Recommended 'Elective' Improvement

In addition to the minimum build improvement option, an additional component that could be considered is a widening of Interstate 91 southbound to provide another operational lane. The figure below illustrates this 'elective' improvement. The operational lane could begin at either the Route 20 entrance ramp to Interstate 91 or at Kennedy Road. The advantage to beginning the southbound operational lane at Route 20 is that the new lane would eliminate the double merge condition that Route 20 traffic is forced to make under the existing lane configuration. The operational lane would allow Route 20 traffic to flow onto Interstate 91 southbound and only traffic in the right lane on the Route 20 ramp would have to merge with traffic in the left lane on Route 20. This operational lane would become an exclusive exit lane to Day Hill Road and Route 75.

Anticipated Construction Costs

The following table illustrates construction costs for the short-term intersection improvement and each of the separate elements of the recommended long-term improvements. Estimated costs are presented in 2005 dollars using representative unit prices and other cost parameters derived from previous Connecticut Department of Transportation construction projects. The costs include incidentals to construction and contingencies as well as fees for preliminary engineering and environmental investigations.

<table>
<thead>
<tr>
<th>Improvement</th>
<th>2005 Construction Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term Intersection Improvements at Route 75 / Interstate 91 Northbound Ramps</td>
<td>$400,000</td>
</tr>
<tr>
<td>Day Hill Road Interchange Improvement (Concept 3A)</td>
<td>$11,300,000</td>
</tr>
<tr>
<td>Interstate 91 Northbound Operational Lane – Route 75 to Kennedy Road (Mitigation Measure)</td>
<td>$4,900,000</td>
</tr>
<tr>
<td>Interstate 91 Northbound Operational Lane – Kennedy Road to Route 20 (Mitigation Measure)</td>
<td>$600,000</td>
</tr>
<tr>
<td>Interstate 91 Southbound Operational Lane – Route 75 to Kennedy Road (Elective Measure)</td>
<td>$4,600,000</td>
</tr>
<tr>
<td>Interstate 91 Southbound Operational Lane – Kennedy Road to Route 20(Elective Measure)</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

During the Bradley Area Transportation Study, completed in 2002, access problems to the Day Hill Area growth center were identified as problematic. For this reason and in an effort to address future traffic demands and growth potential of the Day Hill Corporate Area (DHCA), the Interchange Study was initiated.

This summary highlights the transportation findings and recommendations related to Interstate 91, Interchange 38 (Route 75 / Day Hill Road) and the surrounding area. It was developed by a study team composed of staff from the Capital Region Council of Governments, the Town of Windsor, and the Connecticut Department of Transportation. The consulting firm, URS Corporation AES, provided technical assistance.

Interchange 38

The Route 75 / Day Hill Road interchange with Interstate 91 is located in the center of the Town of Windsor. The overall interchange takes the form of a partial cloverleaf / split diamond hybrid layout, involving several ramp types serving the major movements between Interstate 91, Route 75 and Day Hill Road.

The interchange also provides access between Route 75 and high occupancy vehicle (HOV) lanes on Interstate 91 to and from the south.

Day Hill Corporate Area

The DHCA currently contains approximately 6.4 million square feet of developed floor area on approximately 1,400 acres of land. The area has grown from undeveloped farmland to a successful commercial and industrial center over the past 20 years. In order for the Town of Windsor and the State of Connecticut to reap the economic development benefits of the DHCA, prospective developers and businesses need assurance that access to the area will continue to be easy and direct even when traffic volumes increase as development grows.
Recommended Intersection Improvement (Short Term)
The intersection of Route 75 and the Interstate 91 northbound ramps experience heavy queuing and operational problems in the evening peak commuter hours, with southbound queues on Route 75 frequently backing up through the adjacent Interstate 91 HOV ramps / Route 75 intersection. The problems are mostly attributed to the high volume of commuters making a left turn from Route 75 southbound to I91 northbound. In an effort to correct this situation in the short term, the Bradley Area Transportation Study identified intersection improvements: constructing an additional northbound right-turn lane on Route 75 and an additional left-turn lane onto Route 75 from the Interstate 91 northbound off-ramp. These improvements would allow for traffic signal retiming, providing more green time for the Route 75 southbound left turn movement. Although operations will be improved, analyses show the southbound vehicles will continue to experience queuing problems in the future. For this reason, longer term improvements that provide a direct access from Day Hill Road to Interstate 91 northbound were evaluated.

Recommended Interchange Improvements (Long Term)
A series of concepts were developed to address access improvements to Interstate 91 northbound from both Route 75 and Day Hill Road. Criteria such as wetland impacts, potential land acquisition, and geometrics were evaluated for each alternative. Major stakeholders, such as the Town of Windsor and the Connecticut Department of Transportation, screened the alternatives and a recommended interchange improvement was identified.

The figure to the right illustrates the preferred interchange improvement, Concept 3A. This concept provides a direct connection to northbound Interstate 91 from Day Hill Road by the construction of spans over Route 75 and Interstate 91. Retaining walls would be required and both wetland and right-of-way impacts are minimized.

Recommended Mitigation Measure (Long Term)
In an effort to address concerns that I-91 would experience increased “turbulence” from the new ramp configuration, an additional mitigation measure was identified as part of the recommended interchange improvement.

The figure to the left highlights this additional mitigation measure which consists of widening northbound Interstate 91 to provide an additional operational lane that would begin at the Day Hill Road interchange and extend north to the Kennedy Road interchange or to the Route 20 interchange. This additional northbound lane will require widening the existing bridge carrying Interstate 91 over the Farmington River.

The combined set of improvements (Concept 3A interchange improvement and the additional operational lane on northbound I-91) is considered the minimum build option for improvements to the Day Hill Road Interchange.