REGIONAL TRANSIT ORIENTED DEVELOPMENT PILOT PROGRAM

Task 4: Alternative Transportation Modes

CREATED FOR:
GREATER BRIDGEPORT TRANSIT
GREATER BRIDGEPORT REGIONAL COUNCIL

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Introduction

Alternative Transportation Modes is the fourth task of the Regional Transit Oriented Development Pilot Project undertaken by MetroCOG and Greater Bridgeport Transit(GBT).

GBT faces a rapid growth in ridership and wish to improve service in response to this growing demand.
The subject of this Task is a rapid transit feasibility review that examines the existing system and corridors in the study area to identify corridor options for establishing rapid transit services that are fully integrated into the Long Range Transit Plan (Task 5 of this project). The long range plan identifies the complete transit network that can be grouped into four different layers:

- Rapid Transit (15 minute all day service with high frequency in the peaks)
- Frequent Transit (20 minute all day service)
- Standard Transit (30 minute all day service)
- Community Transit (30-60 minute service)

Task 4 focuses on development of the Rapid Transit layer in the Long Rage Transit Plan by reviewing a number of routes traversing the study area to identify the best set of corridors that allow for establishing a simplified service that is as direct as possible, provides the maximum number of connection points, and serves existing corridors with the highest ridership. Future land developments and connectivity with the 4 existing and 1 future (Barnum Avenue) Metro North railroad stations were also key factors in determining future rapid transit corridors and routes.

The review of Rapid Transit corridors in Task 4 of this project, includes the following sections:
Public Outreach 4.1
Study Area Definition 4.2
Data Collection and Review of Existing Conditions 4.3
Needs Assessment 4.4
Corridor Alignments 4.5

BACKGROUND: THE REGIONAL TRANSIT ORIENTED DEVELOPMENT PILOT PROJECT

Overall

The Alternatives Analysis which comprises the identification and analysis of rapid transit corridors and routes in the study area is the fourth task in a series of planning projects jointly undertaken by the Metropolitan Council of Governments (MetroCOG) and Greater Bridgeport Transit (GBT), and collectively referred to as the Regional Transit Oriented Development Pilot Project (TOD Pilot Project). This family of Tasks represents an effort to coordinate data collection, analysis, mapping, community engagement and transit improvement concept development in the Greater Bridgeport Region. In all, the TOD Pilot Project includes:

Task 1 – The Town of Stratford Transit Oriented Development Pilot Project, completed in December of 2015;
Task 2 – The development of a Model TOD Ordinance for use in the region, completed in 2015;
Task 3 – The Alternative Transportation Assessment of the East Bridgeport Development Corridor, completed in May 2016;
Task 4 – The Alternatives Analysis of rapid transit corridors; and
Task 5 – The Long Range Transit Plan for the Bridgeport Region.

This document details the work conducted in Task 4 of the overall project and includes technical review, the study area definition, comprehensive data analysis to identify and evaluate potential corridors and recommended short term and long term transit service and street level improvements.

Funding

Funding for the Regional TOD Pilot Project was derived from a number of sources including:

- Federal Transit Administration (FTA) Section 5307 funding;
- Federal Transit Administration (FTA) Section 5339 funding;
- Funding from the Metropolitan Council of Governments (MetroCOG);
- Funding from the State of Connecticut Department of Transportation (CTDOT); and
- The Greater Bridgeport Transit Authority (GBT).

More specifically, the work conducted under this task was funded through a discretionary grant provided by FTA totaling $166,488 with additional funding provided by GBT totaling $41,622.

The Alternatives Analysis

This Task was initiated through the development of a scope of work that was jointly prepared by the MetroCOG and GBT and was conceived in an effort to evaluate the suitability of high frequency bus or Bus Rapid Transit (BRT) services in the coastal corridor that extends from the Fairfield Metro Center (Rail Station) at the western edge of the study area, to Stratford Center, the Stratford Rail Station and the Dock Shopping Center – a corridor of approximately 7.9 miles between Fairfield and Stratford Connecticut.

The evaluation and this report's proposals present a high frequency bus service corridor through the service area, street level improvements and service planning information. The plan sets the stage for the advancement of improved bus service which will serve as an important element in meeting the public transit needs of the region in the future.

Greater Bridgeport Transit (GBT) Service

Today, Greater Bridgeport Transit (GBT) operates fixed route and demand response bus services throughout the Greater Bridgeport Region (Connecticut). While GBT's core service covers its municipal members including Bridgeport, Fairfield, Stratford and Trumbull, GBT provides local and interregional services in other municipalities. These include peak period express service to Monroe, local and express services to Shelton and Derby and service along the southwestern coast of Connecticut (The Coastal Link) from Milford to Norwalk including service to Westport. It is noteworthy that GBT operates the Coastal Link (CL) service in partnership with Milford Transit District and Norwalk Transit District.

GBT's fixed route service has experienced significant growth over the past five years with ridership growing from 5.2 million in 2011 to nearly 6 million boardings annually today. Service is operated 365 days per year with operations extending from approximately 5:00am to 11:45 pm. Service levels are lower on Saturdays, Sundays and holidays. A fleet of fifty-seven fixed routes buses is used in this service. The buses are housed at GBT's Administrative and Maintenance Facilities at Cross Street in Bridgeport.

Nearly all of GBT's services connect at the Bus Station at the Downtown Bridgeport Inter-modal Center (710 Water Street) which also provides access to interstate bus services, Metro North and Amtrak rail services, taxis and the Bridgeport-Port Jefferson Ferry. The GBT services are designed as a "Pulse" transit system where buses operate out of the same exchange and meet at regular intervals to minimizes transfer time between routes.

GBT's bus terminal portion of the inter-modal facility was completed in September 2007 and includes 17 bus bays, a 10,000 square foot passenger ticketing and waiting facility, a raised pedestrian bridge to the adjacent rail platforms along with real-time information installed in 2009.

GBT also operates a demand responsive service known as "GBT Access" providing the requisite transportation under the Americans with Disabilities Act (ADA). Access currently provides approximately 95,000 door-to-door trips annually. This service is not operated directly by GBT and is contracted to TransDev through a competitive process which is renewed every three to five years. GBT's ADA service is provided through a fleet of twenty-nine minibuses housed and maintained at GBT's maintenance facility at Cross Street.

The base fare for GBT's fixed route services is $1.75 and GBT offers a family of time-based transfers . All GBT fare media is available at half fare for riders with disabilities and seniors. GBT passes are on sale on board and at Stop and Shops through the service area as well as GBT information center at the Water Street Station. The fare for ADA service is $3.50 for a one-way, door-to-door trip.

GBT Governance

The 171 direct employees at GBT and the demand response contractor are overseen by a Board of Commissioners appoint by the Chief Elected Officials of member municipalities. GBT's current board has ten representatives. The Board of Commissioners meets monthly to consider financial, operations, legal and policy matters.

GBT also has a Passenger Advisory Committee (PAC) which is comprised of approximately ten regular riders who meet with GBT staff periodically to discuss GBT services from the rider's perspective. GBT's PAC has been consulted on the elements of this project.

GBT Operating and Capital Funding

GBT receives its operating and capital funding from a number of sources. Operating investment is provided by the Connecticut Department of Transportation (CTDOT) on an annual basis for both fixed route and demand response services. GBT's fare box recovery ratio, the percent of operating expenses recovered through the fare box, hovers at approximately 32%.

Funding for GBT's capital program is provided by the Federal Transit Administration (FTA). This includes 80% of the expenses associated with all capital procurements. The remaining 20% of the capital expenses are provided by CTDOT. From time-to-time, GBT is the recipient of other discretionary or formula funding including Congestion Mitigation Air Quality (CMAQ) funding, State of Good Repair (SGR) and other sources.

TASK 4.1 ADVISORY COMMITTEE AND STAKEHOLDER OUTREACH

GBT's Public Participation Process

While the Transit Advisory Committee (TAC) ensured that representatives from member municipalities and agencies with responsibilities for regional transit planning, operating and funding were able to participate in the project and coordinate efforts, the Project Team conducted extensive outreach throughout the process which conformed to GBT's Public Participation Plan. The principles of the plan ensure that:

1. Potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health;
2. The publics contribution can and will influence GBT's decision making;
3. The concerns of all participants involved is be considered in the decision-making process; and
4. GBT will seek out and facilitate the involvement of those potentially affected.

The goals of GBT's public participation plan include:

- **Clarity in Potential for Influence** - The process clearly identifies and communicates where and how participants can have influence and direct impact on decision making;
- **Consistent Commitment** - GBT communicates regularly, develops trust with riders and our community and builds community capacity to provide public input;
- **Diversity** - Participants represent a range of socioeconomic, ethnic and cultural perspectives, with representative participants including residents from low income neighborhoods, ethnic communities and residents with Limited English Proficiency;
- **Accessibility** - Every reasonable effort is made to ensure that opportunities to participate are physically, geographically, temporally, linguistically, and culturally accessible;
- **Relevance** - Issues are framed in such a way that the significance and potential effect is understood by participants;
- **Participant Satisfaction** - People who take the time to participate feel it is worth the effort to join the discussion and provide feedback;
- **Partnerships** - GBT develops and maintains partnerships with communities through the methods described in its public participation plan; and
- **Quality Input and Participation** - That comments received by GBT are useful, relevant and constructive, contributing to better plans, projects, strategies and decisions.

The stakeholder outreach program has been a three phased process to solicit input as the development of this Task (and Task 5 - Long-range Transit Master Plan) have progressed. Each of these phases had a specific purpose based on the stage of the plan's development.

Phase 1 - Community Input

To meet the principles and goals of the GBT public participation process, and to ensure that the project's recommended proposals reflect the input of current riders and other community members and are clearly understood, the public engagement for this project was extensive. This phase included two community meetings held in 2014 to provide an overview of the project as well as to gather initial thoughts from the public.

FIGURE 1: Public Open House Bridgeport, November 18, 2014

The following public meetings were held:

April 24	Holiday Inn, Bridgeport
November 18	Holiday Inn, Bridgeport

To inform and educate participants, the Phase 1 overview included the provision by the project team of basic transit planning theory and a review of what the current Task of the transit planning pilot program was focused on accomplishing. At this stage, no preliminary proposals were presented as the focus was to solicit stakeholder input into the planning process.

Seat drops (cards with information on the transit planning tasks, website links to more information and reference details on the upcoming community events) leading up to each of the community meetings were conducted in the month prior to these events. All information was provided in both English and Spanish. The Project Team used a variety of other methods to attract attendees to these meetings. These included reliance on social media (Twitter - see Figure 2 and Facebook - see Figure 3), regular updates on public meeting dates and locations on the GBT and MetroCOG websites, and information on-board GBT buses and on bus station platforms.

At each community meeting, Spanish translation services were available as were GBT staff in order to gather

any complaints and/or commendations on existing transit services.
The goal of Phase 1 input was to gather input on the future of the transit system and identify corridors and key origins and destinations in the region. These results were then verified with the passenger boarding and alighting data from the Automatic Passenger Count (APC) and Automatic Vehicle Location (AVL) equipment on transit vehicles.

The meetings were well attended and provided the Project Team with the opportunity to present information about the current bus system and to gather information from riders and community members about current and future bus transit needs in the region.

FIGURE 2: GBT Twitter Feed

At the November 18th meeting the Project Team employed a real-time poling system to provide attendees with instant feedback to questions posed by the Project Team. The questions to attendees included a range of topics from why riders use the bus to street conditions traveling to and from the bus to potential hi frequency bus corridor alignments (Boston Avenue, Barnum Avenue or Connecticut/Stratford Avenues). The team also asked attendees about improvements they would like to see in the system.

Phase 2 - Initial System Proposal Input

This phase included both web and paper based transit surveys that were conducted between September 2014 and February 2015 to seek specific inputs on the state of the existing system as well as preferences for the future. This phase also included a Stakeholder charette with the Study Advisory Committee to review progress to date, present the detailed examination of key routes to potentially identify refined service options. The information from this phase was used to develop, refine and review draft corridor options.

TRANSIT SURVEY

A lengthy paper based and online (using SurveyMonkey) public survey with 27 questions about the transit system was used to gather specific inputs from stakeholders. Questions ranged from identification of preferred routes, how passengers transferred and views on the utilization of existing infrastructure (e.g. stations, Metro North rail service). This data was used to map out passenger movements and identify issues with current routings. An example of the polling results is shown in Figure 4.

An insightful comment that was received multiple times referred to the lack of understanding of the travel opportunities within the existing system. The complexity of some routes may be a barrier to travel which implies that route simplification should be explicitly considered in the network analysis.

STAKEHOLDER CHARETTE

This activity also involved the detailed review of existing routes as well as the identification of preliminary network options. These were presented to the Study Advisory Committee (SAC) as a three day design charette held at the Transit Terminal in Bridgeport in March 16-18, 2015. The charette included discussions of transit values and considerations for the study area, transit amenities and the initial thoughts and ideas of the project team. Members of the SAC participated in design sessions to create potential route options as well as highlight regional development concerns and connectivity issues.

OTHER INPUTS

Take Home Kits

As members of the community who potentially wished to comment on the project were not always available to attend the public information sessions or participate in the on-line survey, the project team prepared bilingual "take-home" kits which included hard copies of the survey questions, maps and other materials for riders to provide comments on their transit needs. While the kits appeared popular (approximately 200 were distributed), a very low return rate (less than 10) with little subsequent impact, was experienced.

TransformCT

It is worthy to note that at the time this project was being undertaken, the Connecticut Department of Transportation was conducting a public engagement process (TransformCT)which was designed to engage State residents in a dialogue about a vision for the future of Connecticut and how transportation can support that vision.

The project team requested transit related comments that were collected through the TransformCT initiative and this data was incorporated in the base information for consideration as part of this project.

FIGURE 3: GBT Facebook Page

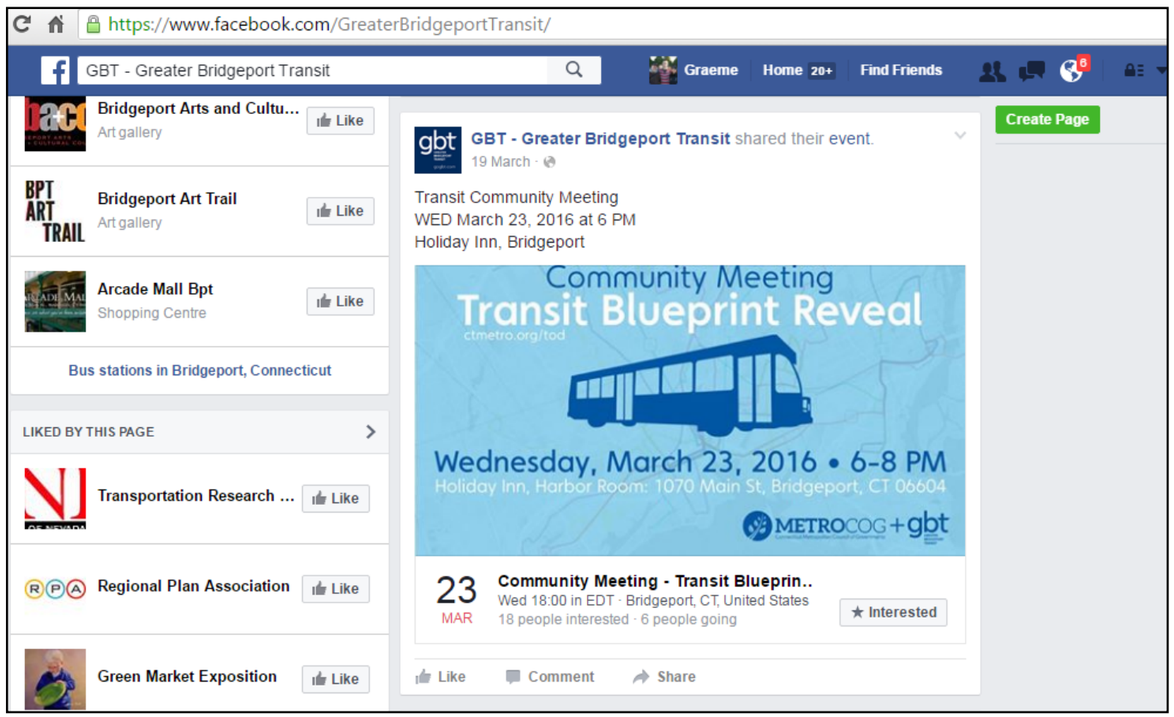
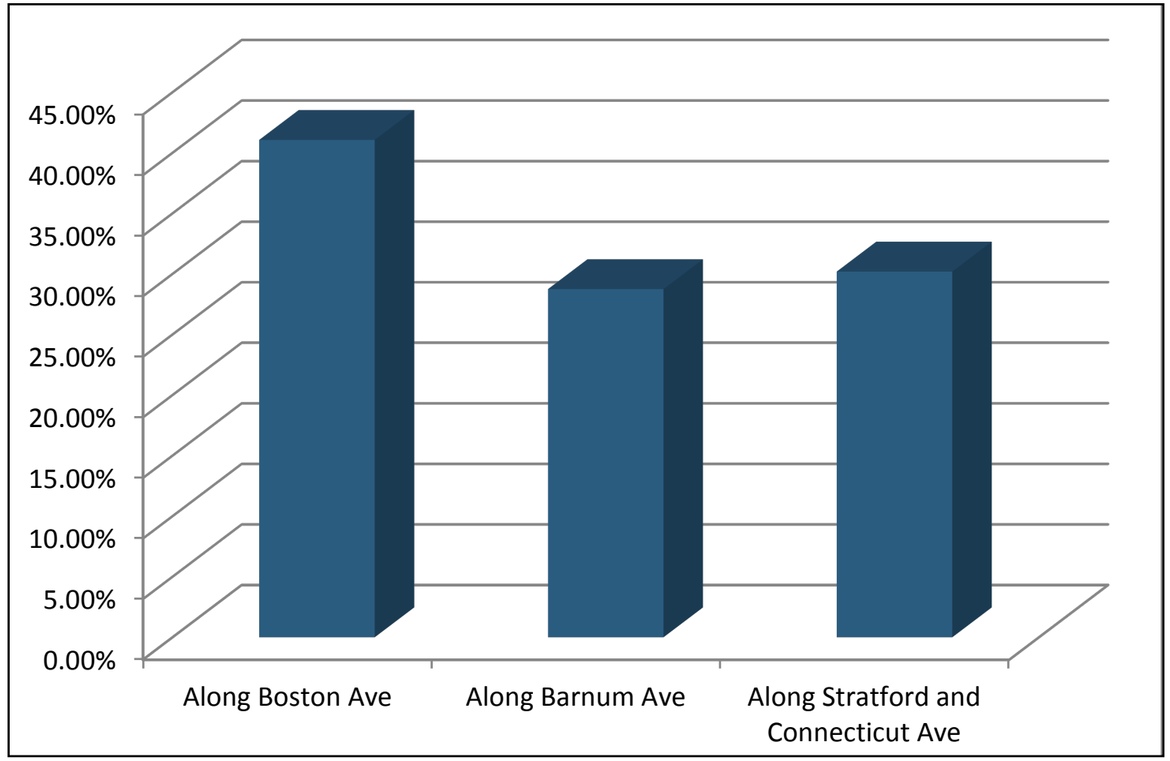


FIGURE 4: Example of polling question at Public Open House November 18, 2014

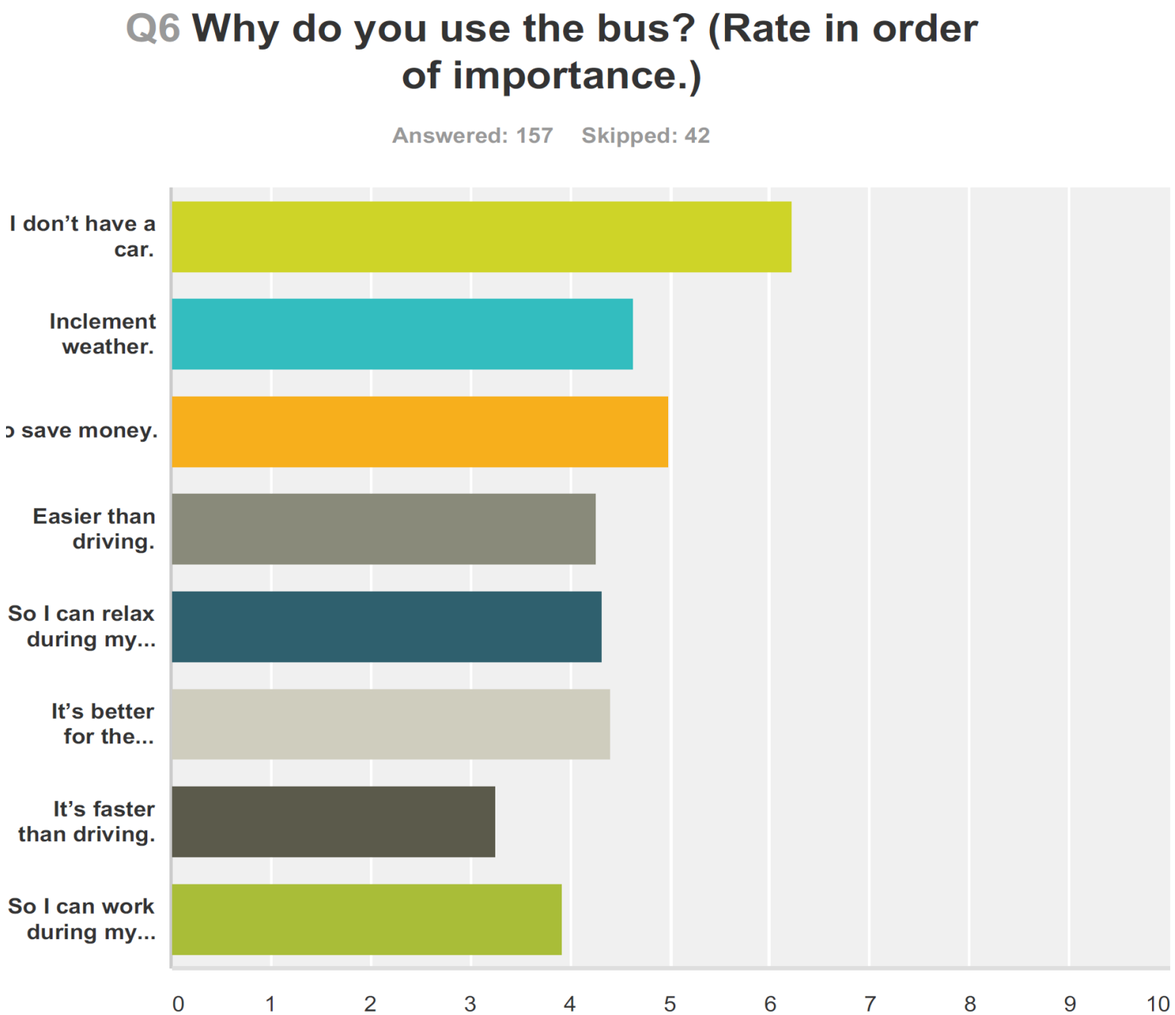


Some of the more significant and relevant TransformCT ideas included:

- Improve connections to Shelton and Derby
- Additional bus transit for the Valley Region/Extend GBT buses into the Valley
- Establish BRT on the Route 8/25 Corridor
- Improve the overall quality of bus transportation

The complete TransformCT comments related to the Bridgeport region are available from GBT.

FIGURE 5: Sample online questionnaire response



Input from Neighborhood Revitalization Zones (NRZs)

The Project Team reviewed all of the Neighborhood Revitalization Zone (NRZ) plans for information related to the transportation infrastructure. As many NRZ's do provide information on transit services and amenities, a summary of the of significant issues identified in these plans, is included below.

South End NRZ Strategic Plan

- Heavy focus on gateway improvement and pedestrian (e.g. landscaping and signage) improvements;
- Enhance the accessibility and convenience of public transportation;
- Work with GBT regarding service;
- Work with GBT regarding stops, shelters and amenities;
- Converting many one way streets to two way;
- Work with Stakeholders to identify funding resources for studying the feasibility of constructing an integrated community center/bus stop facility.

Black Rock NRZ Plan

- Development of gateways;
- Emphasis on bike and pedestrian access;
- Reconfigure Brewster as one way corridor;
- Investigate potential for neighborhood trolley route expansion to service areas such as Black Rock and the Fairfield Metro Station.

In order to expand and improve business and housing in low-to-moderate income neighborhoods or areas within neighborhoods, Bridgeport has established organized Neighborhood Revitalization Zones. With assistance from the City and consultants, neighborhood residents, non-profits, and faith-based organizations meet and form stakeholder groups. These groups identify the priorities and needs of the neighborhoods and can request City Council approval to Establish Neighborhood Revitalization Zones (NRZs)

East Side NRZ Plan

- Development of a new East Bridgeport Train Station off of Barnum Avenue central to the East Side and East End neighborhoods;
- Transit oriented development;
- Improved streetscape and sidewalks.

East End NRZ Plan

- Pedestrian amenities;
- Traffic circulation improvements;
- Bus stops and shelters throughout - Stratford Ave Western gateway; Stratford & Newfield; Stratford & Central; Stratford & Hollister and Stratford eastern gateway;
- Changing roadway directions.

Mill Hill NRZ Plan

- To consider enhancements to road infrastructure such as Boston Avenue reconfiguration;
- To address parking problems, especially along narrow streets;
- To promote pedestrian safety (pedestrian crossings, intersection improvements, traffic calming, bikeways);
- To improve road and sidewalk conditions;
- To promote Safe Routes to Schools Program and Safe Corridors Program;
- To coordinate improvements in service with Greater Bridgeport Transit;
- When the East Bridgeport Transit Station is constructed near the southwestern corner of the neighborhood, there will be the potential for significant impact on transit connections to the Hospital and within the neighborhood generally;
- Shelters and amenities.

Reservoir Avenue NRZ Plan

- Streetscapes;
- Add bus shelters;
- Pedestrian walkways/cross walks;
- Pedestrian lighting;
- Well lit bus stops;
- Specific road an intersection improvements;
- Re-imagining Trumbull Gardens.

West End

- Street lighting;
- Improved pedestrian infrastructure;
- Improve gateways;
- Traffic calming.

Ideas and inputs from these various outreach efforts were incorporated to inform the project as it moved forward. Key take-aways from the these efforts included:

- More frequent services;
- Extended morning and evening service;
- Street level improvements;
- A unified fare system (allowing more seamless transfers among systems operating in the region);
- Improved rail connections;
- Improved interregional services (to Waterbury and Danbury).

Public outreach was continuous throughout the project. Following the initial meetings and the evaluation of existing conditions, the Project Team began the development of system improvement proposals. The draft proposals formed the input to and were the subject of the next phases of public input which focused on finalizing the corridor options for input into Long Range Transit Plan (Task 5).

Phase 3- Draft Network

Phase 3 saw the creation of the draft network and rapid transit corridor options based on the options that were identified by the project team. In June 2015, preliminary network options were presented to GBT and GBRC staff. The purpose was to determine any operational or land use considerations that would alter the proposed routes prior to the Phase 4 community meetings.

Crucial during the draft network development was to ensure that routings made operational sense and that key destinations were being served.

Phase 4 - Refined Network

Phase 4 saw the presentation of the draft recommended transit network that included the rapid transit and frequent transit corridor components. This was the opportunity for the public to review these proposals and offer comments.

Proposals were posted on the GBT website and a second round of public input sessions were held in September to present the proposed rapid transit layer of service and routing alternatives.

The following 3 public meetings were held to solicit feedback on the proposals:

East End (September 23): Meeting #4 - Housatonic Community College
Bridgeport (September 24) Open House- Bridgeport Transit Exchange
Bridgeport (September 24) Meeting #5 -Ralphola Taylor Community Center YMCA

Phase 5 - Final Proposals

This phase was undertaken on March 23, 2016 at the Holiday Inn, Bridgeport to present the final transit network that included the Bus Rapid Transit corridors and routing proposals to the public.

The Technical Advisory Committee

GBT conducts extensive public engagement for any service change it is contemplating. Public outreach is aimed at ensuring that all members of the community have the opportunity to review proposals related to the region's bus service and to provide comments and present their own ideas. GBT's outreach for this project included the assembly of a Technical Advisory Committee (TAC), which also served as the TAC to review the Long Range Transit Plan (Task 5).

The TAC included members from the follow agencies:

- The City of Bridgeport;
- The Town of Stratford;
- The Town of Fairfield;
- MetroCOG;
- GBT;
- The Town of Trumbull;
- The Valley Council of Governments; and
- The Connecticut Department of Transportation (CTDOT).

TASK 4.2 STUDY AREA DEFINITION

The initial study area for this Task was generally described as a corridor running east-west that connects the Stratford Town Center with Fairfield's Fairfield Metro rail station. In addition, one of the initial activities in this task was a detailed review of the Seaview Avenue corridor in terms of suitability for inclusion into the study area.

As the study progressed in tandem with the Long Range Plan development and the other Tasks of the TOD Pilot project, it became clear that the east-west corridor that should be examined should center on the Coastal Link service and Route 1. These 2 routes are two of the three highest ridership routes in the GBT system.

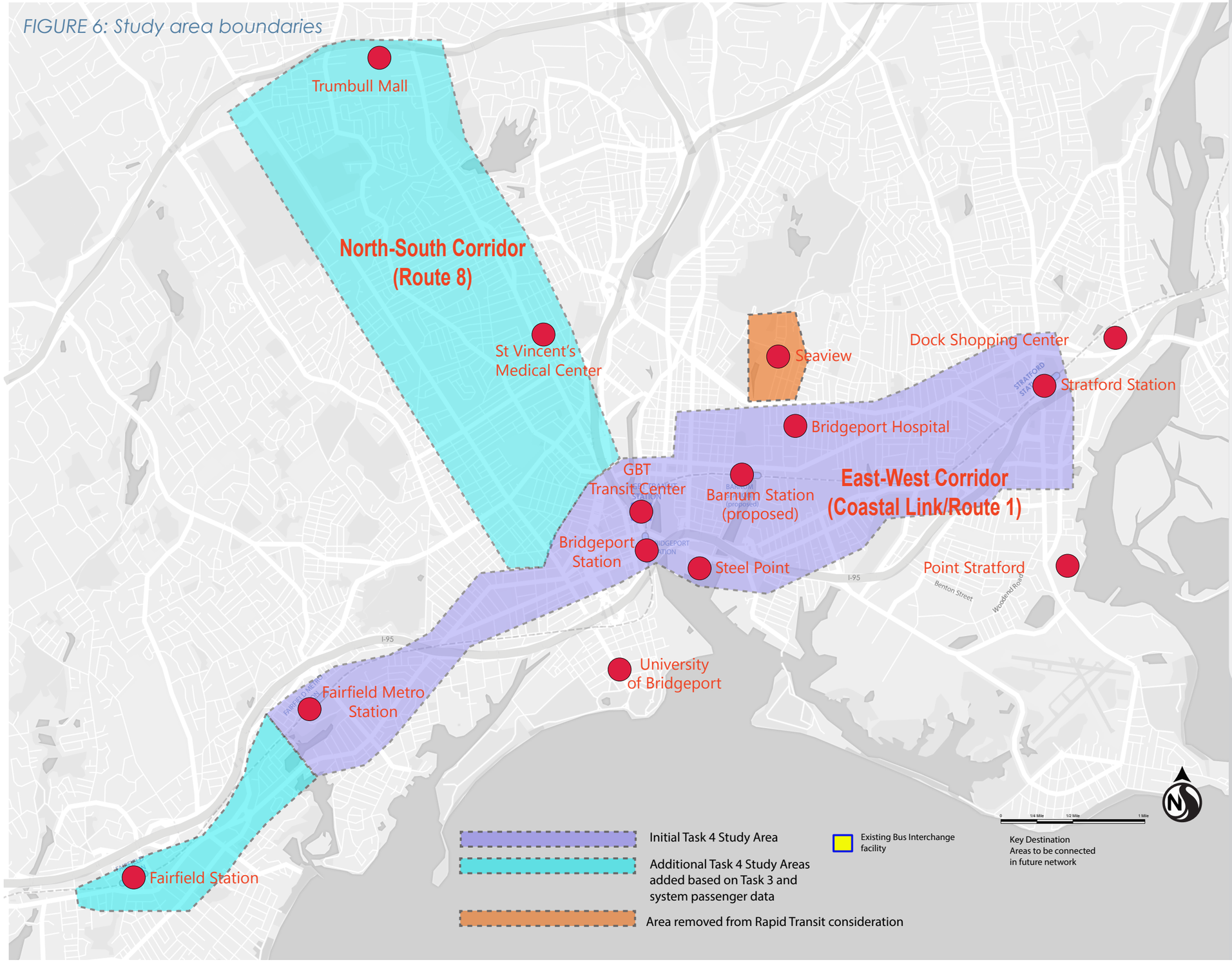
The Seaview Avenue Corridor was identified as a potential component of the primary study area, however, as work on the East Bridgeport Development Corridor (Task 3) progressed, it became apparent that strong links between the Lake Success area and downtown Bridgeport and the University of Bridgeport were more preferable in the short term than linkages with the BRT network. In addition, Seaview Avenue was harder to review due to the lack of existing transit services, despite the Barnum Station feasibility Study which may assist in establishing this corridor as a potential BRT component.

During the project, the GBT requested that the study area be further modified to incorporate the major north/ south corridor in GBT's service area. This modification resulted from the analysis underway in Task 3 (the Alternative Transportation Assessment of the East Bridgeport Development Corridor) which focused upon Seaview Avenue as a possible major corridor. In addition, the review of the Automatic Passenger Counter (APC) data revealed that in terms of demand and connectivity, Main Street, Bridgeport is as important as the Coastal Link/Route 1 corridor with regards to a potential need for high frequency service. This new north-south study area between downtown Bridgeport and the Westfield Trumbull Mall has three major corridors:

- Main Street.
- Madison Avenue
- Park Avenue

The study area was further refined to include an extension of the corridor westward to incorporate Fairfield's commercial sector around the Fairfield rail station to accommodate its development potential along Boston Post Road, Old Post Road, Fairfield Avenue, State Street toward downtown. This corridor represents GBT's major east/west services which generally run parallel to the Metro- North New Haven Line and Interstate 95. At its western end, in the vicinity of Commerce Drive in Fairfield, the corridor can be considered a mix of commercial and light industrial development. In the center of the corridor is downtown Bridgeport and at to the east, the corridor moves through Bridgeport's East End, East Side and Mill Hill Neighborhoods which include residential, commercial and industrial developments.

FIGURE 6: Study area boundaries



Eastward, the study area encompasses, Barnum Ave to Stratford Avenue into the Stratford downtown area and railroad station via Main Street and then east along Post Road to Milford.

There are several noteworthy developments or planned developments, likely to impact the transit infrastructure in the corridor, which were considered in the crafting of proposals in this project. These are shown in Figure 8 and include:

- Proposed Development at the Lake Success Eco-Park;
- Steele Point Development;
- Possible expansion of Bridgeport Hospital;
- Point Stratford;
- Stratford Center Development;
- Seaview Avenue Corridor Development;
- The Proposed Barnum Avenue Station.

Figure 6 indicates the general study area for the project from an east-west alignment as well as a north-south alignment.

TASK 4.3 DATA COLLECTION & ANALYSIS OF EXISTING CONDITIONS

DATA COLLECTION

GBT installed Automatic Passenger Counters (APCs) on its fleet of fixed route buses in 2009 and since that time has been using the bus stop utilization data that it collects (bus stop based passenger boardings and alightings by route and stop and time of day) to refine its services. This project represented the first complete route review since the last system restructure undertaken in 2007 and the installation of the new equipment to inform decision making.

Data for this project was collected in the spring of 2014 and when reviewed, this 4 month sample was found to be somewhat inaccurate. Subsequently, a second sample was collected in the fall and used to validate findings and analyze ridership.

The data also allowed for the integration of APC data with the output from Automatic Vehicle Location (AVL) data which allows for linking boarding and alighting activity to actual locations (based on GPS coordinates) to allow stop level comparisons of on/off movements. AVL data also provided useful information with respect to trip cycle length and running times.

More detailed traffic analysis has occurred within Tasks 1 (Stratford TOD) and Tasks 3 (East Bridgeport/ Seaview Avenue TOD) to support the conclusions from the transit data.

Due to time constraints and data availability, three time periods were analyzed by direction for weekdays only:

- 6 - 9am (AM Peak)
- 9am to 3pm (Midday)
- 3 - 6pm (PM Peak)

The direction of travel was further isolated so that daily boardings and alightings could be shown for both directions.

Land use and demographic data has been used extensively in the Stratford TOD Pilot Project (Task 1) and the East Bridgeport Development Corridor (Task 3). This data together with the development potential of various areas are the major factors in examining the potential for alternative transportation options from an origin-destination perspective.

Transit data collected and utilized for this study focused upon understanding the ridership patterns along the major corridors and the interaction that occurs with the Metro North rail system. Corridor movements in the study area as well as those movement patterns on adjacent intersection corridors create a picture of how people move around the region.

Figure 7 shows an example of boarding and alighting data by route that was examined by direction and time period. A corridor with strong ridership movements in both directions and with multiple origins and destinations has potential to be considered for rapid transit options.

Figure 8 is an example of the use of daily ridership data to determine the relative productivity of points along a corridor. Once this information was collected and mapped, the routes were removed from the map in order to allow examination of the data to better determine the existence of patterns of movement.

The mapping associated with the service proposals for this project is included in the body of this document. The full set of mapping for all GBT services is included in Appendix A.

FIGURE 7: Example of ridership by stop, direction and time period

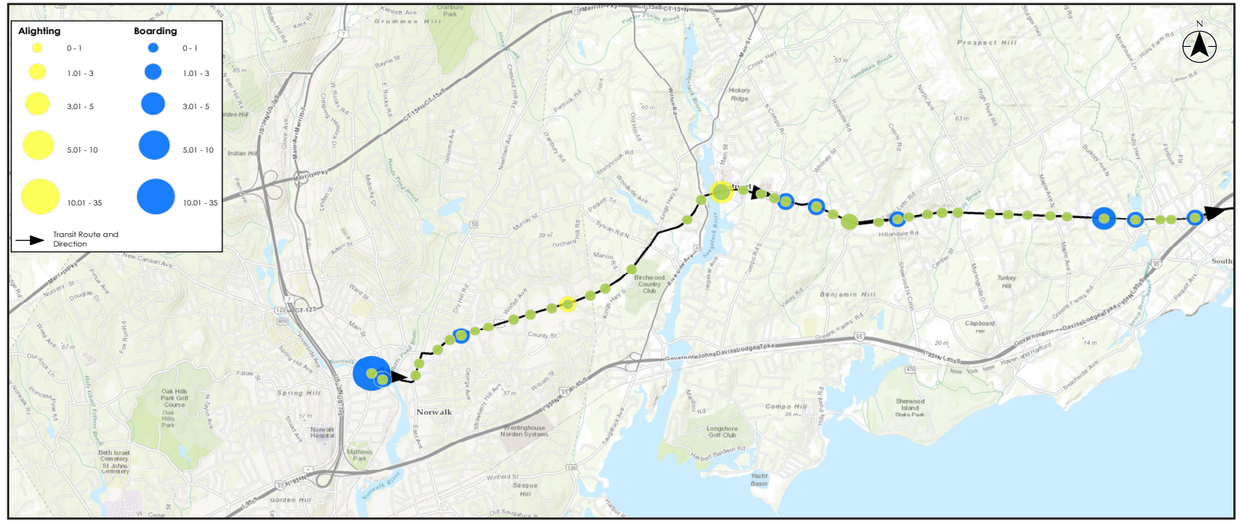
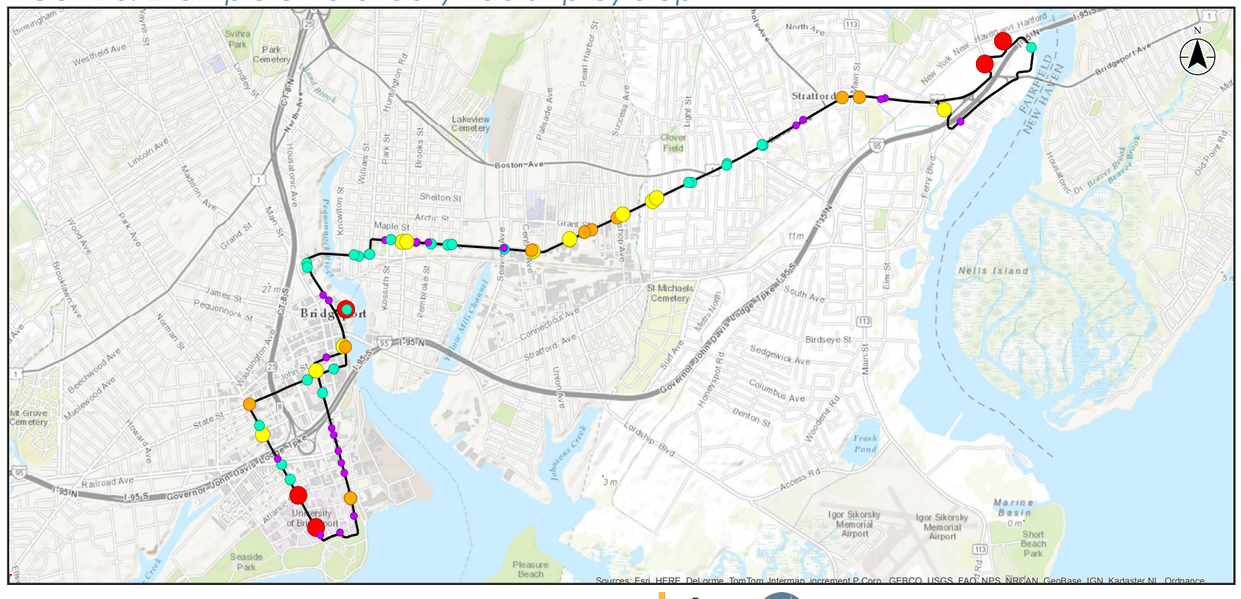


FIGURE 8: Example of total daily ridership by stop



Service Planning

The service planning section covers the following Tasks:

Needs Assessment 4.4 - A review of the key corridors and the current conditions (Task 4.4).
Corridor Alignments and Service Plan - corridors that feature in the planning of BRT style services and the proposed service for the services (Tasks 4.5 and 4.7).
Scenario Impacts – Recommended Infrastructure improvements (Task 4.6).

With respects to transit modeling, the original project methodology was amended and modeling has been limited to Tasks 1 East Bridgeport and Task 3 Stratford TOD. The regional scale planning of the transit system for Task 4 (Alternate Modes Study) and Task 5 (Transit Master Plan) have incorporated the targeted modeling results along with growth information from the area municipalities as well as key transportation network issues such as current operational conditions along major corridors, and the realistic extent of roadway improvements.

The Coastal Corridor study included the specific intersection review of the corridor and noted very few opportunities within the study area to make physical changes that would increase the functionality of rapid transit.

Station planning has not been considered at this stage of planning but is noted within the service plan as an issue.

TASK 4.4 NEEDS ASSESSMENT

The needs assessment includes a review of the corridors as well as the existing services within those corridors. Some operational considerations must also be assessed that impact the ability to operate bus rapid transit on these corridors.. This section considers both bus and rail services and the review of bus service in this section is at a greater level of detail than in the Long Range Transit Plan (Task 5).

The terms of the study required examination of a number of routes that intercepted or ran parallel to the major corridors. The routes are shown in Figure 9 as they relate to the identified study corridors in Figure 9. There are a total of ten routes that intersect to two main east-west or north-south corridors:

North-South

Route 4 - via Park Avenue
Route 3 - via Madison Avenue
Route 8 - via Main Street

East-West

Route - Coastal Link (CL)
Route 5 - Fairfield to Bridgeport
Route 10 - Fairfield Woods Road to Stratford
Route 1 - University of Bridgeport to Stratford via Barnum Avenue
Route 13 - Bridgeport to Lake Success area
Route 23 - Bridgeport to Derby/Shelton
Route 16 - Hawley Lane to The Dock Shopping Center

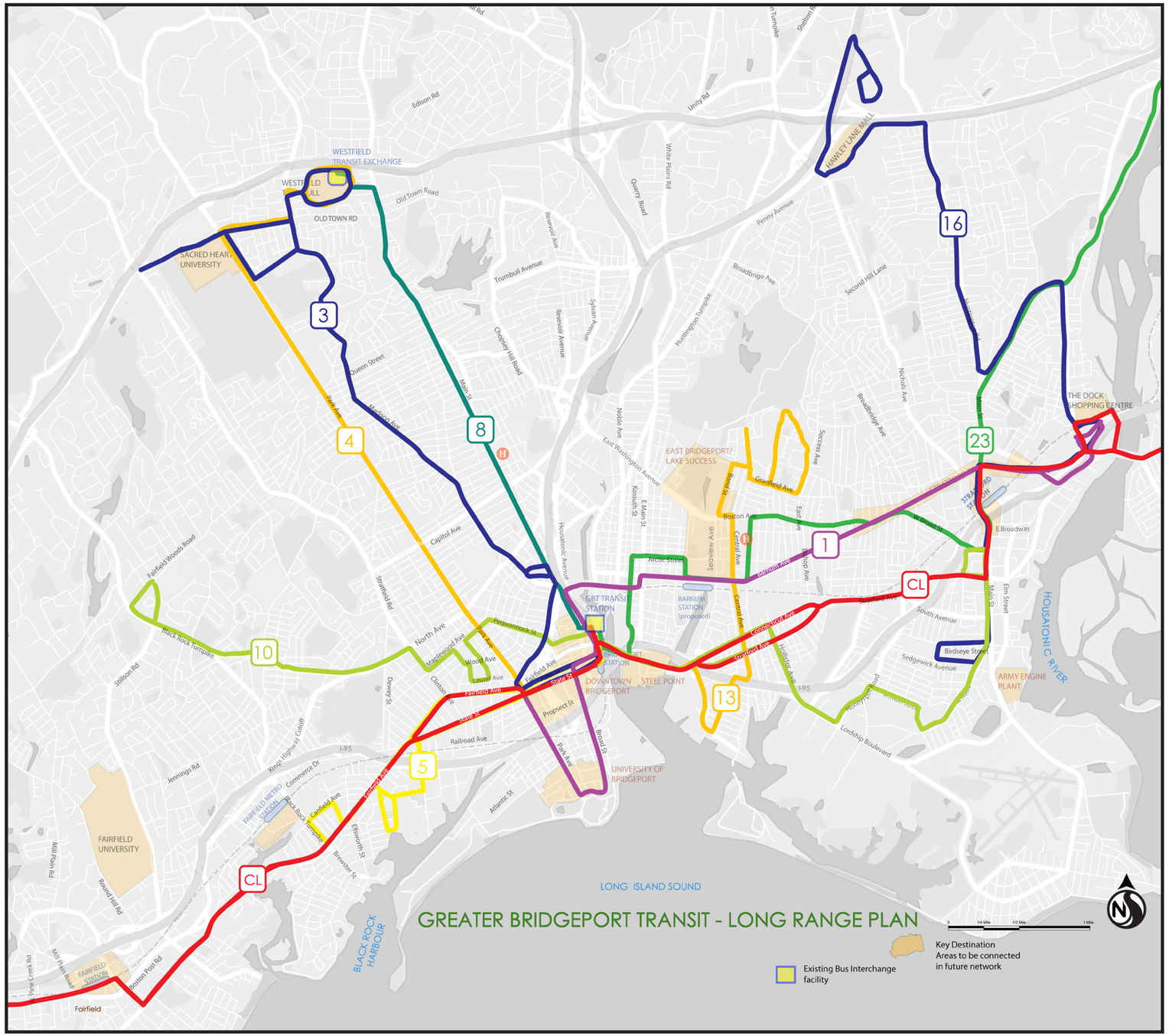
Routes 16 and 23 have limited service, while others provide mainline service such as Route 8 and the Coastal Link. Routes 6 and 13 are local in nature while the eastern half of Route 10 provides a similar function.

Figure 9 also shows the major investment areas and destinations within the region. With the exception of Fairfield University, which is challenging to serve due to the lack of access and stopping points as well as low railway bridges that prevent the use of certain bus types, all key areas are served by two corridors:

1. Boston Post Road-State/Fairfield-Barnum Avenue-Main Street (Stratford)
2. Main Street (Bridgeport)

The examination of route density (the simple overlay of all the routes in order to see if there are corridors that have higher levels of service that is not apparent in a cursory look at the transit map) shows that Fairfield Avenue, State Street as well as portions of various roads in the study area have the

FIGURE 9: Routes that touch the identified corridors



highest density of transit service in the region.

Trip density shows the volume of service provided within corridors without reference to specific routes. This enables a clear view of the regions transit service by corridor. As shown in Figure 13, there are a number of routes and streets that stand out:

- Main Street in Bridgeport
- Boston Post Road
- Fairfield Avenue
- State Street
- Barnum Avenue
- Stratford Avenue and the reverse couplet of Connecticut Avenue

The existing transit ridership data also support these corridors. The creation of a layered transit service would allow the two corridors noted above to have a high quality transit service that eventually can become rapid transit if the conditions dictate the need. The needs assessment identified the two key corridors from a transit and transportation perspective and combined with the potential to establish high quality connections to Metro North commuter rail services and to serve potential growth areas such as Fairfield, around Fairfield Metro station, Stratford Station, Barnum Station and East Bridgeport, Barnum Avenue, Main Street in Stratford, Steel Point and downtown Bridgeport. These corridors should be supplemented with high quality service along Route 10 and Stratford Avenue with connections to the University of Bridgeport.

Figure 10 shows the density of trips provided by the GBT in the service area. The density or number of trips (regardless of route) by corridor is a method to see where the existing service hours are being provided. This provides some insight into where the current demand in the system is located. As can be seen in the figure, Main Street (Bridgeport), Fairfield Avenue, State Street, Post Road, Stratford, Connecticut, and Barnum Avenue have the highest volume of trips in the system.

Route Density (Figure 11) shows the level of overlap within a system. The GBT system has very few instances of overlap within the system except in the State/Fairfield couplet, in the Success Avenue area of Mill Hill, and to a lesser degree on the Stratford/Connecticut couplet and along Main Street in Stratford. This means that opportunities to transfer are limited to connecting points between routes or downtown. It also shows that the Eastern portion of the Coastal Link route has duplicating services creating a high frequency corridor.

Figure 10 - Trip Density

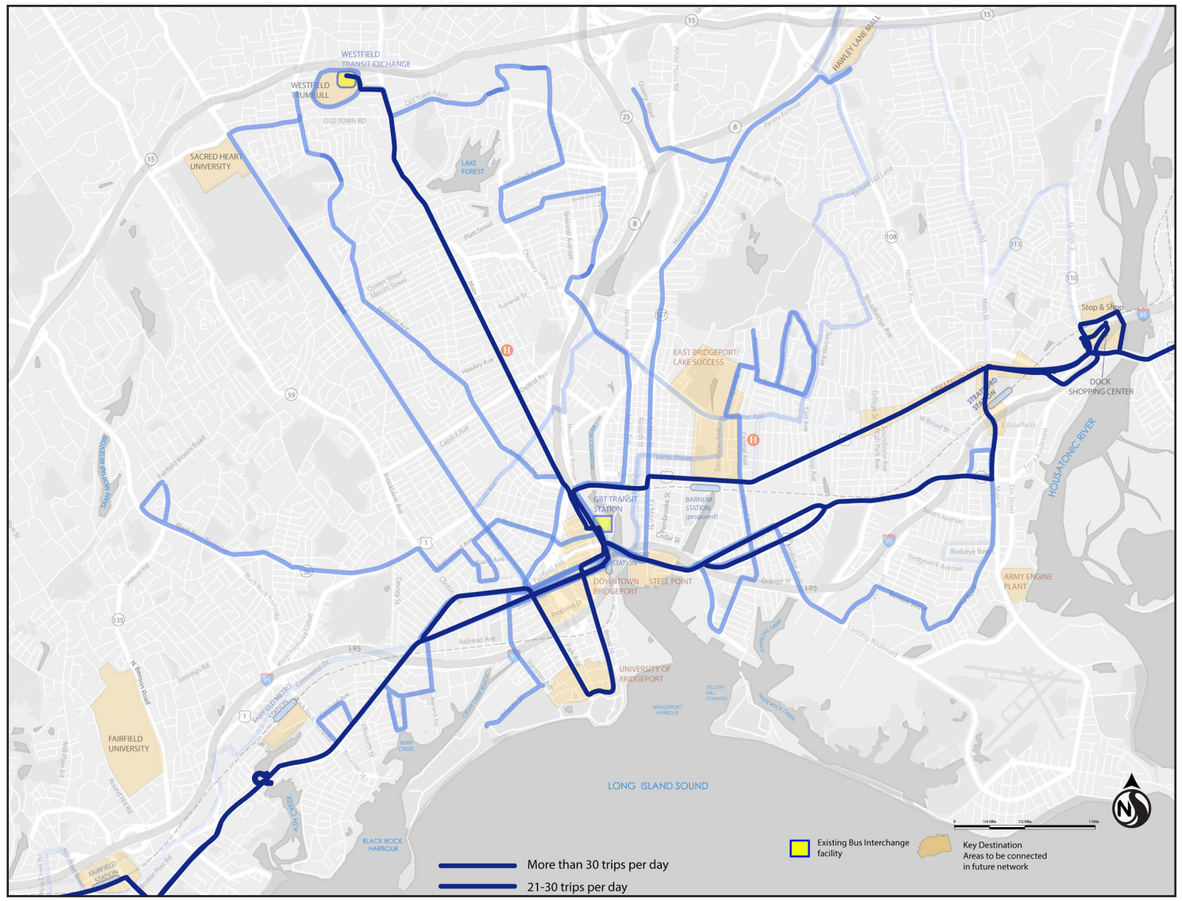
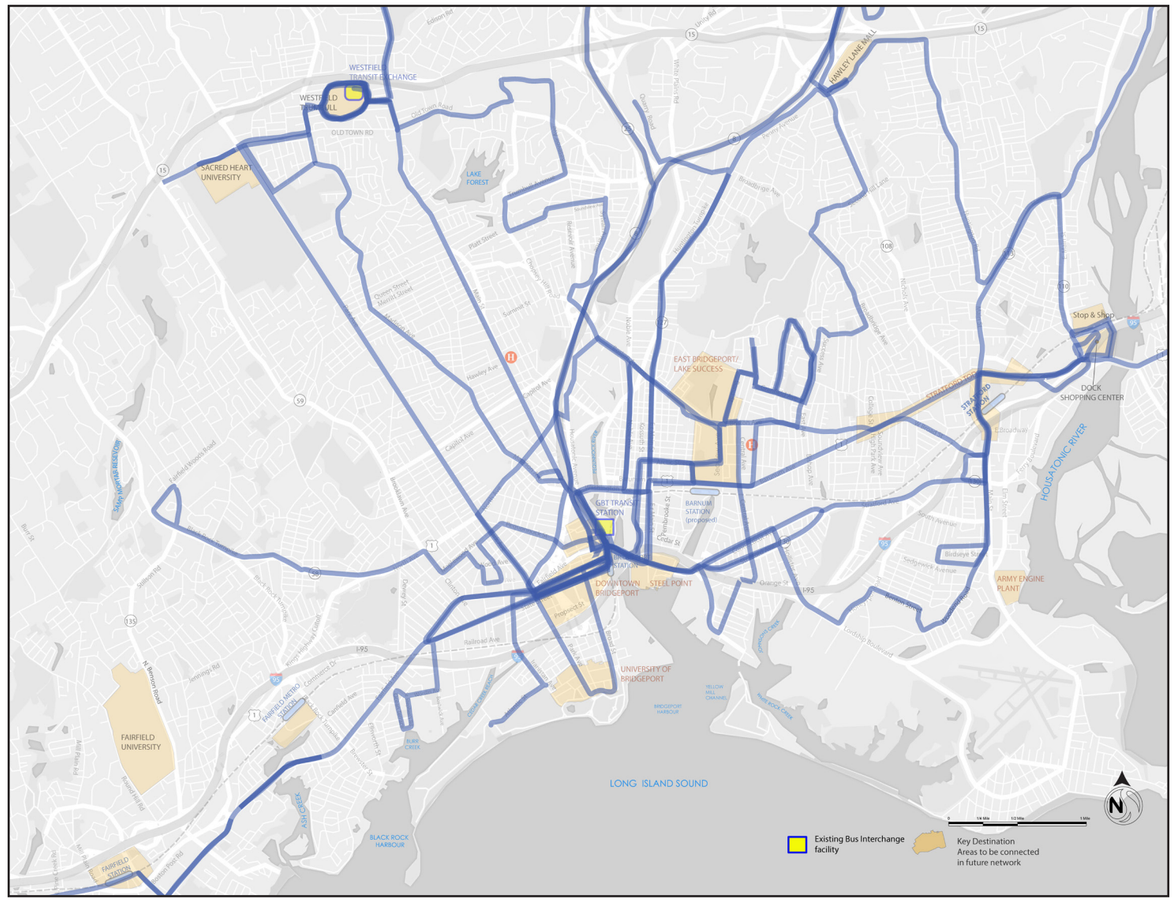


FIGURE 11: Route Density



The major services in each corridor were examined along with a review of the existing transit network. The current network indicates high use corridors either through the provision of transit trips or the duplication of corridors with multiple routes.

METRO NORTH RAIL

Metro North services were examined to understand the commuter usage to NYC that occurs on a daily basis while the key transit routes through the two corridors (Routes 8, coastal Link, Route 1 and Route 10) are also reviewed. Every route in the system has been examined in detail as can be seen in Appendix A.

Metro North service between New York City and New Haven is provided on the New Haven Line with both local and express trains. There are four stations located within the current study area (Fairfield, Fairfield Metro, Bridgeport, and Stratford) with a future additional station that has been proposed at Barnum Avenue/Seaview. Data provided by Metro North Rail shows Bridgeport station as the station with the highest utilization in the study area. Milford Station to the east has similar ridership levels as Fairfield while Southport and Green's Farms to the west are significantly lower. The total number of trains per day varies with Stratford receiving slightly fewer trains per day in either direction than the other four stations.
The weekday total trains by time period varies from 41-46 inbound to New York City and a larger number heading back to Connecticut, particularly in the evening. It should be noted that for comparative purposes, the time periods used for this review differ from those used by Metro North in dictating fare rates. The following times periods were used:

AM Peak: 6-9am
Midday: 9am to 3pm
PM Peak: 3-6pm
Evening: all remaining trips.

The amount of service indicates that Metro North is an important regional service for any proposed service to connect with. A key feature of this study area is that Metro North rail stations are adjacent to key roads that may be utilized for rapid transit options such as Bus Rapid Transit.

TABLE 1: Metro North trips per day

To NYC	AM Peak	Midday	PM Peak	Evening	Daily
Stratford	15	13	6	7	41
Bridgeport	19	14	6	7	46
Fairfield Metro	19	14	6	7	46
Fairfield Metro	19	14	6	7	46

From NYC	AM Peak	Midday	PM Peak	Evening	Daily
Stratford	6	10	8	31	55
Bridgeport	7	10	8	33	58
Fairfield Metro	7	10	8	33	58
Fairfield Metro	7	10	8	33	58

TABLE 2: Metro North ridership Boardings

	Weekday Inbound	Weekday Outbound	Total Weekday
Stratford	1313	85	1398
Bridgeport	3012	440	3452
Fairfield	1502	51	1553
Fairfield Metro	2048	118	2166

FIGURE 12: Metro North Rail

ROUTE 1

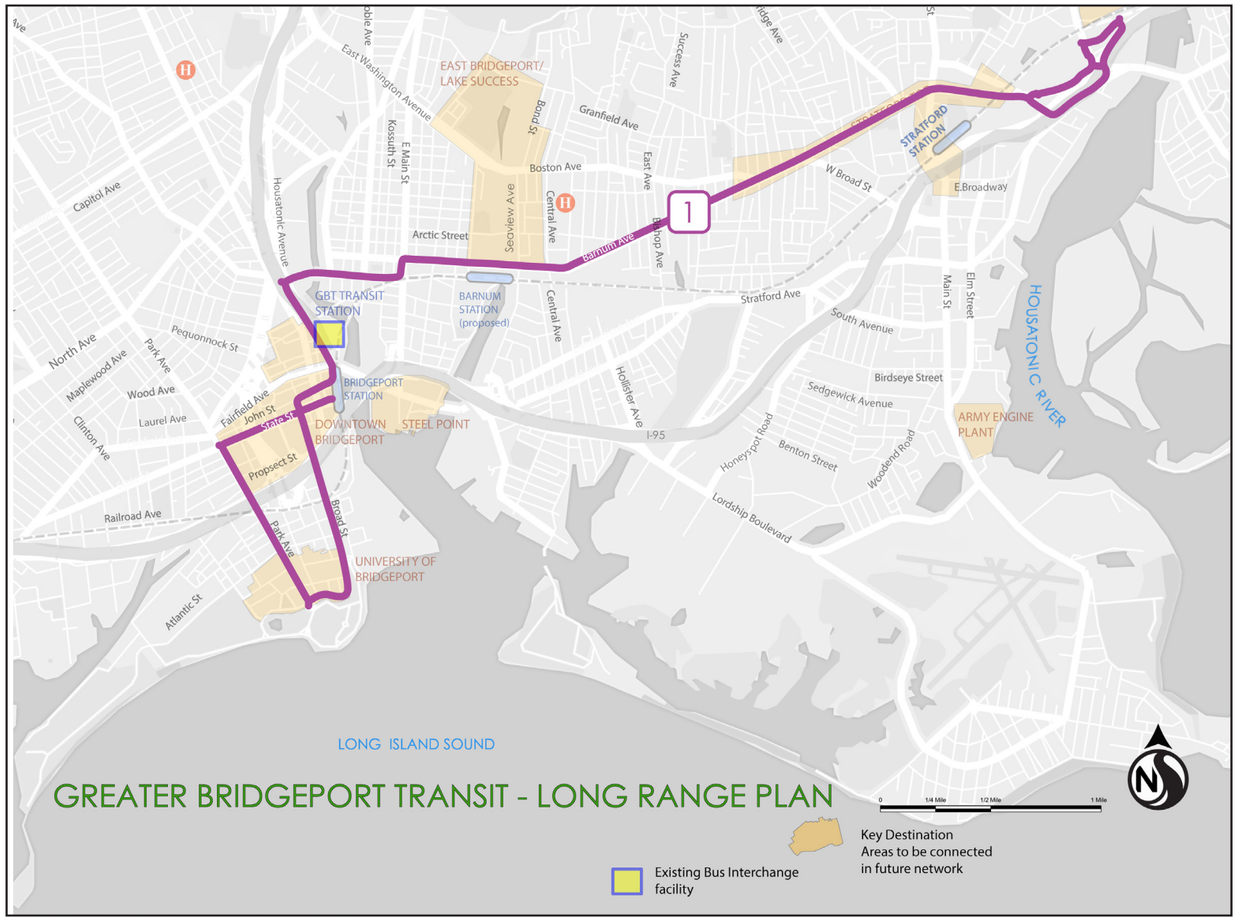


FIGURE 13: Route 1 existing routing

Route Description
The route provides two major connections from Downtown Bridgeport namely to the University of Bridgeport and to the Dock Shopping center in Stratford. Barnum Avenue and Boston Avenue are the primary streets between Bridgeport and Stratford that were considered during the alternate transportation analysis.

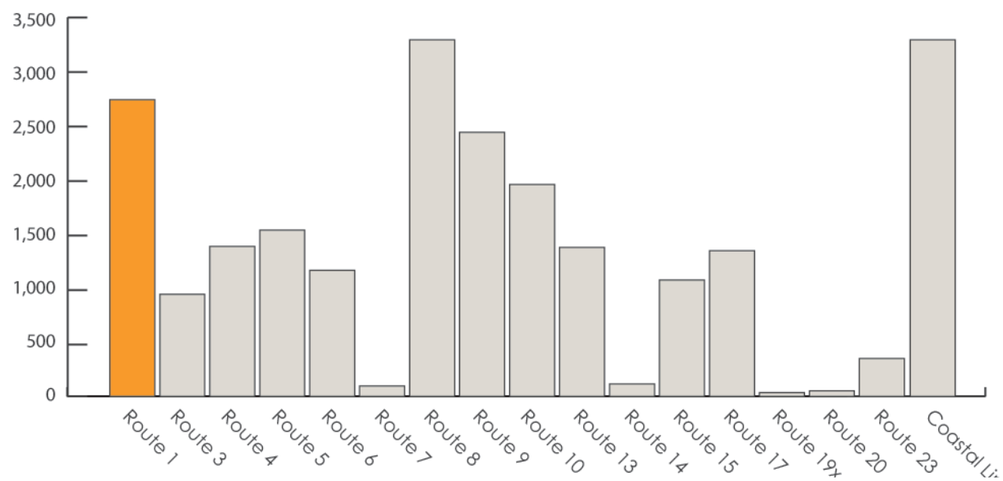
Observations
Route 1 is one of the best performing routes in the GBT network, with about 160 boardings per hour in the morning and afternoon peaks

Route Highlights

There is high utilization across entire route corridor, with most stops along the corridor having a similar amount of stop activity by time of day.

- Major activity centers and transfer points have the largest stop activity for this route. These include: University of Bridgeport, The Dock Shopping Center, Stratford Crossing, Stratford Town Center, and the GBT Bus Station.
- Outside of these key destinations, the busiest segment of the route is on Barnum Ave between Central Ave and Boston Ave. This is primarily a walkable, residential area and is also home to Bridgeport Hospital.
- Travel patterns in each directions appear similar for all times of day, although there are significant variations in the volumes of passengers.
- Ridership is greater in the AM peak than in the PM peak or midday, with the busiest stops seeing up to five times as many boardings/alightings in the AM than in the PM.

Route 1 Snapshot	
Weekday Daily Boardings	2,730
Percent of System Activity (Sampled Routes)	12%
Daily One-Way Revenue Trips	72
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	Future FTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	7%
Average Boardings per Hour - AM Peak	160
Average Boardings per Hour - Midday	199
Average Boardings per Hour - PM Peak	161



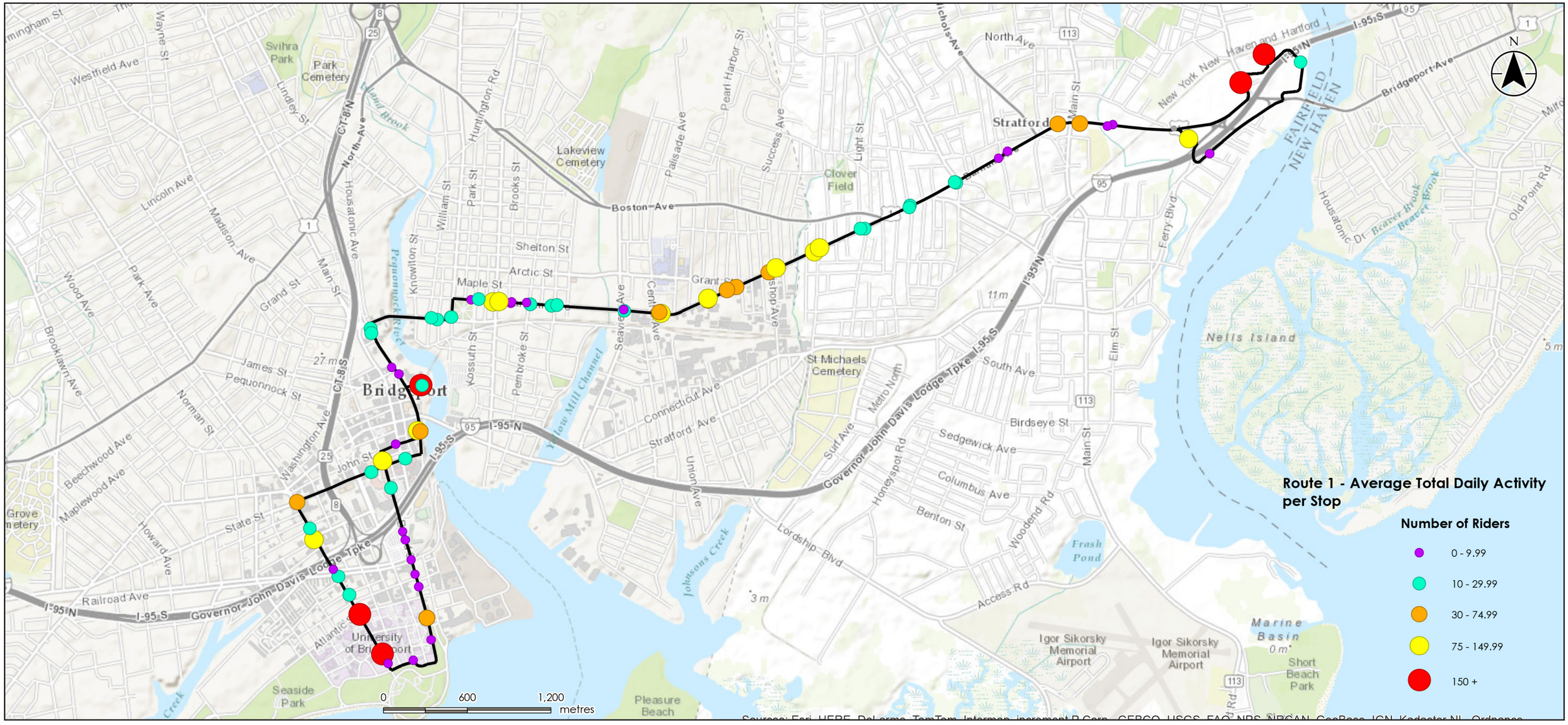


FIGURE 14: Route 1 total daily trip activity

Route 1 has consistent usage throughout its length but there are operational challenges with the University of Bridgeport extension. Trip cycle length and passenger volumes means that the route is challenged to meet the scheduled running times and actually performs as two routes: Bridgeport to Stratford and a University connector.

The Barnum Avenue corridor is well suited to higher levels of transit based on road width, the investment in improved pedestrian infrastructure on the eastern half of the roadway and the number of key points and connections that can be made.

The movement out of downtown Bridgeport to Barnum Avenue could be altered to add connectivity to the Steel Point development area as well as the relocation of the ferry terminal. The University portion of the route could be moved onto a different route to allow through movements to link with the coastal corridor services. The lack of service to the Stratford railroad station is a consideration for relocating the service within the Stratford area to take advantage of that key transportation resource as well as support potential Transit Oriented Design potential along Main Street in Stratford.

COASTAL LINK

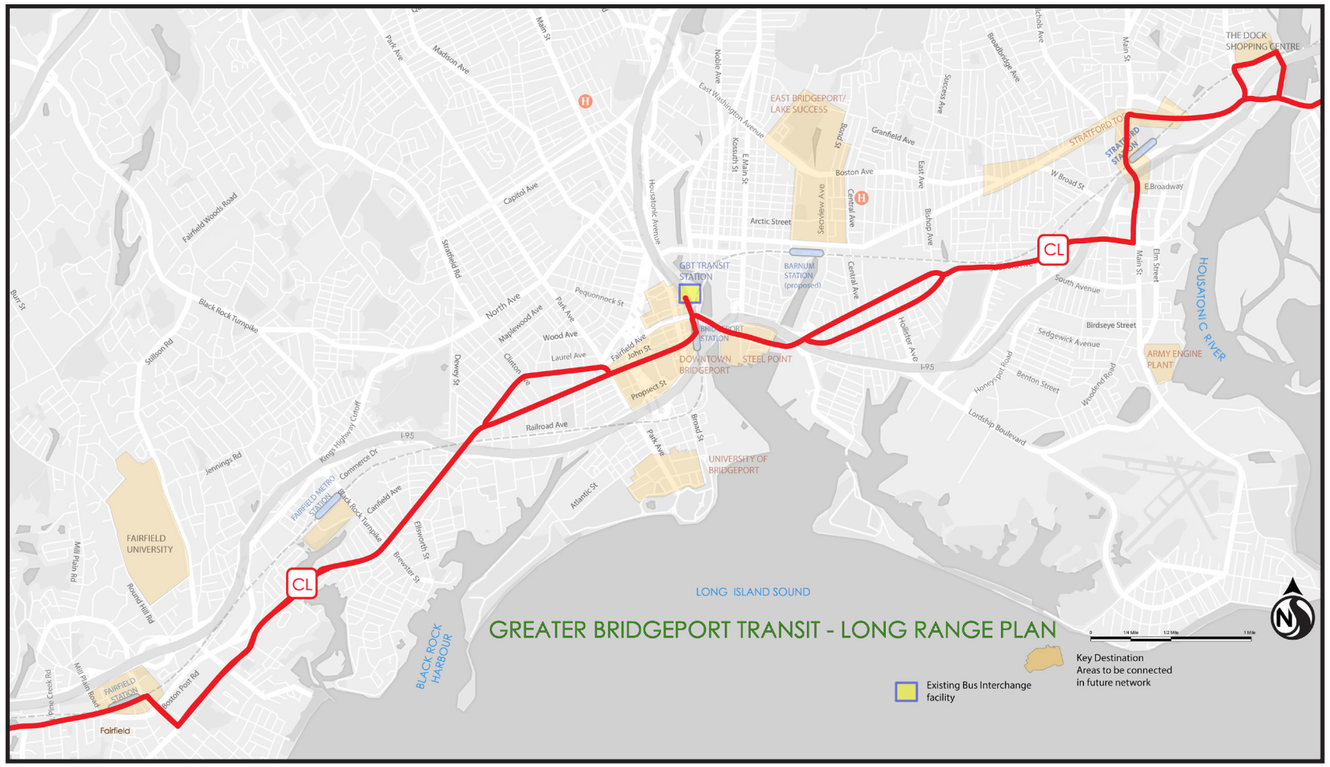


FIGURE 15: Coastal Link existing routing

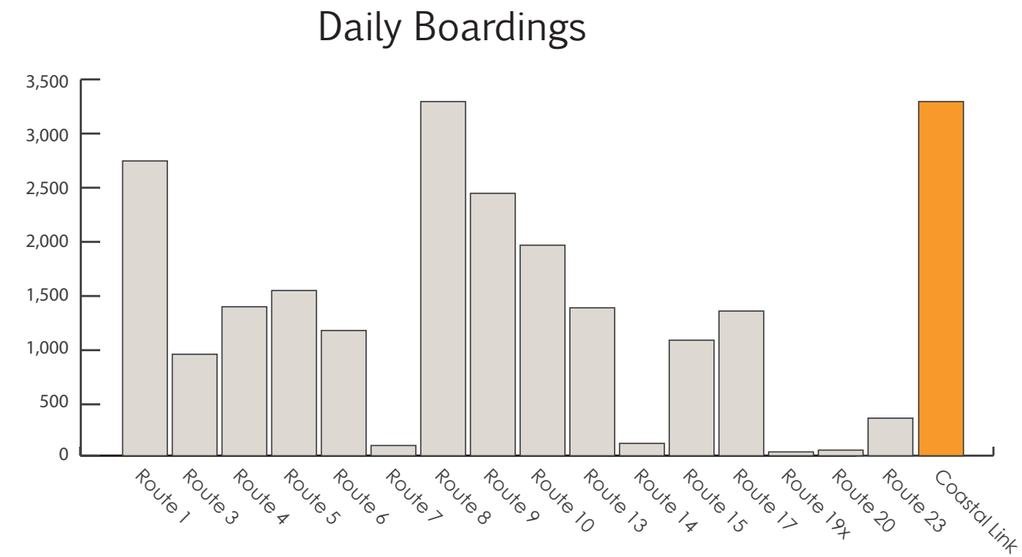
Route Description
This route connects the Norwalk Wheels Hub to the Westfield Connecticut Post Mall, with connections to the rest of the GBT system at the Dock Shopping Center, Stratford Train Station, Downtown Bridgeport, and the Fairfield Train Station. The route is operated jointly through Bridgeport by Norwalk, GBT and Milford.

Observations
The Coastal Link is the busiest route in the GBT network, connecting a number of communities, town centers, employment areas, and train stations along the coast. There are challenges with on-time performance, missed trips, and crowding. Some of the performance issues are related to the length of the line and the narrow right-of-way where queuing can occur behind vehicles turning left.

Route Highlights:

- Coastal Link provides strong inter-regional connections. The termini provide transfer opportunities to the Norwalk, CT Transit Stamford and New Haven and Milford Transit Districts, while stops along the route at rail stations provide access to Metro North and Amtrak services.
- Due to the number of key destinations and activity centers this route serves, it sees balanced ridership throughout the day, in terms of boardings per hour.

Coastal Link Snapshot	
Weekday Daily Boardings	3,320
Percent of System Activity (Sampled Routes)	14%
Daily One-Way Revenue Trips	91
Peak / Off-Peak Headway (Minutes)	20 / 30
Service Type	Future FTN
Number of Peak Buses	4
Efficiency (% Schedule Recovery)	3.2%
Average Boardings per Hour - AM Peak	223
Average Boardings per Hour - Midday	231
Average Boardings per Hour - PM Peak	239



- Stops with the greatest activity are concentrated within the City of Bridgeport at key destinations and transfer points, such as train stations, shopping centers, and schools
- The resulting effect is stop activity that is very nodal, particularly outside of Bridgeport, where there are many sequential stops with low utilization, followed by a single, well-utilized stop.
- The strong connections, combined with a legible route pattern and the highest peak frequencies in the GBT network, make this an attractive and well-performing service.

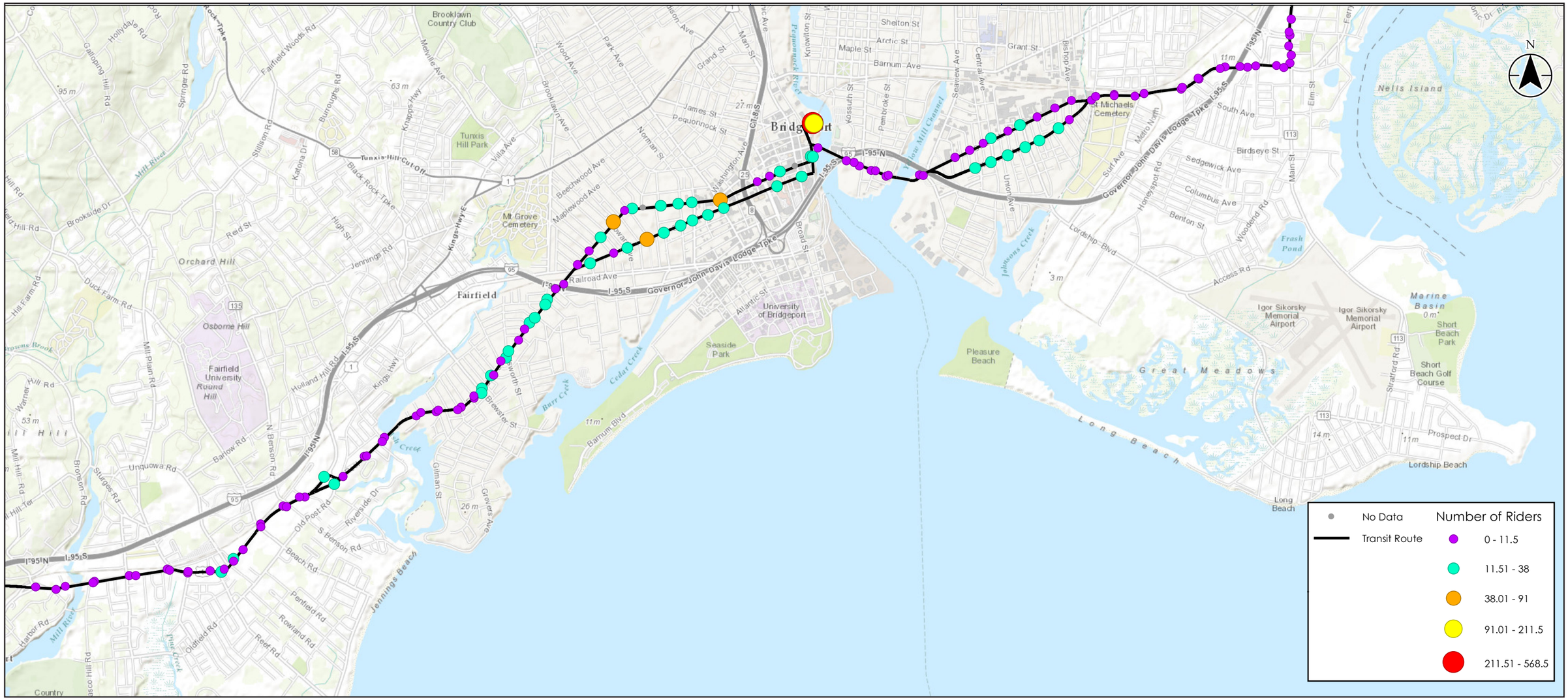


FIGURE 16-Coastal Link total daily trip activity

The Coastal Link service is well used, particularly in the western section from Bridgeport to Fairfield. The Eastern section is well used along Stratford Avenue but less utilized throughout the rest of the routing to Stratford and Milford. When considering corridors to link together to serve the study area, the western portion of the Coastal Link and the Route 1 routing through Barnum Avenue would appear to be a good match in terms of maximizing ridership. The eastern half of the service could be linked with another route to ensure high levels of service but would create a single corridor to consider for the east-west rapid transit option.

Existing Coastal Link Operations

The Coastal Link is an example of inter-agency and regional coordination to operate a regional transit service. Service on the Coastal Link (CL) began in 1999 through a partnership between GBT, Norwalk Transit District and Milford Transit District which jointly operate the service.

The schedules currently operated by the CL were developed in 1999 and, with the exception of a few minor modifications to improve connections, have not been refined since that time. Combined ridership now surpasses 100,000 boardings per month making the CL a critical part of the bus transit network in southwestern Connecticut.

Notwithstanding the success of the service and the regional partnership, the CL currently suffers from several challenges:

- The growth in ridership to its current level coupled with no changes to eighteen year old schedules has led to schedule reliability problems.
- Congestion along Post Road, and particularly left turns that create long back- ups create a major schedule adherence challenge with no transit priority along the corridor.
- The current timetables indicate a reduced frequency in the off-peak midday period which has led to crowding, schedule reliability issues and customer dissatisfaction.
- Perhaps the most frustrating issue with the CL is the lack of a unified fare structure among operating entities. This is reflected in customer comments and complaints and a unified fare was one item which ranked high in the first phase of public outreach associated with this project.

Other CL Studies/Evaluations

The following planning initiatives have been completed or are in the process of being undertaken:

- In 2011, a study of the CL service was initiated by the agencies that operate the service (Coastal Corridor Bus Study). This study also confirmed that the CL suffered from schedule adherence problems and that the lack of a unified fare. The study contains proposals for routing, scheduling and street level improvements for the CL in the short and long term. The operational proposal was to have the Coastal Link centered on Bridgeport with a Coastal Link East extending to New Haven (combining the Coastal Link and CT Bus New Haven's Route 0) and the Coastal Link West extending to Norwalk (combining the Coastal Link and Norwalk's Route 41). See figure 27.
- As of this writing, the Connecticut Department of Transportation (CTDOT) has commenced a BRT study on the same coastal corridor extending the service evaluation from Stamford to New Haven. This study is expected to complete in the fall of 2016.
- Additionally, the design team for the proposed Barnum Avenue Station is evaluating transit in the vicinity of the station site.

Current Coastal Link Plan

The remainder of this evaluation focuses on the development of service plans for the implementation of BRT and high frequency bus services using an alignment on Barnum Avenue.

The Coastal Link plan may have a number of phases to it in order to move from the current network of routes to a BRT plan linking Norwalk to New Haven. As noted in the Coastal Corridor study, the existing services run through multiple jurisdictions and use 5 different routes. The corridor study proposed the creation of a Coastal Link service that met in Bridgeport but contained and east and west service link. The west link would run from Bridgeport to Stamford while the east link would run from Bridgeport to New Haven. This is a continuation of a BRT study conducted for the Norwalk to Stamford portion in 2008 (Greenwich/Norwalk Bus Rapid Transit Study, SWRPA, 2008) which recommended both a BRT or Enhanced Bus Service along with underlying local services.

The main challenge with services along Post Road is that the width of the right-of-way varies considerably along the length allowing for multiple lanes in some areas with parking and single lanes with parking in others. There are few restrictions to left hand turns on the road or left turn bays which means that traffic consistently clogs as people turn into commercial or residential driveways. There is limited ability to expand the roadway to allow for transit by-pass zones or left turn bays as shown in the Coastal Corridor study.

The length of the Coastal Corridor route is problematic from the operational perspective because it becomes exceedingly hard to maintain the existing headways due to congestion. Thus if a bus is caught in congestion near Norwalk, it impacts service near New Haven. Though it is preferred to have a single continuous line without the need to transfer, without the appropriate dedicated right of way, there is no way to guarantee the headway (gap between the buses) or the consistency of the running times.

As a result, the acknowledgment of the congestion must be reflected in the operating plan. The longer the route, the greater the potential to reduce on-time performance and reliability as well as consistency of travel times. These are two key expectations for patrons using rapid transit services. Although the infrastructure changes may help reduce the congestion related operational challenges, the overlap of jurisdictions and the inability to ensure standardized daily services means that the Coastal Link will be challenged to meet the goal of a seamless ride from Stamford to New Haven.

Current Public Input results

Figure 28 shows the public input results from the online survey regarding the improvements for the Coastal Link service. As can be seen in the graphic, the four major issues can be summarized as follows:

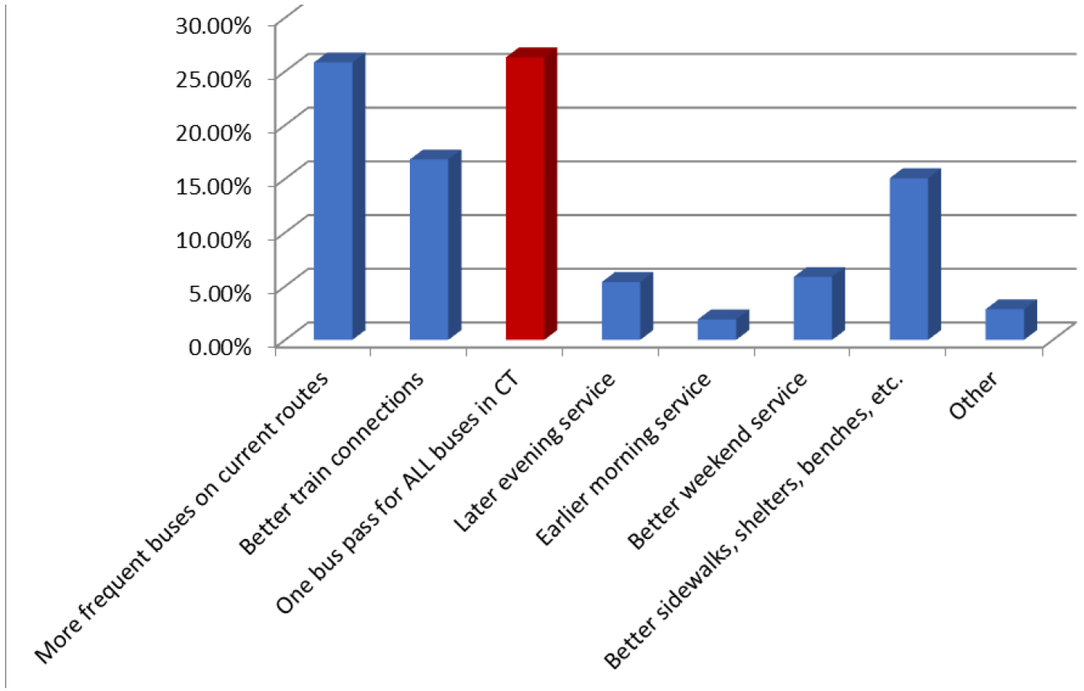
- Increased service frequencies;
- A universal bus pass;
- Improved connections to the rail service;
- Improved on-street infrastructure.

With respect to route based improvements, increased frequency and improved connections to the trains rank as the most important.

Operational Considerations

As shown in Figure 18, the operational structure features three transit agencies providing service in the corridor between Norwalk and Milford. The challenges noted in the previous study as well as those indicated by the GBT create the need for an interim step to a two-piece Coastal Link service. Prior to the implementation of the transit priority measures noted within the Coastal Corridor Bus Study and this study, there may be an interim step in operations that makes sense to reduce the potential for missed or late trips that result from local transit operating considerations within the

FIGURE 17: Online Survey results for Coastal Link



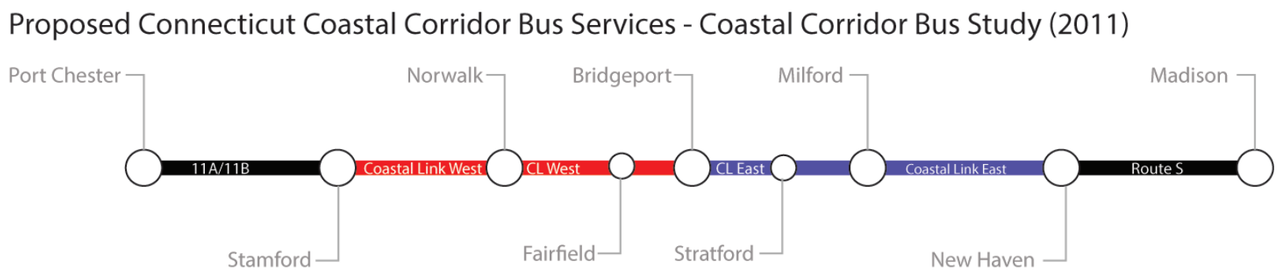
three districts. These can be the result of the lack of operating resources on a given day, services that are late already before they change routes to deliver Coastal Link service and location congestions. It has been noted in the Coastal Corridor Bus Study that the length of the service has inherent challenges with on-time performance and consistency. The report considered breaking the route in Bridgeport into an east and west segments as shown in Figure 18. It may be possible to modify the operating plan in the medium term to include 2 distinct operating sections between Stamford and Milford, i.e.:

- Stamford to Westport
- Westport to Milford

This would require a transfer point (transit center) somewhere in the Westport to Southport section of the Post Road. The benefit to shortening the operational lengths of the Coastal Link segments is that is allows for greater control of the influence of local congestion issues, passenger loads and other issues that can occur on extremely long routes.

This allows a gradual improvement in service quality that can continue to build ridership in the corridor and promote transit as an alternative mode in the region. Although it introduces a transfer, it may allow the two major transit agencies to increase service levels, review the actual schedule and trip times and decrease some of the passenger overload challenges that exist today.

Figure 18 - 2011 Coastal Corridor Operational Concept



Shorten the Coastal Link

The Coastal Link is extremely long...
[s]hortening this route would decrease the likelihood of individual trips becoming extremely late.

-Coastal Corridor Bus Study

AECom January 2012

Route 8

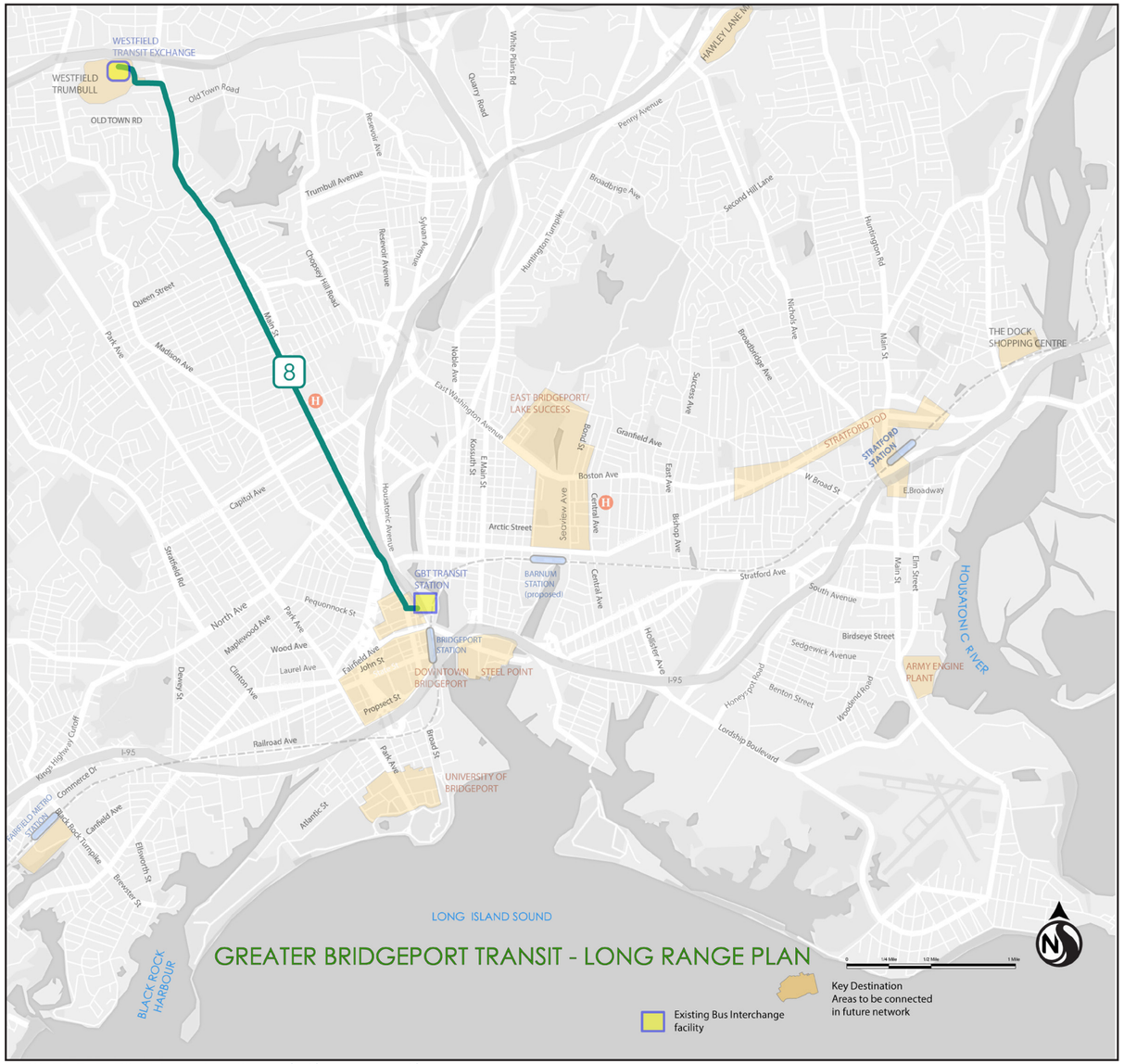
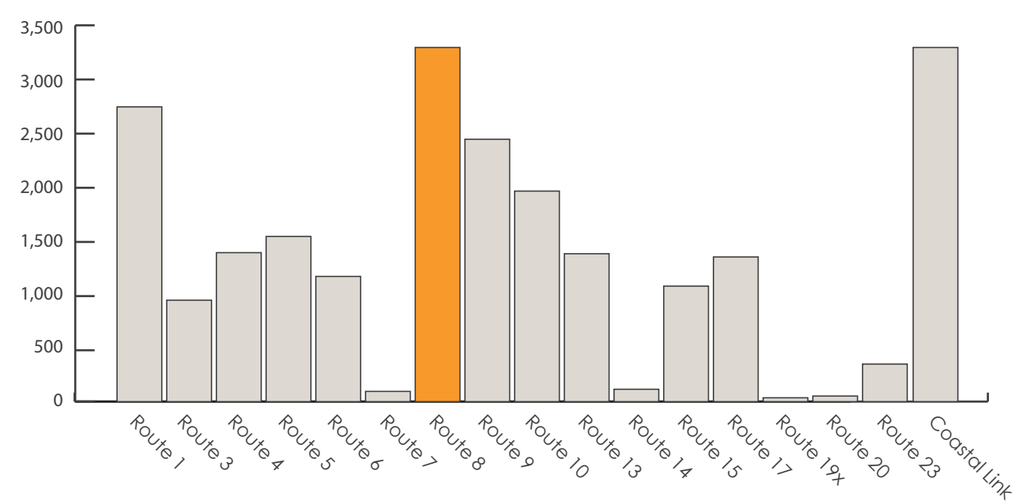


FIGURE 19: Route 8 existing routing

Route Description
Route 8 is a high ridership route with about 200 boardings per hour in the morning and afternoon peaks that connects Downtown Bridgeport with the Westfield Trumbull Mall.

Observations
Route 8 is the second busiest line and demonstrates strong ridership and stop use along the entire corridor.

Route 8	
Weekday Daily Boardings	3,280
Percent of System Activity (Sampled Routes)	14%
Daily One-Way Revenue Trips	95
Peak / Off-Peak Headway (Minutes)	20 / 20
Service Type	Future FTN
Number of Peak Buses	4
Efficiency (% Schedule Recovery)	23.6%
Average Boardings per Hour - AM Peak	199
Average Boardings per Hour - Midday	233
Average Boardings per Hour - PM Peak	239



Route Highlights

- There is strong ridership in both directions during the AM peak. In the inbound direction, a larger percentage of alightings occur in Downtown Bridgeport. In the outbound direction, boardings and alightings are more balanced over the length of the route.
- During the midday, there is a drop in inbound ridership, while outbound ridership remains relatively unchanged.

- During the PM peak, ridership drops to downtown compared to the other periods for the stops between Westfield Trumbull Mall and Bronx Ave. Leaving downtown there is a concentration of boardings in Downtown Bridgeport, while the remainder of the route remains well balanced in terms of boardings and alightings.

Route 8 represents a major connection corridor along Main Street that intersects with the east-west movements of a coastal corridor rapid transit link. Main Street is a densely populated corridor with goods and services, along with a hospital anchored at both ends by major regional destination points (Westfield Trumbull Mall and downtown Bridgeport). Activity along Main Street from a transit perspective is high usage in both directions making this a candidate corridor for additional rapid transit.

Moving away from a single corridor to a T-shaped network of corridors introduces high quality connections to many of the key destinations within the study area that include all Metro North railroad stations. Providing cross connections with intersecting routes at regular intervals will extend the accessibility to rapid transit services. Parallel corridors along Park Avenue and Madison Avenue create alternate travel paths if congestion or service levels do not meet future demands. The challenge along this corridor with respect to rapid transit in the future is the restricted width along the corridor, the competition with on-street parking, and the volume of vehicular traffic.

FIGURE 20: Route 8 total daily trip activity

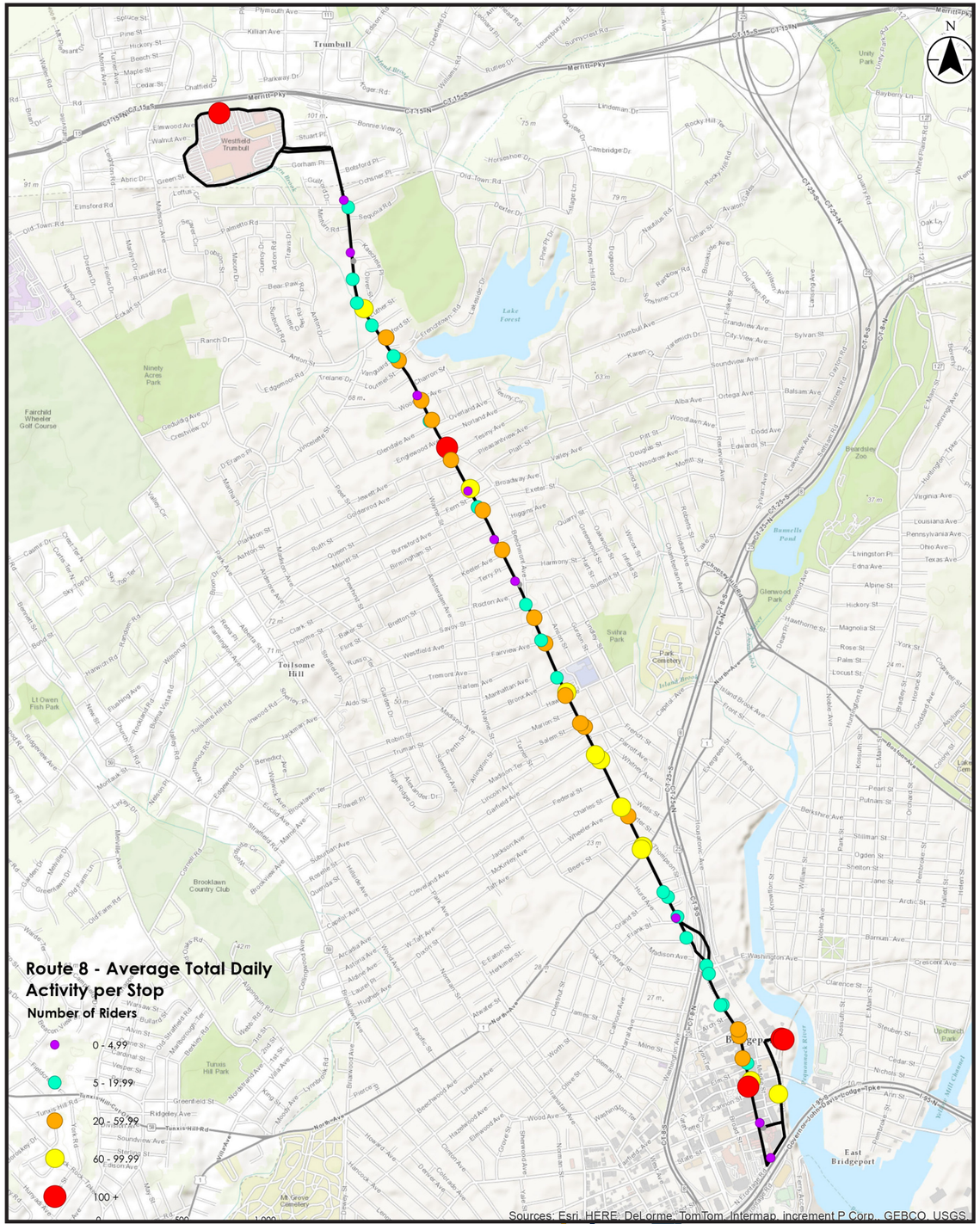
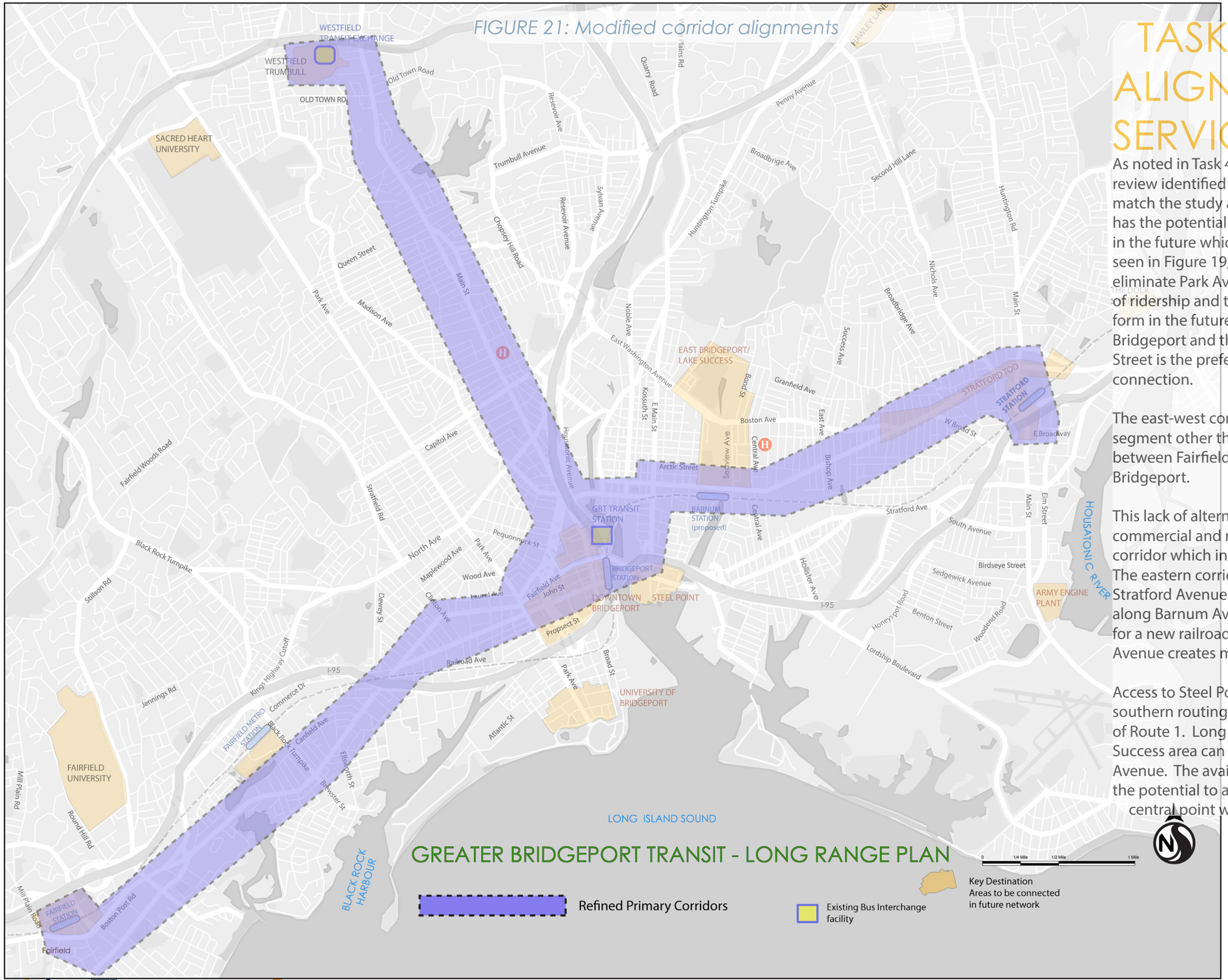


FIGURE 21: Modified corridor alignments



TASK 4.5 CORRIDOR ALIGNMENTS AND SERVICE PLAN

As noted in Task 4.4, the needs assessment and the system review identified an inverted T shaped corridor alignment to match the study area. The State Street/Fairfield Avenue couplet has the potential to revert to two-way street functionality in the future which would further refine the study area. As seen in Figure 19, the larger study area has been reduced to eliminate Park Avenue and Madison Avenue based on the level of ridership and the reduced likelihood of a change in the urban form in the future. The direct connection between downtown Bridgeport and the Westfield Trumbull Mall means that Main Street is the preferred corridor for a north-south rapid transit connection.

The east-west corridor has few alternatives in the western segment other than the Post Road - Fairfield/State connection between Fairfield Station and the Transit Center in downtown Bridgeport.

This lack of alternatives can be positive in that it focuses future commercial and residential development along the same corridor which increases the viability of a rapid transit service. The eastern corridor had the two options - Barnum Avenue or Stratford Avenue. The development opportunities in Stratford along Barnum Avenue and Main Street along with the potential for a new railroad station at Barnum Avenue and Seaview Avenue creates more demand on the northern corridor.

Access to Steel Point can be accomplished by examining a southern routing out of downtown versus the current routing of Route 1. Long term development opportunities in the Lake Success area can be served by a short connection to Barnum Avenue. The availability of light industrial land in that area has the potential to allow for transit maintenance or storage in a central point within the region.

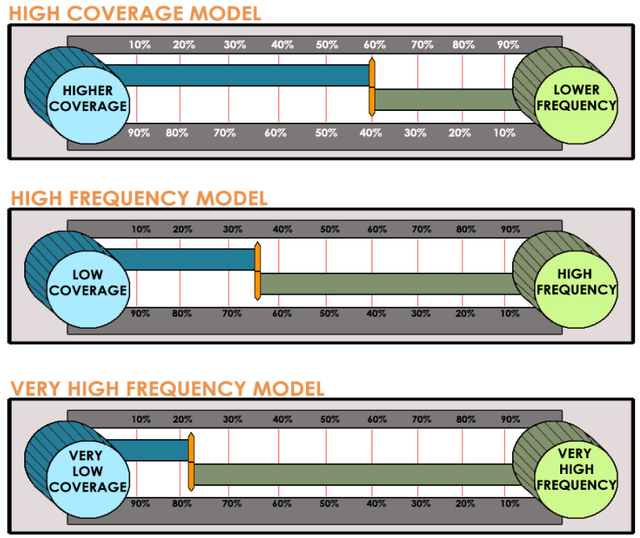


FIGURE 22: Coverage VS. Frequency

In the past, transit planning within the region has been from an incremental perspective, slowly growing or changing routes as a response to requests for improvements. An alternative transit planning approach has been adopted for this region which is to first develop the overall vision for the system. All systems have some balance of coverage versus frequency as guideposts with three models shown in Figure 20. The tension that these create is based on land use potential, the desire to maximize ridership or access to the service and the ability to make physical changes to the transportation network to favor the movement of people over vehicles.

A high coverage model would be one where access to the service (regardless of the quality of the service) has priority over financial revenue and volume of passengers. High frequency model pushes service planning into considering higher levels of service as a trade-off for increased walk distances. A very high frequency or rapid transit model dictates that the movement of people in key corridors takes precedent over the movement of vehicles.

This service plan is based on a vision that supports the High Frequency Model which creates the layered transit service together with supporting network of lower performing, more coverage-based routes that prioritize the simplification of route structures, optimization of customer accessibility and increasing trip frequency to attract more passengers to transit.

FIGURE 23: Bus rapid and frequent transit corridors

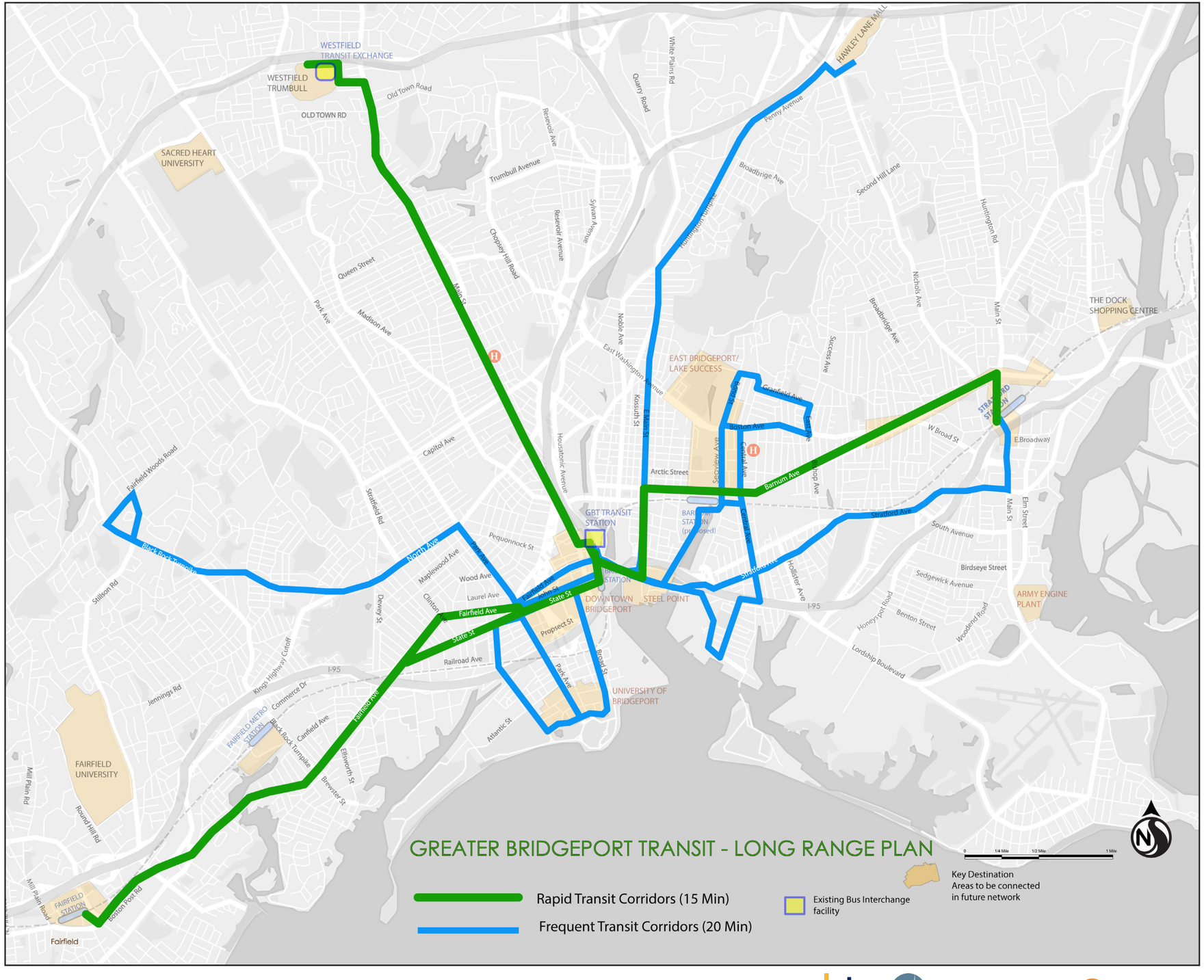
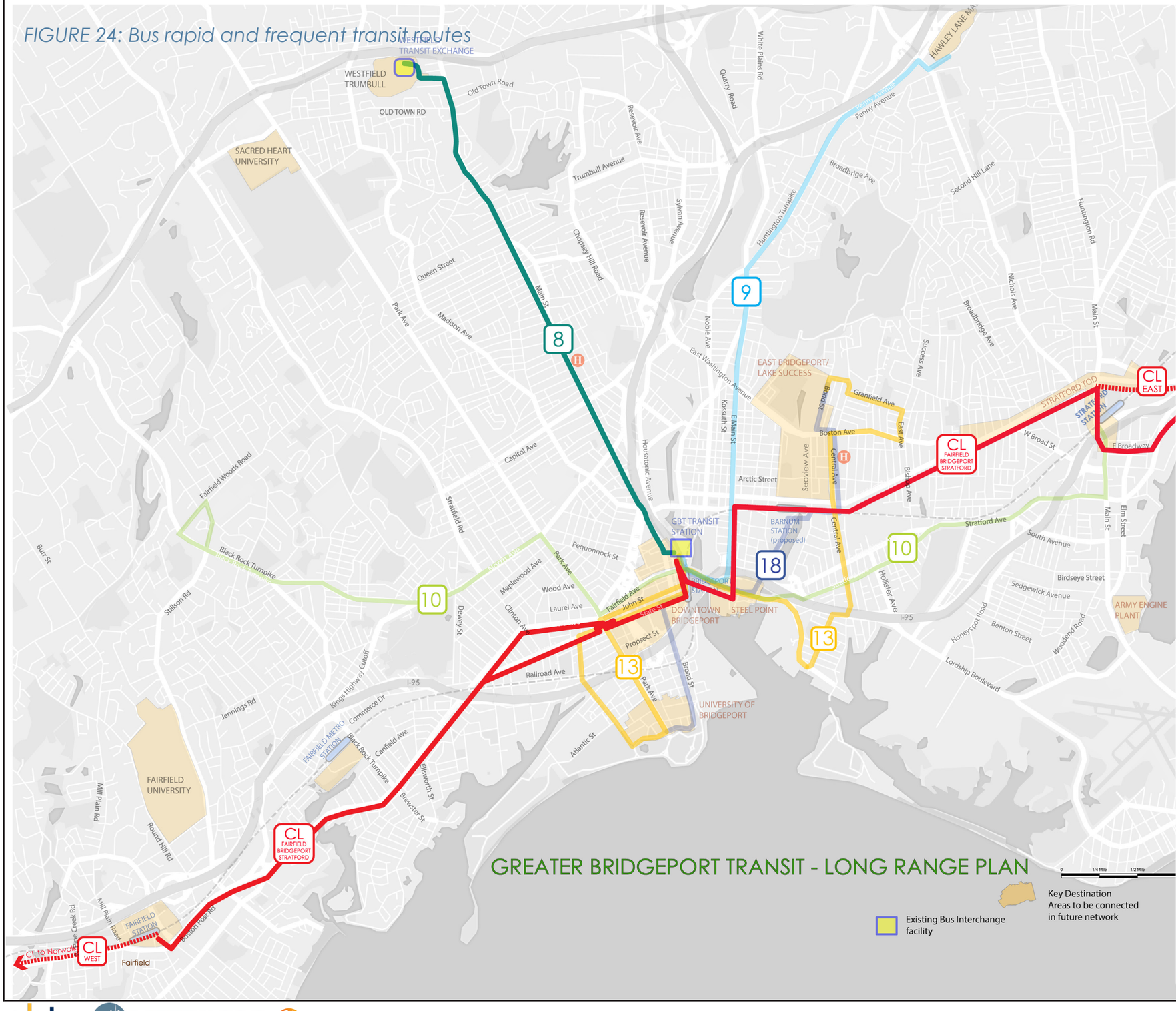


FIGURE 24: Bus rapid and frequent transit routes



Through the initial input, it was determined that a new focus on ridership for the system should be used in the planning of the network. This new network planning created a set of layers of transit as follows:

Rapid Transit – focused upon ridership in the high use corridors with simple routes, limited stops and some form of transit priority.
Frequent Transit – high performing routes that may become Rapid services in the future if certain ridership or land use density standards are met
Local Transit – more coverage based community services that are lower performing but have no expectations of changing in the near future.

Based on the vision for the system (See Figure 21) and the use of the high frequency concept, the study area was reviewed for rapid transit corridors as well as frequent transit corridors.

RAPID TRANSIT

Changes to the system to create rapid transit services (by evolving from high frequency services to BRT) are as follows:

1. Combine the Coastal Link and Route 1 which modifies the Coastal Link routing east of downtown Bridgeport. The Coastal Link would run along East Main Street to Barnum Avenue and then connect to the Stratford (and future Barnum) railroad station and continue towards Milford and New Haven along East Broadway and Post Road.
2. Reroute the #8 into the downtown Bridgeport Transit Center more directly.

FREQUENT TRANSIT

Create a frequent transit layer out of routes 9, 10, 13, and 18.

3. Route 10 is simplified in its routing from the west via North Avenue and Park Avenue to Fairfield Avenue into the transit exchange. Towards Stratford, the route would replace the current Coastal Link along Stratford Avenue (the routing presumes that Stratford becomes a two-way service in the future) and Main Street to a new transit facility.
4. Route 9 is simplified by removing the Quarry Road diversion
5. Route 13 is altered to provide coverage to the University of Bridgeport, Steel Point, and Central Avenue to Lake Success
6. Route 18 would be a new service with a more direct connection between Lake Success, Barnum Station, Bridgeport and the University.

Coastal Link:
Proposed Service Plan (CL and route 1)

Introduction

It has been demonstrated that, with a few adjustments, the existing Coastal Link could be a good candidate for transformation into a BRT route.

As mentioned previously, in accordance to public input, the Coastal Link service plan should reflect the need for:

- More express-like service – I.e. fewer bus stops
- Better connections with Metro North rail Stations and other local transit networks
- Improved frequency and service span
- More reliable service

Coastal Link routing (see table 3)

Previous and current assessments conclude that, for most part, the actual Coastal Link has the characteristics needed to become a BRT. To better serve the Fairfield Station and Barnum Avenue (including the future Barnum Avenue Station), it is proposed that the alignment of the existing Coastal Link is slightly modified as follows:

- Between Fairfield Station and where Post Road connects with Old Post Road (East of Fairfield Station). The CL will use Post Road instead of Old Post Road.
- Between Bridgeport Bus Station and Stratford Railway Station, the CL route will use Barnum Ave instead of Stratford Ave and Connecticut Ave.

Table 3 presents the turn list for the proposed Coastal Link as a BRT route.

FIGURE 25 :Coastal Link temporary routing

TABLE 3: Coastal Link turns list

To Milford (Eastbound)	
Start	Wheels Hub - Brunell Blvd
Left	Belden Ave
Left	Wall St
Continue	East Wall
Left	East Ave
Right	Westport Avenue
Continue	Post Road West
Continue	Post Road East
Continue	Boston Post Road
Left	Kings Hwy
Left	Grasmere Ave
Right	Kings Hwy
Right	Commerce Dr
Right	Black Rock Turnpike
Continue	Brewster St
Left	Fairfield Ave
Right	State St
Left	Water St
Right	Bus Station
Left	Water St
Left	Stratford
Left	E Main St
Right	Barnum Ave
Right	Main St
Left	E Broadway
Continue	Ferry Blvd
Continue	Barnum Ave Cutoff
Left	E Main St
Right	Dock Shopping Center
Loop Left	Parking Lot to Side of Stop & Shop
Left	Dock Shopping Center
Left	Dock Access Road
Left	Devon Bridge
Continue	Bridgeport Ave
Continue	S Broad St
Left	Daniels St
Right	West River St
Right	River St
Right	Cherry
Continue	Boston Post Road
Right	East Town Road
Right	Mall Access Rd

See temporary routing

Temporary routing:

Right	Housatonic Ave
Right	E Washington Ave
Left	E Main St
Right	Barnum Ave

To Norwalk (Westbound)	
Start	CT Post Mail
Left	Mall Access Rd.
Left	East Town Road
Left	Boston Post Road
Continue	Cherry St
Left	River St
Left	West River St
Right	Broad St
Right	S. Broad St
Continue	Bridgeport Ave
Continue	Devon Bridge
Right	Dock Shopping Center
Continue	Access Rd. to Stop & Shop
Right	Access Rd.
Left	East Main St.
Right	Barnum Ave Cutoff
Continue	Barnum Ave Cutoff
Left	Barnum Ave
Continue	Ferry Blvd
Right	E. Broadway
Right	Main St
Left	Barnum Ave
Left	E Main St
Right	Stratford
Right	Water St
Right	Bus Station
Left	Water
Right	John
Continue	Fairfield
Right	Brewster
Continue	Black Rock Turnpike
Left	Commerce Dr
Left	Kings Hwy
Left	Grasmere Ave
Right	Kings Hwy
Right	Boston Post Road
Continue	Post Road East
Continue	Post Road West
Continue	Westport Ave
Left	East Ave
Right	E Wall St
Right	Main St
Left	Burnell Blvd
Pull into Norwalk Wheels Hub	

See temporary routing

Temporary routing:

Left	E Main St
Right	E Washington Ave
Left	Housatonic Ave
Left	Bus Station

Bus stop locations

Creating the rapid transit "station" locations is a critical component of a rapid transit plan. It needs to maintain a balance between fewer bus stops to minimize delay while still maintaining acceptable walking distance for users to access the transit service. A spacing between bus stops of ¼ mile is usually targeted, but is subject to existing and/or future land-use developments and densities along the BRT route.

In identifying optimum station locations (See Figure 24), several factors have been taken into account:

- **Existing level of ridership** – the bus stops with the highest level of ridership were preferred as they already ensure an high level of service efficiency
- **Major destinations, location of commercial and densely developed areas and future land-use development** – those areas have a high potential for generating a high ridership levels
- **Quality of infrastructure quality and accessibility of stations to promote transit use**
- **Location of intersecting local transit routes and Metro North Rail stations** to allow for rapid and effective transfers to other networks to promote system-wide transit utilization.
- **Maintain ¼ mile station spacing where feasible and as far as possible** – even if ridership and/or land use development does not warrant it – to address overall transit accessibility to the majority of customers.

Only bus stops highlighted in blue remain operational following the implementation of the BRT route. All other bus stops will not be served by the BRT Coastal Link. It should be noted that some high volume bus stops (with more than 50 to 100 daily riders), are proposed to be removed from Coastal Link to maintain appropriate spacing between stops to manage the operational impact on the BRT service. All stops that are earmarked for removal are however within walking distance from a BRT bus stop.

Frequency and service span

Improving the frequency and the service span of the Coastal Link is another tool to help increase the ridership on this route. The existing Coastal Link frequency varies during the day and varies from municipality to municipality. For example, along the Coastal Link section between Fairfield and Stratford, the frequency varies between 20 to 30 minutes depending on time of day.

BRT routes are characterized by a higher frequency and service span in comparison to local services. Offering a more frequent, consistent service will attract new riders and for this reason an all day frequency of 15 minutes is proposed. To be attractive, most BRT routes offer a service span of 18 to 20 hours per day. It should be noted that the Coastal Link already offers an 18 hour service day which therefore does not require an extension to the service day in the short term.

Based on the proposed frequency (see figure 4) and span, an estimation of the number of buses needed and drivers needed are shown in table 5.

*TABLE 4: Proposed frequency**

Frequency	
AM	15 minutes
Midday	15 minutes
PM	15 minutes
Evening	15 minutes

*TABLE 5: Resource Requirements***

Resource requirements	
Buses	16
Drivers	39 - 55

* - Only service buses included
** - Number of drivers based on a 6 to 8 shift hours

Estimated future ridership

Based on BRT project experience, the implementation of a BRT typically results in a ridership increase that can range between 15 to 30%. A conservative ridership increase of 20% is therefore assumed.

Existing data has been used to forecast future ridership due to the majority of the proposed BRT route actually following the current CL routing.

There are two sections where the proposed routing deviates from existing alignment and in these sections ridership forecast is based on the following assumptions:

East of Fairfield Station

- In this section, existing ridership could be used as the Old Post Road is within a walkable distance from Post Road. Significant ridership increases are expected in this area due to the new routing serving a major commercial zone.

Between Bridgeport Bus Station and Stratford Railway Station.

- In this section, Barnum Ave is actually served by route 1. It is assumed that 50% of the Route 1 riders will switch to the Coastal Link instead of Route 1, as it follows more or less the same routing in this area.
- It is assumed that riders actually boarding or alighting at Stratford Avenue or Connecticut Avenue bus stops will either walk up to Barnum Avenue or take the new Route 10, that will go along Stratford Avenue and Connecticut Avenue, and then transfer to the Coastal Link at the Bridgeport Bus Station.

Table 7 presents the ridership for the existing bus stops served by the Coastal Link, and Route 1 for the section between the Bridgeport Bus Station and Stratford Railway Station.

As mentioned previously some high volume bus stops are proposed to be removed from Coastal Link to maintain bus stop spacing to assist in managing the operational impact on the BRT service. All the stops earmarked for removal are however within acceptable walking distance from remaining BRT bus stops. Therefore the ridership associated to bus stops earmarked for removal has been distributed among the remaining bus stop locations.

The 20% increase in ridership is projected with the implementation of this BRT route due to the effect of shorter travel times and increased service (headways).

Figure 26 - Existing Bus Stop based ridership

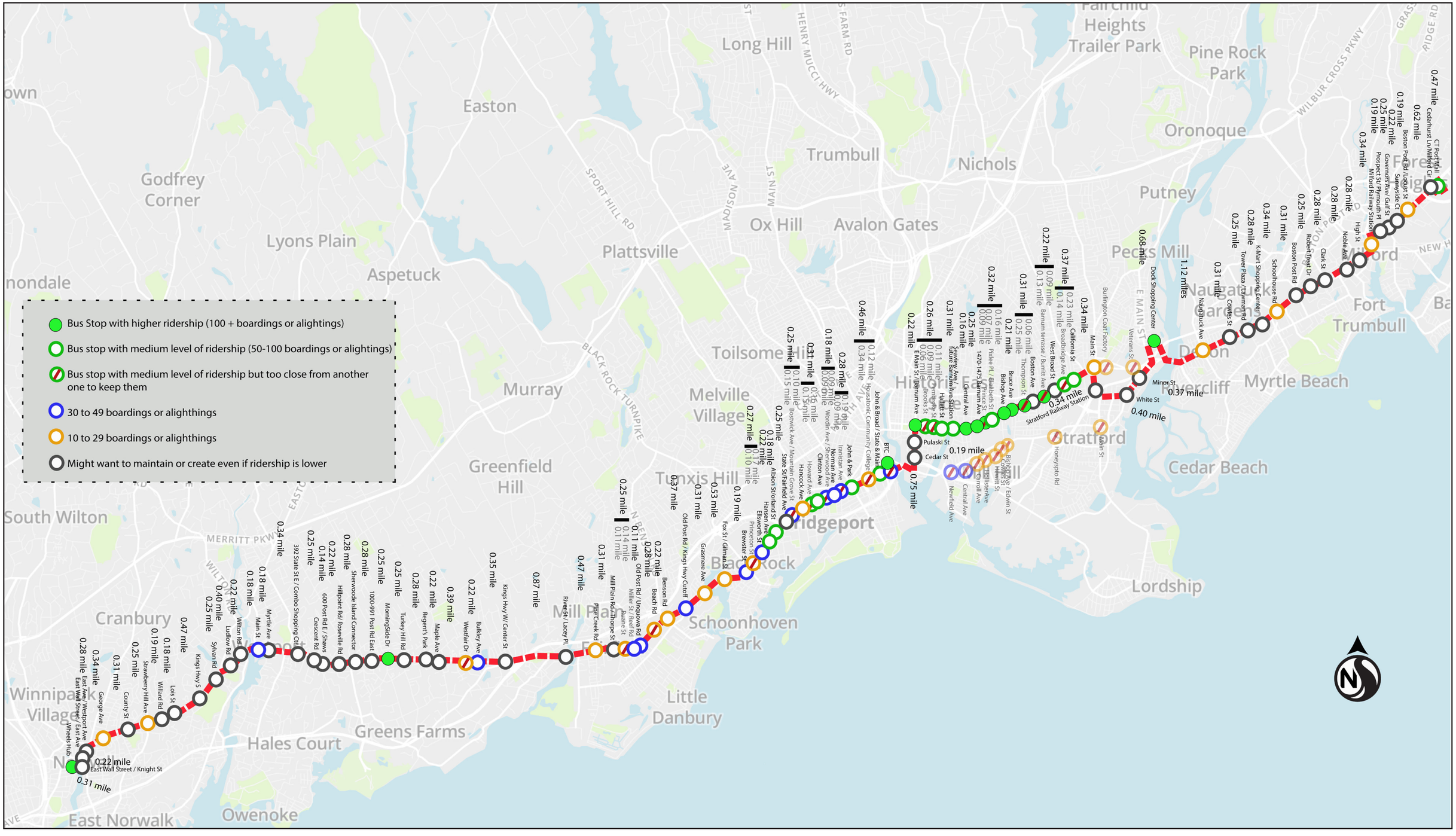


TABLE6: Coastal Link future ridership at proposed bus stop locations

Bus Station	Existing ridership	Future ridership (+20%)	Stop Level (actual)	Comments
NORWALK WHEEL HUB	134	160		
WALL ST at COMMERCE ST / E WALL ST. at KNIGHT ST.	9	10		
EAST AVE. at BETTSWOOD RD / EAST WALL ST.	3	8		
EAST AVE. at PARK HILL AVE / SAINT PAUL'S PL.	4			
EAST AVE at WESTPORT AVE		6		
WESTPORT AVE. at WALGREEN'SS	1			
WESTPORT AVE. at DRY HILL RD.	5			
WESTPORT AVE. at GEORGE AVE.	14	25		
WESTPORT AVE. at WALTER AVE. / VOLLMER AVE.	3			
WESTPORT AVE. at WOLFPIT AVE.	10			
WESTPORT AVE. at COUNTY ST.		16		
WESTPORT AVE. at 330 WESTPORT AVE.	1			
WESTPORT AVE. at STRAWBERRY HILL AVE.	11	13		
WESTPORT AVE. at WILLARD RD.	5	5		
WESTPORT AVE. at LOIS ST.	7	19		
POST RD. WEST at HILLS LN.	8			
POST RD. WEST at JOHN'S BEST PIZZA	1			
POST RD. WEST at KINGS HWY. SOUTH	3	3		
POST RD. WEST at SYLVAN RD.	4	4		
POST RD. WEST at KINGS HWY. NORTH	0			
POST RD. WEST at LUDLOW	2	2		
POST RD. WEST at RIVERSIDE AVE / WILTON RD.	2	2		
POST RD. WEST at MAIN ST.	23	27		
POST RD. WEST at IMPERIAL AVE / MYRTLE AVE.	4	7		
POST RD. EAST at 286-292 POST ROAD EAST	2			
POST RD. EAST at COMPO RD.	2			
POST RD. EAST at COMPO SHOPPING CTR.	6	10		
POST RD. EAST at CRESCENT PARK RD.	1	1		
POST RD. EAST at 606 POST RD E / SHAWS	3	4		
POST RD. EAST at HILLS POINT RD.	7	8		
POST RD. EAST at LONG LOTS RD.	2			
POST RD. EAST at SHERWOOD ISLAND CONNECTOR	7	13		
POST RD. EAST at WEST PARISH RD / CEDAR RD	2			
POST RD. EAST at 1000-991 POST RD. EAST	6	7		
POST RD. EAST at CHURCH ST. NORTH	4			
POST RD. EAST at MORNINGSIDE DR.	339	412		
POST RD. EAST at TURKEY HILL RD	5	8		
POST RD. EAST at MILLS St	2			
POST RD. EAST at REGENTS PARK	0	1		
POST RD. EAST at MAPLE AVE.	4	4		
POST RD. EAST at 1572 POST RD E / WESTPORT INN	3			
POST RD. EAST at WESTFAIR DR.	14	16		
POST RD. EAST at BULKLEY AVE.	34	41		
BOSTON POST RD. at HULLS HWY.	1			
BOSTON POST RD. at CENTER ST / KINGS HWY. WEST	4	25		
BOSTON POST RD. at 3330 BOSTON POST RD.	11			Too close to Center St
BOSTON POST RD. at PEASE AVE.	7			
BOSTON POST RD. at MILL HILL RD.	3			
BOSTON POST RD. at RIVER ST. / LACEY PL.	3	8		
BOSTON POST RD. at SASCO HILL RD / PENT CT.	2			
BOSTON POST RD. at PINE CREEK RD.	16	19		
BOSTON POST RD. at THORPE / MILL PLAIN RD.	9	23		
BOSTON POST RD. at RUANE ST.	11			Too close to Thorpe/Mill Plain Rd.
BOSTON POST RD. at REEF RD / MILLER ST.	30	39		
BOSTON POST RD. at SANFORD ST.	7			
BOSTON POST RD. at OLD POST RD. / UNQUOWA RD.	34	49		Fairfield Station
BOSTON POST RD. at 1261 BOSTON POST RD.	3			
BOSTON POST RD. at BEACH RD./ ROUND HILL RD.	24			Too close to Benson Rd
BOSTON POST RD. at BENSON RD.	10	50		
BOSTON POST RD. at BELMONT ST / ELIOT PL.	9			
BOSTON POST RD at OLD POST RD / KINGS HWY. CUTOFF at 1296 KINGS HWY. CUTOFF	30	42		
BOSTON POST RD. at 417 BOSTON POST RD	5			
BOSTON POST RD. at SHOREHAM VILLAGE DR.	4			
BOSTON POST RD. at RIVERSIDE DR/GRASMERE AVE.	18	52		
FAIRFIELD AVE. at BEACHVIEW AVE / POLAND ST.	8			
FAIRFIELD AVE. at COURTLAND AVE / DAVIDSON ST.	5			
FAIRFIELD AVE. at GILMAN ST./FOX ST.	23	35		
FAIRFIELD AVE. at JETLAND ST./WILSON ST.	2			
FAIRFIELD AVE. at BREWSTER ST.	44	71		
FAIRFIELD AVE. at MELROSE AVE/PRINCETON ST.	16			Too close Brewster St
FAIRFIELD AVE. at SCOFIELD AVE.	9			
FAIRFIELD AVE. at ELLSWORTH ST.	41	64		
FAIRFIELD AVE. at MARTIN TER./WALDORF AVE.	13			Too close to Ellsworth St
FAIRFIELD AVE. at WORDIN AVE./HANSEN ST.	49	59		
FAIRFIELD AVE. at ALBION ST./ORLAND ST.	58	106		
FAIRFIELD AVE. at PINE ST.	31			Too close to AlbionSt/Orland St
FAIRFIELD AVE at STATE ST		38		
FAIRFIELD AVE. at SILLIMAN AVE.	0	0		
FAIRFIELD AVE. at BOSTWICK AVE./MOUNTAIN GROVE ST	32	38		Crossing will be easier at Fairfield/State
FAIRFIELD AVE. at HANCOCK AVE.	25	228		

Bus Station	Existing ridership	Future ridership (+20%)	Stop Level (actual)	Comments
FAIRFIELD AVE. at HOWARD AVE.	66			Too close to Hancock Ave
FAIRFIELD AVE. at COLORADO AVE.	12			Too close to Hancock Ave
FAIRFIELD AVE. at CLINTON AVE.	74	89		
FAIRFIELD AVE. at WORDIN AVE./SHERWOOD AVE.	30			Too close to Norman St
FAIRFIELD AVE. at NORMAN ST.	46	131		
FAIRFIELD AVE. at IRANISTAN AVE.	34			Too close to Norman St
STATE ST. at SEELEY ST.	17			Too close to Park Ave
STATE ST./JOHN ST. at PARK AVE.	71	105		
JOHN ST. at COURTLAND ST.	3			
JOHN ST. at HOUSATONIC C.C./LAFAYETTE BLVD.	17			Too close to Main St/Broad St
STATE ST. at MAIN ST./JOHN ST. at BROAD ST.	49	79		
WATER ST. at JOHN ST.	30			Too close to BTC
BTC	1054	1301		Include transfers from route 10 (Stratford/Connecticut)
STRATFORD AVE. at KOSSUTH ST.	2			
EAST MAIN ST. at CEDAR ST	60	72		
EAST MAIN ST. at PALUSKI ST	60	72		
BARNUM AVE. at EAST MAIN ST.	199	349		Estimated ridership based on route 1 ridership
BARNUM AVE. at BROOKS ST.	67			Too close to East Main St Estimated ridership based on route 1 ridership
BARNUM AVE. at PEMBROKE ST.	50			Too close to East Main St & Seaview Ave Estimated ridership based on route 1 ridership
BARNUM AVE. at HALLETT ST.	70			Estimated ridership based on route 1 ridership
BARNUM AVE. at SEAVIEW AVE./ FUTURE BARNUM AVE STATION	92	223		Estimated ridership based on route 1 ridership
BARNUM AVE. at CENTRAL AVE.	266	319		Estimated ridership based on route 1 ridership
BARNUM AVE. at 1470-1475 BARNUM AVE.	225	547		Estimated ridership based on route 1 ridership
BARNUM AVE. at PRINCE ST.	145			Too close to 1470-1475 Barnum Ave Estimated ridership based on route 1 ridership
BARNUM AVE. at ELIZABETH ST./PIXLEE PL.	86			Too close to 1470-1475 Barnum Ave
BARNUM AVE. at BISHOP AVE.	295	354		Estimated ridership based on route 1 ridership
BARNUM AVE. at BRUCE AVE.	266	319		Estimated ridership based on route 1 ridership
BARNUM AVE. at THOMPSON ST.	137			Too close to Boston Barnum Estimated ridership based on route 1 ridership
BARNUM AVE at BOSTON BARNUM.		164		Easier to cross than Thompson + middle between Thompson and Burrith (2 big stops)
BARNUM AVE. at BURRITT AVE./BARNUM TER.	102			Too close to W Broad St Estimated ridership based on route 1 ridership
MAIN ST at W BROAD ST		237		
BARNUM AVE. at BROADBRIDGE AVE.	96			Too close to W Broad St Estimated ridership based on route 1 ridership
BARNUM AVE. at CALIFORNIA ST.	70	83		Estimated ridership based on route 1 ridership
BARNUM AVE. at MAIN ST.	21	36		
MAIN ST. at ESSEX PL.	7			
MAIN ST. at TEMPLE CT.	2			
MAIN ST. at BROADBRIDGE AVE.	3	4		
MAIN ST. at LINDEN AVE.	7	8		
MAIN ST at E BROADWAY		12		
E BROADWAY at WHITE ST		10		
FERRY BLVD at MINOR ST.	4	4		
DOCK SHOPPING CENTER at SIDE OF STOP & SHOP	377			Too close to Dock Shopping Center
DOCK SHOPPING CENTER	500	1061		
DOCK SHOPPING CENTER at BJ'S WHOLESALE CLUB	8			
BRIDGEPORT AVE. at COLONIAL AVE.	4			
BRIDGEPORT AVE. at ORMOND ST.	3			
BRIDGEPORT AVE. at NAUGATUCK AVE. - S.B. -	12	25		
BRIDGEPORT AVE. at FAIRVIEW/ BERWYN ST.	3			
BRIDGEPORT AVE. at JUDSON PL.	0			
BRIDGEPORT AVE. at CLEVELAND AVE / COWLES ST.	5	12		
BRIDGEPORT AVE. at BAKER ST.	2			
BRIDGEPORT AVE. at I-95 EXIT 34	3			
BRIDGEPORT AVE. at TOWER PLAZA	0	5		
BRIDGEPORT AVE. at LANSDALE AVE	4			
BRIDGEPORT AVE. at K-MART SHOPPING CENTER	7	8		
BRIDGEPORT AVE. at MEADOWS END RD.	1			
BRIDGEPORT AVE. at SCHOOLHOUSE RD.	12	16		
BRIDGEPORT AVE. at SILVER SANDS STATE PARK	2	2		
BRIDGEPORT AVE. at BOSTON POST RD.	5	11		
BRIDGEPORT AVE. at DORSEY LN.	2			
BRIDGEPORT AVE. at ROBERT TREAT DR.	3	3		
BRIDGEPORT AVE. at CLARK ST.	8	11		
BRIDGEPORT AVE. at SEASIDE AVE./OSBORNE ST.	2			
BRIDGEPORT AVE. at NOBLE AVE		6		
BRIDGEPORT AVE./GREENSEND PL. at SOUTH BROAD ST	3			
SOUTH BROAD ST. at GREENSEND PL.	0			
MILFORD GREEN	6			
BRIDGEPORT AVE. at HIGH ST		7		
RIVER ST. at MILFORD RAILROAD STATION	13	16		
RIVER ST. at PROSPECT ST./ MILFORD CITY HALL	3	4		
CHERRY ST. at 50/51-61 CHERRY ST.	1			
CHERRY ST. at GOVERNORS AVE/ GULF ST		6		
CHERRY ST. at MILFORD PL/158 CHERRY ST.	3			
CHERRY ST. at COMMERCE PARK RD/SUNNYSIDE CT.	9	11		
CHERRY ST. at BOSTON POST RD./LOCUST ST.	16	31		
BOSTON POST RD. at HOME ACRES AVE.	1			
EAST TOWN RD. at WESTFIELD CT POST MALL (REAR EN	6			
EAST TOWN RD. at WESTFIELD CT POST MALL (FRONT EI	10			
BOSTON POST RD. at CEDARHURST LN	2	22		
CT POST MALL	76	91		

BRT Bus Stop
High level of ridership
Medium-High level of ridership
Medium level of ridership
Low level of ridership
Bus stop removed even if high or medium level of ridership
Proposed new bus stop

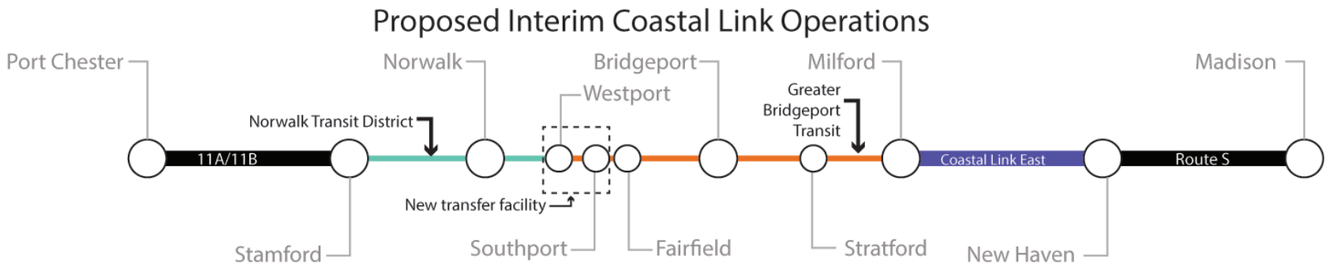
TABLE 7 Illustrative Public Timetable

To Milford (eastbound)			To Norwalk (westbound)		
Wheels Hub	Arrive at Bus Station	Westfield Connecticut Post Mall	Westfield Connecticut Post Mall	Arrive at Bus Station	Wheels Hub
5:30	6:30	7:24	5:30	6:19	7:24
5:45	6:45	7:39	5:45	6:34	7:39
6:00	7:00	7:54	6:00	6:49	7:54
6:15	7:15	8:09	6:15	7:04	8:09
6:30	7:30	8:24	6:30	7:19	8:24
6:45	7:45	8:39	6:45	7:34	8:39
7:00	8:00	8:54	7:00	7:49	8:54
7:15	8:15	9:09	7:15	8:04	9:09
7:30	8:30	9:24	7:30	8:19	9:24
7:45	8:45	9:39	7:45	8:34	9:39
8:00	9:00	9:54	8:00	8:49	9:54
8:15	9:15	10:09	8:15	9:04	10:09
8:30	9:30	10:24	8:30	9:19	10:24
8:45	9:45	10:39	8:45	9:34	10:39
9:00	10:00	10:54	9:00	9:49	10:54
9:15	10:15	11:09	9:15	10:04	11:09
9:30	10:30	11:24	9:30	10:19	11:24
9:45	10:45	11:39	9:45	10:34	11:39
10:00	11:00	11:54	10:00	10:49	11:54
10:15	11:15	**12:09**	10:15	11:04	**12:09**
10:30	11:30	**12:24**	10:30	11:19	**12:24**
10:45	11:45	**12:39**	10:45	11:34	**12:39**
11:00	**12:00**	**12:54**	11:00	11:49	**12:54**
11:15	**12:15**	**13:09**	11:15	**12:04**	**13:09**
11:30	**12:30**	**13:24**	11:30	**12:19**	**13:24**
11:45	**12:45**	**13:39**	11:45	**12:34**	**13:39**
12:00	**13:00**	**13:54**	**12:00**	**12:49**	**13:54**
12:15	**13:15**	**14:09**	**12:15**	**13:04**	**14:09**
12:30	**13:30**	**14:24**	**12:30**	**13:19**	**14:24**
12:45	**13:45**	**14:39**	**12:45**	**13:34**	**14:39**
13:00	**14:00**	**14:54**	**13:00**	**13:49**	**14:54**
13:15	**14:15**	**15:09**	**13:15**	**14:04**	**15:09**
13:30	**14:30**	**15:24**	**13:30**	**14:19**	**15:24**
13:45	**14:45**	**15:39**	**13:45**	**14:34**	**15:39**
14:00	**15:00**	**15:54**	**14:00**	**14:49**	**15:54**
14:15	**15:15**	**16:09**	**14:15**	**15:04**	**16:09**
14:30	**15:30**	**16:24**	**14:30**	**15:19**	**16:24**
14:45	**15:45**	**16:39**	**14:45**	**15:34**	**16:39**
15:00	**16:00**	**16:54**	**15:00**	**15:49**	**16:54**
15:15	**16:15**	**17:09**	**15:15**	**16:04**	**17:09**
15:30	**16:30**	**17:24**	**15:30**	**16:19**	**17:24**
15:45	**16:45**	**17:39**	**15:45**	**16:34**	**17:39**
16:00	**17:00**	**17:54**	**16:00**	**16:49**	**17:54**
16:15	**17:15**	**18:09**	**16:15**	**17:04**	**18:09**
16:30	**17:30**	**18:24**	**16:30**	**17:19**	**18:24**
16:45	**17:45**	**18:39**	**16:45**	**17:34**	**18:39**
17:00	**18:00**	**18:54**	**17:00**	**17:49**	**18:54**
17:15	**18:15**	**19:09**	**17:15**	**18:04**	**19:09**
17:30	**18:30**	**19:24**	**17:30**	**18:19**	**19:24**
17:45	**18:45**	**19:39**	**17:45**	**18:34**	**19:39**
18:00	**19:00**	**19:54**	**18:00**	**18:49**	**19:54**
18:15	**19:15**	**20:09**	**18:15**	**19:04**	**20:09**
18:30	**19:30**	**20:24**	**18:30**	**19:19**	**20:24**
18:45	**19:45**	**20:39**	**18:45**	**19:34**	**20:39**
19:00	**20:00**	**20:54**	**19:00**	**19:49**	**20:54**
19:15	**20:15**	**21:09**	**19:15**	**20:04**	**21:09**
19:30	**20:30**	**21:24**	**19:30**	**20:19**	**21:24**
19:45	**20:45**	**21:39**	**19:45**	**20:34**	**21:39**
20:00	**21:00**	**21:54**	**20:00**	**20:49**	**21:54**
20:15	**21:15**	**22:09**	**20:15**	**21:04**	**22:09**
20:30	**21:30**	**22:24**	**20:30**	**21:19**	**22:24**
20:45	**21:45**	**22:39**	**20:45**	**21:34**	**22:39**
21:00	**22:00**	**22:54**	**21:00**	**21:49**	**22:54**
21:15	**22:15**	**23:09**	**21:15**	**22:04**	**23:09**
21:30	**22:30**	**23:24**	**21:30**	**22:19**	**23:24**
21:45	**22:45**	**23:39**	**21:45**	**22:34**	**23:39**
22:00	**23:00**	**23:54**	**22:00**	**22:49**	**23:54**
22:15	**23:15**	**0:09**	**22:15**	**23:04**	**0:09**
22:30	**23:30**	**0:24**	**22:30**	**23:19**	**0:24**
22:45	**23:45**	**0:39**	**22:45**	**23:34**	**0:39**
23:00	**0:00**	**0:54**	**23:00**	**23:49**	**0:54**

Service Operations

Based on the previous reports, existing input and operational considerations, it is proposed that the operations of the Coastal Link be broken into two segments between Stamford and Milford in order to increase the service reliability and reduce the impacts of congestion. The area between Southport and Westport features a wider cross section along Boston Post Road with two travel lanes in either direction and a center turn lane. Allowing Norwalk and GBT/Milford Transit to operate within their own service areas creates the opportunity to add frequency where required as well as ensure that the consistency of the Coastal Link is high enough to instill confidence in the passengers.

Figure 27 - Proposed Coastal Link Operational Plan



ROUTE 8 PLAN
Proposed Service Plan

Introduction

Initially Route 8 was not identified as a component of the BRT service. However, the outcome of Task 3 of this project (Alternative Transportation Assessment of the East Bridgeport Development Corridor) together with the analysis of Automatic Passenger Count (APC) data, show that this route and its ridership characteristics should be considered as an element of the BRT service layer.

Operational considerations

Contrary to the Coastal Link, Route 8 is operated by GBT only, which simplifies the operational arrangements. There are however some issues that should be addressed to improve its efficiency as a BRT route.

Predominantly operating on Main Street, Route 8 passes through areas with significant commercial, mixed use and residential development. Due to the high level of urban development and multiple destinations on this street, traffic volumes together with entrance and egress movements are heavy all day long. The presence of on-street parking and the varying lane configuration along this road significantly contributes to congestion and subsequent delays. Therefore, when determining the runtime between the downtown Bridgeport Transit Center and the Westfield Trumbull Mall, the impact of the traffic congestion and delay on this corridor needs to be accounted for.

Route 8 routing

The previous section concludes that Route 8 has the ridership characteristics required to be considered a BRT route. The only route adjustment that is proposed is to establish a more direct link between the Transit Center and Westfield Trumbull Mall by routing directly northbound when exiting the exchange in the mall direction as opposed to the current routing via North Frontage Road and State Street before heading to Westfield Trumbull Mall.

Table 8 details the "turn list" for the proposed BRT Route 8.

TABLE 8: Route 8 turns list

To Westfield (East/Northbound)	
Start	Bus Station
Right	Housatonic Ave
Left	E Washington Ave
Right	Main St
Right	Continue on Main St
Left	Westfield Shoppingtown Entrance
Right	Loop around Westfield Shoppingtown
Left	Bus Terminal (Westfield Trumbull)

To downtown (South/Westbound)	
Start	Bus Terminal (Westfield Trumbull)
Right	Loop around Westfield Shoppingtown
Left	Westfield Shoppingtown Exit
Right	Main St
Left	Continue on Main St
Left	State
Left	Water
Right	Bus Station

Bus stop locations (see Figure 32 and Table 12)

The same approach as the Coastal Link bus stop location methodology has been followed for bus stops serving BRT Route 8. Bus stops highlighted in blue are bus stops that will serve the BRT service and all other existing stops will be removed in an effort to maintain the spacing.

of stops to support the operational reliability of the BRT service. All bus stops that are earmarked for removal are in a walking distance from a BRT bus stop.

Frequency and service span (see figure 9)

Similar to the Coastal Link, improving the frequency and the service span of the Route 8 is a tool to promote ridership on this route. The existing frequency on this route is 20 minutes during the day and 30 minutes in the evening.

As mentioned previously, BRT routes are characterized by a high service frequency and long service span. Therefore, it is proposed to provide a 15 minute all day frequency on this route to attract new riders.

Similarly, it is proposed to increase the current service span of between 16 and 17 hours per day to 18 to conform to the Coastal link service span.

Based on the proposed frequency and span, number of buses (in service) and drivers required are shown in table10.

*TABLE 9: Route 8 proposed frequency**

Frequency	
AM	15 minutes
Midday	15 minutes
PM	15 minutes
Evening	15 minutes

*TABLE 10: Route 8 resource requirements***

Resource requirements	
Buses	4
Drivers	8 - 10

* - Only service buses included
** - Number of drivers based on a 6 to 8 shift hours

TABLE 11: Illustrative Public Timetable

To Westfield			Downtown		
Bus Station	St Vincent's Medical Center (Hawley Ave)	Westfield Trumbull Mall	Westfield Trumbull Mall	St Vincent's Medical Center (Hawley Ave)	Bus Station
5:30	5:39	5:51	5:30	5:42	5:57
5:45	5:54	6:06	5:45	5:57	6:12
6:00	6:09	6:21	6:00	6:12	6:27
6:15	6:24	6:36	6:15	6:27	6:42
6:30	6:39	6:51	6:30	6:42	6:57
6:45	6:54	7:06	6:45	6:57	7:12
7:00	7:09	7:21	7:00	7:12	7:27
7:15	7:24	7:36	7:15	7:27	7:42
7:30	7:39	7:51	7:30	7:42	7:57
7:45	7:54	8:06	7:45	7:57	8:12
8:00	8:09	8:21	8:00	8:12	8:27
8:15	8:24	8:36	8:15	8:27	8:42
8:30	8:39	8:51	8:30	8:42	8:57
8:45	8:54	9:06	8:45	8:57	9:12
9:00	9:09	9:21	9:00	9:12	9:27
9:15	9:24	9:36	9:15	9:27	9:42
9:30	9:39	9:51	9:30	9:42	9:57
9:45	9:54	10:06	9:45	9:57	10:12
10:00	10:09	10:21	10:00	10:12	10:27
10:15	10:24	10:36	10:15	10:27	10:42
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11:15	11:24	11:36	11:15	11:27	11:42
11:30	11:39	11:51	11:30	11:42	11:57
11:45	11:54	**12:06**	11:45	11:57	**12:12**
12:00	**12:09**	**12:21**	**12:00**	**12:12**	**12:27**
12:15	**12:24**	**12:36**	**12:15**	**12:27**	**12:42**
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14:00	**14:09**	**14:21**	**14:00**	**14:12**	**14:27**
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14:30	**14:39**	**14:51**	**14:30**	**14:42**	**14:57**
14:45	**14:54**	**15:06**	**14:45**	**14:57**	**15:12**
15:00	**15:09**	**15:21**	**15:00**	**15:12**	**15:27**
15:15	**15:24**	**15:36**	**15:15**	**15:27**	**15:42**
15:30	**15:39**	**15:51**	**15:30**	**15:42**	**15:57**
15:45	**15:54**	**16:06**	**15:45**	**15:57**	**16:12**
16:00	**16:09**	**16:21**	**16:00**	**16:12**	**16:27**
16:15	**16:24**	**16:36**	**16:15**	**16:27**	**16:42**
16:30	**16:39**	**16:51**	**16:30**	**16:42**	**16:57**
16:45	**16:54**	**17:06**	**16:45**	**16:57**	**17:12**
17:00	**17:09**	**17:21**	**17:00**	**17:12**	**17:27**
17:15	**17:24**	**17:36**	**17:15**	**17:27**	**17:42**
17:30	**17:39**	**17:51**	**17:30**	**17:42**	**17:57**
17:45	**17:54**	**18:06**	**17:45**	**17:57**	**18:12**
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19:15	**19:24**	**19:36**	**19:15**	**19:27**	**19:42**
19:30	**19:39**	**19:51**	**19:30**	**19:42**	**19:57**
19:45	**19:54**	**20:06**	**19:45**	**19:57**	**20:12**
20:00	**20:09**	**20:21**	**20:00**	**20:12**	**20:27**
20:15	**20:24**	**20:36**	**20:15**	**20:27**	**20:42**
20:30	**20:39**	**20:51**	**20:30**	**20:42**	**20:57**
20:45	**20:54**	**21:06**	**20:45**	**20:57**	**21:12**
21:00	**21:09**	**21:21**	**21:00**	**21:12**	**21:27**
21:15	**21:24**	**21:36**	**21:15**	**21:27**	**21:42**
21:30	**21:39**	**21:51**	**21:30**	**21:42**	**21:57**
21:45	**21:54**	**22:06**	**21:45**	**21:57**	**22:12**
22:00	**22:09**	**22:21**	**22:00**	**22:12**	**22:27**
22:15	**22:24**	**22:36**	**22:15**	**22:27**	**22:42**
22:30	**22:39**	**22:51**	**22:30**	**22:42**	**22:57**
22:45	**22:54**	**23:06**	**22:45**	**22:57**	**23:12**
23:00	**23:09**	**23:21**	**23:00**	**23:12**	**23:27**
23:15	**23:24**	**23:36**	**23:15**	**23:27**	**23:42**
23:30	**23:39**	**23:51**	**23:30**	**23:42**	**23:57**

FIGURE 28: Route 8 Corridor proposed bus stops

Estimated future ridership

Similarly to the Coastal Link riderships estimation, a conservative increase of 20% in ridership is expected when the existing route is transformed into a BRT service.
As the majority of the BRT route will follow the current Route 8 alignment excepting in the downtown area (North Frontage road and State Street), it suggests that existing ridership data can be used to estimate future ridership.

The following table presents the ridership for the bus stops along Route 8. As mentioned previously some bus stops are proposed to be removed to maintain bus stop spacing to assist in managing the operational impact on the BRT service. All the stops earmarked for removal are however within acceptable walking distance from remaining BRT bus stops and their associated ridership has been distributed among the remaining bus stop locations.

TABLE12: Route 8 future ridership at proposed bus stop locations

Bus Station	Existing ridership	Future ridership (+20%)	Stop Level (actual)	Comments
BTC	764	916		
WATER ST. at JOHN ST.	165	238		
STATE ST. at MAIN ST.	34			
MAIN ST. at BANK ST.	1			
MAIN ST. at FAIRFIELD AVE.	178	232		
MAIN ST. at GOLDEN HILL ST.	33			
MAIN ST. at CONGRESS ST. / CHAPEL ST.	67	157		
MAIN ST. at CLIFFORD HOUSE	16			
MAIN ST. at EAST WASHINGTON AVE. / CATHERINE ST	34			
MAIN ST. at GEORGE ST	13	21		
MAIN ST. at FRANK ST.	10			
MAIN ST. at GRAND ST.	18	27		
MAIN ST. at NORTH AVE.	165	264		
MAIN ST. at PORTER ST. / WHEELER AVE.	119			Too close to North & Capitol Ave
MAIN ST. at CAPITOL AVE.	151	301		
MAIN ST. at SALEM ST.	81			Too close to Capitol & Hawley Ave
MAIN ST. at HAWLEY AVE.	129	271		
MAIN ST. at BRONX AVE	17			
MAIN ST. at FAIRVIEW AVE.	39			
MAIN ST. at SUMMITT ST. / SAVOY ST.	65	162		
MAIN ST. at WENTWORTH ST.	32			
MAIN ST. at THORME ST.	28	34		
MAIN ST. at HILLHOUSE AVE. /BURNSFORD AVE.	78	129		
MAIN ST. at RENZY AVE. - / STOEHR PL.	62			Too close to Hillhouse&Beechmont
MAIN ST. at BEECHMONT AVE./ JEWETT AVE	167	254		
MAIN ST. at OVERLAND AVE./ GLENDALE AVE	29			
MAIN ST. at WOODSIDE AVE.	65	95		
MAIN ST. at FRENCHTOWN RD./ VANGUARD ST	62	74		Too close to Woodside& Kaechele
MAIN ST. at OXFORD ST. / VINCELETTE ST.	59			Too close to Woodside& Kaechele
MAIN ST. at KAECHELE PL.	136	245		
MAIN ST. at BROOKSIDE SHOPPING CENTER	10			
MAIN ST. at HILLVIEW ST. / COMMERCE PARK	53			Too close to Kaechele
MAIN ST. at OLD TOWN RD.	18	85		
WESTFIELD SHOPPINGTOWN TRUMBULL				

BRT Bus Stop
High level of ridership
Medium level of ridership
Bus stop removed even if high or medium level of ridership

TASK 4.6 SCENARIO IMPACTS

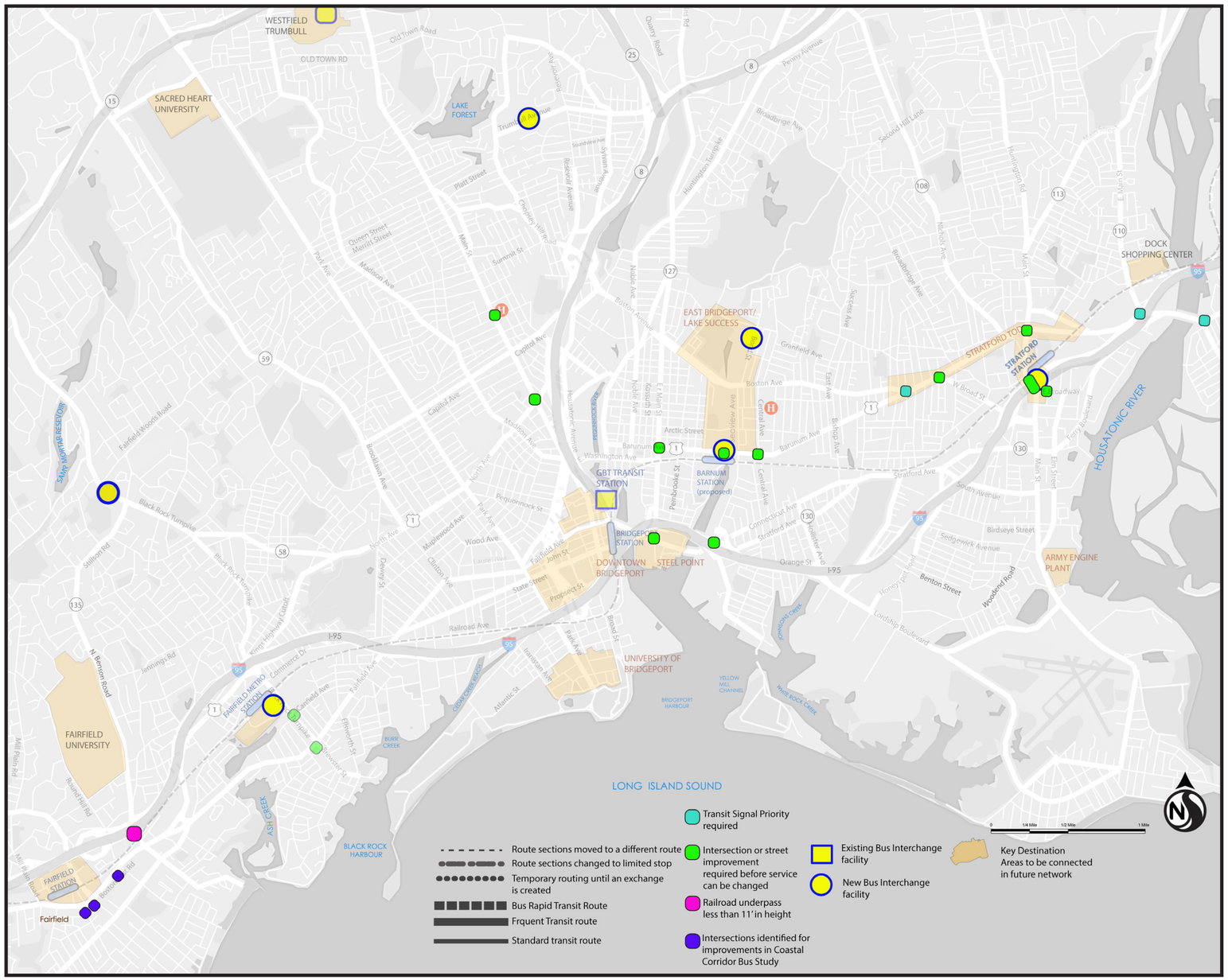


FIGURE 29: Barnum avenue @ Seaview avenue

Transportation modeling undertaken for Tasks 1 (Stratford) and Task 3 (East Bridgeport Redevelopment) indicated a number of impacts within the roadway system where level of service declined due to proposed developments creating the need for improvements. These improvements also include establishing dedicated transit zones and cycling improvements. Infrastructure changes that improve the reliability of transit as well as the journey to and from the transit stops/stations will promote ridership.

Transit is one part of the overall transportation network that requires an integrated approach to ensure that traffic movements are consistent and reliable (especially in corridors transit services are frequent or rapid) and the safe access by other modes such as cycling and walking is optimized.

Three types of impacts identified:

- Intersections requiring geometric improvements
- Intersections requiring signal improvements
- Passenger transfer points requiring system and operational improvements

Improvements identified in the 2011 Coastal Corridor Study are indicated in Figure 27. Further proposed improvements are also show on the map – the majority of them being intersection related. The various passenger transfer points or exchange improvements will accommodate route turnarounds and improve the overall system structure for the future.

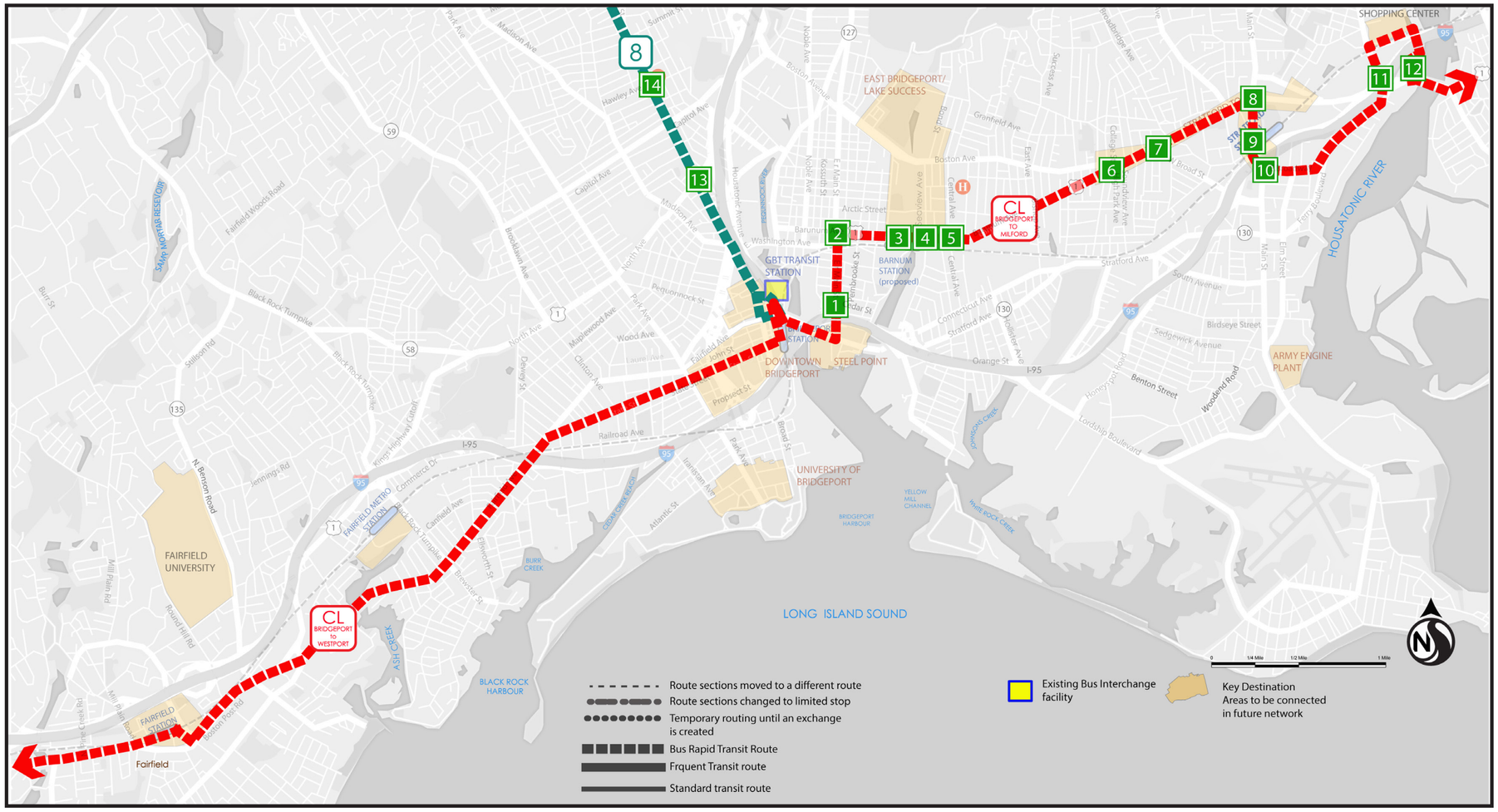


FIGURE 30: Infrastructure needs

These improvements are discussed in more detail in the following section.

Infrastructure improvements

The proposed routes serving the rapid transit corridors is shown in Figure 34, and can be described as follows:

- East West Corridor: Coastal Link/Route 1 – From Fairfield via Boston, Post, State to Bridgeport and via Barnum to Stratford
- North-South corridor: Route 8 - Bridgeport to Westfield Trumbull Mall via Main Street

There has been some identification of infrastructure needs identified in the Coastal Corridor study which outlined intersection and infrastructure needs on the western portion of the Coastal Link. Further review of intersections and terminal needs from this project have identified an additional 12 key locations in the East-West corridor and two in the North-South corridor for infrastructure improvements as shown in Figure 28. These include specific intersection improvements as well as locations requiring passenger transfer and layover improvements. For example, currently the Dock shopping Center area in the east is used as a turnaround. This occurs on private property with no dedicated space or lanes for these operations. The future land use plans in the vicinity of the Stratford town center suggest that this is a more desirable location to consider and establish a layover and passenger transfer facility to allow passenger interchange between routes or modes.

The standard process of identifying bus stop locations to refine the stop distance to closer to 1/4 mile between stops has not yet been undertaken. Creating the rapid transit "station" locations is a critical component of a rapid transit plan, however the identification process is usually apparent in the ridership profile. Most major corridors that are considered for rapid transit have key stops spaced sufficiently apart to show the future location of stations. The ridership profile for the Coastal Link suggests that this may be challenging and require further review due to the high and consistent levels of use on most stops in the study area.

The combining of the Route 1 and the Coastal Link to operate the link between Bridgeport and Stratford would first benefit from some stop consolidation along with increased frequencies prior to the next stage of development which would be the transformation from a high frequency service to a rapid transit service. Parallel local service may be required. The Main Street corridor presents similar challenges with high use on the existing stops throughout the route. Stop consolidation may be limited in scope with increased frequencies being the focus of service improvements for the medium term prior to the move to rapid transit.

Figure 34 highlights key intersections or segments of roadway that have been identified for an improvement in the infrastructure in order to allow either for an integrated corridor approach or specific intersection improvements. There have also been several locations identified that required a transit transfer or layover facility in order to allow passenger interchange between routes or modes. These are detailed in the following section.

COASTAL LINK
#1 - East Main @ Cedar street

The addition of a bus-only queue jump lane along the southbound approaches of Cedar Street and E Main Avenue could reduce southbound bus delays at these intersections. An advanced STOP bar should be provided along the southbound approach to the Cedar Street intersection in order to provide a better advantage for buses to bypass traffic.

Additionally, the relocation of the existing southbound bus stop from north of Howe Street to south of Seymour Street (and subsequent restriction on parking along the west side of East Main Avenue between Seymour Street and Howe Street) could also reduce bus intersection delays.

The improvements can be accommodated within the existing right-of-way.

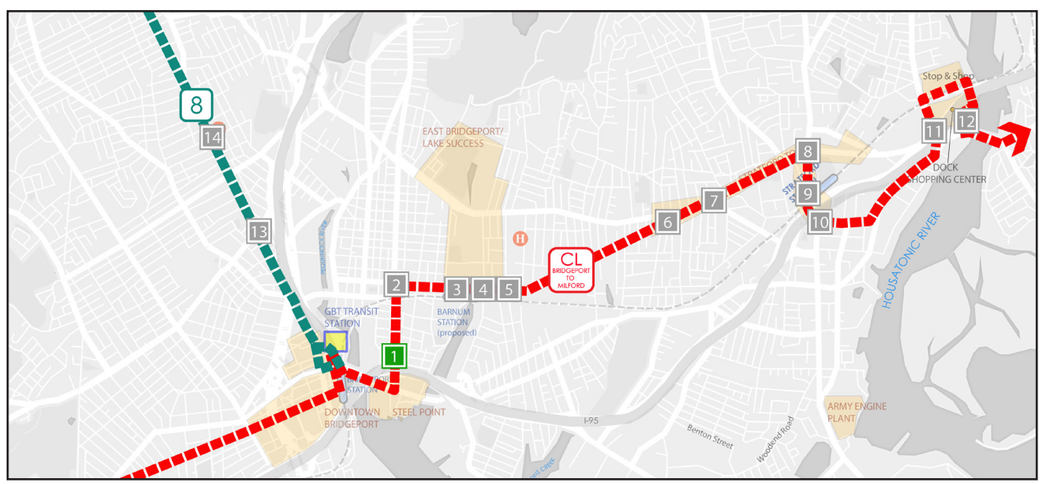
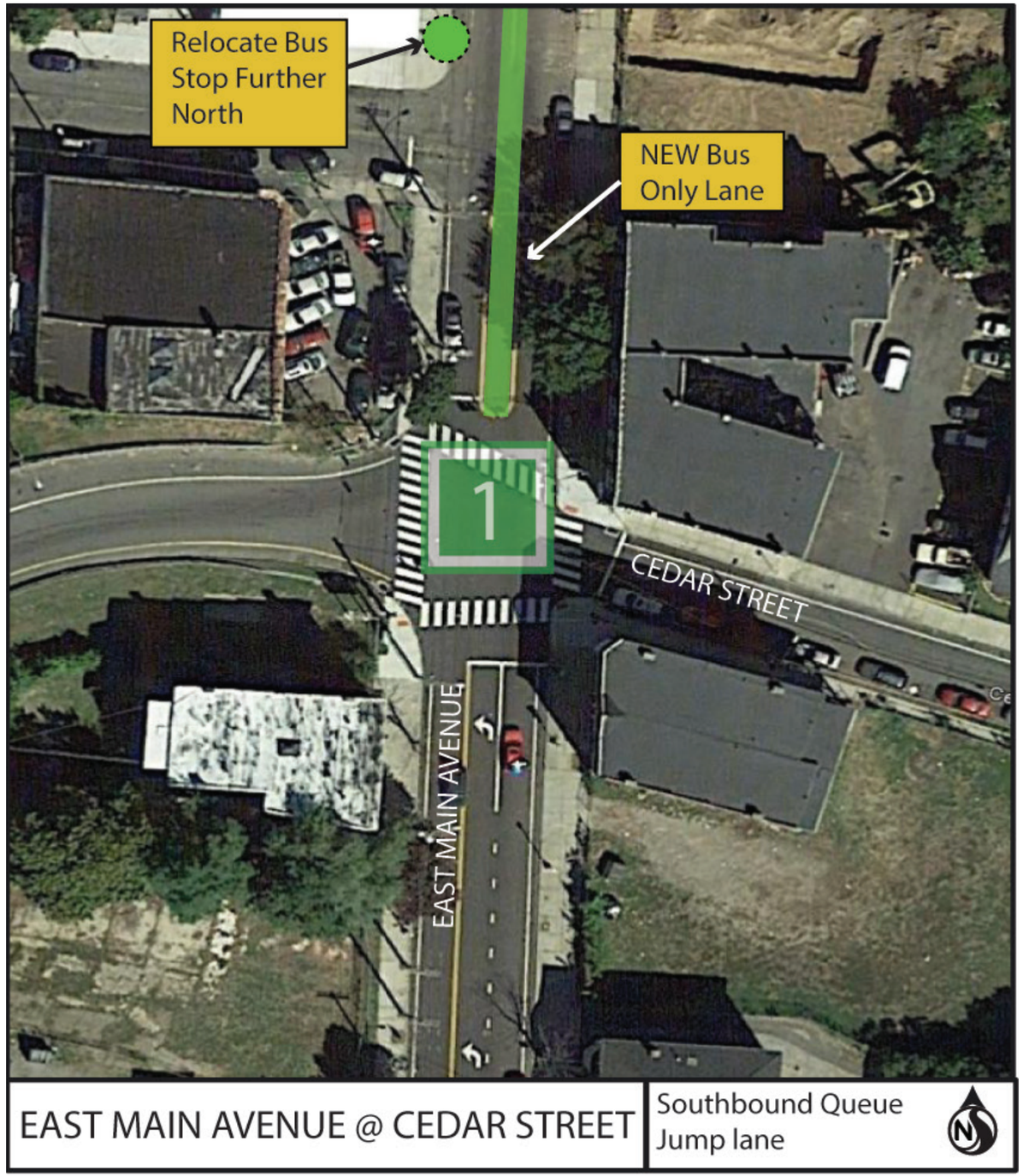


FIGURE 31: East Main @ Cedar



COASTAL LINK
#2 - Barnum Avenue @ East Main Avenue

The modification of signal timing and the addition of left turn bays at the intersection of Barnum Avenue and East Main Avenue could increase intersection capacity and reduce bus intersection delays.

Additionally, the relocation of the existing bus stops from each of the intersection approaches to the far side of each intersection approach could also help reduce bus intersection delays.

Both improvements would require:

- The relocation of STOP bars further away from the intersection in order to provide additional space for buses to make wide turns
- The elimination of on-street parking within 250 feet of each intersection approach.

The improvements can be accommodated within the existing right-of-way.

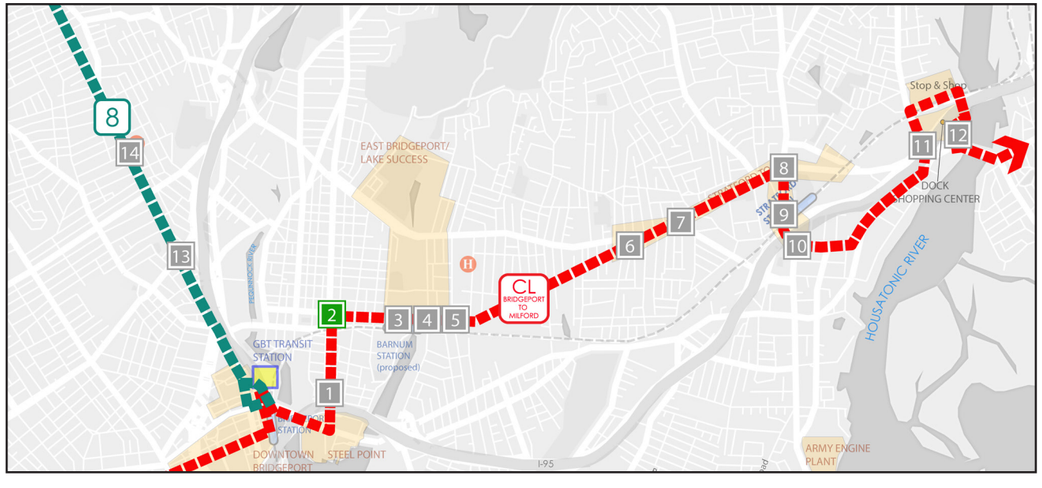
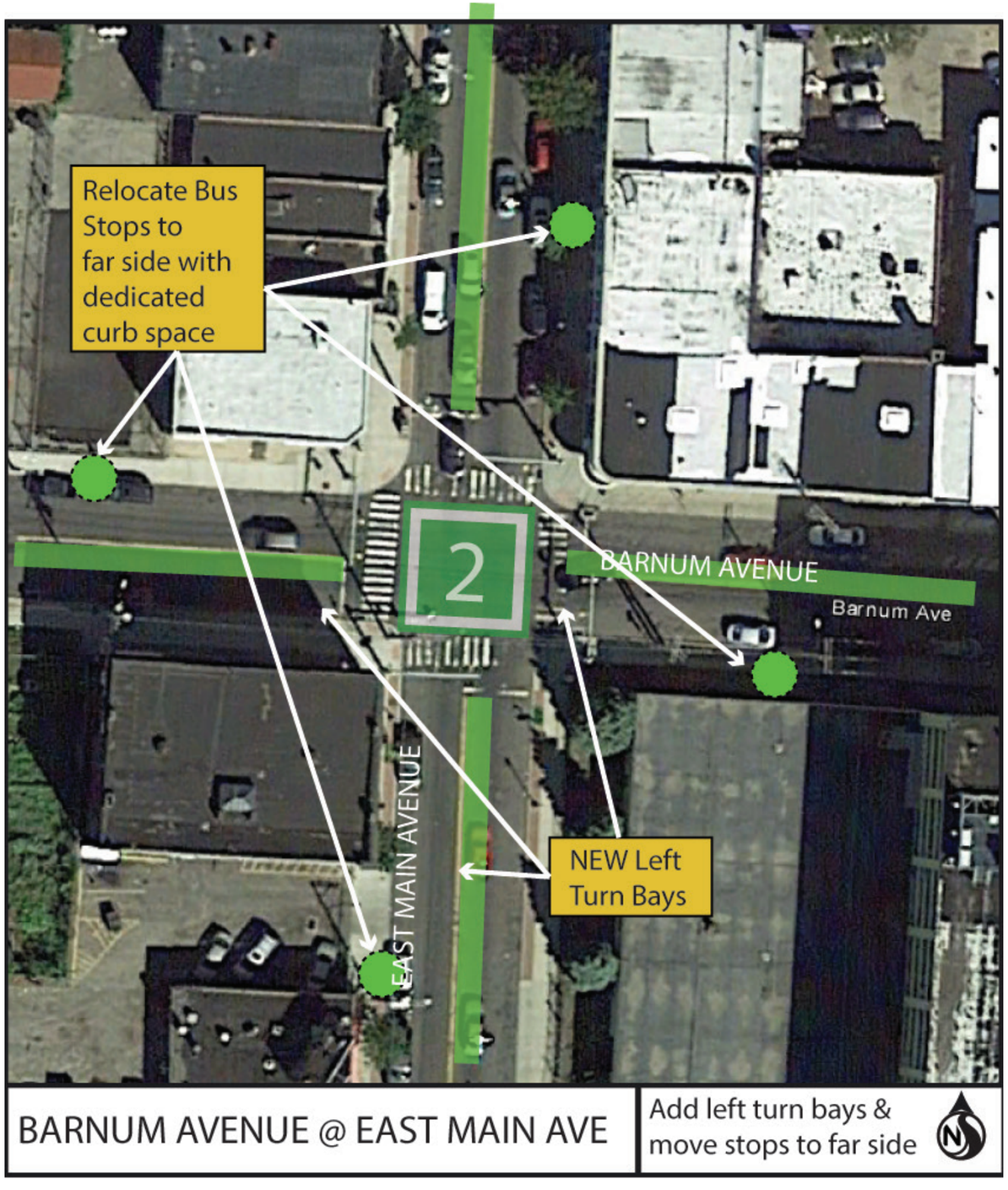


FIGURE 32: Barnum Avenue @ East Main Avenue



COASTAL LINK
#3 - Barnum Avenue Station

The addition of a new railway station on Barnum Avenue creates the opportunity for buses to terminate at the station or provide for a transfer opportunity between bus and rail. As shown in Figure 37, there will need to be bus stations & stops created on either side of Barnum Avenue close to Seaview Avenue. This allows for a controlled crossing to and from the railway station. It is currently proposed that several routes terminate at the station, therefore further investigation of whether the BRT stations and local stops should be off street or within the existing right of way is required once the station area planning is at a detailed design level

COASTAL LINK
#4 - Barnum Avenue @ Seaview Avenue

The modification of signal timing, the channelization of southbound and eastbound right turn movements, the addition of an eastbound right turn bay, and the addition of left turn bays along all intersection approaches can reduce bus intersection delays.

Additionally, the relocation of the existing bus stop along westbound Barnum Avenue to the far side of the intersection could help reduce bus intersection delays.

Right-of-way acquisition may be necessary in order incorporate the geometric design improvements.

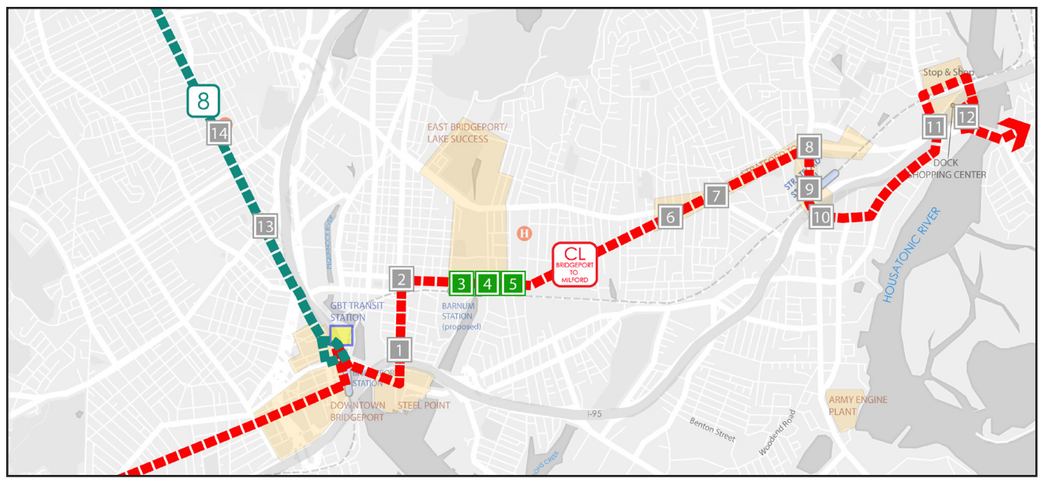
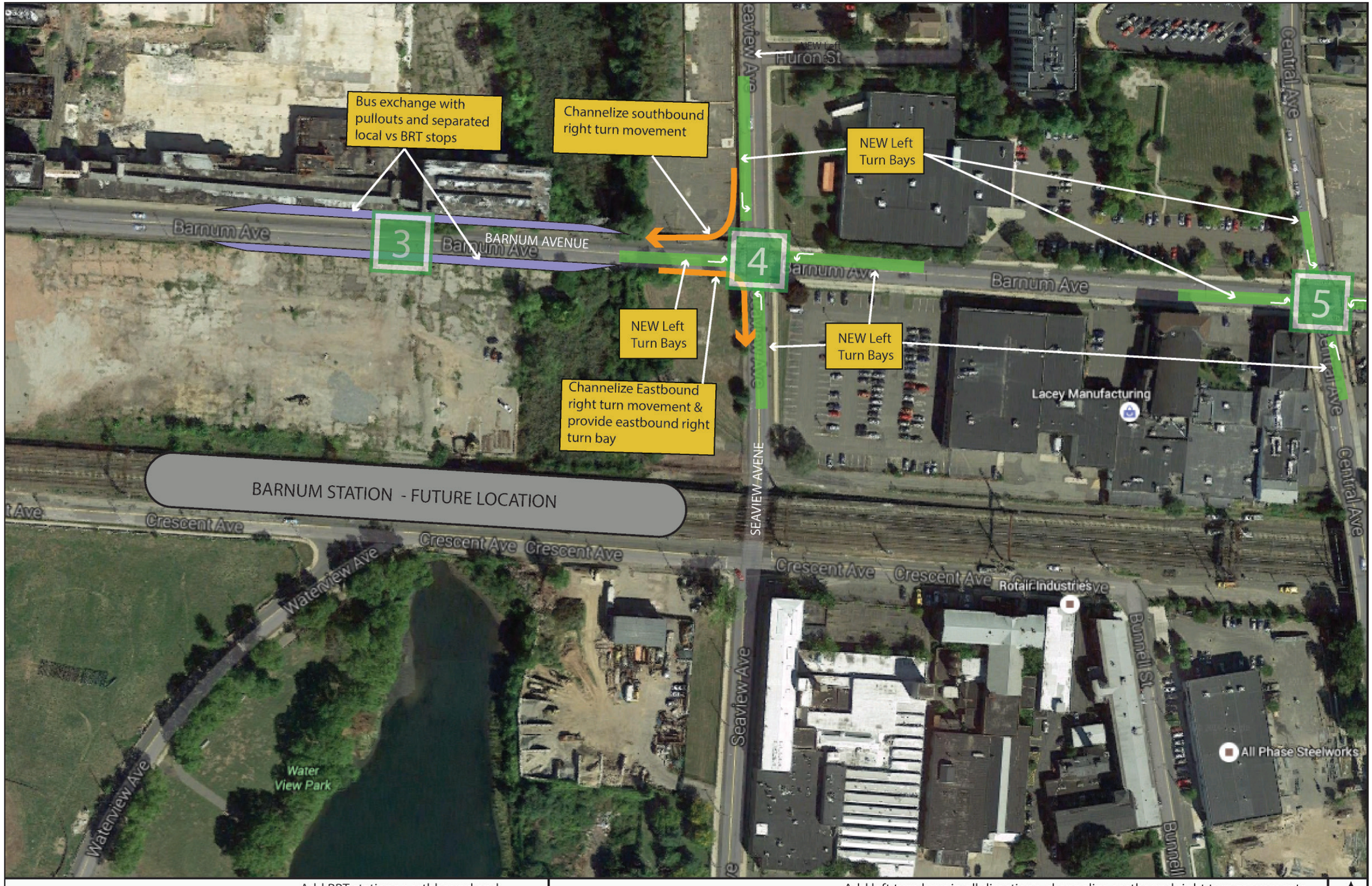


FIGURE 33: Barnum Avenue Station plus Barnum Avenue @ Seaview Avenue



MAIN STREET @ BARNUM STATION	Add BRT stations northbound and southbound as well as local stops	MAIN STREET @ SEAVIEW AVENUE	Add left turn bays in all directions, channelize eastbound right turn movements and create a right turn bay, channelize southbound right turn movements

COASTAL LINK
#5 - Barnum Avenue @ Central Avenue

The modification of signal timing and the addition of left turn bays along all approaches of the intersection of Barnum Avenue and Central Avenue could increase intersection capacity and reduce bus intersection delays.

Right-of-way acquisition may be necessary in order incorporate the geometric design improvement.

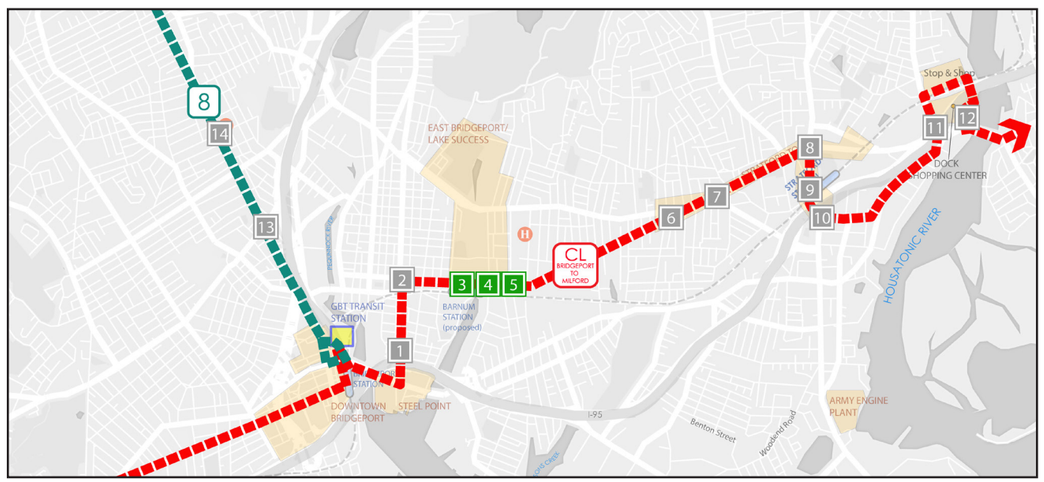
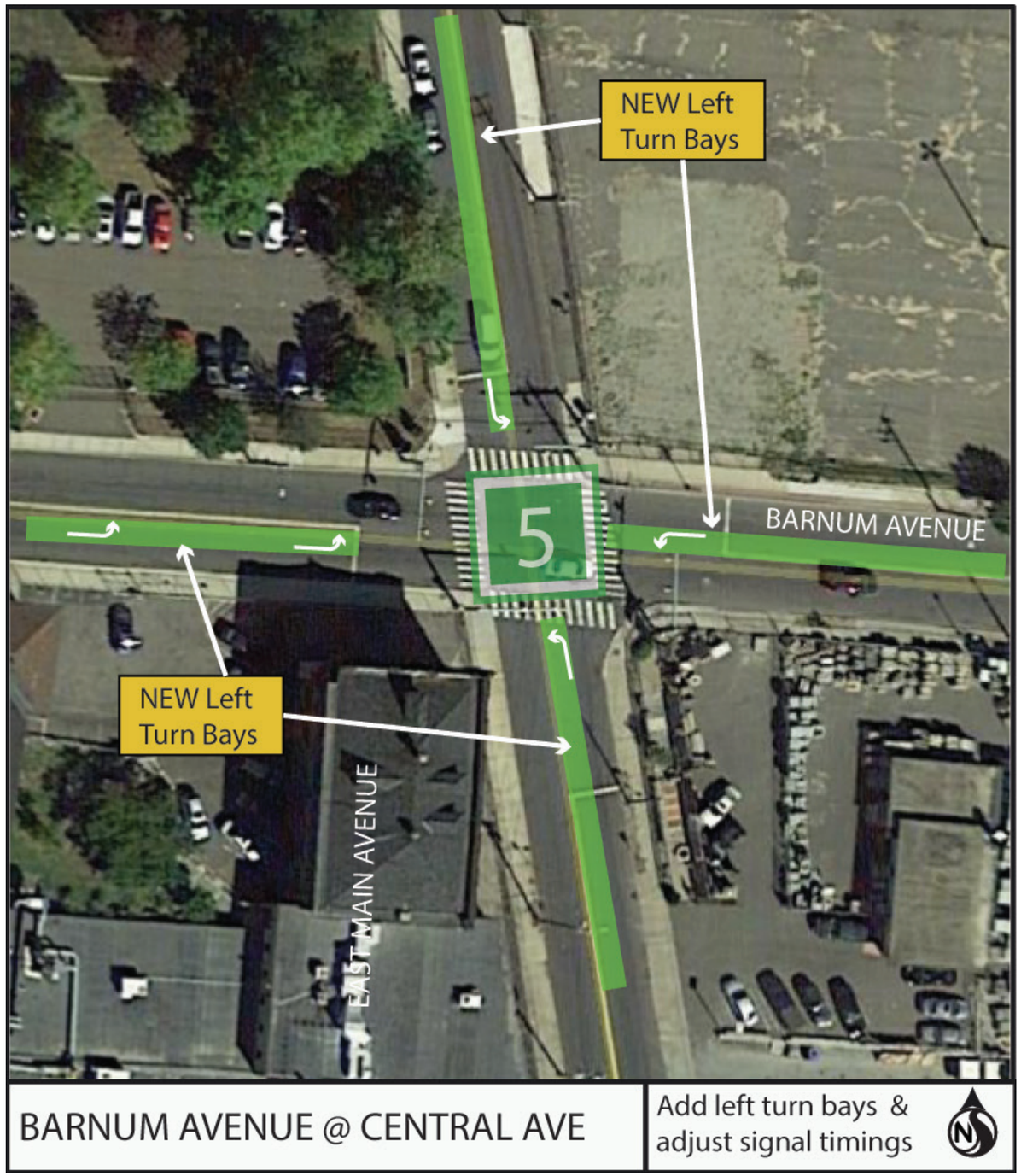


FIGURE 34: Barnum Avenue @ Central Avenue



COASTAL LINK
#6 - Barnum Avenue @ Boston Avenue

The modification of signal timing and the prohibition of peak period eastbound and westbound left turns at the intersection of Barnum Avenue at Boston Avenue and College Street could increase intersection capacity and reduce bus intersection delays.

The improvements can be accommodated using the existing right-of-way.

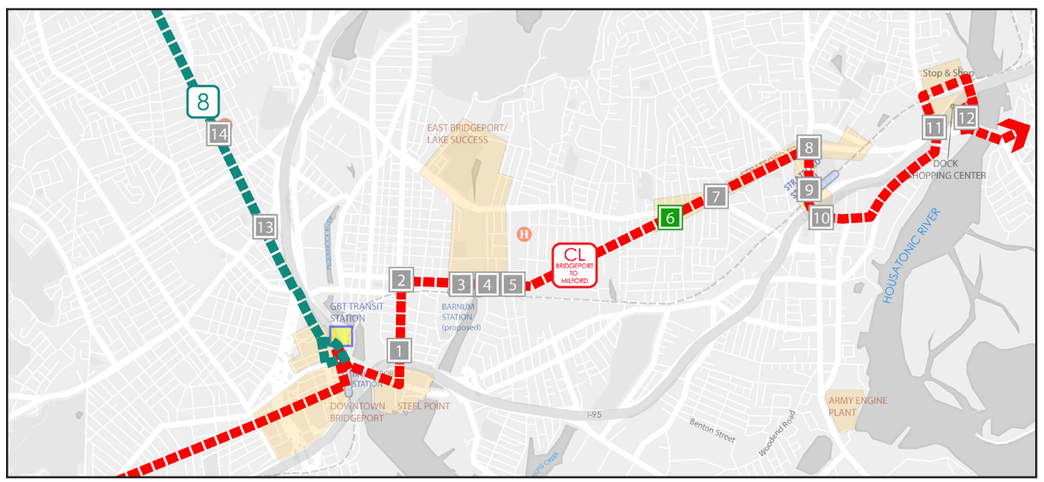
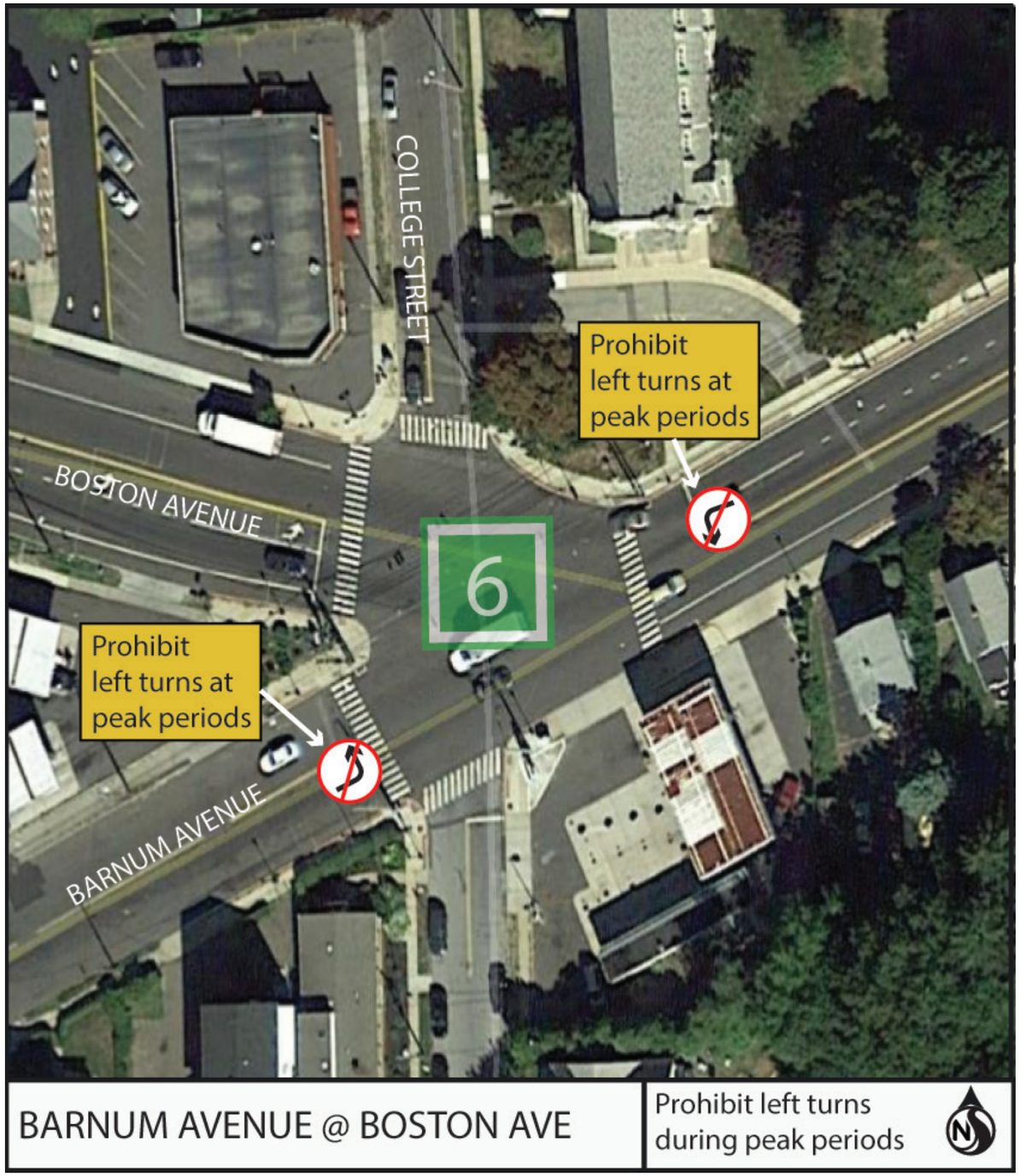


FIGURE 35: Barnum Avenue @ Boston Avenue



COASTAL LINK
#7 - Barnum Avenue @ West Broad Street

The modification of signal timing and the addition of a westbound left turn bay at the intersection of Barnum Avenue and West Broad Street could increase intersection capacity and reduce bus intersection delays.

It is recommended to begin the westbound left turn bay east of Noble Street. In order to do this, on-street parking should be prohibited along the north side of Barnum Avenue east of Noble Street during peak periods.

The improvements can be accommodated using the existing right-of-way.

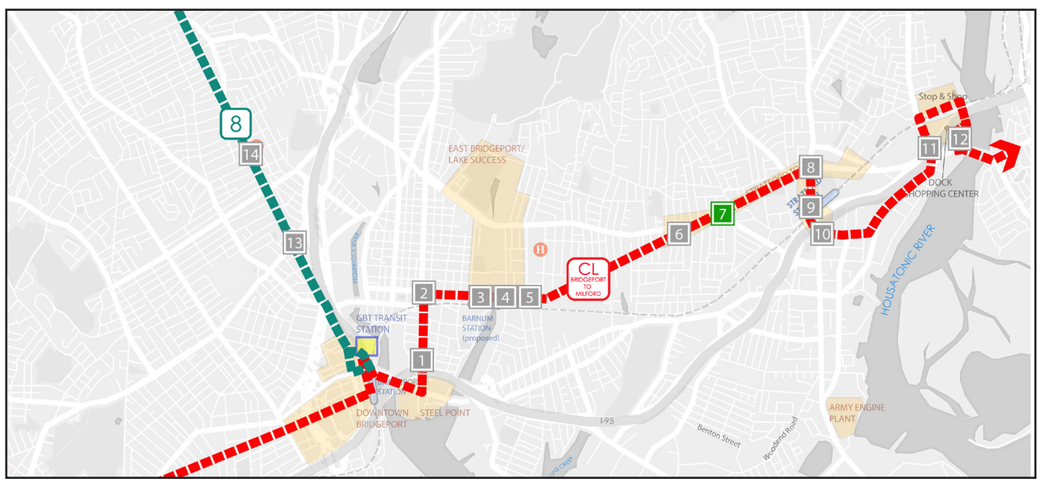
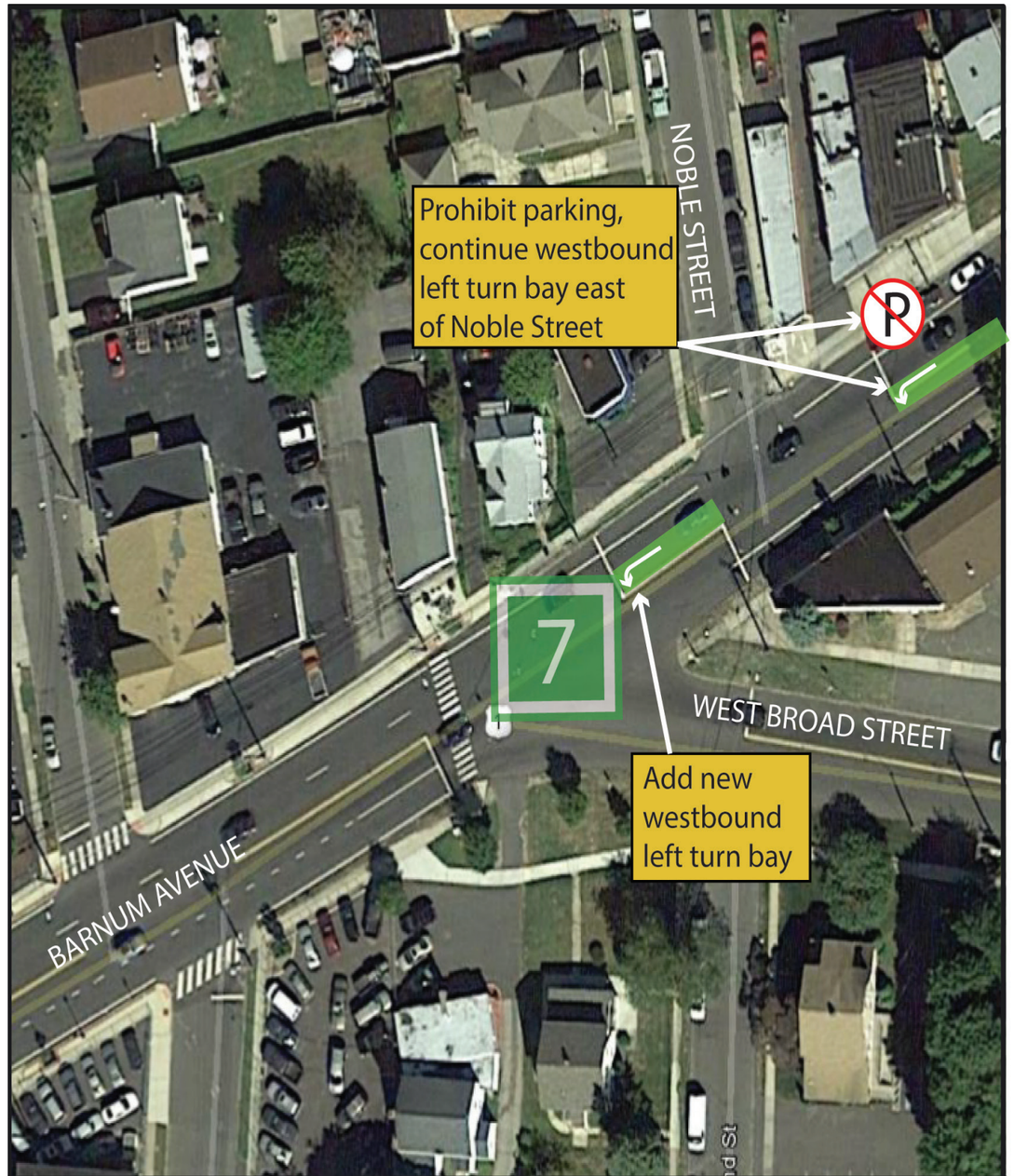


FIGURE 36: Barnum Avenue @ West Broad Street



COASTAL LINK
#8 - Barnum Avenue @ Main Street

The modification of signal timing and the addition of an eastbound right turn bay at the intersection of Barnum Avenue and Main Street could increase intersection capacity and reduce bus intersection delays. There is potential for additional changes including bike lanes on Main Street and Barnum Avenue, as well as median strips further south on Main Street that have been identified in Task 1 - Stratford Transit Oriented Development(TOD). The existing left turn bay northbound on Main Street can be used by transit without modification.

Right-of-way acquisition may be necessary in order incorporate the geometric design improvement to accommodate a new right turn lane on Barnum Avenue

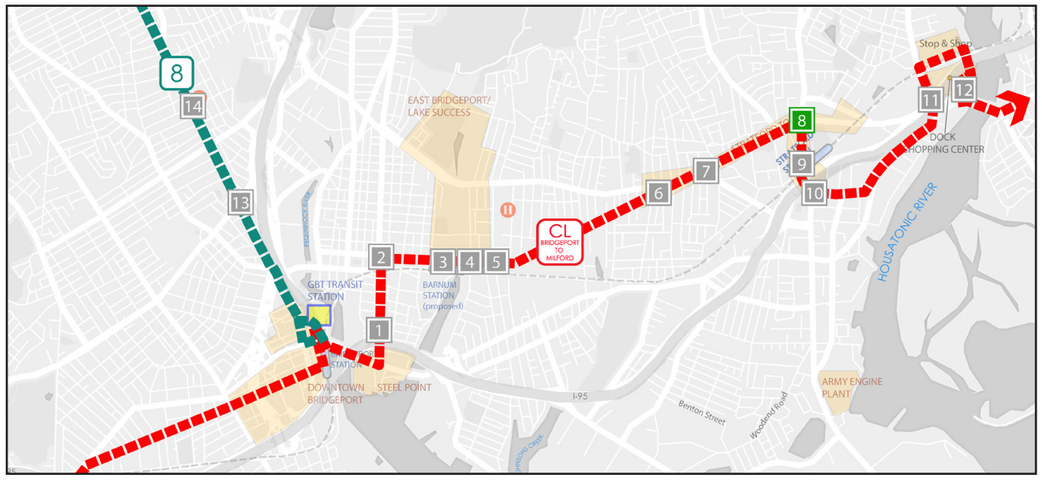


FIGURE 37: Barnum Avenue @ Main Street

COASTAL LINK
#9 - Main Street @ Stratford Railway Stn

As identified in Task 1 (Stratford TOD), there is a need to improve transit terminal or stopping locations at the Stratford Railway station. Northbound has sufficient space to create off-street bus zones through acquisition of the boulevard strip adjacent to the parking lot. Southbound stops cannot be consolidated due to the existence of the two driveways, therefore, separating the BRT stop from local bus stops will be required. The southbound stops will have to be on-street unless additional right-of-way can be purchased to widen out Main Street in this location. Task 1 noted the inclusion of bicycle lanes in the area which also may force the need for additional right- of-way.

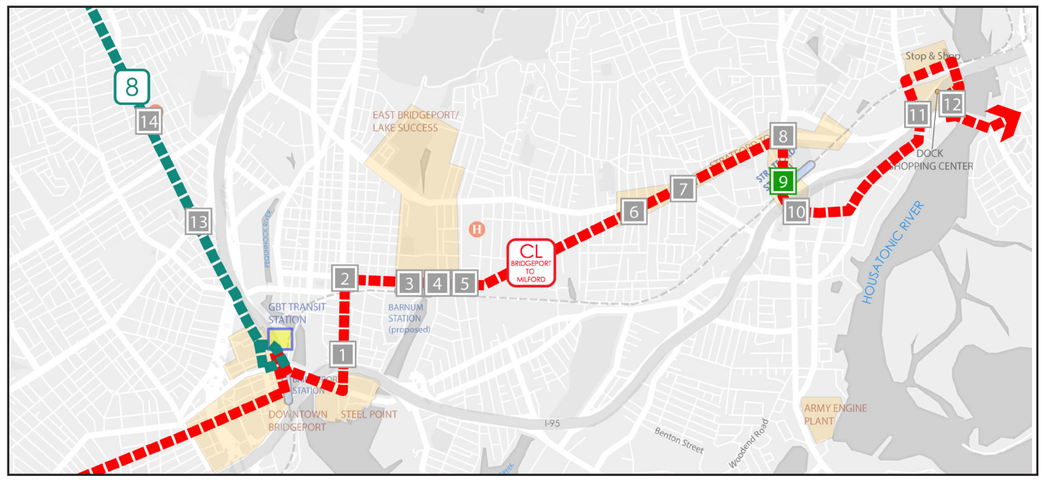
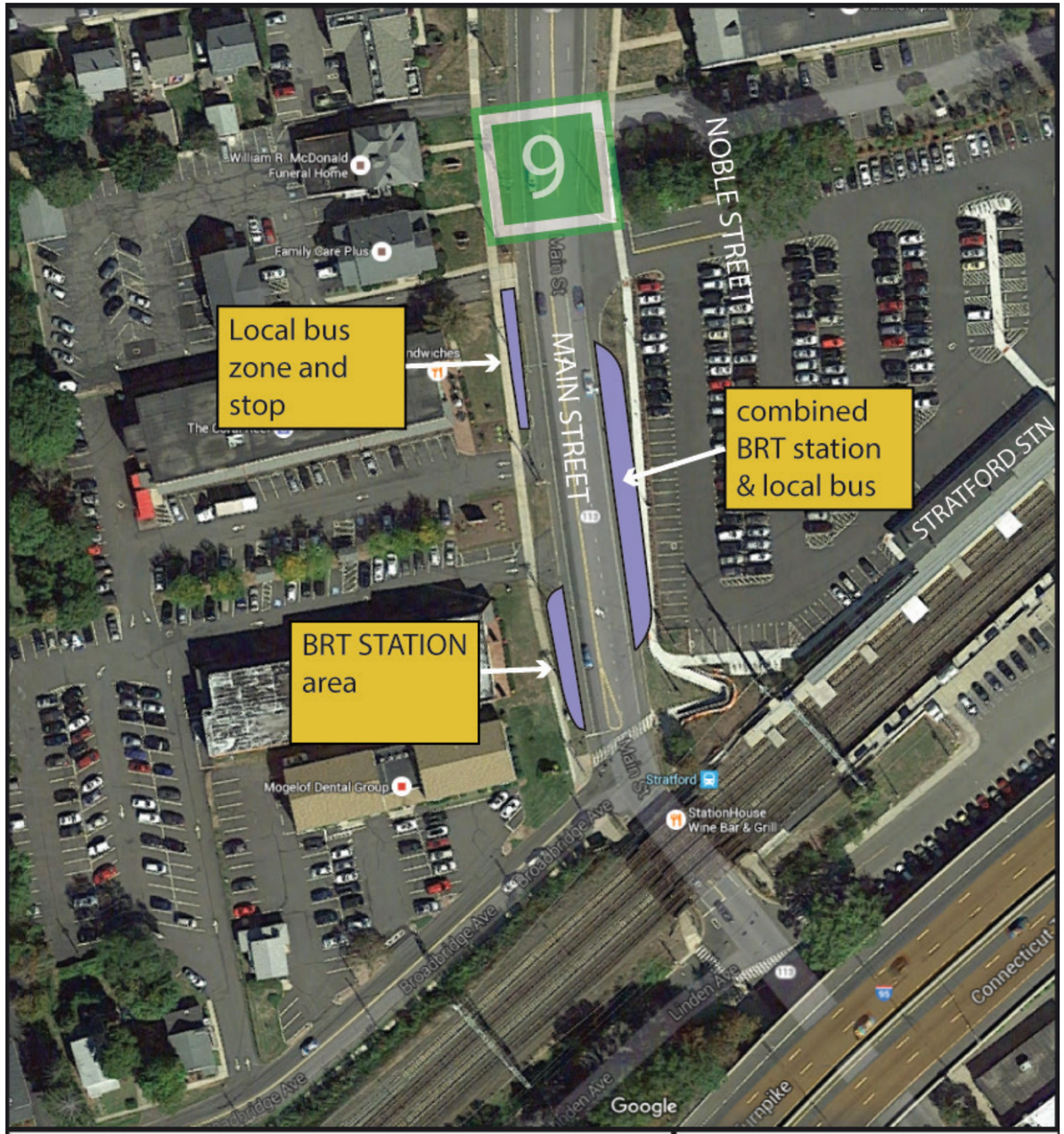


FIGURE 38: Main Street @ Stratford Railway Station



MAIN STREET @ STRATFORD RAIL STN | Add dedicated stop space for BRT and local

COASTAL LINK
#10 - Main Street @ East Broadway

The modification of signal timing and the addition of a westbound right turn lane at the intersection of East Broadway at Main Street could increase intersection capacity and reduce bus intersection delays. This intersection is also identified in Task 1 (Stratford TOD).

Right-of-way acquisition may be necessary in order to incorporate the geometric design improvement.

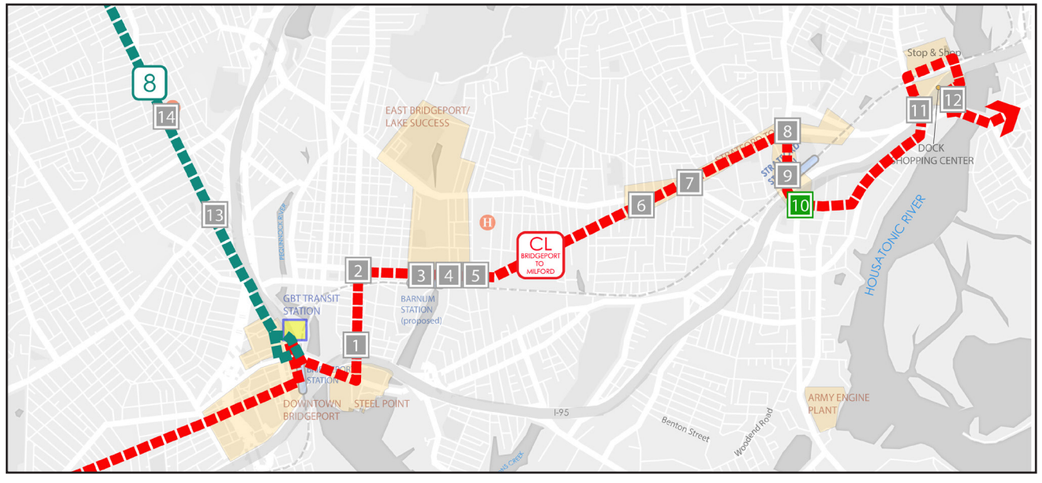
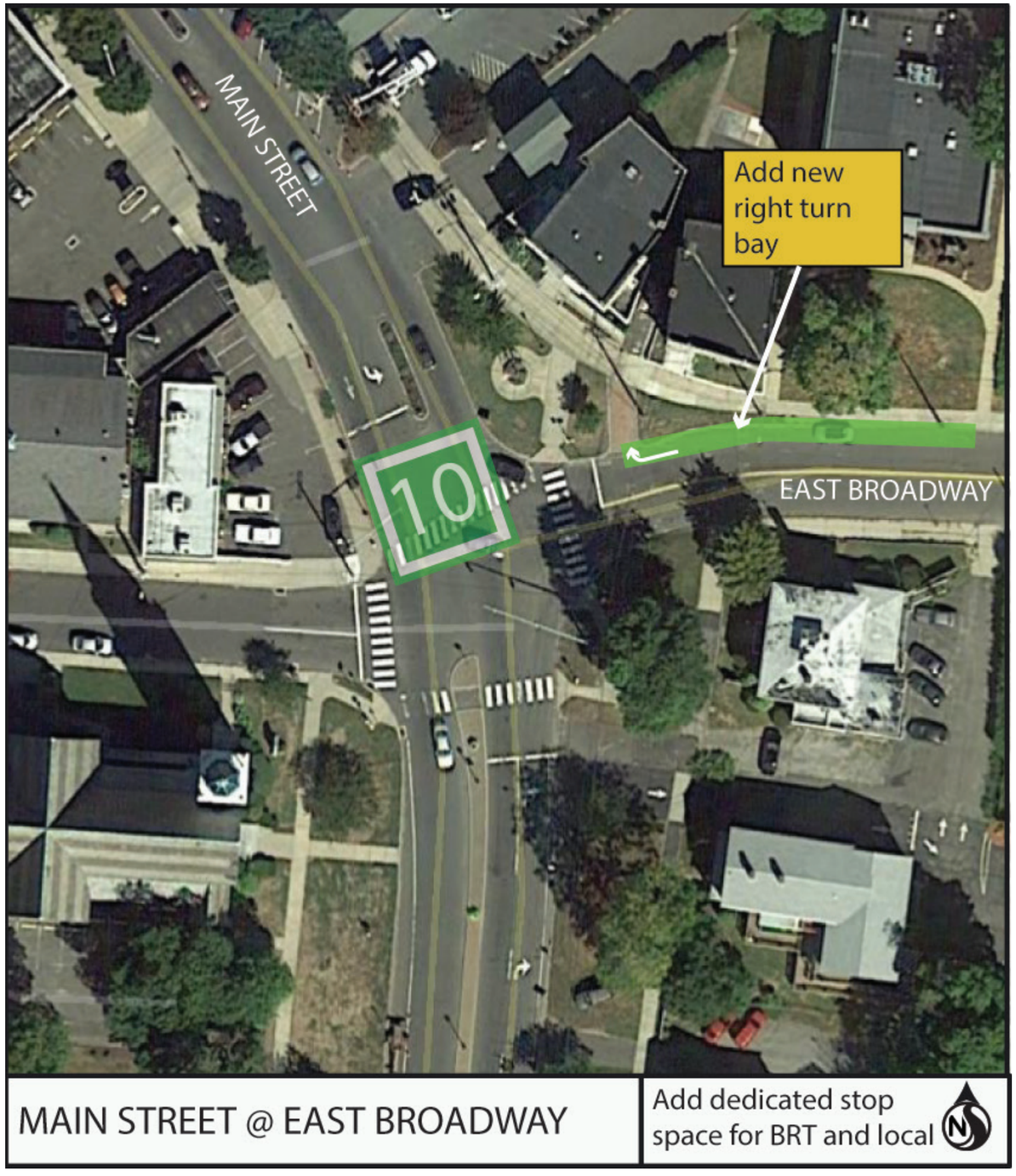


FIGURE 39: Main Street @ East Broadway



COASTAL LINK
#11- Barnum Ave Cutoff @ The Dock

The addition of a third northbound lane at the intersection of Barnum Avenue Cutoff and Ferry Boulevard could provide a dedicated lane for buses and vehicles that are heading northward towards the Dock Shopping Center (the rightmost travel lane). Additionally, the third lane could increase intersection capacity and reduce bus intersection delays.

Right-of-way acquisition may be necessary in order incorporate the geometric design improvement

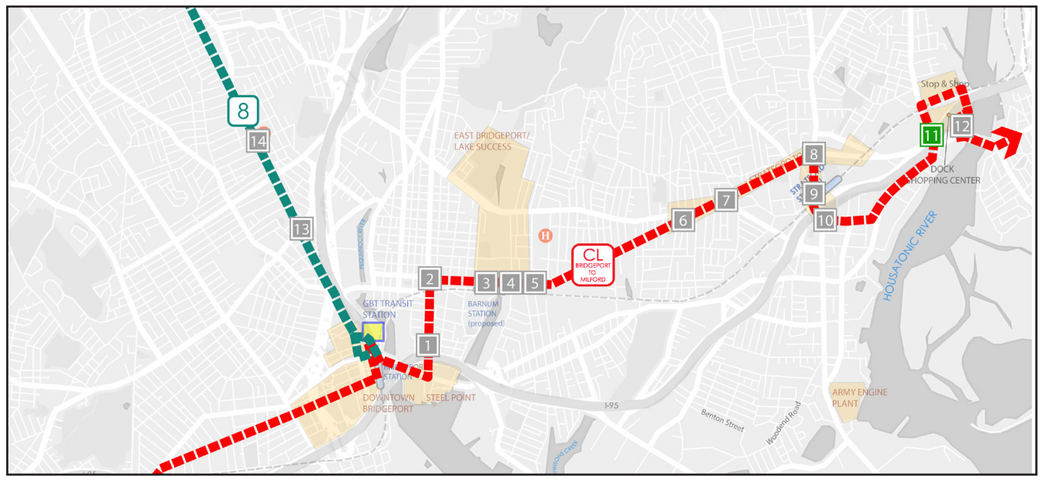
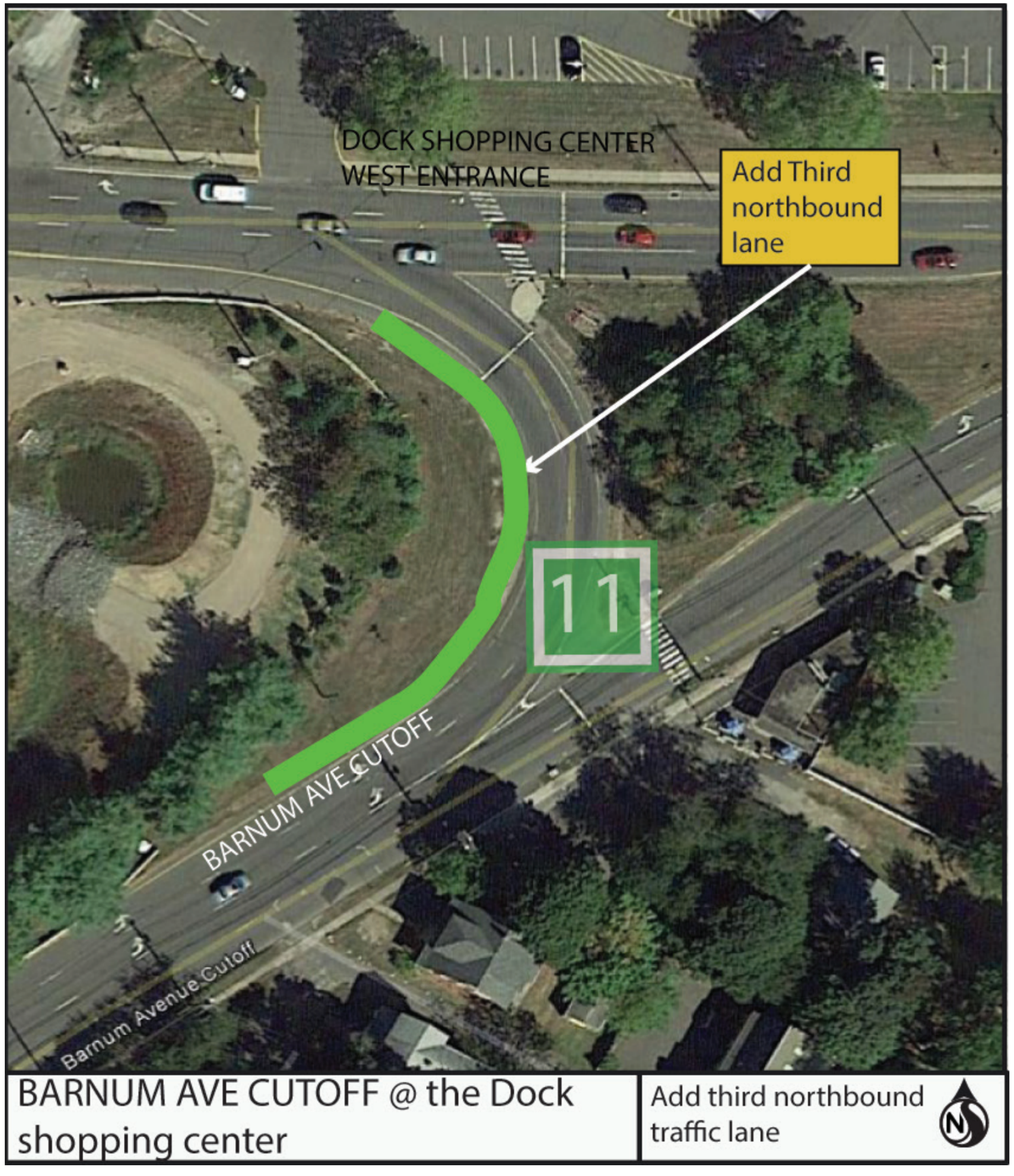


FIGURE 40: West Entrance to the Dock Shopping Center



COASTAL LINK
#12 - Barnum Ave Cutoff @The Dock SC

The modification of signal timing could reduce bus intersection delays, especially for buses leaving the Dock Shopping Center and heading to Milford and other eastern destinations.

The improvements can be accommodated using the existing right-of-way.

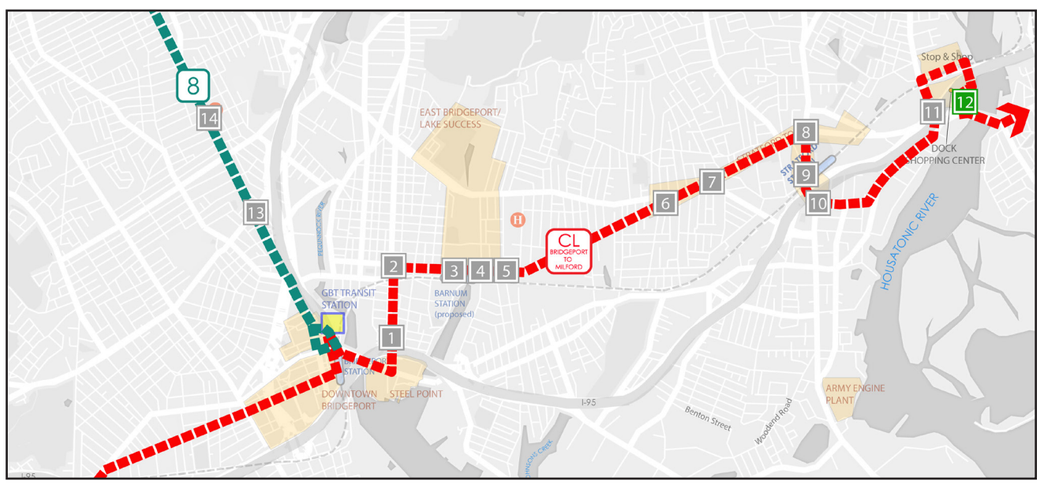
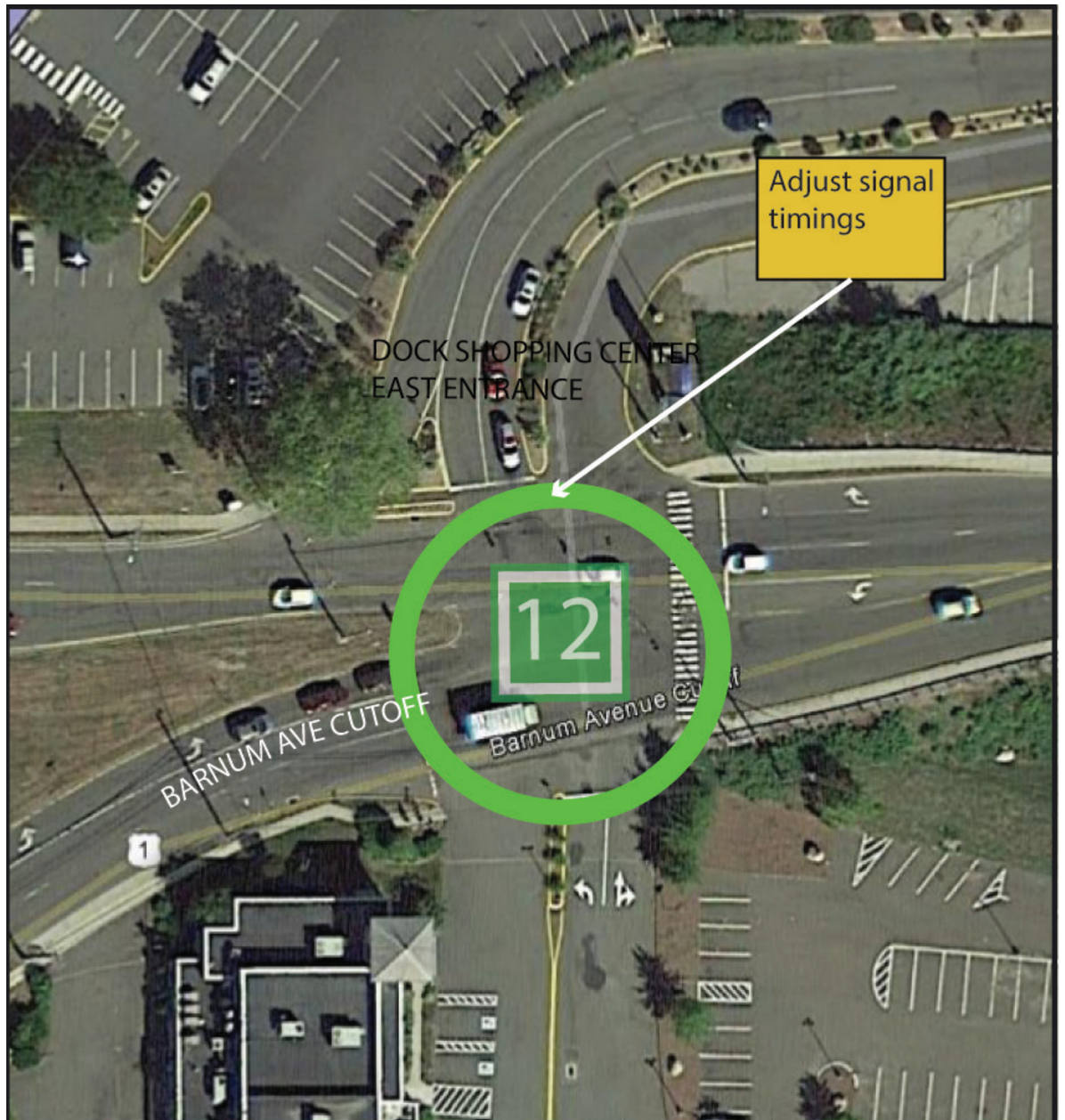


FIGURE 41: East Entrance to the Dock Shopping Center



Route 8
#13 - Main Street @ North Avenue

The modification of signal timing and the addition of a northbound right turn bay on Main Street at North Avenue could increase intersection capacity and reduce bus intersection delays.

Additionally, the relocation of the southbound bus stop to the far side of the intersection could reduce bus intersection delays. On-street parking (to be added in the figure) would have to be prohibited along the west side of Main Street south of North Avenue in order to relocate the bus stop.

The improvements can be accommodated using the existing right-of-way.

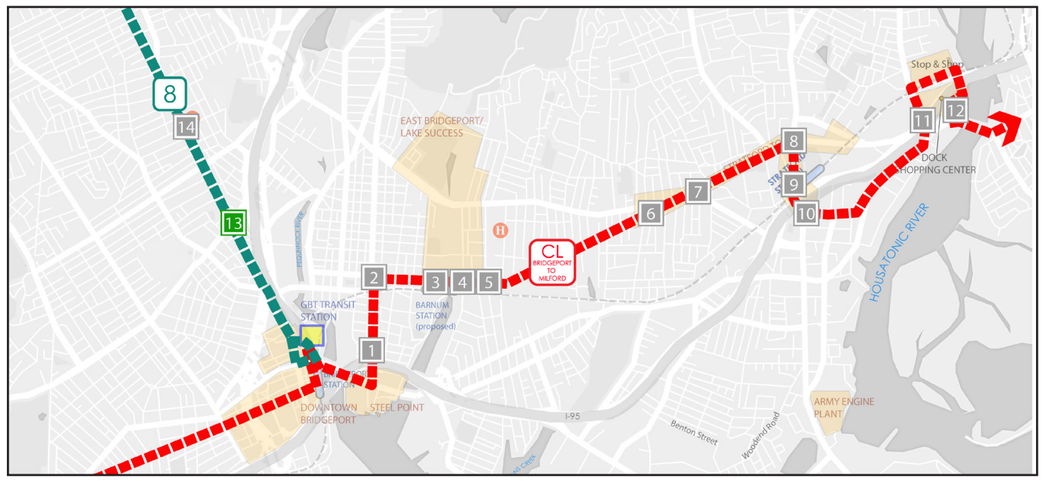
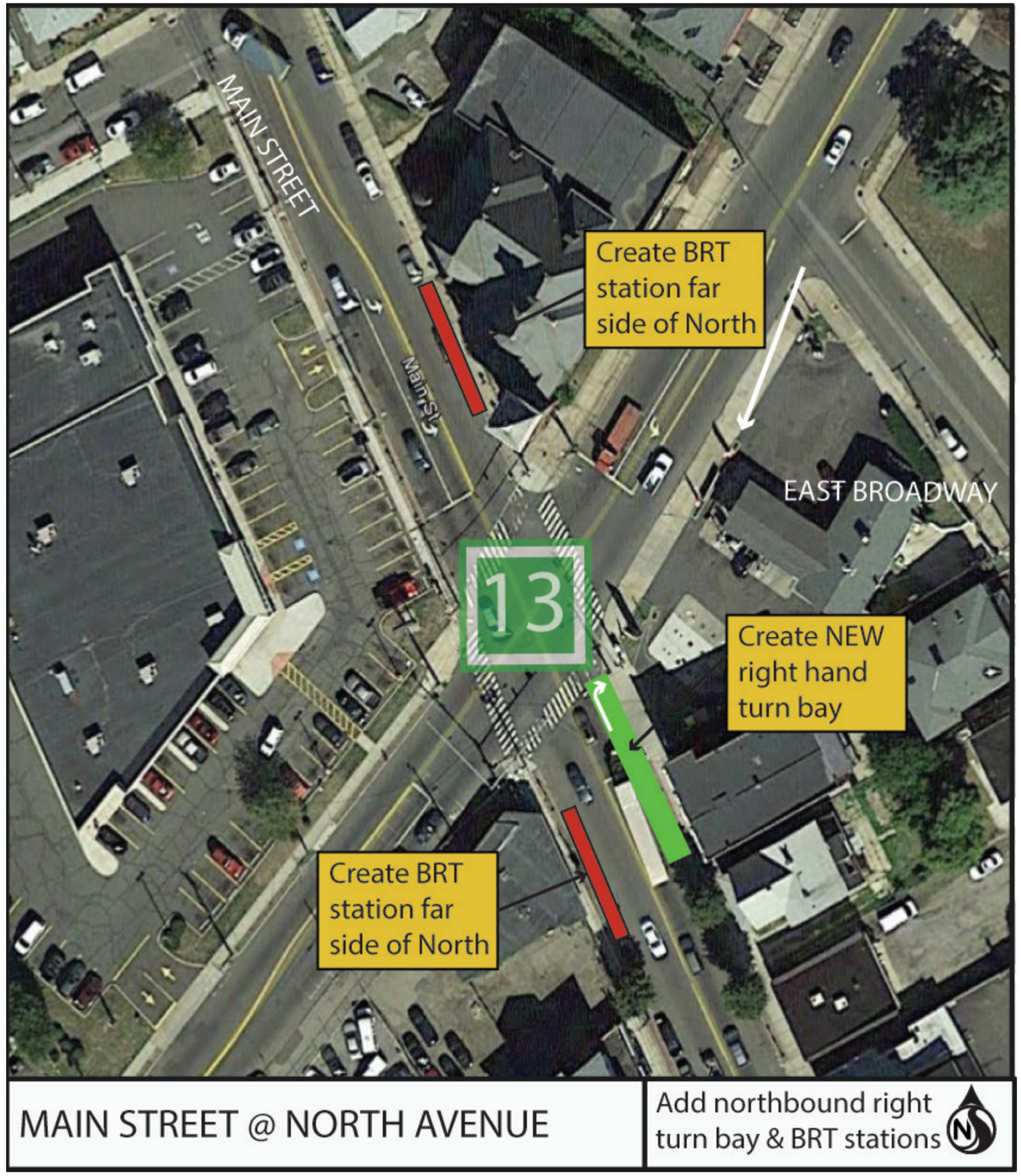


FIGURE 42: Main Street (Bridgeport) @ North Avenue



Route 8
#14 - Main Street @ East Broadway

The addition of a northbound right turn bay at the intersection of Main Street and Hawley could increase intersection capacity and reduce bus intersection delays.

Additionally, the relocation of the southbound bus stop to the far side of the intersection could reduce bus intersection delays. On-street parking would have to be prohibited along the west side of Main Street south of Hawley Avenue in order to relocate the bus stop.

The improvements can be accommodated using the existing right-of-way.

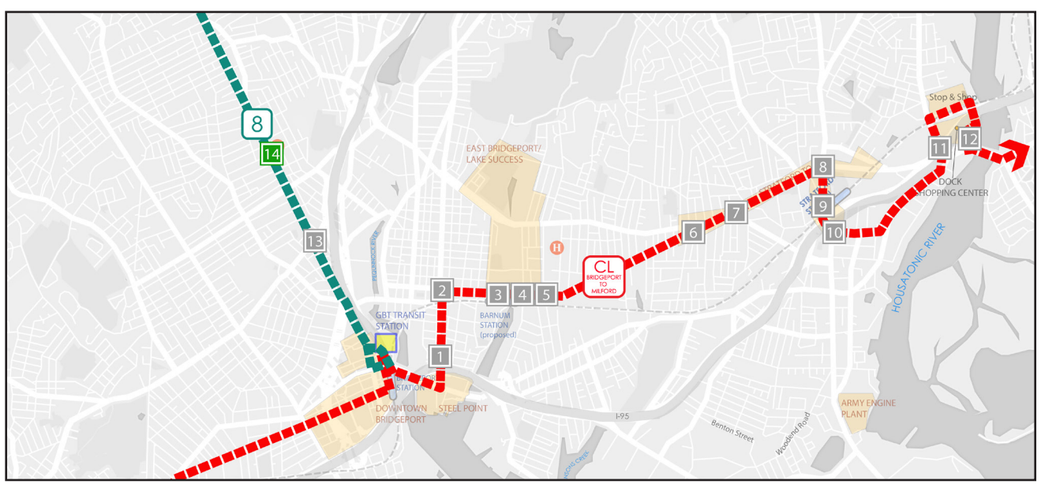
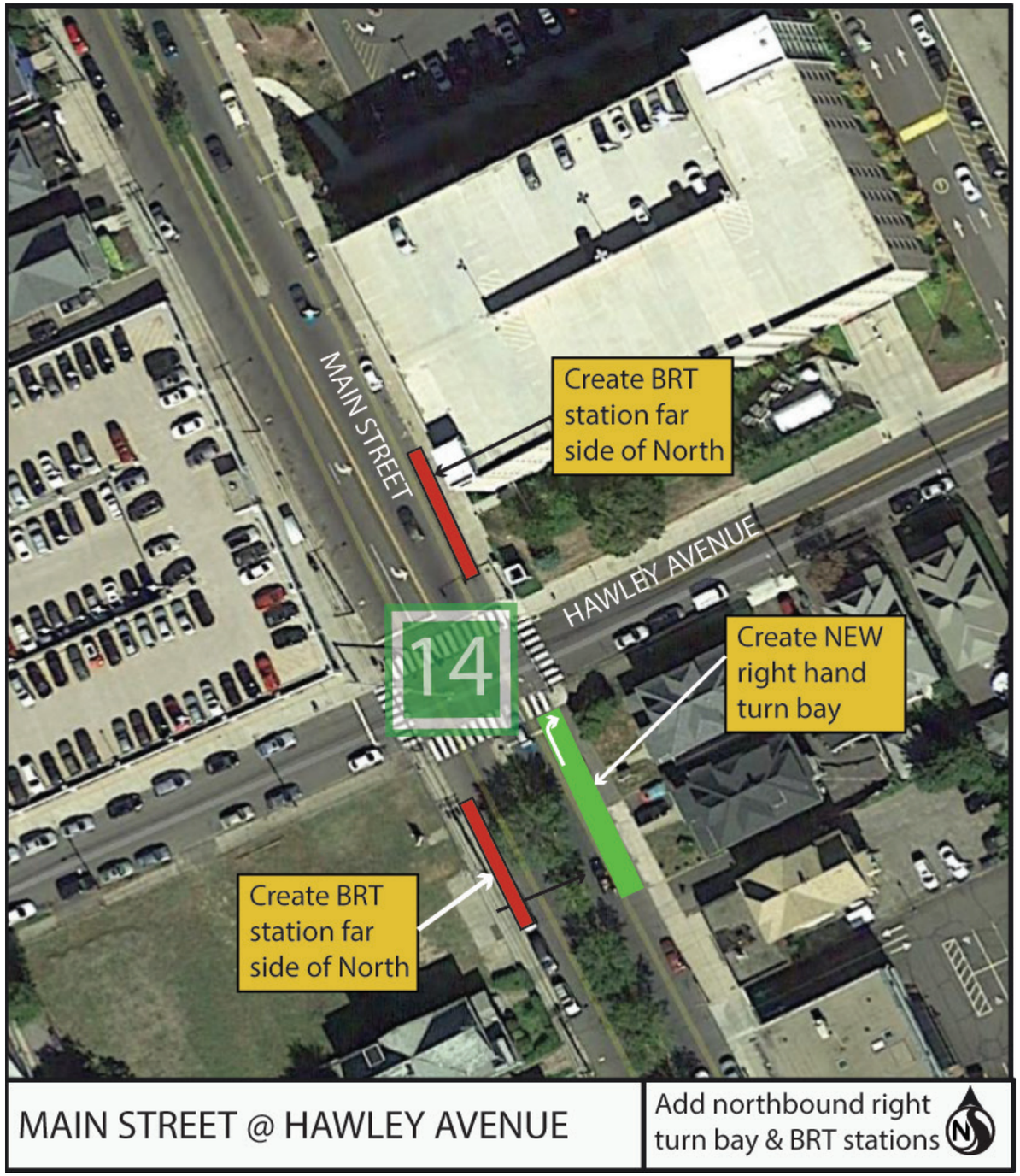
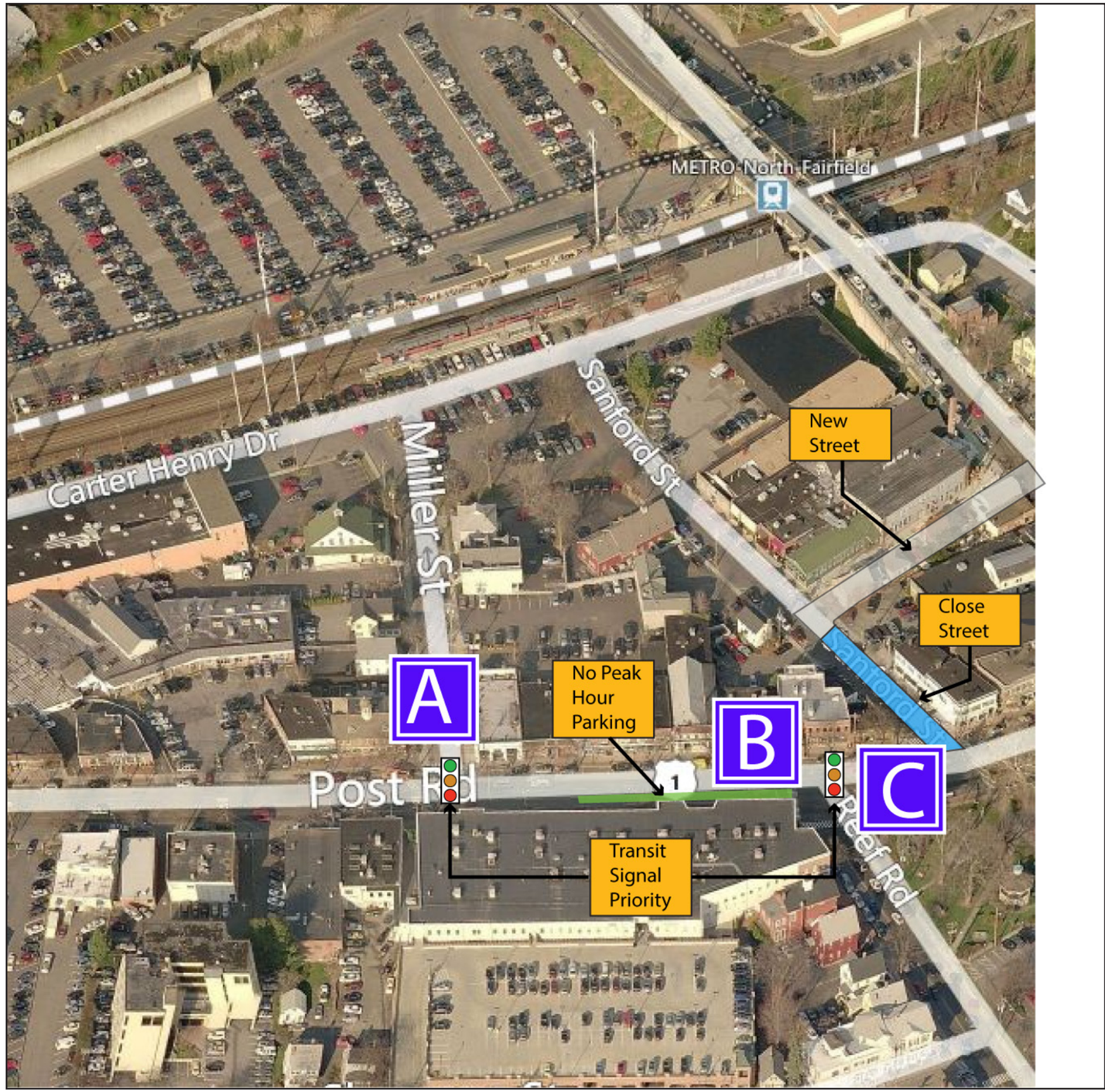


FIGURE 43: Main Street (Bridgeport) @ Hawley Avenue



The Coastal Corridor Bus Study reviewed geometric issues, signal timings and changes in parking restrictions along the entire bus route with the exception of the area between Fairfield Metro to East of Stratford. The only areas included in the study that overlap this study are around the Fairfield Railway Station where there are four total intersections that could benefit from signal priority. State and Fairfield have sufficient capacity as do Connecticut and Stratford Avenues that no changes were required. The study did not contemplate any change to the existing route, therefore movements in downtown Bridgeport and along Barnum were not part of that study.

Figure 44 - Coastal Corridor Bus Study Improvements in Study Area



Summary

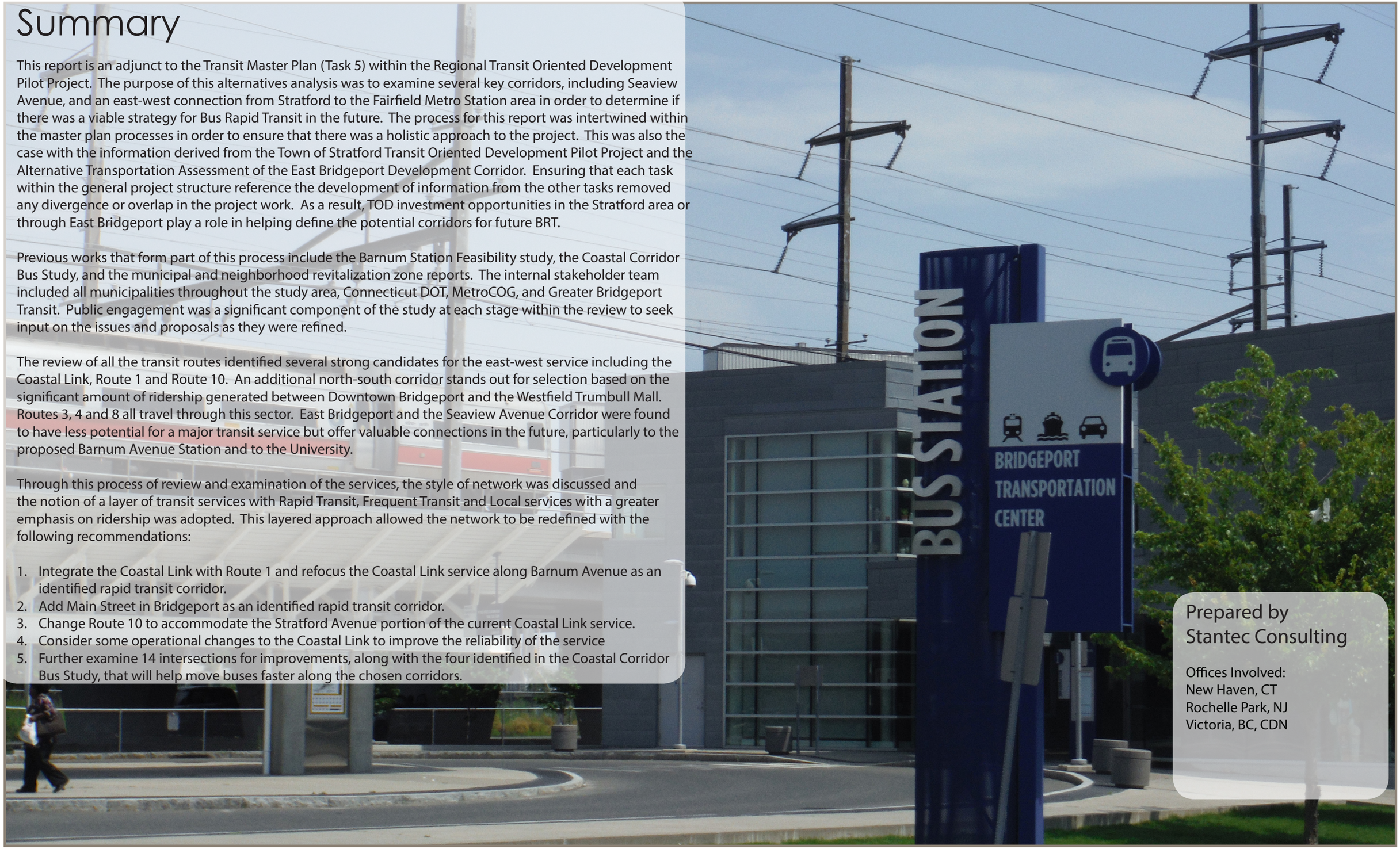
This report is an adjunct to the Transit Master Plan (Task 5) within the Regional Transit Oriented Development Pilot Project. The purpose of this alternatives analysis was to examine several key corridors, including Seaview Avenue, and an east-west connection from Stratford to the Fairfield Metro Station area in order to determine if there was a viable strategy for Bus Rapid Transit in the future. The process for this report was intertwined within the master plan processes in order to ensure that there was a holistic approach to the project. This was also the case with the information derived from the Town of Stratford Transit Oriented Development Pilot Project and the Alternative Transportation Assessment of the East Bridgeport Development Corridor. Ensuring that each task within the general project structure reference the development of information from the other tasks removed any divergence or overlap in the project work. As a result, TOD investment opportunities in the Stratford area or through East Bridgeport play a role in helping define the potential corridors for future BRT.

Previous works that form part of this process include the Barnum Station Feasibility study, the Coastal Corridor Bus Study, and the municipal and neighborhood revitalization zone reports. The internal stakeholder team included all municipalities throughout the study area, Connecticut DOT, MetroCOG, and Greater Bridgeport Transit. Public engagement was a significant component of the study at each stage within the review to seek input on the issues and proposals as they were refined.

The review of all the transit routes identified several strong candidates for the east-west service including the Coastal Link, Route 1 and Route 10. An additional north-south corridor stands out for selection based on the significant amount of ridership generated between Downtown Bridgeport and the Westfield Trumbull Mall. Routes 3, 4 and 8 all travel through this sector. East Bridgeport and the Seaview Avenue Corridor were found to have less potential for a major transit service but offer valuable connections in the future, particularly to the proposed Barnum Avenue Station and to the University.

Through this process of review and examination of the services, the style of network was discussed and the notion of a layer of transit services with Rapid Transit, Frequent Transit and Local services with a greater emphasis on ridership was adopted. This layered approach allowed the network to be redefined with the following recommendations:

1. Integrate the Coastal Link with Route 1 and refocus the Coastal Link service along Barnum Avenue as an identified rapid transit corridor.
2. Add Main Street in Bridgeport as an identified rapid transit corridor.
3. Change Route 10 to accommodate the Stratford Avenue portion of the current Coastal Link service.
4. Consider some operational changes to the Coastal Link to improve the reliability of the service
5. Further examine 14 intersections for improvements, along with the four identified in the Coastal Corridor Bus Study, that will help move buses faster along the chosen corridors.



Prepared by
Stantec Consulting

Offices Involved:
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Rochelle Park, NJ
Victoria, BC, CDN

Appendices: Existing Conditions

The purpose of the System and Route Ridership Analysis is to provide a comprehensive overview of the Greater Bridgeport Transit system, with a focus of how it is used by passengers today. Data was collected using Automated Passenger Counters (APCs) and reflect service utilization in the Fall of 2014. This data provided the basis for developing recommendations for changes to individual routes as well as for the system as a whole.

The analysis is presented in a visually in a variety of ways. An overview of weekday level of activity of all bus stops in the system is provided, as well as the activity of individual routes by time of day and direction. These patterns were used to identify services that could form a frequent transit network. This group of services could be promoted as "superior" to the rest of the routes in the system in terms of frequency, speed, and reliability. All seventeen routes in the system currently operate at 30 or 60-minute headways, with the exception of Route 8, which operates at a 20 minute headway. As such, this system operates at relatively low frequencies and increasing frequencies on some of the better performing routes could increase the current weekday ridership of approximately 23,000.

Route 16 and 22x were not analyzed and data for the Coastal Link route is incomplete due to multiple operators delivering the service.

Appendix A: Wide Stop Level Activity

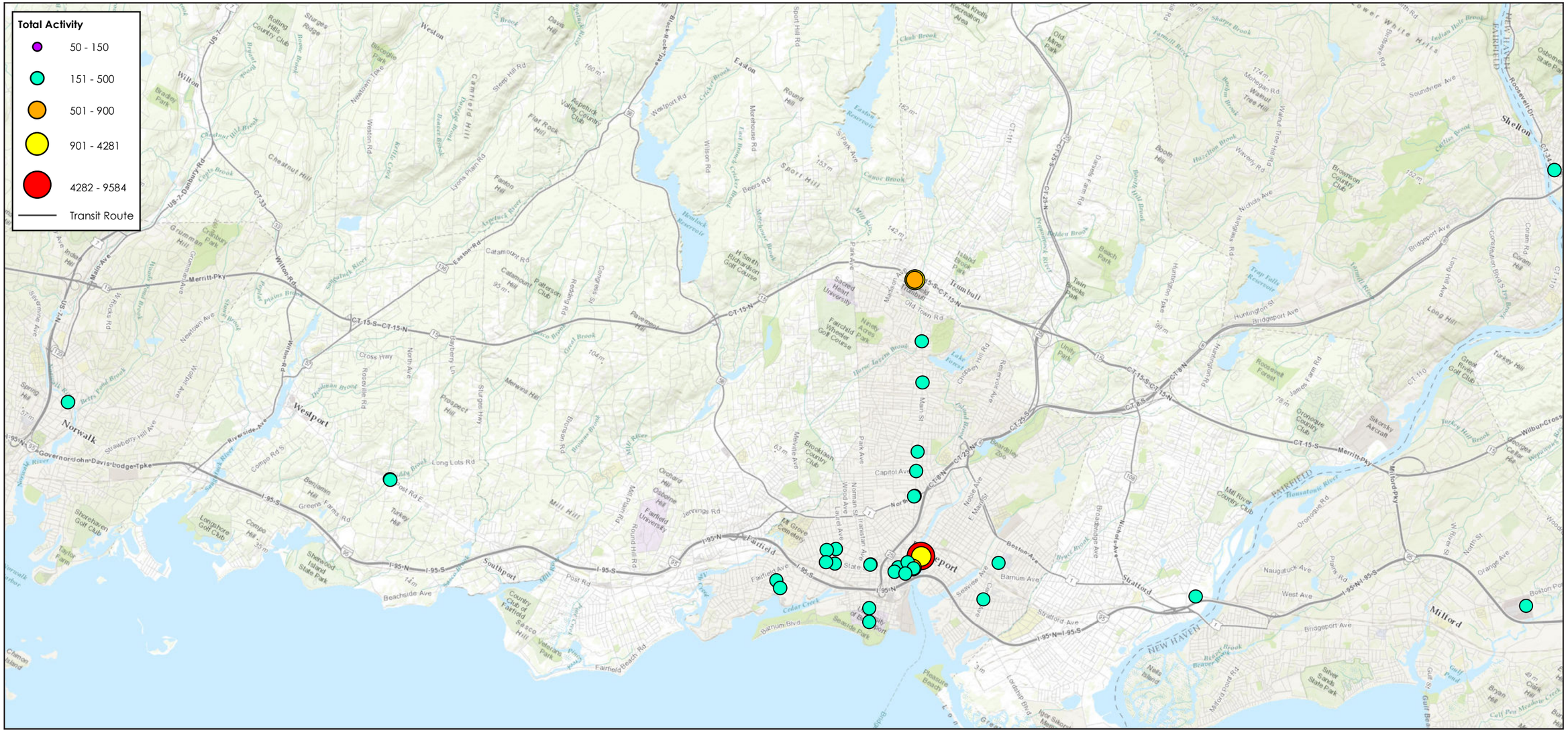
The Greater Bridgeport Transit system is a predominantly radial system in which most routes serve Downtown Bridgeport. As such, most trips can be categorized as either inbound or outbound, with inbound trips heading towards Downtown Bridgeport and outbound trips traveling from Downtown Bridgeport. Radial systems are typical in urban areas with a strong commercial center, but post-war urban sprawl that includes the development of suburban malls and office parks, have made city centers a less dominant destination for travel. In radial systems, transit may however continue to attract a fairly high share of trips to the urban center, but will likely not attract a significant amount of travel between nodal developments on the periphery of the urban center.

The following analysis shows the concentration of boardings and alightings by:

- high use and low use stops (shown without routes to highlight travel patterns)
- time of day and by direction of travel in relation to Downtown Bridgeport.

The result is a characterization of how passenger flows change throughout the day and evidence of whether routes are more likely to serve typical commute travel (i.e., inbound in the AM peak and outbound in the PM peak) or a more balanced travel demand (i.e. buses well used on both inbound and outbound trips throughout the day

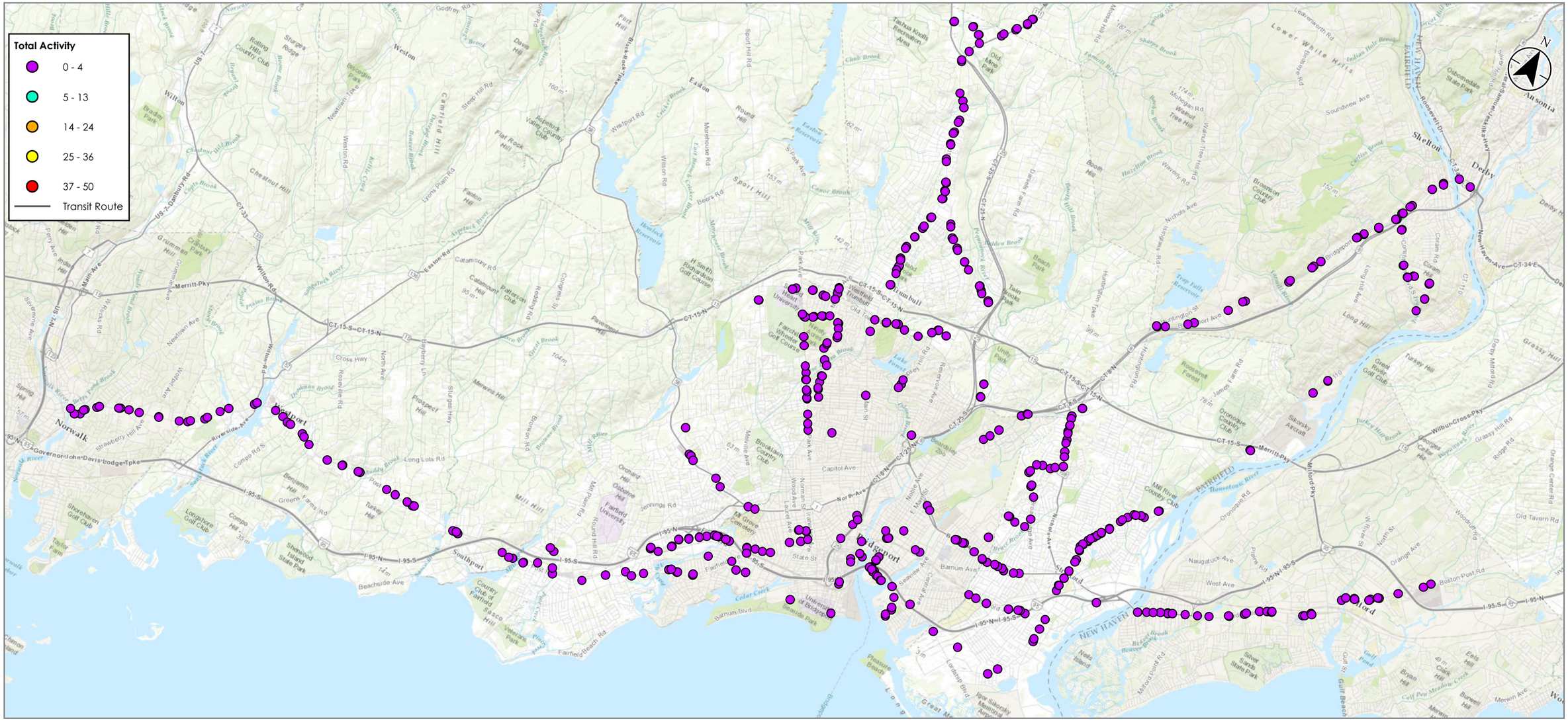
High Activity Stops System Wide



The majority of boardings occur at the GBT Transit Center in downtown Bridgeport,with high rates of passenger activity evident and other major downtown stops . Beyond the town center, Westfield Trumbull Mall outperforms all other stops threefold with more than 1,500 average daily boardings and alightings. This northern transit exchange facilitates transfers between six routes that connecting Monroe, Trumbull and Bridgeport. In comparison, the North East exchange at the Hawley Lane Mall which provides connections to four routes, produces just over 300 average daily boardings and alightings.

The high activity stops also clearly identifies two significant corridors – a north-south corridor along Main Street from Westfield Trumbull Mall to the Bridgeport University, and a east-west corridor that follows the Coastal Link route.

Low Activity Stops System Wide



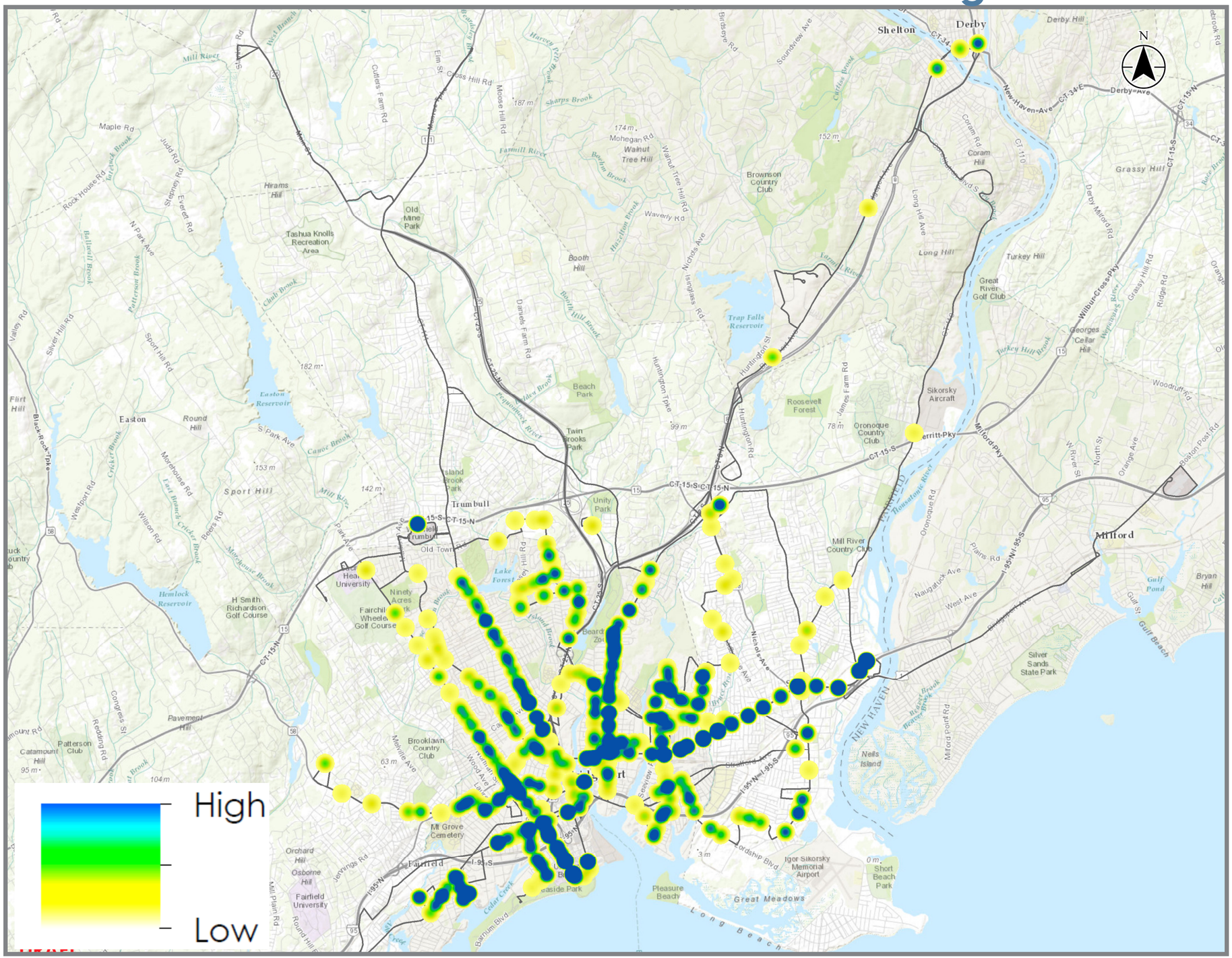
Maps displaying low activity stops can be deceiving, as they could be misinterpreted as implying poor transit performance overall. There are many factors that can contribute to low activity stops, the major one being transit service levels. The map above displays stops with zero to four boardings and alightings on an average weekday. Many of these stops are located along routes with very low levels of service. In addition, low density land uses is another major contributor to low ridership - especially in the communities surrounding Bridgeport.

Some corridors with low activity stops do however also have random nodes of high activity - the east-west Coastal Link corridor is a prime example. This data indicates that the Coastal Link could potentially be transitioned to a limited stop express service without affecting too many riders, while also reducing trip time . Other routes present similar opportunities, especially Routes 19x and 20 in Trumbull.

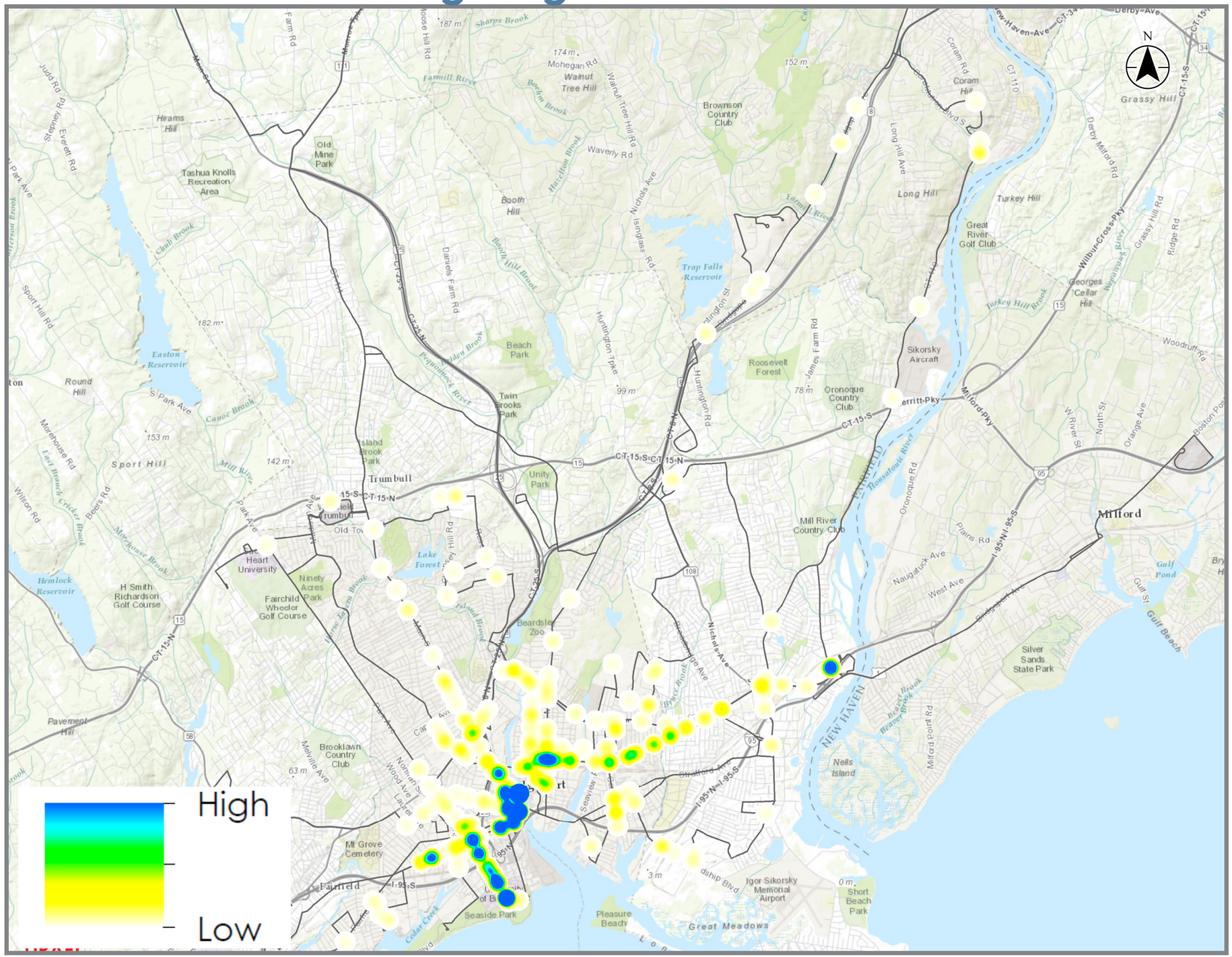
Overall, a bus stop review and consolidation could help streamline services and better match bus stop spacing to service and land use type.

AM Peak Inbound Boarding

In the AM peak inbound direction, riders appear to board the system from all over the service area, but alight at only a few destinations , including Downtown Bridgeport, the University of Bridgeport, Westfield Trumbull Mall, the Dock Shopping Center and Norwalk.



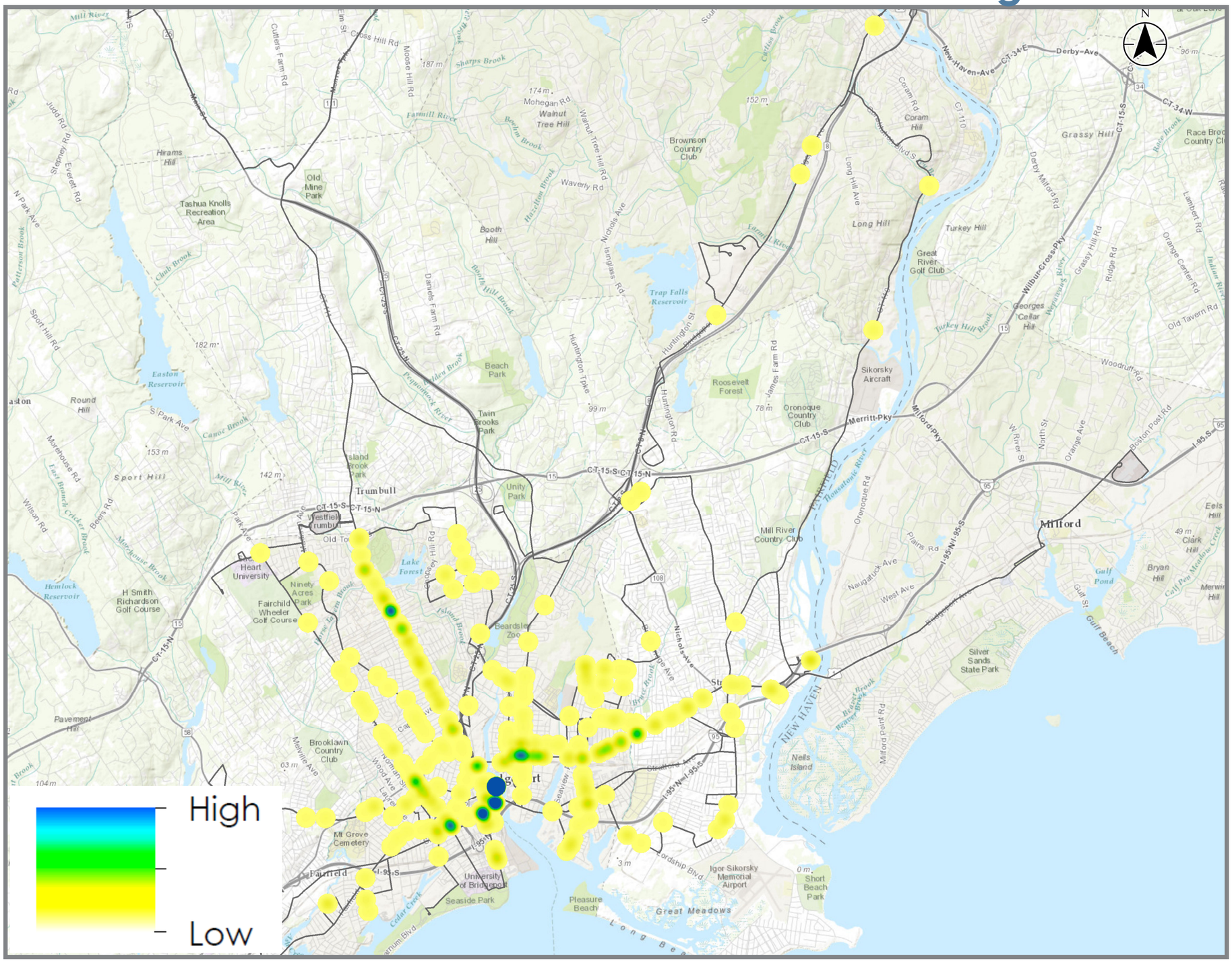
AM Peak Inbound Alighting



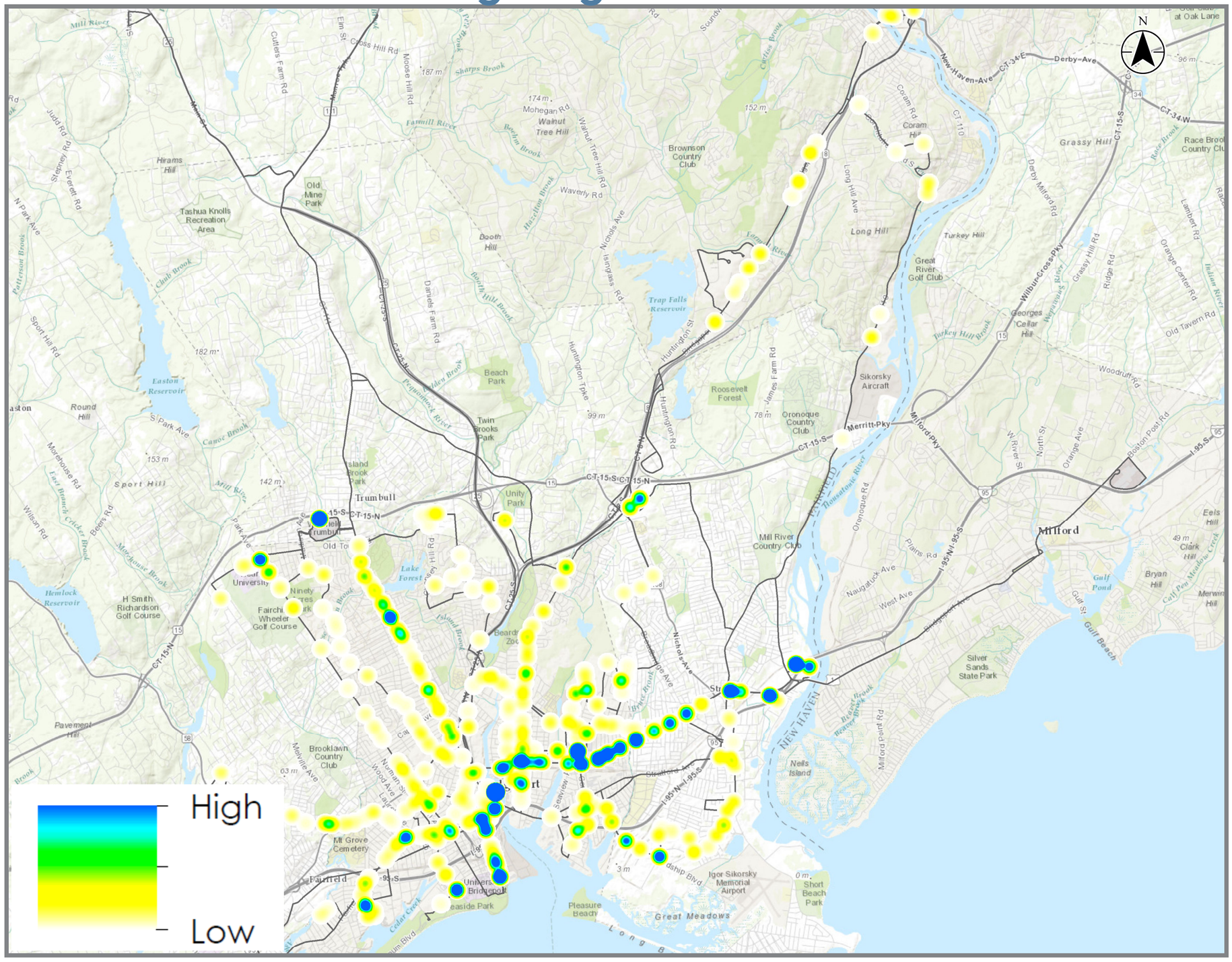
AM Peak Outbound Boarding

Outbound travel from downtown in the AM peak is significantly less than its inbound counterpart, revealing a strong one-way peak period travel demand. It is typical to experience relatively full buses as they head into downtown, and relatively empty buses heading out of downtown Bridgeport. High boarding activity at major destinations such as the downtown transit center, Westfield Trumbull Mall and Fairfield Ave is an indicator of transfers

It appears that the destinations are relatively dispersed across the Barnum Avenue, Fairfield Avenue and up Main Street in Bridgeport. There are a few corridors that display alighting along the entire length such as the Coastal Link route within Bridgeport and Route 8 (Main St). Because these routes show higher levels of activity in the less predominant direction, they may be potential candidates for future all day, higher levels of service

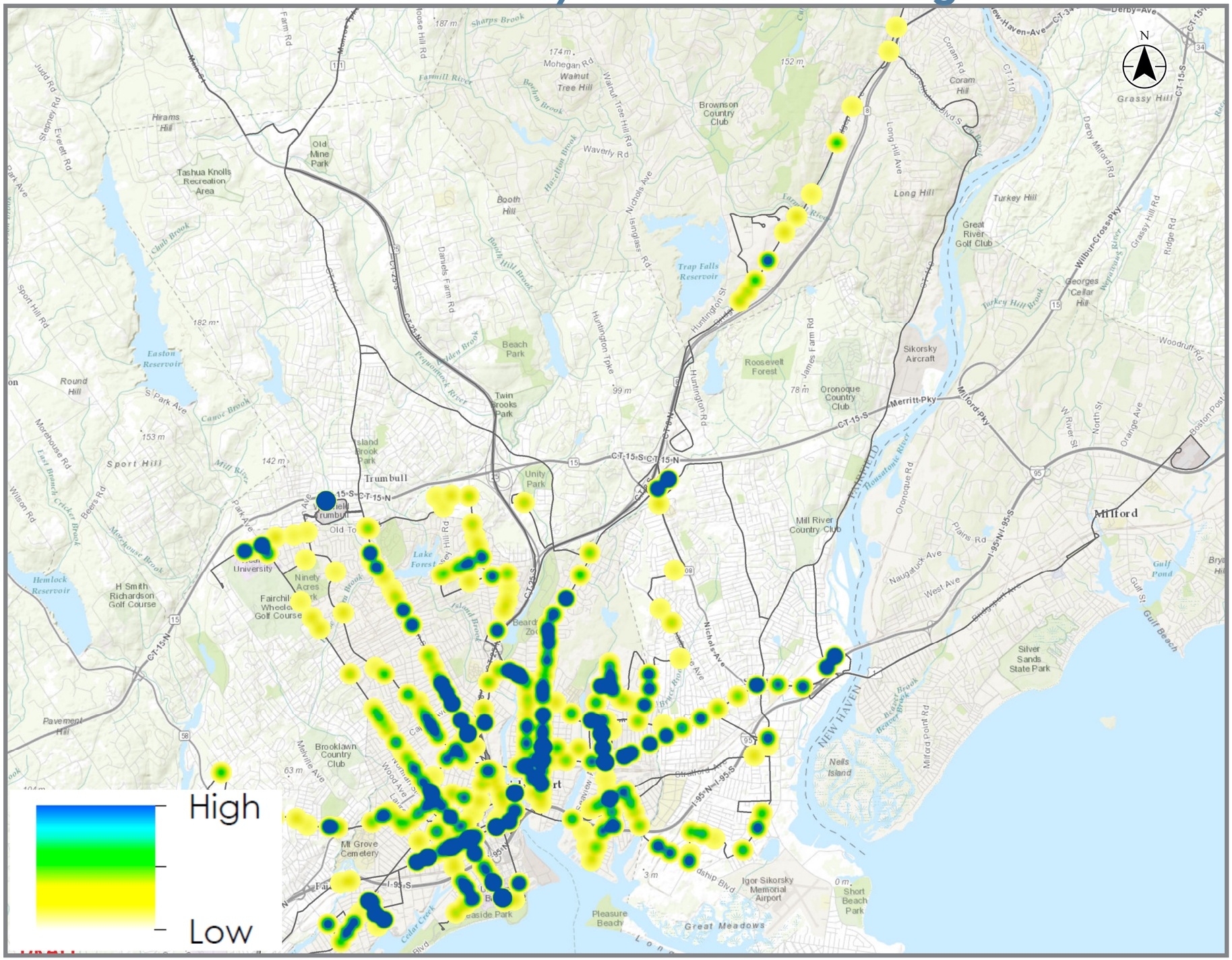


AM Peak Outbound Alighting

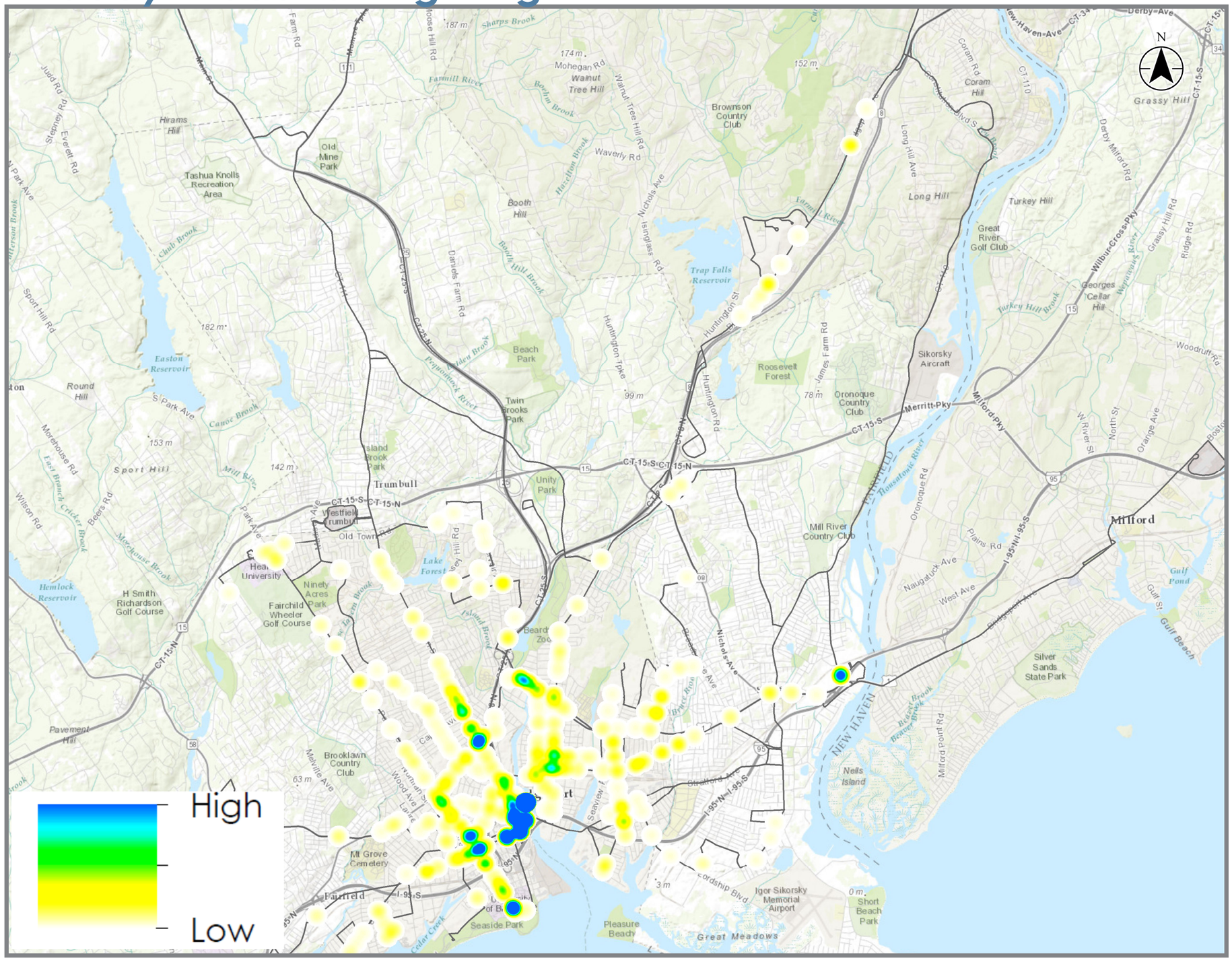


Midday Inbound Boarding

As with the inbound AM peak trips, there is a concentration of alightings in Downtown Bridgeport and the University of Bridgeport in the midday. The distribution of boardings for inbound travel in the midday is also similar to the AM Peak, except that there appears to be heavier usage along E. Main Street and at Sacred Heart University.

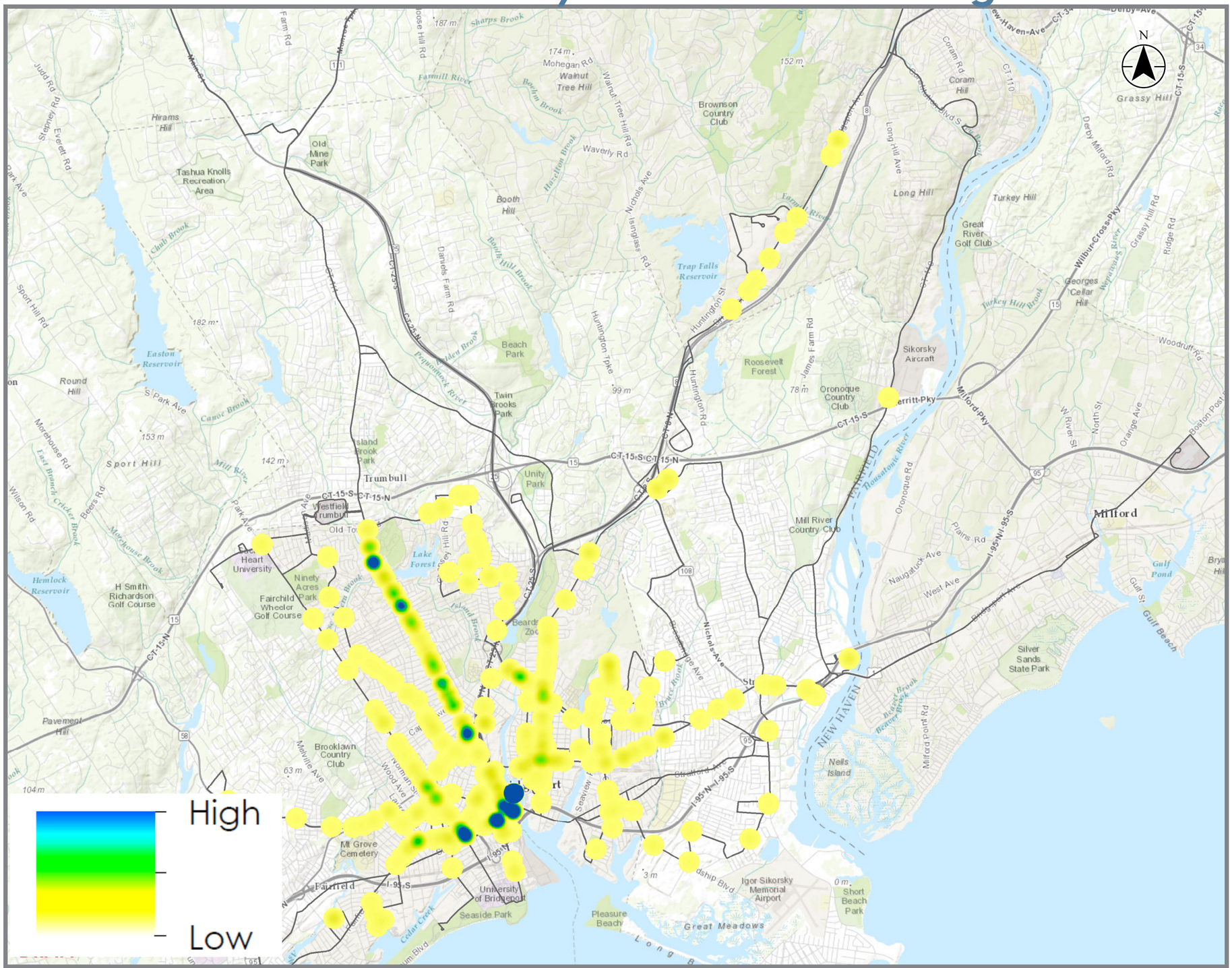


Midday Inbound Alighting

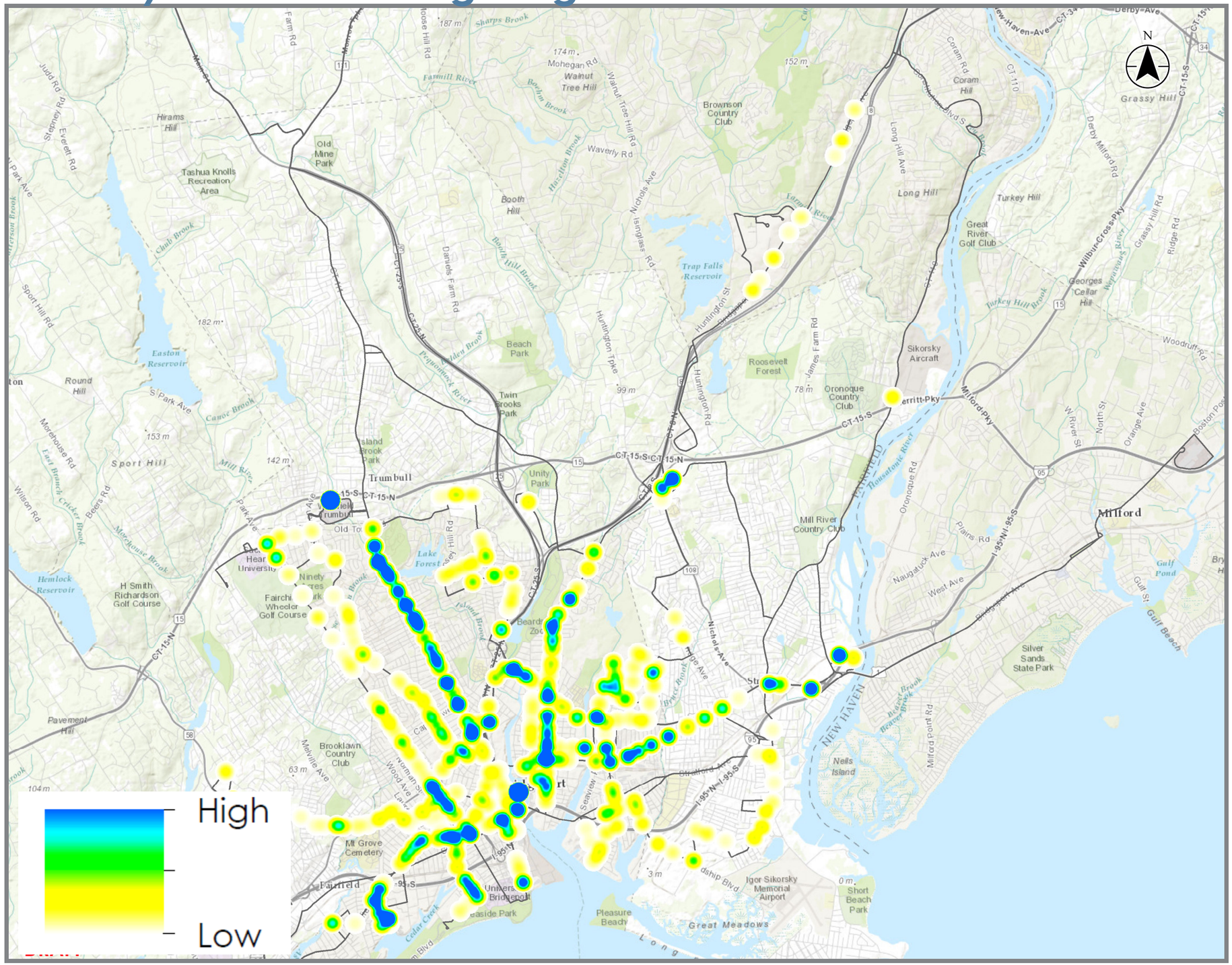


Midday Outbound Boarding

As for outbound midday travel, there is a concentration of boardings in Downtown Bridgeport, and destinations are concentrated at Westfield Trumbull Mall, along E. Main Street, along Barnum Avenue, along Fairfield Avenue, and in the Black Rock neighborhood.



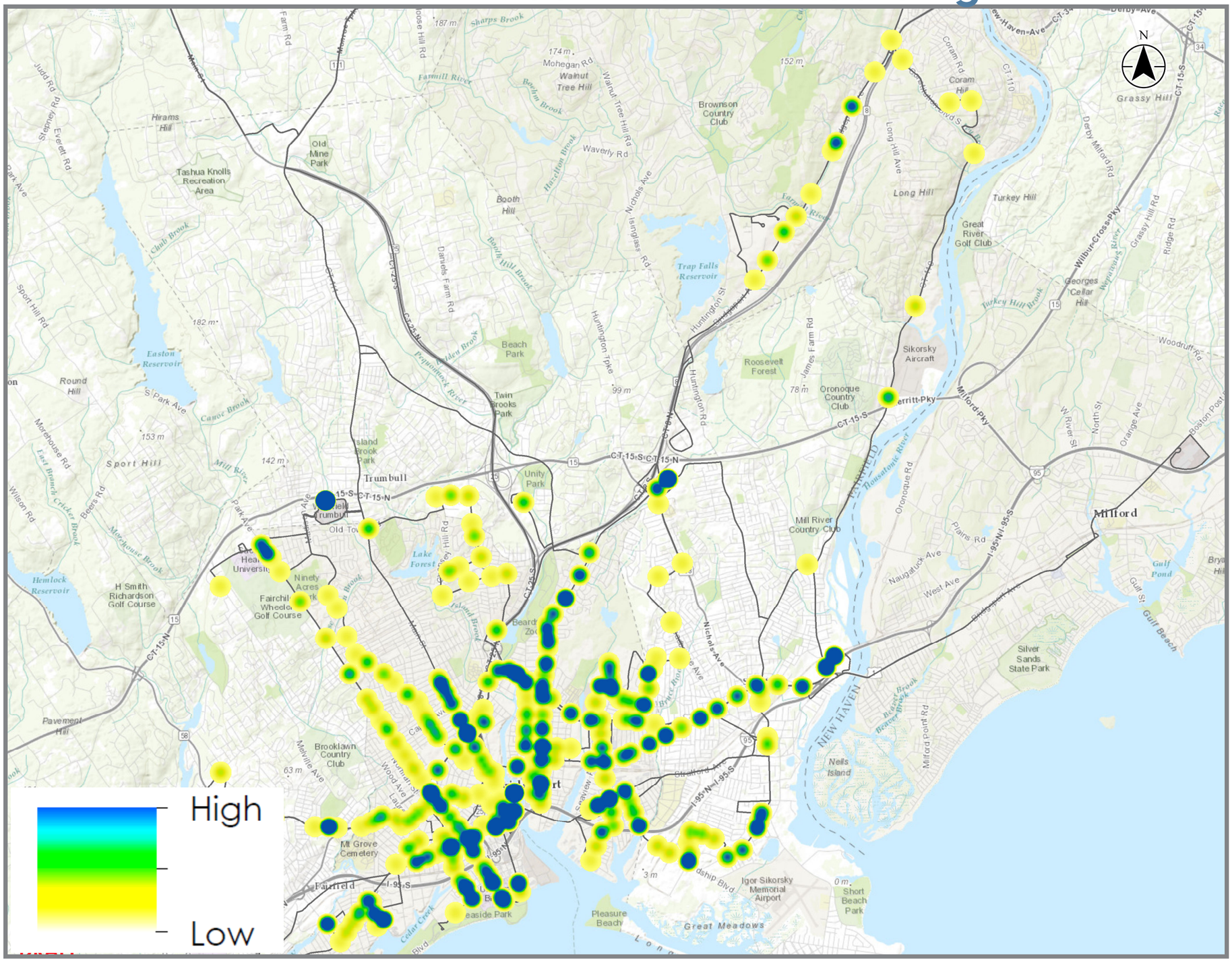
Midday Outbound Alighting



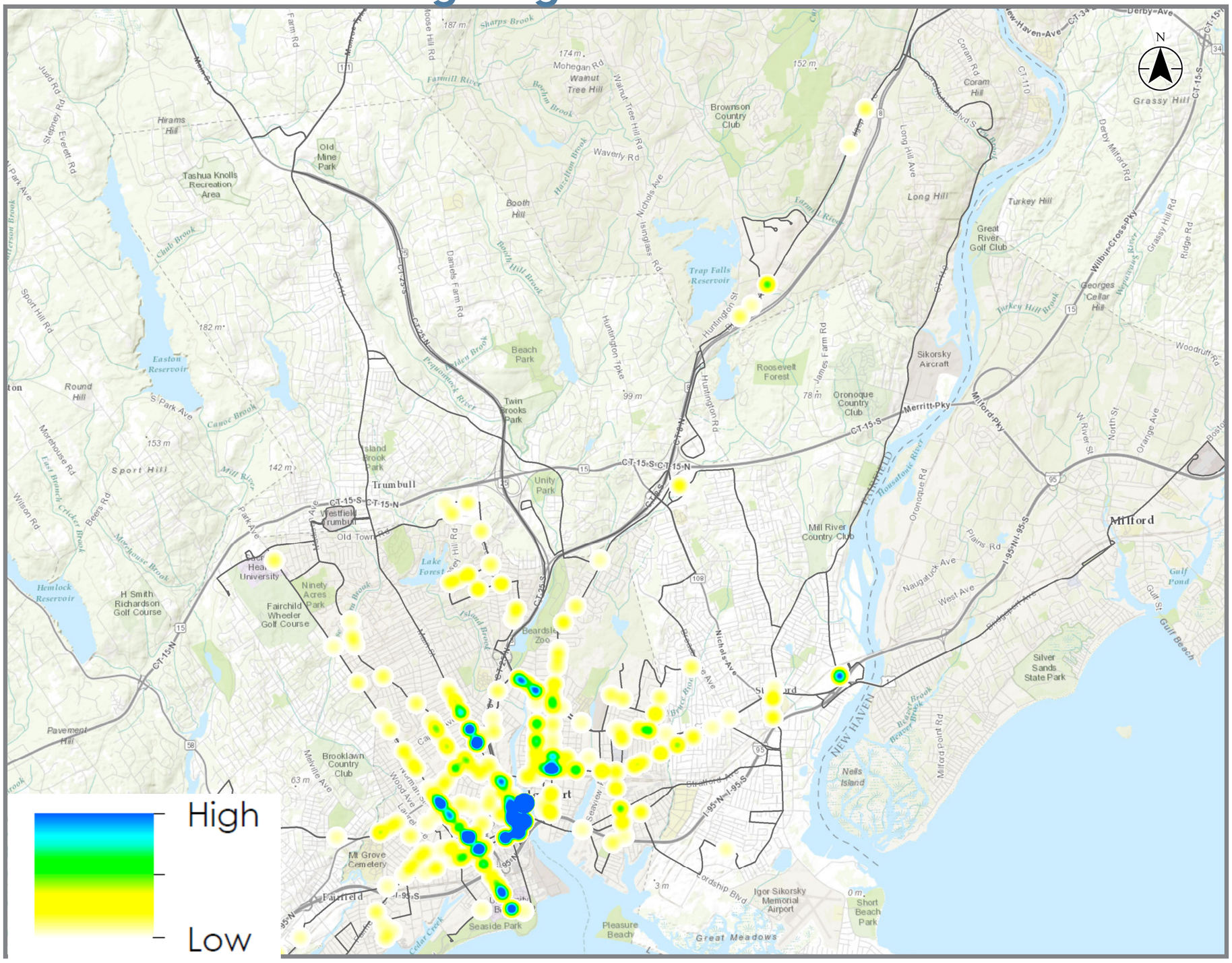
PM Peak Inbound Boarding

In the PM peak inbound direction, alightings are more evenly distributed than they are in the AM peak. Rather than just being in Downtown Bridgeport and the University of Bridgeport, there are also concentrations along Park Avenue south of Capitol Avenue, on Main Street around Capitol Avenue, at the intersection of E. Main Street and Barnum Avenue, and along Boston Avenue between E. Main Street and Highway 25.

Boardings for inbound PM peak trips are distributed throughout the system, including Downtown Bridgeport, Westfield Trumbull Mall, Sacred Heart University, the Dock Shopping Center, Barnum Avenue, E. Main Street, and Main Street south of Capitol Avenue.

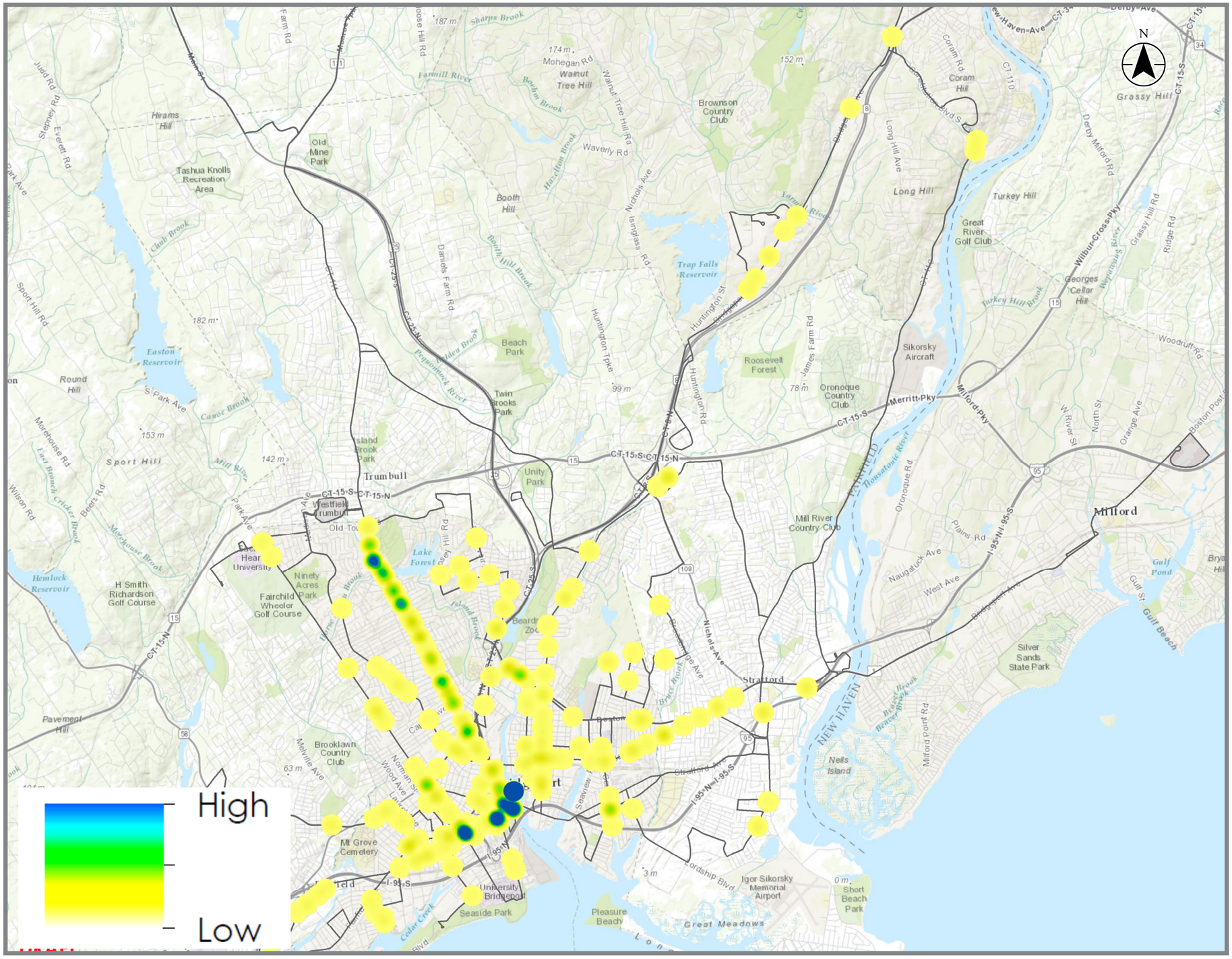


PM Peak Inbound Alighting

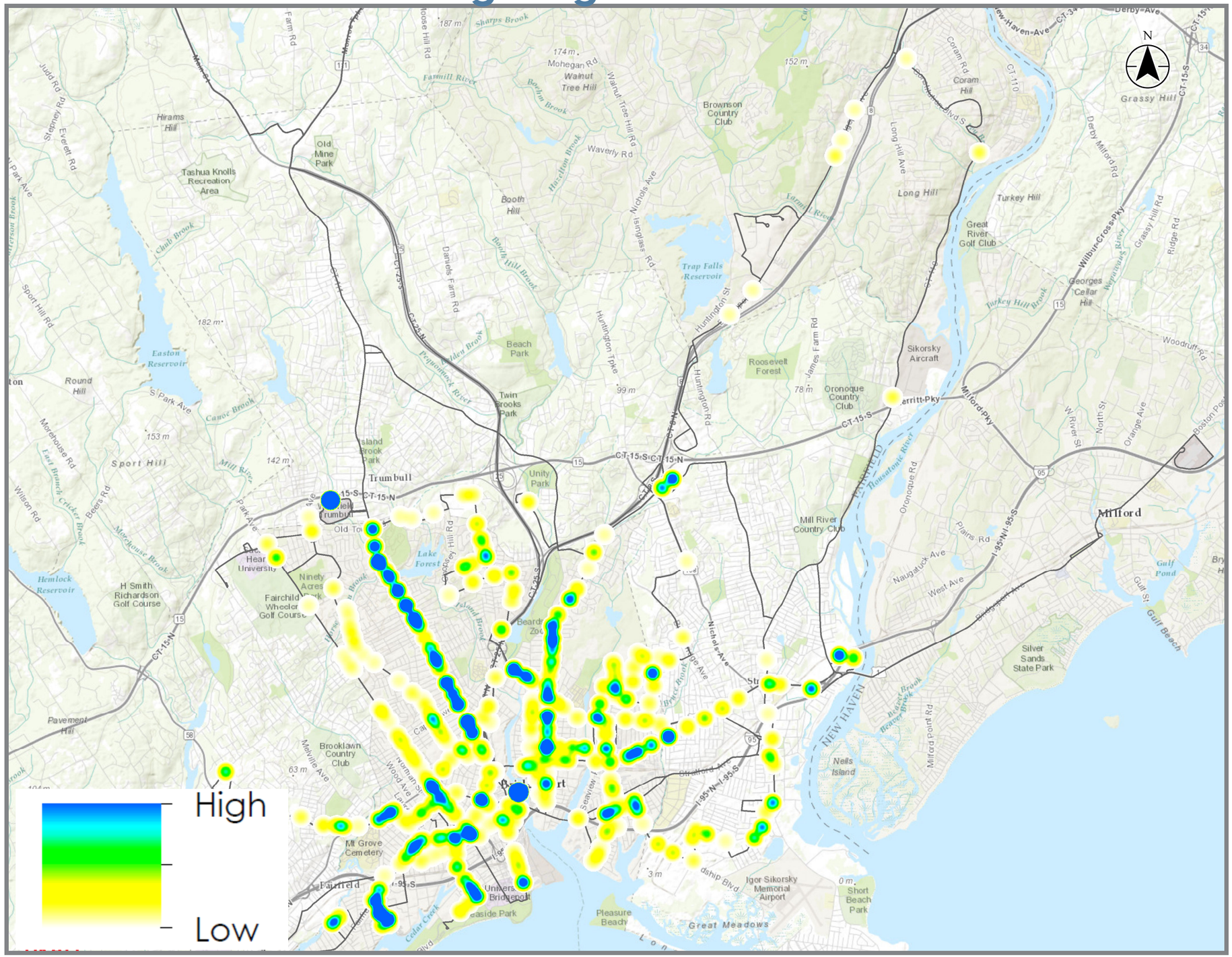


PM Peak Outbound Boarding

As expected, the boardings for outbound trips in the PM peak are heavily concentrated in downtown Bridgeport. Alightings for these trips are typically along E. Main Street, Main Street, Barnum Avenue, Fairfield Avenue, or Boston Avenue between E. Main Street and Highway 25, where there are several shopping centers. It may be that some riders divert for shopping as part of their PM commute.



PM Peak Outbound Alighting



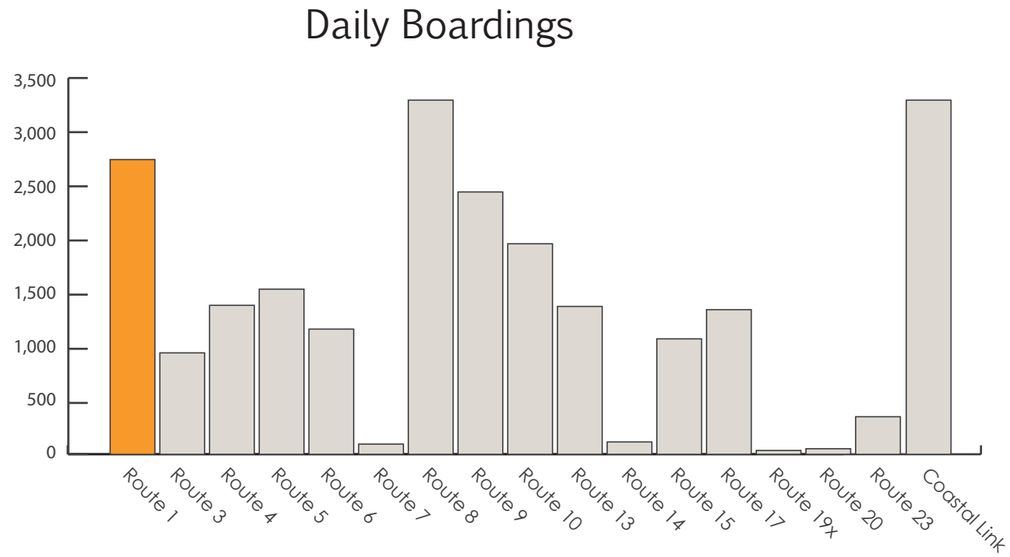
Appendix B: Route Level Performance

The following section examines each route and its stop locations by time period and direction. This is the first time use of Automatic Passenger Count (APC) data by the Greater Bridgeport Transit Authority to track the movement of both buses and passenger boarding and alighting activity in order to analyze travel patterns on routes. These patterns help create an understanding of how passengers make use of the system, where there are gaps in the use of stops, or where there are opportunities to introduce different levels of service

Route One

University of Bridgeport - Downtown - Dock Shopping Center

Route 1 Snapshot	
Weekday Daily Boardings	2,730
Percent of System Activity (Sampled Routes)	12%
Daily One-Way Revenue Trips	72
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	Future FTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	7%
Average Boardings per Hour - AM Peak	160
Average Boardings per Hour - Midday	199
Average Boardings per Hour - PM Peak	161



FTN (Frequent Transit Network) in above table

Route Highlights:

- Route One offers customers a legible pattern along Barnum Ave and connects with a number of other GBT services.
- There is high utilization across entire route corridor, with the majority of stops along the corridor having a similar amount of stop activity by time of day.
- Major activity centers and transfer points have the largest stop activity for this route. These include the University of Bridgeport, The Dock Shopping Center, Stratford Crossing, Stratford Town Center, and the GBT Bus Station.
- Outside of these key destinations, the busiest segment of the route is on Barnum Ave between Central Ave and Boston Ave. This is primarily a walkable, residential area and is also home to Bridgeport Hospital.
- Travel patterns in each direction appear similar for all times of day, although there are significant variations in the volumes of passengers.
- Ridership is greater in the AM peak than in the PM peak or midday, with the busiest stops seeing up to five times as many boardings/alightings in the AM than in the PM.

Observations: Route 1 is one of the best performing routes in the GBT network, with about 160 boardings per hour in the morning and afternoon peaks. It serves the University of Bridgeport, Downtown Bridgeport, Barnum Avenue, and the Dock Shopping Center.

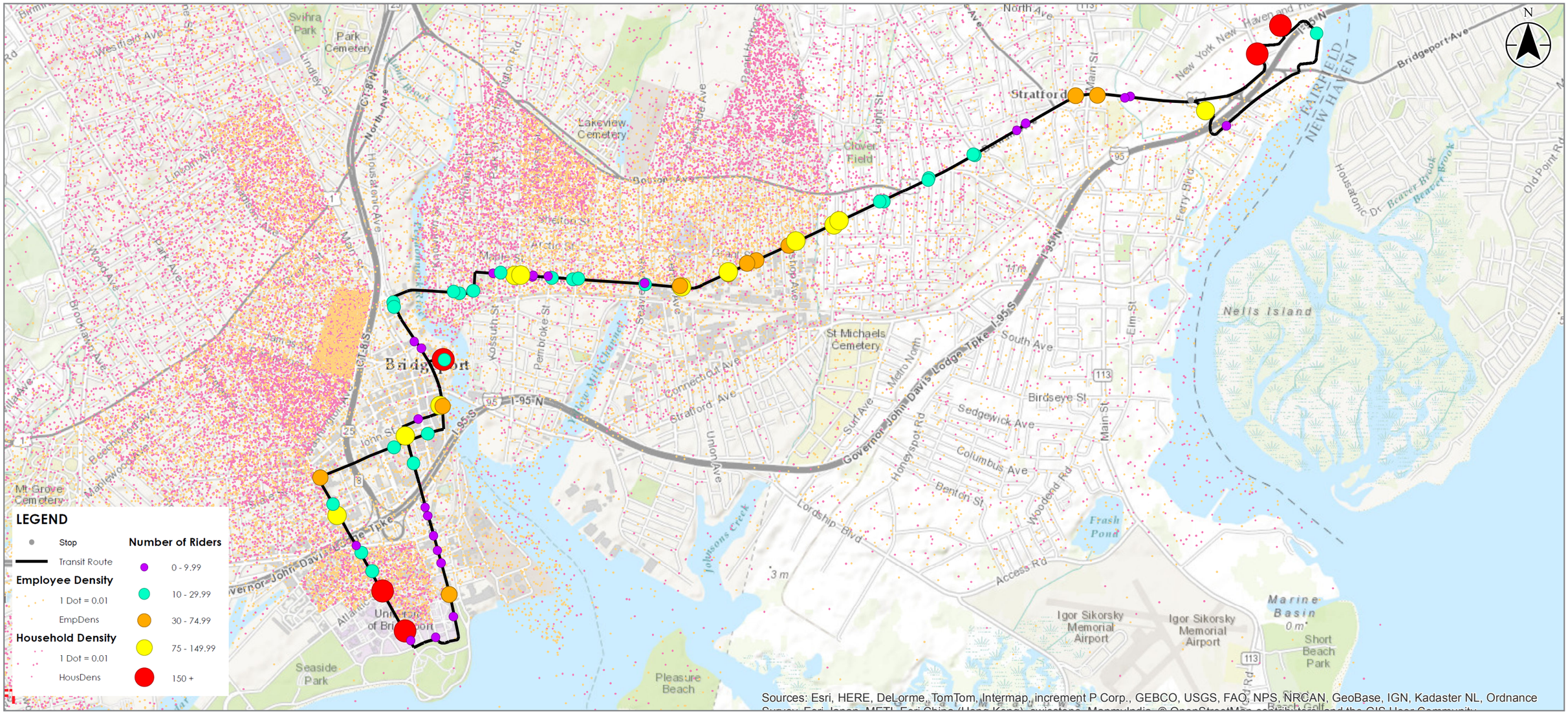
Changes under consideration: Given its high performance, it is proposed that Route 1, with some adjustments, be incorporated into a future BRT network that consists of two other routes – Route 8 that connects Downtown Bridgeport to Westfield Trumbull Mall and a portion of the Coastal Link route.

The adjustments proposed for Route 1 are to reallocate service to the University of Bridgeport and the Dock Shopping Center to create efficiencies on the main route between Downtown Bridgeport and Stratford along Barnum Avenue, which is where the majority of the activity on this route occurs. The connection to the University of Bridgeport would be a component of the Frequent Transit Network, and the connection to the Dock Shopping Center would be provided by a portion of the Coastal Link route. At its eastern end, Route 1 would be terminated at a proposed new bus exchange at Stratford Train Station to reinforce connections with other GBT bus routes, regional transit services, and the Stratford Town Center.

These changes would eliminate the redundant services to the Dock Shopping Center by Route 1 and the Coastal Link without inconveniencing the majority of passengers. Furthermore, these truncations would allow buses on Route 1 to complete a round trip in sixty minutes, which would potentially mean that more service could be offered with the same number of buses and on-time performance would be improved.

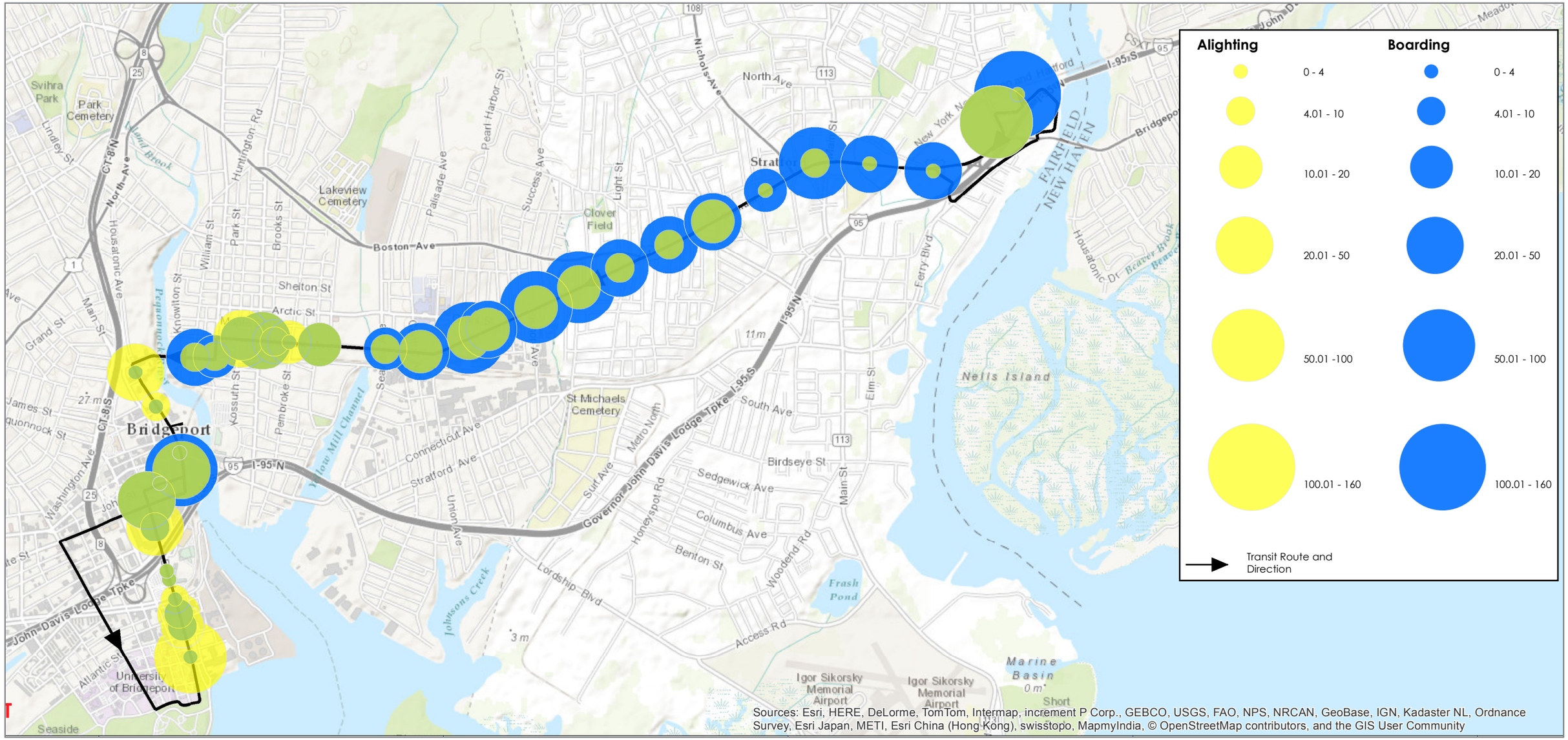
Total Daily Activity

Route 1



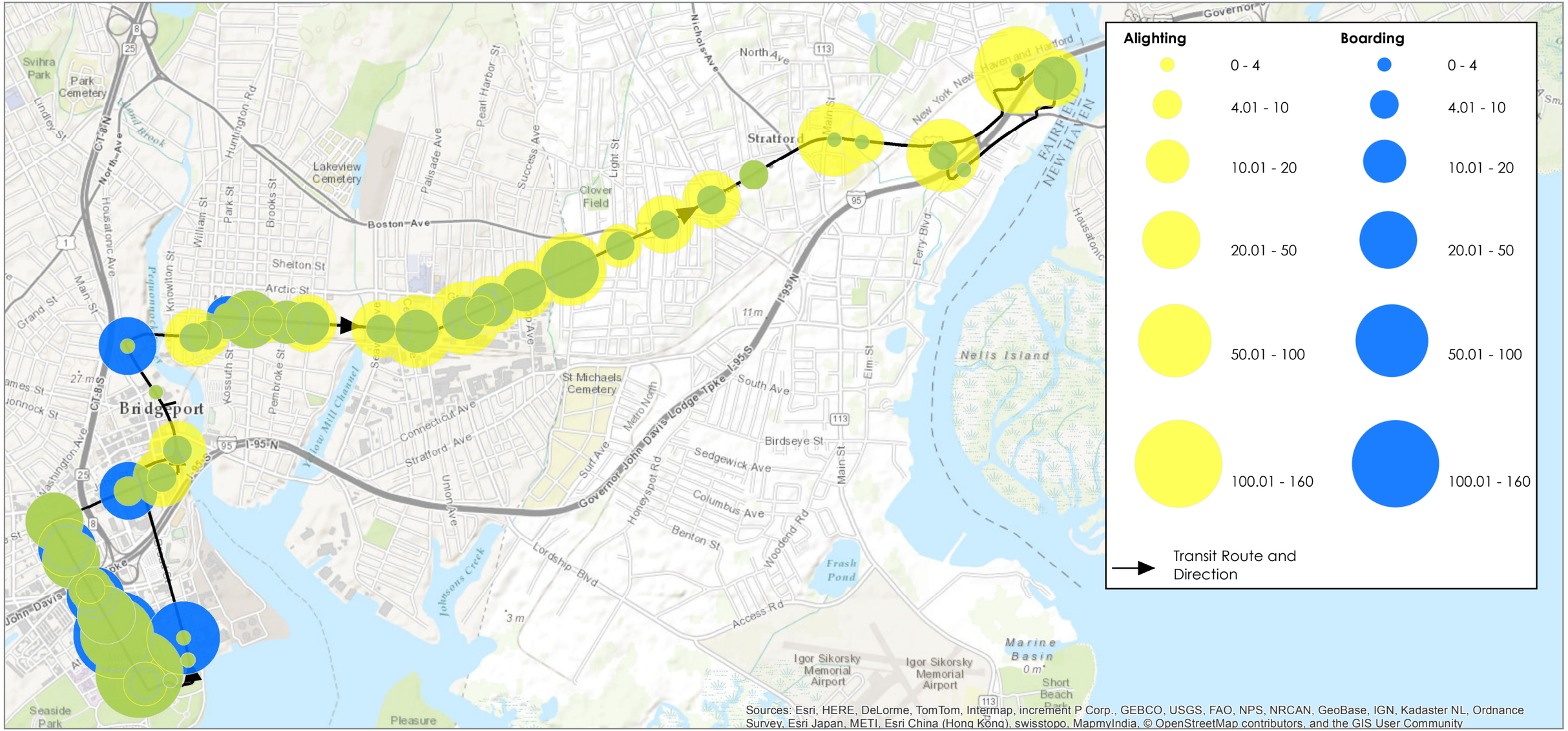
Route 1

5am - 9am Inbound



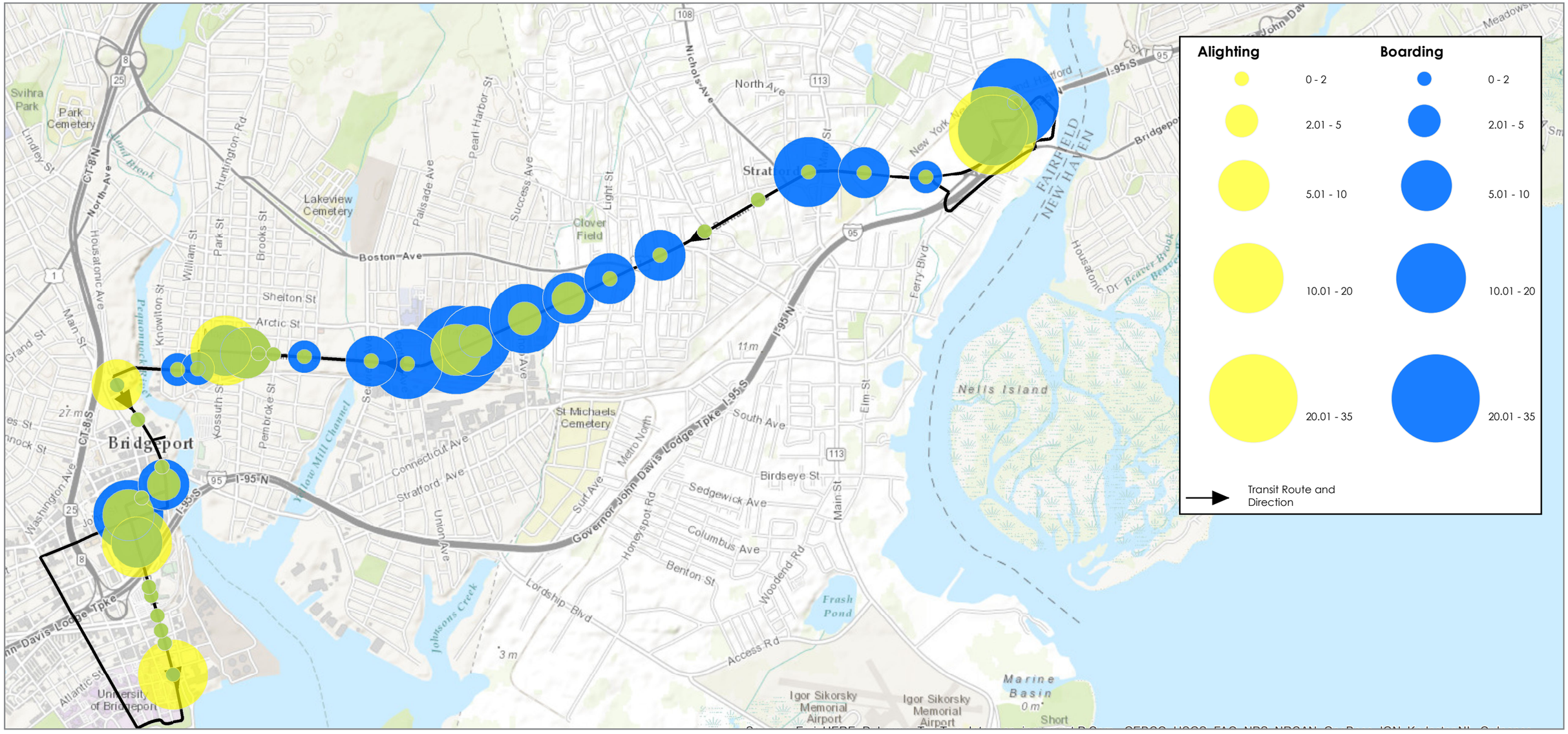
5am - 9am Outbound

Route 1



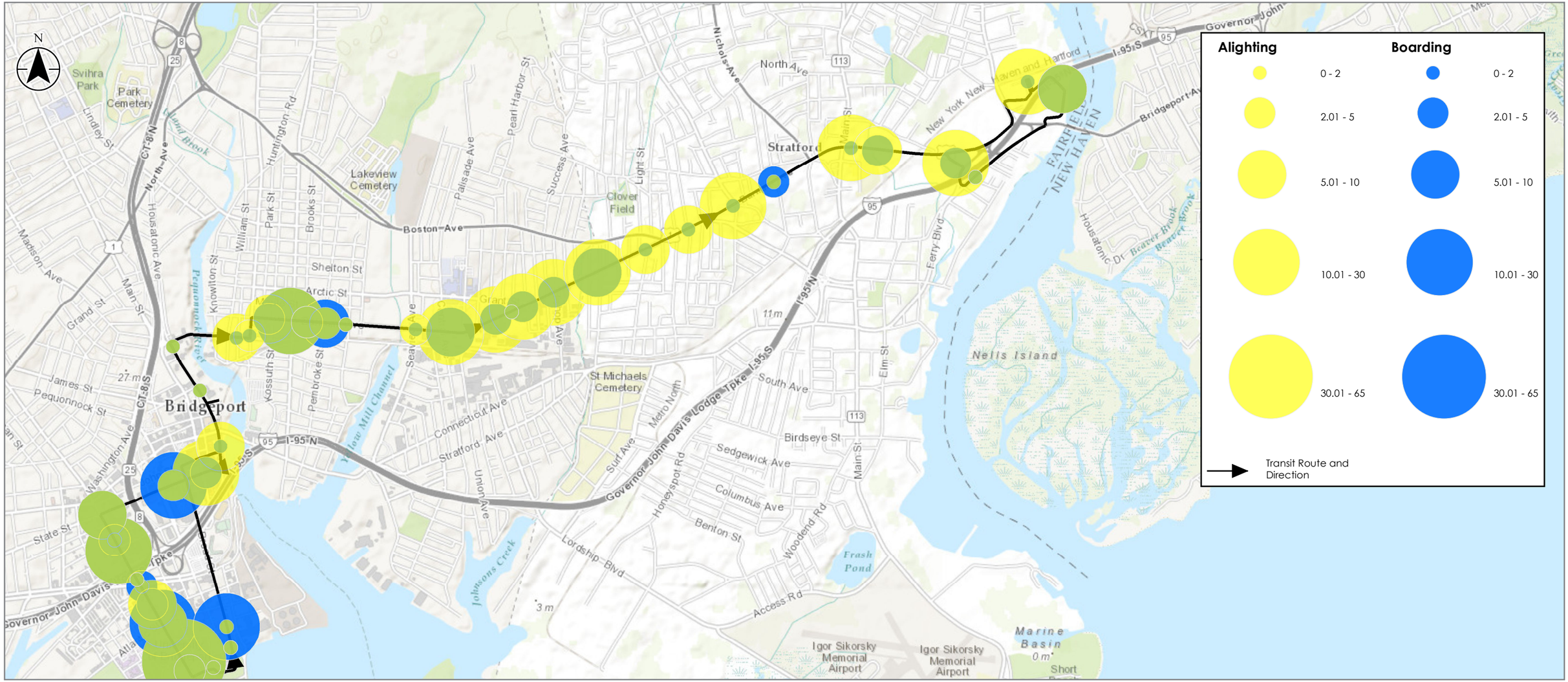
Route 1

10am - 2pm Inbound



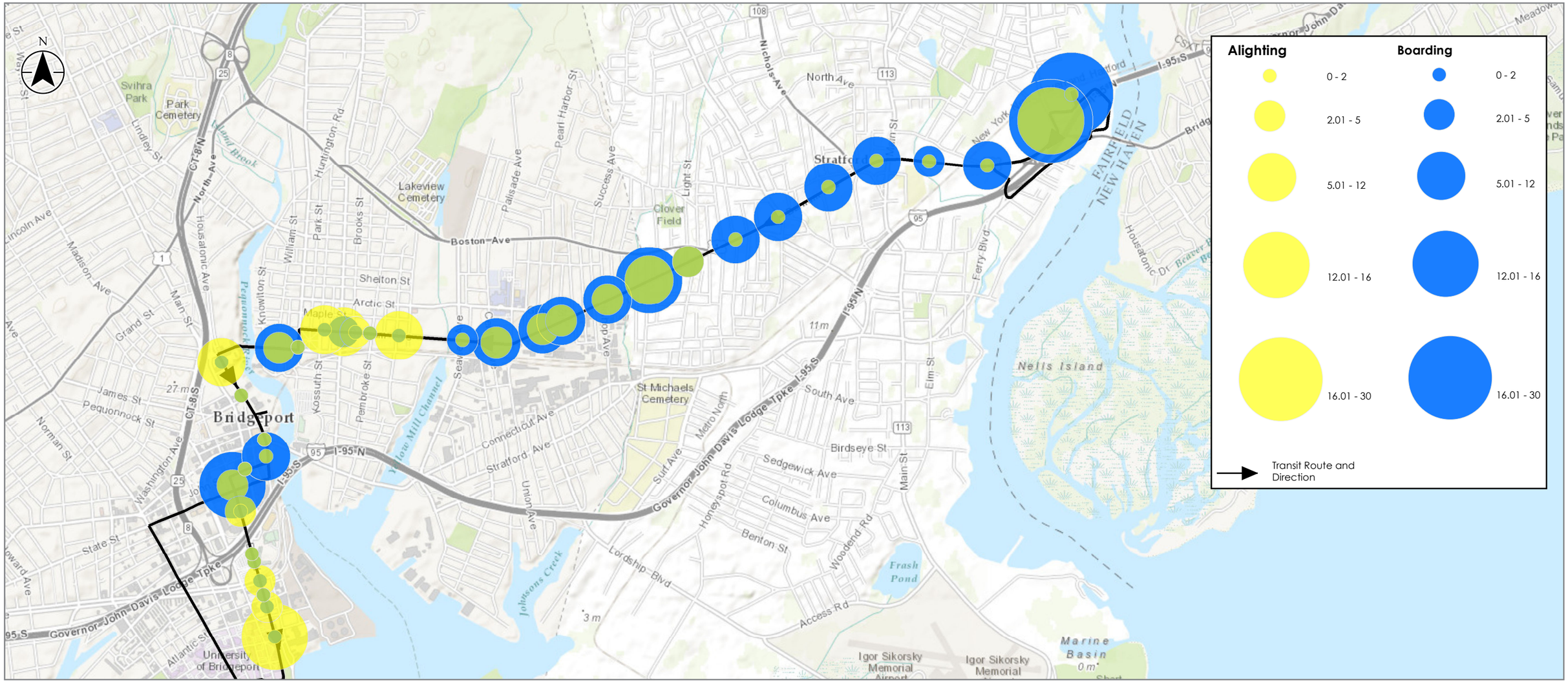
10am - 2pm Outbound

Route 1



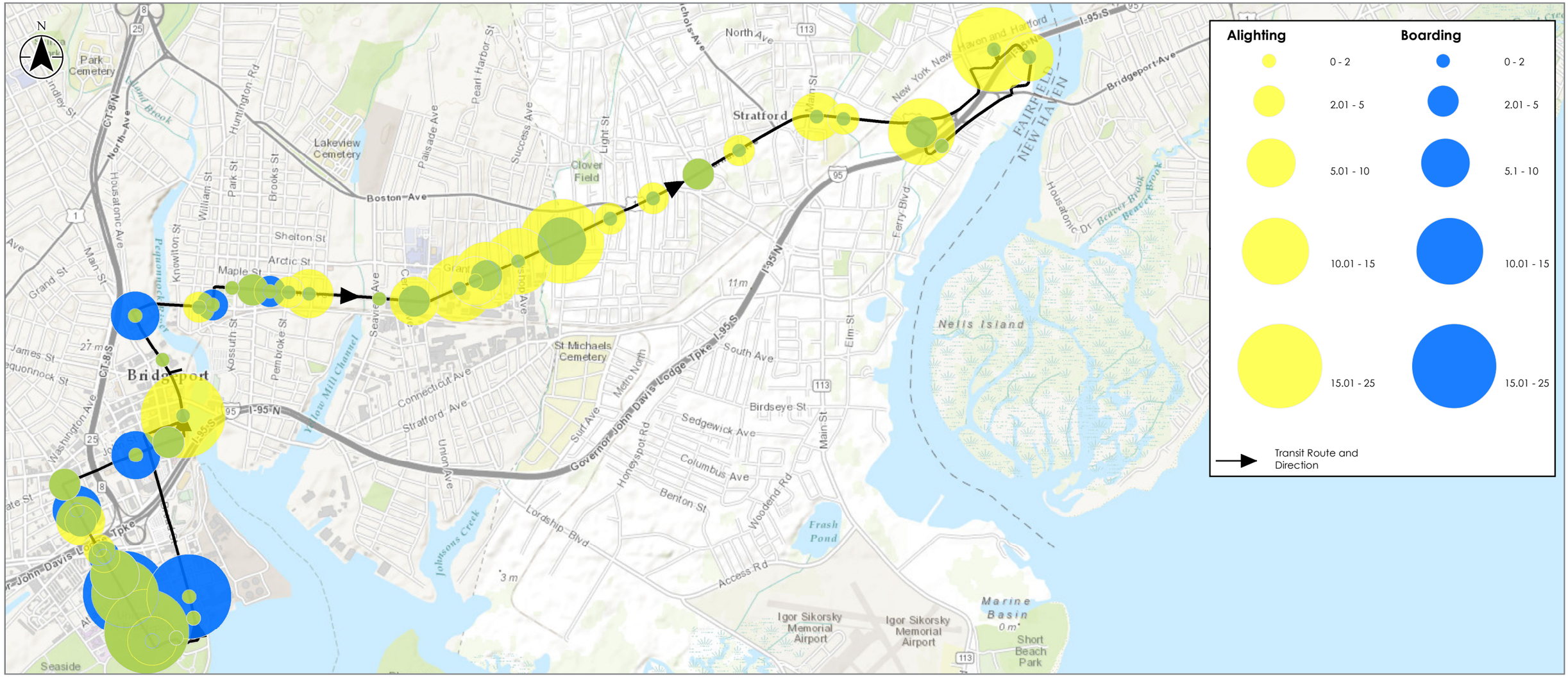
Route 1

3pm - 6pm Inbound



3pm - 6pm Outbound

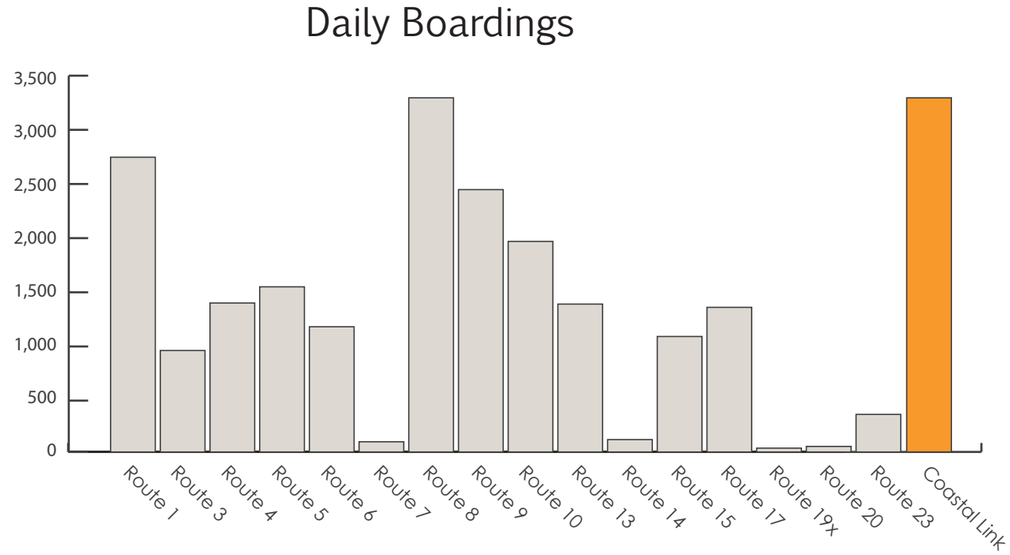
Route 1



Coastal Link

Norwalk Transit Hub - Post Rd - Downtown - Stratford Ave - CT Post Mall

Coastal Link Snapshot	
Weekday Daily Boardings	3,320
Percent of System Activity (Sampled Routes)	14%
Daily One-Way Revenue Trips	91
Peak / Off-Peak Headway (Minutes)	20 / 30
Service Type	Future FTN
Number of Peak Buses	4
Efficiency (% Schedule Recovery)	3.2%
Average Boardings per Hour - AM Peak	223
Average Boardings per Hour - Midday	231
Average Boardings per Hour - PM Peak	239



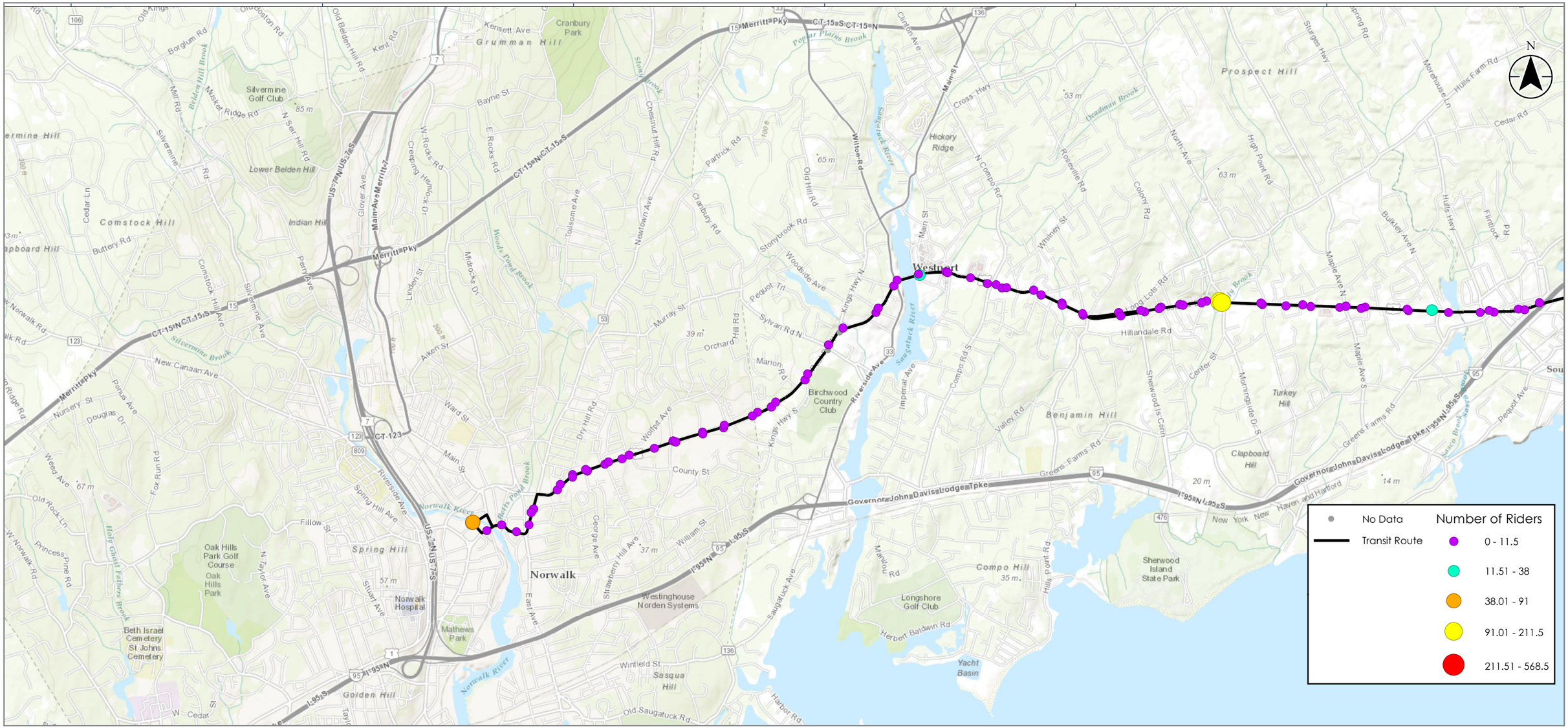
Route Highlights:

- The Coastal Link is one of the busiest route in the GBT network, connecting a number of communities, town centers, employment areas, and train stations along the coast.
- Coastal Link provides strong inter-regional connections. The termini provide transfer opportunities to the Norwalk and Milford Transit Districts, while stops along the route at rail stations provide access to Metro North and Amtrak services.
- Due to the number of key destinations and activity centers this route serves, it sees balanced ridership throughout the day, in terms of boardings per hour.
- Stops with the greatest activity are concentrated within the City of Bridgeport at key destinations and transfer points, such as train stations, shopping centers, and schools.
- The resulting effect is stop activity that is very nodal, particularly outside of Bridgeport, where there are many sequential stops with low utilization, followed by a single, well-utilized stop.
- The strong connections, combined with a simple to understand route pattern and the highest peak frequencies in the GBT network, make this an attractive and well-performing service.

This route connects the Norwalk Wheels Hub to the Westfield Connecticut Post Mall, with connections to the rest of the GBT system at the Dock Shopping Center, Stratford Train Station, Downtown Bridgeport, and the Fairfield Train Station. The area between Downtown Bridgeport and Stratford Station can be operated as a limited service because Route 10 will provide Frequent Transit Network service in this section. The Coastal Link route will be the only GBT route to serve the Dock Shopping Center.

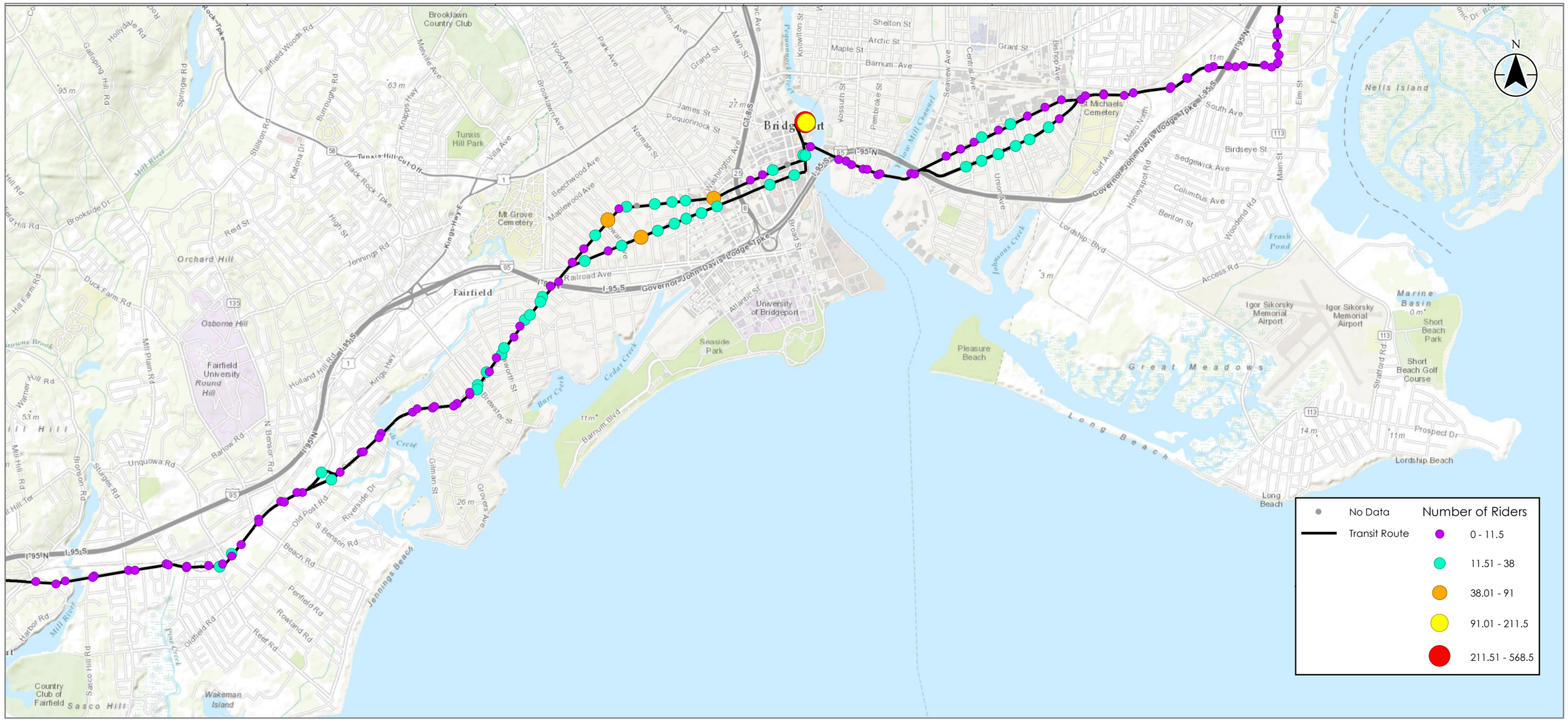
Total Daily Activity

Coastal Link



Total Daily Activity

Coastal Link


No Data
Transit Route
Number of Riders
0 - 11.5
11.51 - 38
38.01 - 91
91.01 - 211.5
211.51 - 568.5
Bridgeport
Fairfield
Orchard Hill
Osborne Hill
Round Hill
Sasco Hill
Mill River
Pequonnock River
Johnsons Creek
Cedar Creek
Barr Creek
Great Meadows
Long Beach
Nells Island
Pleasure Beach
Seaside Park
Wakeman Island
Jennings Beach
Brooklawn Country Club
Tunxis Hill Park
Mt Grove Cemetery
St Michaels Cemetery
University of Bridgeport
Fairfield University
Country Club of Fairfield
Igor Sikorsky Memorial Airport
Short Beach Park
Short Beach Golf Course
Lordship Beach
Frash Pond
Marine Basin
I-95 N
I-95 S
Governor John Davis Lodge Tpke
Tunxis Hill Cut Off
Black Rock Tpke
Railroad Ave
Barnum Blvd
Lordship Blvd
Access Rd
Columbus Ave
Sedgewick Ave
Birdseye St
South Ave
Main St
Elm St
Stratford Rd
Prospect Dr
Beach Rd
Old Post Rd
S Benson Rd
Riverside Dr
Holland Hill Rd
Unquowa Rd
Barlow Rd
Harbor Rd
Reef Rd
Rowland Rd
Penfield Rd
Oldfield Rd
Sturges Rd
Bronson Rd
Kings Hwy
Knapps Hwy
Fairfield Woods Rd
Brookside Dr
Red St
High St
Jennings Rd
Duck Farm Rd
Hill Farm Rd
Mill Plain Rd
Springer Rd
Gallopping Hill Rd
Hollyday Rd
Stillson Rd
Katona Dr
Burroughs Rd
Melville Ave
Wood Ave
Park Ave
Brooklawn Ave
Villa Ave
Beechwood Ave
Maplewood Ave
Norman St
James St
Pequonnock St
Washington Ave
Main St
Broad St
Atlantic St
Grand St
Sheldon St
Maple St
Arctic St
Barnum Ave
Knowlton St
Pembroke St
Seaview Ave
Central Ave
Grant St
Bishop Ave
Union Ave
Surf Ave
Honeyspot Rd
Metro North
Woodend Rd
Benton St
Gilman St
Groves Ave
Sasco Hill Rd
Bronson Rd
Mill Hill Rd
Mill Hill Ter
Warner Hill Rd
Brookside Dr
Hill Rd
Hill Farm Rd
Gallopping Hill Rd
Springer Rd
Fairfield Woods Rd
Burroughs Rd
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Sturges Rd
Bronson Rd
Harbor Rd
Mill River
Sasco Hill Rd
Country Club of Fairfield
Sasco Hill
Wakeman Island
Jennings Beach
Reef Rd
Rowland Rd
Penfield Rd
Oldfield Rd
Pine Creek
Old Post Rd
S Benson Rd
Riverside Dr
Beach Rd
Gilman St
Groves Ave
Barnum Blvd
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Barr Creek
Seaside Park
Pleasure Beach
Great Meadows
Long Beach
Lordship Beach
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Pembroke St
Seaview Ave
Central Ave
Grant St
Bishop Ave
Union Ave
Surf Ave
Honeyspot Rd
Metro North
Woodend Rd
Benton St
Columbus Ave
Sedgewick Ave
Birdseye St
South Ave
Main St
Elm St
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Short Beach Golf Course
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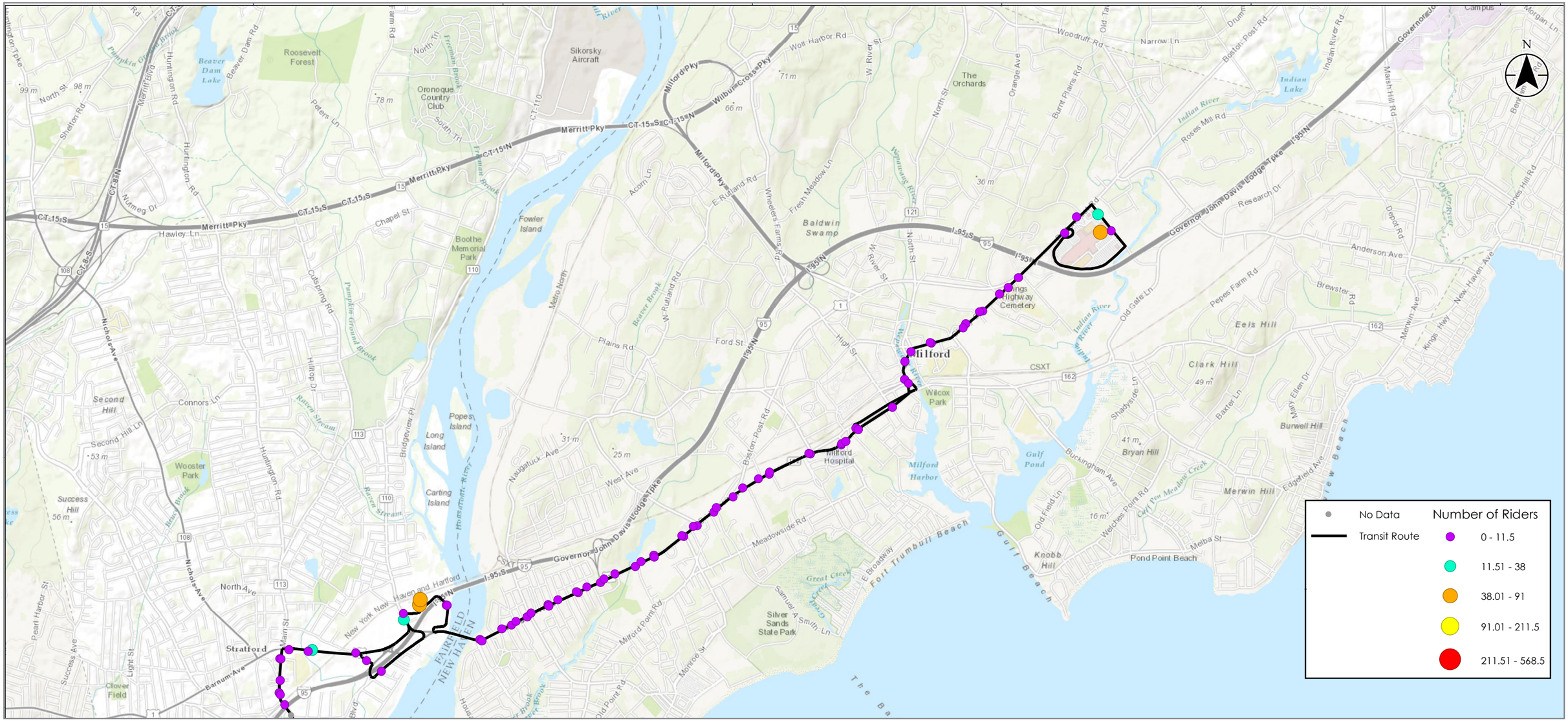
Mt Grove Cemetery
St Michaels Cemetery
University of Bridgeport
Fairfield University
Country Club of Fairfield
Pequonnock River
Mill River
Johnsons Creek
Cedar Creek
Barr Creek
Pine Creek

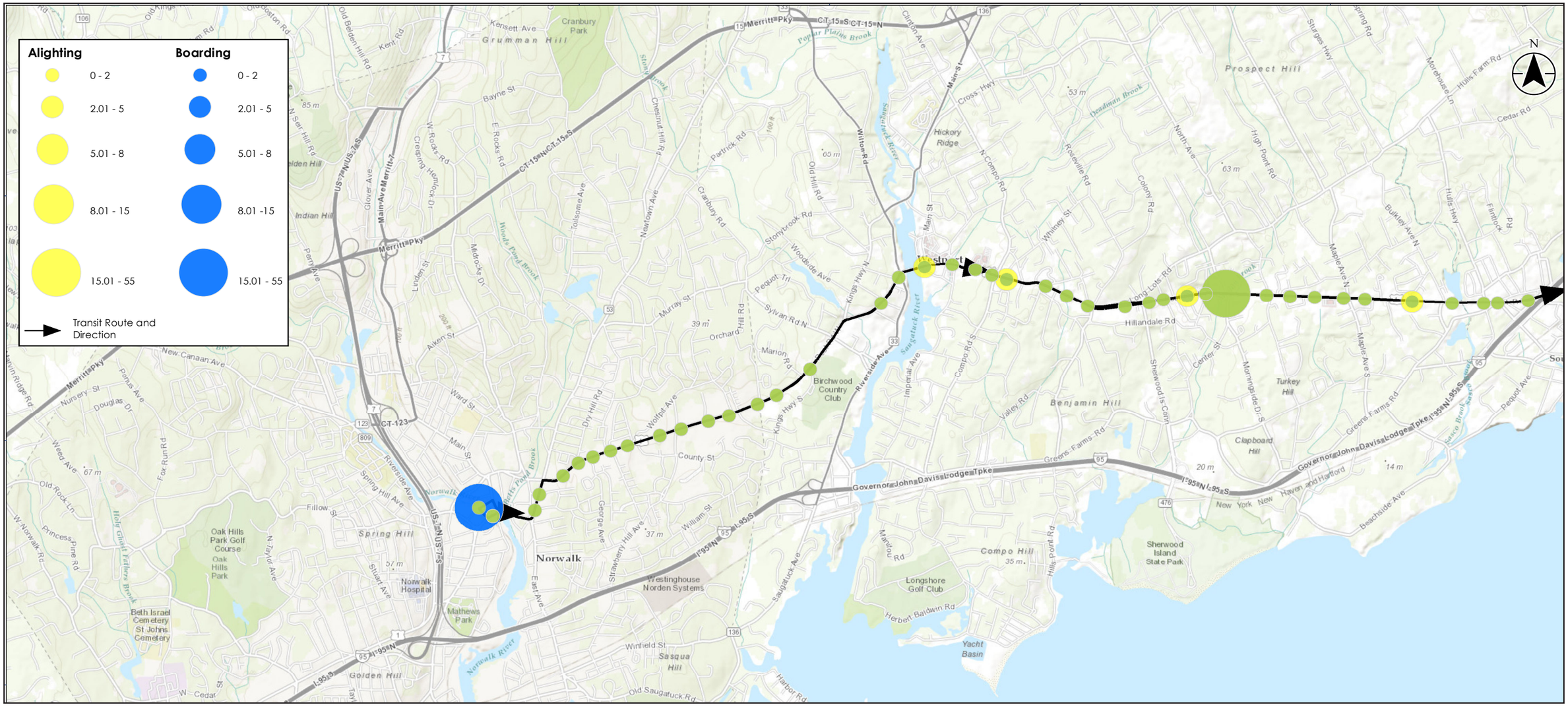
Total Daily Activity

Coastal Link



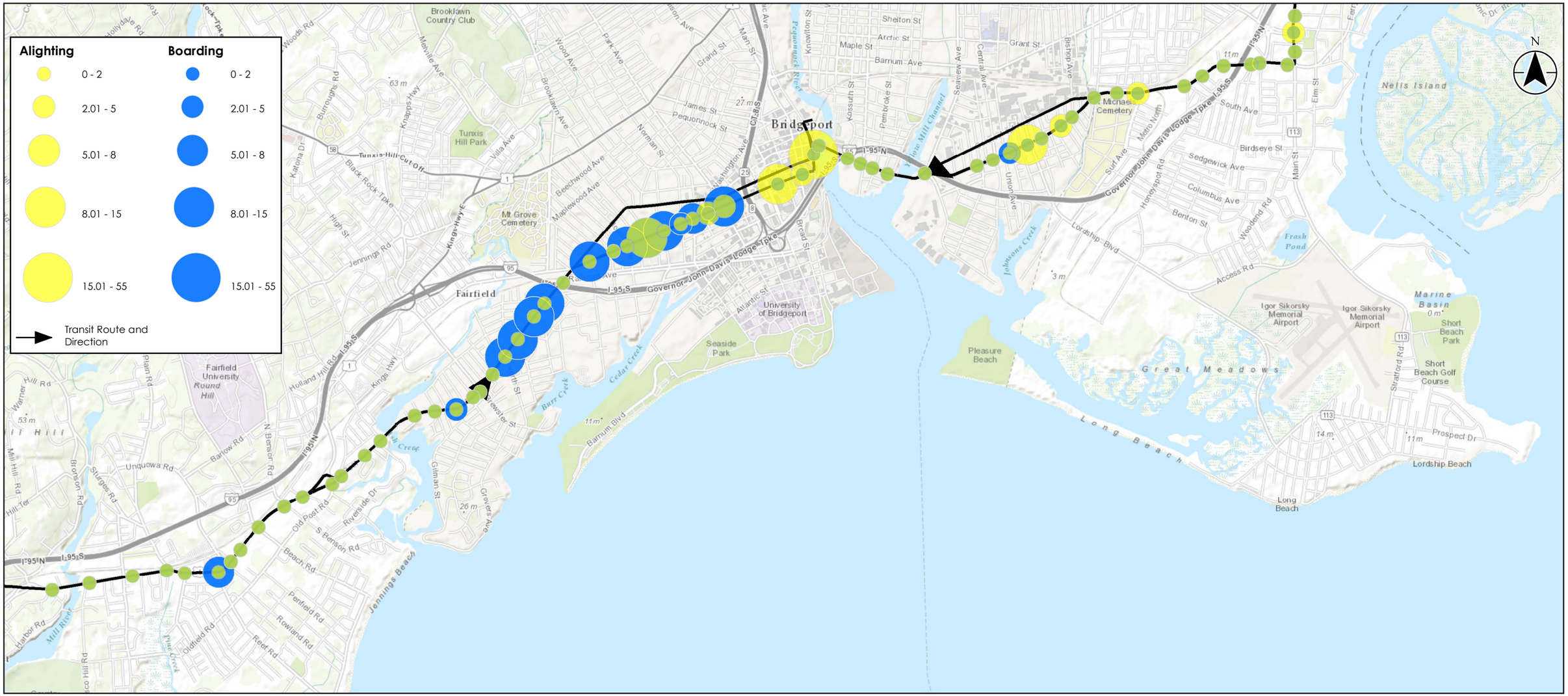
Coastal Link

5am - 9am Eastbound



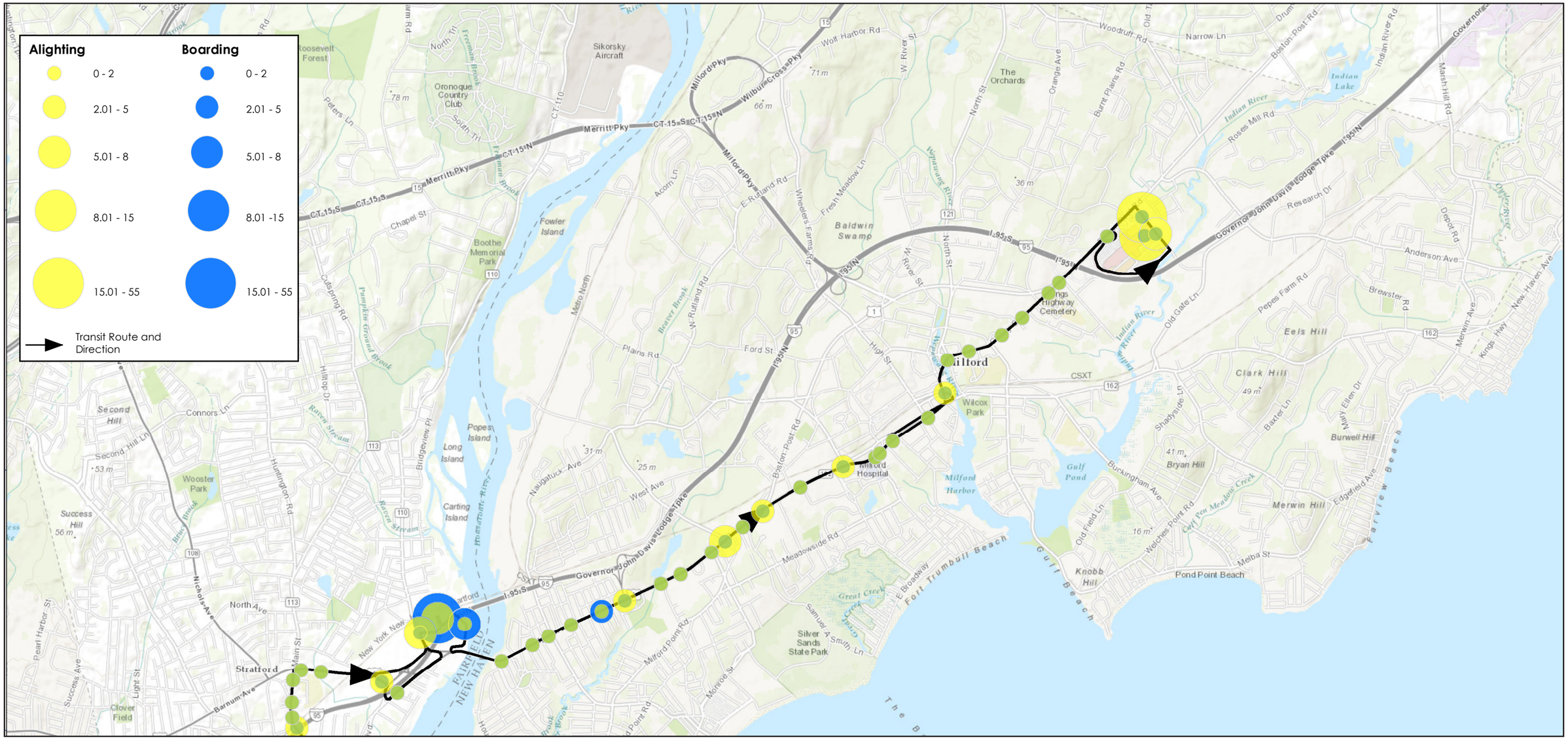
5am - 9am Eastbound

Coastal Link



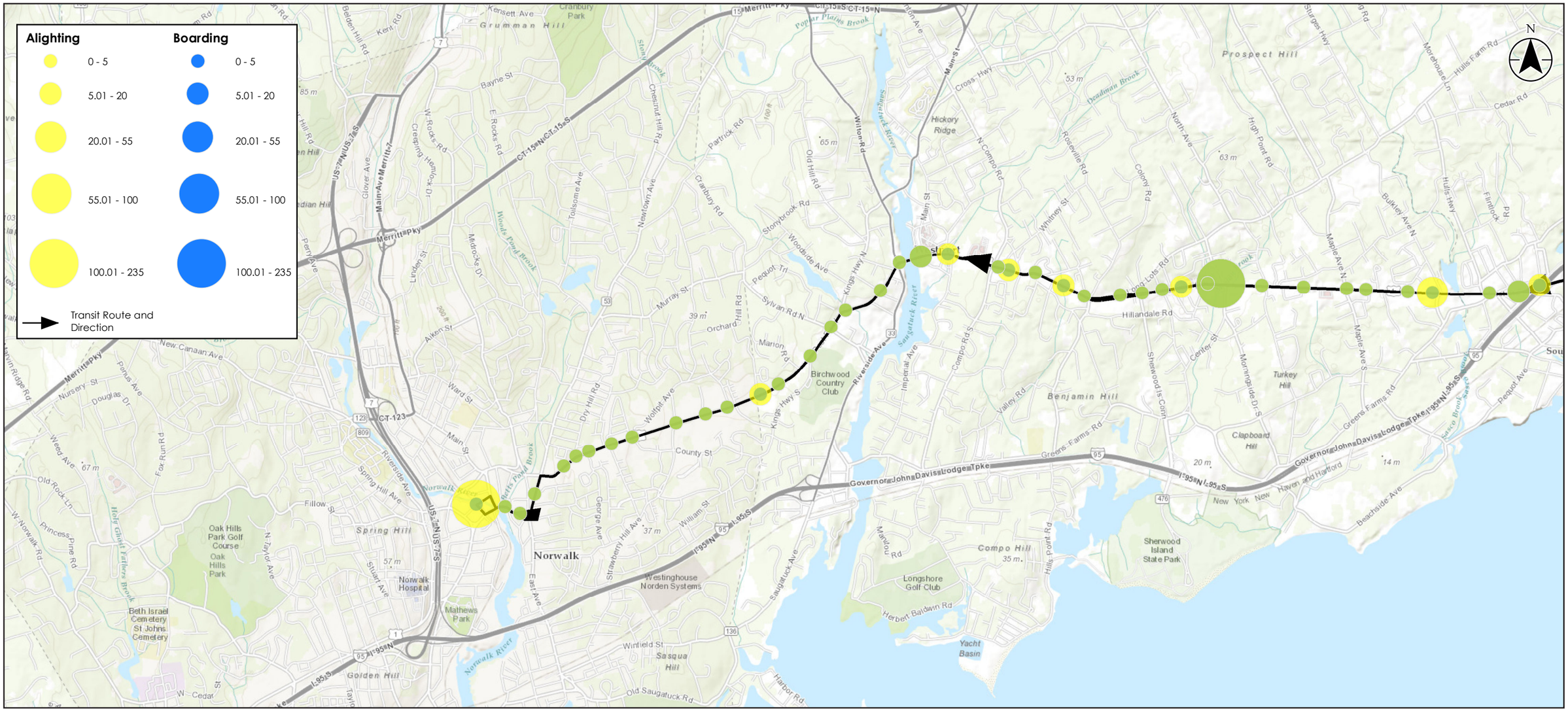
Coastal Link

5am - 9am Eastbound



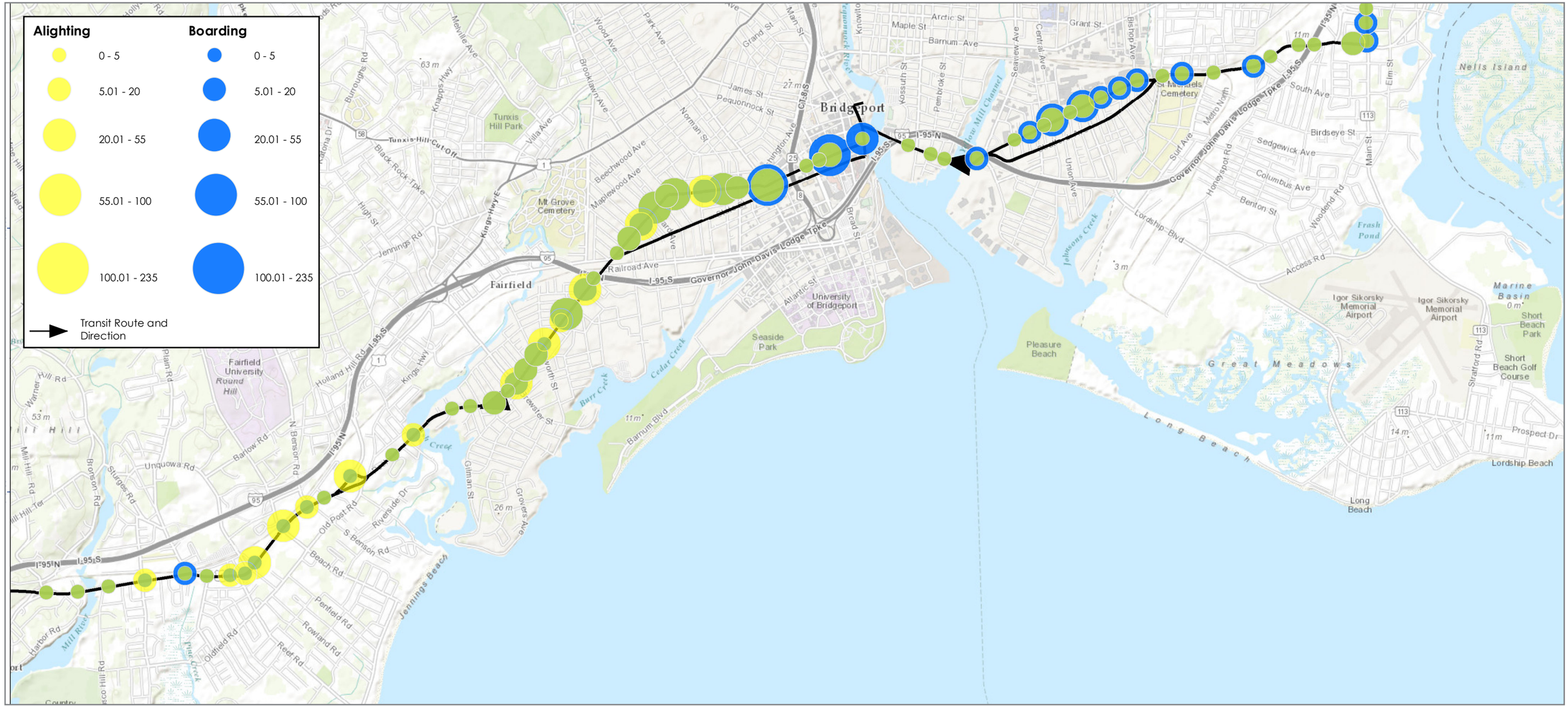
5am - 9am Westbound

Coastal Link



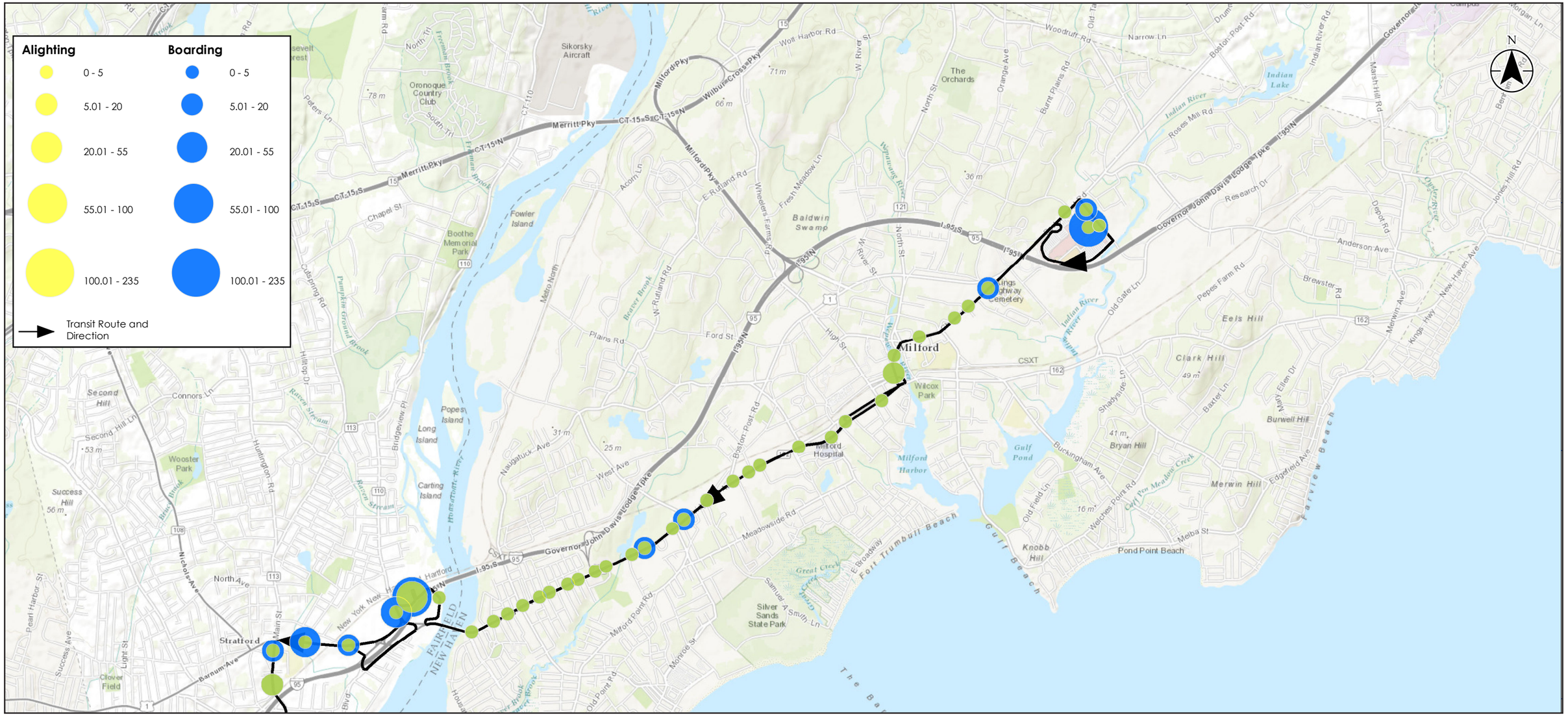
Coastal Link

5am - 9am Westbound



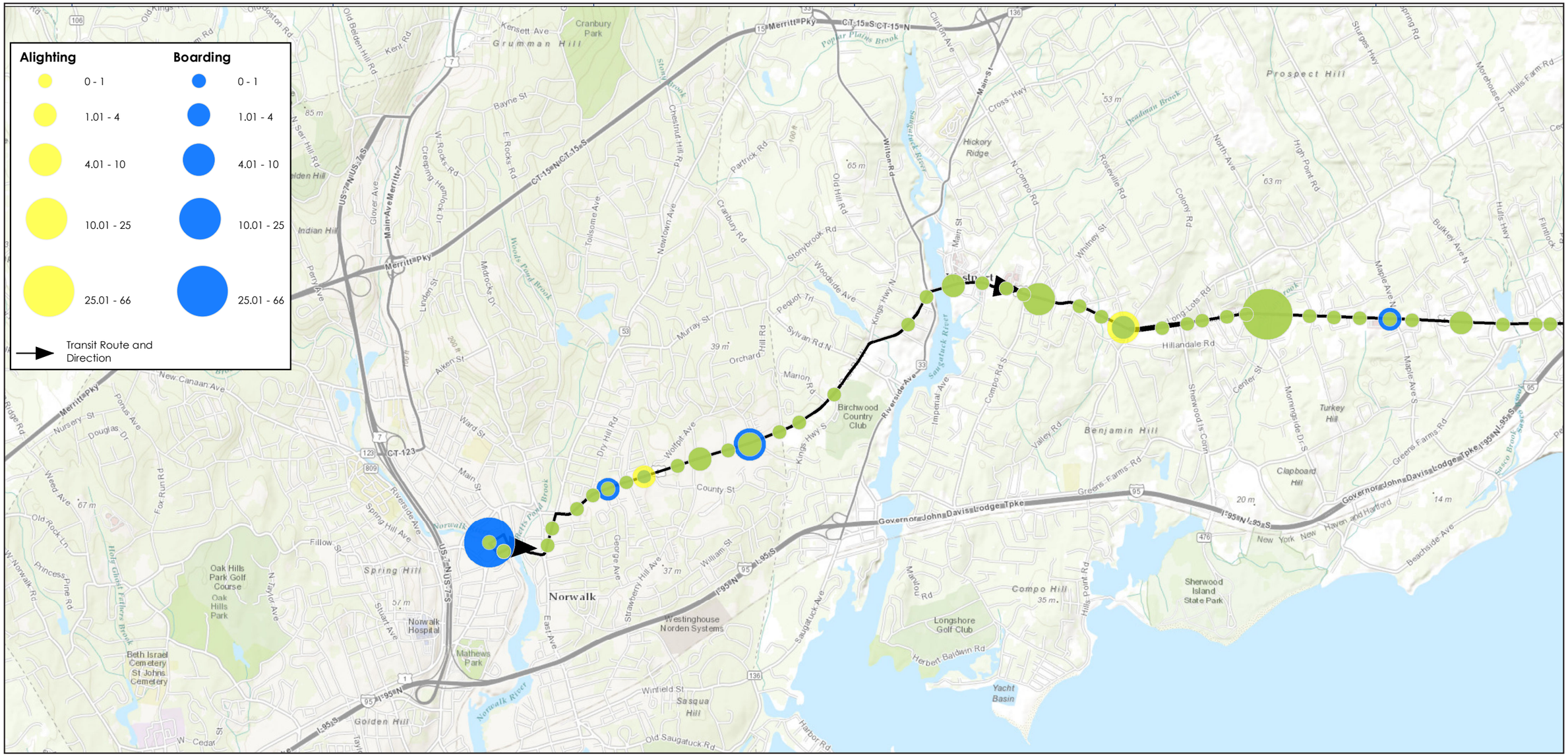
5am - 9am Westbound

Coastal Link



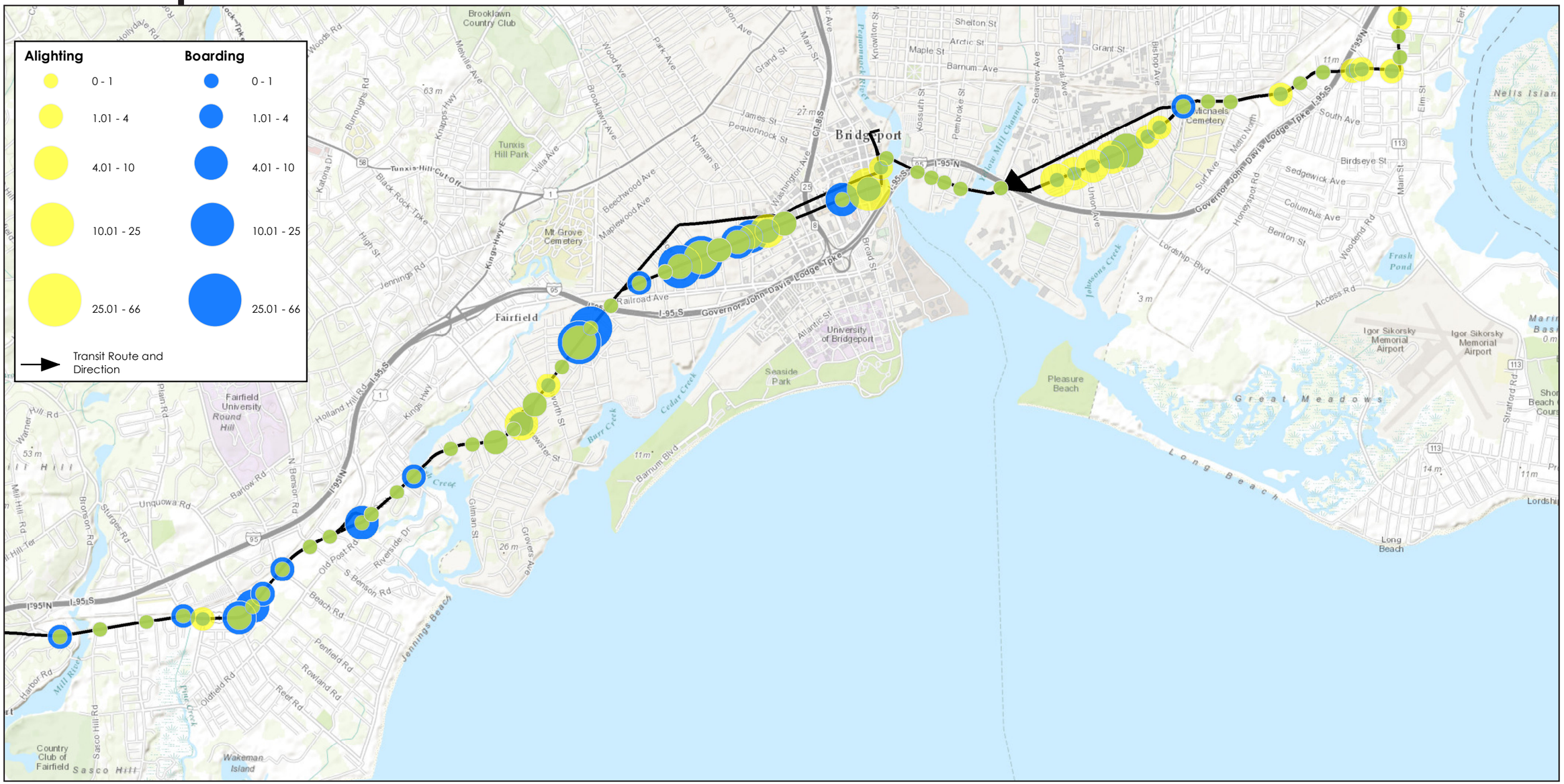
Coastal Link

10am - 2pm Eastbound



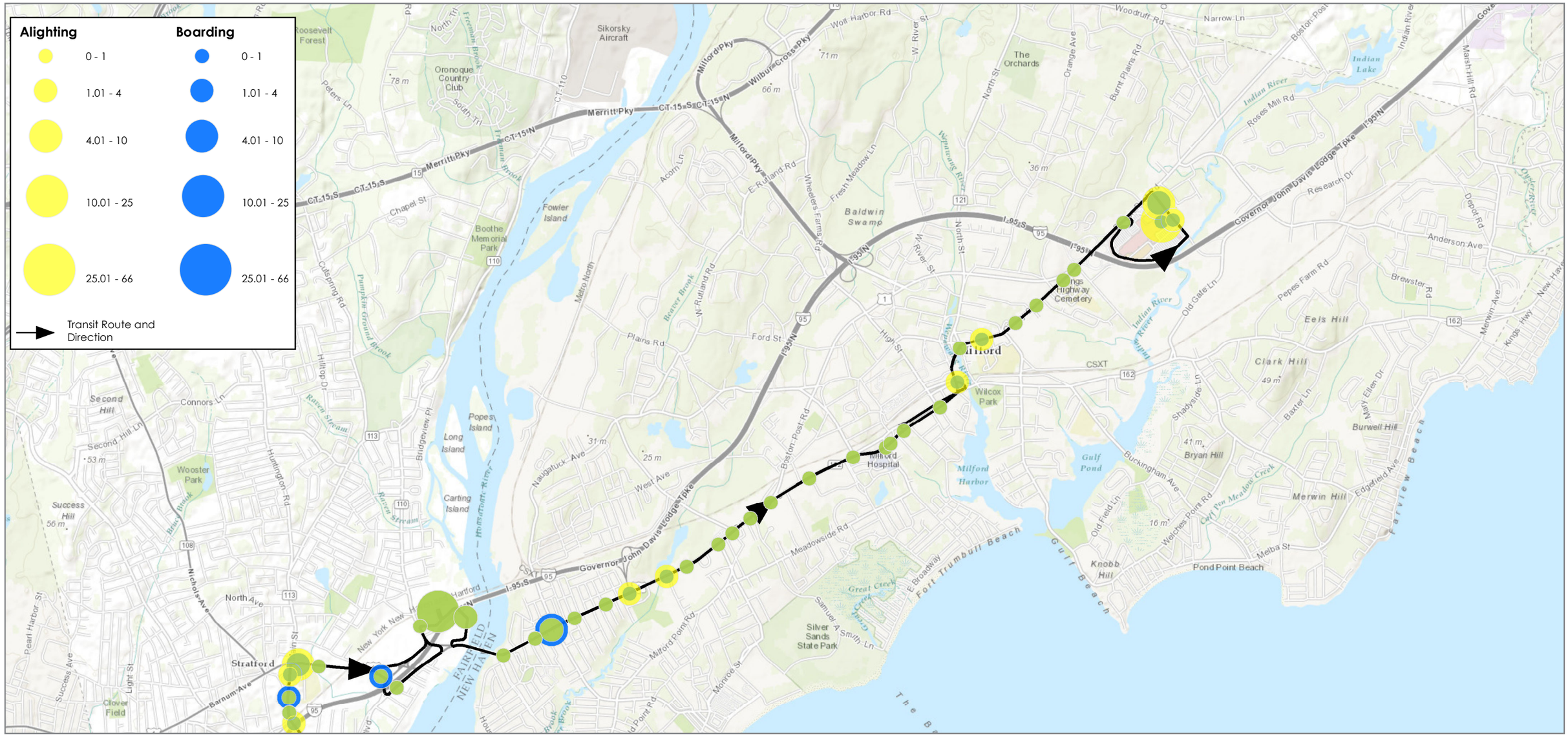
10am - 2pm Eastbound

Coastal Link



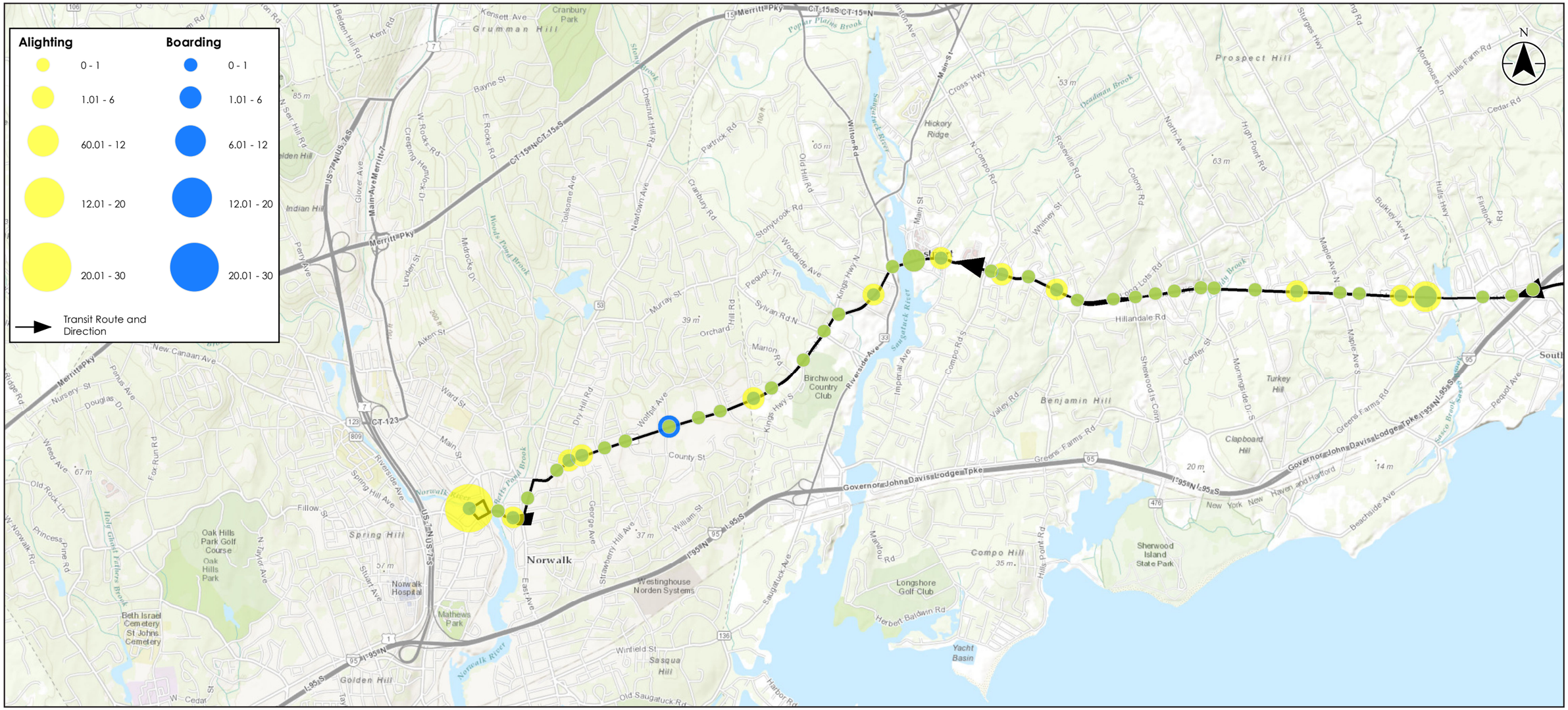
Coastal Link

10am - 2pm Eastbound



10am - 2pm Westbound

Coastal Link



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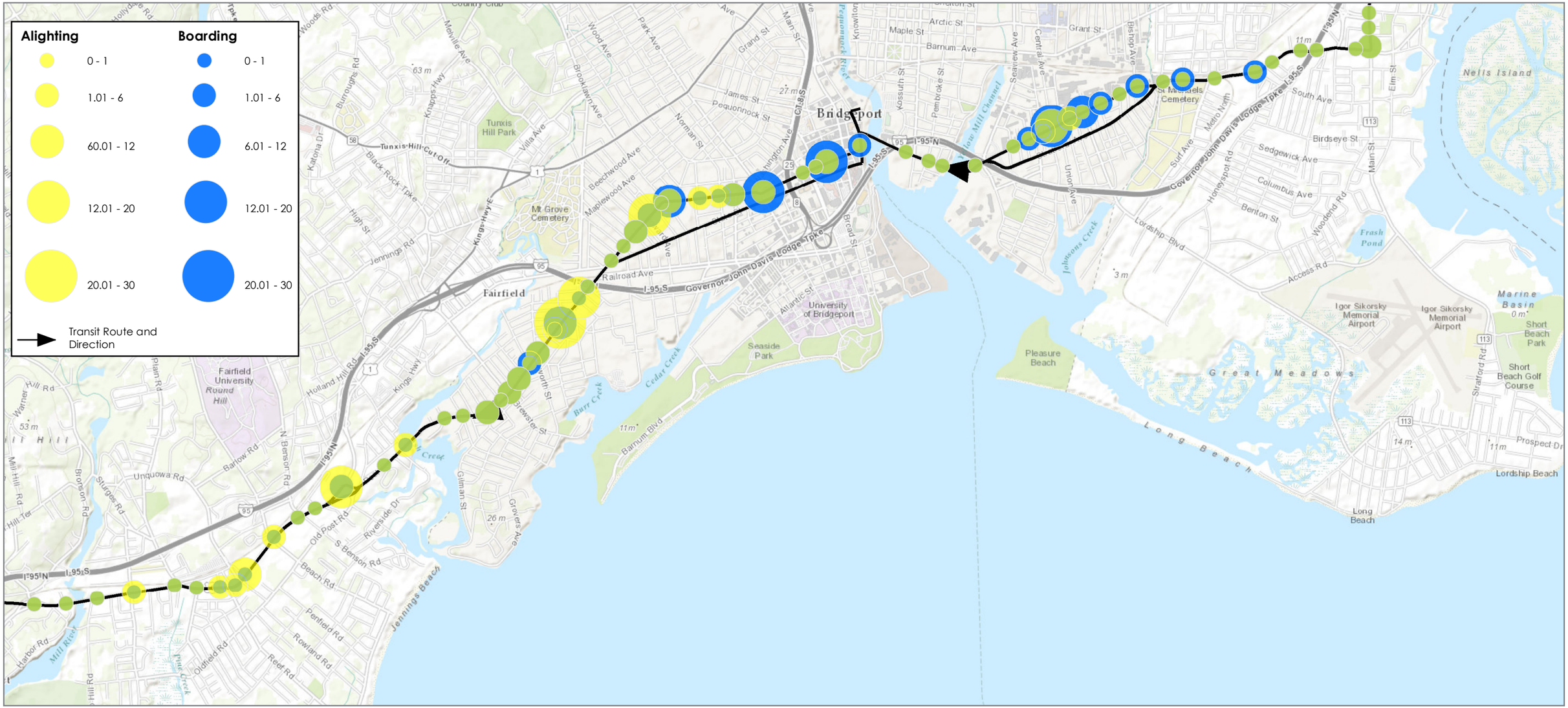
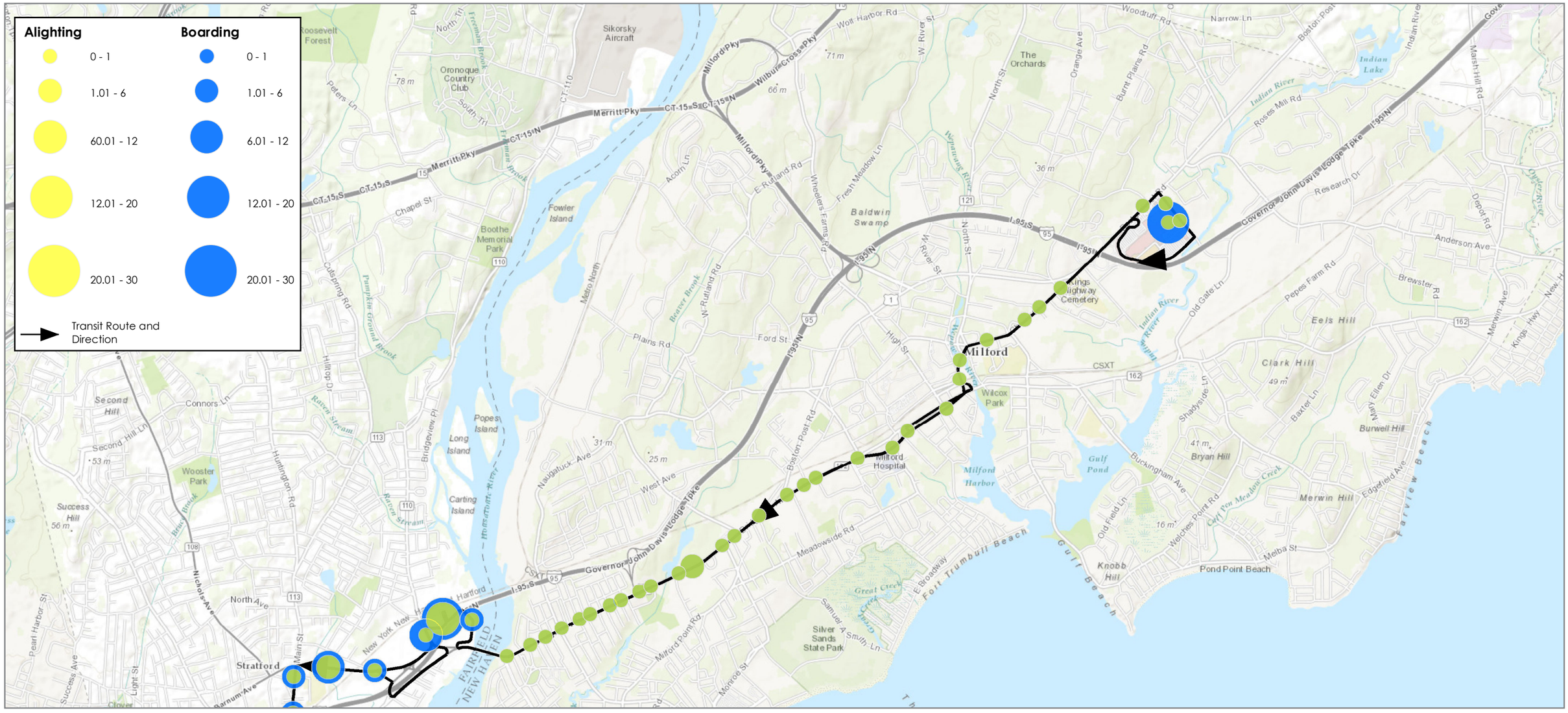


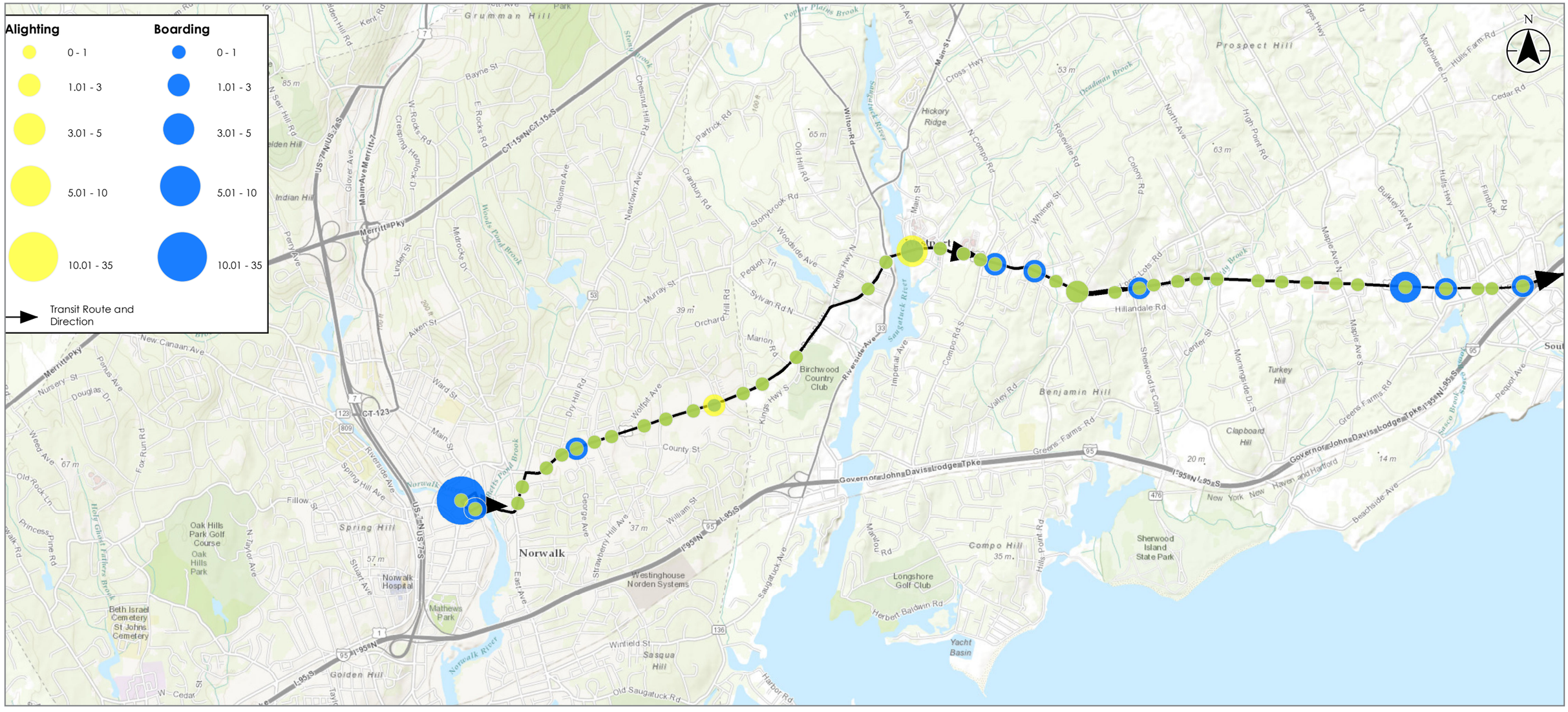
10am - 2pm Westbound

Coastal Link



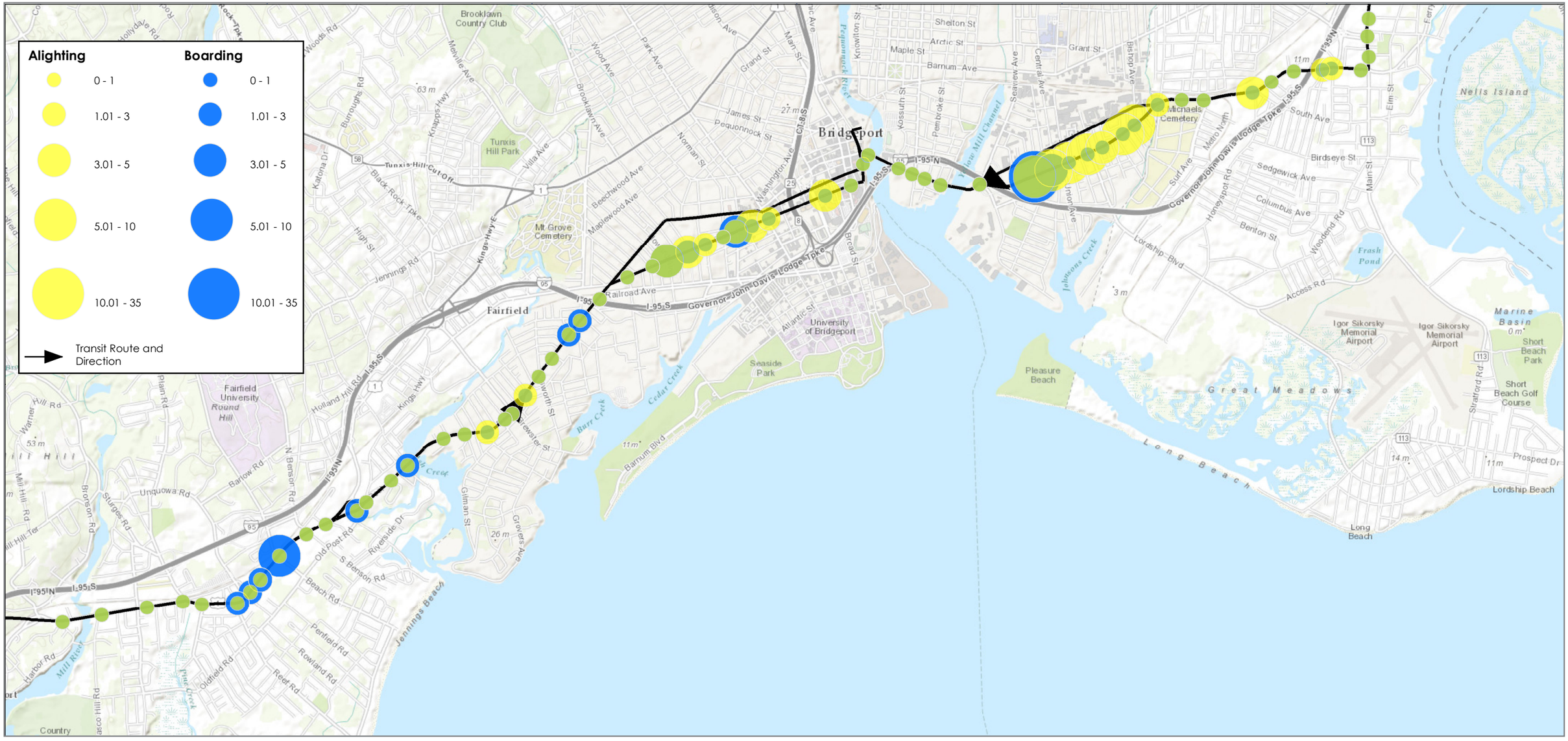
Coastal Link

3pm - 6pm Eastbound



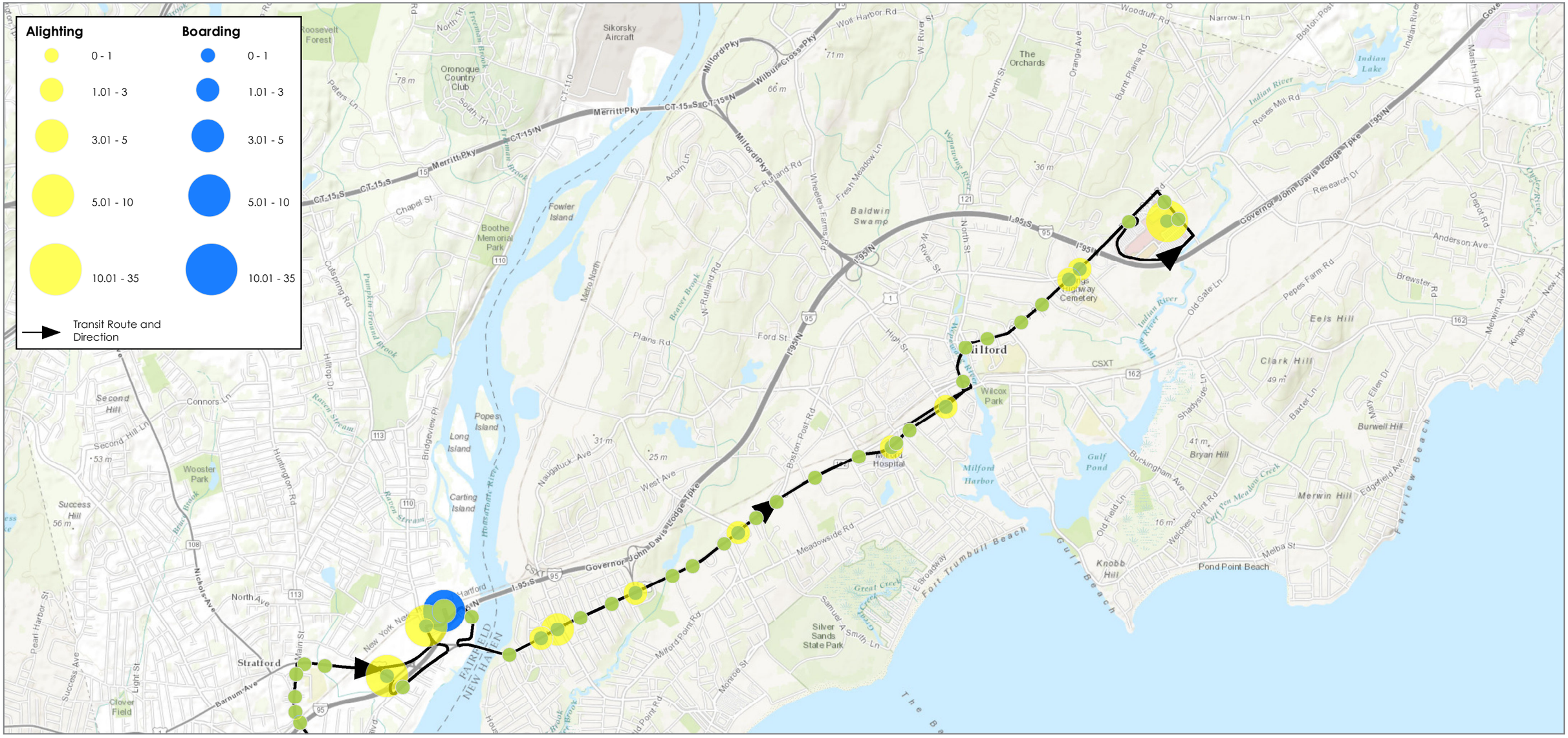
3pm - 6pm Eastbound

Coastal Link



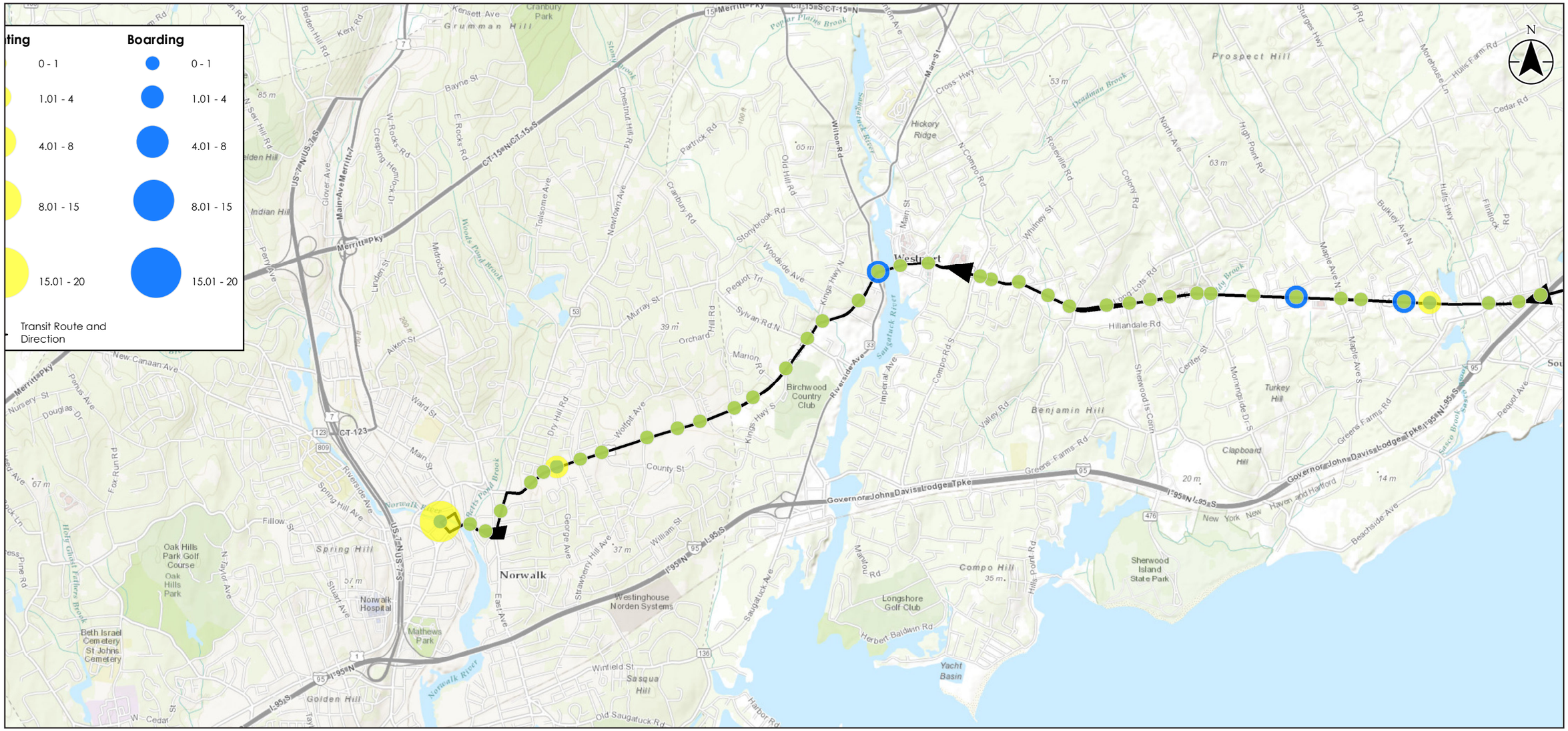
Coastal Link

3pm - 6pm Eastbound



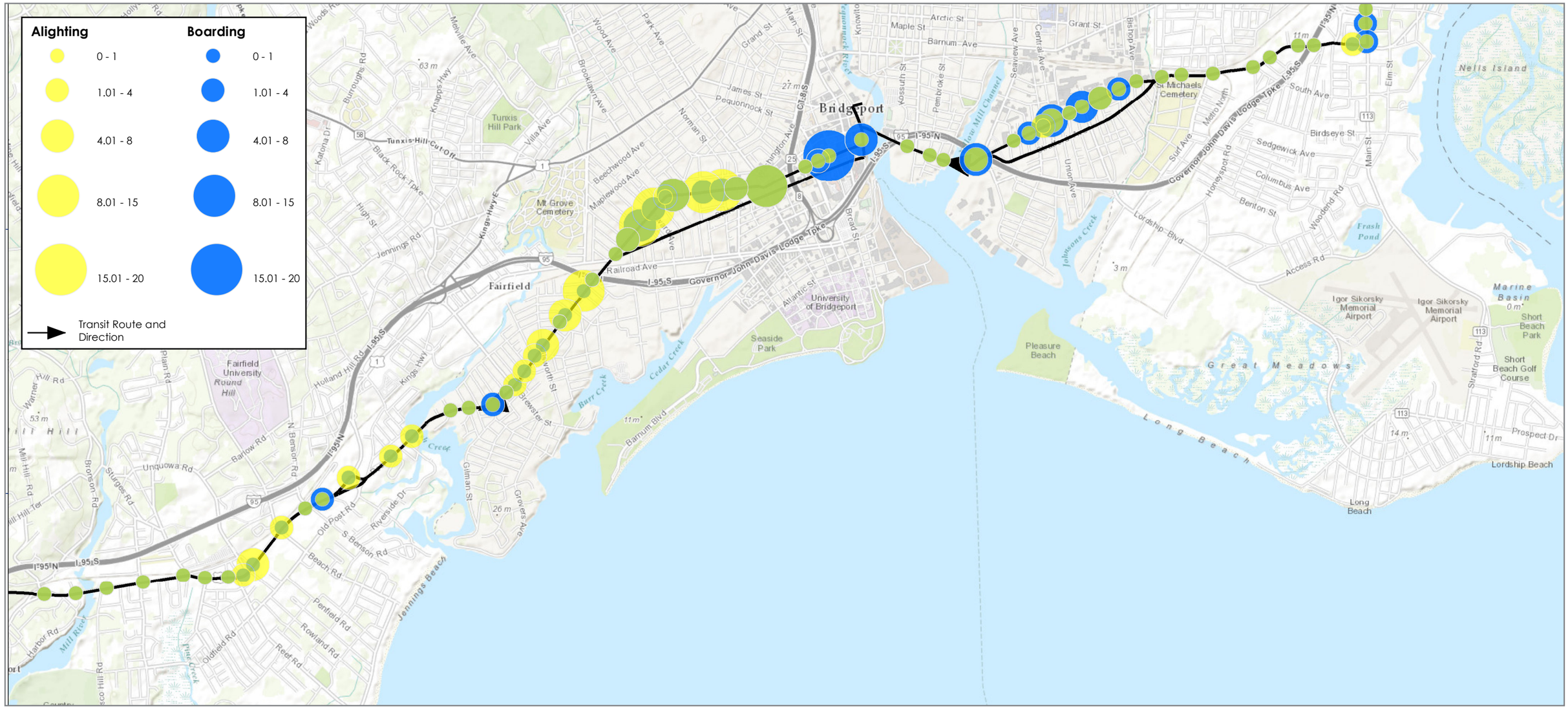
3pm - 6pm Westbound

Coastal Link



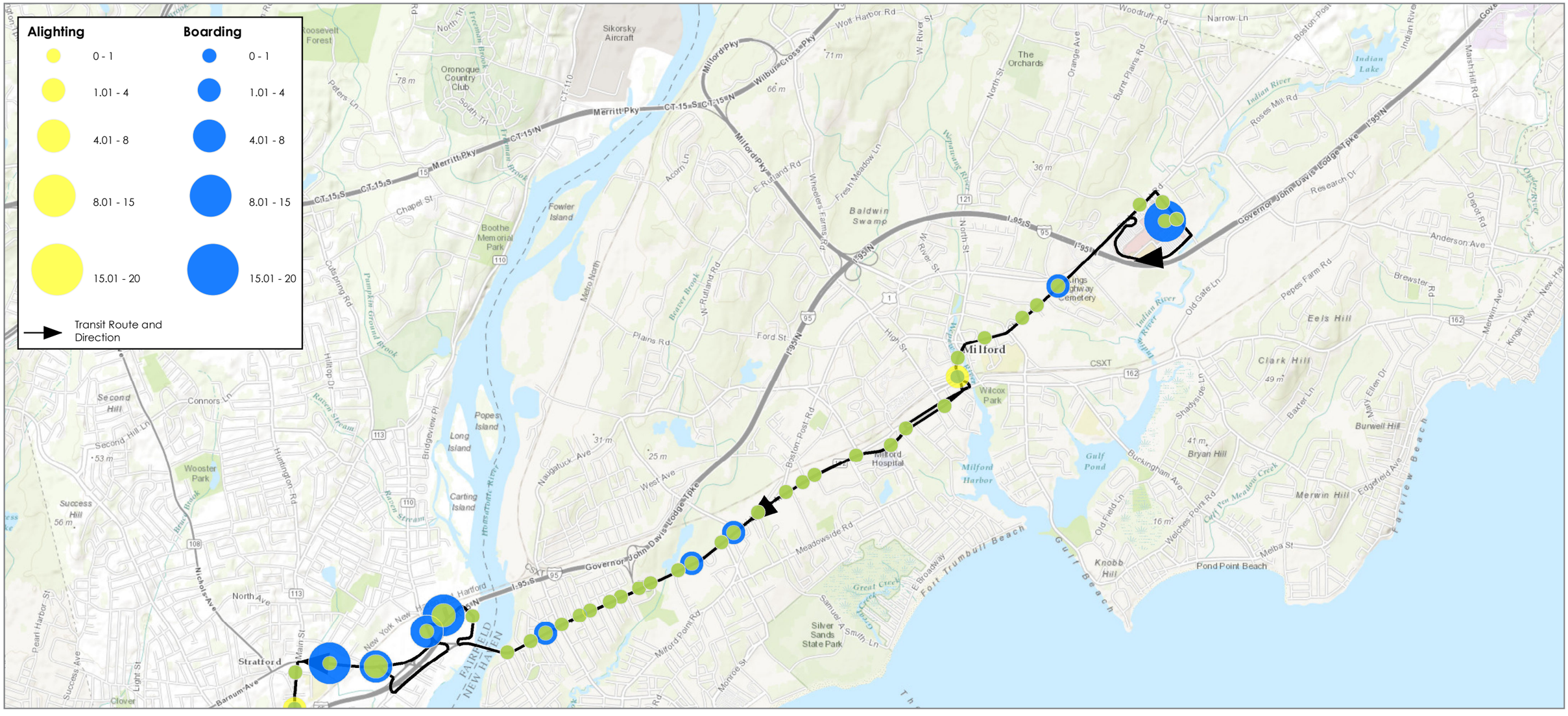
Coastal Link

3pm - 6pm Westbound



3pm - 6pm Westbound

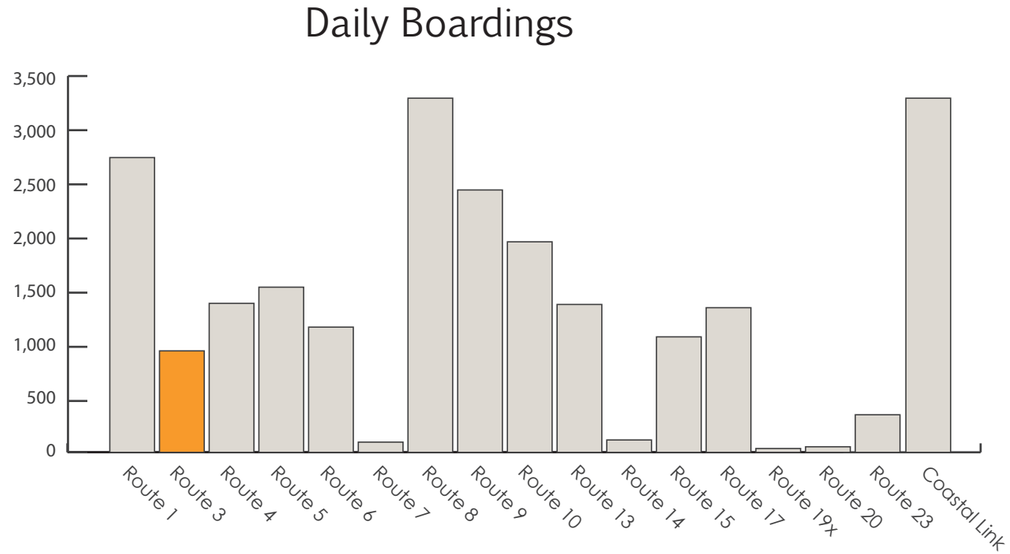
Coastal Link



Route Three

Downtown - Madison Ave - Westfield Trumbull Mall - Sacred Heart University

Route 3	
Weekday Daily Boardings	940
Percent of System Activity (Sampled Routes)	4%
Daily One-Way Revenue Trips	61
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	RTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	15%
Average Boardings per Hour - AM Peak	45
Average Boardings per Hour - Midday	63
Average Boardings per Hour - PM Peak	63



RTN (Regional Transit Network) in above table

Route Highlights:

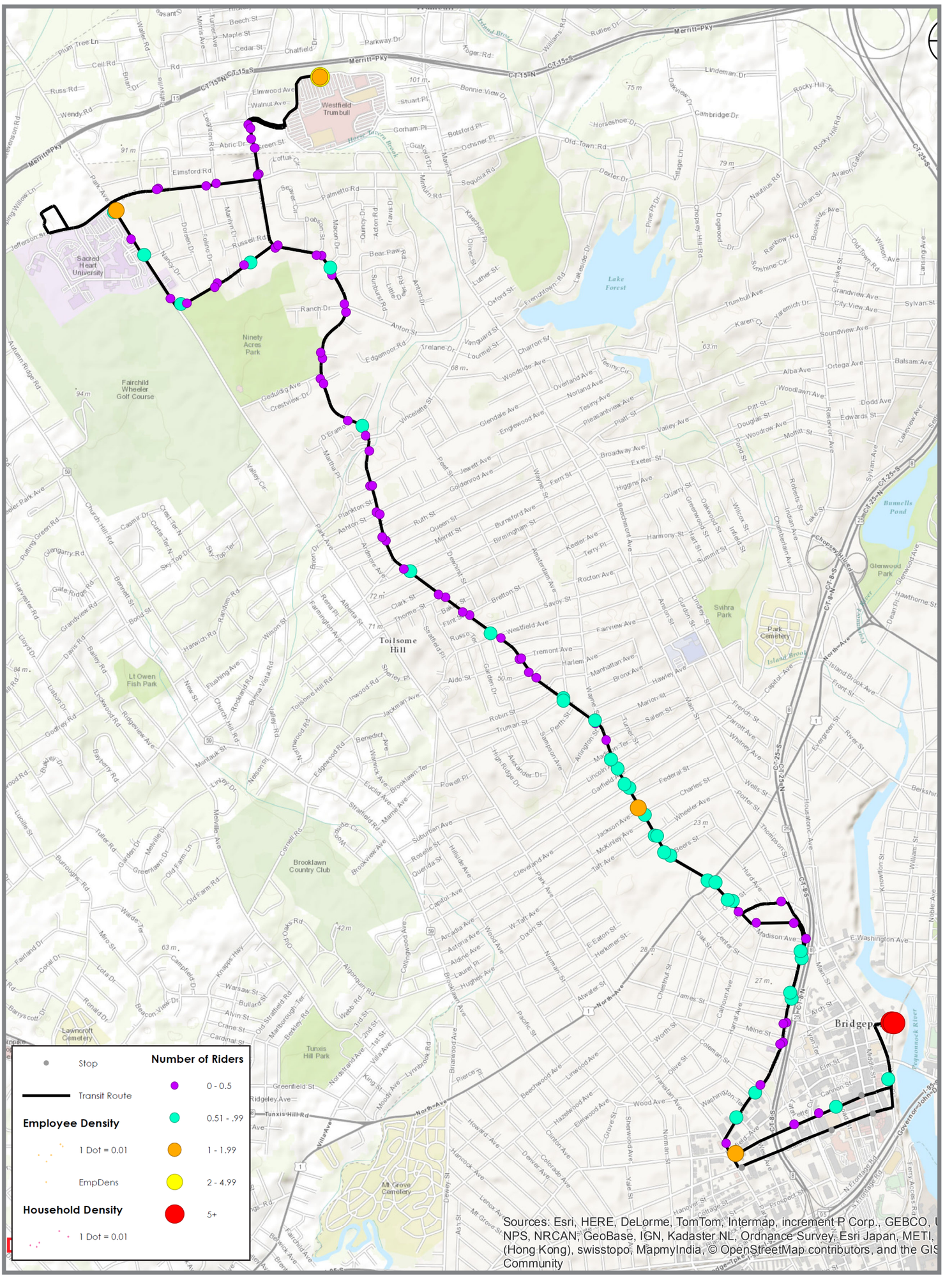
- Route Three is the lowest performing all-day service in the system.
- With the exception of the terminus at Westfield Trumbull Mall, the busiest stops for this route are all south of Capitol Ave.
- The stops between Capitol Ave and Westfield Trumbull Mall have extremely low utilization, with less than 0-4 boardings or alightings for each time period surveyed.
- The low stop activity along the middle section of this route reflects the low density of population and land uses in this area.
- The ridership patterns demonstrate that this route is very nodal, with many customers from the north (at Westfield Trumbull Mall) using this service to reach the Downtown Bridgeport (and vice-versa).
- The Westfield Trumbull Mall serves as a key connection point to four GBT routes.

Observations: Route 3 connects the Westfield Trumbull Mall to Downtown Bridgeport, predominantly along Madison Avenue. It has the lowest ridership of any all-day route in the GBT system. This is in part due to the low density land uses along this route's northern section as well as an over-saturation of service along this North – South corridor by Routes 4 and 8 on Park and Main Street respectively. Both routes are more direct and in the case of Route 8, more frequent than Route 3. However, it attracts more activity at its southern end, which appears to be mainly passengers traveling to Downtown Bridgeport in the morning and returning in the afternoon.

Changes under consideration: It is proposed that the northern section of this route be modified such that it operates with limited stop service in its northern half between Capitol Avenue and the Westfield Trumbull Mall.

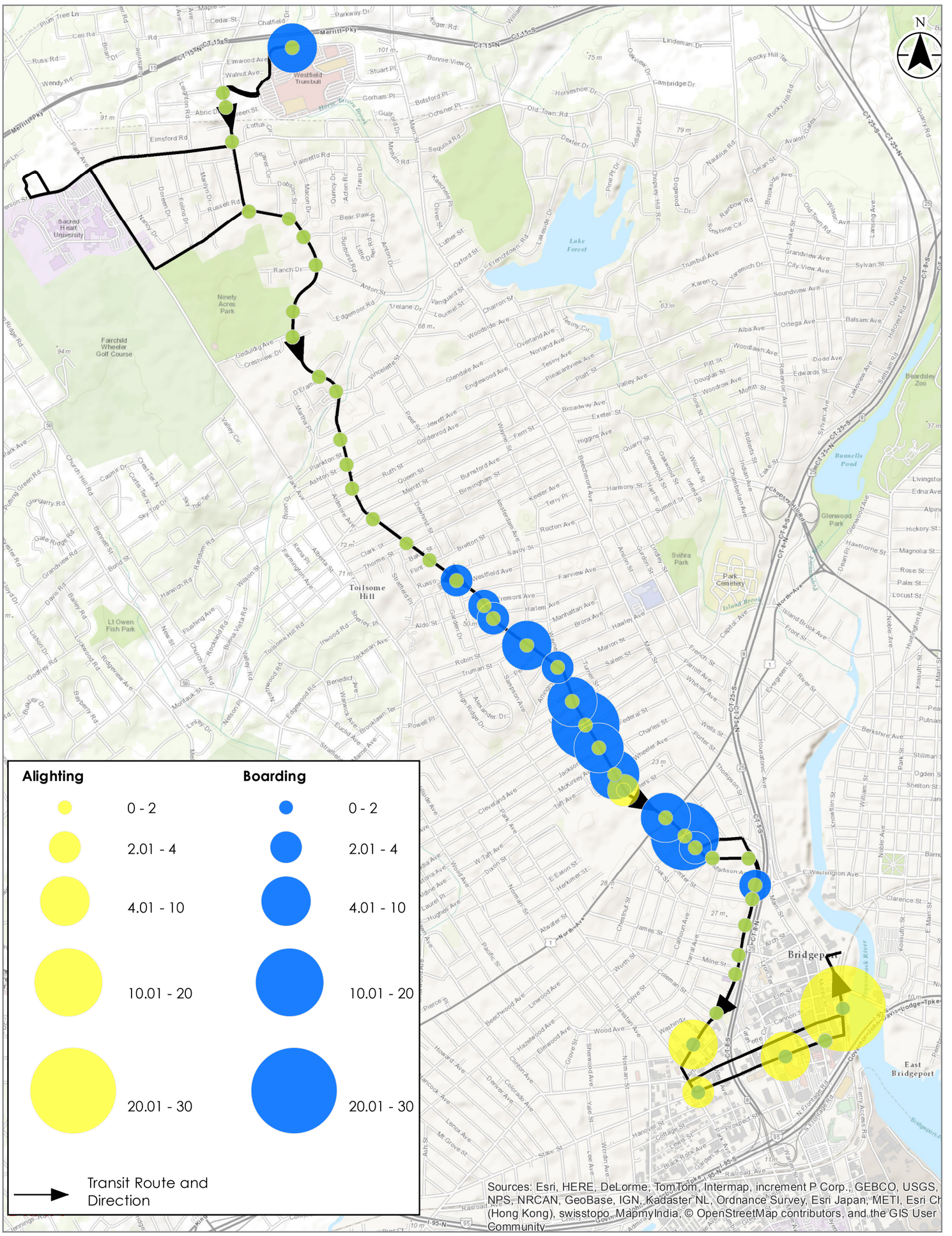
Total Daily Activity

Route 3



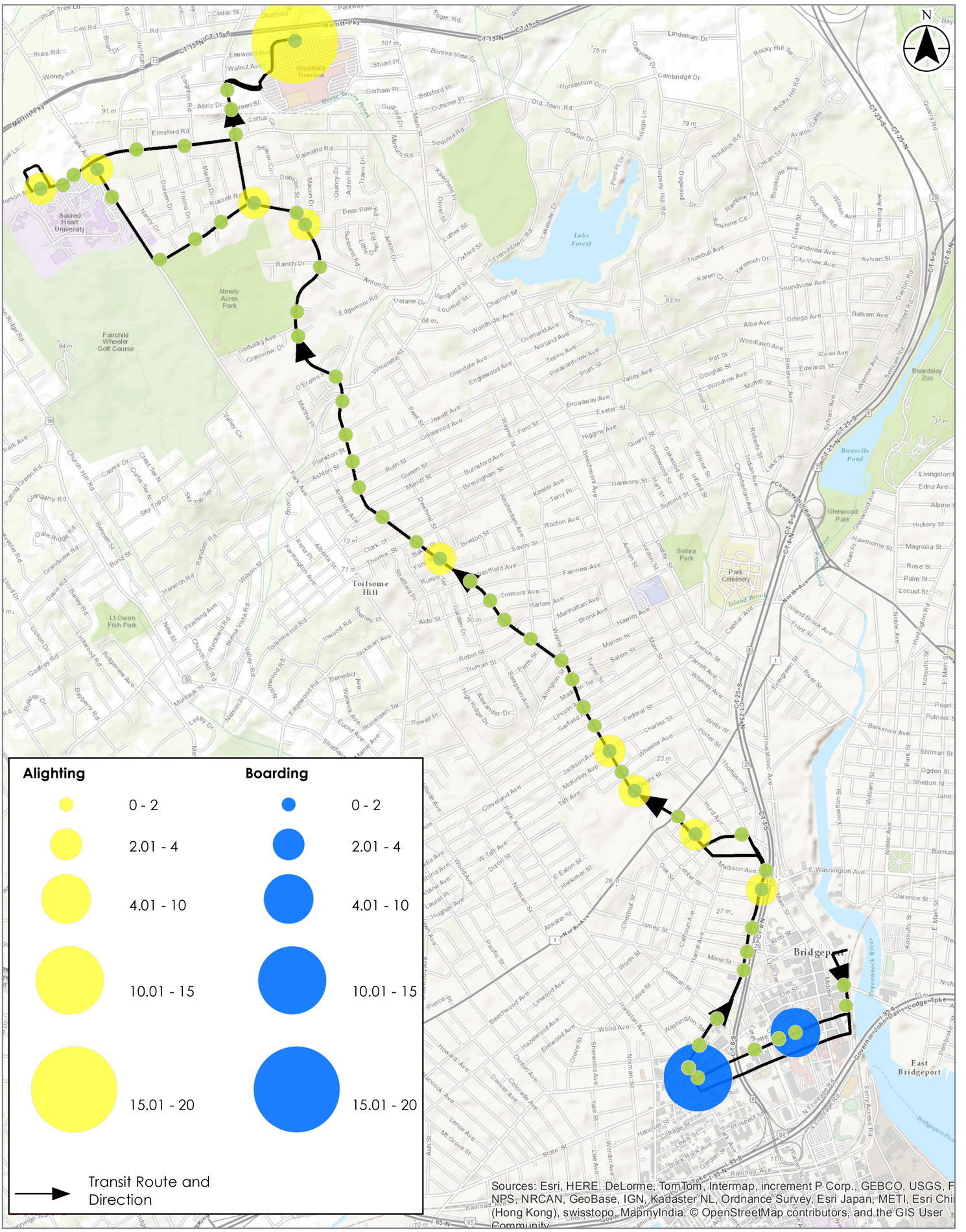
5am - 9am Inbound

Route 3



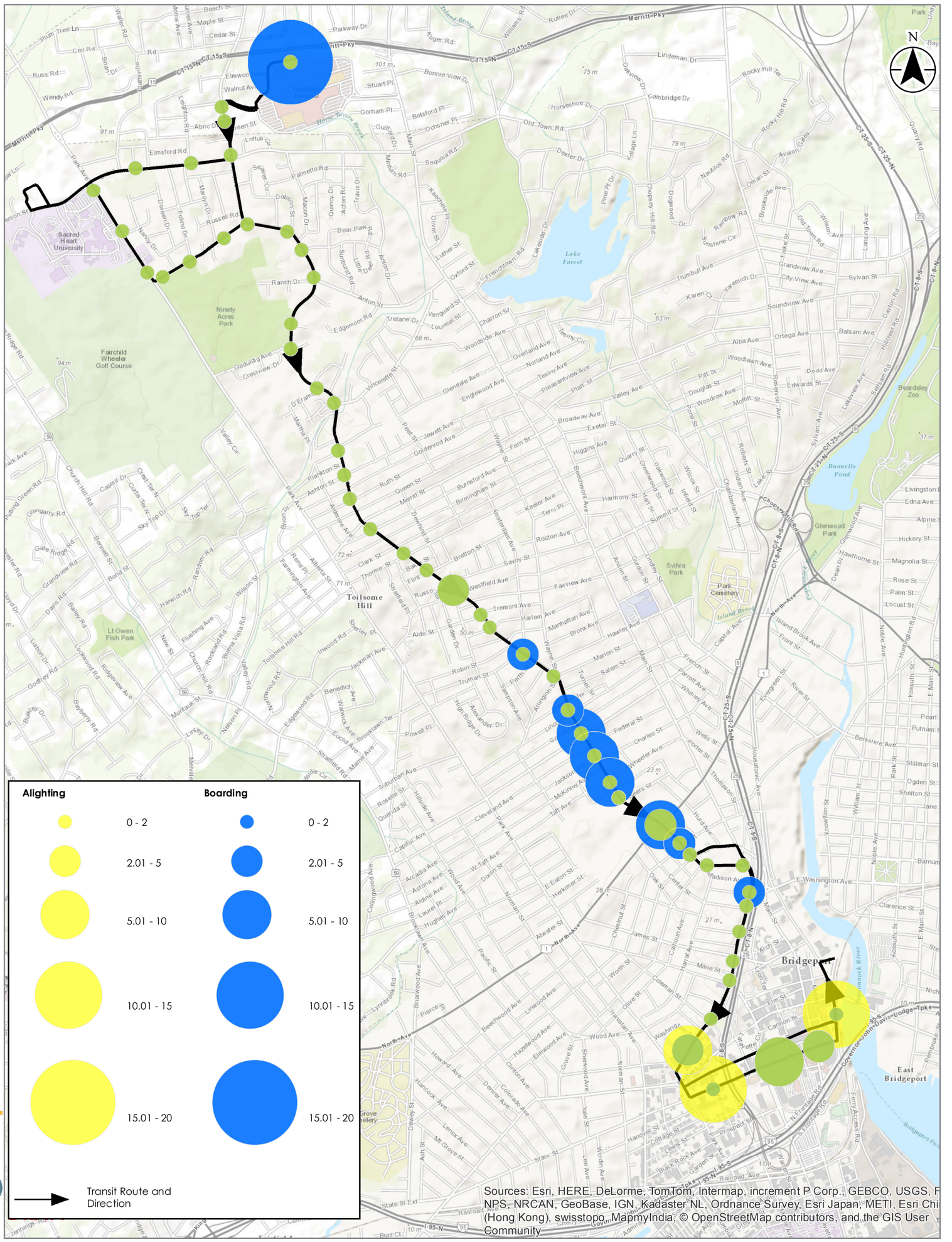
5am - 9am Outbound

Route 3



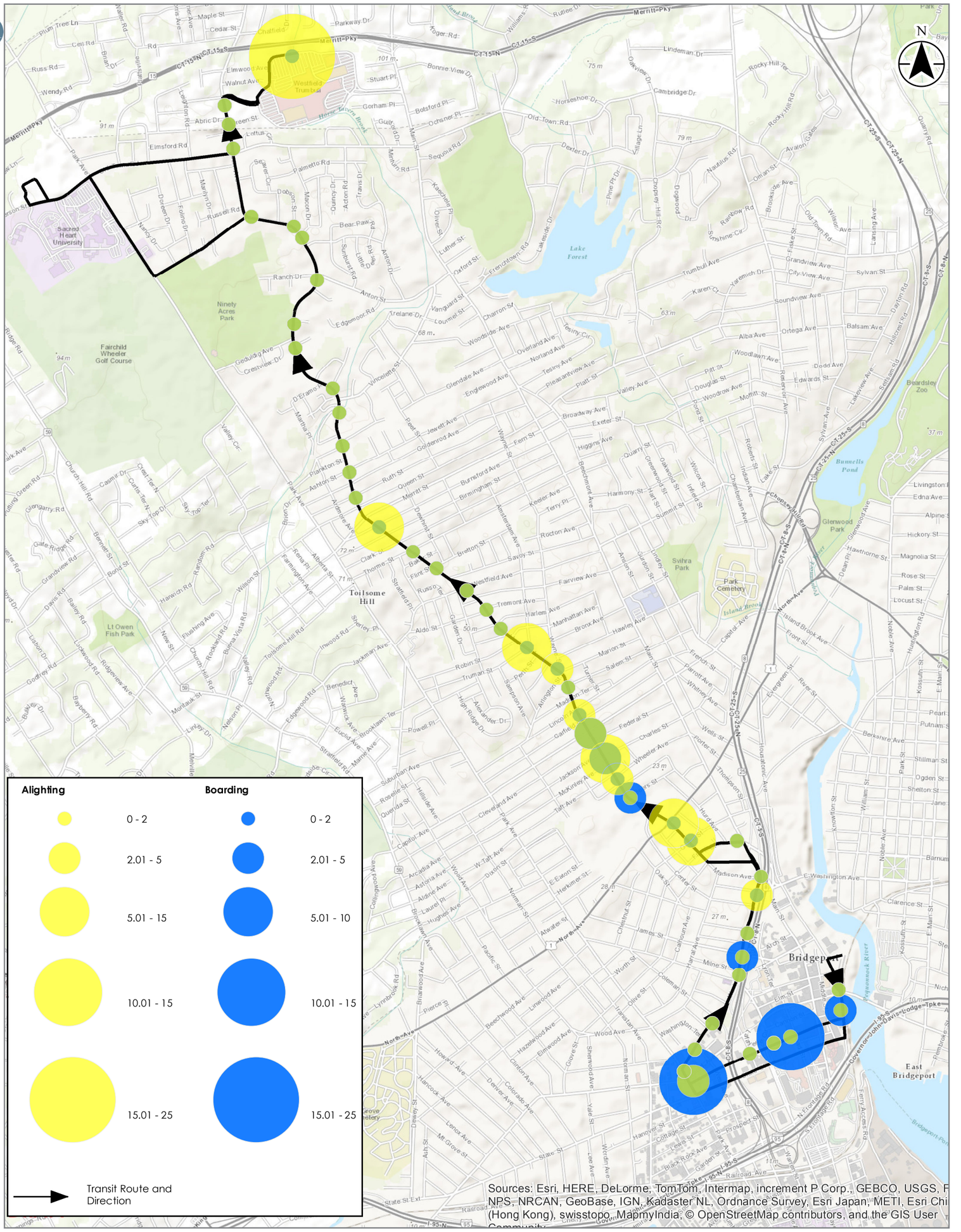
10am - 2pm Inbound

Route 3



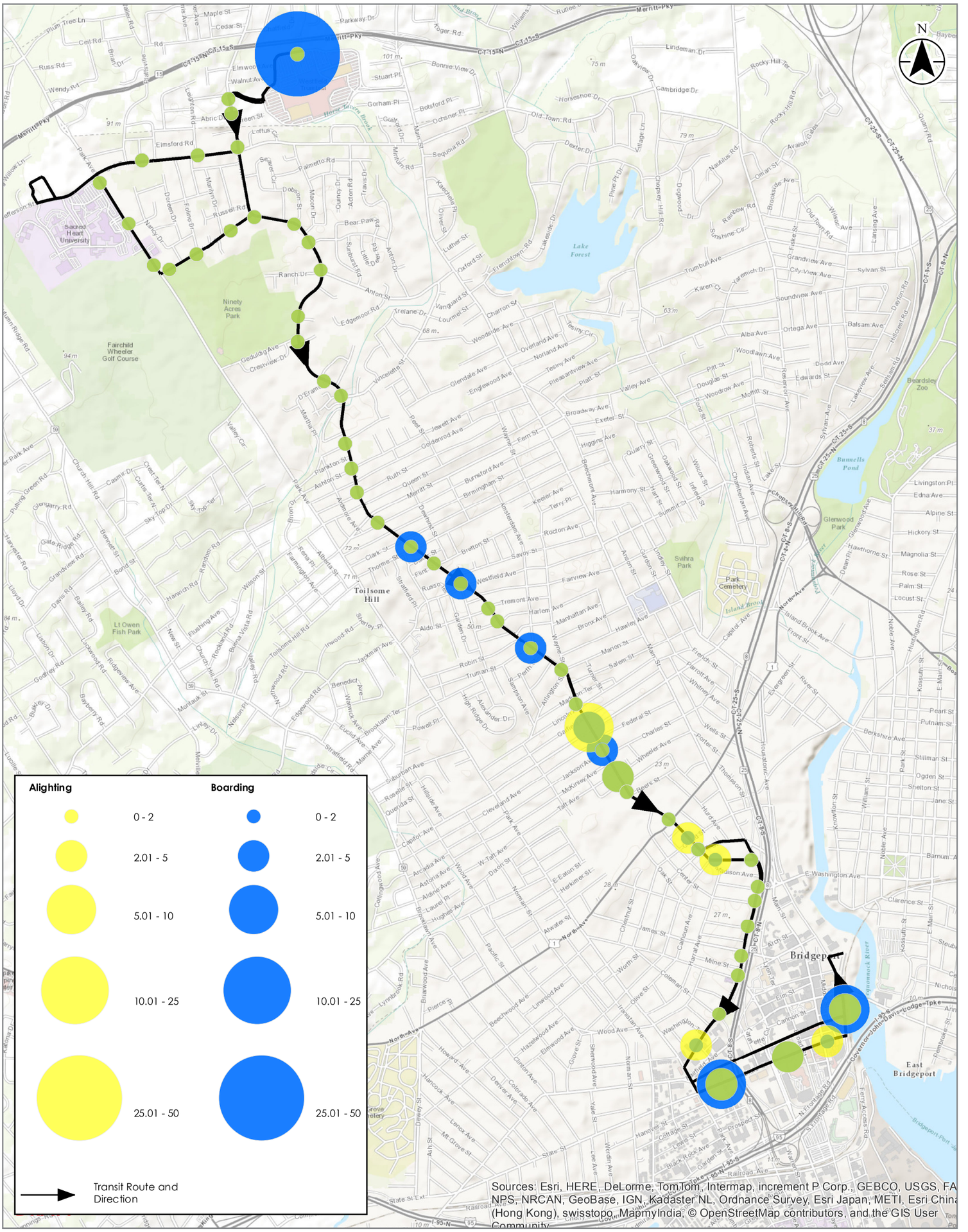
10am - 2pm Outbound

Route 3



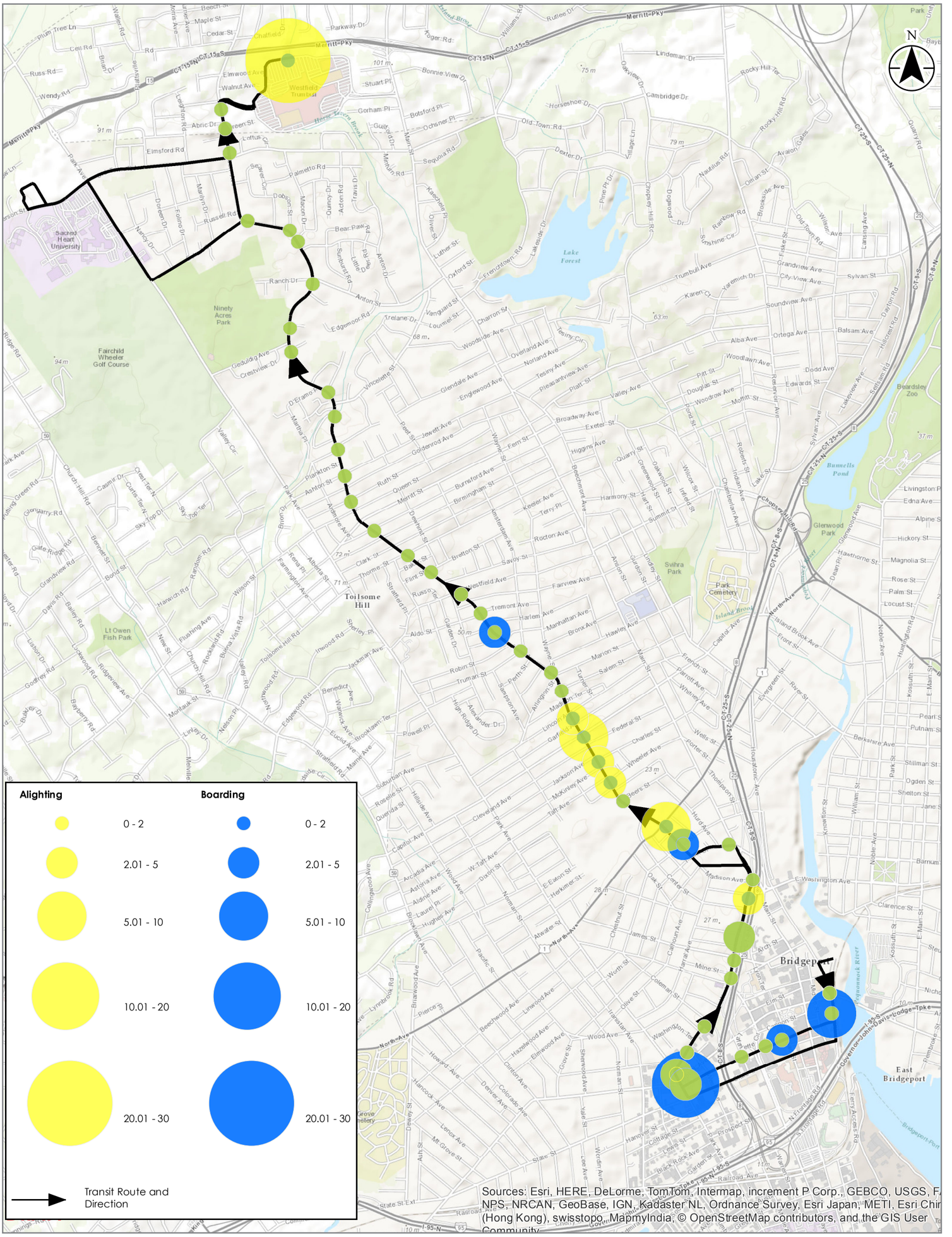
3pm - 6pm Inbound

Route 3



3pm - 6pm Outbound

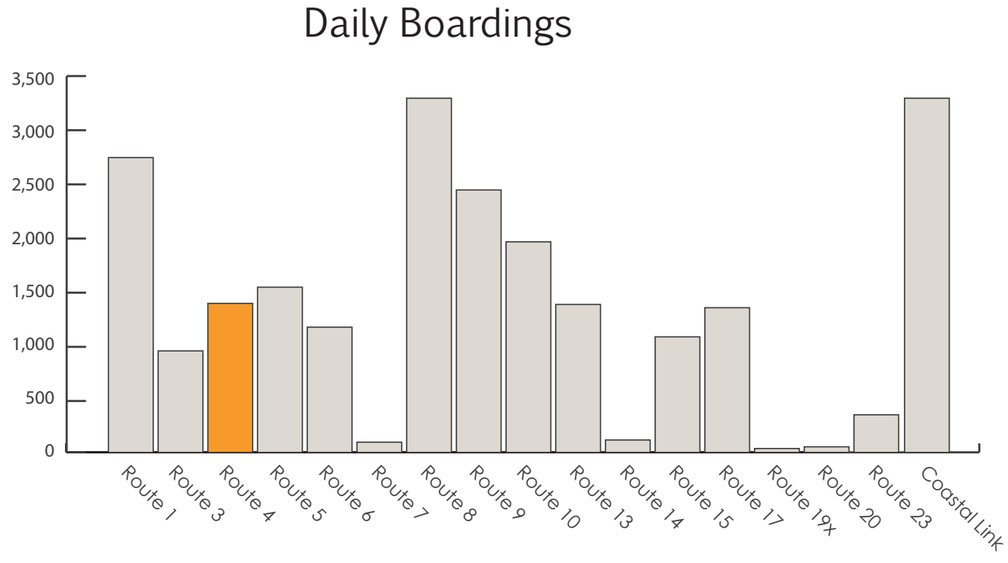
Route 3



Route Four

Downtown - Park Ave - Westfield Trumbull Mall - Sacred Heart University - GE Headquarters

Route 4	
Weekday Daily Boardings	1,380
Percent of System Activity (Sampled Routes)	6%
Daily One-Way Revenue Trips	58
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	RTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	19.4%
Average Boardings per Hour - AM Peak	93
Average Boardings per Hour - Midday	96
Average Boardings per Hour - PM Peak	78



Route Highlights:

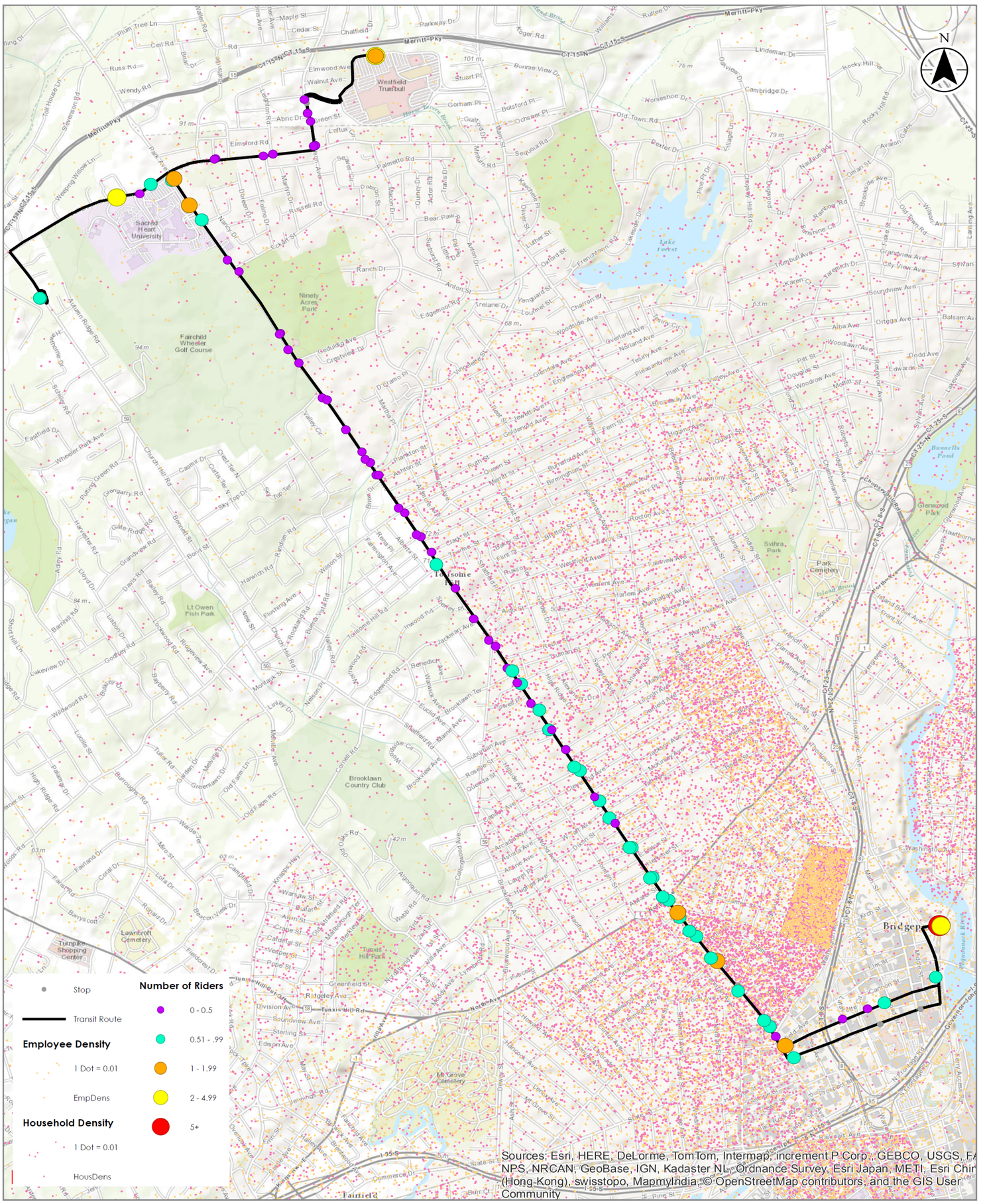
- Route Four stop activity is concentrated along the southern half of the route.
- Ridership for the northern half of the route is primarily limited to stops at Sacred Heart University and Westfield Trumbull Mall, which serve as regional employment centers, key destinations, and transfer points.
- Inbound AM peak trips serve a commuter-oriented market, with nearly all alightings occurring in Downtown Bridgeport.
- At all times of day, the segment of the route between Sacred Heart University and Capitol Ave. sees very low ridership. Land use in this area is low density residential, with few commercial or retail uses.
- Ridership during the midday is well balanced in both directions. Average boardings per hour remain at AM peak levels, due to the increase of activity at Sacred Heart University and Westfield Trumbull Mall.
- Ridership during the PM peak is again commuter-oriented, with the largest concentration of boardings occurring in Downtown Bridgeport for the outbound direction, and at Westfield Trumbull Mall in the inbound direction.
- This route features a simple to understand and efficient route design, traveling along Park Ave for the majority of the route.

Observations: Route 4 connects the Westfield Trumbull Mall to Sacred Heart University and Downtown Bridgeport, largely along Park Avenue. Similar to Route 3, it attracts more activity at its southern end, which appears to be mainly passengers traveling to Downtown Bridgeport in the morning and returning in the afternoon.

Changes under consideration: It is proposed that the northern section of this route be modified such that it operates with limited stop service between Capitol Avenue and the Westfield Trumbull Mall to better match demand with service. It will also improve travel time for passengers traveling along the northern half of the route.

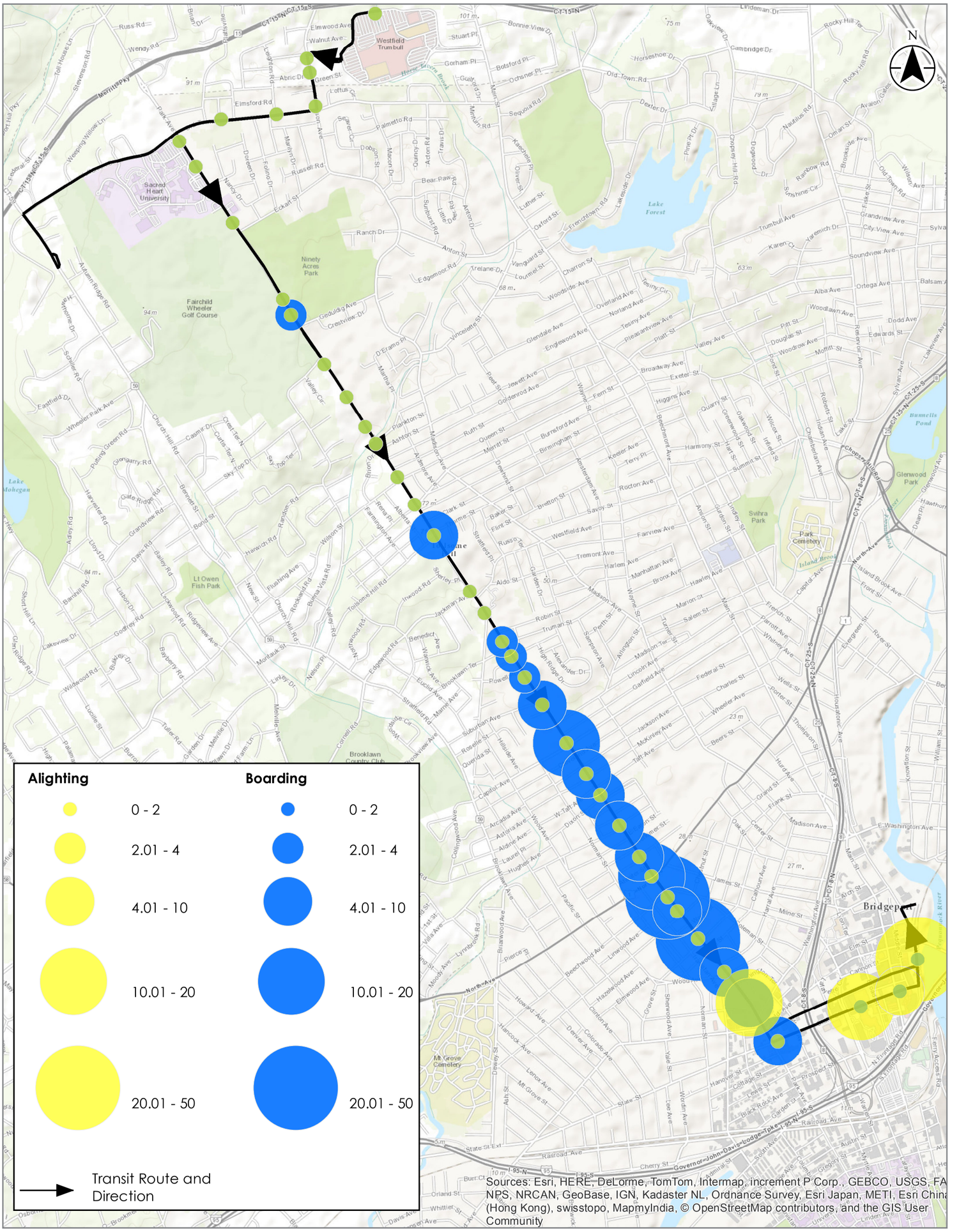
Total Daily Activity

Route 4



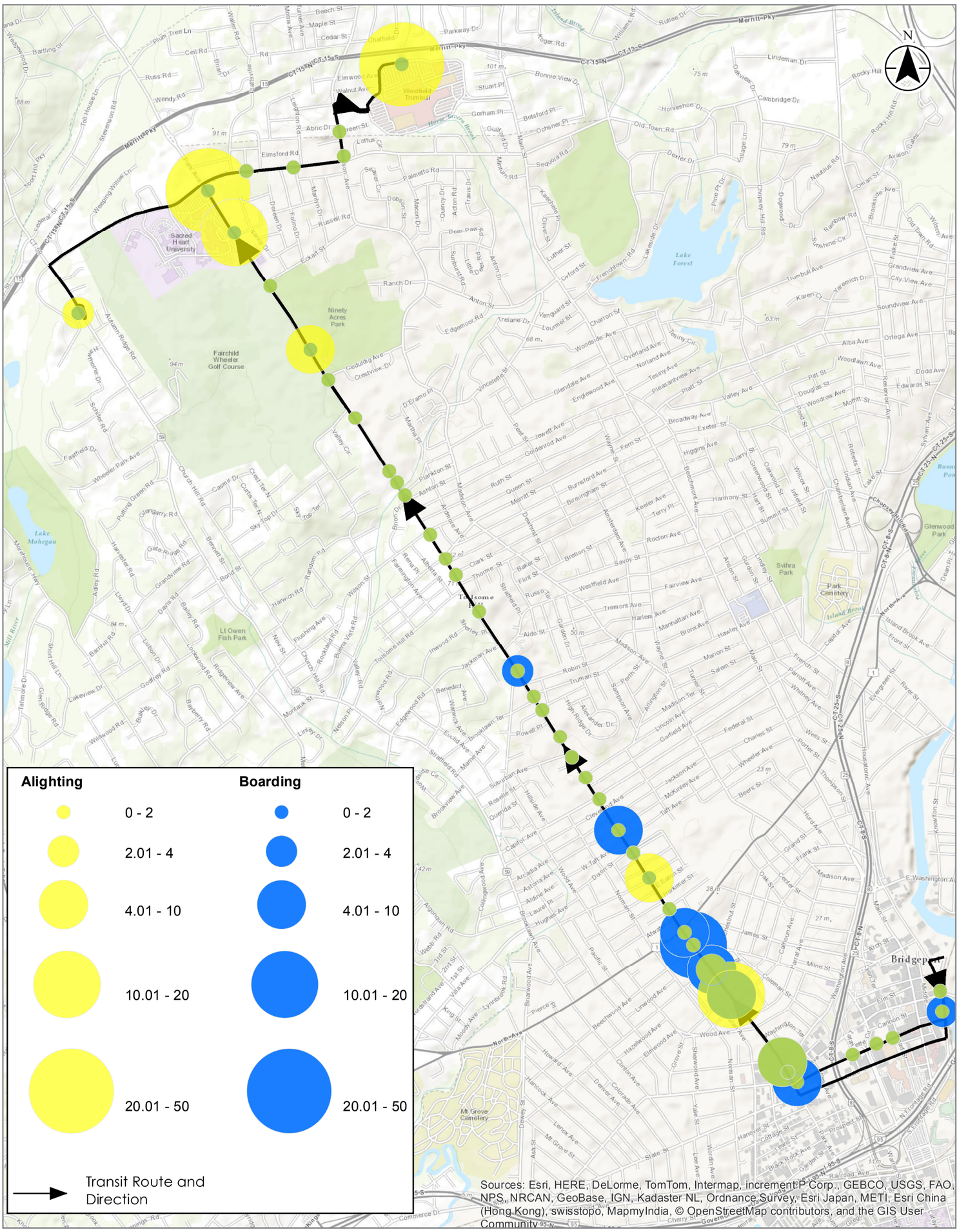
5am - 9am Inbound

Route 4



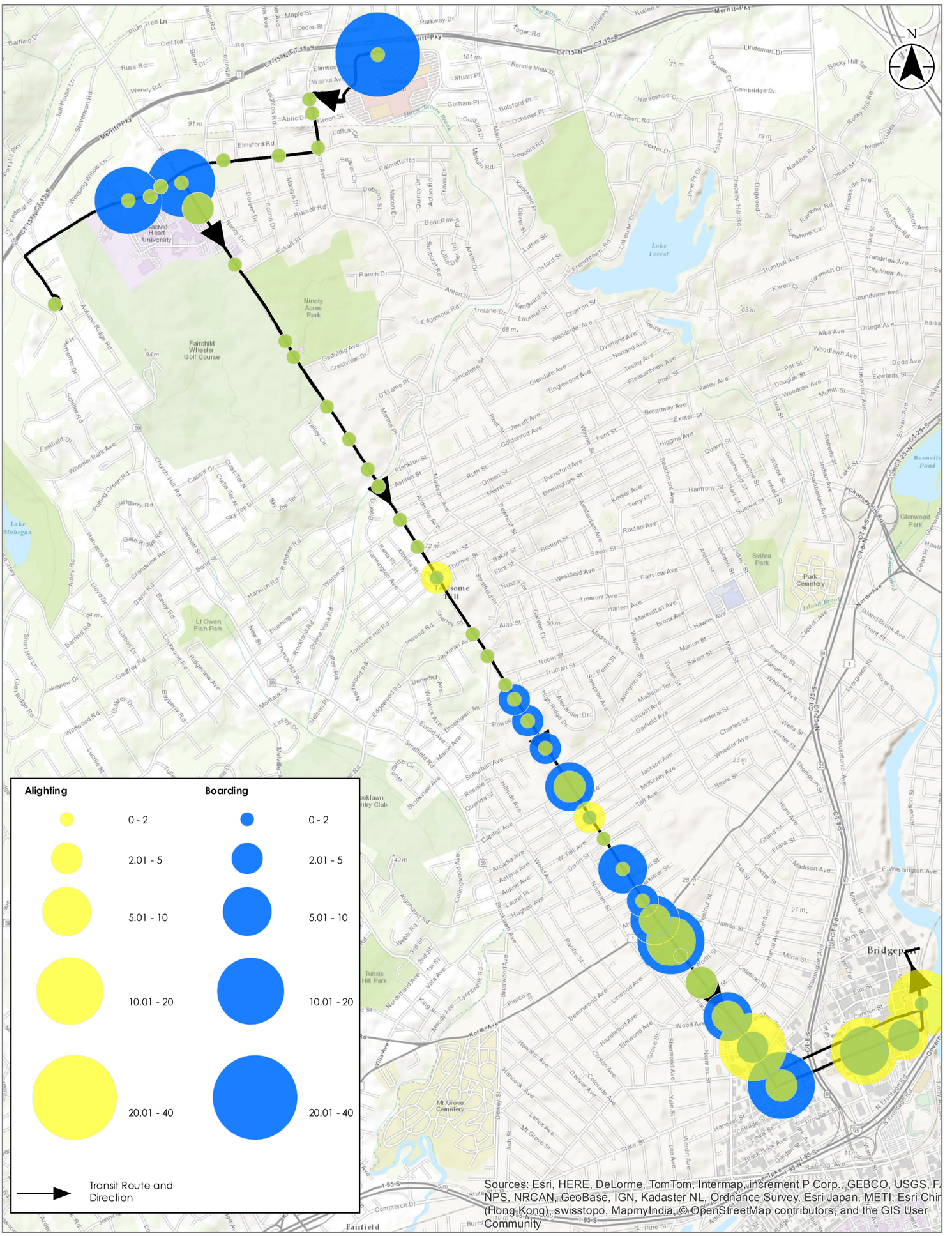
5am - 9am Outbound

Route 4



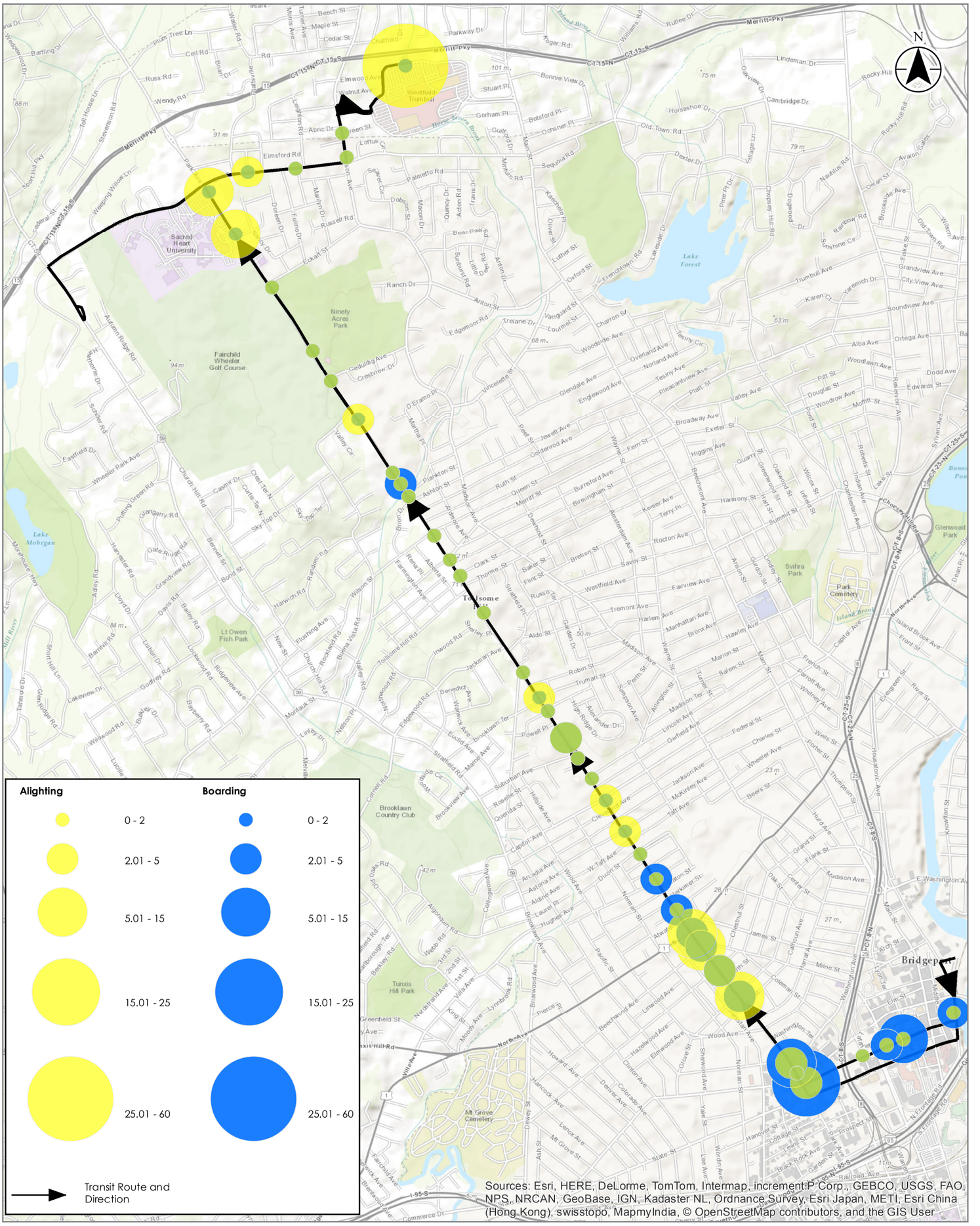
10am - 2pm Inbound

Route 4



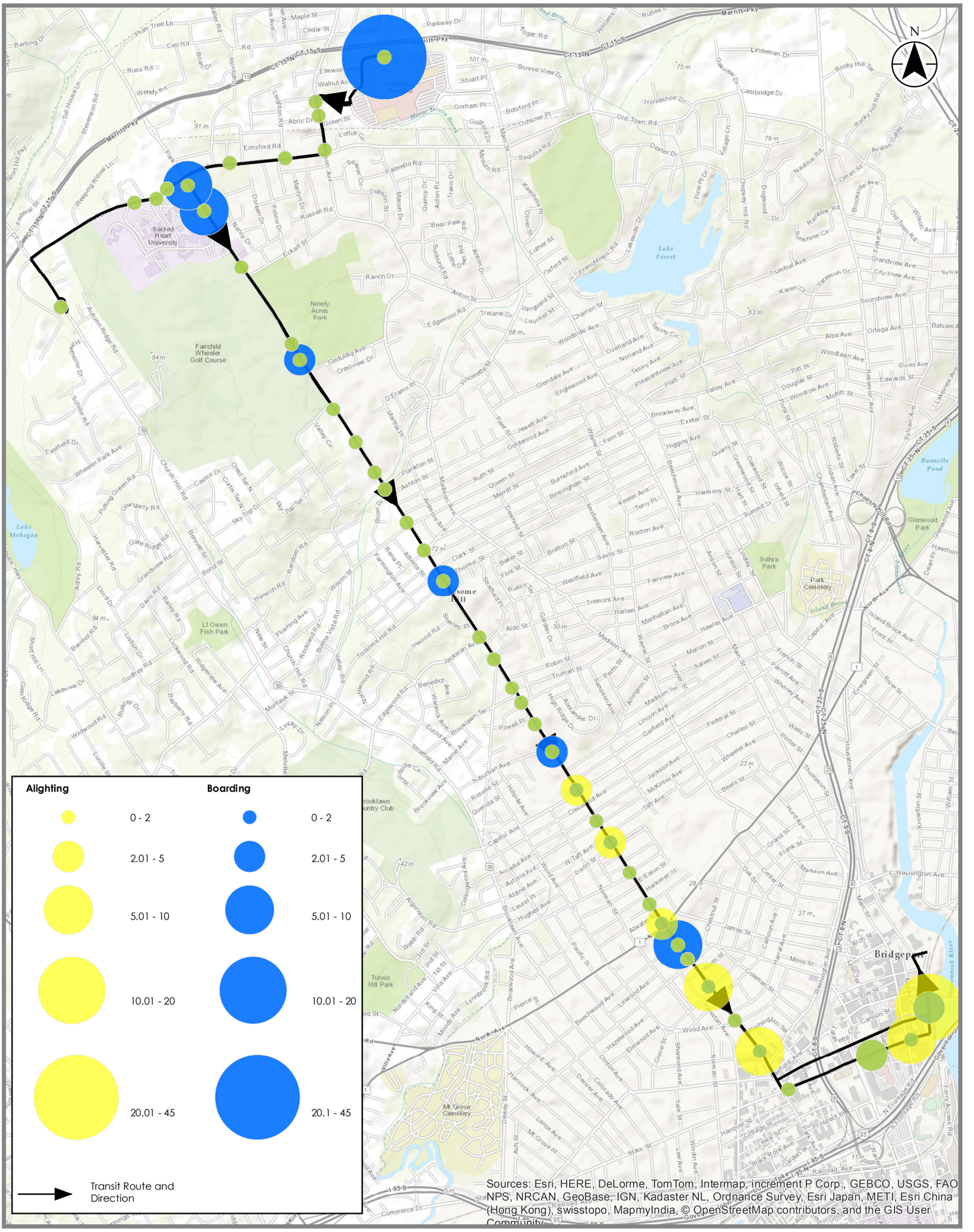
10am - 2pm Outbound

Route 4



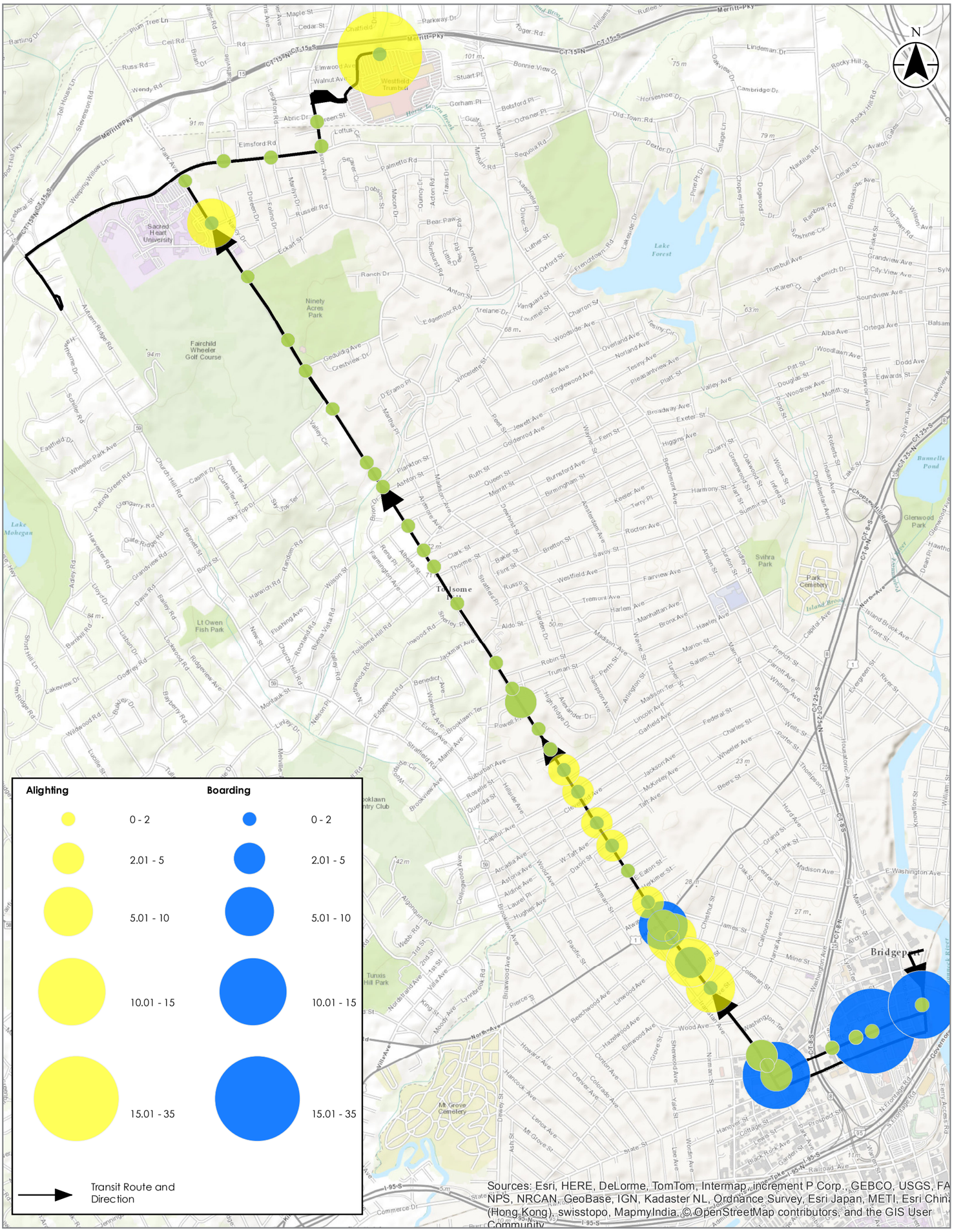
3pm - 6pm Inbound

Route 4



3pm - 6pm Outbound

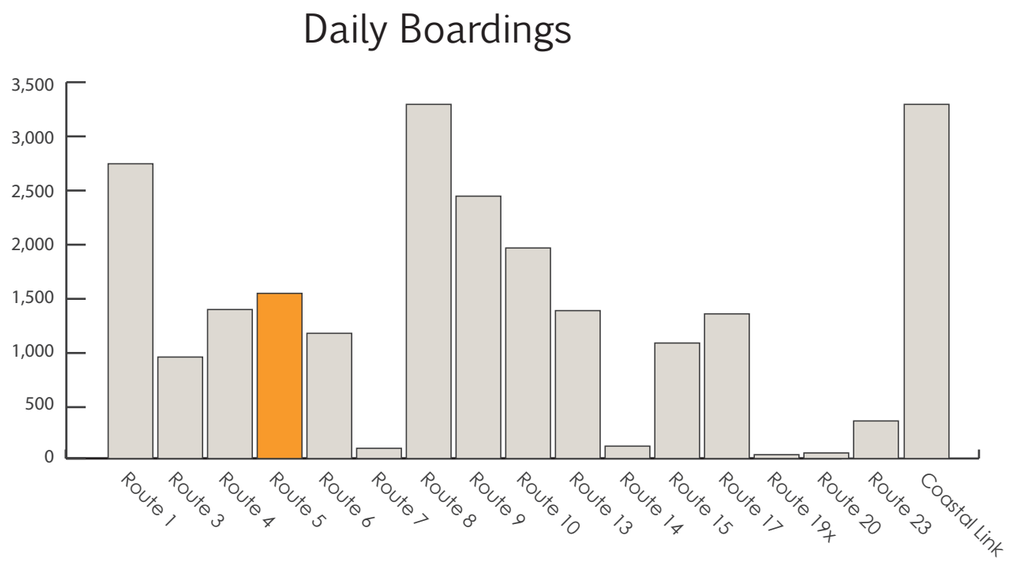
Route 4



Route Five

Downtown - Fairfield Ave - Black Rock

Route 5	
Weekday Daily Boardings	1,530
Percent of System Activity (Sampled Routes)	7%
Daily One-Way Revenue Trips	71
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	Future FTN
Number of Peak Buses	2
Efficiency (% Schedule Recovery)	28.3%
Average Boardings per Hour - AM Peak	94
Average Boardings per Hour - Midday	114
Average Boardings per Hour - PM Peak	89



Route Highlights:

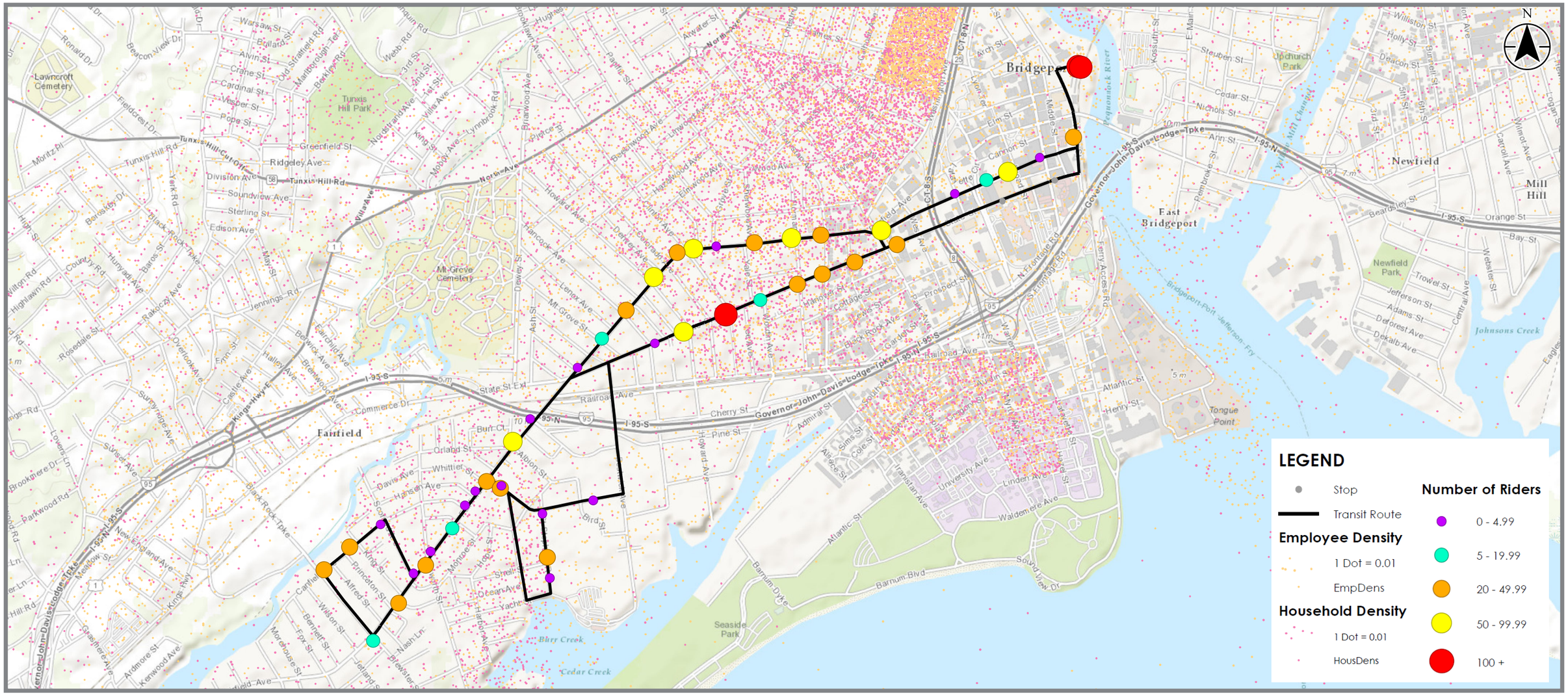
- Route Five has a confusing and circuitous service design with a number of one-way segments, which may impact how easy it is for customers to understand and use this route.
- Due to the route design, corresponding stops for a return trip may be located quite far apart from where a customer alighted on their first trip.
- This route directly services the PT Barnum Apartments, which is Connecticut's largest public housing project.
- The PT Barnum Apartments stop is the second busiest on the route, after the GBT Bus Station.
- This route plays an important role in terms of social equity for Bridgeport residents.
- Travel patterns for this route appear to be consistent throughout the day. Stops along State Street and Fairfield Ave. have a healthy amount of passenger activity both boardings and alightings.
- Ridership at stops towards both ends of the route (east of Hancock Ave and Downtown) are more unbalanced and reflect one way travel demand depending on time of day.

Route 5 connects Black Rock, the Fairfield Metro Station, and Downtown Bridgeport along State Street/Fairfield Avenue couplet. Unlike many other routes in the system, there is a fairly consistent pattern of passengers traveling in both directions throughout the day between Black Rock and Downtown Bridgeport. This is likely due to the need for passengers to access the train station or the downtown core to get to work.

It is proposed that this route be streamlined west of downtown to reduce the occurrence of one way loops and increase bi-directional service. This should make the service easier to understand for existing and new customers. Also, it is proposed to extend the route beyond Downtown Bridgeport to increase its service area and serve the proposed bus exchange on Bond Street, making up for some of the coverage lost from the proposed changes to Route 13.

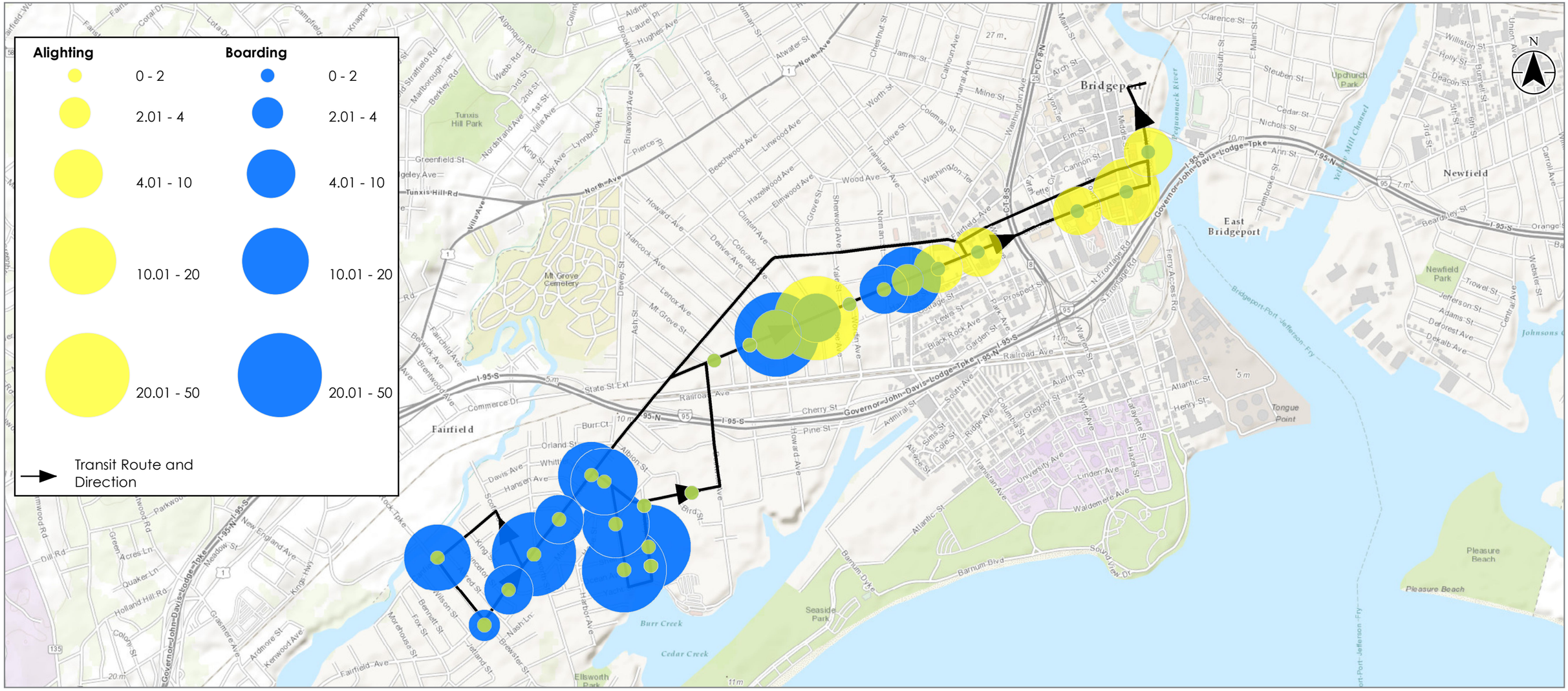
Total Daily Activity

Route 5



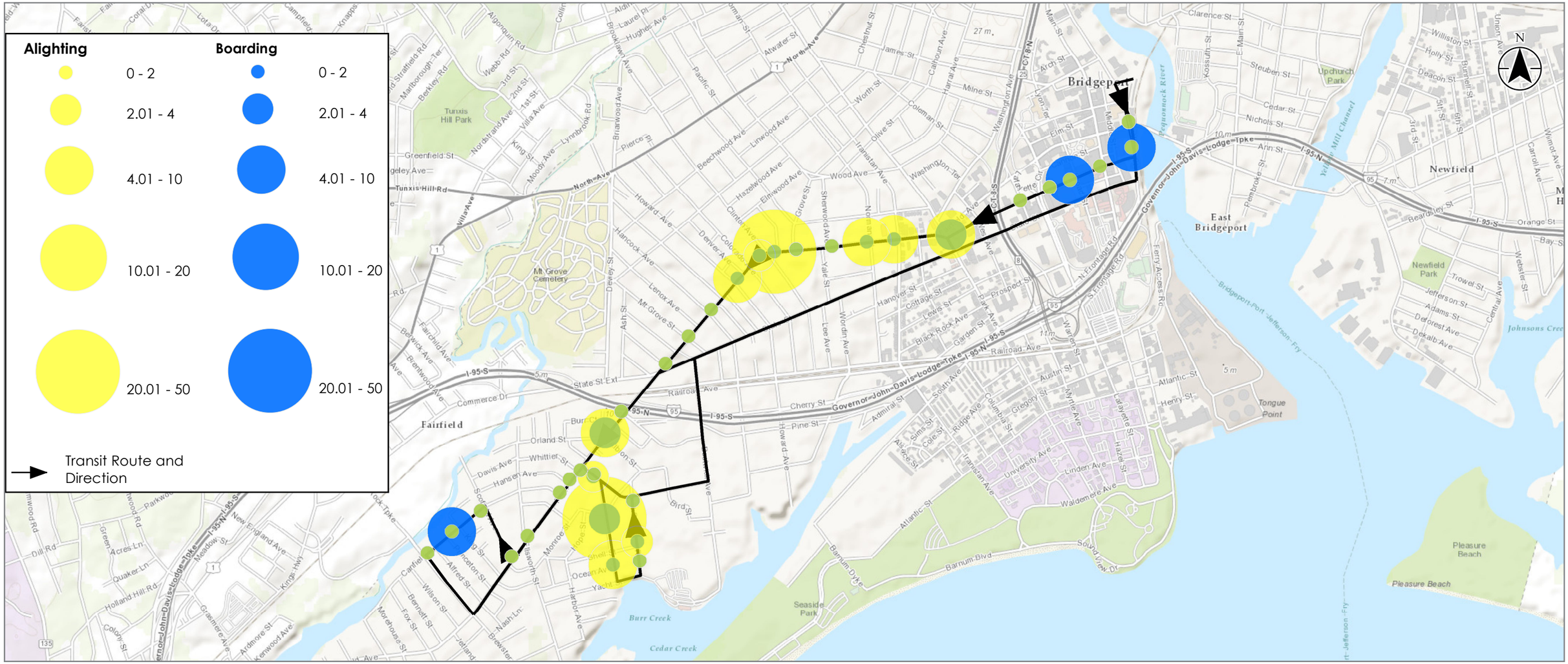
Route 5

5am - 9am Inbound



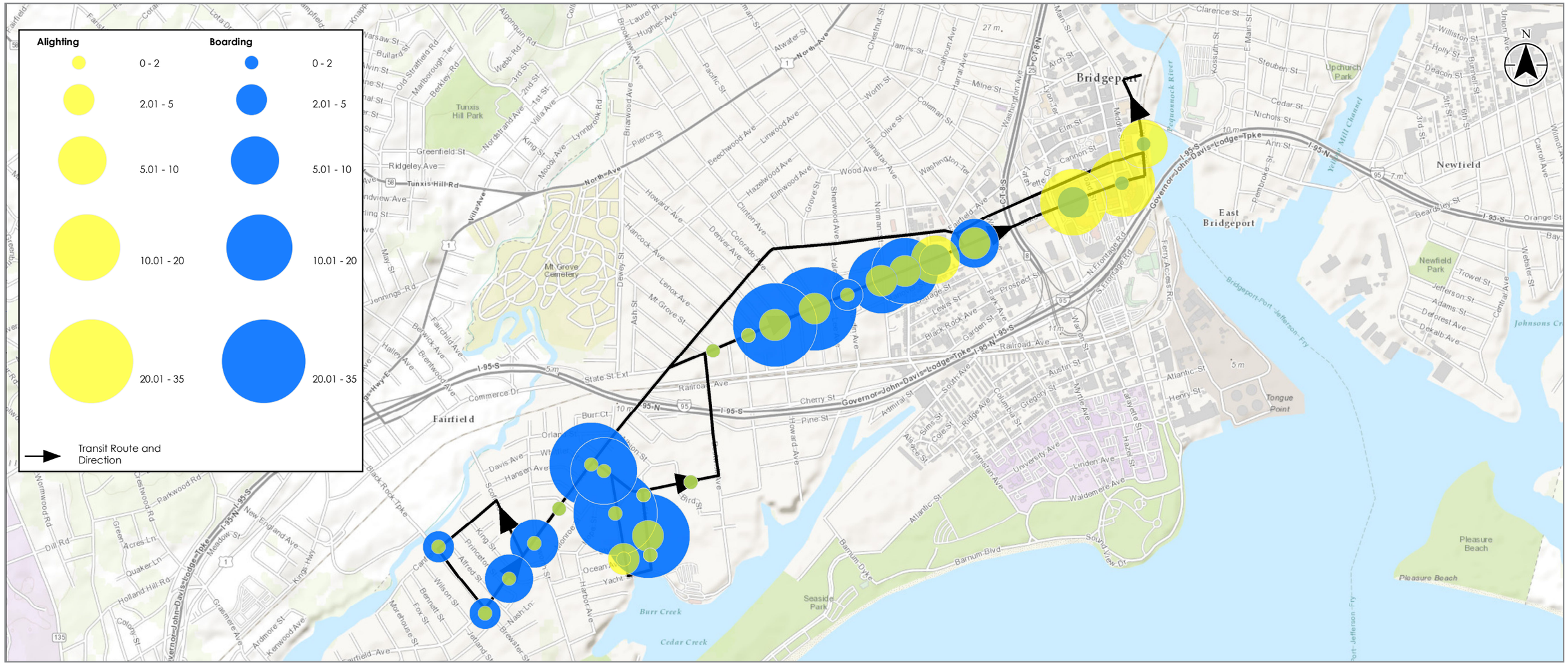
5am - 9am Outbound

Route 5



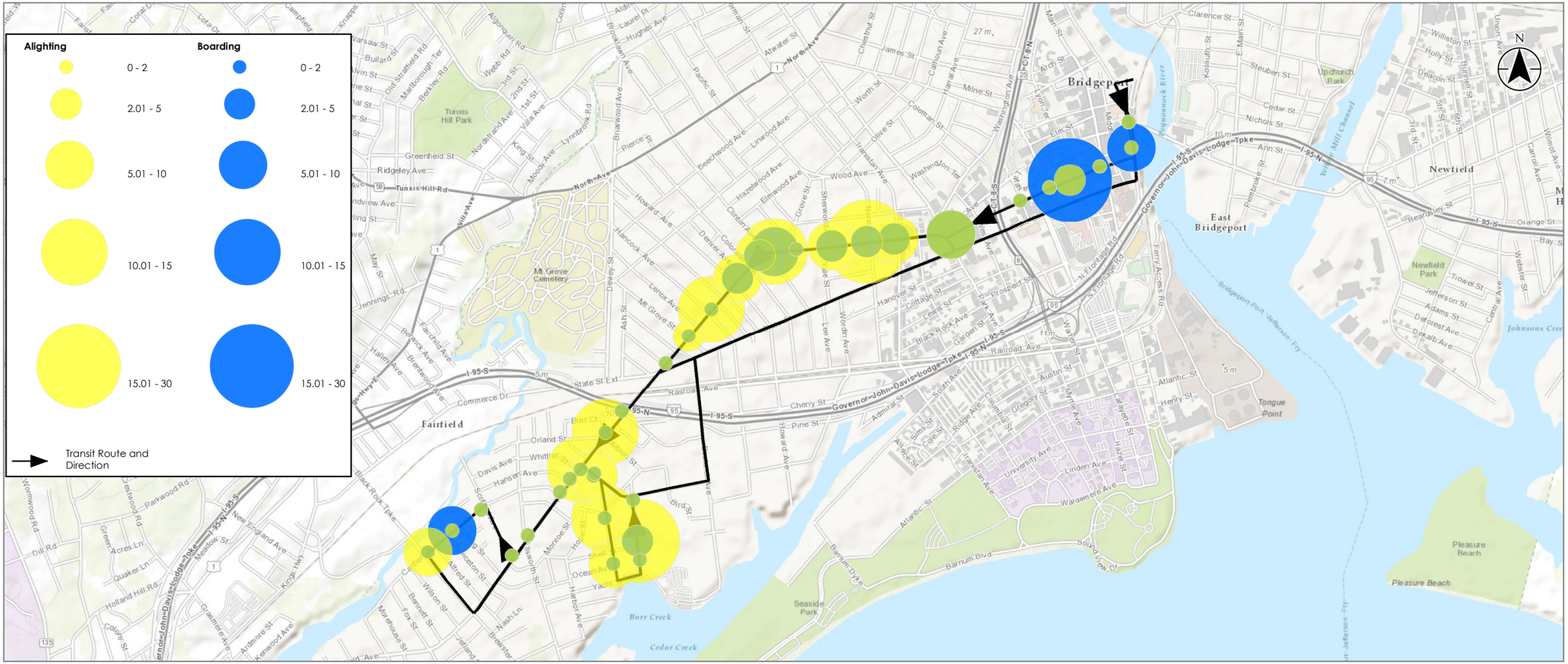
Route 5

10am - 2pm Inbound



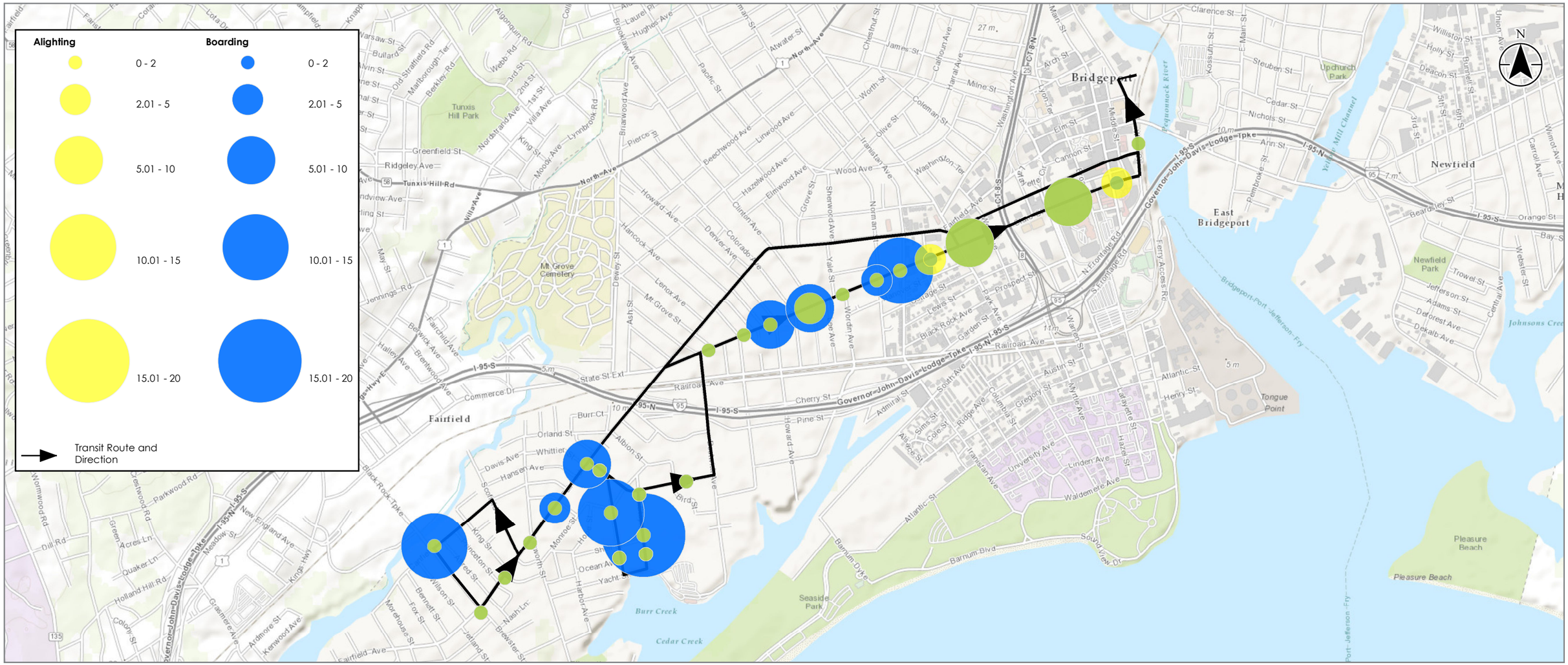
10am - 2pm Outbound

Route 5



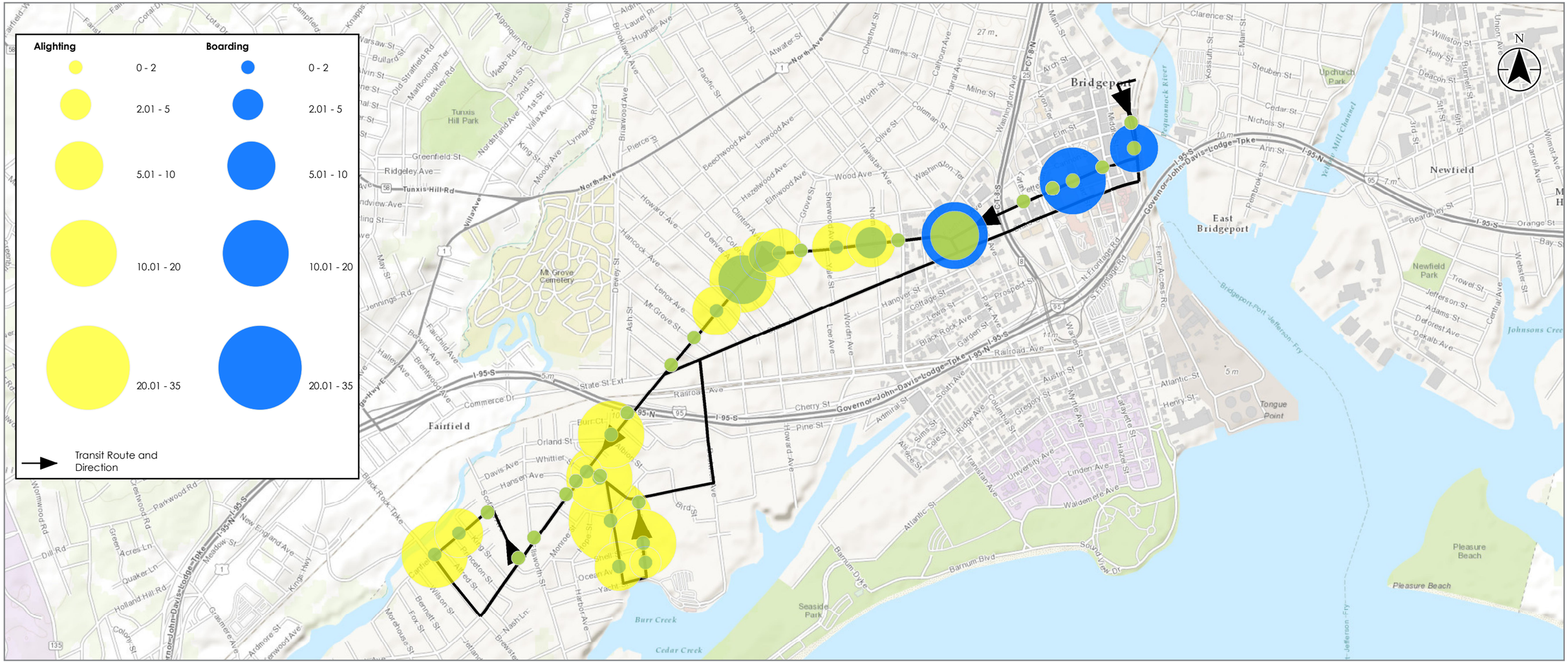
Route 5

3pm - 6pm Inbound



3pm - 6pm Outbound

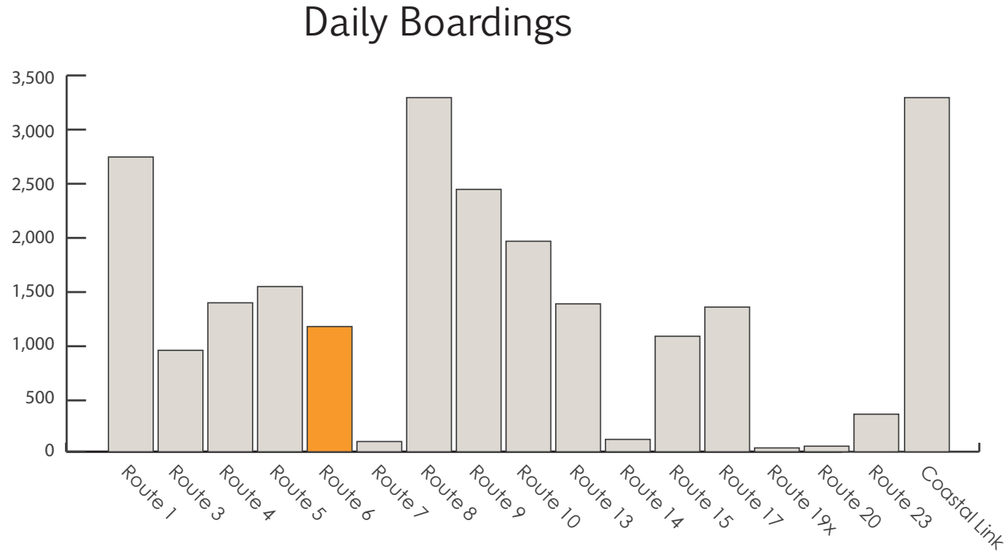
Route 5



Route Six

Downtown - Westfield Trumbull Mall

Route 6	
Weekday Daily Boardings	1,160
Percent of System Activity (Sampled Routes)	5%
Daily One-Way Revenue Trips	61
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	RTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	9.7%
Average Boardings per Hour - AM Peak	61
Average Boardings per Hour - Midday	73
Average Boardings per Hour - PM Peak	77



Route Highlights:

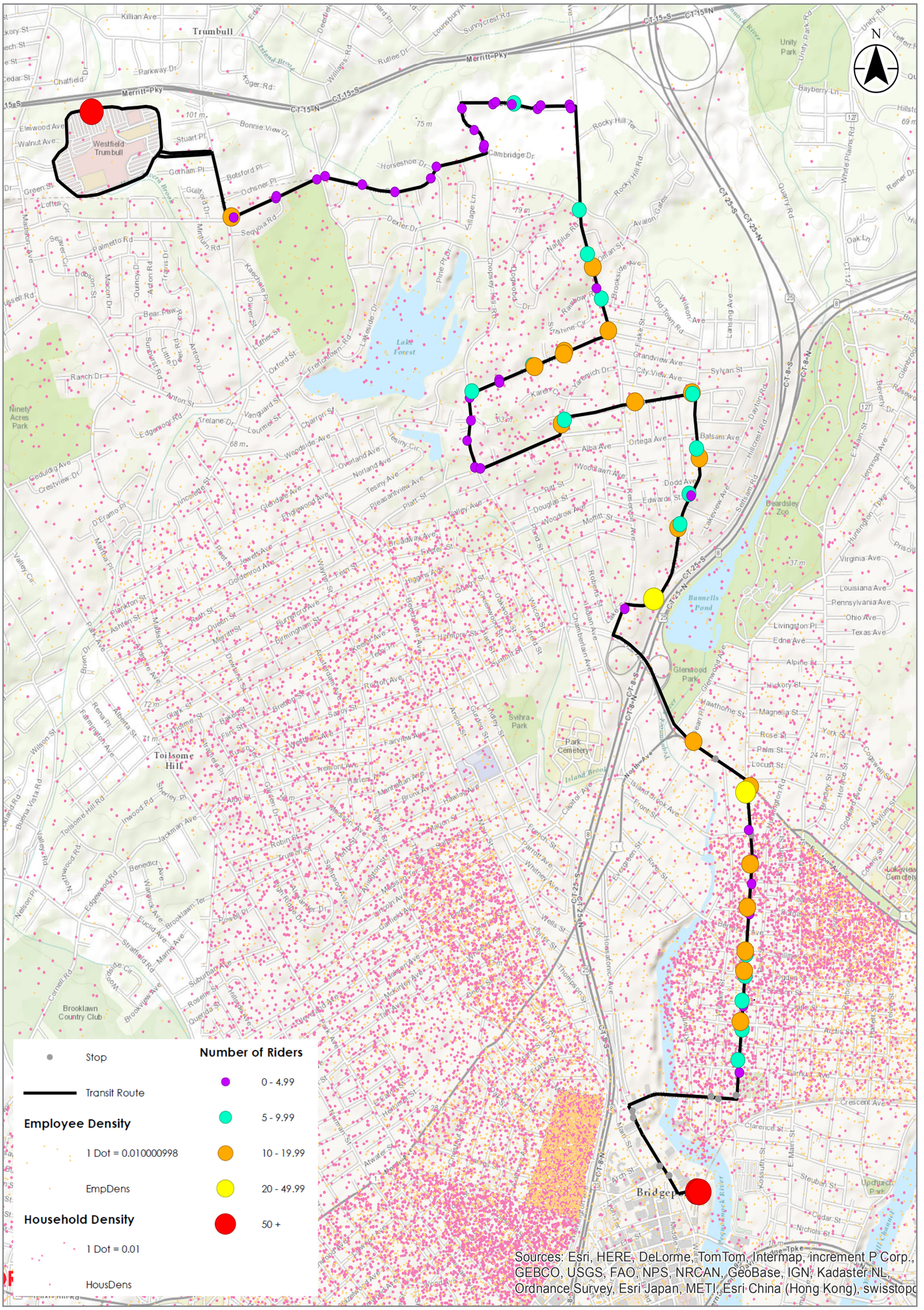
- Route Six has well balanced ridership along the entire route, with high activity stops scattered along the entire corridor.
- Ridership in the AM peak and midday is greater in the inbound direction than outbound, while in the outbound direction during these time periods stop activity is limited to key intersections and employment centers.
- In the PM peak, ridership patterns reverse, with greater ridership in the outbound direction.
- In general, alightings during this time match boardings from the AM peak for stops north of State Hwy 25. However, for stops on Noble Ave, ridership is lower during the PM peak, perhaps due to the proximity of other routes in parallel corridors.
- Westfield Trumbull Mall offers a strong northern anchor and transfer point for this route. However, the stops on Lindeman Dr. and Old Town Rd. to reach Westfield Trumbull Mall have extremely low utilization at all times of day.

Route 6 connects Westfield Trumbull Mall with Downtown Bridgeport via Old Town Road, Reservoir Avenue, Trumbull Avenue, Chopsey Hill Road, Sylvan Avenue, and Noble Avenue. Most of the route, including Westfield Trumbull Mall, has consistent activity except the very northern and east-west portions along Old Town Road.

It is proposed that this route be split in two to better match service with demand. The northern would connect a new bus exchange on Trumbull Avenue to a new crosstown route (proposed Route 24) as well as the replacement of the southern section of the route (proposed Route 11).

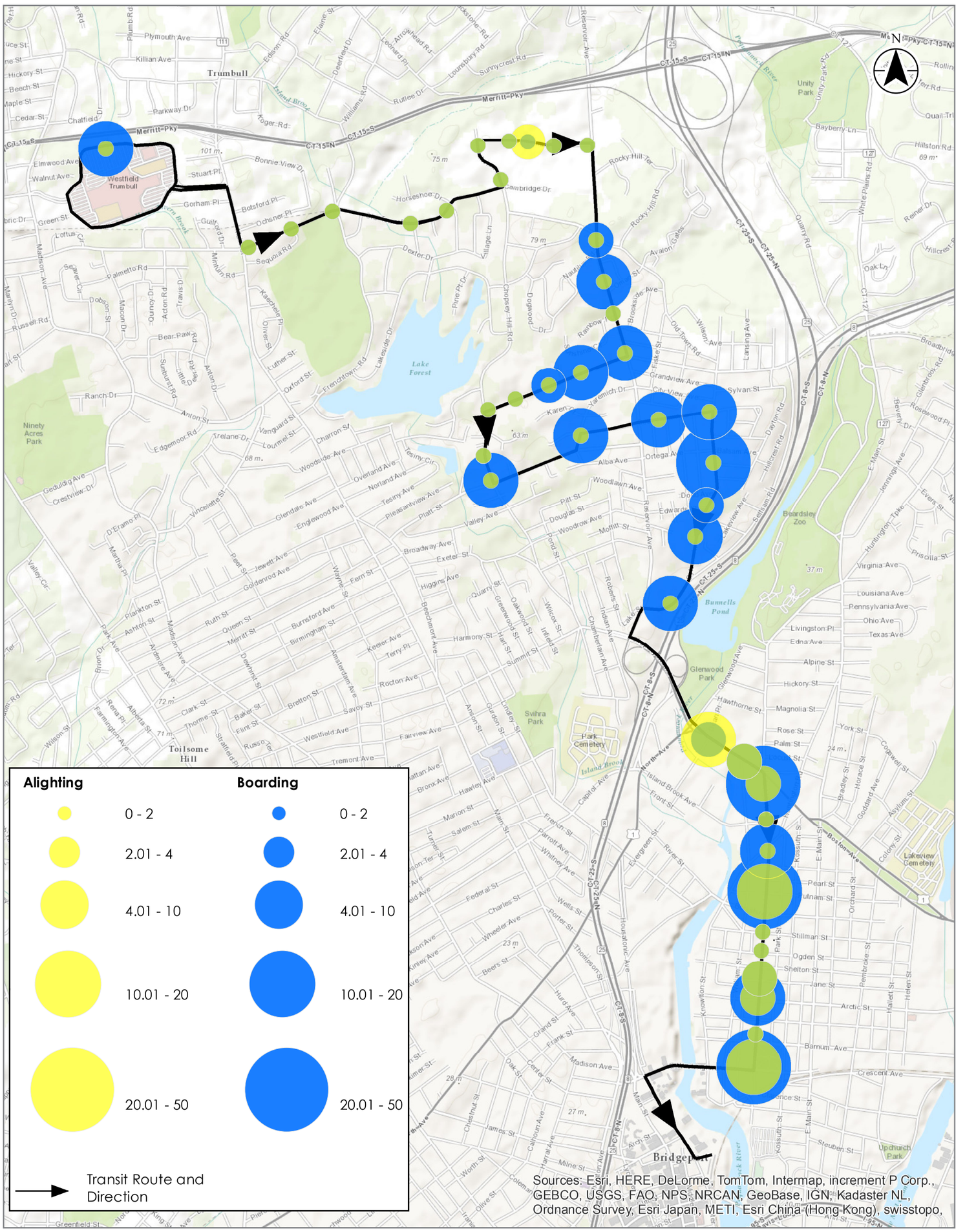
Total Daily Activity

Route 6



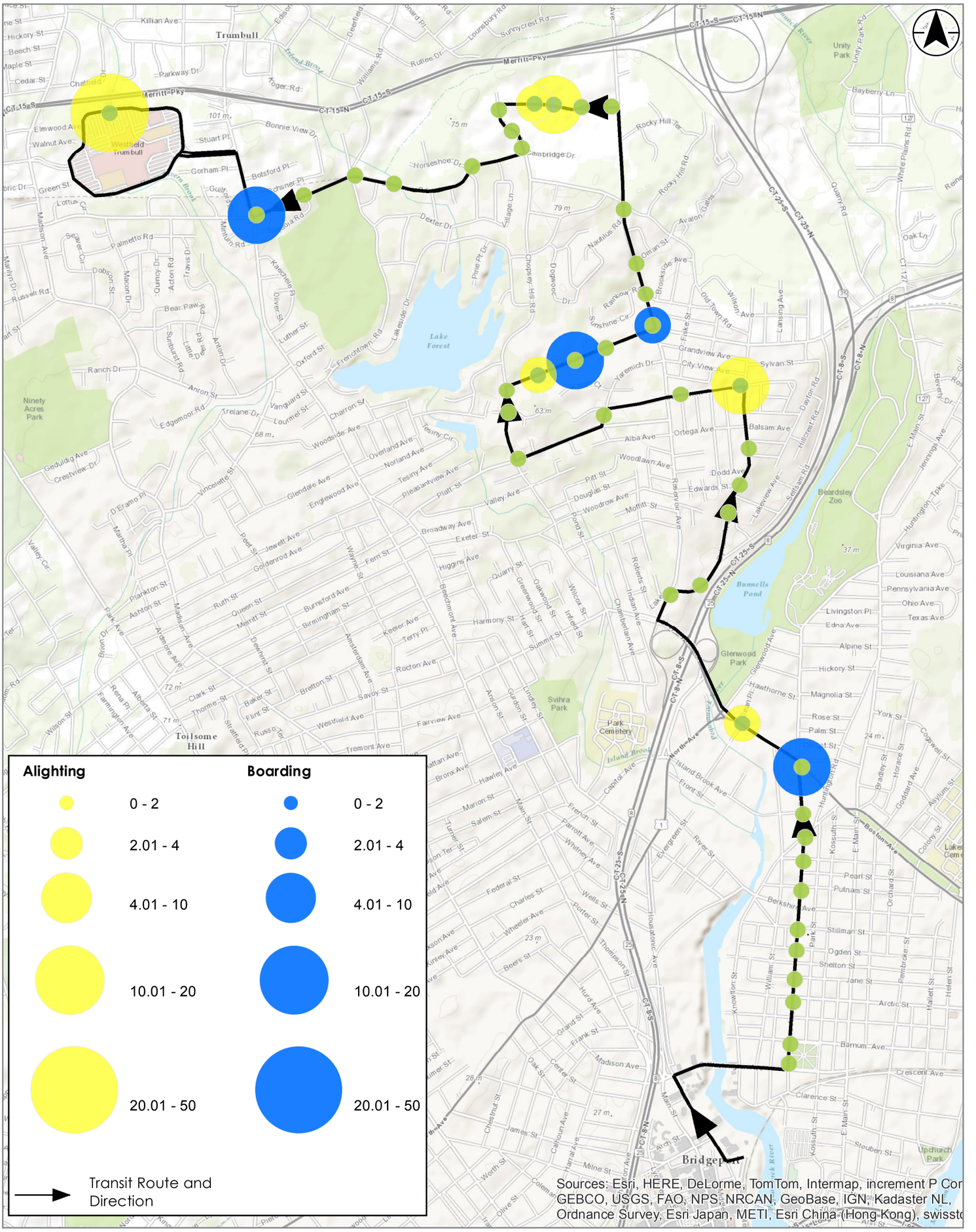
5am - 9am Inbound

Route 6



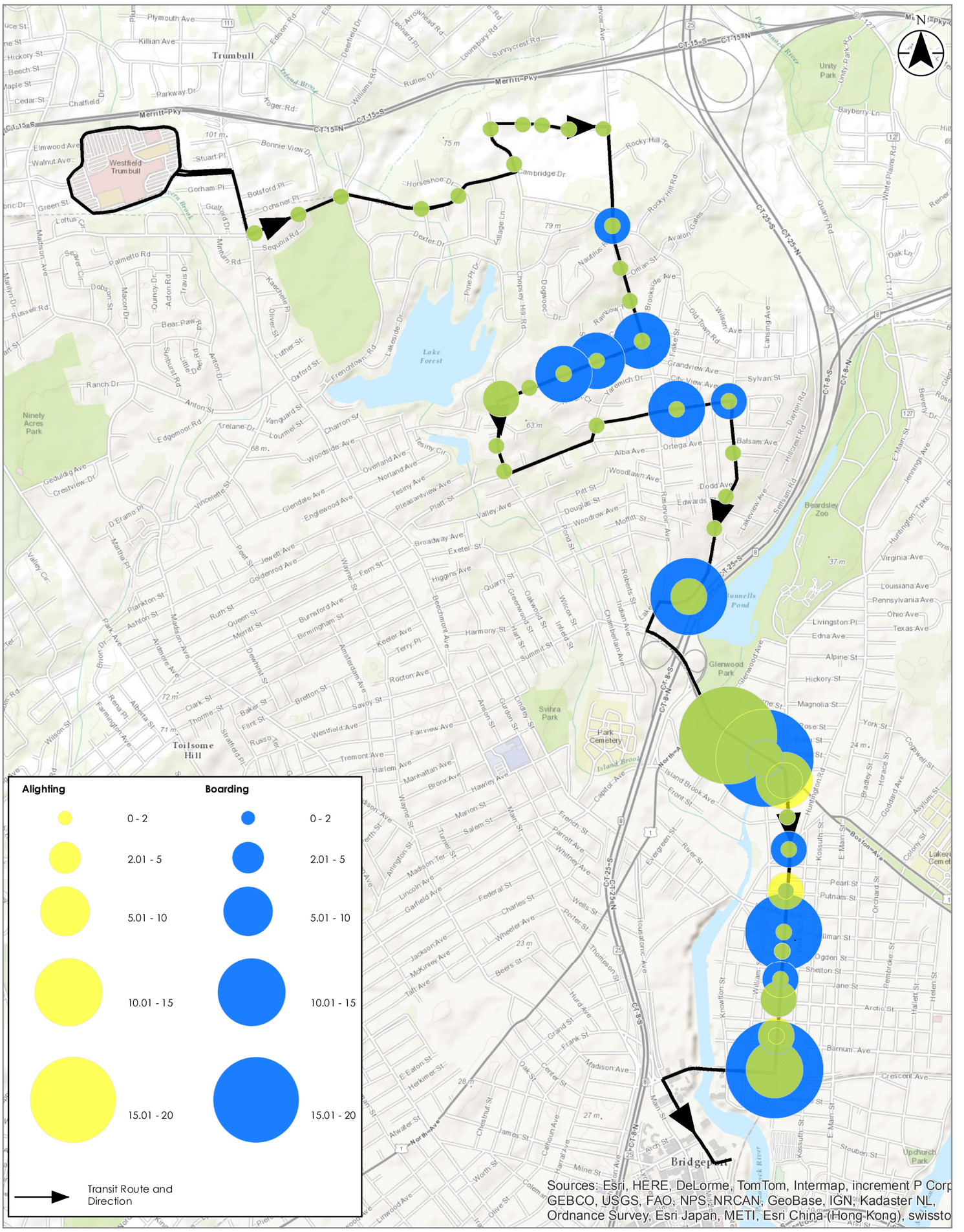
5am - 9am Outbound

Route 6



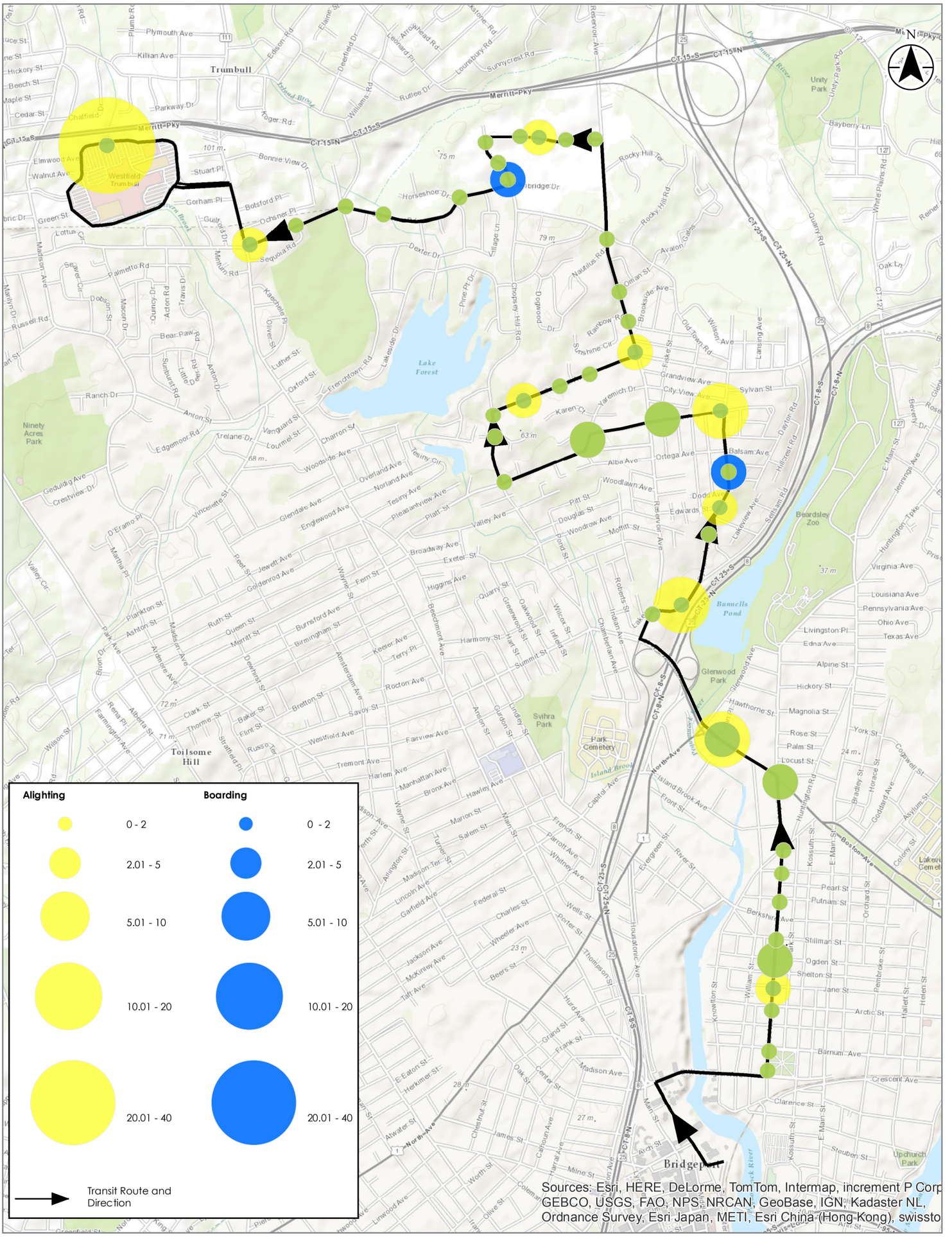
10am - 2pm Inbound

Route 6



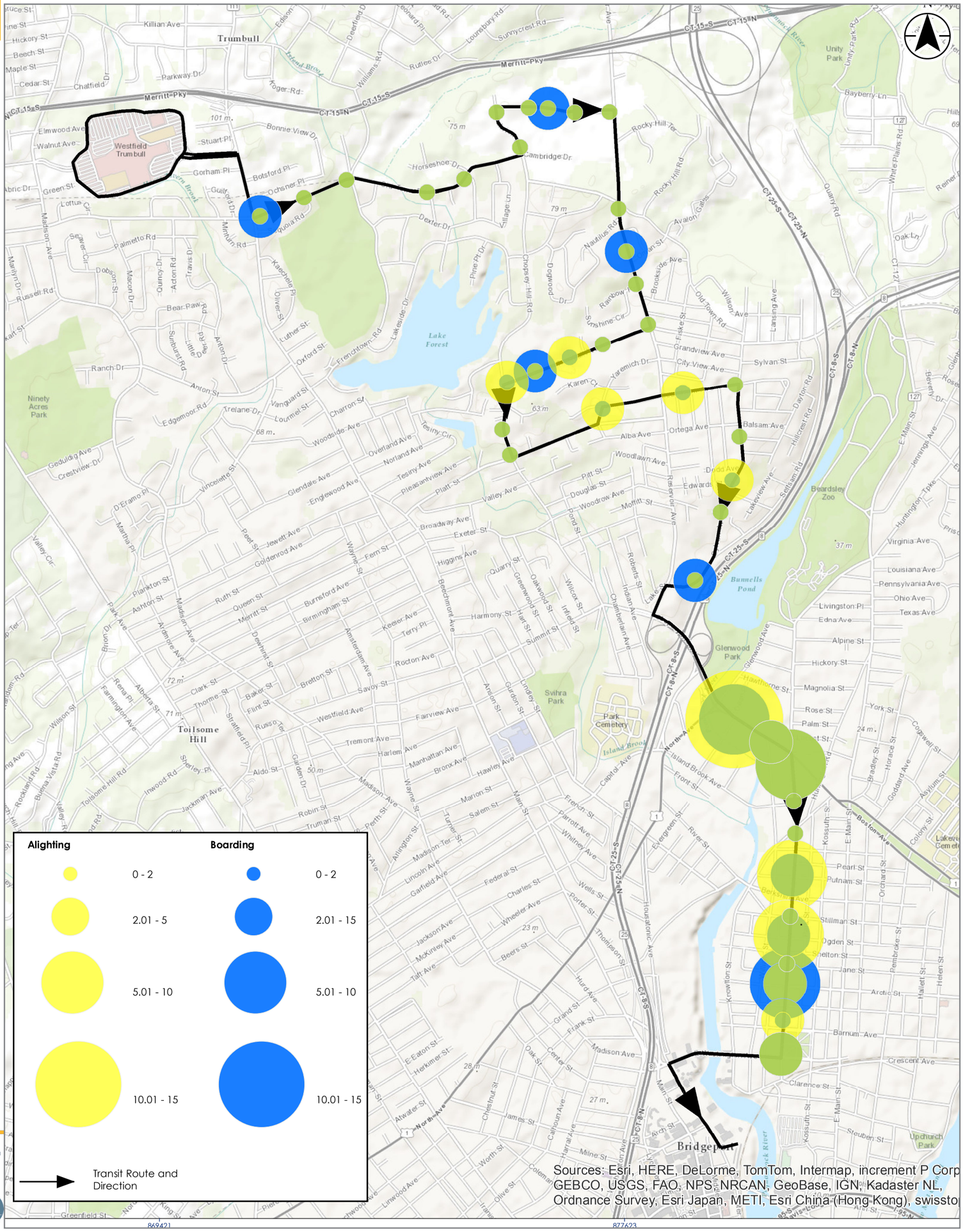
10am - 2pm Outbound

Route 6



3pm - 6pm Inbound

Route 6


Alighting
Boarding
0 - 2
0 - 2
2.01 - 5
2.01 - 15
5.01 - 10
5.01 - 10
10.01 - 15
10.01 - 15
Transit Route and Direction
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp, GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo
Trumbull
Bridgeport
Toilsome Hill
Lake Forest
Ninety Acres Park
Svihra Park
Glenwood Park
Beardsley Zoo
Unity Park
Bunnells Pond
Park Cemetery
Merritt Pky
CT-15-S
CT-15-N
CT-25-S
CT-25-N
CT-8-S
CT-8-N
North Ave
Main St
Fairfield Ave
Broadway Ave
Madison Ave
Crescent Ave
Barnum Ave
Island Brook Ave
Boston Ave
Park Ave
Stratford Ave
Trumbull Ave
Virginia Ave
Louisiana Ave
Pennsylvania Ave
Ohio Ave
Texas Ave
Livingston Pl
Edna Ave
Alpine St
Hickory St
Magnolia St
Rose St
Palm St
York St
Pearl St
Putnam St
Stillman St
Ogden St
Shelton St
Jane St
Arctic St
Barnum Ave
Clarence St
Steuben St
Upchurch Park
Lake Forest
Westfield Trumbull
Ranch Dr
Edgemoor Rd
Gedulig Ave
Crestview Dr
Valley Ctr
Ruth St
Queen St
Merritt St
Ashton St
Plankton St
Park Ave
Madison Ave
Alamitos Ave
Clark St
Thorne St
Baker St
Flint St
Russo Ter
Aldo St
Garden Dr
Robin St
Truman St
Perth St
Wayne St
Arlington St
Madison Ter St
Lincoln Ave
Garfield Ave
Jackson Ave
McKinley Ave
Taft Ave
Beers St
Wheeler Ave
Charles St
Federal St
Wells St
Porter St
Thorndale St
Hurd Ave
Grand St
Frank St
Madison Ave
Oak St
Center St
E Eaton St
Herkimer St
Atwater St
Chestnut St
James St
Calhoun Ave
Harral Ave
Milne St
Worth St
Olive St
Arch St
Main St
Knowlton St
Houstatonic Ave
Evergreen St
River St
Front St
Capitol Ave
Island Brook
Bradley St
Horace St
Goddard Ave
Asylum St
Colony St
Cornwell St
Lakeview Cemetery
Hawley Ave
Marion St
Salem St
Main St
French St
Parrott Ave
Whitney Ave
Anson St
Gordon St
Lindley St
Beechmont Ave
Quarry St
Greenwood St
Oakwood St
Wilcox St
Infield St
Harmony St
Hart St
Summit St
Higgins Ave
Roberts St
Chamberlain Ave
Indian Ave
Lake Ave
Reservoir Ave
Pond St
Douglas St
Woodrow Ave
Moffitt St
Platt St
Valley Ave
Exeter St
Woodlawn Ave
Dodd Ave
Edwards St
Lakeview Ave
Seitsam Rd
Alba Ave
Ortega Ave
Balsam Ave
Hillcrest Rd
Dayton Rd
Sylvan St
Lansing Ave
Wilson Ave
Old Town Rd
Grandview Ave
City View Ave
Yaremich Dr
Karen Ct
Sunshine Cir
Rainbow
Nautilus Rd
Brookside Ave
Fiske St
Rocky Hill Rd
Rocky Hill Ter
Avalon Gates
Cambridge Dr
Horseshoe Dr
Bonnie View Dr
Stuart Pl
Gorham Pl
Botsford Pl
Ochsner Pl
Guilford Dr
Mimulin Rd
Ipoia Rd
Dexter Dr
Village Ln
Chipsey Hill Rd
Dogwood Dr
Pine Pl Dr
Lakeside Dr
Frenchtown Rd
Oxford St
Luther St
Oliver St
Katahdin Pl
Travis Dr
Acton Rd
Macon Dr
Quincy Dr
Dobson St
Madison Ave
Palmetto Rd
Russell Rd
Marilynn Dr
Bear Paw Rd
Little Dr
Sunburst Rd
Anton Dr
Anton St
Trelane Dr
Lourmel St
Vanguard St
Charron St
Woodside Ave
Overland Ave
Norland Ave
Tesiny Ave
Tesiny Cir
Pleasantview Ave
Englewood Ave
Glendale Ave
Vincelette St
Peet St
Jewett Ave
Goldenrod Ave
Wayne St
Fern St
Burnsford Ave
Birmingham St
Keeler Ave
Tery Pl
Roston Ave
Bretton St
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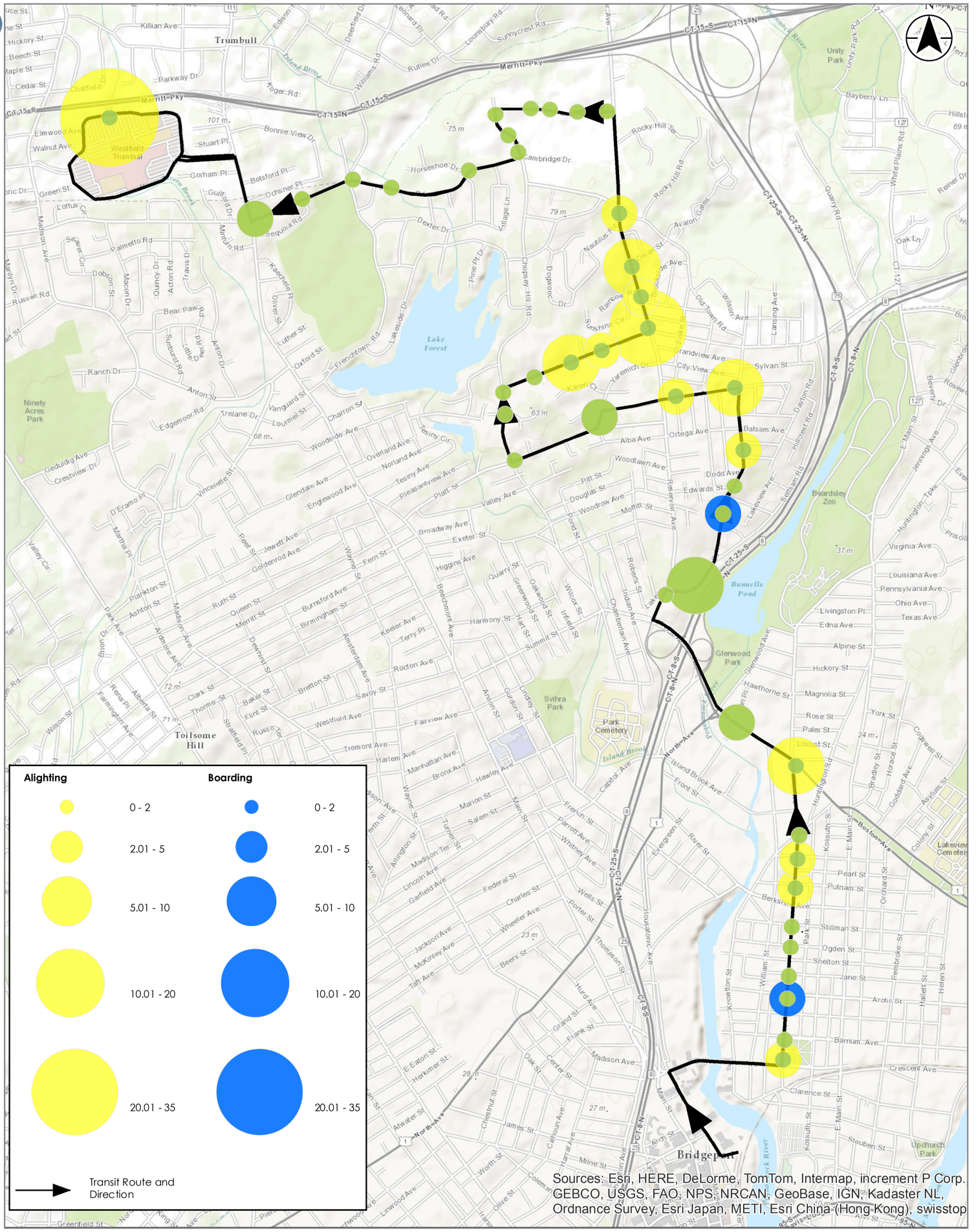
Amsterdam Ave
Westfield Ave
Fairview Ave
Tremont Ave
Harlem Ave
Manhattan Ave
Bronx Ave

3pm - 6pm Outbound

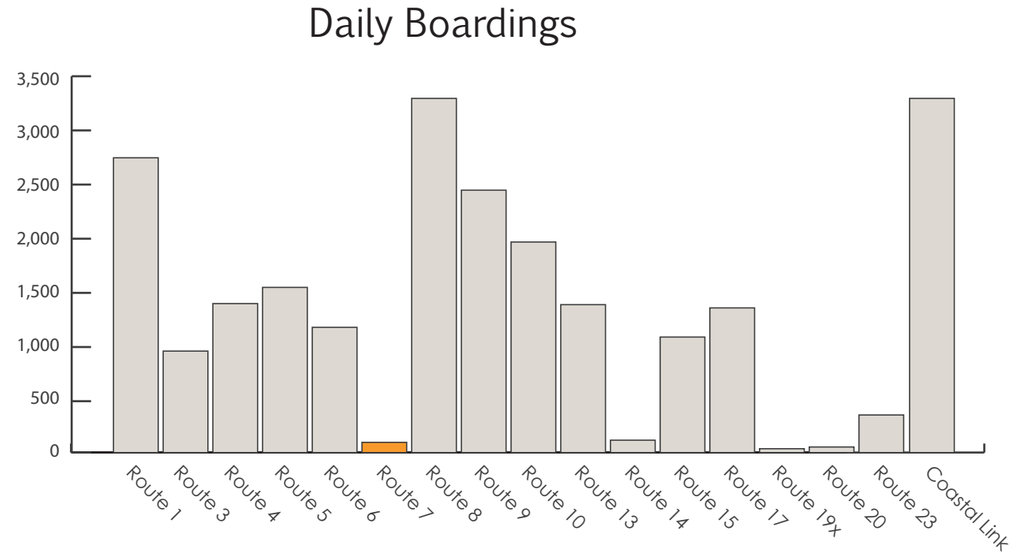
Route 6



Route Seven

Downtown - Commerce Dr - Fairfield Station

Route 7	
Weekday Daily Boardings	95
Percent of System Activity (Sampled Routes)	0.4%
Daily One-Way Revenue Trips	14
Peak / Off-Peak Headway (Minutes)	60
Service Type	LTN
Number of Peak Buses	1
Efficiency (% Schedule Recovery)	14.7%
Average Boardings per Hour - AM Peak	
Average Boardings per Hour - Midday	
Average Boardings per Hour - PM Peak	29



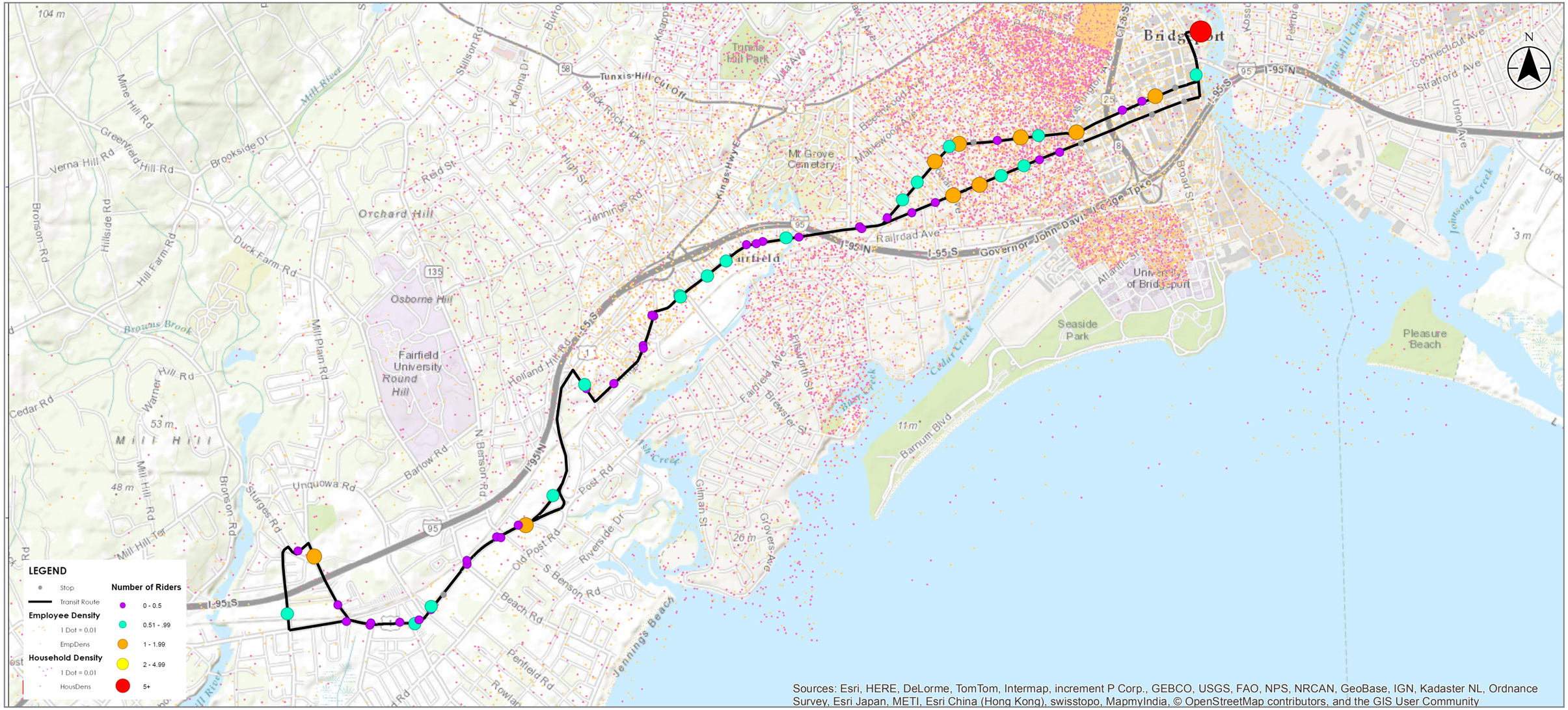
Route Highlights:

- Route Seven is one of the lowest performers in the GBT system, offering peak-period service between Downtown Bridgeport and Carolton Hospital.
- The majority of stops along the entire route have less than four riders.
- Of the ten stops with more than four riders, seven are located on State St. and Fairfield Ave. where service is duplicated by Route 5.
- Other stops with more than four riders are the Carolton Hospital, Fairfield Circle, and the GBT Bus Station.

This route connects Fairfield Train Station, Fairfield Metro Center, and Downtown Bridgeport. It is proposed to realign the eastern end of this route along Kings Highway E / North Avenue (Highway 1) and Beechwood Avenue to reduce redundancy with Route 5.

Total Daily Activity

Route 7



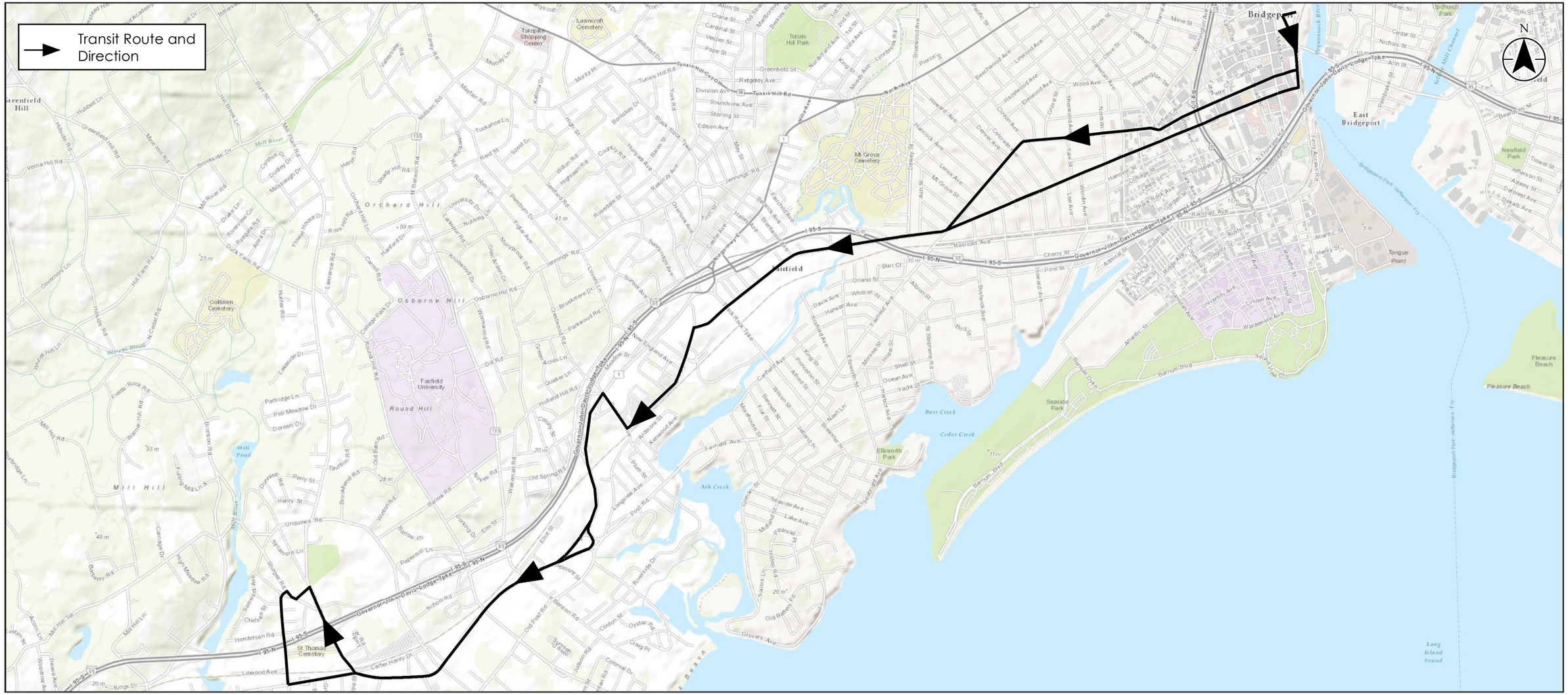
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route 7

5am - 9am Inbound

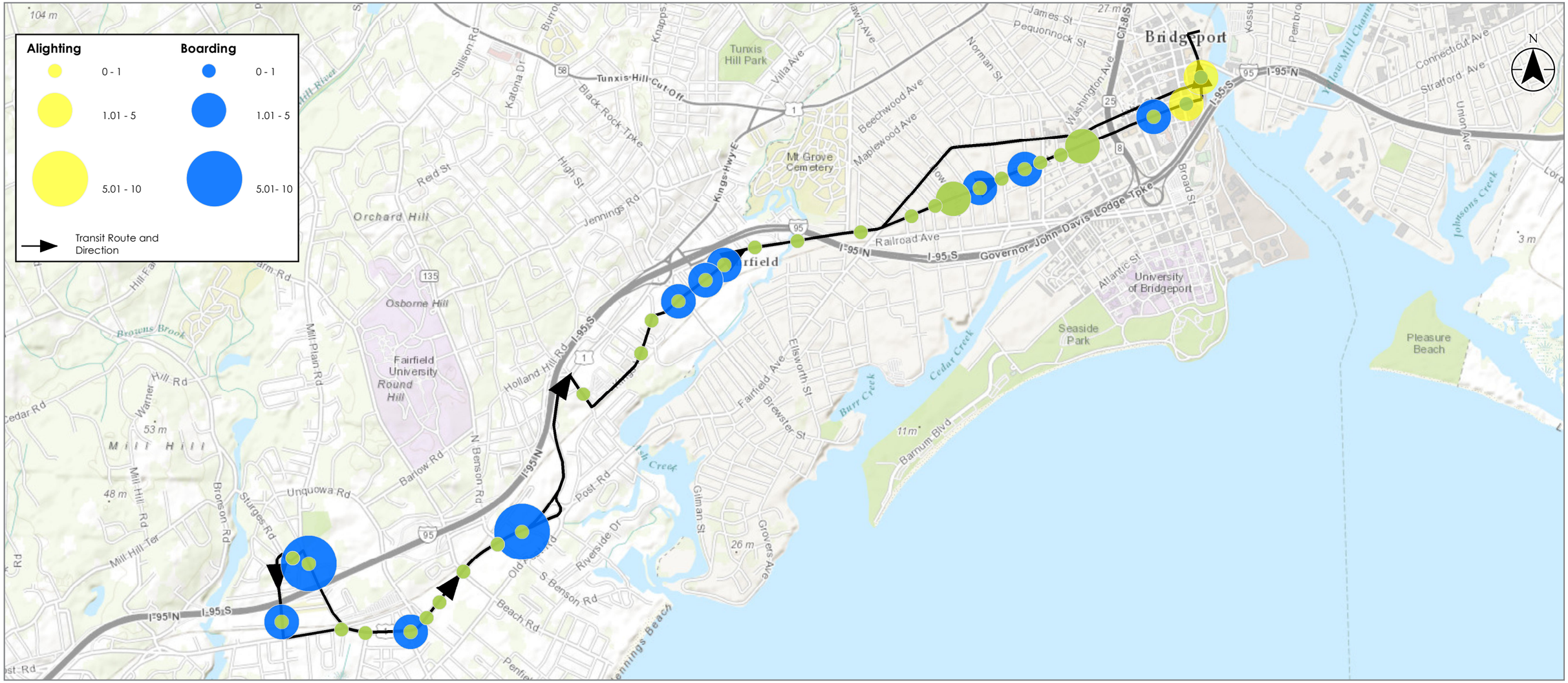
5am - 9am Outbound

Route 7



Route 7

3pm - 6pm Inbound



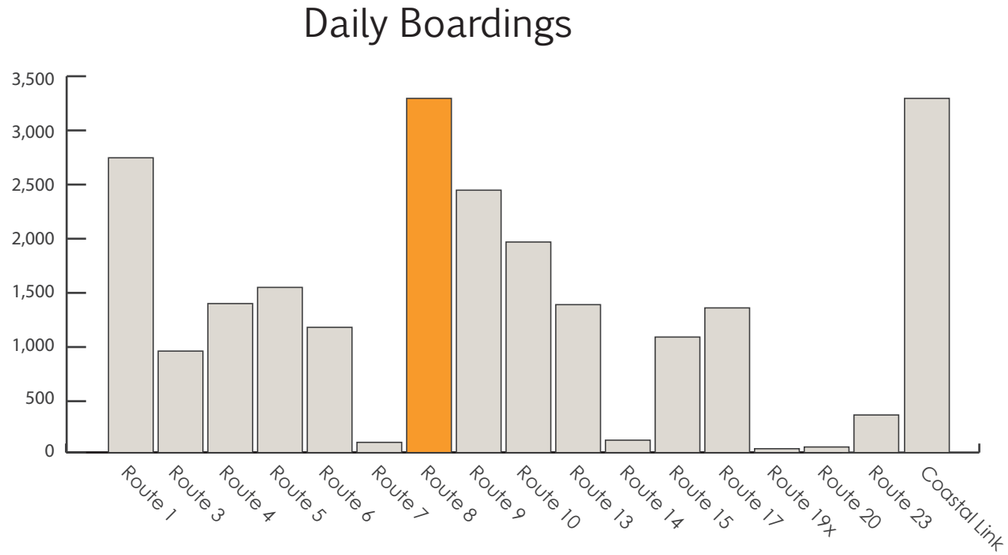
3pm - 6pm Outbound

Route 7

Route Eight

Downtown - Main St - Westfield Trumbull Mall

Route 8	
Weekday Daily Boardings	3,280
Percent of System Activity (Sampled Routes)	14%
Daily One-Way Revenue Trips	95
Peak / Off-Peak Headway (Minutes)	20 / 20
Service Type	Future FTN
Number of Peak Buses	4
Efficiency (% Schedule Recovery)	23.6%
Average Boardings per Hour - AM Peak	199
Average Boardings per Hour - Midday	233
Average Boardings per Hour - PM Peak	239



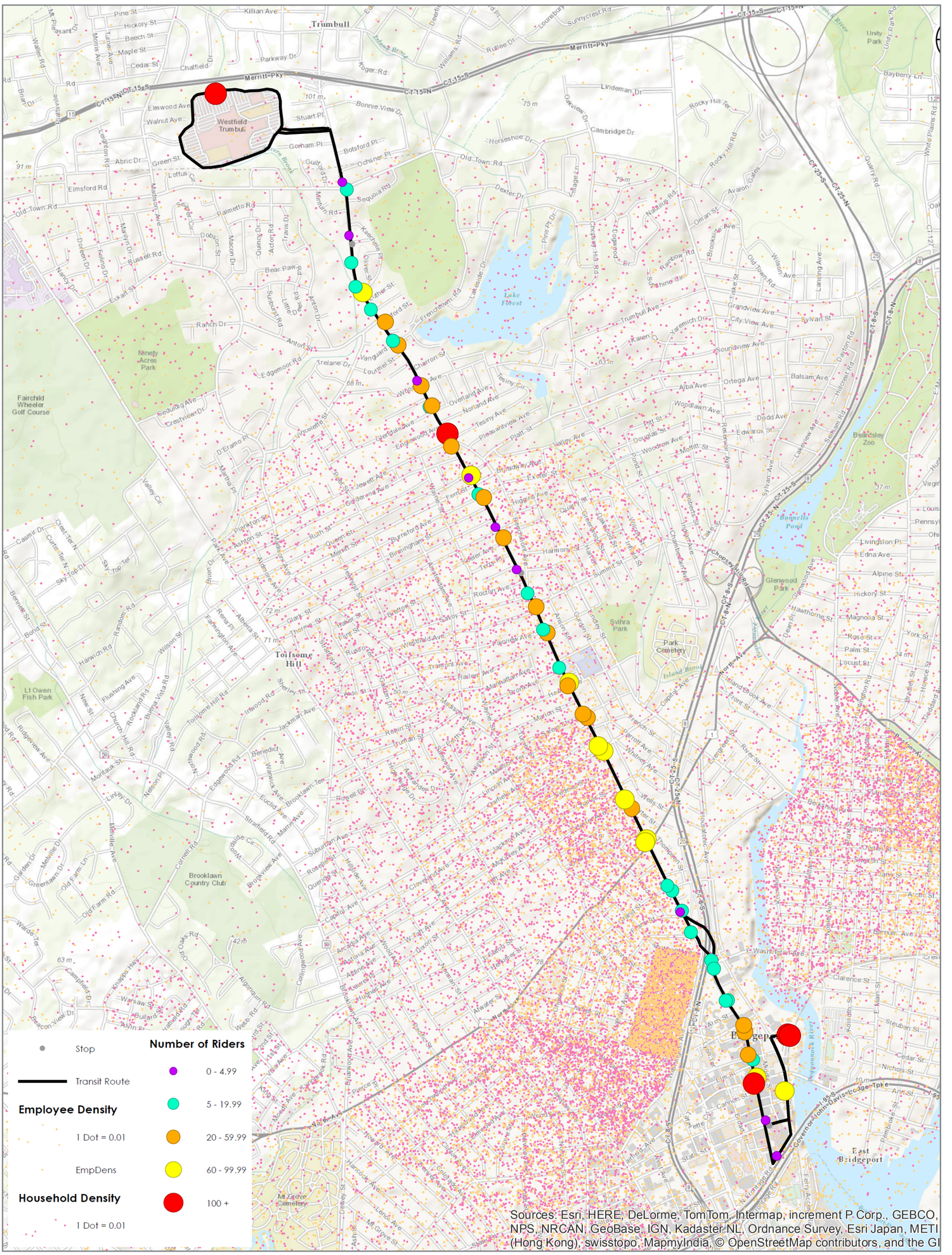
Route Highlights:

- Route Eight is the second busiest line in the GBT network and demonstrates strong ridership and stop utilization along the entire corridor.
- This is a very simple and direct service, traveling through areas of higher density along Main Street.
- There is strong ridership in both directions during the AM peak. In the inbound direction, a larger percentage of alightings occur in Downtown Bridgeport. In the outbound direction, boardings and alightings are more balanced over the length of the route.
- During the midday, there is a drop in inbound ridership, while outbound ridership remains relatively unchanged.
- During the PM peak, inbound ridership drops off substantially compared to the other periods for the stops between Westfield Trumbull Mall and Bronx Ave. However, outbound travel patterns remain well balanced throughout the day.
- Outbound during the PM, there is a concentration of boardings in Downtown Bridgeport, while the remainder of the route remains well balanced in terms of boardings and alightings.

Route 8 is a high ridership route with about 200 boardings per hour in the morning and afternoon peaks that connects Downtown Bridgeport with the Westfield Trumbull Mall. Given the overall ridership on this route, its balanced demand throughout the day and in both directions, and its direct routing, this route has been identified as a component of the proposed BRT network.

Total Daily Activity

Route 8

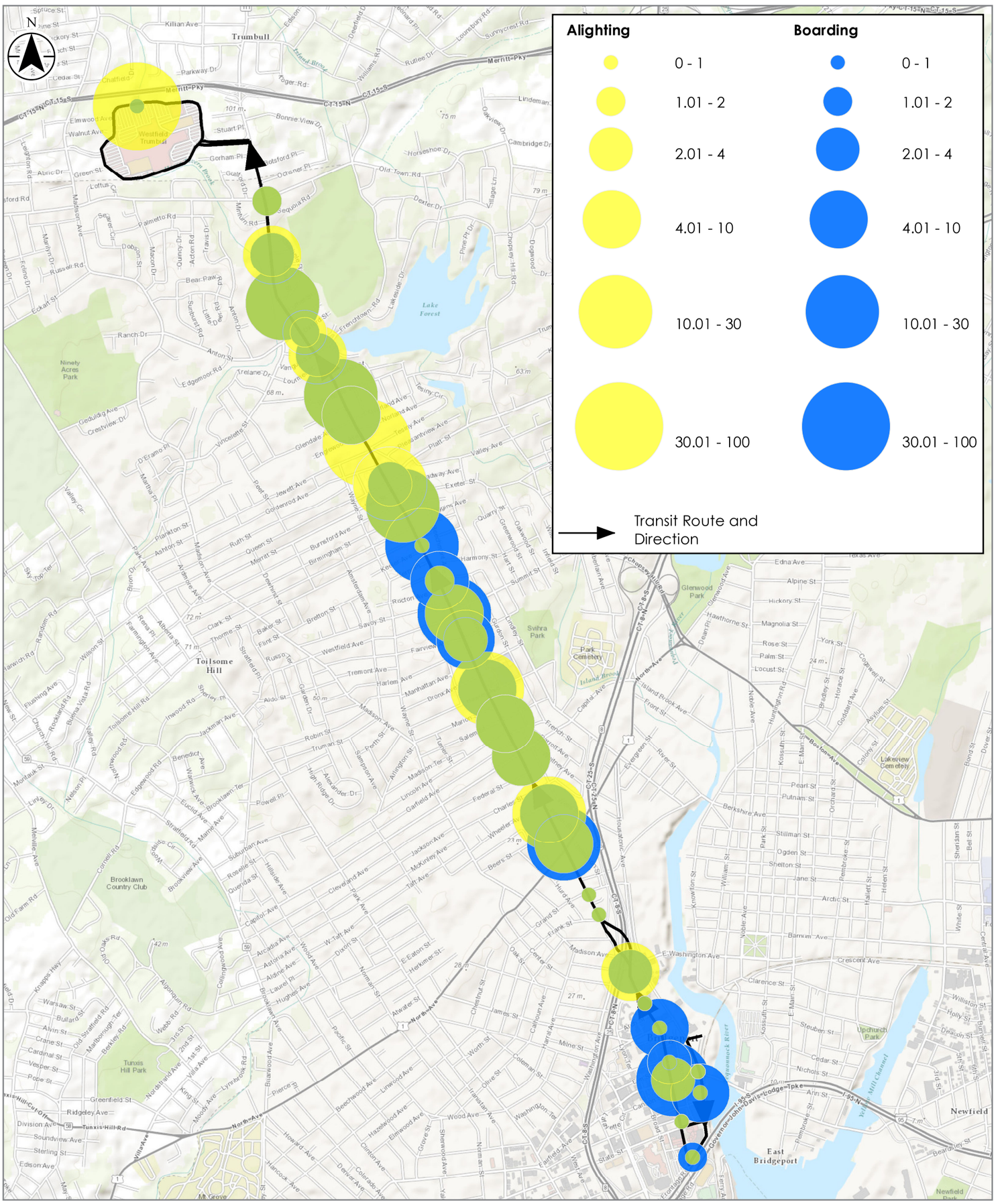


5am - 9am Inbound

Route 8

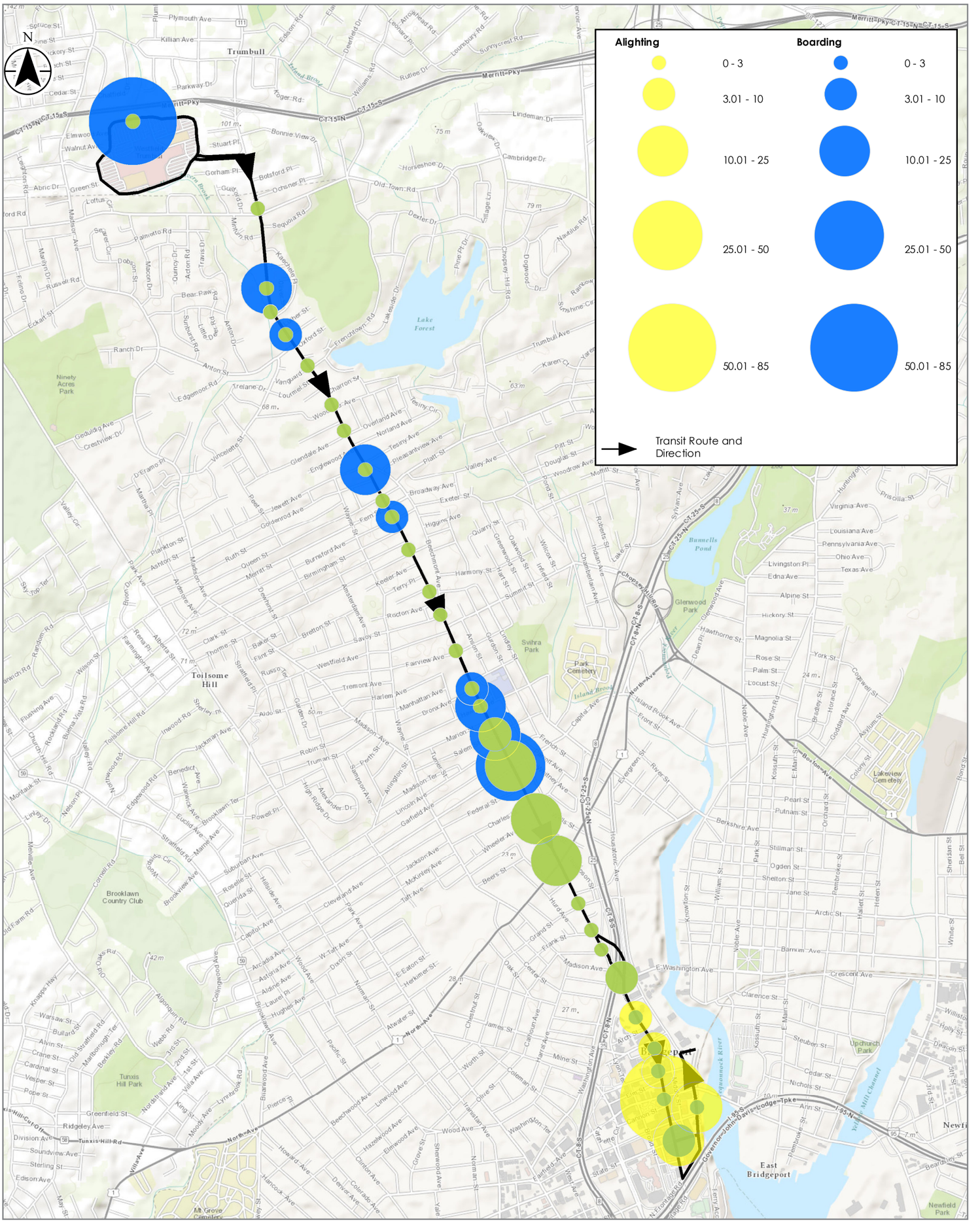
5am - 9am Outbound

Route 8



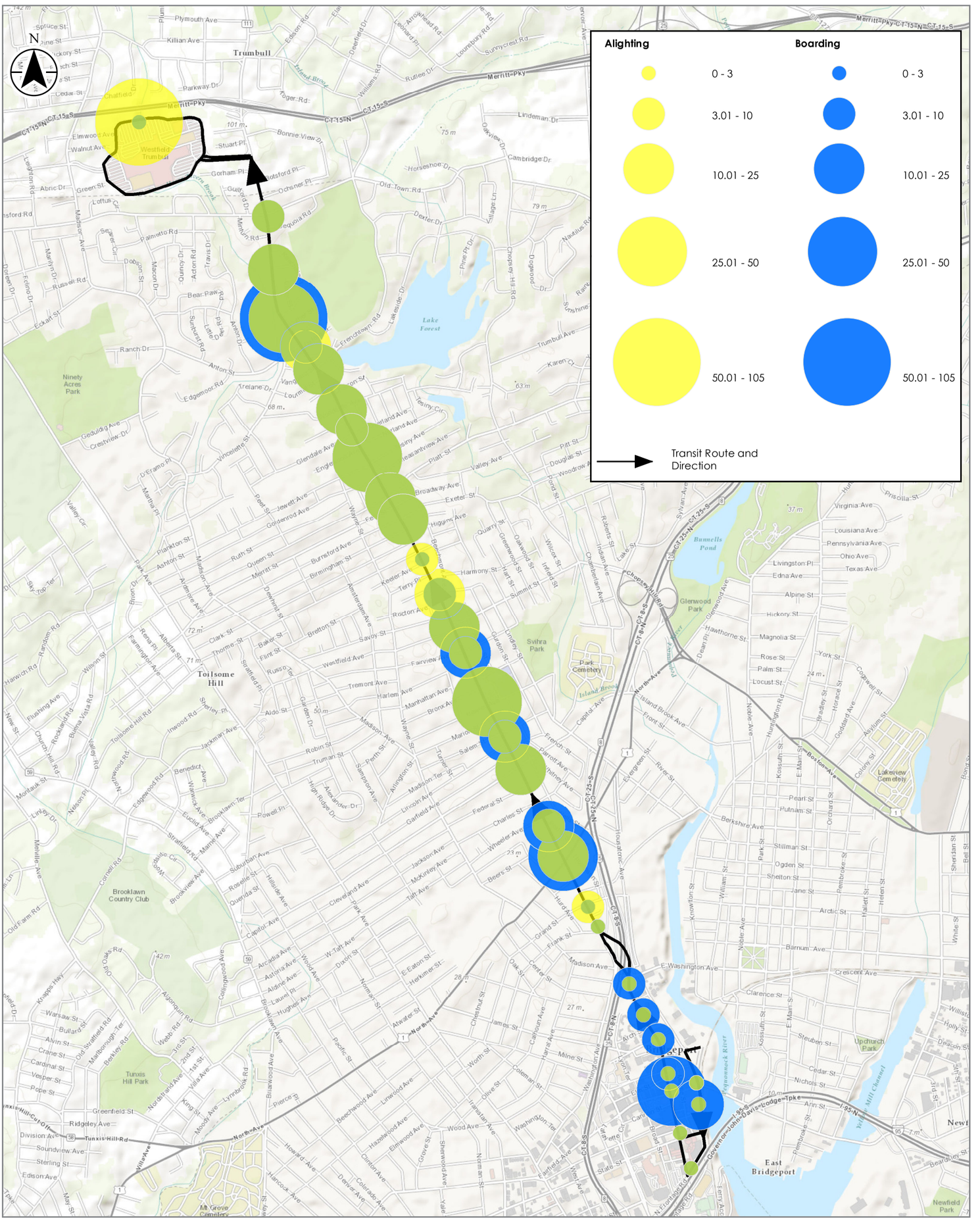
10am - 2pm Inbound

Route 8



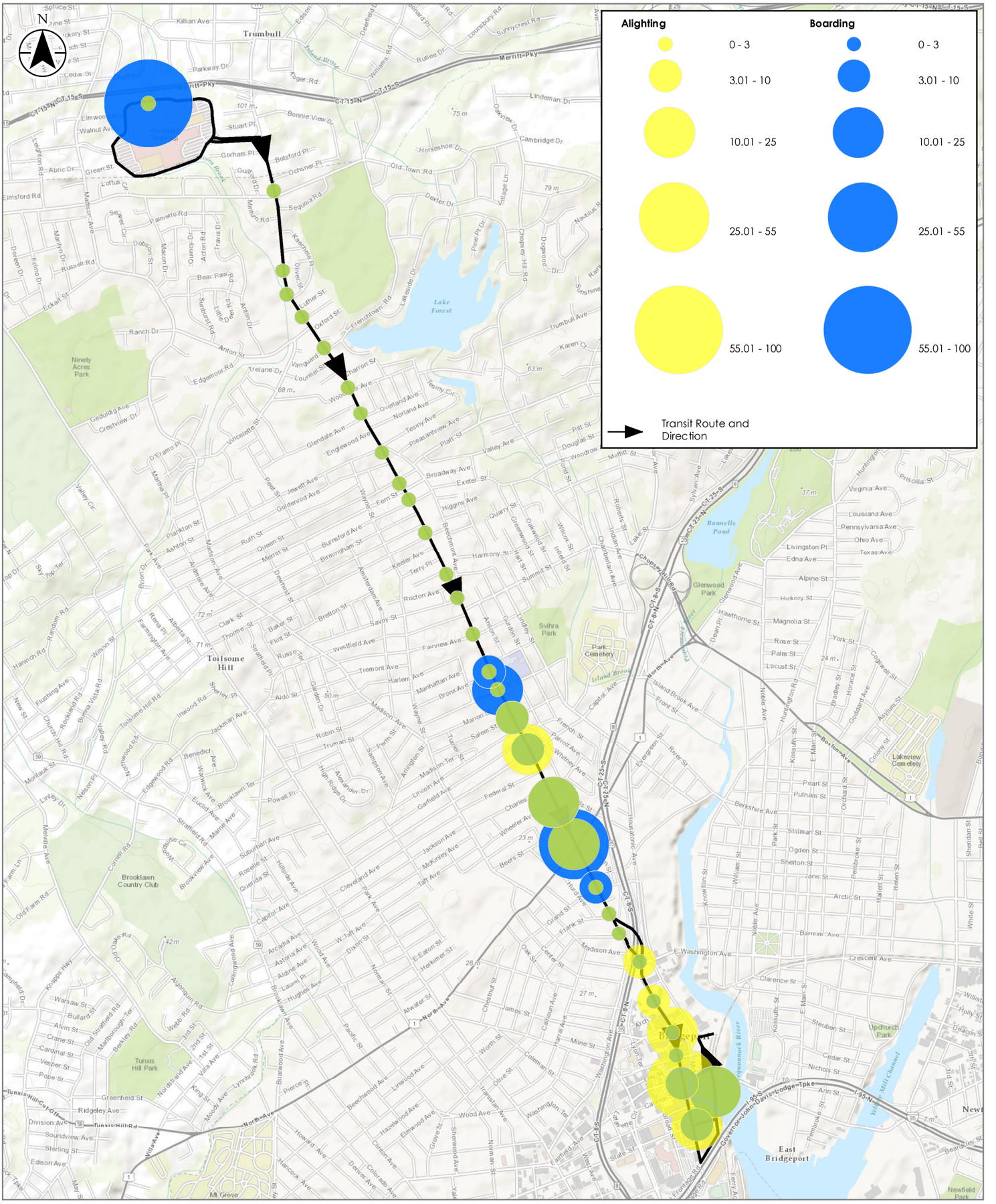
10am - 2pm Outbound

Route 8



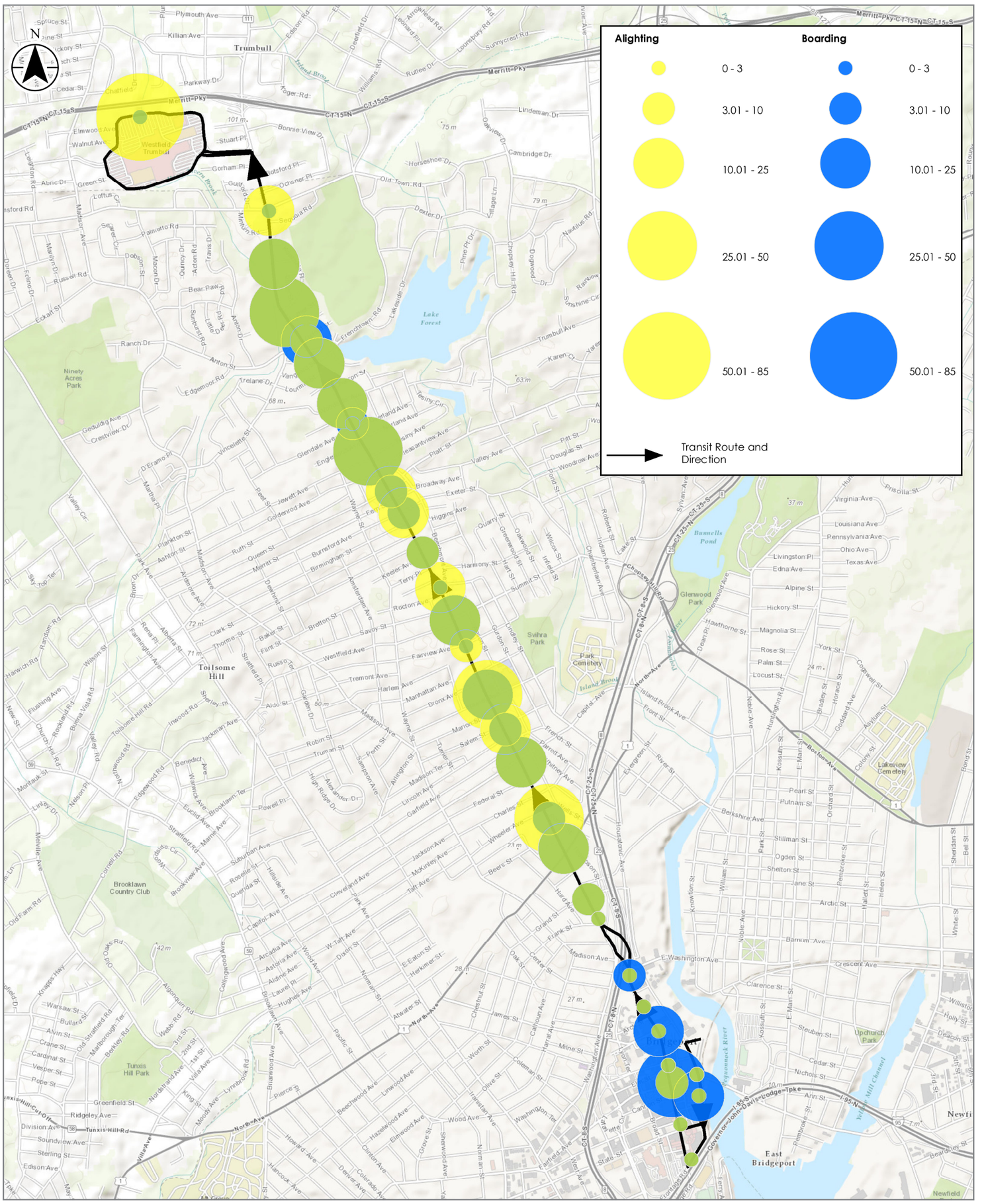
3pm - 6pm Inbound

Route 8


Alighting
0 - 3
3.01 - 10
10.01 - 25
25.01 - 55
55.01 - 100
Boarding
0 - 3
3.01 - 10
10.01 - 25
25.01 - 55
55.01 - 100
Transit Route and Direction
Trumbull
Toilsome Hill
Brooklawn Country Club
Tunxis Hill Park
Ninety Acres Park
Lake Forest
Svihra Park
Park Cemetery
Bunnells Pond
Glenwood Park
Lakeview Cemetery
Upchurch Park
East Bridgeport
Newfield Park
Mt Grove
Merritt Pky
I-95
Boston Ave
North Ave
E Washington Ave
Main St
Fairfield Ave
Stratford Ave
Madison Ave
Broadway Ave
Park Ave
Capitol Ave
Connecticut Ave
Lindley St
Seaview Ave
Ridgeley Ave
Tunxis Hill Rd
Greenfield St
Trumbull Ave
Huntington Rd
Virginia Ave
Louisiana Ave
Pennsylvania Ave
Ohio Ave
Texas Ave
Livingston Pl
Edna Ave
Alpine St
Hickory St
Magnolia St
Rose St
Palm St
Locust St
York St
Cornwall St
Godard Ave
Asylum St
Colony St
Orchard St
Pearl St
Hutnam St
Berkshire Ave
Stillman St
Ogden St
Shelton St
Jane St
Arctic St
Barnum Ave
Crescent Ave
Clarence St
Steuben St
Cedar St
Nichols St
Virginia Ave
Sheridan St
Paul St
White St
Holly St
Willis St
Deacon St
Newf
Pembroke St
Mallett St
Hitchcock St
Knowlton St
William St
Wilbur Ave
Kossuth St
E Main St
Hawthorne St
Dean Pl
Glenwood Ave
Chopsey Hill Rd
Roberts St
Logan St
Wilcox St
Intrepid St
Summit St
Oakwood St
Greenwood St
Hart St
Quarry St
Higgins Ave
Harmony St
Beechmont Ave
Keeler Ave
Terry Pl
Rocton Ave
Savoy St
Amherst St
Gurdon St
Lindley St
Fairview Ave
Westfield Ave
Tremont Ave
Harlem Ave
Manhattan Ave
Bronx Ave
Marion St
Salem St
French St
Whitney Ave
Charles St
Federal St
Wheeler Ave
Beers St
Lincoln Ave
Garfield Ave
Madison Ter
Trumbull St
Wayne St
Madison Ave
Perth St
Arlington St
Robin St
Truman St
Aldo St
Galen Dr
Shelley Pl
Jackman Ave
Inwood Rd
Toilsome Hill Rd
Benedict Ave
Warwick Ave
Brooklawn Ter
Euclid Ave
Maine Ave
Stratford Rd
Powell Pl
Suburban Ave
Rosselle St
Quentin St
Hillside Ave
Cleveland Ave
Park Ave
Clinton Ave
Arcadia Ave
Astoria Ave
Alsace Ave
Laurel Pl
Hughes Ave
Woodward Ave
Collingwood Ave
Dixon St
W Taft Ave
E Taft Ave
McKinley Ave
Jackson Ave
E Easton St
Herkimer St
Normal St
Pacific St
Atwater St
Beechwood Ave
Linwood Ave
Haselwood Ave
Elmwood Ave
Grove St
Sherwood Ave
Wood Ave
Tremont St
Translation Ave
Olive St
Worth St
Chestnut St
James St
Harral Ave
Calhoun Ave
Milne St
Washington Ave
Coleman St
Fairfield Ave
Wesley Ave
Stratford Ave
Lafayette Blvd
Congress St
Frank St
Grand St
Hancock Ave
Howard Ave
Colorado Ave
Denver Ave
Dunbar Ave
Yale Ave
Hollister Ave
Willow Ave
Sterling St
Soundview Ave
Division Ave
Edison Ave
Moody Ave
Lyncrook Rd
Pierce St
Blairwood Ave
Beechwood Ave
Northland Ave
King St
2nd St
1st St
Villa Ave
Webb Rd
Algonquin Rd
Old Oaks Rd
Knapp Hwy
Warsaw St
Bullard St
Old Stratford Rd
Marlborough Ter
Berkley Rd
Alvin St
Crane St
Cardinal St
Verner St
Pope St
Tunxis Hill Cut-Off
Old Farm Rd
Cornell Rd
Melville Ave
Lindley Dr
Nelson Pl
Mortlake St
Church Hill Rd
Rockaway Rd
Bellevista Rd
Flushing Ave
New St
Harwich Rd
Wilson St
Fairmount Ave
Alberta St
Rena Pl
Bond Dr
Park Ave
Ashton St
Parkton St
Ruth St
Queen St
Merrit St
Madison Ave
Arimore Ave
Dewhurst St
Baker St
Flint St
Russo Ter
Stratford Pl
Thorne St
Clark St
Bretton St
Burnford Ave
Birmingham St
Jewett Ave
Goldenrod Ave
Pearl St
Wayne St
Fern St
Exeter St
Broadway Ave
Platt St
Douglas St
Woodrow St
Moffitt St
Sylvan Ave
Lake St
Trowbridge Ave
Virginia Ave
Priscilla St
Valley Ave
Pleasantview Ave
Tesiny Ave
Tesiny Cir
Overland Ave
Norland Ave
Woodward Ave
Englewood Ave
Glendale Ave
Vincelette St
Trelane Dr
Edgemoor Rd
Anton St
Sharon St
Loumeda St
Vanguard Rd
Oxford St
Luther St
Driver St
Kosciusko Pl
Sequoia Rd
Minuth Rd
Gulf Rd
Botsford Pl
Ochsner Pl
Gorham Pl
Stuart Pl
Bonnie View Dr
Elmwood Ave
Walnut Ave
Loftus Cir
Green St
Abric Dr
Leighton Rd
Elmsford Rd
Madison Ave
Spencer Dr
Palmetto Rd
Dobson St
Mason Dr
Quincy Dr
Acton Rd
Travis Dr
Bear Paw Rd
Sunburst Rd
Linda Rd
Anton Dr
Ranch Dr
Marilyn Dr
Ruswell Rd
Dorsten Dr
Fedino Dr
Eckart St
Martha Pl
D'Eramo Pl
Valley Cir
Crestview Dr
Geduldig Ave
Ninety Acres Park
Killian Ave
Spruce St
Pine St
Hickory St
Birch St
Cedar St
Parkway Dr
Roger Rd
Williams Rd
Rutlee Dr
Island Brook
Merritt Pky
CT-15 N
CT-15 S
Lindeman Dr
Oakview Dr
Cambridge Dr
Horseshoe Dr
Old Town Rd
Dexter Dr
Village Ln
Pine Pl Dr
Chopsey Hill Rd
Dogwood Dr
Nautilus Rd
Lakeside Dr
Frenchtown Rd
Trumbull Ave
Karen Cy
Ferry Pl
Valley St
Platt St
Douglas St
Woodrow St
Moffitt St
Lake St
Trowbridge Ave
Sylvan Ave
Priscilla St
Virginia Ave
Huntington Rd

3pm - 6pm Outbound

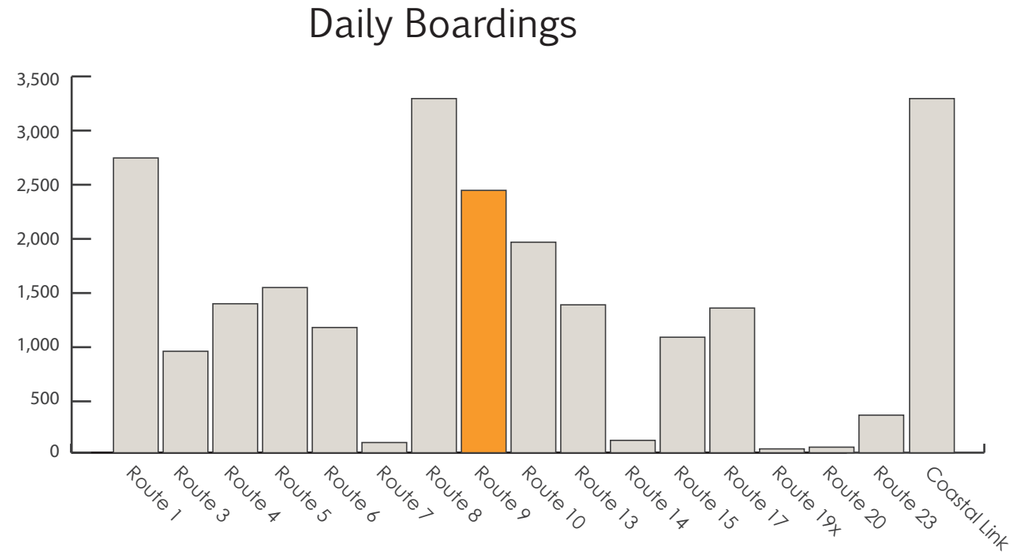
Route 8



Route Nine

Seaside Park - Downtown - East Main St - Hawley Lane Mall

Route 9	
Weekday Daily Boardings	2,430
Percent of System Activity (Sampled Routes)	11%
Daily One-Way Revenue Trips	63
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	Future FTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	13.1%
Average Boardings per Hour - AM Peak	154
Average Boardings per Hour - Midday	162
Average Boardings per Hour - PM Peak	166



Route Highlights:

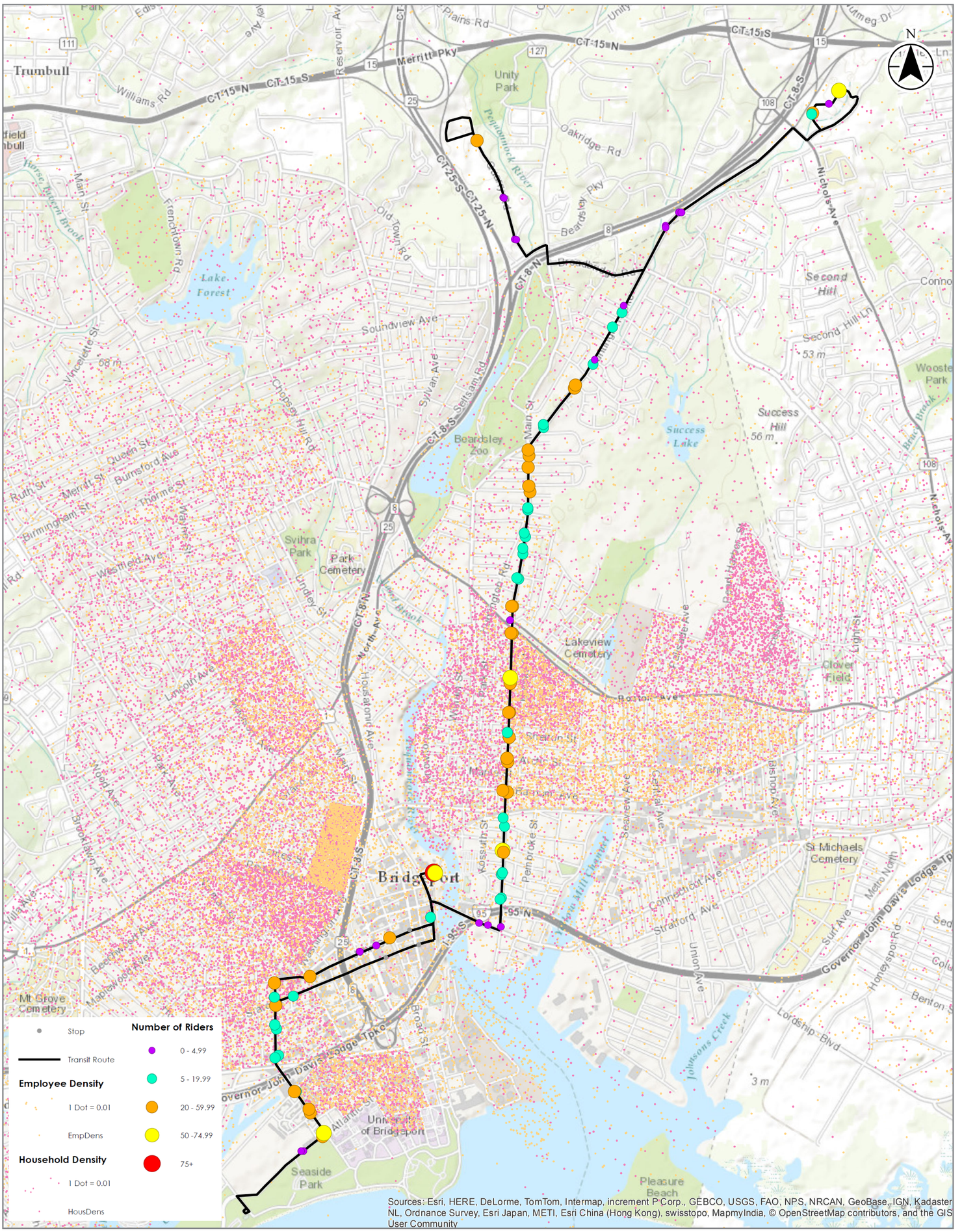
- Route Nine is another strong performer in the GBT network, connecting downtown Bridgeport and the University of Bridgeport to residential and commercial areas to the east.
- Inbound and outbound patterns for each time period are generally opposite of one another, in terms of the location and prominence of boardings and alightings.
- Stop activity is not well balanced, and stops are dominated by either boardings or alightings, depending on the direction of travel and time period.
- There are a limited number of stops with balanced stop activity - these are primarily located in Downtown Bridgeport and along the southern half of Main Street.

Route 9 connects Hawley Lane Mall to Downtown Bridgeport and the University of Bridgeport. The ridership data show a fairly consistent pattern of passengers using the route to get to and from Downtown Bridgeport and the University of Bridgeport from the neighborhoods to the north.

There is little evidence of strong demand to or from Seaside Park. It is proposed that this route be truncated in Downtown Bridgeport and that that the service to the University of Bridgeport be provided by Route 13. Route 13 would be on the proposed Frequent Transit Network (FTN) and be the sole provider of service to the University of Bridgeport.

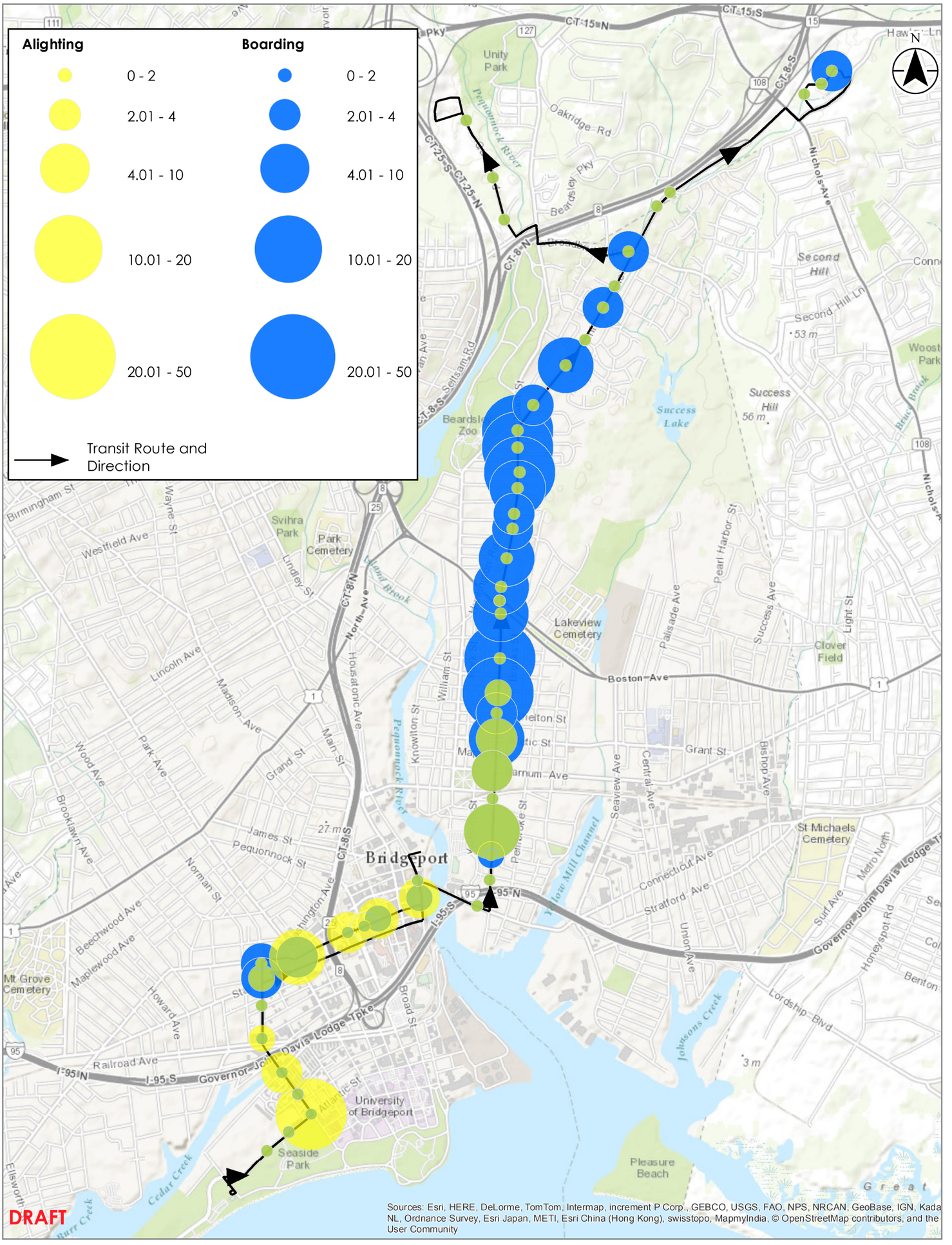
Total Daily Activity

Route 9



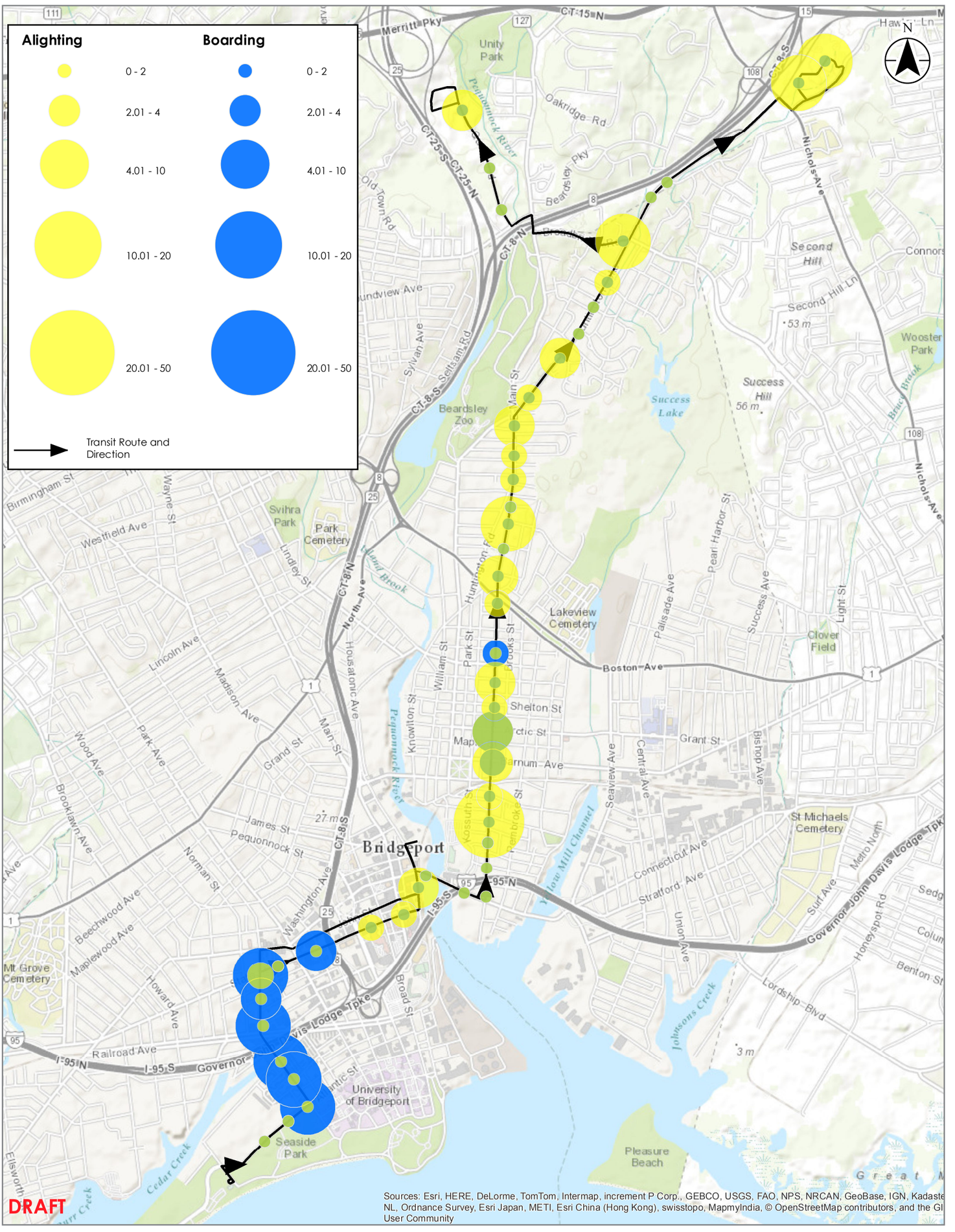
5am - 9am Inbound

Route 9



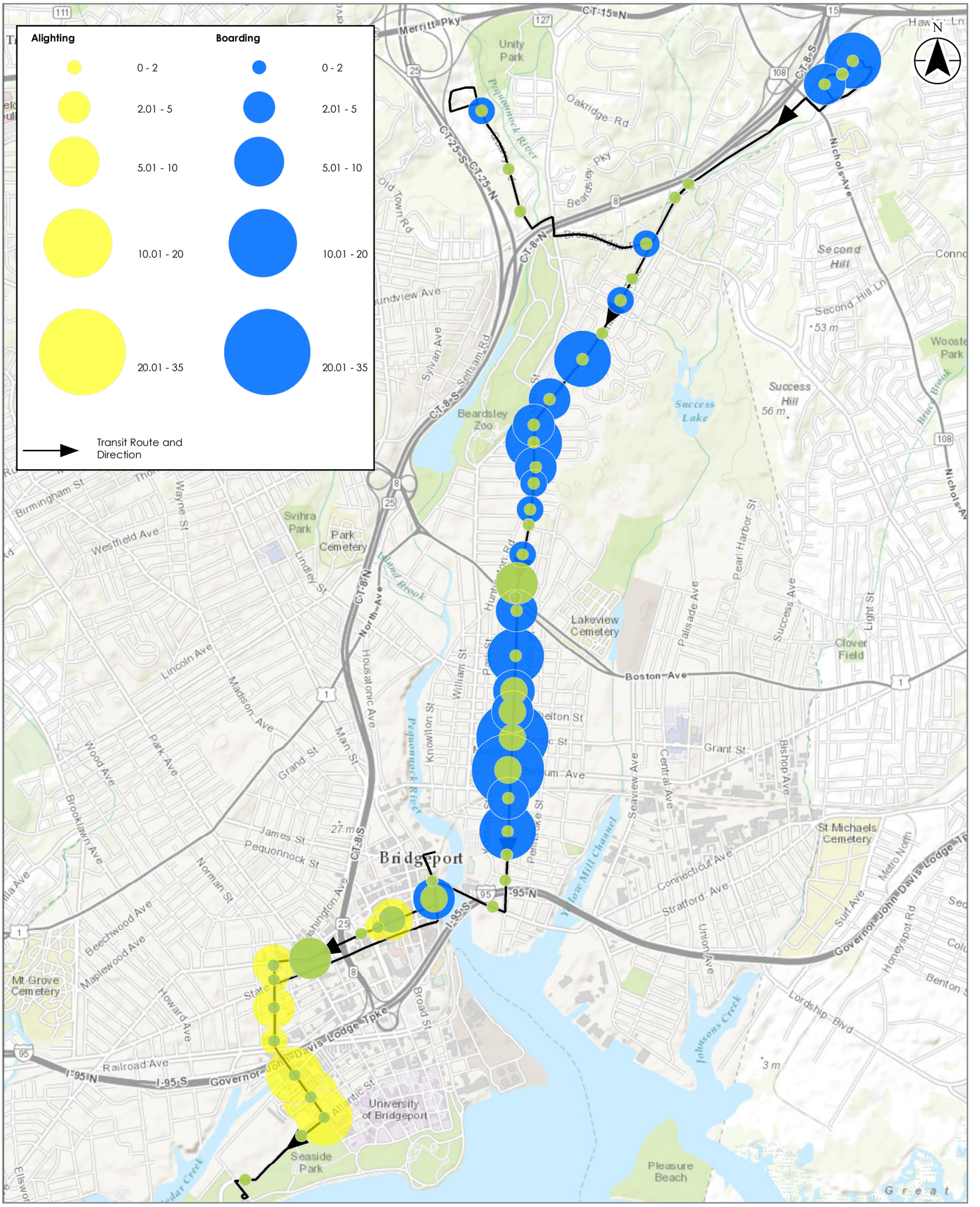
5am - 9am Outbound

Route 9



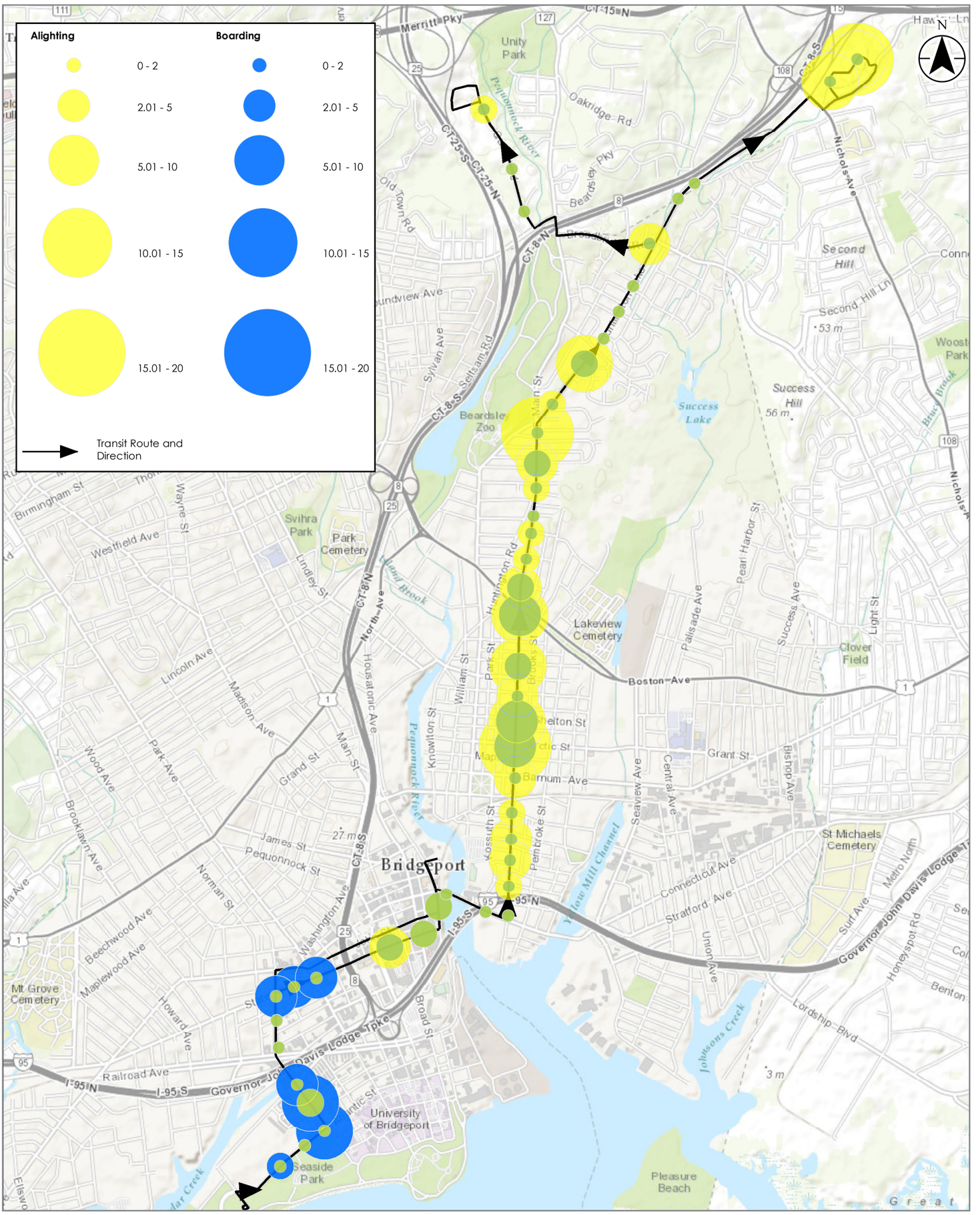
10am - 2pm Inbound

Route 9



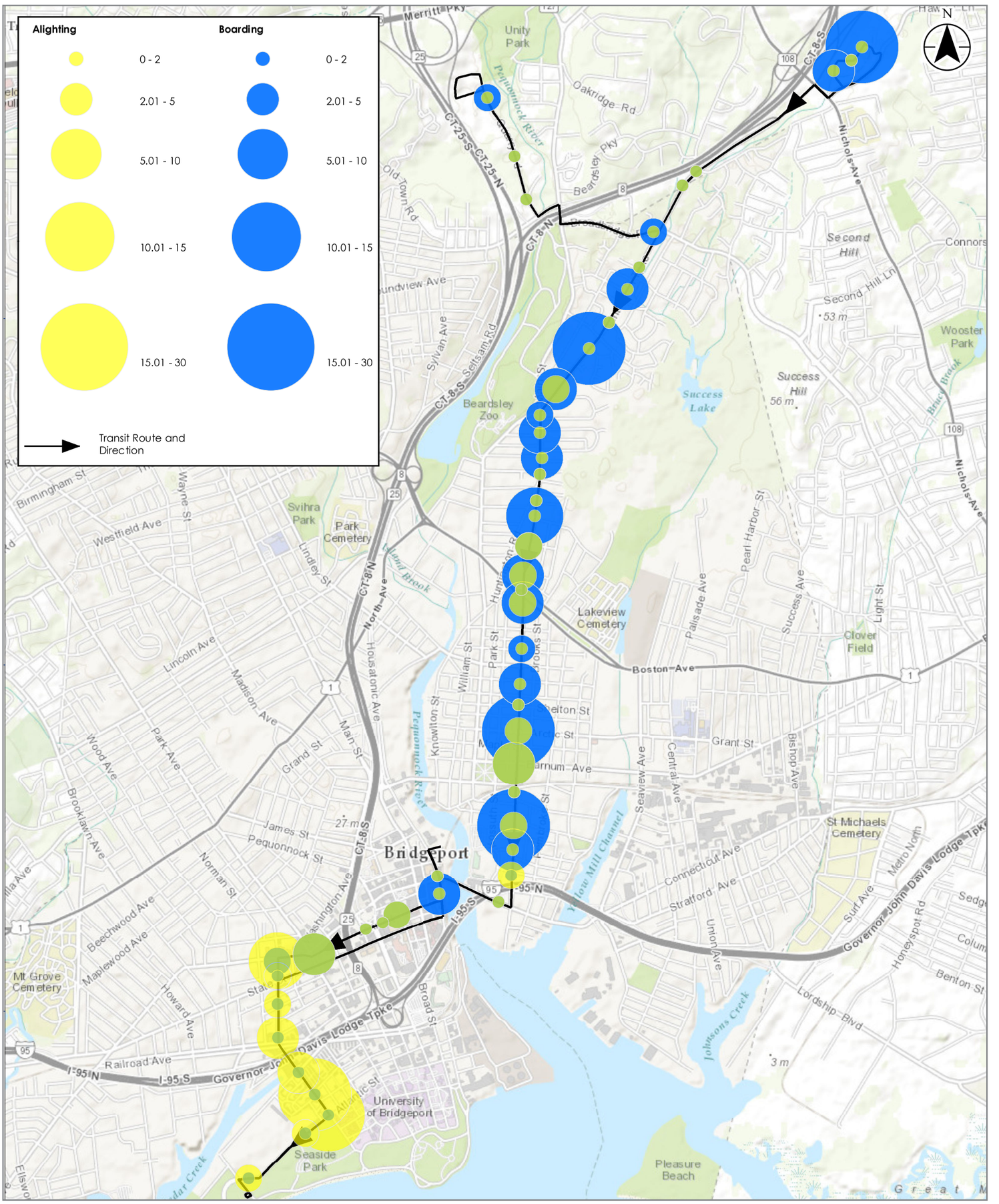
10am - 2pm Outbound

Route 9



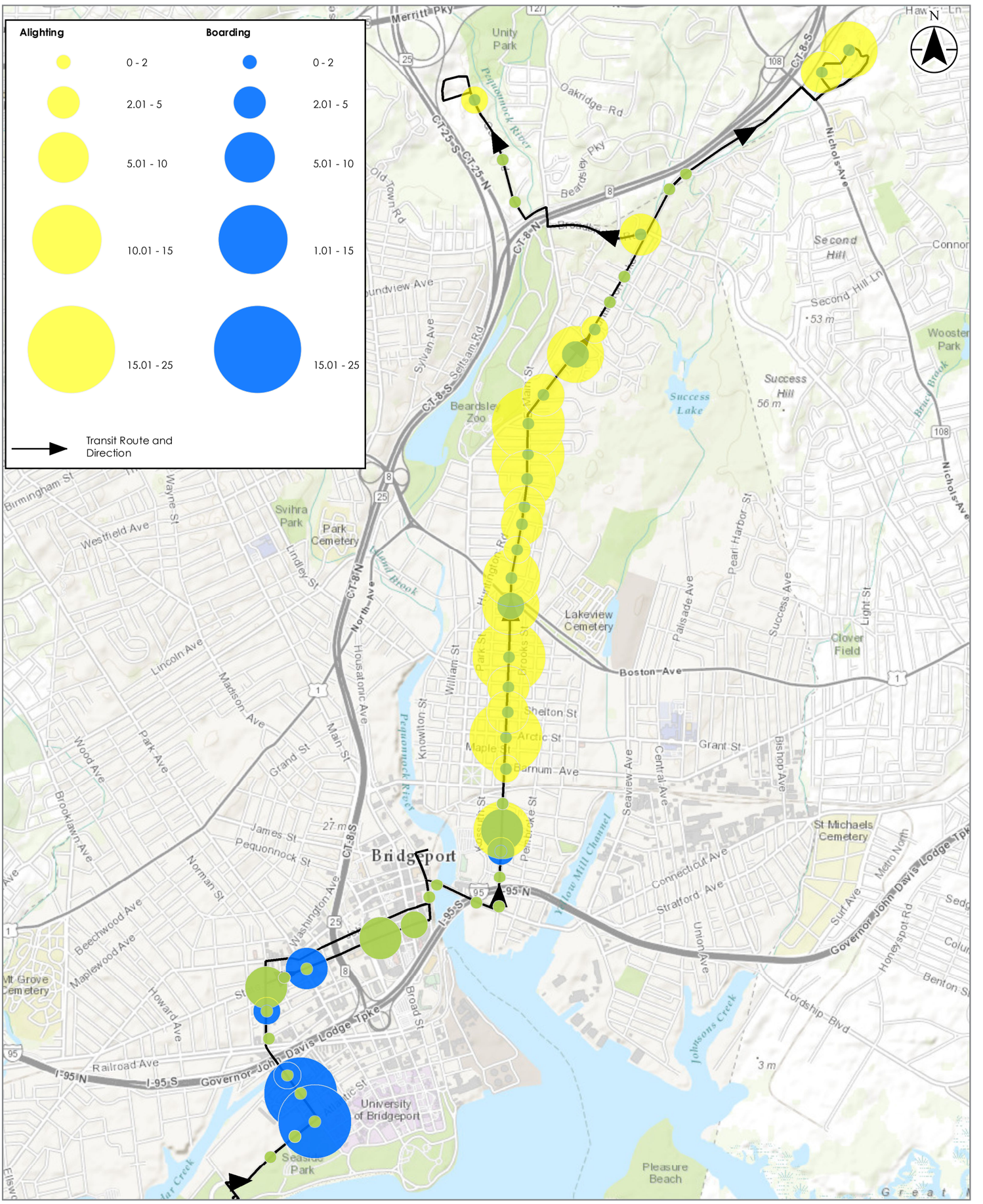
3pm - 6pm Inbound

Route 9



3pm - 6pm Outbound

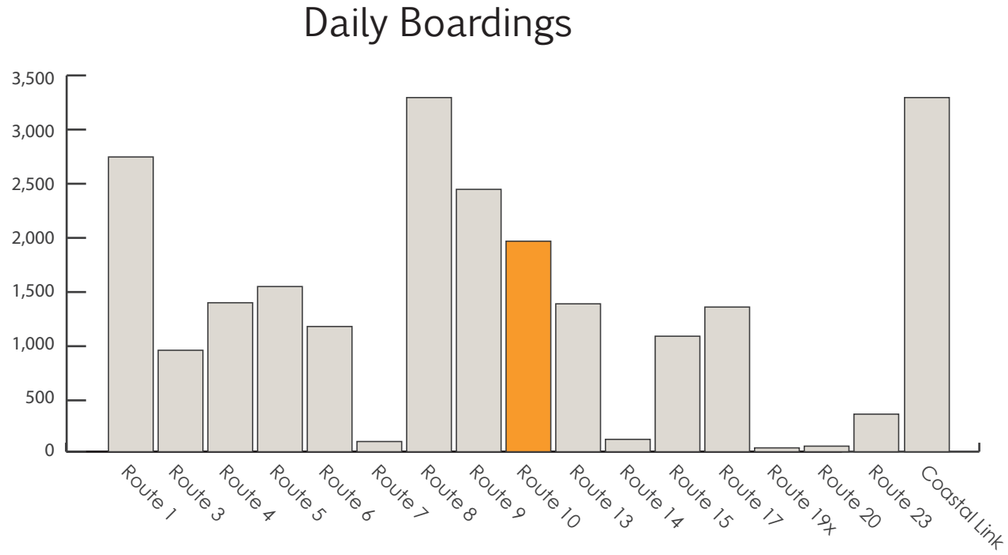
Route 9



Route Ten

Fairfield - Downtown - Stratford

Route 10	
Weekday Daily Boardings	1,950
Percent of System Activity (Sampled Routes)	8%
Daily One-Way Revenue Trips	54
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	Future FTN
Number of Peak Buses	4
Efficiency (% Schedule Recovery)	11.3%
Average Boardings per Hour - AM Peak	140
Average Boardings per Hour - Midday	105
Average Boardings per Hour - PM Peak	147



Route Highlights:

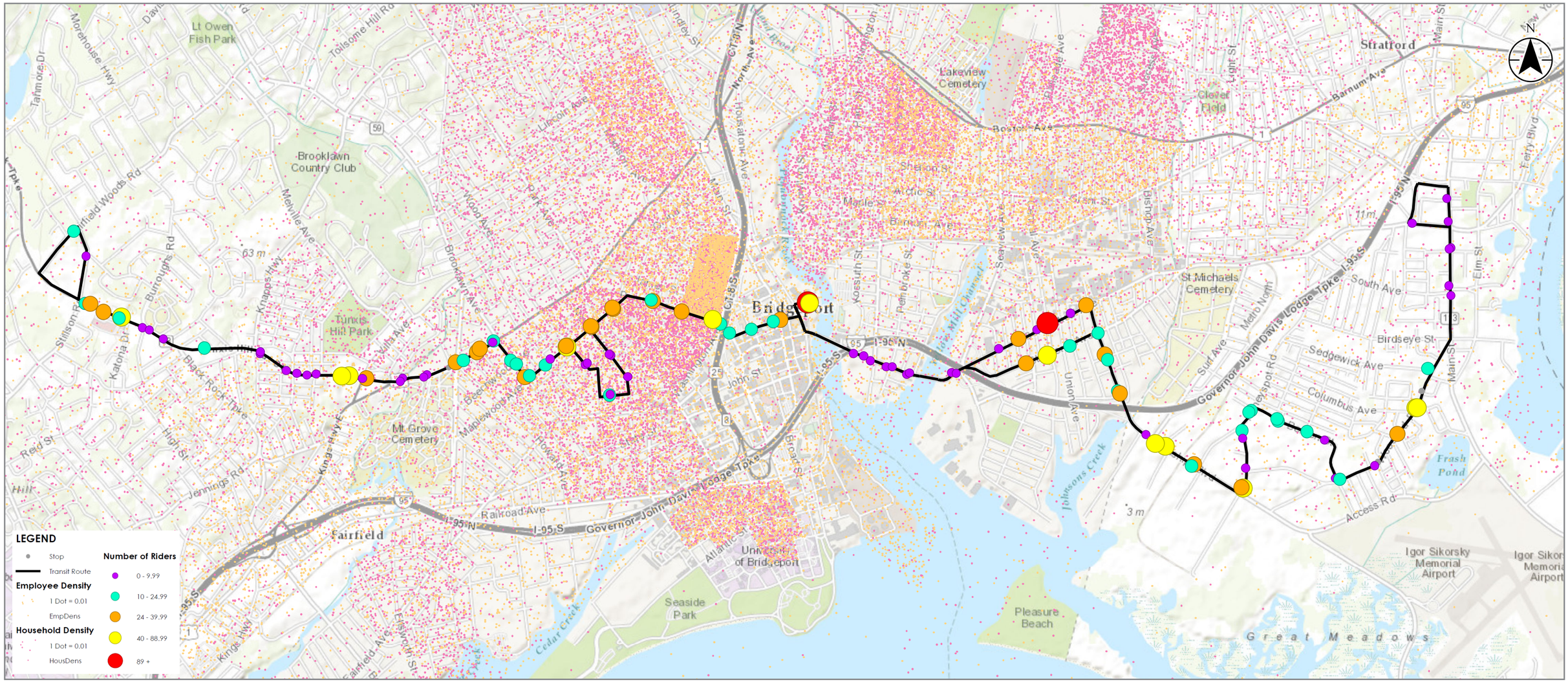
- Route Ten features a good network design and is one of the few routes in the network in which Downtown Bridgeport is a mid-route stop and not a terminal stop. This allows for high passenger turnover (capacity utilization) over the course of the entire route in each direction, even at peak periods.
- This route features stops with higher ridership along the entire corridor. The GBT Transit Center is the single busiest stop, offering a transfer opportunity to other routes and access to employment and services downtown.
- Due to the network design, the east and west half of the routes typically show opposite patterns of boardings and alightings, as people travel to and from downtown.
- Each half of the route is dominated by either boardings or alightings, depending on the direction and time of day. There are few stops on either side of downtown that have significant passenger turnover (boardings and alightings).

Route 10 is a well performing route that experiences heavier usage in the peak periods. It is proposed that this route be incorporated as a component of the Frequent Transit Network (FTN) and be made more direct in certain sections to reduce travel times and improve customer convenience.

It is proposed that this route use Connecticut Avenue and Stratford Avenue to get to the Stratford Train Station and that the route use primarily Park Avenue and North Avenue west of Downtown Bridgeport in order to be easier to use. It is proposed that a new route (proposed Route 25) serve the area of Stratford south of I-95 that Route 10 currently serves.

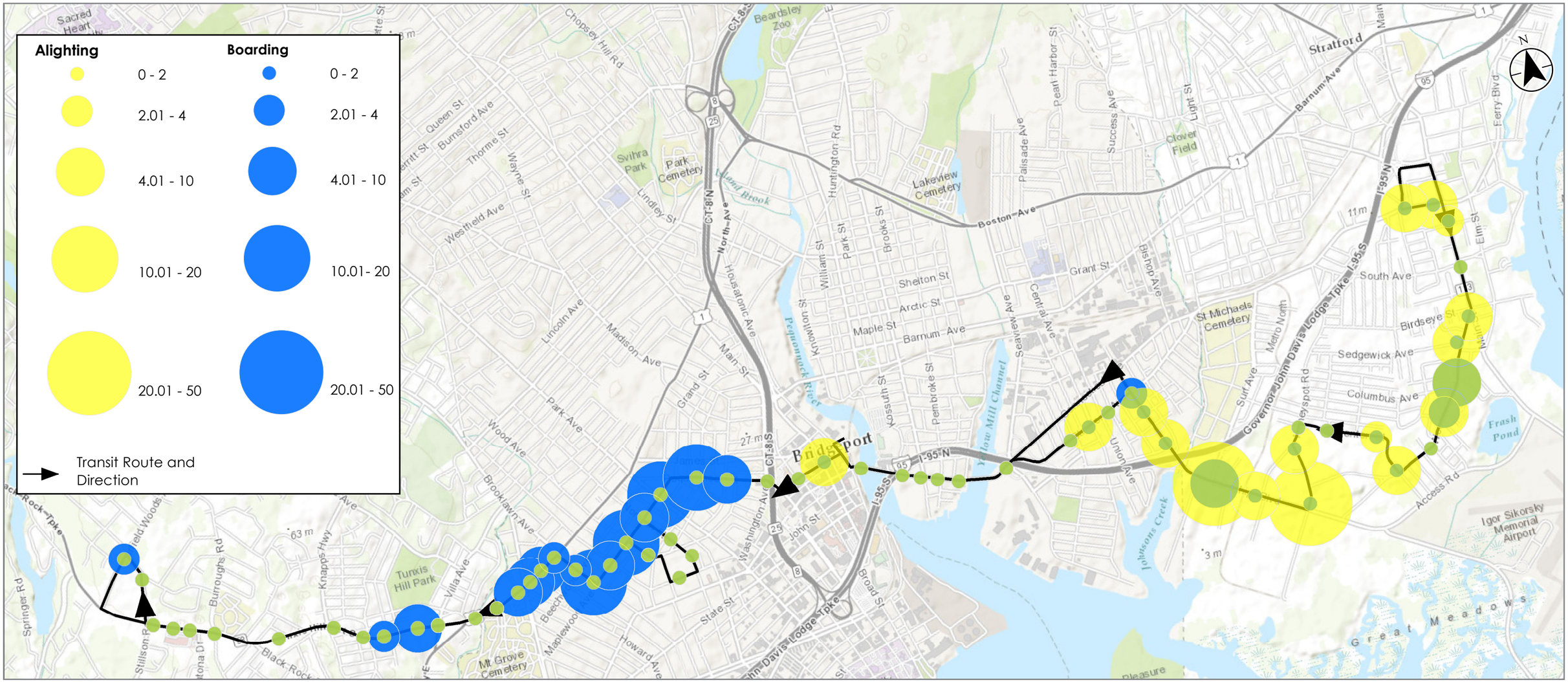
Total Daily Activity

Route 10



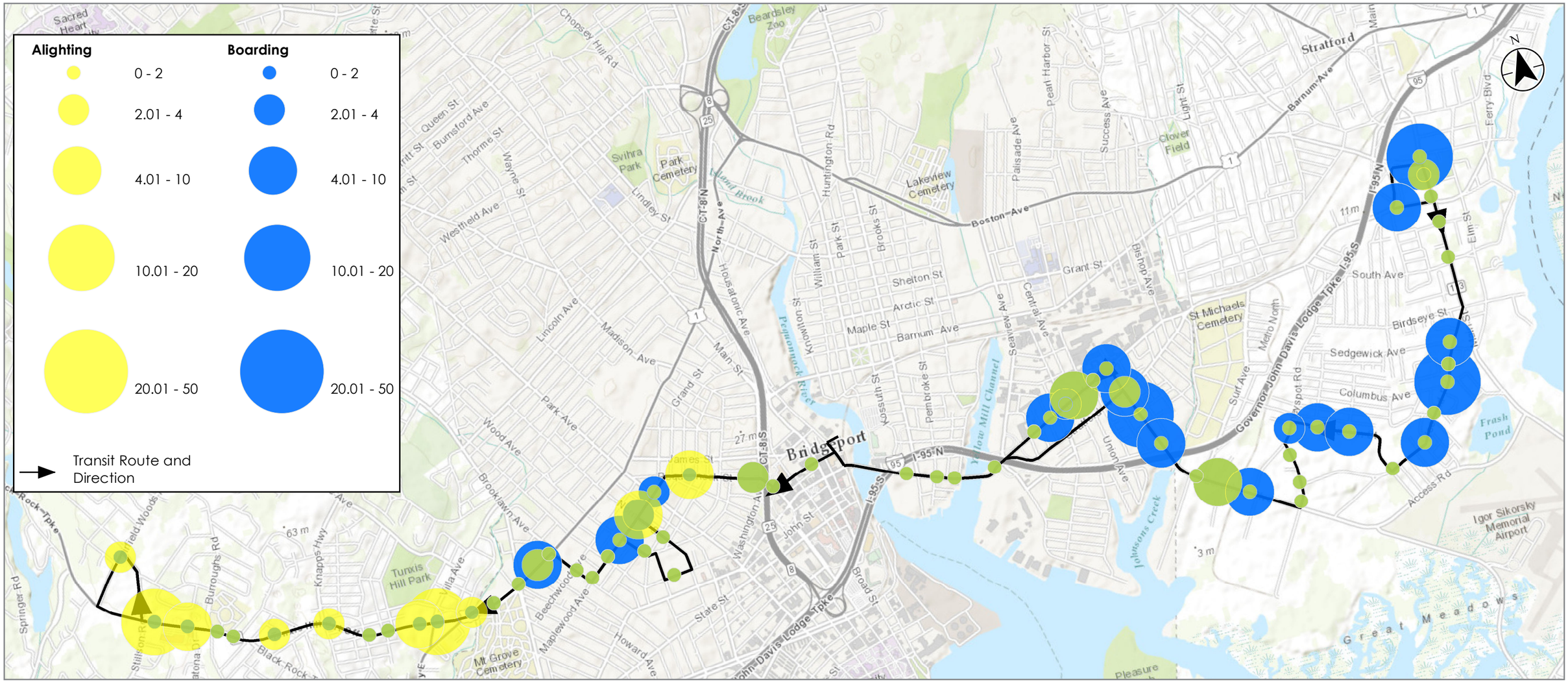
Route 10

5am - 9am Eastbound



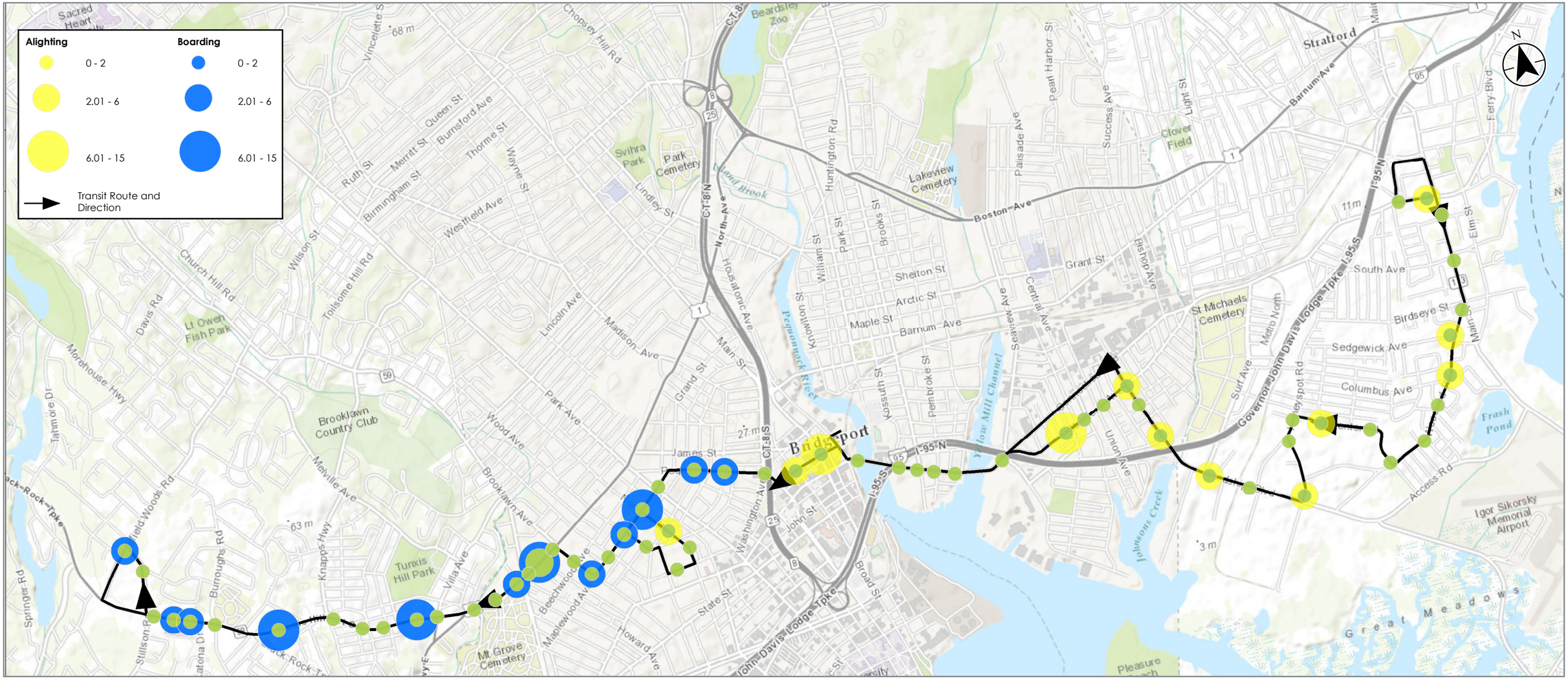
5am - 9am Westbound

Route 10



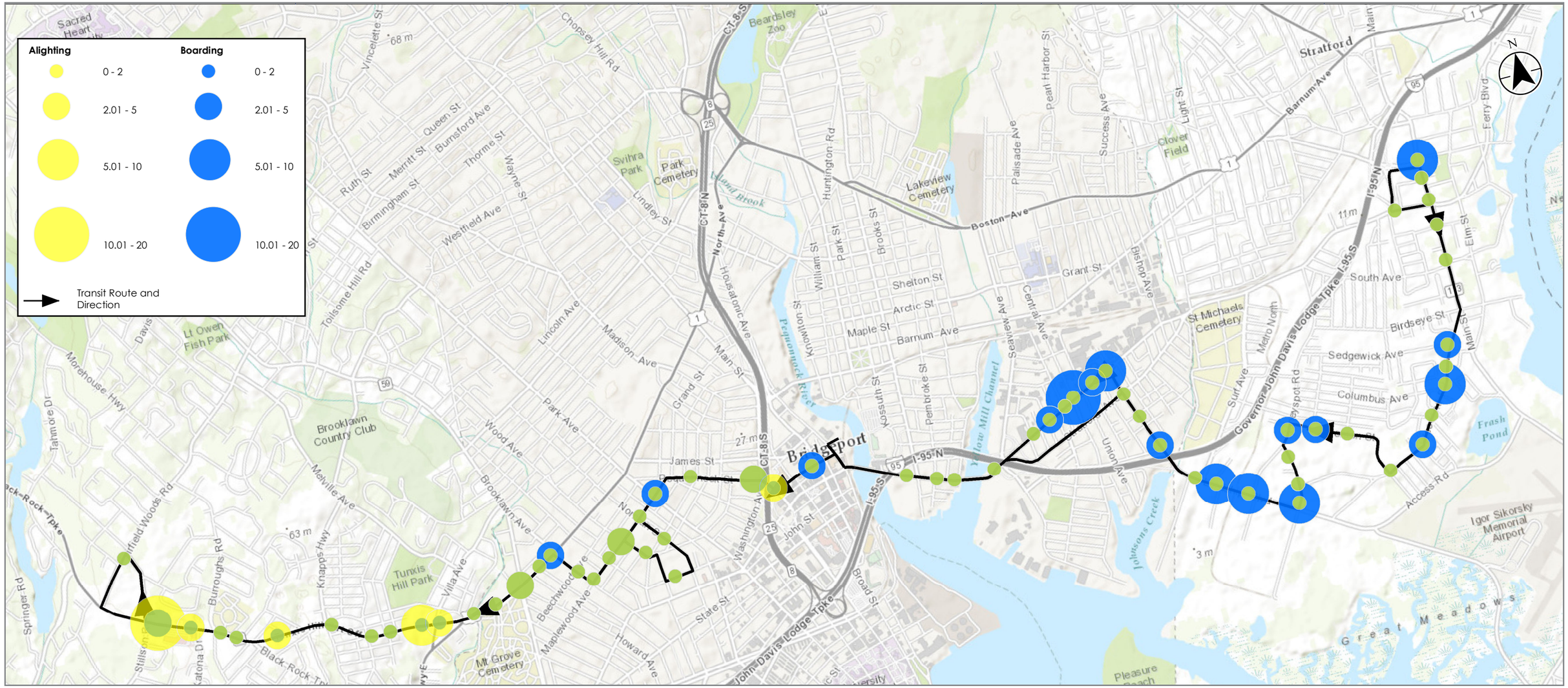
Route 10

10am - 2pm Eastbound



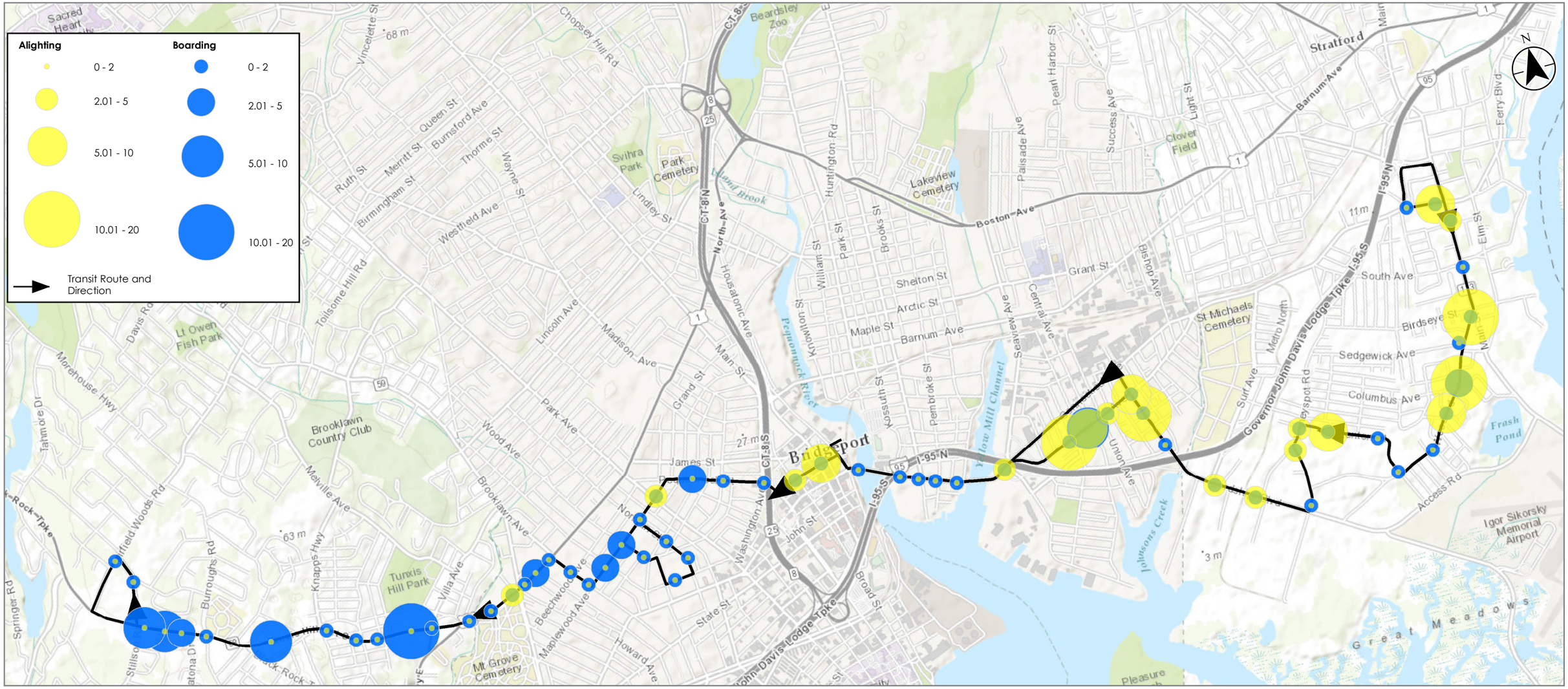
10am - 2pm Westbound

Route 10



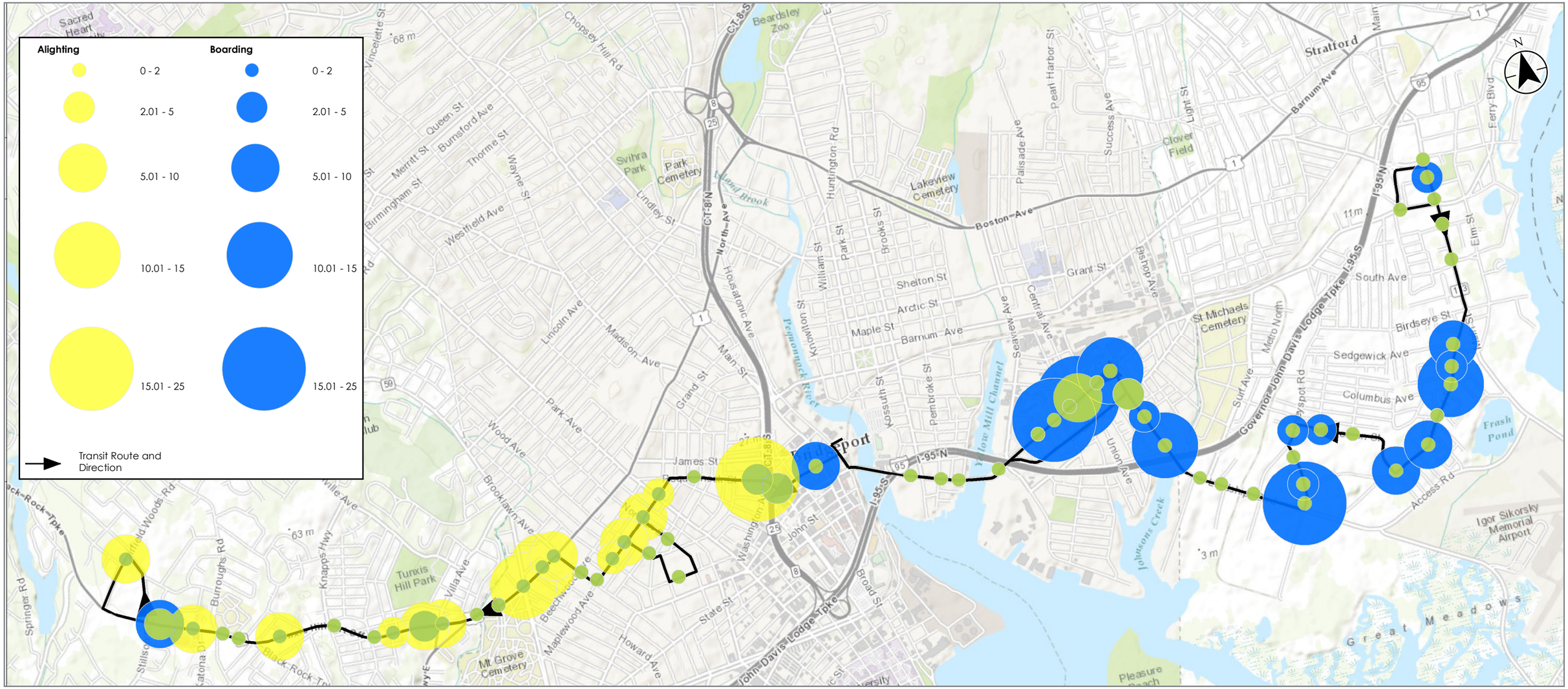
Route 10

3pm - 6pm Eastbound



3pm - 6pm Westbound

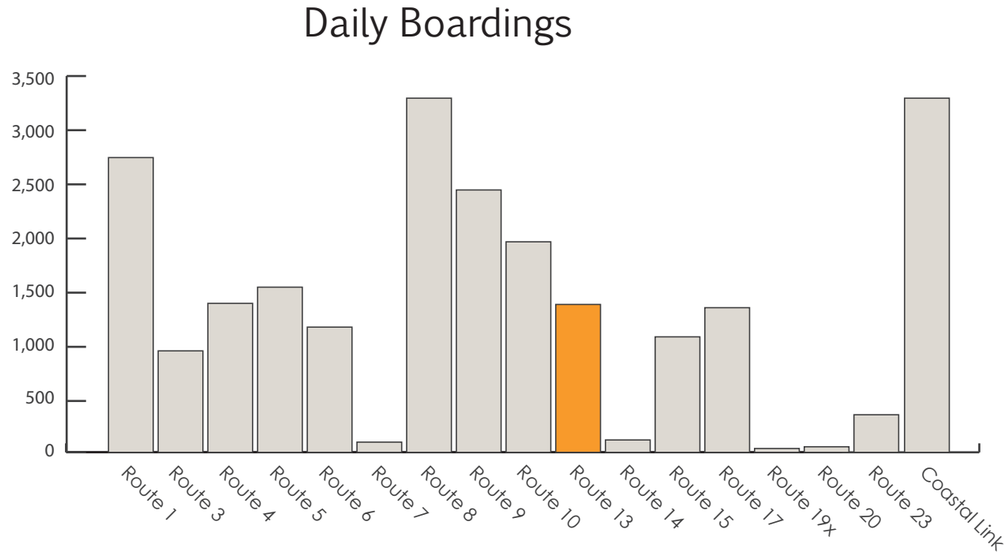
Route 10



Route Thirteen

Downtown - Seaview Ave - Success Park

Route 13	
Weekday Daily Boardings	1,370
Percent of System Activity (Sampled Routes)	6%
Daily One-Way Revenue Trips	50
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	RTN
Number of Peak Buses	2
Efficiency (% Schedule Recovery)	8.9%
Average Boardings per Hour - AM Peak	167
Average Boardings per Hour - Midday	57
Average Boardings per Hour - PM Peak	44



Route Highlights:

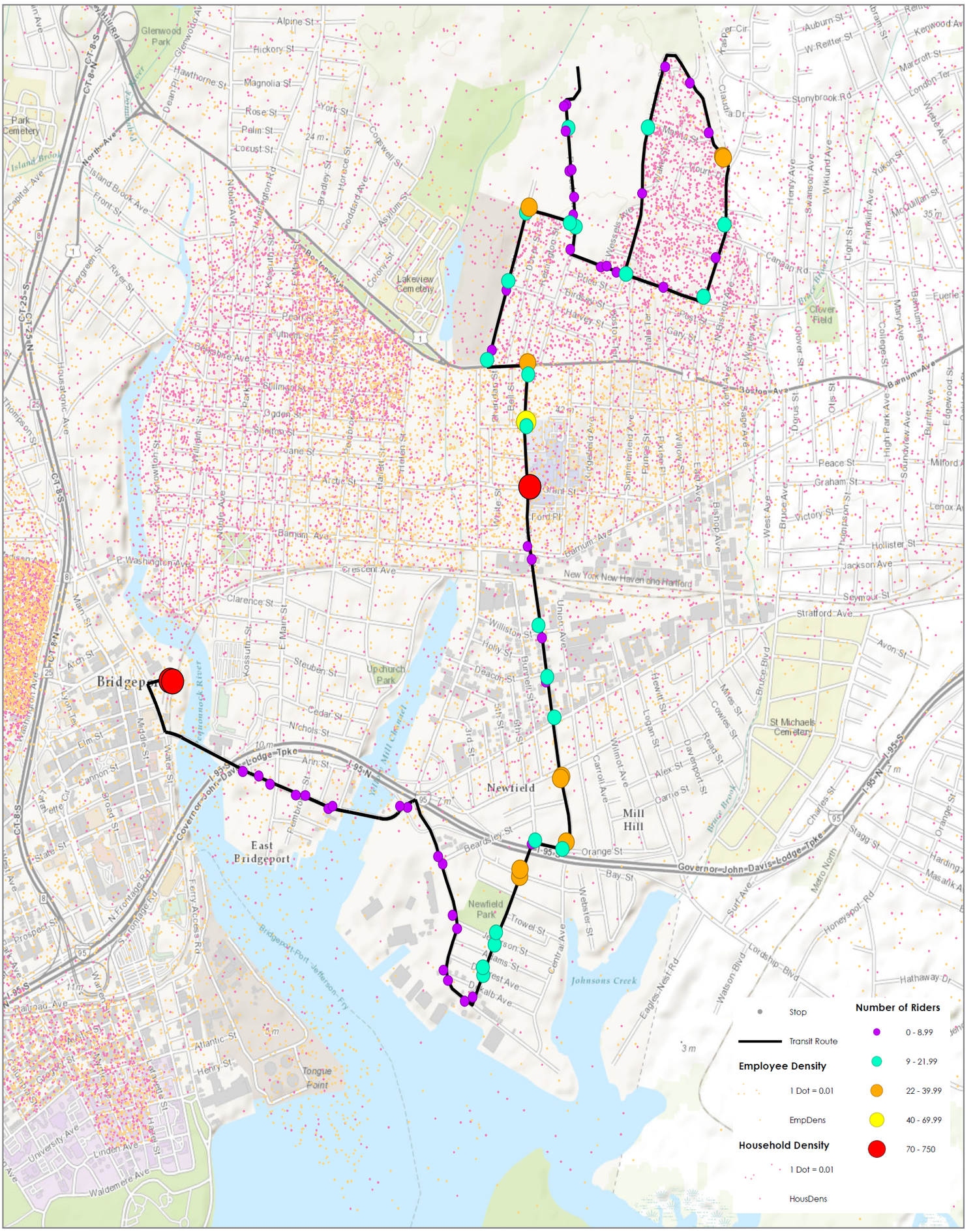
- Route Thirteen serves as a commuter-oriented service, as demonstrated by stop activity patterns throughout the day and by the significant shift in average boardings per hour, particularly between the AM peak and the rest of the day.
- The majority of stop activity occurs at the GBT Transit Center and passenger turnover along the route is low.
- Outside of the GBT Transit Center, the highest use stops are at transfer points for other GBT routes and at key destinations, including Harding High School and Bridgeport Hospital.
- The AM peak is noticeably busier than other times. Inbound travel during the AM peak is dominated by boardings along the entire route, while the outbound direction has slightly higher passenger turnover, particularly at transfer points.
- The midday and PM peak periods have less ridership than the morning, and is limited to a fraction of the stops along the route.
- The busiest stops in both directions during these times remain the GBT Transit Center and Bridgeport Hospital.

Route 13 connects Downtown Bridgeport to the Pearl Harbor and Success area and the area around Bullard-Havens Technical High School. This route has heavy usage in the morning in the inbound direction, but it is fairly lightly used in the midday.

It is proposed that this route be simplified at this northern end and extended to the University of Bridgeport. In this manner, it would become a component of the proposed Frequent Transit Network (FTN) and the only route serving the University of Bridgeport.

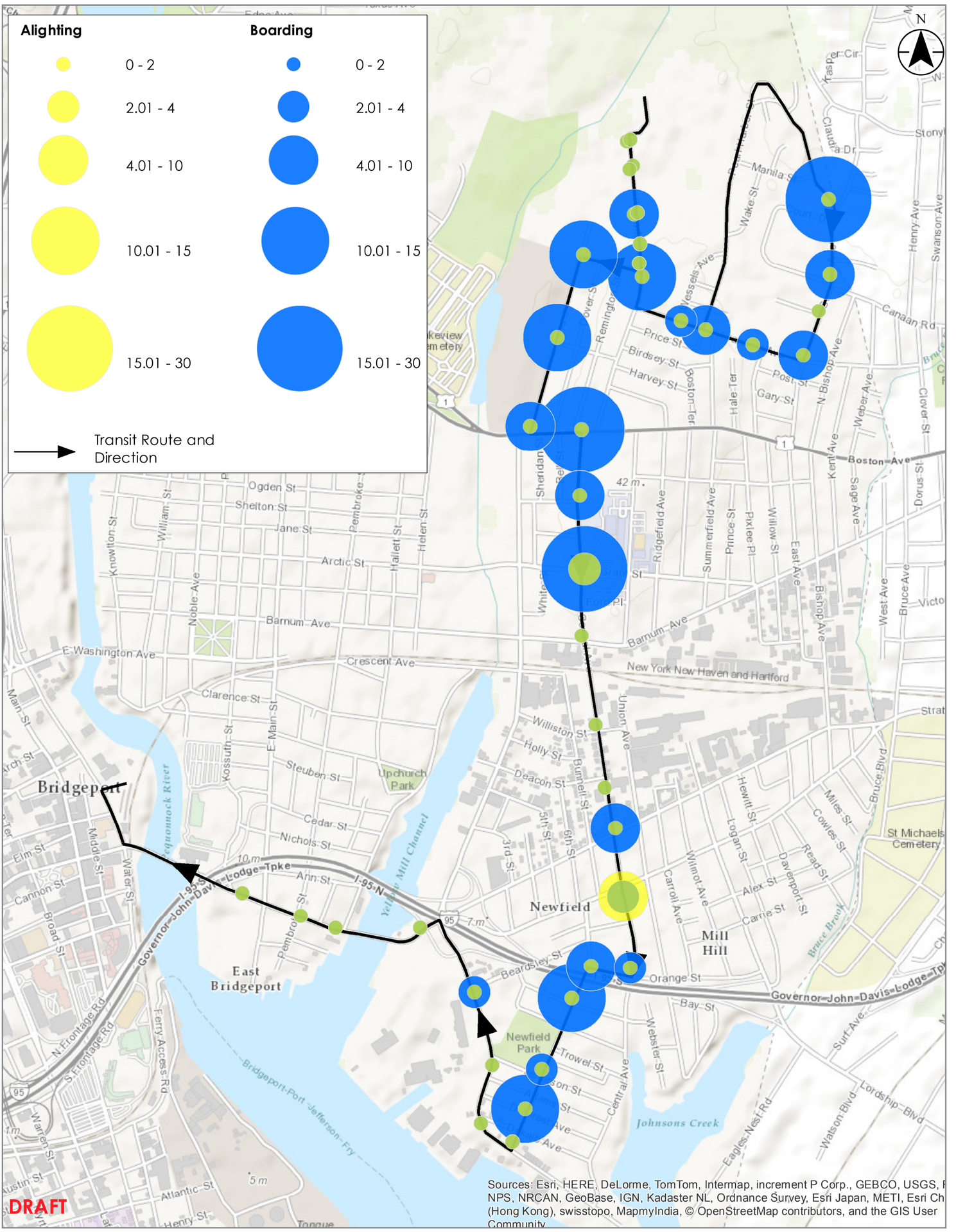
Total Daily Activity

Route 13



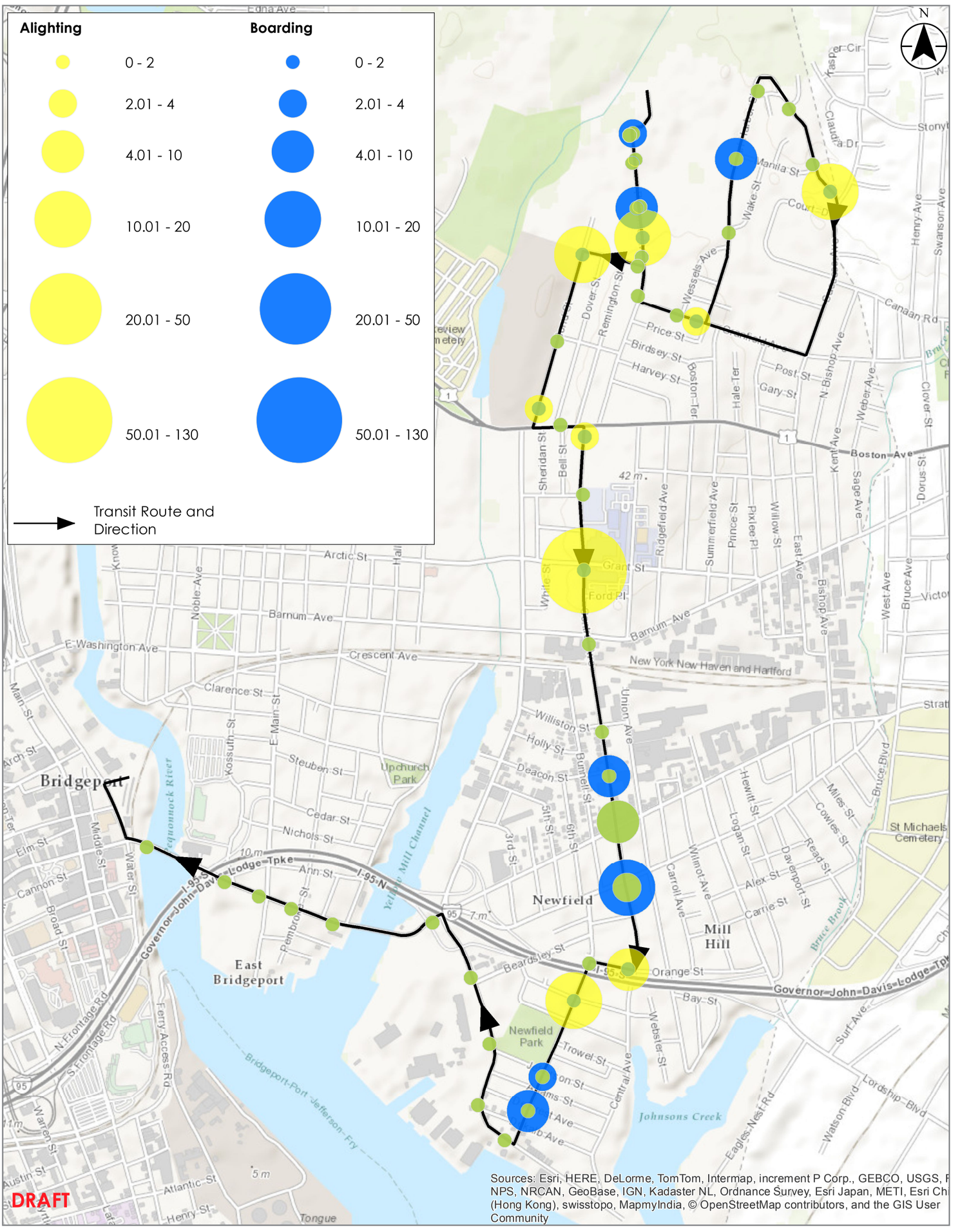
5am - 9am Inbound

Route 13


Alighting
0 - 2
2.01 - 4
4.01 - 10
10.01 - 15
15.01 - 30
Boarding
0 - 2
2.01 - 4
4.01 - 10
10.01 - 15
15.01 - 30
Transit Route and Direction
N
Bridgeport
East Bridgeport
Newfield
Mill Hill
Upchurch Park
Newfield Park
St Michaels Cemetery
Pequonnock River
Yellow Mill Channel
Bridgeport Harbor
Johnsons Creek
Bridgeport-Port Jefferson Ferry
Barnum Ave
Boston Ave
Crescent Ave
New York New Haven and Hartford
Governor John Davis Lodge Tpke
I-95 N
Ann St
Broad St
Main St
Water St
Middle St
Cannon St
Elm St
Clarence St
Steuben St
Cedar St
Nichols St
Ogden St
Shelton St
Jane St
Arctic St
Barnum Ave
E Washington Ave
Crescent Ave
Williston St
Holly St
Deacon St
Orange St
Bay St
Trowel St
Beardsley St
Carroll Ave
Wilmot Ave
Alex St
Carrie St
Davenport St
Read St
Cowles St
Miles St
Hewitt St
Logan St
Union Ave
Bruce Blvd
Surf Ave
Lordship Blvd
Watson Blvd
Eagles Nest Rd
Webster St
Central Ave
Ferry Access Rd
N Frontage Rd
S Frontage Rd
Warren St
Austin St
Atlantic St
Henry St
Tague
Price St
Birdsey St
Harvey St
Gary St
Post St
Canaan Rd
Stony
Claudia Dr
Manila St
Wake St
Messels Ave
Henry Ave
Swanson Ave
Boston Ter
Hale Ter
N Bishop Ave
Weber Ave
Kent Ave
Sheridan Dr
Ridgefield Ave
Summerfield Ave
Prince St
Pixlee Pl
Willow St
East Ave
Bishop Ave
West Ave
Bruce Ave
Victo
Dorus St
Sage Ave
Knowlton St
William St
Noble Ave
Hallett St
Helen St
Pembroke St
Kossuth St
E Main St
Union Ave
Burnell St
5th St
6th St
3rd St
Hewitt St
Logan St
Miles St
Cowles St
Read St
Davenport St
Alex St
Carrie St
Wilmot Ave
Carroll Ave
Webster St
Central Ave
Trowel St
Bay St
Orange St
Beardsley St
Newfield Park
Johnsons Creek
Bridgeport Harbor
Yellow Mill Channel
Pequonnock River
Upchurch Park
St Michaels Cemetery
Bruce Brook

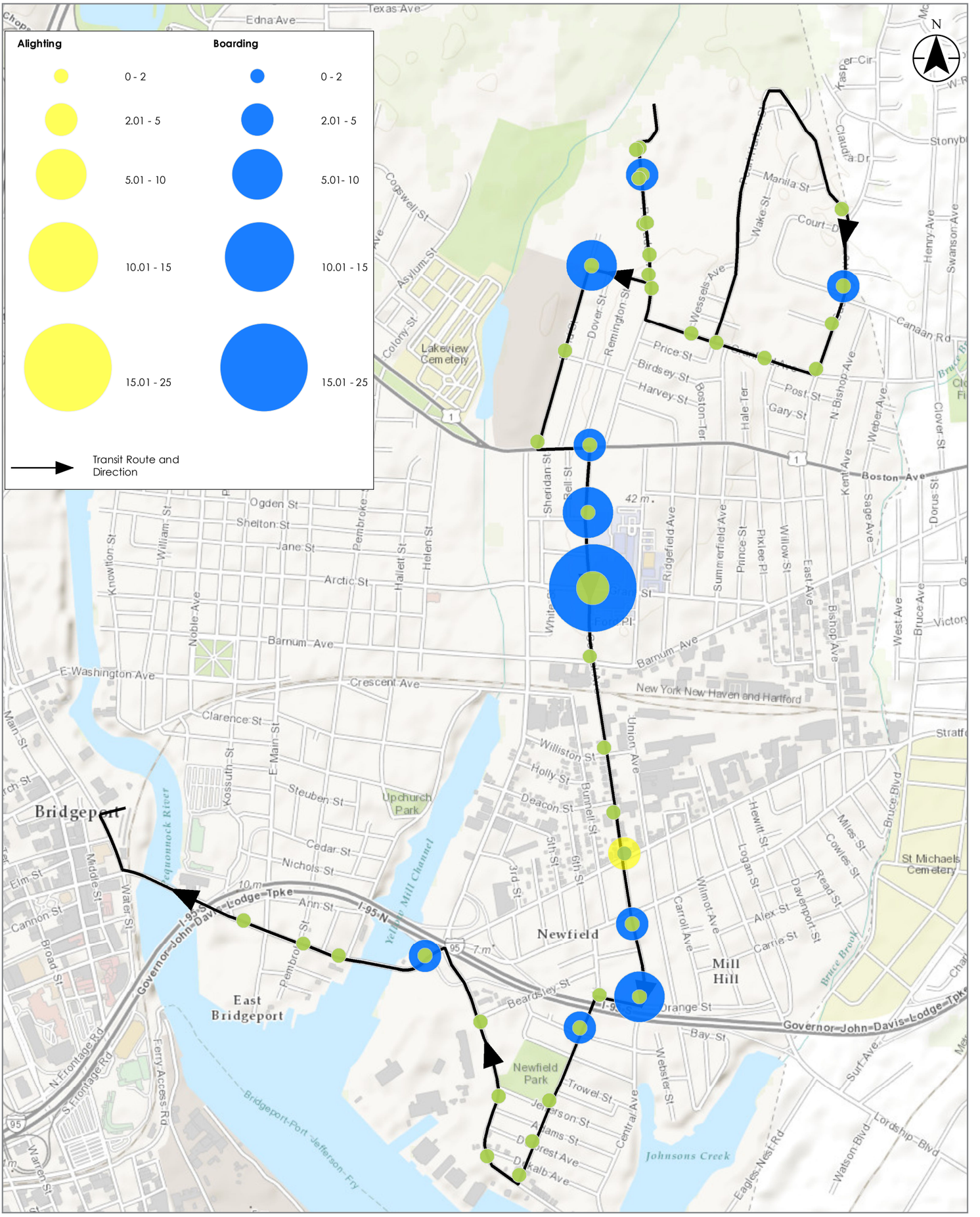
5am - 9am Outbound

Route 13



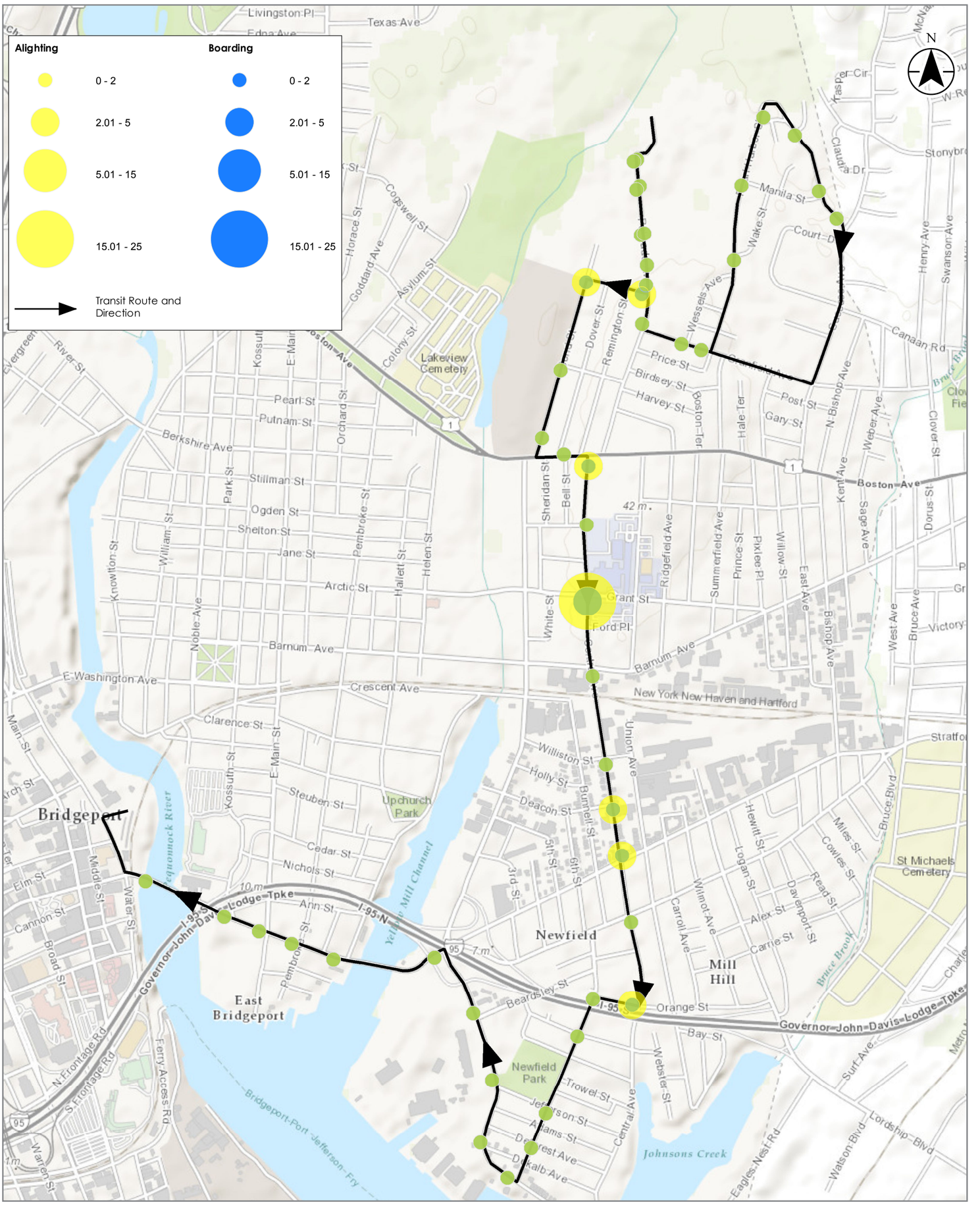
10am - 2pm Inbound

Route 13



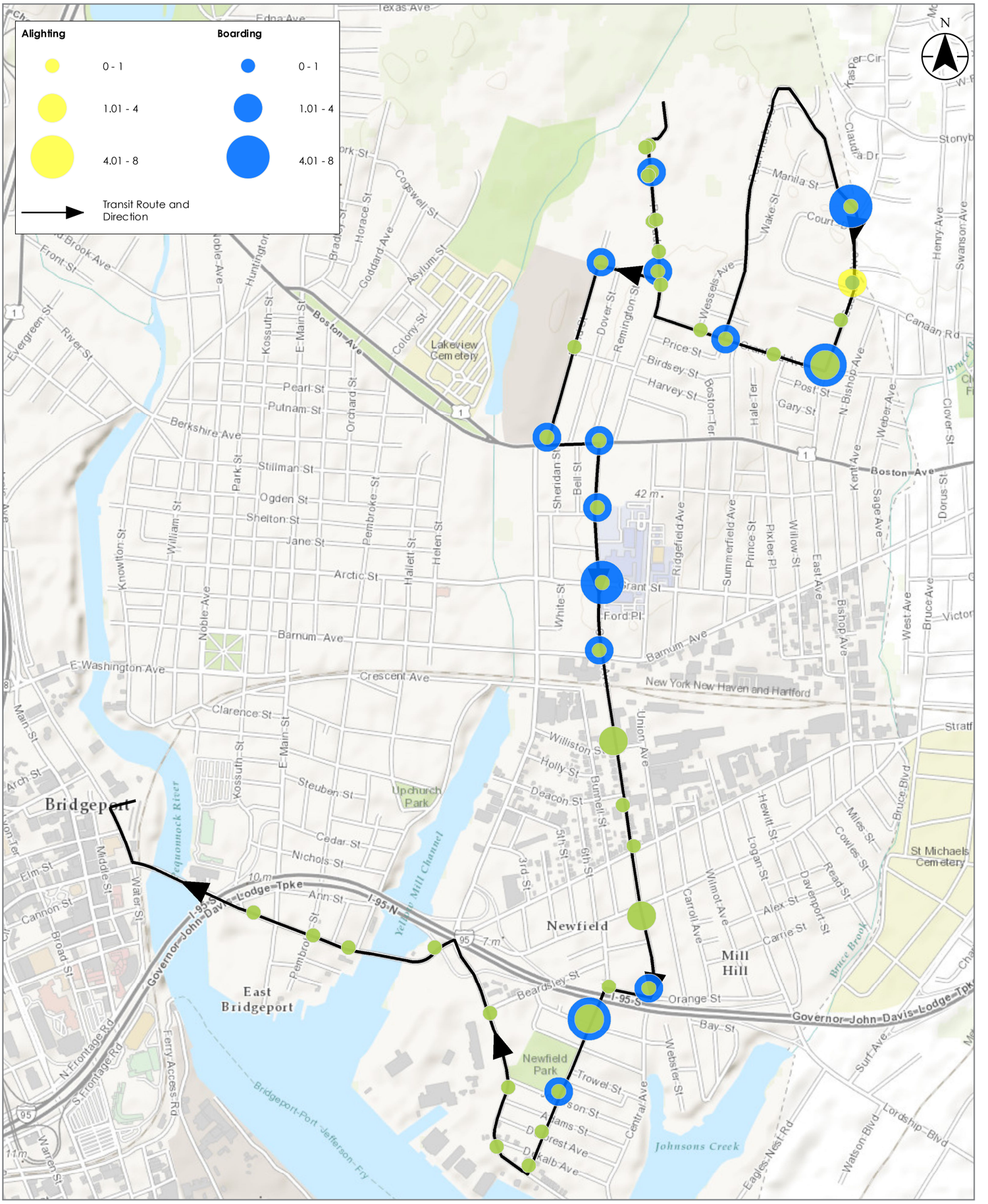
10am - 2pm Outbound

Route 13



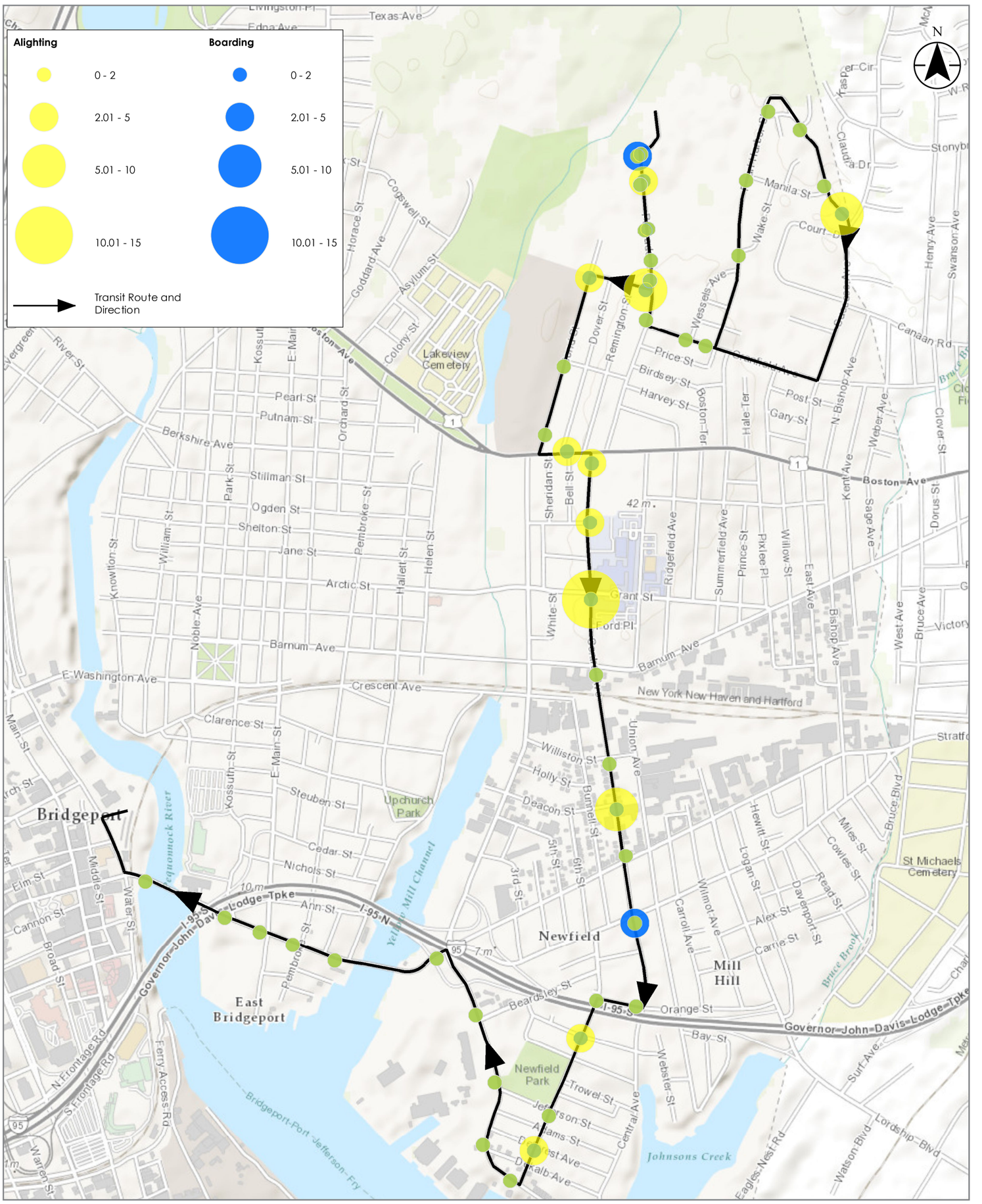
3pm - 6pm Inbound

Route 13



3pm - 6pm Outbound

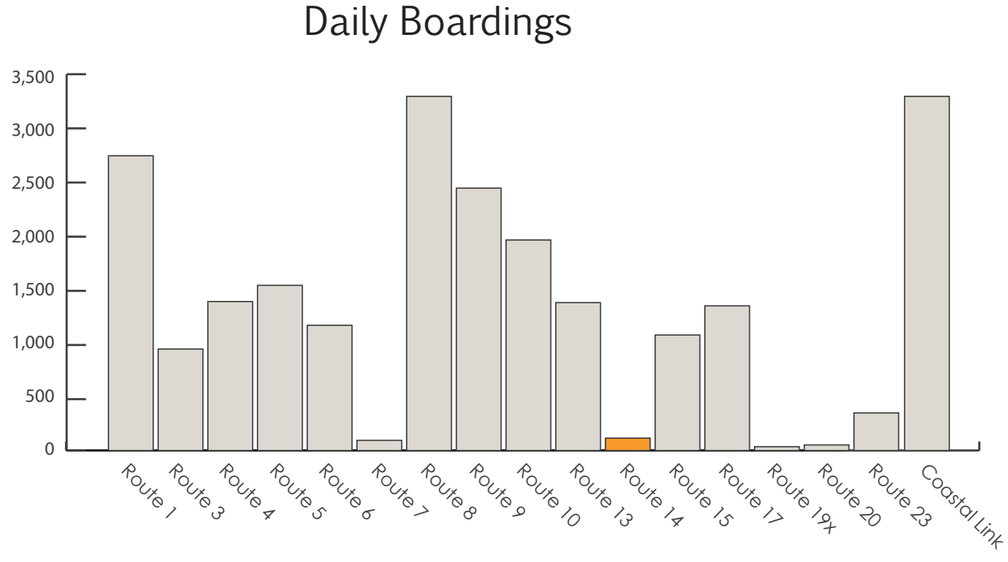
Route 13



Route Fourteen

Westfield Trumbull Mall - Route 111 - Monroe

Route 14	
Weekday Daily Boardings	115
Percent of System Activity (Sampled Routes)	0.5%
Daily One-Way Revenue Trips	8
Peak / Off-Peak Headway (Minutes)	60
Service Type	LTN
Number of Peak Buses	1
Efficiency (% Schedule Recovery)	12.1%
Average Boardings per Hour - AM Peak	33
Average Boardings per Hour - Midday	13
Average Boardings per Hour - PM Peak	10



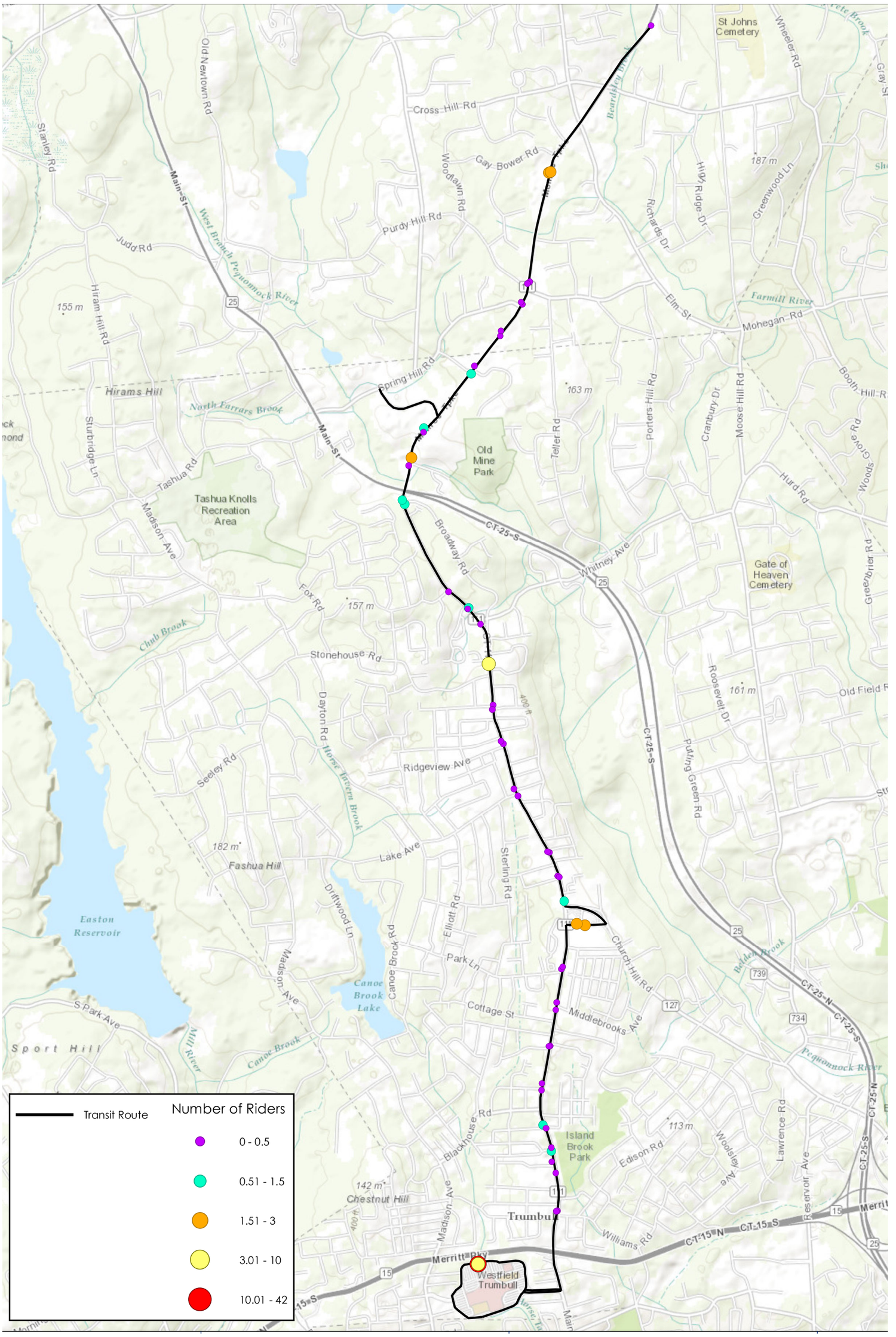
Route Highlights:

- Route Fourteen is a limited, hourly service operating between Monroe and Westfield Trumbull Mall.
- Out of a number of limited services in the GBT network, this route is unique in that it is primarily a midday service, rather than a peak-period service.
- Some trips operate at the beginning or end of the peak-periods.
- During peak-periods, coverage along this route is provided by Routes 19x and 20.
- Customers traveling to and from Downtown Bridgeport during this time need to transfer at Westfield Trumbull Mall.
- Westfield Trumbull Mall serves as a key origin and destination for customers. It is the most utilized stop on the route, providing transfer opportunities to and from other GBT routes.
- Along the remainder of the route, the majority of stops see no customers. Stops with boardings and alightings are generally limited to those adjacent to shopping centers, industrial parks, and civic centers, such as the Trumbull Town Hall and Library.

Route 14 connects the Monroe Turnpike to the Westfield Trumbull Mall. It is proposed that this route be replaced with Routes 19 and 26. Route 19 would serve Westfield Trumbull Mall and Route 26 would provide limited stop service to Downtown Bridgeport from the Monroe Turnpike.

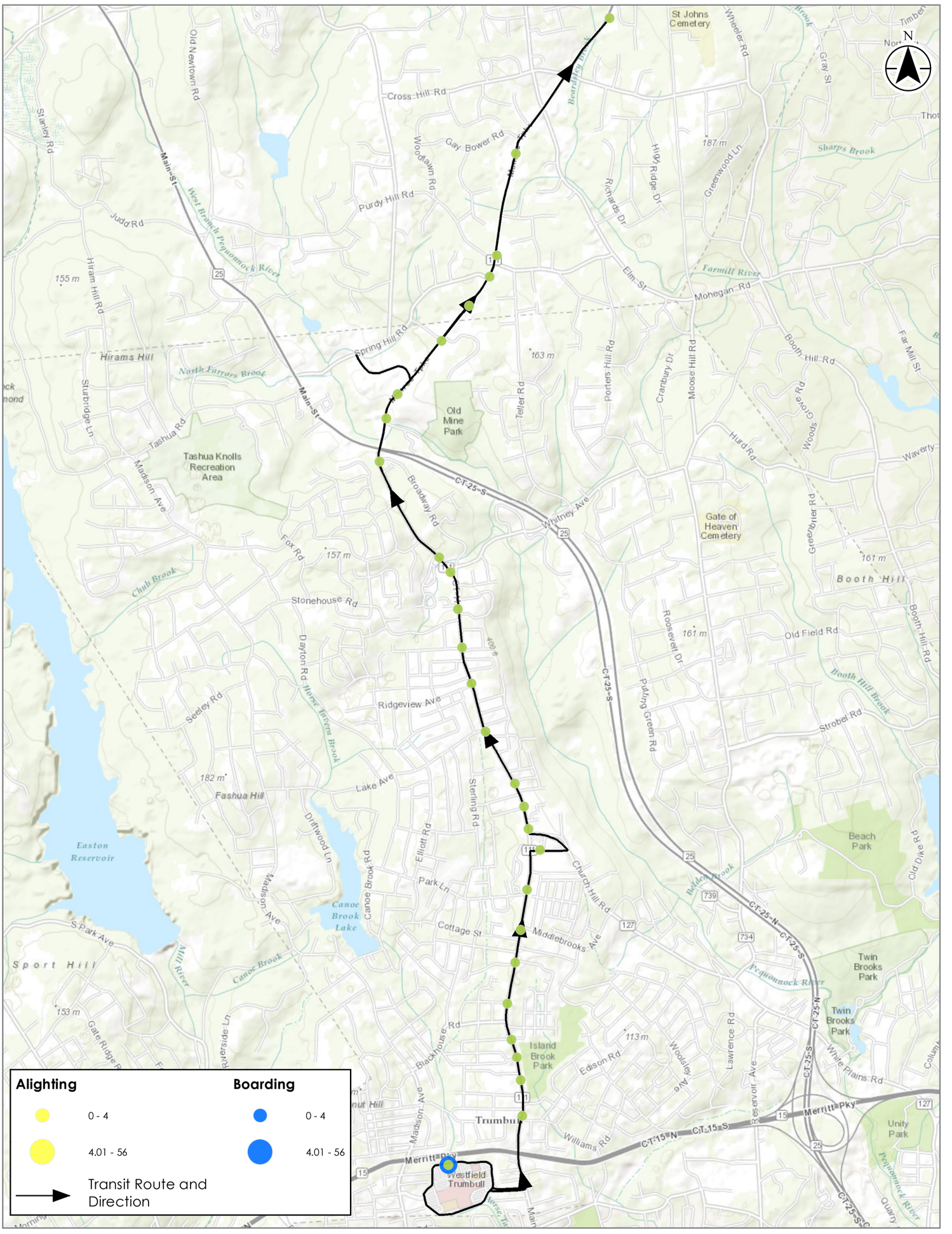
Total Daily Activity

Route 14



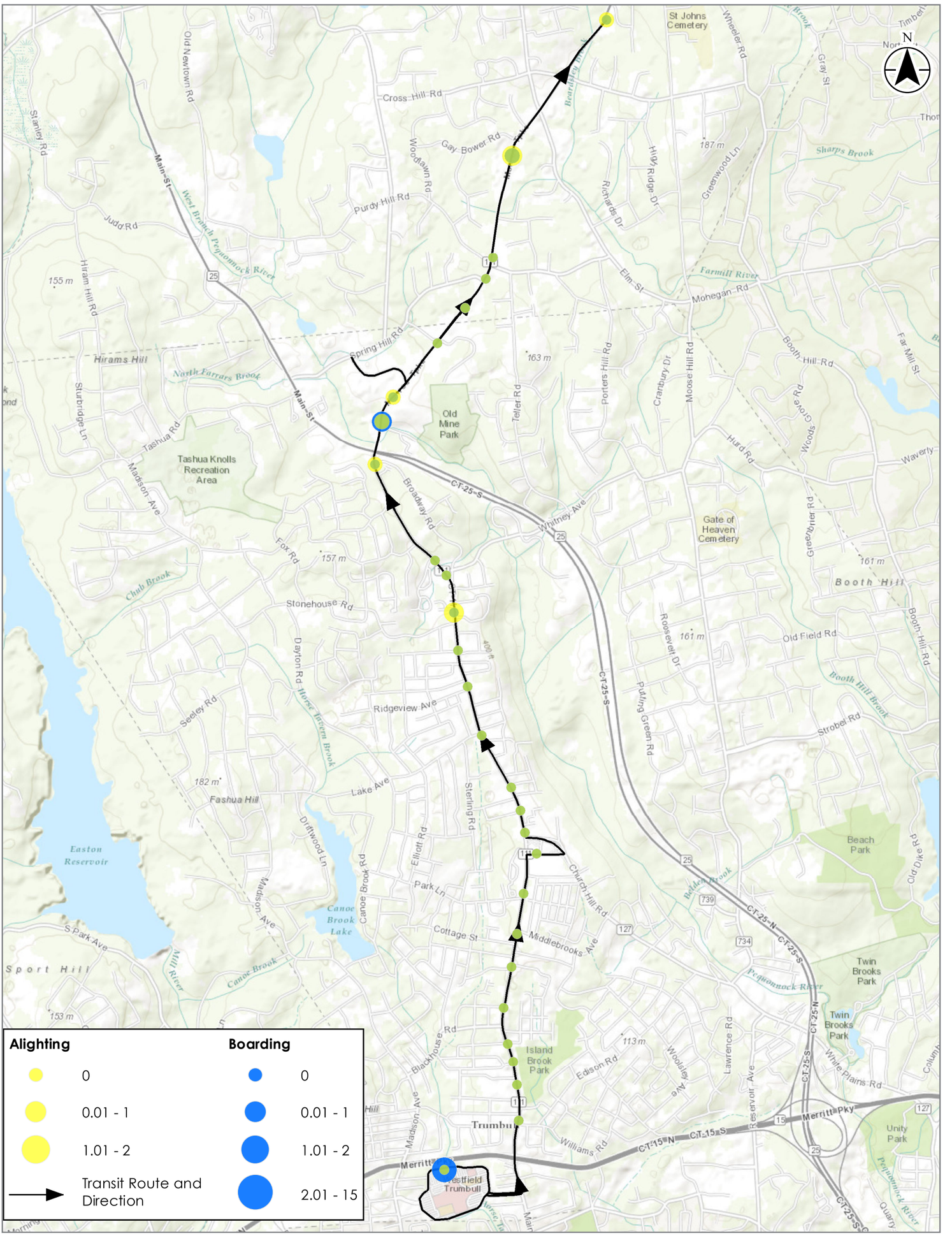
5am - 9am Outbound

Route 14



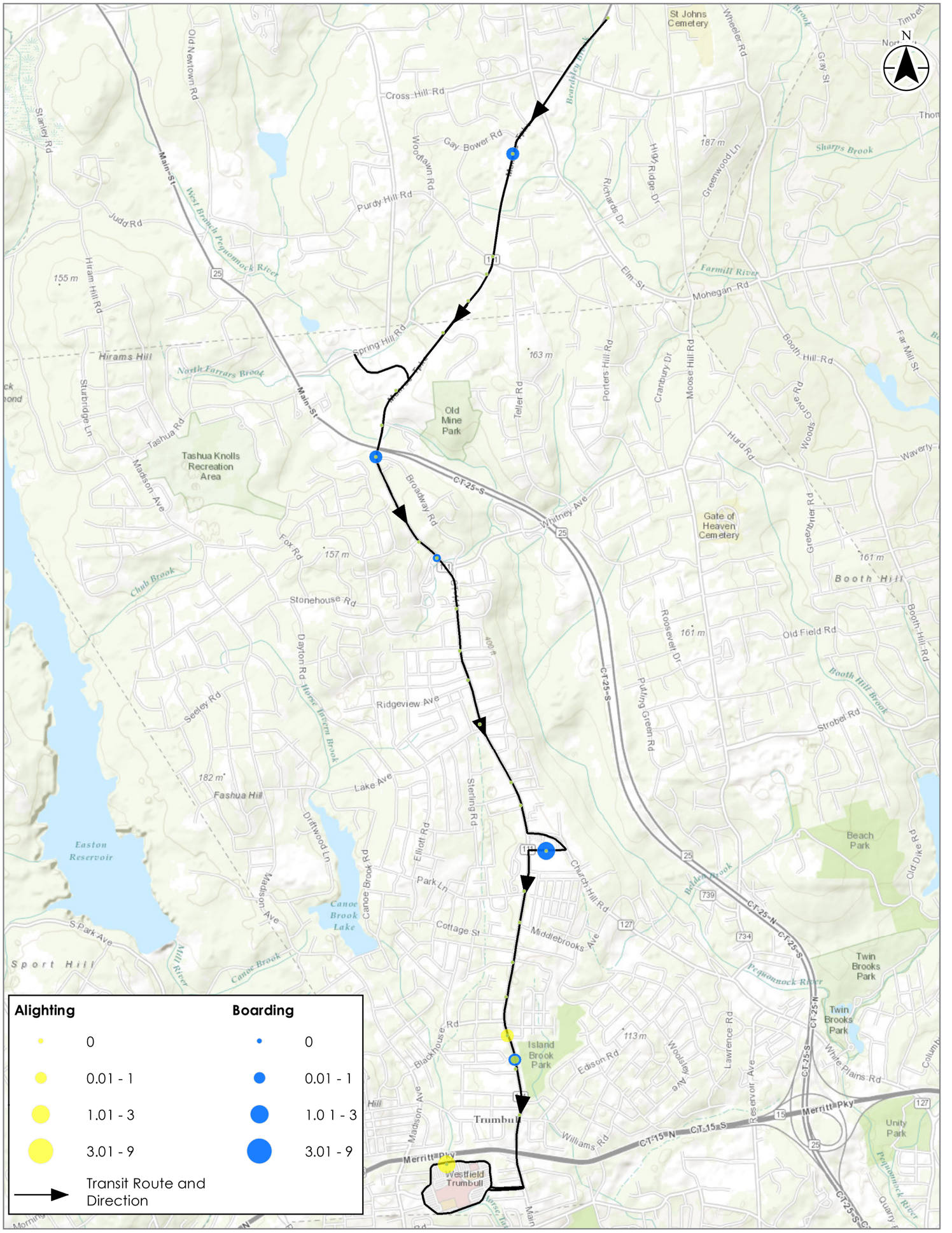
10am - 2pm Outbound

Route 14



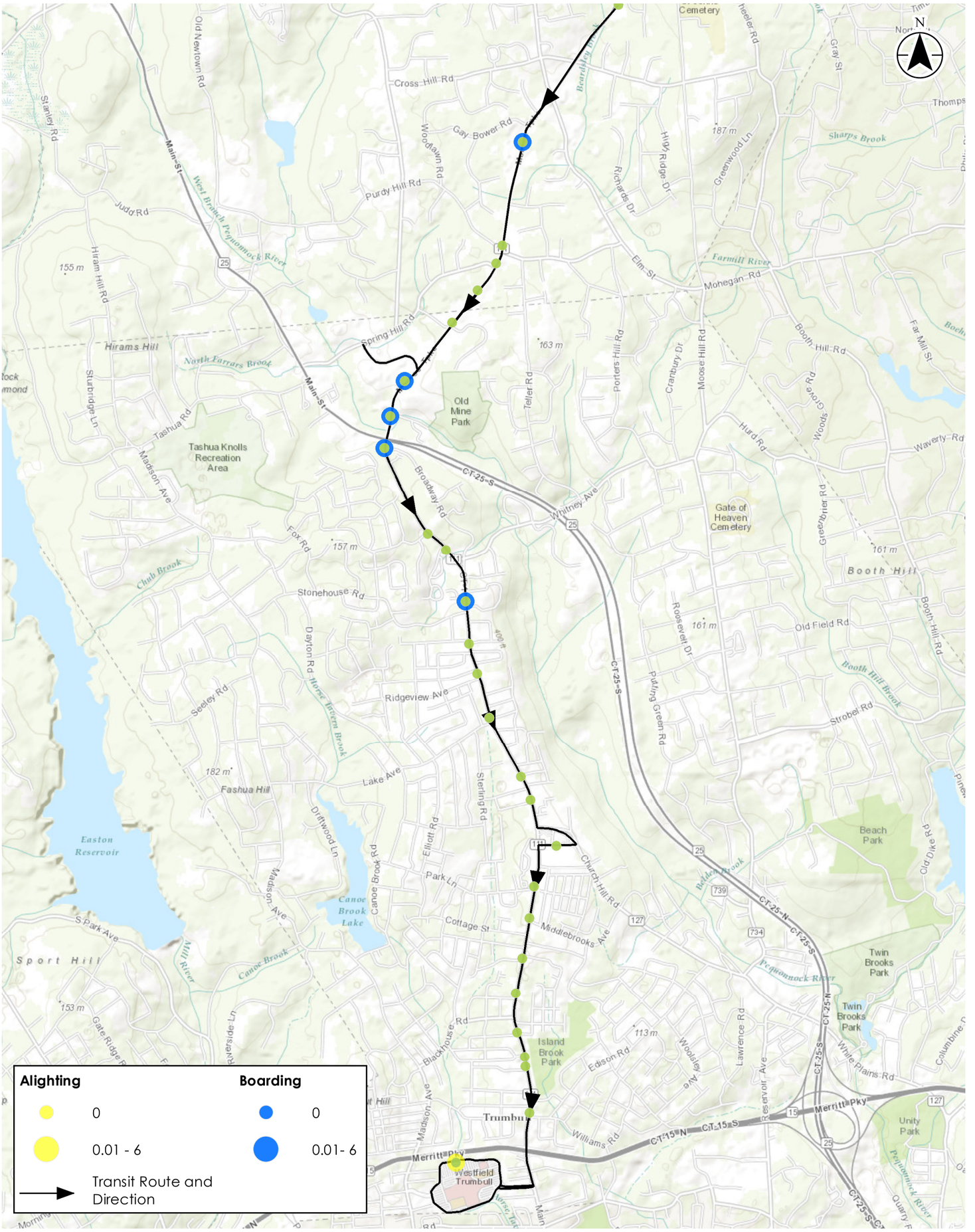
10am - 2pm Inbound

Route 14



3pm - 6pm Inbound

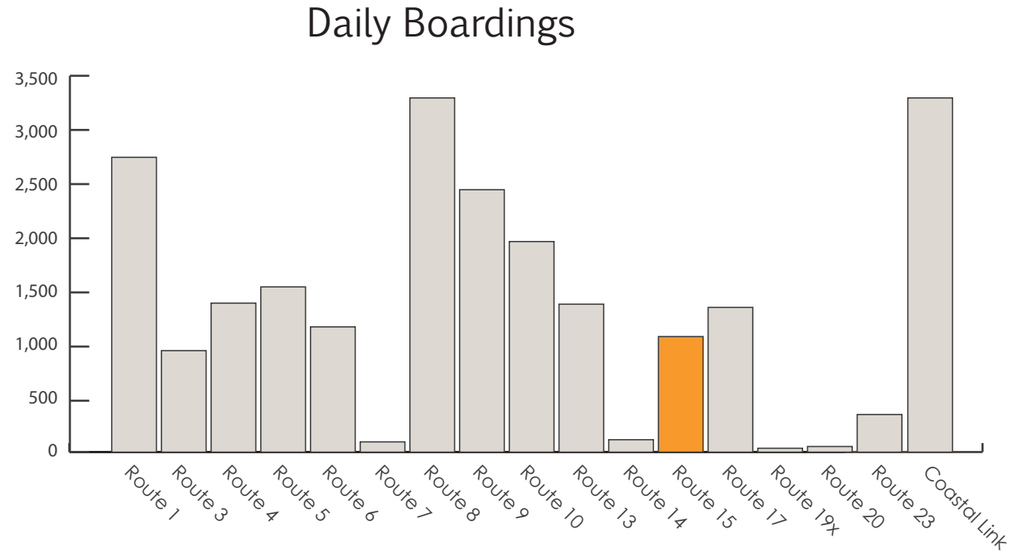
Route 14



Route Fifteen

Downtown - Hawley Lane Mall - Shelton - Derby Station

Route 15	
Weekday Daily Boardings	1,070
Percent of System Activity (Sampled Routes)	5%
Daily One-Way Revenue Trips	35
Peak / Off-Peak Headway (Minutes)	60
Service Type	RTN
Number of Peak Buses	2
Efficiency (% Schedule Recovery)	11.3%
Average Boardings per Hour - AM Peak	58
Average Boardings per Hour - Midday	60
Average Boardings per Hour - PM Peak	117



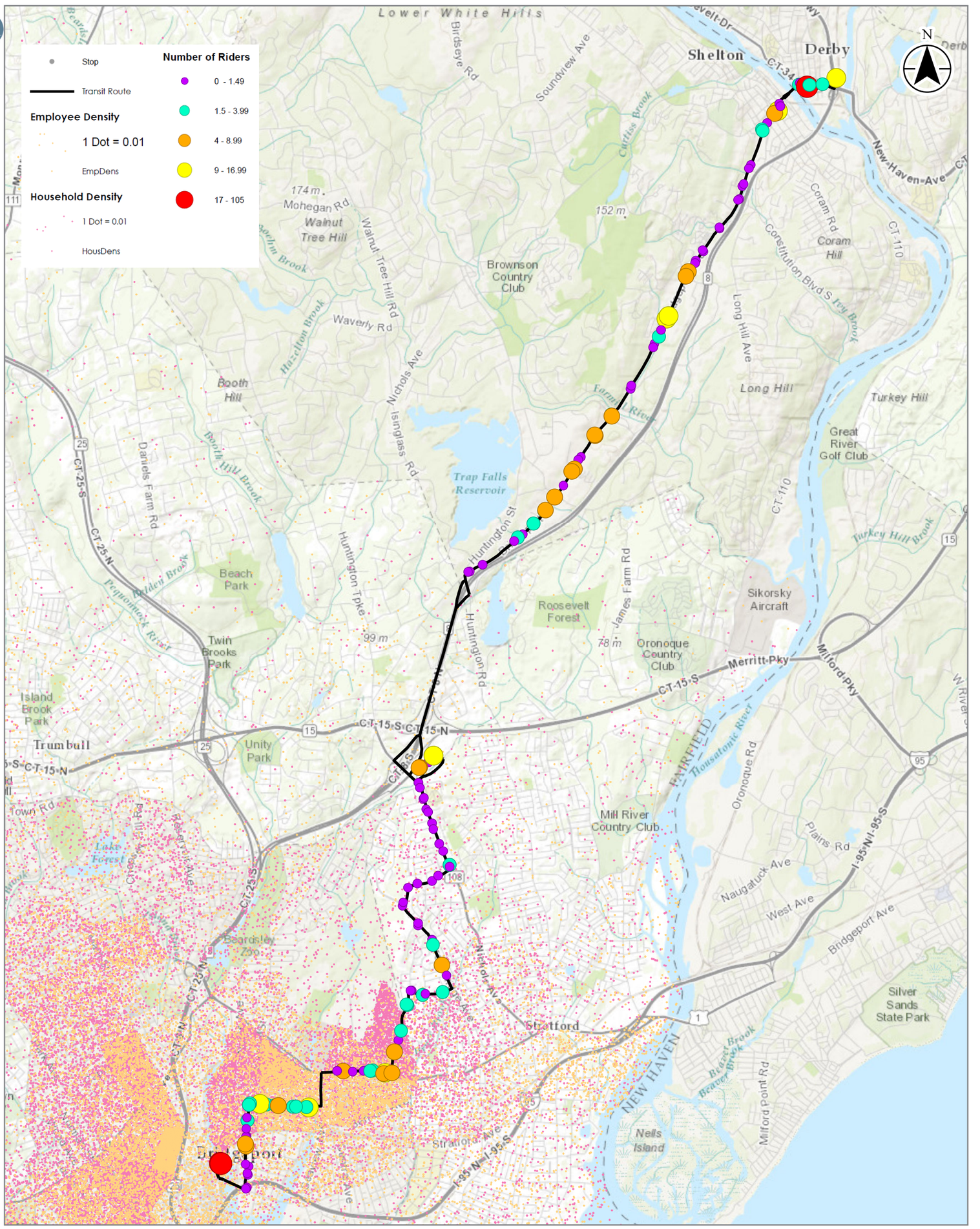
Route Highlights:

- Route Fifteen is one of the moderately performing all-day services in the GBT network.
- Inbound during the AM peak, the majority of stops have no activity and ridership does not pickup until it reaches the Bridgeport city boundary, showing that there is a small market for service into Downtown Bridgeport from communities such as Shelton.
- Stops along this area have good utilization in the outbound direction, but not in the inbound direction, likely as a result of employees traveling from Bridgeport to these places of employment.
- PM peak travel appears to be the opposite of AM peak patterns, except for an increase of activity at Derby Train Station. This change may explain the increase in boardings per hour for the PM peak, as compared to the midday or AM Peak.
- The PM peak also sees a drop of activity within the City of Bridgeport

Route 15 is a regional all-day service connecting the Derby Train Station with Downtown Bridgeport. To improve performance, it is proposed that this route operate limited stop service beyond Broadbridge Avenue in the City of Stratford. Some of the coverage that is currently provided by Route 15 would be provided by a modified Route 17.

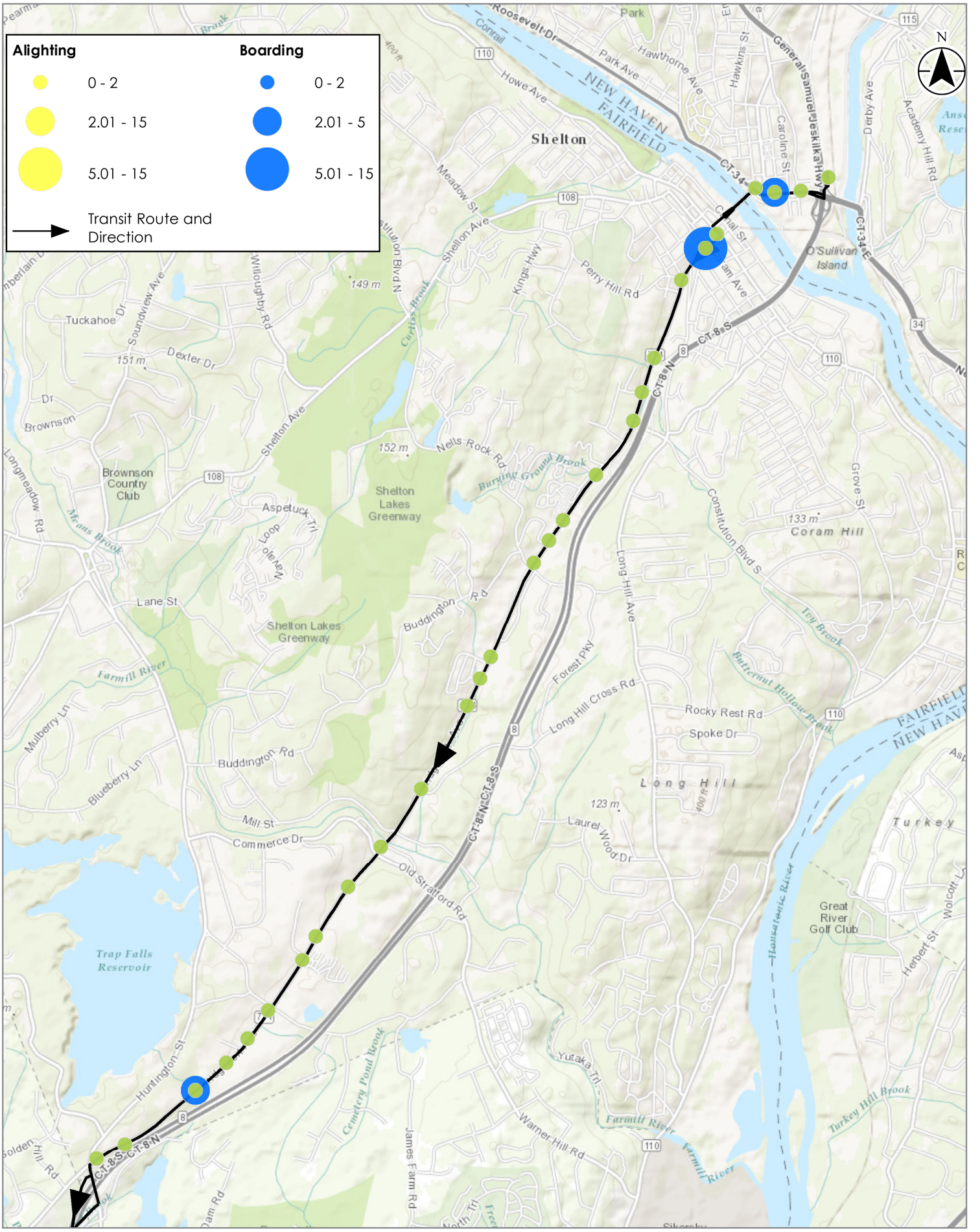
Total Daily Activity

Route 15



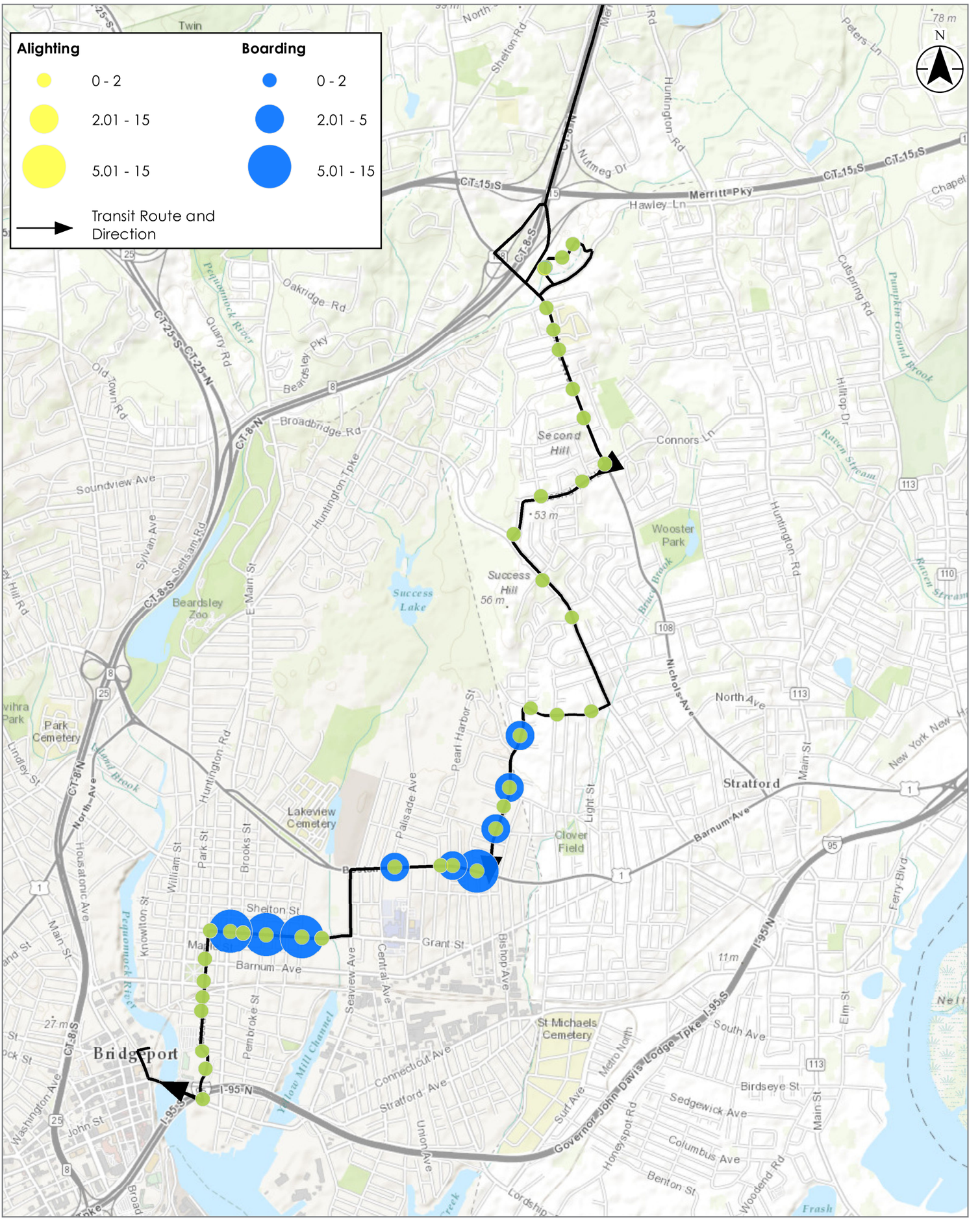
5am - 9am Inbound

Route 15



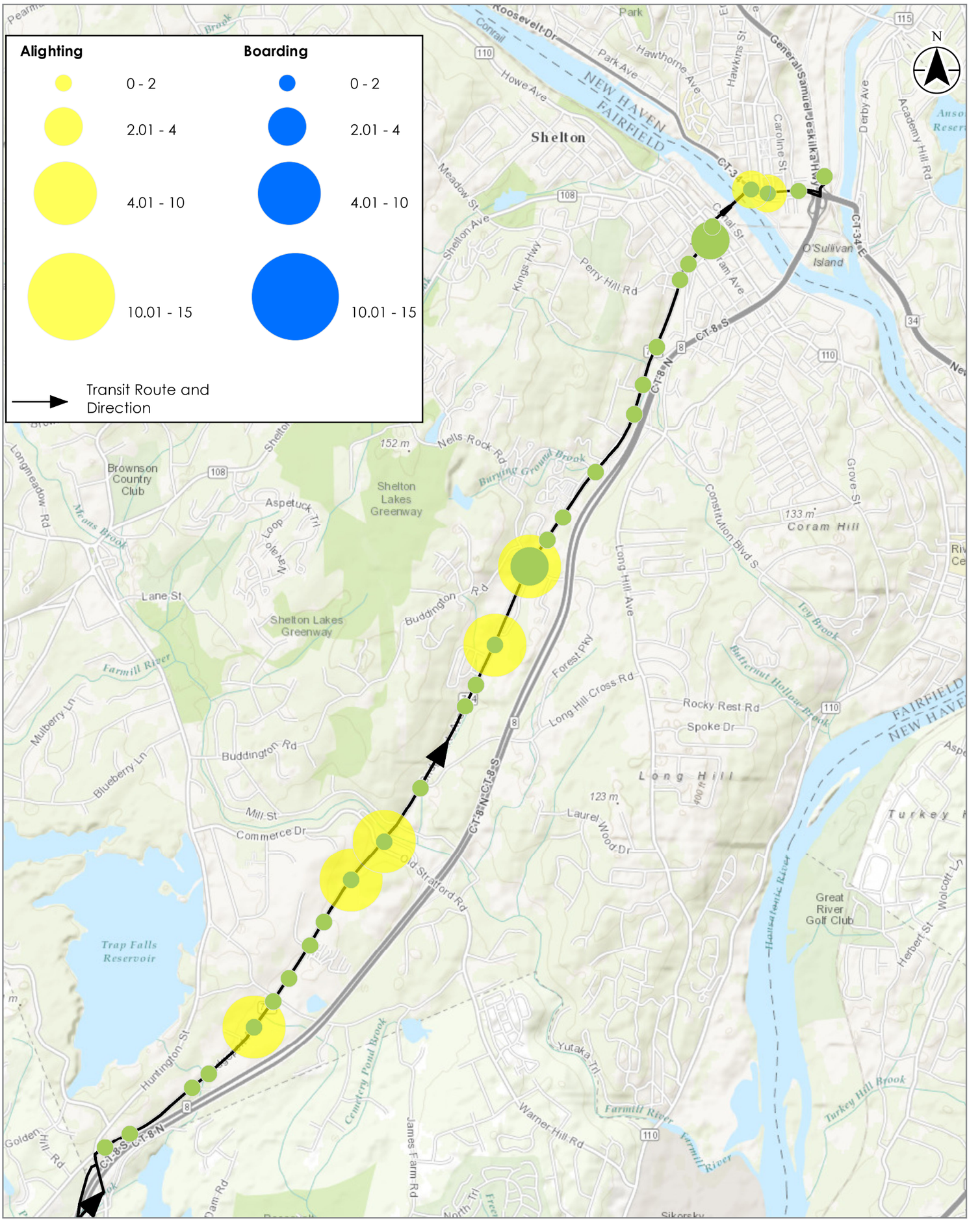
5am - 9am Inbound

Route 15



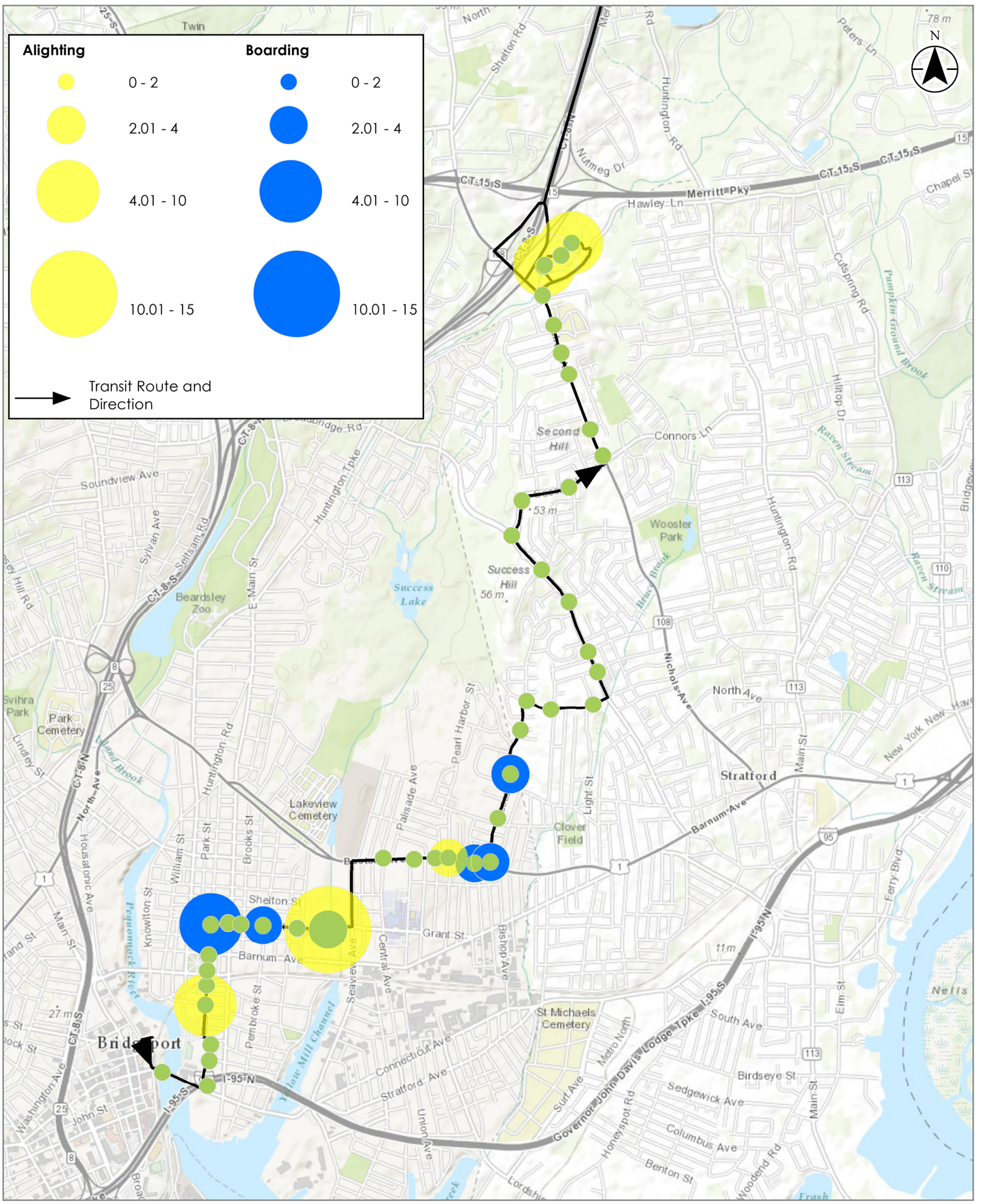
5am - 9am Outbound

Route 15



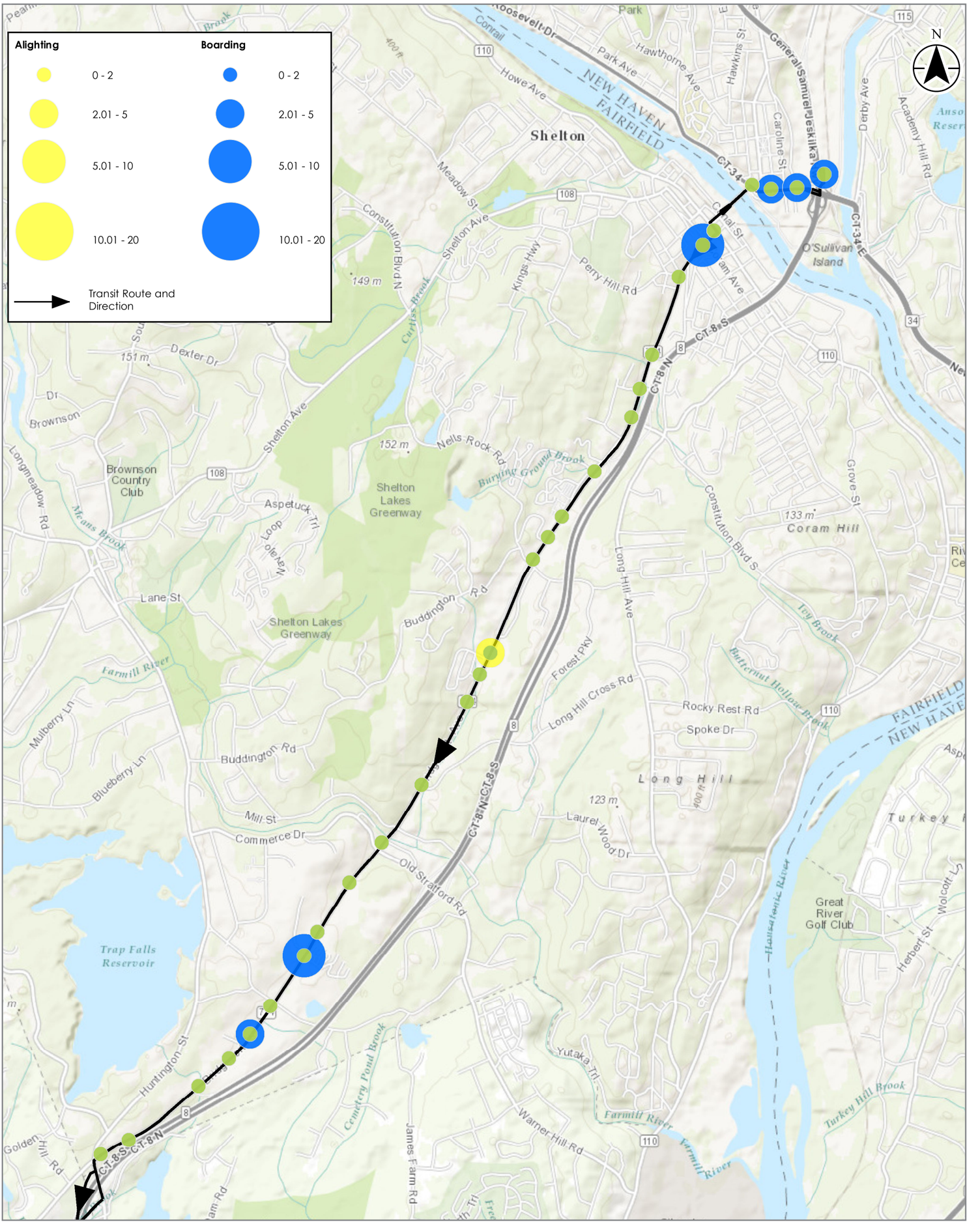
5am - 9am Outbound

Route 15



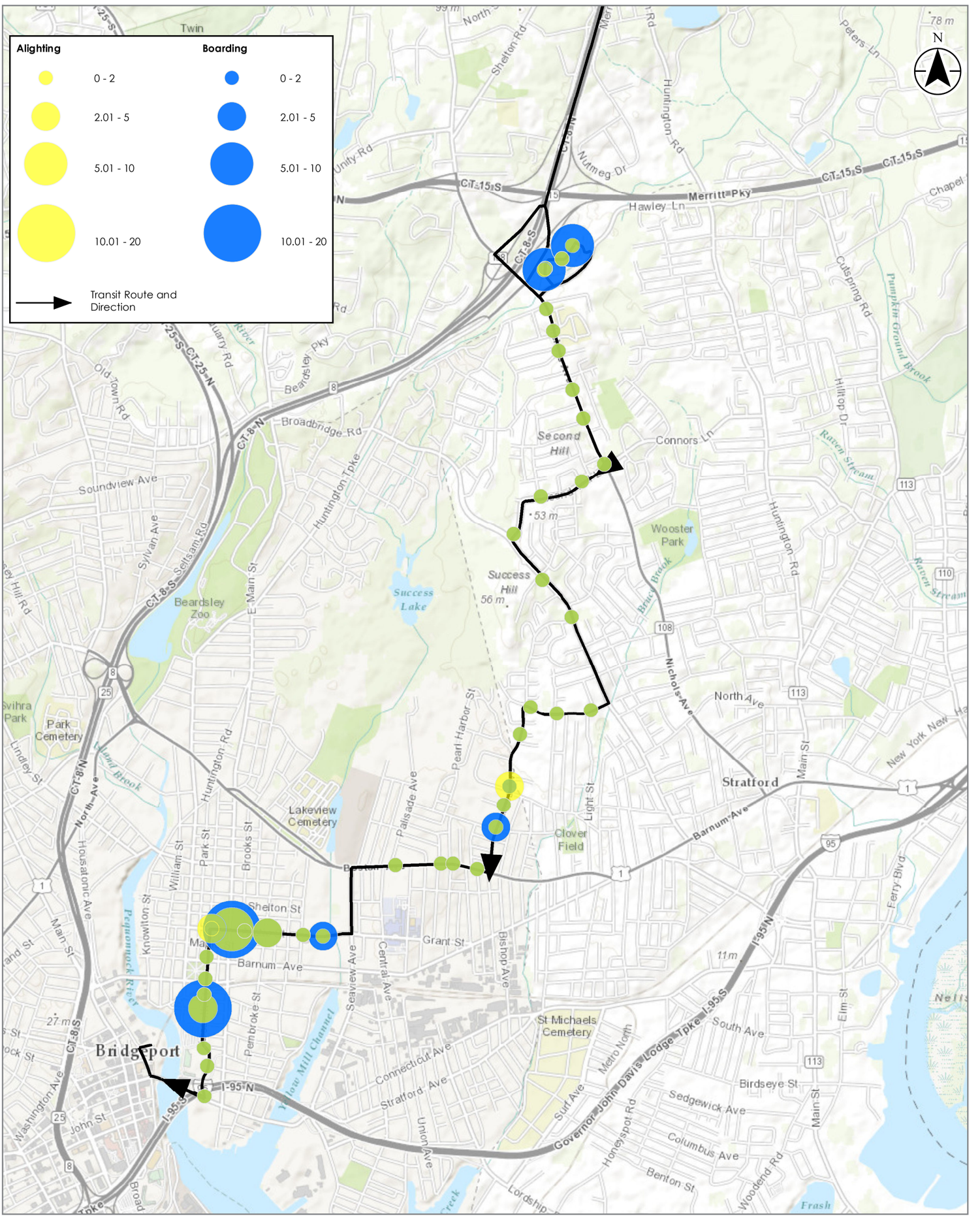
10am - 2pm Inbound

Route 15



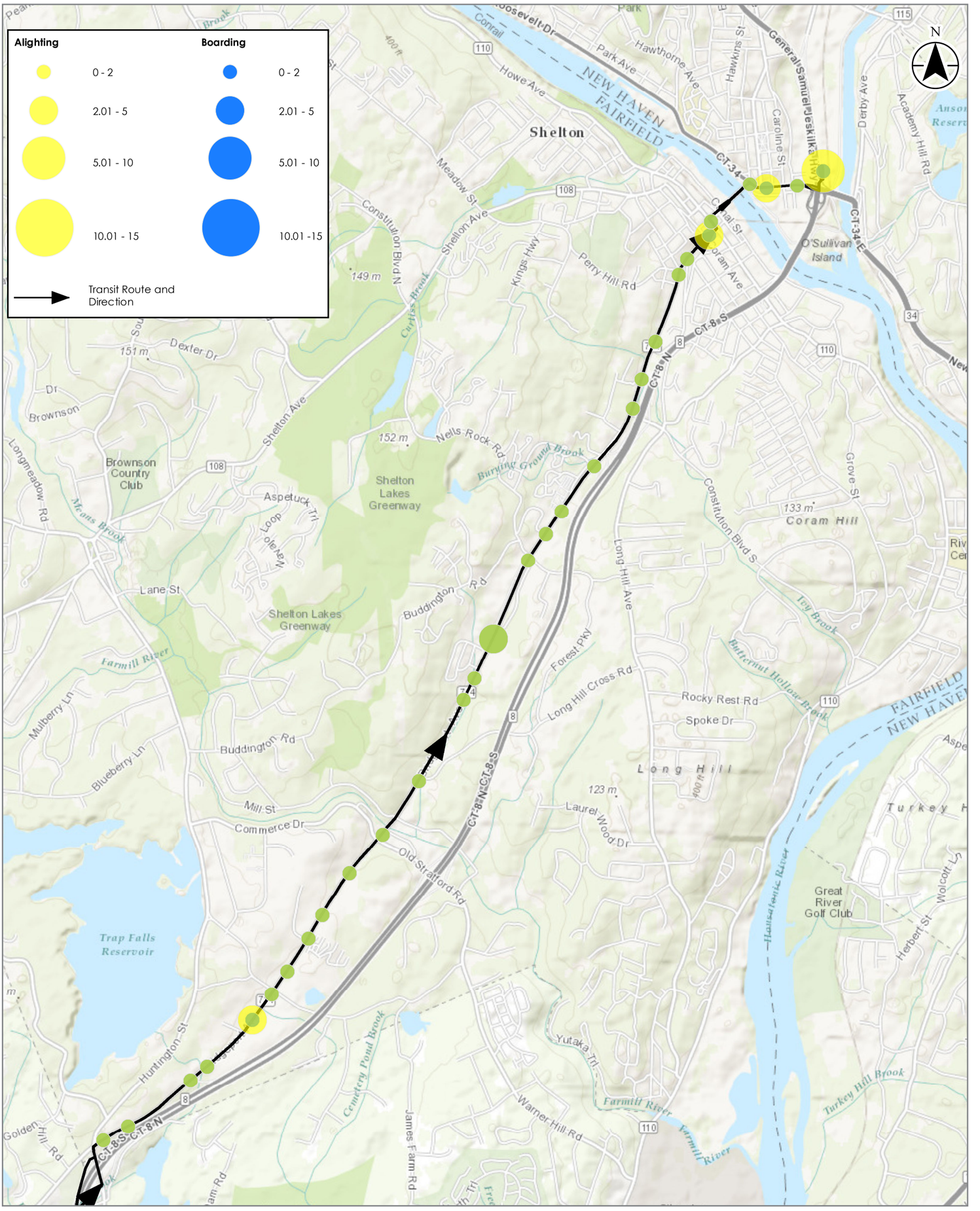
10am - 2pm Inbound

Route 15



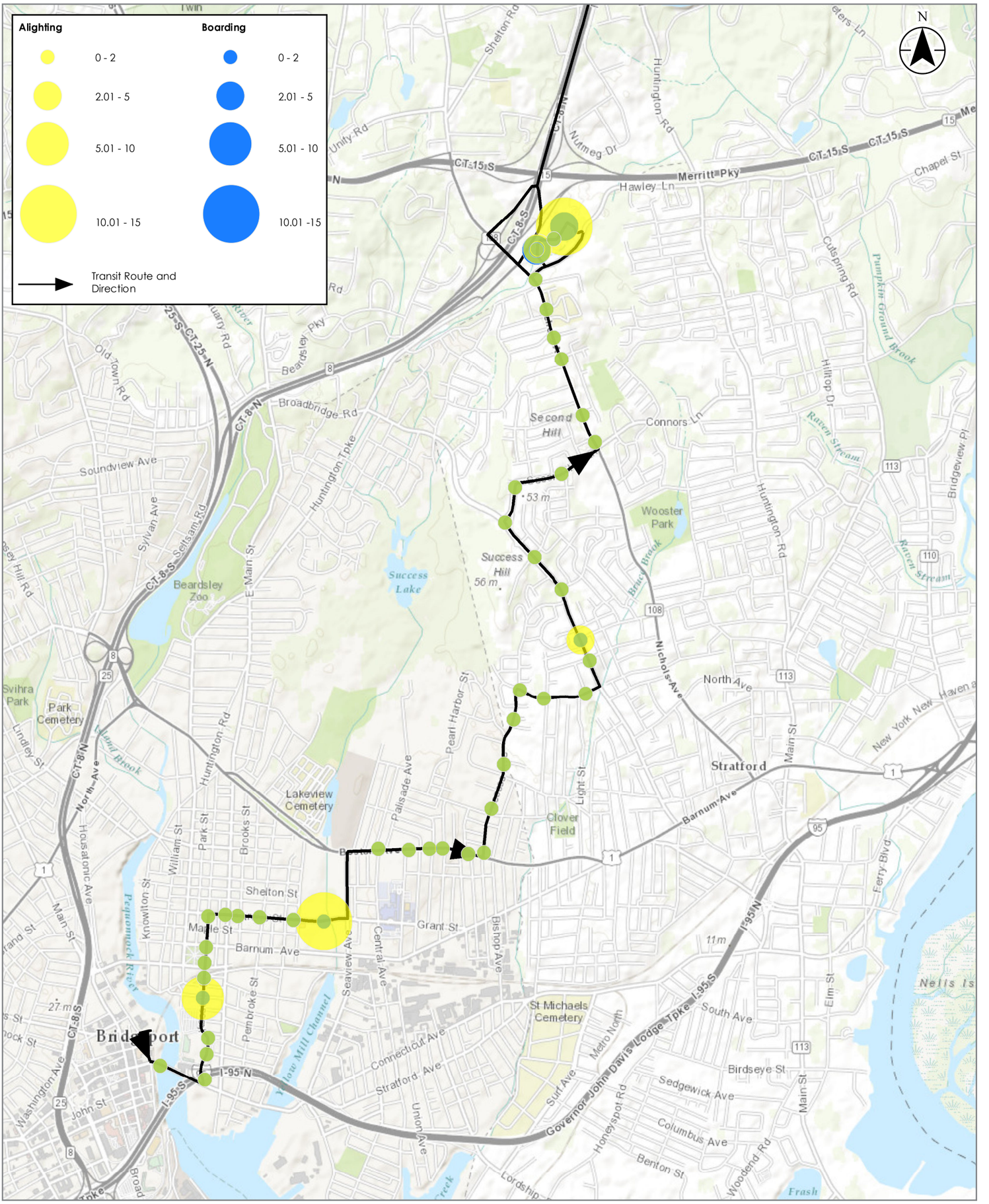
10am - 2pm Outbound

Route 15



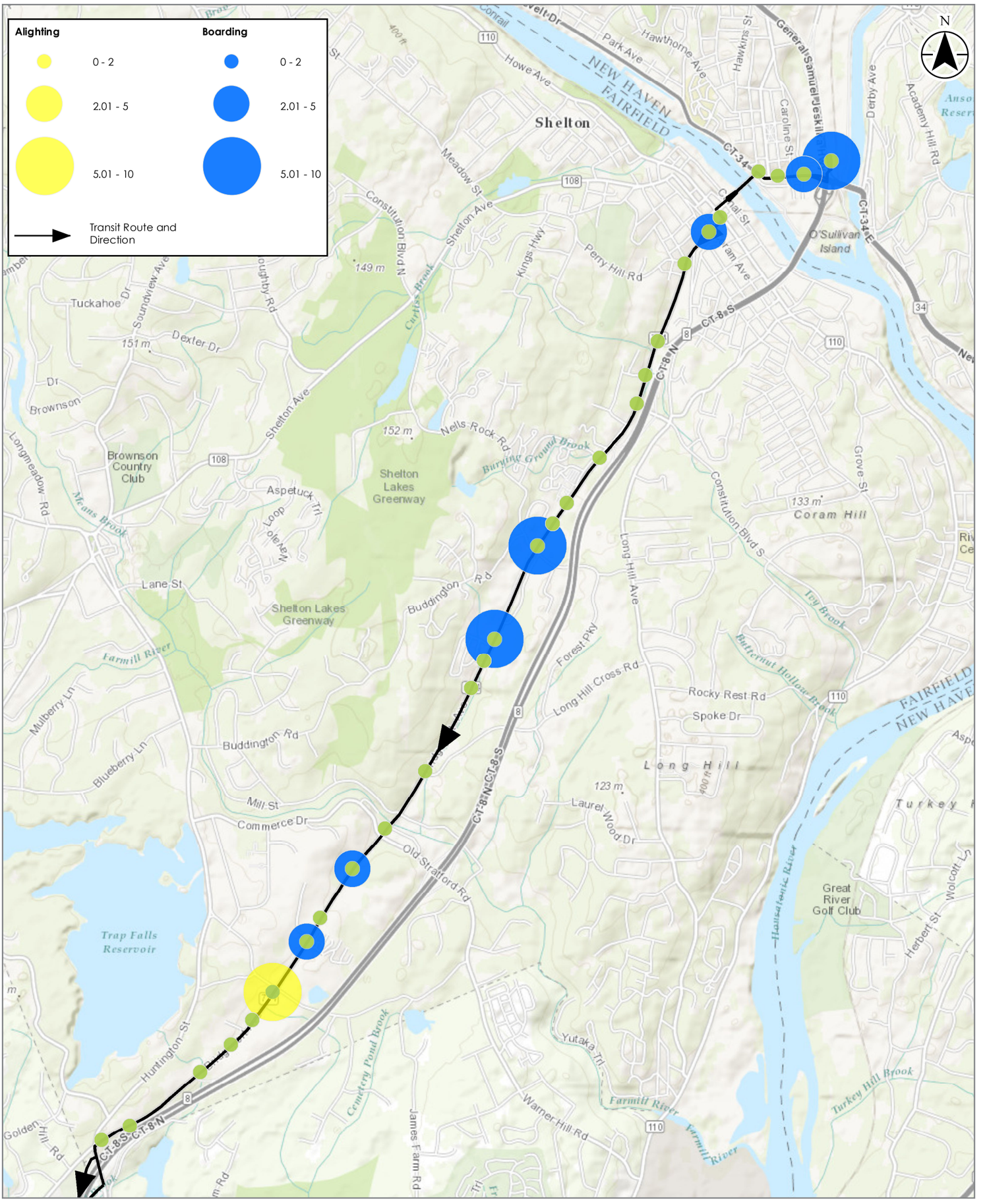
10am - 2pm Outbound

Route 15



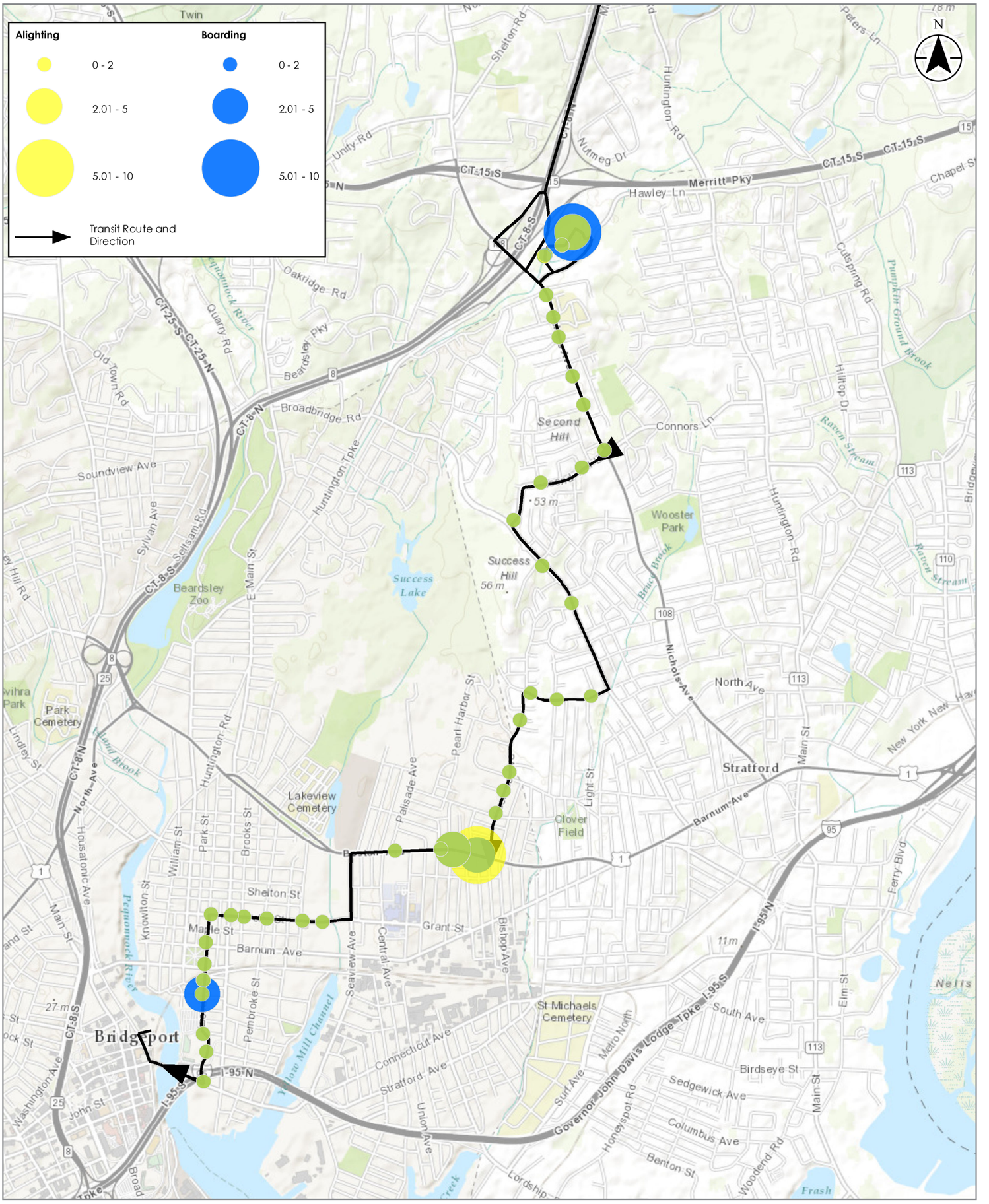
3pm - 6pm Inbound

Route 15



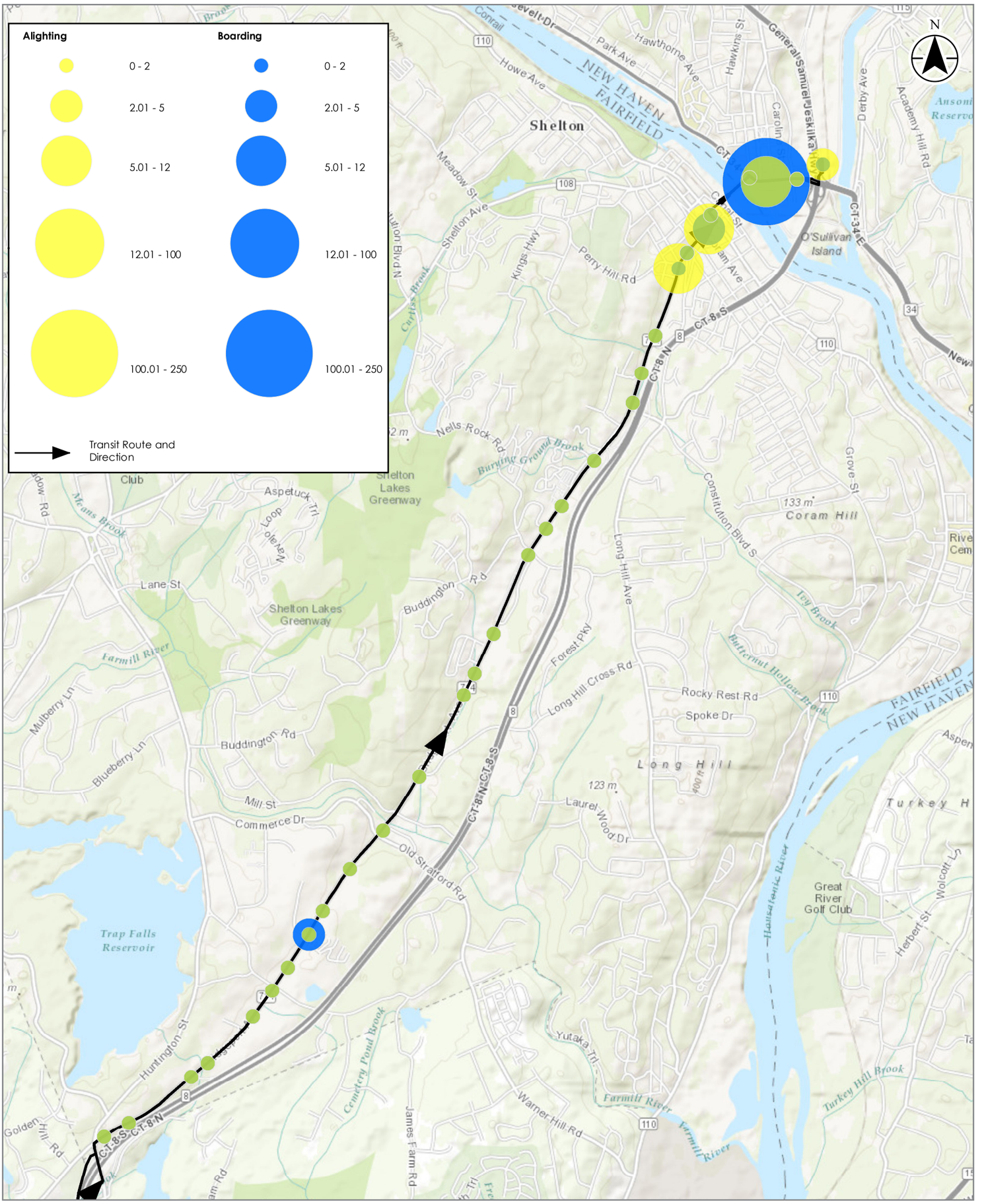
3pm - 6pm Inbound

Route 15



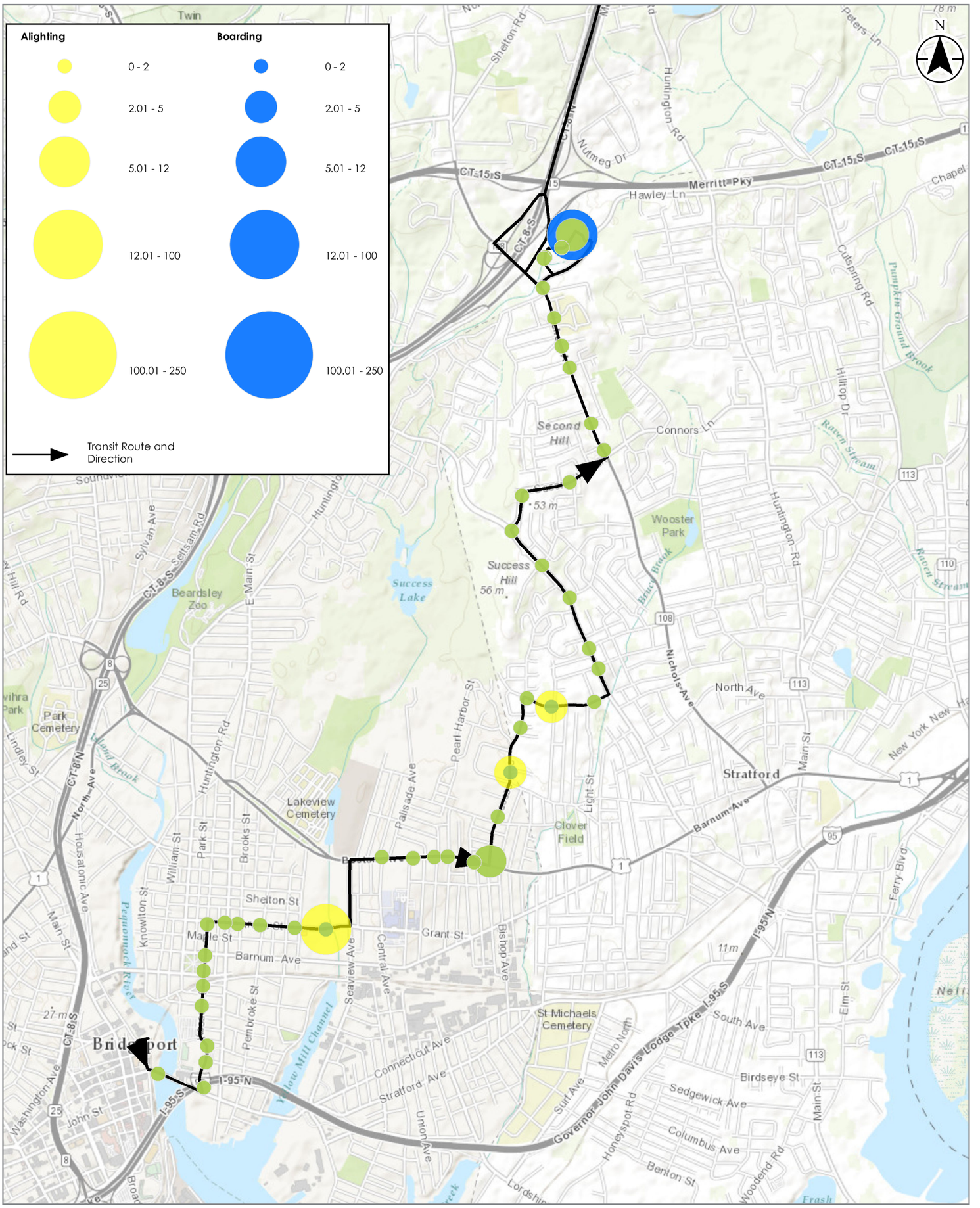
3pm - 6pm Outbound

Route 15



3pm - 6pm Outbound

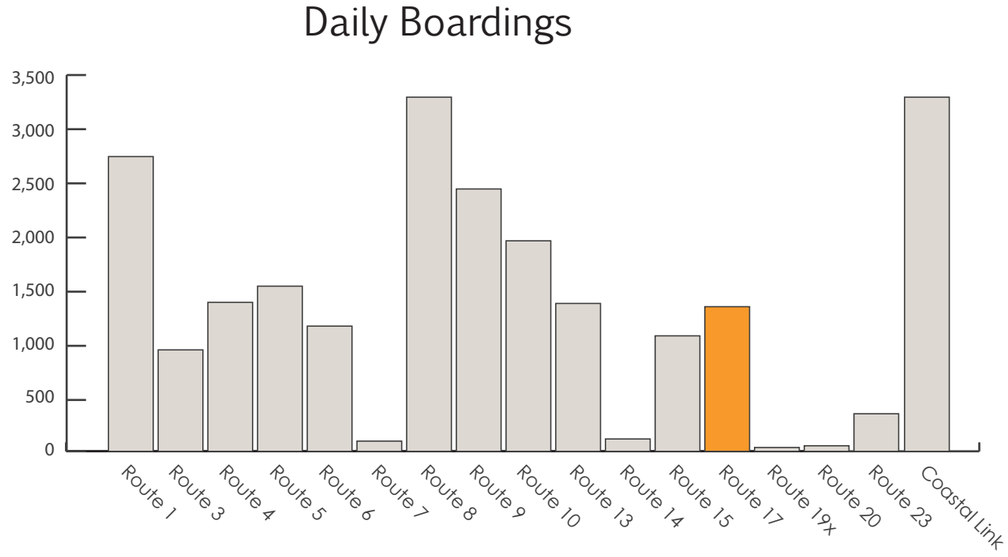
Route 15



Route Seventeen

Downtown - North Ave - Boston Ave - Success Park

Route 17	
Weekday Daily Boardings	1,340
Percent of System Activity (Sampled Routes)	6%
Daily One-Way Revenue Trips	45
Peak / Off-Peak Headway (Minutes)	30 / 30
Service Type	RTN
Number of Peak Buses	3
Efficiency (% Schedule Recovery)	8.3%
Average Boardings per Hour - AM Peak	58
Average Boardings per Hour - Midday	138
Average Boardings per Hour - PM Peak	105



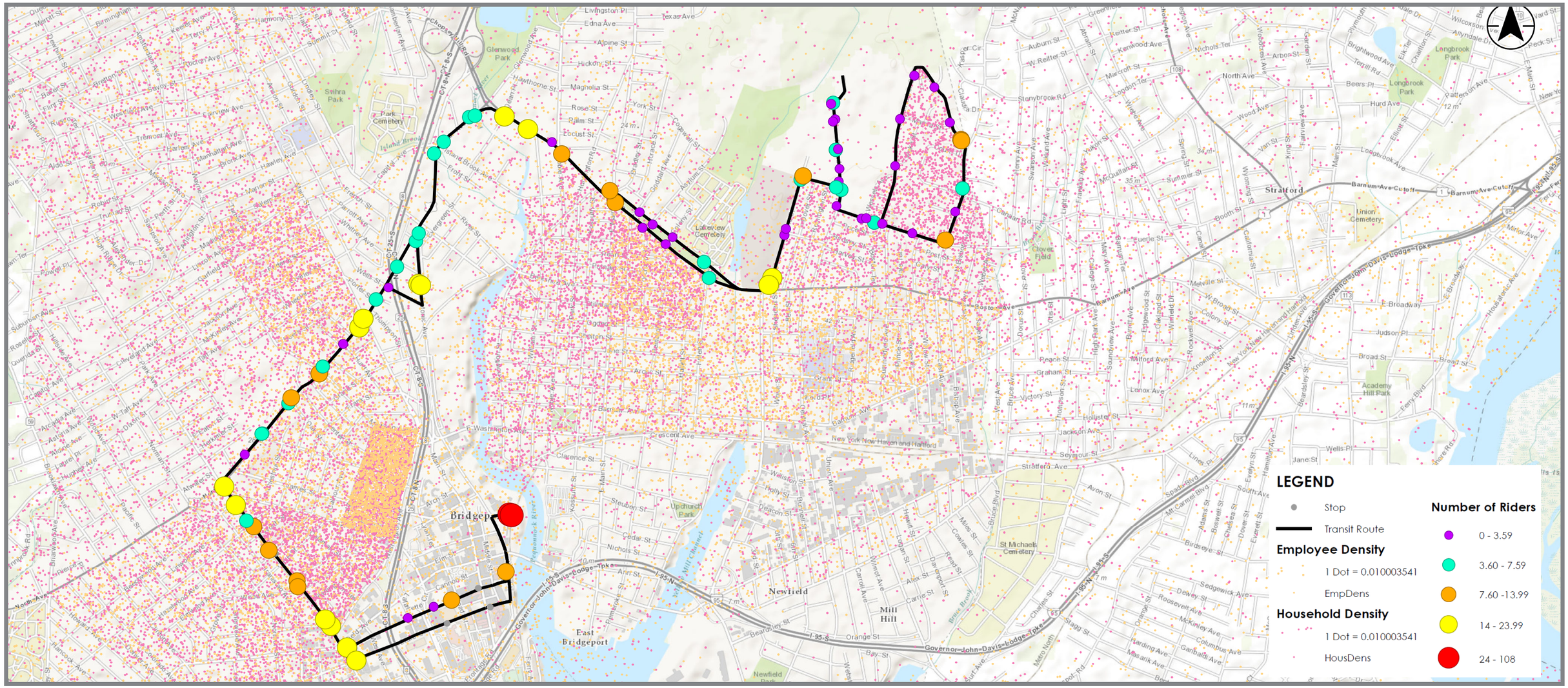
Route Highlights:

- The network design of Route Seventeen, while not the most direct, offers opportunities to connect with many other GBT services at various points along the route.
- As a result of the network design, there are busy stops located along the length of the route, rather than being clustered in one area, as is the case for other routes.
- During the AM peak, this service serves a commuter-oriented market with a high percentage of alightings occurring in Downtown Bridgeport, with boardings prominent along the remainder of the route. Transfer points do not appear exceptionally busy during this time.
- During the midday and PM peak, travel patterns shift considerably from the AM peak; this reflects the substantial increase in the average boardings per hour between these periods.
- These shifts indicate that this route may be used heavily for discretionary travel, which is logical given the network design and transfer opportunities available along the route.

Route 17 connects Downtown Bridgeport to the area around Central High School and to the area around Bullard-Havens Technical High School. It is proposed that the route's diversions be reduced west of Downtown Bridgeport and around Success Park and the route extended to Hawley Lane Mall to replace the coverage lost from proposed changes to Route 15.

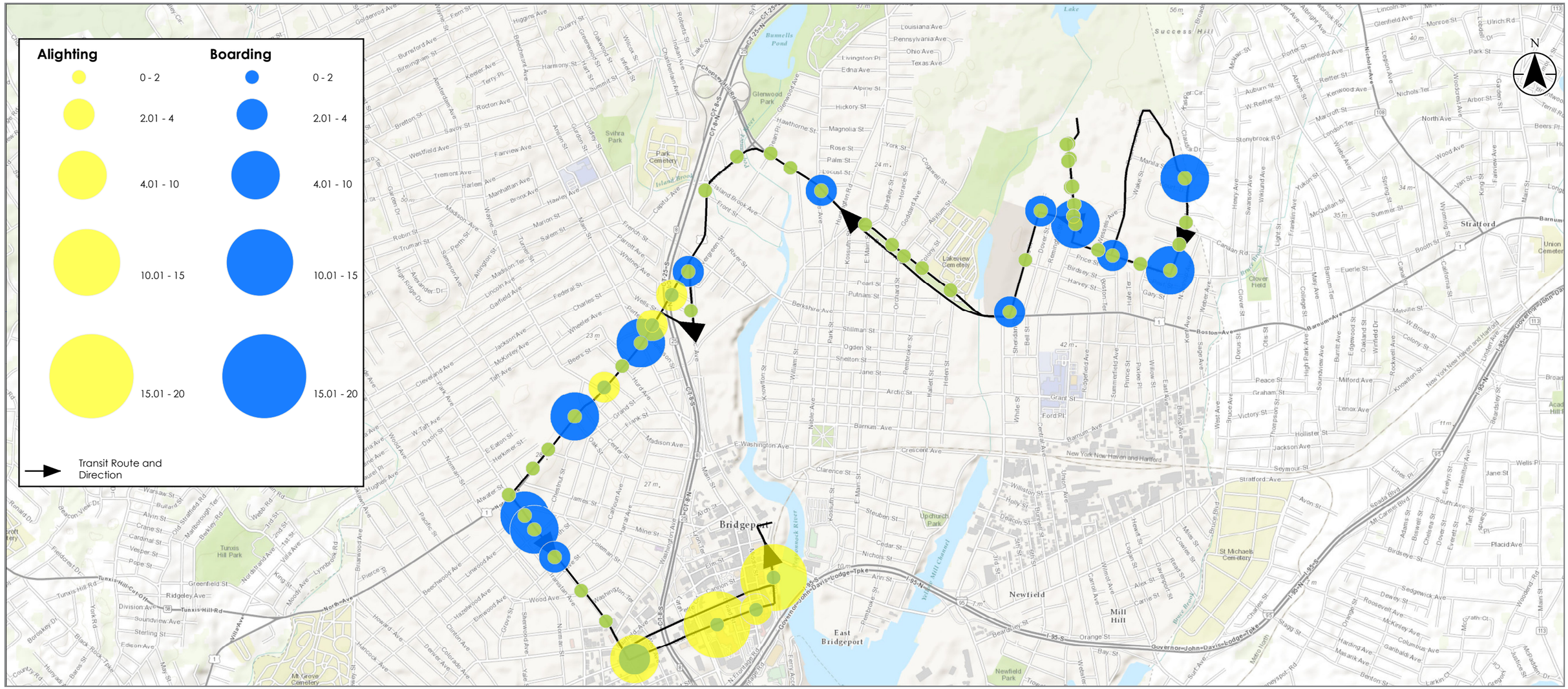
Total Daily Activity

Route 17



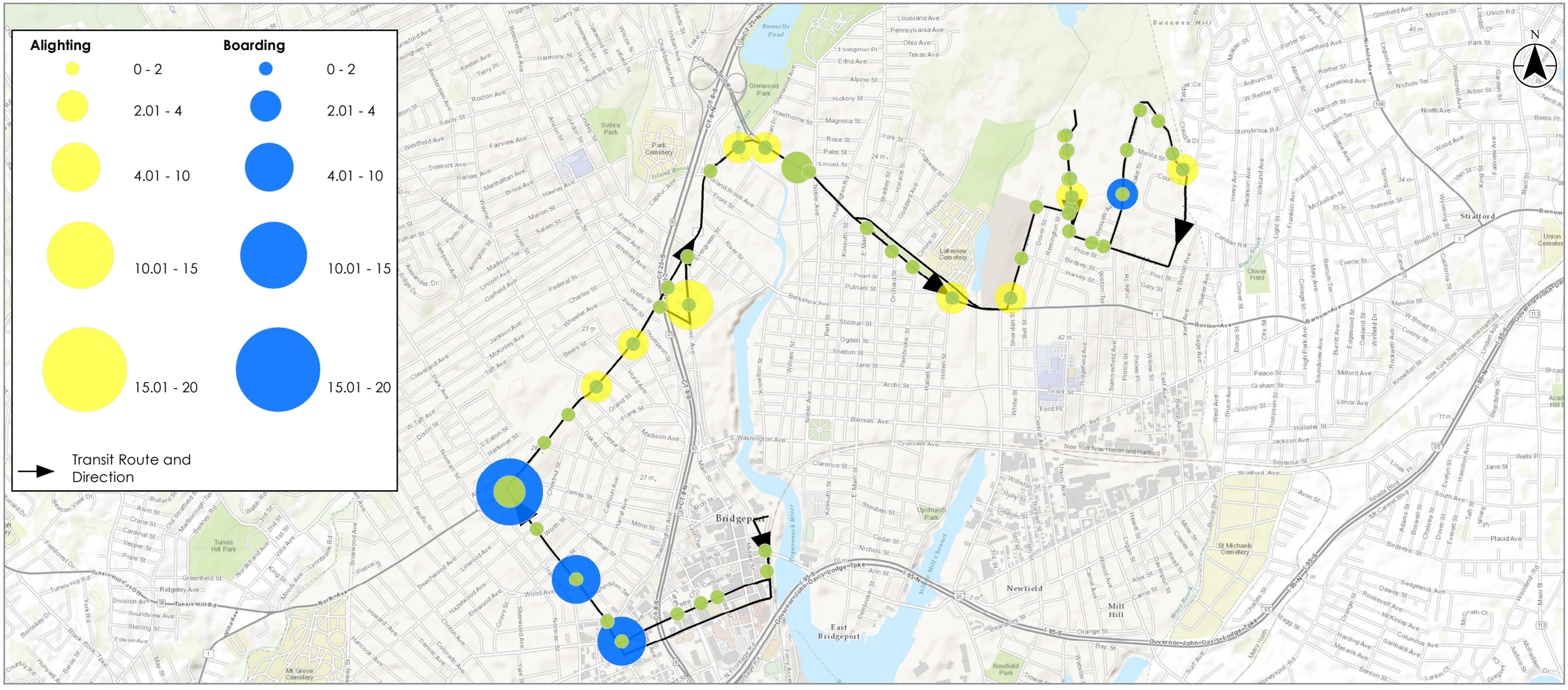
Route 17

5am - 9am Inbound



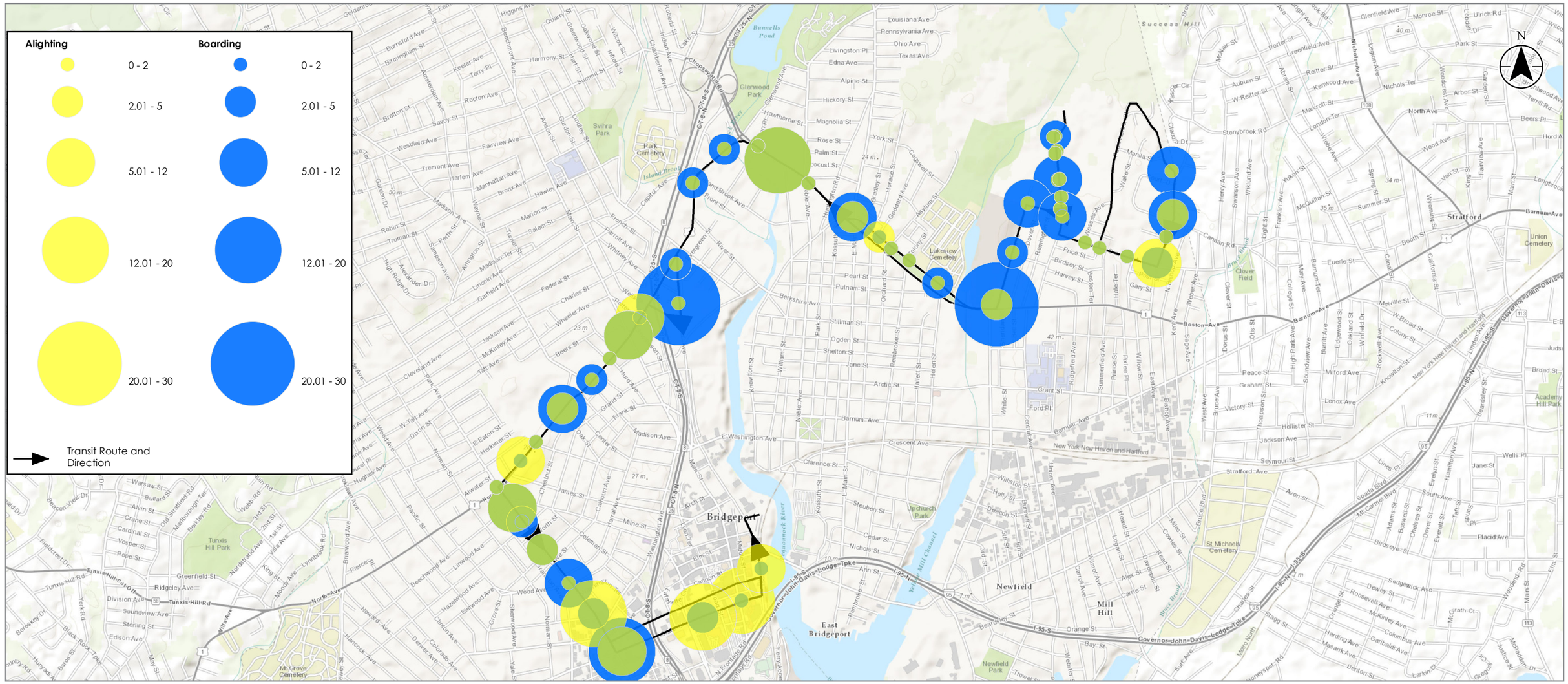
5am - 9am Outbound

Route 17



Route 17

10am - 2pm Inbound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Boarding
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2.01 - 5
5.01 - 12
5.01 - 12
12.01 - 20
12.01 - 20
20.01 - 30
20.01 - 30
Transit Route and Direction
N
Bridgeport
Stratford
East Bridgeport
Newfield
Mill Hill
Glenwood Park
Svihra Park
Park Cemetery
Lakeview Cemetery
Tunxis Hill Park
Mt Grove Cemetery
Upchurch Park
St Michaels Cemetery
Clover Field
Union Cemetery
Academy Hill Park
Newfield Park
Fairfield
Bunnells Pond
Success Hill
Island Brook
Pequonnock River
Yellow Mill Channel
Bruce Brook
Metro North
New York New Haven and Hartford
Governor John Davis Lodge Tpke
I-95 S
I-95 N
Boston Ave
Barnum Ave
North Ave
Stratford Ave
Main St
Broad St
Fairfield Ave
Park St
Madison Ave
E Washington Ave
Crescent Ave
Clarence St
Wood Ave
Hancock Ave
Howard Ave
Beers St
Hurd Ave
Grand St
Frank St
Oak St
Center St
Chestnut St
James St
Calhoun Ave
Harral Ave
Milne St
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Pacific St
Briarwood Ave
Beechwood Ave
Linwood Ave
Hazelwood Ave
Elmwood Ave
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Sherwood Ave
Norman St
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Seymour St
Jane St
Wells Pl
Placid Ave
Birdseye St
Sedgewick Ave
Dewey St
Roosevelt Ave
McKinley Ave
Columbus Ave
Garibaldi Ave
Harding Ave
Masaryk Ave
Denton St
Woodberry Rd
Main St
Elm St
Hollister St
Jackson Ave
Lenox Ave
Milford Ave
Peace St
Graham St
Victory St
Grant St
Ford Pl
Ridgefield Ave
Summerfield Ave
Prince St
Willow St
East Ave
Broad St
Colony St
W Broad St
Meltville St
Rockwell Ave
Knowlton St
Oakland Dr
Edgewood St
Burritt Ave
Soundview Ave
High Park Ave
Otis St
Dorus St
Water Ave
Kent Ave
Gary St
Euerle St
Barnum Ter
Canal St
California St
Wyomissing St
Booth St
Summer St
McQuillan St
Franklin Ave
Light St
Canaan Rd
Price St
Birdsey St
Harvey St
Dover Rd
Remington Rd
Wesley Ave
Manila St
Claudia Dr
Kaster Cir
Stonybrook Rd
Wiklund Ave
Henry Ave
Swanson Ave
Auburn St
W Reitter St
Reitter St
Greenfield Ave
Porter St
Monroe St
Glenfield Ave
Ulrich Rd
Arbor St
Garden St
Woodcrest Ave
Terrill Rd
Beers Pl
Hurd Ave
Wood Ave
Van St
King St
Fairview Ave
Main St
Longbrook
Nichols Ter
Legion Ave
Nicholas Ave
Marcroft St
London Ter
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Kenwood Ave
Yukon St
Sturdy St
Wyomissing St
Barnum Ave
Union Cemetery
Gov John Davis Lodge Tpke
Lindley St
Arsdale St
Gladden St
Sylvan Ave
Westfield Ave
Fairview Ave
Tremont Ave
Harlem Ave
Manhattan Ave
Bronx Ave
Hawley Ave
Madison Ave
Wayne St
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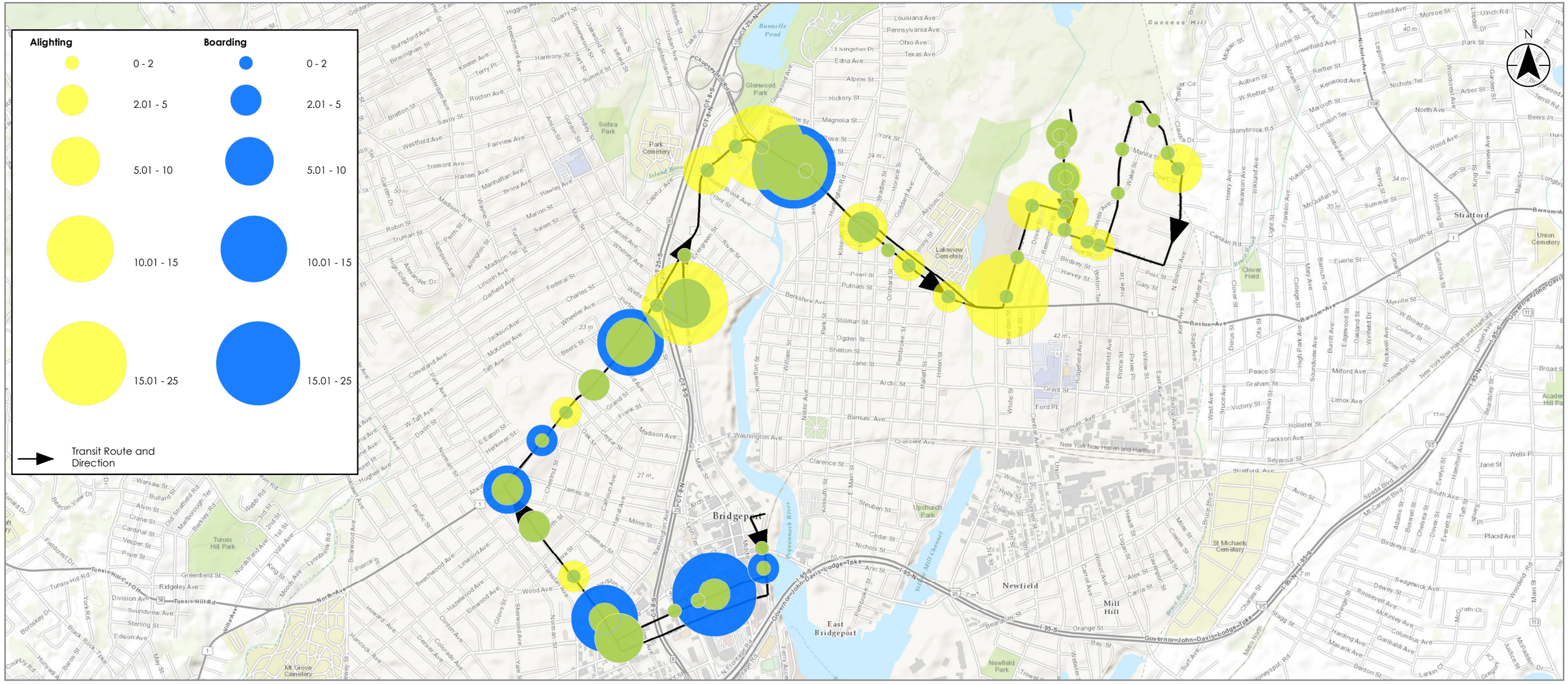
Main St
Turner St
Madison Ter St
Arlington St
Sampson Ave
Perth St
Truman St
Robin St
Garden Dr
Alexander Dr
High Ridge Dr
Lincoln Ave
Garfield Ave
Federal St
Charles St
Wheeler Ave
Whitney Ave
Perrott Ave
Frisbie St
Front St
Brook Ave
Caputo Ave
Island Brook
Park Cemetery
Glenwood Park
Hawthorne St
Magnolia St
Rose St
Palm St
Locust St
York St
Hickory St
Alpine St
Edna Ave
Livingston Pl
Louisiana Ave
Pennsylvania Ave
Ohio Ave
Texas Ave
Roberts St
Indian Ave
Lake St
Chamberlain Ave
Chopsey Hill Rd
Harmony St
Quarry St
Oakwood St
Greenwood St
Hart St
Summit St
Wilcox St
Infield St
Birchmont Ave
Higgins Ave
Burnsford Ave
Birmingham St
Keeler Ave
Terry Pl
Amsterdam Ave
Rocton Ave
Savoy St
Bretton St
Westfield

10am - 2pm Outbound

Route 17


Alighting
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2.01 - 5
5.01 - 10
5.01 - 10
10.01 - 15
10.01 - 15
15.01 - 25
15.01 - 25
Transit Route and Direction
N
Bridgeport
Stratford
Newfield
East Bridgeport
Mill Hill
Glenwood Park
Svihra Park
Tunxis Hill Park
Mt Grove Cemetery
Lakeview Cemetery
St Michaels Cemetery
Union Cemetery
Upchurch Park
Newfield Park
Clover Field
Bunnells Pond
Success Hill
Island Brook
Yellow Mill Channel
Pequonnock River
Bruce Brook
Main St
Broad St
Fairfield Ave
Park St
North Ave
Boston Ave
Barnum Ave
Canaan Rd
Stratford Ave
Jackson Ave
Seymour St
New York New Haven and Hartford
Governor John Davis Lodge Tpke
I-95 N
I-95 S
CT-8 N
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CT-25 N
CT-25 S
CT-130
CT-113
CT-1
Tunxis Hill Cutoff
Tunxis Hill Rd
Washington Ave
Madison Ave
Wood Ave
Ash St
Arch St
Crescent Ave
Clarence St
Steuben St
Cedar St
Nichols St
Ann St
Orange St
Bay St
Grant St
Ford Pl
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Placid Ave
Sedgwick Ave
Dewey St
Roosevelt Ave
McKinley Ave
Columbus Ave
Garibaldi Ave
Benton St
Larkin Ct
Surf Ave
Bay St
Orange St
Stagg St
Charles St
Beardsley St
Hawley Ave
Hancock Ave
Howard Ave
Pierce Pl
Greenfield St
Ridgeley Ave
Division Ave
Soundview Ave
Sterling St
Edison Ave
Warsaw St
Alvin St
Crane St
Cardinal St
Vesper St
Pope St
Fieldcrest Dr
Tremont Ave
Fairview Ave
Harlem Ave
Manhattan Ave
Bronx Ave
Westfield Ave
Savoy St
Bretton St
Rocton Ave
Keeler Ave
Terry Pl
Amsterdam Ave
Burnsford Ave
Birmingham St
Harmony St
Beechmont Ave
Quarry St
Greenwood St
Oakwood St
Hart St
Summit St
Wilcox St
Infield St
Roberts St
Lake St
Charlestown Ave
Higgins Ave
Louisiana Ave
Pennsylvania Ave
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Livingston Pl
Edna Ave
Alpine St
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York St
Hawthorne St
Glenwood Ave
Island Brook Ave
Front St
Capitol Ave
Garden Dr
Robin St
Truman St
Madison Ave
Perth St
Sampson Ave
Alexander Dr
High Ridge Dr
Arlington St
Wayne St
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Durbin St
Lindley St
Hawley Ave
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Lincoln Ave
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French St
Parrott Ave
Whitney Ave
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Wheeler Ave
Porter St
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McKinley Ave
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Atwater St
Chestnut St
James St
Calhoun Ave
Harral Ave
Milne St
Coleman St
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Linwood Ave
Hazelwood Ave
Elmwood Ave
Clinton Ave
Colorado Ave
Delavan Ave
Grove St
Sherwood Ave
Yale St
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Wood Ave
Howard Ave
Hancock Ave
Linwood Ave
Beechwood Ave
Pacific St
Branford Ave
Pierce Pl
Webb Rd
2nd St
1st St
Villa Ave
King St
Nordstrand Ave
Mood Ave
Lynnbrook Rd
North Ave
Tunxis Hill Rd
Tunxis Hill Cutoff
Ridgeley Ave
Division Ave
Soundview Ave
Sterling St
Edison Ave
Black Rock Tpke
York Rd
Berkley Dr
Country Rd
Hunyard Dr
Mary St
Barnes St
Old Stratfield Rd
Marlborough Ter
Berkley Rd
Warsaw St
Bullard St
Alvin St
Crane St
Cardinal St
Vesper St
Pope St
Fieldcrest Dr
Beacon View Dr
Donald Dr
Hunyard Dr
Country Rd
Mary St
Barnes St
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York Rd
Berkley Dr
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Ridgeley Ave
Greenfield St
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Branford Ave
Howard Ave
Hancock Ave
Derby Ave
Colorado Ave
Clinton Ave
Hazelwood Ave
Elmwood Ave
Linwood Ave
Beechwood Ave
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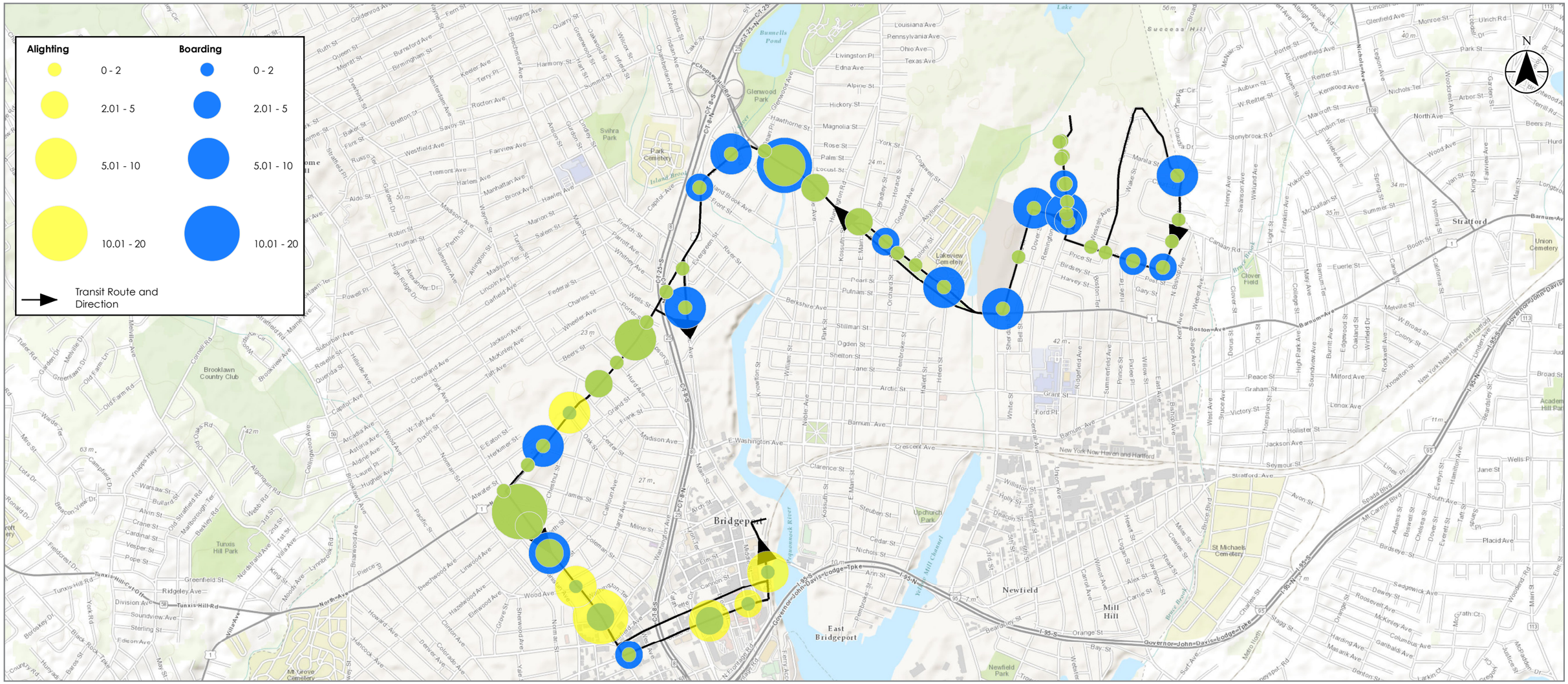
Milne St
Harral Ave
Calhoun Ave
James St
Chestnut St
Atwater St
Norman St

Route 17

3pm - 6pm Inbound


Alighting
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5.01 - 10
10.01 - 20
Boarding
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2.01 - 5
5.01 - 10
10.01 - 20
Transit Route and Direction
N
Bridgeport
East Bridgeport
Stratford
Newfield
Mill Hill
Glenwood Park
Park Cemetery
Svihra Park
Tunxis Hill Park
Brooklawn Country Club
Lakeview Cemetery
Union Cemetery
St Michaels Cemetery
Mt Grove Cemetery
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Updyke Park
Clover Field
Bunnells Pond
Island Brook
Pequonnock River
Yellow Mill Channel
Success Hill
Stratford Ave
Boston Ave
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Main St
Fairfield Ave
Park Ave
Madison Ave
Capitol Ave
Wood Ave
Stillman St
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Shelton St
Jane St
Arctic St
Crescent Ave
Clarence St
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Lenox Ave
Milford Ave
Graham St
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Victory St
Ford Pl
Grant St
Orange St
Bay St
Carroll Ave
Alex St
Carrie St
Davenport St
Howe St
Logan St
Cowles St
Reed St
Miss St
Bruce Blvd
Seaview Ave
Bostwick Ave
Sterling St
Soundview Ave
Division Ave
Ridgeley Ave
Greenfield St
Tunxis Hill Rd
Tunxis Hill Cut-Off
North Ave
Villa Ave
Fairfield Rd
Melville Ave
Old Farm Rd
Cornell Rd
Brookview Ave
Suburban Ave
Roselle St
Hillside Ave
Cleveland Ave
Park Ave
Arcadia Ave
Aldine Ave
Laurel Pl
Hughes Ave
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Clinton Ave
Colorado Ave
Denver Ave
Howard Ave
Hancock Ave
Shirwood Ave
Norman St
Yale Ave
Trumbull St
Fern St
Goldenrod Ave
Ruth St
Queen St
Merritt St
Burnham St
Burleford Ave
Birmingham St
Dewhirst St
Baker St
Flint St
Russ St
Bretton St
Westfield Ave
Savoy St
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Keeler Ave
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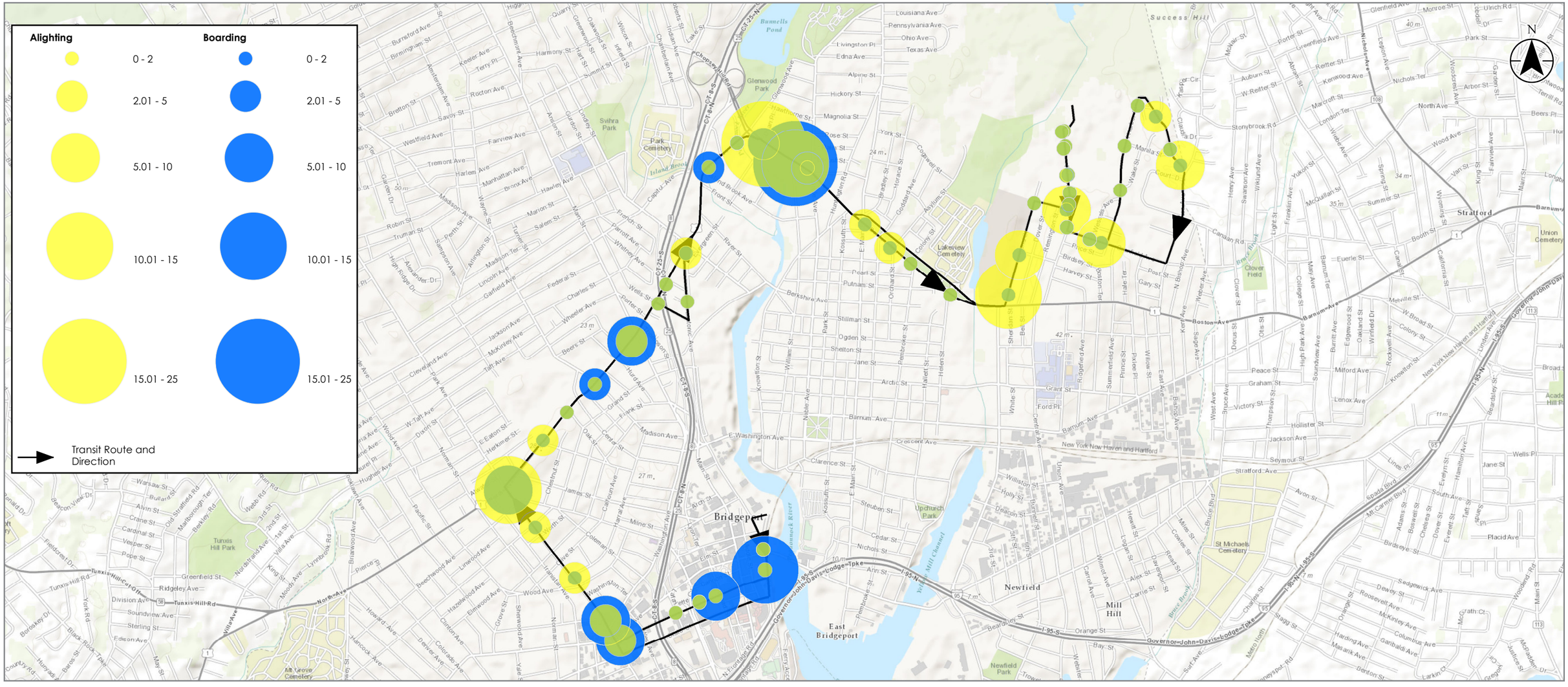
Oak St
Central St
Frank St
Grand St
Madison Ave

3pm - 6pm Outbound

Route 17


Alighting
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5.01 - 10
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15.01 - 25
Transit Route and Direction
Bridgeport
Stratford
Newfield
East Bridgeport
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Main St
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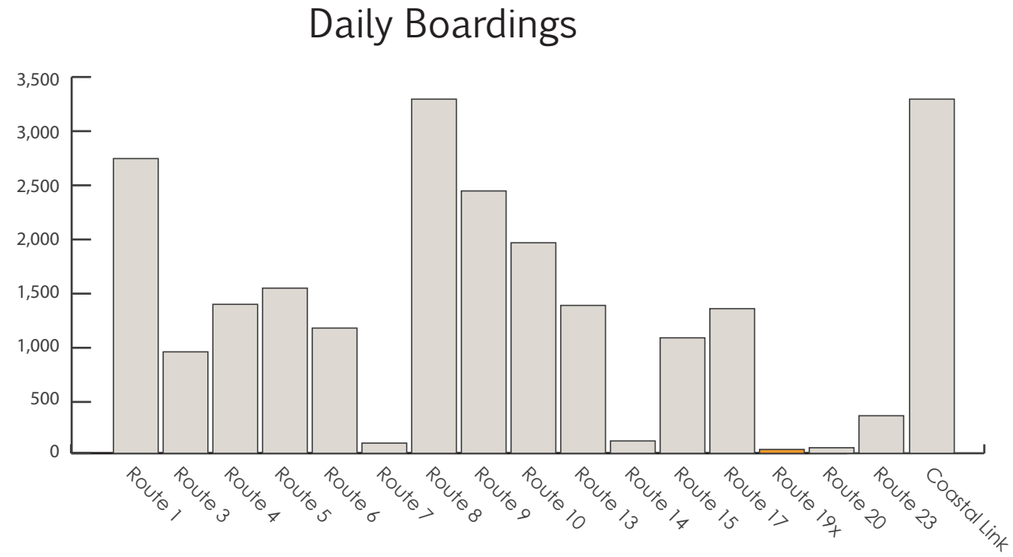
Golden Hill St
Colorado Ave
Clinton Ave
Drexler Ave
Hancock Ave
Howard Ave
Shrunkpond Ave
Grove St
Elmwood Ave
Hazelwood Ave
Limewood Ave
Beechwood

Route Nineteen-X

Downtown - Route 25 - Route 111 - Monroe

Route 19x	
Weekday Daily Boardings	35
Percent of System Activity (Sampled Routes)	0.2%
Daily One-Way Revenue Trips	8
Peak / Off-Peak Headway (Minutes)	60
Service Type	LTN
Number of Peak Buses	2
Efficiency (% Schedule Recovery)	4.1%
Average Boardings per Hour - AM Peak	8
Average Boardings per Hour - Midday	
Average Boardings per Hour - PM Peak	4



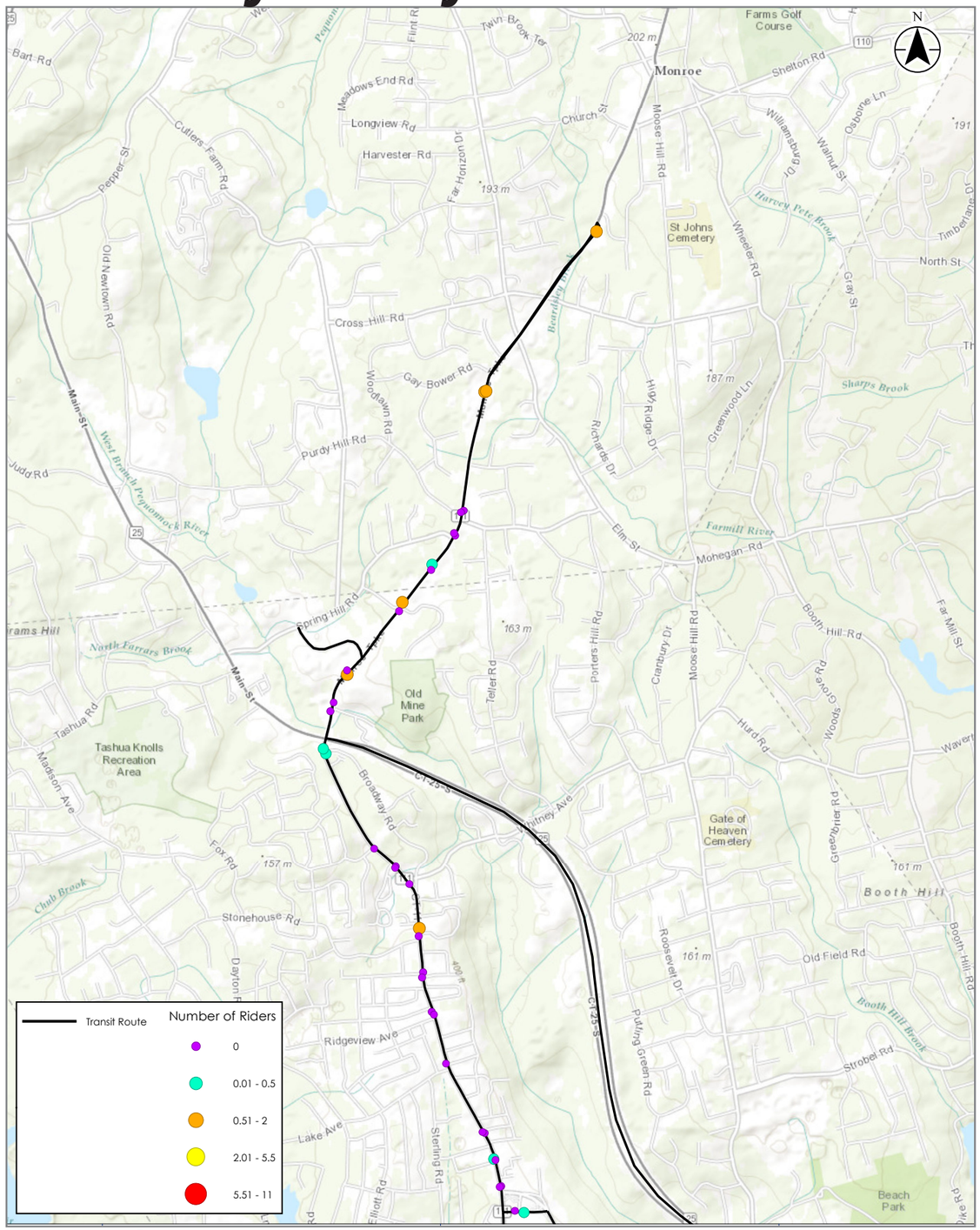
Route Highlights:

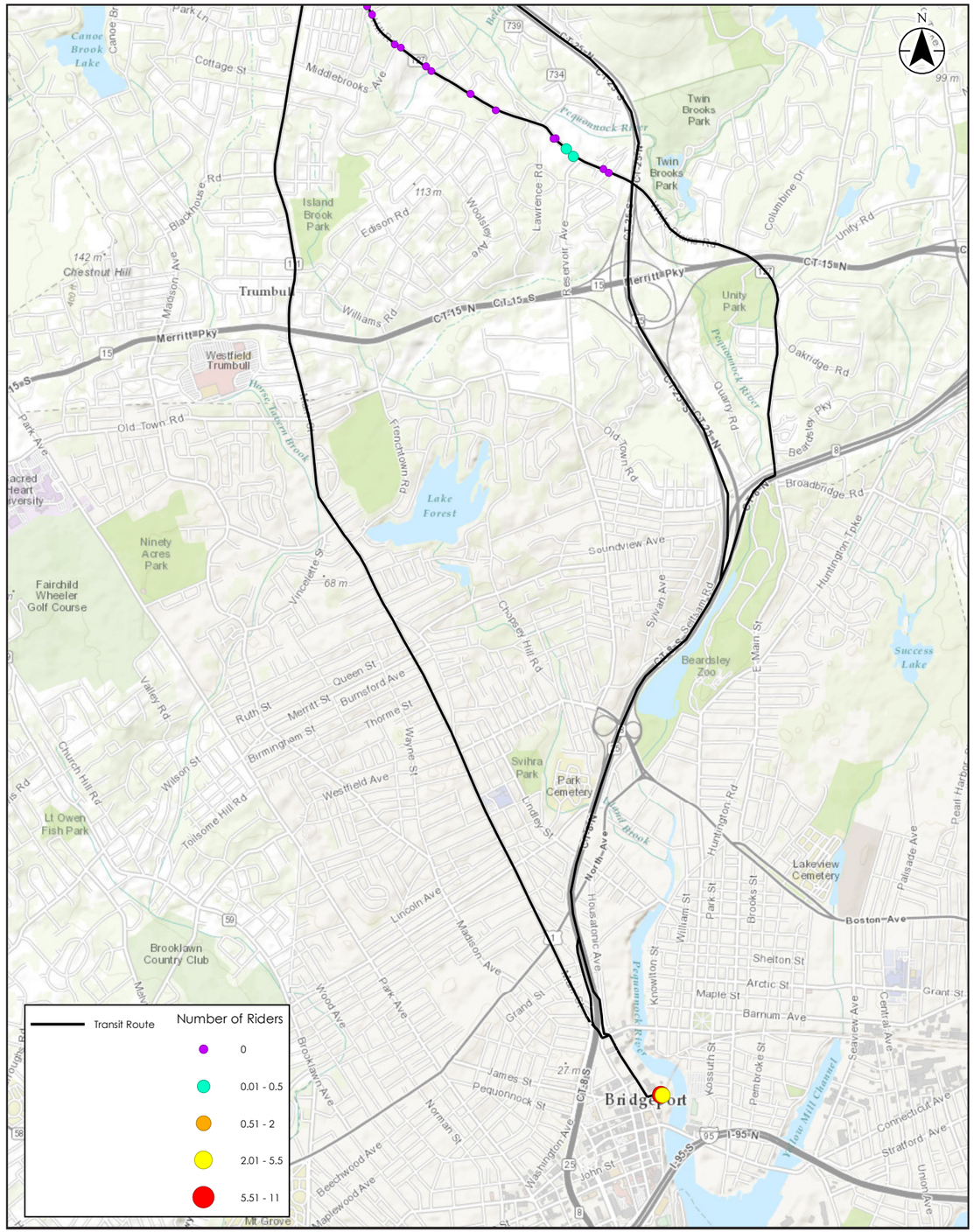
- Route 19x is a peak-only (limited) reverse commute service which is complemented by Route 14 during the midday and peak shoulders.
- This route offers customers from Monroe and Trumbull a one-seat ride into Downtown Bridgeport, as opposed to Route 14, which requires a transfer.
- This route also has the lowest number of boardings of any limited service routes in the GBT network.
- The limited schedule and auto-dominated land uses this route serves are likely factors limiting ridership.
- Throughout the course of a day, the busiest stop on the route, the GBT Transit Center, only sees approximately 15 boardings and alightings.
- During each of the observed time periods, the majority of stops remain unused. Where there is recorded activity for a stop, on average there is usually only one or two customer boardings and alightings.

This is an express bus service that connects Downtown Bridgeport to the Monroe Turnpike. It is proposed that this route be truncated at Westfield Trumbull Mall and routed via the proposed bus exchange at Trumbull Avenue.

Total Daily Activity

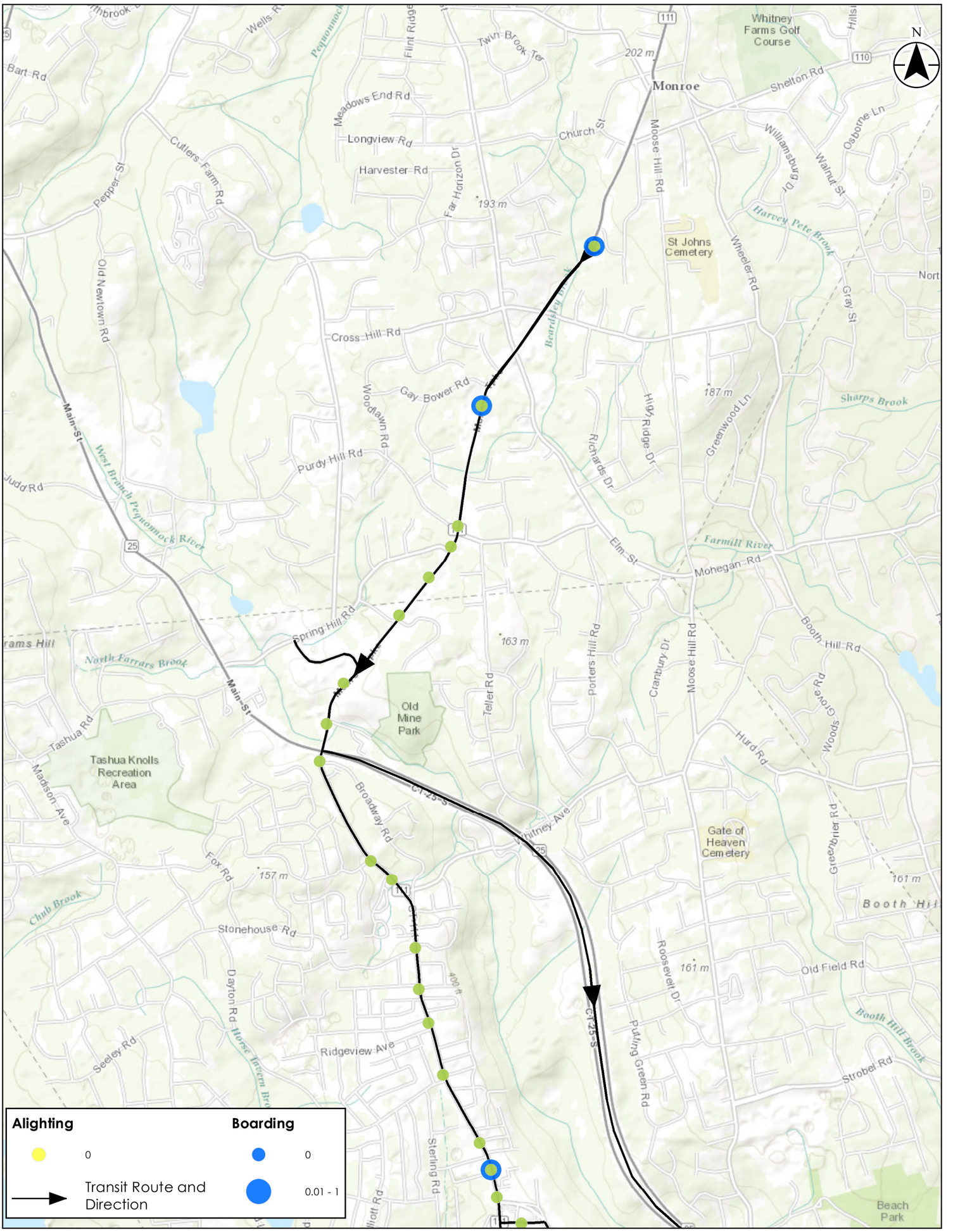
Route 19X





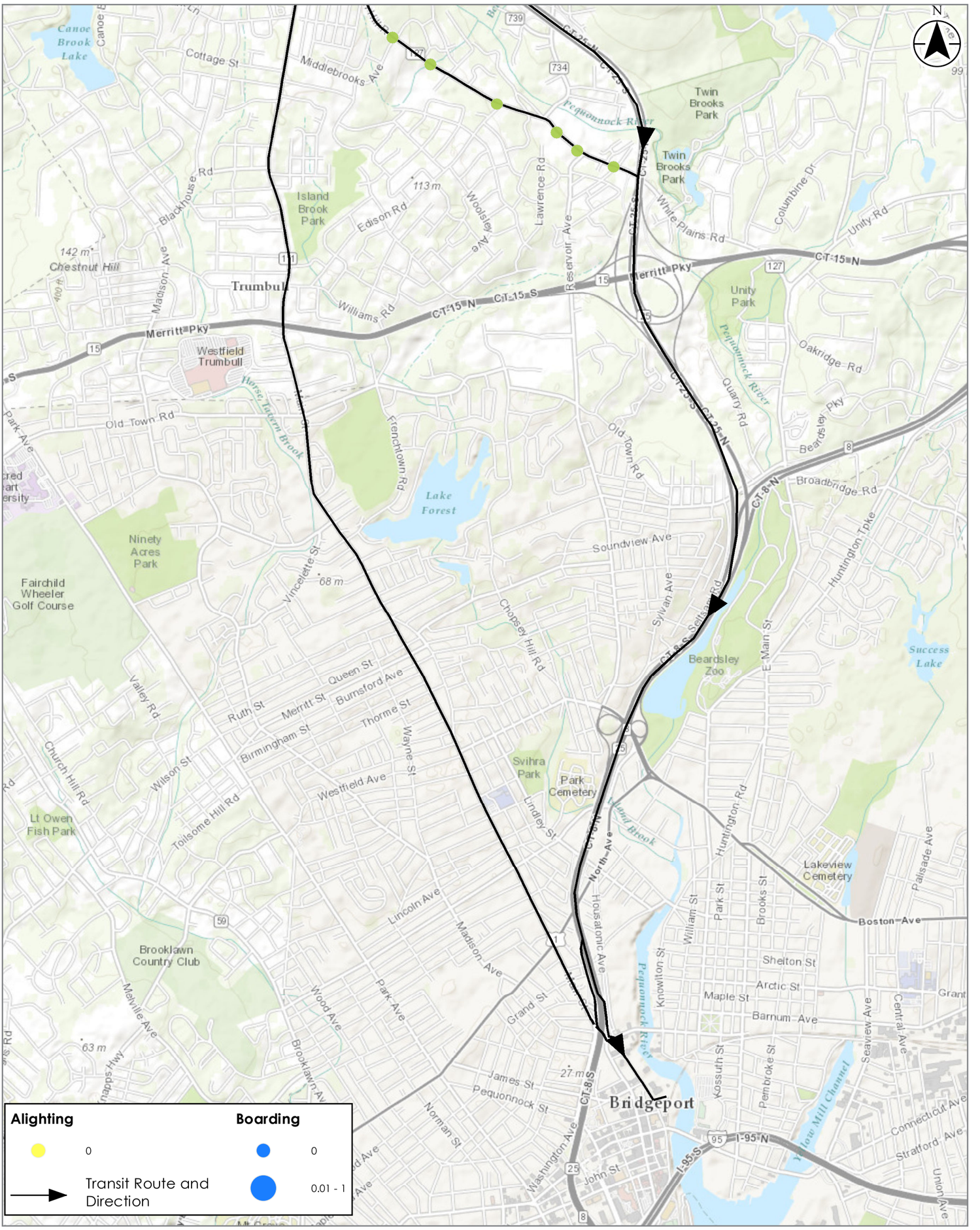
5am - 9am Inbound

Route 19X



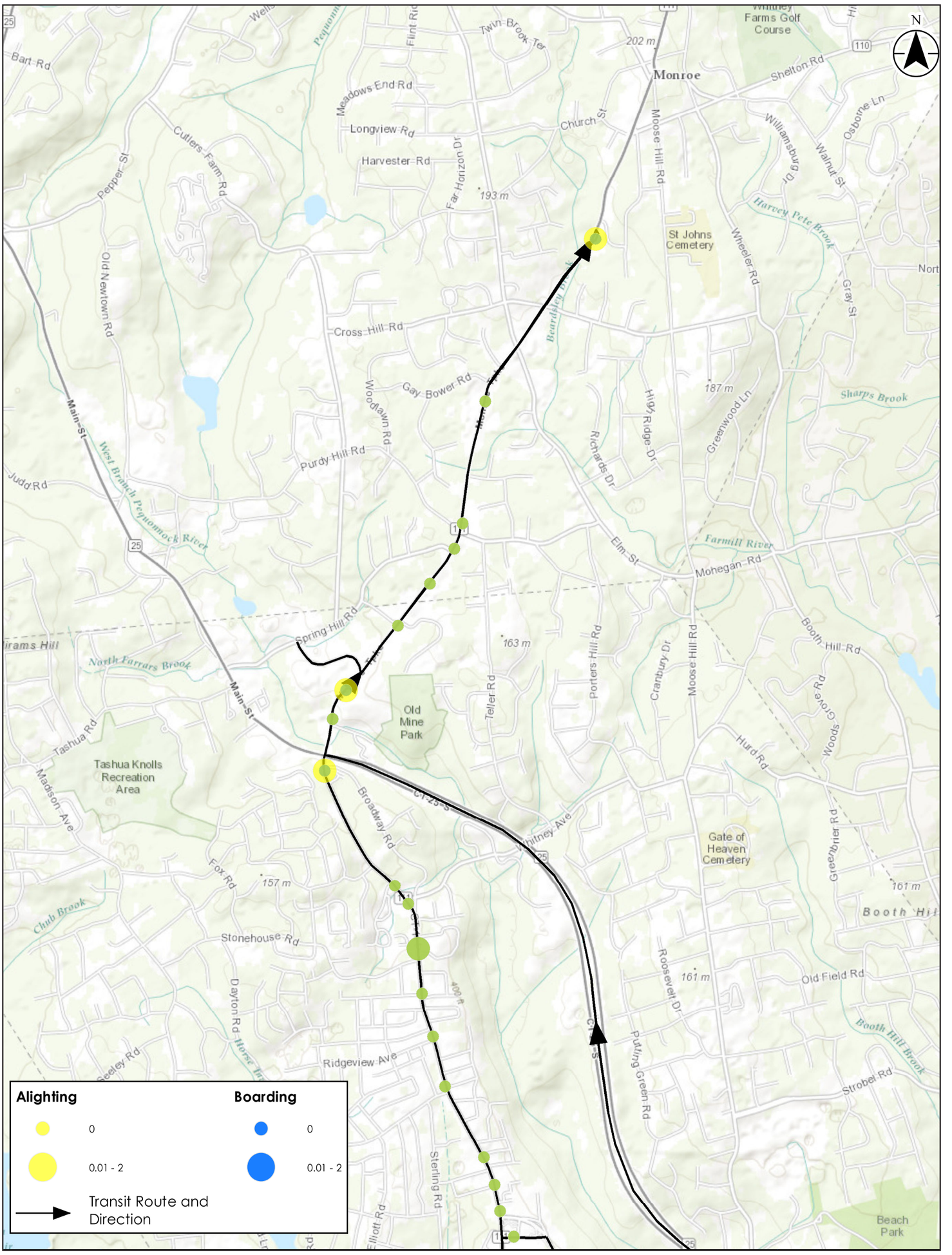
5am - 9am Inbound

Route 19X



5am - 9am Outbound

Route 19X



5am - 9am Outbound

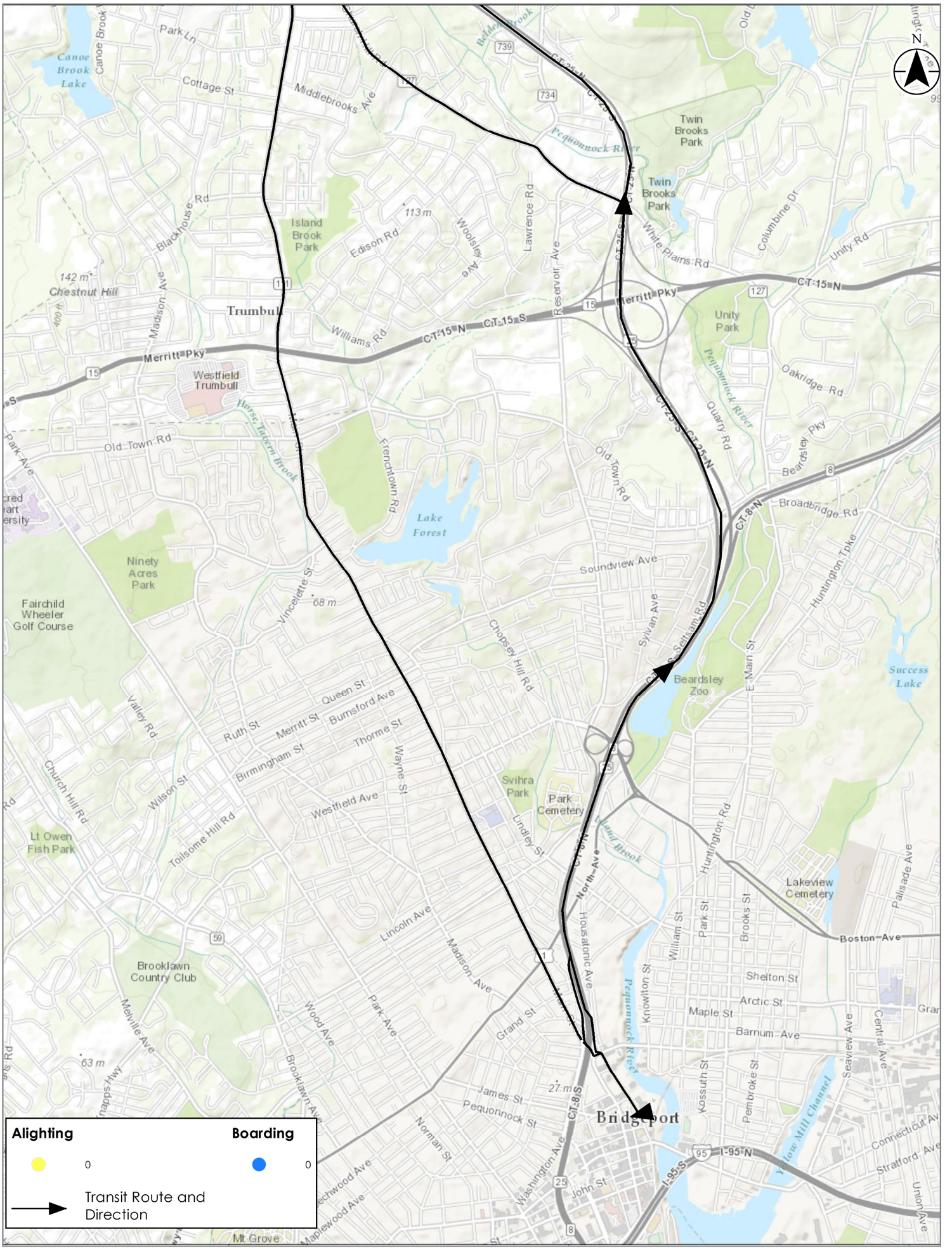
Route 19X

3pm - 6pm Inbound

Route 19X

3pm - 6pm Inbound

Route 19X

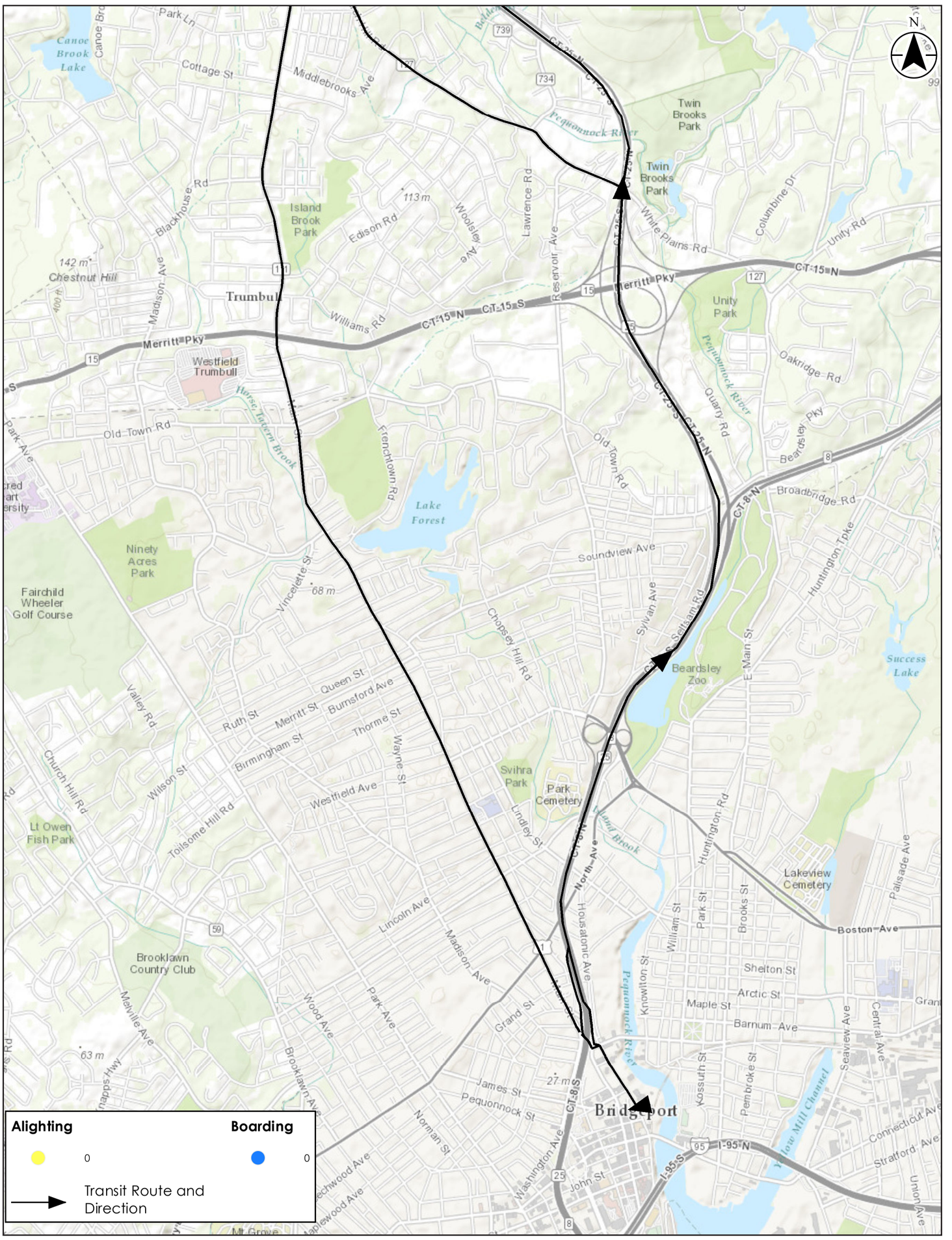


3pm - 6pm Outbound

Route 19X

3pm - 6pm Outbound

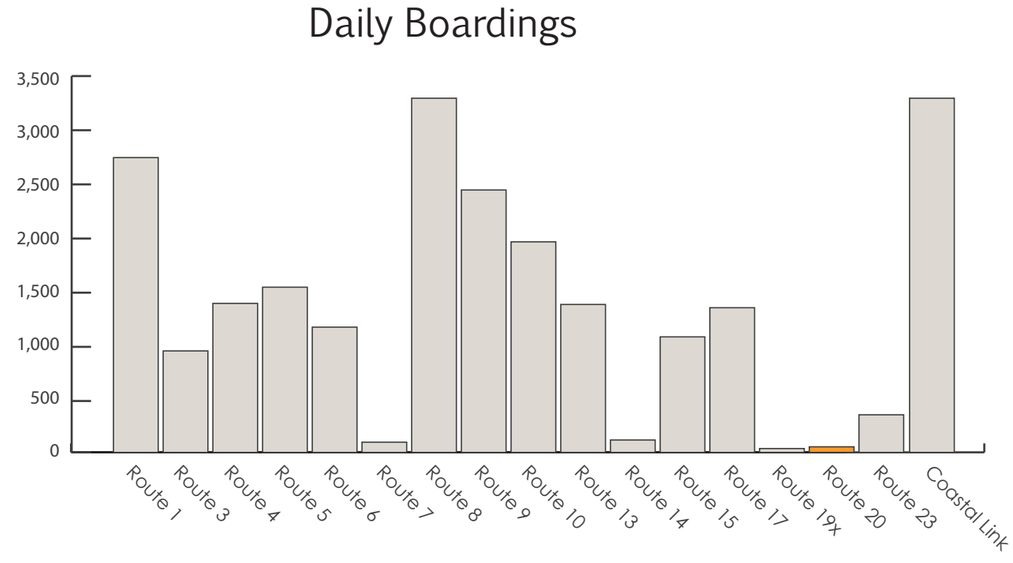
Route 19X



Route Twenty

Westfield Trumbull Mall - Route 25 - Route 111 - Upper Stepney

Route 20	
Weekday Daily Boardings	50
Percent of System Activity (Sampled Routes)	0.2%
Daily One-Way Revenue Trips	8
Peak / Off-Peak Headway (Minutes)	60
Service Type	LTN
Number of Peak Buses	1
Efficiency (% Schedule Recovery)	16.3%
Average Boardings per Hour - AM Peak	14
Average Boardings per Hour - Midday	
Average Boardings per Hour - PM Peak	8



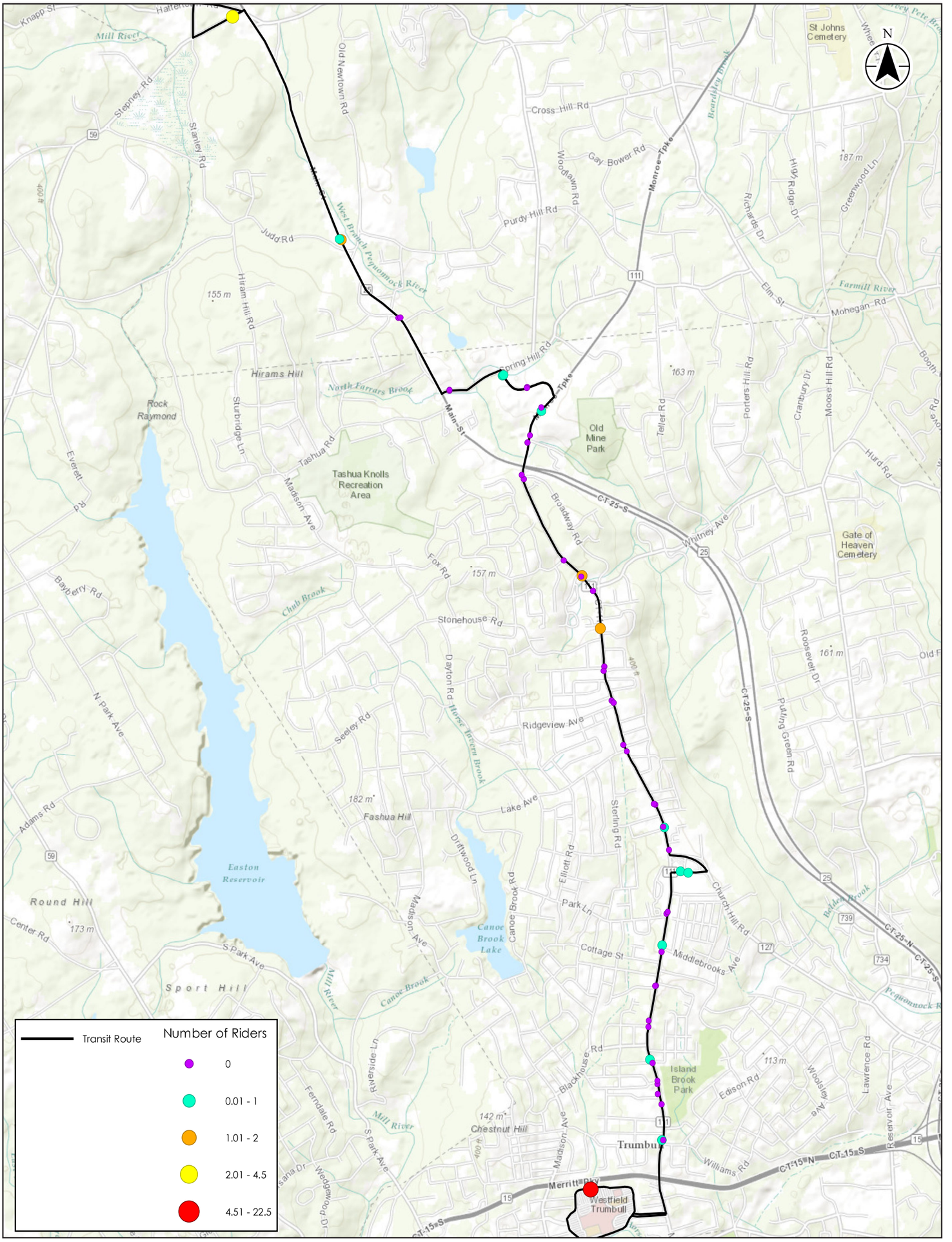
Route Highlights:

- Route Twenty is a new service introduced in February 2014, which offers a peak-only, limited service with four daily round trips between Westfield Trumbull Mall and Upper Stepney in Monroe.
- A portion of the route along State Route 111 is duplicated by Routes 14 and 19x.
- Ridership levels and stop activity patterns are similar, as well, to Routes 14 and 19x, with stops on average seeing no more than 1-2 customers per day.
- Stop activity is concentrated at the two termini at Westfield Trumbull Mall and Upper Stepney. The majority of boardings and alightings for this route occur at these two stops.
- There are approximately twice as many riders in the inbound direction than outbound during the AM peak. Despite this, there appears to be demand for service in both directions.

This route connects Upper Stepney to the Westfield Trumbull Mall. No changes are proposed for this route. New major developments are expected in this corridor in the near future.

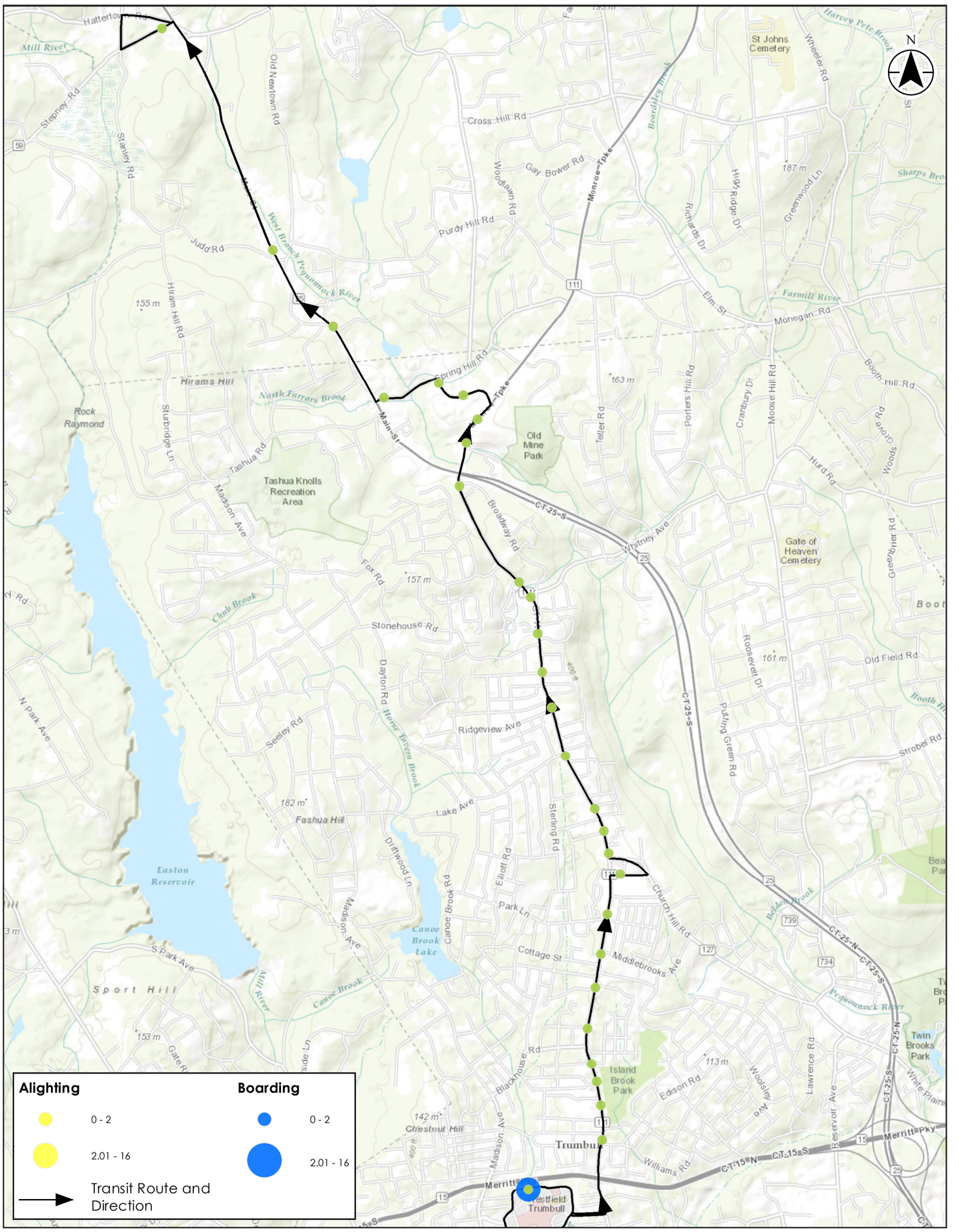
Total Daily Activity

Route 20



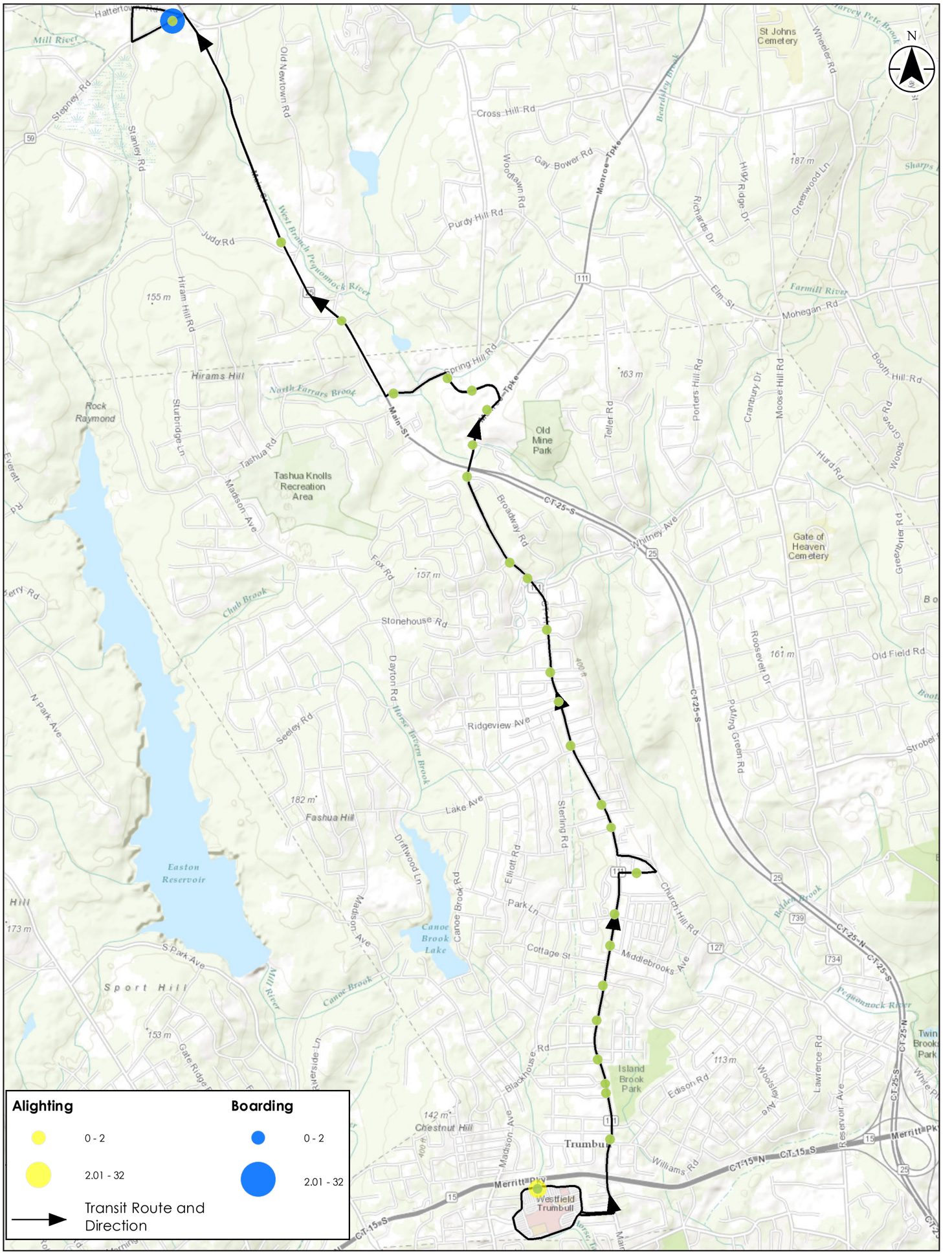
5am - 9am Outbound

Route 20



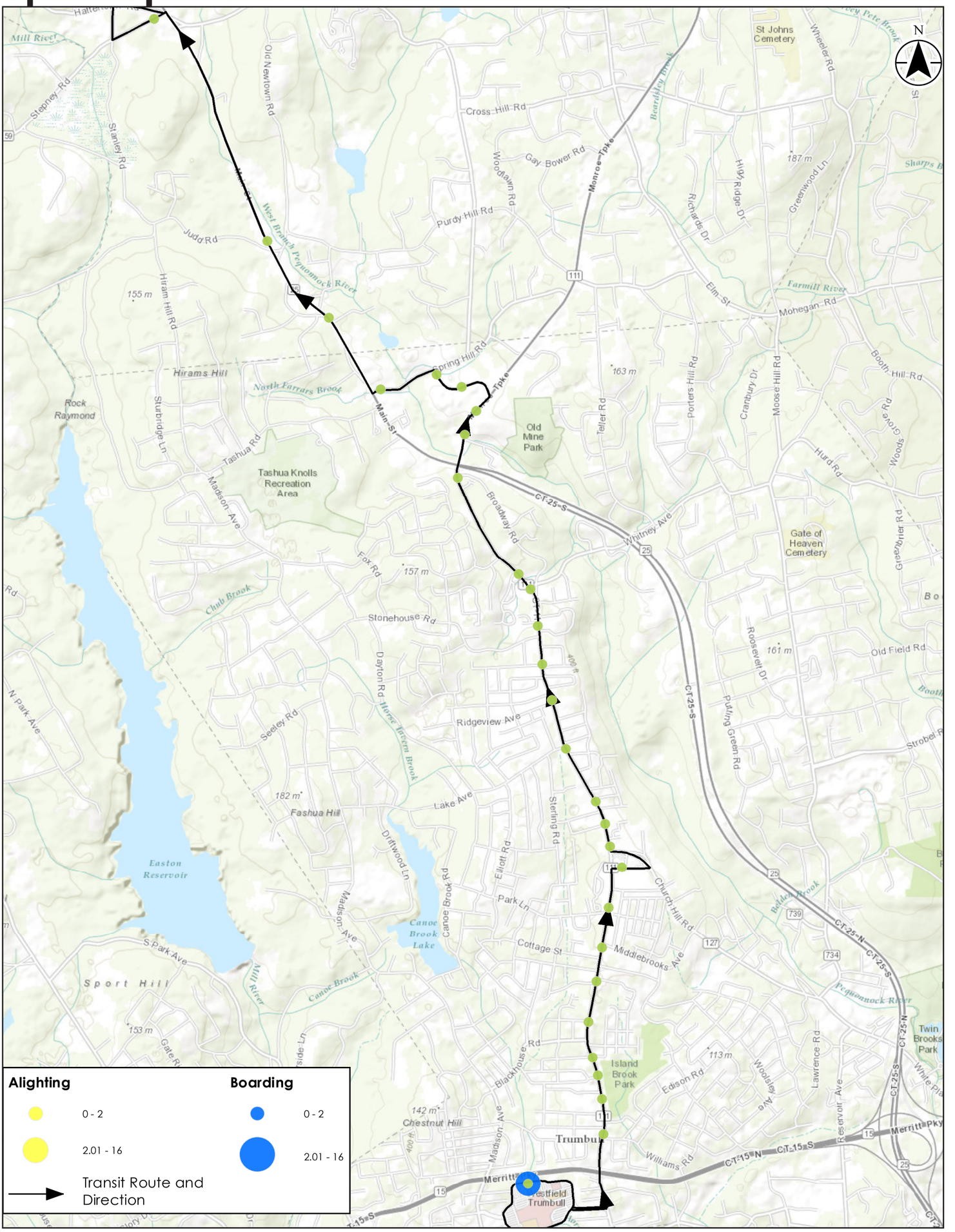
5am - 9am Inbound

Route 20



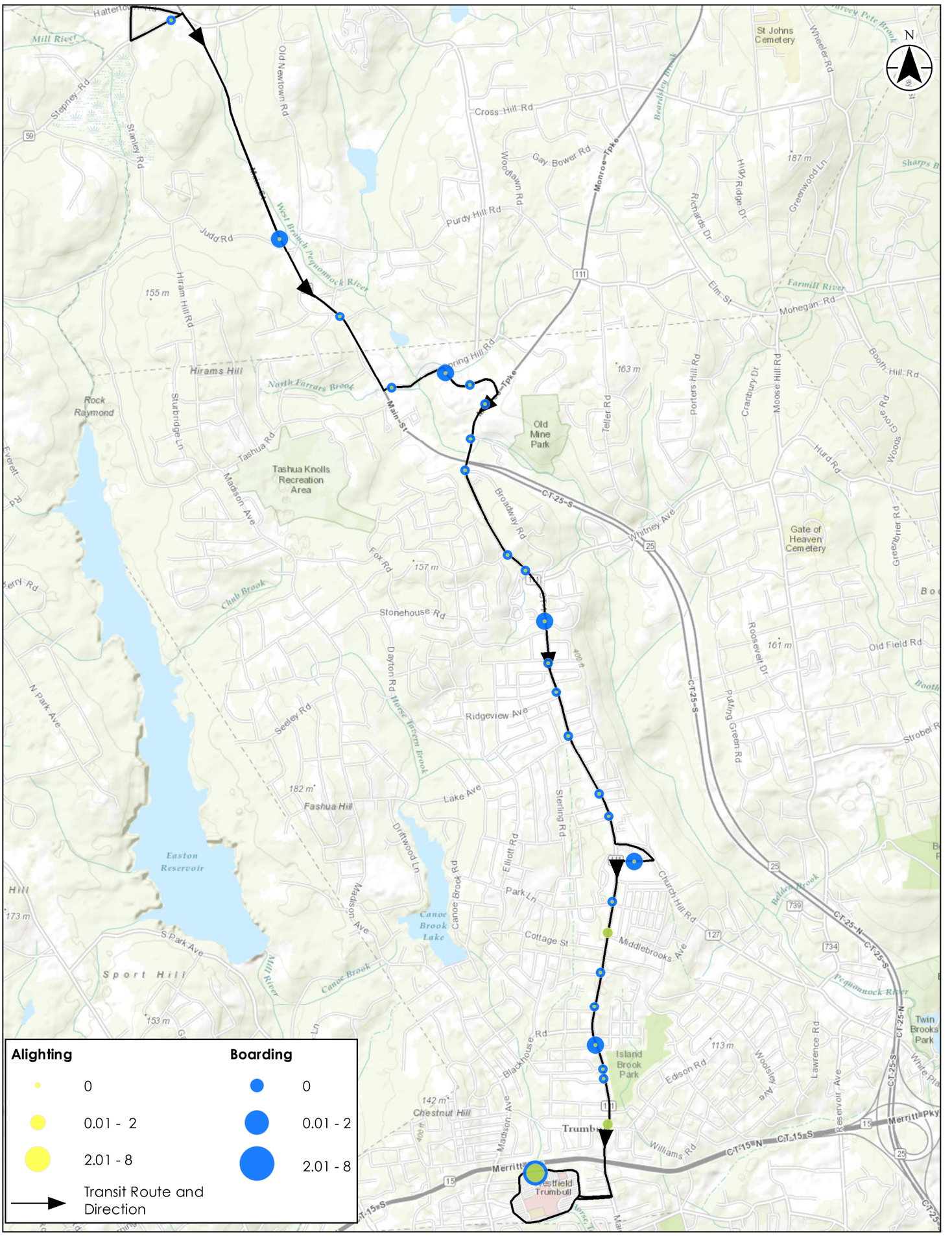
3pm - 6pm Outbound

Route 20



3pm - 6pm Inbound

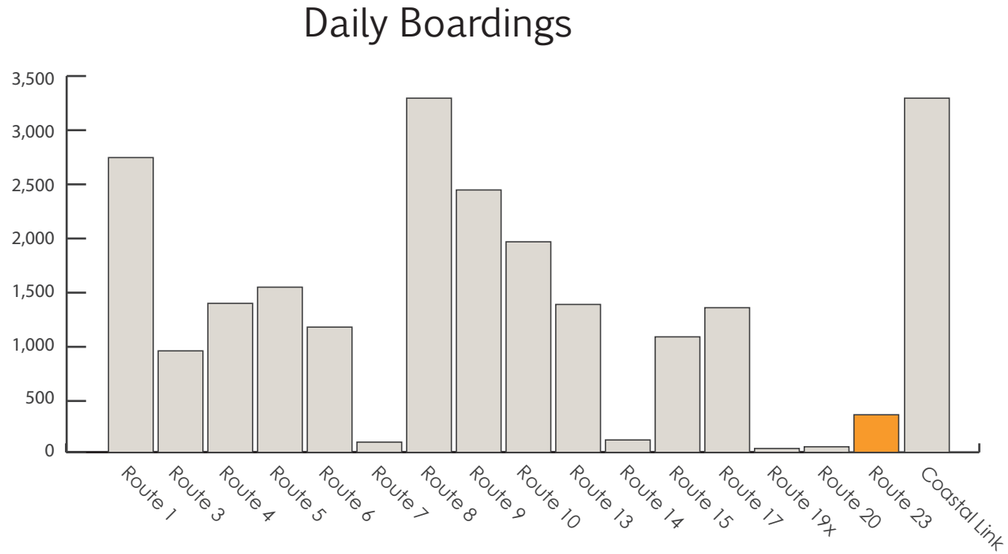
Route 20



Route Twenty-Three

Downtown - Stratford - Main St - River Rd - Derby Station

Route Twenty-Three	
Weekday Daily Boardings	400
Percent of System Activity (Sampled Routes)	2%
Daily One-Way Revenue Trips	27
Peak / Off-Peak Headway (Minutes)	60
Service Type	LTN
Number of Peak Buses	2
Efficiency (% Schedule Recovery)	18.5%
Average Boardings per Hour - AM Peak	31
Average Boardings per Hour - Midday	17
Average Boardings per Hour - PM Peak	47



Route Highlights:

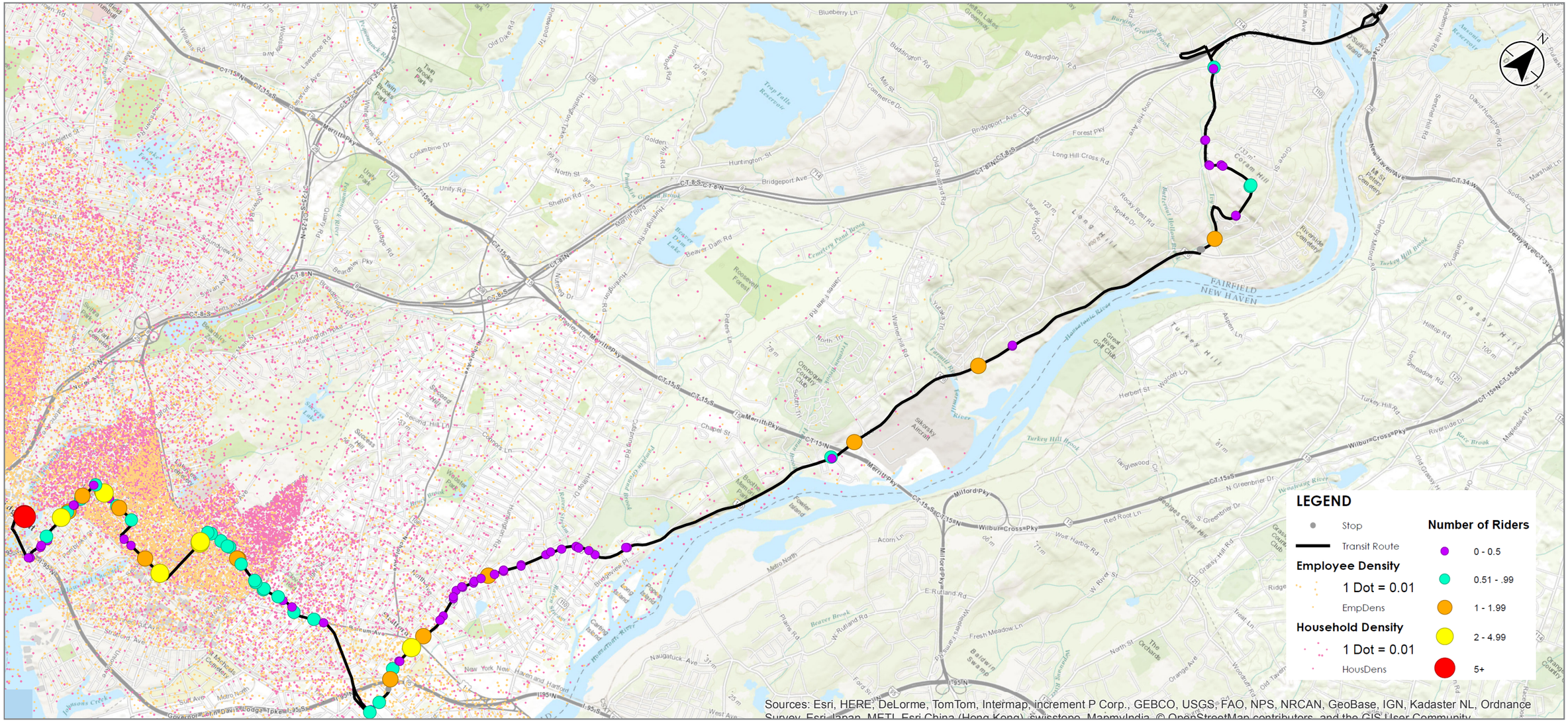
- Route Twenty-Three has the highest number of boardings of any peak-only (limited) service in the GBT network.
- The majority of stop activity for this route occurs between Bridgeport and Stratford, which is duplicated by other, all-day services. There is very little ridership between Stratford and Shelton/Derby.
- Land use between Stratford and Shelton/Derby is dominated by large-scale, industrial and manufacturing uses, which likely contributes to the low ridership in this segment.
- Stops with the highest usage are located at transfer points for bus and rail services, near high schools, or large employers.

Route 23 is a peak only service which connects Downtown Bridgeport with Stratford Station and Derby Station; similar to Route 15 except for the added connection to the Stratford Train Station. Activity in Bridgeport is relatively strong until Stratford Station, north of which activity becomes nodal.

In the future, when the Barnum Avenue Train Station is completed, it is proposed that the entire route is converted into a limited stop service.

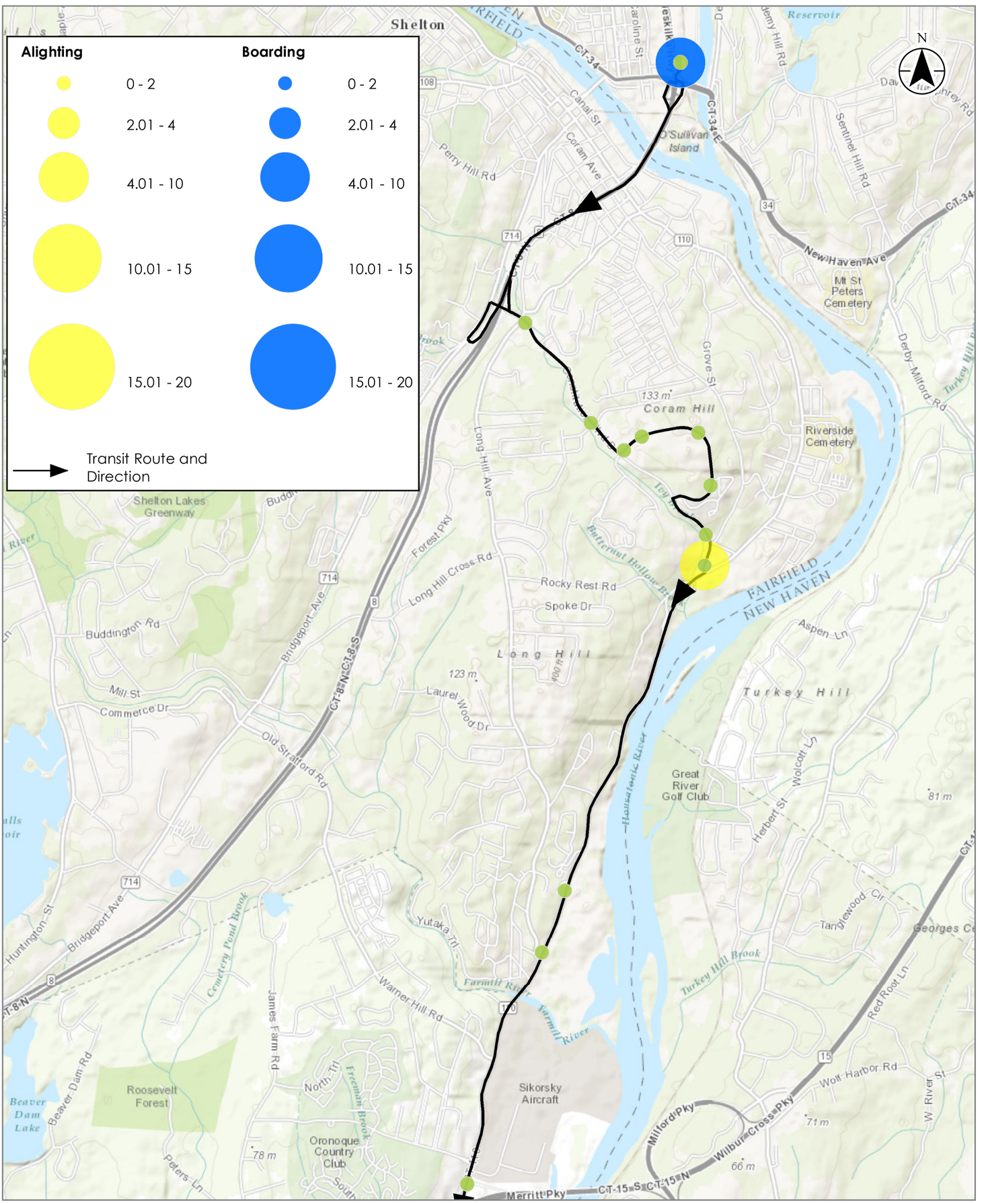
Total Daily Activity

Route 23



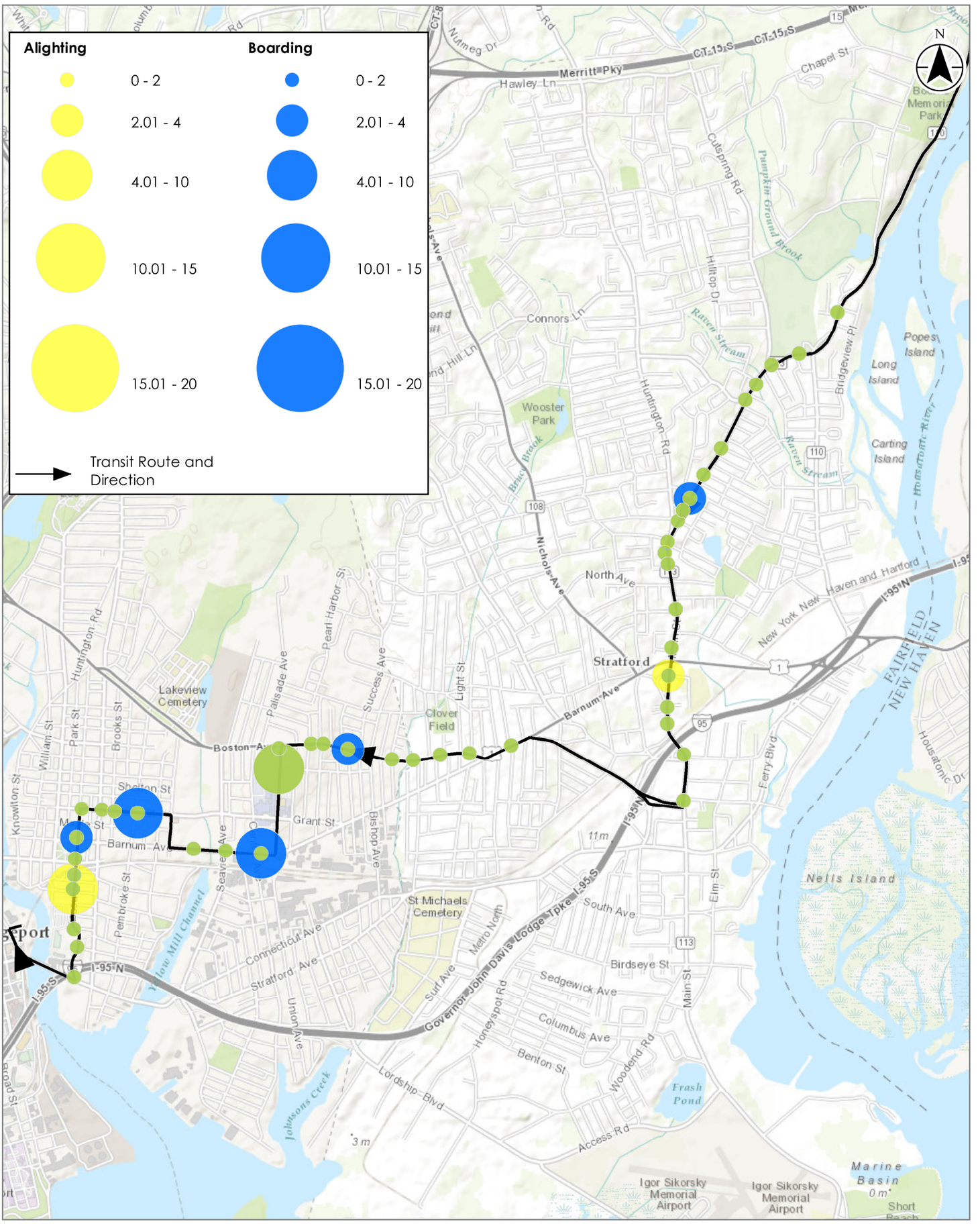
5am - 9am Inbound

Route 23



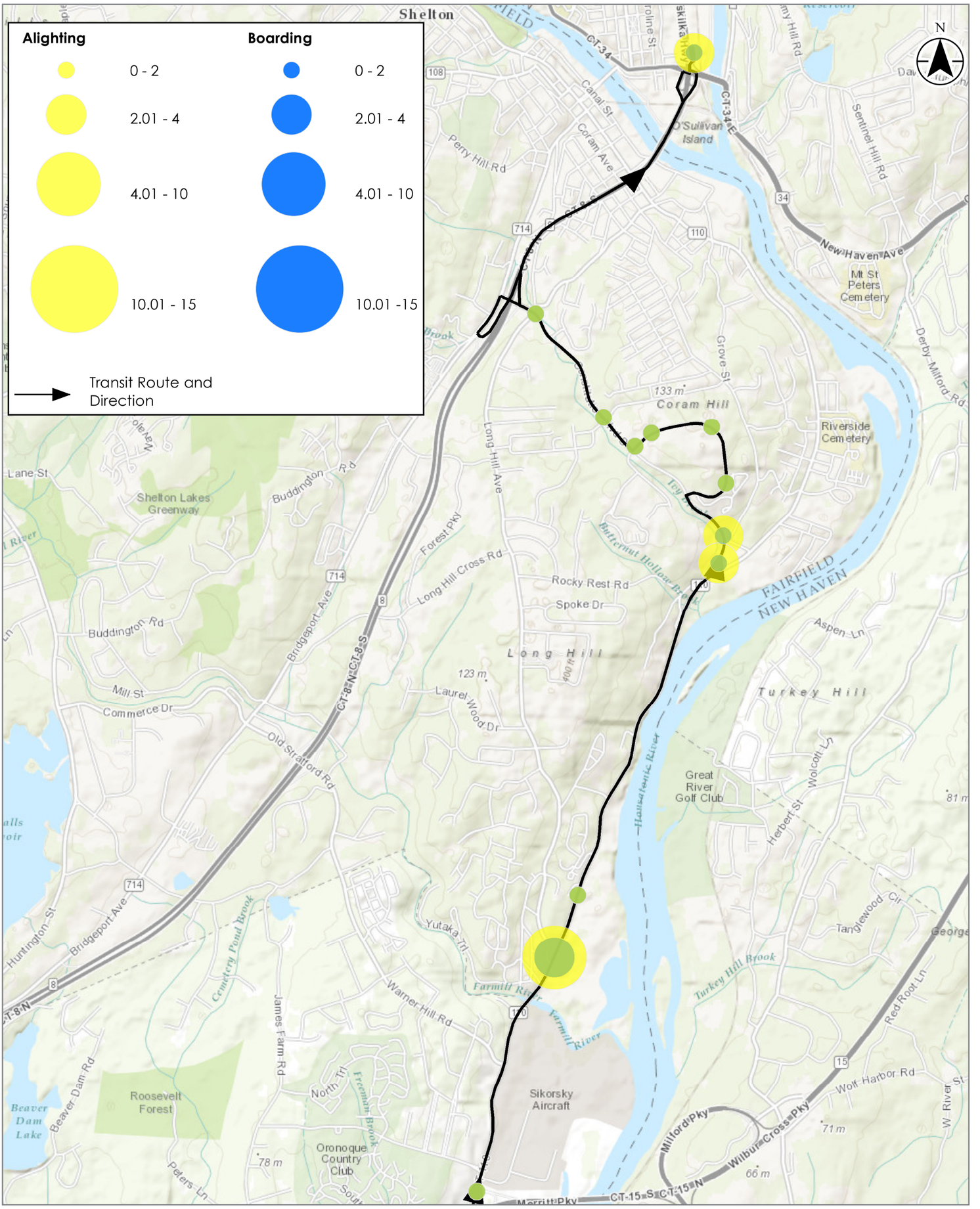
5am - 9am Inbound

Route 23



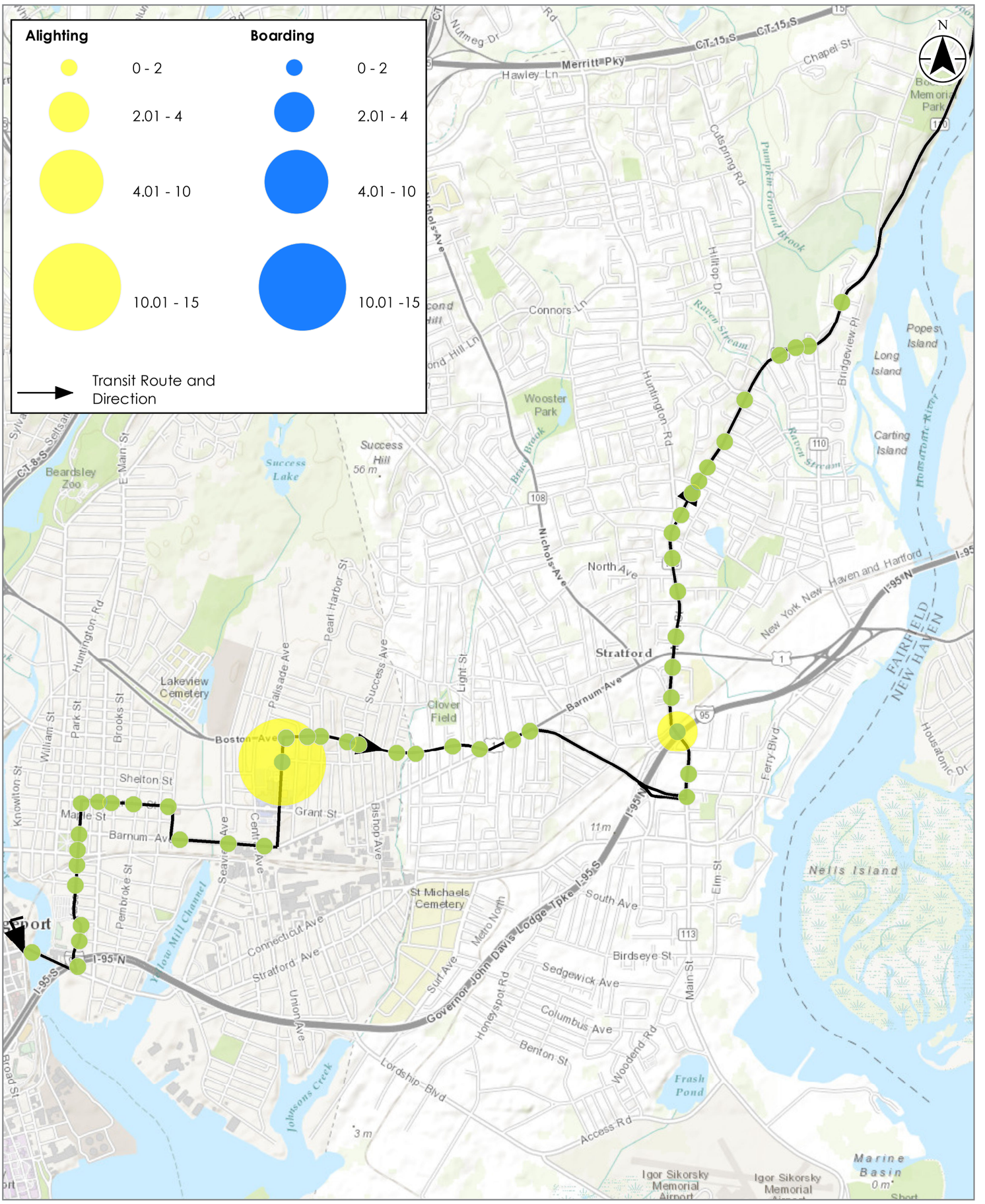
5am - 9am Outbound

Route 23



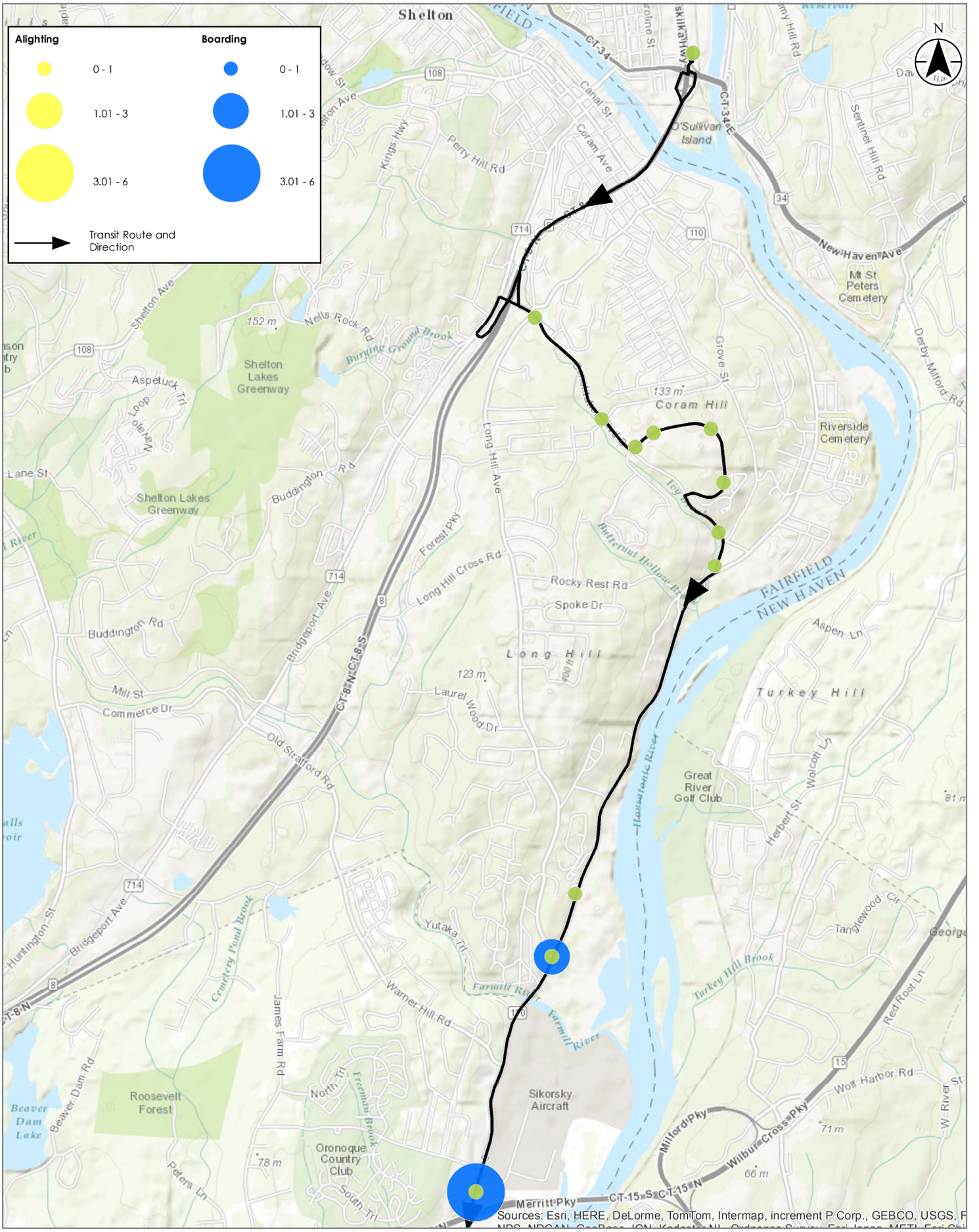
5am - 9am Outbound

Route 23



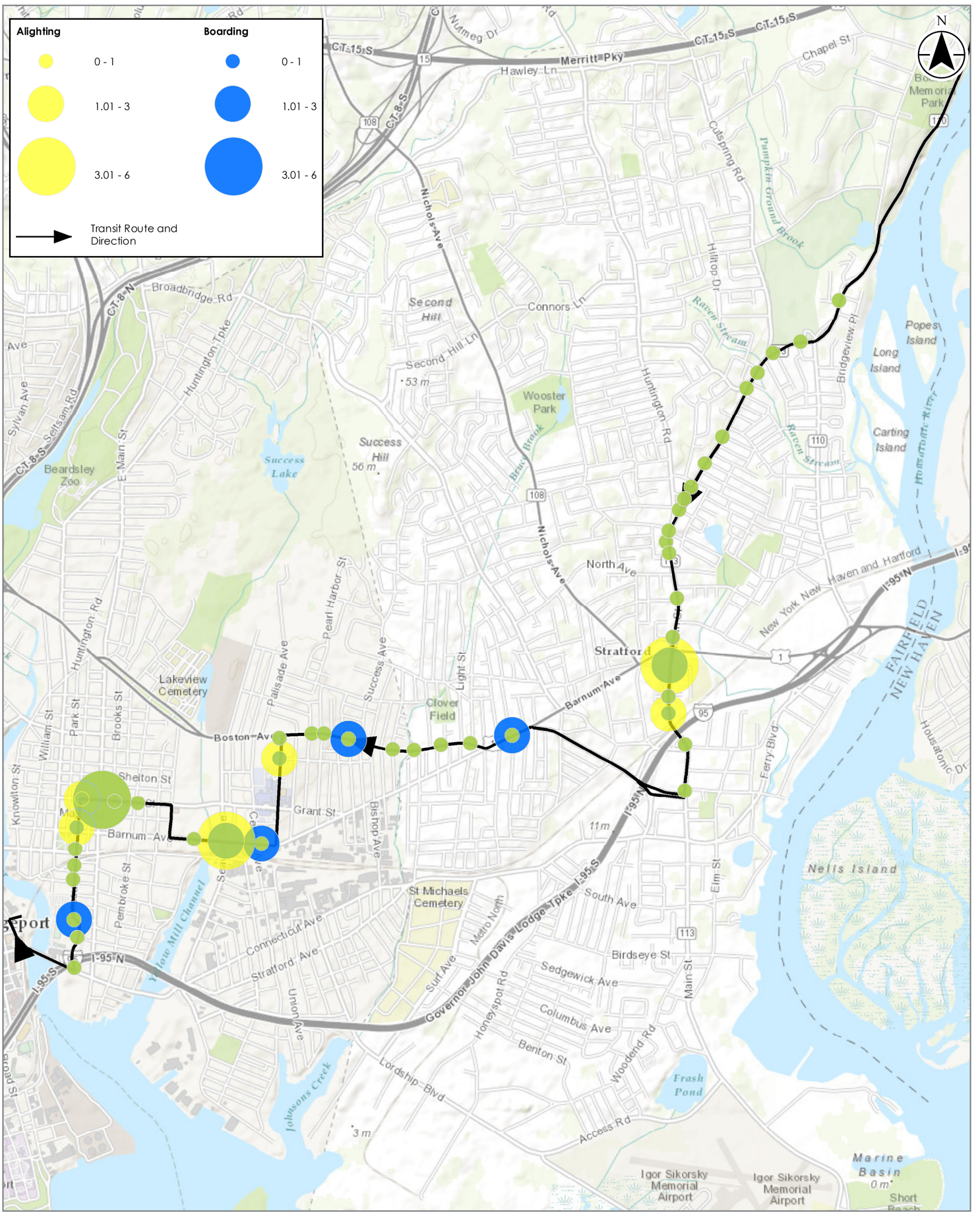
3pm - 6pm Inbound

Route 23



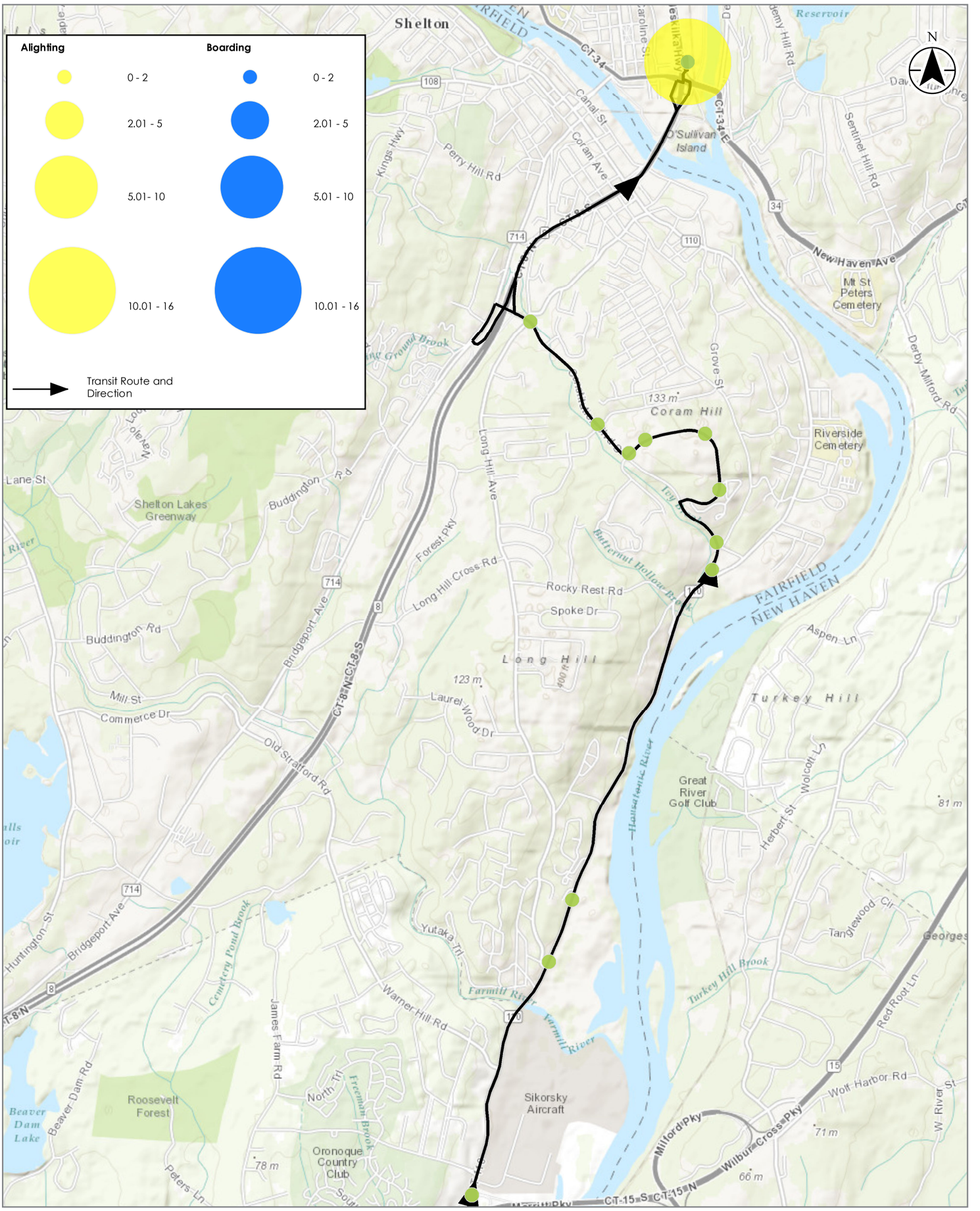
3pm - 6pm Inbound

Route 23



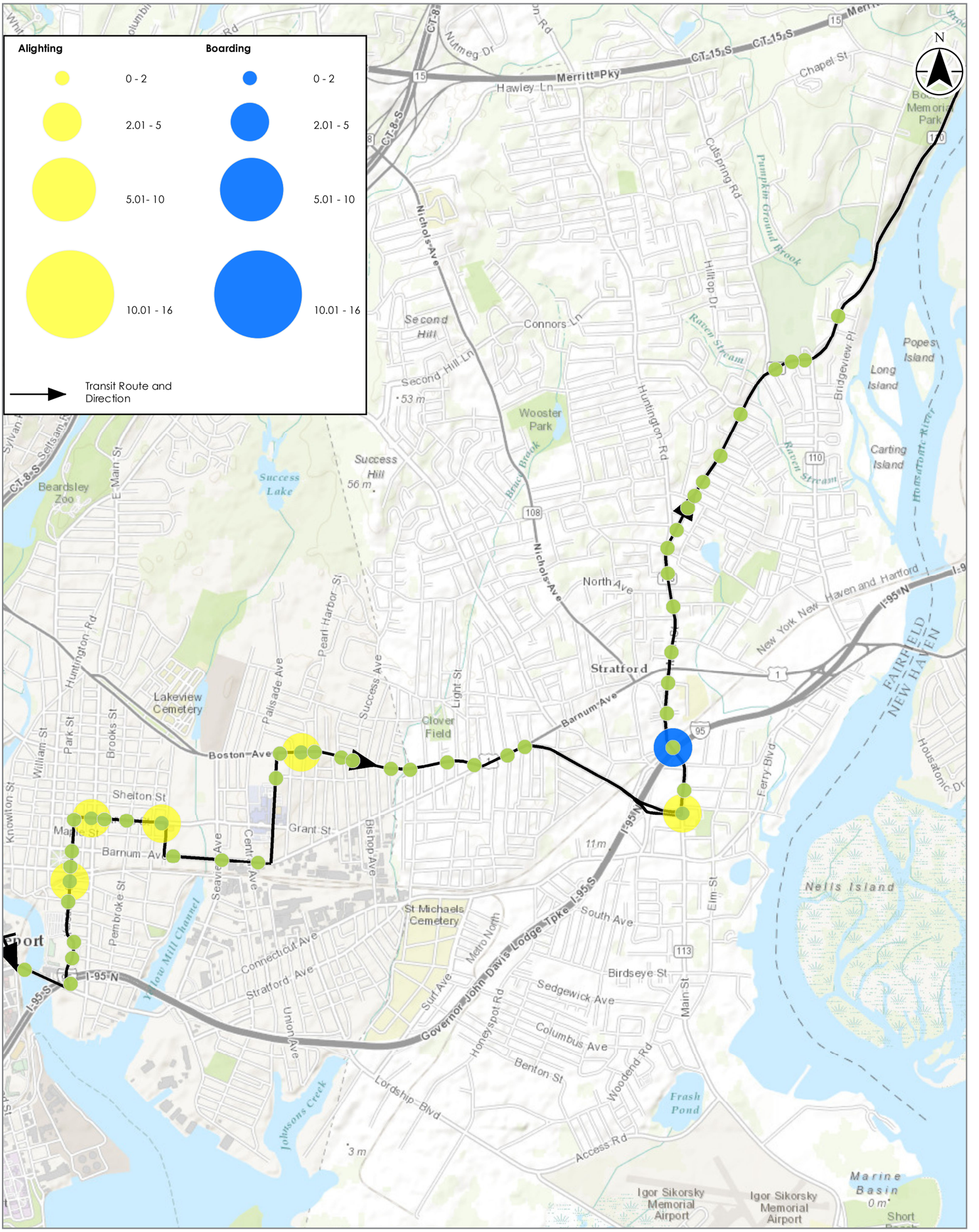
3pm - 6pm Outbound

Route 23



3pm - 6pm Outbound

Route 23



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