Town of Guilford, CT
Elevating Coastal Roads

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Town Engineer
What if this is the only road to your house?

- Old Quarry Road, Guilford, CT
- March 9th & September 9th 2013
The town’s engineering department is going to get complaints!

• Old Quarry Road provides access to 29 homes - cumulative value of over $78M, average value of $2.7M each
• frequency of flooding was increasing
• and this is not the only road in town that is a problem....
• establish coastal roads fund & apply for grants
• begin design and permitting
• identify mitigation projects
Planning for roads and mitigation:

• 1994 - Leetes Island Tidal Marsh by Milone & MacBroom, 40 acre marsh conditions analysis and restoration & maintenance plan for CTDEEP
• 2003 - Town of Guilford Transportation Plan, road flooding not a concern raised in this plan
• 2012 – Hazard Mitigation Plan & Commission established
• 2014 - Town of Guilford Community Coastal Resilience Plan by Milone & MacBroom, Nature Conservancy and Yale University with funding by NOAA
• 2015 – Plan of Conservation & Development, coastal roads and access discussed as an immediate issue
• 2017 – Regional Coastal Resilience Plan
• 2017 – Study of Rte 146 flooding frequency by CIRCA
• 2018 – Regional Hazard Mitigation Plan
• 2019 – Towns of Guilford & Branford seek funding for Corridor Study for Rte 146
Roads planned to be elevated 2013:

<table>
<thead>
<tr>
<th>Road</th>
<th>Length, lf</th>
<th>Estimated Impact, sf</th>
<th>Actual Impact, sf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Quarry Road</td>
<td>2,000</td>
<td>15,300</td>
<td>20,100</td>
</tr>
<tr>
<td>Tuttles Point Road</td>
<td>350</td>
<td>1,488</td>
<td>6,200</td>
</tr>
<tr>
<td>Chaffinch Island Road</td>
<td>600</td>
<td>6,550</td>
<td>12,240</td>
</tr>
<tr>
<td>Andrews Road</td>
<td>250</td>
<td>1,250</td>
<td></td>
</tr>
<tr>
<td>Shell Beach Road</td>
<td>1,200</td>
<td>8,470</td>
<td></td>
</tr>
<tr>
<td>Prospect Avenue</td>
<td>450</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Falcon Road</td>
<td>260</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>Vineyard Point Road</td>
<td>600</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>Daniel Avenue</td>
<td>460</td>
<td>4,600</td>
<td></td>
</tr>
<tr>
<td>Mulberry Point Road</td>
<td>200</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td><strong>6,370</strong></td>
<td><strong>45,958</strong></td>
<td><strong>38,540</strong></td>
</tr>
</tbody>
</table>
Old Quarry Road
elevated road 2’ to lowest elevation of 6’

Before

After
LEGEND

- Post Construction Toe of Embankment (2016)
- Pre Construction Toe of Embankment (2013)

OLD QUARRY ROAD (NORTH)

SOURCE: GOOGLE EARTH

FIG. 2A
Tuttles Point Road

elevated road about 3’ to elevation 7.2’

Before

After
Chaffinch Island Road

elevated road 3’ to elevation 7.5’, berms to elevation 9’, HMGP funding

Before

After
Falcon Road damaged 12/21/18
Permits underway to repair in kind, future betterment project?
Lessons learned and challenges going forward

• Construction impacts exceeded permits
• NOVs from CTDEEP and Army Corps, fines, etc...
• Mitigation challenges, two agencies, possibly two different requirements
• Costs and future permitting and mitigation
• Causeways vs. neighborhood streets
• Rte 146 floods in 5 locations, $15M to be spent for one of those locations with 360’ bridge to be built, two other locations involve Amtrak underpasses...challenges for CTDOT
• Which roads will become the next priority?