road Right-of-Way Widths
RTC/Market Area Access Study



Park Street narrows from four to three lanes under the CSX railroad bridge. There are no sidewalks under the bridge, although the road is curbed and a paved snow storage area exists on both sides beneath the bridge. However, the City installed sidewalks between the CSX bridge and the Ley Creek bridge during the rehabilitation of the Ley Creek bridge. Staff observed pedestrians walking along the new sidewalks and atop the snow storage area (beneath the CSX bridge) to avoid traffic. Bicyclists were observed traveling in both directions using the travel lanes under the CSX Bridge.

Park Street is curbed within the primary study area. The speed limit is not posted on this section of roadway, but it is understood to be 30 MPH. Park Street has an “excellent” pavement condition rating between Hiawatha Boulevard East and Harborside Drive, and is rated “good” between Harborside Drive and the City Line.

Sidewalks exist road near the market area, along the former Babies-R-U's property, and (as mentioned) between the CSX railroad bridge and the Ley Creek bridge. As shown in Figure 18 and Figure 19, road width varies from 39 feet northwest of the CSX railroad bridge to 64 feet between Farmers Market Place and Hiawatha Boulevard. The right-of-way also varies from 104-to 112-feet, and overlaps with the 250-foot I-81 right-of-way owned by the NYSDOT.

Two AADT values exist for Park Street:

- 12,943 northwest of the I-81 off-ramp
- 3,547 southeast of the I-81 off-ramp.

5.3 Study Area Intersections

SMTC staff documented the presence or lack of: crosswalks, pedestrian push buttons/countdown crossing timers, curb ramps (with and without detectable warnings), and the type of traffic control (e.g., stop or signal-controlled) at 18 intersections within the primary and secondary study area.

Table 2 summarizes pedestrian amenities at the 18 intersections. The table identifies if amenities exist on all approaches, some of the approaches, or if it is not present on any approach. As previously shown in Figure 13, no bicycle facilities exist and most intersections lack pedestrian facilities, especially within the primary study area.

Table 2 – Pedestrian Amenities and Primary and Secondary Study Area Intersections

Intersections	Crosswalks	Ped. signals	Countdown timers	Curb Ramps	Detectable warnings	Control	Notes
Primary Study Area							
Hiawatha/N. Salina/Lodi /I-81	-	-	-	-	-	sig.	5-leg curbed intersection, no ped., amenities, recently repaved
Hiawatha/Park	-	-	-	-	-	sig.	4-leg curbed intersection w/S-EB right slip ramp, no ped. amenities; building encroaches southeast corner with signs posted that impede pedestrians
Hiawatha/Carbon	-	-	-	●	●	stop	3-leg curbed intersection, gravel driveway (across Carbon) into Market, curb ramps on Carbon only
Hiawatha/Spring	-	-	-	●	●	stop	3-leg curbed intersection, curb ramps on Spring only
Hiawatha/1st North/Tex Simone	-	○	-	○	○	sig.	4-leg curbed intersection, pedestrian push buttons are missing on two corners
Hiawatha/2nd North	-	-	-	●	●	stop	4-leg curbed intersection, a ten-foot wide sidewalk exists on the north side of 2 nd North St between Hiawatha and the Stadium. Vegetation is overgrown next to sidewalk
Hiawatha/Grant	-	-	-	○	○	sig.	4-leg curbed intersection, curb ramps with detectable warnings east side of road only
Hiawatha/4th North	-	-	-	-	-	stop	4-leg curbed intersection, no ped. facilities
Park/Farmers Market/I-81	○	○	○	○	○	sig.	4-leg curbed intersection, a crosswalk exists across northwest approach with curb cuts/ped signals/countdown timer. A bike rack exists at southeast corner
Park/NBT Bank/Harborside	-	-	-	○	-	sig.	4-leg curbed intersection, a paved pathway exists on the south side of Harborside Drive. Curb cuts with detectable warnings do not exist. A sidewalk exists on the north side of NBT Bank Parkway, and a worn footpath exists in the grass on the south. A southbound right slip ramp exits
Secondary Study Area							
Hiawatha/Solar	●	●	-	●	●	sig.	4-leg curbed intersection, no sidewalks to mall
Hiawatha/6th North	-	-	-	-	-	stop	4-leg curbed intersection, with a railroad crossing
Hiawatha/7th North	○	-	-	○	○	sig.	3-leg curbed intersection, 1 crosswalk/curb cut only
7th North/E. Terminal	-	-	-	-	-	sig.	4-leg intersection with shoulders
NBT Bank/Farmers Market	-	-	-	○	-	stop	3-leg curbed intersection with curbed island
NBT Bank/Tex Simone	-	-	-	○	-	stop	3-leg curbed intersection, with a railroad crossing
Harborside/Destiny USA	-	-	-	-	-	stop	3-leg curbed intersection with curbed island
Destiny USA/Solar	-	-	-	-	-	stop	3-leg curbed intersection – no pedestrian facilities

- Not present

○ Present on some approaches

● Present on all approaches

Only three of ten primary study area intersections had curb cuts with detectable warnings.

However, as part of the Park Street Neighborhood Greenway project, the City made the following pedestrian crossing improvements to the northbound approach at Park Street/Farmers Market Place/I-81 intersection: a high-visibility ladder crosswalk, two curb cuts with detectable warnings with pedestrian push buttons, and a bicycle rack.

5.4 Speed Data

Overall, little speed data exists for the study area. Table 3 summarizes available speed data for the following corridor segments.

Table 3. Existing Speed Data

Segment	Year	Direction	Average Speed	50th Percentile Speed (Median)	85% Percentile Speed	Posted Speed
Hiawatha Blvd East, Grant to Seventh	2015	NB	27.3	30.6	36	30
		SB	27.7	30.8	36.5	
Hiawatha Blvd West, Spencer to Solar	2017	EB	32.3	35.9	42.7	35
		WB	34.3	36	42	
Park Street, Wolf to Farmers Market Place	2014	EB	22.1	23.3	28.3	30
		WB	22.4	23.3	28	

Community stakeholders have identified speeding as an issue that should be addressed in future roadway design improvements. A speed study is beyond the scope of this assessment, but could be conducted during engineering design if deemed necessary.

5.5 Road Facility & Crash Assessment Summary

A five-year crash assessment found that the top three contributing factors include: following too closely, failure to yield the right-of-way, and driver inattention. Moreover, the top three collision types include: rear-end, overtaking, and right-angle crashes. The intersections with active pedestrian crossings had the following number of crashes:

- Park/NBT Bank Intersection (58)
- Park/Hiawatha* (29)
- Hiawatha/1st North (14)
- Hiawatha/Carbon* (4).

The two intersections listed above with an asterisk (*) had one pedestrian crash. Fatal crashes and bicycle crashes did not occur at primary study area intersections.

The shortest walking distance across Hiawatha Boulevard East is 34 feet. Hiawatha is classified as a Principal Arterial (Other) southwest of Park Street and is 89 feet wide with an AADT of 16,189 in this area. The road classification changes to a Major Collector northeast of Park Street, and narrows to 34 feet in width with an AADT of 4,324. The speed limit is not posted, but is understood to be 35 MPH.

Park Street is 49 feet wide at the NBT Bank Parkway/Harborside Drive intersection and has an AADT of 12,943. The road is classified as a Principal Arterial (Other) and is understood to have a 35 MPH speed limit.

Chapter 6 - Pedestrian Observations

Chapter 6 provides a summary of observed pedestrian and bicycle activity at active crossing locations within the primary study area. SMTC staff observed activity along Hiawatha Boulevard East from North Salina Street to Carbon Street, and from 1st North Street to Grant Boulevard. Staff also observed the Park Street/NBT Bank Parkway/Harborside Drive intersection and the nearby RTC/RMA driveways.

6.1 Methodology

Observations occurred on two warm sunny summer days during the market's peak hours of operation. Two sources of information were used to determine when the market is the busiest: conversations with market staff, including the market's director, and the market's Facebook page, which includes charts that indicate peak hours of operation by day.

Additionally, staff reviewed Centro bus route schedules to determine when the most buses arrive and depart at the RTC. Peak bus arrival and departure times generally aligned with the busiest times at the market.

The market sells fresh produce on Thursdays and Saturdays (the RMA

operates a Flea Market on Sunday). All five sheds are open on Saturday, while only one shed is open on Thursday. The SMTC observed activity on both days during their busiest times to compare trends.

The SMTC conducted observations on:

- Thursday, July 25, 2019, from 10:00 a.m. to 12:00 p.m.
- Saturday, August 3, 2019, from 9:00 a.m. to 11:00 a.m.

A summary of findings is presented in the following sections.

6.2 Summary of Observations

The SMTC documented the exact location where pedestrians and bicyclists crossed the road and their general travel route to the extent practicable to determine trends.

Staff observed people of all ages walking and riding bikes back and forth between the market and the neighborhood. It was not uncommon to observe the walkers and bicyclists return with bags of produce.

Parents, and in particular mothers, were observed pushing baby strollers. Staff observed seniors pushing produce carts. Some seniors used a walker, a cane, or a wheel chair (including motorized wheel chairs). Some seniors walked alone, others were observed walking with children. Most bicyclists, including seniors, rode independently. And, at least one teenage/young adult was observed on a skateboard traveling along Park Street.

Thursday Observations

Figure 20 shows pedestrian movements by direction on Thursday, July 25, from 10:00 a.m. until 12:00 p.m.

As shown, the majority of pedestrians crossed Hiawatha Boulevard East at Carbon Street, 1st North Street, and Park Street. Most pedestrians (17) crossed at the southeast corner of Carbon Street. The Tex Simone Drive/1st North Street intersection had the second highest number of pedestrians crossing (12) Hiawatha Boulevard East.

More pedestrians were observed walking along the north/west side of Hiawatha Boulevard East than along the south/east side. No pedestrians that originated from the north walked south of 1st North Street along Hiawatha Boulevard. Likewise, only one pedestrian who originated from the south walked north of Spring Street.

Staff also observed several pedestrians who by-passed the Park/Hiawatha intersection by walking along Exchange Street.

Most pedestrians who crossed Park Street/NBT Bank Parkway/Harborside Drive intersection did so at the northbound and westbound approaches. Staff observed 12 pedestrians crossing mid-block between the market and the RTC driveways.

Figure 21 shows bicycle movements by direction. As shown, two bicyclists crossed Hiawatha Boulevard East (one on each side

of the intersection) at Park Street. Both bicyclists traveled northwest. Instead of crossing at Park Street, one bicyclist crossed mid-block between Park Street and Carbon Street, and one bicyclist crossed mid-block between Park Street and North Salina Street. Staff observed one bicyclist traveling northeast along Hiawatha Boulevard East.

Staff observed five bicyclists traveling under the CSX railroad bridge near the Park Street/NBT Bank Parkway/Harborside Drive intersection.

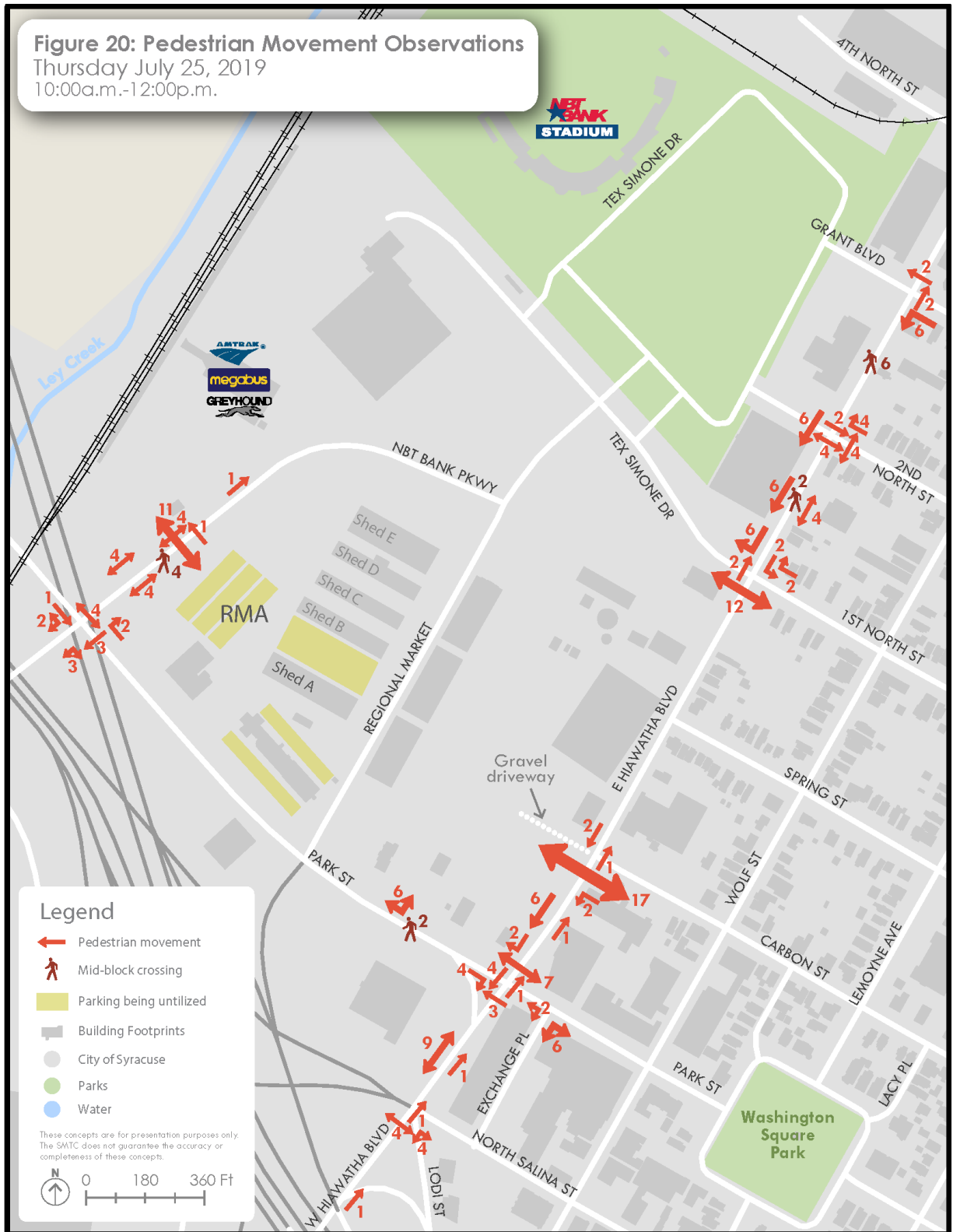
Saturday Observations

Figure 22 shows pedestrian movements by direction on Saturday, August 3, from 9:00 a.m. until 11:00 a.m.

Although similar trends from the observation on Thursday were also observed on Saturday, there were a few noteworthy differences.

As shown in Figure 22, a greater number of pedestrians crossed Hiawatha Boulevard East at the southwest-bound approach of the Park Street intersection; only one crossed at the northeast-bound approach to the intersection.

Carbon Street had 24 pedestrian crossings - the second highest - along the gravel driveway into the market area. The 1st North Street/Tex Simone Drive intersection was the third highest location with 9 pedestrian crossings.







Similar to the Thursday observations, more pedestrians were observed walking along the north/west side of Hiawatha Boulevard East than along the south/east side. Likewise, it was not common for pedestrians originating from the north or the south to travel beyond Spring Street.

A greater number of pedestrians (13) were also observed by staff crossing the northwest bound approach of the Park Street/NBT Bank Parkway/Harborside Drive intersection. Although a sidewalk only exists along the north side of NBT Bank Parkway, pedestrians tend to walk along the south side of the road through a worn pathway through the grass. Pedestrians also primarily walked along the paved path on the south side of Harborside Drive. Staff also observed more than 20 mid-block crossings along NBT Bank Parkway by the RTC/RMA driveways.

Figure 23 shows bicycle movements by direction. In general, very few bicyclists traveled along Hiawatha Boulevard East. Most bicyclists traveled across Hiawatha Boulevard East between the neighborhood and the RTC/market area. As shown, all eight bicyclists crossed Hiawatha Boulevard East at the Park Street intersection at the southwest-bound approach.

Additionally, four bicyclists crossed Hiawatha Boulevard East heading northeast from 1st North Street to Tex Simone Drive.

Several bicyclists were observed traveling under the CSX railroad. Only one of the bicyclists traveled towards Destiny USA; most continued riding along Park Street as they crossed the Park Street/NBT Bank Parkway/Harborside Drive intersection.

6.3 Observation Summary

Observations of pedestrian and bicyclist movements during two different visits show the following patterns and trends:

- Hiawatha Boulevard East at Carbon Street was an active pedestrian crossing point; followed by Hiawatha at Park Street; then Hiawatha at 1st North Street/Tex Simone Dr.
- Nearly all bicyclists and pedestrians crossed the southwest bound approach at Park Street/Hiawatha Boulevard East
- Park Street (northbound) experienced the most bicyclists; fewer ride along the Hiawatha Boulevard East corridor
- Most pedestrians cross the northbound approach of the Park Street/NBT Bank Parkway/Harborside Drive intersection
- Bicyclists and pedestrians were observed traveling Park Street under the CSX railroad bridge, although it was more common to observe bicyclists along this route
- Many pedestrians cross NBT Bank Stadium mid-block between the market and the RTC.



Chapter 7 - Community Feedback

Chapter 7 outlines SMTC’s public outreach process and summarizes the community input received through several outreach efforts undertaken throughout the course of the study.

7.1 Public Involvement Plan

As mentioned in Chapter 1, the SMTC developed a Public Involvement Plan (PIP) to guide community input outreach efforts. The SMTC reviewed the PIP with the SAC. A copy of the PIP is provided in Appendix B.

The PIP serves as a guide to help the SMTC create public awareness of the study’s goals, objectives, and process, as well as to seek public comment and document public input to inform the decision making process.

The following sections summarize feedback received from the public, local stakeholders, community groups, and public, private, and non-profit entities.

7.2 Community & Stakeholder Outreach

The SMTC reached out to several groups and individuals identified in the PIP to solicit public input. The SMTC sought feedback from neighborhood associations,

community groups, refugee service programs, transit providers, community-based organizations, as well as public, private, and non-profit stakeholders.

Stakeholder Outreach

Staff from the SMTC spoke in-person with the market’s director, the assistant director, the facilities manager, and a deputy from the Onondaga County Sheriff’s office. Additionally, the SMTC corresponded via e-mail with a representative from Centro, the director of Northside Up, the director of Hopeprint, and representatives from the Northside Tomorrow’s Neighborhood Today (TNT), the Washington Square TNT Task Force, and the TNT Danforth/Butternut/Pond Task Force.

Community Meetings

The Washington Square Neighborhood Association (WSNA) invited the SMTC to discuss the purpose of the RTC-Market Area Study and solicit feedback on May 16, 2019. Staff also met with the Refugee Resettlement Service team from Catholic Charities on October 23, 2019. And, on January 7, 2020, staff meet with the Washington Square Task Force. In total, approximately 40 people participated and provided comments.

Public Outreach at the Farmer’s Market

The SMTC also staffed two informational kiosks at the Regional Market (inside Shed A, outside the Welcome Center building as shown in Image 18) on Saturday,

September 21, 2019 from 9:00 a.m. to 11:00 a.m. Approximately 35 to 40 people participated and provided comments.



Image 18 – Outdoor study information kiosk display between the Welcome Center building and Shed A at the Regional Market.

7.2 Community Feedback

The SMTC received the following comments (arranged by topic) during the community and stakeholder outreach efforts:

Bike Lanes

- Add bike lanes along:
 - Hiawatha Boulevard (East and West)
 - North Salina Street
 - Carbon Street and the gravel driveway into the market
 - On-road bike lanes (and sharrows) pose safety concerns for bicyclists. Separate bike lanes by elevating them to the level of the sidewalk or by putting barriers between the bike lanes and vehicle travel lanes.

Bicycling

- It was noted that many refugees commute by bike year-round to Destiny and to Liverpool (Henry Clay Businesses) and as far as Baldwinsville to access work. Many refugees work night shifts, so the pedestrian observation time periods didn't capture the number of bicyclists that ride at night along Park Street and Hiawatha Boulevard.

Sidewalks

- Install/improve sidewalks along Hiawatha Boulevard East, Tex Simone Drive, Park Street, and the northern extensions of Grant Boulevard, and Carbon Street (gravel driveway owned by the Regional Market Authority)
- The sidewalk network around the market is almost non-existent

Pedestrian Signals

- Pedestrian signals at: Park Street at NBT Bank Parkway, and along Hiawatha Boulevard East at Park Street, Carbon Street, Tex Simone Drive, 2nd North Street, and Grant Boulevard
- Consider using Leading Pedestrian Intervals (LPIs).

Mid-block Crossings

- Provide a mid-block crossing on NBT Bank Parkway connected the market with the RTC
- Install pedestrian crossing improvements between the market and the baseball stadium.

- A crosswalk and curb cuts do not exist between the (market-owned) parking lot at the Cold Storage Facility and the market. Add them to NBT Bank Parkway.

Carbon Street/Gravel Driveway/Hiawatha Boulevard Intersection

- The gravel driveway should be paved/improved to accommodate bicyclists, pedestrians, and drivers
- Consider a four-way stop-controlled intersection and/or a rectangular rapid flashing beacon (RRFB) for this location
- Bike lanes and sidewalks or a shared use path along entrance into the market.

Hiawatha Boulevard East/Park Street Intersection

- Should improvements be made to the Park Street/Hiawatha intersection, incorporate push button signals with a Leading Pedestrian Interval (LPI) signal phasing to provide pedestrians with additional time before the vehicular traffic is allowed to proceed
- Prioritize bicycling crossing improvements at Park Street at Hiawatha Boulevard East
- Reduce width of road (eliminate turn-bay lane) on southwest bound approach.

Park Street (Abandoned) Bikeway

- This bikeway is abandoned and not maintained. It is overgrown with weeds and the trail surface is poor and rutted.

Homeless individuals have been observed living near the bikeway (especially under the I-81 bridges)

- The Park Street Bikeway trail does not connect to the Onondaga Lake Parkway's southbound lanes. As such, bicyclists traveling southbound along Onondaga Lake Parkway have to cross several lanes of high speed traffic near on- and off-ramps to access the trail.

Park Street

- Add left-turn lane from Park Street into the market at Farmer's Market Place.

Park Street Neighborhood Greenway

- Repave road and repaint sharrows
- Separate traffic as much as possible from bicyclists (e.g., separated bike lanes, etc.)
- Add wayfinding signage directing bicyclists to the neighborhood greenway.

Bear Street

- If the Bear St bridge comes down or is repaired as part of the Interstate 81 project, sidewalks should be installed.

Solar Street

- Can bike lanes and sidewalks be incorporated on both sides of Solar Street from Franklin Square to the entrance of Destiny?
- Solar Street at Hiawatha Boulevard lacks pedestrian amenities to the mall.

Wolf Street at Carbon Street

- Crossing or turning on Wolf Street is dangerous, limited sight distance.

Harborside Drive Pathway

- The paved pathway along the south side of Harborside Drive is dilapidated and may not be wide enough to serve as a shared-use path.

Landscaping

- Add a planting strip along the sides of and center of Hiawatha Boulevard.

Centro Bus Service

- Provide stops at the regional market and “front door” service at the Stadium. (On-request Stadium service once existed as a deviation option for 116/216 routes, but was discontinued because the deviation took too long and caused service delays.)

Parking Lots (RTC/market/Ball Park)

- Impervious surface parking lots should be designed as pervious service to improve lake water quality.

Miscellaneous Safety Issues and Concerns

- Hand-held flags could be provided at crosswalks for people to carry as they cross the road to improve their visibility for motorists
- Lighting does not exist in many locations and needs to be improved to enhance personal safety and mobility
- It was noted that lighting needs to improve under the bridges between the market, Destiny, and Liverpool. Many bicyclists commute along Park Street (and Hiawatha) in the evenings to

access work in Liverpool, Destiny, and beyond. They typically work second or third shifts

- Cars park on sidewalks.

Miscellaneous Bicycle Amenities

- Bike racks do not exist at the market - people lock their bikes to the fences - consider adding bike racks
- Several people and organizations advocated for adding bike racks at the market, the RTC, and at Destiny.

Winter/Seasonal Considerations

- Although the market is open all year – a market vendor said that business reduces significantly during the winter months (only two sheds open on a Saturday) and that it is likely there is less visitation from those who walk or bike to the market
- Bicyclists commute late shifts from Northside to Liverpool and beyond (via Park Street and Hiawatha Boulevard) year-round. Lighting is needed along these roadways and under bridges.

Train/Bus Station Visitors

- According to a market vendor, it is not uncommon for people waiting at the RTC (for a train or bus) to walk over to the market – pedestrian amenities do not exist across NBT Bank Stadium.

Lodi Street

- It is not uncommon for pedestrians to walk along Lodi Street to Hiawatha Boulevard to access the mall, so improve the Lodi Street connection at Hiawatha Boulevard.

Loop-the-Lake Trail Access

- There is a lack of a safe access between RTC/Market Area and points northwest such as Village of Liverpool and Old Liverpool Road area
- Unsafe to walk/bike to the Loop-the-Lake trail from the RTC/Market Area.

Feedback about the Refugee Population

- There are a half to a dozen different countries represented by refugees living in Northside neighborhoods
- Many different languages are spoken throughout the Northside
- Refugees tend to be employed by businesses that offer entry-level shift work. Some examples provided include Destiny, and the many businesses along Henry Clay Boulevard in Liverpool. It was noted that many refugees commute by bike to work during the afternoon and evening hours. Concerns were expressed about the lack of bikeways, snow, and dark streets. Some refugees commute as far as Baldwinsville by bike. Additionally, many work destinations, including the RTC, Destiny and the market, have few if any bike racks
- The Regional Market Authority once picked up refugees at Catholic Charities
- Although not specific to the study area, attendees noted a lack of bus service at major employment sites outside of the City of Syracuse.

7.3 Feedback Summary

The SMTC received public comments during a variety of outreach efforts, which included phone and e-mail conversations, in-person

interviews, neighborhood meetings, and at staffed kiosks during the farmer's market. Approximately 80-100 community members participated and dozens provided feedback.

In short, most people who offered feedback suggested improving the gravel driveway as an official road with sidewalks and bike lanes, or a shared-use path. People also expressed a desire to see bike lanes installed along Hiawatha Boulevard, Park Street, and North Salina Street.

A consistent comment from community members was the need to install sidewalks throughout the neighborhoods, along Hiawatha Boulevard and Park Street, as well as within and around the RTC-Market Area campus. Furthermore, the WSNA highlighted the need to improve neighborhood sidewalks to accommodate residents walking to the market, including refugees who tend to live further east towards Butternut Street.

Many commenters also expressed the need to install crosswalks across NBT Bank Parkway: between the market and the RTC, and between the market and the parking lot adjacent to the cold storage building.

Several people also mentioned the need to improve connections to buses and existing bikeways/pathways. Some people suggested providing bus service inside of the market's campus and extending existing pathways (e.g., Onondaga Creekwalk, the Loop-the-Lake Trail, etc.) to the market. Only a few people knew of the Park Street Bikeway and the Beartrap Creek Trail.

Chapter 8 – Mobility Improvement Options

Chapter 8 provides an overview of potential pedestrian and bicycle facility improvement options to enhance mobility between the Northside neighborhood and the RTC/Market Area. The chapter is divided into two sections:

- Section 8.1 identifies planning-level concept plan options to improve walking and bicycling across priority intersections in the primary study area
- Section 8.2 informs city and county planning efforts (e.g., Loop-the-Lake, LWRP, ReZone Syracuse, I-81, etc.) about ‘big picture’ ideas (that may warrant further study) to improve mobility within the secondary study area and beyond.

The SMTC conducted a cooperative planning-level assessment that involved road owners (e.g., City of Syracuse, New York State Department of Transportation), the RTC (i.e., Centro), and county facilities such as the stadium, etc. (i.e., Onondaga County). The SMTC designed options to address the unique needs and desires of the community to the greatest extent practicable:

- demographics of walkers and bicyclists – including young, elderly, refugee (Ch. 3)
- Constraints; e.g., road width (Ch. 4 & 5)
- Observed crossing locations (Ch. 6)
- Feedback from neighborhood groups, stakeholders, development organizations, and from the market’s director, staff, and customers (Ch. 7).

Primary Study Area Corridors

Hiawatha Boulevard East

Existing pavement width may accommodate five-foot bike lanes and 12-foot travel lanes. The right-of-way (ROW) may also accommodate five-foot wide sidewalks, or a shared use path (SUP) along the north side of the road where more space exists within the ROW. A tree planting zone with pedestrian-scale lights between the curb and the sidewalk may also be possible along the road’s north side. The number of driveway curb cuts makes it difficult to accommodate on-street parking or an on-road cycle track. If desired, an access management plan (beyond the scope of this study) could identify ways to consolidate driveways and increase curb space for on-street parking and/or a cycle track.

Park Street

Protected bike lanes - separated from traffic - may require road widening or lane consolidation. Sharrows are less desirable due to traffic volumes. The ROW appears sufficient to accommodate sidewalks,

and/or a bi-direction SUP that accommodates walkers and bicyclists.

8.1 Intersection Mobility Improvement Options

Section 8.1 identifies concept plan options to improve pedestrian mobility at the four busiest intersections (for pedestrians) within the primary study area:

- Hiawatha/Park (Signalized)
- Hiawatha/Carbon (Un-signalized)
- Hiawatha/1st North (Signalized)
- Park/NBT Bank/Harborside (Signalized).

Figure 24 – shows the four intersections (Inset area A-D) and identifies ‘big picture’ ideas to improve access and mobility along corridors between the outer region and the RTC/Market Area (see Section 8.2).

Common Features

Priority intersections, regardless if signalized or un-signalized, should comply with Americans with Disabilities Act (ADA) for design elements – e.g., sidewalks with curb-cuts and high-contrast detectable warnings, high-visibility ladder crosswalks, and sufficient lighting to enhance safety.

Common Features (Signal Intersections)

Leading Pedestrian Interval (LPI)

Signalized intersections in the primary study area are potential candidates for Leading Pedestrian Intervals (LPI).

LPIs can minimize conflicts between pedestrians (crossing a road) and vehicles turning left or right. Conflicts are reduced by extending the WALK signal 3-7 seconds before the motorists are allowed to proceed through the intersection.² LPI’s may also incorporate an audible noise to let visually impaired pedestrians know that it’s safe to cross. When used, it may be necessary to restrict right-turn-on-red (RTOR) to maximize LPI effectiveness.

Since LPIs extend the walk time for pedestrians, they create additional delay for vehicles. An engineer can assess a LPI to determine if it maintains an acceptable level-of-service when changes to the intersection are proposed (e.g., geometry changes due to lane reconfiguration, lane consolidation, increases in traffic, etc.).

Increased Pedestrian Crossing Time

Staff observed elderly pedestrians (including those who used canes and wheelchairs for assistance), refugees, and parents pushing strollers accompanied by children crossing the street. Signalized intersections in the primary study area are potential candidates for additional pedestrian clearance time for walking speed of less than 3.5 feet per second.

² Fayish, A. and F. Gross, *Safety Effectiveness of Leading Pedestrian Intervals Evaluated by a Before-After Study with Comparison Groups*, Transportation Research Record: Journal of

the Transportation Research Board, 2010. <http://trb.metapress.com/content/b34p020765640146/fulltext.pdf>



Pedestrian Countdown Signal Head

Signalized intersections in the primary study area should include pedestrian countdown signal heads with push button activation.

Hiawatha Boulevard East/Park Street Intersection (Signalized)

This signalized intersection experiences unbalanced traffic volumes. Staff observed that most walkers and bicyclists crossed at the narrowest section of Hiawatha Boulevard - along the north side of Park Street - where traffic volumes are also lowest. Community stakeholders advocated for bicycle and pedestrian

facilities at this intersection. SAC representatives asked if southbound traffic volumes warrant an exclusive left-turn lane, center lane, and right-turn lane; and wondered if it is possible to consolidate lanes to reduce crossing distance.

The SMTC modeled several lane consolidation scenarios. The SMTC used weekday turning movement counts provided by the City. As shown in Table 4, the results suggest that consolidating select eastbound, southbound, and northbound travel lanes will maintain similar and acceptable delay. Summary Syncho reports are provided in Appendix D.

Table 4 - Intersection Lane Consolidation Scenarios – Level-of-Service Impacts

Level-of-Service and Delay (in seconds) at Hiawatha/Park Intersection (signalized)
 Weekday PM Only (includes anticipated Dunkin' Donuts Traffic)
 'Existing' Conditions and 'Scenario' Conditions

Intersection Approach	Movement	Scenarios					
		Existing	SB L/T Lane	SB L/T; NB 2 Lefts & T/R	SB L/T/R; NB 2 Lefts & T/R	SB L/T/R; NB 2 Lefts & T/R; EB Right (No slip ramp)	SB L/T/R; EB Right (No Slip Ramp) & T/L; WB L/T/R; NB 2 Lefts & T/R
Eastbound	Left	D (39)	D (39)	D (40)	D (40)	D (41)	-
	Through/left	-	-	-	-	-	C (33)
	Through Right	C (33) A (1)	C (33) A (1)	C (33) A (1)	C (33) A (1)	C (33) A (8)	- A (7)
Westbound	Left	D (39)	D (39)	D (40)	D (40)	D (41)	-
	Through/right	D (36)	D (37)	D (37)	D (38)	D (37)	-
	Through/left/right	-	-	-	-	-	C (31)
Northbound	Left	C (34)	C (35)	C (29)	C (29)	C (30)	C (28)
	Through left/Through right	C (29)	C (29)	-	-	-	-
	Through/right	-	-	C (33)	C (34)	C (35)	C (33)
Southbound	Left	C (28)	-	-	-	-	-
	Through	D (40)	-	-	-	-	-
	Through/left	-	D (40)	D (40)	-	-	-
	Through/left/right	-	-	-	D (46)	D (46)	D (34)
	Right	A (5)	A (5)	A (5)	-	-	-
OVERALL INTERSECTION LOS		C (26)	C (26)	C (26)	C (29)	C (32)	C (27)

Notes:

- Source: 2018 Dunkin' Donuts Traffic Study for City of Syracuse
- SB = Southbound, NB = Northbound, WB = Westbound, EB = Eastbound, L = Left, T = Through, R = Right
- The SMTC did not conduct turning movement counts
- The SMTC referenced anticipated 'full-build' turning movement volume and signal diagram information from a 2018 Dunkin' Donuts traffic study that was provided to SMTC by the City of Syracuse
- The SMTC modeled the highest turning movement volumes - weekday PM peak hour
- Weekend and mid-day volumes do not exist and were not assessed
- All findings represent a 100-second signal time length

Intersection Lane Consolidation

Lane consolidation may allow for a reduction in pavement width and excess space could be repurposed for bike/pedestrian facilities. (A planning-level review suggests that sufficient space may already exist within the ROW to accommodate facility options regardless of lane consolidation. An official land survey would be required, which is beyond the scope of this assessment.)

Figure 25 shows existing lane configuration. The SMTC considered two consolidated lane facility option concept plans. As mentioned, facility options are not necessarily dependent on lane consolidation. It may also be possible to “mix and match” options. A traffic engineer would deem what is appropriate based on an official survey and a traffic study.

Figure 26 consolidates southbound travel lanes into a single left/through/right lane. The northbound left/through lane is also modified as a left only to reduce to a single northbound receiving lane. The southbound approach may be narrowed, but a center median is still required to align through travel lanes due to northbound traffic volumes. Sidewalks and crosswalks are shown as potential facility options.

Figure 27 maintains the consolidated southbound lane and modified northbound lane, and consolidates the eastbound lanes

as one left/through lane and one right-turn lane (shown as a modified slip ramp; however, it may be possible to use a standard right-turn lane). A SUP³ accommodates walkers and bicyclists.

Signalized Intersection Observations

Traffic lights along Park Street do not appear to be timed to accommodate Market traffic and Destiny USA holiday traffic. Market traffic is busiest during the summer months, while Destiny USA traffic is busiest during the winter months.

There are two northbound left-turn lanes on Hiawatha Boulevard and two receiving lanes on Park Street. During field observations, staff observed drivers turning left from Hiawatha Boulevard from the wrong (inside) left-turn lane. This resulted in them changing lanes while turning – often cutting off traffic. Pavement markings and wayfinding may reduce the likelihood of improper lane selection.

During the busiest 30-minute period (which occurred between 10:30 and 11:00 on a Saturday morning), staff also witnessed vehicles exiting the market and queuing along Park Street from Farmer’s Market Place through the Park/Hiawatha intersection to the I-81 On-ramp (on Hiawatha Boulevard). Traffic exiting at the gravel driveway on Hiawatha also queued to the Hiawatha I-81 On-ramp.

³ For more information visit: <https://www.dot.ny.gov/display/programs/bicycle/planning/shared-use>

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/pdf/15chapter14.pdf

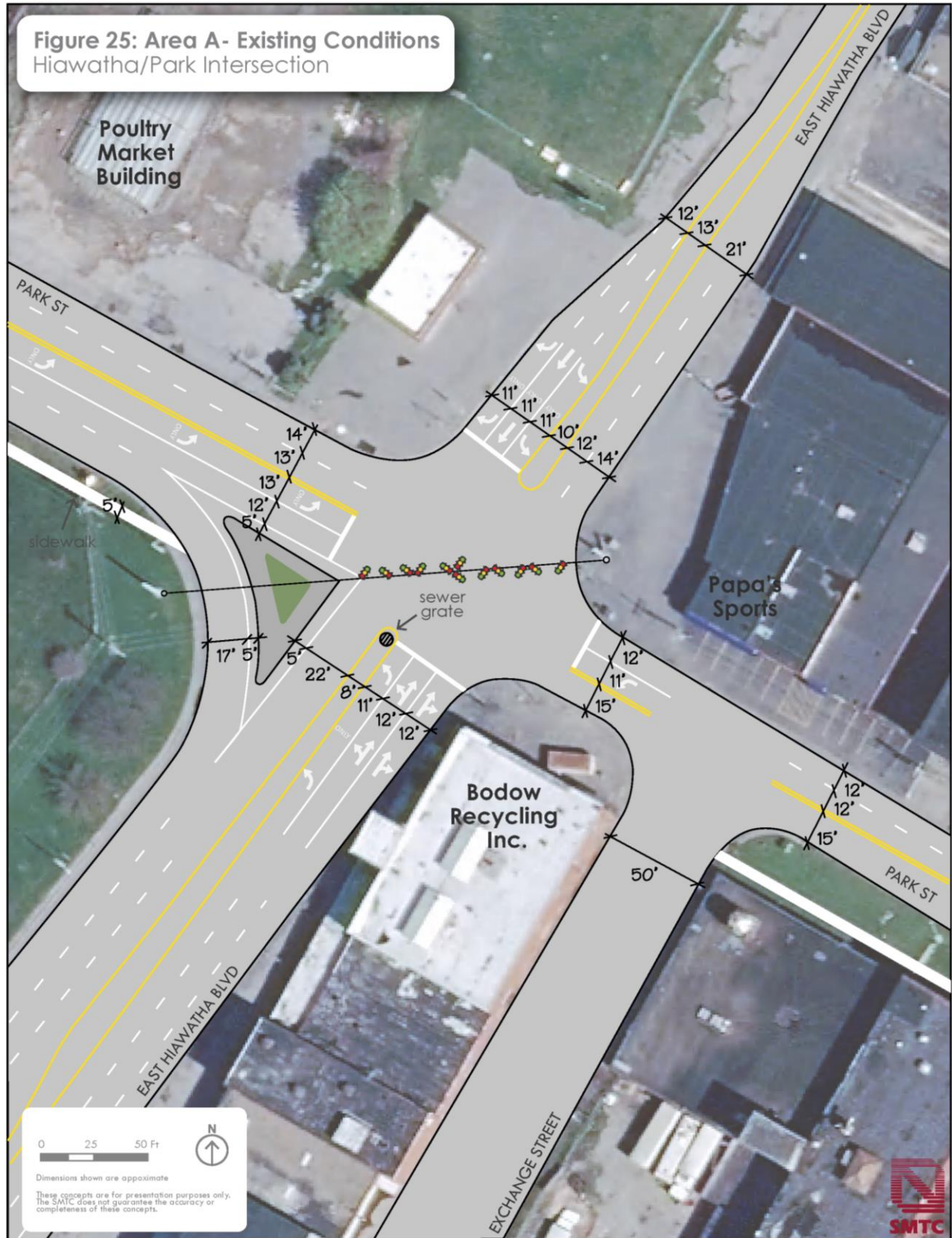


Figure 26: Area A- Sidewalk Concept Plan
Hiawatha Blvd. and Park St. Intersection

Notes:

- o Dimensions and scale of facilities shown are approximate.
- o Consider Leading Pedestrian Interval (LPI); increased pedestrian clearance time; audible warnings and countdown timers.



Figure 27: Area A- Shared Use Path Concept Plan
Hiawatha Blvd. and Park St. Intersection

Notes:

- o Dimensions and scale of facilities shown are approximate.
- o Notify bicyclists to dismount and walk using signs at various locations along the shared use path.
- o Consider Leading Pedestrian Interval (LPI); increased pedestrian clearance time; audible warnings and countdown timers.



Common Features – Northbound Approach

Space to accommodate a sidewalk along Hiawatha Boulevard's southeast corner is prohibitively limited due to the proximity of the buildings to the edge of the road. Additionally, the northbound left-turn movement volumes warrant two left-turn lanes (PM Peak Hour are greater than 300 vehicles per hour); thus, reducing the number of lanes to accommodate a sidewalk doesn't appear to be an option. A drainage grate in the center median also limits lane realignment options to increase sidewalk space on the eastern side of the road. Northbound storage capacity needs may also limit lane consolidation options.

Although it may be possible to relocate the entire intersection to the west, this would require an engineering study that is beyond the scope of this assessment. Geometric issues associated with unbalanced travel lanes, grade changes, and drainage issues pose complex design challenges. As such, bicycle and pedestrian facilities are only identified along the western side of the street only - not the eastern side.

It should be noted, however, that there is an advantage to extending bike/pedestrian facilities along the eastern side of the road if resources exist to redesign the intersection. The primary advantage is to prevent the need for a walker to cross Hiawatha at street level to access Destiny USA. For instance, a SUP from the intersection's southeast corner to Solar Street would link directly to the Destiny

USA sky bridge (above Hiawatha) and therefore eliminate the need to cross the road at street level to enter the mall. Furthermore, this side of the road connects to the Onondaga Creekwalk. The Creekwalk links to Destiny USA, Onondaga Lake, the Inner Harbor, Franklin Square, Armory Square and Downtown Syracuse.

Common Features – Southbound Approach

As shown in Figures 26 and 27, 13-foot travel lanes with shared lane markings (sharrows) along the southbound approach minimize walking distance across the intersection. The 13-foot travel lanes accommodate truck traffic. Bike lanes can be accommodated, but would increase crossing distance for pedestrians. As such, sharrows are shown between Park Street and Carbon Street; and bike lanes from Carbon Street to 7th North Street.

Travel lanes and turning radii sufficient to accommodate trucks should be considered. The center median, which aligns the through travel lanes, could accommodate a raised refuge island with an at-grade cut-through for bicyclists and pedestrians.

Hiawatha Boulevard East/Carbon Street Intersection (Unsignalized)

As shown in Figure 28, the Hiawatha/Carbon intersection currently exists as a three-leg intersection. A stop sign exists on Carbon Street. A gravel access road exists opposite Carbon Street - although not an official driveway, motorists, bicyclists, and pedestrians use the access road as a market entrance

Figure 28: Area B- Shared Use Path Concept Plan
Carbon Street Road Extension

Notes:

- o Dimensions and scale of facilities shown are approximate.
- o Notify bicyclists to dismount and walk using signs at various locations along the shared use path.
- o The Hiawatha Boulevard / Carbon Street intersection may be a potential candidate as a raised intersection table.



Legend

- Shared Use Path (10-14' wide)
- Sidewalk
- Bike Lanes
- Sharrows
- Crosswalk (Bikes)
- Crosswalk (Peds)
- Ornamental Fence and/or bollards
- Ornamental Light
- Detectable Warning
- Curb Cut with Detectable Warning
- Tree

Signage

- Rectangular Rapid Flashing Beacon (RRFB)
- Walk your Bike Sign Assembly
- WALK BIKE USE CROSSWALK
- USE PED SIGNAL

0 25 50 Ft

Dimensions shown are approximate.

These concepts are for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of these concepts.



Staff observed the highest number of walkers and bicyclists crossing Hiawatha Boulevard at Carbon Street to enter the market via the gravel access road. During public outreach sessions, community stakeholders repeatedly expressed interest in improving the gravel driveway as an official road. Sidewalks, bike lanes or sharrows, lighting, and landscaping may be accommodated along a new road given the amount of undeveloped land surrounding the gravel driveway.

Figure 28 shows pedestrian curb cut and cross walk improvements at the Hiawatha/Carbon intersection. A rectangular rapid flashing beacon (RRFB) – see Image 19 – is also shown at the Carbon Street/ Hiawatha Boulevard intersection to provide additional advanced warning for motorists.

Image 19 – RRFB



Image 19: Example of an RRFB dark (left) and illuminated during the flash period (center and right) mounted with W11-2 sign and W16-7P plaque at an uncontrolled crosswalk. Source: FHWA Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks, 2018.

A RRFB is preferred over an All-Way Stop due to the unbalanced traffic volumes and the lack of crashes that occur at this

location. If the gravel driveway is improved as a road, an engineering study would determine if installation of a multi-way STOP sign meets the warrant conditions in the Manual on the Uniform Traffic Control Devices (MUTCD) Section 2B.07.

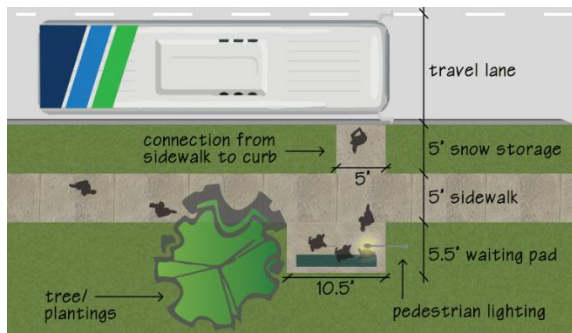
Carbon Street and Hiawatha Boulevard are wide enough to stripe five-foot wide bike lanes. As an alternative to bike lanes, Figure 28 shows a SUP from Hiawatha Boulevard to Farmers Market Place. (Figure 27 is overlaid to show how to connect to the envisioned SUP along Park Street.) Due to personal safety and trespass-related building security concerns, the SUP could extend to Park Street along the Wendy’s property, instead of to Farmers Market Place. Both alignments are illustrated as options in Figure 28. Fencing, lighting, and security cameras may also be considered.

Although not shown, a raised intersection and/or raised crosswalks could also be considered at the Carbon Street/Hiawatha Boulevard intersection, especially if the gravel access road is paved to become a four-way intersection. If changes are proposed, a traffic engineering study would determine if a raised intersection or raised crosswalks are appropriate options. The observed truck traffic along Hiawatha Boulevard would have to be considered. Advantages of raised crosswalks and intersections include traffic calming (i.e., speed reduction), crosswalks level with the sidewalk, and increased visibility to drivers. Disadvantages include impacts to snow plow operations, drainage, and truck traffic.

Hiawatha Boulevard East/1st North Street/Tex Simone Drive Intersection (Signalized)

The Hiawatha/1st North/Tex Simone intersection is a signalized intersection. Figure 29 shows curb cuts, high visibility ladder crosswalks, pedestrian push buttons and LPI signals. Hiawatha Boulevard and 1st North Street may accommodate five-foot bike lanes. Sharrows are shown along Tex Simone Drive. Additionally, the bus stop along the Tex Simone (eastbound lane) is shown with concrete pad and new sidewalk. An example of an improved bus stop area is shown in Image 20.

Image 20



Park Street/NBT Bank Parkway/Harborside Drive Intersection (Signalized)

The Park/NBT Bank/Harborside intersection is a signalized intersection that is a possible candidate for a LPI. This intersection exists under the I-81 viaduct. ROW ownership is split by the City and State. The city owns the surface streets; the State owns the elevated highway and much of the surrounding land. Concrete bridge piers and utilities present design challenges, but space may exist to accommodate off-road bicycle and pedestrian facilities.

Turning volumes suggest that consolidating lanes would adversely impact level-of-service, so lane consolidation is not shown.

Sidewalks, curb cuts, and high-visibility crosswalks may accommodate pedestrians at this intersection. Figure 30 incorporates a SUP along the north side of Park Street and the south side of Harborside Drive. Sidewalks and sharrows complete the pedestrian and bike network.

Figure 30 also shows a raised pedestrian refuge island with at-grade crosswalks at the southbound-right slip ramp. In addition to high-visibility ladder crosswalks, a bicycle crosswalk is shown across Park Street’s northbound approach.

Narrowing the southbound lanes by one to two feet may provide enough space to extend a new sidewalk under the CSX railroad bridge. Since space may be limited, the northern side of the road is the most ideal location to link the new sidewalk (or SUP) to the Park Street Bikeway (abandoned) and the City’s new sidewalk over Ley Creek opposite the railroad bridge.

8.2 Secondary & Greater Study Area Mobility Options

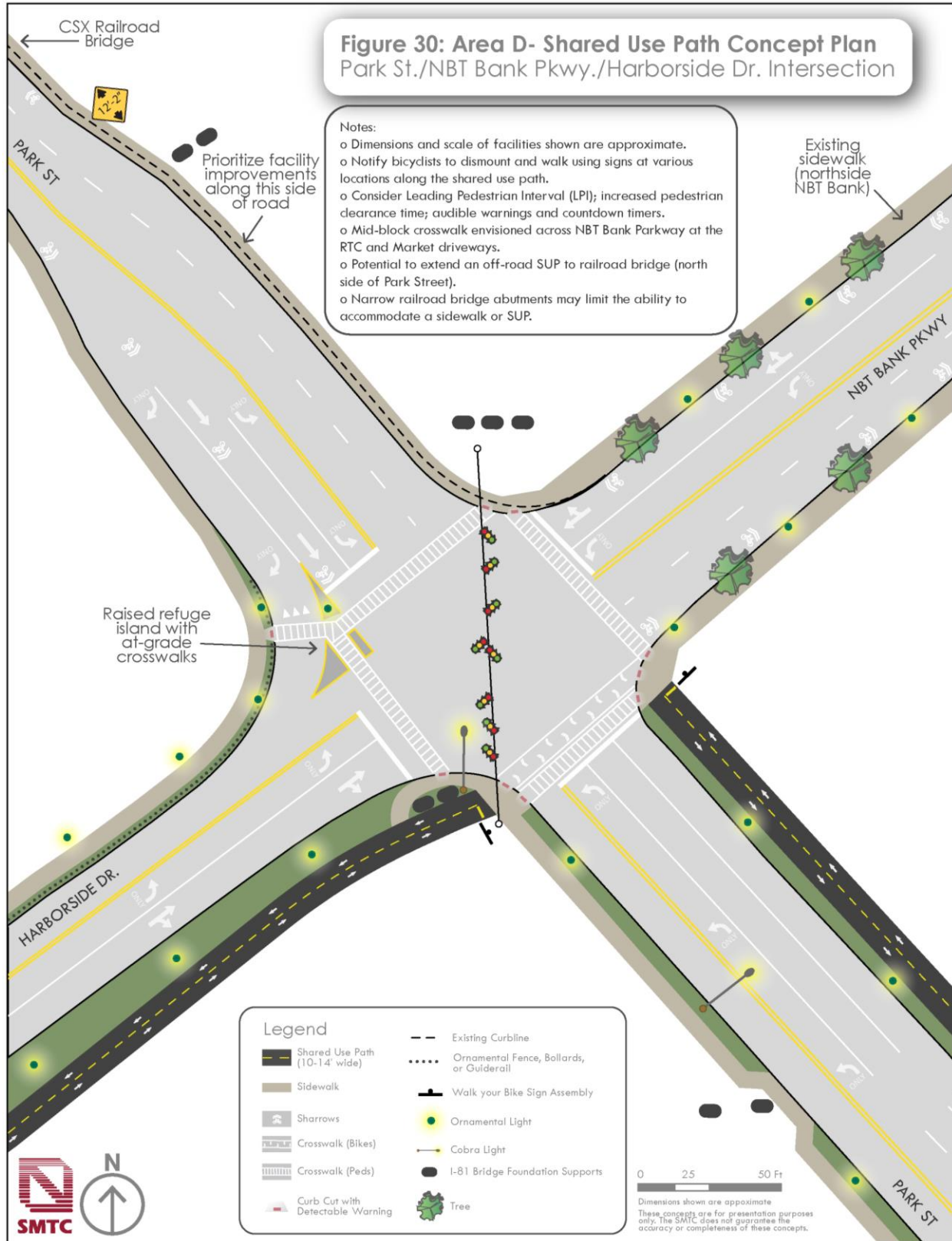
This section identifies ‘big picture’ ideas to inform ongoing city, county, and state planning efforts that seek to improve regional mobility to the RTC/Market Area.

Figure 31 identifies regional mobility improvement ideas that require further study as well as options vetted in existing plans per Section 2.

Figure 29: Area C- Sidewalk/Bike Lane Concept Plan
 Hiawatha Blvd./1st North St./Tex Simone Dr. Intersection

Notes:
 o Dimensions and scale of facilities shown are approximate.
 o Consider Leading Pedestrian Interval (LPI); increased pedestrian clearance time; audible warnings and countdown timers.







The highlighted corridors show how a potential region-wide bicycle and pedestrian network could link to the RTC/Market Area. Reference numbers on the map correspond with the following:

1. The RTC/Regional Market/NBT Bank Stadium could choose to develop a joint campus mobility plan to address bicycle and pedestrian mobility needs within and between these destinations, especially during large events.

Potential Issues and Opportunities

Community stakeholders advocated for two mid-block crosswalks across NBT Bank Parkway between:

- the RTC driveway and the Market
- the Byrne Dairy parking lot and the Market opposite the pedestrian gate. This location includes a curve that may result in sight-line issues.

Additionally, the Market and the Stadium have several vehicle access points that are gated when the Market is closed. Curb cuts and one or two partially built driveways exist, but do not currently service the Market. Shared parking arrangements are also in place, so visitors park and walk in opposite directions depending on their desired destination. Market shoppers walk between buildings and parking areas, so riding a bike is hampered due to the number of pedestrians.

Centro also provides local bus service to the RTC and to Destiny USA, but there is no “front door” bus service to/from the Market or Stadium. Front drop off service to the stadium once existed as an “at request” deviation option for 116/216 routes, but Centro discontinued this because it caused unacceptable service delays. Currently, Centro uses the bus stop at the Tex Simone Drive/Hiawatha Boulevard intersection to drop off Stadium patrons; however, sidewalks do not exist between the stop and the Stadium.

As such, it would be beneficial to conduct a joint-campus mobility plan. If interested, the respective facility owners (i.e., City, Centro - RTC, SOCPA/Onondaga County – NBT Bank Stadium, and the Regional Market Authority) may choose to collaborate to study this idea further.

2. A narrow pathway exists along Harborside Drive between Park Street and the Destiny parking lot. As shown in Figure 31, a SUP extends from Park Street through an existing parking lot to Destiny USA. The parking spaces - adjacent to I-81 – have a wide service lane. It may be possible to narrow the service lane and restripe the spaces to accommodate a SUP (between the restriped spaces and I-81). Additionally, the SUP could use the existing crosswalk (across Destiny USA Drive) and

- potentially enter the grass island to the Macy's entrance. If interested, the facility owners (i.e., City, NYSDOT, and Destiny USA) may choose to collaborate to study this idea further.
3. As previously noted in Section 2.4, the NYSDOT Bike Commuter Corridor Study suggests bicycle facilities be installed along Onondaga Lake Parkway and Old Liverpool Road. As shown in Figure 31, SUPs would link envisioned bike lanes along these roads to the existing Park Street Bikeway. The Plan also identifies Lemoyne Avenue as a bike commuter corridor, which links to the Park Street Neighborhood Greenway. If interested, the road owners (i.e., City, NYSDOT, and the Town of Salina) may choose to collaborate to study this idea further.
 4. The City of Syracuse expressed interest in extending the NYSDOT Beartrap Creek Trail along the I-81 ROW south to the Park Street Bikeway. Bicycle and pedestrian improvements on 7th North Street and Old 7th North Street, and crossing improvements at Ley Creek Drive and Terminal Road may be required. The Bear Trap Creek Trail could extend from Old 7th North Street south along the I-81 ROW to the Park Street Bikeway (abandoned). If interested, the road owners (i.e., City, NYSDOT, and the Town of Salina) may choose to collaborate to study this idea further.
 5. As previously noted in Section 2.12, the I-81 Opportunity Preliminary Draft Environmental Impact Statement (PDEIS) envisions mobility improvements in the block between Lodi, Bear, Hiawatha, and I-81. A SUP is envisioned. If developed, designers could extend it along Hiawatha Boulevard West to the Onondaga Creekwalk, and to the Destiny USA Sky Bridge entrance on Solar Street. Additionally, there may be potential to extend the SUP along Bear Street to Solar Street as Shown in Figure 31. If interested, the facility owners (i.e., City, NYSDOT, and Destiny) may choose to collaborate to study this idea further.

Conclusion

Priority intersection concept plan options and “big picture” ideas to improve regional mobility are presented to characterize the types of improvements that could improve local and regional mobility for bicyclists and pedestrians. This study is a planning-level assessment only and does not represent a proposal to design and construct improvements. All options presented are for informational purposes only, are conceptual in nature, and would require further engineering evaluation and review.

Appendix A

Scope

Syracuse Metropolitan Transportation Council

RTC/MARKET AREA ACCESS AND MOBILITY STUDY SCOPE OF WORK

Approved:
February 26, 2019

1. INTRODUCTION

Overview

As part of the 2018-2019 Unified Planning Work Program (UPWP), the Syracuse Metropolitan Transportation Council (SMTC) has agreed to complete an Access and Mobility Study (Study) for the William F. Walsh Regional Transportation Center/Regional Market Area (RTC/Market Area) on behalf of the City of Syracuse (Syracuse). The adopted 2018-2019 UPWP noted commencement of the planning task would occur at the end-of-program year.

The Regional Market (i.e., the farmer’s market) is a year-round source of fresh, locally-grown food for the region. Destiny USA (Destiny) is located next to the Regional Market – it serves as a major retail shopping destination for the northeast and it is a major employment center for local residents.

As regional destinations, most shoppers drive to these locations. Surrounding roadways have few if any pedestrian or bicycle amenities. As such, it is difficult for walkers and bicycle riders to cross Hiawatha Boulevard and Park Street. The City of Syracuse wants to make it safer and easier to walk and bike across the road to these destinations, especially for residents who live nearby in the Park Street neighborhood and don’t have access to an automobile. This Study will identify where to incorporate bicycle and pedestrian amenities across Hiawatha Boulevard and at the Park Street/NBT Bank Parkway intersection.

As a secondary focus, the SMTC will identify ‘high-level’ mobility issues around the RTC/Market Area and generate ideas about how to better connect these areas to each other. Other destinations within walking and bicycling distance from the RTC/Market Area include: NBT Bank Stadium, the RTC, Onondaga Creekwalk, Onondaga Lake, Loop-the-Lake Trail, Route 370 bikeway, and the Bear Trap Creek Trail. In support of other planning activities for the area, the SMTC will prepare a general list of potential mobility improvements that warrant further study.

Background

In 2014, Syracuse received a Transportation Enhancement Program (TEP) award to build the Park Street Neighborhood Greenway (Greenway) project. However, due to budget limitations, Syracuse reduced the scope of the Greenway project to include shared lane pavement markings (i.e., “sharrows”) and crosswalk / curb-cut. Originally, the

Greenway project also sought to improve mobility along Park Street from Hiawatha Boulevard to NBT Bank Parkway. However, this area was also excluded from the Greenway project due to funding limitations.

The RTC/Market Area offers inter-city travel options (via train/bus) and serves as a regional shopping destination for fresh farm-grown foods. The Market and NBT Bank Stadium are regional entertainment venues. Destiny serves a major retail shopping destination for the northeast and provides a significant number of local jobs. Although these prominent amenities are within walking distance of each other, they are difficult to reach safely and comfortably by foot or by bike. This is problematic for some neighboring residents as City of Syracuse staff indicated there are households nearby where residents don't have access to a vehicle. Moreover, visitors who arrive to the area by car are not inclined to walk from destination to destination. This limits economic returns that may otherwise be realized.

The RTC/Market Area could also experience new investment and development in the foreseeable future. Syracuse is currently coordinating with the Syracuse-Onondaga County Planning Agency to develop a Local Waterfront Redevelopment Plan (LWRP) for the Lakefront and RTC/Market Area. In 2018, the SMTC completed the *SMART 1 Study*, which recommended a bus rapid transit (BRT) system with one of the proposed routes connecting to the RTC. The upcoming redevelopment decision for I-81 will also create new issues and opportunities. Since the area may experience new investment, now is an optimal time to plan for mobility needs.

To help identify mobility improvements, Syracuse requested that the SMTC identify crossing improvements for walkers and bicycle riders. To the extent practicable, the improvements should meet the unique needs of the community. Syracuse requested that the SMTC identify where the improvements are most appropriate on Hiawatha Boulevard between North Salina Street and 4th North Street. Additionally, the SMTC will identify ways to make it safer to cross Park Street at NBT Bank Parkway.

As a secondary focus, Syracuse also requested that the study identify 'high-level' issues and opportunities to enhance access and mobility within and around the RTC/Market Area in support of other planning efforts such as the LWRP. Identified issues and opportunities will be general in nature and could be considered for future study – such as in the LWRP or as independent studies.

Study Area

The primary study area extends along Hiawatha Boulevard from North Salina Street to 4th North Street. It also includes the Park Street/NBT Bank Parkway/Harborside Drive intersection. The secondary study area consists of: Park Street (from Washington Square to the city line), Hiawatha Boulevard (from Onondaga Creekwalk to 7th North Street), 7th North Street (from Hiawatha to city line), NBT Bank Parkway, Harborside Drive, Destiny USA Drive, Tex Simone Drive, and Farmer's Market Place.

2 . T A S K S

Task 1: Project Initiation

Develop a Study Advisory Committee

To begin this study, the SMTC will establish a Study Advisory Committee (SAC) consisting of representatives from SMTC member agencies to provide technical and procedural guidance for the project. The SAC will not vote on approval or disapproval of project-related products and documents. The SMTC will invite the following agencies to serve:

- Central New York Regional Transportation Authority (Centro)
- Centerstate CEO (CCEO)
- City of Syracuse (Syracuse)
 - Department of Public Works (DPW)
 - Department of Planning (Planning)
 - Department of Engineering (Engineering)
- New York State Department of Transportation (NYSDOT)
- Syracuse-Onondaga County Planning Agency (SOCPA)
- Central New York Regional Planning and Development Board (CNYRPDB), and
- Other agencies (such as the Regional Market Authority) as deemed appropriate by the project sponsor and the SMTC.

The SMTC will work regularly with the SAC and will prepare minutes for each meeting. It is anticipated that the SMTC will hold up to four SAC meetings during this study.

Develop a Public Involvement Plan

The SMTC will create a project-specific Public Involvement Plan (PIP) that will document how public input will be gathered and incorporated into the study. The PIP will outline the number and types of meetings and will be reviewed by the SAC.

The SMTC may meet with or conduct phone interviews with the following interested stakeholders on an as-needed basis:

- Central New York Regional Market Authority (CNYRMA)
- CSX Transportation (CSX)
- Community Based Organizations (CBO)*
 - Center for New Americans
 - Catholic Charities
 - Refugee Resettlement Services
 - Interfaith Works
- Destiny USA (Destiny)
- Onondaga County Industrial Development Agency (OCIDA)
- Onondaga County Parks (County Parks).

** Syracuse's Northside has several established CBOs that provide refugee and immigrant resettlement assistance to individuals / families from multiple countries. The Northside,*

which includes the Park Street neighborhood, has become home to many of the resettled immigrants and refugees. Based on previous Northside planning efforts (e.g., Butternut Street Corridor Study) feedback from CBOs indicate that it is not uncommon for refugees to lack driver licenses or access to a car, have limited English proficiency levels, and reside in low income households.

Although the outcome of the PIP will determine the final set of public engagement needs, the SMTC could undertake the following:

- up to four SAC meetings
- as-needed stakeholder meetings or phone interview discussion(s), and
- if deemed necessary, set up an informational booth during an event at the market.

Conduct SAC Meeting #1

The SMTC will confirm the project purpose, goals, objectives, study area, a general project schedule, and will review the draft Public Involvement Plan (PIP) at the SAC kickoff meeting (SAC Meeting #1). The SAC will help confirm the proposed public engagement strategy. A proposed study area map will be provided and refinements will be discussed. Additional ideas will be solicited and considered for incorporation into the study, particularly SAC suggestions for data collection items included in Task 2. If additional effort is identified, the SMTC may revisit and revise this scope as necessary.

Task 1 Work Products:

The SMTC will document Task 1 efforts in the form of meeting minutes/notes for SAC Meeting #1. The SMTC will also produce a study area map, the final PIP, and incorporate necessary items in the draft study report.

Task 2: Data Collection

The SMTC will gather and document a variety of data for the study area. The SMTC will conduct much of Task 2 as a “desktop” planning-level assessment based on readily available information from Syracuse and SMTC member agencies. The SMTC will coordinate with its member agencies to collect existing plans, available right-of-way files, and any as-built drawings. The SMTC will also spot-check roadway lane width and shoulder measurements on a limited basis to assist with the development of planning-level access and mobility improvement options.

Pedestrian Counts/Observations

Pedestrian counts/observations will be conducted as necessary for Hiawatha Boulevard. The SMTC will conduct the pedestrian counts/observations while the Regional Market is open to observe how many residents from the Park Street neighborhood are crossing Hiawatha Boulevard and where they are crossing. Staff will note observations such as number of families with children, strollers, ADA-related needs, etc.

Turning Movement Counts – Intersection Capacity Analysis

Turning movement counts will not be collected and intersection capacity analysis will not be conducted. Existing and available count and signal timing information will be referenced to assist with planning-level reviews.

Review existing plans and studies

SMTC staff will also review relevant existing planning documents for pertinent information or recommendations. These plans will include, at a minimum:

- Syracuse Park Street Neighborhood Greenway (As-Built Plans and documents)
- Previous (2002) Local Waterfront Revitalization Plan (LWRP)
- Current Local Waterfront Revitalization Plan for Lakefront and RTC/Market Area (currently underway)
- SMART 1 Study (2018 SMTC)
- Syracuse 2040 Bicycle Plan (2014 City of Syracuse)
- Bicycle Commuter Corridor Study (2013 SMTC)
- City of Syracuse Land Use Plan
- Syracuse - Rezone Syracuse initiative documents (currently underway)
- Sustainable Streets Project (2017 SMTC)
- NYS Brownfield Opportunity Area: Hiawatha-Lodi BOA Study (2014 Syracuse)
- Available turning movement counts, signal plans, tube counts, and annual average daily traffic information.

Demographics

The SMTC will briefly summarize existing demographic information (based on the American Community Survey, U.S. Census, etc.) likely to influence the demand for pedestrian and bicycle facilities, such as population density, vehicle ownership, etc. The SMTC will summarize findings pertaining to minority and low-income areas of concentration and areas with populations with limited English proficiency.

Land use and land use regulations

SMTC will also briefly summarize current land use, and the location of any anticipated developments that may influence future pedestrian/bicycle travel patterns (e.g., SMART 1, I-81, LWRP, etc.) based on information provided SMTC member agencies. The assessment will also include a brief summary of zoning regulations including the proposed ReZone Syracuse initiative.

Conduct a basic property review

The SMTC will use GIS data to identify property ownership (i.e., public vs. private) and to identify known public and private utility easements and right-of-way.

Conduct a general crash assessment

The SMTC will provide a brief overview of crash trends for the study area. The SMTC would obtain crash data from the NYSDOT's Accident Location Identification System (ALIS) database for the most recent five-year period available. SMTC staff would summarize these data and provide a list of common collision types and contributing

factors in tabular format. Intersection and non-intersection crashes will be summarized to the extent practicable. If annual average daily traffic (AADT) or turning movement count data exists, crash rates may be calculated and any calculated rates will be compared to the published statewide average rate for comparable facilities.

Summarize existing roadway conditions

The SMTC will document existing conditions for Hiawatha Boulevard and the Park Street/NBT Bank Parkway intersection based on available data sets, a limited number of field measurements, and observations including:

- Typical lane and shoulder widths along any corridors being considered (may spot-check a limited number of other study area roadways if necessary)
- Roadway ownership and functional classification
- Location of existing pedestrian and bicycle facilities, including sidewalks, crosswalks, curb ramps, pedestrian signals, bicycle lanes, and bicycle racks
- Parking regulations and posted speed limits
- Available AADT data, and turning movement count data, and
- Qualitative observations of traffic operations, parking activity, delivery truck activity, and bicycle and pedestrian activity, with an emphasis on identifying notable conflicts between users.

SMTC will request that Syracuse/NYS DOT provide available as-built plans, SYNCRHO models, and any other files that may contain right-of-way information, ideally in electronic format. If right-of-way information cannot be obtained, SMTC will approximate the available right-of-way using available parcel data in GIS. This will be a planning-level assessment only; Syracuse will need to obtain survey information and develop engineering documents to implement recommendations in the future. The SMTC does not conduct site surveys nor will site surveys be conducted as part of this planning-level effort.

Task 2 Work Products:

The SMTC will prepare maps, charts, and brief summary text to review at SAC Meeting #2. The SMTC will document Task 2 efforts as appropriate in the draft report. SAC feedback will be documented in the SAC meeting minutes. Please note that the following tasks identified under Task 3 will also be presented at SAC Meeting #2.

Task 3: Identification of Issues

Once the existing conditions have been documented, SMTC staff will review this information with the SAC and identify any apparent issues to consider such as:

- Significant impediments, such as limited pavement width and/or right-of-way
- Environmental and infrastructure constraints
- Zoning, relevant local laws, or other land use restrictions (existing or proposed)

- The general location of utility poles and other ROW obstructions
- Environmental considerations
- Personal safety and security issue concerns
- Traffic volumes and speeds (based on posted speed limit)
- Potential for conflicts between pedestrians/bicyclists and vehicular traffic including truck delivery traffic
- Likelihood of pedestrian/bike traffic based on demographics and land use, including presence of major generators.

Identify areas of concern

The SMTC will provide a brief narrative that may accompany a graphic that identifies areas of concern and problematic features such as areas without bicycle and/or pedestrian amenities, elevated highway underpasses, railroad bridge underpasses, rail road, topography, creeks, and gated access points into the RTC/Market Area. Issues will be summarized for Hiawatha Boulevard and surrounding area roadways.

Conduct SAC Meeting #2

The SMTC will review and confirm issues with the SAC at SAC Meeting #2. The SMTC will also discuss the need to conduct interview(s) with stakeholder(s), set up an informational booth during a Saturday.

Task 3 Work Products:

SMTC staff will compile an “issues assessment” review, which will incorporate SAC feedback. The identification of issues will be documented in the draft report. SAC feedback will be documented in the SAC meeting minutes.

Task 4: Stakeholder Outreach/Public Engagement

As indicated, public engagement will include stakeholder interviews conducted as an in-person meeting(s) or via telephone conversation(s). The interviews will occur on an as-needed basis throughout the study process and will include any stakeholders identified in the PIP (Task 1). Additionally, if deemed necessary, provisions could be made for the SMTC to set up an information booth during a Saturday market. A formal public meeting or open house meeting will not be conducted. Involving stakeholders throughout the planning process will allow the SMTC to:

- Identify where bicycle and pedestrian amenities are necessary and feasible
- Document the level of community interest
- Document issues and opportunities
- Identify specific community needs/issues to address
- Consider/document new ideas and concepts, such as:
 - establishing the Market Area as a “Food Campus” with enhanced walkability
 - beautifying gateways into the RTC/Market Area from roadways, highway off-ramps, the Amtrak train station – to improve first impressions
- Document what ideas the community likes/dislikes
- Emphasize that this is not a proposal to construct or build.

Task 4 Work Products:

SMTC staff will summarize notes from the stakeholders. Issues, opportunities and needs will be discussed and documented. If necessary, the SMTC will update the list of issues identified in Task 3 in the draft report.

Task 5: Preliminary Planning-level Improvement Options

The SMTC will consider any information received from stakeholders when developing preliminary improvement options. The SMTC will reference the American Association of State and Highway Traffic Officials (AASHTO), the National Association of City Transportation Officials (NACTO) guidelines, the Manual of Uniform Traffic Control Devices (MUTCD), and the New York State supplement to the MUTCD as necessary.

The SMTC will identify locations to make bicycle and pedestrian facility improvements across Hiawatha Boulevard and Park Street and will identify planning-level options to add on- and/or off-road bicycle and pedestrian facilities at these locations. A limited number of illustrations of typical cross sections and plan-view illustrations may be provided for these locations. The SMTC is not able to create engineering-level designs (preliminary or final), site surveys, striping plans, or detailed cost estimates. General planning-level cost estimates, based on input from member agencies could be provided.

The SMTC will also summarize issues and potential improvement opportunities that may warrant further study for surrounding area roadways. Any concepts identified for surrounding area roadways will be general in nature and are meant to assist other planning efforts such as the LWRP or future site-specific studies.

Conduct SAC Meeting #3

The preliminary recommendations will be reviewed with the SAC at SAC Meeting #3.

Task 5 Work Products:

Planning-level illustrations of typical cross-sections incorporating the recommended pedestrian and bicycle infrastructure, plus some additional illustrations for specific locations (to be determined) as noted above. The development of preliminary planning-level improvement options will be documented in the draft report. SAC feedback will be documented in the SAC meeting minutes.

Task 6: Final Planning-level Improvement Options

Using the feedback received from the public, stakeholder(s), and the SAC, SMTC staff will update the planning-level improvement options as appropriate and develop a final set of options. A report will be prepared that summarizes these findings and it will document the community's level of interest in developing access and mobility improvements across Hiawatha Boulevard and around the RTC/Market Area. This effort will be documented in the draft report.

Conduct SAC Meeting #4

A final SAC meeting (SAC Meeting #4) will be held to review the draft report with the SAC. If necessary, SMTC staff will make final updates to the report based on the discussion at this SAC meeting before finalizing this report for SMTC committee acknowledgment.

Task 6 Work Products:

The SMTC will document final recommendations in the draft report. SAC feedback will be documented in the SAC meeting minutes.

3 . D E L I V E R A B L E S

- Public Involvement Plan
- SAC meeting minutes
- Stakeholder(s) interview notes, and
- Draft and final reports with maps and graphics.

4 . S C H E D U L E

The study is anticipated to take up to 12 months to complete following acknowledgement of this scope of work.

Appendix B

Public Involvement Plan (PIP)

Public Involvement Plan

April 26, 2019

Financial assistance for the preparation of this document was provided, in part, by the U.S. Department of Transportation's Federal Highway and Federal Transit Administrations and the New York State Department of Transportation. The Syracuse Metropolitan Transportation Council (SMTTC) is solely responsible for its content.

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www.smtcmpo.org

I. Introduction

Engaging the public early and often in the planning process is critical to the success of any transportation plan or program. When people are involved in a decision-making process and can see how their input has influenced that process, they are more likely to adopt its outcomes. As the Federal Highway Administration/Federal Transit Administration guidebook *Public Involvement Techniques for Transportation Decision-Making* states: “Through continued interaction with the entire community, agencies build community support and, more importantly, assure that the public has the opportunity to help shape the substance of plans and projects.”

The importance of public involvement is underscored by the fact that it is required by numerous state and federal laws. Metropolitan Planning Organizations (MPO) such as the Syracuse Metropolitan Transportation Council (SMTC) must provide citizens, affected public agencies, businesses, local government, and other interested parties with a reasonable opportunity to comment on transportation plans and programs. This Public Involvement Plan (PIP) is intended to supplement the Scope of Work approved in February 2019.

II. Background

The RTC/Market Area offers inter-city travel options (via train/bus) and serves as a regional shopping destination for fresh farm-grown foods. The Market and NBT Bank Stadium are regional entertainment venues. Destiny USA serves as a major retail shopping destination for the northeast and provides a significant number of local jobs. Although these prominent amenities are within walking distance of each other, they are difficult to reach safely and comfortably by foot or by bike. This is problematic for some neighboring residents as some do not have access to a vehicle. Moreover, visitors who arrive to the area by car are not inclined to walk from destination to destination.

In 2014, the City of Syracuse (Syracuse) received a Transportation Enhancement Program (TEP) award to build the Park Street Neighborhood Greenway (Greenway) project, which initially was to extend all the way north to the city line. However, due to budget limitations, Syracuse reduced the scope of the Greenway project and did not make any improvements north of U.S. 11 (Wolf Street).

The primary study area for the RTC/Market Area extends along Hiawatha Boulevard from North Salina Street to 4th North Street. It also includes the Park Street/NBT Bank Parkway/Harborside Drive intersection. To help identify mobility improvement options, Syracuse requested that the SMTC identify crossing improvements for walkers and bicycle riders. To the extent practicable, the improvements should meet the unique needs of the community. As a secondary focus, the SMTC will also review ‘high-level’ mobility issues and opportunities that may warrant further study for the greater area.

III. Purpose

The purpose of the **RTC/Market Area Access and Mobility Study (Study)** is to identify potential options to improve pedestrian and bicycle facilities at various locations across Hiawatha Boulevard and across Park Street at NBT Bank Parkway.

IV. Goals

The intent of the Public Involvement Plan (PIP) for the Study is to engage the public by:

- (1) Creating public awareness of the Study’s goals, objectives, and process, as well as to document public comment on draft recommendations, and
- (2) Solicit public input into the decision making process.

V. Study Advisory Committee

A Study Advisory Committee (SAC) will be established to provide technical and procedural guidance throughout the Study. At a minimum, a representative from the following agencies will serve on the SAC:

- New York State Department of Transportation (NYSDOT)
- Syracuse-Onondaga County Planning Agency (SOCPA)
- Central New York Regional Transportation Authority (CENTRO)
- City of Syracuse (Public Works, Planning and Sustainability, Engineer)

The SAC will meet as needed with the SMTC to assist in the Study. The SAC’s role will be to advise the SMTC on the technical content of deliverables and to provide needed input and guidance. The SAC will not vote on approval or disapproval of Study-related documents. The SMTC anticipates holding up to four SAC meetings (as needed) over the course of this Study, as shown below.

SAC meeting no.	Anticipated purpose
1	Kickoff: confirm study purpose, goals, objectives, schedule, and PIP.
2	Review and confirm existing conditions findings, facility opportunities, and issues. Brainstorm recommendations and public engagement needs.
3	Review facility improvement options and public feedback.
4	Review the draft report.

Securing a SAC meeting location, announcing SAC meetings through mail/e-mail, conducting SAC meetings (including preparation of agenda, materials, presentations, etc.), and preparing the minutes from each meeting will be the responsibility of the SMTC.

VI. Public Outreach

A planning-level technical assessment identifies several options for consideration that appear to be feasible, but does not select specific recommendations for advancement. Instead, a ‘menu’ of options is presented to the owner of the roadway and it is the road owner’s decision whether to identify, design, fund, and construct a preferred option of its choice. This Study is envisioned as a technical assessment.

Although technical assessments typically do not include extensive public outreach, the SMTC recognizes that this Study would benefit from understanding the local community’s unique needs to improve pedestrian access and mobility between the neighborhoods and the greater RTC/Market Area. As mentioned, many neighboring households do not have access to a car. It is also likely that the surrounding neighborhoods include low-income households and are becoming increasingly diverse with multiple languages spoken as refugees resettle within the area.

Syracuse’s north side is home to several community-based organizations (CBOs) that provide resettlement services for refugees from throughout the world. Given the diversity of the programs that service refugees from multiple countries, the SMTC will engage with the CBOs to determine if there are concentrations of refugee populations locally, and if so, what is the best way to receive their feedback. Conducting a traditional public meeting may not be the most effective way to solicit and receive feedback, especially if there is a need to translate English into multiple languages during a meeting. As such, it may be much more worthwhile to coordinate with a single representative from each CBO to request assistance to help facilitate discussions with the refugee populations they serve. If necessary, the SMTC may attend CBO-sponsored community meetings at their request and present as an agenda item at their meeting.

The SMTC may also conduct outreach to the Regional Market Authority (RMA) to receive feedback about its clientele’s mobility needs. If necessary, the SMTC may also set up a booth during a Saturday morning Farmer’s Market to engage with customers about mobility issues and opportunities. If so, the SMTC would welcome representation from any of the CBOs to help facilitate conversations with refugee customers, which would be a unique opportunity to engage with the public directly.

If necessary, the SMTC may also choose to post the draft report online and notify the public through a press release that it is available for public review and comment. If so, the SMTC will send a copy of the press release to the SAC and to stakeholders – including any interested CBOs - for further dissemination throughout the community. The SMTC may also include the press release on the homepage of its website (www.smtcmpo.org) and share the press release through its social media (i.e., Facebook) page.

VII. Additional public outreach

Stakeholders list

Stakeholders are those individuals that have a significant personal or professional interest in the Study. In consultation with the SAC, the SMTC will work refine the initial list of stakeholders based on staff and SAC members' existing knowledge of the community. Additional stakeholders will be added continuously at the request of the SAC or any community member. The stakeholders will be sent pertinent Study information, kept apprised of significant Study developments, notified of all public outreach opportunities, and encouraged to provide feedback and comment regarding the assessment.

Based on initial discussions during the scoping process, the SMTC suggests conducting phone interviews with the following stakeholders on an as-needed basis:

- Central New York Regional Market Authority (CNYRMA)
- CSX Transportation (CSX)
- Community Based Organizations (CBOs)
 - Center for New Americans
 - Catholic Charities
 - Refugee Resettlement Services
 - Interfaith Works
- Destiny USA (Destiny)
- Onondaga County Industrial Development Agency (OCIDA)
- Onondaga County Parks (County Parks)
- CenterState Corporation for Economic Opportunity (CenterState CEO)
- Northside Urban Partnership (Northside UP)
- Byrne Dairy.

Coordination with community groups

If necessary, staff from the SMTC may reach out to existing community groups (such as the CBOs and other stakeholders previously mentioned) in the Study area and seek their assistance in notifying their members about the Study and soliciting participation and feedback. If requested, SMTC staff may attend existing community meetings to provide a brief overview of the Study. The SMTC will work with the SAC to refine or update this list as necessary throughout the Study.

Distribution of Study materials

If deemed necessary (at the discretion of the SAC and/or other appropriate SMTC committees), the SMTC may distribute Study-specific information at sites throughout the Study area (e.g. schools, community centers, libraries, etc.). This information may include one or more of the following: introductory flier, meeting notice, comment card, and a pre-addressed survey on a particular Study issue. It is also the SMTC's intent to

work with and encourage other agencies to include this information in their publications or to assist in material distribution.

Approved documents, such as the Study's Final Report, may be made available at libraries in the vicinity of the Study area. News releases will be produced to announce the availability of such items, as well as invite written comments to be submitted to the SMTC.

Public comment

All interested individuals are encouraged to submit comments to the SMTC. This message will be publicized and made clear verbally and on Study material and publications. The public is also welcome to attend any of the publicized SMTC Executive, Planning and Policy Committee meetings, at which the Study may be on the agenda as a discussion item.

VIII. Press releases and media coverage

The SMTC may issue press releases announcing the details of the public comment period to all major and minor newspapers in advance. If necessary, the SMTC may also send additional news releases, or take the initiative to promote media coverage on pertinent developments pertaining to the Study.

All media inquiries should be directed to the SMTC director or project manager. However, this is not always possible. If you (e.g. SMTC committee members, SAC members, and/or interested stakeholders associated with the Study) are interviewed by the media, please limit your comments to your respective agency's opinion or involvement in the Study. Speaking to the media on specific issues and questions regarding the Study, including its progress and development, is the exclusive responsibility of the SMTC.

IX. SMTC publications

The SMTC publishes a newsletter, *DIRECTIONS*, that offers news about its activities and particular studies. This newsletter is distributed to over 5,000 individuals, some of whom include the media; local, state, and federal agencies associated with the SMTC; municipal and elected officials; community agencies and representatives; and a large number of interested citizens. It is anticipated that articles on the Study (e.g. Study development issues or the announcement of a public comment period) may be published in future issues of *DIRECTIONS*. Should the need arise for the production of a separate newsletter/flier/report to convey a timely Study development, the SMTC staff is prepared to perform this additional task. It is also important to note that the mailing list of the SMTC newsletter, *DIRECTIONS*, will be updated to include all members of the SAC, stakeholders, and others interested or involved in the Assessment.

The SMTC web site (www.smtcmpo.org) may also serve as a resource for general information about the SMTC, the Assessment, and any final reports.

X. Conclusion

It is important for the SMTC to understand public attitudes and values throughout the Study. Through the activities described in this public involvement plan, the SMTC will solicit public input and provide opportunities for the public to develop greater awareness of, and active involvement, in the Study.

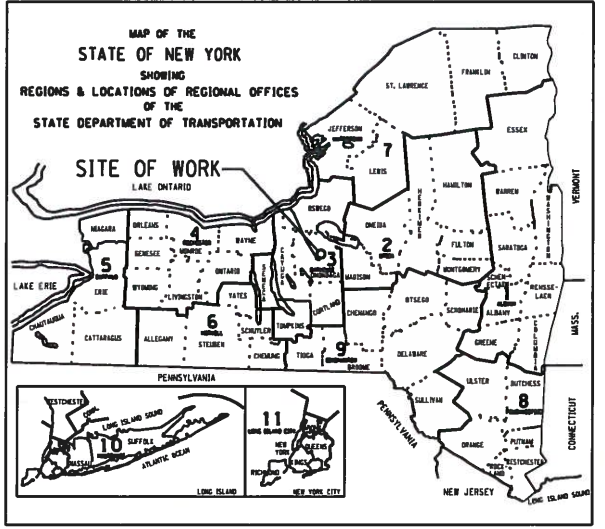
Appendix C

Selections from the Park Street Greenway Contract Plans

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CITY OF SYRACUSE PARK STREET NEIGHBORHOOD GREENWAY

PIN 3950.56
 D034843

CITY OF SYRACUSE
 STEPHANIE A. MINER
 MAYOR

CONTRACT PLANS

MARCH 2017

CONTRACT BEGINS
 STA. 24+00.00



PROJECT LOCATION

CONTRACT ENDS
 STA. 125+88.00

CONTRACTOR'S NAME _____	
AWARD DATE _____	
COMPLETION DATE _____	
FINAL ACCEPTANCE DATE _____	
ENGINEER IN CHARGE _____	
FINAL COST TOTAL _____	
FISCAL SHARE _____	COST(S) _____

STANDARD SHEETS

THE LATEST REVISIONS OF THE STANDARD SHEETS MAINTAINED BY THE NYSOT, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS, SHALL BE CONSIDERED TO BE IN EFFECT. ALL PAY ITEMS AND WORK CONTAINED IN THE CONTRACT AND ANY ADDITIONAL PAY ITEMS AND WORK ENCOUNTERED DURING THE COURSE OF THE CONTRACT SHALL BE SUBJECT TO THE APPLICABLE STANDARD SHEETS UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

ALL WORK CONTEMPLATED UNDER THIS CONTRACT IS TO BE COVERED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (US CUSTOMARY/METRIC) REFERENCED IN THE CONTRACT PROJECT "PROPOSAL" EXCEPT AS MODIFIED BY THESE PLANS OR BY CHANGES SET FORTH IN THE CONTRACT PROJECT "PROPOSAL".

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

THE CONTRACT PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH NYSOT GUIDELINES AND POLICIES AND THE FINAL DESIGN REPORT APPROVED ON 8/26/2016.

APPROVED BY

MARY E. ROBISON, P.E.
 CITY ENGINEER

DATE



PREPARED AND RECOMMENDED BY



03/16/17
 DATE

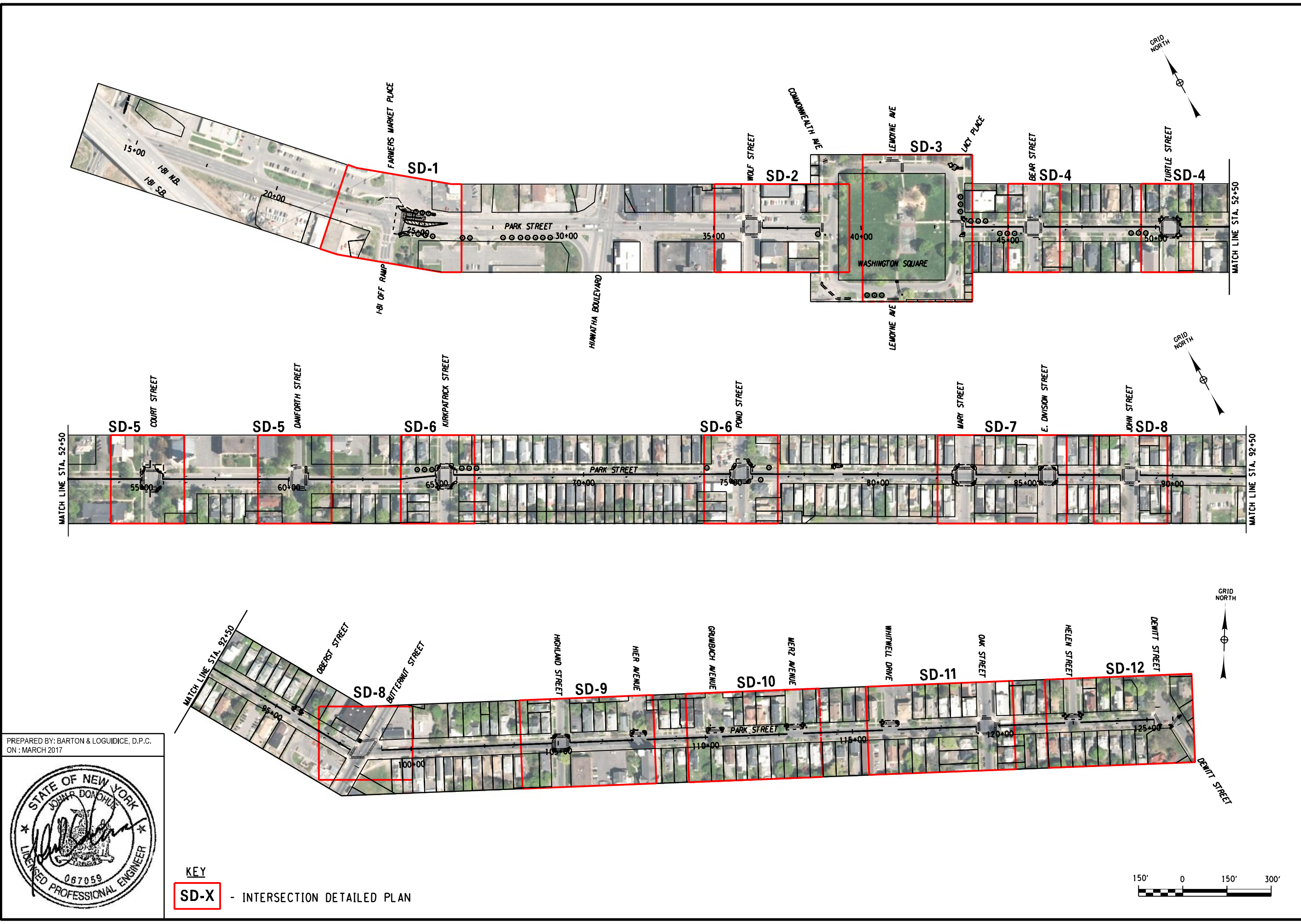
JOHN P. DONOHUE, P.E.
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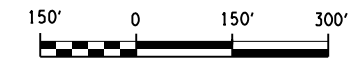
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 ON: MARCH 2017



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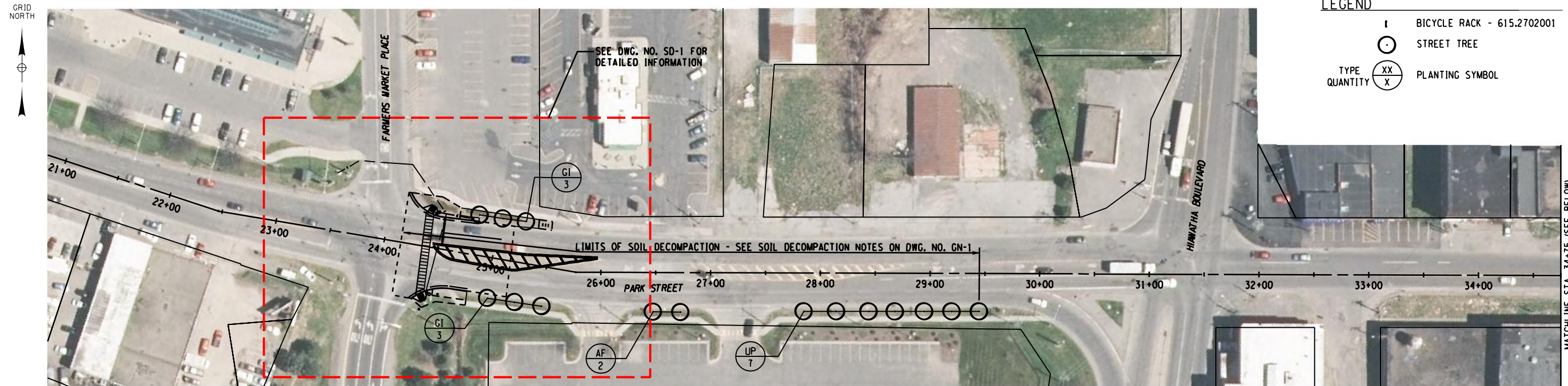


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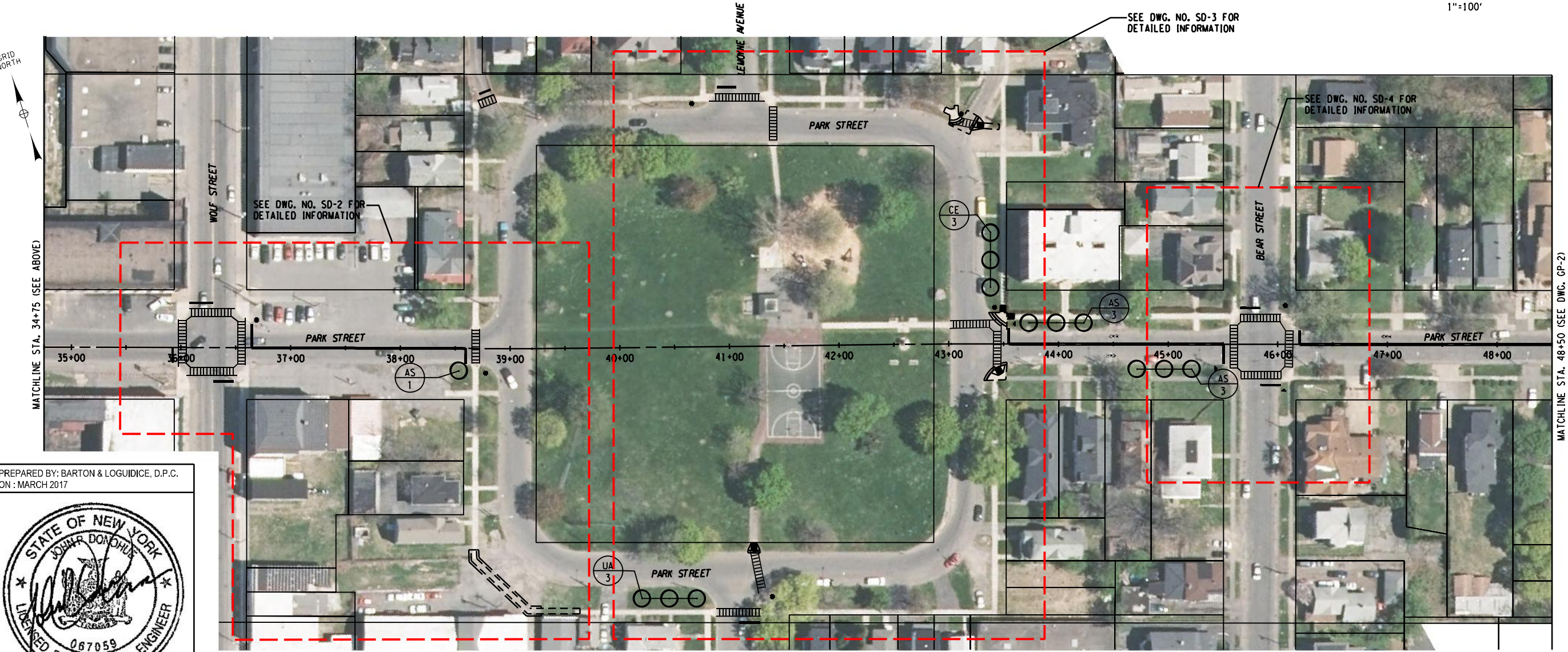
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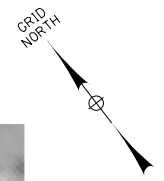
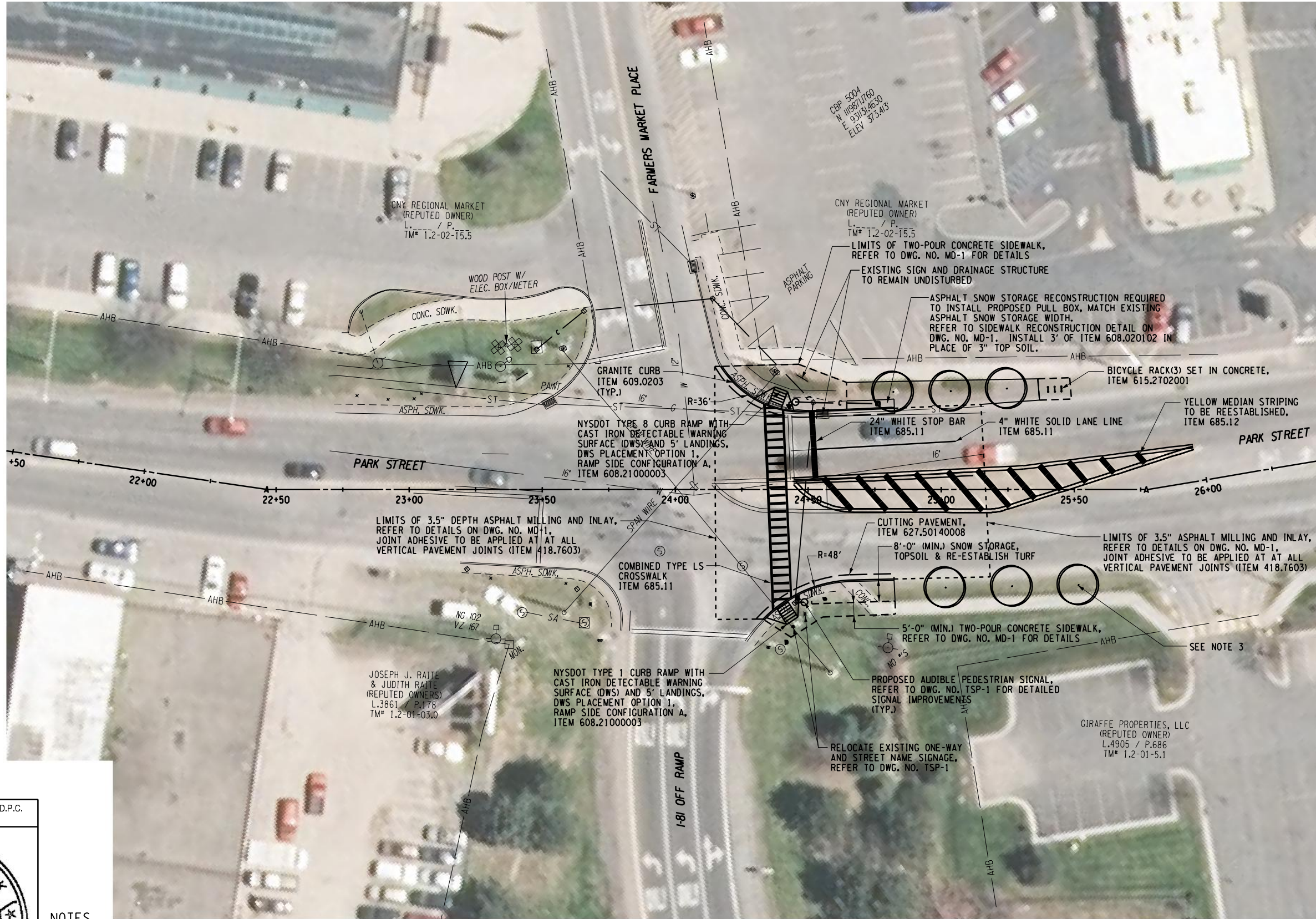
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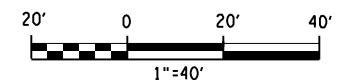


NOTES

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3. REFER TO DWG. NO. LD-1 & GENERAL PLANS FOR DETAILS & QUANTITIES
4. JOINT ADHESIVE (ITEM 418.7603) SHALL BE APPLIED AT ALL VERTICAL PAVEMENT JOINTS.



**PARK STREET AND FARMERS MARKET PLACE
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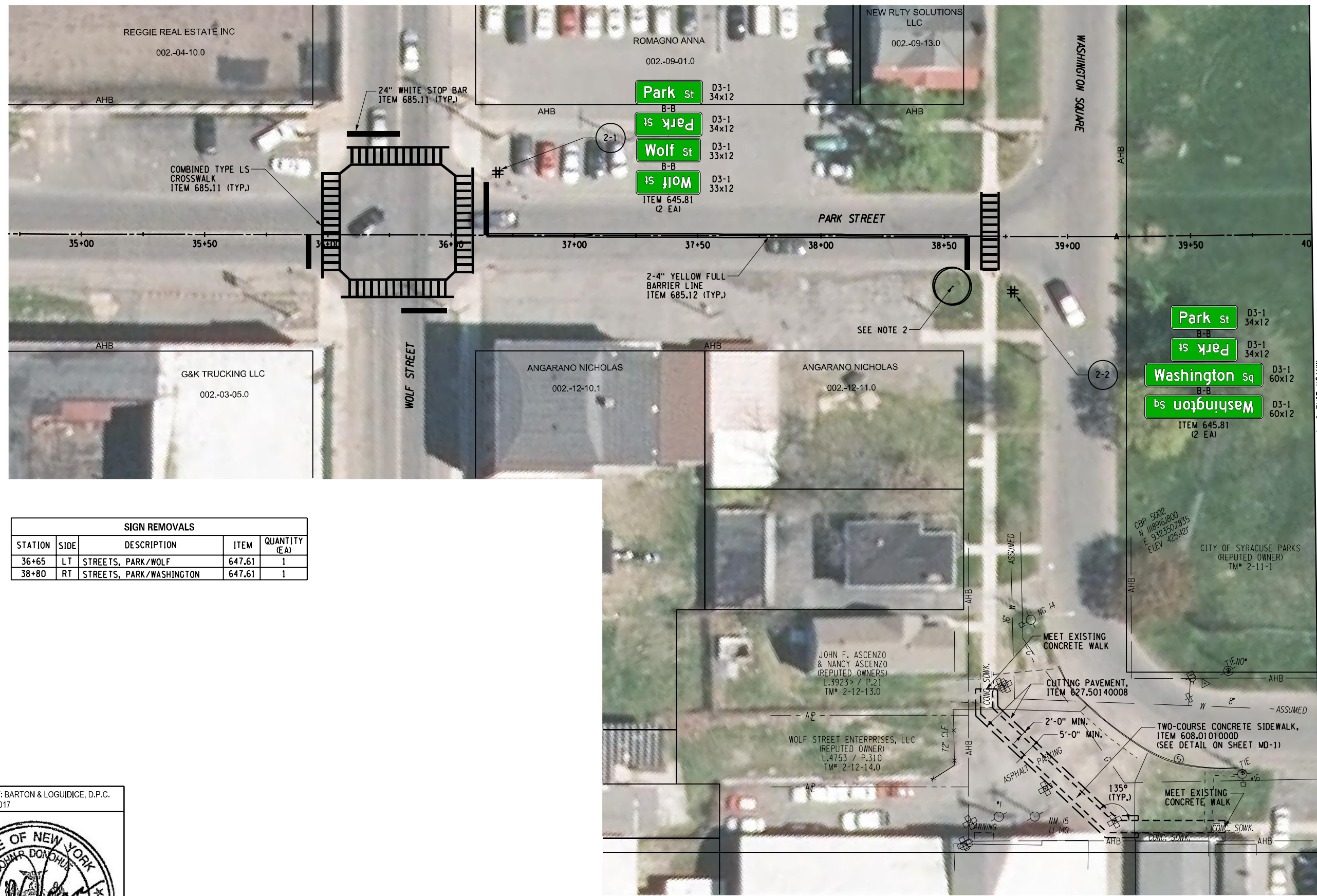
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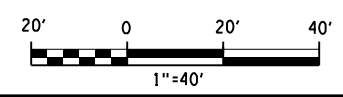
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38+80	RT	STREETS, PARK/WASHINGTON	647.61	1

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 ON: MARCH 2017



- NOTES**
- REFER TO DWG. NO. MD-1 FOR FULL DEPTH RECONSTRUCTION DETAILS
 - REFER TO DWG. NO. LD-1 & GENERAL PLANS FOR DETAILS & QUANTITIES
 - JOINT ADHESIVE (ITEM 418.7603) SHALL BE APPLIED AT ALL VERTICAL PAVEMENT JOINTS.

**PARK STREET AND WOLF STREET
 PARK STREET AND WASHINGTON SQUARE
 INTERSECTION IMPROVEMENTS**



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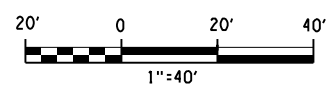


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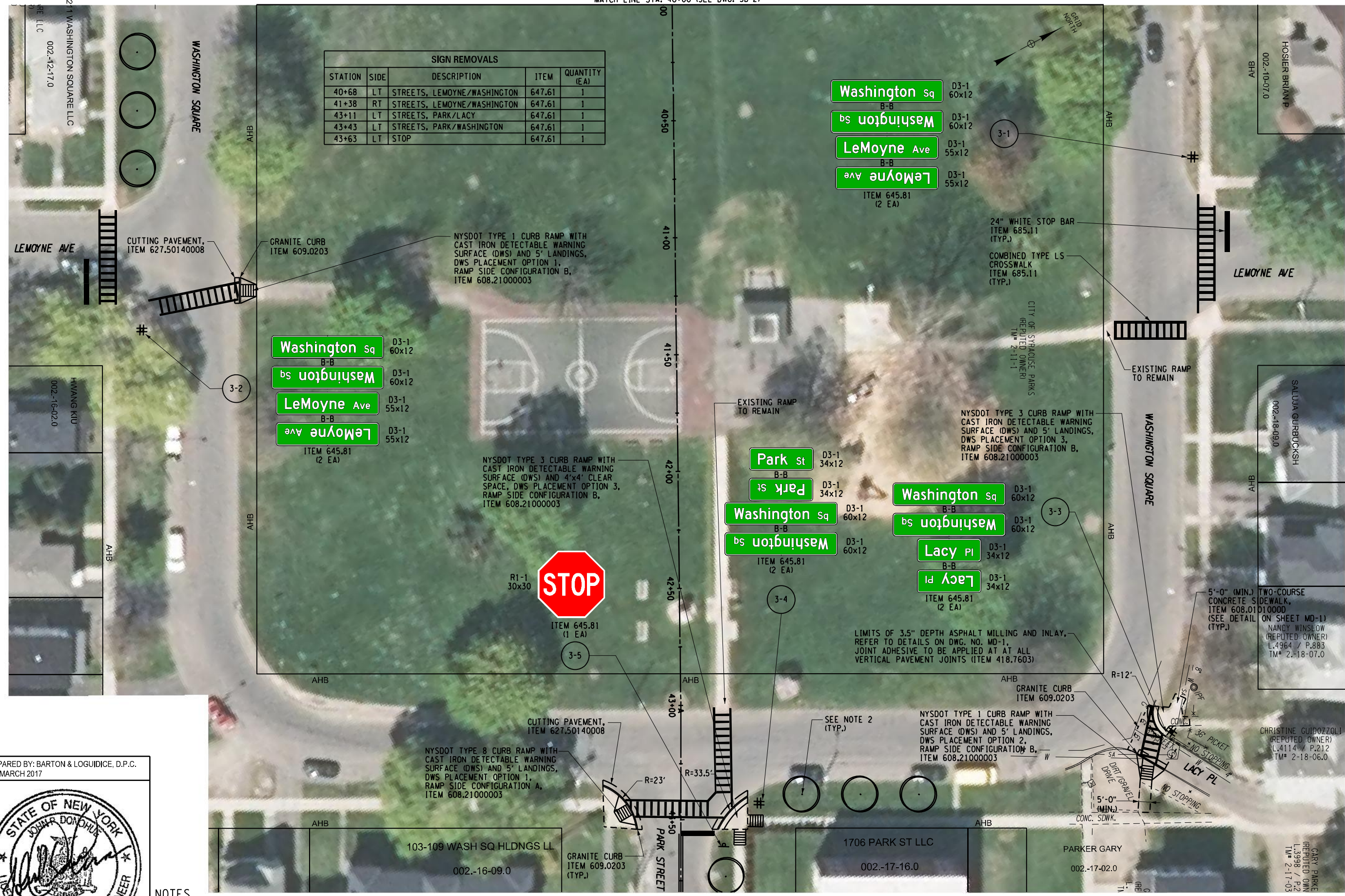


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PARK STREET AND WASHINGTON SQUARE
 LEMOYNE AVE AND WASHINGTON SQUARE
 INTERSECTION IMPROVEMENTS



20 36
PARK STREET NEIGHBORHOOD GREENWAY CITY OF SYRACUSE ONONDAGA COUNTY P.I.N. 3950.56
INTERSECTION DETAILED PLAN
SCALE: AS SHOWN DATE ISSUED: 03/2017 DRAWING SD-3



Appendix D

Synchro Summary Reports

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (Existing Conditions)
 11/21/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00	1.00				
Fr _t			0.850		0.991			0.986				0.850
Fl _t Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1787	1881	1599	1787	1862	0	1626	3308	0	1752	1845	1568
Fl _t Permitted	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (perm)	1777	1881	1578	1777	1862	0	1623	3305	0	1752	1845	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			10				84
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	75	151	384	55	147	0	221	444	0	16	300	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (Existing Conditions)

11/21/2019

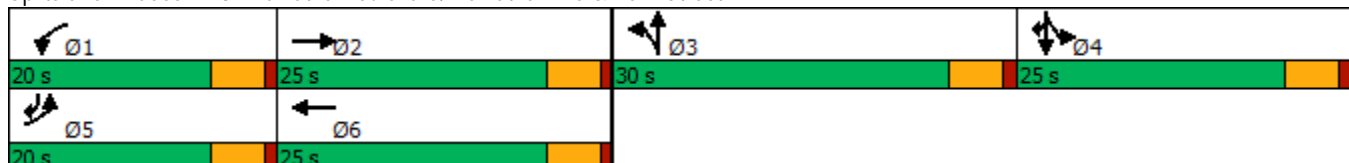


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases	Free											
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	9.0	16.1	73.9	8.3	12.7		17.4	17.4		17.0	17.0	28.1
Actuated g/C Ratio	0.12	0.22	1.00	0.11	0.17		0.24	0.24		0.23	0.23	0.38
v/c Ratio	0.34	0.37	0.24	0.28	0.46		0.58	0.57		0.04	0.71	0.13
Control Delay	39.1	32.6	0.4	39.1	36.4		34.1	29.0		27.6	39.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	39.1	32.6	0.4	39.1	36.4		34.1	29.0		27.6	39.9	5.3
LOS	D	C	A	D	D		C	C		C	D	A
Approach Delay		13.1			37.1			30.7			32.1	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 73.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 26.0
 Intersection LOS: C
 Intersection Capacity Utilization 56.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street



Lanes, Volumes, Timings (For RTC Project)
Hiawatha Blvd & Park St.

p.m. peak (w/ SB Left-Thru Lane)

11/21/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00	1.00				
Fr _t			0.850		0.991			0.986				0.850
Fl _t Protected	0.950			0.950			0.950	0.980			0.997	
Satd. Flow (prot)	1787	1881	1599	1787	1862	0	1626	3308	0	0	1839	1568
Fl _t Permitted	0.950			0.950			0.950	0.980			0.997	
Satd. Flow (perm)	1777	1881	1578	1777	1862	0	1623	3305	0	0	1839	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			10				84
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	75	151	384	55	147	0	221	444	0	0	316	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Analyst = SMTC

(Source: Hard Copy Synchro Reports done by GTS Consulting for Dunkin Donuts in Nov. 2018)

Synchro 9 Report

Page 1

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (w/ SB Left-Thru Lane)

11/21/2019

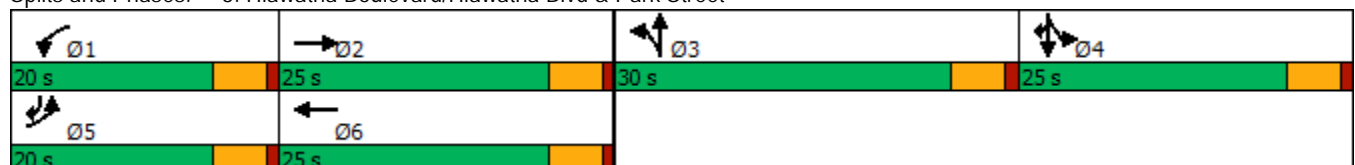


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases	Free											
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	9.0	16.0	74.7	8.3	12.7		17.4	17.4			17.9	29.0
Actuated g/C Ratio	0.12	0.21	1.00	0.11	0.17		0.23	0.23			0.24	0.39
v/c Ratio	0.35	0.38	0.24	0.28	0.46		0.58	0.57			0.72	0.13
Control Delay	39.4	32.9	0.4	39.4	36.8		34.6	29.4			40.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.4	32.9	0.4	39.4	36.8		34.6	29.4			40.1	5.3
LOS	D	C	A	D	D		C	C			D	A
Approach Delay		13.2			37.5			31.1			32.8	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 74.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 26.3
 Intersection LOS: C
 Intersection Capacity Utilization 56.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street



Lanes, Volumes, Timings (For RTC Project)
Hiawatha Blvd & Park St.

p.m. peak (w/ SB Left-Thru & NB 2 Lefts)

11/21/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	1		1	1		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00					
Fr _t			0.850		0.991			0.977				0.850
Fl _t Protected	0.950			0.950			0.950				0.997	
Satd. Flow (prot)	1787	1881	1599	1787	1861	0	3467	1838	0	0	1839	1568
Fl _t Permitted	0.950			0.950			0.950				0.997	
Satd. Flow (perm)	1771	1881	1578	1777	1861	0	3455	1838	0	0	1839	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			9				84
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	151	384	55	147	0	401	264	0	0	316	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			36				36
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Analyst = SMTC

(Source: Hard Copy Synchro Reports done by GTS Consulting for Dunkin Donuts in Nov. 2018)

Synchro 9 Report

Page 1

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (w/ SB Left-Thru & NB 2 Lefts)

11/21/2019

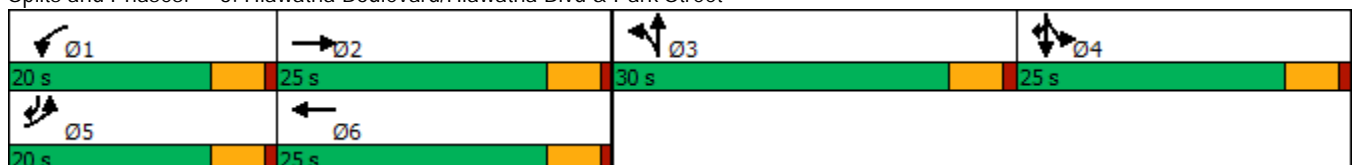


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	9.0	16.0	74.8	8.3	12.7		17.5	17.5			17.8	29.0
Actuated g/C Ratio	0.12	0.21	1.00	0.11	0.17		0.23	0.23			0.24	0.39
v/c Ratio	0.35	0.37	0.24	0.28	0.46		0.50	0.61			0.72	0.13
Control Delay	39.5	33.0	0.4	39.5	36.8		28.6	33.1			40.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.5	33.0	0.4	39.5	36.8		28.6	33.1			40.3	5.3
LOS	D	C	A	D	D		C	C			D	A
Approach Delay		13.3			37.6			30.4			33.0	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 74.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 26.1
 Intersection LOS: C
 Intersection Capacity Utilization 58.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street



Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (w/ SB LTR & NB 2 Lefts)
 11/21/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	1		1	1		0	2		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00					1.00
Frt			0.850		0.991			0.977				0.972
Flt Protected	0.950			0.950			0.950					0.998
Satd. Flow (prot)	1787	1881	1599	1787	1861	0	3467	1838	0	0	1784	0
Flt Permitted	0.950			0.950			0.950					0.998
Satd. Flow (perm)	1771	1881	1578	1777	1861	0	3456	1838	0	0	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			9				12
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	151	384	55	147	0	401	264	0	0	400	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			36				36
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

p.m. peak (w/ SB LTR & NB 2 Lefts)

11/21/2019

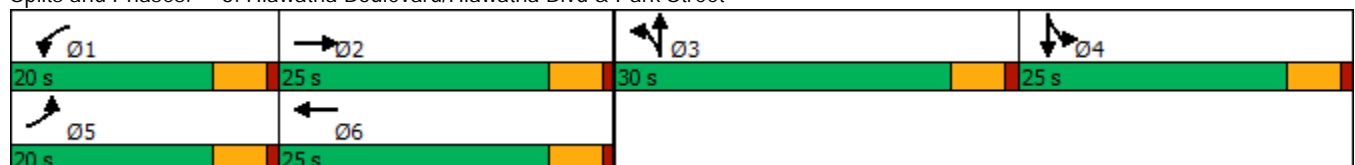


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	Free											
Detector Phase	5	2		1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	8.9	15.8	77.1	8.2	12.5		17.4	17.4				20.7
Actuated g/C Ratio	0.12	0.20	1.00	0.11	0.16		0.23	0.23				0.27
v/c Ratio	0.36	0.39	0.24	0.29	0.49		0.51	0.63				0.82
Control Delay	40.2	33.4	0.4	40.0	37.6		29.4	34.3				45.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	40.2	33.4	0.4	40.0	37.6		29.4	34.3				45.6
LOS	D	C	A	D	D		C	C				D
Approach Delay		13.4			38.3			31.4				45.6
Approach LOS		B			D			C				D

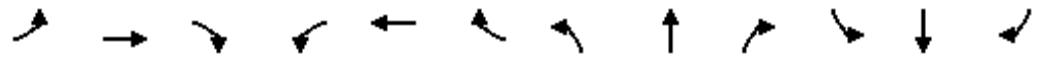
Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 77.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 29.3
 Intersection LOS: C
 Intersection Capacity Utilization 62.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street



Lanes, Volumes, Timings (For RTC Project) p.m. peak (w/ SB LTR & NB 2 Lefts & no EBR slip)
 Hiawatha Blvd & Park St. 11/22/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	1		1	1		0	2		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.98	0.99	1.00		1.00					1.00
Frt			0.850		0.991			0.977				0.972
Flt Protected	0.950			0.950			0.950					0.998
Satd. Flow (prot)	1787	1881	1599	1787	1861	0	3467	1838	0	0	1784	0
Flt Permitted	0.950			0.950			0.950					0.998
Satd. Flow (perm)	1771	1881	1569	1777	1861	0	3456	1838	0	0	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			9				12
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	151	384	55	147	0	401	264	0	0	400	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			36				36
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings (For RTC Project) p.m. peak (w/ SB LTR & NB 2 Lefts & no EBR slip)
 Hiawatha Blvd & Park St. 11/22/2019

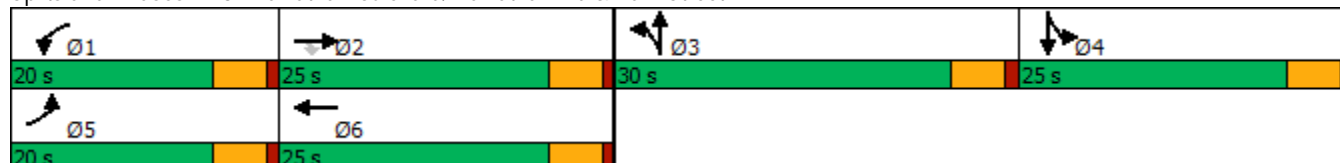


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2									
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0	25.0	20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%	25.0%	20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0	20.0	15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effect Green (s)	9.0	16.3	16.3	8.2	12.9		17.4	17.4			20.7	
Actuated g/C Ratio	0.12	0.21	0.21	0.11	0.17		0.22	0.22			0.27	
v/c Ratio	0.37	0.38	0.61	0.29	0.47		0.52	0.63			0.82	
Control Delay	40.7	33.0	8.3	40.5	36.9		29.8	34.9			46.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	40.7	33.0	8.3	40.5	36.9		29.8	34.9			46.3	
LOS	D	C	A	D	D		C	C			D	
Approach Delay		18.4			37.9			31.8			46.3	
Approach LOS		B			D			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 77.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 31.2
 Intersection LOS: C
 Intersection Capacity Utilization 62.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street



Lanes, Volumes, Timings (For RTC Project)
Hiawatha Blvd & Park St.

experimental(2)
12/06/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↖			↕	
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		0
Storage Lanes	0		1	0		0	2		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.98		1.00		1.00					1.00
Frt			0.850		0.994			0.977				0.972
Flt Protected		0.984			0.987		0.950					0.998
Satd. Flow (prot)	0	1851	1599	0	1843	0	3467	1838	0	0	1784	0
Flt Permitted		0.814			0.837		0.950					0.998
Satd. Flow (perm)	0	1528	1569	0	1561	0	3456	1838	0	0	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		2			9				14
Link Speed (mph)		30			30			30				30
Link Distance (ft)		896			774			453				637
Travel Time (s)		20.4			17.6			10.3				14.5
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	384	0	202	0	401	264	0	0	400	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			36				36
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings (For RTC Project)
 Hiawatha Blvd & Park St.

experimental(2)

12/06/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	
Permitted Phases	2		2	6								
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		28.0	28.0		37.0	37.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		28.0%	28.0%		37.0%	37.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		32.0	32.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effect Green (s)		18.1	18.1		18.1		17.1	17.1			21.2	
Actuated g/C Ratio		0.25	0.25		0.25		0.24	0.24			0.29	
v/c Ratio		0.59	0.57		0.52		0.49	0.60			0.75	
Control Delay		33.3	6.6		30.7		28.3	32.9			33.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		33.3	6.6		30.7		28.3	32.9			33.9	
LOS		C	A		C		C	C			C	
Approach Delay		16.5			30.7			30.2			33.9	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 72.5
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 26.6
 Intersection LOS: C
 Intersection Capacity Utilization 70.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Hiawatha Boulevard/Hiawatha Blvd & Park Street

