

# Town of Guilford, CT Elevating Coastal Roads

Janice A. Plaziak, P.E.

Town Engineer

# What if this is the only road to your house?

- Old Quarry Road, Guilford, CT
- March 9<sup>th</sup> & September 9<sup>th</sup> 2013



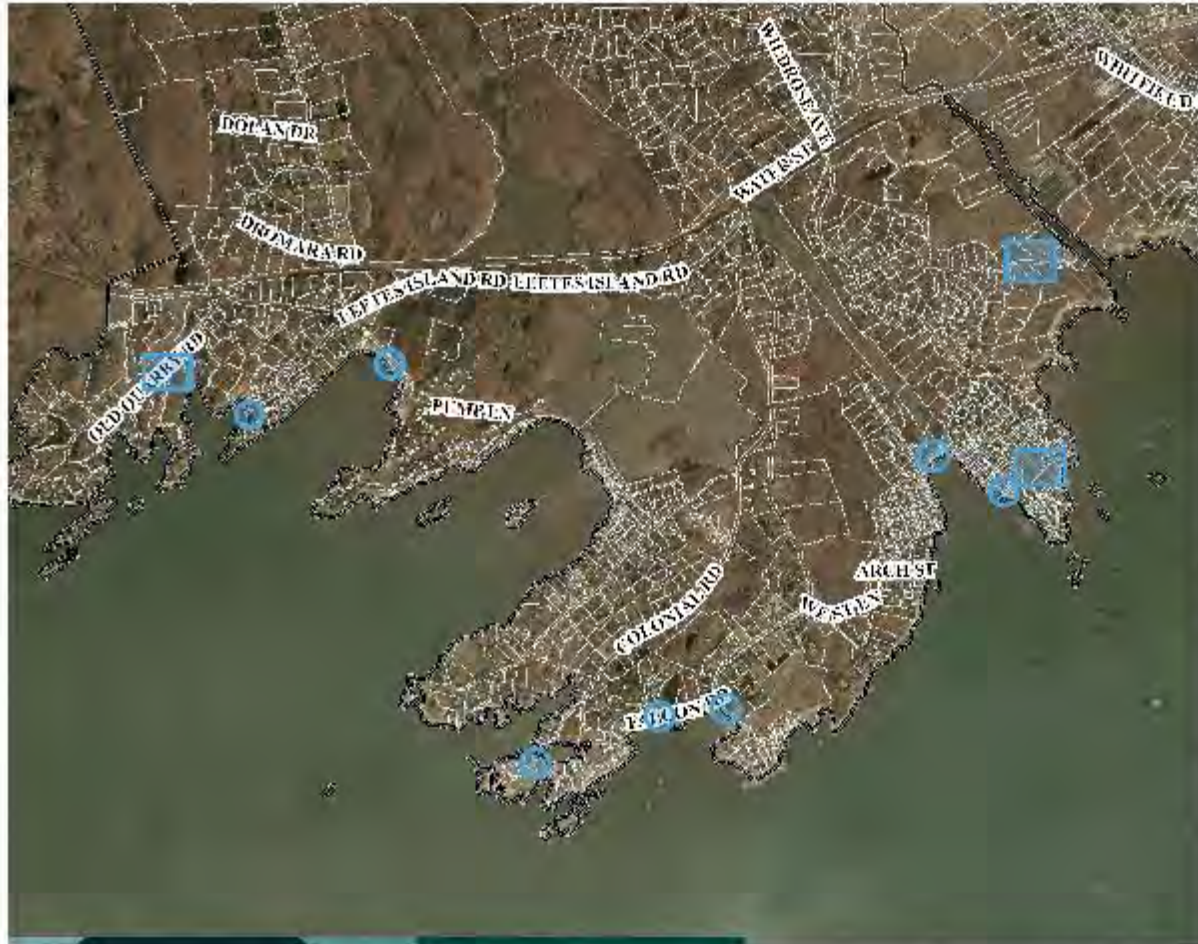
# The town's engineering department is going to get complaints!

- 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

# Town of Guilford, CT

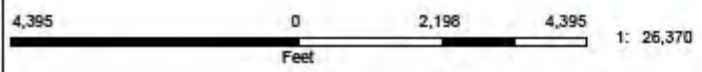


### Legend

- Parcels
- Barriers**
  - Curb
  - Guardrail
  - Retaining Wall
  - Rock Wall
  - Wall
- Structures**
  - Pool
  - Building
  - Foundation
  - Other
- Driveways / Sidewalks

### Location

### Notes



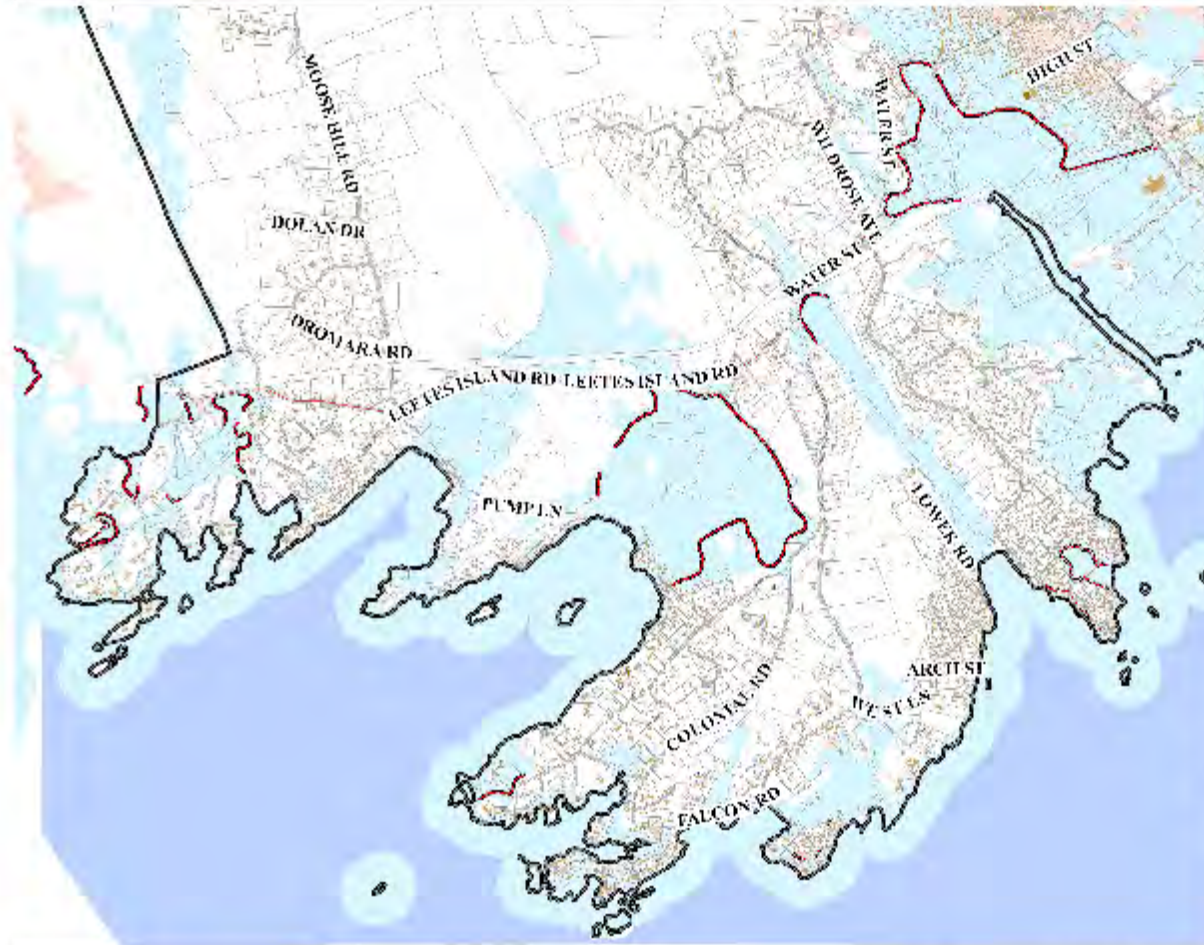
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

# Roads planned to be elevated 2013:

Road	Length, lf	Estimated Impact, sf	Actual Impact, sf
Old Quarry Road	2,000	15,300	20,100
Tuttles Point Road	350	1,488	6,200
Chaffinch Island Road	600	6,550	12,240
Andrews Road	250	1,250	
Shell Beach Road	1,200	8,470	
Prospect Avenue	450	1,000	
Falcon Road	260	1,300	
Vineyard Point Road	600	5,000	
Daniel Avenue	460	4,600	
Mulberry Point Road	200	1,000	
Totals:	6,370	45,958	38,540



# Town of Guilford, CT

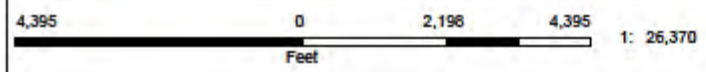


### Legend

- Parcels
- Barriers**
  - Curb
  - Guardrail
  - Retaining Wall
  - Rock Wall
  - Wall
- Structures**
  - Pool
  - Building
  - Foundation
  - Other
- Driveways / Sidewalks
- Limit of Moderate Wave Action
- Flood Hazard Zones**
  - 1% Annual Chance Flood Hazard
  - Regulatory Floodway
  - Special Floodway
  - Area of Undetermined Flood Hazard

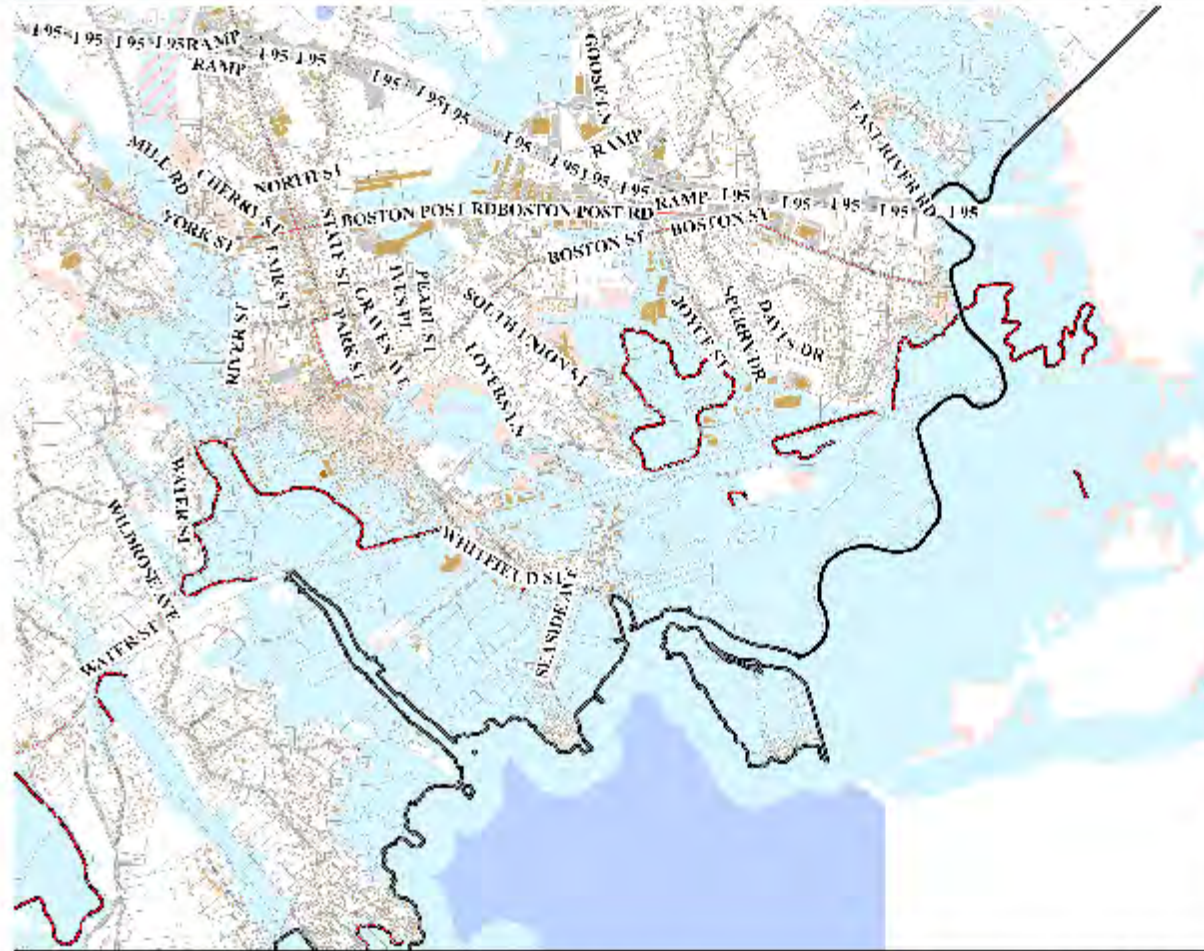
### Location

### Notes



This product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

# Town of Guilford, CT

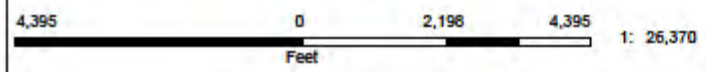


### Legend

- Parcels
- Barriers**
  - Curb
  - Guardrail
  - Retaining Wall
  - Rock Wall
  - Wall
- Structures**
  - Pool
  - Building
  - Foundation
  - Other
- Driveways / Sidewalks
- Limit of Moderate Wave Action
- Flood Hazard Zones**
  - 1% Annual Chance Flood Hazard
  - Regulatory Floodway
  - Special Floodway
  - Area of Undetermined Flood Hazard



### Notes



This product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review and consult the primary data and information sources to ascertain the usability of the information.



# Old Quarry Road

elevated road 2' to lowest elevation of 6'

**Before**



**After**



# Town of Guilford, CT



## Legend

## Location



## Notes

2,198 0 1,099 2,198  
Feet 1: 13,185



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



plan N\_000\_1.mxd:SP12A.DWG



**LEGEND**

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

**MILONE & MACBROOM**  
 99 Realty Drive  
 Cheshire, Connecticut 06410  
 (203) 271-1773  
 www.mminc.com

**OLD QUARRY ROAD (NORTH)**

---

OLD QUARRY ROAD  
 GUILFORD, CONNECTICUT

SOURCE: GOOGLE EARTH

DATE: 15 NOV 2018		
NOT TO SCALE		
PROJ. NO.: 2426-28		
DESIGNED	DRAWN	CHECKED
MBR	KFK	MBR
DRAWING NAME:		
FIG. 2A		

Plan 2\_3000.mxd 11/15/2018 11:01 AM



**LEGEND**

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

<b>MILONE &amp; MACBROOM</b> 99 Realty Drive Cheshire, Connecticut 06410 (203) 271-1773 <a href="http://www.mminc.com">www.mminc.com</a>	<b>OLD QUARRY ROAD (SOUTH)</b>	DATE: <b>15 NOV 2018</b> NOT TO SCALE PROJ. NO.: <b>2426-28</b> DESIGNED   DRAWN   CHECKED <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; text-align: center;">MBR</td> <td style="border: 1px solid black; text-align: center;">KFK</td> <td style="border: 1px solid black; text-align: center;">MBR</td> </tr> </table>	MBR	KFK	MBR
	MBR	KFK	MBR		
SOURCE: GOOGLE EARTH	<b>FIG. 2B</b>	DRAWING NAME:			



# Tuttles Point Road

elevated road about 3' to elevation 7.2'

**Before**



**After**



# Town of Guilford, CT

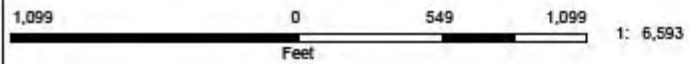


## Legend

## Location



## Notes



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



# Chaffinch Island Road

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

**Before**



**After**



# Town of Guilford, CT

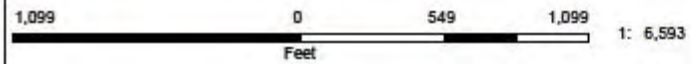


## Legend

## Location



## Notes



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



www.milone.com



**MILONE & MACBROOM**  
 99 Realty Drive  
 Cheshire, Connecticut 06410  
 (203) 271-1773  
 www.mminc.com

**CHAFFINCH ISLAND ROAD**

---

CHAFFINCH ISLAND ROAD  
 GUILFORD, CONNECTICUT

SOURCE: GOOGLE EARTH

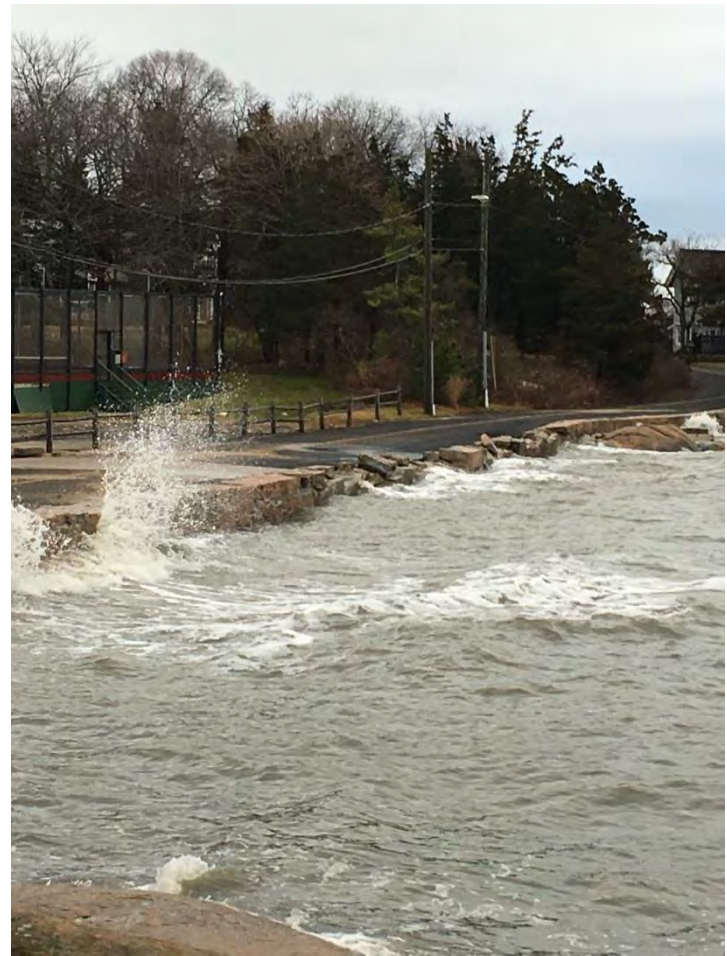
DATE: 15 NOV 2018  
 NOT TO SCALE  
 PROJ. NO: 2426-28

DESIGNED	DRAWN	CHECKED
MBR	KFK	MBR

DRAWING NAME:  
**FIG. 1**

# 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?