Route 195 Corridor Study

Existing Conditions

Tolland, Connecticut

Prepared for:
Capitol Region Council of Governments
and Town of Tolland

Prepared by:
VHB/Vanasse Hangen Brustlin, Inc.

In association with:
RKG Associates, Inc.
GM2 Associates, Inc.
Fitzgerald and Halliday, Inc.

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Existing Conditions

The ability to implement appropriate corridor improvements depends on correctly understanding the existing challenges and opportunities throughout the study area. To uncover these challenges and opportunities, the Vanasse Hangen Brustlin, Inc. (VHB) project team collected a significant amount of transportation and land use data and spent time observing transportation activity in the corridor. Additionally, the project team solicited information from the project Advisory Committee (AC) and the general public in regards to current concerns along the Route 195 corridor. Through this data collection effort, VHB has identified the most pressing transportation and land use issues facing the corridor today.

The Existing Conditions Report summarizes the existing transportation and land use challenges and opportunities in the Route 195 corridor study area (Figure 1). To simplify the evaluation process, the corridor was broken up into three distinct areas based on existing land use zones. Each of these zones is characterized by distinct transportation and land use patterns that warrants individual consideration and unique improvements. Before findings are presented for each zone, corridor-wide transportation data are discussed. Although transportation data will also be addressed at the zonal level, it is important to examine interrelated transportation issues throughout the corridor since the transportation network transcends land use zones. Appendix A provides all detailed technical data collected and analyzed in support of the Route 195 Corridor Study, including traffic volume and crash data, current intersection operating conditions, an urban design evaluation, and an economic market analysis. This detailed data and analysis will be a valuable resource during the implementation stage of the proposed recommendations.

Existing Condition Summary

The 2.5-mile stretch of Route 195 between Route 74 and Anthony Road/Baxter Street represents the diversity of land uses and transportation issues facing the Town of Tolland today. This segment of roadway traverses three land use zones, each with their own unique characteristics: the Village Center Zone, the Gateway Design District, and the Neighborhood Commercial Zone. Through examining each one of these zones, it will be possible to develop strategies to improve the transportation network and related land use throughout the corridor. Below, key findings from the existing conditions evaluation are summarized by zone. Based on these findings, several transportation alternatives will be developed to address the most critical needs in the corridor.

The Village Center Zone is largely characterized by the historic district surrounding the Town Green. This area is largely residential and has the lowest traffic volumes in the corridor. As this study moves forward, the following key issues have been identified for consideration:

- The skewed intersection of Route 195 and Route 74 has confusing geometry that results in poor levels of service on Route 195. At this intersection, Route 74 is treated as the mainline and Route 195 is stop controlled.
- There is a misaligned stop sign and stop bar at the intersection of Route 74 and the carriage road parallel to Route 195 on the south side of Route 74. The location of the stop could lead to potential conflicts between motorists and pedestrians.
- Morning school traffic headed to Tolland Middle School and Parker Memorial School affects the operation of the intersection of Old Post Road and Route 195.
- This zone has the most developed pedestrian network, but pedestrian facilities could be better connected through the addition of crosswalks or enhancement of existing crosswalks.
- There is no pedestrian connectivity to the commercial areas in the Gateway Design District.

Figure 1
Study Area
Route 195 Corridor
Tolland, CT
Existing zoning regulations and actions by the Tolland Green Steering Committee have successfully protected and enhanced the character of the Town Green.

The designation of the historic district and the Town Green’s inclusion on the National Register of Historic Places will require any potential improvements to minimize impact on this historic area.

The Gateway Design District encompasses two distinct areas: the area north of the Interstate 84 interchange that serves as a transition to the Town Green and the area south of the interchange that acts as a gateway to UConn. Although these two areas have different transportation characteristics, they are both largely commercial areas. Within this zone there are many important issues that will shape potential alternatives:

- A steep grade (8 percent) in the southbound direction from Cider Mill Road induces high speeds and may contribute to crashes in inclement weather.
- There is no pedestrian connection to the Town Green.
- Managing curb cut frequency and width in the vicinity of the commercial developments north of the interchange may help reduce crashes and improve traffic operations on this roadway segment.
- The ConnDOT Park-and-Ride does not have any bus or shuttle service and has additional parking capacity available.
- There is interest from developers to locate a hotel in proximity to the interchange, which could be a major traffic generator.
- The existing pedestrian network lacks crosswalks in many places.
- The Skunamaug watershed is an important town resource and associated wetlands and the Aquifer Protection Zone will place limitations on development and roadway improvements.
- UConn event traffic south of the interchange results in significant traffic congestion, which will be addressed through widening Route 195 to three lanes from the Interstate 84 ramps through the Rhodes Road/Goose Lane intersection.
- With the exception of UConn events, the zone has fairly good levels of service.
- The existing pedestrian network lacks crosswalks in many places.
- The design guidelines for this zone have encouraged higher quality design of new developments (e.g., Dunkin Donuts and Fieldstone Commons) suiting the character of the town. Additionally, the guidelines encouraged the addition of extensive pedestrian facilities in the vicinity of Fieldstone Commons.
- The offset intersection of Route 195 and Rhodes Road/Goose Lane in combination with multiple wide curb cuts in proximity to the intersection complicates traffic operations.

The Neighborhood Commercial Zone serves as a transition from the more developed commercial area to residential development. There are primarily smaller-scale office developments in this zone, which appears the most rural from Route 195. Any potential alternatives for this zone should address the following key issues:

- The change in speed from 40 mph to 35 mph in combination with the downgrade (4 percent on average) in the northbound direction may contribute to a high crash rate reported for this zone.

The rural characteristics of this zone are inconsistent with pedestrian travel, resulting in a lack of any pedestrian facilities.

This zone generally exhibits good access management principals, such as single-point driveways.

This zone has the largest amount of vacant land. There is a desire to develop some of this land for incubator office space. This type of develop could result in potentially one new major traffic generator.

Heavy traffic volumes on Route 195, especially during UConn events, degrade the level of service for the side streets at the unsignalized intersection of Route 195 and Anthony Road/Baxter Street.

### Transportation Data

VHB collected traffic and transportation data concerning current traffic volumes, signalized and unsignalized intersection operations, and crash data. Examining these data at the corridor level provides the opportunity to identify patterns and compare performance throughout the study area.

#### Daily Traffic Volumes

VHB collected daily traffic volumes for three points along the Route 195 corridor within the study area in December 2007, presented in Table 1. These traffic volumes have not been seasonally adjusted, but are useful in demonstrating the typical traffic patterns and volumes in addition to providing a basis for comparing traffic between different segments of the corridor. Since Route 195 is a state road, ConnDOT provides average daily traffic (ADT) volumes for multiple points along the study corridor, which were collected in April 2005. The ADT volumes collected by ConnDOT are slightly higher for the Gateway Design District and the Neighborhood Commercial Zone and slightly lower for the Village Center Zone than those observed in December 2007. This additional information is used to supplement the data collected in December 2007. Below, analysis of the December 2007 ADT data is provided. In the remainder of the existing conditions report, the highest reported ADT for each point in the corridor is used. Considering the highest reported ADT in making decisions about the corridor will ensure a conservative approach is taken and the highest traffic volumes experienced in the corridor are appropriately accommodated in the planning process.

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DRAFT Route 195 Existing Conditions

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Vanasse Hangen Brustlin, Inc.
As shown in Table 1, the traffic volumes for different segments of the Route 195 corridor vary considerably. The portion of Route 195 located north of the Interstate 84 interchange sees the lowest traffic volumes in the corridor. In the vicinity of the Town Green in the Village Center Zone, Route 195 carries approximately 9,240 vehicles per day (vpd). This roadway segment, which connects primarily residential areas to Interstate 84, sees a directional distribution corresponding to traditional commute patterns: during the morning peak hour traffic is headed south toward the interstate with the reverse trend occurring during the evening peak hour. ConnDOT reported ADT volumes of 8,500 vpd in this segment of the corridor. Traffic volumes immediately south of the Interstate 84 interchange in the Gateway Design District are more than double those observed near the Town Green. Traffic volumes in the vicinity of the Fieldstone Commons development reach approximately 19,060 vpd, the heaviest volumes recorded in the corridor. The directional distribution in this roadway segment is more evenly split, with just a slight bias toward Interstate 84 during the morning peak hour and away from Interstate 84 in the evening. The closer balance between the directional traffic is the result of people commuting not only towards Interstate 84, but also commuting from Interstate 84 to employment centers south of Tolland, such as UConn, via Route 195. The retail and office establishments in this section of the corridor also contribute to the heavier traffic volumes. ConnDOT observed ADTs of 12,400 vpd just north of the westbound interchange ramps and 21,800 vehicles per day just south of the eastbound interchange ramps. Heading south in the corridor, the traffic volumes decrease along Route 195 in the Neighborhood Commercial Zone. Near the intersection of Route 195 and Anthony Road/Baxter Street, the traffic volume is approximately 14,545 vpd. Similar to traffic during the peak hours in the Gateway Design District south of Interstate 84, the directional distribution of traffic is split fairly evenly. ConnDOT reported ADT volumes of 17,700 vehicles per day in this segment of the corridor.

Existing Intersection Operations

In May and September 2007, the VHB project team conducted an extensive turning movement count program during the morning and afternoon peak periods at seven intersections, depicted in Figure 2 and Figure 3. Intersection capacity analyses use this data to test the ability of an intersection to handle existing traffic demands and how the operation of that intersection evolves as it meets future traffic demands.

Intersection operating conditions are classified by calculated levels of service. Levels of service (LOS) provide an index to the operational qualities of an intersection and highlights operational problems. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. The evaluation criteria used to analyze area intersections are based on the 2000 Highway Capacity Manual.1 Tables 2 and 3 summarize the intersection capacity analyses.

Table 2
Signalized Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Date of Analysis</th>
<th>Location</th>
<th>LOS</th>
<th>V/C</th>
<th>Delay</th>
<th>Queue Length</th>
<th>ICR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>D/C</td>
<td>1.449.74</td>
<td>53.927.07</td>
<td>-</td>
<td>76.1%/77.9%</td>
<td></td>
</tr>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>N/S</td>
<td>735</td>
<td>77.8%</td>
<td>SB</td>
<td>8.3%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>W/E</td>
<td>1,115</td>
<td>53.6%</td>
<td>NB</td>
<td>5.7%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>N/S</td>
<td>815</td>
<td>57.4%</td>
<td>NB</td>
<td>8.8%</td>
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<tr>
<td>Route 195 at Old Post Rd.</td>
<td>W/E</td>
<td>50.2%</td>
<td>SB</td>
<td>5.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>N/S</td>
<td>1,320</td>
<td>52.6%</td>
<td>NB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 195 at Old Post Rd.</td>
<td>W/E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unsignalized Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Intersection/Movement</th>
<th>2007 Existing Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
</tr>
<tr>
<td>Route 74 at Old Stafford Rd.</td>
<td></td>
</tr>
<tr>
<td>● Route 74 Eastbound</td>
<td>330/403</td>
</tr>
<tr>
<td>● Route 74 Westbound</td>
<td>298/468</td>
</tr>
<tr>
<td>Tollard Green Southbound</td>
<td>352/219</td>
</tr>
<tr>
<td>Route 105 at Route 74</td>
<td></td>
</tr>
<tr>
<td>● Route 74 Eastbound</td>
<td>715/615</td>
</tr>
<tr>
<td>● Route 74 Westbound</td>
<td>95/141</td>
</tr>
<tr>
<td>● Route 195 Northbound</td>
<td>203/35</td>
</tr>
<tr>
<td>Route 105 at Anthony Rd./Baxter St.</td>
<td></td>
</tr>
<tr>
<td>● Route 195 Northbound</td>
<td>403/37</td>
</tr>
<tr>
<td>● Route 195 Southbound</td>
<td>622/65</td>
</tr>
<tr>
<td>● Anthony Rd. (Westbound)</td>
<td>7454</td>
</tr>
<tr>
<td>● Baxter St. (Eastbound)</td>
<td>3507</td>
</tr>
</tbody>
</table>

Results shown as AM peak hour/PM peak hour
* 95th percentile volume exceeds capacity, queue may be longer
1 Level of Service
2 Volume to Capacity Ratio
3 Average control delay for all vehicles entering the intersection in seconds / vehicle
4 95th percentile queue length in feet
5 Intersection Capacity Utilization

Although the analyses indicate the study area intersections generally operate at acceptable levels of service for a suburban/rural corridor with peak commuter characteristics, the detailed examination of each intersection did identify several opportunities to improve key operational aspects of corridor intersections:

- **Route 74 @ Route 195** – is an unsignalized intersection with confusing roadway geometry designed to prioritize traffic operations on Route 74. Both Route 74 approaches operate with little or no delay (LOS A) during all peak periods. The northbound Route 195 approach is stop controlled, which creates poor traffic operations on this approach during the evening peak period (LOS F). During the evening peak period, queues forming on northbound Route 195 at Route 74 can extend back to Old Post Road.

- **Old Post Road @ Route 195** – is a signalized intersection that operates at LOS D during the morning peak period and LOS C during the afternoon peak period. Operation of this intersection during the morning is affected by school traffic attracted to Tolland Middle School and Parker Memorial School on Old Post Road. When school is opening and dismissing, queues develop on both northbound and southbound Route 195. The southbound queues can back up to Route 74. Queues also form on Route 195 during the evening peak period, but the intersection operates at a higher LOS since school traffic is not competing with commute traffic. During both peak periods, the westbound approach on Old Post Road operates at a worse LOS than the intersection as a whole, likely a result associated with the difficulty of turning left onto Route 195.

- **Westbound Interstate 84 Ramps @ Route 195** – is a signalized intersection that operates at LOS C during the morning peak period and LOS B during the evening peak period. Although intersection operations are generally acceptable, there are isolated operational issues stemming from commute traffic accessing and exiting I-84, particularly during the morning peak hour. The Route 195 northbound left turn lane operates at LOS D during the morning peak period since the left turning volume is higher than any other movement and the signal time provided to it is not sufficient. Since the Route 195 southbound volume is quite high during the morning peak (735 veh/hr), not many left-turning northbound vehicles can access the Interstate 84 ramp during Phase 2 of the signal (protected and permitted phase). The Interstate 84 westbound off-ramp also operates at LOS D during the morning peak period, but the traffic volume is relatively light (135 veh/hr) and no significant queues develop.

- **Eastbound Interstate 84 Ramps @ Route 195** – is a signalized intersection that operates at LOS B during the morning peak period and LOS C during the evening peak period. Although the intersection generally operates at an acceptable LOS, traffic associated with commuting to and from Tolland creates operational issues for select vehicle movements. During the morning peak period, the left/through lane on the Interstate 84 eastbound off-ramp operates at LOS D, but the traffic volume is light (96 veh/hr) resulting in no significant vehicle queues. During the evening peak hour, the Interstate 84 eastbound off-ramp approach operates at LOS D and the shared left/through lane operates at LOS F. In the evening, queues form in the right-turn lane of the Interstate 84 eastbound off ramp. The 95th percentile queue length for movement of 568 feet is quite significant (approximately 23 cars). These traffic operational issues are expected to be mitigated as part of ConnDOT project number 142-146.¹

- **Fieldstone Commons Drive @ Route 195** – is a signalized intersection that operates at LOS A during the morning peak period and LOS D during the evening peak period. The evening peak hour volume at this intersection increases over the morning peak volume by approximately 60 percent. The increased traffic associated with Fieldstone Commons Drive during the evening peak period is likely the result of shoppers accessing the Fieldstone Commons stores on their commute home. The shared left/through lane on eastbound Fieldstone Commons Drive operates at LOS E during the evening peak. The side street movement phase shows max times during all cycles during the evening peak. Queues of southbound traffic also develop on Route 195 and can approach the Interstate 84 Eastbound ramps intersection. This traffic operational issue is expected to be mitigated as part of ConnDOT project number 142-146.

- **Rhodes Road/Goose Lane @ Route 195** – is an offset signalized intersection that operates at LOS B during all peak periods. Queues develop on Goose Lane with a resulting level of service of E during both morning and evening peak periods due to insufficient time for this

¹ Based on average vehicle length of 25 feet, which includes distance between vehicles.
² ConnDOT project number 142-146 is designed to widen a segment of Route 195 to reduce traffic congestion south of the INTERSTATE 84 interchange. The project will provide two right-turn lanes from the westbound INTERSTATE 84 off-ramp, which will reduce traffic backups onto INTERSTATE 84 associated with UConn events. Route 195 will be extended to three lanes with a center median, with two lanes in the southbound direction from the INTERSTATE 84 ramp through the intersection of Rhodes Rd./Goose Ln.
approach. The volume of left-turning vehicles from Goose Lane is higher than the through and right-turning volumes. Left-turning traffic out of Goose Lane may face significant delay since vehicles have to yield to through and right-turning traffic from Rhodes Road. Additionally, queues form in the northbound direction of Route 195, a result of the heavy traffic volumes traversing this intersection into the Gateway Design District.  

Anthony Road/Baxter Street @ Route 195 - is an unsignalized intersection with stop-controlled side streets. The side streets, Anthony Road and Baxter Street, operate at LOS E during the morning peak hour and LOS F during the evening peak hour due to the relatively constant flow of traffic on Route 195. Since side-street traffic volumes are generally light (ranging from 35 to 75 vehicles per hour), no significant queues develop at any point during the day.

UConn Event Traffic

During major UConn events, State Police Officers manually control intersections along Route 195 from I-84 to the intersection of Rhodes Road/Goose Lane. This traffic management strategy enables trained professionals to react to traffic conditions as they develop, helping to minimize vehicle queues. Since automated traffic signals are not used during UConn events, it is not possible to calculate a level of service for intersections during such a period. Instead, travel time runs were conducted to qualitatively assess traffic conditions.

Observations regarding traffic conditions in the corridor were recorded during several travel time runs made along Route 195 and I-84 from 4:30 PM to 7:00 PM, on December 6, 2007, during a men’s basketball game at Gampel Pavilion on the UConn campus. The southbound travel time runs began at the intersection of Route 195 at Route 74 and ended at the intersection of Route 195 and Walbridge Hill Road (2.66 miles). The northbound runs began at Walbridge Hill Road and ended at the intersection of Route 195 at Route 74 (2.66 miles). Travel time runs were also made starting at the I-84 eastbound off-ramp and ending at Walbridge Hill Road (1.95 miles). A total of eleven travel time runs were made during the study period.

The travel time runs indicated that delays were minimal during this event period and that no significant queues developed. Any queues that did develop were short lived and normal traffic speeds were accommodated. Two factors likely contributed to efficient transportation operations during the event: State Police Officers were able to manage the traffic to avoid queues and this event did not sell out, resulting in less game-day traffic than experienced at other times during the year.

Crash Data

Crash data was collected for a period of January 1, 2004, to December 31, 2006, from the Connecticut Department of Transportation’s Traffic Accident Viewing System to conduct an accident analysis along Route 195 (Merrow Road) between the intersections of Route 74 and Anthony Road/Baxter Street. The data was compiled and analyzed to identify intersections and roadway segments with high crash frequencies. Intersections with high crash frequencies were identified based on the number of accidents per total vehicle volume entering the intersection on a yearly basis. Appendix A presents a complete review of the crash data and describes the types of crashes at the following locations:

- **Roadway Segment between Cider Mill Road and ConnDOT Commuter Lot** - experienced a total of 12 crashes during the study period (the highest concentration of crashes north of the Interstate 84 ramps). The majority of these crashes were the result of turning and angle type crashes. This segment of the corridor has many driveways resulting in multiple turning movements to and from the roadway. Shared driveways and the elimination of off-set curb cuts may help reduce the number of accidents along this section of Route 195. The southbound steep grade may also contribute to inducing higher speeds and create additional crash concerns during inclement weather.

- **Intersection of Route 195 and Rhodes Road/Goose Lane** - skewed geometry contributes to confusing vehicle operations and creates potential safety concerns.

- **Roadway Segment between Rhodes Road/Goose Lane and Anthony Road/Baxter Street** - experienced the highest concentration of crashes anywhere in the corridor (61 crashes over 0.91 miles). The majority of these 61 crashes were rear-end type crashes (approximately 56 percent). Twenty-five of these rear-end crashes involved northbound vehicles whereas only nine rear-end crashes involved southbound vehicles. Crashes were particularly clustered just north of the Anthony Road/Baxter Street intersection. This segment of roadway acts as a transition into commercial areas from a primarily rural roadway in the northbound direction. Reflecting this transition, the posted speed limit on this portion of Route 195 changes from 40 mph to 35 mph in the northbound direction, but the observed 85th percentile speed was 51 mph. The lack of traffic controls for approximately three miles between the junction of Route 32 and the Rhodes Road/Goose Lane intersection and rural nature of the roadway contributes to the expectation that vehicles will not be required to stop often on Route 195. Once vehicles traveling in the northbound direction pass Anthony Road/Baxter Street there is a sudden increase in driveways associated with commercial establishments. These businesses are set back from the roadway and have minimal signage, diminishing the visual cues that vehicles have entered a commercial area. Additionally, Route 195 is on an almost constant downgrade northbound between the intersection of Anthony Road and Rhodes Road. High speed combined with the grade of the road and increase in commercial driveways appears to contribute to the rate of rear-end crashes on this segment of the corridor. Finally, solar glare for motorists travelling southbound has also been identified as an issue for this segment of road.

*High crash locations are areas that experience higher crash frequencies and severity than expected for the type of roadway classification.*
Traversing the Route 195 corridor through the study area offers glimpses of three different faces of Tolland, from a traditional town green to an emerging retail center to a rural roadway. These distinct segments—each with their own traffic and land-use patterns—correspond to three contiguous land use zones detailed in the Tolland Zone Code (see Figure 4):

- Village Center Zone
- Gateway Design District
- Neighborhood Commercial Zone

Since the characteristics of the corridor change considerably between land use designations, issues and opportunities identified through an existing conditions evaluation and meetings with the advisory committee have been categorized by zone. Understanding the specific needs of each discrete segment of the corridor is crucial for adopting the most appropriate solutions for the entire study area.

The issues and opportunities identified in each zone fall into eight separate categories. Each of these categories represents some aspect of the transportation system or land use. The issues and opportunities raised under each of these categories will provide the basis for corridor improvement alternatives.

- **Traffic operations** include average daily traffic volumes, vehicle speeds, intersection level of service, travel-time runs, and any general issues associated with moving vehicles through the corridor. Improving traffic operations can help reduce congestion and decrease travel times.

- **Roadway geometry** issues generally relate to the design of the roadway, which has important impacts on how vehicles move through the corridor. Improving roadway geometry can increase capacity, reduce the likelihood of crashes, slow vehicles down, or speed vehicles up among other results.

- **Access management** aims to reduce points of conflicts between vehicles entering and exiting the roadway main line and other vehicles and pedestrians. Minimizing curb cuts and improving the predictability of how vehicles will access destinations can improve safety in the corridor and reduce congestion.

- **Pedestrian and bicycle mobility** provide for alternative modes of transportation through the corridor. In many places in the corridor, pedestrian facilities have not been included as land was developed, making it difficult to travel by any means other than personal automobile. Improving pedestrian and bicycle mobility will increase transportation options and improve safety for pedestrians and cyclists.

- **Transit and commuter system** is another means of alternative transportation in the corridor. These types of services include public transit, private transit, and formal and informal carpooling. These services potentially help people get to and from the corridor as well as around the corridor. This type of travel is another important link in a comprehensive transportation network where people have several options for how they make a trip.

- **Urban design** addresses the physical appearance of the corridor, from building siting to architecture to landscaping. The visual character of a corridor plays an important role in building the character of the place. High-quality urban design can help attract business, residents, and visitors and make the corridor a more attractive place to be.

- **Land Use** provides information on the type and intensity of development occurring throughout the study area, which largely determines the traffic associated with each parcel. Additionally, the land use category examines the capacity for future development considering zoning regulations and market conditions. Any new developments that qualify as major traffic generators will potentially have significant impacts on the transportation network.

- **Environmental** considerations play an important role in determining where and how roadway improvements or development can take place. The location of wetlands, water resources, topography, and historical and cultural resources can alter or prohibit plans for construction.6

All issues and opportunities identified through this process are presented by zone below.

6 The Town of Tolland provided data on environmental constraints in the corridor. All base mapping in this report reflects this data.
Figure 4
Land Use Zones
Route 195 Corridor
Tolland, CT
Village Center Zone

The Village Center Zone aims to protect the traditional village atmosphere in the vicinity of the Tolland Green. The predominant land use in this zone is single-family residential. Consistent with the village atmosphere, this zone is the most pedestrian friendly, with bluestone sidewalks and period lighting lining the historic building fronts in proximity of the green. This segment of the corridor has the least amount of traffic, but the confusing geometry associated with the intersection of Route 195 and Route 74 degrades traffic operations. The transportation and land use issues described below are summarized in Figures 5 through 7.

Traffic Operations

Traffic volumes are lowest in this segment of the corridor. Operational issues are primarily associated with traffic stopping on Route 195 at the intersection with Route 74 and with school-related traffic on Old Post Road.

- The traffic volume for the Village Center Zone is approximately 9,420 vehicles per day (vpd).
- The average vehicle speed is 30 mph with an 85th percentile speed of 34 mph.
- There are three intersections in this zone: one signalized and two unsignalized. The two unsignalized intersections are located along Route 74, one at the intersection of Route 195 and the other at the intersection of Old Stafford Road. For both of these intersections, the main line (Route 74) operates at LOS A and the side street has operational issues. The prioritization of Route 74 as the mainline at the intersection with Route 195 is counter intuitive based on roadway geometry and traffic volumes. As a result of only stop controlling northbound Route 195, the northbound Route 195 approach operates at LOS D during the morning peak and F during the afternoon peak. Southbound Old Stafford Road operates at LOS F for both the morning and afternoon peak periods. The signalized intersection—Route 195 and Old Post Road—operates at LOS D during the morning peak period and LOS C during the afternoon peak period.
- Travel-time runs did not indicate any significant main-line traffic operational issues in this zone. Travel time was calculated for a segment of the corridor including the Village Center Zone and the Transition Area in the Gateway Design District. For this stretch of Route 195, the average travel time in the southbound direction during the morning peak period was 115.2 seconds (28 mph) and 100.8 seconds (30 mph) during the afternoon peak period. In the northbound direction, average travel times were 115.8 seconds (29 mph) during the morning peak and 116.4 seconds (27 mph) during the afternoon peak were recorded.

Roadway Geometry

The roadway cross section in the vicinity of the Town Green is relatively wide to accommodate on-street parking on the western side of Route 195. The intersection of Route 195 and Route 74 presents challenging geometry associated with the skewed angle of the intersection, numerous conflicting turning movements, and poor sight lines.

- The posted speed limit for the majority of the Village Center Zone is 30 miles per hour (mph). The speed limit changes to 35 at Cider Mill Road in the south end of the zone. The cross section of the roadway in this zone varies: the roadway is wider along the Tolland Green and narrows south of the green. In the vicinity of the green the roadway is 36 feet wide, including two 12.5 foot travel lanes, a 1-foot shoulder on the northbound side, and a 10-foot parking lane on the southbound side.
- There are two carriage roads running parallel to Route 195 on the west side of the Town Green: one along the north Green and one along the south Green. These roads connect Route 74 to Old Stafford Road and Old Post Road, respectively. Both roads allow two-way traffic with parking on the west side of the road.
- The intersection of Route 195 and Route 74 has confusing roadway geometry. Route 74 intersects Route 195 at an angle, enabling northbound Route 74 traffic to continue traveling smoothly without stopping. Route 195 is stop controlled at this intersection. Additionally, a stop-controlled access point for the north carriage road along the green is located in the intersection. The angle at which the roads intersect and the wide cross section of the intersection contribute to numerous conflicting turning movements and poor sight lines.
- There is a misaligned stop sign and stop bar at the intersection of the south carriage road along the green and Route 74. The stop sign is located several feet before the stop bar, which is located in the middle of the pavement next to an uncurbed parking area. Only by pulling up to the stop bar is it possible for a driver to see vehicles approaching westbound on Route 74. This arrangement makes the appropriate place to stop unclear.
- Route 195 has a steep grade at the southern terminus of the Village Center Zone. The grade decreases by approximately eight percent from Cider Mill Road to the beginning of commercial development just north of the interchange.

Access Management

The vast majority of curb cuts in this zone are associated with single-family residences, which generate and attract few trips per day. The frequency and width of existing curb cuts in this zone generally adhere to principles of good access management.

- There are a total of 19 curb cuts in this zone: 15 residential driveways and 4 non-residential driveways. The non-residential driveways correspond primarily to religious institutions and the municipal complex, uses with very specific peak periods and low turnover throughout the day.
- There are no excessively wide curb cuts (curb cuts over 35 feet wide).
- Three properties have two or more curb cuts providing multiple entrance and exit points from a single property. One of these properties is a church where the driveways serve separate but connected parking lots. The final property with multiple access points is residential with two single-family homes.

Pedestrian and Bicycle Mobility

This zone not only has the best pedestrian connectivity in the corridor—bluestone sidewalks, crosswalks and pedestrian stanchions, and period lighting—but the design of these pedestrian amenities enhances the character of the town green. Lacking in this zone, are any obvious bike amenities, such as bike routes, bike lanes, or bike parking facilities.
The Village Center Zone has the best pedestrian connectivity of all the zones in the corridor. Pedestrian facilities are not only present throughout the vicinity of the Tolland Green, but their design bolsters the village atmosphere. The sidewalks running along the building frontages on either side of the green are constructed of bluestone and is illuminated with period lighting.

There are multiple crosswalks on Route 195 and side streets in this zone, including a midblock crossing just south of the intersection with Route 74. The crosswalks near this intersection have yield-to-pedestrian stanchions to raise drivers' awareness of the pedestrian crossings.

Although this zone has the most extensive pedestrian facilities, there are not striped crosswalks at all pedestrian crossings. At the southern end of the Green a sidewalk leads from the Veterans of Foreign Wars Memorial south, but there is no crosswalk across Old Post Road.

Portland concrete sidewalk is only located south of the Green on the eastern side of Route 195 to the crosswalk at Old Cider Mill Road.

There is no pedestrian connectivity between the Village Center Zone and the Gateway Design District. Sidewalk from the Village Center Zone turns at Old Cider Mill Road and continues in the direction of Crandall Park.

There are no obvious bike amenities in this zone, such as designated bike routes, bike lanes, or bike parking facilities. Bicycle travel is accommodated in the existing roadway cross section, which is at its widest in the corridor near the Green. Although the roadway cross section is 36 feet wide, the shoulder is only 1 foot in the northbound direction and is a parking lane in the southbound direction. Lower traffic volumes in this zone will contribute to a more comfortable bicycling environment. South of the Green, the roadway narrows and traffic volumes increase, contributing to an inconsistent cycling experience.

Transit and Commuter System

No bus or shuttle service stops (e.g., local public transit, UConn, Greyhound, Peter Pan, etc.) or any other type of commuting facility at any location in this zone.

Urban Design

The Village Center Zone is the historic core of the Town of Tolland. The visual center of this district is the historic Town Green, which is still maintained as an open space and is still used today as public gathering place for events such as Farmer’s Markets and fairs. The district’s character derives largely from the churches and eighteenth and nineteenth-century residences that suggest an earlier time in American history. The historic character of the Town Green has been successfully protected and enhanced through many of the recommendations presented in the Report of the Tolland Green Steering Committee.

The Village Center has been placed on the National Register of Historic Places. The control of development, reuse of historical buildings, establishment of museums, preservation of historic amenities (e.g. bluestone walks, horse ties and carriage steps), and designation of the area as a National Historic District reinforce the Town Green’s historic character.

Uniform building setbacks bring the entrances to buildings close to the street, with large backyards, farmland or parking lots in the rear. Parcels are long and narrow, allowing only narrow side yards, bringing the buildings closer together.

Tree-lined sidewalks connect the building entrances for easy pedestrian access. The majority of the sidewalks in the historic district are made of bluestone, adding to the historic character. In some areas it was noted that special care has been taken to preserve the bluestone paths where asphalt driveways cross the path. In addition, period sensitive lamp posts are located along the sidewalks.

There is a mix of historic, religious, civic and residential buildings throughout the Village Center. In addition, there are various degrees of building types, architecture and details. Within the district a wide range of architectural types and styles is present, from the colonial era to the mid-20th century: Colonial, Federal, Greek and Romansque Revival, Italianate, Victorian, and Georgian. The Tolland County Courthouse at 53 Tolland Green, and the current home of the Tolland Historical Society, is listed individually on the National Register of Historic Places.

Dry-laid stone walls, and ornamental and picket fences in front of houses are some other landscape details that contribute to the character of the Village Green.

The Village Center is located at a topographical high point, allowing for views of the wooded hills outside of the district.

Landscape plantings include mature alleys of sugar maples, newly planted alleys of trees in the Green, large evergreens, and foundation plantings.

New plantings in the green and the recent integration of context sensitive signs (No Parking signs on the east side of the green) are successful outcomes from the design guidelines proposed by the Town Green Steering Committee. The integration of these guidelines can further aid in the preservation of the historic character of the district.

Overhead utility lines bisect the Town Green.

A large communications antenna is located adjacent to the Green, next to the County Jail Museum. The antenna is visible from the Green and from many areas within the district. The antenna detracts from the historic feel of the Village Center.

The gateways to the Village Center are not clearly defined.

The standard modern-day signage for pedestrian crossings or no parking zones is not fitting to the historic feel and detailing of the area.

Traffic volumes on Route 195 and lack of cohesive pedestrian network create a disconnect between the east and west sides of the Green.

Land Use

Land use in this zone is characterized by the historic residential uses located on the Town Green. A historic district designation and the Tolland Zone Code limit the possibility for new development or significant changes in land use.

According to the Tolland Zone Code, “The purpose of the Village Center Zone is to protect the traditional New England Village atmosphere of the existing residential, municipal, cultural and religious uses in the village green area.”

There are several key zoning regulations designed to maintain the character of the Green: uses are restricted primarily to single-family residential, civic, cultural, and religious; moderately large setbacks are required (40 feet from street line and 50 feet in rear; buildings...
can cover a maximum of 20 percent of a lot; minimum lot size of one acre and minimum buildable area of 19,000 square feet; one dwelling unit allowed per lot (plus an accessory dwelling unit).

- No vacant parcels abut the corridor, but there is one vacant 19-acre parcel directly behind parcels fronting the eastern side of Route 195. To conform with existing development in this zone, this parcel is envisioned as a possible location for municipal uses. This parcel would not have direct driveway access to Route 195, but it could be connected through new development in the Gateway Design District. It is not anticipated that this development will be a major traffic generator.

- The historic district surrounding the Tolland Green is on the National Registry of Historic Places. This designation places limits on the ability to introduce any new development or major expansions along Route 195. Any impact on the historic district requires approval from the Connecticut State Historic Preservation Office (SHPO).

- There are no new potential major traffic generator nodes planned for this zone.

- The Special Area Study for the Tolland Gateway/South Green Area primarily focused on the Transition Area in the Gateway Design District also addresses the southern end of the Village Center Zone. Action Area 3 in the Tolland Gateway/South Green Study covers south of Old Post Road. This action area calls for maintaining residential zoning and historic uses, but to allow for civic uses along Old Post Road.

Environmental

The primary environmental consideration in this zone is related to potential impacts to the historic district, which is on the National Registry of Historic Places. This designation provides the Green and the many historic buildings abutting Route 195 special protection. Any improvement made in the historic district will require permission from the SHPO.
Figure 5
Village Center Zone Transportation Overview
Route 195 Corridor
Tolland, CT

Legend
- Existing sidewalk
- Proposed pedestrian facility
- Existing crosswalk
- Opportunity for sharing or consolidating curb cuts
- Level of Service
- Project Segment Boundary
- ADT - Highest reported average daily traffic

- Few gaps for stopped traffic to access Route 74
- Confusing skewed intersection – Route 195 stop controlled
- Most extensive pedestrian facilities in corridor
- No pedestrian connection to commercial area
- 8 percent grade
- Speed Limit 30
- Speed Limit 35
- 2-lane 36’ cross section
- 12’ travel lanes
- 1’ shoulder
- 10’ parking lane
- Poor LOS during the morning peak period
- Traffic volume (ADT) is 9,300 vehicles per day
- Speed changes between 35 mph and 30 mph
Figure 6
Village Center Zone Land Use Overview
Route 195 Corridor
Tolland, CT

Legend
- Traffic Signal
- Project Segment Boundary
- Historic District
- Parcel Boundary
- Waterbody
- Wetland
- Aquifer Protection Area

Zone
- Residential Design (RDD)
- Village Center (VCZ)
- Gateway Design (GDD)
- Neighborhood Commercial (NCZ)

Historic district on National Register of Historic Places
Historic character of Town Green does not support major new development
Action Area 3
- Low-density residential and historic uses
Envisioned as municipal development
Wide range of architectural styles from colonial period to mid-20th century
Historic pedestrian amenities (bluestone sidewalks, period lighting) contribute to historic character
Landscape plantings include mature alleys of sugar maples, newly planted alleys of trees in the Green, and foundation plantings.
Figure 7
Village Center Zone Existing Condition Summary
Route 195 Corridor
Tolland, CT

Legend
- Existing sidewalk
- Proposed pedestrian facility
- Existing crosswalk
  - Opportunity for sharing or consolidating curb cuts
  - Traffic Signal
  - Project Segment Boundary

- Potential municipal development site
- Confusing roadway geometry contributes to poor LOS on Route 195
- Misaligned stop sign creates potential conflict between motorists and pedestrians
- Strong pedestrian network could benefit from additional or enhanced crosswalks
- No pedestrian connectivity to commercial area
- Morning school traffic affects the operation of this intersection
- Existing zoning regulations have successfully protected the character of the Town Green area
**Gateway Design District**

The Gateway Design District is intended to manage the retail and service growth naturally stemming from the Interstate 84 interchange. This zone accepts the largest single user developments, but has required any new development to undergo an architecture design review process since 2000 to ensure consistency with the development character of the town. There is significant interest in developing parcels in proximity to the interchange, which could add major traffic generators to this zone. A legacy of strip retail development in this zone has resulted in very few pedestrian amenities, although new sidewalks and crosswalks are starting to appear in conjunction with new development. As the gateway to the Town, the University of Connecticut, and interchange services this zone has the highest recorded traffic volume (segment of roadway just south of Interstate 84). A planned roadway improvement (ConnDOT project number 142-146) will widen Route 195 south of the interchange to three lanes to reduce congestion. Traffic operations in this zone are also affected by the misaligned intersection at Rhodes/Goose and Route 195, which has a high rate of reported accidents. There is a Connecticut Department of Transportation park-and-ride facility located in this zone just north of the interchange, the only commuter facility in the corridor.

Although this land-use zone spans both sides of the interchange, there are important differences between the segments north and south of Interstate 84. The northern segment acts as a transition to the historic town green area, whereas the southern segment serves as the gateway to UConn. Therefore, analysis of this zone is presented as two segments—Transition Area and Interchange/Commercial Area—when necessary. The transportation and land use issues described below are summarized in Figures 8 through 10.

**Traffic Operations**

The two roadway segments—one north (Transition Area) and one south (Interchange/Commercial Area) of Route 195—function separately in terms of traffic. Traffic volumes through the Transition Area reflect the lower number of vehicles traveling toward the Town Green, whereas the Interchange/Commercial Area has the highest traffic volumes in the corridor due to the access it provides to UConn. In this zone, some operational issues are anticipated to be addressed through a roadway widening project in the Interchange/Commercial Area. The major operational issue left unaddressed is the misaligned intersection of Rhodes/Goose and Route 195 where there are several reported crashes.

- In the Interchange/Commercial Area there are 21,800 vpd south of the interchange and 12,400 vpd north of the interchange.
- The average vehicle speed is 34 mph with an 85th percentile speed of 42 mph.
- There are four signalized intersections in this zone; all but one operate at a LOS C or higher. Only the intersection at Fieldstone Commons operates at LOS D during weekday afternoons. Signal optimization may be able to address this issue.
- Traffic associated with University of Connecticut (UConn) events has significant impacts on the traffic operations of the Interstate 84 eastbound off ramp as well as southbound Route 195. The congestion associated with vehicles attempting to access the UConn campus during a short time period results in traffic backing up on eastbound Interstate 84 and southbound Route 195. A planned roadway improvement—widening Route 195 from two lanes to three from the interchange to the intersection of Rhodes/Goose and Route 195—is anticipated to improve traffic flow south when traffic volumes spike.
- The intersection of Rhodes/Goose at Route 195 has a relatively high rate of reported crashes (22 reported crashes in the three year period between January 2004 and December 2006). There are several conditions at this intersection that could affect its operation. The alignment of Rhodes Road and Goose Lane are offset, contributing to confusion regarding which turning movement has the right of way. There are also numerous open curb cuts to parcels adjacent to the intersection (gas stations with three curb cuts each on two of the corners) creating opportunities for multiple turning movements to and from Route 195. The advisory committee has also suggested that this intersection is used by many new drivers (students en route to the high school).

- There were 12 crashes reported during the three-year study period between the ConnDOT park-and-ride and Cider Mill Road. Many of these related to turning or angle type crashes.
- Travel-time runs did not indicate any significant main-line traffic operational issues south of the interchange to the intersection of Rhodes/Goose and Route 195. In the southbound direction, average travel times of 59.4 seconds (26 mph) during the morning peak and 48.6 seconds (30 mph) during the afternoon peak were observed. In the northbound direction, average travel times of 42.0 seconds (35 mph) during the morning peak and 49.2 seconds (31 mph) during the afternoon peak were recorded.

**Roadway Geometry**

The roadway cross section varies considerably in this zone. The segment north of the interchange handles lower traffic volumes and has two 12-foot travel lanes. The roadway segment south of the interchange is planned to have two southbound travel lanes and one northbound travel lane to accommodate nearly twice the traffic volume.

- The posted speed limit for Route 195 throughout the entirety of the Gateway Design District is 35 mph.
- The cross section of the roadway in this zone varies: it is narrower north of the interchange and wider south of the interchange. In the Transition Area, the total cross section is 28 feet to 30 feet, with a 12-foot travel lane in each direction and a 2-to-3-foot shoulder on each side. In the Interchange/Commercial Area, the proposed roadway cross section will be 50 to 56 feet wide, with three 12-foot travel lanes (two southbound and one northbound) and 4-foot shoulders. The differences in these cross sections conform to the differences in the traffic volumes handled by each of these segments of Route 195.
- Route 195 has a steep grade at the northern terminus of the Gateway Design District. The grade decreases by approximately eight percent from Cider Mill Road to the beginning of commercial development just north of the interchange.
- In this zone, sightline issues are limited to the Crossen property driveway, immediately south of Fieldstone Commons. This driveway is planned to be realigned as part of the Route 195 widening project, which will address this issue.
Access Management

The Gateway Design District has many opportunities to improve access management. The majority of curb cuts in this area are associated with commercial land uses, which attract a high volume of trips. Reducing the frequency and width of curb cuts will help reduce potential turning conflicts with vehicles and pedestrians.

- There are a total of 23 curb cuts in this zone: 20 commercial driveways and 3 residential driveways. Commercial driveways attract higher volumes of traffic than residential driveways, meaning there will be more friction on the main line in this zone from cars entering and leaving commercial driveways.
- There are ten driveways with curb cuts in excess of 40 feet wide (ranging from 40 feet to 70 feet).
- Eight properties in this zone have two or more curb cuts providing multiple entry and exit points from the same property. Two gas stations each have three curb cuts.
- In proximity of the Rhodes/Goose and Route 195 intersection and the eastbound Interstate 84 ramps, there are several driveways in close proximity to traffic signals, creating additional conflicting turning movements.
- There are opportunities to reduce the frequency of curb cuts through consolidating access points to single properties and sharing driveways between properties. There are also opportunities to reduce driveway cross sections to create more predictable entry and exit lanes.

Transit and Commuter System

Transit and commuter services are restricted to a ConnDOT park-and-ride lot that serves as a formal and informal meeting place for carpools. No bus or shuttle services stop at this lot or any other location in the zone.

- ConnDOT operates a commuter park-and-ride lot within the Interstate 84 right of way. The park-and-ride has a parking capacity of 140 spaces. A recent ConnDOT survey of the facility found that 68 percent of the spaces were used, a 125 percent increase from 2005. In addition to informal carpooling at this lot, it is an official meeting point for the Easy Street carpool program.
- No bus or shuttle service stops at the park-and-ride or at any other location in this zone (e.g., local public transit, UConn, Greyhound, Peter Pan, etc.).
- The recently completed Busway East study does not currently plan to extend Hartford commuter bus service to Tolland. The study does identify the Exit 68 park-and-ride as a possible future destination for bus service if it were ever extended.

Pedestrian and Bicycle Mobility

Pedestrian facilities are relatively limited in this zone, but where they do exist they provide good connectivity along Route 195 and to the Fieldstone Commons development. There are no obvious bike facilities in the Gateway Design District.

- There are no pedestrian facilities connecting the Gateway District and the town green.
- There are no pedestrian facilities between the park-and-ride and adjacent businesses, such as paths, sidewalks, or crosswalks. Access to the Dunkin Donuts is further impeded by a chain-link fence running along the perimeter of the park-and-ride. The park-and-ride does have a wooden shelter with a bench for pedestrians to wait.
- Sidewalk facilities are limited to the western side of Route 195 from the development north of the interchange across the overpass and through the Fieldstone Commons property. With the exception of a short piece of disconnected bituminous sidewalk in the Transition Area, all sidewalk is constructed from Portland Concrete, starting just north of the interchange.
- Striped pedestrian crosswalks are only located at the intersection of Route 195 and Fieldstone Commons. There are no crosswalks connecting the existing sidewalk across the interchange ramps.
- There is good pedestrian connectivity in the vicinity of the Fieldstone Commons development, a result of the architecture design review process. These pedestrian facilities include sidewalks along Route 195 and sidewalks from Route 195 to the development.
- There are no obvious bike amenities in this zone, such as designated bike routes, bike lanes, or bike parking facilities. Bicycle travel is accommodated in the existing roadway cross section. In the Transition Area, the minimal shoulder widths (2 to 3 feet), steep grade

Urban Design

The Gateway Design District contains a mix of multi-tenant and single standing commercial and retail structures. Retail facilities, food services, gas stations, and other services make up the majority of the occupants in the Gateway Design District.

- The district is bisected by Interstate Highway 84. This district is very visible from Interstate 84 and to people entering and leaving Tolland as it contains the exit and entrance ramps for Interstate 84.
- Design guidelines that were adopted as part of the zoning code encourage site development consistent with “character of the Town.” The design details at Fieldstone Commons and Dunkin Donuts, including stone walls, plantings, and pedestrian amenities, reinforce the “Gateway” image.
- The location of parking behind retail facilities at Dunkin Donuts and Fieldstone Commons helps screen parking and brings businesses closer to the street. This placement is consistent with the placement of parking away from the street in the Village Green.
- There is inconsistent visual character, architecture, landscaping, and setbacks for older developments within the Gateway District.
- There is no consistent treatment of the public realm elements within the Route 195 public right-of-way to visually unify the Gateway zone (i.e. sidewalks, crosswalks, lighting, plantings, etc.).
- The visual impact of “Subway” building from Interstate 84 and ramp does not reinforce desired “Gateway” character.
There are poor pedestrian connections throughout the Gateway District.

**Land Use**

The Gateway Design District is home to the majority of the corridor’s retail development. Based on the zone’s proximity to the Interstate 84 interchange, there has been interest expressed in additional development from large-format retailers and hotels. Tolland’s Zone Code and the recently completed Tolland Gateway/South Green Area Study are designed to ensure that any new growth in the zone conforms to the Town’s vision and its existing character.

- According to the Tolland Zone Code, the goal of the Gateway Design District is to “promote compact commercial development having scale and form consistent with the natural landforms of the site and the character of the Town.”

- The location of the Interstate 84 interchange in this zone makes it the most desirable location for new development. There is one large undeveloped parcel (15+ acres) abutting Route 195. There is also considerable amounts of vacant land in the proximity of the interchange that does not directly front the corridor. All four quadrants surrounding the interchange have the potential for development or redevelopment.

- Older retail developments in this zone may no longer be the highest and best uses for desirable development locations. Many of these developments conform to typical strip-mall patterns, with parking in front, low architectural standards, and poor pedestrian connections. Redeveloping these parcels may attract a diverse range of retail tenants.

- The Gateway Design District has the most existing development demand of any zone in the study area. Developers have expressed interest primarily in constructing large-format retail space and a hotel. Two major factors have prevented these types of developments from locating in Tolland: the compatibility of these new uses with an existing adult entertainment use and development restrictions in the Tolland Zone Code.

- The Tolland Gateway/South Green Area Study addresses appropriate uses and development forms for the Transition Area, an area stretching north of the interchange to the southern end of the Village Center Zone. This plan breaks the Transition Area into three action areas and identifies the type and intensity of uses envisioned for each area, starting with the most intense use near the interchange and gradually transitioning to less intense uses that mirror the character of the Green. Action Area 1 is intended to have higher density mixed-use retail, restaurant, and services near the interchange. Action Area 2 is envisioned to have moderate density multi-family and office uses. Action Area 3 is planned to maintain residential zoning and historic uses.

- This zone is anticipated to add two to three potential major traffic generator nodes to the corridor. Between the Tolland Gateway/South Green Area Study and expressed development interest, this zone might attract a mixed-use development, large-format retail, and a hotel in the future.

**Environmental**

The Skungamaug River and the Tolland Marsh contribute to the significant amount of wetlands located in this zone, which restricts development potential of several vacant parcels. There are also significant portions of land covered by Aquifer Protection Areas, which prohibit certain types of development.

- The Skungamaug River runs along the south side of Interstate 84 in the study area. This river and the Tolland Marsh contribute to significant wetlands in the Gateway Design District. Wetlands are in the vicinity of each quadrant surrounding the interchange except the northeast. In the southeast quadrant, wetlands appear to cover all of the undeveloped land abutting Route 195. The locations of water resources and wetlands will have a significant impact on the potential for development in this zone.

- There are also large portions of land not covered by water or wetlands that fall in an Aquifer Protection Area. Aquifer Protection Areas have restrictions on the type and quantity of development that can take place near important water resources. Developing land in an Aquifer Protection Area is possible, but requires additional considerations.

- The Gateway Design District has one historic property located directly across from Fieldstone Common Dr. The property is not listed on the National Registry of Historic Places, but it was built over 50 years ago, which will require any impact to the property to undergo the State Historic Preservation Office (SHPO) process.
Figure 8
Gateway Design District Transportation Overview
Route 195 Corridor
Tolland, CT

Traffic volumes (ADT) decrease to 12,500 vehicles per day (vpd) north of I-84

ConnDOT Park-and-Ride lot with 140 spaces

8 percent grade

2-lane 28'-30' cross section
-12' travel lanes
-1'3' shoulders

Numerous parcels with multiple curb cuts

Existing pedestrian sidewalk on bridge

Crosswalks and extensive pedestrian facilities in vicinity of Fieldstone Commons

Highest traffic volumes (ADT) in corridor - 22,000 vehicles per day

Widthening project will create a 3-lane 50'-56' cross section
-12' travel lanes
-4' shoulders

Legend

- - Existing sidewalk
- - Proposed pedestrian facility
- - Existing crosswalk
- - Opportunity for sharing or consolidating curb cuts

Level of Service

AM/PM

- Project Segment Boundary
- ADT - Highest reported average daily traffic

Speed Limit 35
Numerous curb cuts near intersection
Figure 9
Gateway Design District Land Use Overview
Route 195 Corridor
Tolland, CT

Planimetrics Study Area

Action Area 3
- Low-density residential and historic uses

Action Area 2
- Moderate-density multi-family and office uses

Action Area 1
- High-density mixed use retail, restaurant, and services

Potential for campus-type office or other development

No consistent treatment of right-of-way – sidewalks, lighting, plantings, etc.

Significant wetlands on potential development properties

Development interest in a hotel in proximity to the interchange

Development interest in large-format retail

Potential redevelopment opportunity

Design guidelines encouraged development at Fieldstone Commons to be consistent with the town character

Wetlands and Aquifer Protection Zone associated with Skungamaug River

Legend
- Traffic Signal
- Project Segment Boundary
- Waterbody
- Wetland
- Aquifer Protection Area
- Parcel Boundary
- Zone
  - Residential Design (RDD)
  - Village Center (VCZ)
  - Gateway Design (GDD)
  - Neighborhood Commercial (NCZ)
Figure 10
Gateway Design District Existing Condition Summary
Route 195 Corridor
Tolland, CT

Steep grade induces high speeds in southbound direction

Underused park-and-ride lot with no bus or shuttle service

Potential for multiple major traffic generators in proximity to the interchange

Skungamaug watershed is an important town resource

UCConn event traffic causes congestion

No pedestrian connection to residential area

Fairly good LOS throughout zone (non-event and excluding intersection at Fieldstone Commons Dr.)

Offset intersection with multiple wide driveways complicates operations

Lack of crosswalks connecting existing sidewalks

Managing curb cut frequency and width may help reduce crashes and improve operations on this roadway segment

No pedestrian connection to Town Green

Lower LOS during weekday evening due to shopping trips

Design guidelines helping improve development quality and pedestrian facilities
Neighborhood Commercial Zone

The Neighborhood Commercial Zone consists of smaller-scale developments—primarily offices—that provide a transition to more residential areas south of the study area. This zone has the greatest amount of vacant land abutting the corridor, which contributes to the rural character of this segment of Route 195. A combination of building setbacks and undeveloped land has resulted in no pedestrian amenities (sidewalks, crosswalks, etc.) in this zone. The majority of the traffic heading south from the interchange flows through this zone creating operational issues at the unsignalized intersection of Anthony/Baxter and Route 195, especially during UConn events. The transportation and land use issues described below are summarized in Figures 11 through 13.

Traffic Operations

The heavy traffic volumes observed in the Interchange/Commercial Area largely continue through the Neighborhood Commercial Zone. This high volume of traffic makes it difficult for vehicles to access the main line from the side streets at the intersection of Anthony/Baxter and Route 195.

- The Neighborhood Commercial Zone registered a traffic volume of 17,700 vpd.
- The average vehicle speed is 40 mph with an 85th percentile speed of 48 mph.
- There is one unsignalized intersection in this zone located at Anthony/Baxter and Route 195. The main line operates through this intersection without any problems (LOS A), but the side streets have trouble feeding vehicles onto Route 195. Both the Anthony Road and Baxter Street approaches operate at LOS E during the morning peak and LOS F during the afternoon peak. Traffic operations at this intersection are especially bad for the side streets during UConn events.
- The segment of Route 195 between Rhodes Road/Goose Lane and Anthony Road/Baxter Street had 61 recorded crashes during the three-year study period. Over half of these were rear-end crashes. Within this roadway segment, crashes were particularly clustered in the northbound direction just north of the intersection of Route 195 and Anthony Road/Baxter Street. A combination of factors likely contributes to this high crash rate in the northbound direction on this segment of Route 195: the speed limit drops from 40 mph to 35 mph, the observed 85th percentile vehicle speed is 51 mph, there are no traffic controls on the main line in this zone, this segment of roadway transitions from a rural roadway to a commercial area, and there is a consistent downgrade on the roadway. In the northbound direction, the transition from a rural roadway to a commercial area is most prominent just north of Anthony Road/Baxter Street, where vehicles are traveling at high speeds, there is a sudden increase in commercial driveways, and there are limited visual cues that a vehicle is entering a commercial area resulting from minimal signage and buildings with large setbacks.
- Travel-time runs did not indicate any significant main-line traffic operational issues in this zone. In the southbound direction, average travel times of 81.6 seconds (41 mph) during the morning peak and 86.2 seconds (38 mph) during the afternoon peak were recorded. In the northbound direction, average travel times of 79.8 seconds (36 mph) during the morning peak and 94.2 seconds (36 mph) during the afternoon peak were recorded.

Access Management

The Neighborhood Commercial Zone provides good examples of access management. Despite the presence of numerous commercial driveways, the frequency and width of curb cuts has largely been kept to a minimum. There are still a few opportunities to reduce multiple curb cuts for single properties and excessively wide curb cuts.

- There are a total of 23 total curb cuts in this zone: 13 commercial driveways and 10 residential driveways. This balance between commercial and residential driveways suggests that although there is the same total number of curb cuts as the Gateway Design District, there will be fewer issues associated with vehicles accessing driveways in this zone.
- There are two driveways over 40 feet wide (50 feet and 55 feet).
- Three properties have two or more curb cuts, one of which is a gas station with three curb cuts. All three of these properties are located at the southern terminus of this zone.
- This zone provides several examples of good access management. The majority of the commercial office buildings located here have a single access drive and some buildings share access drives. Minimizing the number of access points along Route 195 helps reduce potential turning conflicts.

Pedestrian and Bicycle Mobility

There are no pedestrian facilities or obvious bike amenities in this zone. The rural nature of the roadway in this area makes it an unlikely place to attract pedestrian trips.

- There are no pedestrian facilities—sidewalks and crosswalks—located in the Neighborhood Commercial Zone.
- There are no obvious bike amenities in this zone, such as designated bike routes, bike lanes, or bike parking facilities. Bicycle travel is accommodated in the existing roadway cross section, primarily the 3-4 foot shoulder. The combination of minimal shoulder width, steep grades, heavy traffic volumes and high travel speeds will affect bike travel.

Roadway Geometry

The roadway in this zone is relatively consistent, with a 32-foot total cross section and two 12-foot travel lanes. This rural segment of Route 195 has the highest posted speed limit (40 mph) in the corridor.

- The posted speed limit through the majority of the Neighborhood Commercial Zone is 40 mph. The speed limit changes from 35 mph to 40 mph just south of the intersection of Rhodes/Goose and Route 195.
- The roadway cross section is generally consistent along this segment of the corridor. The total cross section width is 32 feet, with a 12-foot travel lane in each direction and a 4-foot shoulder on either side. The cross section narrows slightly for a short distance in the northern portion of this corridor segment, measuring 30 feet across with shorter shoulders.
- Through this zone there is an average of a 4-percent grade elevating in the southbound direction. Certain segments of the roadway have a steeper grade, particularly the crest curve just south of the intersection of Route 195 and Rhodes Road/Goose Lane.
Transit and Commuter System

No bus or shuttle service stops at any location in this zone (e.g., local public transit, UConn, Greyhound, Peter Pan, etc.) or any other type of commuting facility.

Urban Design

The Neighborhood Commercial Zone consists of smaller-scale developments—primarily offices—that provide a transition to more residential areas south of the study area. Lower density development, vegetated vacant land, and greater building setbacks within this zone contribute to its rural character.

- Setbacks and landscaped buffers for commercial buildings such as the USDA and NERAC properties enhance the rural road character.
- Dense vegetation along Route 195 lends to rural character.
- Mixed use of residential and retail/commercial sites in the east portion of the district is successful. Design guidelines would help maintain a consistent treatment within this area.
- There are no design guidelines established in the zoning code to encourage consistent site developments to help maintain the rural character.
- There are no pedestrian connections or amenities to connect residents with commercial/retail resources within this district.

Land Use

The Neighborhood Commercial Zone is the primary location of office space in the Corridor. This zone has the largest amount of vacant acreage abutting Route 195. Future development in this zone is conceived of as a network of small office buildings, which combined could act as a new major traffic generator for this zone.

- According to the Tolland Zone Code, “The purpose of the Neighborhood Commercial Zone is to provide for smaller scale, less intense commercial/office uses which will serve as a transition to residential areas.”
- There are several key zone code regulations designed to ensure compatible commercial development near residential areas: a diverse mix of non-residential uses are allowed; no single retail use can exceed 32,000 square foot; uses greater than 20,000 square feet require a special permit; residential uses are only allowed as part of a mixed-use development with a special permit; drive-through developments (except banks) are prohibited; lots are required to be a minimum of one acre and have a maximum lot coverage of 50 percent.
- This zone has the greatest absolute acreage available for development. There are two large undeveloped parcels (15+ acres) abutting the corridor. There are also several smaller parcels that could be developed or assembled as part of larger development projects.
- A new sewer extension running along Route 195 for the majority of this zone is in the approval process. Providing municipal utilities could spur additional development in the Neighborhood Commercial Zone.
- There is an expressed desire to increase the amount of “incubator” office space in this zone. Existing tech businesses with connections to UConn have located in this zone and require more office space as they grow and attract other businesses.

There is potential for one additional major traffic generator node in this zone in the way of 60,000 to 100,000 square feet of small office development.

Environmental

The presence of wetlands in this zone appears to be the primary environmental consideration. Wetlands potentially restrict the available land for development on several parcels. Additionally, wetlands proximity to Route 195 could have implications for any improvements made to the roadway.

- Wetlands appear to be located on or near most vacant parcels. The wetlands appear to cross Route 195 in two locations and are adjacent to the roadway in a third location. The locations of water resources and wetlands will have a significant impact on the potential for development in this zone.
Figure 11
Neighborhood Commercial Zone Transportation Overview
Route 195 Corridor
Tolland, CT

Legend
- Existing sidewalk
- Proposed pedestrian facility
- Existing crosswalk
- Opportunity for sharing or consolidating curb cuts

Level of Service
AM/PM - Project Segment Boundary
ADT - Highest reported average daily traffic

Multiple wide curb cuts
Traffic volume (ADT) is 18,000 vehicles per day
No transit or commuter facilities in zone
Average of 4 percent grade
Multiple wide curb cuts near intersection
Traffic volumes, high speeds, and nominal shoulders impact bicycle travel

Speed Limit
35
35 mph
40 mph

Crest curve with steep grade
No pedestrian facilities in zone
2-lane 32’ cross section
- 12’ travel lanes
- 4’ shoulders

Poor LOS for side streets (Anthony Rd. and Baxter St.)

Commercial/Neighborhood Area

North
Figure 12
Neighborhood Commercial Zone Land Use Overview
Route 195 Corridor
Tolland, CT

Legend

- Traffic Signals
- Parcel Boundary
- Waterbody
- Wetland
- Aquifer Protection Area

Zone
- Residential Design (RDD)
- Village Center (VCZ)
- Gateway Design (GDD)
- Neighborhood Commercial (NCZ)

Potential redevelopment opportunity

Envisioned for incubator office pod development

Setbacks and landscaping enhance rural road character

Sewer extension could spur additional development

Steep topography limits development potential

Greatest amount of vacant land in the corridor is in this zone

No design guidelines to encourage consistent site development

Wetlands adjacent to Route 195

Wetlands limit development potential of vacant parcels

Envisioned for incubator office pod development

Dense vegetation contributes to rural character

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DRAFT Route 195 Existing Conditions
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Figure 13
Neighborhood Commercial Zone Existing Condition Summary
Route 195 Corridor
Tolland, CT

Legend
- Existing sidewalk
- Proposed pedestrian facility
- Existing crosswalk
- Opportunity for sharing or consolidating curb cuts
- Traffic Signal
- Project Segment Boundary

Desire to increase incubator office space
Generally good access management - single-point driveways
Rural characteristics inconsistent with pedestrian travel
Change in speed and downgrade may contribute to high crash rate at a crest curve
LiConn events have impacts on traffic
Generally consistent cross section
One potential new major traffic generator
Heavy traffic volumes on Route 185 degrade the LOS for side streets (Anthony Rd. and Baxter St.) at this unsignalized intersection

Commercial/Neighborhood Area