

#### 4.2.2.d Concept D: Basic Four Lane Roadway with U-turns

As shown in Figure 4-17, this alternative combines design features of Concept A and Concept C to provide a basic four lane roadway with u-turn opportunities at the intersections of Addison Road, Brewster Road, Sheffield Drive, and Mountain Road. U-turns would be accommodated at these locations by widening the roadway and providing a short segment of raised median with an exclusive left turn lane. This concept would address concerns voiced by corridor residents regarding the inconvenience of a continuous raised median while providing a potentially safer access option. By providing u-turn opportunities along the corridor, residents would have the option during peak traffic periods to turn right from their driveways and ultimately change directions to the left at a u-turn in order to avoid crossing multiple lanes of heavy traffic. During off-peak traffic periods, most residents would be able to make direct left turns from their driveways.

#### Key Design Features

- Provide U-turn opportunities at Addison Road, Brewster Road, Sheffield Drive, and Mountain Road in conjunction with short segments of landscaped raised medians. Additional median width would be required in the vicinity of intersections where U-turn opportunities are provided in order to physically accommodate turning maneuvers.
- Provide textured and colored pavement within median transition areas leading up to raised medians for aesthetic enhancement.
- Provide additional turn lanes at Addison Road and Marshall Phelps Road as required to maintain acceptable intersection operations.
- Accommodate widening equally on both sides of Route 305 in order to balance potential impacts to existing residential properties.
- Transition to the basic four lane roadway west of Addison Road.

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Windsor

Left Turn Lane for Left & U-Turns

Provide Sidewalk on Both Sides

Left Turn Lane for Left & U-Turns

Textured Median Taper (Typ)

Basic Four Lane Section

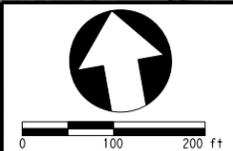
Left Turn Lane for Left & U-Turns

Match Localized Improvements

LEGEND

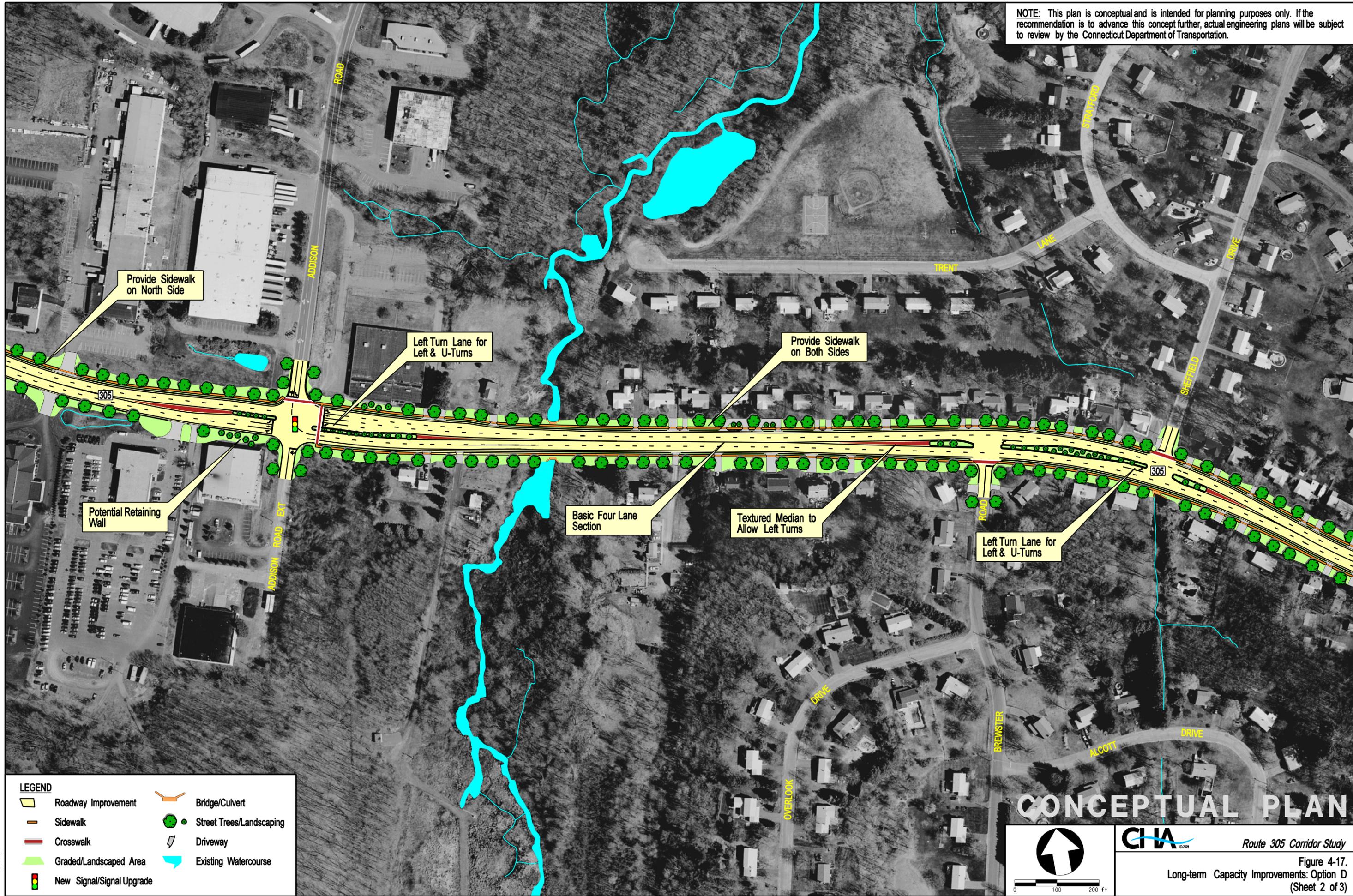
Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

CONCEPTUAL PLAN



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Provide Sidewalk on North Side

Left Turn Lane for Left & U-Turns

Provide Sidewalk on Both Sides

Potential Retaining Wall

Basic Four Lane Section

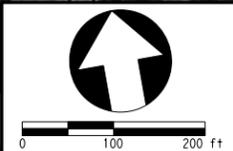
Textured Median to Allow Left Turns

Left Turn Lane for Left & U-Turns

LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

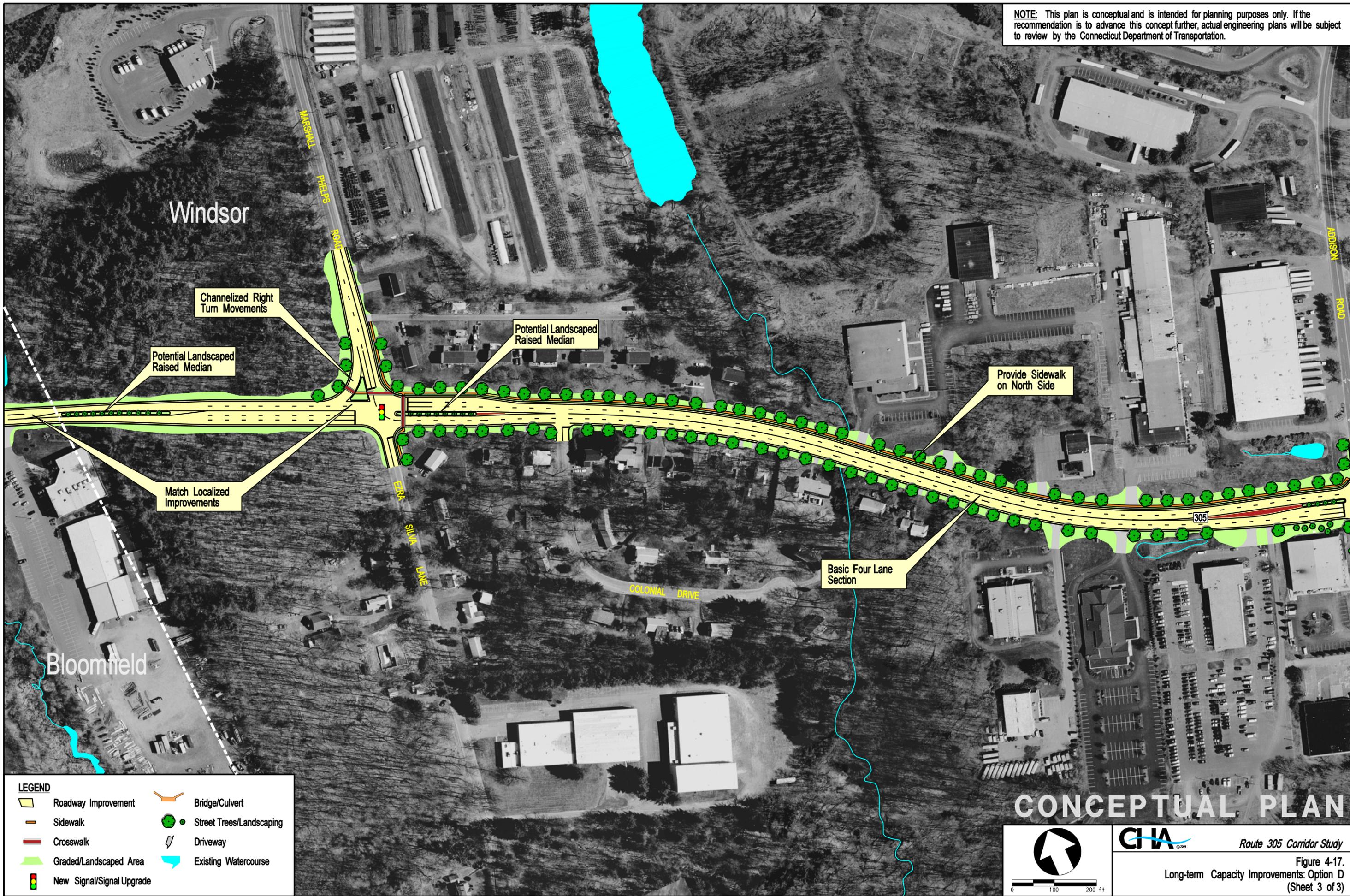
# CONCEPTUAL PLAN



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 Route 305 Corridor Study  
 Figure 4-17.  
 Long-term Capacity Improvements: Option D  
 (Sheet 2 of 3)

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**LEGEND**

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

**CONCEPTUAL PLAN**

0 100 200 ft

Route 305 Corridor Study

Figure 4-17.  
Long-term Capacity Improvements: Option D  
(Sheet 3 of 3)

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#### 4.2.2.e Comparison of Route 305 Capacity Improvement Concepts

Table 4-2 provides a comparison of the advantages, disadvantages, estimated construction costs, and impacts associated with the four capacity improvement concepts presented in this section.

The study team developed planning-level construction cost estimates in accordance with the procedures and assumptions provided in ConnDOT's *Preliminary Cost Estimating Guidelines* dated January 2009. Because the cost estimates are highly variable based on many unknown field conditions – conditions that would ultimately be determined through survey and preliminary design – the cost estimates presented in this section are intended to help guide the selection of a preferred concept and provide an approximate level of funding that would be required for construction.

The construction cost estimates assume the following conditions:

- Roadway widening for the basic four lane section (Concept A, and Concepts B/C/D between Addison Road and Marshall Phelps Road) would be accomplished by providing a new, full-depth, bituminous concrete pavement structure beyond the limits of the existing pavement surface. Existing pavement surfaces adjacent to widened sections would be milled and repaved with new bituminous concrete pavement.
- Roadway widening for the asymmetric section (Concept C between Dunfey Lane and Addison Road) would also be accomplished by providing a new, full-depth, bituminous concrete pavement structure beyond the limits of the existing pavement surface. Existing pavement surfaces adjacent to widened sections would be milled and repaved with new bituminous concrete pavement.
- A new, full-depth, bituminous concrete pavement structure would be provided for the entire roadway width for the four lane section with narrow median (Concept B between Mountain Road and Addison Road and Concept D in vicinity of raised median sections). The full-width, full-depth pavement structure would provide a consistent pavement structure given the nature of the widening and construction of the median down the center of the existing roadway.
- Estimated construction costs are based on estimates for major construction items (pavement, subbase, earthworks, bridge structures, drainage, curbing, etc.) with contingencies added for minor construction items and additional percentages for lump sum items such as maintenance and protection of traffic, mobilization, and construction staking.
- Cost allowances for right-of-way acquisitions, utility relocations, environmental mitigation, and engineering are not included in the cost estimates.

For planning purposes, the cost estimates are represented in 2009 dollars and 2019 dollars to illustrate the effect that compounding inflation has on the estimated construction cost values over an assumed implementation period of 10 years. The estimated costs in 2019 dollars were determined using an annual inflation rate of 6% in accordance with ConnDOT guidelines.

The study team estimated right-of-way (ROW) impacts using property lines obtained from the Town of Windsor's GIS database. The number of properties impacted refers to the number of properties from which a ROW taking would likely be required to accommodate the improvement concept.

Wetland impacts were approximated from wetland soils information that was obtained from available GIS data sources.

Table 4-2. Comparison of Route 305 Capacity Improvement Concepts

Category	Concept A: Basic Four Lane Roadway (No Median)	Concept B: Four Lane Roadway with Narrow Median	Concept C: Asymmetric Four Lane Roadway with Wide Median	Concept D: Basic Four Lane Roadway with U-turns
<b>Advantages</b>	<ul style="list-style-type: none"> <li>Minimizes roadway width</li> <li>Minimizes ROW impacts</li> <li>Potentially requires no full property acquisitions</li> <li>Minimizes disturbance to existing frontage</li> <li>Lowest capital investment</li> <li>Matches localized improvement at Interchange 37 – Brookview Road</li> </ul>	<ul style="list-style-type: none"> <li>Median provides landscaping &amp; lighting opportunities</li> <li>Landscaped median provides traffic calming benefits</li> <li>Median provides sheltered left turns from Route 305</li> <li>Reduces number of conflict points for turning vehicles</li> <li>Improves overall safety</li> <li>Less ROW takings than Concept C</li> <li>Matches localized improvement at Interchange 37 – Brookview Road</li> </ul>	<ul style="list-style-type: none"> <li>Median provides landscaping &amp; lighting opportunities</li> <li>Landscaped median provides traffic calming benefits</li> <li>Median provides sheltered left turns from Route 305</li> <li>Reduces number of conflict points for turning vehicles</li> <li>Improves overall safety</li> <li>Concentrates impacts to one side of roadway resulting in fewer number of properties impacted</li> </ul>	<ul style="list-style-type: none"> <li>Minimizes roadway width and ROW impacts in most areas</li> <li>Median areas provide sheltered left turns and U-turn opportunities</li> <li>Maintains left-turn opportunities from most driveways along Route 305</li> <li>Median areas provide landscaping opportunities</li> <li>Median areas provide traffic calming benefits</li> <li>Impacts fewer properties than Concept B</li> <li>Matches localized improvement at Interchange 37 – Brookview Road</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>Not aesthetically pleasing</li> <li>Large pavement area could encourage higher speeds</li> <li>Motorists turning left from sideroads/driveways must cross two lanes of traffic</li> </ul>	<ul style="list-style-type: none"> <li>Impacts greatest number of properties</li> <li>Potentially requires 4 full property acquisitions</li> <li>Prohibits left turns from drives</li> <li>Median requires routine maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Impacts large number of properties</li> <li>Potentially requires 19 full property acquisitions</li> <li>Prohibits left turns from drives</li> <li>Median requires routine maintenance</li> <li>Requires modification of localized improvement at Interchange 37 – Brookview Road</li> <li>Highest construction cost</li> </ul>	<ul style="list-style-type: none"> <li>Impacts more properties than Concept A</li> <li>Potentially requires 4 full property acquisitions</li> <li>Median sections require routine maintenance</li> <li>Higher construction cost than Concept A</li> </ul>
<b>ROW Impacts (Approximate)</b>				
<ul style="list-style-type: none"> <li>Total No. Properties Impacted</li> <li>Total No. Potential Full Acquisitions*</li> <li>Total ROW Takings**</li> </ul>	<p>19</p> <p>0</p> <p>0.4 acre</p>	<p>51</p> <p>4</p> <p>3.6 acres</p>	<p>36</p> <p>19</p> <p>13.2 acres</p>	<p>38</p> <p>4</p> <p>3.6 acres</p>
<b>Wetland Impacts (Approximate)</b>				
	< 1 acre	< 1 acre	< 1 acre	< 1 acre
<b>Construction Costs (Estimated)</b>				
<ul style="list-style-type: none"> <li>Interchange 37 to Addison Road</li> <li>Addison Road to Marshall Phelps Road</li> <li><b>Total 2009 \$</b></li> <li><b>Total 2019 \$</b></li> </ul>	<p>\$ 5.1 million</p> <p>\$ 3.6 million</p> <p><b>\$ 8.7 million</b></p> <p><b>\$ 15.6 million</b></p>	<p>\$ 6.4 million</p> <p>\$ 3.6 million</p> <p><b>\$ 10.0 million</b></p> <p><b>\$ 17.9 million</b></p>	<p>\$ 6.9 million</p> <p>\$ 3.6 million</p> <p><b>\$ 10.5 million</b></p> <p><b>\$ 18.8 million</b></p>	<p>\$ 5.6 million</p> <p>\$3.6 million</p> <p><b>\$9.2 million</b></p> <p><b>\$16.5 million</b></p>

\* Number of potential full acquisitions could change based on a detailed assessment of resulting building setbacks that would require surveyed building footprints and preliminary roadway design. Minimum setback in residential zones along Route 305 in Windsor is 40 ft. Any resulting setback less than 35 ft was assumed to be a potential full acquisition for the purposes of this study.

\*\* ROW includes entire parcel area for potential full acquisitions.

### 4.2.3 Roadway Network Modifications

The study team investigated the feasibility of roadway network modifications in both Windsor and Bloomfield that would aim to improve east-west mobility and capacity in the study area through the introduction of new roadways and roadway connections. In Windsor, the study team investigated the feasibility of providing a new interchange on I-91 at Pigeon Hill Road and several direct northbound connections from I-91 to Day Hill Road as potential alternatives to long-term capacity improvements on Route 305. In Bloomfield, the study team investigated the feasibility of extending Route 305 (Old Windsor Road) westerly from Route 187 (Blue Hills Avenue) to Route 189 (Tunxis Avenue). This section summarizes the investigations and conclusions of the study team relative to these potential roadway network modifications.

#### 4.2.3.a Pigeon Hill Road Interchange Concept

Through the study process of identifying improvement concepts to address the future traffic demands generated by the Day Hill Corporate Area in Windsor, the advisory committee suggested the study team develop and evaluate a concept to provide a new interchange on I-91 between Interchange 37 at Route 305 and Interchange 38 at Day Hill Road. The new interchange would provide access to Pigeon Hill Road with the intent of facilitating more direct access to the Day Hill Corporate Area than is currently provided by Route 305 and Day Hill Road.

The concept consisted of new diamond interchange ramps from I-91 to a relocated Pigeon Hill Road alignment. The existing Pigeon Hill Road overpass would be removed to accommodate the new ramps and Pigeon Hill Road on both sides of the interstate would terminate in cul-de-sacs. The resulting spacing between interchanges would be less than the one mile urban interchange spacing desired by ConnDOT. The ramps between Interchange 37, Pigeon Hill Road, and Interchange 38 would be connected by auxiliary lanes to improve weaving operations adjacent to the mainline traffic flow.

See **Appendix 4** for an illustration of the Pigeon Hill Road interchange concept.

CRCOG utilized the regional travel demand model to analyze the potential traffic diversion from Route 305 that could be realized should a new interchange be provided. Although the model indicated that a new interchange could help offset 2030 Baseline traffic growth on Route 305, the study team determined that the anticipated environmental impacts and construction costs associated with the interchange did not support the viability of this concept as an alternative to providing capacity improvements on Route 305. Furthermore, discussions with ConnDOT regarding the feasibility of introducing a new interchange on I-91 indicated that Federal Highway Administration (FHWA) and ConnDOT approval of such a concept would face some challenges given the resulting undesirable interchange spacing and the existing congested conditions on I-91 that would not be improved by providing a new interchange.

#### 4.2.3.b Day Hill Road Access Improvement Concepts

In addition to the new interchange concept at Pigeon Hill Road, the study team evaluated the feasibility of improving access from northbound I-91 to Day Hill Road to reduce the Day Hill Corporate Area-related traffic demand that comes to Route 305 via the northbound off-ramp at Interchange 37. Two concepts evaluated by the study team included a new northbound off-ramp from I-91 directly connected to Day Hill Road with existing access from northbound I-91 to Route 75 maintained, and the same northbound off-ramp with existing access from northbound I-91 to Route 75 removed. Although it could be physically feasible to provide a direct northbound connection, CRCOG's analysis of the potential traffic diversion resulting from either concept had a negligible effect on traffic conditions in the Route 305 corridor. Consequently, the study team did not pursue these concepts in any more detail. Additional details are provided in Appendix 4.

#### 4.2.3.c Extension of Route 305: At-grade Railroad Crossing Concept

One of the primary goals of this study was to evaluate the feasibility of extending Route 305 (Old Windsor Road) from its existing terminus at Route 187 (Blue Hills Avenue) westerly approximately two miles to Route 189 (Tunxis Avenue) in Bloomfield. The benefits of the extension would include providing another major east-west connection through the region that would parallel Route 218 to the south and Day Hill Road to the north; providing a critical outlet for heavy truck traffic on Woodland Avenue; and improving access to some developable lands in Bloomfield for the purposes of creating new economic development opportunities.

Although several alternative alignment concepts for the extension were vetted through the study process (see Appendix 4 for these alternative concepts), the advisory committee determined that an alignment that follows existing sections of Old Windsor Road, West Dudley Town Road, and Peters Road would provide the most direct east-west connection between Route 187 and Route 189 and would therefore provide the greatest transportation benefit. Because the utilization of existing Peters Road would require an at-grade crossing of the existing Griffin Line (a freight railroad line which runs north-south and parallels Route 189 in the study area), this concept is defined as the *at-grade* crossing concept.

The potential new at-grade crossing of the Griffin Line would be the greatest impediment to the extension of Route 305 in this location due primarily to the safety and liability risks that it introduces to ConnDOT (owner of the Griffin Line) and the current operator of the line, Central New England Railroad (CNZR), and secondarily to the potential limitations that it imposes on current access and operations at the current Home Depot Distribution Center located just north of the potential crossing location.

Safety risks are inherent to at-grade crossings and would be minimized by providing an active railroad warning system with automatic lights and gates that would be coordinated with new traffic signalization at the intersection of Peters Road and Route 189 (Tunxis Avenue). The potential limitations on current railroad operations could be mitigated by providing improvements to the existing siding for the Home Depot Distribution Center.

The siding improvements could consist of extending the existing siding approximately 850 ft to the north and connecting the siding back to mainline track, creating a new *runaround*, or section of parallel track to facilitate maneuvering of rail cars. The siding improvement and runaround would provide sufficient track and operational flexibility to maintain existing rail operations in the area and eliminate any operational conflicts that a new at-grade crossing may introduce with Peters Road. The study team notes that these potential siding improvements would require additional rail rights-of-way and would require further coordination with adjacent property owners.

See **Appendix 4** for additional details regarding the existing rail operations and potential siding improvements.

The study team also notes that any new at-grade railroad crossing would require further coordination with ConnDOT and CNZR to fully understand the safety and operational concerns associated with the crossing. Additionally, in accordance with the General Statutes of Connecticut (Section 13b-268), a new at-grade railroad crossing cannot be constructed unless authorized by special act of the General Assembly.



Artist rendering of a potential at-grade railroad crossing at the terminus of existing Peters Road.

The complete at-grade crossing concept, illustrated in Figure 4-18, includes roadway improvements to existing Old Windsor Road, West Dudley Town Road, and Peters Road, as well as new roadway segments connecting West Dudley Town Road to Peters Road and Peters Road to Route 189. The typical roadway section consists of one 11 ft

travel lane in each direction and 5 ft shoulders within a proposed 60 ft right-of-way. The study team recommends that upon further refinement of this concept under subsequent planning and design efforts, the new roadway section be designed and constructed to state standards in the anticipation that the extension be adopted as a new state-owned and maintained roadway.

The estimated construction costs and impacts associated with the at-grade crossing concept are summarized in Table 4-3 in Section 4.2.3.e.

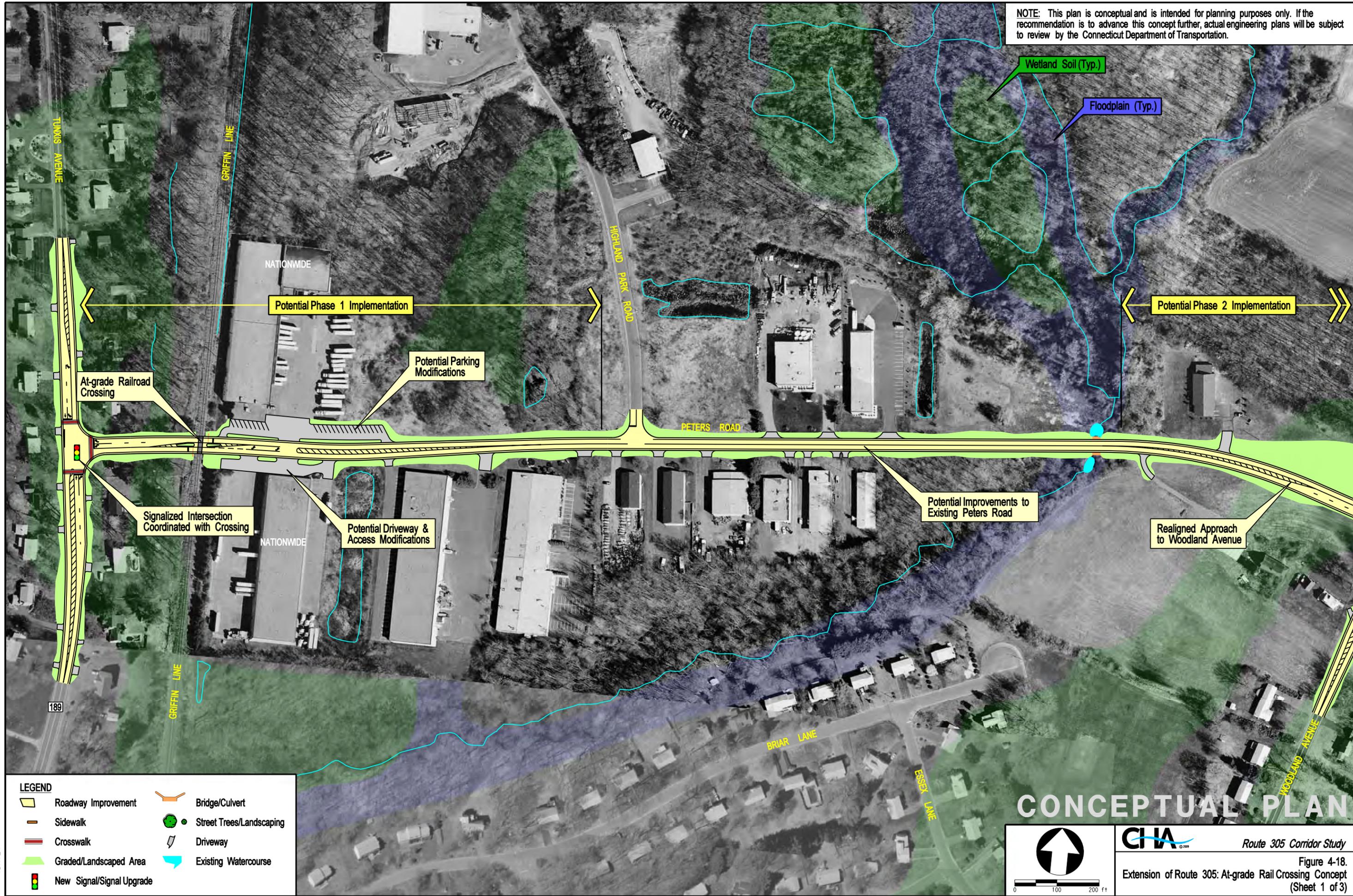
**Other Considerations**

- Potential impacts to existing access and parking for the current Nationwide properties located at the western end of existing Peters Road will require coordination with the property owner to mitigate parking impacts and to maintain full truck access to the sites.

- Minimization of environmental impacts will be an important consideration in the design of the new roadway segments, particularly between West Dudley Town Road and Woodland Avenue where wetlands and floodplains would be impacted to some degree. The improvement concept assumes that a new bridge structure would span the watercourse and floodplain that are located between West Dudley Town Road and Woodland Avenue.
- If and when the at-grade crossing is approved through the legislative process, it would be possible for the at-grade crossing concept to be implemented in phases or segments as funding becomes available. Potential phasing could include:
  - **Phase 1:** Route 189 to Highland Park Road, including at-grade railroad crossing and potential siding improvements. The advisory committee has expressed desire for this short segment be completed first as the new connection between existing Peters Road and Route 189 would immediately facilitate truck access from Woodland Avenue and Peters Road to the state roadway network.
  - **Phase 2:** Woodland Avenue to West Dudley Town Road, including realigned Peters Road approach to Woodland Avenue. New segment would complete east-west connection between Route 189 and Route 187. Existing Peters Road east of Highland Park Road could also be upgraded during this phase or during Phase 3.
  - **Phase 3:** West Dudley Town and Old Windsor Road. Improvements to existing roadway would support higher traffic volumes and improve safety.

The study team notes that the order of implementation of Phase 2 and Phase 3 could be interchanged based on constructability considerations. Given that completion of Phase 2 construction (as described above) would result in additional traffic on existing West Dudley Town Road and Old Windsor Road, it might be desirable from a constructability standpoint to construct Phase 3 prior to Phase 2 so that construction of Phase 3 would be completed under less traffic. However, if funding for construction is limited, it might be desirable to construct Phase 2 prior to Phase 3 in order to expedite completion of a continuous connection between Route 189 and Route 187.

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TUNNIS AVENUE

GRIFFIN LINE

HIGHLAND PARK ROAD

PETERS ROAD

BRIAR LANE

ESSEX LANE

WOODLAND AVENUE

NATIONWIDE

NATIONWIDE

Potential Phase 1 Implementation

Potential Phase 2 Implementation

At-grade Railroad Crossing

Potential Parking Modifications

Signalized Intersection Coordinated with Crossing

Potential Driveway & Access Modifications

Potential Improvements to Existing Peters Road

Realigned Approach to Woodland Avenue

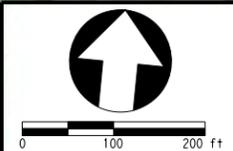
Wetland Soil (Typ.)

Floodplain (Typ.)

**LEGEND**

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

**CONCEPTUAL PLAN**

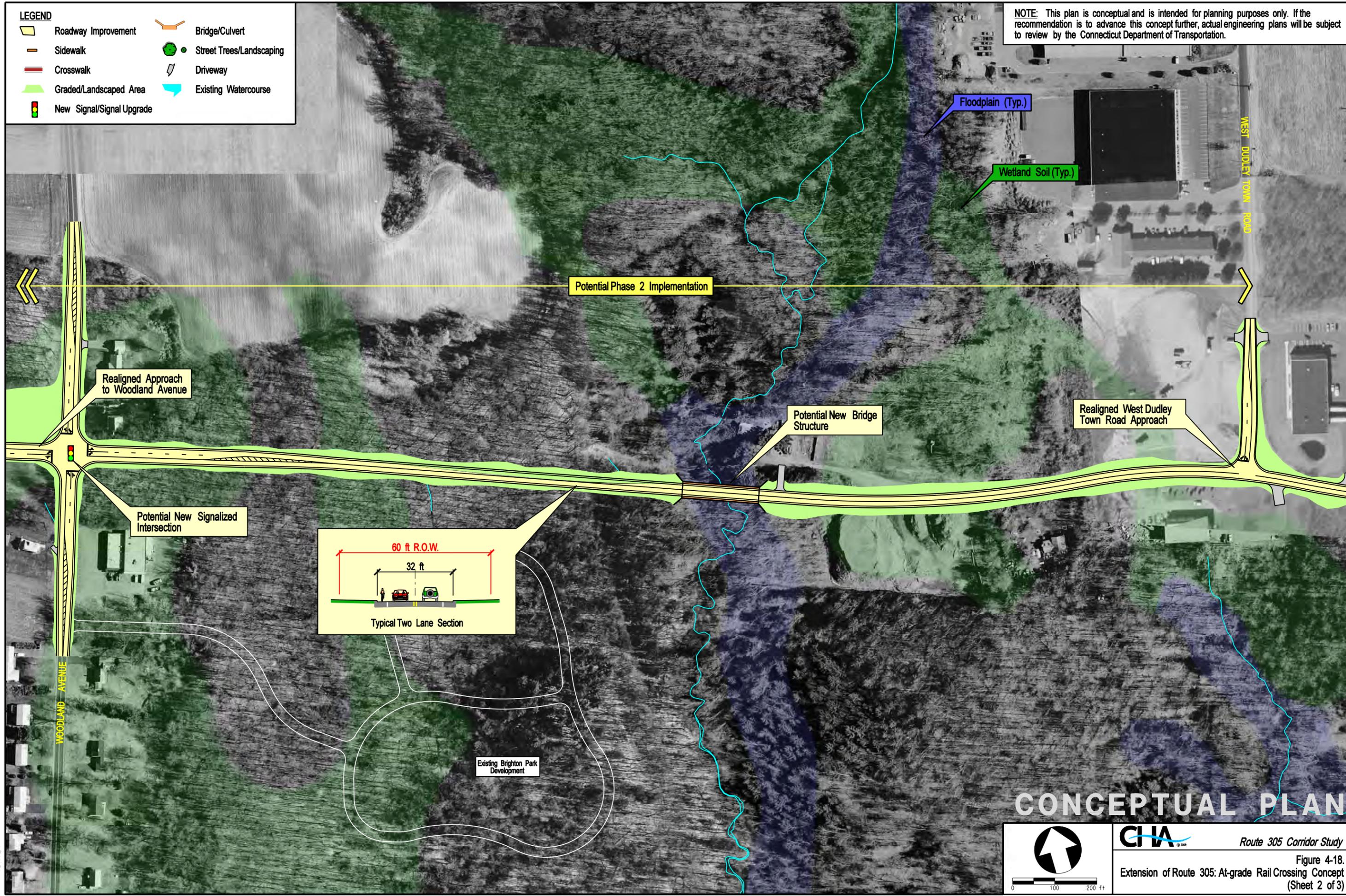


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 Route 305 Corridor Study  
 Figure 4-18.  
 Extension of Route 305: At-grade Rail Crossing Concept  
 (Sheet 1 of 3)

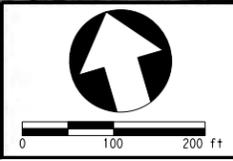
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- LEGEND**
-  Roadway Improvement
  -  Sidewalk
  -  Crosswalk
  -  Graded/Landscaped Area
  -  New Signal/Signal Upgrade
  -  Bridge/Culvert
  -  Street Trees/Landscaping
  -  Driveway
  -  Existing Watercourse

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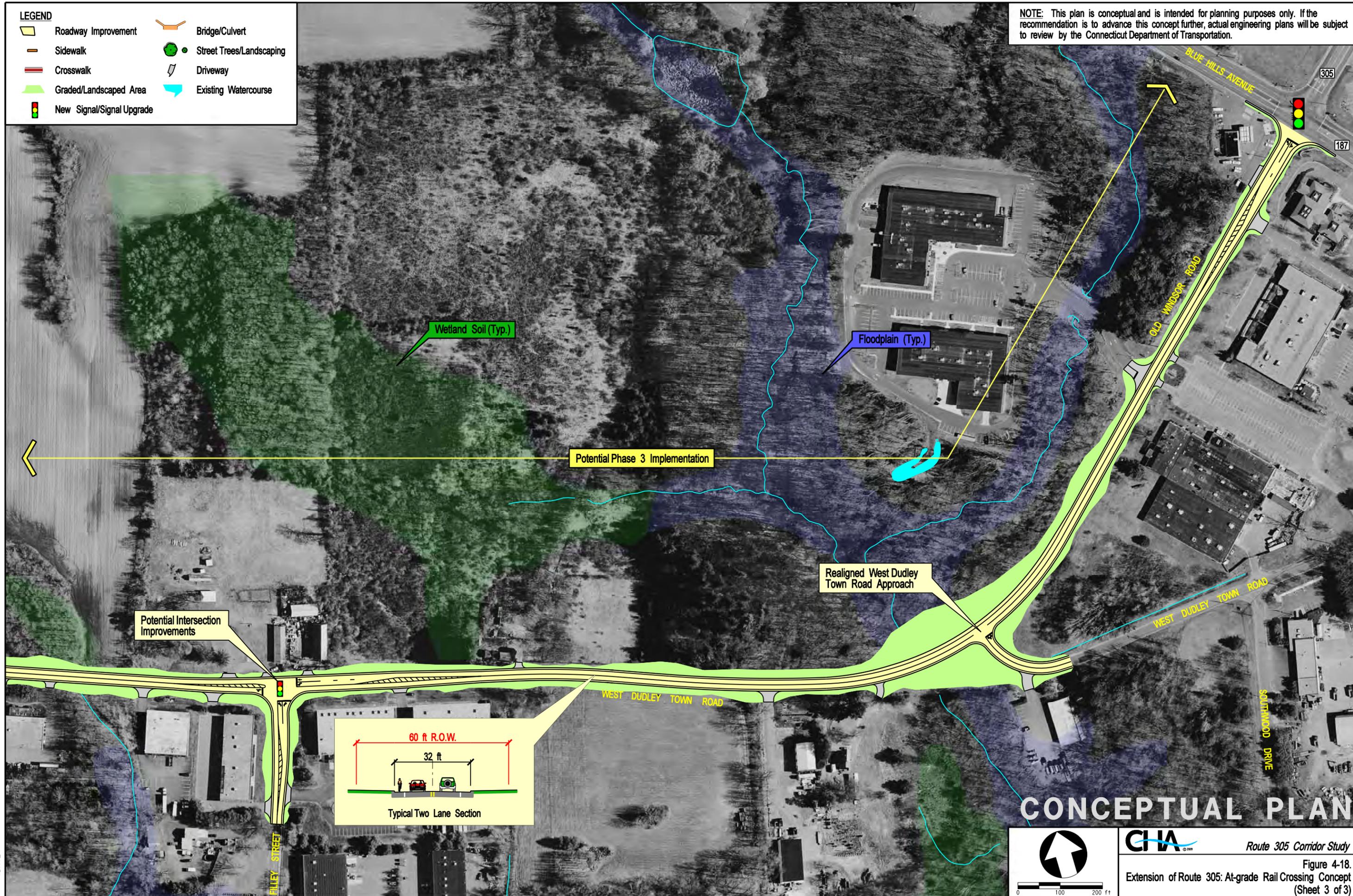
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Figure 4-18.  
Extension of Route 305: At-grade Rail Crossing Concept  
(Sheet 2 of 3)

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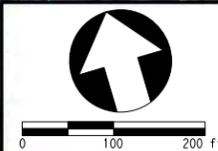
- LEGEND**
-  Roadway Improvement
  -  Bridge/Culvert
  -  Sidewalk
  -  Street Trees/Landscaping
  -  Crosswalk
  -  Driveway
  -  Graded/Landscaped Area
  -  Existing Watercourse
  -  New Signal/Signal Upgrade

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Figure 4-18.  
Extension of Route 305: At-grade Rail Crossing Concept  
(Sheet 3 of 3)

#### 4.2.3.d Extension of Route 305: Grade-separated Railroad Crossing Concept

In response to safety and operational concerns expressed by ConnDOT and CNZR relative to a potential at-grade railroad crossing, the study team evaluated several alignment concepts for the extension that would accommodate a grade-separated crossing of the Griffin Line. The preferred grade-separated crossing concept is illustrated in Figure 4-19.

See **Appendix 4** for alternative grade-separated crossing alignments.

Similar to the at-grade crossing concept, the grade-separated concept follows existing sections of Old Windsor Road and West Dudley Town Road before deviating from the at-grade alignment approximately half way along the new section of roadway between West Dudley Town Road and Woodland Avenue. From this location, the grade-separated alignment turns northwest before intersecting Woodland Avenue just north of the existing Peters Road intersection. The alignment continues in a northwest direction, traversing two floodplains and intersecting existing Highland Park Road at-grade, before rising over the Griffin Line.

The Griffin Line and adjacent spurs to the Home Depot Distribution Center would be spanned by a structure approximately 140 ft long. The grade-separated alignment would descend back to meet the existing grade of Route 189 and would follow along the existing flood retention berm in this area. The resultant roadway grades on the approach to the crossing would be approximately 6.5% in order to provide the minimum vertical clearance of 22'-6" at the crossing. The location of the grade-separated crossing near the spur for the Home Depot Distribution Center was controlled by the available distance between the Griffin Line and Route 189; the location provides the minimum distance required to maintain standard grades and stopping sight distances through the crossing.

The typical roadway section is the same as the typical at-grade section and consists of one 11 ft travel lane in each direction and 5 ft shoulders within a proposed 60 ft right-of-way. The study team recommends that upon further refinement of this concept under subsequent planning and design efforts, the new roadway section be designed and constructed to state standards in the anticipation that the extension be adopted as a new state owned and maintained roadway.

The estimated construction costs and impacts associated with the grade-separated crossing concept are summarized in Table 4-3 in Section 4.2.3.e.

#### Other Considerations

- The new bridge structure over the Griffin Line should be sufficiently wide to not preclude provisions for potential future sidewalks along the new extension.
- The conceptual alignment as shown in Figure 4-19 should be refined through preliminary design to minimize environmental impacts and to provide new subdivided parcels of land that are sufficiently sized to accommodate potential future development within the environmental and topographic constraints of the area, particularly between Woodland Avenue and Highland Park Road.

- Peters Road approach to Woodland Avenue should be realigned to intersect the new extension such that access would be provided directly from Peters Road to the extension.
- Similar to the at-grade concept, it would be possible for the grade-separated crossing concept to be implemented in phases or segments as funding becomes available.
  - **Phase 1:** Route 189 to Woodland Avenue. New segment would facilitate truck access from Woodland Avenue and Peters Road to Route 189 and the state roadway network.
  - **Phase 2:** Woodland Avenue to West Dudley Town Road. New segment would complete east-west connection between Route 189 and Route 187.
  - **Phase 3:** West Dudley Town and Old Windsor Road. Improvements to existing roadway would support higher traffic volumes and improve safety.

The study team notes that the order of implementation of Phase 2 and Phase 3 could be interchanged based on constructability considerations. Given that completion of Phase 2 construction (as described above) would result in additional traffic on existing West Dudley Town Road and Old Windsor Road, it might be desirable from a constructability standpoint to construct Phase 3 prior to Phase 2 so that construction of Phase 3 would be completed under less traffic. However, if funding for construction is limited, it might be desirable to construct Phase 2 prior to Phase 3 in order to expedite completion of a continuous connection between Route 189 and Route 187.

- Land along Woodland Avenue near the new intersection of the extension and Woodland Avenue should be reserved for the future extension such that development does not preclude the feasibility of the grade-separated concept.

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Potential New Signalized Intersection

Grade-separated Crossing

Potential Phase 1 Implementation

Potential New Bridge Structure



**LEGEND**

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

**CONCEPTUAL PLAN**

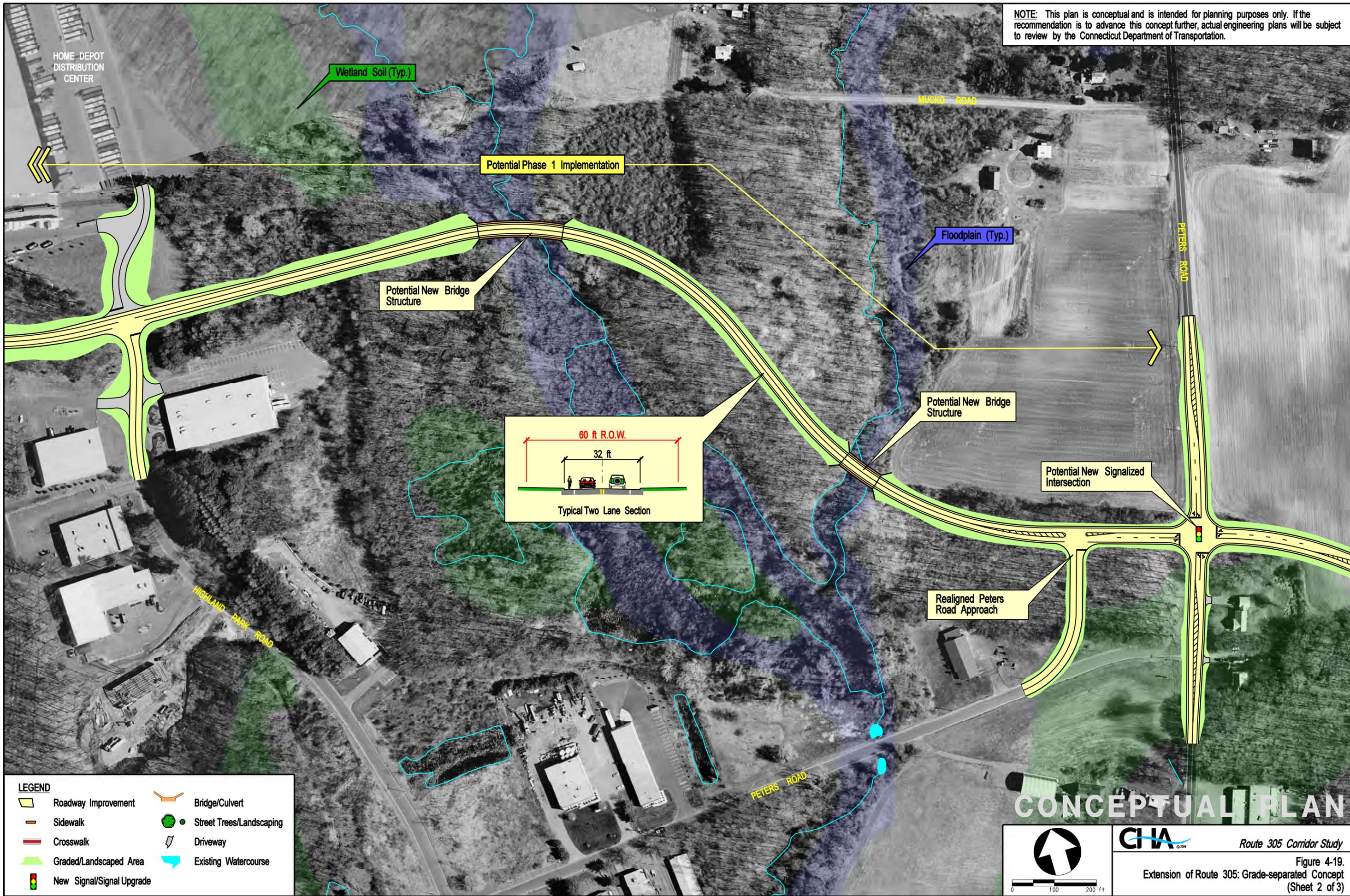
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Route 305 Corridor Study

Figure 4-19.  
Extension of Route 305: Grade-separated Concept  
(Sheet 1 of 3)

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**LEGEND**

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

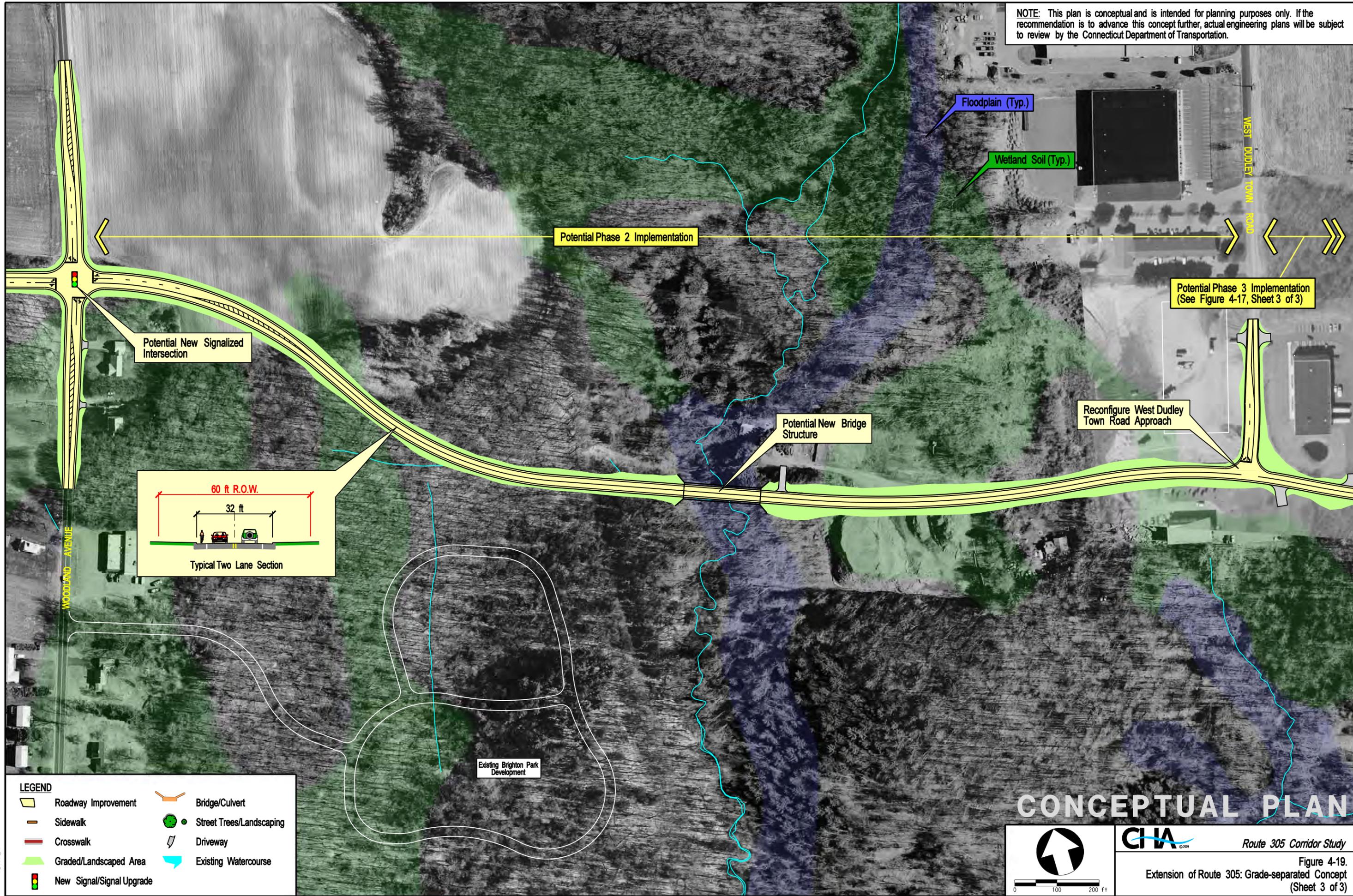
**CONCEPTUAL PLAN**

Route 305 Corridor Study

Figure 4-19.  
Extension of Route 305: Grade-separated Concept  
(Sheet 2 of 3)

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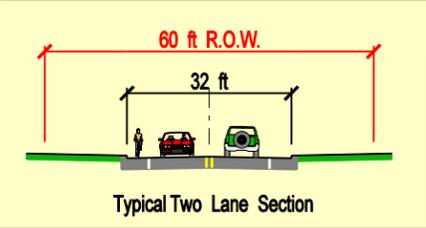
Potential Phase 2 Implementation

Potential Phase 3 Implementation  
(See Figure 4-17, Sheet 3 of 3)

Potential New Signalized Intersection

Potential New Bridge Structure

Reconfigure West Dudley Town Road Approach

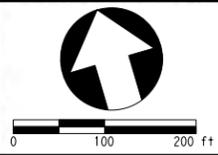


Existing Brighton Park Development

LEGEND

- |                           |                          |
|---------------------------|--------------------------|
| Roadway Improvement       | Bridge/Culvert           |
| Sidewalk                  | Street Trees/Landscaping |
| Crosswalk                 | Driveway                 |
| Graded/Landscaped Area    | Existing Watercourse     |
| New Signal/Signal Upgrade |                          |

CONCEPTUAL PLAN



**CIA** © 2023  
Route 305 Corridor Study  
Figure 4-19.  
Extension of Route 305: Grade-separated Concept  
(Sheet 3 of 3)

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#### 4.2.3.e Comparison of Extension of Route 305 Concepts

Table 4-3 provides a comparison of the estimated construction costs and impacts associated with the at-grade and grade-separated crossing concepts presented in this section.

The study team developed planning-level construction cost estimates in accordance with the procedures and assumptions provided in ConnDOT’s *Preliminary Cost Estimating Guidelines* dated January 2009. Because the cost estimates are highly variable based on many unknown field conditions – conditions that would ultimately be determined through survey and preliminary design – the cost estimates presented in this section are intended to help guide the selection of a preferred concept and provide an approximate level of funding that would be required for construction.

The construction cost estimates assume the following conditions:

- All new and realigned roadway segments would consist of a full-depth bituminous concrete pavement structure.
- Widening of existing roadway segments to provide standard widths would be accomplished by providing a new, full-depth, bituminous concrete pavement structure beyond the limits of the existing pavement surface.
- Existing pavement surfaces adjacent to widened sections would be milled and repaved with new bituminous concrete pavement.
- Estimated construction costs are based on estimates for major construction items (pavement, subbase, earthworks, bridge structures, drainage, curbing) with contingencies added for minor construction items and additional percentages for lump sum items such as maintenance and protection of traffic, mobilization, and construction staking.
- Cost allowances for right-of-way (ROW) acquisitions, utility relocations, environmental mitigation, and engineering are not included in the cost estimates.

For planning purposes, the cost estimates are represented in 2009 dollars and 2019 dollars to illustrate the effect that compounding inflation has on the estimated construction cost values over an assumed implementation period of 10 years. The estimated costs in 2019 dollars were determined using an annual inflation rate of 6% in accordance with ConnDOT’s cost estimating guidelines. Additionally, cost estimates are provided for each of the three phases that are described in the *Other Considerations* discussion presented above for the respective concepts.

The study team estimated ROW impacts using property lines obtained from the Town of Bloomfield’s GIS database. The number of properties impacted refers to the number of properties from which a ROW taking would likely be required to accommodate the improvement concept.

Environmental impacts include potential wetland and floodplain impacts that were approximated from wetland soils and floodplain data obtained from available GIS data sources. The study team assumed that any new bridge structures spanning watercourses would also span the 100-year floodplain. Thus, potential floodplain impacts would mainly be a result of impacts resulting from construction activities associated with preparing and constructing new bridge substructures. The majority of the environmental impacts reported in Table 4-3 are wetland soil impacts.

**Table 4-3. Comparison of Extension of Route 305 Concepts**

Category	At-grade Railroad Crossing Concept	Grade-separated Railroad Crossing Concept
<b>ROW Impacts (Approximate)</b>		
• Total Number of Properties Impacted	31	25
• Total Number of Potential Full Acquisitions	1	0
• Total ROW Takings*	6.6 acres	11.5 acres
<b>Environmental Impacts (Approximate)</b>		
	3.1 acres	2.5 acres
<b>Construction Costs (Estimated)</b>		
• Phase 1	\$ 3.1 million	\$ 11.9 million
• Phase 2	\$ 8.5 million	\$ 6.9 million
• Phase 3	\$ 4.1 million	\$ 4.1 million
<b>Total 2009 \$</b>	<b>\$ 15.7 million</b>	<b>\$ 22.9 million</b>
<b>Total 2019 \$</b>	<b>\$28.0 million</b>	<b>\$ 41.0 million</b>

\* ROW taking area includes entire parcel area for potential full acquisitions.

#### 4.2.4 Multimodal Considerations

The Capitol Region Council of Governments' (CRCOG) *Regional Pedestrian and Bicycle Plan: The CRCOG Commitment to a Walkable Bikable Region*, completed in April 2008, has as a stated goal that “complete streets” will be the standard for all road design by 2015. Complete streets are designed for all users, including motorists, pedestrians, bicyclists, and transit users. Another goal in CRCOG’s plan is that all commercial developments will have safe and convenient pedestrian access. CRCOG includes a goal that all major commuter routes to employment concentrations will have appropriate bicycle facilities (bike lanes, bike shoulders, wide curb lanes, or parallel multi-use paths).

In addition, CRCOG identified Route 305 as part of an on-road bicycle network in the 2008 Plan. The on-road bicycle network includes the roads that provide linkages between towns and commercial locations in the region and serves as the backbone of the region’s bicycle infrastructure. CRCOG recommends that road improvement projects on Route 305 and other bicycle network routes examine bicycle safety as part of the project. Improvements in bike accommodations on these roads are essential if an effective bicycle network is to be achieved.

##### 4.2.4.a Pedestrian and Bicycle Improvements

There are a number of improvements in the Route 305 corridor that can incorporate the travel needs of pedestrians and bicyclists. These improvements are presented in this section as near-term and long-term recommendations and are consistent with CRCOG’s goals. Many of these improvements have been incorporated into the localized and long-term improvement concepts presented above.

##### Near-term Improvements

- Re-stripe the existing roadway to provide 11 ft lanes while maximizing the existing shoulder width. Provide shoulders that are 4 ft wide or wider, where possible. Eleven feet is adequate width for vehicular travel and can mitigate excessive speeds. This combined with a widened shoulder will increase the safety and security of bicyclists and pedestrians who choose to travel in the expanded shoulder. Four feet is the minimum shoulder width recommended to accommodate bicycle travel as referenced in the 1999 American Association of State Highway and Transportation Officials’ *Guide for the Development of Bicycle Facilities*.
- Install curb-cuts and ramps for accessibility to pedestrian push buttons at all signalized intersections in the study area that currently have pedestrian push buttons, including:
  - Interchange 37 northbound ramps
  - Interchange 37 HOV ramps
  - Interchange 37 southbound ramps
  - Dunfey Lane/Targeting Center
  - Mountain Road
  - Addison Road
  - Marshall Phelps Road/Ezra Silva Lane
  - Route 187 (Blue Hills Avenue)

All sidewalk ramps should include tactile warning surfaces for visually impaired pedestrians in accordance with current American with Disabilities Act Accessibility Guidelines (ADAAG).

- Provide crosswalks at the signalized locations on Route 305 listed below:
  - Interchange 37 northbound ramps – along Route 305 across the ramps.
  - Interchange 37 HOV ramps – along Route 305 across the ramps.
  - Interchange 37 southbound ramps – along Route 305 across the ramps.
  - Dunfey Lane/Targeting Center – along the north and south sides of Route 305 across Dunfey Lane and Targeting Center, and one location across Route 305.
  - Mountain Road – along the north and south sides of Route 305 across Mountain Road and one location across Route 305.
  - Addison Road – along the north and south sides of Route 305 across Addison Road.
  - Marshall Phelps Road/Ezra Silva Lane – along the north and south sides of Route 305 across Marshall Phelps Road and Ezra Silva Lane.
  - Route 187 (Blue Hills Avenue) – along the north and south sides of Route 305 across Blue Hills Avenue and across Route 305 on both the east and west side of Blue Hills Avenue.

All of these intersections have pedestrian signals and it would greatly improve the visibility of and safety for pedestrians if painted or textured crosswalks are provided to guide pedestrians and inform motorists of the potential for pedestrians at that location. Many of these intersections have (or potentially will have) a mix of land uses around them including residential, commercial, and community/religious uses.

- Provide crosswalks at the unsignalized locations on Route 305 listed below:
  - Sheffield Drive – along the north side of Route 305 across Sheffield Drive.
  - Brewster Road – along the south side of Route 305 across Brewster Road.

There are sidewalks within the vicinity of these cross streets. Crosswalks would improve the visibility of and safety for pedestrians and inform motorists that pedestrians could cross at that location. These intersections are located in residential areas.

- Reset catch basin tops and install bicycle safe grates. These measures will improve the safety of bicyclists traveling on the shoulder by minimizing the need to avoid the hazards posed by recessed tops and unsafe grates.

### Long-term Improvements

- Provide 11 ft lanes and 5 ft shoulders on any newly constructed roadway sections if sufficient right-of-way is available or can be obtained.
- If desired by area residents, evaluate the extension of sidewalks westerly on the south side of Route 305 to Addison Road. The sidewalk currently ends at Brewster Road.
- Extend the sidewalk westerly on the north side of Route 305 to Marshall Phelps Road. The sidewalk currently ends at Mountain Road. Much of this new area recommended for sidewalk construction is residential, though there are some commercial developments west of Addison Road that will benefit from the improvements.
- Provide a crosswalk across Route 305 at Addison Road. This will assist pedestrians crossing between the north side sidewalk and the termini of the south side sidewalk.

The Connecticut Department of Transportation (ConnDOT) is expected to release an update to the Connecticut Statewide Bicycle and Pedestrian Plan in summer 2009. Since the plan update is on-going, this study's evaluation does not consider ConnDOT's bicycle and pedestrian planning initiatives. At such time the updated plan is completed and released, it is recommended that all bicycle and pedestrian recommendations in this Improvement Plan be reassessed to ensure consistency with ConnDOT's plan.

#### 4.2.4.b Transit Improvements

There are a number of improvements in the Route 305 corridor that can incorporate the travel needs of transit users. These improvements are described below and are consistent with the findings of the *Griffin Busway Feasibility Study* (CRCOG, 2004), which recommended reserving the Griffin freight rail line to accommodate potential future mass rail in the corridor.

- Provide widened shoulders or bus pullouts with amenities for bus stops on Route 305 near Mountain Road and Route 305 near Route 187 (Blue Hills Avenue).
- Design sites being considered for mixed use development in the vicinity of Interchange 37 (see Section 4.3) with an eye to transit usage, insuring that they can be easily served by transit operating along Route 305.
- Town officials should continue to collaborate with regional and state officials as well as other stakeholders to continue to identify future mass transit opportunities and systems as they relate to connections to the New Haven – Hartford – Springfield rail corridor and the Griffin Busway corridor.

CRCOG recently completed the *Northwest Corridor Study* which includes the development of a transit service plan for CT Transit for the Northwest Corridor. The corridor extends from downtown Hartford in a northwesterly direction along the Griffin rail corridor, including the Griffin Office Park area, and extending north of the rail terminus to include the town of East Granby and the Bradley Airport area. The main focus area for the study included the Day Hill Road area, a growing employment center.

The Route 305 study supports the findings and recommendations from the *Northwest Corridor Study* including providing for a transit hub at Interchange 38; providing a Park 'n Ride lot at the Griffin Office Park; improving transit service (including service from downtown and from other

suburbs) to the transit hub and Park ‘n Ride lot; establishing a network of shuttles to employment sites; and improving transit amenities by providing bus pullouts, sidewalks and bus shelters where appropriate.

See **Appendix 4** for an illustration of the *Northwest Corridor Study* recommendations

#### 4.2.5 Traffic Demand Management Considerations

Traffic demand management (TDM) practices include a range of strategies that aim to reduce private automobile trips, traffic congestion, and air pollution by encouraging small-scale travel alternatives. In addition to the physical improvement concepts developed by the study team to address near and long-term traffic operations and capacity issues, the study team suggests that several TDM practices be considered by area policymakers to help mitigate traffic growth and preserve existing traffic capacity. These TDM practices include:

- Encouraging area employers to stagger work shifts, accommodate flexible work schedules, implement compressed work weeks, and accommodate telecommuting. These practices will help reduce peak hour traffic demands.
- Providing incentives to area employers to provide their employees with programs and incentives to utilize alternative modes of transportation such as ridesharing, vanpools, shuttles, mass transit, bicycling, and walking.
- Encouraging area employees to live in nearby neighborhoods and potentially in new transit-supportive, mixed use developments in the Route 305 corridor (as described in Section 4.3).
- Establishing a Transportation Management Association (TMA) in cooperation with Day Hill Road and other area employers. The TMA would work to advance traffic demand management (TDM) strategies.

### 4.3 Land Use Strategies

To help mitigate future traffic growth, future development along the Route 305 corridor should be guided by land use policies and transportation policies that facilitate mode shift – that is, improvements and policies that will encourage people to use public transit or other alternative forms of travel to get to their places of employment or other destinations. Possible improvements and traffic mitigation strategies to effect mode shift and to encourage people to avoid driving during peak traffic periods include transit-supportive land uses which serve to decrease dependency on the single-occupant automobile and thereby reduce traffic congestion.

Denser, quality, mixed-use development (that includes a significant number of residential units) constructed along existing arterials and bus routes in cities and towns will serve to reduce sprawl in outlying areas and reduce distances that people commute to work by providing people with housing opportunities closer to where they work and shop. Improvements to the Route 305 corridor, therefore, should not only address ways to increase road capacity, but also foster patterns of development that improve access to transit and encourage use of transit by co-locating uses at or near transit hubs. The compact nature of transit-supportive development not only controls growth and encourages redevelopment of and investment in communities, but also maximizes use of costly infrastructure, reduces harmful vehicle emissions, and decreases the

amount of runoff from roadways. Improved transit opportunities also provide residents with improved quality of life by reducing commuting stress and household transportation expenses.

The economic development rewards of transit-supportive development include increased investment, increased property values and tax revenues, and strengthening of the appeal of Bloomfield and Windsor as places to live, work and play.

Transit-supportive land uses recommended for the Route 305 study area include:

- **“Neighborhood Transit Centers” (NTC) at Interchange 37, Windsor:** The concept for transit-supportive land use in the interchange area would incorporate mixed-use developments with the potential for a bus transit station, or pulse point, to create compact, neighborhood-oriented development where transit supports land use and vice versa. NTCs, like the one that is conceptualized in Figure 4-20, could convert under-utilized industrial sites, strip shopping plazas and other auto-oriented uses to compact, mixed-use developments that would support transit, mitigate traffic growth, and provide a neighborhood center for social and cultural activities.

NTCs would encourage “park-and-walk” behavior. Increasingly, people prefer to live, work, and conduct business and social activities in mixed-use districts that are attractive, compact, walkable, have a human scale, cater to an array of lifestyles, and are alive with a diversity of activities (business, retail, entertainment, dining, cultural, mixed-income housing, artist lofts and galleries). These innovative developments foster sustainable lifestyles and make the use of transit, walking and biking a convenient, attractive option for building occupants – residents and office workers alike. NTCs provide better travel options for its residents and effectuate expansion of the ridership of current transit services. NTCs can provide the town with new economic activity while minimizing the impacts of this activity on highway congestion.

- **“Traditional Neighborhood Development” (TND) Strategy to Redevelop the Intersection of Old Windsor Road/Blue Hills Avenue, Bloomfield:** This potential development strategy, shown in Figure 4-21, would convert relatively low-density, one story “flex buildings” and other land into high-density, pedestrian and transit-oriented, walkable, mixed-use developments using the urban planning principles of ‘New Urbanism’. The TND strategy would utilize two, three, or even four story buildings constructed on new streets carved out of the existing sites and create a traditional town center. This use of “liner buildings” could convert existing one-story flex buildings to more pedestrian-oriented and less automobile-oriented development by constructing two or three story additions along the front of flex buildings. This strategy would create a ‘street-wall’ and optimize development opportunities without the need to construct additional parking. Like NTCs, TNDs would encourage “park-and-walk” behavior and provide mixed use districts where people could live, work, and conduct business and social activities without the need to use a car. Design standards ensure that TNDs are attractive, compact, walkable, and are designed in a human scale. The diversity of uses could include businesses, retail, entertainment, dining, mixed-income housing, churches and civic buildings.

NOTE: This plan is conceptual and is intended for planning purposes only. If the recommendation is to advance this concept further, actual engineering plans will be subject to review by the Connecticut Department of Transportation.



Potential Green or "Village Center"

Potential Landmark Corner Building (Typ.)

Potential Mixed-Use Building (2 to 4 Stories) Typ.

Parking Deck or Parking Garage

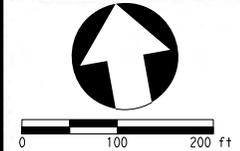
Potential Streets with On-Street Parking

Existing Property Lines (Approximate, Typ.)

Existing Gas Station

Gateway Building (Typ.)

# CONCEPTUAL PLAN



Route 305 Corridor Study

Figure 4-20.  
Interchange 37 - Northwest Quadrant:  
Neighborhood Transit Center Concept

NOTE: This plan is conceptual and is intended for planning purposes only. If the recommendation is to advance this concept further, actual engineering plans will be subject to review by the Connecticut Department of Transportation.



Existing Pond

Potential Street with On-Street Parking

Potential Mixed-Use Building (2 to 4 Stories)

Potential Parking Deck and Garage (Typ.)

Existing Building (Typ.)

# CONCEPTUAL PLAN



0 200 400 ft



Route 305 Corridor Study

Figure 4-21.  
Route 305 at Route 187 (Blue Hills Avenue)  
Traditional Neighborhood Development Concept

These transit-supportive development concepts are based on planning and design precepts borrowed from the New Urbanism and Smart Growth movements including:

- Developments organized within traditional street grids composed of short blocks to encourage walking and promote safety and security.
- Streets with narrow traffic lanes, on-street parking, wide sidewalks, and bicycle lanes.
- Bus transit facilities integrated within developments to create multi-functional public spaces that allow transit riders to undertake multiple tasks or errands at one stop.
- Human-scaled architecture with finely detailed, contextual buildings with porches, cafes, custom pedestrian-level lighting, and signage.
- Multi-story, mixed-use buildings (e.g. residential, small-scale retail, restaurants, professional services) situated close to a tree-lined street.
- Discrete parking located to the rear of buildings or along the street to create more walkable streets and calm traffic.
- Proximity and mix of uses to allow for shared parking and to reduce parking demand. Each use would have a different or complementary peak hour. Parking layout would encourage ‘park-once-and-walk’ behavior allowing people to visit multiple destinations without driving.

It should be noted that the transit-supportive land use recommendations of this study are illustrative only and that the towns of Bloomfield and Windsor would not be acquiring private land for redevelopment. Rather, if residents and business owners support the concepts, the private sector would initiate and implement the development and assemble any land that may be necessary. The municipalities may want to facilitate these redevelopment initiatives by revising zoning to allow the uses and densities and adopting design standards to control the more subjective aspects of development. In fact, both towns have or are proposing to revise land use and zoning regulations to allow such development or redevelopment.

Not incidentally, private redevelopment using New Urbanism principles greatly improves the “walkability” and safety of the street. These traditional patterns of development can therefore provide traffic calming benefits. By creating enclosure and changing the psychological feel of the street, they send a clear reminder to motorists of the dual functions of the street, as both a movement corridor and as a place for social and cultural activity.<sup>1</sup> The presence of pedestrians, bicyclists, parked vehicles and prominent cross-walks also conveys a sense of uncertainty and a reminder that movement on the street is not limited to vehicles. The attention to detail of the design of the street edge and the creation of an interesting and compact “street-wall” on private property have a moderating influence on motor vehicle speeds and obligate motorists to drive slowly and attentively.<sup>2</sup> All of these visual cues impart a distinct village character to the street that will remind motorists that they are in special district and are using streets that are designed for multiple users.

<sup>1</sup> Engwicht, David, “Street Reclaiming Through Design.”  
Source website: <http://www.lesstraffic.com/Articles/Traffic/SRdesign.htm>

<sup>2</sup> Nozzi, Dom. “The Ingredients of a Walkable Street.”  
Source website: <http://www.walkablestreets.com/walkingred.htm>