

INTRASTATE PASSENGER COMMUTER FERRY STUDY

New Haven, Bridgeport, Norwalk, Stamford



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Summary

This study analyzes the need and opportunity for establishing an Intrastate Passenger Commuter Ferry service along Long Island Sound, serving ports between Branford and Stamford, Connecticut. The feasibility of providing passenger ferry service focuses on ports in Branford, New Haven, Bridgeport, Norwalk, and Stamford. The emphasis of this study is to determine the opportunity to promote the diversion of auto traffic from the congested southwest corridor roadways to waterborne travel as an alternative mode of transportation.

This study investigated existing and planned ferry and transit operations along the southwest corridor and Long Island Sound. Various ferry operators were contacted and they provided information regarding their operations and physical assets. The existing waterway facilities infrastructure in the study corridor was analyzed to determine its appropriateness for accommodating a new ferry passenger service. New waterway infrastructure requirements were then identified that would be needed in addition to the existing infrastructure.

The initial operating parameters of a potential service have been determined based on the interest in providing service during the morning and evening commuting periods, with a minimal capital investment. Providing a ferry passenger terminal in Branford was eliminated from further consideration. One site which is located on the Branford River

lacks adequate water depth at low tide for the ferry to operate safely. The river freezes in the winter and the distance the ferry would have to travel between Long Island Sound and the terminal site would add a substantial amount of time to the overall trip. The second site off Totoket Road in Branford lacks sufficient land for providing parking for ferry patrons. Town officials have indicated concerns regarding the potential for a new service to generate additional traffic through residential neighborhoods. This site would also introduce potential operational conflicts between Buchanan Marine's existing gravel barge operation and a potential new ferry operation. Sites were identified in New Haven, Bridgeport, Norwalk, and Stamford that can be considered for developing new passenger ferry terminals.

Two ferry vessels, with a seating capacity of 150 each, could make two round trips each day in the morning and evening commuter periods between New Haven and Stamford. One vessel would serve New Haven, Bridgeport, and Stamford, while the other would serve New Haven, Norwalk, and Stamford. It is projected that this service would carry approximately 50 passengers daily in each direction.

Capital and operating costs have been determined for two different vessel types, which have different operating characteristics but would both be functionally sufficient. An estimated capital investment of \$15,600,000 would be required to purchase two vessels and to construct terminal/dock

combinations and parking at each of the four sites. An estimated annual operating expenditure of \$1,350,000 would be needed for personnel, fuel, equipment, infrastructure maintenance, insurance, marketing and training.

This new passenger ferry service would be operating between municipalities along a Connecticut corridor which, at the present time, offers commuters a number of travel options. The corridor is currently served by commuter rail, bus and rideshare programs (carpools and vanpools). The primary roadways in the corridor are Interstate 95, Route 15 and Route 1. Approximately 240,000 vehicles travel these roads daily, with the heaviest travel being during the commuter periods. The anticipated ridership of 100 daily commuter trips on a new passenger ferry service would have a negligible affect on the average daily or peak period traffic operations in the southwest corridor.

The Connecticut Department of Transportation's capital and operating budgets, at the present time, are fully programmed and do not include the funds needed to initiate and operate a new passenger ferry service.

Based on the findings of this investigation, the expenditure of public funds to initiate and operate the suggested passenger commuter ferry service cannot be recommended.

Chapter I

Study Background and Purpose

As a result of specific legislative initiatives (Public Act No. 00-148, Section 23), the Connecticut Department of Transportation (ConnDOT) has conducted the Intrastate Passenger Commuter Ferry and Commercial Barge Transportation Study. The legislative action directs ConnDOT to investigate the opportunity for increasing waterborne transportation. In particular, this study focuses on establishing Connecticut intrastate passenger ferry service between Branford and Stamford, and providing commercial barge service between the Ports of New York and New Jersey, and the Ports of Bridgeport, New Haven, and New London in Connecticut. The emphasis of this study is to promote the diversion of automobile and commercial truck traffic from the congested roadways in the southwest corridor, particularly Interstate 95 (I-95) and Route 15. Average Daily Traffic on I-95 and Route 15 for October 1999 was 135,100 and 70,800, respectively. Ten percent of the daily volume on I-95 is truck traffic. Interstate 95 carried 9,000 vehicles per hour and Route 15 carried 7,000 vehicles per hour during the commuting peak periods. Congestion and delays are a regular occurrence.

This report presents the findings of the potential for establishing an intrastate passenger ferry commuter service that would operate along

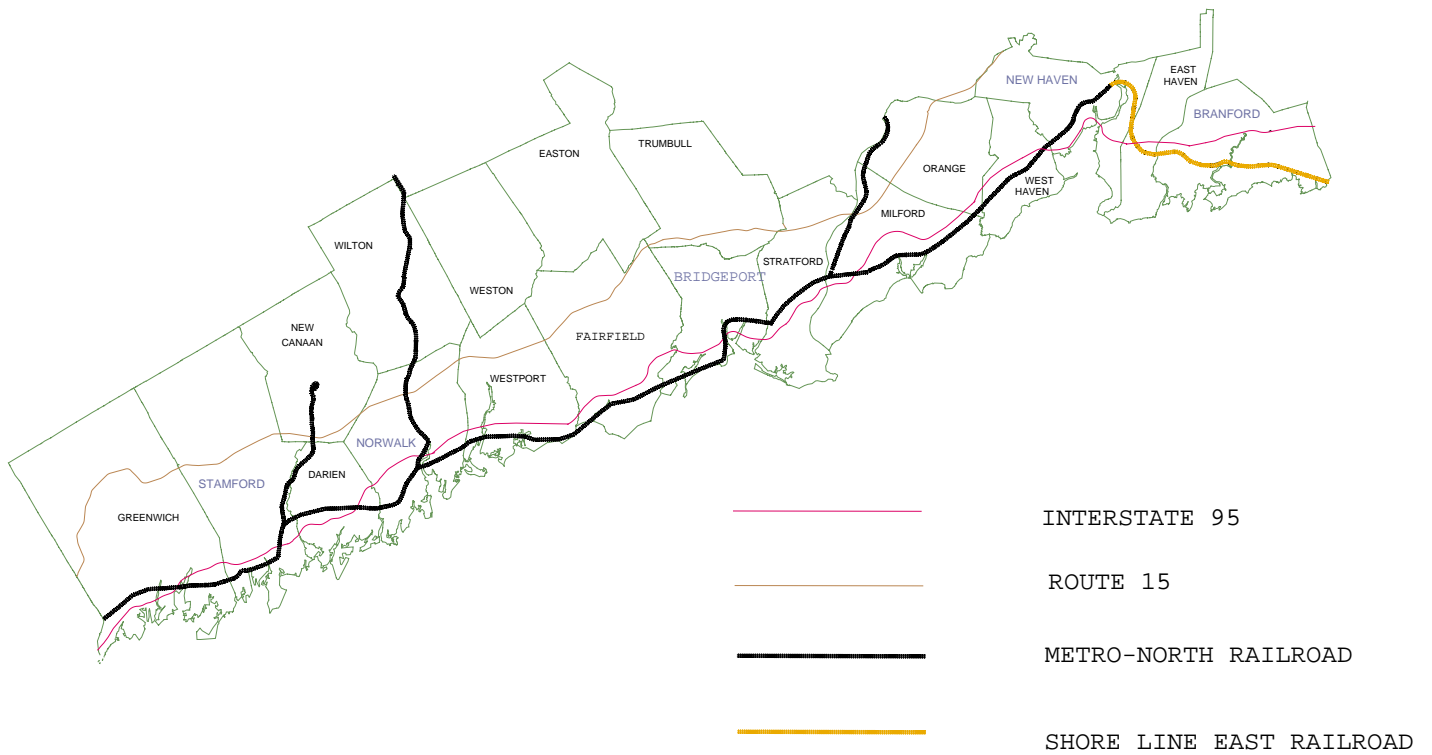
Long Island Sound, between Branford and Stamford, Connecticut (Figure 1). The investigation regarding commercial barge service is documented in a separate report.

The feasibility of establishing passenger ferry service considers potential ports in Branford, New Haven, Bridgeport, Norwalk and Stamford. Two alternative routes have been studied for the purposes of providing a competitive transit option to existing travel choices in the study corridor. One route would provide service at New Haven/Bridgeport/Stamford, and a second route would provide service at New Haven/Norwalk/Stamford. It was determined that ferry service along these routes would be a reasonable alternative to evaluate as an option for commuters, along with the bus, auto, and train, which are currently available along the study corridor.

This study was conducted in coordination with the South Central Regional Council of Governments, Greater Bridgeport Regional Planning Agency, and South Western Regional Planning Agency organizations, first officials and the planning departments of the affected municipalities, port authorities, port terminal operators, as well as current and potential passenger ferry operators.

INTRASTATE PASSENGER COMMUTER FERRY STUDY

BRANFORD, NEW HAVEN, BRIDGEPORT, NORWALK, STAMFORD



Study Corridor

Figure 1

Chapter II

Existing and Planned Commuter Travel Options

Existing Transportation Services

The study corridor is presently served by two commuter rail systems. The Shore Line East system is operated by Amtrak for ConnDOT, providing a total of twenty-five scheduled weekday peak period trains that operate between New Haven and New London. The service carried 268,248 passengers in Fiscal Year 1999 (July 1, 1998 – June 30, 1999) at a deficit/passenger cost (subsidy) of \$18.37.

The New Haven Line, which is operated for ConnDOT by Metro North Railroad, consists of the New Haven main line and the Waterbury, Danbury, and New Canaan branch lines. There are approximately 250 scheduled weekday trains, 143 Saturday trains, and 132 Sunday and holiday trains. In Bridgeport, ConnDOT has provided added train service with an incentive fare structure. In addition, a 500 space surface parking lot provides free parking for train passengers who purchase a monthly, weekly, or ten-trip rail ticket. New morning and evening reverse peak intrastate service has also been added. The New Haven line carried 30,670,203 passengers at a deficit/passenger cost of \$1.44 in Fiscal Year 1999.

The passenger ferry study corridor is also served by fixed bus routes in five transit service areas. The service characteristics are provided in the following table and reflect Fiscal Year 1999:

Transit Service Area	Buses	Fixed Routes	Towns Served	Passenger Trips Per Year	Deficit/Passenger
New Haven	110	18	19	9,051,949	\$1.37
Milford	6	5	1	158,320	\$3.32
Bridgeport	40	17	7	3,750,224	\$1.34
Norwalk	54	34	6	1,162,691	\$2.25
Stamford	42	12	4	2,953,167	\$1.28

Another commuting option available to the traveling public in the study corridor is ridesharing. In the area between New Haven and Greenwich this service is provided through Rideworks and MetroPool which are non-profit ridesharing agencies that receive financial support through ConnDOT. MetroPool serves Southwestern Connecticut by providing schedule information for the New Haven line and bus services, and by offering employers and commuters ride-matching services, guaranteed ride home programs, the Ridestuff Program, and conducting direct employer outreach. MetroPool reports in their first quarterly report for Fiscal Year 2000 that they have 5,834 carpools and 33 vanpools.

Rideworks of Greater New Haven serves the New Haven and Waterbury areas, including Branford. Rideworks provides commuters with information regarding Shore Line East and New Haven line commuter rail

services, and local bus service, provides ride-matching services and conducts employer outreach. Rideworks is also piloting a statewide program Telecommute Connecticut, which offers expertise and assistance to employers who choose to implement telecommuter programs. Rideworks Fiscal Year 1999 annual report stated they have 2,233 carpools and 26 vanpools.

Interstate 95 and Routes 15 and 1 provide the primary roadway routes along the study corridor for commuters who travel by automobile. In October of 1999 in the study corridor, average daily traffic on I-95 was 135,100, on Route 15 it was 70,800, and Route 1 it was 33,800. I-95 carried 9,000 vehicles per hour, Route 15 carried 7,000 vehicles per hour, and Route 1 carried 3,118 vehicles per hour during the commuting periods.

Planned Transportation Improvements in the Study Corridor

ConnDOT has planned improvements for the various transit services available to commuters in the study corridor. Transit services are continuously monitored and adjustments are made to improve operations and address customer needs. Some major projects are presented below.

The Metro-North commuter rail service, New Haven main line, is currently undergoing major infrastructure improvements. The existing catenary system is being replaced with a constant tension wire supported

system, which is designed for the maximum allowed track geometry and other physical constraints. Wooden rail ties are being replaced with concrete ties that have a 50-year life expectancy. The Stamford Center Island Platform project involves the construction of additional island platforms to increase capacity and increase the speed of the boarding and deboardings of the trains. The Stamford Station Parking Garage Expansion will provide approximately 1,200 additional parking spaces for rail commuters. The current interlocking configuration in New Haven is being improved to allow an increase in speeds of up to 50 mph for through trains. A parking garage expansion of approximately 1,000 spaces is planned for New Haven Union Station. The multiple unit rolling rail car fleet will be replaced due to the cars approaching the end of their useful life.

For the Shore Line East service, the existing train stations are planned to be upgraded in order to be compatible with the High Speed Rail service operated by Amtrak. A new rail station in New Haven is being constructed along State Street to provide commuters with improved direct access with downtown New Haven. Additional scheduled commuter service is also planned.

Amtrak's Acela Express service is an improved passenger rail service that has recently been initiated in the Northeast Corridor is expected to be in full operation by summer 2001. The full service will be

provided by 20 trains traveling at speeds of up to 150 mph with stops in Connecticut being provided at New London, New Haven, and Stamford. There will be ten daily round trips between Boston and New York City.

There are also a number of improvements being planned for the CTTransit bus system operated and supported by ConnDOT. During the next ten years, ConnDOT will purchase 478 buses to replace existing buses in use statewide. Bus garages in Waterbury, New Haven, Norwalk, and Stamford will be replaced. In Norwich, a new transportation center is being planned to replace the existing transit center. The new facility will consist of a 240 car garage and enclosed waiting area.

ConnDOT is also conducting two bus transit studies: a Local Bus System Study (recently completed) examines operational performance and service effectiveness, and a Bus Transit Management, Governance, and Finance Study will be used to determine how to more effectively operate, fund, and manage the bus systems in Connecticut. It is anticipated that service efficiencies and enhancement opportunities will be pursued, based upon the recommendations of these studies.

There are numerous roadway improvements being implemented and planned for I-95, Route 15, Route 1, and other state and local roads that serve to meet travel demand along the study corridor. Some major

projects include: I-95 improvements in Bridgeport, I-95 widening between Branford and New Haven (Q Bridge), safety and interchange improvements along I-95 and Route 15, and operational improvements on Route 1.

Chapter III

Passenger Ferry Operations – Current and Proposed/Planned

Current Passenger Ferry Operations

The study area is served by a number of passenger ferry operations. The Bridgeport-Port Jefferson Ferry operates out of the Port of Bridgeport across Long Island Sound to Port Jefferson on Long Island. This service is operated by the Bridgeport & Port Jefferson Steamboat Company. In 1999, the company acquired a new boat for \$14,000,000. The company's other two boats were acquired in 1983 and 1986. In 1999, the three boats carried approximately 800,000 passengers, 342,000 cars, and 3,000 vehicles in other categories. In the summer months they provide 16 daily round trips and in the winter they provide 11 daily round trips. The one-way fare for a car is \$34.50, a motorcycle is \$18.50, and vehicles other than cars cost \$40.50 - \$88.00. The fare for a passenger in a car is \$9.20 and \$12.25 for an adult foot passenger.

The Port of New London has extensive ferry operations serving various locations. The passenger ferries serve Long Island (New York), Block Island (Rhode Island), Glen Cove (New York), and Fishers Island (New York). The Fishers Island Ferry, operated by the Fishers Island Ferry District, in the summer months will make 44 scheduled trips per week, with a minimum of five trips per day and a maximum of 11 trips per day on

Fridays and Sundays. In the winter months this service makes 34 trips per week, with an average of five per weekday, six on Fridays, and four each on Saturday and Sunday. The cost for a car is \$10, bicycle \$5, passenger \$4, children and senior citizens \$2, and trucks are \$1.25 per foot length, with a minimum fee of 15 feet (\$18.75). In 1997, Fishers Island Ferry transported approximately 156,400 passengers, 40,900 cars, and 4,900 trucks.

Cross Sound Ferry operates between New London and Orient Point, Long Island. They operate seven vessels for this service, with six that can carry automobiles, trucks, motor homes, buses, and walk-on passengers, while the seventh is a passenger-only high speed ferry. In 1999, the fleet carried 1.2 million passengers, 360,000 cars, and 12,000 trucks. In the summer months they make a combined total of 26 daily round trips and in the off-season they make eight round trips. The one-way fare for automobiles is \$34, motorcycle is \$22, and for trailers, tractor trailers, motor homes, buses, and campers it is \$2.25 per foot, with a \$3 surcharge. The one-way fare for a passenger is \$10, and \$2 for bicycles.

The trip time between New London and Orient Point for the vehicle ferries is 80 minutes, while the high-speed passenger ferry takes 35 minutes. The vehicle ferries have a cruising speed of 14 knots, while the high-speed ferry has a cruising speed of 30 knots. Improvements that are

planned at the present time are to consolidate their terminal operations into a new terminal building in New London.

Fox Navigation operates a fast ferry service between New London, Connecticut and Glen Cove, New York. They operate out of the Cross Sound Ferry terminal in New London. The trip takes approximately two hours and 15 minutes and costs \$59, or \$89 for the round trip. The service operates seven days a week with two round trips per day. The service carries an average of 50 people per trip, with approximately 10% of the passengers transferring to the Amtrak rail service in New London. Glen Cove has a 250-car parking lot that is dedicated to this service, while New London has parking available in a parking garage near the terminal. Foxwoods Casino operates a shuttle bus that meets the incoming ferry in New London and transports the ferry patrons to their casino. In addition, they operate a seasonal service to Martha's Vineyard in the summer months, with a one-way trip for \$59 and a round trip for \$89.

The Montauk Ferry operates between Montauk, New York and New London, Connecticut. This service is seasonal, beginning on Mother's Day and ending on Labor Day. The service has only one round trip on Friday night and one on Sunday night that leaves Montauk at 7:00 p.m. and leaves New London at 9:00 p.m. The trip takes approximately 95 minutes and carries 80 to 120 passengers per trip. The fare for a round trip is \$35, the

one-way fare is \$20, and a bicycle costs \$6 for the round trip. The service has recently switched operations in New London from the Canadian National Pier to the Cross Sound Ferry terminal site.

Proposed/Planned Passenger Ferry Operations

Lighthouse Landings, through its subsidiary Fast Ferry, is a private operator, which has proposed a ferry service between Stamford and New York City. The proposed site to be used for its ferry terminal in Stamford is located just south of the intersection of Washington and Atlantic Streets on the West Branch of Stamford Harbor. The site consists of two paved parking lots which are in poor condition, with a riprap flood control structure along the harbor side. This site is located on a CTTransit fixed-bus route that services the Stamford train station.

This service is planned to begin operation as a commuter service during the weekdays. The ferry is planned to service LaGuardia Airport, Manhattan Pier 34, and Wall Street Pier 11, with running times of 40 minutes, 55 minutes, and 60 minutes, respectively. Lighthouse Landings will operate three morning peak period trips at 6:00 a.m., 7:00 a.m., and 8:00 a.m., and three evening peak period trips at 4:20 p.m., 5:20 p.m., and 6:20 p.m. The cost for a monthly pass is expected to be in the range of \$400 to \$450. The operation will use two ferries, each having a seating capacity of approximately 300 passengers. The operator expects to have a

ridership of 1,800 trips per day, with 900 in the morning and 900 in the evening. One deadhead trip will operate between Glen Cove, New York and Stamford to service the Long Island market.

The service to LaGuardia will have various drawbacks because of the commuter characteristics of the proposed service. With only three morning trips and three evening trips, there is limited time periods that a passenger will be able to make a transfer between the ferry and a plane without having to spend a substantial amount of time waiting to make the connection. Another impediment would be the need to transfer passenger luggage from the ferry to a bus, and from the bus to the airline terminal. Safety regulations also could prevent the construction of a covered terminal at the ferry-landing site, which could result in the passengers being exposed to the elements during the transfer process.

This service to LaGuardia will be in competition with Connecticut Limo service (limousine/van/bus) to the airport from Stamford. Connecticut Limo currently offers a more frequent service, with the first trip leaving Stamford at 4:35 a.m. and successive trips leaving at five and 35 minutes past the hour until 8:05 p.m., for a total of 32 daily trips. The travel time of Connecticut Limo is approximately 70 minutes, which is 30 minutes longer than the proposed travel time of the ferry. The cost of the limo is \$36 one-way and \$68 round trip, which is more than the

approximate \$14 one-way fare and \$27 round trip fare anticipated for the proposed ferry.

The ferry service, that is proposed to continue to the Manhattan Pier and Wall Street Pier, will compete with the Metro-North railroad. The ferry offers three morning peak period trips, while Metro-North offers 30 morning peak period trips from Stamford, and the ferry has three evening peak period trips, while Metro-North has 27 evening peak period trips from Stamford. Metro-North has one-half hour service during non-peak periods, while the proposed ferry has no non-peak service. The cost of a monthly pass on Metro-North is \$218, with the monthly pass for the ferry is anticipated at \$400 - \$450.

The travel time to Grand Central Station on a Metro-North express train from Stamford is approximately 47 minutes, while the ferry boat will take 55 minutes to get to Manhattan Pier 34, and 60 minutes to get to Wall Street Pier 11. Grand Central Station provides a connection to the subway system in a climate-controlled enclosed building, while the Manhattan and Wall Street Pier sites will require the ferry commuter to walk between one and five blocks to connect with a bus or a subway.

Chapter IV

Service Parameters

The parameters to establish and operate a new intrastate commuter passenger ferry service would include vessels, passenger terminals, parking, transit access to the terminals, and equipment storage and repair areas. Two ferry vessels would each provide two trips in the morning peak period and two trips in the evening peak period. One ferry would begin in New Haven, stop in Bridgeport, with the final destination being Stamford. The other ferry would also begin in New Haven, stop in Norwalk, and continue on to Stamford. The estimated travel times for a one-way trip from New Haven to Stamford, with one stop, is estimated at 75 minutes. The cruising speed of the ferries would be 30 knots. The commuter schedule considered would provide service Monday through Friday. The morning schedule could begin with departures from New Haven (westbound) and Stamford (eastbound) at 5:15 a.m., with the last vessels arriving at their origin station at 11:00 a.m. The evening schedule would begin with departure from New Haven (westbound) and Stamford (eastbound) at 3:00 p.m., with a last vessels arrival at their origin station at 8:45 p.m. A possible schedule could be as follows:

Morning Peak

Boat 1		Boat 2	
Depart New Haven	5:15 a.m.	Depart Stamford	5:15 a.m.
Arrive Bridgeport	6:00 a.m.	Arrive Norwalk	5:30 a.m.
Arrive Stamford	6:30 a.m.	Arrive New Haven	6:30 a.m.
Depart Stamford	6:45 a.m.	Depart New Haven	6:45 a.m.
Arrive Bridgeport	7:15 a.m.	Arrive Norwalk	7:00 a.m.
Arrive New Haven	8:00 a.m.	Arrive Stamford	8:00 a.m.
Depart New Haven	8:15 a.m.	Depart Stamford	8:15 a.m.
Arrive Bridgeport	9:00 a.m.	Arrive Norwalk	8:30 a.m.
Arrive Stamford	9:30 a.m.	Arrive New Haven	9:30 a.m.
Depart Stamford	9:45 a.m.	Depart New Haven	9:45 a.m.
Arrive Bridgeport	10:15 a.m.	Arrive Norwalk	10:45 a.m.
Arrive New Haven	11:00 a.m.	Arrive Stamford	11:00 a.m.

Evening Peak

Boat 1		Boat 2	
Depart New Haven	3:00 p.m.	Depart Stamford	3:00 p.m.
Arrive Bridgeport	3:45 p.m.	Arrive Norwalk	3:15 p.m.
Arrive Stamford	4:15 p.m.	Arrive New Haven	4:15 p.m.
Depart Stamford	4:30 p.m.	Depart New Haven	4:30 p.m.
Arrive Bridgeport	5:00 p.m.	Arrive Norwalk	5:30 p.m.
Arrive New Haven	5:45 p.m.	Arrive Stamford	5:45 p.m.
Depart New Haven	6:00 p.m.	Depart Stamford	6:00 p.m.
Arrive Bridgeport	6:45 p.m.	Arrive Norwalk	6:15 p.m.
Arrive Stamford	7:15 p.m.	Arrive New Haven	7:15 p.m.
Depart Stamford	7:30 p.m.	Depart New Haven	7:30 p.m.
Arrive Bridgeport	8:00 p.m.	Arrive Norwalk	8:30 p.m.
Arrive New Haven	8:45 p.m.	Arrive Stamford	8:45 p.m.

It is anticipated that each terminal would be accessible by walking, private vehicles, or transferring with other transit systems. The fares would be comparable to the Shore Line East rail service operated by ConnDOT.

The user of a ferry service is presumed to be an individual who would be willing to pay for a unique commuting experience. The ride on a ferry would be smoother than the train or bus, the views would be of scenic Long Island rather than the industrial centers the train and bus pass through. The ferry would be more spacious and quieter for commuters than the trains or bus. This would all contribute to providing a more enjoyable commute for potential users of a ferry service. A ferry service would also give commuters another option for their modes of transportation in the congested southwest corridor.

Chapter V

Equipment Requirements

As previously indicated, two vessels would be required for this service. The length of time for each trip would require at least two vessels in order to provide a reasonable initial frequency of service during the commuter peak periods. New Haven, Bridgeport, Norwalk, and Stamford would have four round trips daily in this service arrangement, which would make the service more attractive to potential users. Additional vessels would be considered only as patronage warranted. If an individual vessel were used for this service, it would require a prohibitive amount of time to service all four ports (New Haven, Bridgeport, Norwalk, and Stamford). The type of vessel required must be capable of achieving a cruising speed of at least 30 knots. This speed would provide a travel time of 75 minutes, which would be acceptable for potential commuters. Anything slower would be prohibitive for attracting users to this service, when compared with other transportation options available to commuters in the study corridor.

Another criteria to be considered in determining the type of vessel to use would be the draft. Based on the channels that must be traversed in the various ports of the service area, a maximum draft of approximately six feet would be desirable due to the constant silting of the harbors and channels in the study corridor. Due to the concerns of other users of the

harbors and various harbormasters, a low wake for the vessels is also desirable.

Two vessel types would accommodate all of the above requirements. One would be the InCat 22 meter Catamaran with the jet engine package. The cruising speed is 30 knots, the draft is 3.3 feet, the wake production is 1.3 feet, and the passenger loading capabilities is 149 all weather, with added exterior seating capabilities. The second vessel to meet these requirements would be the super express 95 Monohull. The cruising speed is approximately 28-30.5 knots, the draft is six feet, the wake production is 1-2 feet, and the passenger loading capabilities is 149, with possible added exterior seating.

Chapter VI

Sites Investigated for Passenger Service

Potential sites for the various ferry terminals were investigated using aerial photographs, U.S.G.S. maps with water depths, and channel location information. A review of the study corridor coast line was made to identify sites that are located adjacent to a channel that can accommodate a ferry vessel, a piece of land next to the channel that can provide docks, a terminal and enough parking to accommodate potential ferry passengers. Pedestrian access from the surrounding neighborhoods, business locations, and available public transit systems were also factors in evaluating site characteristics. Sites located near existing rail stations or fixed bus routes were given preference for their potential intermodal characteristics.

Field visits were made to determine the actual suitability of each identified site for ferry service. Meetings with the local municipal planners and various port authorities were held to gather their knowledge of the sites, any future plans for the sites, any local concerns regarding the sites, and any factors that could prohibit the use of the site for ferry service. A location map of each of the sites discussed here is included in Appendix A.

Branford:

Two ferry terminal sites were identified for investigation in the Town of Branford. The first site is located in the downtown area along the Branford River, near the intersection of Maple Street and Indian Neck avenue. The landward side of the site consists of an abandoned factory complex of mill buildings, concrete pads, piles of rubble, and overgrown brush areas. The site has an existing dock which is in such poor condition and insufficient size it would be of no use toward a new service and would have to be replaced.

The site has no existing parking. Pedestrian access would have to be from Maple Street which is without sidewalks, and would create an unsafe condition for potential ferry users. The site is not served by existing transit service either directly or in proximity but is within potential walking distance of a Shore Line East transit station.

There are a number of marinas along the Branford River that would create navigational concerns for ferry maneuvers. The river has a very narrow channel with depths ranging from six feet to 13 feet and has numerous turns to it.

Discussions with the town planner revealed that this site has redevelopment potential. A developer is planning a mix of housing and a

hotel for this site. The development plan does not include an area for public parking, which would necessitate an alternative location to accommodate ferry passenger parking.

ConnDOT is planning to relocate the existing train station across Maple Street from this site for Shore Line East rail service. The new facility will accommodate approximately 200 parking spaces. The use of the existing rail station parking area for the last four years has been: 1999 - 61 cars, 1998 - 70 cars, 1997 - 68 cars, and 1996 - 72 cars. Based upon this history of parking usage, there may be an opportunity for ferry passengers to also park in the new rail lot. Another option for ferry patron parking may be the present train station parking area located on the north side of the tracks and within walking distance of the site. This area will have parking available for 77 cars after the train station is relocated.

Further discussions with the town planner regarding this site identified potential operational problems. During the winter months the river freezes and this could present problems for the ferry traveling up the river to the docking site. Another issue is that, at low tide there is a potential problem with insufficient water in the channel for navigational purposes. Because the dock would have to be replaced, some dredging may be required which could encounter hazardous materials. The channel leading to the site is narrow, with numerous bends in it that could present

safety issues when the ferry is passing another vessel. The final consideration for this site is that the distance up the channel from the sound would add a substantial amount of time to the ferry trip which would affect the overall operation and reduce its desirability for any potential commuters.

Because of the above-mentioned operational difficulties, this site would not be considered for future ferry service because the constraints on it would not make it attractive for ferry commuters to use.

The second site investigated in Branford is the Tilcon gravel facility located at Juniper Point. Tilcon transports gravel to this site by rail and then ships it out by barge. The access to this site would be from Totoket Road. This facility has a 450 foot quay where the gravel is loaded onto barges for transport. There are approximately 12 dolphins alongside the channel leading to the site for storing barges after they have been filled, or are waiting to be filled with gravel. The channel depth is approximately 13 feet.

The Tilcon site has no transit connections to either bus service or passenger rail. No sidewalks are along Totoket Road or the access road into the site to provide a safe pedestrian access. The parking on-site is strictly limited to employees. This site also lacks the ability to provide

adequate parking for potential commuters, due to the surrounding wetlands and recent residential development.

The town has expressed concerns regarding potential conflicts between the train and barge operation with a new ferry service. They also had concerns with additional commuter traffic being generated through the surrounding residential area. These local concerns will preclude the further study of this site for ferry service.

New Haven:

The City of New Haven has five existing waterway facilities that were investigated to be used for passenger service. The first site is at a naval reserve facility located on Woodward Avenue. This site has a perimeter security fence that encloses parking reserved for military vehicles and Navy Reserve personnel only. This site lacks additional space to construct parking due to adjacent parks, regulated areas, and surrounding residential neighborhoods. Woodward Avenue has partial sidewalks that extend close to the front gate of the Naval Reserve facility. CTTransit's G Route, which operates from 5:44 in the morning to 10:20 in the evening is the local fixed-route bus that operates one block away on Townsend Avenue, which is within an acceptable walking distance from the site.

There is an existing dock on site that extends approximately 300 feet into the harbor. No channel has been developed that leads into this site. The water depth between the dock and main channel is approximately 10 to 16 feet.

Use of this site could cause potential security problems by allowing public access. There is also insufficient space for parking. This site will not be considered further for new waterway infrastructure requirements associated with a passenger ferryboat service.

The second site in New Haven is a Coast Guard facility located just north of the Naval Reserve facility, also on Woodward Avenue. This site is also enclosed by a perimeter security fence, with available parking that is reserved for Coast Guard personnel and vehicles. Building additional parking for ferry patrons would be prohibitive because of adjacent parks, regulated areas, and surrounding residential neighborhoods. Pedestrian access to the site would be from Woodward Avenue which has partial sidewalks leading up to the entrance of the facility. CTTransit's G Route could also provide bus service to this location.

The Coast Guard site has a dock that extends approximately 160 feet into the harbor. It also has two slips adjacent to the dock that are approximately 40 to 50 feet long and can accommodate two vessels per

slip. This site does not have a channel connecting it with the main channel. The water depth between the Coast Guard facility and the main channel ranges from two to 18 feet. This would require dredging from the dock almost out to the channel.

Use of this site could cause security problems by allowing the public access. There is also insufficient space for parking. This site will not be considered further for new waterway infrastructure requirements associated with a passenger ferryboat service.

The third site in New Haven is an inactive power plant located off of Waterfront Street. At the present time, this power plant is not in operation but there are proposals for reactivation. Waterfront Street is heavily used by trucks traveling to and from the various terminals at the port. There are no sidewalks which would be unsafe for pedestrians access. No local bus routes serve Waterfront Street directly. The walk to the closest bus routes on Forbes Avenue and Townsend Avenue would be prohibitive to any potential users from this site due to the heavy truck traffic and the long distances involved.

The dock on this site is approximately 450 feet long. The water depth between the dock and the channel ranges from six to 28 feet. There is no channel from the main channel to the dock.

The dock supports a piping system that delivers the fuel from the delivery vessel to two storage tanks located on the site. This piping system on the pier could interfere with potential passenger ferry users as they board and discharge from the ferry. The fuel delivery operations could also interfere with the fixed scheduled operations of a ferry service. A fuel vessel being off-loaded would prevent a ferry from docking. This site is also not for public use and lacks available parking for ferry users, without available property on site to construct additional parking which would preclude it from further consideration.

The fourth site in New Haven is an old fuel tank farm located south of I-95 near the intersection of Water Street, East Street, and Forbes Avenue. This site is under consideration by the City of New Haven for redevelopment. The City has begun to negotiate with the property owner to acquire the property. This site has ample space for constructing parking and a ferry terminal. Sidewalks on the streets that border the site provide pedestrian access. CTTransit's F Route, which operates from 5:25 in the morning to 10:07 in the evening, is the local fixed bus route that operates on Forbes Avenue.

This site has an inlet with deep water that could provide access for the ferry vessels without dredging being required. On the east side of the

inlet, there is 520 feet of existing docks. There is also a dock in the inlet that is 700 feet long. On the west side of the inlet, there is an existing quay that is 170 feet long and 300 feet of frontage that can be used for a quay. The water depth leading up to the inlet is 39 feet deep.

At the present time, this site does not have the facilities required for a ferry terminal site. Parking for approximately 150 cars would have to be developed for this site. The parking lot layout would have to be designed to allow bus circulation within it for discharging and collecting passengers at the ferry terminal building. Pedestrian access from the surrounding sidewalk network to the terminal would also have to be developed.

A ferry terminal building and a covered walkway from the terminal to the quay would be needed. The quay adjacent to the inlet into the site would also have to be reconstructed, as it is not suitable for passenger traffic from the terminal area to the ferry and could present safety problems to the ferries.

This site is considered to be at high risk for the presence of contaminants. The cost and time that would be required to decontaminate this site because of past uses would be substantial.

The fifth site investigated in New Haven is the Long Warf Pier area located on the west side of the harbor. This pier is used for docking tour boats and serves as homeport for the Amistad. This site has very limited parking (approximately 30 spaces) associated with it. Long Warf Drive is the primary access to this site and has sidewalks for pedestrians. Local fixed bus route traverses Long Warf Drive provided by CTTransit's commuter connection which operates in the morning and evening peak periods. CTTransit Route Z also serves this area from 6:12 in the morning to 8:24 in the evening.

The present main pier at this site is approximately 520 feet long. There are two docks that extend from the main pier that are 110 feet long and 230 feet long and are used to tie boats. The water depth near the pier ranges from three to 18 feet, and between the pier and channel between 18 and 33 feet.

The existing building that is used for ticket sales for the excursion boats that operate from that site could also be used for a new commuter ferry service. The building can be expanded to include a waiting area for ferry passengers. The dock would have to be covered to provide a protected environment from the elements as the passengers walk to and from the ferry.

This site does not, however, have adequate space on the landside to provide parking spaces for 150 cars. The parking area can currently accommodate approximately 30 cars. Bus and pedestrian access to the site can be along Long Warf Drive, which is adjacent to the site, with the only modification that would be required is a bus pull-in area. A bus shuttle could be used to transport ferry passengers between the dock and various parking sites in the immediate area that could be leased.

The Long Warf redevelopment project that incorporates this area can be used in the future for a ferry service. The city has been interested in relocating the former Yale University boathouse from its current location near Route 1 to the Long Warf area by creating 3.8 acres of filled land. The site is also envisioned to include a public marina for 256 boats, an esplanada, a plaza, waterfront park, and limited parking. The ferry service could use some of the dock space created for the proposed marina or planned exhibits to operate from.

Bridgeport:

At the present time, the Port of Bridgeport provides docking services for the Bridgeport-Port Jefferson ferry. The existing ferry terminal is part of an intermodal transportation system. MetroNorth and Amtrak rail, ferry, and bus transportation hubs are all within walking distance of each other. A parking garage has been built adjacent to this site at the Bridgeport

Sport Complex, and another 200-space garage is planned to be built south of the ferry terminal building in the near future. The Bridgeport City Planner, Bridgeport Port Authority, and the Greater Bridgeport Regional Planning Agency, all support use of this site for a terminal.

This site has an existing berth that an active ferry service is presently using for its operations between Bridgeport and Port Jefferson on Long Island. North of this berth is a dock that can potentially serve a ferry vessel. This site is adjacent to the main channel, and, therefore, has plenty of water depth.

This site is adjacent to fixed local bus routes that can transport passengers between the ferry and sites in Bridgeport and the intermodal transportation center at the train station. The parking garage that is to be built on site can be expanded to 400 spaces if the need arises, and there is additional parking a short distance away near the train station. The existing parking supply and proposed additional parking should be able to accommodate the needs of the ferry services at this site.

Norwalk:

Norwalk has two existing waterway facilities that can be considered for potential ferry terminal locations. The first is a marina located at the end of Calf Pasture Beach Road. The site is zoned marine commercial

which permits services such as a ferry operation. This site has limited parking in the winter as the boats are stored on all available property. The city suggested that a parking deck could be constructed on site to accommodate the parking needs of a ferry service. Calf Pasture Beach Road has sidewalks that could provide pedestrian access to this site. The Norwalk Transit District, through WHEELS, has the Route 8 fixed bus route which serves Calf Pasture Road between 6:20 in the morning to 7:15 in the evening, and could provide transit access to this site.

The marina has one dock that is 180 feet long and could potentially serve a ferry vessel. The remainder of the marina consists of slips for recreational boating. There is a channel that leads to this site with water depth of approximately 14 to 16 feet.

A private operator's recent proposal (within the past two years) for ferry service from this site has generated concerns by the neighborhoods in this area. They were concerned about the additional traffic that would be generated by a ferry service, along with the traffic from the marina and park, which in the summer months is substantial. The city indicated that a proposal to operate a commuter ferry from this site would most likely generate similar concerns from the neighborhood. For this reason, along with a lack of on-site parking, this site will not be considered further for this service.

The second site investigated in Norwalk is located on Water Street and fronts the Norwalk River. This site is presently being used as a parking lot for adjoining businesses, and would also accommodate ample parking for ferry customers. There are sidewalks along Water Street that could provide pedestrian access to this site. Fixed route bus service along Route 9 would provide a transit connection to this site along Water Street between 6:20 in the morning and 7:15 in the evening.

This site has approximately 350 feet of frontage along the Norwalk River. The channel in the river is approximately 16 feet deep. There are other docks and marinas adjacent to this site that should not pose operational constraints as the channel is wide in this area.

This site contains infrastructure that would have to be replaced to support a ferry service. The dock on site is in such poor condition that it would have to be replaced to safely operate a ferry service at this location. A ferry terminal building would also have to be constructed and a covered walkway would be needed to the quay from the terminal to protect the passengers from the elements.

The existing parking lot would need to be paved. It would be designed for bus access, with a drop-off area near the terminal building.

Pedestrian access to the site from the adjoining sidewalk network would also have to be incorporated into the parking lot design.

Stamford:

The City of Stamford has two waterway sites that have been identified as potential ferry terminal sites. The first site, Brewer's Yacht Haven Boatyard is located on a 14-acre peninsula that extends into the harbor and is surrounded by water on three sides. This active marina has 275 marina slips, boat repair facilities, and provides winter storage of 500 to 600 boats, which drastically reduces on-site parking availability during the winter months. The City of Stamford's long range development plan for the harbor has identified this area as the prime location for a ferry terminal. It is located at the top of the peninsula which would require the least travel time in the harbor for a ferry. A 300-space parking garage has been envisioned for this site for passengers. The CTTransit local fixed route bus service could be diverted to this site to provide a connection to the train station without adding a considerable amount of time to the route.

There is a dock on site that has been used for a single event ferry boat demonstration trip to New York City. The dock is adjacent to the West Branch of Stamford Harbor which is approximately 17 feet deep. Dyke Lane provides vehicle access to the site and has sidewalks for pedestrian

access. This site is presently being served by CTTransit's H Route from approximately 6:21 in the morning to 9:38 in the evening.

As this site is presently being used for a Marina and identified for development in City's long range plan (20 year plan), this site is not being considered further for ferry service.

The second site investigated in Stamford is located on the Northeast Utilities property at the intersection of Washington Boulevard and Atlantic Street. This site fronts the west branch of the Rippowam River that leads to Stamford Harbor.

This ferry terminal would be a satellite intermodal transportation facility of the McKinney Transportation Center located north of this site at the train station. Fixed route bus service is provided adjacent to this site and passengers would be able to transfer to the transportation center to connect with Amtrak, Metro-North, Greyhound, and various local fixed bus routes.

The portion of the property that has been identified for possible use as a ferry terminal consists of two parking lots, a seawall, and three dolphins in the channel for docking vessels. The frontage on the West Branch of the harbor for this potential ferry site is approximately 480 feet,

with 220 feet associated with the three dolphins. The channel adjacent to this site is approximately 10 to 17 feet. No dredging would be required for this site as the water depth is adequate for ferry access.

Two on-site parking lots could provide adequate parking for a potential ferry service. The lots are in disrepair with cracks and vegetation due to nonuse and would have to be repaved. The site is at high risk for being contaminated. Washington Boulevard has sidewalks, which could provide pedestrian access to this site. CTTransit's H Route provides fixed route bus service to this site from 6:21 in the morning to 9:38 in the evening.

A new entrance from Washington Boulevard would need to be built because the present entrance from Water Street would provide operational difficulties for a bus entering the site. Pedestrian access into the site would have to be designed into the parking lot improvements.

This site would require a terminal building, as well as a dock for the ferry to operate from to be constructed (this location has no existing dock). The walkway from the terminal to the dock would have to be covered along with the dock itself to protect passengers from inclement weather.

The Stamford Harbor Master has identified various concerns regarding any new ferry service in the harbor. The harbor has an extensive amount of moored and docked boats, which would be affected by the ferry wake if it were operated above a 5 mph speed limit. An additional concern is that ferries turning around at the dock with their thrusters can churn up sediments which can be contaminated. These sediments can pose a water quality problem and can create aesthetic problems with recreational craft in the harbor by distributing a scum line on the craft. The Harbor Master also indicated a concern that sediments being churned up by thrusters can pose a problem to the commercial shellfish beds in the harbor. Recreational fishermen also use the harbor when the bluefish are running, which can present a conflict with the navigation of the ferries due to the number of small boats.

Chapter VII

Potential Passenger Ferry Service Market

The patronage estimates for a new commuter ferry is based on a Statewide Travel Model using TRANSPLAN travel forecasting software. A modified rail transit network was created from ConnDOT's base network to add a new ferry service. The ferry service was input into the model as a slower train service to mimic the travel time of the ferry between the terminal points. The model also factored in cost, travel time, and demographic information. Estimates of total daily work trips (Year 2000) on weekdays for the proposed service is 30, with a yearly total of 7,650.

Given that the model is not calibrated to specifically address the unique characteristics of ferry service, additional analysis was performed to determine ridership projections. The demographics that would support such a service would be white-collar managerial professionals and households earning greater than \$50,000 annually. After examining the data and the fact that Stamford has a large number of white-collar managerial professionals, the number of potential daily ferry passenger users can be estimated in the range of 50 to 100 trips daily (25-50 in each direction), with a yearly use of 12,750 to 25,500.

This limited amount of anticipated ferry use is understandable when reviewing competing modes of transportation in the study corridor. These include the MetroNorth rail service which provides faster and more frequent service (250 scheduled weekday trains), the restricted market for the service due to limited origin and destinations, and the preference and greater flexibility of commuting by automobile. The affect this service would have on the patronage of other transit modes would be negligible for the foreseeable future.

Chapter VIII

Capital and Operating Costs

ConnDOT has estimated the capital and operating costs for a new commuter ferry service between New Haven and Stamford. One-time start-up costs have been determined for both the Super Express and Incatt 22 Meter with Jets at \$1,191,380 and \$1,207,200, respectively. These costs include one full year of marketing expenses, and maintenance and repairs equal to one year's expenses for two vessels (including spare parts, tools, and supplies).

The capital costs for the suggested ferry service would include the purchase of two vessels, terminals and docks in each of the four municipalities being served, and parking facilities. The total costs are between \$15,200,000 and \$15,600,000, with the Super Express vessel being the higher cost option. This does not include the cost of property acquisition or any environmental action that may be required on a terminal site.

The main components of the annual operating costs include labor, fuel, maintenance, insurance, and marketing. The operating costs for the Super Express and Incatt 22 Meter with Jets are estimated at \$1,317,520 and \$1,338,120, respectively. The administration of this service was

assumed to be managed by ConnDOT within existing offices and current staffing. The estimates are itemized in the table below:

Annual Capital and Operating Cost of Commuter Ferry Service for Two Vessels

	Capital Costs	
	Super Express	Incatt 22 Meter with Jets
Vessel Purchase x 2	\$ 3,600,000	\$ 3,200,000
Terminal/Docks-\$2,100,000 x 4	\$ 8,400,000	\$ 8,400,000
Parking-400 spaces x \$6,000 per space	<u>\$ 2,400,000</u>	<u>\$ 2,400,000</u>
Sub-Total	<u>\$14,400,000</u>	<u>\$14,000,000</u>
One-time Start-up Costs (i.e. marketing, spare parts, operation expenses)	<u>\$ 1,191,380</u>	<u>\$ 1,207,200</u>
Total	<u><u>\$15,591,380</u></u>	<u><u>\$15,207,200</u></u>

	Annual Operating Costs	
	Super Express	Incatt 22 Meter with Jets
Captain - \$77,220 x 2 positions	\$ 154,440	\$ 154,440
Deckhand - \$48,420 x 4 positions	\$ 194,480	\$ 194,480
Terminal Manager-\$34,320 x 4 positions	\$ 137,280	\$ 137,280
Fuel	\$ 586,500	\$ 612,000
Maintenance	\$ 127,500	\$ 127,000
Insurance	\$ 67,320	\$ 62,920
Marketing	<u>\$ 50,000</u>	<u>\$ 50,000</u>
Total	<u><u>\$ 1,317,520</u></u>	<u><u>\$ 1,338,120</u></u>

A new ferry service would have a negative effect on ConnDOT's budget for transit operations. ConnDOT's transit operating budget has remained the same or decreased since 1993. At the present time, all available operating funds have been fully programmed, primarily for operating subsidies on the New Haven Line, Shore Line East, and various bus operations. Major capital programs underway, or soon to be underway, such as the catenary rail line replacement, Stamford Station Center Isle Platform, New Haven Rail Interlocking, Bus Fleet Replacement,

and Bus Garage Replacement, will require additional operating monies to construct and maintain them in a state of good repair. Financing the continued maintenance of these new infrastructure and planned facilities will have to come from the existing operating budget.

The estimated operating costs of the ferry service being considered in this document are not included in the present or future budgets of ConnDOT.

The effect of a new ferry service on ConnDOT's capital program is similar in nature to the impact on the operating budget. At the present time, all transit capital monies are programmed until the year 2009 to maintain the existing system in a state of good repair. ConnDOT does not have the capital monies available now, nor can they be anticipated in the foreseeable future to initiate a new service.

Chapter IX

Effect on Roadway Congestion

If all of the commuters that would use a new ferry service were drivers in single-occupant automobiles, then up to 100 daily trips could be eliminated from state and local roadways between New Haven and Stamford. This number of trips would have no noticeable effect on the traffic volumes and operations on I-95, Route 15, and Route 1 during the commuter travel period. The traffic congestion levels of these facilities would remain the same and, therefore, no traffic congestion relief or measurable air quality improvements could be anticipated with a new service.

At the present time, I-95 is operating at a Level of Service F (forced flow) during the peak period. The volume of traffic attempting to enter on to the roadway is greater than the roadways' physical capacity. According to the Federal Highway Administration "Highway Capacity Manual 1997" this would equate to at least 2,400 vehicles per hour per lane (7,200 vehicles per hour in one direction). There are approximately 9,000 vehicles on a three-lane section of I-95 per hour during the commuter peak travel time and peak direction.

To improve the Level of Service on I-95 to an operating condition such as Level of Service C (stable operation), there would have to be a maximum of 1,700 vehicles per hour, per lane (or 5,100 vehicles per hour in three lanes). Therefore, for a ferry service to have a positive impact on the Level of Service of I-95, it would have to carry 2,100 passengers per hour (assuming all were previous lone automobile drivers) when it is in operation.

Chapter X

Conclusions

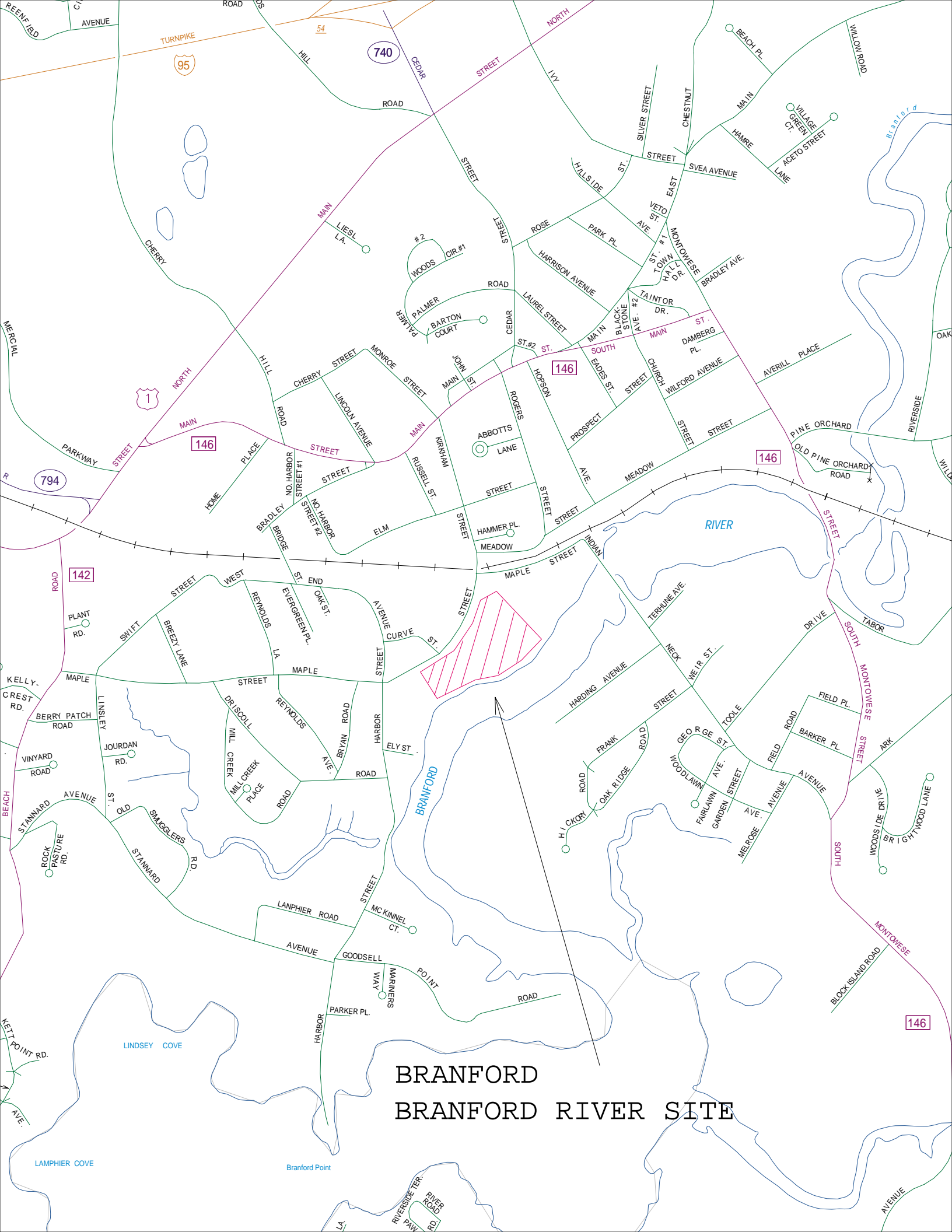
This report presents the findings of ConnDOT's study to analyze the need and opportunity for establishing an Intrastate Passenger Commuter Ferry Service along Long Island Sound, serving ports between Branford and Stamford, Connecticut. The ferry passenger terminal in Branford at the Branford River site was eliminated from consideration due to lack of adequate water in the river at low tide. The river freezes in the winter and there is a long travel time up the river. An alternative Branford site on Totoket Road was also inadequate due to the inability to provide parking, concerns of additional traffic through neighborhoods, and potential conflicts with existing marine traffic operations. Therefore, the feasibility of providing passenger ferry service focused on ports in New Haven, Bridgeport, Norwalk, and Stamford.

The capital costs for providing intrastate ferry service would be approximately \$15,600,000, and the annual operating costs would be approximately \$1,350,000. Additional funding would be required to initiate and operate this service. Based on the ridership forecasts, the two-vessel operation would provide sufficient capacity to accommodate the projected daily ridership of 50 passengers each way.

Commuter travel along the study corridor is currently accommodated by roadway, rail, bus, and ridesharing. The New Haven Line Commuter Rail Service carries approximately 30,670,230 passenger trips per year, and five bus transit service areas carry a combined 17,076,351 passenger trips per year.

Each day, there are 135,100 vehicles on I-95, 70,800 vehicles on Route 15, and 33,800 vehicles on Route 1. Diverting the projected 100 trips per day from automobile to a new ferry service would have no beneficial affect upon the roadway operations in the study corridor. Therefore, the expenditure of public funds to initiate and operate the suggested passenger ferry service cannot be recommended.

Appendix A
Site Locations



BRANFORD
BRANFORD RIVER SITE

LINSEY COVE

LAMPHIER COVE

Branford Point

146

142

146

146

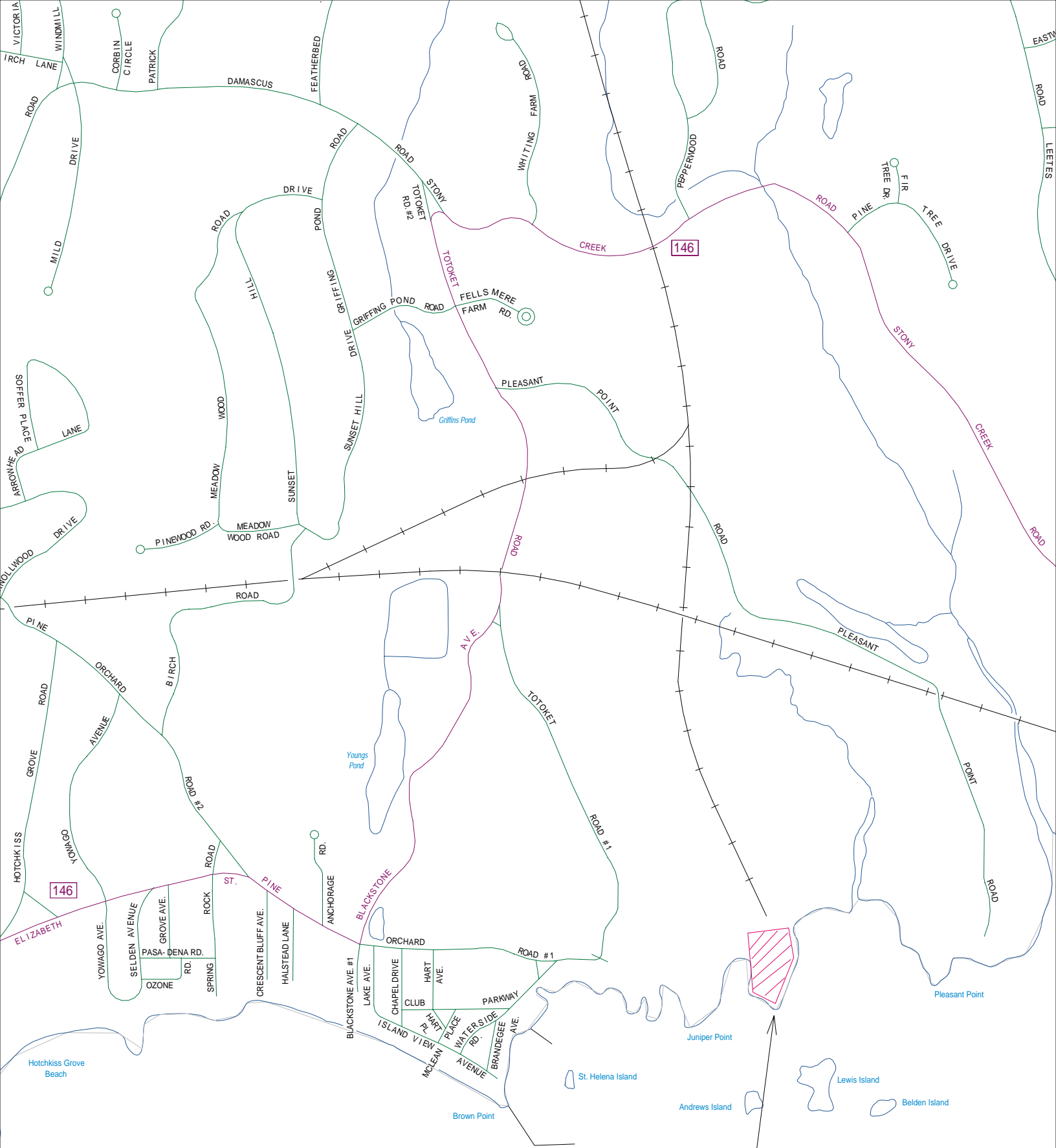
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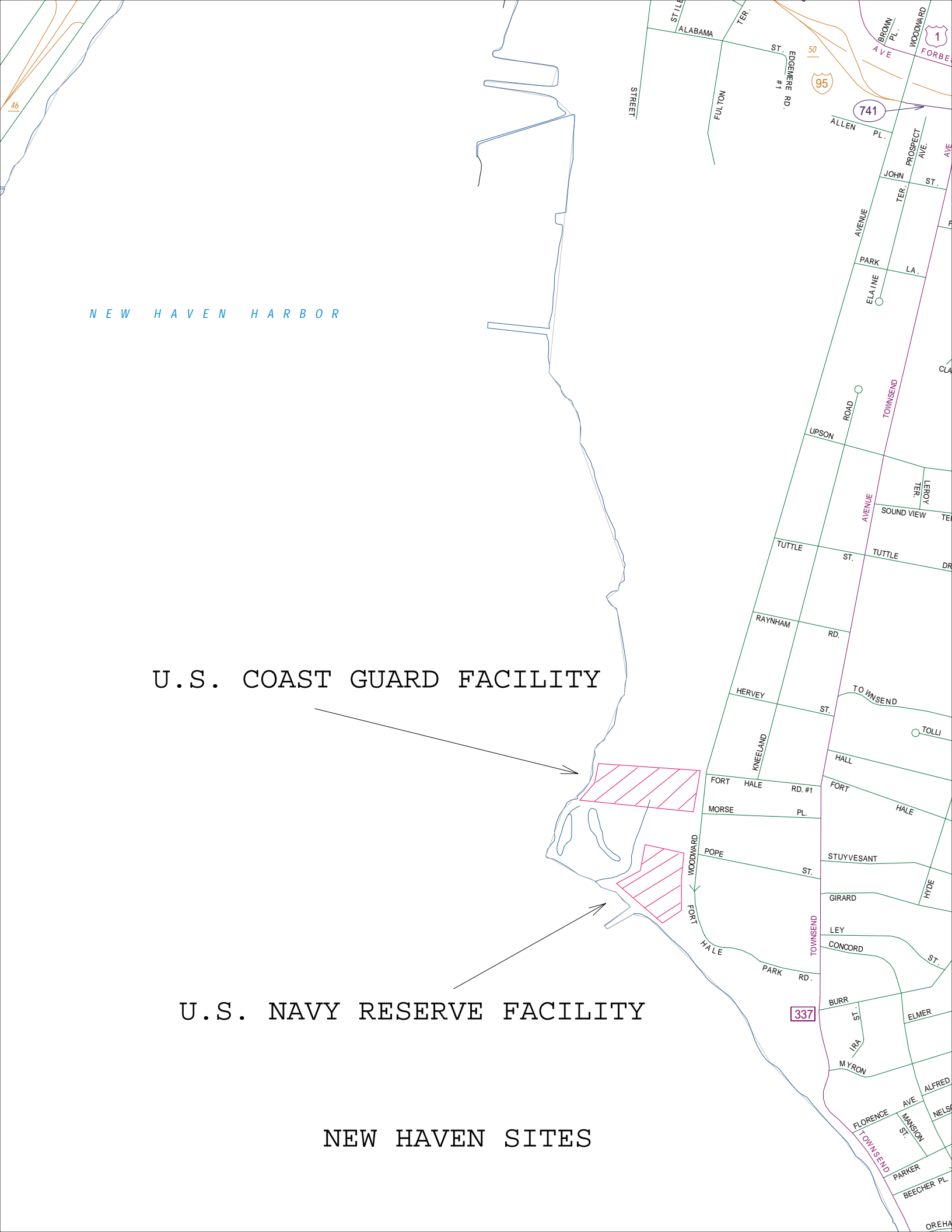
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95

1



BRANFORD TILCON GRAVEL FACILITY SITE

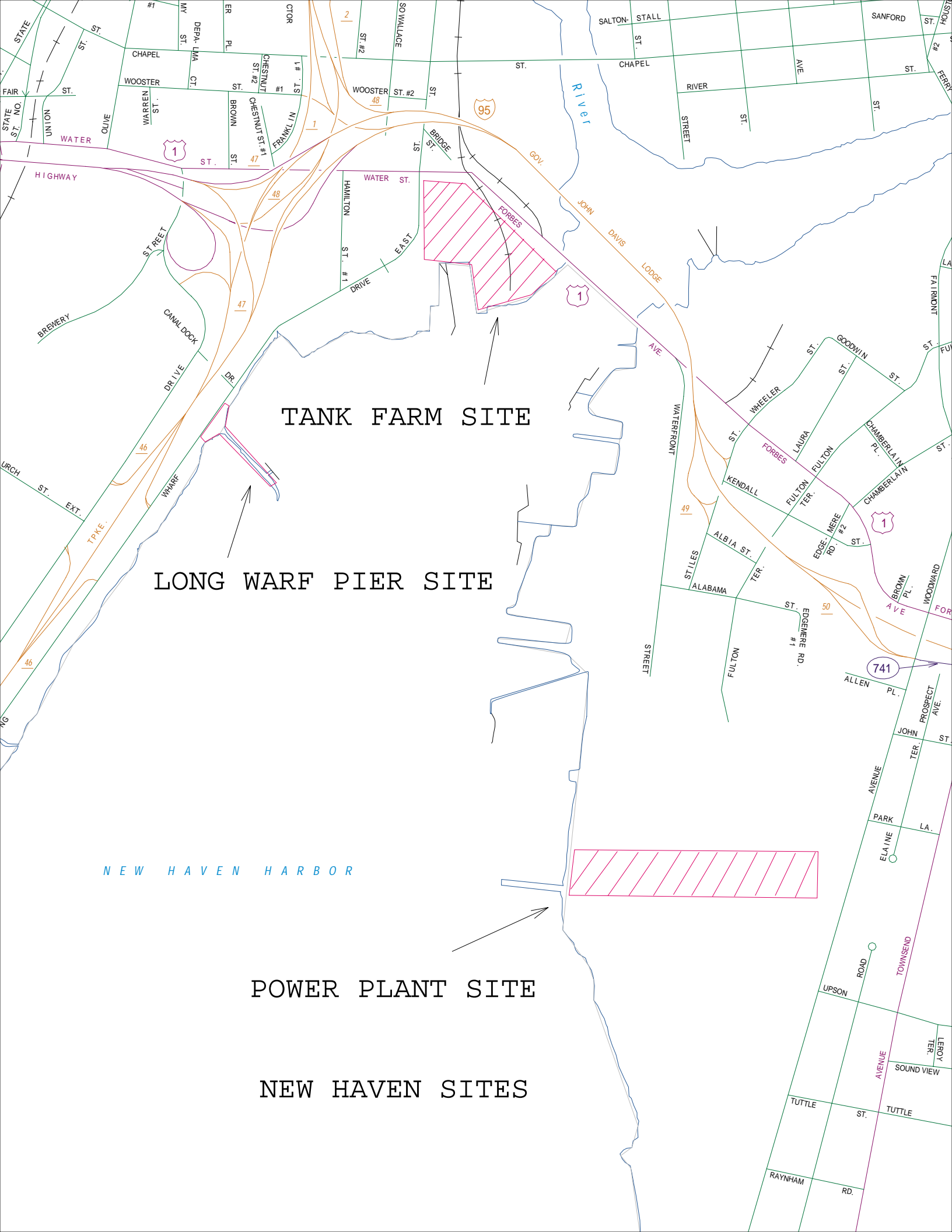


NEW HAVEN HARBOR

U.S. COAST GUARD FACILITY

U.S. NAVY RESERVE FACILITY

NEW HAVEN SITES



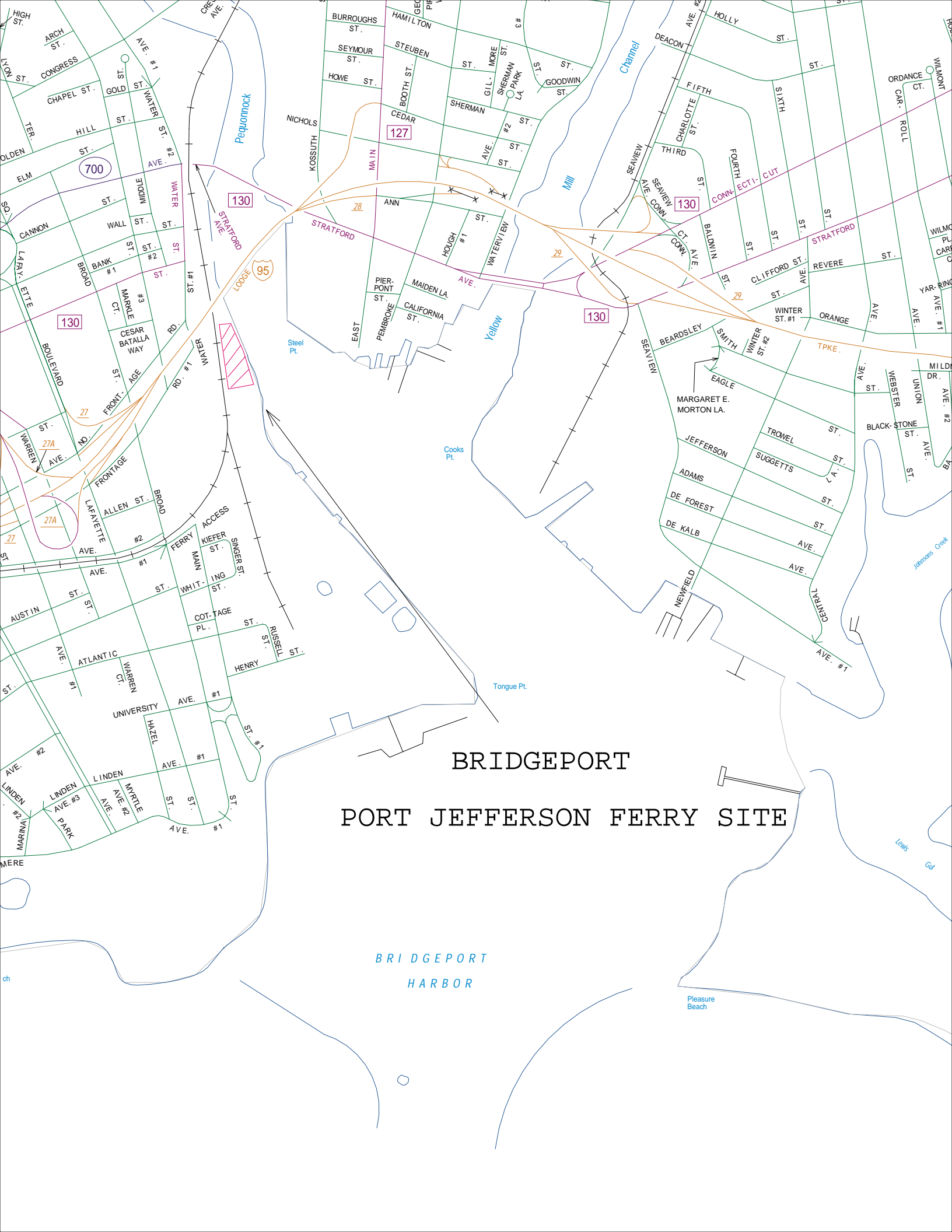
TANK FARM SITE

LONG WARF PIER SITE

NEW HAVEN HARBOR

POWER PLANT SITE

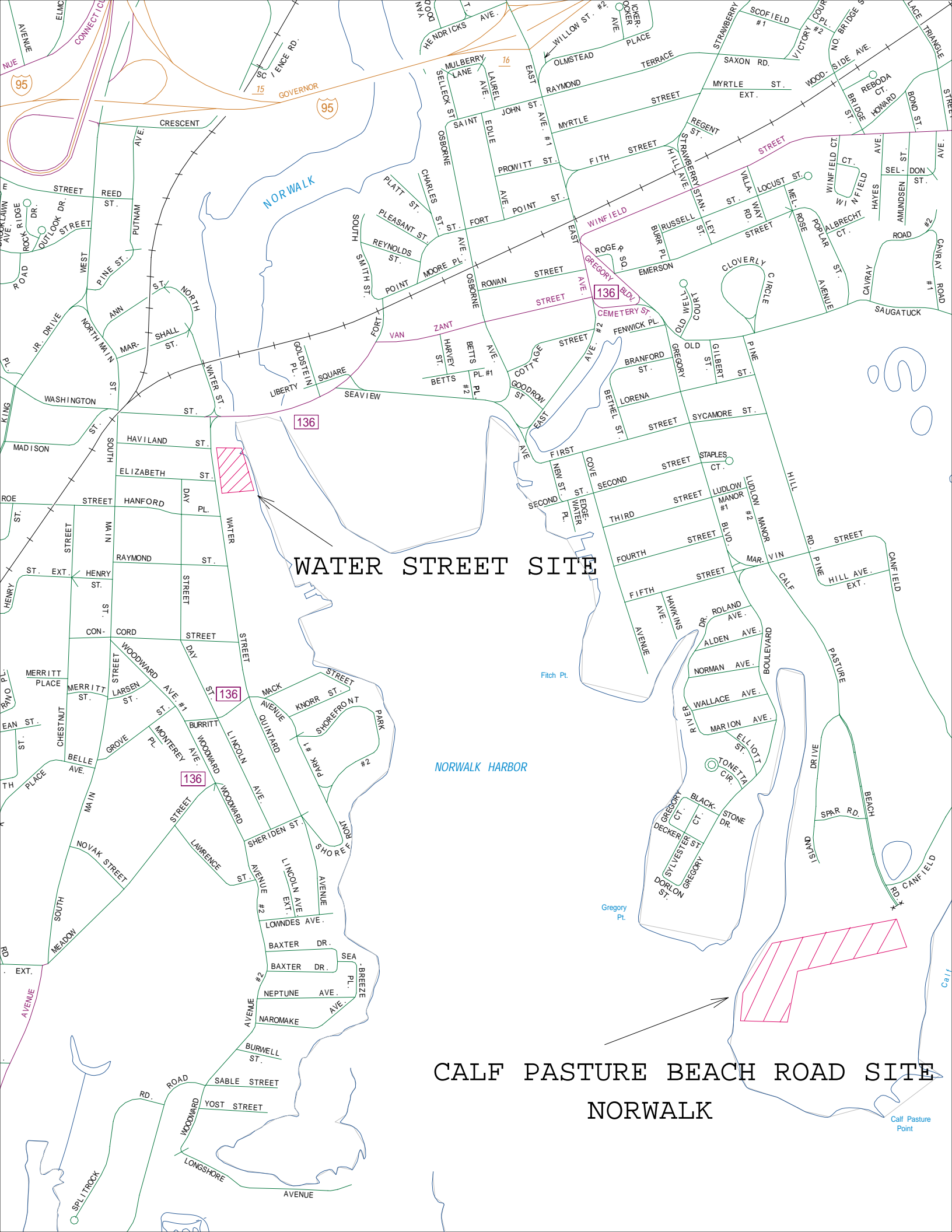
NEW HAVEN SITES



BRIDGEPORT
PORT JEFFERSON FERRY SITE

BRIDGEPORT
HARBOR

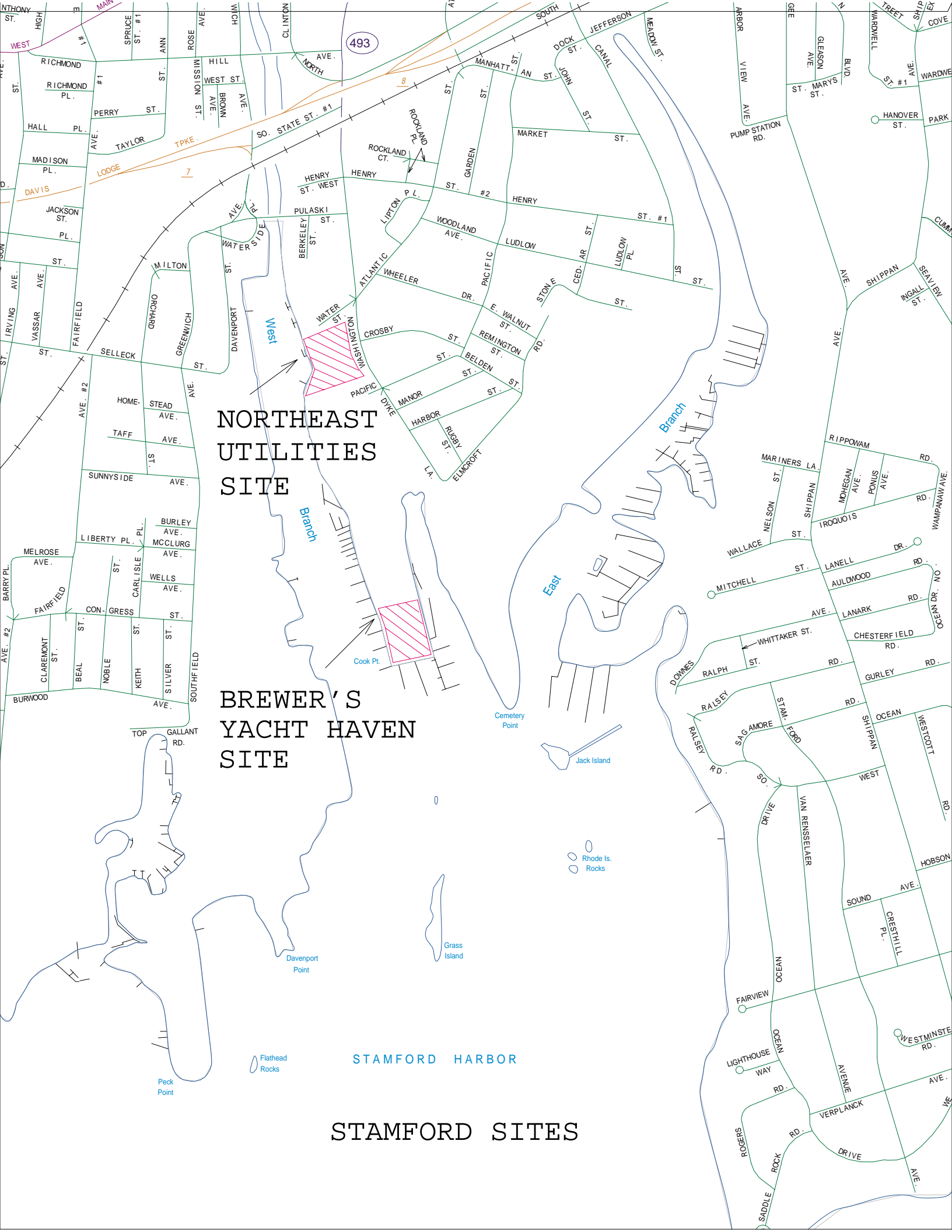
Pleasure
Beach



WATER STREET SITE

CALF PASTURE BEACH ROAD SITE
NORWALK

Calf Pasture Point



493

NORTHEAST
UTILITIES
SITE

BREWER'S
YACHT HAVEN
SITE

STAMFORD HARBOR

STAMFORD SITES

Appendix B
Vessel Specifications

Vessel Analysis Specification Sheet

Bulder	Gladding-Hearn Shipbuilding
Designation/Model	InCat 22 meter
Vessel Type	Catamaran
Desinger/Licensing Agent	International Catamaran Designs (InCat)
Building Clasfication	U.S. Coast Guard Subchapter "T"
Hull and Deck Construction.....	(Hull) aluminum (Deck) Aluminum
L. O. A	72.2 ft.
Beam	(Total) 28.5 ft. (Per Hull) 8.0 ft.
Draft	3.3 ft. (Jets) / 5.7 ft. (Props)
Height Above Waterline	NA
Displacement/Deadweight	NA
Anticipated Crew Requirement	1 Captain/2 Deckhands
Passenger Capacity	149 (149 All Weather + Add. Exterior Seating)
Main Engines	2 x DDA 12V-92TA or CAT 3412 @ 1050 BHP ea = 2100 Tot HP 2 x DDA 16V-92TA @ 1450 BHP ea = 2900 Total BHP
Drive System	WaterJets or Conventional Propellor
Auxiliary Engine	2 x 20 Kw Gen Sets
Cruise Speed (Fully Loaded)	27 knots (Props & smaller engines) 30 Knots (Jets & larger engine package)
Maximum Speed (Fully Loaded)	26 knots (Props & smaller engines) 32 knots (Jets & larger engine package)
Fuel Capacity	2000 Gallons
Fuel Consumption @ Cruise.....	80 GPH/120 GPH
Range @ Cruise	675 Nm/ 500 Nm
Passenger Loading	Stern P/S or Bow Loading - 50 pas./Min.
Wake Production	Apporx. 1.3 ft. (Jets) / 1.6 ft. (Props)
Maximum Sea State	Apporx. 8 ft.
Noise Levels	(On Deck) 78 dB (From Distance) 75 dB (100 ft.)
Hulls in Service	25 in Puerto Rico, Honk Kong, U.S. and Australia
Cost	\$ 1.3 to \$1.6 Million depending on engines and fit-out

Vessel Analysis Specification Sheet

Builder	Westport Shipyard
Designation/Model	Super Express 95
Vessel Type	Monohull
Designer/Licensing Agent	Jack Sarin
Building Classification	U.S. Coast Guard Subchapter "T"
Hull and Deck Construction.....	(Hull) GRP Composite (Deck) GRP Composite
L. O. A	95.0 ft.
Beam	22.67 ft.
Draft	6.0 ft.
Height Above Waterline	NA
Displacement/Deadweight	80 Tons
Anticipated Crew Requirement	1 Captain/2 Deckhands
Passenger Capacity	149 (All Weather Seats + Add. Exterior Seating)
Main Engines	2 x DDA16V-149TI & 1600HP ea. = 3200 Total HP
Drive System	Conventional Propellor
Auxiliary Engine	2 x 20 KW Gen Sets
Cruise Speed (Fully Loaded)	Approx. 28-30.5 Knots
Maximum Speed (Fully Loaded)	Approx. 32 Knots
Fuel Capacity	2,000 gallons
Fuel Consumption @ Cruise.....	Approx. 115 GPH
Range @ Cruise	Approx. 520 Nm
Passenger Loading	Midships and Stern Port/Starboard
Wake Production	Very Low: 1-2 ft. at speed
Maximum Sea State	Uncertain , Vessel presently operates on open ocean
Noise Levels	(on Deck) NA (From Distance) 63 dB
Hulls in Service	Two in this Series
Cost	\$1.8 Million depending on fit-out

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