

**REPLACEMENT OF THE
NEW HAVEN LINE RAILROAD BRIDGE
OVER THE NORWALK RIVER
IN NORWALK, CONNECTICUT
(WALK BRIDGE; Bridge No. 04288R; MP 41.5)**

Bridge Replacement Options and Navigation Needs

In the development of feasible options to address the aging Walk Bridge, CTDOT worked closely with the Federal Transit Administration (FTA) in the development of the project's Purpose and Need Statement, an outline of the project requirements that are summarized as follows:

- Address the existing deteriorated bridge with a resilient bridge structure
- Enhance the safety and reliability of rail service
- Offer operational flexibility and ease of maintenance
- Provide for increased efficiencies of rail transportation along the New Haven Line/Northeast Corridor
- Maintain and improve navigational capacity and dependability for marine traffic in the Norwalk River
- Increase bridge reliability, incorporate bridge redundancy, and provide a sustainable bridge for significant weather events, thereby accommodating current and future rail and marine traffic

The existing Walk Bridge has been in service for 120 years. While the structure has served the Connecticut and broader Northeastern traveling public for a significant amount of time, the bridge has exceeded its original design life. Based on recent operational issues with the historic swing span, the CTDOT has determined that corrective action is needed in order to preserve the reliability of train service and the accommodation of waterway users.

The Department initially screened more than 70 possible alternatives that would address the performance and reliability issues associated with the Walk Bridge, including:

1. Rehabilitating the overall facility, including all bridge superstructure and substructure elements, rail systems and high towers. The rehabilitation of the existing bridge would be a robust effort to strengthen and/or replace deteriorated elements such that the service life of the overall structure would be extended another 100 years;
2. Replacing the existing bridge with a fixed (non-movable) main span; and,
3. Replacing the existing bridge with a new movable main span.

Three subsets of options were evaluated within the category of fixed bridge alternatives, including:

1. Low Level Fixed Bridge, in which there is no change to the vertical position of the existing railroad tracks, resulting in little to no change in the vertical navigation clearance through the bridge. The low level fixed bridge would essentially prohibit all current navigation traffic requiring an opening of the Walk Bridge from transiting the channel under this option.

2. Mid-Level Fixed Bridge, in which the existing railroad tracks are nominally raised, resulting in only a slight increase in the vertical navigation clearance. Although the mid-level fixed bridge would allow for certain vessels to pass beneath the structure, all current vessels requiring an opening of the existing Walk Bridge that are tied to commercial interests would be prohibited from transiting the waterway. Additionally, the complexity of implementing the track grade-raise that is required for this option results in significant impacts to railroad traffic.
3. High-Level Fixed Bridge, in which a new bridge matching the navigation vertical clearance of the upstream I-95 structure. The vertical navigation of the existing highway bridge is being used by the United States Coast Guard (USCG) as the guide clearance to be met as part of the Walk Bridge project. While this option meets the current and future navigation needs, this option also results in the most significant impacts to cost, schedule, rail traffic, environmental interests, and adjacent properties.

Within the category of “Low Level Fixed Bridge” options is the scenario to convert the existing swing span from a movable span to a fixed (or stationary) structure. Also with this option, the overall facility would be completely rehabilitated to promote the extended service life and reliability of the structure. Simply converting the existing swing span to a fixed span does not alleviate the facility-wide rehabilitation needs. It should be pointed out that rehabilitating the swing span’s mechanical and electrical systems is not included in this option, as these elements would no longer be needed if the movable span were to be converted to a fixed structure. Likewise, the mechanical and electrical rehabilitation efforts represent less than 5% of the total rehabilitation costs. Lastly, when converting the existing swing span to a fixed structure, the swing span would not be “welded shut”. Rather, the mechanical/electrical system that is currently used to lock the bridge in the closed position will be altered to become a purely structural restraint system similar to the supports on the adjacent approach spans.

Two federal agencies have jurisdiction over the Norwalk River:

1. United States Army Corps of Engineers, with jurisdiction over the maintenance of the federal channel, including dredging.
2. United States Coast Guard, having primary jurisdiction over all matters related to navigation, including navigation clearances provided by any bridge or other structure on the waterway.

In evaluating feasible alternatives to address the needs of the Walk Bridge, it is important to consider the requirements of these two federal agencies, the fact that the structure passes over a designated Navigable Waterway of the United States, and the previously mentioned project requirement to preserve the needs of navigation of the Norwalk River. Navigable Waterways are regulated by the United States Government as prescribed under the 1899 Rivers and Harbors Act which is still in force today. Section 9 of the Rivers and Harbors Act prohibits the construction of any bridge across a Navigable Waterway without prior approval from the United States Government. Administration of Section 9 has been delegated to the USCG; the approval of a proposed structure over a navigable waterway under Section 9 of the Rivers and Harbors Act is commonly referred to as the “USCG Bridge Permit”.

The issuance of the USCG Bridge Permit is not limited to the construction of new bridges over navigable waterways; rather, the USCG also has jurisdiction over any action applied toward existing bridges whose ability to meet the current and future needs of navigation may be negatively impacted by such action.

In essence, the Coast Guard approves the location and plans of bridges and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation. A bridge permit is the written approval of the location and plans of the bridge to be constructed or modified across a navigable waterway of the United States. Any individual, partnership, corporation, or local, state, or federal legislative body, agency, or authority planning to construct or modify a bridge across a navigable waterway of the US must apply for a Coast Guard bridge permit in accordance with 33 CFR 115.50. In other words, any action to be taken to address the operational and reliability concerns of the Walk Bridge will require a USCG Bridge permit.

Prior to issuing a Bridge Permit, the USCG ensures that all other federal, state and local regulations and permits are in place. This includes the approval of the Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Record of Decision through the Connecticut Environmental Policy Act. Until all environmental permitting requirements are satisfied, which includes addressing the current and future needs of navigation through public comment and input, the USCG permit will not be issued and any construction activity would be prohibited until such time that the bridge permit is in place.

In addition to having satisfied the environmental requirements noted above, the USCG will also evaluate the navigation needs of waterway and how the new or modified bridge most closely addresses those needs. The goal of the USCG, including the approval of bridge permit applications, is to “provide reasonably free, safe, and unobstructed passage for waterborne traffic while considering the needs of land (in this, rail) transportation”. On the matter of meeting the reasonable needs of navigation as part of approving a bridge permit application, the USCG will focus on accommodating the following:

1. Emergency vessels
2. Present and prospective recreational and commercial navigation
3. Corp of Engineers plans for maintaining the federal channel

In addition to the federal regulations that must be met, there are State and Local requirements related to navigation interests that must also be met. For example, the Connecticut Department of Energy and Environmental Protection (CTDEEP) through its Office of Long Island Sound Programs (OLISP) regulates all activities conducted in tidal wetlands and in tidal, coastal or navigable waters in Connecticut under the Structures, Dredging and Fill Act and the Tidal Wetlands Act. The major objectives of the permit program are to avoid or minimize navigational conflicts, encroachments into the state’s public trust area, and adverse impacts on coastal resources and uses, consistent with the Connecticut Coastal Management Act.

On a local level, the Norwalk Harbor Management Commission, through the Norwalk Harbor Management Plan, administers the City of Norwalk’s goals, objectives and policies for managing Norwalk

Harbor (and River) in the public interest. The goals and objectives are directed toward achieving balance among the number of equally important purposes, including encouragement of beneficial water-dependent use of the Harbor and waterfront; conservation of environmental quality; and protection of the health, safety and welfare of everyone who uses the Harbor and waterfront. Among the concerns addressed by the implementation of the Norwalk Harbor Management Plan are those related to navigation, recreational boating, port activities, waterfront land-use and development and public access to and use of the water.

In the end, both the Low-Level (which includes conversion of the existing bridge to a fixed span) and Mid-Level Bridge options do not meet reasonable needs of navigation and specifically in the areas outline above from a federal, state and local level. ***Additionally, a comparative analysis between other feasible alternatives relative to cost, schedule, impacts and risk demonstrate that fixed bridge and rehabilitation options actually fair much worse in these categories.*** On the surface, it may seem as if a new fixed bridge or rehabilitating the existing structure would generate the least cost, shortest duration effort resulting in minimal impacts to rail traffic. On the contrary, the manner in which this work would need to be implemented will negatively affect both cost and duration of the effort with an increased to the traveling public.