



# MEMORANDUM

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**TO:** Neil Burke, City of Syracuse Department of Public Works

**FROM:** Thomas Bardenett, Transportation Planner

**DATE:** September 22, 2022

**RE:** E Brighton Ave / E Seneca Turnpike technical analysis

**CC:** James D'Agostino, Director

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## Introduction

The City of Syracuse Planning Commission requested that the Department of Public Works (DPW) identify a general set of guidelines and a concept plan for the area around the intersection of East Brighton Ave and East Seneca Turnpike. Constituents have raised concerns about the existing conditions at this intersection, especially related to pedestrian safety. The SMTC agreed to complete a technical analysis on the behalf of the DPW within the existing City of Syracuse On-Call Planning Support item on the 2022-23 Unified Planning Work Plan (UPWP).

This study was completed as a planning-level analysis only. The SMTC is not able to create engineering-level designs for any of the pedestrian, bicycle or other infrastructure recommendations noted. Completion of this assessment does not imply that any funds for implementation will be made available through the SMTC now or in the future.

As this work was completed as a technical analysis, public outreach was not conducted.

## Study Area

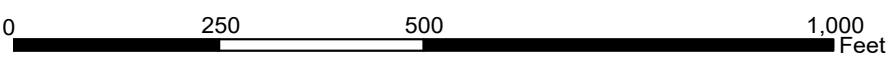
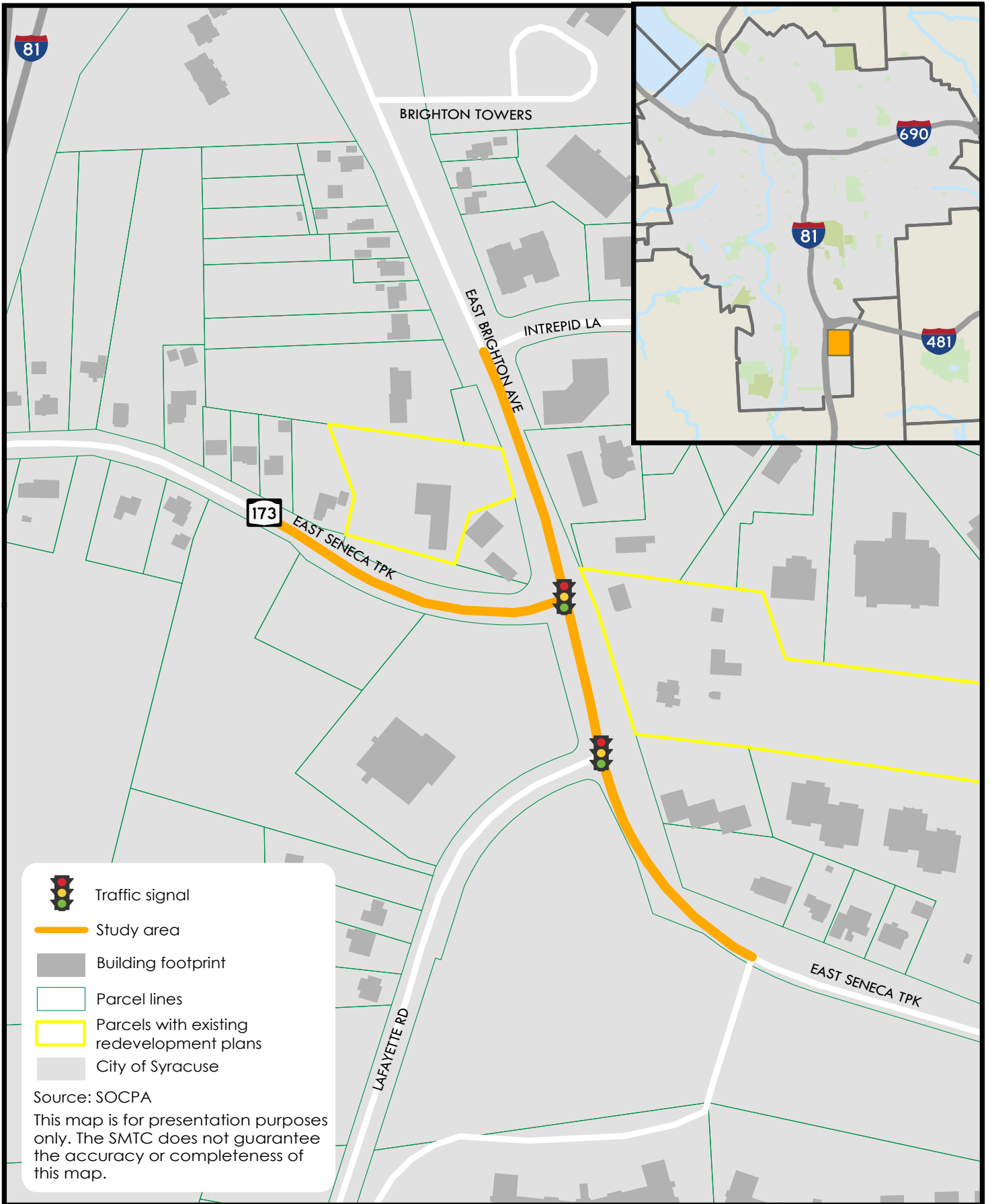
The area examined within this analysis includes East Brighton Ave, from Intrepid Lane to East Seneca Turnpike, and East Seneca Turnpike, from the Kinney Drugs driveway to the Nob Hill driveway (Figure 1). SMTC staff also reviewed impacts associated with the I-81 Viaduct Project, specifically the reconstruction occurring along East Brighton Ave from the new East Glen Ave intersection to Rock Cut Rd, north of Intrepid Lane.

## Previous Studies

The SMTC examined previously completed studies that were conducted in/around the study area to inform this analysis.

### ***I-81 Viaduct Project: Final Environmental Impact Statement***

In April of 2022, NYSDOT released the Final Environmental Impact Statement (FEIS) for the I-81 Viaduct Project, announcing that the Community Grid plan would replace the aging viaduct through the City of Syracuse. The Community Grid will see the removal of the current viaduct through Downtown Syracuse, which will be replaced by a street level boulevard from Van Buren Street north to Erie Boulevard, with high-speed access maintained north and south of this boulevard. This segment will be renamed Business Loop 81, with I-81 being rerouted to the former I-481. This massive project will have impacts beyond the interstate system, as new street connections



**Figure 1: Study Area**

will be introduced, along with additional bike and pedestrian amenities within the project area.

Just north of this technical memo's study area, a new connecting road at East Glen Ave will provide access to the new Business Loop 81 highway, as well as connect to the existing off-ramp for the newly designated I-81. Overall, the traffic along E Brighton Ave through the study area will remain steady as a result of these access changes.<sup>1</sup> Traffic levels will shift at the Rock Cut Rd intersection as drivers are diverted to the new on- and off-ramps, but no additional traffic is expected south of this interchange.

According to the FEIS, the roadway configuration of E Brighton Ave will change between Rock Cut Rd and E Glen Ave, north of the study area, most notably through the addition of bicycle and pedestrian infrastructure. The rebuilt bridge across the new I-81 will see the following changes:

- Lane reductions: 2 lanes in each direction, with a center painted median and alternating turning lanes
- A 10' wide cycle track on the western side of the roadway with a 3' buffer
- A 6' bike lane on the eastern side of the roadway with a 3' buffer
- A 6' sidewalk on the western side of the roadway with a 3' buffer next to the cycle track

North of E Glen Ave and south of Rock Cut Rd, cyclists will merge with vehicle traffic to share lanes.<sup>2</sup> The sidewalk on the western side will end at the driveway of a small office park just south of Rock Cut Rd, while a sidewalk on the eastern side will begin at Rock Cut Rd and continue south along E Brighton Ave. People walking along E Brighton Ave will need to cross at the Rock Cut Rd intersection in order to continue on a sidewalk.<sup>3</sup>

### **Syracuse Bicycle Plan**

The *Syracuse Bicycle Plan 2040* (Bike Plan) was released in 2012 as a component of Syracuse's Comprehensive Plan 2040, laying out the reasons an expanded bike network is needed and what that network should look like. The E Brighton Ave / E Seneca Turnpike corridor is considered a long-term priority corridor due to higher volumes of traffic and difficult topography.<sup>4</sup> The corridor is rated highly for its connections to destinations / surrounding neighborhoods and bus routes, as well as a fairly wide right-of-way (over 40'+ wide in most areas) without parking lanes, although the report does not see it as a candidate for a road diet.<sup>5</sup> The long-term vision for this corridor is to stripe standard bike lanes along E Brighton Ave from Southe Ave to E Seneca Turnpike and along E Seneca Turnpike from E Brighton Ave to the City line.

### **Bike Suitability Map of Greater Syracuse (2020)**

In 2020, the SMTC released an updated bike suitability map aimed at assisting bicycle commuters in determining the ideal route for their travels based on the existing conditions on the roadway.<sup>6</sup> Ratings were determined across the length of roadway segments, the length of which is determined by NYSDOT's pavement rating system, taking in the average suitability along each segment. The rating system is defined as follows:

- **Excellent:** Highly Recommend
  - Slow moving traffic; low volume traffic & some separation from vehicles.
- **Good:** Acceptable
  - Moderately traveled with some separation from vehicles traveling at slower speeds.

1 NYSDOT, *I-81 Viaduct Project: Final Design Report / Final Environmental Impact Statement / Final Section 4(f) Evaluation*, "Appendix C-3: Traffic Volumes and Levels of Service," pg. 25, 293, 309

2 Ibid.

3 NYSDOT, *I-81 Viaduct Project: Final Design Report / Final Environmental Impact Statement / Final Section 4(f) Evaluation*, "Appendix A-1: Plans and Sections Part 2 of 3," pg. 35-36

4 City of Syracuse, *Syracuse Bicycle Plan 2040* (2012), pg. 26, 101

5 City of Syracuse, *Syracuse Bicycle Plan 2040* (2012), pg. 97-98, 102-104

6 SMTC, *Bike Suitability Map of Great Syracuse* (2020), Accessed April 28, 2022. <https://smtc.maps.arcgis.com/apps/webappviewer/index.html?id=aa2cb8b68962469e9022c97c3ce4fabd>

- **Average:** Urban Acceptable
  - Moderately traveled with little separation from vehicles traveling at slower speeds; or roads with higher volumes of traffic and some separation from vehicles.
- **Poor:** Not suitable
  - Heavily traveled with fast moving traffic, little to no separation from vehicles, and/or rough cycling conditions.

The 2020 update includes the following ratings within the study area:

- E Brighton Ave (E Glen Ave to E Seneca Turnpike) – **Poor**
- E Seneca Ave (S Salina St to the Nob Hill driveway) – **Average**
- E Seneca Ave (Nob Hill driveway to the City line) – **Good**

### ***Bicycle Commuter Corridor Study***

In 2013, the SMTC released the Bicycle Commuter Corridor Study which aimed to identify pathways for “experienced-confident riders” to commute from the suburbs to employment centers within the City and surrounding villages.<sup>7</sup> Riders would primarily travel with vehicle traffic, not on separated facilities. E Brighton Ave – E Seneca Turnpike was identified as a corridor of interest by the Study Advisory Committee (SAC) due to its connectivity with businesses north of I-481 but was ruled out due to heavy vehicle traffic which creates dangerous riding conditions.<sup>8</sup>

## **Proposed Projects**

Two development projects within the study area have been proposed since 2016, including a Taco Bell restaurant on the northwest corner of the East Brighton Ave / East Seneca Turnpike intersection and a larger office / residential development on the eastern side of East Seneca Turnpike from East Brighton Ave to Lafayette Rd (Brighton Mews Development).

### ***Taco Bell – 962 E Brighton Avenue***

An application was submitted on November 9, 2021, by Bohler Engineering to demolish the existing automotive service center structure and construct a 2,650 sq ft Taco Bell with a drive-thru, as well as approximately 38 parking spaces. Proposed vehicle access to the development includes:

- A full access driveway on E Brighton Ave
- A full access driveway on E Seneca Turnpike
- A right-turn exit only driveway on E Seneca Turnpike
- A shared access drive through the Mobil Gas Station lot

Additional changes proposed for the commercial site include:

- Sidewalks along the E Seneca Turnpike and E Brighton Ave frontages
- Crosswalks painted across each driveway
- Ground signage to direct traffic movements

Overall, Bohler Engineering determined that 62 vehicles would be expected to enter the lot during the peak morning hour, 46 vehicles during the peak evening hour, and 80 vehicles during the peak hour on Saturdays.

### ***Brighton Mews Development – 1001 E Brighton Avenue***

Brighton Mews was a mixed-use development proposed on the eastern side of E Brighton Ave/ E Seneca Turnpike in 2017. The project may change as it goes through the review process, but the 2017 proposal includes:

- ~27,000 sf of mixed-use development
  - 3 commercial buildings

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<sup>7</sup> SMTC, *Bicycle Commuter Corridor Study* (2013), pg. 1

<sup>8</sup> SMTC, *Bicycle Commuter Corridor Study* (2013), Appendix B: Maps 3, 4, 11, 14

- 10,925 sf of retail (first floors)
- 16,225 sf of office (second floors)
- 2 residential buildings
  - 10 apartments in each
- 162 parking spaces
  - 118 surface lot spaces
  - 44 underground spaces

The proposal included access points at the E Brighton Ave / E Seneca Turnpike and the E Seneca Turnpike / Lafayette Rd intersections. The southern driveway, at Lafayette Rd, would be given over to the City as a public road. In order to accommodate the new traffic demand, GTS Consulting recommended the following improvements:

- E Brighton Ave / E Seneca Turnpike intersection
  - Restripe shared eastbound left/right lane to left/through/right
  - Restripe southbound through only lane to left/through
  - Modify traffic signal to provide signal heads to the development's driveway
    - Westbound driveway would receive a separate split signal phase which would be actuated
- Signal timing cycles at both intersections would be increased
  - AM: from 72 seconds to 100 seconds
  - PM: from 100 seconds to 120 seconds<sup>9</sup>

The GTS study concluded that through these improvements, the intersections will continue to operate at LOS C or better during both peak hours. Overall, traffic would experience some additional delays, with most directions experiencing under four additional seconds.

## Existing Conditions

### ***Road Ownership / Functional Classification***

The two focus streets within the study area, E Brighton Ave and E Seneca Turnpike, are classified as minor arterials and are owned by the City of Syracuse. Lafayette Rd, also owned by the City, is classified as a major collector, while Intrepid Lane and the Nob Hill driveway are privately owned local roadways.

### ***Traffic Volumes***

The Average Annual Daily Traffic (AADT) is the total volume of vehicle traffic on a road segment for a year divided by 365 days. SMTC staff reviewed traffic data collected between 2000 and 2021 on the three roadway segments within the study area. Overall, traffic along E Seneca Turnpike (NY 173) has remained steady over this period, with a slight decline noted since 2015. E Brighton Ave has seen traffic increase by 13 percent during this period, with a slight decline during the Covid-19 pandemic. All roadway segments reviewed have relatively low rates of heavy vehicle usage, below 5 percent of the total traffic on each, as more typical freight locations reside north of the study area, closer to the interstate.

Traffic within the study area follows a fairly typical morning and evening peak structure, with the evening peak seeing the highest volume of traffic overall. The morning peak is from 8:00 a.m. to 9:00 a.m. and the evening peak from 4:00 p.m. to 5:00 p.m. A less pronounced midday peak can be seen from 12:00 p.m. to 1:00 p.m., with around 10 percent less and 25 percent less traffic than experienced during the morning and evening peaks, respectively.

The posted speed limit within the study area is 30-mph, with a 25-mph zone around the Brighton Towers entrance. The 85th percentile speed, the speed on which speed limits are often based, for each segment was significantly

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<sup>9</sup> Traffic timings acquired from the City of Syracuse indicated the traffic signals currently operate on different cycle lengths than noted in the GTS analysis: 100 seconds (AM Peak) and 105 seconds (PM Peak).

**Table 1: Average Annual Daily Traffic (AADT) and Peak Hour volumes near study area**

Count Location		Most recent AADT		% Heavy Vehicles	AM Peak (8-9AM)	PM Peak (4-5PM)	Pre-Pandemic AADT	
		Vehicles per day	Year Counted				Vehicles per day	Year Counted
E Seneca Turnpike (NY 173)	Between S Salina St and Brighton Ave	14,400	2021	4%	1,100*	1,400	15,800	2019
E Brighton Ave	Between I-481 ramps and NY 173	20,400	2021	3%	1,600	1,900	21,800	2016
E Seneca Turnpike (NY 173)	Between Brighton Ave and City line	7,200	2020	4%	600	800	9,100	2019

\*AM Peak observed from 7:00 a.m. to 8:00 a.m.

above 30-mph. The 85th percentile speeds on E Seneca Turnpike were 36 mph (S Salina Street to Brighton Ave) and 38-mph (Brighton Ave to the City line). The highest speeds were observed on E Seneca Turnpike heading south towards the City line, where a 50-mph zone sits just across the border. E Brighton Ave had slightly lower 85th percentile speeds, recorded at 34-mph northbound and 32-mph southbound, but was measured within the 25-mph zone.

**Zoning / Land Use**

The Syracuse Land Use and Development Plan (Land Use Plan) is a component of the Syracuse Comprehensive Plan, 2040. The Land Use Plan identifies current conditions, a vision for future “character areas” throughout the City, as well as neighborhood-specific recommendations for each Tomorrow’s Neighborhoods Today (TNT) area. The Land Use Plan was the first step in an on-going process of updating the City’s zoning code. This effort, titled “ReZone Syracuse,” is expected to be complete in the near future. SMTC staff have been involved in the ReZone process and anticipate that the final zoning will largely reflect what is shown in the Land Use Plan.

According to the Land Use Plan (Figure 2), the study area falls primarily within a Suburban Commercial district, which is characterized by larger “big-box” commercial development along major transportation corridors. Office complexes and certain light-industrial uses are allowed within this character area. Suburban Commercial is the only character area that may utilize larger parking lots at the front of the development.<sup>10</sup>

North of the study area around Brighton Towers and south of Lafayette Rd, a High-Density Residential / Office district borders E Brighton Ave and E Seneca Turnpike, respectively. High-rise residential towers and multi-building apartment complexes, similar to the Nob Hill Apartments, along with medium-rise office buildings with large setbacks and small-scale commercial spaces are allowed within this character area.<sup>11</sup>

**Pedestrian Infrastructure**

Table 2 provides an inventory of pedestrian amenities at intersections within the study area, and Figure 3 indicates the location of sidewalks and crosswalks.

Sidewalks within the study area typically run along only one side of the street. The only exceptions to this are the sections of E Seneca Turnpike between E Brighton Ave and Lafayette Rd and Lafayette Rd from E Seneca Turnpike

10 City of Syracuse, *Syracuse Land Use & Development Plan 2040* (2012), pg. 18

11 *Ibid.*, pg. 17

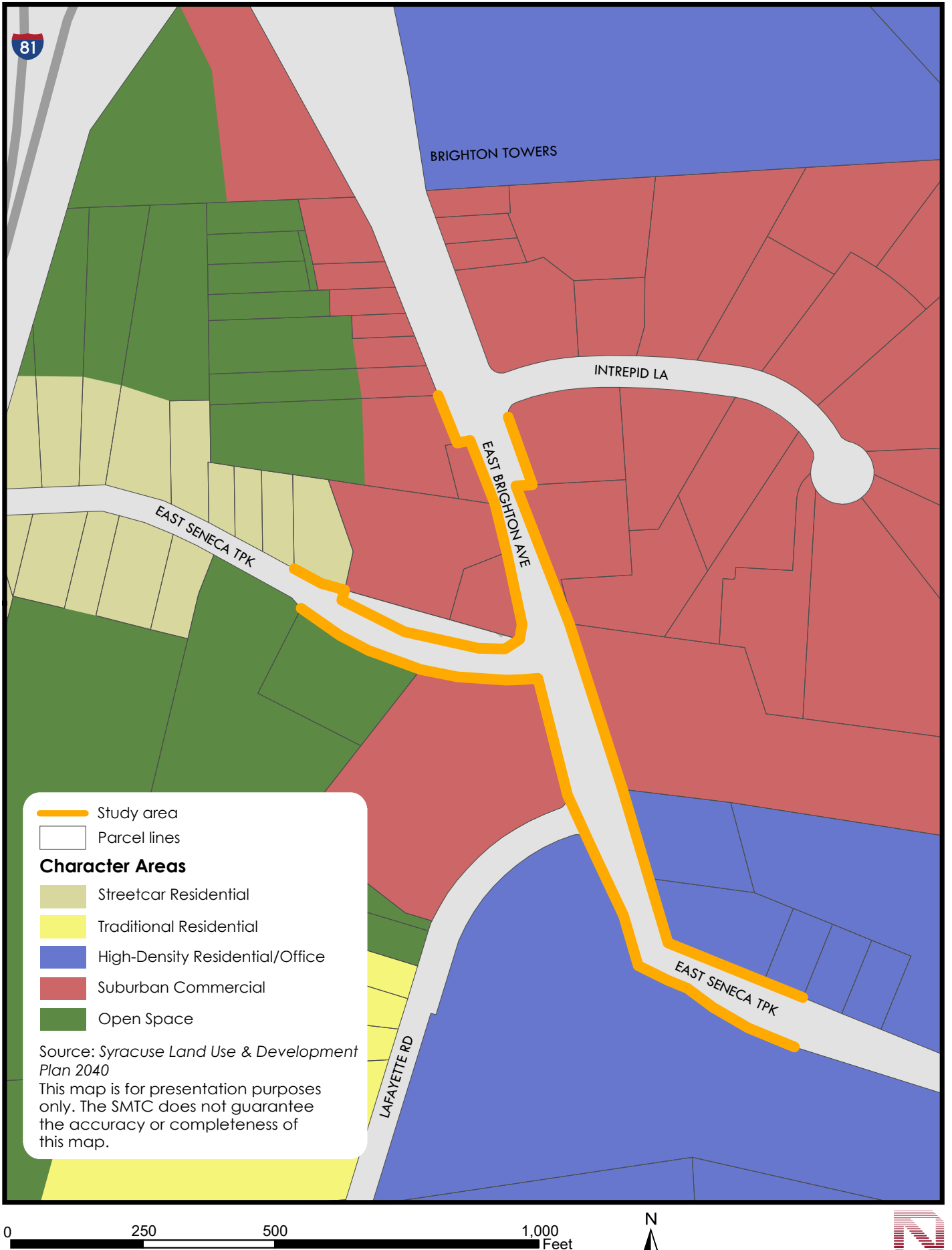


Figure 2: Character Areas

to the Kinney Drugs driveway. The existing sidewalks are all five feet in width and in good condition.

Crosswalks only exist at two of the four intersections within the study area. The E Brighton Ave / E Seneca Turnpike intersection has a single, ladder-style crosswalk across northbound E Seneca Turnpike. The E Seneca Turnpike / Lafayette Rd intersection has three, ladder-style crosswalks with southbound E Seneca Turnpike as the lone exception without one. The remaining two intersections do not provide any pedestrian crossings across the main E Brighton Ave - E Seneca Turnpike corridor and do not provide crosswalks across their respective side streets.

The Americans with Disabilities Act (ADA) requires municipalities to provide curb ramps at pedestrian crossings and at public transportation stops where walkways intersect a street so that people with disabilities can safely cross. Detectable warnings alert pedestrians with visual impairments about the sidewalk to street transition. Truncated domes are the required type of detectable warning according to the ADA and are required to contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light.

**Table 2: Pedestrian amenities at study area intersections**

Location	Control	Crosswalks	Ped Signals / Buttons	Countdown Timers	Curb Ramps	Detectable Warnings
E Brighton Ave / Intrepid Lane	stop	-	-	-	○	-
E Brighton Ave / E Seneca Tpke	signal	○	○	○	○	○
E Seneca Tpke / Lafayette Rd	signal	○	○	○	○	○
E Seneca Tpke / Nob Hill driveway	stop	-	-	-	○	-
- Not present    ○ Present on some approaches    ● Present on all approaches						

Truncated domes are utilized on all curb ramps at the E Seneca Turnpike / Lafayette Rd intersection, but only appear on the western curb ramp at E Brighton Ave / E Seneca Turnpike. All other curb ramps within the study area do not use detectable warnings.

At the two signalized intersections, E Brighton Ave / E Seneca Turnpike and E Seneca Turnpike / Lafayette Rd, the pedestrian signals are push-activated and trigger an exclusive pedestrian phase at the end of their signal cycles.

***Bicycle Infrastructure***

There are currently no signed bicycle routes, on- or off-road bicycle lanes/facilities, or bicycle racks within the study area.

***Public Transit***

The study area is primarily served by the Centro bus route Sy40, specifically Route 240. Sy 72 (Route 172) offers limited service to the Iroquois Nursing Home just south of the study area.

Figure 3 includes the transit stop locations surrounding the study area. There are no bus shelters along E Brighton Ave and E Seneca Turnpike. There is a bench located about 100 ft away from the E Seneca Turnpike & Lafayette Rd bus stop. There are no sidewalks present at, or leading to, the southbound E Brighton Ave & Intrepid La bus stop.





Figure 3: Pedestrian and Transit Facilities

**Table 3: Transit stops in the study area**

<b>Stops near the study area that rank in top 25% of overall ridership (in the Syracuse / Onondaga County service area)</b>			
<b>Stop Name</b>	<b>Factored Estimated Boardings / Day</b>	<b>Factored Estimated Alightings / Day</b>	<b>Notes</b>
Brighton Towers	68.26	62.41	Senior housing apartments
Nob Hill Apts. Building #3	26.34	7.76	Apartment complex
Nob Hill Apts. Building #2	17.08	7.53	Apartment complex
Nob Hill Apts. Building #4	15.59	31.47	Apartment complex
Nob Hill Apts. Building #1	11.15	3.79	Apartment complex
E Seneca Tpke & E Brighton Ave	6.83	0.28	NB traffic
E Brighton Ave & Intrepid La	5.32	0.09	NB traffic
<b>Other stops in the study area</b>			
E Seneca Tpke & Lafayette Rd	0.34	5.40	SB traffic
E Brighton Ave & Intrepid La	0.12	4.11	SB traffic, no sidewalk

*Source: 2019 Centro APC Data*

According to 2019 ridership data provided by Centro, seven bus stops within, or just outside of, the study area rank in the top 25 percent of overall ridership within the Syracuse/Onondaga County service area, based on boardings per day. These stops are noted in Table 3 along with the factored estimated daily boardings and alightings per stop. It is important to note that these numbers are prior to the Covid-19 pandemic which saw shifts in both travel patterns and bus ridership, which are still in flux.

### **Crash Analysis**

#### *Section 1 – Number of Crashes and Crash Rates*

The NYSDOT maintains a database known as the Accident Location Information System (ALIS) which catalogues information about crashes that occur throughout the state. The SMTC used this database to examine the crash history in the study area for a five-year period from January 1, 2017 to December 31, 2021. There were 130 crashes examined in this area and timeframe.

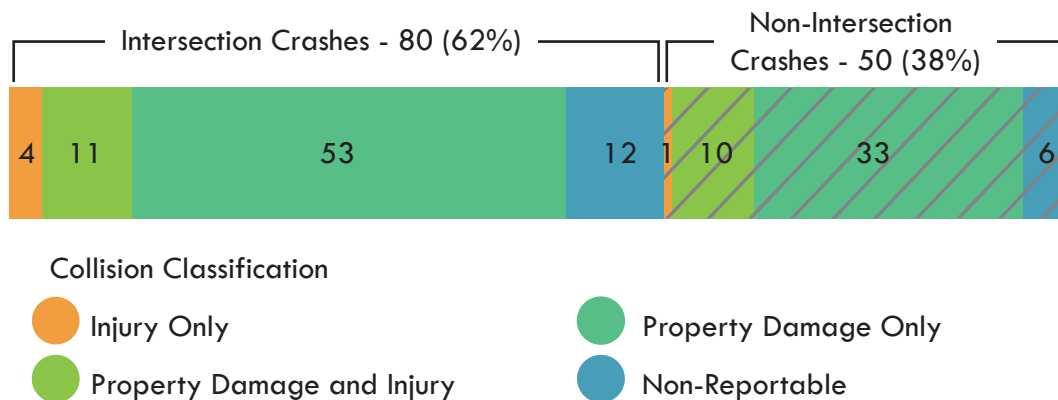
Crashes are categorized as “intersection” or “non-intersection” (i.e. segment – which were measured from signalized intersection to signalized intersection) crashes, as shown in Figure 4. In this area, there were more intersection crashes (80) than non-intersection crashes (50). Most of the intersection crashes occurred at the Brighton/Seneca intersection (55 crashes). Along segments, most crashes occurred north of the Brighton/Seneca intersection before Intrepid Lane.

#### *Section 2 – Crash Classification*

Crashes are classified as either “reportable” or “non-reportable” by the Department of Motor Vehicles. A crash is classified as reportable if it results in death, personal injury, or property damage to any single motor vehicle that meets a threshold of at least \$1,000. All other crashes that do not meet these criteria are considered non-reportable. Reportable events are classified into four categories by severity: fatal, injury, property damage and injury, and property damage only. There were no fatal crashes in the area, and only one serious injury crash.

**Table 4: Crash Classification**

Type	Reportable				Non-Reportable	Total
	Fatal	Injury Only	Property Damage and Injury	Property Damage Only		
Motor Vehicle	0	2	20	81	13	<b>116</b>
Pedestrian	0	1	0	0	0	<b>1</b>
Bicyclist	0	1	0	0	0	<b>1</b>
Other	0	1	1	5	5	<b>12</b>
<b>Total</b>	<b>0</b>	<b>5</b>	<b>21</b>	<b>86</b>	<b>18</b>	<b>130</b>

**Figure 4: Collision Classification**

Twenty-six crashes resulted in an injury.

### Section 3 – Collision Type and Contributing Factors

For all recorded crashes in the ALIS database, the type of collision (i.e. rear end, right angle, etc.) is noted, and all recorded crashes must also have at least one apparent contributing factor indicated (i.e. human, vehicular, and/or environmental). Common collision types within the study were Rear End, Right Angle, and Overtaking. The most common contributing factors were “Following Too Closely,” “Driver Inattention,” and “Failure to Yield Right of Way.” Of the crashes examined, there was one collision with a bicyclist and one collision with a pedestrian.

The SMTC also reviewed the common collision types and contributing factors for the intersection and segment with the highest crash rates and found they were generally consistent with the results for the study area overall. Most of the intersection crashes occurred at the Brighton-Seneca intersection, with 55 total crashes including 18 rear ends and 12 overtakings. The most common contributing factors were “Following Too Closely” (10) and “Failure to Yield Right of Way” (9).

The road segment with the most crashes is Brighton Avenue between Seneca Turnpike and Intrepid Lane. There are several commercial properties along this corridor, with minimal access management. Some of the curb cuts in the area are greater than 60 feet wide. The SMTC examined crashes in this area through the lens of vehicles turning into and out of businesses along this corridor. Of the 27 crashes that occurred between Seneca Turnpike and Intrepid Lane (54% of all segment crashes in the study area), 11 were collisions that were both right angle and with a factor of “Failure to Yield Right of Way.” This may suggest that some of the crashes in this area are the result of turns.

Using traffic volume data from NYSDOT, the SMTC generated crash rates for segments along the corridor. The

section of Brighton Avenue between Seneca Turnpike and Intrepid Lane had the highest rate at 7.80 crashes per million vehicle miles traveled, higher than the NYSDOT average for similar facilities.

## Issues and Opportunities

The E Brighton Ave / E Seneca Turnpike corridor is an important link in the roadway network within the southeastern corner of the City, and experiences high traffic volumes through most of the day. The corridor, in its current form, emphasizes the mobility of motor vehicles and provides little access to pedestrians and cyclists. As of 2019, seven bus stops between Rock Cut Road and the Nob Hill apartment complex rank within the top 25 percent of stops in Onondaga County in terms of ridership, demonstrating a need for pedestrian infrastructure connecting these facilities.

### ***East Brighton Ave / Intrepid Lane intersection***

Intrepid Lane, a private road that functions primarily as an extended driveway entrance to a variety of medical offices, meets E Brighton Ave to form a three-legged intersection. Westbound traffic on Intrepid Lane is controlled by a stop sign while traffic on E Brighton Ave does not stop. The mobility issues at this intersection include:

- No crosswalks on any approach.
- Curb ramps do not include detectable warnings and only direct pedestrians across Intrepid Lane.
- Southbound bus stop does not have sidewalk access and leaves passengers in overgrown vegetation.

These issues present opportunities for improved pedestrian accessibility through:

- Adding detectable warnings to the existing curb ramps.
- Painting a ladder style crosswalk across Intrepid Lane.
- Pouring a concrete landing pad for pedestrians at the southbound bus stop, potentially connecting it to nearby development or other pedestrian infrastructure nearby.

### ***East Brighton Ave / East Seneca Turnpike intersection***

E Brighton Ave terminates at its three-legged intersection with E Seneca Turnpike. Eastbound E Seneca Turnpike travels up a hill from S Salina Street before turning right at the E Brighton Ave intersection and continuing south past the city line. The intersection is controlled by a three-color traffic signal with protected/permitted left turns for the northbound approach and protected (only) left turns on the eastbound approach. The intersection experiences the highest volume of traffic in the study area. Pedestrian crossings are controlled through a push-activated exclusive pedestrian phase. The mobility issues at this intersection include:

- Only one crosswalk (across northbound E Seneca Turnpike), leaving pedestrians no options when trying to reach the western side of E Brighton Ave.
- Only one of the existing curb ramps has a detectable warning.
- A lack of sidewalks on the western side of E Brighton Ave.
- Near continuous right-turn vehicle traffic from southbound E Brighton Ave (right-turn slip ramp is controlled by a yield sign but is not controlled by the traffic signal).
- Large trucks are often seen turning between southbound E Brighton Ave and westbound E Seneca Turnpike, taking wide turns.
- Numerous and overly wide curb cuts at local businesses in the area add additional conflict points within the functional area of the intersection.
- Vehicles travel at speeds significantly higher than the posted limits.

While this intersection is vital to traffic flow in the southeastern corner of the City, there are opportunities to improve the safety and accessibility of the intersection for people outside of personal vehicles as well, including:

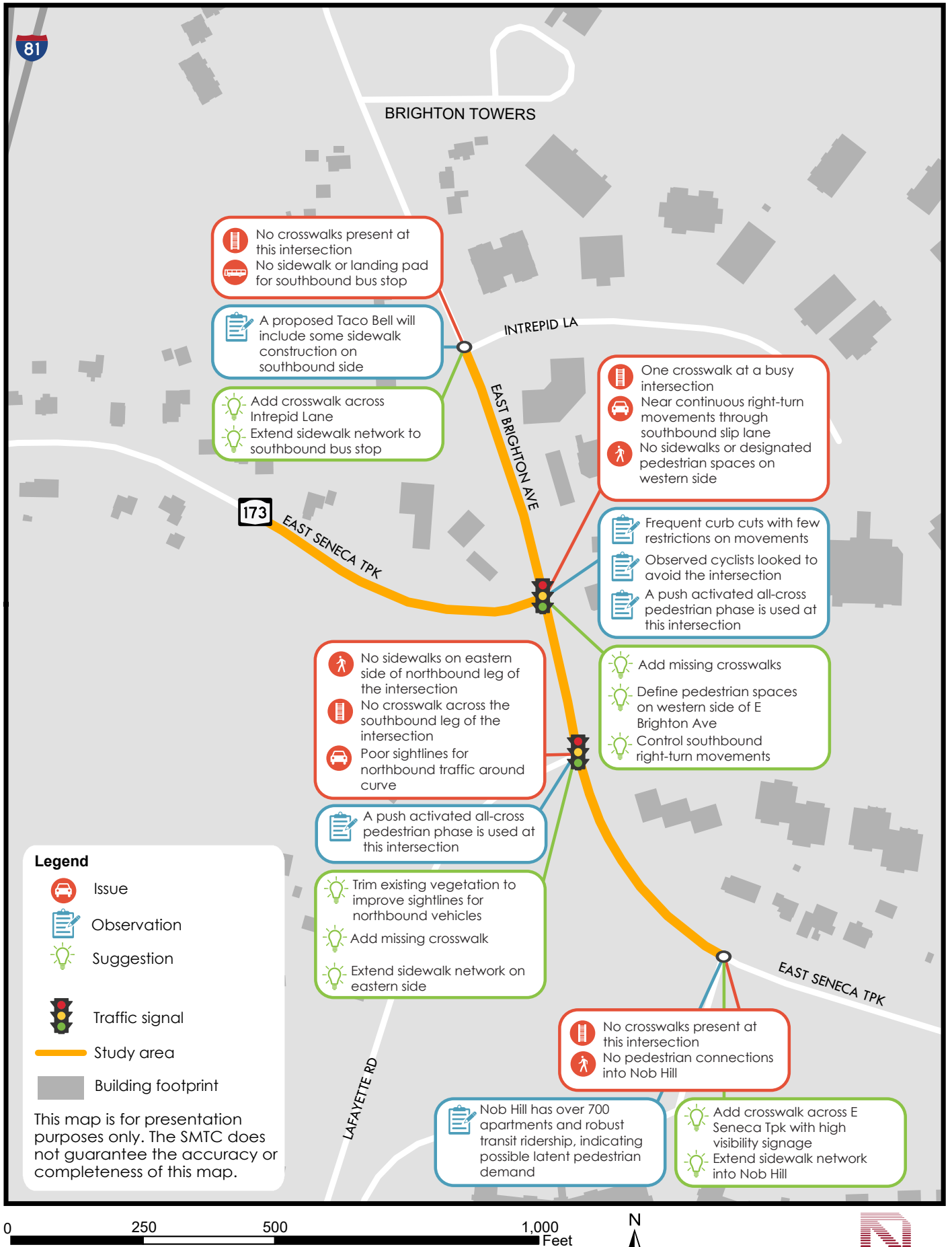


Figure 5: Issues and Opportunities

- Painting ladder style crosswalks on the two legs of the intersection not currently crossable.
- Maintaining the exclusive pedestrian phase but restrict vehicle movements on red lights with “No Turn on Red” signage.
- Modifying the southbound right-turn movement so that it is controlled by the traffic signal.
- Extending the sidewalk network to all sides of the corridor to improve pedestrian access.
- Moving / improving the waiting area for bus riders, potentially as part of a future development along the eastern side of E Seneca Turnpike.

#### ***East Seneca Turnpike / Lafayette Road intersection***

The only four-legged intersection within the study area includes a westbound entrance to an apartment complex off Lafayette Rd that sees minimal traffic. The intersection is controlled by a three-color traffic signal. The southbound approach includes a right turn-only lane. Pedestrian crossings are controlled through a push-activated exclusive pedestrian phase. The mobility issues at this intersection include:

- A lack of sidewalks on the eastern side of northbound E Seneca Turnpike and the entirety of westbound Lafayette Rd.
- A missing crosswalk and curb ramps across southbound E Seneca Turnpike.
- Poor sightlines for northbound traffic as vehicles travel around the curve in the road approaching the intersection.

Although the intersection offers better pedestrian access than the other intersections within the study area, there are opportunities to increase its accessibility, including:

- Painting a crosswalk across southbound E Seneca Turnpike.
- Extending sidewalks where none currently exist.
- Trimming existing vegetation south of the intersection to improve sightlines for northbound vehicles.

#### ***East Seneca Turnpike / Nob Hill driveway***

With over 700 units, the Nob Hill apartment complex is a major generator of trips within the study area.<sup>12</sup> The driveway approach to the intersection with E Seneca Turnpike is controlled by a stop sign. Traffic along E Seneca Turnpike does not stop. The mobility issues at this intersection include:

- An absence of crosswalks across all approaches.
- The sidewalk along the western edge of E Seneca Turnpike terminating at the Nob Hill driveway, with no sidewalk along the eastern edge.
- No pedestrian connections into the Nob Hill apartment complex.

With a large population and high transit ridership numbers, the Nob Hill apartment complex could and should be tied into the rest of the study area as further developments take place. Some opportunities include:

- The extension of sidewalks into the apartment complex allowing for increased pedestrian access.
- The extension of sidewalks down the eastern side of E Seneca Turnpike.
- Adding a crosswalk across E Seneca Turnpike accompanied by high visibility signage to improve pedestrian mobility on both sides of the corridor.

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<sup>12</sup> Rick Moriarty, “What Syracuse apartment complex just sold for almost \$60 million?” The Post Standard, August 7, 2018. [https://www.syracuse.com/business-news/2018/08/what\\_syracuse\\_apartment\\_complex\\_just\\_sold\\_for\\_almost\\_60\\_million.html](https://www.syracuse.com/business-news/2018/08/what_syracuse_apartment_complex_just_sold_for_almost_60_million.html)

## Intersection Capacity Analysis

In order to evaluate the impacts of the opportunities identified for each intersection, an intersection capacity analysis was performed. Prior to running the analysis, SMTC staff reviewed turning movement counts conducted for the Brighton Mews proposal, mentioned earlier in this memo. The counts, conducted in 2016, occurred prior to the reopening of the Mobil gas station, Dunkin taking over the former Tim Horton's location, and the announcement of a future Taco Bell just west of the intersection on E Seneca Turnpike.

To address these omissions, SMTC staff reviewed the standard trip generation data from ITE for the respective land uses of Dunkin and Mobil to include in an existing conditions model. Trip assignments were based on the analysis conducted by GTS Consulting for the Brighton Mews proposal and added to their 2018 no-build projections. The trip generations for the Taco Bell were included, along with the trips generated by the Brighton Mews proposal, within the future build scenarios.

While the analyses looked at both the E Brighton Ave / E Seneca Turnpike and the E Seneca Turnpike / Lafayette Rd intersection for impacts, only the E Brighton Ave / E Seneca Turnpike intersection saw changes to lane management and signal timing. Four scenarios were analyzed: Existing, Existing + RT, Future + RT, Future + Road Diet.

**Existing:** Staff evaluated the level of service and delay times for traffic in its current configuration and existing traffic levels (2018 projections by GTS Consulting plus Dunkin and Mobil trip generation).

**Existing + RT:** Maintaining the existing traffic levels, the southbound right-turn slip lane is changed to a standard right-turn only lane controlled by the traffic signal. A green signal for the southbound right-turn lane overlaps with the eastbound phasing, but turns are restricted during the northbound phase. No changes were made to the E Seneca Turnpike / Lafayette Rd intersection.

**Build + RT:** The right-turn functionality from Existing + RT is maintained, but a fourth leg is added to accommodate the future development, which is controlled by an actuated signal phase. The right-most northbound lane allows for through-right movements. The right-most eastbound lane allows for left-through-right movements. Additional traffic volumes associated with the Brighton Mews proposal and the future Taco Bell are included. No changes were made to the E Seneca Turnpike / Lafayette Rd intersection.

**Build + Road Diet:** The traffic volumes and the additional leg is maintained from Future + RT, with significant changes to the southbound approach. Southbound traffic breaks into three lanes at the intersection with a lane each dedicated to left, through, and right turn movements. The receiving lanes are reduced from two to one to accommodate this change. The left-most lane for eastbound traffic becomes the only left-turn movement, while the right-most lane becomes a through-right movement. The left-most northbound lane becomes a left-only lane, as the right-most lane becomes a through-right movement. No changes were made to the E Seneca Turnpike / Lafayette Rd intersection.

For each of these analyses, a pedestrian phase was not factored in. While we believe the push activated exclusive pedestrian phase that currently exists should be maintained, there do not appear to be enough pedestrians to include the phase as a recurring feature of the signal cycle in this capacity analysis.

As shown in Table 5, removing the slip lane and controlling the southbound right-turn movement results in minor changes to the level of service (LOS) under existing traffic conditions. Should the proposed developments build out fully, LOS will be reduced, but no movement will operate in a "failed" condition. The overall LOS for the intersection would remain similar to the existing conditions at a C.

**Table 5: Level of service and delay in seconds**

Approach	Lane Configuration*	AM Peak Hour								PM Peak Hour							
		Existing		Existing + RT		Build +RT		Build + Road Diet		Existing		Existing + RT		Build + RT		Build + Road Diet	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>Seneca / Brighton</b>																	
EB (Seneca)	L - LR	C	26	C	27	-	-	-	-	D	36	D	40	-	-	-	-
	L	-	-	-	-	D	38	E	66	-	-	-	-	E	58	F	88
	(L)TR	-	-	-	-	D	38	C	22	-	-	-	-	E	61	C	34
WB (Driveway)	LTR	-	-	-	-	D	47	D	53	-	-	-	-	E	59	D	48
NB (Seneca)	LT - T(R)	B	19	B	19	B	18	-	-	A	9	A	9	A	14	-	-
	L	-	-	-	-	-	-	B	19	-	-	-	-	-	-	C	20
	TR	-	-	-	-	-	-	C	32	-	-	-	-	-	-	B	13
SB (Brighton)	L	-	-	-	-	-	-	D	36	-	-	-	-	-	-	B	19
	(L)T	C	34	C	34	D	37	D	36	C	34	C	34	C	33	D	51
	R	A	0	A	6	C	26	D	37	A	1	A	7	A	7	B	11
OVERALL		C	20	C	22	C	26	D	37	C	20	C	23	C	30	D	39
<b>Seneca / Lafayette</b>																	
EB (Lafayette)	LTR	D	50	E	56	D	42	C	34	D	39	D	42	D	42	C	33
WB (Lafayette)	LTR	B	14	C	32	C	31	C	26	B	16	C	33	C	33	C	27
NB (Seneca)	LT	A	6	A	7	A	9	B	15	A	7	A	7	A	7	A	8
	TR																
SB (Seneca)	LT	A	5	A	5	A	6	A	5	A	8	A	8	A	8	A	9
	R	A	1	A	4	A	5	A	4	A	2	A	6	A	6	A	7
OVERALL		B	12	B	14	B	13	B	15	B	10	B	12	B	12	B	12

\*Movements in parentheses are only present in the Build + RT scenario

The road diet scenario, as described above, does experience a point of failure with eastbound left-turns during the PM peak hour. This is a crucial movement through the intersection and could result in extended back-ups down the E Seneca Turnpike hill. Overall, the LOS for the intersection would drop from a C to a D.

The full intersection capacity analysis can be found in Appendix B.

## Recommendations

Based on conversations with the City of Syracuse, we have broken out the recommendations for this technical analysis into four sections: Low-Intensity Public Improvements, Medium-Intensity Public Improvements, High-Intensity Public Improvements and Requests for Private Developers.

### Low-Intensity Public Improvements

Interventions that provide a safer, more accessible environment for pedestrians can be implemented fairly quickly. The Low-Intensity Public Improvements listed below can be acted upon with minimal funding and with tools the City has at hand. These recommendations will move from north to south along the corridor.

#### Install Curb Ramps and Crosswalk at Intrepid Lane

Pedestrians within the study area are provided few options in terms of safe walking paths along sidewalks. North of the E Seneca Turnpike / E Brighton Ave intersection, only the eastern side of the street includes a sidewalk, which ends at the entrance to Brighton Towers. This sidewalk will be extended, through the I-81 project, down to Rock Cut Rd, where it will connect across E Brighton Ave to cross the bridge on the western side. Along this path,



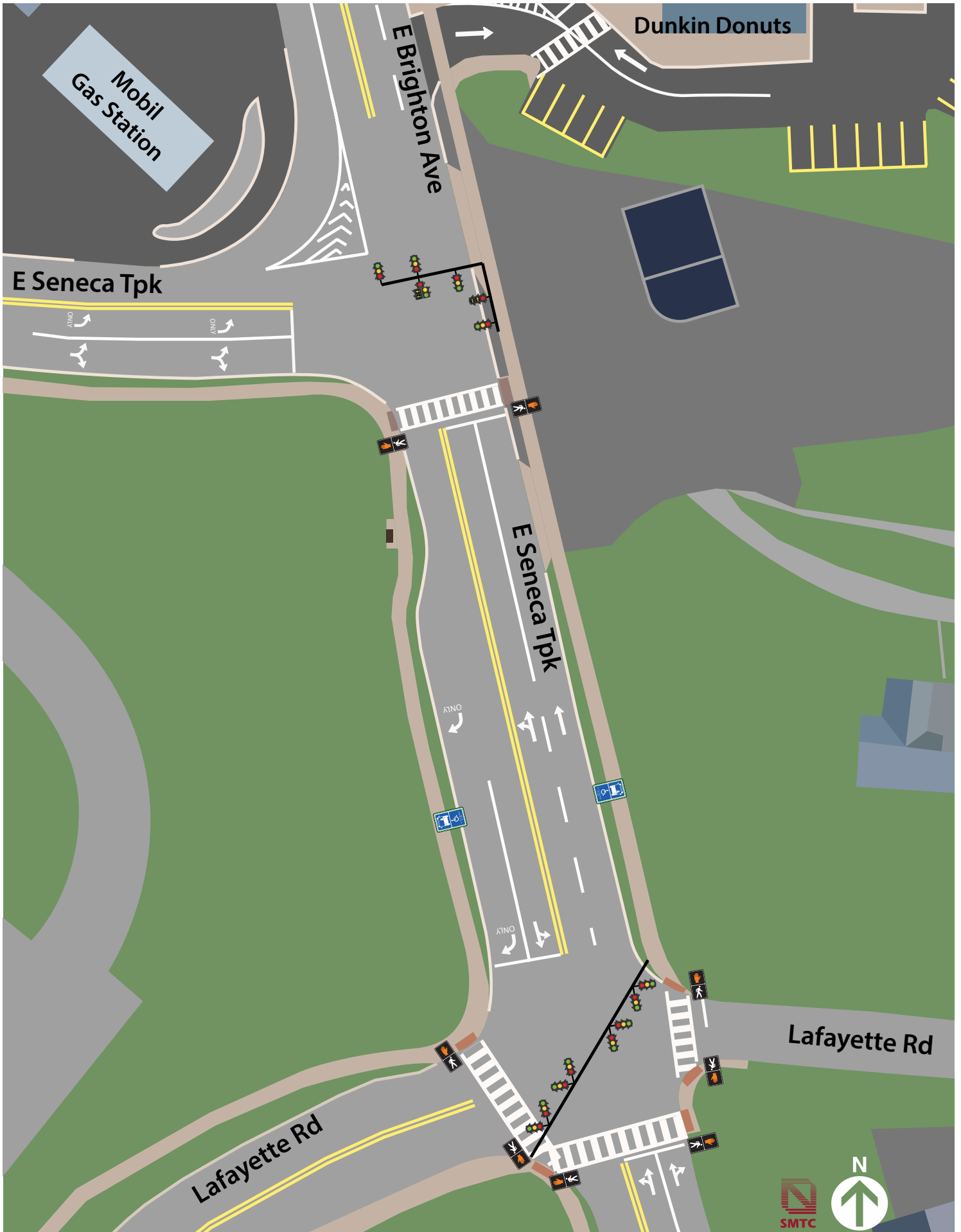


Figure 6: Existing conditions, E Seneca Turnpike from E Brighton Ave to Lafayette Rd

Intrepid Lane remains the only intersection that does not include detectable warning strips on its curb ramps nor a crosswalk. While Intrepid Lane functions primarily as an extended driveway for the many offices along it, it should be treated as a full intersection with the appropriate safety measures (Figure 7).

#### *Install Pedestrian Upgrades at E Brighton Ave / E Seneca Turnpike*

While maintaining the current southbound right slip lane, SMTC staff recommend that the push-activated exclusive pedestrian phase continue to be utilized at the E Brighton Ave / E Seneca Turnpike intersection but be coupled with additional pedestrian improvements (Figure 8).

ADA compliant curb ramps and pedestrian signals should be installed on the approaches where they are missing. This includes two new poles with pedestrian signal heads at the northeast and northwest corners. From the northwest corner, a crosswalk from the curb to the painted island should be installed, along with sawtooth “Yield” markings 25 feet north of it. A “Yield to Pedestrians” sign must be installed in conjunction with the street markings, warning vehicles of pedestrian activity. Pedestrians should wait for their exclusive phase before entering the crosswalk on this approach, forcing vehicles in the slip lane to yield while all other approaches are stopped. The painted island should be visually reinforced through the installation of delineator posts at each corner, and framing the crosswalk connections, as an additional safety measure.

Crosswalks across E Brighton Ave and E Seneca Turnpike should extend out from the painted island, creating one seamless maneuver for pedestrians during their exclusive phase.

One item the City will need to consider further is the timing of the pedestrian signal phase. The current phase lasts 18 seconds, with a 7 second start up time and 11 seconds for pedestrian clearance interval based on the distance across northbound E Seneca Turnpike. Eastbound E Seneca Turnpike, with a measured pedestrian crossing distance of roughly 90’ when using the painted island, will require over 30 seconds to cross, utilizing the minimum 4 second start up time. This additional time, nearly double the current phase, will be difficult to include in a 100/105 second signal cycle. The City may decide to extend the cycle when pedestrian phases are in use, or eliminate this specific proposed crossing as pedestrians still maintain access to the northwest corner of the intersection through the proposed crosswalk across southbound E Brighton Ave. An additional five seconds of crossing time will still be needed to accommodate pedestrians across southbound E Brighton Ave.

#### *Install Curb Ramps and Crosswalk at E Seneca Turnpike / Lafayette Rd*

Currently, the E Seneca Turnpike / Lafayette Rd intersection also operates using an exclusive pedestrian phase upon activation. SMTC staff recommend that this phasing is maintained with the addition of a pedestrian signal across the southbound approach of E Seneca Turnpike, including ADA compliant curb ramps and a crosswalk , potentially paid for by the developer as will be discussed in a later recommendation. Providing this additional crossing will aid pedestrians coming to and from the proposed new development, as well as provide a safer, faster way to either side of the roadway for bus riders at the two nearby stops.

### ***Medium-Intensity Public Improvements***

The Medium-Intensity Public Improvements listed below build on the Low-Intensity Public Improvements and can be incorporated into an upcoming milling and paving project for the corridor with minimal additional funding. Similar to previous section, these recommendations will move from north to south along the corridor.

#### *Extend Sidewalk Along E Brighton Ave*

The E Brighton Ave / Intrepid Lane bus stop lets riders off on the western side of E Brighton Ave. Currently there are no sidewalks along this stretch of the corridor and the bus stop sign is surrounded by overgrown bushes and trees. Passengers are forced to walk in the road or through overgrowth after they depart from the bus.

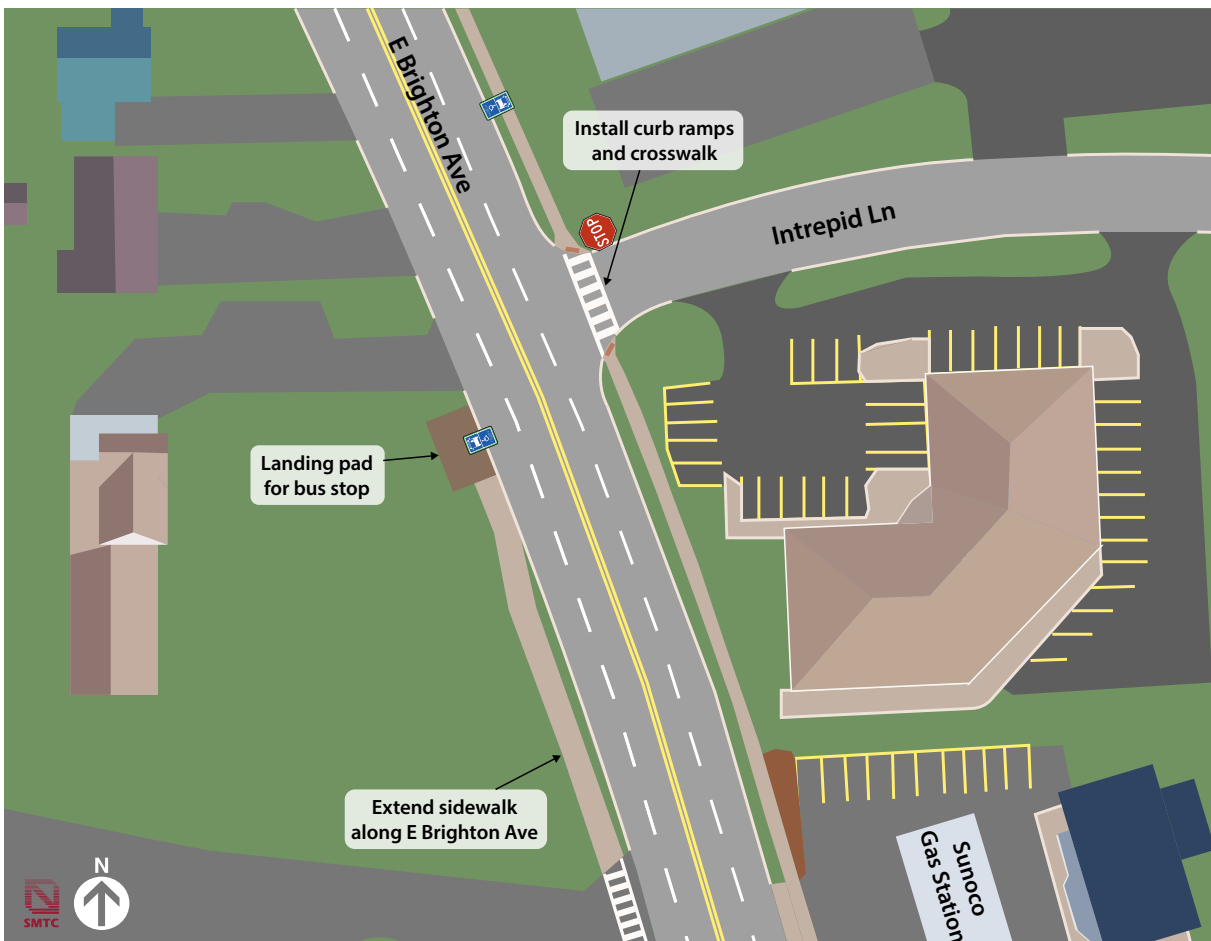
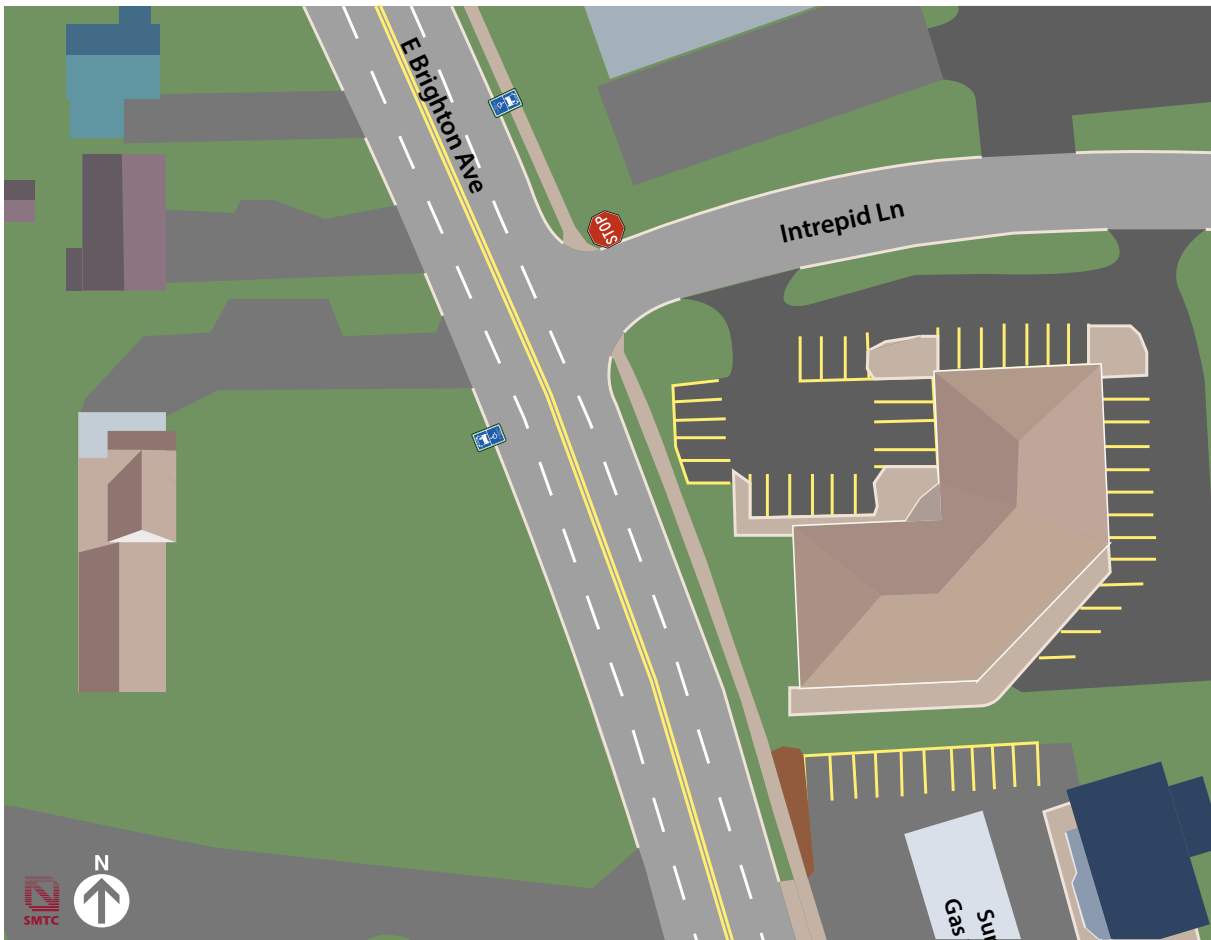


Figure 7: Intrepid Lane existing conditions (Top) and proposed future conditions (Bottom)

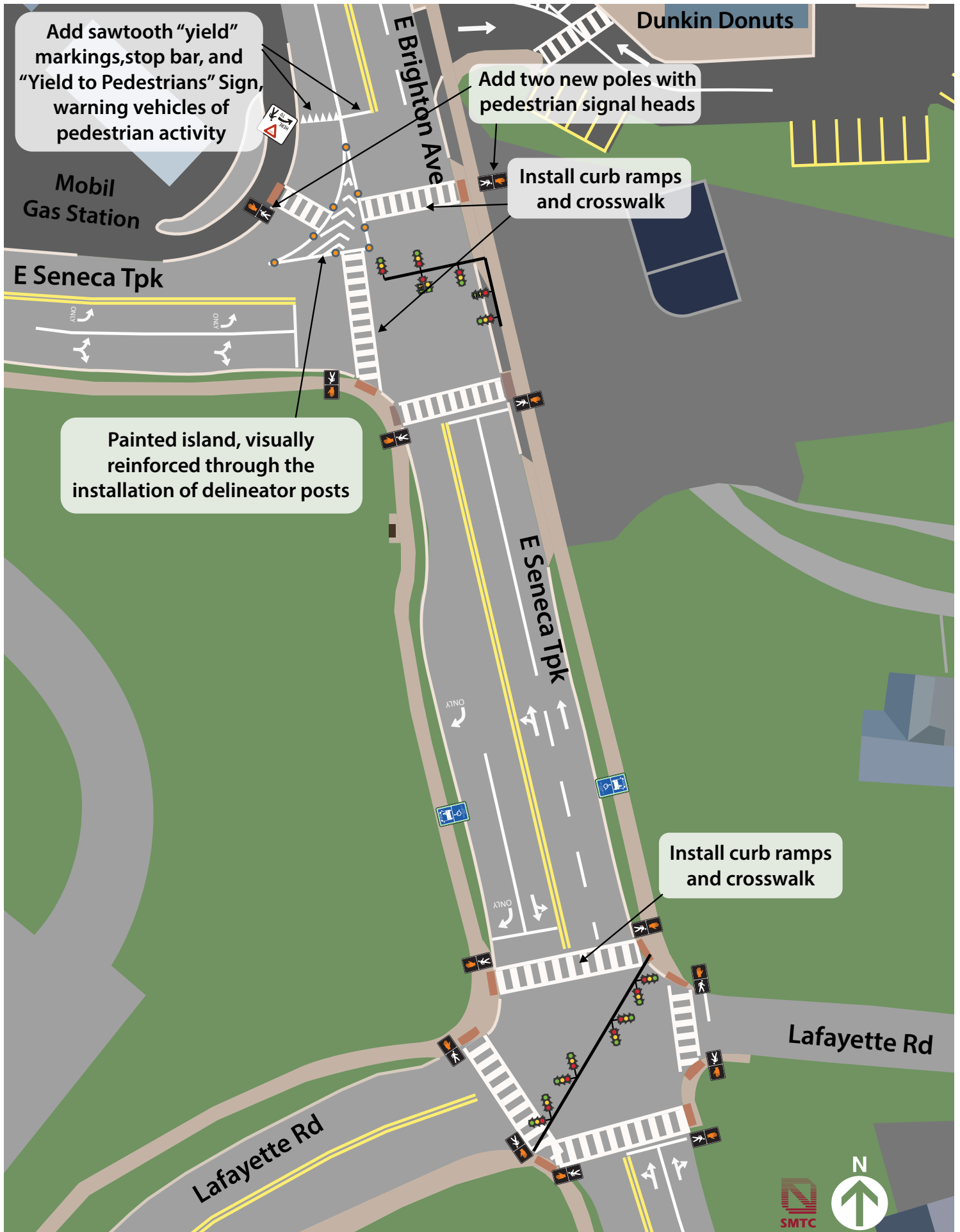
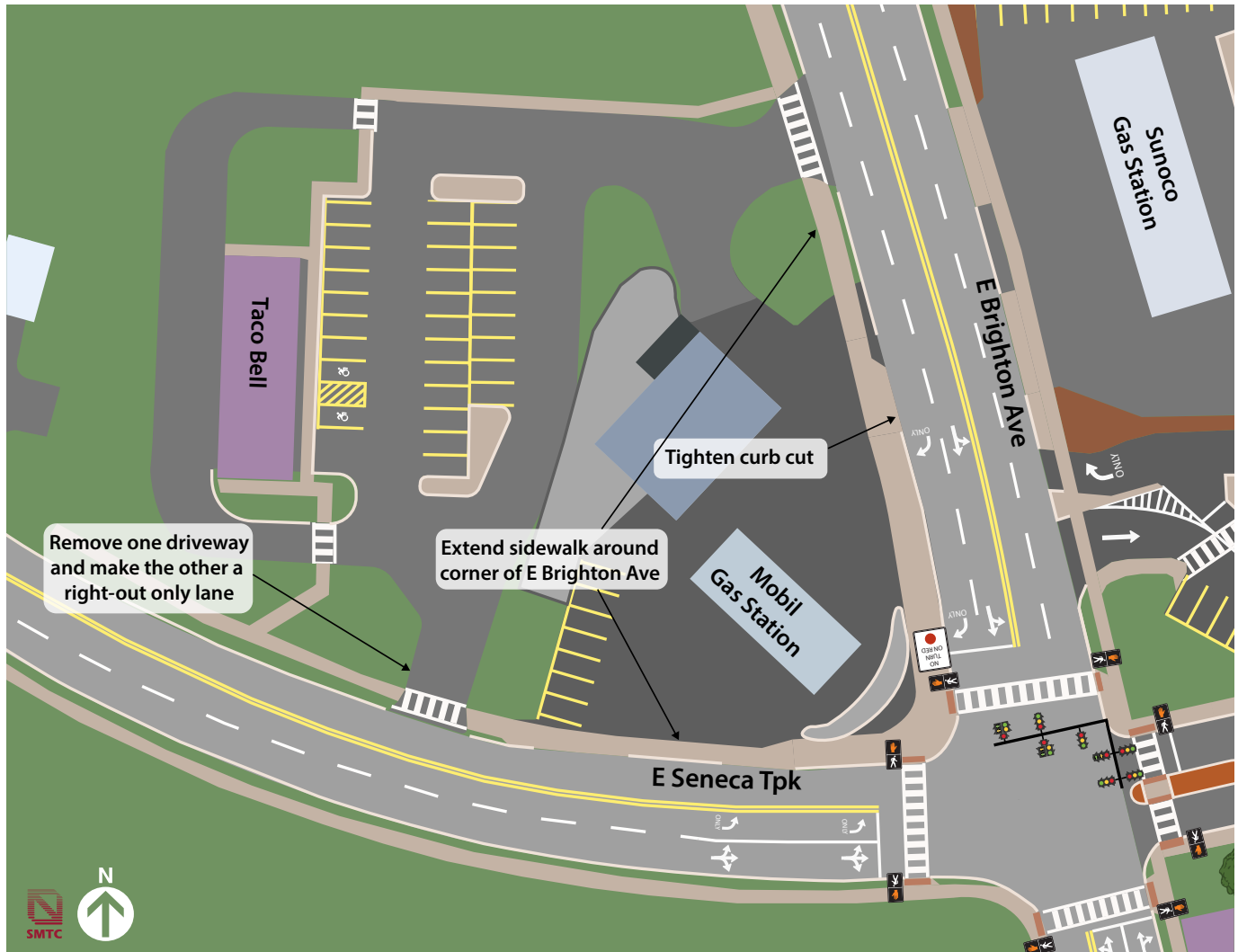


Figure 8: Low-intensity improvements, E Seneca Turnpike from E Brighton Ave to Lafayette Rd



**Figure 9: Sidewalk extensions and curb cut reductions around the Mobil gas station as part of the Medium-Intensity Public Improvements**

Utilizing the City's nascent sidewalk improvement program, the City should construct a new sidewalk from the bus stop south towards E Seneca Turnpike and north towards the bridge at Rock Cut Rd. A proposed Taco Bell includes the construction of several feet of sidewalk on either side of its driveways onto E Brighton Ave, roughly 150 feet south of the bus stop, and E Seneca Turnpike, which will aid in connecting the new sidewalk to the rest of the network. The City should continue this network around the Mobil gas station, providing a full pedestrian connection (Figure 9).

Should the City choose to emphasize connections to NYSDOT's I-81 project, north of the study area, a double-wide sidewalk would provide a better connection to the protected shared-use path that will run along the newly constructed bridge. One example to follow is the double-wide sidewalk along Hiawatha Blvd, which utilizes flex-posts and a guard rail to create a safer space for pedestrians and cyclists to use while traveling along the Onondaga Creekwalk. The City has between 10 and 20 feet of right-of-way beyond the current roadway edge along this stretch of E Brighton Ave, although close discussions with neighboring property owners will be required for any future sidewalk construction.

#### *Reduce Overly Wide Curb Cut on E Brighton Ave*

The Mobil Gas Station at the northwest corner of the E Seneca Turnpike / E Brighton Ave intersection currently has three curb cuts allowing access to the property; two narrower curb cuts on E Seneca Turnpike (roughly 36-38

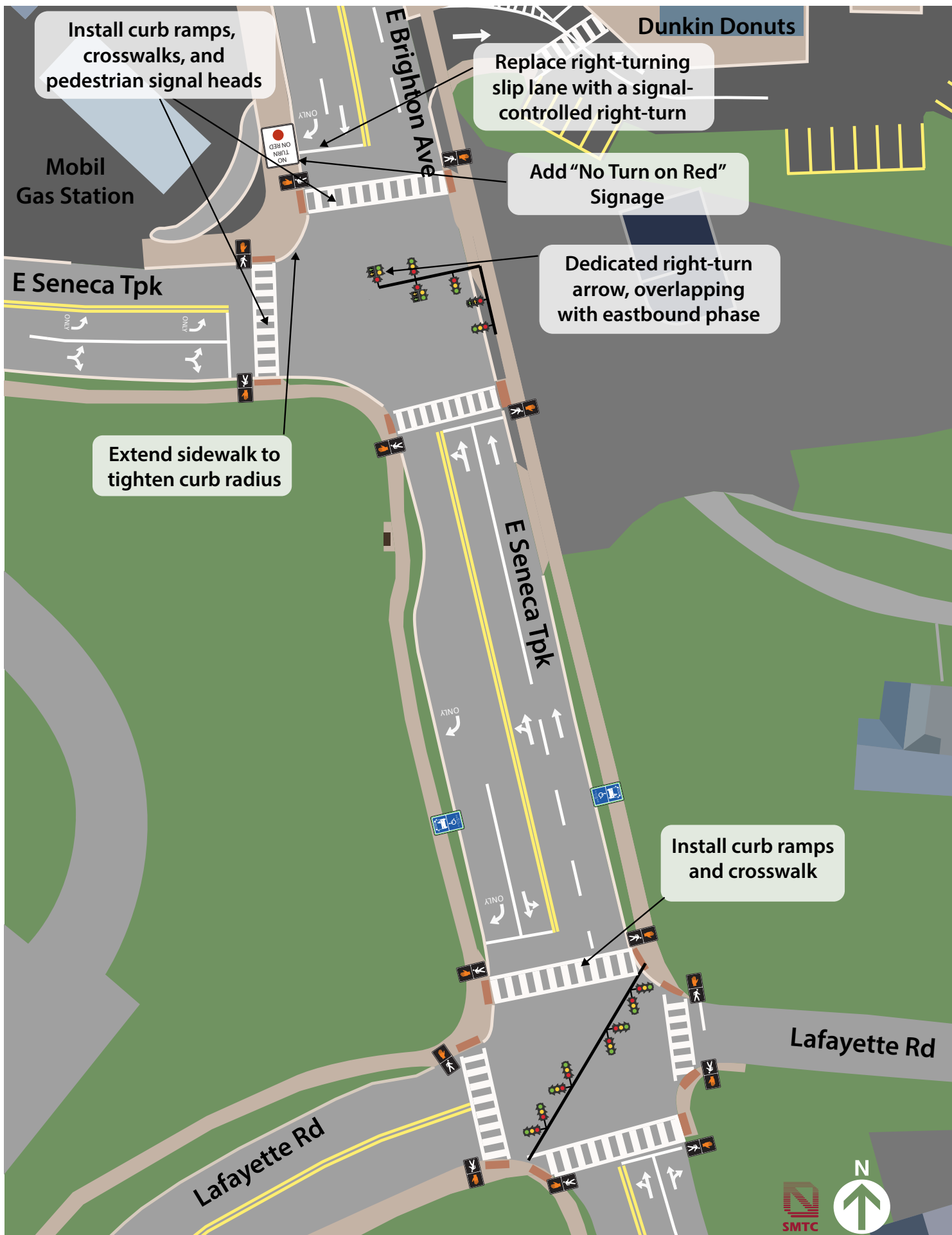


Figure 10: Medium-intensity improvements, E Seneca Turnpike from E Brighton Ave to Lafayette Rd

feet across), and one much wider curb cut along E Brighton Ave (roughly 65 feet across).

The curb cut along E Brighton Ave was likely widened over time, resulting in a confusing space for drivers to operate in that is in very close proximity to the intersection. The City should reduce the curb cut to a width closer to 35 feet, pushing drivers to enter and exit further north of the intersection. By pushing drivers to this location away from the intersection, they become more visible to approaching vehicles, less likely to interfere with left turning vehicles coming off E Seneca Turnpike and will be able to merge with traffic easier.

#### *Remove Slip Lane from Southbound E Brighton Ave*

The southbound slip lane currently poses one of the largest obstacles to pedestrians looking to safely cross the E Brighton Ave / E Seneca Turnpike intersection. The near constant flow of traffic provides few gaps for pedestrians to cross, even if the southbound approach has a red light.

To remove the slip lane, the curb should be extended out, tightening the turn radius for vehicles and creating a shorter crossing distance for pedestrians (Figure 10). Right-turn movements will be controlled by the signal with a dedicated right-turn arrow which will also overlap with the eastbound phase, assuming the existing mast arm is able to accommodate a five-light assembly. Additional cost may be incurred if a new signal pole must be installed, at which time the addition of a second signal pole at the southwest corner should be considered.

As stated in the Low-Intensity improvements, we recommend that the push-activated exclusive pedestrian phase be maintained at the E Brighton Ave / E Seneca Turnpike intersection in order to provide a safer crossing environment for pedestrians. To reinforce this phasing, “No Turn On Red” signage should be utilized on all approaches, including the southbound right turn. This helps to ensure pedestrians have a completely protected phase to cross, which the current slip lane design does not allow for.

Through our intersection capacity analysis, these changes had minimal impact on traffic flow, with all approaches maintaining their level of service under existing traffic conditions. Should the proposed future developments occur, the level of service will diminish slightly, but no movements are expected to operate under “failing” conditions.

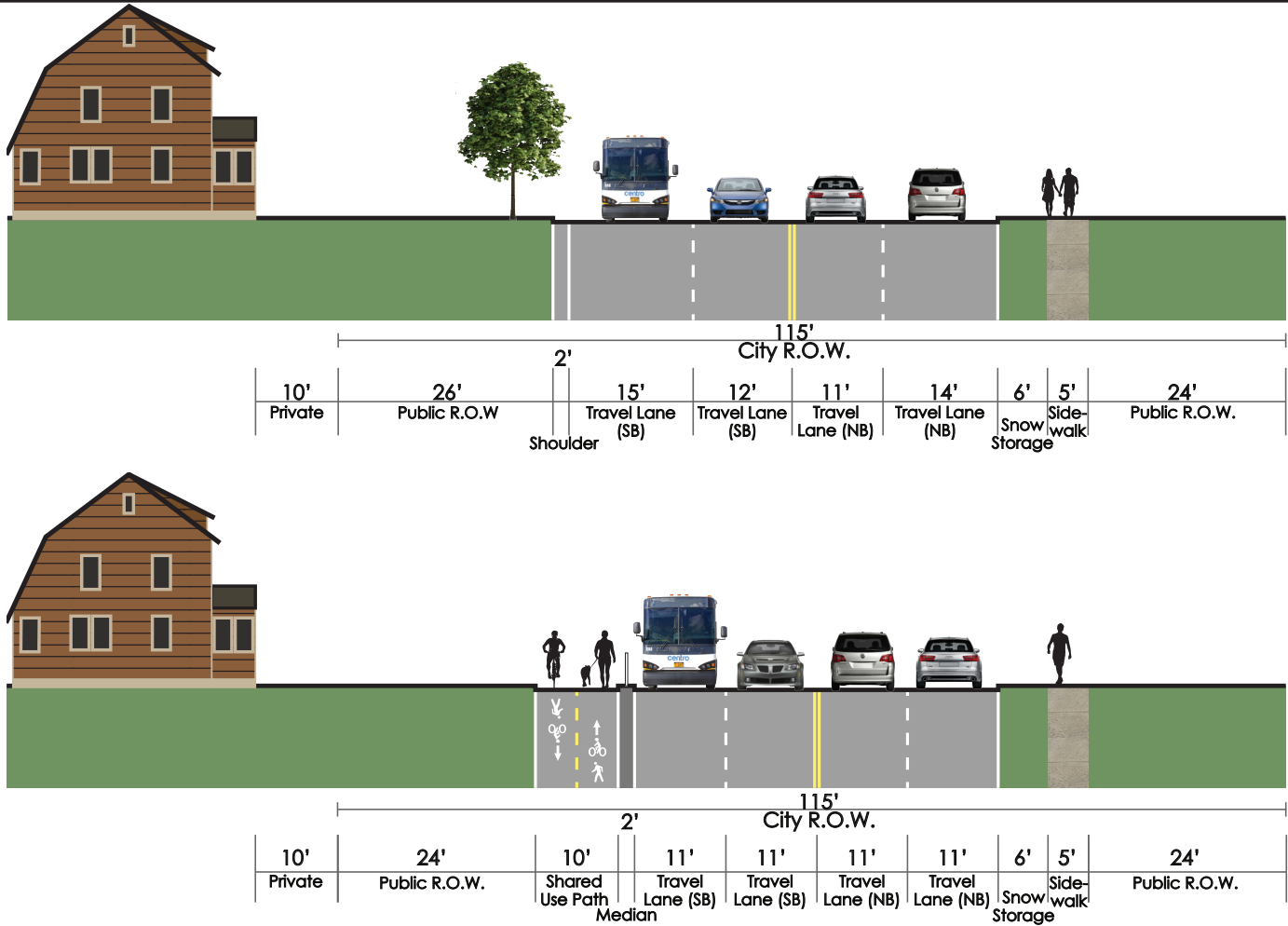
#### *Install Curb Ramps and Crosswalks at E Brighton Ave / E Seneca Turnpike*

As noted above, the slip lane removal allows the curb to be extended, creating a tighter curb radius that will slow down turning traffic. This also creates a shorter crossing distance for pedestrians and removes the painted island that currently exists. As a result, new crosswalks and ADA compliant curb ramps should be added to all approaches from this new curb placement.

The intersection’s current layout, with the southbound right-turn slip lane, has made it difficult for pedestrians to utilize their exclusive phase. If the southbound right-turn is controlled by the signal, the additional curb ramps and crosswalks will allow full use of the exclusive phasing across all approaches, creating easier connections to and from the proposed new development as well as the nearby bus stops.

#### ***High-Intensity Public Improvements***

As discussed previously, improvements to the bridge just north of the study area associated with the I-81 viaduct project will include a protected shared use path along the western side. The City has indicated an interest in continuing a protected path to the E Brighton Ave / E Seneca Turnpike intersection. In order to accomplish this goal as part of the upcoming milling and paving project, additional funding will be needed to move curbing and expand the roadway to accommodate all users.



**Figure 11: Cross section of E Brighton Ave, existing conditions (Top) and proposed high-intensity improvements (Bottom)**

*Construct a Protected Bikeway*

The proposed protected shared-use path is currently designed to end roughly 1,000 feet north of the E Brighton Ave / E Seneca Turnpike intersection, where the existing shoulder begins to narrow, leaving cyclists to merge into travel lanes shared by vehicular traffic. To continue this path, the City would need to adjust the lane widths of each travel lane heading south, from an average of 13 feet today down to 11 feet. Using the slowly narrowing shoulder, each lane will taper down to the new width over the course of 350 feet.

At the same time, the western curb will need to be moved farther west by four feet. Currently, the City’s right-of-way along this portion of the corridor ranges from roughly 60 feet at its narrowest to over 160 feet at its widest. By moving the curb farther west, the roadway will reach a total of 56 feet wide, curb to curb. This includes four 11-foot lanes and a new ten-foot wide shared-use path protected by a two-foot-wide buffer. A representative cross section can be seen in Figure 11. The buffer would ideally be curbed with plastic delineators to emphasize its separation from vehicular traffic, but a painted buffer coupled with delineators can also be used to visually define the separation.

Due to the shift in lanes, the crown of the roadway would need to be shifted approximately three feet to the east to run down the center of the vehicular travel lanes.

The shared use path would end at the E Brighton Ave / E Seneca Turnpike intersection, encouraging users to use the newly installed crosswalks to reach their destinations at the intersection. Further study would be needed to explore connections south of this intersection.



### ***Requests for Private Developers***

While the future of the Brighton Mews development is currently unknown, it is likely something of a similar design and scope will occupy the large parcel that sits along E Seneca Turnpike from E Brighton Ave to Lafayette Rd. Based on the proposals submitted thus far for this site, and an understanding of the issues and opportunities identified within this memorandum, there are a number of improvements and mitigations the City may choose to request from the developer (Figure 12).

#### ***Intersection alignment***

Any development that occurs at the Brighton Mews parcel should be required to align their driveway with the E Seneca Turnpike / E Brighton Ave intersection at a 90-degree angle. The current development proposal has evolved over time, including by changing the angle at which the driveway meets this primary intersection. By squaring off the intersection at 90-degrees, drivers experience better sightlines of oncoming traffic, cyclists and pedestrians. The tighter turning radius will also force drivers to perform safer right-hand turns out of the development, reducing the likelihood of rolling-stops often seen at more skewed intersections and creating a shorter crossing distance for pedestrians.

The developer should also be responsible for the repositioning of the traffic signal pole and additional traffic signal heads associated with this configuration. Currently the traffic signal pole sits directly in the center of the proposed driveway location, requiring the pole to be moved to either side to accommodate the new roadway. Earlier submissions by the developer saw the use of a skewed angle driveway to avoid this relocation work, but that should be discouraged.

#### ***Crosswalk Installation***

Both the near-term and long-term improvements identified above include additional crosswalks at the intersections of E Seneca Turnpike / E Brighton Ave and E Seneca Turnpike / Lafayette Road. The City should require the developer of the site to install the proposed crosswalks and pedestrian signals up to the City's requested standards.

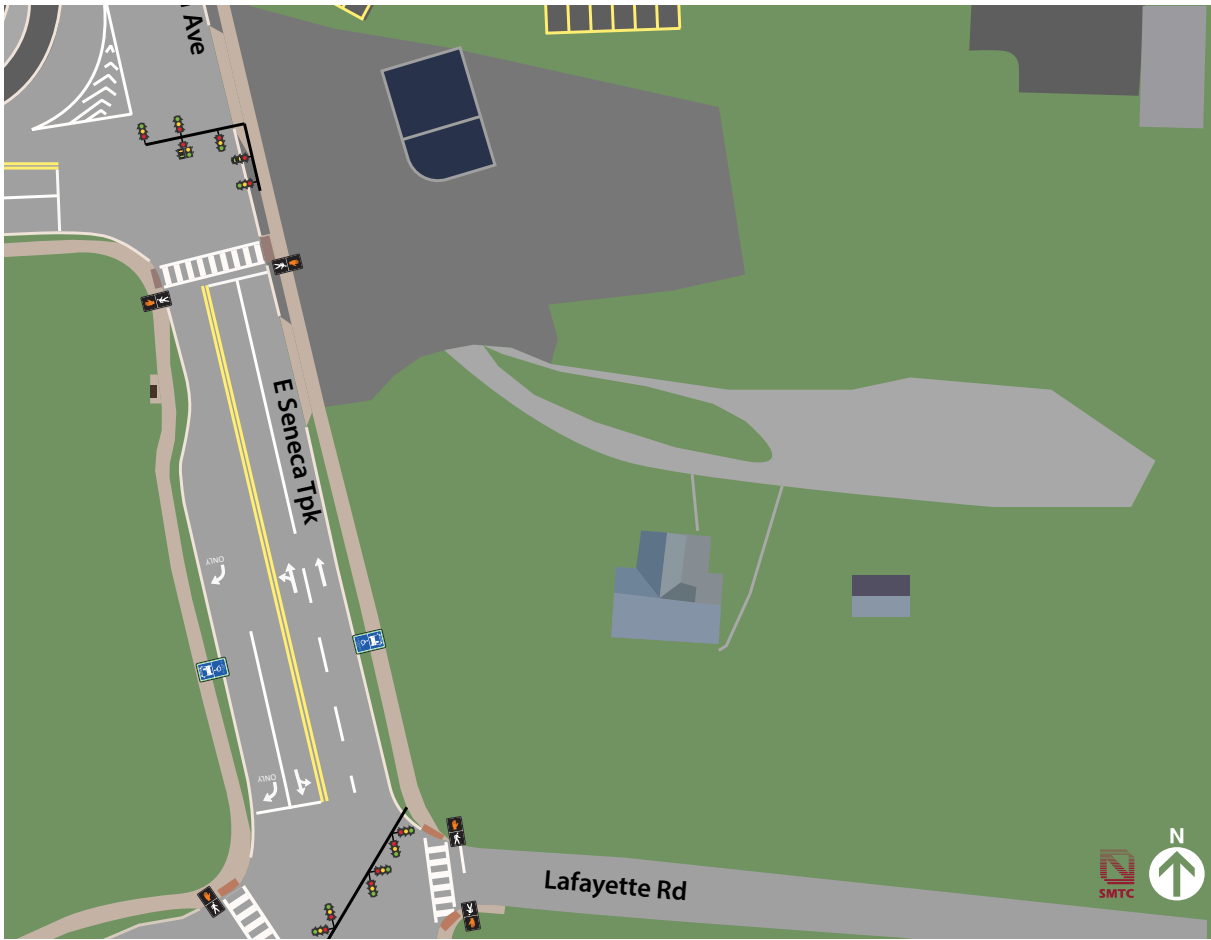
#### ***Limit Off-Street Parking***

The current Brighton Mews proposal, reviewed for this analysis, includes 162 off-street parking spaces while the proposed development is only required to include 85 under current zoning regulations; 65 spaces for the commercial development and 20 for the residential development. Looking ahead, ReZone Syracuse would cap the amount of off-street parking spaces to 125 percent of the minimum for the commercial development, or roughly 82 spaces. While ReZone Syracuse has not been approved at this time, the City should look to reduce the number of spaces proposed by the developer. In Figure 12, the parking is reduced by 30 spaces, still above the proposed maximum, but allowing for greater flexibility in terms of the positioning of buildings.

Parking spaces would need to be removed from the 2017 Brighton Mews site plan to allow the site driveway to meet the E Seneca Turnpike / E Brighton Ave intersection at a 90-degree angle, as proposed above. Reducing the parking may also encourage other modes of transportation to and from the development, reducing pressure on the nearby roadways.

#### ***Bus Shelter***

The E Seneca Turnpike / E Brighton Ave bus stop currently ranks in the top 25 percent of stops within Centro's Syracuse system. While the stop does not currently qualify for a shelter under Centro's guidelines, the increased travel demand brought on by the mixed-use development at Brighton Mews will only increase its usage. The developer should be requested to install a bus shelter at the stop, including a widened sidewalk and bench. Further amenities, such as a next bus displays, should be included within these discussions.



**Figure 12: Development Site existing conditions (Top) and proposed future conditions (Bottom)**

**Table 6: Recommendations summary**

<b>Low-Intensity Public Improvements</b>	<b>Medium-Intensity Public Improvements</b>	<b>High-Intensity Public Improvements</b>	<b>Requests for Private Developers</b>
<ul style="list-style-type: none"> <li>• Install curb ramps and crosswalk at Intrepid Lane*</li> <li>• Add crosswalks, ped signal heads, signage, and delineators at E Brighton Ave/ E Seneca Turnpike</li> <li>• Install curb ramps and crosswalk at E Seneca Turnpike / Lafayette Rd*</li> </ul>	<ul style="list-style-type: none"> <li>• Extend sidewalk along E Brighton Ave</li> <li>• Reduce Mobil curb cut on E Brighton Ave</li> <li>• Remove slip lane from southbound E Brighton Ave and install curb extensions</li> <li>• Install curb ramps and crosswalks at E Brighton Ave / E Seneca Turnpike</li> </ul>	<ul style="list-style-type: none"> <li>• Construct a protected bikeway</li> </ul>	<ul style="list-style-type: none"> <li>• Align new driveway intersection E Brighton Ave / E Seneca Turnpike at right-angle</li> <li>• Install additional crosswalks</li> <li>• Limit off-street parking</li> <li>• Install bus shelter</li> <li>• Plant street trees</li> </ul>
* Recommendations included in all design options presented within the memo			

### *Street Trees*

In response to a note from the City Engineer regarding coordinating with the City arborist on street trees, all street trees from the site plans were eliminated.<sup>13</sup> We encourage the City and the developer to include approved street trees along E Seneca Turnpike and within the development as a whole as a way to lower temperatures, improve air quality, and provide a more pleasant experience to people walking in the area.

Table 6 is provided as a quick reference summary of the recommendations laid out in each category. It should be noted that some public improvements, such as the additional curb ramps and crosswalks at E Seneca Turnpike / Lafayette Rd, should be included in all construction scenarios.

### *Road Diet Consideration*

Land uses directly north of the E Brighton Ave / E Seneca Turnpike intersections utilize an abundance of curb cuts to accommodate various turning movements. As noted earlier, a fairly large number of crashes along this corridor may be attributable to movements in and out of these commercial properties. One potential solution examined by SMTC staff was the implementation of a road diet.

The FHWA considers any roadways with under 20,000 vehicles per day as a good candidate for a road diet.<sup>14</sup> Some cities, including Seattle, WA, will explore road diets on corridors with up to 25,000 vehicles per day.<sup>15</sup> With average vehicle traffic around 22,000 vehicles per day, E Brighton Ave is on the high end of roadways to consider, but the potential benefits warranted an analysis.

The road diet design included reducing E Brighton Ave to one travel lane in each direction with a center turning lane. The lanes would be aligned along the eastern curb, with the far western lane converted to a protected shared-use path. At the intersection, the southbound lane would expand into three lanes, one for each potential movement; left, through, and right.

<sup>13</sup> Brighton Mews, "Letter to Mr. Mirza Malkoc, City Engineering," January 13, 2017

<sup>14</sup> US Department of Transportation, "Road Diet FAQ," accessed August 17, 2022. [https://safety.fhwa.dot.gov/road\\_diets/resources/pdf/fhwasa17021.pdf](https://safety.fhwa.dot.gov/road_diets/resources/pdf/fhwasa17021.pdf)

<sup>15</sup> Seattle Department of Transportation, "Rightsizing Streets: The Seattle Experience," April 30, 2013. [http://events.kittelson.com/system/datas/80/original/Rightsizing\\_Streets\\_-\\_Seattle.pdf](http://events.kittelson.com/system/datas/80/original/Rightsizing_Streets_-_Seattle.pdf)

As noted above, SMTC staff performed an intersection capacity analysis on this lane configuration, which resulted in key movements operating under “failing” conditions, most notably the eastbound left turn movement. Due to the failure of these movements, the SMTC does not recommend a road diet at this time.

### **Conclusion**

While improving pedestrian safety and accessibility at the E Brighton Ave / E Seneca Turnpike intersection can be achieved through the use of low-intensity interventions, SMTC staff recommends using the upcoming milling and paving project as an opportunity to reshape the corridor through curb replacements and thoughtful expansions of the right-of-way. Controlling vehicular traffic, providing additional space and amenities to pedestrians, and the inclusion of bike friendly infrastructure will not only increase safety, but also promote the use of a more diverse transportation network. Working with nearby proposed developments will also provide opportunities to encourage these mode shifts by emphasizing access from the street, reducing off street parking, and improving the quality of amenities offered to those outside of private vehicles.

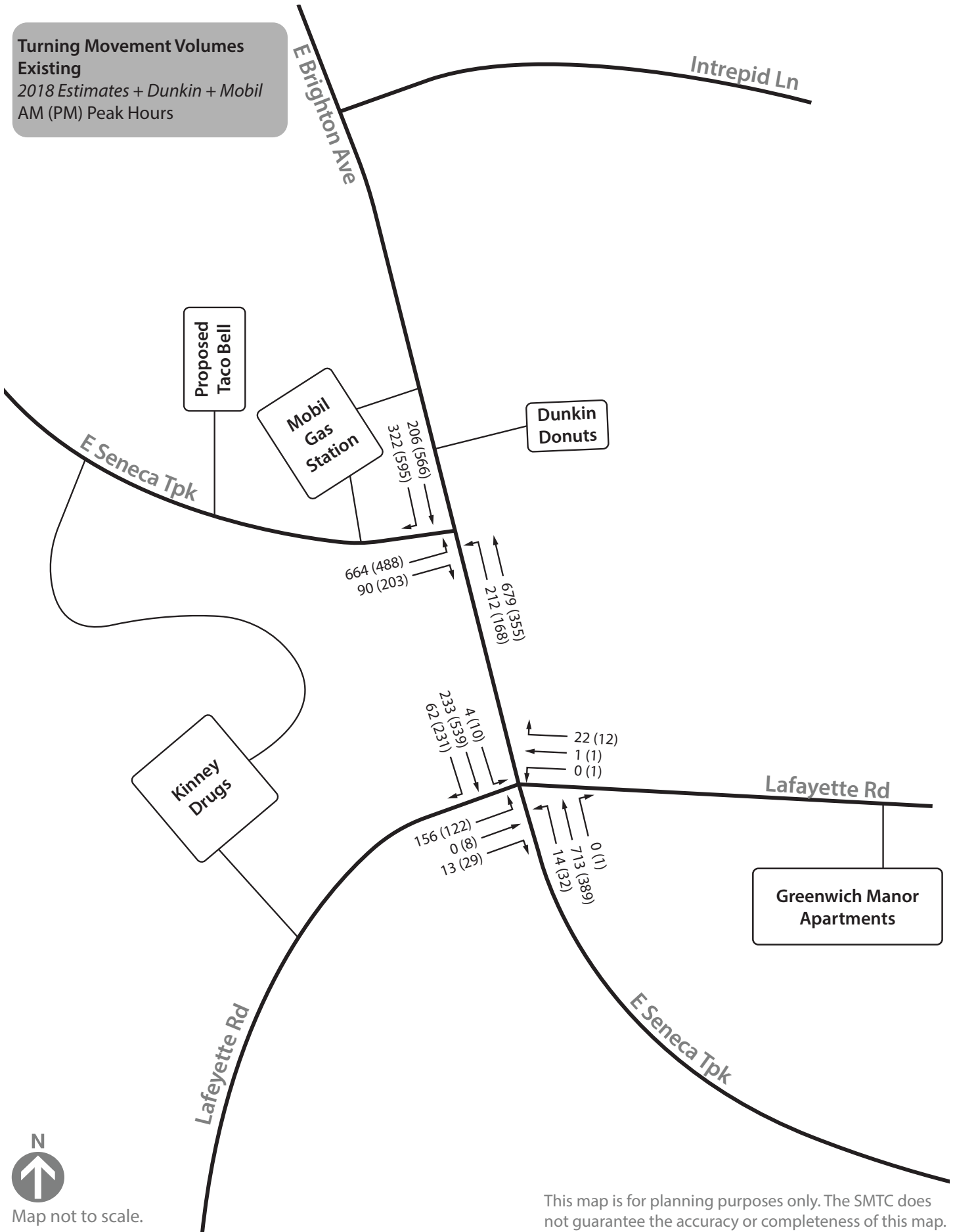
# **APPENDICES**

**APPENDIX A - Turning Movement Diagrams**

**APPENDIX B - Intersection Capacity Analysis**

## APPENDIX A - Turning Movement Diagrams

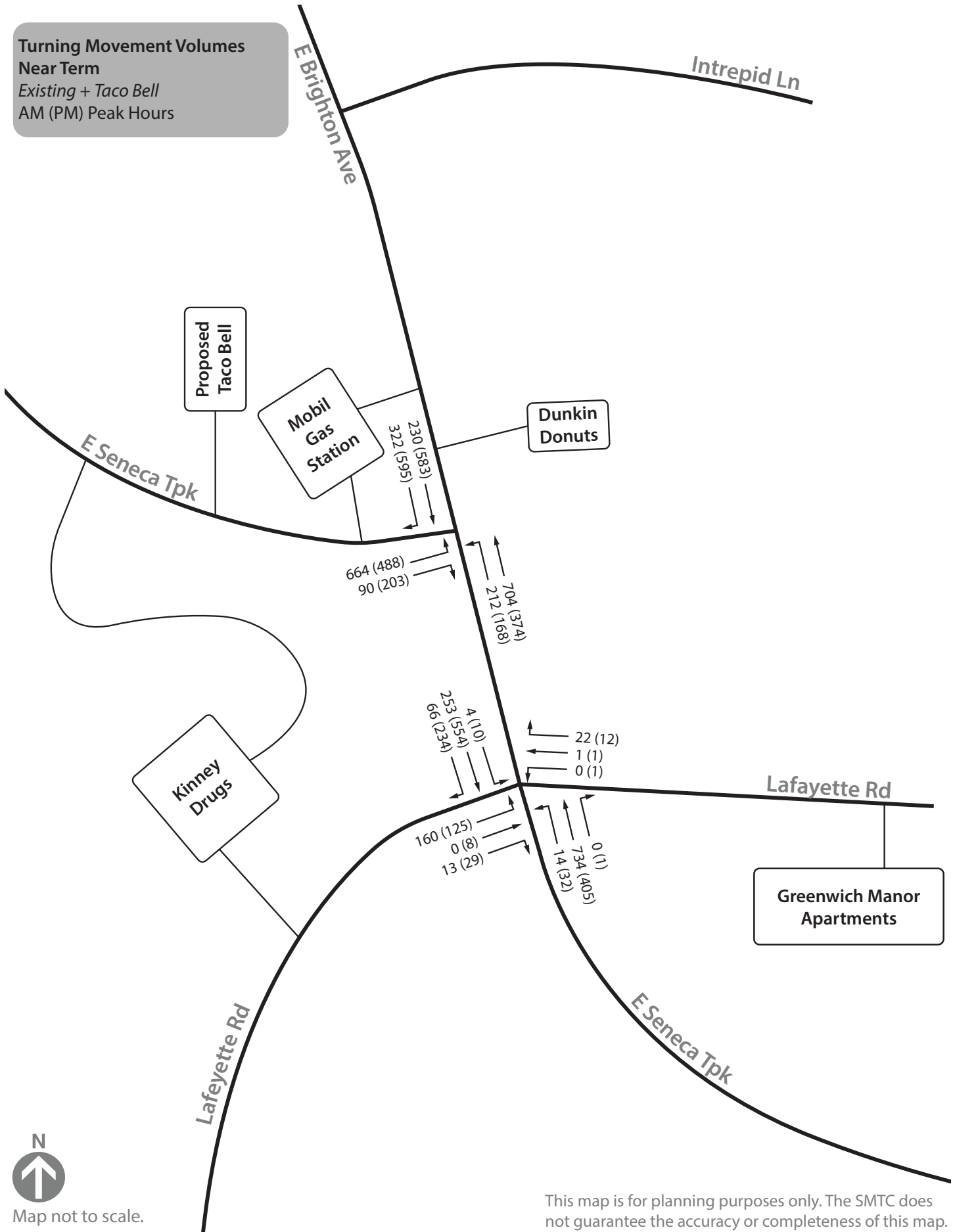
Turning Movement Volumes  
Existing  
2018 Estimates + Dunkin + Mobil  
AM (PM) Peak Hours



Map not to scale.

This map is for planning purposes only. The SMTC does not guarantee the accuracy or completeness of this map.

**Turning Movement Volumes**  
 Near Term  
 Existing + Taco Bell  
 AM (PM) Peak Hours

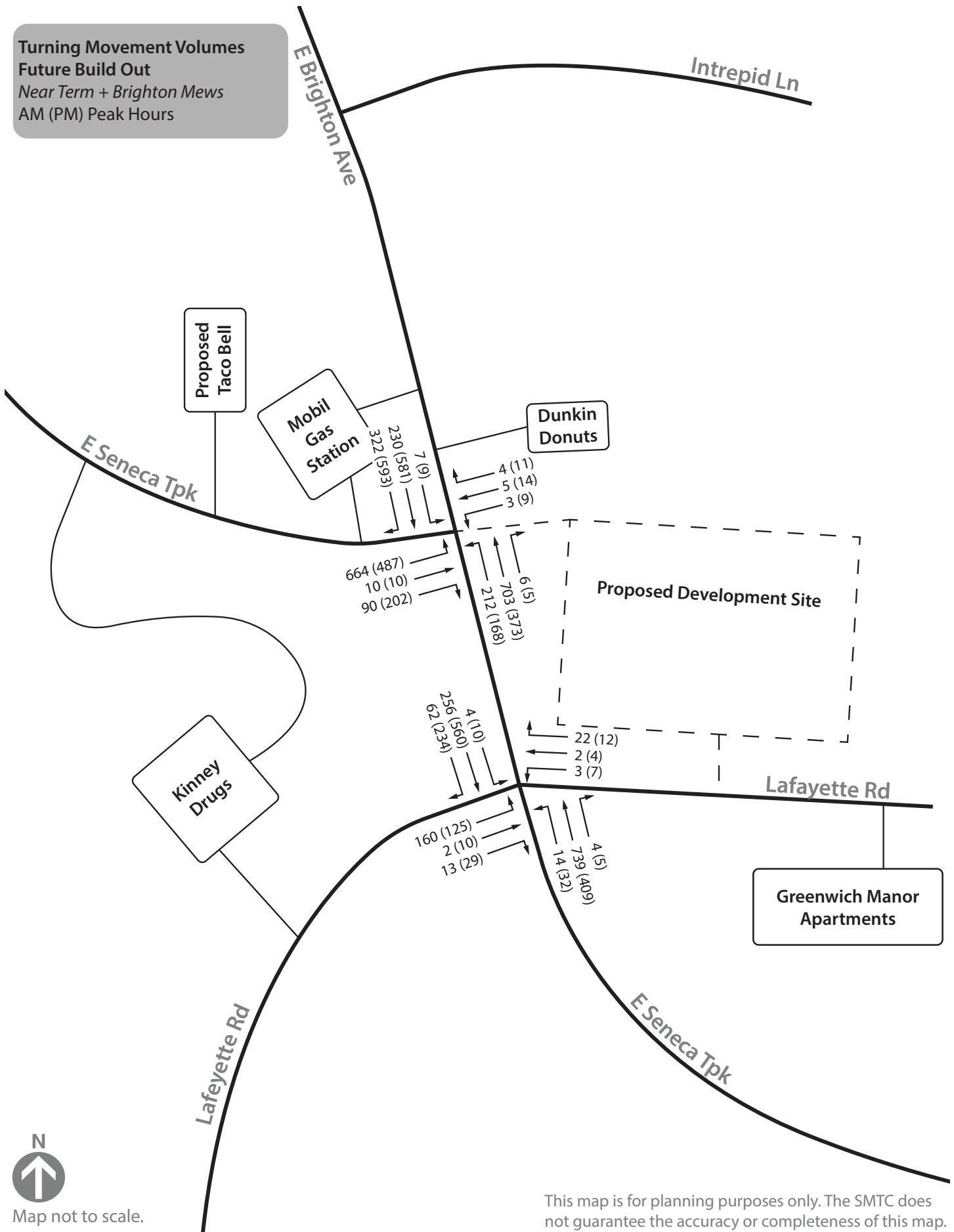


Map not to scale.

This map is for planning purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



Turning Movement Volumes  
 Future Build Out  
 Near Term + Brighton Mews  
 AM (PM) Peak Hours















Map not to scale.

This map is for planning purposes only. The SMTC does not guarantee the accuracy or completeness of this map.

**APPENDIX B - Intersection Capacity Analysis**

Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing  
AM Peak

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 		
Traffic Volume (vph)	664	90	212	679	206	322
Future Volume (vph)	664	90	212	679	206	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	13	12	15
Storage Length (ft)	0	425	0			0
Storage Lanes	2	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt	0.982					0.850
Fit Protected	0.958			0.988		
Satd. Flow (prot)	3400	0	0	3613	1863	1742
Fit Permitted	0.958			0.673		
Satd. Flow (perm)	3400	0	0	2461	1863	1742
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	18					358
Link Speed (mph)	30			30	30	
Link Distance (ft)	1154			296	513	
Travel Time (s)	26.2			6.7	11.7	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	738	100	223	715	229	358
Shared Lane Traffic (%)						
Lane Group Flow (vph)	838	0	0	938	229	358
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.00	0.96	1.00	0.88
Turning Speed (mph)	15	9	15			9
Number of Detectors	0		1	1	0	0
Detector Template			Left			
Leading Detector (ft)	0		20	20	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	20	6	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		pm+pt	NA	NA	Free
Protected Phases	3		1	6	2	
Permitted Phases			6			Free
Detector Phase	3		1	1	2	
Switch Phase						
Minimum Initial (s)	8.0		7.0	10.0	10.0	
Minimum Split (s)	13.5		12.5	15.5	15.5	

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing  
AM Peak

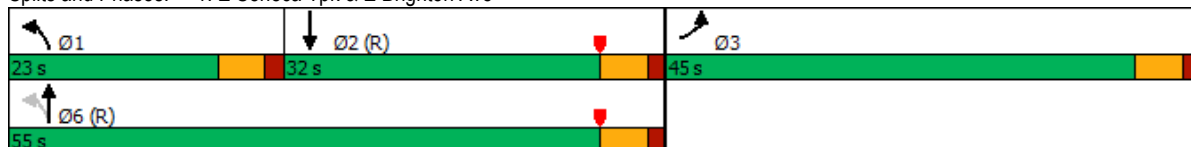


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Split (s)	45.0		23.0	55.0	32.0	
Total Split (%)	45.0%		23.0%	55.0%	32.0%	
Maximum Green (s)	39.5		17.5	49.5	26.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	Max		None	C-Max	C-Max	
Act Effct Green (s)	39.5			49.5	26.5	100.0
Actuated g/C Ratio	0.40			0.50	0.26	1.00
v/c Ratio	0.62			0.66	0.46	0.21
Control Delay	26.1			18.9	34.5	0.3
Queue Delay	0.0			0.3	0.0	0.0
Total Delay	26.1			19.2	34.5	0.3
LOS	C			B	C	A
Approach Delay	26.1			19.2	13.6	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 1 (1%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 20.3      Intersection LOS: C  
 Intersection Capacity Utilization 71.3%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 1: E Seneca Tpk & E Brighton Ave



Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing  
AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	0	13	0	1	22	14	713	0	4	233	62
Future Volume (vph)	156	0	13	0	1	22	14	713	0	4	233	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00									1.00	
Frt		0.989			0.871							0.850
Flt Protected		0.956						0.999			0.999	
Satd. Flow (prot)	0	1993	0	0	1622	0	0	3536	0	0	1923	1636
Flt Permitted		0.726						0.947			0.988	
Satd. Flow (perm)	0	1513	0	0	1622	0	0	3352	0	0	1902	1636
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			22							74
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)			1	1					5	5		
Peak Hour Factor	0.83	0.83	0.83	0.82	0.82	1.00	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	188	0	16	0	1	22	17	849	0	5	277	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	0	0	23	0	0	866	0	0	282	74
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15			9	15		9	15	9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		NA			Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing  
AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		71.0	71.0		71.0	71.0	71.0
Total Split (%)	29.0%	29.0%		29.0%	29.0%		71.0%	71.0%		71.0%	71.0%	71.0%
Maximum Green (s)	23.5	23.5		23.5	23.5		65.5	65.5		65.5	65.5	65.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)		16.6			16.6			72.4			72.4	72.4
Actuated g/C Ratio		0.17			0.17			0.72			0.72	0.72
v/c Ratio		0.75			0.08			0.36			0.20	0.06
Control Delay		50.3			13.7			6.2			4.1	1.0
Queue Delay		0.0			0.0			0.1			0.5	0.0
Total Delay		50.3			13.7			6.3			4.6	1.0
LOS		D			B			A			A	A
Approach Delay		50.3			13.7			6.3			3.8	
Approach LOS		D			B			A			A	

Intersection Summary











Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	12.0
Intersection LOS:	B
Intersection Capacity Utilization	55.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing  
PM Peak

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	488	203	168	355	566	595
Future Volume (vph)	488	203	168	355	566	595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	13	12	15
Storage Length (ft)	0	425	0			0
Storage Lanes	2	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.956					0.850
Flt Protected	0.966			0.984		
Satd. Flow (prot)	3349	0	0	3634	1881	1759
Flt Permitted	0.966			0.511		
Satd. Flow (perm)	3349	0	0	1887	1881	1759
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	63					396
Link Speed (mph)	30			30	30	
Link Distance (ft)	1154			296	513	
Travel Time (s)	26.2			6.7	11.7	
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.98	0.98	0.89	0.89	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	498	207	189	399	596	626
Shared Lane Traffic (%)						
Lane Group Flow (vph)	705	0	0	588	596	626
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.00	0.96	1.00	0.88
Turning Speed (mph)	15	9	15			9
Number of Detectors	0		1	1	0	0
Detector Template			Left			
Leading Detector (ft)	0		20	20	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	20	6	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		pm+pt	NA	NA	Free
Protected Phases	3		1	6	2	
Permitted Phases			6			Free
Detector Phase	3		1	1	2	

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing  
PM Peak

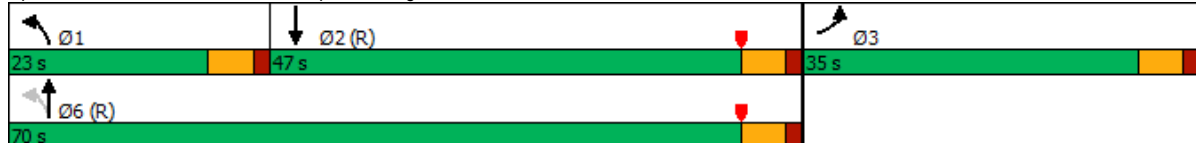


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
<b>Switch Phase</b>						
Minimum Initial (s)	8.0		7.0	10.0	10.0	
Minimum Split (s)	13.5		12.5	15.5	15.5	
Total Split (s)	35.0		23.0	70.0	47.0	
Total Split (%)	33.3%		21.9%	66.7%	44.8%	
Maximum Green (s)	29.5		17.5	64.5	41.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?					Yes	
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	Max		None	C-Max	C-Max	
Act Effct Green (s)	29.5			64.5	44.2	105.0
Actuated g/C Ratio	0.28			0.61	0.42	1.00
v/c Ratio	0.72			0.42	0.75	0.36
Control Delay	35.6			8.7	33.7	0.6
Queue Delay	0.0			0.2	0.0	0.0
Total Delay	35.6			8.9	33.7	0.6
LOS	D			A	C	A
Approach Delay	35.6			8.9	16.7	
Approach LOS	D			A	B	

**Intersection Summary**

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	35 (33%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	20.2
Intersection LOS:	C
Intersection Capacity Utilization	78.6%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 1: E Seneca Tpk & E Brighton Ave





Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	8	29	1	1	12	32	389	1	10	539	231
Future Volume (vph)	122	8	29	1	1	12	32	389	1	10	539	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00				0.97
Frt		0.975			0.879							0.850
Flt Protected		0.963			0.997			0.996			0.999	
Satd. Flow (prot)	0	1994	0	0	1627	0	0	3560	0	0	1942	1652
Flt Permitted		0.764			0.989			0.880			0.990	
Satd. Flow (perm)	0	1578	0	0	1614	0	0	3145	0	0	1924	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			17							246
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)	2		1	1		2	7					7
Peak Hour Factor	0.89	0.89	0.89	0.70	0.70	0.70	0.88	0.88	0.88	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	137	9	33	1	1	17	36	442	1	11	573	246
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	19	0	0	479	0	0	584	246
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

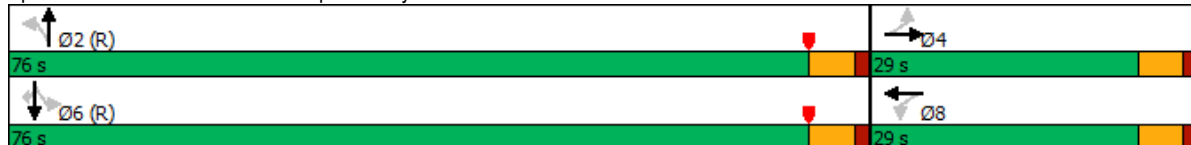
2022 Existing  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		76.0	76.0		76.0	76.0	76.0
Total Split (%)	27.6%	27.6%		27.6%	27.6%		72.4%	72.4%		72.4%	72.4%	72.4%
Maximum Green (s)	23.5	23.5		23.5	23.5		70.5	70.5		70.5	70.5	70.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effect Green (s)		23.5			23.5			70.5			70.5	70.5
Actuated g/C Ratio		0.22			0.22			0.67			0.67	0.67
v/c Ratio		0.50			0.05			0.23			0.45	0.21
Control Delay		39.0			15.6			7.0			6.5	0.9
Queue Delay		0.0			0.0			0.0			1.3	0.6
Total Delay		39.0			15.6			7.0			7.8	1.5
LOS		D			B			A			A	A
Approach Delay		39.0			15.6			7.0			5.9	
Approach LOS		D			B			A			A	

Intersection Summary













Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 40 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 10.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.2%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing plus RT  
AM Peak

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 		
Traffic Volume (vph)	664	90	212	679	206	322
Future Volume (vph)	664	90	212	679	206	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	13	12	15
Storage Length (ft)	0	425	0			0
Storage Lanes	2	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt	0.982					0.850
Fit Protected	0.958			0.988		
Satd. Flow (prot)	3400	0	0	3613	1863	1742
Fit Permitted	0.958			0.673		
Satd. Flow (perm)	3400	0	0	2461	1863	1742
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	1154			296	513	
Travel Time (s)	26.2			6.7	11.7	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	738	100	223	715	229	358
Shared Lane Traffic (%)						
Lane Group Flow (vph)	838	0	0	938	229	358
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.00	0.96	1.00	0.88
Turning Speed (mph)	15	9	15			9
Number of Detectors	0		1	1	0	0
Detector Template			Left			
Leading Detector (ft)	0		20	20	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	20	6	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		pm+pt	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases			6			2
Detector Phase	3		1	1	2	3
Switch Phase						
Minimum Initial (s)	8.0		7.0	10.0	10.0	8.0
Minimum Split (s)	13.5		12.5	15.5	15.5	13.5

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing plus RT  
AM Peak

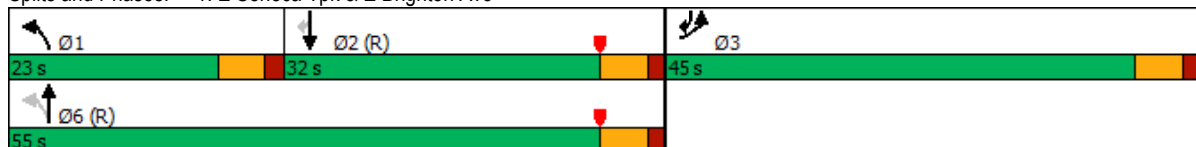


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Split (s)	45.0		23.0	55.0	32.0	45.0
Total Split (%)	45.0%		23.0%	55.0%	32.0%	45.0%
Maximum Green (s)	39.5		17.5	49.5	26.5	39.5
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.5		1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.5			5.5	5.5	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	4.0		4.0	4.0	4.0	4.0
Recall Mode	Max		None	C-Max	C-Max	Max
Act Effct Green (s)	39.5			49.5	26.5	71.5
Actuated g/C Ratio	0.40			0.50	0.26	0.72
v/c Ratio	0.62			0.66	0.46	0.29
Control Delay	26.8			19.4	34.5	5.8
Queue Delay	0.0			0.3	0.0	0.0
Total Delay	26.8			19.7	34.5	5.8
LOS	C			B	C	A
Approach Delay	26.8			19.7	17.0	
Approach LOS	C			B	B	

Intersection Summary


















Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 1 (1%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 21.6  
 Intersection LOS: C  
 Intersection Capacity Utilization 71.3%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 1: E Seneca Tpk & E Brighton Ave



Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing plus RT  
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	0	13	0	1	22	14	713	0	4	233	62
Future Volume (vph)	156	0	13	0	1	22	14	713	0	4	233	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00									1.00	
Frt		0.989			0.871							0.850
Fit Protected		0.956						0.999			0.999	
Satd. Flow (prot)	0	1993	0	0	1622	0	0	3536	0	0	1923	1636
Flt Permitted		0.726						0.947			0.988	
Satd. Flow (perm)	0	1513	0	0	1622	0	0	3352	0	0	1902	1636
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)			1	1					5	5		
Peak Hour Factor	0.83	0.83	0.83	0.82	0.82	1.00	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	188	0	16	0	1	22	17	849	0	5	277	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	0	0	23	0	0	866	0	0	282	74
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15			9	15		9	15	9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		NA			Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing plus RT  
AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		71.0	71.0		71.0	71.0	71.0
Total Split (%)	29.0%	29.0%		29.0%	29.0%		71.0%	71.0%		71.0%	71.0%	71.0%
Maximum Green (s)	23.5	23.5		23.5	23.5		65.5	65.5		65.5	65.5	65.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effect Green (s)		17.8			17.8			71.2			71.2	71.2
Actuated g/C Ratio		0.18			0.18			0.71			0.71	0.71
v/c Ratio		0.76			0.08			0.36			0.21	0.06
Control Delay		56.2			32.3			6.6			4.4	4.0
Queue Delay		0.0			0.0			0.1			0.5	0.0
Total Delay		56.2			32.3			6.7			4.9	4.0
LOS		E			C			A			A	A
Approach Delay		56.2			32.3			6.7			4.7	
Approach LOS		E			C			A			A	

Intersection Summary











Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	13.6
Intersection LOS:	B
Intersection Capacity Utilization	55.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing plus RT  
PM Peak

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	488	203	168	355	566	595
Future Volume (vph)	488	203	168	355	566	595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	13	12	15
Storage Length (ft)	0	425	0			0
Storage Lanes	2	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt	0.956					0.850
Flt Protected	0.966			0.984		
Satd. Flow (prot)	3370	0	0	3634	1881	1759
Flt Permitted	0.966			0.511		
Satd. Flow (perm)	3370	0	0	1887	1881	1759
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	1154			296	513	
Travel Time (s)	26.2			6.7	11.7	
Peak Hour Factor	0.98	0.98	0.89	0.89	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	498	207	189	399	596	626
Shared Lane Traffic (%)						
Lane Group Flow (vph)	705	0	0	588	596	626
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.00	0.96	1.00	0.88
Turning Speed (mph)	15	9	15			9
Number of Detectors	0		1	1	0	0
Detector Template			Left			
Leading Detector (ft)	0		20	20	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	20	6	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		pm+pt	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases			6			2
Detector Phase	3		1	1	2	3
Switch Phase						
Minimum Initial (s)	8.0		7.0	10.0	10.0	8.0

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & E Brighton Ave

2022 Existing plus RT  
PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	13.5		12.5	15.5	15.5	13.5
Total Split (s)	35.0		23.0	70.0	47.0	35.0
Total Split (%)	33.3%		21.9%	66.7%	44.8%	33.3%
Maximum Green (s)	29.5		17.5	64.5	41.5	29.5
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.5		1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.5			5.5	5.5	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	4.0		4.0	4.0	4.0	4.0
Recall Mode	Max		None	C-Max	C-Max	Max
Act Effct Green (s)	29.5			64.5	44.2	79.2
Actuated g/C Ratio	0.28			0.61	0.42	0.75
v/c Ratio	0.75			0.42	0.75	0.47
Control Delay	40.1			9.2	33.7	6.6
Queue Delay	0.0			0.2	0.0	0.0
Total Delay	40.1			9.4	33.7	6.6
LOS	D			A	C	A
Approach Delay	40.1			9.4	19.8	
Approach LOS	D			A	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 35 (33%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 23.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 78.5%  
 ICU Level of Service D  
 Analysis Period (min) 15


















Splits and Phases: 1: E Seneca Tpk & E Brighton Ave





Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing plus RT  
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	8	29	1	1	12	32	389	1	10	539	231
Future Volume (vph)	122	8	29	1	1	12	32	389	1	10	539	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00				0.97
Frt		0.975			0.879							0.850
Fit Protected		0.963			0.997			0.996			0.999	
Satd. Flow (prot)	0	1994	0	0	1627	0	0	3560	0	0	1942	1652
Fit Permitted		0.764			0.989			0.880			0.990	
Satd. Flow (perm)	0	1578	0	0	1614	0	0	3145	0	0	1924	1611
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)	2		1	1		2	7					7
Peak Hour Factor	0.89	0.89	0.89	0.70	0.70	0.70	0.88	0.88	0.88	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	137	9	33	1	1	17	36	442	1	11	573	246
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	19	0	0	479	0	0	584	246
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

2022 Existing plus RT  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		76.0	76.0		76.0	76.0	76.0
Total Split (%)	27.6%	27.6%		27.6%	27.6%		72.4%	72.4%		72.4%	72.4%	72.4%
Maximum Green (s)	23.5	23.5		23.5	23.5		70.5	70.5		70.5	70.5	70.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effect Green (s)		23.5			23.5			70.5			70.5	70.5
Actuated g/C Ratio		0.22			0.22			0.67			0.67	0.67
v/c Ratio		0.51			0.05			0.23			0.45	0.23
Control Delay		41.6			32.6			7.0			6.7	5.6
Queue Delay		0.0			0.0			0.0			1.4	0.9
Total Delay		41.6			32.6			7.0			8.1	6.4
LOS		D			C			A			A	A
Approach Delay		41.6			32.6			7.0			7.6	
Approach LOS		D			C			A			A	

Intersection Summary



















Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	40 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization	61.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

Build volumes plus RT  
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	664	10	90	3	5	4	212	703	6	7	230	322
Future Volume (vph)	664	10	90	3	5	4	212	703	6	7	230	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	12	12	12	12	13	12	12	12	15
Storage Length (ft)	0		425	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.964			0.958			0.999				0.850
Fit Protected	0.950	0.964			0.989			0.989			0.998	
Satd. Flow (prot)	1681	1644	0	0	1765	0	0	3613	0	0	1859	1742
Fit Permitted	0.950	0.964			0.989			0.616			0.958	
Satd. Flow (perm)	1681	1644	0	0	1765	0	0	2251	0	0	1785	1742
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1154			420			296			513	
Travel Time (s)		26.2			9.5			6.7			11.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	738	11	100	3	6	4	223	740	6	8	256	358
Shared Lane Traffic (%)	42%											
Lane Group Flow (vph)	428	421	0	0	13	0	0	969	0	0	264	358
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.96	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	0.88
Turning Speed (mph)	15		9	60			60	15	60	60		9
Number of Detectors	0	0		1	1		1	1		1	0	0
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	20		20	20		20	0	0
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		20	20		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA		Split	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	3	3		7	7		1	6			2	3
Permitted Phases							6			2		2
Detector Phase	3	3		7	7		1	1		2	2	3
Switch Phase												
Minimum Initial (s)	8.0	8.0		6.0	6.0		7.0	10.0		10.0	10.0	8.0
Minimum Split (s)	13.5	13.5		11.5	11.5		12.5	15.5		15.5	15.5	13.5

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

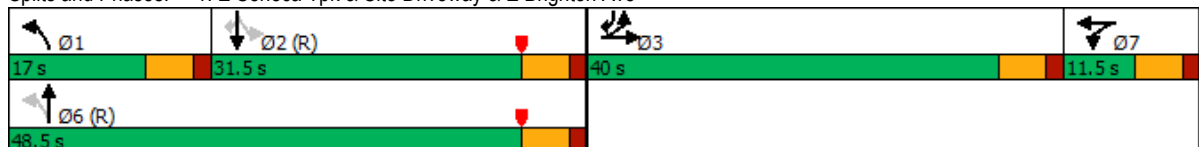
Build volumes plus RT  
AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	40.0	40.0		11.5	11.5		17.0	48.5		31.5	31.5	40.0
Total Split (%)	40.0%	40.0%		11.5%	11.5%		17.0%	48.5%		31.5%	31.5%	40.0%
Maximum Green (s)	34.5	34.5		6.0	6.0		11.5	43.0		26.0	26.0	34.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5			5.5			5.5	5.5
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Max	Max		None	None		None	C-Max		C-Max	C-Max	Max
Act Effct Green (s)	34.5	34.5			6.0			52.2			26.7	66.7
Actuated g/C Ratio	0.34	0.34			0.06			0.52			0.27	0.67
v/c Ratio	0.74	0.74			0.12			0.67			0.55	0.31
Control Delay	37.9	38.3			47.3			17.4			37.1	8.0
Queue Delay	0.0	0.0			0.0			0.1			0.0	0.0
Total Delay	37.9	38.3			47.3			17.5			37.1	8.0
LOS	D	D			D			B			D	A
Approach Delay		38.1			47.3			17.5			20.3	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 1 (1%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 25.5      Intersection LOS: C  
 Intersection Capacity Utilization 80.1%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 1: E Seneca Tpk & Site Driveway & E Brighton Ave



Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes plus RT  
AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	2	13	3	2	22	14	739	4	4	256	62
Future Volume (vph)	160	2	13	3	2	22	14	739	4	4	256	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.990			0.894			0.999				0.850
Flt Protected		0.956			0.993			0.999			0.999	
Satd. Flow (prot)	0	1995	0	0	1654	0	0	3532	0	0	1923	1636
Flt Permitted		0.724			0.960			0.946			0.988	
Satd. Flow (perm)	0	1511	0	0	1598	0	0	3344	0	0	1902	1636
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)			1	1					5	5		
Peak Hour Factor	0.83	0.83	0.83	0.82	0.82	1.00	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	193	2	16	4	2	22	17	880	5	5	305	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	28	0	0	902	0	0	310	74
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15			9	15		9	15	9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
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	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
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  
2: E Seneca Tpk & Lafayette Rd

Build volumes plus RT  
AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		71.0	71.0		71.0	71.0	71.0
Total Split (%)	29.0%	29.0%		29.0%	29.0%		71.0%	71.0%		71.0%	71.0%	71.0%
Maximum Green (s)	23.5	23.5		23.5	23.5		65.5	65.5		65.5	65.5	65.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)		23.5		23.5			65.5			65.5		65.5
Actuated g/C Ratio		0.24		0.24			0.66			0.66		0.66
v/c Ratio		0.59		0.07			0.41			0.25		0.07
Control Delay		42.0		30.6			8.8			5.4		4.5
Queue Delay		0.0		0.0			0.1			0.7		0.0
Total Delay		42.0		30.6			8.9			6.1		4.5
LOS		D		C			A			A		A
Approach Delay		42.0		30.6			8.9			5.8		
Approach LOS		D		C			A			A		

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 13.1      Intersection LOS: B  
 Intersection Capacity Utilization 56.1%      ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

Build volumes plus RT  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	10	202	9	14	11	168	373	5	9	581	593
Future Volume (vph)	487	10	202	9	14	11	168	373	5	9	581	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	12	12	12	12	13	12	12	12	15
Storage Length (ft)	0		425	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99											
Frt	0.910		0.957				0.999				0.850	
Flt Protected	0.950	0.982	0.987				0.985				0.999	
Satd. Flow (prot)	1698	1576	0	0	1759	0	0	3634	0	0	1879	1759
Flt Permitted	0.950	0.982	0.987				0.510				0.990	
Satd. Flow (perm)	1698	1576	0	0	1759	0	0	1882	0	0	1862	1759
Right Turn on Red			No				No				No	
Satd. Flow (RTOR)												
Link Speed (mph)	30		30				30				30	
Link Distance (ft)	1154		420				296				513	
Travel Time (s)	26.2		9.5				6.7				11.7	
Confl. Peds. (#/hr)	1											
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	1%	2%	2%	2%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	497	10	206	10	16	12	189	419	6	9	612	624
Shared Lane Traffic (%)	26%											
Lane Group Flow (vph)	368	345	0	0	38	0	0	614	0	0	621	624
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12		12				0				0	
Link Offset(ft)	0		0				0				0	
Crosswalk Width(ft)	16		16				16				16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.96	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	0.88
Turning Speed (mph)	15		9				15				9	
Number of Detectors	0	0	1		1	1		1	1		0	0
Detector Template			Left				Left				Left	
Leading Detector (ft)	0	0	20		20	20		20	20		0	0
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		20	20		6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Turn Type	Split	NA	Split		NA	pm+pt		NA	Perm		NA	pm+ov
Protected Phases	3	3	7		7	1		6			2	3
Permitted Phases							6				2	
Detector Phase	3	3	7		7	1		1	2		2	3

Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

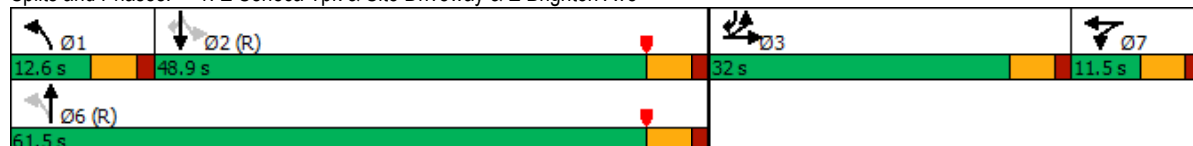
Build volumes plus RT  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		6.0	6.0		7.0	10.0		10.0	10.0	8.0
Minimum Split (s)	13.5	13.5		11.5	11.5		12.5	15.5		15.5	15.5	13.5
Total Split (s)	32.0	32.0		11.5	11.5		12.6	61.5		48.9	48.9	32.0
Total Split (%)	30.5%	30.5%		11.0%	11.0%		12.0%	58.6%		46.6%	46.6%	30.5%
Maximum Green (s)	26.5	26.5		6.0	6.0		7.1	56.0		43.4	43.4	26.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5			5.5			5.5	5.5
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Max	Max		None	None		None	C-Max		C-Max	C-Max	Max
Act Effct Green (s)	26.5	26.5			6.0			60.6			45.9	77.9
Actuated g/C Ratio	0.25	0.25			0.06			0.58			0.44	0.74
v/c Ratio	0.86	0.87			0.38			0.50			0.76	0.48
Control Delay	58.2	60.7			59.0			14.1			33.3	7.3
Queue Delay	0.0	0.0			0.0			0.3			0.0	0.0
Total Delay	58.2	60.7			59.0			14.4			33.3	7.3
LOS	E	E			E			B			C	A
Approach Delay		59.4			59.0			14.4			20.2	
Approach LOS		E			E			B			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 105  
 Offset: 35 (33%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 30.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 86.8%  
 ICU Level of Service E  
 Analysis Period (min) 15


















Splits and Phases: 1: E Seneca Tpk & Site Driveway & E Brighton Ave





Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes plus RT  
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	10	29	7	4	12	32	409	5	10	560	234
Future Volume (vph)	125	10	29	7	4	12	32	409	5	10	560	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00				0.97
Frt		0.976			0.930			0.998				0.850
Flt Protected		0.963			0.985			0.996			0.999	
Satd. Flow (prot)	0	1996	0	0	1710	0	0	3553	0	0	1942	1652
Flt Permitted		0.756			0.905			0.881			0.990	
Satd. Flow (perm)	0	1564	0	0	1571	0	0	3142	0	0	1924	1611
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)	2		1	1		2	7					7
Peak Hour Factor	0.89	0.89	0.89	0.70	0.70	0.70	0.88	0.88	0.88	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	140	11	33	10	6	17	36	465	6	11	596	249
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	33	0	0	507	0	0	607	249
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
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	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
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												

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes plus RT  
PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2		6		6
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	29.0	29.0		29.0	29.0		76.0	76.0		76.0	76.0	76.0
Total Split (%)	27.6%	27.6%		27.6%	27.6%		72.4%	72.4%		72.4%	72.4%	72.4%
Maximum Green (s)	23.5	23.5		23.5	23.5		70.5	70.5		70.5	70.5	70.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)		23.5			23.5			70.5			70.5	70.5
Actuated g/C Ratio		0.22			0.22			0.67			0.67	0.67
v/c Ratio		0.53			0.09			0.24			0.47	0.23
Control Delay		42.2			33.3			7.1			6.6	5.5
Queue Delay		0.0			0.0			0.0			1.7	0.9
Total Delay		42.2			33.3			7.1			8.3	6.4
LOS		D			C			A			A	A
Approach Delay		42.2			33.3			7.1			7.7	
Approach LOS		D			C			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	40 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	12.1
Intersection LOS:	B
Intersection Capacity Utilization:	62.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd























Lanes, Volumes, Timings

Build volumes with road diet

1: E Seneca Tpk & Site Driveway & E Brighton Ave

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	664	10	90	3	5	4	212	703	6	7	230	322
Future Volume (vph)	664	10	90	3	5	4	212	703	6	7	230	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	12	12	12	12
Storage Length (ft)	0		425	0		0	0		0	140		140
Storage Lanes	1		1	0		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	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.958			0.999				0.850
Fit Protected	0.950				0.989		0.950			0.950		
Satd. Flow (prot)	1829	1665	0	0	1765	0	1829	1923	0	1770	1863	1583
Fit Permitted	0.950				0.989		0.375			0.134		
Satd. Flow (perm)	1829	1665	0	0	1765	0	722	1923	0	250	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1154			420			296			513	
Travel Time (s)		26.2			9.5			6.7			11.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	738	11	100	3	6	4	223	740	6	8	256	358
Shared Lane Traffic (%)												
Lane Group Flow (vph)	738	111	0	0	13	0	223	746	0	8	256	358
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)		13			13			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	0.96	0.96	1.00	1.00	1.00	0.96	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	60			60	15		60	60	9
Number of Detectors	0	0		1	1		1	0		0	0	0
Detector Template				Left								
Leading Detector (ft)	0	0		20	20		20	0		0	0	0
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		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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA		Split	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	3	3		7	7		1	6			2	3
Permitted Phases							6			2		2
Detector Phase	3	3		7	7		1	6		2	2	3
Switch Phase												
Minimum Initial (s)	8.0	8.0		6.0	6.0		7.0	10.0		10.0	10.0	8.0
Minimum Split (s)	13.5	13.5		11.5	11.5		12.5	15.5		15.5	15.5	13.5

08/03/2022

Synchro 11 Report  
Page 1

Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

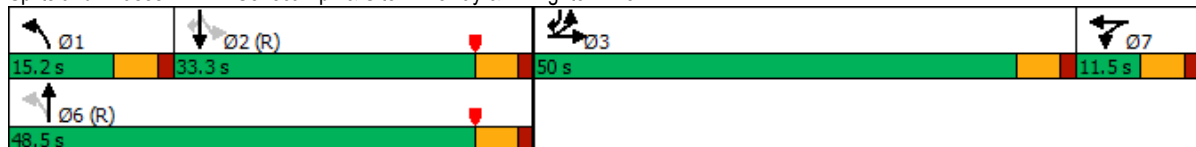
Build volumes with road diet  
AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	50.0	50.0		11.5	11.5		15.2	48.5		33.3	33.3	50.0
Total Split (%)	45.5%	45.5%		10.5%	10.5%		13.8%	44.1%		30.3%	30.3%	45.5%
Maximum Green (s)	44.5	44.5		6.0	6.0		9.7	43.0		27.8	27.8	44.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Max	Max		None	None		None	C-Max		C-Max	C-Max	Max
Act Effct Green (s)	44.5	44.5			6.0		49.9	49.9		33.2	33.2	83.2
Actuated g/C Ratio	0.40	0.40			0.05		0.45	0.45		0.30	0.30	0.76
v/c Ratio	1.00	0.16			0.14		0.51	0.86		0.11	0.46	0.30
Control Delay	66.4	21.8			52.9		18.3	31.5		35.7	35.7	5.6
Queue Delay	0.0	0.0			0.0		0.2	0.2		0.0	0.0	0.0
Total Delay	66.4	21.8			52.9		18.5	31.8		35.7	35.7	5.6
LOS	E	C			D		B	C		D	D	A
Approach Delay		60.6			52.9			28.7			18.4	
Approach LOS		E			D			C			B	

Intersection Summary


















Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	37.2
Intersection LOS:	D
Intersection Capacity Utilization:	102.9%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 1: E Seneca Tpk & Site Driveway & E Brighton Ave



Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes with road diet  
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	2	13	3	2	22	14	739	4	4	256	62
Future Volume (vph)	160	2	13	3	2	22	14	739	4	4	256	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frnt		0.990			0.894			0.999				0.850
Fit Protected		0.956			0.993			0.999			0.999	
Satd. Flow (prot)	0	1995	0	0	1654	0	0	3532	0	0	1923	1636
Fit Permitted		0.724			0.967			0.946			0.987	
Satd. Flow (perm)	0	1511	0	0	1610	0	0	3344	0	0	1900	1636
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)			1	1					5	5		
Peak Hour Factor	0.83	0.83	0.83	0.82	0.82	1.00	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	193	2	16	4	2	22	17	880	5	5	305	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	28	0	0	902	0	0	310	74
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15			9	15		9	15	9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												

Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes with road diet  
AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	41.0	41.0		41.0	41.0		69.0	69.0		69.0	69.0	69.0
Total Split (%)	37.3%	37.3%		37.3%	37.3%		62.7%	62.7%		62.7%	62.7%	62.7%
Maximum Green (s)	35.5	35.5		35.5	35.5		63.5	63.5		63.5	63.5	63.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)		35.5			35.5			63.5			63.5	63.5
Actuated g/C Ratio		0.32			0.32			0.58			0.58	0.58
v/c Ratio		0.43			0.05			0.47			0.28	0.08
Control Delay		32.8			26.2			14.5			4.7	4.4
Queue Delay		1.3			0.0			0.0			0.4	0.0
Total Delay		34.0			26.3			14.5			5.2	4.4
LOS		C			C			B			A	A
Approach Delay		34.0			26.3			14.5			5.0	
Approach LOS		C			C			B			A	

Intersection Summary





















Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	18 (16%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	15.0
Intersection LOS:	B
Intersection Capacity Utilization:	56.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd



Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

Build volumes with road diet  
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	10	202	9	14	11	168	373	5	9	581	593
Future Volume (vph)	487	10	202	9	14	11	168	373	5	9	581	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	13	13	12	12	12	12
Storage Length (ft)	0		425	0		0	0		0	140		140
Storage Lanes	1		1	0		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	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98											
Frt	0.857		0.957				0.998			0.850		
Flt Protected	0.950		0.987				0.950			0.950		
Satd. Flow (prot)	1847	1630	0	0	1759	0	1847	1940	0	1770	1881	1599
Flt Permitted	0.950		0.987				0.115			0.515		
Satd. Flow (perm)	1847	1630	0	0	1759	0	224	1940	0	959	1881	1599
Right Turn on Red	No											
Satd. Flow (RTOR)	No											
Link Speed (mph)	30		30				30			30		
Link Distance (ft)	1154		420				296			513		
Travel Time (s)	26.2		9.5				6.7			11.7		
Confl. Peds. (#/hr)	1											
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	1%	2%	2%	2%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	497	10	206	10	16	12	189	419	6	9	612	624
Shared Lane Traffic (%)												
Lane Group Flow (vph)	497	216	0	0	38	0	189	425	0	9	612	624
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	13		13				13			13		
Link Offset(ft)	0		0				0			0		
Crosswalk Width(ft)	16		16				16			16		
Two way Left Turn Lane												
Headway Factor	0.96	0.96	0.96	1.00	1.00	1.00	0.96	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	1		1	0		0	0	0
Detector Template	Left											
Leading Detector (ft)	0	0		20	20		20	0		0	0	0
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		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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Split	NA		Split	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	3	3		7	7		1	6			2	3
Permitted Phases							6			2		2
Detector Phase	3	3		7	7		1	1		2	2	3

Lanes, Volumes, Timings  
1: E Seneca Tpk & Site Driveway & E Brighton Ave

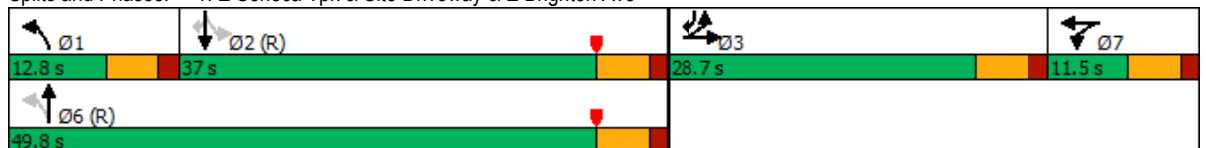
Build volumes with road diet  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		6.0	6.0		7.0	10.0		10.0	10.0	8.0
Minimum Split (s)	13.5	13.5		11.5	11.5		12.5	15.5		15.5	15.5	13.5
Total Split (s)	28.7	28.7		11.5	11.5		12.8	49.8		37.0	37.0	28.7
Total Split (%)	31.9%	31.9%		12.8%	12.8%		14.2%	55.3%		41.1%	41.1%	31.9%
Maximum Green (s)	23.2	23.2		6.0	6.0		7.3	44.3		31.5	31.5	23.2
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Max	Max		None	None		Max	C-Max		C-Max	C-Max	Max
Act Effct Green (s)	23.2	23.2			6.0		48.9	48.9		31.5	31.5	60.2
Actuated g/C Ratio	0.26	0.26			0.07		0.54	0.54		0.35	0.35	0.67
v/c Ratio	1.04	0.51			0.32		0.56	0.40		0.03	0.93	0.58
Control Delay	87.8	33.7			47.9		20.2	12.9		19.7	51.4	10.9
Queue Delay	0.0	0.0			0.0		0.0	0.6		0.0	0.0	0.0
Total Delay	87.8	33.7			47.9		20.2	13.4		19.7	51.4	10.9
LOS	F	C			D		C	B		B	D	B
Approach Delay		71.4			47.9			15.5			30.8	
Approach LOS		E			D			B			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 38.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 87.3%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 1: E Seneca Tpk & Site Driveway & E Brighton Ave





Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes with road diet  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	10	29	7	4	12	32	409	5	10	560	234
Future Volume (vph)	125	10	29	7	4	12	32	409	5	10	560	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	13	13	13
Storage Length (ft)	0		0	0		0	0		175	0		140
Storage Lanes	0		0	0		0	0		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	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00				0.97
Frt		0.976			0.930			0.998				0.850
Flt Protected		0.963			0.985			0.996			0.999	
Satd. Flow (prot)	0	1996	0	0	1711	0	0	3553	0	0	1942	1652
Flt Permitted		0.756			0.908			0.885			0.990	
Satd. Flow (perm)	0	1564	0	0	1576	0	0	3156	0	0	1924	1610
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1521			819			2174			296	
Travel Time (s)		34.6			18.6			49.4			6.7	
Confl. Peds. (#/hr)	2		1	1		2	7					7
Peak Hour Factor	0.89	0.89	0.89	0.70	0.70	0.70	0.88	0.88	0.88	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	140	11	33	10	6	17	36	465	6	11	596	249
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	33	0	0	507	0	0	607	249
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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	0		20	0	0
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	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
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6

08/03/2022

Synchro 11 Report  
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Lanes, Volumes, Timings  
2: E Seneca Tpk & Lafayette Rd

Build volumes with road diet  
PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.5	11.5		11.5	11.5		15.5	15.5		15.5	15.5	15.5
Total Split (s)	28.0	28.0		28.0	28.0		62.0	62.0		62.0	62.0	62.0
Total Split (%)	31.1%	31.1%		31.1%	31.1%		68.9%	68.9%		68.9%	68.9%	68.9%
Maximum Green (s)	22.5	22.5		22.5	22.5		56.5	56.5		56.5	56.5	56.5
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)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.5			5.5			5.5			5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effect Green (s)		22.5			22.5			56.5			56.5	56.5
Actuated g/C Ratio		0.25			0.25			0.63			0.63	0.63
v/c Ratio		0.47			0.08			0.26			0.50	0.25
Control Delay		33.4			26.7			7.8			7.2	6.1
Queue Delay		0.0			0.0			0.0			1.7	0.8
Total Delay		33.4			26.7			7.8			8.9	6.9
LOS		C			C			A			A	A
Approach Delay		33.4			26.7			7.8			8.3	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	7 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	11.5
Intersection LOS:	B
Intersection Capacity Utilization	62.6%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 2: E Seneca Tpk & Lafayette Rd

