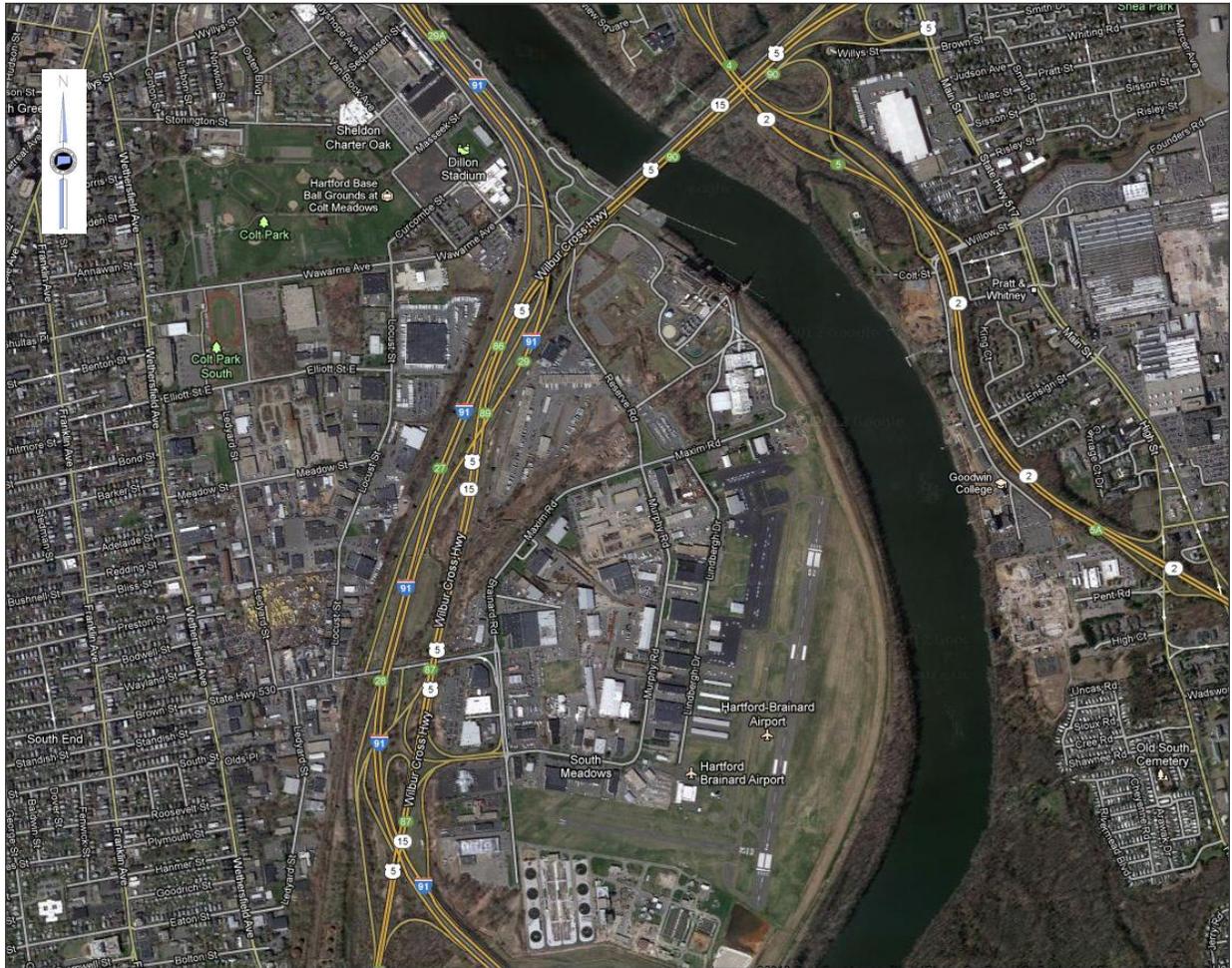


PROJECT NO. 63-703 IMPROVEMENTS ON I-91 NORTH TO ROUTE 15 & I-84 EAST HARTFORD AND EAST HARTFORD

PURPOSE & NEED OF PROJECT: The purpose of this project is to address safety concerns associated with capacity and operational failures at Interchange No. 29 on Northbound I-91, which connects to Route 15 North and I-84 East.

PROJECT LOCATION MAP:



PROJECT DESCRIPTION:

Existing Conditions: As an overview, three of the four connections for the I-91 and I-84 interchange are located proximate to the physical crossing of the interstates in downtown Hartford. Interchange 29, which is located approximately 1.6 miles to the south of I-84, provides the I-91 North to I-84 East connection, via Route 15.

Due to a combination of contributing factors such as the vertical geometry and single-lane configuration of the I-91 Exit 29 off-ramp, the I-91 traffic volumes at or near capacity, and the heavy traffic weave on the Charter Oak Bridge, there are significant traffic delays on I-91 North which result in an above average crash frequency on I-91. Traffic routinely backs up from Exit 29 onto the northbound I-91 mainline,

taking up the right-most lane of the three-lane facility. The length of the back-ups vary, but have been observed extending approximately 1.4 miles to the vicinity of the Wethersfield Cove. The condition is made far worse by the tendency of drivers to cut into the right lane queue from the center lane, drastically reducing the capacity of that center lane also.

Most of Interstate 91 from the Wethersfield/Hartford town line to Interchange 29 has been included on the most recent Suggested List Of Surveillance Study Sites List (2007-2009). The two sections are from the city limits to Interchange 28 (Sequence No. 1267) and from Interchange 28 to Interchange 29 (Sequence No. 656). During 2008 through 2010, there were 529 crashes recorded on northbound I-91, from just north of the Wethersfield Cove to the exit ramp on Interchange 29. Of the 529 recorded crashes, 136 were injury crashes with a total of 205 injuries (2 type “A” and 40 type “B” injuries). The crash types were 75% “rear-end”, 12% “sideswipe – same direction” and 11% “fixed object”. At the approach to Interchange 27 (MP 35.40 to MP 35.6), crash data shows 81 crashes with 22 injury crashes and 29 total injuries. The higher than normal crash frequency appears to be related to congestion due to the lane drop.

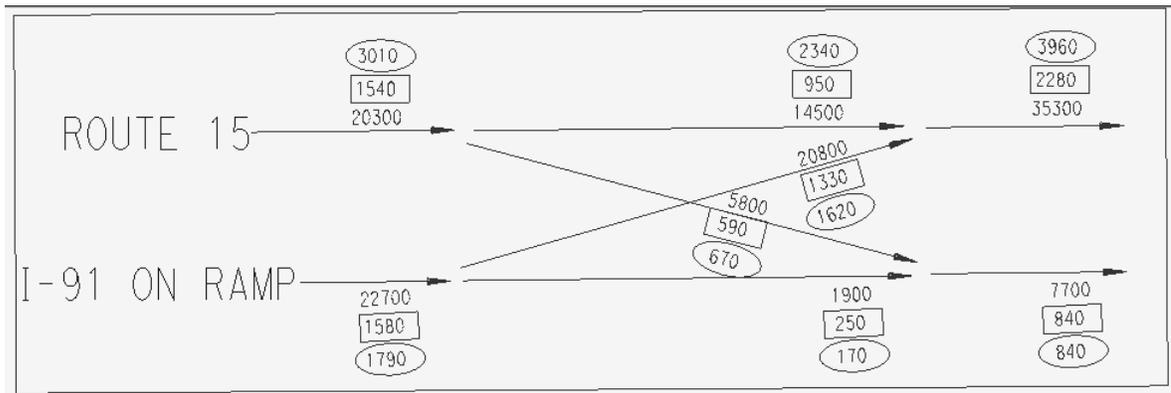
Proposed Improvements: The following improvements are proposed (south to north):

- **Widen I-91 North from Interchange 27 to Interchange 29** – Widen northbound I-91 for approximately 4,300 feet to extend the four lane travel lane section from Interchange 27 to Interchange 29 to relieve congestion, address significant safety concerns and provide an efficient I-91 to I-84 connection. This widening will occur on the easterly side of I-91 and will require modifications to the following four bridges: Bridge No. 813, I-91 over Route 15; Bridge No. 3613, I-91 over a drainage crossing (8x12 box culvert); Bridge No. 1466, I-91 over SB entrance ramp to SB I-91 and SB Route 15; and Bridge No. 480, I-91 over Airport Road. Due to subsurface soil conditions, it is anticipated that the use of light weight fill will be required in fill areas approaching Bridge No. 480 and the Charter Oak Bridge.
- **Replace and Relocate the I-91 Exit Ramp at Interchange 29 with Major Diverge** – To address the adverse vertical grade and limited capacity of the existing ramp, it is proposed to remove the ramp and provide a major diverge on I-91 North just south of Bridge No. 815 (I-91 over Route 15). I-91 will be widened to accommodate the diverge which will consist of three lanes to the right maintaining I-91 traffic over Bridge No. 815 (existing condition) and two lanes to the left via a new bridge over southbound Route 15.

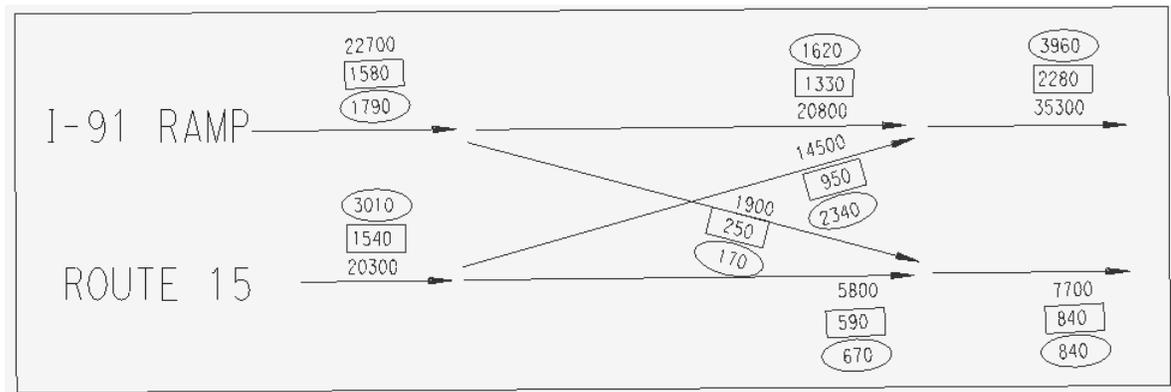
The two left lanes of the I-91 diverge would horizontally displace the two existing northbound lanes on Route 15. The Route 15 northbound lanes would be realigned to the east and would be merged with the two lanes from I-91 to form a four-lane section prior to the Charter Oak Bridge. To accommodate this four travel-lane section, widening of Bridge No. 6117 (Route 15 over I-91, Reserve Road and a rail line) will be required. The two-lane entrance ramp from Route 15 to I-91 will also require realignment.

To avoid widening Bridge No. 6000A (northbound barrel of the Charter Oak Bridge), the existing cross-section of 10-foot left shoulder, three 12-foot travel lanes and a 10-foot right shoulder would be modified to a 4-foot shoulder (left), four 11-foot travel lanes and a 10-foot shoulder (right) for approximately 850 feet. The cross-section would transition to 10-foot shoulders (left & right) and 12-foot travel lanes on the remaining section of Charter Oak Bridge.

The following diagrams compare the existing and proposed traffic volumes through the merge-diverge area on the Charter Oak Bridge as a result of the improvements.



EXISTING WEAVE CONDITION



PROPOSED WEAVE CONDITIONS

- Widen Route 15 North from the Charter Oak Bridge to the Silver Lane Underpass** – The four travel-lane section on northbound Route 15 formed by the two entering lanes from I-91 merging with the two travel lanes on Route 15 is extended over Charter Oak Bridge until Interchange 90 where there is a lane-drop to Route 2 and Route 5. The remaining 3 travel lanes will need to be reduced to two prior to the Route 15 merge with I-84. Due to the proximity of the 4-lane merge and the lane drop at Interchange 90, it was determined that Route 15 would be widened to three travel lanes from east of the Charter Oak Bridge to the Silver Lane underpass, and providing a lane-drop prior to its merge with I-84 East. This widening addresses capacity concerns on Route 15 and allows a more desirable distance from Interchange 29 on I-91 to merge from three travel lanes to two prior to its merge with I-84 East. This improvement will require widening Bridge No. 6043A (Route 15 over Route 5) and Bridge No. 5796 (Route 15 over Silver Lane).

Potential Project Impacts: The widening of northbound I-91 may affect a known entombed area of contaminated material located in the embankment between I-91 North and Route 15 South just to the north of Airport Road, as well as the environmental mitigation site located just south of Bridge No. 5922 (I-91 over Route 15, between I-91 North and Route 15 South). It is anticipated that environmental permits required would include Flood Plain Management, Storm Water Discharge, Army Corps and Inland Wetlands. Rights-of-Way involvement may include an off-site environmental mitigation site. Utility involvement is not anticipated.

Preliminary Cost Estimate: The total cost of the project is estimated at \$196 million