

Appendix B

Transportation Analysis

East Norwalk Neighborhood TOD Plan

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Prepared for the City of Norwalk

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Vehicular Circulation

While readily accessible by car to Interstate 95 (I-95), the East Norwalk neighborhood has a local residential neighborhood character in land use and street design. East Avenue, the primary arterial roadway in East Norwalk, is one of the neighborhoods busiest streets and is said to experience both local traffic as well as traffic bound for destinations outside of the neighborhood including South Norwalk, Westport and the parts of Norwalk north of I-95. The following discussion of vehicular circulation focuses on the existing conditions of the primary roadways in East Norwalk as encompassed in the study area, as well as issues and concerns observed in the field or discussed in prior reports. **Figure B1** summarizes the existing condition issues and concerns in the study area.

East Avenue

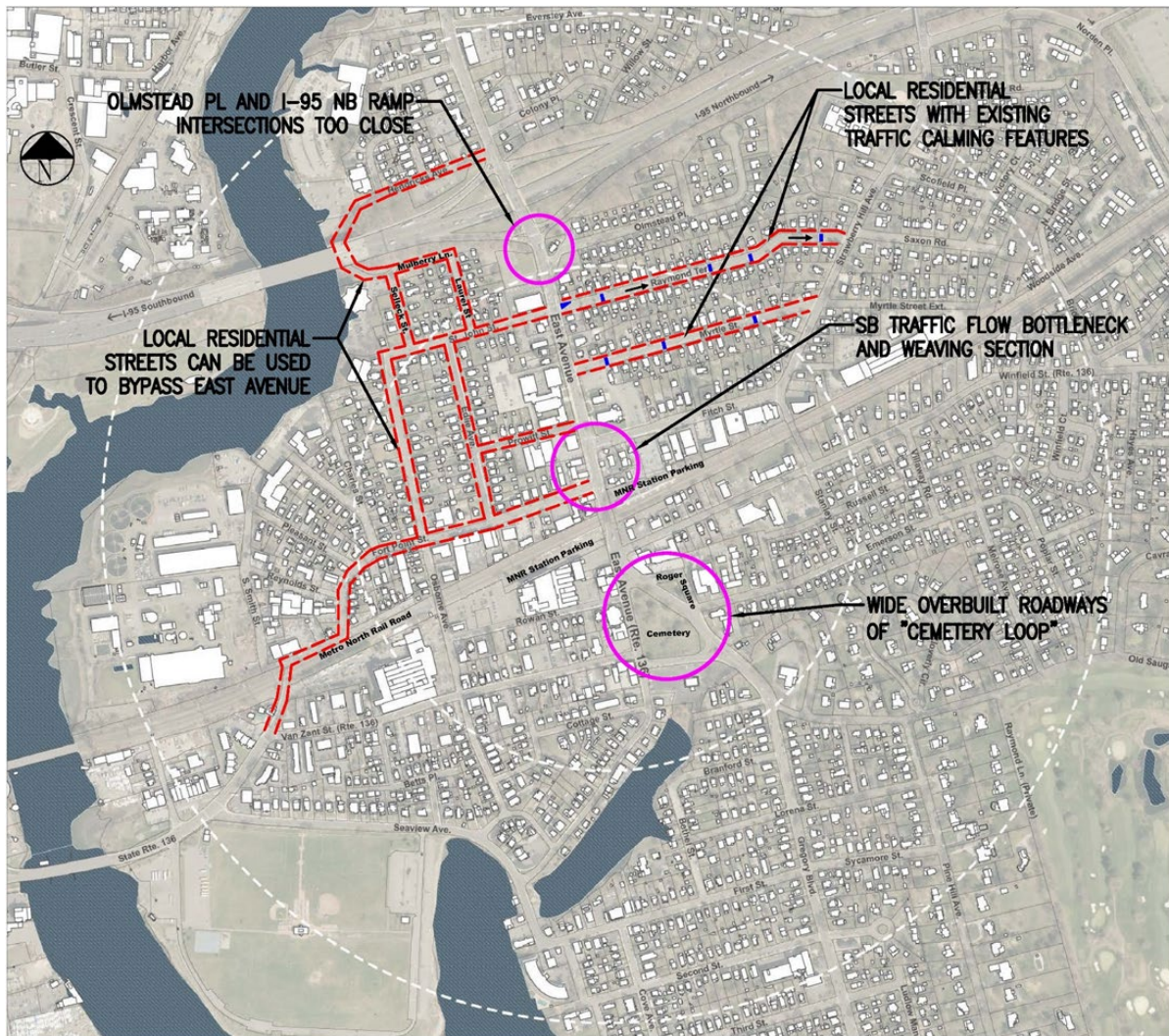
Within the study area, East Avenue is the primary roadway in the East Norwalk neighborhood, providing vehicle access in the north-south directions and connecting the Interstate 95 entrance and exit ramps (exit 16) to the north to the Metro-North Rail Road (MNR) East Norwalk Station to the south. According to the CTDOT functional roadway classification map, East Avenue is considered a principal urban arterial within the majority of the study area with the exception of the segment between Cemetery Street and Seaview Avenue (no functional roadway classification). Based on CTDOT AADT data, East Avenue experienced an AADT of 15,600 vehicles per day south of the I-95 interchange (2017).

East Avenue supports vehicular travel in both the north and south directions, with one to two lanes in each direction. Parking is not permitted between I-95 and East Avenue Rail Bridge due to the width of the roadway (40 ft. curb to curb) and number of active roadway lanes (3-4 lanes). Sidewalks of varying widths are present on both sides of the street within the study area; however, a sidewalk is only present on the west side of East Avenue when the roadway traverses below the East Avenue Rail Bridge.

South of the I-95 interchange, southbound East Avenue has two through lanes until the roadway reaches Fitch Street, in which a left turn only lane at Fitch Street and right turn only lane at Fort Point Street effectively create a lane drop and weaving section from the right lane to the left lane in the southbound direction. Currently, there is only one lane in each direction below the East Avenue Rail Bridge, thus potentially creating a traffic bottleneck at this location. Based on the traffic analysis included in the *230 East Avenue TAIS*, favorable LOS is shown for the north and south movements along East Avenue during the weekday morning, afternoon and Saturday midday peak hours in the 2017 existing conditions, while minor streets experience less favorable to congested LOS in the same peak hours. This would suggest delays experienced at the minor approaches along East Avenue at signalized intersections (Winfield Street, Fitch Street) are caused by high north-southbound vehicular demand on East Avenue. Similarly, the unsignalized eastbound approach at Fort Point Street experienced unfavorable LOS in all analyzed peak hours as drivers struggle to find gaps to turn onto East Avenue.

At the intersection of East Avenue, Fort Point Street and the east parking lot driveway for the Metro-North East Norwalk Station, the minor street approaches are offset as well as unsignalized (minor streets are stop-controlled). As the crosswalk is utilized by commuters to cross East Avenue, these factors result in unsafe conditions including ambiguous timing and limited gaps for crossing pedestrians against major and minor street traffic, ambiguous right-of-way for minor street vehicles turning into East Avenue, as well as poor sight lines from minor streets. These issues point to a problematic intersection located adjacent to the East Norwalk Station.

Figure B1 – Existing Traffic Conditions



Although traffic volumes along the residential dead-end street of Olmstead Place are likely low, the intersection of Olmstead Place and East Avenue appears to be particularly problematic in its proximity to the I-95 interchange ramps and the lack of restriction of southbound left turns and westbound left turns at this unsignalized intersection. This intersection has potential to cause delays due to westbound left turns blocking the northbound lanes to find a gap in southbound traffic flow during congested peak periods.

Cut-Through Streets

Based on the congestion observed at intersections along East Avenue, public input and the abundance of drivers utilizing GPS navigation, it is likely that local residential streets in the study area intended for local traffic are experiencing additional cut-through traffic to avoid delays on East Avenue and I-95. Roadways providing alternative north-south vehicular mobility between the Washington Street Bridge (leading to South Norwalk) and I-95 other than East Avenue include the following streets: Fort Point Street, Osbourne Avenue, Saint John Street, Selleck Street, and Hendricks Avenue. In addition to increased traffic volumes, it is likely that cut-through traffic could be travelling at higher speeds as they do not have a destination in

the neighborhood, contributing to unsafe conditions on these local roads for residents. These roadways typically exhibit the following characteristics: narrow curb to curb and sidewalk widths, two-way traffic flow, limited pedestrian crossing pavement markings, parking on one or both sides of the street, and serve primarily low density residential uses. Thus, these local streets were not designed to accommodate alternative commuting routes and influxes of traffic originally intended to be served on the neighborhoods primary arterial, East Avenue.

Raymond Terrace and Myrtle Street have also been flagged as potential alternative east-west routes that experience cut-through traffic. Currently, these streets have some traffic calming and cut-through traffic deterring features already implemented. On Raymond Terrace, the road operates one-way westbound with no through trucks permitted, and includes a diverter at the eastbound receiving leg of its intersection with East Avenue. In addition, no southbound left turns are permitted at this intersection, and four speed bumps were installed along the roadway to reduce vehicular speeds. Effectively, these interventions eliminate potential eastbound cut-through traffic flow, while deterring westbound cut-through traffic to use other routes. On Myrtle Street, southbound left turns from East Avenue and through trucks are not permitted and currently have three speed bumps installed along the street, similar to Raymond Terrace. However, Myrtle Street supports traffic in both east and west directions. Thus, these traffic calming interventions on Myrtle Street would intend to reduce truck traffic and vehicular speeds along the roadway.

Cemetery Circle (East Ave, Gregory Blvd, Cemetery St)

South of the East Norwalk Station along East Avenue, the East Norwalk Historical Cemetery is located on a two block long triangular parcel which is bound by East Avenue to the west, Cemetery Street to the south and Gregory Boulevard to the east. These three roadways form a counter-clockwise one-way traffic loop, experiencing an AADT of 9,500, 7,700 and 18,800 vehicles per day (2017) on the segments of East Avenue, Cemetery Street and Gregory Boulevard, respectively. South of Winfield Street, East Avenue is approximately 38 feet wide curb to curb. The width of Gregory Boulevard varies in width between Cemetery Street and Winfield Street, but reaches a minimum width of approximately 36 feet curb to curb, while Cemetery Street is approximately 38 feet wide curb to curb. These three roadway segments, or the 'Cemetery Circle' appear to be overbuilt in terms of width, as the roadways typically support two vehicular lanes and sometimes with and sometimes without a parking lane. This excessive roadway width contributes to poor pedestrian mobility and safety in this area, as wide roadways contribute to longer crossing times in an area with limited east west pedestrian facilities and connectivity.

Van Zant Street (SR 136)

Van Zant Street (SR 136) is an east-west principal urban arterial with one traffic lane in each direction and parking permitted along the south curb. Although Van Zant Street is just over a 1/3 of a mile long, this roadway provides the primary vehicular connection between the southern end of East Avenue to Fort Point St/Washington Street to the South Norwalk neighborhood. Van Zant Street is a fairly narrow roadway (32 feet curb to curb) with narrow sidewalks on both sides of the street.

Winfield St (SR 136)

Winfield Street (SR 136) is an east-west minor urban arterial with one traffic lane in each direction with generally no parking permitted on either side of the road within the study area. The roadway of Winfield

Street is typically 34 feet wide (curbs not always present), and experiences an AADT of 7,200 vehicles per day (2017).

Winfield Street generally serves as the primary local road connection between the Metro-North Saugatuck Station, I-95 entrance and exit ramps at exit 17 and the East Norwalk neighborhood. As such, Winfield Street can become an alternative east-west route to I-95 at times when traffic is diverted from the severe congestion and back-ups frequently experienced on the interstate

Strawberry Hill Avenue

Strawberry Hill Avenue is a north-south minor urban arterial with one traffic lane and one bicycle lane in each direction, with parking permitted on the west curb within the study area. Strawberry Hill Avenue is typically 40 feet curb to curb and experiences an AADT of 9,300 vehicles per day (2017) within the study area. Strawberry Hill Avenue serves the low-density residential uses along it in the study area, as well as connects the East Norwalk neighborhood to greater Norwalk north of I-95 and northeast of the study area. This roadway can also serve as an alternative north-south connection to East Avenue, connecting Post Road (US 1) to East and South Norwalk.

Future Roadway Improvements

The Walk Bridge project, a large-scale bridge replacement project, is planned by CTDOT to replace three Metro-North Bridges that cross above East Avenue, Osbourne Street, and Fort Point Street. The project will also include roadway improvements below and adjacent to those bridge underpasses.

On East Avenue, the plan includes a widening of the roadway below the bridge providing two travel lanes in each direction, a southbound bicycle lane as well as sidewalks on both sides of East Avenue. The roadway construction will also include lowering the roadway to provide additional vertical clearance to support larger vehicles such as trucks. Additional improvements will be made north of the Fort Point Street intersection, which include new pavement markings to eliminate the lane drop and weaving of through traffic between Fitch Street and Fort Point (both lanes at the southbound approaches will be shared through and turning lanes) as well as the realignment and signalization of the East Norwalk Station parking lot driveway with Fort Point Street to create a typical four-way approach intersection.

In addition, the rail bridge above Fort Point Street is planned to be shifted so that the roadway aligns with South Smith Street to the west, creating a typical “T” intersection and eliminating the northbound “S” turn required for northbound traffic on Fort Point continuing north on South Smith Street.

While the East Avenue improvements would not be considered a traffic calming project, the project would have benefits by improving traffic flow south of Fitch Street by reducing weaving movements and eliminating the bottleneck caused by the lane drop in the existing condition. By improving the roadway through put and maintaining two southbound lanes of traffic from I-95 in the north to Van Zant Street to the south, it is possible that in the short term the volume of cut-through traffic on residential streets may experience a reduction. However, it should be noted that induced traffic, or additional traffic attracted to the area due to the improved traffic conditions including trucks, has the potential to increase in the long term, where levels of traffic congestion could return to the existing condition levels on East Avenue and thus could also return residential cut through traffic back to existing levels. Lastly, the signalization and realignment planned at East Avenue, Fort Point Street, and the East Norwalk Station parking lot driveway

would provide a significant benefit to traffic and pedestrian safety, as well as improve transit accessibility from the street network to the East Norwalk Station and parking lots.

The SoNo Collection Retail Development

The SoNo Collection is a newly opened mall including 730,000 gross leasable area of retail and hotel space that was completed in late 2019. The mall is located along West Avenue in SoNo, just south of I-95, and was expected to generate a total of 1,933 and 2,700 vehicular trips in the weekday PM and Saturday peak hour, respectively, per the *Supplemental Traffic Impact Assessment* prepared by Langan Engineering (2016). Although the majority of vehicular trips to and from the development site were anticipated to originate or depart to the I-95 entrance and exit ramps along West Avenue or Reed Street when I-95 is operating with acceptable levels of service, there is a concern amongst some residents of East Norwalk that periods of congestion and back-ups on I-95 may result in mall-generated trips diverting to local roads as an alternative means of reaching the mall. As the Washington St Bridge could serve as an alternative means of getting to the neighborhood of SoNo and the mall, there is a possibility that during these congested periods on I-95, diverted mall-generated trips may pass through the East Norwalk neighborhood, which could potentially exacerbate existing conditions of congestion on East Avenue as well as increasing cut-through traffic on local residential streets.

Pedestrian and Bicycle Circulation

Pedestrian Activity & Conditions

The primary area of pedestrian activity within the study area occurs around East Norwalk Station. The two primary commuter parking areas are located on the northeast and southwest sides of the station, with East Avenue and the railroad tracks separating them. Therefore, commuters must cross under the railroad overpass and cross East Avenue either in the morning or evening.

There is also a Park and Ride facility on Hendricks Avenue, west of East Avenue, approximately 1/2 mile from the station. This parking facility is free at all times, and therefore generates pedestrian traffic along the west side of East Avenue.

The most significant gap in the pedestrian network, at the intersection of East Avenue and Winfield Street (Route 136), will be addressed as part of the East Avenue Bridge Replacement and Roadway Improvements project. On East Avenue from the railroad overpass to the intersection of Route 136, there is a narrow sidewalk that is substandard in condition and width, and does not lead to pedestrian ramps or crosswalks at the intersection. There is currently no pedestrian connection to the south side of Route 136, and no sidewalk along the south side of Route 136 until approximately 500 ft. east of the intersection. After that, 500 ft. stretch of missing sidewalk along the south side of Route 136, there is a sidewalk present. Once completed, the East Avenue Bridge Replacement and Roadway Improvements project will create a pedestrian connection from north of the railroad overpass to that existing sidewalk on the south side of Route 136.

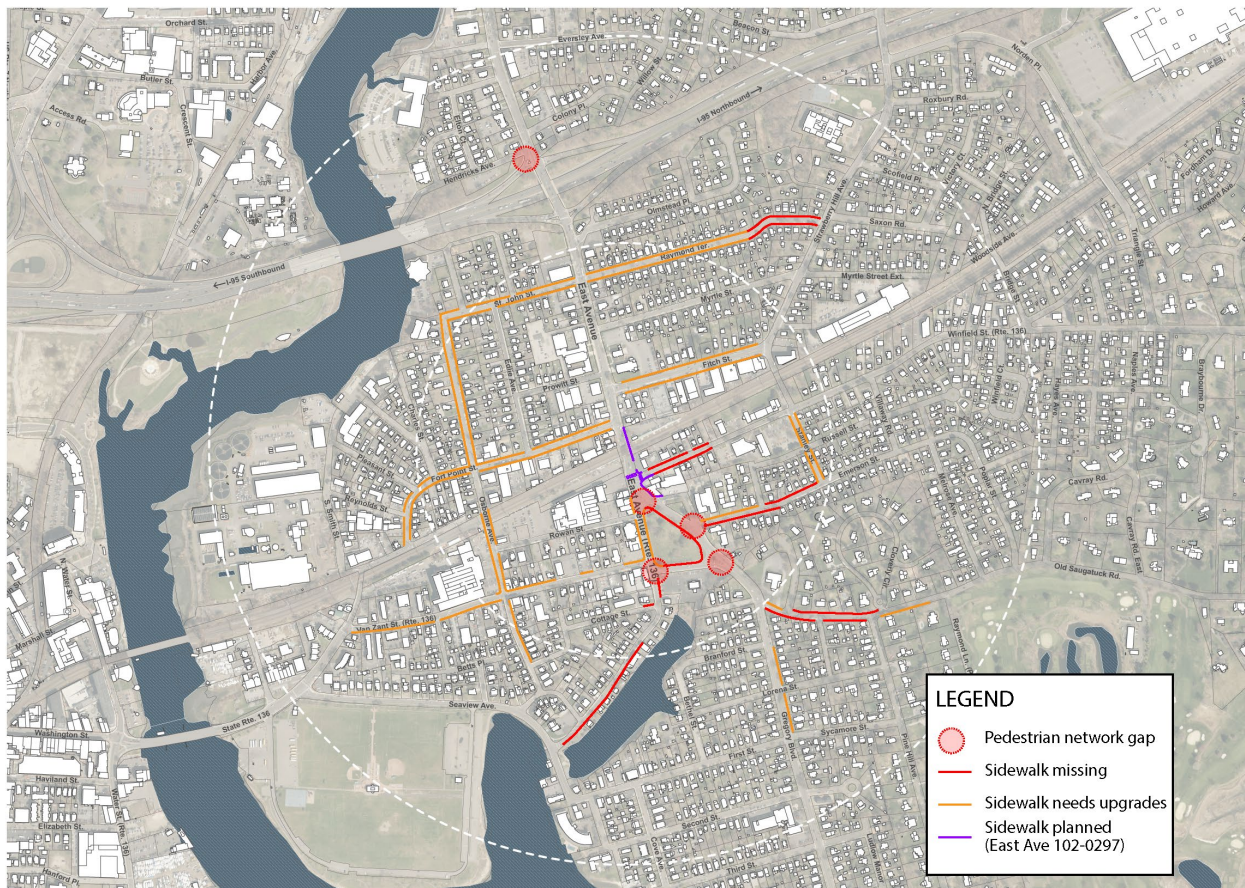
On the west side of East Avenue, north of the I-95 overpass, there is a missing pedestrian connection at Hendricks Avenue. This intersection includes an entrance ramp to I-95. The highway entrance ramp has crosswalks marked to align with existing sections of sidewalk, but from the northwest corner to the southwest of Hendricks Avenue there is no crosswalk.

While the general condition of the pedestrian network elsewhere is adequate, there are some key locations that require intersection improvements for pedestrians, including:

- Gregory Blvd. and Roger Square
 - Crosswalks and pedestrian ramps are missing
 - Painted geometric changes do not adequately shorten the crossing distance
- Gregory Blvd. and Emerson Street
 - This intersection is excessively wide due to the convergence of Emerson Street and Roger Square, creating an expansive, unmarked space for pedestrians to navigate
 - No crosswalks or pedestrian ramps are present
- Gregory Blvd. and Cemetery Street
 - Crossing Gregory Blvd. to access the west side of the cemetery area from the east side of Gregory Blvd. is unmarked
 - A landscaped triangle creates an obstructed view of pedestrians for motorists
 - A pedestrian cut-through is present on the southern tip of the landscaped triangle in this location, but no crosswalk is present
- East Avenue and Cemetery Street
 - Crossing Gregory Blvd. to access the east side of the cemetery area from the west side of East Avenue is unmarked
- East Avenue and Hendrix Avenue
 - Some existing crosswalks provide a walking route across the highway entrance ramps, but pedestrian ramps as well as crosswalks across Hendricks Avenue are missing
- East Ave and Route 136 (details above)
- Route 136 and Strawberry Hill Road (details above)

Figure B2 summarizes the pedestrian existing conditions and concerns detailed above.

Figure B2 – Existing Pedestrian Conditions



Bicycle Activity & Conditions

In terms of bicycle activity, observations made during weekday am and pm peak periods indicated only a few cyclists traveling through the study area, primarily utilizing East Avenue to reach the East Norwalk Station. Of the 15 bicycle parking spaces available (at racks adjacent to the westbound station building), seven were occupied. However, bicycle activity increases on weekends, as observations indicated a significant number of cyclists utilizing Fort Point Street and Gregory Blvd to reach Veterans Park and Calf Pasture Beach.

The existing bicycle network provides some connectivity to the northeast section of the study area, but does not provide a continuous network of bicycle routes. The bicycle facilities that are provided include striped bicycle lanes, bicycle logos with directional arrows, and “Bike Lane” signs.

Two-way dedicated bicycle lanes can be found on Fitch Street, as well as Strawberry Hill Avenue from Fitch Street north, extending out of the study area. Shared lane markings are found on the block of Strawberry Hill Avenue between Fitch Street and Stanley Avenue. Seaview Avenue has a dedicated bicycle lane in the eastbound direction only, along Veterans Memorial Park, terminating at East Avenue. The designated route of the East Coast Greenway follows Route 136 (Van Zant Street and Winfield Avenue,

with a one-block connection on East Avenue along the west side of the cemetery), but no bicycle route signs or markings are present.

Figure B3 summarizes the existing conditions and concerns detailed above.

Transit

Rail

Metro-North's New Haven Line provides commuter rail service to the study area via the East Norwalk Station, which is located at 230 East Avenue. The average travel time to/from Grand Central is 68 minutes though this varies depending on run and time of day. Service is more limited at East Norwalk Station compared to South Norwalk Station. For example, during the am peak, 11 New York bound trains serve East Norwalk compared to 21 trains that serve South Norwalk while in the pm peak, 11 New Haven bound trains serve East Norwalk compared to 19 trains that serve South Norwalk. The average frequency of peak trains at the station is 20 minutes, while the frequency of off peak trains is generally 60 minutes. Weekend service, which is hourly, is again more limited than South Norwalk. Metro-North has no immediate plans to increase service at East Norwalk Station.

Table B1 below indicates sample fares to Manhattan from East Norwalk.

Table B1 – Metro-North Sample Fares to Manhattan from East Norwalk

<i>Ticket Type</i>	<i>MTA eTix</i>	<i>Station</i>	<i>On Train</i>
One Way Peak	\$16.50	\$16.50	\$23.00
Ten-Trip Peak	\$165.00	\$165.00	N/A
One Way Off-Peak	\$12.50	\$12.50	\$19.00
Ten Trip Off-Peak	\$106.25	\$106.25	N/A
Monthly	\$360.00	\$360.00	N/A
Weekly	\$115.25	\$115.25	N/A
Senior/Disabled/Medicare	\$8.25	\$8.25	\$8.25
Ten Trip Sr./Dis./Medicare	\$82.50	\$82.50	N/A

Table B2 below indicates ridership at East Norwalk Station. Given the more limited service at the station, it is not surprising that the number of weekday rides is significantly lower than South Norwalk, which averages 7,184 weekday rides. East Norwalk is comparable to other stations along the New Haven Line with limited service such as Southport (682), Rowayton (1,100), Green's Farms (1,634), Riverside (1,394), and Cos Cob (1886).

Figure B3 – Existing Bicycle Conditions

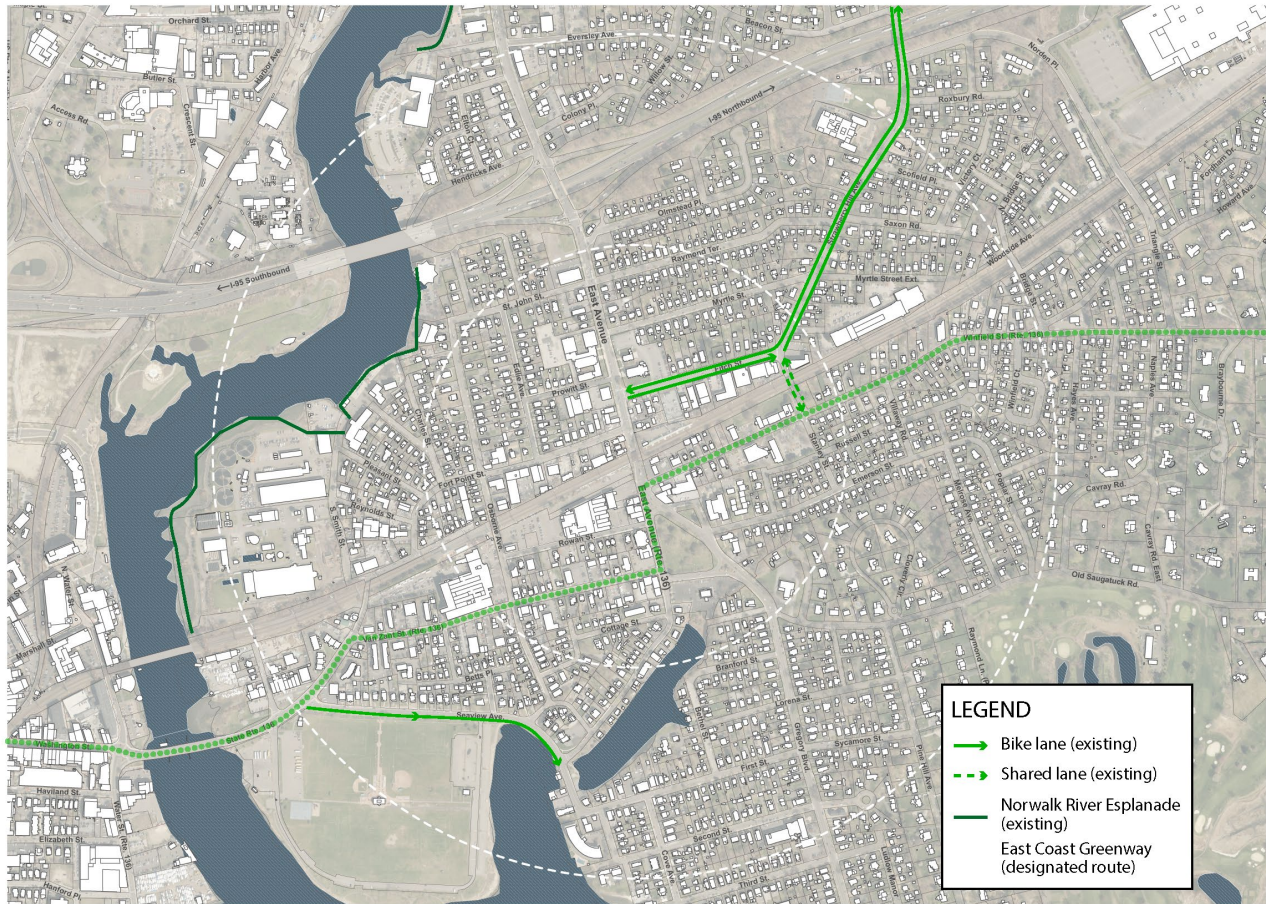


Table B2 – Ridership at East Norwalk Station

<i>2017 New Haven Line</i>	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
Weekday Boardings	550	162	712
Weekday Alightings	162	550	712
Total Weekday Rides	712	712	1,424
<i>2017 New Haven Line</i>	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
Saturday Boardings	209	76	285
Saturday Alightings	76	209	285
Total Saturday Rides	285	285	570
<i>2017 New Haven Line</i>	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
Sunday Boardings	178	46	224
Sunday Alightings	46	178	224
Total Sunday Rides	224	224	448

Data from Metro-North 2017 Weekday Boardings and 2017 Weekend Station Boardings. Alightings based on boarding count.

Amenities at the station include bike racks, a bus-type shelter, waste receptacles and benches, and a TVM. A small building, in the parking lot near the New York Bound platform side of the station, houses a concession and restrooms, which are open during am peak hours. Both the New York and New Haven bound platforms at the station can accommodate only four cars. As part of the Walk Bridge Program, the station is being upgraded which will include the platforms being increased to accommodate 10 train cars in both directions, increased commuter parking (including handicap parking on both sides of the tracks), and new ADA elevators.

There are three commuter permit parking lots at the East Norwalk Station which include a 50 space lot on the westbound side adjacent to the station building, a 100 space lot near the intersection of Rowan Street and Osborne Avenue, and a 26 space temporary lot on the corner of Fort Point Road and East Avenue (**see Figure B4**). Each of the permit lots is open to daily parkers on weekends. In addition, the Norwalk Parking Authority, which manages all parking at the station, entered into an agreement with CTDOT at the end of last year, which provides 117 spaces alongside the southside tracks and adjacent buildings off of East Avenue on a temporary basis for daily parkers only. This parking will be available until the CTDOT needs them for the East Avenue Bridge Replacement and Roadway Improvements project. Permit parking utilization is at 93% during weekdays according to the Western Connecticut 2018 Commuter Parking Survey (prepared for WestCOG by HART).

In addition to the commuter lots, as mentioned earlier, there is a park and lot ride at Hendricks Avenue and I-95 that is utilized by commuters.

The monthly fee for permits is \$70 while daily parking costs \$8. The Parking Authority issued 202 permits in 2017 for East Norwalk Station and there is a waiting list of approximately 136 people.

A recent survey conducted for the Parking Authority indicated that 55% of the people traveling to the station during the morning commute carpooled, followed by 23% who drove alone, and 22% who walked. Only 3% used public transit to reach the station. In terms of where people parked, 36% parked in the temporary lot, followed by 21% who parked in the monthly southbound lot, as well as 21% who parked in the Rowan lot. The majority of commuters came from two zip codes, 06855 (55%) which includes East Norwalk south of I-95, and 06851 (35%) which includes East Norwalk north of I-95 as well as the neighborhoods north of East Norwalk and east of the Norwalk River (all the way to the border with the Town of Wilton).

Bus

The study area is served by two fixed Norwalk Transit District routes; routes 7 and 11 (**see Figure B5**). Route 7 provides hourly service (from 6:20am to 7:11pm) on weekdays only, running between the Hub, Calf Pasture Beach, and Norden Park. Route 11 provides service every 40 minutes on both weekdays (from 5:40am to 8:35pm) and Saturdays (from 6:17am to 7:35pm), running from the Hub to Norwalk Community College.

On routes 7 and 11, passengers may board anywhere along the route. Fares for each route as well as all Norwalk Transit District routes are shown on **Table B3** below.

Figure B4 – Existing Parking in Proximity to the East Norwalk Metro-North Railroad Station

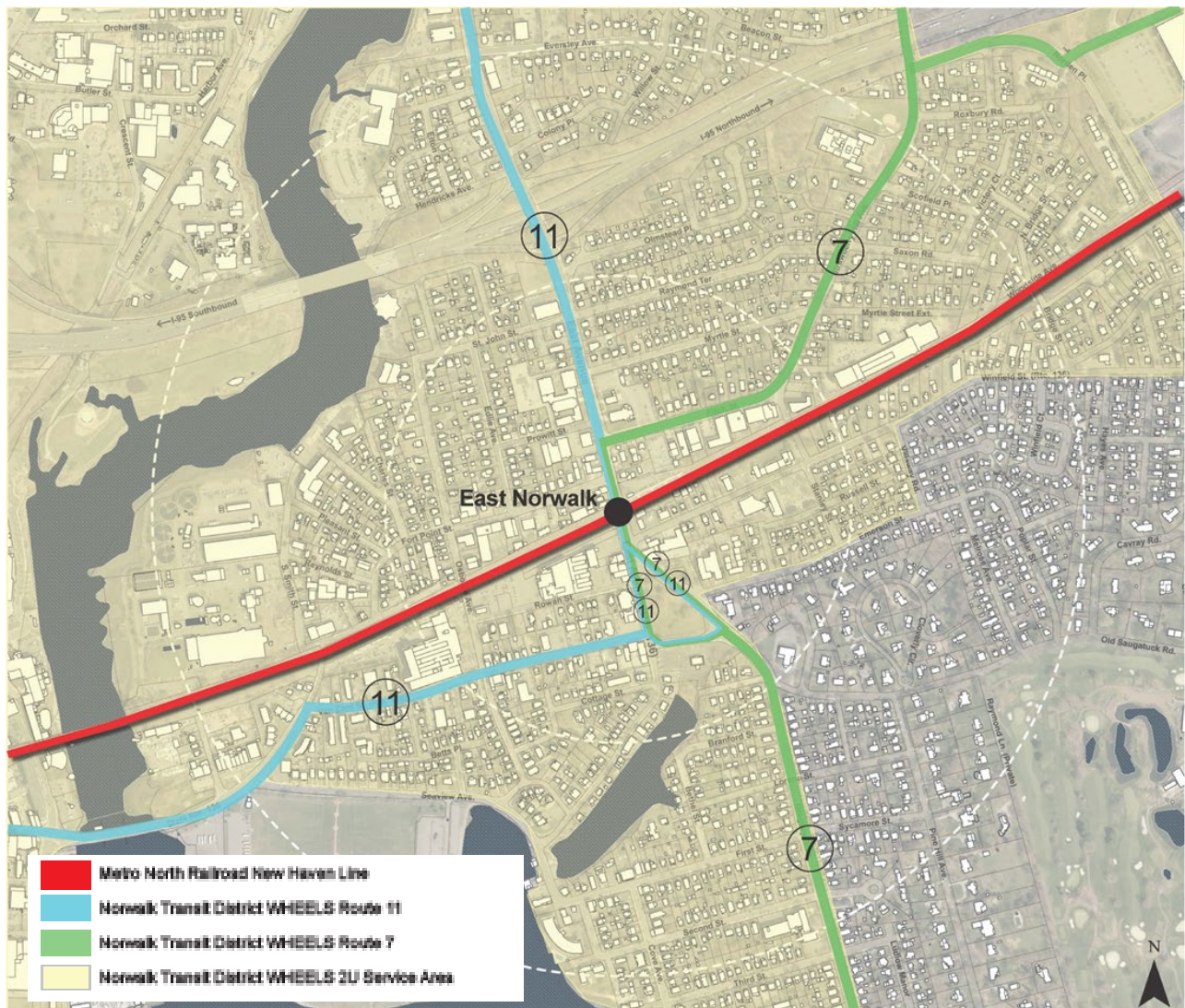


Table B3 – Norwalk Transit District Fare System

<i>Cash</i>	
90 Minutes Full Fare	\$1.75
90 Minutes Half* Fare	\$0.85
<i>Tokens</i>	
10 - Pack	\$17.50
20 - Pack	\$35.00
40 - Pack	\$70.00
<i>Full Fare Cards</i>	
1 Day Unlimited	\$4.00
7 Days Unlimited	\$17.50
31 Days Unlimited	\$70.00
<i>Half * Fare Cards</i>	
1 Day Unlimited	\$2.00
7 Days Unlimited	\$8.75
31 Days Unlimited	\$35.00

*Elderly age 65+ or disabled passengers must present a valid Medicare Card, ADA Identification car, or CT state elderly/disabled card.

Figure B5 – Area Bus and Shuttle Service



The average monthly ridership on Route 7 is 3,825 which accounts for 4% of the total monthly system ridership (88,003), while the average monthly ridership on Route 11 is 9,656 which accounts for 11% of the total monthly system ridership (88,003). In terms of boardings within the study area, for Route 7, 5% (199) of the average monthly boardings on the route take place within the study area, while for Route 11, 14% (1,645) of the average monthly boardings on the route take place within the study area.

In addition to the two fixed routes, a large part of the study area (see **Figure B5**) is served by the new on-demand WHEELS2U shuttle service, which is the first microtransit service in Connecticut. The service which is a six month pilot program (started in September 2018 by the Norwalk Transit District) allows for the flexible routing and scheduling of shuttle buses. The objective of the WHEELS2U service is to improve connections between South Norwalk, the Maritime Aquarium, the Sono Collection, the Wall Street area, and other attractions.

By using an app, riders can request a pick up and drop off location anywhere within the WHEELS2U service area. Shuttle drivers also have an app in each vehicle to provide navigation, live traffic conditions, and

real time pick up and drop off information. The service currently operates Thursday, Friday, and Saturday from 5:00pm to 12:00am, and on Sundays from 12:00pm to 9:00pm.

As the service is currently a pilot program, fares are being subsidized by the City. However, although the service is free, riders still must reserve their trip through the app.

Since its inception last year, monthly ridership on the service has risen from 0 to 600 - 700 trips per month, and the NTD recently announced that the pilot program has been extended another two months until May of 2019 when they will review bids and decide which provider to go with for the future of the program.