

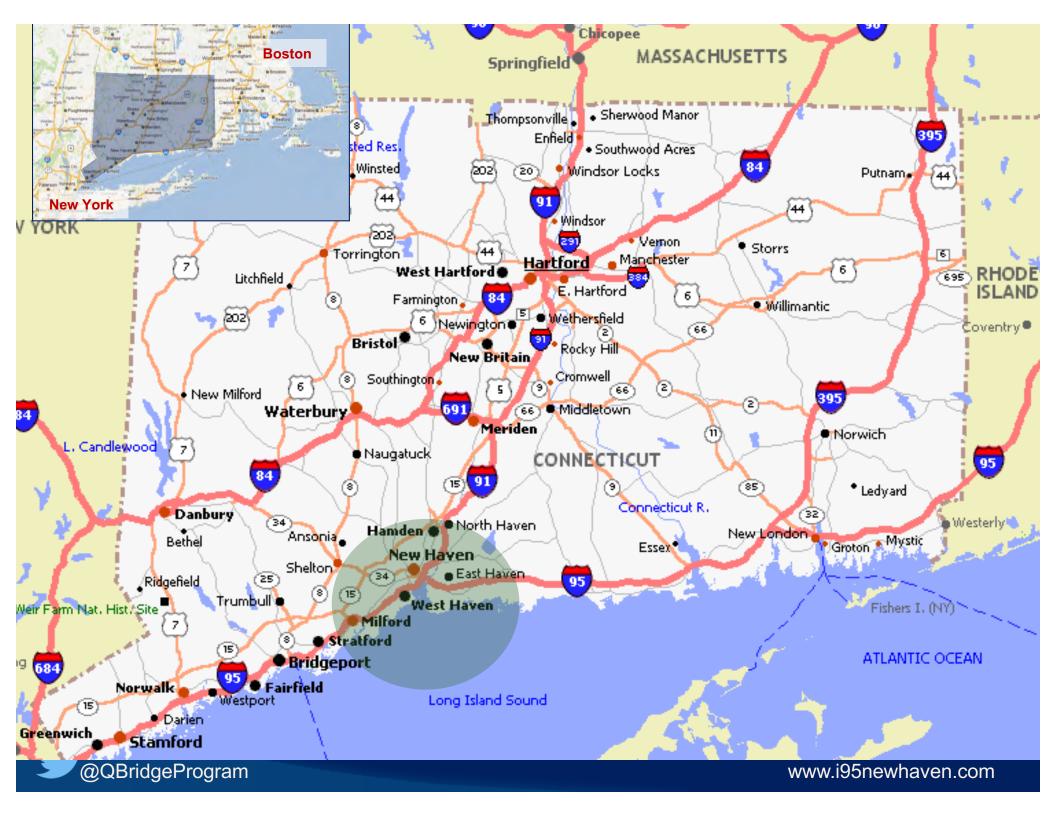
# I-95 New Haven Harbor Crossing Corridor Improvement Program



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## "Q Bridge" Program Overview

- 25 years of planning, design and construction
- 32 separate contracts
- \$1.9 billion program





### Multi-modal Improvement Program

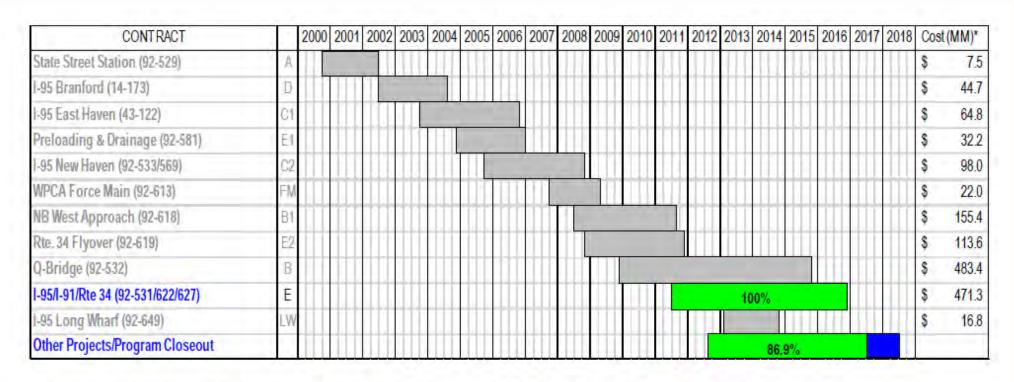
- Pearl Harbor Memorial (Q) Bridge
- I-95/I-91/Route 34 Interchange
- Highway Operational and Safety Improvements on 7.2 miles of I-95 between New Haven and Branford
- State Street Station
- Bell Dock RailYard
- Bicycle and Pedestrian Accessibility
- Canal Dock Boathouse

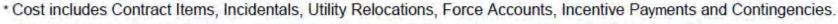






### Program Schedule





Completed Projects Ongoing Projects

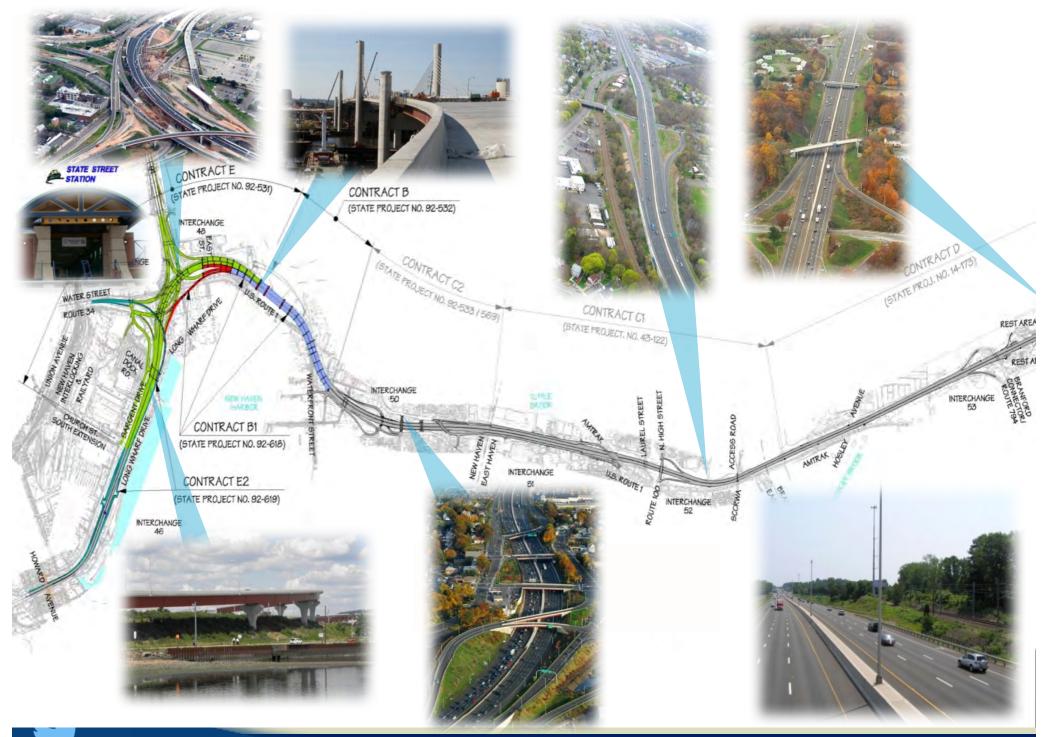
Progress to Date

These percentages are based of the end of last quarter, June 30, 2017

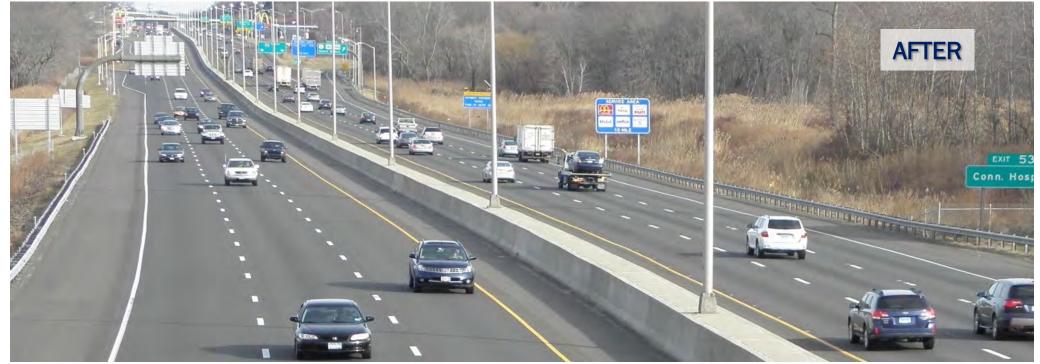


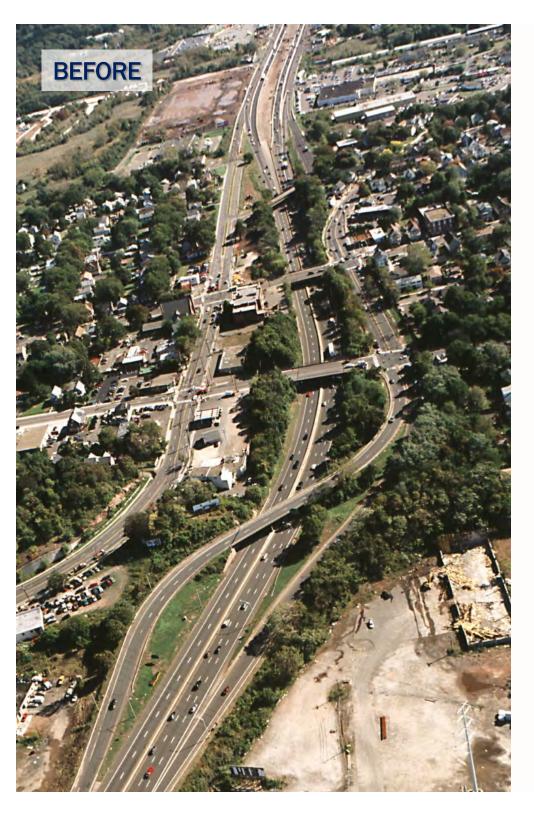


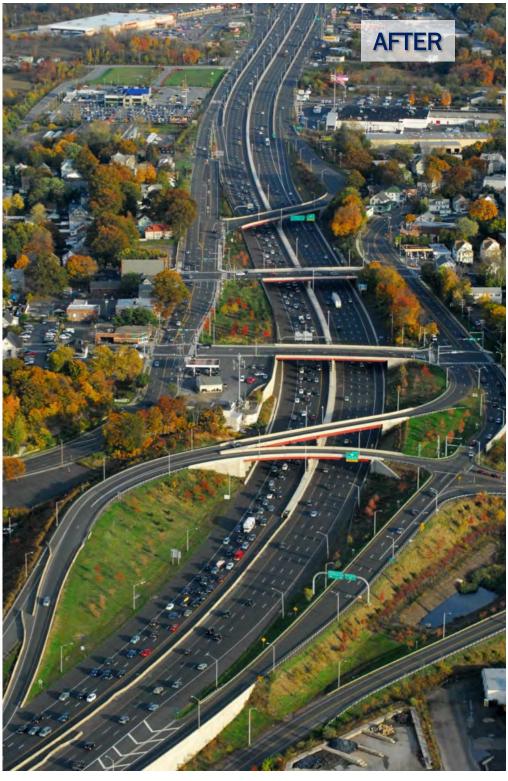






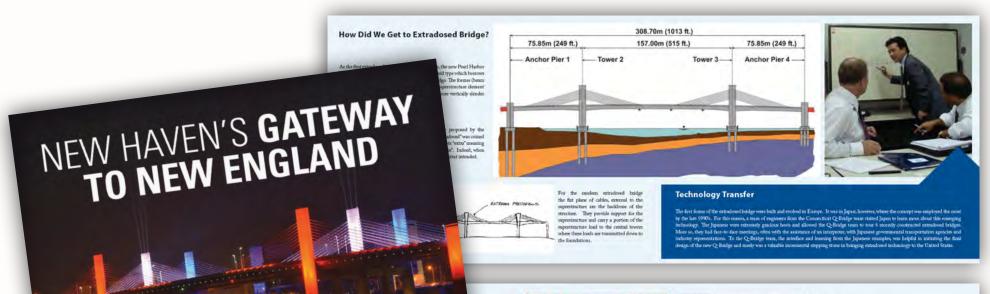








### Historical Documentation- Book



### Cables

The I-95 New Haven Harbor Crossing Corridor Improvement Program

Fitter popularly question, "Color of the Q-Bidge stray cables". Assives, "What is Light Cold Graps" Ver, the cables we important so provide support to the superstravars. The eary cables are constrained of a series of the constrained of a series of the color of the constrained of a series of the color of

At roughly 100 ft. each, the Northboard and Southboard 1-95 competing, the Q-Bindge on quite vide. Each bridge of the beta Q-Bindge structures carties 5 lanes of traffic with aboulders. At the collets, the exceptional width requires the use of externil post-tensioning to cury load from the intension of the box godier to the achies. Without this post-tensioning the intension of the box would say and potentially crack.

It is this susy. Not really: Engineers dug deepen into the design of the cables for the Q-Hodge and this has influenced the development of ubsequent building codes. Because of their fit angle not starter to the hidge appearantmen, the cables of an estradous building are subjected to smaller fittings tabels and because of this, the allowshie terms level in the start cables can be increased. Engineers broke new pround and took ultratings of this thebasics during the delay for the Q-Hodge and the result is a swinge of material versus earlier designs. Reading between the lines, this means less are parts money to pay for the new bridge.

# Trucial per

ends of the main Q diddgs view intended to be monitored by No. home with first called their supports. Anchor Fenr Teat it did not take long for the name to kind. They represent Paul Harbox, the maritime spirit of New Haves, the ends of the bridge. They tray? Anchor We main bridgs. Even in the engineering densings, the supports are densited as Anchor Fenr 1 and Richor Pier 4 for the legislating and and of the bridge, respectively. The Q Diright shall be reinfend northwest? accelerate and it was difficult to give a reference of the properties of the properties of the prosent of the properties of the proposed properties. The proposed properties of the proposed properties of the proference of the properties of the properties of the proton of the properties of the properties of the proton of the properties of the proton of the properties of the properties of the proton o

They serve their purpose in quiet dignity and are inscribed with the bridge name and its tribute to those who served and gave the ultimate secrifice at the darker. They are the Anthor Piers.

#### Pylons

The towers of the Q-Bridge upport the cables and uppertructure and carry these loads to the foundations. During the senthects development as oral shape was selected, however, a pass own of eithers in difficult to build. Therefore, engineers modified this shape impresceptible by making the oral out of two compound curves each with a different radius. Lemnatic De Vinci securit by proad.



#### Foundation Type and Layout

The importance of a strong foundation is paramount. The leads of the Q-fieldge are carried by a sites of 8. ft dimeter deal sharts or caisons found in bed voic. The deepen bed rock in at Auchie Perl I. Here shafts over 200 ft, deep serve constructed is support the bridge. These diseases were us deep that speed high performance concrete mines were developed so that the concrete mentioned field for over 10 hours, yet still had deepans transpile when it seem over time. The commenced means used "gener technology in the construction of the defiled durit. Fly ask and ground generated blust farmose sing by products of the coal and steel industries, were instead with crement to compliante the properties of the full handood concrete. He needs is a "win-visif," i.e., premoting asstrainability through the new recycled products while exhancing the performance of the bridge.





### Historical Documentation-Film

# The New Q Constructing the Pearl Harbor Memorial Bridge

- Behind the scenes look at construction
- Interviews with key personnel

