



ROUTE 146 CORRIDOR MANAGEMENT PLAN

# Route 146 CMP – Existing Conditions Update

Towns of Branford and Guilford, CT

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# 1

## Introduction

Connecticut Route 146 stretches 13 miles from Route 1 (North Main Street) in Branford to the intersection to Route 1 (Boston Post Road) in Guilford. It is a unique and scenic road connecting Branford and Guilford with the coast of the Long Island Sound. Visitors can see historic homes, wildlife habitats, and scenic views by walking, biking, or driving. The low-speed, winding roads are a pleasant and calming travel experience compared to Route 1 or Interstate 95.

Many places along the road are listed as Designated Historic Resources on State and National Registers. The Route 146 Historic District runs between Flat Rock Road in Branford and Water Street in Guilford, and the corridor runs through three more Historic Districts: the Branford Center Historic District, the Stony Creek – Thimble Islands Historic District, and the Guilford Historic Town Center. In 1990 Route 146 was made a State Scenic Road from Eades Street in Branford to the end of the road in Guilford at Route 1.

A Corridor Study for Route 146 was initiated by the South Central Regional Council of Governments (SCRCOG) in 2019, and an existing conditions report was published in early 2021. During the Corridor Study public engagement efforts, it was requested that a holistic and comprehensive review of the corridor was needed due to the many historical, cultural and environmental resources along the route. Subsequent to the completion of the Existing Conditions report, the Connecticut Department of Transportation (CTDOT) initiated the Corridor Management (CMP) study. The CMP process was considered a more appropriate study to understand Route 146's unique qualities and character in the process of reviewing safety in the corridor.

This document was created to update the Existing Conditions Report for Route 146, dated July 31, 2021. The Route 146 CMP will develop a plan for the future of the corridor and any improvements made to it, working to preserve the historic and environmental character of the scenic roadway. The purpose of this document is to review known/identified changes or updates that were made to the corridor in the time between the issuing of SCRCOG report and the initial development of the CMP. The update to the existing conditions covers the following areas:



- › Field Data & Roadside Development
- › Safety Data
- › Traffic Volumes, Speeds, and Vehicle Classification
- › Land Use
- › Historical and Cultural Environment
- › Inland/Coastal Wetlands & Flooding Risk
- › Scenic Highway Aesthetics, State and Federal Scenic Highway Programs

New information was collected by the CMP Study Team related to the above items that are discussed on the next sections of this memorandum.

Items from the previous Existing Conditions Report that are not updated in this document include: intersection sight distance, roadway geometrics, traffic operations, roadway over/underpasses and culverts, and pedestrian, bicycle, and transit facilities. These items were not updated based upon an understanding that there are no known changes since the SCRCOG report was produced.

# 2

## Existing Conditions Update

This chapter summarizes the update to the existing conditions as the first piece of completing the Route 146 Corridor Management Plan.

### 2.1 Field Data and Roadside Development

VHB staff collected information about municipal projects, state projects, land development projects, and roadway improvements that have been recently completed, are upcoming, or are underway in Branford and Guilford that are on or around the Route 146 corridor. Staff were particularly concerned about any projects or plans that may significantly impact the character and aesthetics of the roadway or access to the road for vulnerable users (people biking and walking). The following sections are displayed by town.

#### Town of Branford

1. **Branford Connector Study:** In 2018 SCRCOG released the final report on the Branford Connector Corridor Study. The purpose of this study is to improve the vehicular accessibility between I-95 at Interchange 53, Commercial Parkway, and US Route 1, and to look at improving pedestrian circulation throughout the study area, stimulating economic growth along Commercial Parkway, and improving roadway safety and reducing crashes. The final report on this study recommended Alternative 2, which makes changes to how the Branford Connector intersects Route 1 and also realigns Route

146/Main Street with Route 1. SCRCOG is currently working with CTDOT on the next steps for this project.

Figure 1 Branford Connector Alternate 2



Source: 2018 Branford Connector Study

2. **Limewood Ave/Route 146 Seawall Replacement:** CTDOT completed improvements to the seawall along Limewood Ave between Sybil Avenue and Waverly Road in mid-2022 under Project #0014-0186. The project involved the replacement of the existing wall, roadway reconstruction, drainage improvements and pedestrian safety improvements. New sidewalks were constructed on the seawall side of Route 146 and curb ramps added at the crosswalks at Wilford Road and Waverly Road.



**Figure 2** Limewood Ave new sidewalk and sea wall



Source: VHB

3. **Sybil Creek Bridge Replacement:** Route 146/S. Montowese Street crosses Sybil Creek near the intersection with Linden Ave. Under Project #0014-0177, CTDOT is currently replacing the bridge over the creek with construction expected to be complete fall 2022. This project will include the installation of sidewalks on both sides of the bridge and will include a crosswalk at the southern end of the project limits, crossing Route 146. The project will also include the realignment of Linden Avenue to improve its approach to Route 146. The estimated cost of this project is \$4,950,015.
4. **Branford Housing Authority Project at Parkside Village I, 115 S Montowese St:** The Branford Housing Authority is redeveloping and constructing new affordable housing units at its existing Parkside Village I location at 115 South Montowese Street. Construction began on the project in September 2022. The construction will allow the units to comply with ADA standards. Entry and existing driveways and sidewalk modifications are expected as part of this project. Construction is expected to be complete in December 2023 with additional site work completed in spring 2024.
5. **Shoreline Greenway future plans:** The Shoreline Greenway Trail is a project to build a multi-use trail for pedestrians and bicyclists and to connect communities in a 25-mile corridor from New Haven to Madison. The trail is in on-going development. In 2018, a section of the trail was opened between Tabor Drive and Pine Orchard Road. The Shoreline Greenway Trail is planned to continue further west from the existing terminus at Tabor Drive to Indian Neck Avenue, potentially along the Branford River on the northern bank. Currently, part of the trail is under construction in East Haven from Coe Avenue and Cosey Beach Avenue to the former DC Moore school on Eliot Street under state project



43-129. Additionally, the City of New Haven was awarded \$7 million in federal earmark funding to extend the trail from the East Haven/New Haven border to the Farmington Canal Heritage Trail connection in New Haven. Finally, the Town of Madison has an \$800,000 federal earmark to extend the trail further through Hammonasset Beach State Park, with the project currently in pre-design.

6. **Branford Road Safety Audit:** A Road Safety Audit (RSA) along Route 146 from the Branford River to Limewood Ave in Branford was completed in May 2022. The audit was completed through CTDOT's Community Connections Program and included an assessment of safety and pedestrian and bicycle accessibility issues in this section of the corridor. The RSA provided several recommendations for improving safety and accessibility along this section of the corridor, including new sidewalks and crosswalks, further study of intersection control at Linden Avenue, access management, and shared-lane markings for bicycles.
7. **Main Street reconstruction:** The Town of Branford is embarking on a reconstruction project for Main Street from South Main Street (Route 146) to Chestnut Street within the existing roadway width from curb to curb. New streetscape features will be included in the project, with sidewalk, lighting, and street furniture upgrades being incorporated into the design. Utility work has been underway to replace aging infrastructure. Although this project is not expected to have a direct impact on Route 146, one of the goals is to reverse the Town Hall driveway, which may impact traffic flows in the area. The project is funded by Local Transportation Capital Improvement (LOTICIP) funding.

**Figure 3 Sybil Creek Bridge replacement near Linden Ave (as of February 2023)**



Source: VHB

8. **New sidewalks on Route 1 at Chase Bank/Aldi:** In 2022 sidewalks were constructed on Route 1 just south of the Route 146 intersection. They were constructed along the frontage of a new Chase Bank/Aldi grocery store development as a requirement for their planning and zoning approvals.
9. **Atlantic Wharf Development:** A mixed-use development has been proposed and has planning approval along Meadow Street between Church Street and Route 146/S. Montowese Street in Branford. The project is currently on hold pending legal issues with the project. However, the project, once completed, is expected to include new sidewalks on Route 146 and crosswalks at Pine Orchard Road.
10. **Amazon last-mile facility on Commercial Parkway:** An Amazon last-mile facility was approved by the Branford Planning & Zoning Commission in spring 2022 at 81-111 Commercial Parkway off I-95 Exit 53, across from the Route 1/Route 146 intersection. However, shortly after it was reported that Amazon was backing away from moving ahead with this facility. Local concerns centered around traffic impacts from van delivery operations. At the time of this writing, it does not appear this proposal is moving forward.

**Figure 4 & 5** Rendering of Parkside Village proposed design (left); Parkside Village renovation underway (right)



Source: Branford Housing Authority, VHB

11. **CTDOT Traffic Signal Safety Improvements:** CTDOT Project #0173-0500 has a location in the area at the intersection of Route 146/Main Street at Kirkham Street/Monroe Street in Branford. According to the CTDOT map of active projects, this includes removal of the nighttime flashing operation and associated improvements at state-owned and maintained traffic signals in District 3 to reduce crashes. This project is in pre-development.
12. **Not in CT-Core:** CTDOT has Project #0310-0072 along the entirety of Amtrak rail corridor in Guilford and Branford. According to the CTDOT map of active projects, this includes passenger information display systems (PIDS) installation and connectivity along the Shore Line East Line and the Hartford Line. This project is currently in the planning phase.
13. **Recent Housing Developments:** Field reviews identified at least two new housing developments of significance along Route 146 in Branford. The Branford Warner House at 265 Pine Orchard Road was recently torn down and a new house is being constructed. This property is at the corner of Pine Orchard Road and Blackstone Ave, and land disturbance has resulted in much of the vegetation near the road being removed at the southwest side of the intersection. Another new development is at 87 Stony Creek Road, which has cleared land in a wooded area off the road and has added a new driveway on this part of Route 146.



Figure 6 & 7 Branford section of the Shoreline Greenway Trail (left); Tabor Drive entrance in Branford (right)



Source: Shoreline Greenway Trail; VHB

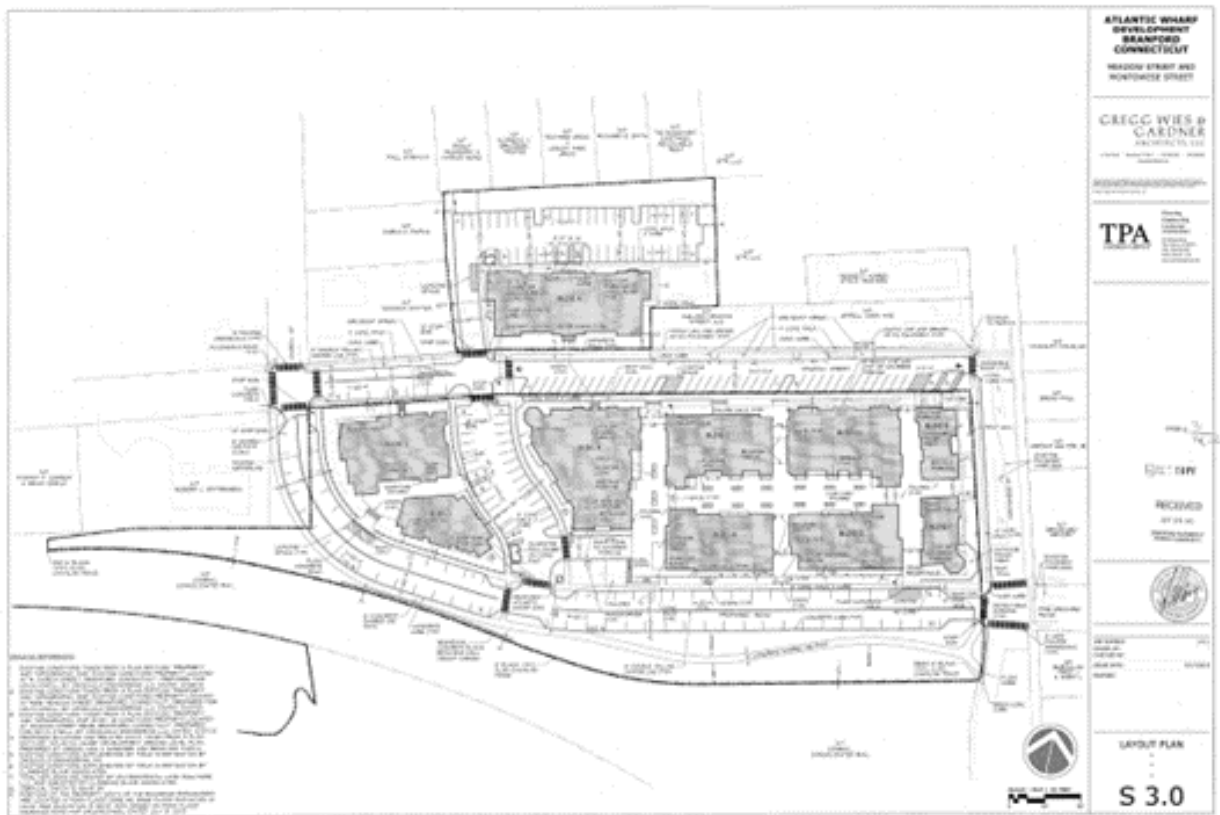
Figure 8 Cover page of Branford Road Safety Audit for Route 146



Source: CTDOT



Figure 9 Site Plan for proposed Atlantic Wharf development in Branford



Source: Town of Branford

## Town of Guilford

1. **New Sidewalks on Boston Street:** In mid-2022 new sidewalks were constructed along Boston Street/Route 146 west of Lover's Lane. The Town of Guilford has a contractor identified to extend sidewalks east along Boston Street to Route 1, filling in sidewalk gaps on one side of the street along this corridor. The sidewalk extension project is expected to begin construction in spring 2023.
2. **Guilford Safe Streets Task Force Report:** The Guilford Board of Selectmen created the Safe Streets Task Force in 2018 with a mission to "preserve and enhance the scenic, historic, and environmental resources of [the] Town while improving safety, mobility equity, and connectivity for [the] Residents." A Report was released in March 2022 with recommendations for improvements along streets and corridors in Guilford to make it easier and more comfortable for people to walk and bicycle in the town. Several recommendations are relevant to the Route 146 corridor and are listed below:
  - Lane narrowing on Water Street/Leetes Island Road in the short term (part of 146) to promote traffic calming
  - Crosswalks at Leetes Island Road at Sachem Head Road intersection, Mulberry Point Road and at Shell Beach Road/Moose Hill Road intersection (map in the report does not show Sachem Head one, but shows one at Mulberry Point Road)

- Sidewalks on Water Street between Jacobs Lane and Mulberry Point Road and between Jacobs Lane and Meadow Street
  - Lane narrowing on Water Street up to Town Green/Whitfield Street
  - Curb extensions at Water Street/Whitfield Street (146/77 intersection)
  - Suggested roundabout at Route 1 and Route 146
  - New sidewalks on Boston Street/146 up to Route 1, along with filling in gaps on Boston Street (see note above regarding new sidewalks)
3. **Route 146 Repaving:** CTDOT maintenance staff have noted that repaving of Route 146 in Guilford from Sachems Head Road to Route 1 is planned to take place in 2023.
  4. **Replacement of Bridge #02677, the “Crabbing Bridge”:** CTDOT has Project # 0059-0157 open in pre-design, which will replace the causeway locally known as the “Crabbing Bridge” in Guilford on Leetes Island Road (Route 146) approximately 0.75 miles east of Moose Hill Road. Currently, the project is on hold pending completion of the Route 146 Corridor Management Plan.
  5. **Potential Subdivision on Leetes Island Road:** The Town of Guilford has noted that a subdivision of three houses has been proposed along Leetes Island Road (Route 146) on the north side of the road, just west of the “Crabbing Bridge.”



**Figure 10** New sidewalk on Boston Street (Route 146) near Lover's Lane



Source: VHB



Figure 11 Page 59 from Guilford Safe Streets Report

 <p>Lane Narrowing</p>	<h3>Traffic Calming Treatments</h3> <p><b>Lane Narrowing</b> Lane narrowing is when an excessively large lane is reduced through shoulder striping (often mischaracterized with the term “fog lines”) or the addition of bike lanes. This helps reduce motor vehicle speeds and creates dedicated space for bicyclists and/or pedestrians.</p> <p><b>Median Islands</b> Medians are raised or flush islands located near centers of roadways. Medians can reduce vehicle speeds by creating horizontal deflection in travel ways, visually tightening the roadway, and using up excess pavement width. Medians may include landscaping which allows motorists to gauge their speed against tall vertical features. They may be combined with pedestrian crossings, in order to provide refuge for the pedestrian and alert the motorist.</p> <p><b>Speed Tables</b> Speed tables are essentially flat-topped speed humps. Speed tables have three parts: a ramp up, a flat top section, and ramp down. They are more pleasant to drive over than speed humps and produce less noise. They effectively reduce the speeds of a wider range of vehicle types than humps. Speed tables are typically preferred by fire departments and public works departments when compared to speed humps due to their more gradual profile. Offset speed tables or speed cushions may be implemented to further mitigate delays to emergency responders.</p> <p>59</p>
 <p>Median Islands</p>	
 <p>Speed Tables</p>	

Source: Town of Guilford



## 2.2 Safety Data and Crash Analysis

To assess traffic safety conditions within the study area, the original existing conditions report utilized collision data from the University of Connecticut, Connecticut Crash Data Repository (CTCDR). Crash data from CTCDR for the most recent full three-year period available, from January 2020 to December 22, 2022, was collected to update this information and determine if any significant changes or trends can be seen. It should be noted that only collisions that result in death, injury, or property damage in excess of \$1,000 are required to be reported. The collision data were reviewed for the entire Route 146 corridor within the project study area, with particular focus given to the 14 study area intersections.

It should be noted that the recent data includes the start of the COVID-19 pandemic in March 2020 through the ongoing pandemic period. This recent data may be affected by the pandemic and may not reflect more “typical” travel conditions that the previous crash data cover in prior years. This crash information is provided primarily for comparison with the crash data in the existing conditions.

According to these most recent data from 2020-2022, 187 crashes were reported along the entirety of the corridor in the study area during the three-year analysis period. The type and severity of all collisions recorded along Route 146 within the study area are summarized in Table 1 and Table 2, respectively.

**Table 1 Overall Route 146 Collision Types**

Type of Collision	2017	2018	2019	Total Collisions	Percent	2020	2021	2022	Total Collisions	Percent
Rear End	22	17	13	52	24.90%	17	9	13	39	20.90%
Angle	18	18	17	53	25.40%	15	15	20	50	26.70%
Fixed Object	8	5	10	23	11.10%	13	15	7	35	18.70%
Sideswipe	8	5	8	21	10.00%	8	10	11	29	15.50%
Animal	2	4	3	9	4.30%	3	2	0	5	2.70%
Bicycle	1	3	1	5	2.40%	2	1	1	4	2.10%
Pedestrian	1	1	1	3	1.40%	1	1	0	2	1.10%
Other	17	15	11	43	20.50%	10	6	7	23	12.30%
<b>Total</b>	<b>77</b>	<b>68</b>	<b>64</b>	<b>209</b>	<b>100%</b>	<b>69</b>	<b>59</b>	<b>59</b>	<b>187</b>	<b>100%</b>

Source: UConn Connecticut Crash Data Repository

As indicated in Table 1 for the study years of 2020 through 2022, just over one quarter (26.7%) of the collisions reported within the study area were angle collisions. The next most common collision types were rear-end (20.9%), fixed object (18.7%), and sideswipe (15.5%). Collisions with animals and those involving pedestrians or bicyclists each accounted for less than 4% of the total collisions reported in the study area. All other collisions (which include rear-to-rear, rear-to-side, and head on) accounted for about 12.3% of crashes collectively.

Comparatively to the study period occurring from 2017 through 2019, just over one quarter (25.4%) of the collisions reported within the study area were angle collisions. The next most common collision types were rear-end (24.9%), fixed object (11.1%), and sideswipe (10%). Similar to the 2020-2022 period, collisions with animals and those involving pedestrians or bicyclists each accounted for 4.3% or less of total collisions in the study area. Other collisions represented about one fifth of all crashes in the study area. Between the two time periods, there were fewer overall crashes, and the pattern of collision types remained the same with angle and rear-end collisions maintaining prevalence along the corridor. It does not appear that the COVID-19 pandemic had a significant impact on the number of crashes in the study area, or in the severity of collisions as shown in Table 2.

**Table 2 Overall Route 146 Collision Severity**

Type of Collision	2017	2018	2019	Total Collisions	Percent	2020	2021	2022	Total Collisions	Percent
Property Damage Only	56	56	55	167	79.9%	55	47	46	148	79.2%
Injury	20	12	9	41	19.6%	14	12	11	38	20.3%
Fatal	1	0	0	1	0.5%	0	0	1	1	0.5%
<b>Total</b>	<b>77</b>	<b>68</b>	<b>64</b>	<b>209</b>	<b>100%</b>	<b>69</b>	<b>59</b>	<b>59</b>	<b>187</b>	<b>100%</b>

Source: UConn Connecticut Crash Data Repository

During the 2020 through 2022 study period, 79.2% of the reported collisions resulted in property damage only, an injury or suspected injury was reported in 20.3% of the collisions, and one fatal collision (0.5%) was reported during the three-year analysis period.

The 2017 through 2019 study period shows a similar pattern in crash severity in the study area. The data from this period show that 79.9% of the reported collisions resulted in property damage only, an injury or suspected injury was reported in 19.6% of the collisions, and one fatal collision (0.5%) during the three-year analysis period. While overall crashes were reduced between the 2017-2019 data and the 2020-2022 data, the percentage of injuries on the corridor increased from 19.6% to 20.3%, a 0.7% increase which can also be seen as a 0.7% reduction in crashes resulting in property damage.

The one fatal collision in the 2020 through 2022 period involved a driver traveling on Route 146 in the vicinity of Sam Hill Road whose vehicle overturned.

The one fatal collision in the 2017 through 2019 period involved a vehicle traveling on Indian Neck Avenue -- a vehicle that crashed into a tree after crossing onto Route 146/South Montowese Street.

Crash data from 2020-2022 was also reviewed for the number of collisions reported at each of the 14 study intersections. The following three intersections experienced the greatest number of reported crashes during the three-year analysis period:

- › Route 146 at Route 1-Branford (13 crashes)
- › Route 146 at Soundview Road and Goose Lane (Soundview Road Extension) (14 crashes)
- › Route 146 at Route 1-Guilford (13 crashes)

These intersections were also noted as experiencing the greatest number of crashes during the 2017-2019 study period. For a full list of collision types, severity, and other crash information, see the Appendix.

## 2.3 Traffic Volumes, Speeds, and Vehicle Classification

### Traffic Volumes

To identify current traffic flow characteristics along the study corridor, historic traffic data collected by CTDOT was reviewed and supplemented by the collection of additional traffic data in February 2023. The traffic data reviewed in this study includes daily traffic volumes, vehicle speeds and classification. The following section summarizes this traffic data collection process and documents the results.

#### Daily Traffic Volumes

Automatic Traffic Recorders (ATRs) were installed at five key locations along the Route 146 corridor in February 2023 to collect data on traffic volumes and speeds by direction over a minimum 48-hour period. Table 3 identifies the approximate ATR count locations and the average daily traffic in both directions. They include comparisons to four locations where traffic data were collected in the same place in July 2019 for the original existing conditions report.

**Table 3** 2023 Existing Weekday Average Daily Traffic Volume Summary

Location	Year	Weekday Average Daily Traffic (ADT)
Route 146, south of Sybil Creek Place	2023	4,799
	2019	9,400
Route 146, east of Pine Tree Drive	2023	1,523
	2019	2,800
Route 146, east of School Street	2023	2,202
Route 146, east of Moose Hill Road	2023	1,810
	2019	3,200
Route 146, near Pearl Street	2023	5,965
	2019	6,300

Source: ATR counts conducted in 2019 in July and 2023 counts conducted in February.

As shown in Table 3, based upon the February 2023 traffic counts, the highest traffic volumes recorded in the study area were located on Route 146 near Pearl Street in Guilford with an Average Daily Traffic (ADT) of 5,965 vehicles per day. Continuing west towards Branford, the daily traffic volumes decrease, where the ADT along Route 146 from Moose Hill Road to School Street to Pine Hill Drive ranged between 1,810 to 2,202 vehicles per day. Daily traffic volumes along Route 146 increased slightly south of Sybil Creek Place in Branford to 4,799 vehicles per day at the western end of the study area.



The July 2019 traffic counts show significant seasonal traffic variations in some locations compared to the winter 2023 counts. The highest traffic volumes recorded in the study area in 2019 were located on Route 146 south of Sybil Creek Place in Branford with an ADT of 9,400 vehicles per day. Moving east towards Guilford, the daily traffic volumes decrease on Route 146, where the ADT along Route 146 from Pine Tree Drive to Moose Hill Road ranged between 2,800 to 3,200 vehicles per day. Daily traffic volumes along Route 146 increased near Pearl Street in Guilford to 6,300 vehicles per day at the eastern end of the study area. It is worth noting that the CTDOT count station located south of Meadow Street in Branford recorded an ADT of 11,500 vehicles per day in 2016.

Overall, the ATR data collected in February 2023 were approximately 35% lower on average than the 2019 collected data. As noted above, the variation in traffic patterns between seasons can likely account for much of the difference in the 2023 counts and the 2019 counts. Summer vacation traffic likely increases the number of drivers on the road. It is not clear if any COVID-19 pandemic variations can be attributed to the difference, given that, as of early 2023, most COVID-19 restrictions have been lifted. Due to the timing of the kick-off of the Corridor Management Plan Project and schedule of the existing conditions report, counts needed to be conducted in winter; however, to account for seasonal variations and have traffic data that is more directly comparable, additional counts will be conducted in summer 2023.

More detailed information about the traffic data collected can be found in the Appendix.

By comparison, the CTDOT traffic volume data from 2019 and 2020 indicate similar roadway patterns. Closest to the downtown areas of Branford and Guilford traffic volumes increase, while the more scenic and rural areas between the town centers have lower volumes. CTDOT traffic volume data is displayed in Table 4. For data collected in 2020, CTDOT notes that they counts were done during the COVID-19 pandemic. Data was collected in October and November 2020. As such, the counts should be viewed cautiously given the significant traffic variations that occurred in 2020 as a result of the pandemic.

Count data collected by CTDOT in 2019 was done in December.

**Table 4 CTDOT Existing Weekday Average Daily Traffic (ADT) Volume Summary (2019 & 2020)**

Location	Year	Weekday ADT
Route 146, northeast of Route 1	2020	7,446
Route 146, west of Hopson Avenue	2020	8,215
Route 146, south of Montowese Street	2020	7,215
Route 146, southeast of Meadow Street (Branford)	2020	6,589
Route 146, south of Old Pine Orchard Road	2020	3,355
Route 146, south of Indian Neck Avenue	2020	5,662
Route 146, southeast of Linden Avenue	2020	2,404
Route 146, east of Crouch Road	2020	2,469
Route 146, southwest of Hotchkiss Grove Road	2020	1,503
Route 146, west of Spring Rock Road	2020	1,044
Route 146, west of Blackstone Avenue	2020	1,348
Route 146, north of Pine Orchard Road	2020	1,001
Route 146, north of Totoket Road	2020	1,438
Route 146, south of Totoket Road	2020	2,055
Route 146, southeast of Stony Creek Road	2020	1,713
Route 146, east of Pepperwood Road	2020	1,400
Route 146, east of Thimble Island Road	2020	1,698
Route 146, at Guilford Town Line	2020	1,499
Route 146, northeast of Wildrose Avenue	2019	4,102
Route 146, west of Meadow Street (Guilford)	2019	4,220
Route 146, west of Route 77	2019	3,879
Route 146, east of Park Street	2019	2,979
Route 146, west of Soundview Road	2019	1,280
Route 146, east of Soundview Road	2019	2,294

Source: ATR counts conducted by CTDOT in 2019 and 2020.

## Vehicle Speeds

Updated vehicle speed data at multiple locations along the Route 146 corridor were compiled from recent speed surveys conducted by CTDOT and supplemented with the Automatic Traffic Recorder (ATR) counts collected in February 2023.

The vehicle speed data was reviewed to determine the average speed and 85<sup>th</sup> percentile speed at each location where data was collected. The 85<sup>th</sup> percentile speed is the speed at which 85-percent of vehicles travel at or below, and transportation agencies typically use it to establish speed limits. These data were compared to the posted speed limit to understand whether there is excessive speeding in the corridor above and beyond the posted speed limit. The entire corridor in Branford has a speed limit of 25 miles per hour. In Guilford, the speed limit is 35 mph near Moose Hill Road and is 30 mph the rest of the corridor, moving east towards Route 1.

The most recent data collected show that the 85<sup>th</sup> percentile speeds were above the speed limit (in any amount) at ten out of 19 data collection locations in Branford, and four out of seven locations in Guilford. Two locations showed the 85<sup>th</sup> percentile speeds of drivers at 10-13 miles per hour over the speed limit – considered excessive speeding – at these areas of the corridor: south of Sybil Creek Place and east of Pine Tree Drive, both in Branford. Average speeds were typically about 3 miles over the posted speed limit in most of the locations. See Figures 12.A, 12.B, and 12.C for maps showing the locations where speeds were captured and where speeds were highest.

From the data gathered for the previous version of the study conducted in 2020/2021 for the majority of locations of the corridor – eleven out of nineteen total locations – the 85<sup>th</sup> percentile speeds exceeded ten miles per hour above the posted speed limit. In some locations, even the average speeds exceed ten miles per hour above the posted speed limit.

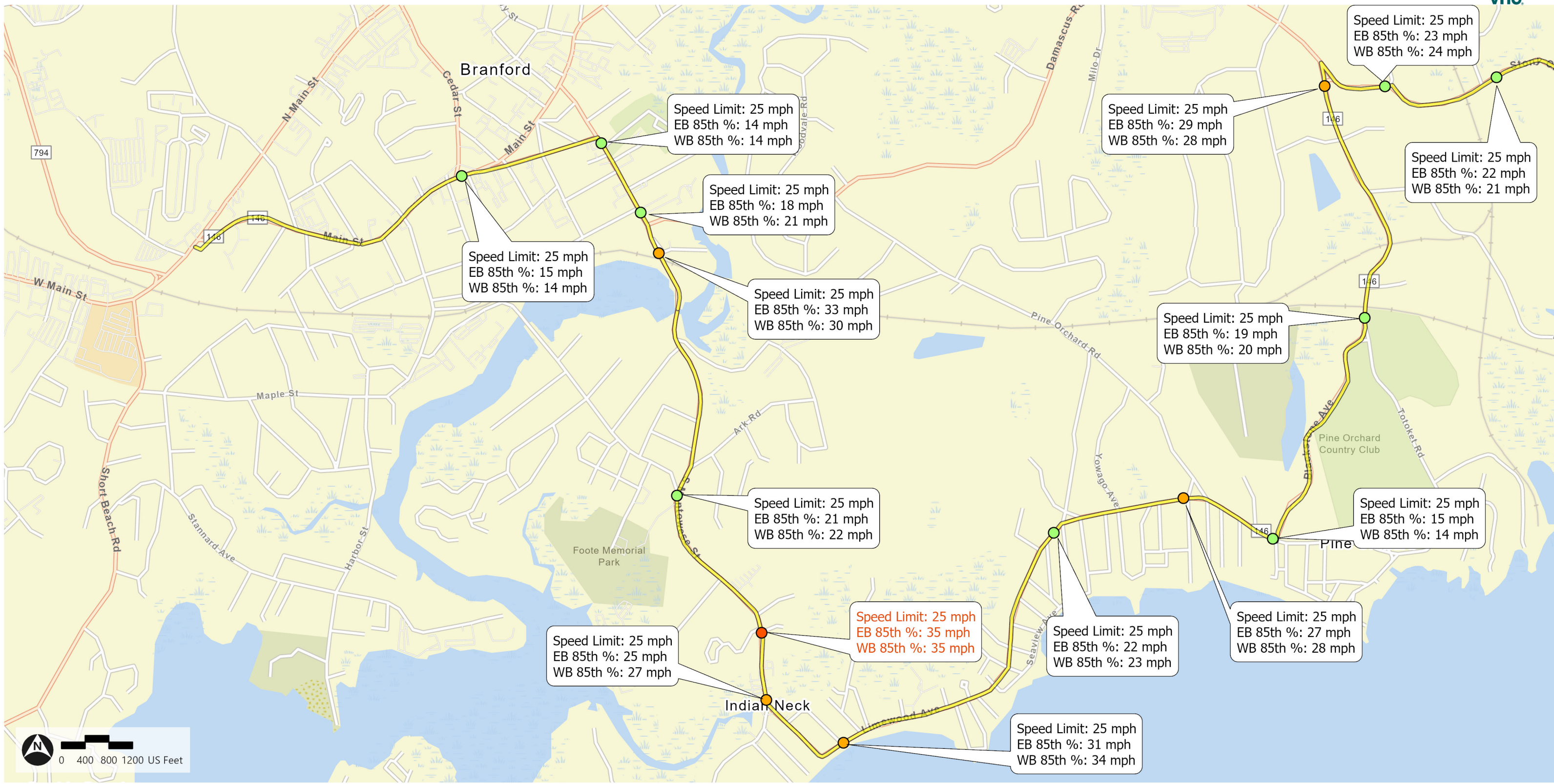
The data show that, more recently, some speeding over the posted limit is occurring, while in other locations it is actually below the posted speed limit. Overall, speeds are lower in Branford than in Guilford, which may be expected due to a lower speed limit and a more winding and twisting roadway which discourages higher speeds. However, the two locations where speeding is well over the limit are in Branford, and the higher speed limit and overall speeds in Guilford show that there are behaviors still at play and speeds which are areas of concern for people biking and walking through the corridor.

Data from the updated speed analysis is presented in Appendix, along with the previous speed analysis from the Existing Conditions Report. The locations where the average or 85<sup>th</sup> percentile speeds are greater than or equal to ten miles per hour above the posted speed limit are highlighted in the tables in the Appendix.



**Figure 12.A: Route 146 Vehicle Speeds**

Route 146 Corridor Management Plan | Branford and Guilford, CT



- Legend**
- Summary Speeds**
- At or Below Speed Limit
  - Between 1-10 MPH Over Speed Limit
  - 10 MPH or More Over Speed Limit

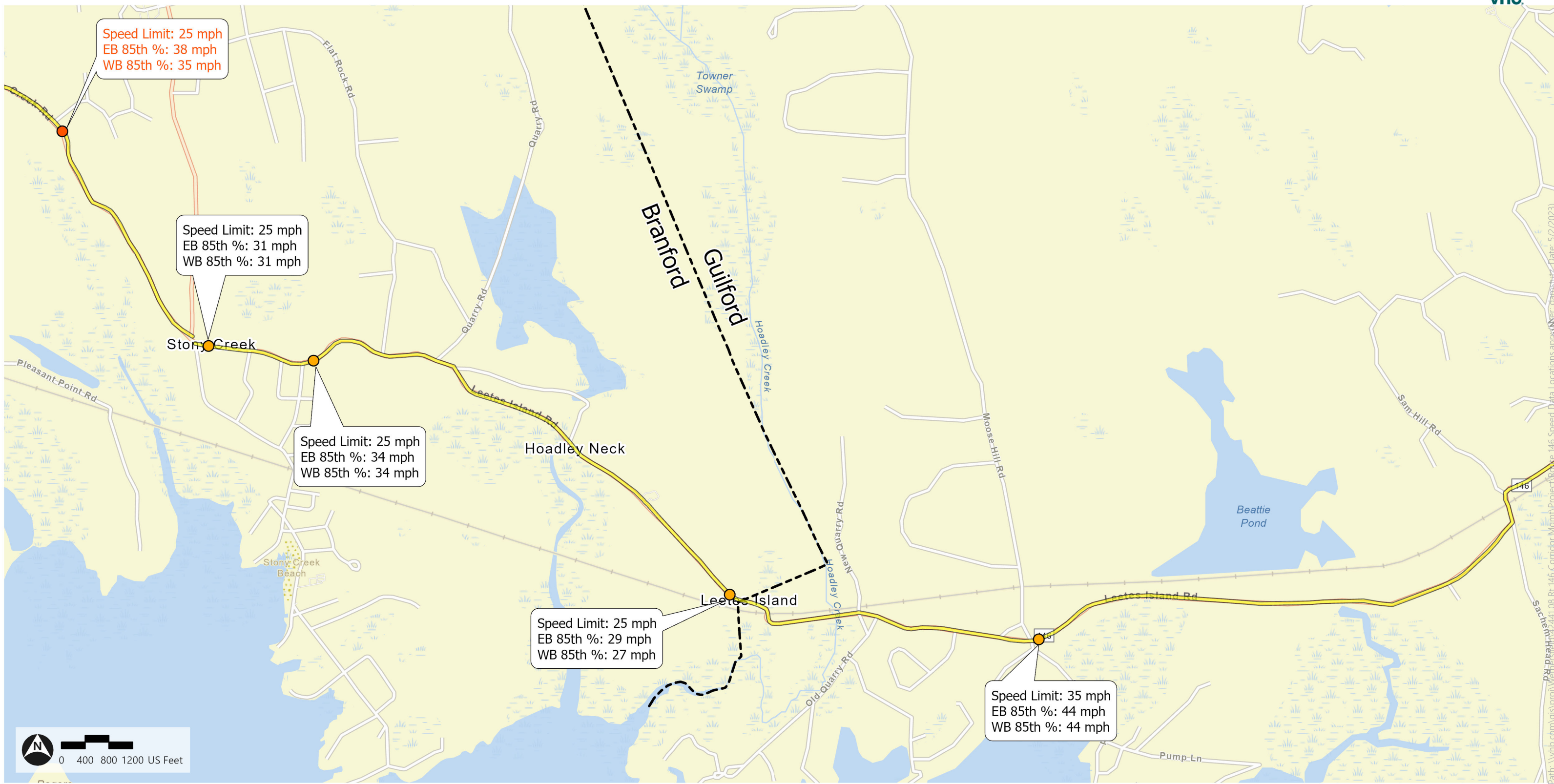
Route 146

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**Figure 12.B: Route 146 Vehicle Speeds**

Route 146 Corridor Management Plan | Branford and Guilford, CT



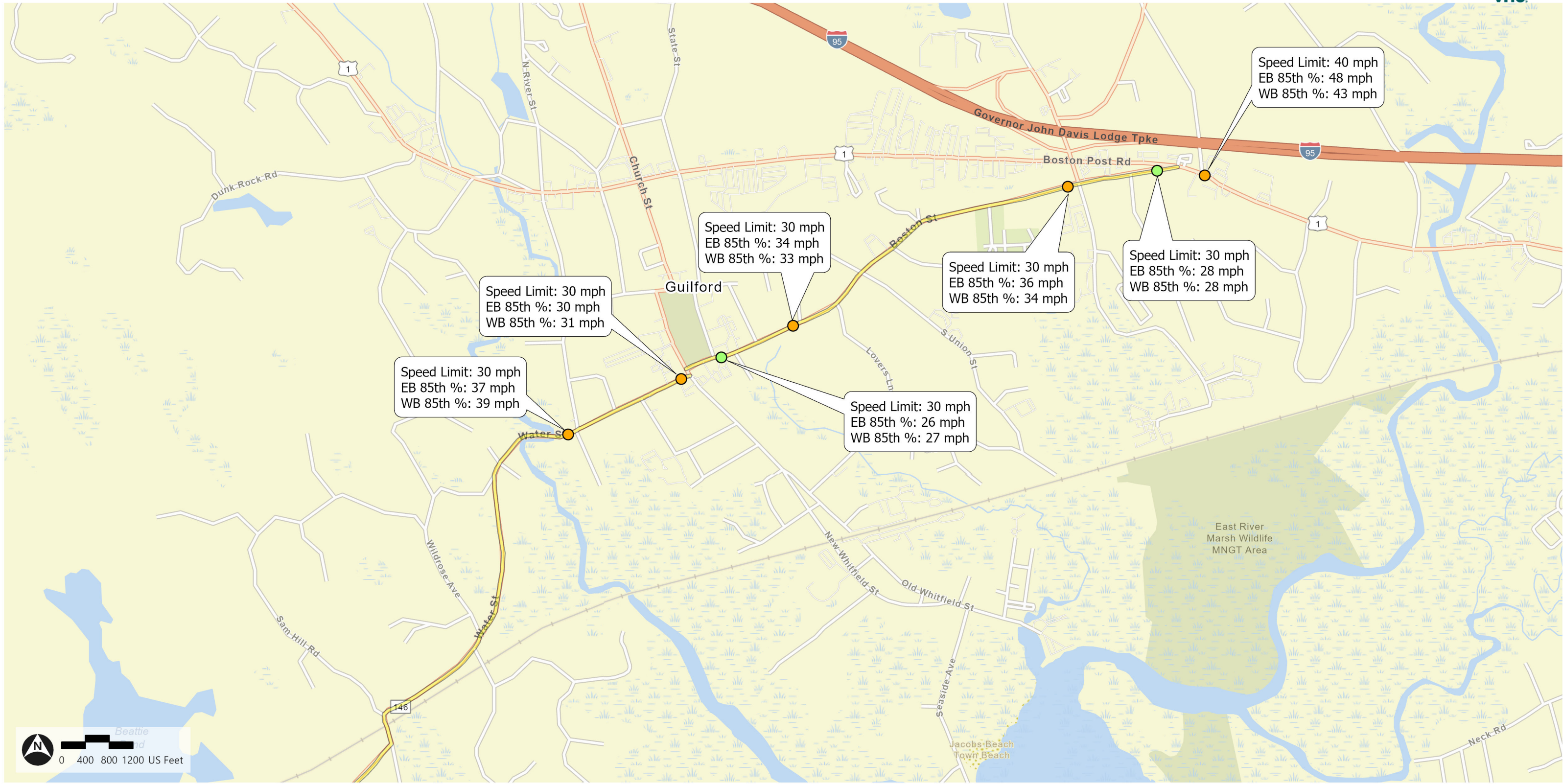
**Legend**

- Summary Speeds**
- Between 1-10 MPH Over Speed Limit
  - 10 MPH or More Over Speed Limit
  - Route 146
  - Town Line



**Figure 12.C: Route 146 Vehicle Speeds**

Route 146 Corridor Management Plan | Branford and Guilford, CT



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- Legend**
- Summary Speeds**
- At or Below Speed Limit
  - Between 1-10 MPH Over Speed Limit

— Route 146

## Vehicle Classification

Vehicle classification data at multiple locations along the Route 146 corridor were compiled from classification surveys conducted by CTDOT and supplemented with the Automatic Traffic Recorder (ATR) counts collected in February 2023.

The vehicle classification data is summarized in Table 5. The table shows the percentage of motorcycles, passenger vehicles, and trucks traveling on the roadway at each given location. The data collected in February 2023 did not include a count of motorcycles, so that field is blank for those locations on the table. The table is organized by location of each classification data collection site along the corridor from west to east.

From Table 5, two locations collected by CTDOT are noted as having a percentage of trucks around 5% of the total volume on the roadway. The ATR location in the vicinity of Wilford Road in Branford has a combined truck percentage of 4.6%, which can be attributed to the construction vehicles associated with the sidewalk and sea wall installment along Limewood Beach in the vicinity of Wilford Road. The second location with a combined truck percentage of 5.2% is the ATR in the vicinity of School Street in Branford. This is to be expected as this is the closest ATR location to the Stony Creek Quarry Corporation and is on the primary travel route to Interstate 95. All other CTDOT ATR locations maintained a combined truck percentage of 4.1% or below within the study area.

Data collected in February 2023 shows much higher truck traffic on Route 146. Four of the five locations are noted as having a percentage of trucks around 8% of the total volume on the roadway. The ATR location near Pine Tree Drive in Branford had a combined truck percentage of 12.3%. This is unusual as it is not on a direct route between the Stony Creek Quarry Corporation and Interstate 95. The second highest ATR truck percentage is the location east of School Street in Branford with a percentage of 9.7%. This is to be expected as this is the closest ATR location to the Stony Creek Quarry Corporation and is on the primary travel route to Interstate 95. The ATR locations south of Sybil Creek Place in Branford and east of Moose Hill Road in Guilford showed approximately 8% of traffic as heavy trucks. This accounts for trucks leaving the downtown/beach front businesses and navigating to Route 1. The collected ATR location, east of Pearl Street, maintained a combined truck percentage of 3.9% or below within the study area.

The data collected in February 2023 also included a count of bicycle traffic along Route 146. Percentage of bicycles was generally low with four of five locations at 0.2 or 0.3% of roadway traffic. The location east of Pine Tree Drive had the highest amount of bicycle traffic at 0.6%, which is coincidentally the same location with the highest truck traffic. Although the winter of 2023 has come with very mild temperatures, it is understood that winter is not the most ideal time for bicyclists to be out, and thus this is an important factor when interpreting the numbers. They are likely much lower than they would be in a more favorable season for cycling. Additional data collection will be conducted in summer 2023 to account for this and other seasonal factors.

**Table 5 Vehicle Classification Summary**

Location	Year	Percent of Motorcycles	Percent of Passenger Vehicles	Percent of Trucks
<b>Branford</b>				
Route 146, vicinity of Hopson Avenue	2020	0.0	99.5	0.5
Route 146, vicinity of Montowese Street	2020	0.2	99.7	0.1
Route 146, vicinity of Meadow Street	2020	0.8	97.4	1.8
Route 146, vicinity of Old Pine Orchard Road	2020	0.7	96.6	2.6
Route 146, vicinity of Indian Neck Avenue	2020	0.3	98.2	1.5
Route 146, south of Sybil Creek Place	2023	-	91.6	8.4
Route 146, vicinity of Linden Avenue	2020	0.8	97.4	1.8
Route 146, vicinity of Wilford Road	2020	1.2	94.3	4.6
Route 146, vicinity of Fifth Avenue	2020	0.8	97.6	1.7
Route 146, vicinity of Spring Rock Road	2020	0.8	97.1	2.1
Route 146, vicinity of Blackstone Avenue	2020	0.0	99.8	0.2
Route 146, south of Totoket Road	2020	0.7	98.3	1.0
Route 146, north of Totoket Road	2020	0.1	98.1	1.9
Route 146, vicinity of Whiting Farm Road	2020	0.3	98.1	1.6
Route 146, east of Pine Tree Drive	2023	-	87.1	12.3
Route 146, vicinity of Pine Tree Drive	2020	0.5	98.9	0.6
Route 146, east of School Street	2023	-	90.1	9.7
Route 146, vicinity of School Street	2020	0.5	94.3	5.2
Route 146, west of Branford/Guilford Town Line	2020	1.2	96.4	2.4
<b>Guilford</b>				
Route 146, east of Moose Hill Road	2023	-	91.7	8.0
Route 146, vicinity of Meadow Street	2019	0.1	96.9	3.0
Route 146, west of Route 77	2019	1.1	97.0	1.9
Route 146, vicinity of Park Street	2019	1.3	96.1	2.6
Route 146, east of Pearl Street	2023	-	95.9	3.9
Route 146, west of Soundview Road	2019	2.1	93.8	4.1
Route 146, west of Route 1	2019	0.3	96.7	3.0
Route 1, east of Route 146	2019	1.4	94.8	3.8

Source: ATR counts conducted by VHB and CTDOT in 2019, 2020, and 2023.



## 2.4 Land Use

Guilford is currently updating its zoning regulations and subdivision regulations, with the intent to finish this by spring of 2023. Part of the changes expected include allowing accessory dwelling units as of right in residential zones and a proposed incentive housing district looking to incentivize higher density multifamily around the train station and the bus corridor (Route 1). These changes do not expect to have any direct impacts on Route 146 but may have secondary impacts.

There are not any land use changes in Branford that were identified during the data collection for this item.

## 2.5 Historic & Cultural Environment

As noted in the existing conditions report, the communities of Branford and Guilford, in addition to being coastal tourist destinations, possess a number of historic and cultural locations. Route 146 is listed as a state scenic highway from the vicinity of Eades Street in Branford through to its terminus in Guilford at Route 1. The corridor runs from “Green to Green” in the two Towns. Multiple locations in the communities have national, state, and/or local historic designations. In the previous existing conditions data collection process, the area was frequently described as a region full of history not just on the local level, but on a national level as well.

### Historic Resources

Resources included in this study included those listed in the National or State Registers of Historic Places as well as those with local historic designations. Figures 2A through 2C from the existing conditions report have been updated and revised with current information regarding designated historic resources located along the Route 146 corridor that are close enough to potentially be impacted by projects on Route 146. The updated information is shown in Figures 13.A, 13.B, and 13.C of this report.

Since the previous data collection, the Historic Preservation Officer (SHPO) has advanced a mapping effort of recorded historic resources and their current designations, which is still being tested internally. SHPO staff provided information from this new mapping tool, allowing more precise information for the current iteration of this study. As a result, some of the resources on the previous map have been edited or removed, while other resources have been added to the maps and list.

- For the purposes of this study, when a resource contributes to a historic district and does not have an additional individual designation, its designation is considered to be subsumed under that of the historic district; these resources are not mapped individually.
- In contrast, resources that have an individual historic designation as well as contributing to a historic district are mapped individually in this study, in recognition that its individual historic significance may differ from that of the overall historic district.
- When updated mapping information indicated that a designated resource included in the previous data collection is actually located at a distance from Route 146, the resource has been removed.
- Locations of some designated historic resources have been refined to match the SHPO’s mapped data.
- Some resources have been added, based on updated mapped data provided by the SHPO.

Below is the updated list of historic resources.

#### Branford and Guilford

- Route 146 National Historic District

#### Branford

1. Swain-Harrison House, 124 West Main Street

2. Bradley Chisley House, 69 Home Place
3. First Baptist Church of Branford, 975 Main Street
4. Branford Town Hall, 1019 Main Street
5. Isaac Palmer House, 736-756 Main Street
6. Samuel Wilford House, corner of Sybil Ave and Linden Ave
7. Isaac Hoadley House, 9 Totoket Road
8. Residence, 18 Totoket Road
9. Edward Frisbie Homestead, 240 Stony Creek Road
10. John Rogers House, 690 Leetes Island Road

*Branford Historic Districts*

- Canoe Brook National Historic District
- Branford Center National Historic District

**Guilford**

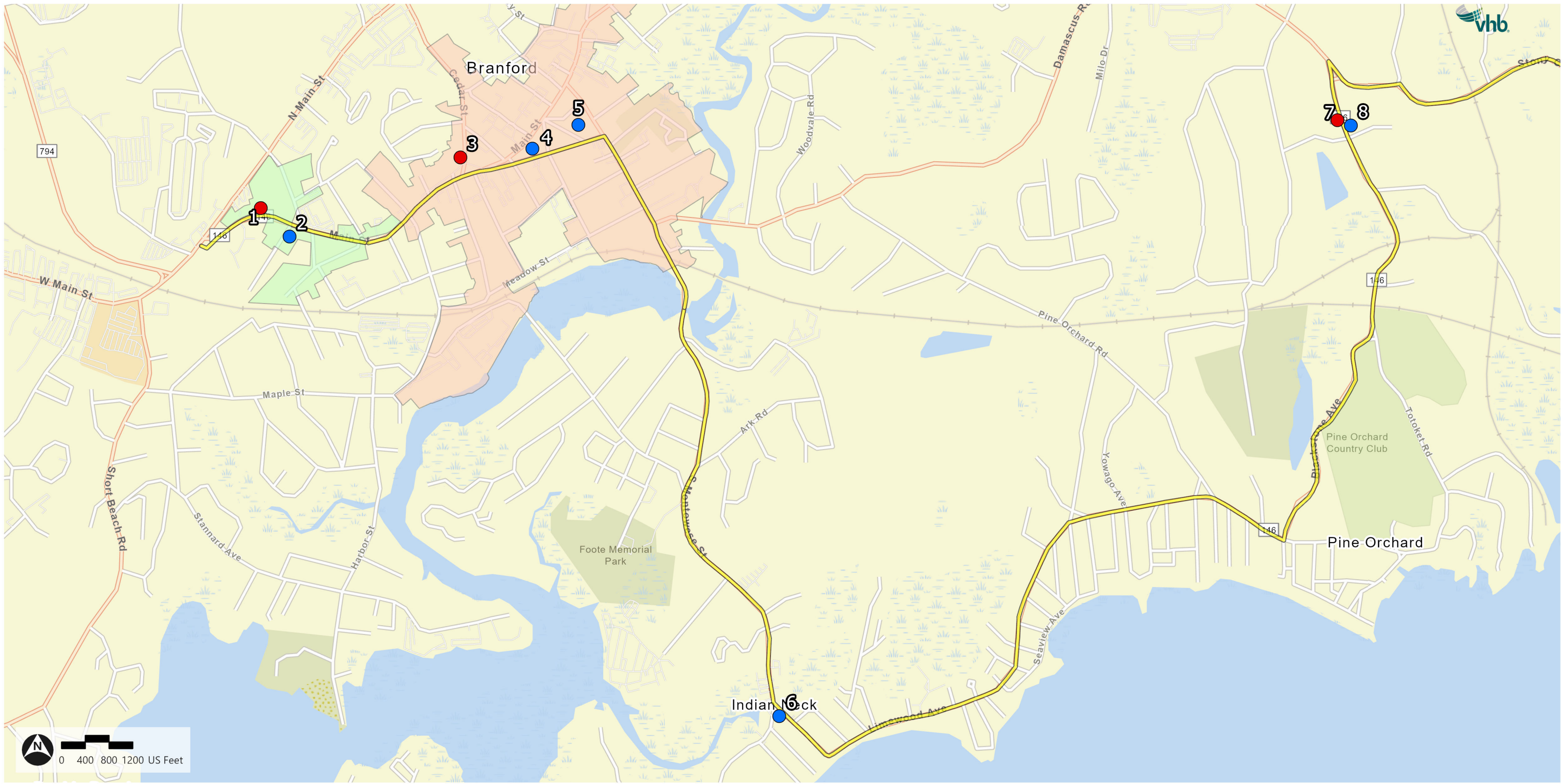
11. Simeon Leete Gravestone, corner of Moose Hill Road and Route 146
12. David Palmer House, 68 Water Street
13. Joseph Parmellee House, 54 Water Street
14. Italianate Villa House, 41 Water Street
15. Increase Pendelton House, 30 Water Street
16. Wyllis Eliot House, 20 Water Street
17. Eliot House, 103 Whitfield Street
18. Thomas Burgis II house, 85 Boston Street
19. Hyland-Wildman House, 84 Boston Street
20. Thomas Griswold House, 171 Boston Street

*Guilford Historic Districts*

- Guilford Town Center National Historic District
- Guilford Town Center Local Historic District
- Whitfield Street Local Historic District

**Figure 13.A: Route 146 Designated Historic Resources and Districts**

Route 146 Corridor Management Plan | Branford and Guilford, CT



**Legend**

- Route 146
- Designated Individual Historic Resources - National Register
- Designated Individual Historic Resources - State Register

**Historic Districts**

- Branford Center Historic District (SR)
- Canoe Brook Historic District (NR)

**Historic Resources**

- |                                                              |                                                                         |                                                                     |
|--------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------|
| <span style="color: red;">●</span> 1. Swain-Harrison House   | <span style="color: blue;">●</span> 4. First Baptist Church of Branford | <span style="color: red;">●</span> 7. Isaac Hoadley House           |
| <span style="color: blue;">●</span> 2. Bradley Chisley House | <span style="color: blue;">●</span> 5. Branford Town Hall               | <span style="color: blue;">●</span> 8. Residence at 18 Totoket Road |
| <span style="color: red;">●</span> 3. Isaac Palmer House     | <span style="color: blue;">●</span> 6. Samuel Wilford House             |                                                                     |

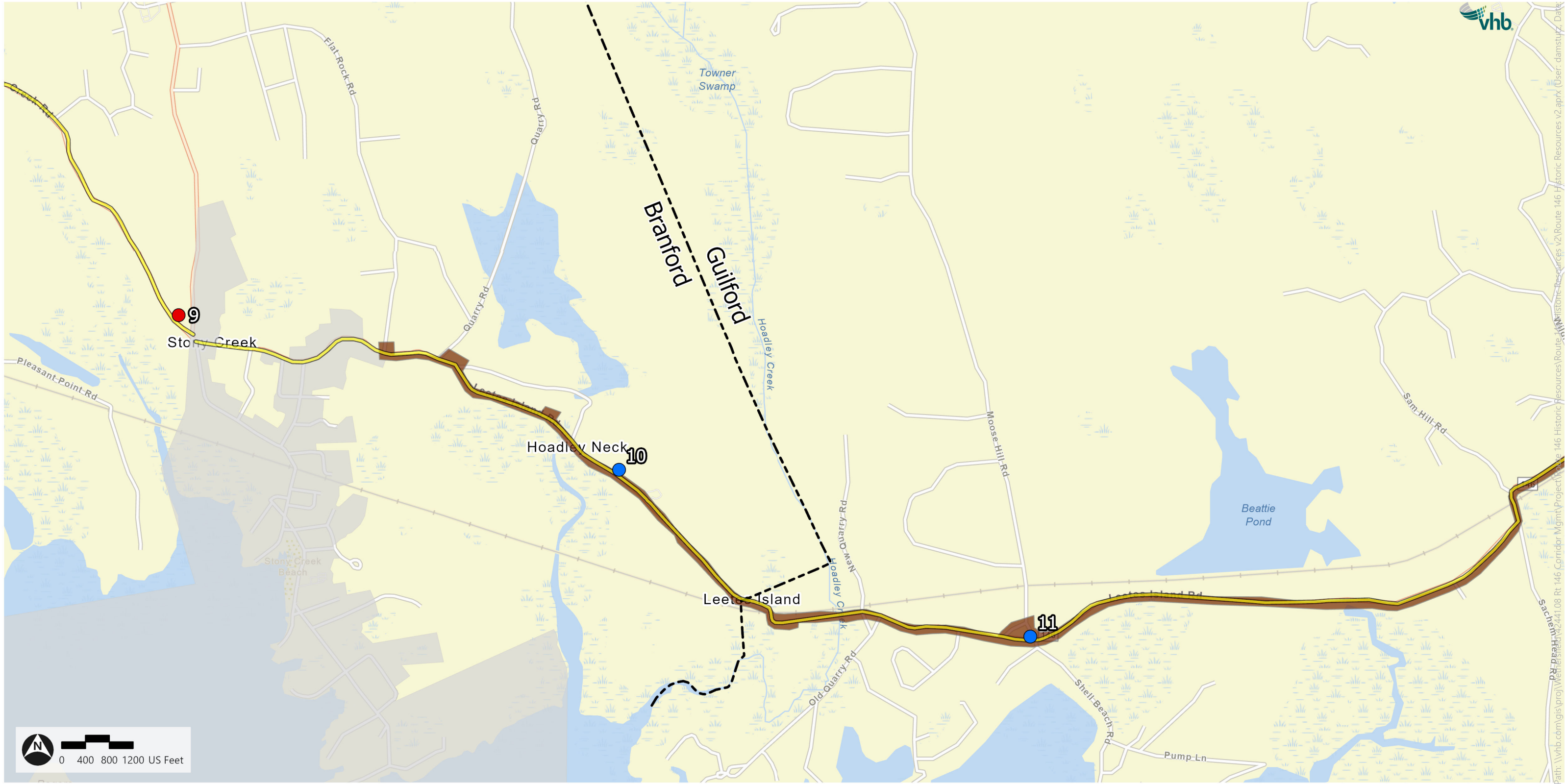
Source: Esri; NPS; Town of Guilford; CTDOT

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**Figure 13.B: Route 146 Designated Historic Resources and Districts**

Route 146 Corridor Management Plan | Branford and Guilford, CT



**Legend**

- Route 146
- Designated Individual Historic Resources - National Register
- Designated Individual Historic Resources - State Register
- Town Line

- Historic Districts**
- Route 146 Historic District (NR)
  - Stony Creek--Thimble Islands Historic District (NR)

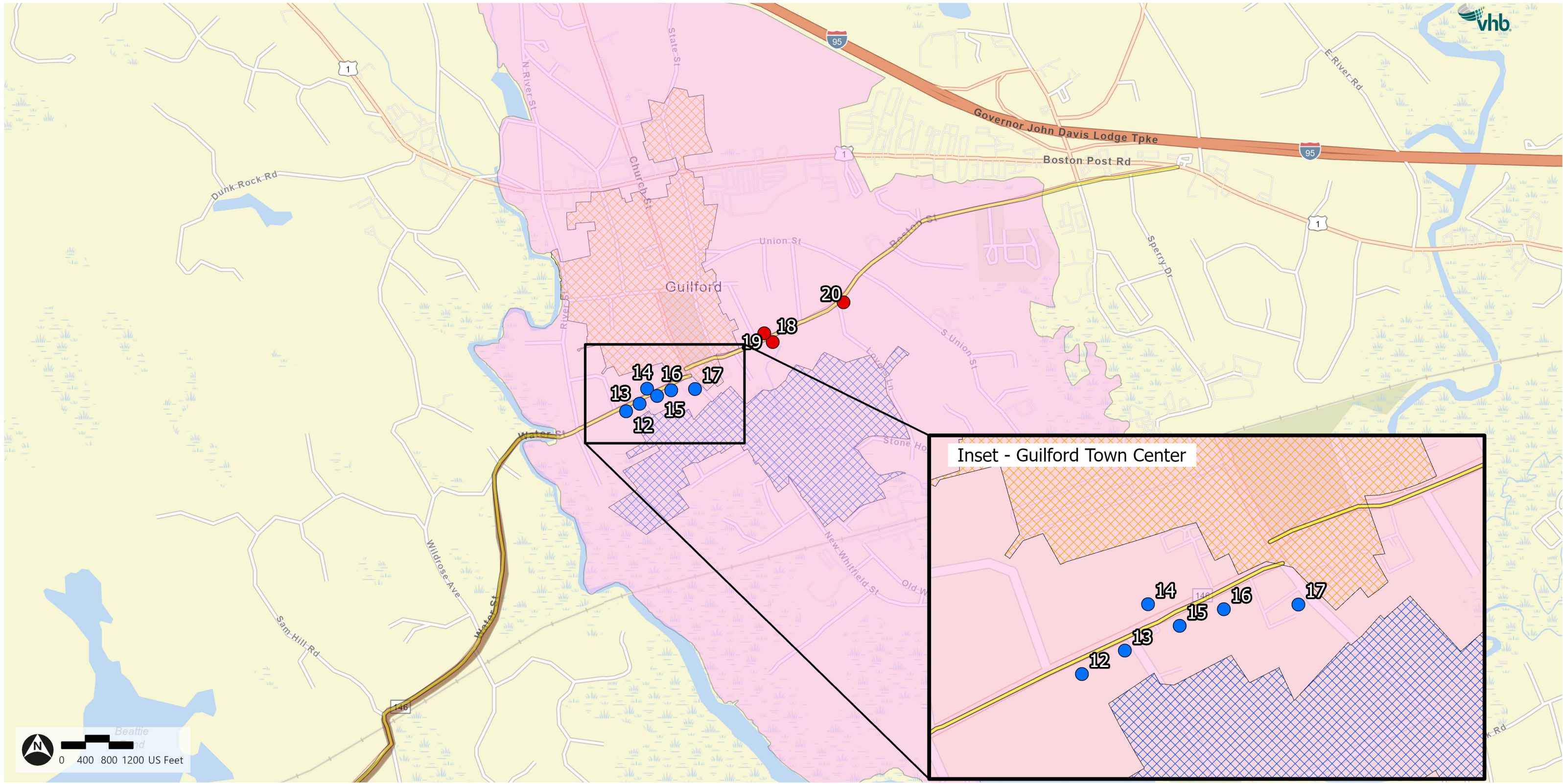
**Historic Resources**

- 9. Edward Frisbie Homestead
- 10. John Roger's House
- 11. Simeon Lette Gravestone



**Figure 13.C: Route 146 Designated Historic Resources and Districts**

Route 146 Corridor Management Plan | Branford and Guilford, CT



- Legend**
- Route 146
  - Designated Individual Historic Resources - National Register
  - Designated Individual Historic Resources - State Register

- Historic Districts**
- Route 146 Historic District (NR)
  - Guilford Town Center National Historic District (NR)

- Guilford Town Center Historic District (LHD)
- Whitfield Historic District (LHD)

- Historic Resources**
- |                            |                              |                            |                           |
|----------------------------|------------------------------|----------------------------|---------------------------|
| 12. David Palmer House     | 15. Increase Pendleton House | 18. Thomas Burgis II House | 20. Thomas Griswold House |
| 13. Joseph Parmellee House | 16. Wyllis Eliot House       | 19. Hyland-Wildman House   |                           |
| 14. Italianate Villa House | 17. Eliot House              |                            |                           |

Source: Esri; NPS; Town of Guilford; CTDOT

Path: \\vhb.com\gis\proj\Wethersfield\42441\08 Rt 146 Corridor Mgmt\Project\Route 146 Historic Resources v2.aprx (User: damstutz, Date: 5/2/2023)

## 2.6 Inland/Coastal Wetlands and Flooding Risk

The original existing conditions report for Route 146 included an evaluation of coastal flood risk across the project area, particularly with the potential impacts to the area of a projected 20 inches of sea level rise by 2050. To assist with updating this information for a later task in the overall Route 146 CMP project, new wetland mapping – if any – was investigated to ensure the project has the most up-to-date information. The Towns of Branford and Guilford were consulted to determine if they were aware of any new wetlands mapping in the last few years.

According to the Guilford Natural Resources Department, there has been no new mapping of wetlands in the Guilford area. The Inland Wetlands Environmental Director for Branford noted there have been edits made to their wetland mapping which they have provided to the study team for further review and incorporation into the updated flood risk task later in the project.



## 2.7 Scenic Highway Aesthetics

This section covers the Connecticut Scenic Roads Program and the federal Scenic Byways Program, and any changes that have occurred recently.

Over the past two years the National Scenic Byways Program (NSBP) has received additional funding via the Consolidated Appropriations Acts of 2021 and 2022, the first time discretionary funding has been directed to the program since 2012. The NSBP's website notes:

"The Department of Transportation Appropriations Act, 2021 (Public Law 116-260), enacted on December 27, 2020, appropriated \$16 million in Highway Infrastructure Program (HIP) funds for the National Scenic Byways Program (NSBP) under 23 U.S.C. 162. The Consolidated Appropriations Act, 2022, enacted on March 15, 2022, appropriated an additional \$6 million, making up to \$22 million available in HIP funds for the NSBP. Under 23 U.S.C. 162(b), grants and technical assistance are to be made available to States or Indian Tribes to (a) implement eligible projects on highways designated as National Scenic Byways or All-American Roads (America's Byways®), State scenic byways, or Indian Tribe scenic byways; and (b) plan, design, and develop a State or Indian Tribe scenic byway program."

Applications for the \$22 million in federal funding were due in mid-2022, with awards expected to be released in fall 2022. Roadways that are designated as scenic byways through a state program – but not a National Scenic Byway or All-America Road – are also eligible for funding through the NSBP program. The 2021 Consolidated Appropriations Act prioritized funding for roads in rural areas. It is expected that future funding through this program will continue to be available to state scenic byways as well.

There have been no changes to the Connecticut Scenic Roads program in the last two years.





# A

## Appendix A: Crash Data

## Crash Data Tables

Table A-1 Overall Route 146 Collision Types

Type of Collision	2017	2018	2019	Total Collisions	Percent	2020	2021	2022	Total Collisions	Percent
Rear End	22	17	13	52	24.9%	17	9	13	39	20.9%
Angle	18	18	17	53	25.4%	15	15	20	50	26.7%
Fixed Object	8	5	10	23	11.1%	13	15	7	35	18.7%
Sideswipe, Same Dir.	5	3	5	13	6.2%	3	7	9	19	10.2%
Animal	2	4	3	9	4.3%	3	2	0	5	2.7%
Head On	2	1	1	4	1.9%	1	5	0	6	3.2%
Sideswipe, Opposite Dir.	3	2	3	8	3.8%	5	3	2	10	5.3%
Bicycle	1	3	1	5	2.4%	2	1	1	4	2.1%
Pedestrian	1	1	1	3	1.4%	1	1	0	2	1.1%
Other	4	0	3	7	3.3%	3	0	3	6	3.2%
Not Applicable	7	7	4	18	8.6%	3	1	4	8	4.3%
Rear to Rear	1	1	1	3	1.4%	0	0	0	0	0.0%
Rear to Side	3	6	2	11	5.3%	3	0	0	3	1.6%
<b>Total</b>	<b>77</b>	<b>68</b>	<b>64</b>	<b>209</b>	<b>100%</b>	<b>69</b>	<b>59</b>	<b>59</b>	<b>187</b>	<b>100%</b>

Source: UConn Connecticut Crash Data Repository

Table A-2 Overall Route 146 Collision Severity

Type of Collision	2017	2018	2019	Total Collisions	Percent	2020	2021	2022	Total Collisions	Percent
Property Damage Only	56	56	55	167	79.9%	55	47	46	148	79.2%
Injury	20	12	9	41	19.6%	14	12	11	38	20.3%
Fatal	1	0	0	1	0.5%	0	0	1	1	0.5%
<b>Total</b>	<b>77</b>	<b>68</b>	<b>64</b>	<b>209</b>	<b>100%</b>	<b>69</b>	<b>59</b>	<b>59</b>	<b>187</b>	<b>100%</b>

Source: UConn Connecticut Crash Data Repository

**Table A-3 Crash Analysis Summary – Route 146 Branford and Guilford**

	Individual Intersections														Entire Corridor, Inclusive of Study Area Intersections
	Route 146 at Route 1- Branford	Route 146 at Kirkham Street	Route 146 at Montowese Street	Route 146 at Meadow Street	Route 146 at Pine Orchard Road (west)	Route 146 at Indian Neck Avenue	Route 146 at Blackstone Avenue	Route 146 at Damascus Road	Route 146 at Leetes Island Road	Route 146 at Moose Hill Road	Route 146 at Sachems Head Road	Route 146 at Whitfield Street	Route 146 at Soundview Road	Route 146 at Route 1- Guilford	Route 146 Corridor- Branford & Guilford
<b>Year</b>															
2020	1	4	2	2	1	1	0	1	0	0	2	4	2	3	69
2021	1	1	2	1	1	2	0	0	1	0	0	4	8	2	59
<u>2022</u>	<u>11</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>2</u>	<u>4</u>	<u>8</u>	<u>59</u>
Total	13	8	4	6	3	4	1	1	2	1	2	10	14	13	189
<b>Collision Type</b>															
Angle	1	1	0	2	1	1	0	1	0	0	1	2	9	6	50
Rear-end	6	5	3	2	2	2	0	0	1	0	0	2	1	7	38
Head-on	0	0	1	0	0	1	0	0	0	0	0	0	1	0	7
Sideswipe, same direction	4	1	0	0	0	0	1	0	0	0	0	3	2	0	19
Sideswipe, opposite direction	0	1	0	0	0	0	0	0	1	0	0	0	0	0	10
<u>Unknown/Other</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>0</u>	<u>63</u>
Total	13	8	4	6	3	4	1	1	2	1	2	5	14	13	187
<b>Severity</b>															
Fatal Injury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Non-Fatal Injury	3	1	1	1	0	2	0	0	0	0	1	1	3	1	37
Property Damage Only	10	7	3	5	3	2	1	1	2	1	1	9	11	12	149
<u>Not Reported/Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	13	8	4	6	3	4	1	1	2	1	2	10	14	13	187
<b>Time of day</b>															
Weekday, 7:00 AM - 9:00 AM	1	0	0	0	0	0	0	0	0	0	0	1	1	0	10
Weekday, 4:00 – 6:00 PM	2	1	1	1	0	1	0	0	0	0	0	0	2	3	23
Saturday, 11:00 AM – 2:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
Weekday, other time	8	7	2	4	3	3	1	1	1	1	1	5	10	8	104
<u>Weekend, other time</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>44</u>
Total	13	8	4	6	3	4	1	1	2	1	2	10	14	13	187
<b>Season</b>															
Dec – Feb	5	2	0	1	0	1	0	0	0	0	0	2	4	3	35
Mar – May	3	4	1	2	1	0	0	0	1	0	0	3	1	1	44
June – Aug	1	1	0	3	2	3	1	0	1	1	2	2	4	5	60
<u>Sept – Nov</u>	<u>4</u>	<u>1</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>5</u>	<u>4</u>	<u>48</u>
Total	13	8	4	6	3	4	1	1	2	1	2	5	14	13	187
<b>Pavement Conditions</b>															
Dry	10	7	4	6	3	4	1	1	1	1	2	9	11	12	160
Wet	3	1	0	0	0	0	0	0	1	0	0	1	2	1	21
Snow	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
<u>Ice</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>
Total	13	8	4	6	3	4	1	1	2	1	2	10	14	13	187
<b>Light Conditions</b>															
Daylight	10	6	3	5	3	4	1	1	2	0	2	10	10	11	133
Dawn/Dusk	2	0	0	0	0	0	0	0	0	0	0	0	1	0	7
Dark, Not Lighted	0	0	0	1	0	0	0	0	0	1	0	0	1	0	22
<u>Dark, Lighted</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>25</u>
Total	13	8	4	6	3	4	1	1	2	1	2	10	14	13	187
<b>Non-Motorist (Bike, Pedestrian)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>

Source: UConn Connecticut Crash Data Repository 2020-12.22.2022.



# B

## Appendix B: Traffic Volumes, Speeds, and Vehicle Classification

**Table B-1 Existing Weekday Average Daily Traffic Volume Summary**

Location	Year	Weekday ADT <sup>1</sup>	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
			Vehicles Per Hour	Dir. Dist. <sup>2</sup>		"K" <sup>3</sup> Factor	Vehicles Per Hour	Dir. Dist.		"K" Factor
Route 146, south of Sybil Creek Place	2023	4,799	228	61%	NB	4.75%	251	57%	SB	5.23%
	2019	9,400	269	51%	NB	2.86%	528	60%	SB	5.62%
Route 146, east of Pine Tree Drive	2023	1,523	71	57%	EB	4.66%	77	50%	WB	5.06%
	2019	2,800	79	51%	EB	2.82%	181	56%	EB	6.46%
Route 146, east of School Street	2023	2,202	118	58%	WB	5.34%	106	51%	EB	4.81%
Route 146, east of Moose Hill Road	2023	1,810	67	51%	EB	3.70%	97	53%	WB	5.36%
	2019	3,200	131	55%	EB	4.09%	188	54%	EB	5.88%
Route 146, near Pearl Street	2023	5,965	282	62%	EB	4.73%	398	63%	EB	6.67%
	2019	6,300	227	53%	WB	3.60%	313	51%	EB	4.97%

Source: ATR counts conducted by VHB in July 2019 and February 2023.

1. ADT = Average Daily Traffic
2. Directional distribution
3. "K" factor is the percentage of total daily traffic occurring during the peak hour

Table B-2 CTDOT Existing Weekday Average Daily Traffic Volume Summary

Location	Year	Weekday ADT <sup>1</sup>	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
			Vehicles Per Hour	Dir. Dist. <sup>2</sup>		"K" <sup>3</sup> Factor	Vehicles Per Hour	Dir. Dist.		"K" Factor
Route 146, northeast of Route 1 <sup>4</sup>	2020	7,446	310	50%	WB	4.16%	442	56%	EB	5.94%
Route 146, west of Hopson Avenue	2020	8,215	386	57%	WB	4.70%	490	58%	EB	5.96%
Route 146, south of Montowese Street	2020	7,215	322	50%	EB	4.46%	466	57%	WB	6.46%
Route 146, southeast of Meadow Street	2020	6,589	326	51%	WB	4.95%	507	55%	EB	7.69%
Route 146, south of Old Pine Orchard Road	2020	3,355	202	54%	EB	6.02%	253	56%	EB	7.54%
Route 146, south of Indian Neck Avenue	2020	5,662	234	52%	WB	4.13%	355	55%	EB	6.27%
Route 146, southeast of Linden Avenue	2020	2,404	111	53%	WB	4.62%	158	58%	WB	6.57%
Route 146, east of Crouch Road	2020	2,469	91	53%	EB	3.69%	134	61%	WB	5.43%



Route 146, southwest of Hotchkiss Grove Road <sup>4</sup>	2020	1,503	69	54%	EB	4.59%	102	51%	EB	6.79%
Route 146, west of Spring Rock Road	2020	1,044	44	51%	WB	4.21%	74	51%	WB	7.09%
Route 146, west of Blackstone Avenue	2020	1,348	69	51%	EB	5.12%	104	56%	EB	7.72%
Route 146, north of Pine Orchard Road	2020	1,001	43	53%	EB	4.30%	59	54%	WB	5.89%
Route 146, north of Totoket Road	2020	1,438	88	55%	WB	6.12%	101	50%	EB	7.02%
Route 146, south of Totoket Road	2020	2,055	85	55%	EB	4.14%	111	51%	EB	5.40%
Route 146, southeast of Stony Creek Road	2020	1,713	88	54%	WB	5.14%	133	50%	EB	7.76%

Source: ATR counts conducted by CT DOT in 2019 and 2020.

1. ADT = Average Daily Traffic
2. Directional distribution
3. "K" factor is the percentage of total daily traffic occurring during the peak hour

Table B-2 (continued) CTDOT Existing Weekday Average Daily Traffic Volume Summary

Location	Year	Weekday ADT <sup>1</sup>	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
			Vehicles Per Hour	Dir. Dist. <sup>2</sup>		"K" <sup>3</sup> Factor	Vehicles Per Hour	Dir. Dist.		"K" Factor
Route 146, east of Pepperwood Road	2020	1,400	72	54%	WB	5.14%	112	50%	WB	8.00%
Route 146, east of Thimble Island Road	2020	1,698	104	55%	WB	6.12%	134	50%	EB	7.89%
Route 146, at Guilford Town Line	2020	1,499	79	51%	WB	5.27%	127	50%	WB	8.47%
Route 146, northeast of Wildrose Avenue	2019	4,102	176	54%	EB	4.29%	256	57%	WB	6.24%
Route 146, west of Meadow Street	2019	4,220	197	52%	WB	4.67%	296	59%	EB	7.01%
Route 146, west of Route 77	2019	3,879	232	60%	WB	5.98%	282	52%	WB	7.27%
Route 146, east of Park Street	2019	2,979	144	50%	EB	4.83%	246	53%	EB	8.26%
Route 146, west of Soundview Road	2019	1,280	55	59%	WB	4.30%	130	56%	WB	10.16%
Route 146, east of Soundview Road	2019	2,294	102	57%	WB	4.45%	150	63%	WB	6.54%

Source: ATR counts conducted by CT DOT in 2019 and 2020.

1. ADT = Average Daily Traffic
2. Directional distribution
3. "K" factor is the percentage of total daily traffic occurring during the peak hour

Table B-3 Updated Vehicle Speed Summary (Data from 2019-2023)

Location	Posted Speed Limit (mph)	Eastbound		Westbound	
		Average Speed (mph)	85 <sup>th</sup> % Speed (mph)	Average Speed (mph)	85 <sup>th</sup> % Speed (mph)
<b>Branford</b>					
Route 146, vicinity of Hopson Avenue <sup>2</sup>	25	12	15	12	14
Route 146, vicinity of Montowese Street <sup>2</sup>	25	12	14	12	14
Route 146, vicinity of Meadow Street <sup>2</sup>	25	15	18	18	21
Route 146, vicinity of Old Pine Orchard Road <sup>2</sup>	25	29	33	26	30
Route 146, vicinity of Indian Neck Avenue <sup>2</sup>	25	19	21	20	22
Route 146, south of Sybil Creek Place <sup>1</sup>	25	31 NB	<b>35 NB</b>	31 SB	<b>35 SB</b>
Route 146, vicinity of Linden Avenue <sup>2</sup>	25	19	25	23	27
Route 146, vicinity of Wilford Road <sup>2</sup>	25	26	31	29	34
Route 146, vicinity of Second Avenue <sup>2</sup>	25	19	22	20	23
Route 146, vicinity of Spring Rock Road <sup>2</sup>	25	24	27	24	28
Route 146, vicinity of Blackstone Avenue <sup>2</sup>	25	13	15	12	14
Route 146, north of Totoket Road #1 <sup>2</sup>	25	16	19	17	20
Route 146, south of Totoket Road #2 <sup>2</sup>	25	26	29	24	28
Route 146, vicinity of Whiting Farm Road <sup>2</sup>	25	21	23	21	24
Route 146, vicinity of Pepperwood Lane <sup>2</sup>	25	19	22	19	21
Route 146, east of Pine Tree Drive <sup>1</sup>	25	33	<b>38</b>	31	<b>35</b>
Route 146, vicinity of Thimble Island Road <sup>2</sup>	25	26	31	27	31
Route 146, east of School Street <sup>1</sup>	25	30	34	29	34
Route 146, west of Branford/Guilford Town Line <sup>2</sup>	25	25	29	24	27
<b>Guilford</b>					
Route 146, east of Moose Hill Road <sup>1</sup>	35	38	44	38	44
Route 146, vicinity of Meadow Street <sup>3</sup>	30	33	37	35	39
Route 146, west of Route 77 <sup>3</sup>	30	25	30	26	31
Route 146, vicinity of Park Street <sup>3</sup>	30	21	26	23	27




Route 146, west of Pearl Street <sup>1</sup>	30	30	34	29	33
Route 146, west of Soundview Road <sup>3</sup>	30	31	36	29	34
Route 146, west of Route 1 <sup>3</sup>	30	24	28	21	28
Route 1, east of Route 146 <sup>3</sup>	40	42 NB	48 NB	38 SB	43 SB

1 Based on ATR counts conducted in February 2023

2 Based on speed surveys conducted by CTDOT in 2020

3 Based on speed surveys conducted by CTDOT in 2019

 Shaded areas denote speed 10 or greater miles per hour above speed limit

**Table B-4 Previous Vehicle Speed Summary (Data from 2013 & 2019)**

Location	Eastbound			Westbound	
	Posted Speed Limit (mph)	Average Speed (mph)	85 <sup>th</sup> % Speed (mph)	Average Speed (mph)	85 <sup>th</sup> % Speed (mph)
<b>Branford</b>					
Route 146, vicinity of Home Place <sup>2</sup>	35	38	42	37	41
Route 146, vicinity of Church Street <sup>2</sup>	25	33	37	32	35
Route 146, vicinity of Barker Place <sup>2</sup>	25	34	37	35	38
Route 146, south of Sybil Creek Place <sup>1</sup>	25	30	34	30	33
Route 146, vicinity of Wilford Road <sup>2</sup>	25	27	31	30	33
Route 146, vicinity of Fifth Avenue <sup>2</sup>	25	34	38	34	38
Route 146, vicinity of Selden Avenue <sup>2</sup>	25	37	41	36	40
Route 146, vicinity of Griffing Pond Road <sup>2</sup>	25	32	36	33	37
Route 146, east of Whiting Farm Road <sup>2</sup>	25	33	37	33	36
Route 146, east of Pine Tree Drive <sup>1</sup>	25	34	38	36	39
Route 146, vicinity of School Street <sup>2</sup>	25	33	36	32	35
Route 146, west of Branford/Guilford Town Line <sup>2</sup>	35	40	44	39	43
<b>Guilford</b>					
Route 146, east of Moose Hill Road <sup>1</sup>	35	36	41	37	43
Route 146, east of Moose Hill Road <sup>2</sup>	35	41	46	43	49
Route 146, east of Wildrose Avenue <sup>2</sup>	30	39	42	37	41
Route 146, vicinity of South Fair Street <sup>2</sup>	30	32	37	32	37
Route 146, west of Pearl Street <sup>1</sup>	25	31	34	30	34
Route 146, east of Union Street <sup>2</sup>	25	35	39	37	41
Route 1, east of Route 146 <sup>2</sup>	45	42	45	40	42

<sup>1</sup> Based on ATR counts conducted in July 2019

<sup>2</sup> Based on speed surveys conducted by CTDOT in 2013

Shaded areas denote speed 10 or greater miles per hour above speed limit

Table B-5 Vehicle Classification Summary

Location	Percent of Bicycles	Percent of Motorcycles	Percent of Passenger Vehicles	Percent of Single Unit Trucks	Percent of Combination Trucks
<b>Branford</b>					
Route 146, vicinity of Hopson Avenue <sup>2</sup>	-	0.0	99.5	0.5	0.0
Route 146, vicinity of Montowese Street <sup>2</sup>	-	0.2	99.7	0.1	0.0
Route 146, vicinity of Meadow Street <sup>2</sup>	-	0.8	97.4	1.7	0.1
Route 146, vicinity of Old Pine Orchard Road <sup>2</sup>	-	0.7	96.6	2.6	0.0
Route 146, vicinity of Indian Neck Avenue <sup>2</sup>	-	0.3	98.2	1.5	0.0
Route 146, south of Sybil Creek Place <sup>1</sup>	0.2	-	91.6	7.6	0.6
Route 146, vicinity of Linden Avenue <sup>2</sup>	-	0.8	97.4	1.8	0.0
Route 146, vicinity of Wilford Road <sup>2</sup>	-	1.2	94.3	4.3	0.3
Route 146, vicinity of Fifth Avenue <sup>2</sup>	-	0.8	97.6	1.6	0.1
Route 146, vicinity of Spring Rock Road <sup>2</sup>	-	0.8	97.1	2.1	0.0
Route 146, vicinity of Blackstone Avenue <sup>2</sup>	-	0.0	99.8	0.2	0.0
Route 146, south of Totoket Road <sup>2</sup>	-	0.7	98.3	1.0	0.0
Route 146, north of Totoket Road <sup>2</sup>	-	0.1	98.1	1.6	0.3
Route 146, vicinity of Whiting Farm Road <sup>2</sup>	-	0.3	98.1	1.5	0.1
Route 146, east of Pine Tree Drive <sup>1</sup>	0.6	-	87.1	11.6	0.7
Route 146, vicinity of Pine Tree Drive <sup>2</sup>	-	0.5	98.9	0.6	0.0
Route 146, east of School Street <sup>1</sup>	0.2	-	90.1	7.2	2.5
Route 146, vicinity of School Street <sup>2</sup>	-	0.5	94.3	5.1	0.1
Route 146, west of Branford/Guilford Town Line <sup>2</sup>	-	1.2	96.4	2.4	0.0
<b>Guilford</b>					
Route 146, east of Moose Hill Road <sup>1</sup>	0.3	-	91.7	7.1	0.9
Route 146, vicinity of Meadow Street <sup>3</sup>	-	0.1	96.9	2.9	0.1
Route 146, west of Route 77 <sup>3</sup>	-	1.1	97.0	1.8	0.1
Route 146, vicinity of Park Street <sup>3</sup>	-	1.3	96.1	2.3	0.3

Route 146, east of Pearl Street <sup>1</sup>	0.2	-	95.9	3.6	0.3
Route 146, west of Soundview Road <sup>3</sup>	-	2.1	93.8	3.9	0.2
Route 146, west of Route 1 <sup>3</sup>	-	0.3	96.7	2.8	0.2
Route 1, east of Route 146 <sup>3</sup>	-	1.4	94.8	3.4	0.4

<sup>1</sup> Based on ATR counts conducted in February 2023

<sup>2</sup> Based on classification surveys conducted by CTDOT in 2020

<sup>3</sup> Based on classification surveys conducted by CTDOT in 2019