Route 146 Corridor Study
Branford/Guilford

VIRTUAL PUBLIC INFORMATION MEETING No. 1
(ZOOM WEBINAR)

630pm – 830pm

December 1, 2020
Virtual Meeting Goals

- To Acquaint the Public with Route 146 Corridor Study
- To Present Consultant Team Summary of Existing Conditions for the Corridor
- To Obtain Public Input on Concerns, Issues and Other Considerations in the Corridor
Virtual Meeting Considerations

- All Participants are Muted until after Presentation
- Presentation of Existing Conditions
- Public Input/Comment
  - Choose Raised Hand Option in Chat Room to be Recognized
  - Moderator Will Unmute
  - 3 Minutes 1st Round, with 1 Minute Reminder
  - Written comments due by 12/31/20
  - Sdudley@scrcog.org

• In writing:
  SCRCOG
  127 Washington Avenue, 4th Floor West
  North Haven, CT 06473
  203-234-7555

- Comments Related to the CTDOT Bridge Project – Future Meeting
Project Study Team Presenters

- SCRCOG
  - Stephen Dudley

- VHB – Study Prime Consultant
  - Joseph Balskus

- RACE Coastal Engineering- Subconsultant
  - Jill Pietropaolo

- Study Advisory Committee Members
Study Advisory Committee Members

**SCRCOG**

Steve Dudley

**BRANFORD**

John Hoefferle
Jon Mulhern
Harry Smith
Karyl Lee Hall

**GUILFORD**

Janice Plaziak
George Kral
Shirley Girioni

**CTDOT**

Edgar Wynkoop
Fred Kulakowski
Claire Sylvestre
Meeting Agenda

- Virtual Meeting Considerations

- Presenter Introductions

- Existing Conditions Review
  - Study Area/Roadway character
  - Cultural/Historical Resources
  - Traffic Volumes/Speeds
  - Crash History
  - Sight Distances/Clearances
  - Operations Summary
  - Coastal Analysis (RACE)

- Public Input/Comment
  - 3 Minutes 1st Round
  - Comments Due 12/31/20
Study Overview

- Evaluate existing conditions for roadway, amenities and land use, evaluate impacts of roadway flooding and sea level rise, traffic calming, future development, traffic volumes, historic and scenic impacts, evacuation routes and possible alternate scenarios.  

  From SCRCOG RFQ May 2019

- 13 Mile Coastal Roadway, 8.6 Branford/4.4 Guilford
Route 146 Corridor Study History

- 1996 Corridor Management Plan
- Reviewed for this Study

From the Mountains to the Sea

ROUTES 77 AND 146 CORRIDOR MANAGEMENT PLAN

prepared for:
The Route 77 and 146 Scenic Road Advisory Committee and
The Connecticut Department of Transportation
Route 146 Corridor – Coastal Roadway Character

- Designated Scenic Roadway for Nearly All 13 miles
- Serves National Register Historic Districts
- Varying Land Uses – Residential Mostly in Coastal Section
- Rural Character of Roadway with Undulating Curves Throughout
- Nominal 24’ Wide, with Limited Shoulders in Sections
Route 146 Corridor – Coastal Roadway Character

- 11,500 Average Daily Traffic (Branford, south of Meadow Street)

- 6,300 ADT (Guilford, east of Pearl Street)

- State-Designated Bike Route (western section only)
  - Red Zone Areas in Corridor

- Parallels/Crosses Amtrak High Speed Railroad and Private Rail
  - 4 Railroad Under/Overpasses and 2 At-Grade Crossings

- Recurring Flooding Issues Along Several Sections of Roadway
Route 146 Corridor – Coastal Roadway
Branford Section

Study Intersections
1. Route 146 at Kilkenny Street
2. Route 146 at Montowese Street
3. Route 146 at Meadow Street
4. Route 146 at Pine Orchard Road (west)
5. Route 146 at Indian Neck Road
6. Route 146 at Pine Orchard Road (east)
7. Route 146 at Blackstone Avenue
8. Route 146 at Damascus Road

LEGEND
- Study Intersection
- Study Corridor

Figure 1-A
Study Intersection Locations
Route 146 Corridor
Branford, CT
Guilford, CT
Nov. 2020
Route 146 Corridor – Coastal Roadway
Branford/Guilford Section

Study Intersections:
9. Route 146 at Leetes Island Road
10. Route 146 at Moose Hill Road

Legend:
- Study Intersection
- Study Corridor
Study Intersections

Branford
- 1. Kirkham Street (signal)
- 2. Montowese Street
- 3. Meadow Street
- 4. Pine Orchard Road (west junction)
- 5. Indian Neck Avenue
- 6. Pine Orchard Road (east junction)
- 7. Blackstone Avenue
- 8. Damascus Road
- 9. Leetes Island Road

Guilford
- 10. Moose Hill Road
- 11. Sachems Head Road
- 12. Whitfield Street
- 13. Soundview Road (flashing red beacon)
- 14. US Route 1 (Boston Post Road)
Route 146 Corridor – Cultural/Historic Resources - Branford

Historic Location Guide
1. Swain-Harrison House
2. Harrison House
3. Bradley House
4. Blackstone Memorial Library
5. Palmer House
6. Wilford Homestead
7. Linwood Avenue Properties (8,10,14)
8. Blackstone House
9. Norton House
10. 161 Damascus Road
11. Baldwin House
12. Second Baldwin House
13. Hoadley House
14. Ives House

Cultural Location Guide
1. St. Mary's Church
2. Branford Municipal Offices & Town Green
3. Branford Center Cemetery
4. Indian Neck School
5. Branford Elks Club
6. Pine Orchard Golf Course
7. Francis Walsh Intermediate School

LEGEND
- Registered Historic Location
- Study Corridor
- Historic District
- Cultural Location
- Scenic Highway

Figure 4-A
Historic and Cultural Locations
Route 146 Corridor
Branford, CT
Guilford, CT
Nov. 2020
Route 146 Corridor – Cultural/Historic Resources

Historic Location Guide
15. Frisbie Homestead
16. Palmer House
17. 29 Flat Rock House
18. Historic Pine Orchard Union Chapel
19. Stick Style House at Stony Creek
20. Lewis Cottage
21. Leete House

Legend
- Registered Historic Location
- Historic District
- Study Corridor
- Scenic Highway
- Cultural Location

Cultural Location Guide
8. Stony Creek Cemetery
9. Branford Trail Trailhead
Route 146 Corridor – Cultural/Historic Resources - Guilford

Legend:
- Registered Historic Location
- Historic District
- Cultural Location
- Study Corridor
- Scenic Highway

Cultural Location Guide
10. Guilford Yacht Club
11. Popular Crabbing Location
12. A.W. Cox Elementary School
13. Guilford Fair Grounds
14. Assembly Of God Church
15. Alder Brook Cemetery

Historic Location Guide
22. Eliot House
23. Medal Stone Tavern
24. Henry Whitfield State Museum
25. Burgis House
26. Hyland House
27. Guilford Town Green
28. Sabbathy House
29. Acadian House
30. Griswold House
Traffic Volume Summary

- Summertime Traffic Volumes Recorded – 2019 and 2020
- CTDOT Traffic Counts – Branford Fall 2020/Guilford 2019
- 11,500 Average Daily Traffic Volume (ADT) in Branford
  - Highest Corridor Volume
  - 11,400 in 1996 Corridor Management Plan (1993 counts)
- 1,000 ADT along Blackstone Avenue Section
  - Lowest Corridor Volume
- 6,300 ADT in Guilford – Highest Volume in Guilford
- Peak Hours Midday and Afternoon (weekdays)
- 14 Intersections Studied
## Traffic Volume Summary

### Table 2-1

**2019 Existing Weekday Average Daily Traffic Volume Summary**

<table>
<thead>
<tr>
<th>Location</th>
<th>Weekday ADT</th>
<th>Weekday Morning Peak Hour</th>
<th>Weekday Evening Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vehicles</td>
<td>Dir. Dist.</td>
<td>&quot;K&quot; Factor</td>
</tr>
<tr>
<td>Route 146, south of Sybil Creek Place</td>
<td>9,400</td>
<td>269</td>
<td>51% NB</td>
</tr>
<tr>
<td>Route 146, east of Pine Tree Drive</td>
<td>2,800</td>
<td>79</td>
<td>51% EB</td>
</tr>
<tr>
<td>Route 146, east of Moose Hill Road</td>
<td>3,200</td>
<td>131</td>
<td>55% EB</td>
</tr>
<tr>
<td>Route 146, west of Pearl Street</td>
<td>6,300</td>
<td>227</td>
<td>53% WB</td>
</tr>
</tbody>
</table>

Source: ATR counts conducted by VHB in July 2019.

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

<table>
<thead>
<tr>
<th>Location</th>
<th>Posted Speed Limit (mph)</th>
<th>Average Speed (mph)</th>
<th>85th % Speed (mph)</th>
<th>Average Speed (mph)</th>
<th>85th % Speed (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 146, vicinity of Home Place</td>
<td>30</td>
<td>38</td>
<td>42</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>Route 146, vicinity of Church Street</td>
<td>25</td>
<td>33</td>
<td>37</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Route 146, vicinity of Barker Place</td>
<td>25</td>
<td>34</td>
<td>37</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>Route 146, south of Sybil Creek Place</td>
<td>25</td>
<td>30 NB</td>
<td>34</td>
<td>30 SB</td>
<td>33</td>
</tr>
<tr>
<td>Route 146, vicinity of Wilford Road</td>
<td>25</td>
<td>27</td>
<td>31</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Route 146, vicinity of Fifth Avenue</td>
<td>25</td>
<td>34</td>
<td>38</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>Route 146, vicinity of Selden Avenue</td>
<td>25</td>
<td>37</td>
<td>41</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>Route 146, vicinity of Griffing Pond Road</td>
<td>25</td>
<td>32</td>
<td>36</td>
<td>33</td>
<td>37</td>
</tr>
<tr>
<td>Route 146, east of Whiting Farm Road</td>
<td>25</td>
<td>33</td>
<td>37</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>Route 146, east of Pine Tree Drive</td>
<td>25</td>
<td>34</td>
<td>38</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>Route 146, vicinity of School Street</td>
<td>20</td>
<td>33</td>
<td>36</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Route 146, west of Branford/Guilford Town Line</td>
<td>35</td>
<td>40</td>
<td>44</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td>Route 146, east of Moose Hill Road</td>
<td>35</td>
<td>36</td>
<td>41</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Route 146, east of Moose Hill Road 2</td>
<td>35</td>
<td>41</td>
<td>46</td>
<td>43</td>
<td>49</td>
</tr>
<tr>
<td>Route 146, east of Wildrose Avenue</td>
<td>30</td>
<td>39</td>
<td>42</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>Route 146, vicinity of South Fair Street</td>
<td>30</td>
<td>32</td>
<td>37</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>Route 146, west of Pearl Street</td>
<td>25</td>
<td>31</td>
<td>34</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>Route 146, east of Union Street</td>
<td>25</td>
<td>35</td>
<td>39</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>Route 1, east of Route 146</td>
<td>45</td>
<td>42</td>
<td>45</td>
<td>40</td>
<td>42</td>
</tr>
</tbody>
</table>

1 Based on ATR counts conducted in July 2019  
2 Based on speed surveys conducted by CTDOT in 2015  
Shaded areas denote 85th percentile speed 10 or greater miles per hour above speed limit
Crash History

- 3 Years of Data 2017-2019
- UCONN Crash Repository Data Base

<table>
<thead>
<tr>
<th>Town</th>
<th>Number of Crashes Per Town</th>
<th>Total Number of Crashes at Study Intersections</th>
<th>Total Number of Injuries on Corridor</th>
<th>Total Number of Pedestrian/Cyclist Crashes on Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branford</td>
<td>136</td>
<td>27</td>
<td>41</td>
<td>3</td>
</tr>
<tr>
<td>Guilford</td>
<td>73</td>
<td>36</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>209</td>
<td>63</td>
<td>50</td>
<td>7</td>
</tr>
</tbody>
</table>

The one fatality occurred in December 2017 on South Montowese Street (Route 146), south of the intersection of Route 146 at Indian Neck Road. The vehicle was a single car crash, the driver lost control and hit a tree. This crash occurred on a wet roadway during dawn/dusk conditions outside of peak hours on a weekend.
### Table 1 Crash Analysis Summary - Route 146 Branford and Guilford

<table>
<thead>
<tr>
<th>Year</th>
<th>Route 126 at Kinkham Street</th>
<th>Route 146 at Montowisco Street</th>
<th>Route 146 at Meadow Street</th>
<th>Route 146 at Barden Road West</th>
<th>Route 146 at Indian Neck Avenue</th>
<th>Route 146 at Long Meadow Road</th>
<th>Route 146 at Sachems Head Road</th>
<th>Route 146 at Whiffletree Road</th>
<th>Route 146 at Soundside Road</th>
<th>Route 126 at Route 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2018</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>2019</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Collision Type
- Angle
- Rear-end
- Sideswipe, same direction
- Unknown

#### Severity
- Fatal Injury
- Non-Fatal Injury
- Property Damage Only
- Not Reported/Unknown

#### Time of Day
- Weekday, 7:00 AM - 9:00 AM
- Weekday, 9:00 - 11:00 PM
- Saturday, 7:00 AM - 11:00 PM
- Weekday, other time

#### Season
- Dec - Feb
- Mar - May
- June - Aug
- Sept - Nov

#### Pavement Conditions
- Dry
- Wet
- Snow
- Ice

#### Light Conditions
- Daylight
- Overcast
- Night

<table>
<thead>
<tr>
<th>Year</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>59</td>
<td>18</td>
</tr>
<tr>
<td>2018</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>2019</td>
<td>37</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collision Type</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Rear-end</td>
<td>38</td>
<td>14</td>
</tr>
<tr>
<td>Sideswipe, same direction</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Head on</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Backing</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Unknown</td>
<td>42</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Severity</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Injury</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Non-Fatal Injury</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>Property Damage Only</td>
<td>103</td>
<td>64</td>
</tr>
<tr>
<td>Not Reported/Unknown</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time of day</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday, 7:00 AM - 9:00 AM</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Weekday, 4:00 - 6:00 PM</td>
<td>27</td>
<td>11</td>
</tr>
<tr>
<td>Saturday, 11:00 AM - 2:00 PM</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Weekday, other time</td>
<td>65</td>
<td>44</td>
</tr>
<tr>
<td>Weekend, other time</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Season</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec – Feb</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Mar – May</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>June – Aug</td>
<td>39</td>
<td>15</td>
</tr>
<tr>
<td>Sept – Nov</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pavement Conditions</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td>104</td>
<td>60</td>
</tr>
<tr>
<td>Wet</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Snow</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Ice</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other Condition</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Light Conditions</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight</td>
<td>104</td>
<td>60</td>
</tr>
<tr>
<td>Dawn/Dusk</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Dark, Not Lighted</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Dark, Lighted</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Motorist (Bike, Pedestrian)</th>
<th>Route 146 Branford Corridor</th>
<th>Route 146 Guilford Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (no K)</td>
<td>4 (no K)</td>
<td></td>
</tr>
</tbody>
</table>

Route 146 Corridor – Crashes - Mid Section

Study Intersections
9. Route 146 at Leetes Island Road
10. Route 146 at Moose Hill Road

Legend
- Number of Crashes Per Intersection
  - 0 - 5
  - 6 - 10
  - 11-15
  - 16+
  - Approx. location of fatal collision

Crash History (2017-2019)
Route 146 Corridor
Branford, CT
Guilford, CT
Fig 2-B
Nov. 2020
## Intersection Sight Distances

<table>
<thead>
<tr>
<th>Study Intersection / Approach</th>
<th>Design Speed (mph)¹</th>
<th>Recommended ISD²</th>
<th>Available ISD³</th>
<th>Meets Standard</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Route 146 at Montowese Street</td>
<td>38 38</td>
<td>420' 420'</td>
<td>&gt;420' &gt;420'</td>
<td>Yes Yes</td>
<td></td>
</tr>
<tr>
<td>- EB Route 146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Route 146 at Meadow Street</td>
<td>38 38</td>
<td>420' 420'</td>
<td>&gt;420' &gt;420'</td>
<td>Yes Yes</td>
<td></td>
</tr>
<tr>
<td>- EB Meadow Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Route 146 at Pine Orchard Road (east)</td>
<td>41 41</td>
<td>450' 450'</td>
<td>&gt;450' &gt;450'</td>
<td>Yes Yes</td>
<td></td>
</tr>
<tr>
<td>- SB Pine Orchard Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Route 146 at Blackstone Avenue</td>
<td>41 41</td>
<td>450' 450'</td>
<td>50' 50'</td>
<td>NO* NO**</td>
<td>Sight lines to left obstructed by stone pillar. ** Sight lines to left obstructed by trees and horizontal curvature. *** Sight lines to right obstructed by stone pillar.</td>
</tr>
<tr>
<td>- NB Blackstone Avenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SB Blackstone Avenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Route 146 at Damascus Road</td>
<td>39 39</td>
<td>430' 430'</td>
<td>240' &gt;430'</td>
<td>NO* Yes</td>
<td>Sight lines to left obstructed by trees and mailbox. ** Sight lines to right obstructed by trees and horizontal curvature.</td>
</tr>
<tr>
<td>- NB Totoket Road at Damascus Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- EB Route 146 (Totoket Rd) at Stony Creek Road</td>
<td>39 39</td>
<td>430' 430'</td>
<td>&gt;430' 215'</td>
<td>Yes NO**</td>
<td></td>
</tr>
<tr>
<td>10 Route 146 at Moose Hill Road</td>
<td>43 43</td>
<td>475' 475'</td>
<td>&gt;475' 335'</td>
<td>Yes NO*</td>
<td>Sight lines to right limited by horizontal and vertical curvature.</td>
</tr>
<tr>
<td>- NB Shell Beach Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Route 146 at Sachems Head Road</td>
<td>42 42</td>
<td>465' 465'</td>
<td>315' 220'</td>
<td>NO* NO*</td>
<td>Sight lines to left limited by bridge. Sight lines to right limited by vegetation.</td>
</tr>
<tr>
<td>- EB Route 146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Route 146 at Whitfield Street</td>
<td>40 40</td>
<td>440' N/A</td>
<td>&gt;440'' N/A</td>
<td>Yes N/A</td>
<td>Intersection has stop control on 3 approaches. Sight lines only needed facing uncontrolled southbound approach. ** Presence of parked cars on street may limit sight lines.</td>
</tr>
<tr>
<td>- EB Route 146 (Water Street)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- WB Route 146 (Boston Street)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Route 146 at Route 1</td>
<td>45 45</td>
<td>495' 495'</td>
<td>&gt;495' 430'</td>
<td>Yes NO*</td>
<td>Sight lines to right limited by horizontal and vertical curvature.</td>
</tr>
<tr>
<td>- EB Route 146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 Design speed for approaching vehicle based on closest available 85° percentile speed data or 10 mph over the posted speed limit if speed data unavailable.
2 Recommended Intersection Sight Distance calculated based on design speed of approaching vehicle and design standards identified in the Connecticut Department of Transportation Highway Design Manual.
3 Available Intersection Sight Distance based on field measurements conducted by VHB in November 2020.
Bridge Overpass Clearances

Bridge #01369

Vertical Clearance Signed: 10' 0"  
Measured: 10' 4"

Bridge #05386

Vertical Clearance Signed: 9' 8"
Measured: 10' 2"

Legend:
- Red: Study Corridor
- Green: Bridge

Figure 2-A

Bridge Observations
Route 146 Corridor Study
Branford, CT
Guilford, CT
Nov. 2020
Intersection Operations

Study Intersections
1. Route 146 at Kirkham Street
2. Route 146 at Montowese Street
3. Route 146 at Meadow Street
4. Route 146 at Pine Orchard Road (west)
5. Route 146 at Indian Neck Road
6. Route 146 at Pine Orchard Road (east)
7. Route 146 at Blackstone Avenue
8. Route 146 at Damascus Road

Legend
- Intersection Number
- Study Corridor

Level of Service (LOS)*
- PM Peak Hour
- AM Peak Hour
- LOS A/B
- LOS C/D
- LOS E/F

Figure 3-A
Existing Level of Service
Route 146 Corridor
Brantford, CT
Guilford, CT
Nov. 2020
Intersection Operations

Study Intersections:
9. Route 146 at Leetes Island Road
10. Route 146 at Moose Hill Road

Legend:
- Intersection Number
- Study Corridor

Level of Service (LOS)*

- LOS A/B
- LOS C/D
- LOS E/F

Existing Level of Service
Route 146 Corridor
Branford, CT
Guilford, CT

Figure 3-8
Nov. 2020
Flooding and Sea Level Rise

- Recurring Flooding Along the Corridor – Town Engineer Summary
- VHB/RACE Team Reviewed Sea Level Rise Impacts
- Future Conditions to Address/Mitigate Impacts
Coastal Analysis Efforts
Coastal Analysis

- RACE performed a coastal analysis, which included reviewing water levels, wind speed and sea level rise from published sources including Federal Emergency Management Agency (FEMA), National Oceanic and Atmospheric Administration (NOAA), United States Army Corps of Engineers (USACE) and the Connecticut Institute for Resilience and Climate Adaption (CIRCA). 
- The purpose of this effort was to consider how future sea level rise may impact the study area as existing FEMA mapping does not take sea level rise into consideration. 
- This analysis determined the starting offshore parameters associated with the design storm across 20 transects.
  - FEMA uses cross-shore transects, or lines that are drawn on maps, that are placed at specific intervals along the shoreline of open coast areas to predict the extents of floodwaters over land.
  - Transect locations used for this analysis were the same locations used by FEMA in its Flood Insurance Study (FIS) No. 09009CV001C.
  - The transects were re-analyzed with 20” of sea level rise to determine future FEMA 1%-annual chance base flood elevations.
  - In accordance with Connecticut General Statutes Section 25-68o(b), in the preparation of any municipal evacuation plan or hazard mitigation plan, such municipality shall consider the most recent sea level change scenario.
    - 20” of sea level rise is the projected 2050 planning threshold recommended by CIRCA and the value that has been adopted by the CT Department of Energy and Environmental Protection (CT DEEP) Commissioner for compliance with this statute.
Effective Flood Insurance Rate Map (FIRM)

- Produced by FEMA’s National Flood Hazard Layer (NFHL) Viewer:
  https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996d4444d4879333b5529a9cfd

- The above map is FEMA’s existing 100-yr flood plan and transect locations.
- The following slides show this data with in more detail.
LEGEND

CT - ROUTE 146

MAJOR CT ROADWAYS

FEMA TRANSEC

EXISTING FEMA FLOOD ZONE

FLOOD ZONE WITH 20" SLR

INCREASE IN FLOOD ZONE

INCREASE IN FLOOD ZONE ALONG CT - ROUTE 146
FLOOD ZONES WITH 20" SLR PARTIAL PLAN 1
Sea Level Rise

- The following slides show existing stillwater level (SWL) flooding and how 20” of sea level rise (SLR) will impact each design SWL flooding event.
- Stillwater flooding is defined as the flood level not including the effects of waves, but including storm surge and astronomic tides.
- The slides include the following events:
  - Mean Higher High Water (MHHW) = El. 1.2’
  - MHHW + 20” of SLR = El. 2.9’
  - 1-yr (Expected annual event) = El. +4.3’
  - 1-yr+20” of SLR = El. +6.0’
  - 10-yr (10% chance of annual occurrence) = El. +6.1’
  - 10-yr+20” of SLR = El. 7.8’
  - 50-yr (2% chance of annual occurrence) = El. +8.0’
  - 100-yr (1% chance of annual occurrence) = El. +9.1’
  - 50-yr+20” of SLR = El. +9.7’
  - 100-yr+20” of SLR = El. +10.8’

The event is labeled in the bottom right hand corner of the slide.
Mean Higher High Water = EL. +1.2’ NAVD88
Mean Higher High Water + 20” Sea Level Rise = EL. +2.9’ NAVD88
1-YR Stillwater Level = EL. +4.3’ NAVD88
1-YR Stillwater Level +20” Sea Level Rise = EL. +6.0’ NAVD88
10-YR Stillwater Level = EL. +6.1’ NAVD88
10-YR Stillwater Level +20” Sea Level Rise = EL. +7.8’ NAVD88
100-YR Stillwater Level = EL. +9.1’ NAVD88
Anticipated Schedule - Update

- Data Collection/Existing Conditions – Draft Report
- Public Information Meeting - TONIGHT
- Future Conditions Winter 2020/21
- Recommendations Spring 2021
- Public Information Meeting – March/April 2021
- Final Report June 30, 2021 (FUNDING DEADLINE)
Next Steps

- Incorporate Comments from Public Information Meeting
- Finalize Existing Conditions – Issue Report
- Initiate Future Conditions and Recommendations
- Spring 2021 Public Information Meeting
Questions – Chat Room