Squibnocket Roadway, Beach & Parking Area # 4: April 9, 2014

Tonight's Agenda

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  - **The Squibnocket Farm Homeowner's Association's plan to provide safe and reliable access to their homes.**

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  - The Squibnocket Farm Homeowner's Association's plan to provide safe and reliable access to their homes.
  - **The Town's plan to expand Squibnocket Beach, have an accessible walkway to the shore, relocate the parking area and provide kayak and commercial skiff access to Squibnocket Pond.**

Tonight's Agenda

- The three previous presentations (12/3/13, 1/7/14, and 3/11/14) are posted on the Town's website:
  - www.chilmarkma.gov
  - Click: News & Announcements link on the Home Page.
  - The complete reports and attachments from our coastal geologist consultants – Greg Berman (WHOI) and Jim O'Connell are also posted under: News & Announcements.

Tonight's Agenda

- **<u>Three-part presentation and discussion:</u>**

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1. **Squibnocket Farm Homeowner's Association will review their plans for an elevated roadway that provides reliable access to their homes.**

Tonight's Agenda

- <u>Three-part presentation and discussion:</u>

1. Squibnocket Farm Homeowner's Association will review their plans for an elevated roadway that provides access to their homes.

2. **Review the Town's beach and parking proposal, updates and the coastal geologist's assessment of this plan.**

Tonight's Agenda

- Three-part presentation and discussion:

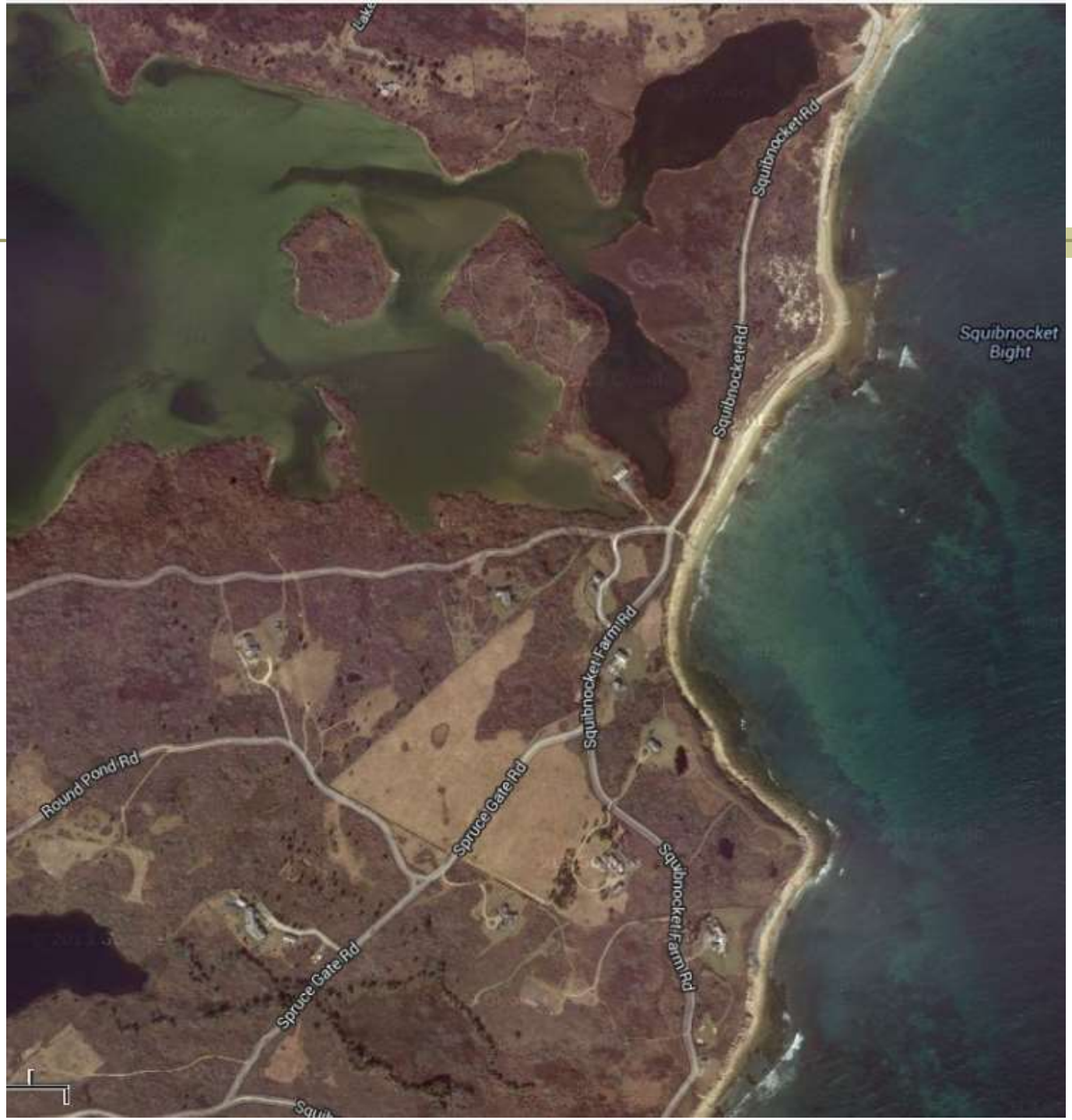
3. **Questions and discussion.**

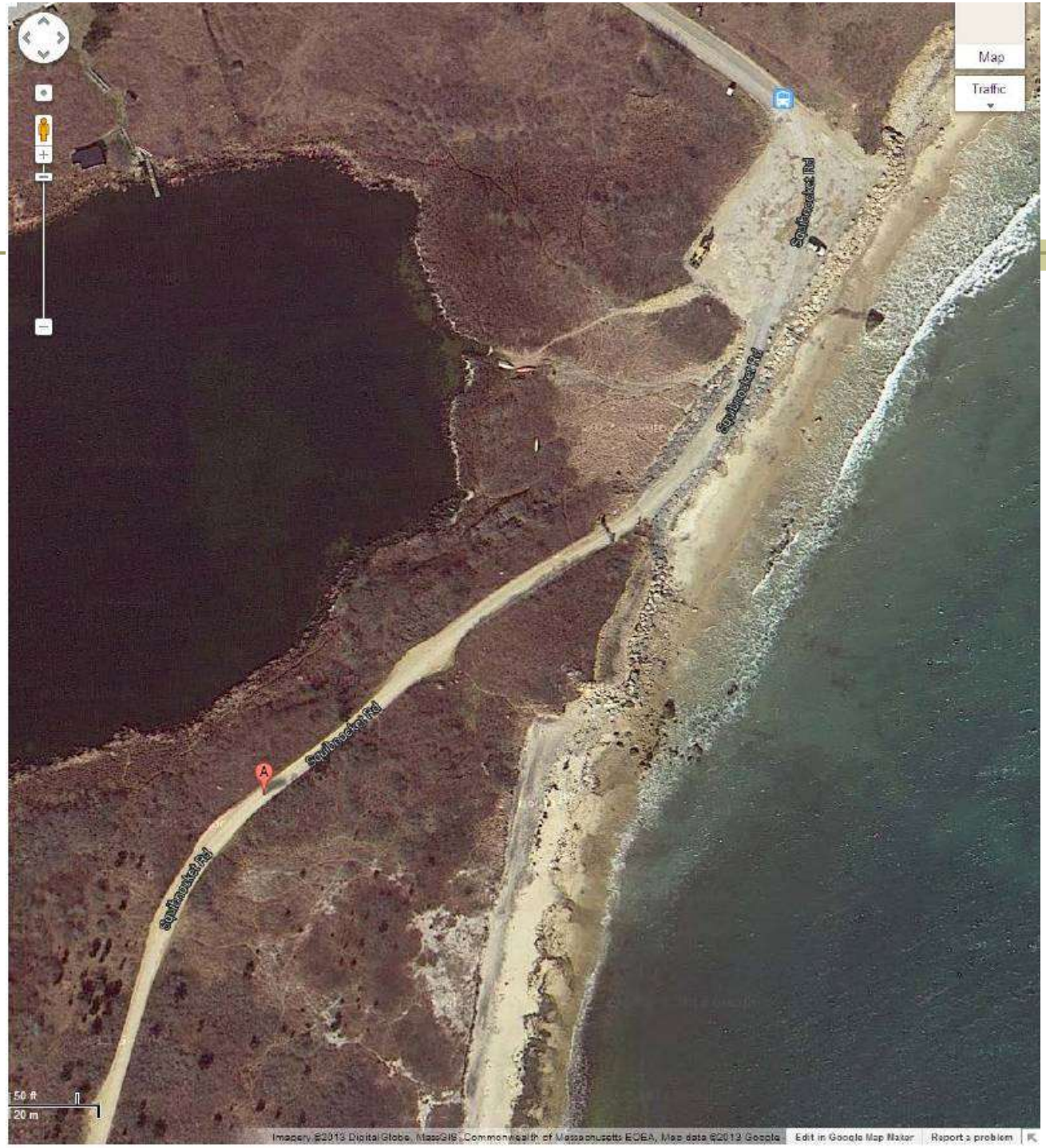
Part 1 - Squibnocket Farm Homeowner's Association

Squibnocket Elevated Roadway

APRIL 9, 2014

ROPES & GRAY


Squibnocket Rd
Squibnocket Rd
Squibnocket Bight
Squibnocket Farm Rd
Round Pond Rd
Spruce Gate Rd
Squibnocket Farm Rd
Spruce Gate Rd


Map
Traffic
Squibnocket Rd
Squibnocket Rd
Squibnocket Rd
Squibnocket Rd
A
50 ft
20 m
Imagery ©2013 DigitalGlobe, MassGIS, Commonwealth of Massachusetts EOEA, Map data ©2013 Google
Edit in Google Map Maker
Report a problem

Existing Revetment

The Problem

- Squibnocket Road provides the sole means of routine and emergency (police, fire, ambulance) access and utility service to the Squibnocket Farm subdivision and adjacent properties.

- The portion of the Road that traverses the existing Town Beach parking lot routinely experiences erosion and damage during major storms. Access was disrupted several times in 2012-13. Storms are predicted to become increasingly more intense along the Eastern seaboard.

Access Causeway During Storm

Storm Damage

The Issue

- Our experts predict that the combination of rising sea level and increased storm intensity will cause ever increasing damage to the existing revetment and may cause the ocean to circumvent the existing revetment and breach into the Squibnocket Pond. Breaches have occurred in the distant and near past, including one in the 1990s.
  - *We can't know when the next catastrophic storm and breach will occur. It could be within a decade, within a year, within a month. But it will happen.*

- The Town's Experts confirm our experts' view that this portion of Squibnocket Road is at increasing risk of more frequent and debilitating storm damage.

  "the beach fronting the revetment will continue to *lower* in elevation resulting in greater wave energy hitting the revetment more than likely resulting in more frequent damage to the revetment with concomitant higher maintenance costs to rebuild the revetment following coastal storms. In addition, end scour or flanking erosion due to the revetment will increase as well." (CAS Report, 3/6, at pp. 3).

The Status Quo

- If nothing is done, it will be necessary to conduct more expensive and more frequent repairs to the revetment and parking lot.
- It is the Town's responsibility under the existing lease to fund such work.
- If necessary repairs are delayed for funding or other reasons, there will be longer disruptions to access and utility service, further harming property values and tax base, exposing the Town to other liabilities, and most critically, threatening life safety.

Solutions?

Option 1: *Extend the current revetment.*

- **<u>The existing revetment system cannot be extended or reinforced to address this problem</u>**. The Massachusetts Department of Environmental Protection ("DEP") prohibits this because of the harmful environmental impacts that result from "hard" engineered solutions to coastal erosion problems. (310 CMR 10.30(3)).

  The existing revetment illustrates the reasons for the prohibition on hard solutions. It has accelerated local erosion rates.

Solutions ?, cont'd

Option 2: *Increase vegetation and place coir logs along the coastal banks to reduce erosion of the roadway ("soft" solution):*

- The homeowners planted additional vegetative cover and placed coir logs in 2011 after DEP vetoed a proposed extension to the revetment. Sandy destroyed the soft solution.
- Soft solutions have been proven unworkable in this location.

The Soft Solution (before Sandy)

The Soft “Solution” After Sandy

Solutions?, cont'd

Option 3: *Elevate the roadway*.

- **The preferred solution functionally and environmentally is to elevate the roadway on piles and allow the ocean to overtake the existing parking lot over time.**
- **DEP Comm'r Ken Kimmell has clearly stated the environmental and regulatory advantages of raising structures rather than armoring them:**

> **"We . . .need to focus on long-term solutions. Unfortunately, global climate change means more frequent and violent storms, and sea level rise will hasten the rapid loss of shoreline . . . . We all need to be cognizant of this fact and make informed decisions to protect homes by moving them out of harm's way. This likely means moving them back and/or placing them on *pile supported structures.*"**

Elevated Roadway (View 1; Money Hill Landing)

Elevated Roadway (View 2; Blacksmith Valley)

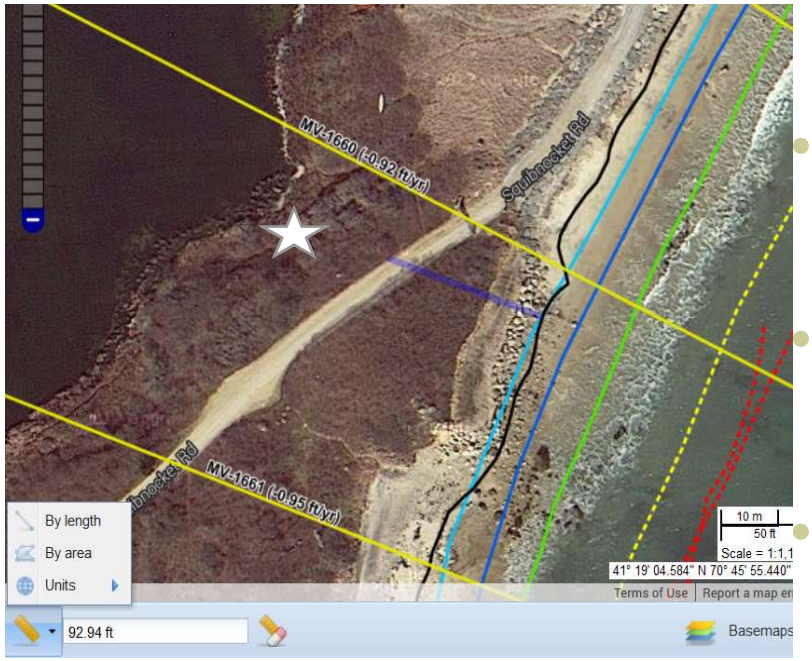
From Higher in Blacksmith Valley: elevated road will be invisible

Elevated Roadway Design

The elevated roadway has been designed to last at least 50 years and to withstand all storm types, including relevant hurricane categories. *Unlike the existing parking lot and road, it will not wash away and can be used continuously regardless of storm intensity*.

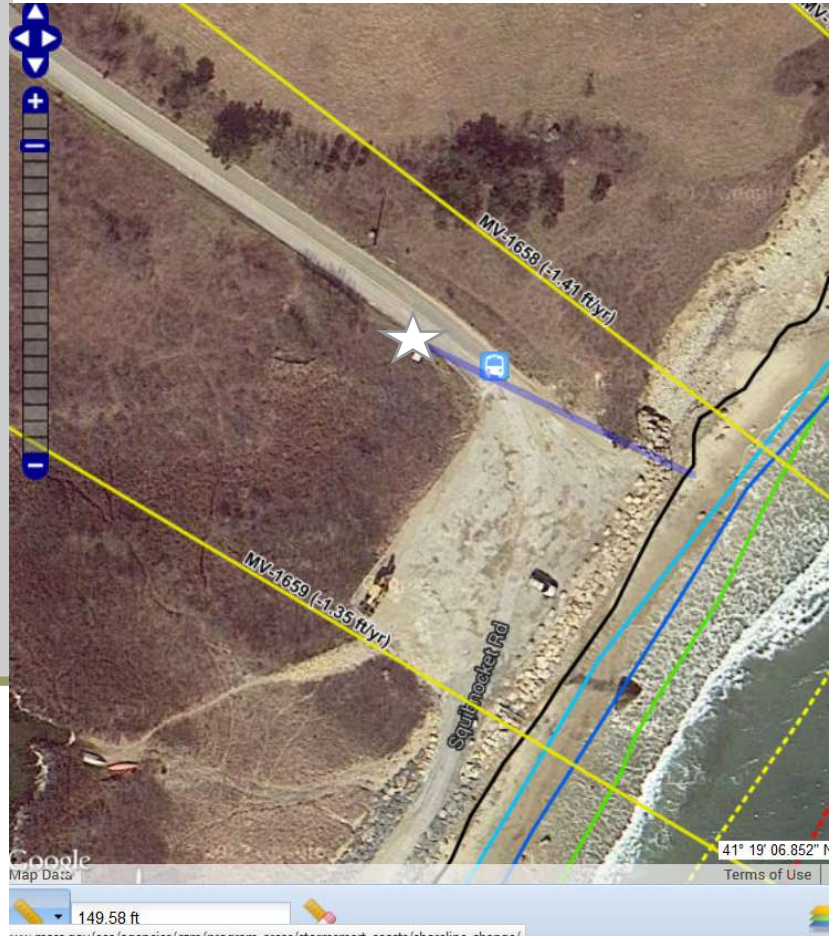
Elevated Roadway – Proposed Alignment

Elevated Roadway – Abutment Longevity



- Western abutment is ~92 ft from existing shoreline
- Local erosion rates are ~0.92 ft/year
- This gives western abutment ~100 years
- Glacial Till knob at Money Hill and existing boulders may decrease erosion pace

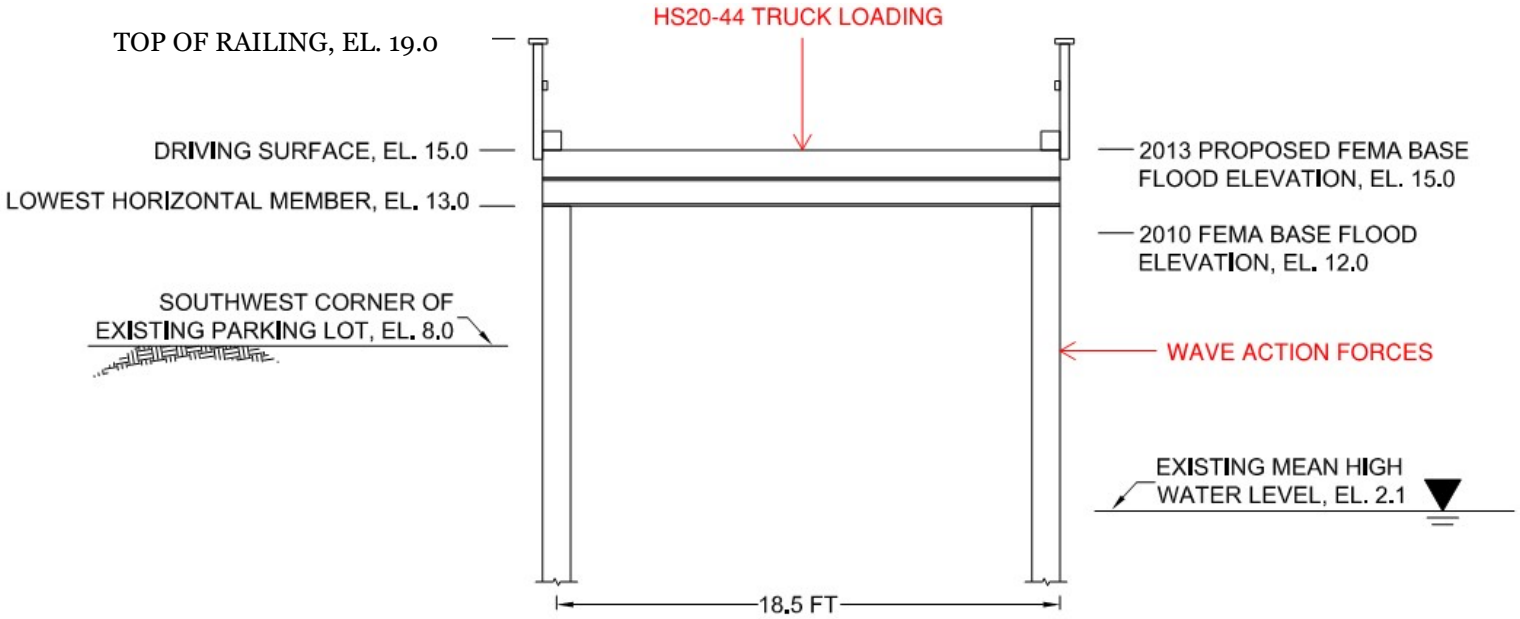
Elevated Roadway – Abutment Longevity



- Eastern abutment is ~150 ft from existing shoreline and high water line
- Local erosion rates are ~1.41 ft/yr
- This gives eastern abutment >100 years
- Remaining parking lot and revetment may decrease erosion pace

Elevated Roadway – Deck Longevity

- 2013 draft FEMA flood elevation for the proposed causeway area is El. 15.0.
- Causeway deck is proposed at El. 15.0.
- The causeway is designed to withstand wave forces up to El. 15 in case the deck is temporarily overtopped in a storm event.



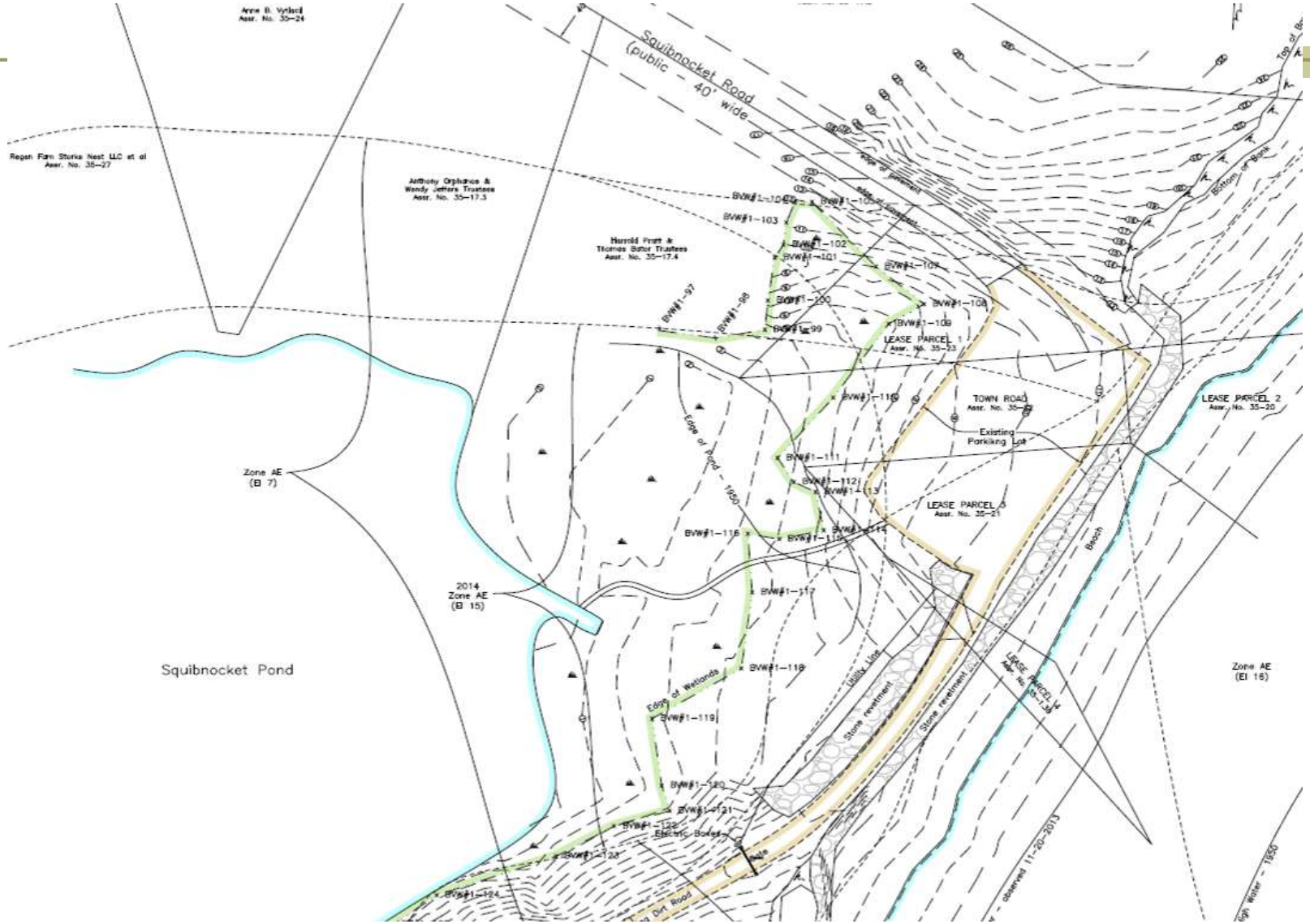
Alternatives Analysis

- Our experts selected a preliminary design and location which would:
  - Minimize potential impacts to wetland resource areas;
  - Meet the performance standards for work on a barrier beach;
  - Avoid work within or any impacts to coastal dune;

Alternatives Analysis

- Be located above the current coastal flood elevation and be designed to withstand wave action corresponding to the estimated coastal flood elevation depicted on the recently released Preliminary Flood Insurance Rate Maps; and
- Avoid the need for land acquisition from private parties.

Wetlands Delineations Complete



Town's Beach Project

- The same forces that threaten the continued existence of the roadway have already eliminated the Town beach at high tide, and threaten to eliminate the parking area.
- The Town suggested to the Homeowners an opportunity to work on a private-public project to provide an expanded Town Beach, new parking area and boat launch in Squibnocket Pond, all to be accessed using the Elevated Roadway.

New Beach Area

Revetment Removal

- Because the current design of the elevated roadway is projected to survive more than 50 years (with or without the revetment), the Homeowners are neutral to removing the revetment.
- The Town's Experts predict more overwash and coastal storm inundation into the Squibnocket Pond and urge further of the effects of increased salinity in the pond.
  - "With the revetment and parking lot completely removed, frequent inundation of saline waters will enter Squibnocket Pond with each storm overwash…The effects of this increased salinity will more than likely be negligible, however, this would have be modeled to gain more accurate predictions." (CAS Report, 3/6, at pp. 11).
  - "As has been described in previous sections of this report, if the existing revetment is removed it is likely that Squibnocket Pond will have a new hydrologic connection with the Atlantic Ocean, either as overwash during storms or more frequently if an occasional inlet were to form after a storm… Permitting this project may require numerical modeling assessment of the potential alterations to tidal hydrodynamics, associated with a new area of greatly increased overwash and/or a potential inlet, as well as the influence of these tidal current changes on coastal erosion potential on the pond and ocean shorelines." (Woods Hole Report, 2/26 at A12)

Next Steps

- Annual Town Meeting: The Town votes will decide on a "yes" or "no" vote whether the Town supports the new beach lease project and the elevated roadway generally.
  - *See* the Town Meeting Warrant Articles #28.
- If the Town votes "yes," the Homeowners and the Town will proceed with the lease negotiations and the permitting process for each project.
  - The final negotiated lease will be presented for approval at a subsequent Town meeting.
  - The applicable permitting agencies will review each project at public meetings.
- If the Town votes "no," or the Town elects not to proceed with the new beach project, the Homeowners will continue the permitting process for a one-lane elevated roadway to secure their long-term access.

Tonight's Agenda – Part 2

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- **Review how we got here.**

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- Review how we got here.
- **Review the Town's current Beach & Parking proposal.**

Tonight's Agenda

- Review how we got here.
- Review the Town's current Beach & Parking proposal.
- **Review the analysis and suggestions provided by Jim O'Connell, an independent coastal geologist.**

Tonight's Agenda

- **Review the Town's construction budget estimates and possible sources of funds.**

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- **Review the other Town options that were considered, ultimately rejected and why.**

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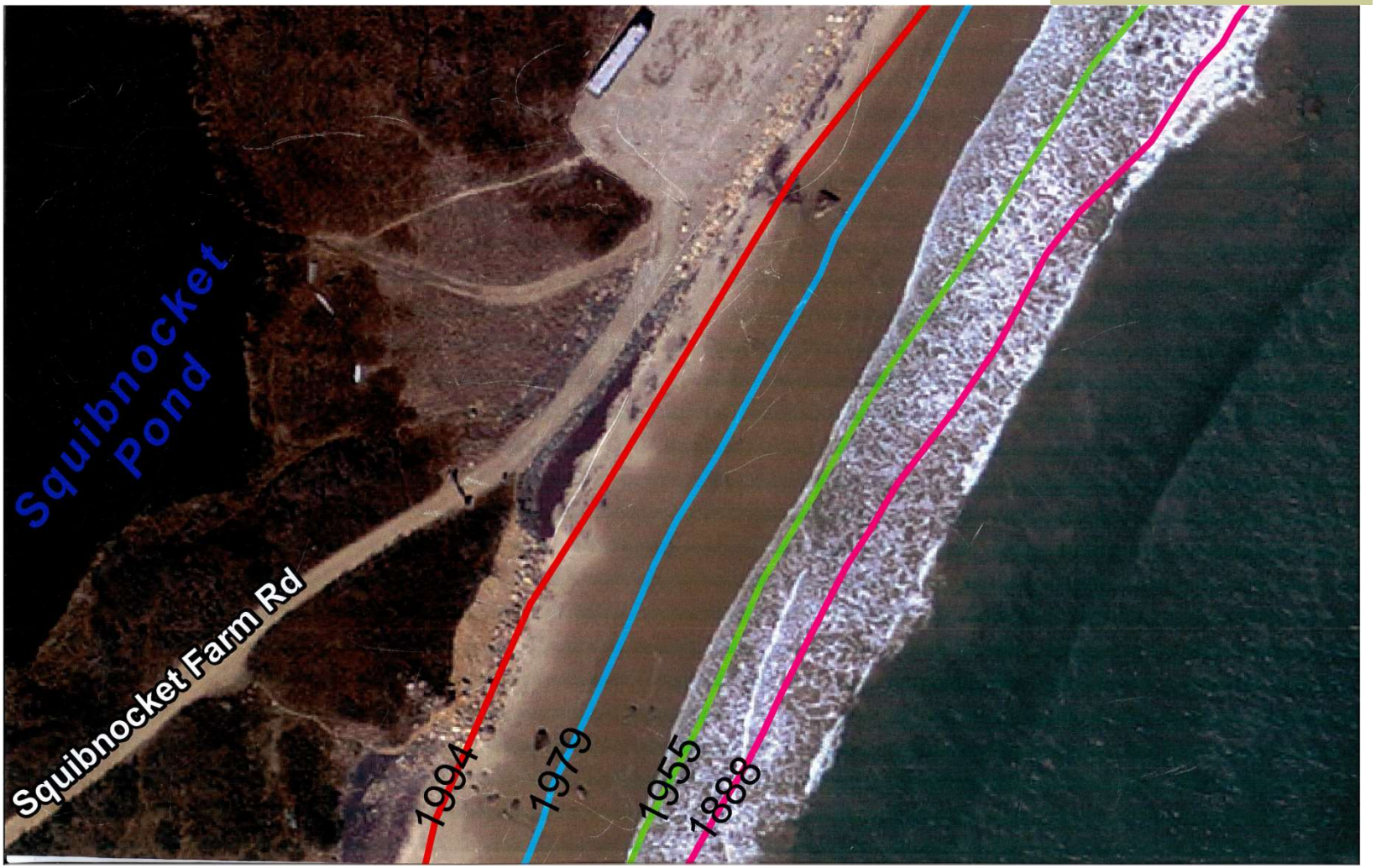
- Review the Town's construction budget estimates and possible sources of funds.
- Review the other Town options that were considered, ultimately rejected and why.
- **Review the plan and warrant article for the April 28th Town Meeting.**

Why are we here?

Beach Shoreline Migration
1888 - Today



How did we get here?

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- **2010: Squibnocket Farm Homeowner's Association (SFHA) received an Order of Conditions to protect the most vulnerable road section at the security gate and "Money Hill".**

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MA. DEP issued Superseding Order of Conditions.

How did we get here?

- **2011:** Hurricane Irene.
- **2012:** Hurricane Sandy.

Hurricane Sandy

How did we get here?

- **<u>2012</u>: Hurricane Sandy.**

SFHA hired engineering firm Haley & Aldrich to design a new roadway solution.

How did we get here?

- **2013:** SFHA reviewed plan for the elevated roadway modeled after the Menemsha Drive-on dock with the Selectmen.

How did we get here?

- **<u>2013</u>: SFHA reviewed plan for the elevated roadway modeled after the Menemsha Drive-on dock with the Selectmen.**

SFHA agrees to postpone their roadway permitting and construction plans.

How did we get here?

- 2013: SFHA reviewed plan for the elevated roadway modeled after the Menemsha Drive-on dock with the Selectmen.

SFHA agrees to postpone their roadway permitting and construction plans.

Selectmen form Committee with SFHA and other disciplines – to find a long-term solution for the Town Beach and Parking that complements SFHA roadway plan.

Town Beach Problems Caused by Severe Erosion

Town Beach Problems Caused by Severe Erosion

1. How to expand the Town's Beach? (in front of the parking area).

Town Beach Problems Caused by Severe Erosion

1. How to expand the Town's Beach? (in front of the parking area).

2. **How to provide stable, long-term beach parking for Town residents?**

Town Beach Problems Caused by Severe Erosion

3. What to do about the severe beach erosion?

Town Beach Problems Caused by Severe Erosion

3. What to do about the severe beach erosion?

4. **How to improve the long-term health of Squibnocket Pond? Determine if there is a <u>practical</u> exit strategy for possibly removing the stone revetment and re-nourishing the barrier beach.**

Town Beach Problems Caused by Severe Erosion

5. How to solve all of the Town's Squibnocket Beach problems <u>without</u> raising taxes to pay for it?

Declining Squibnocket Beach Pass Sales

FY 2013 versus FY 2011

Declining Squibnocket Beach Pass Sales

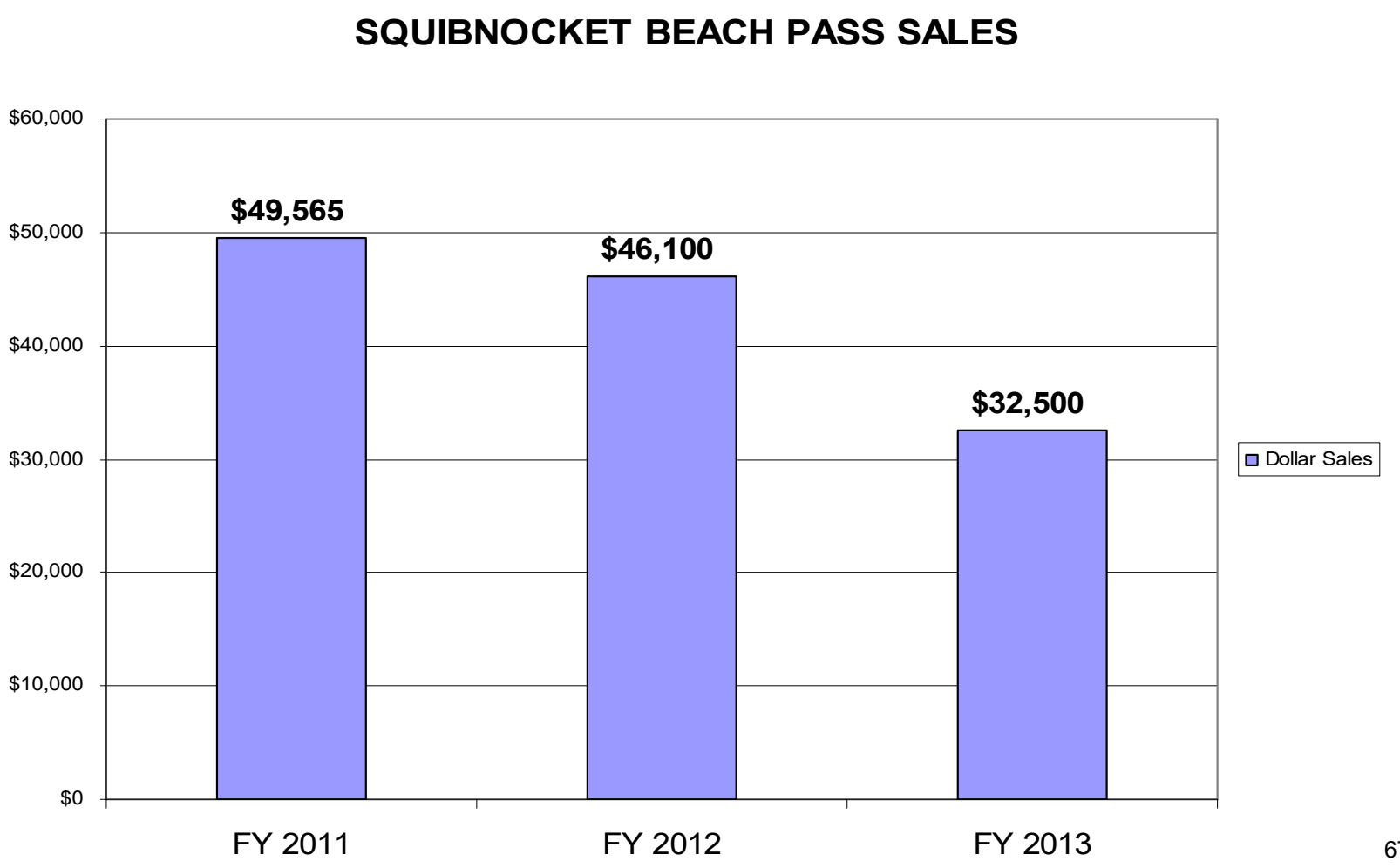
FY 2013 versus FY 2011

- 341 Beach Passes

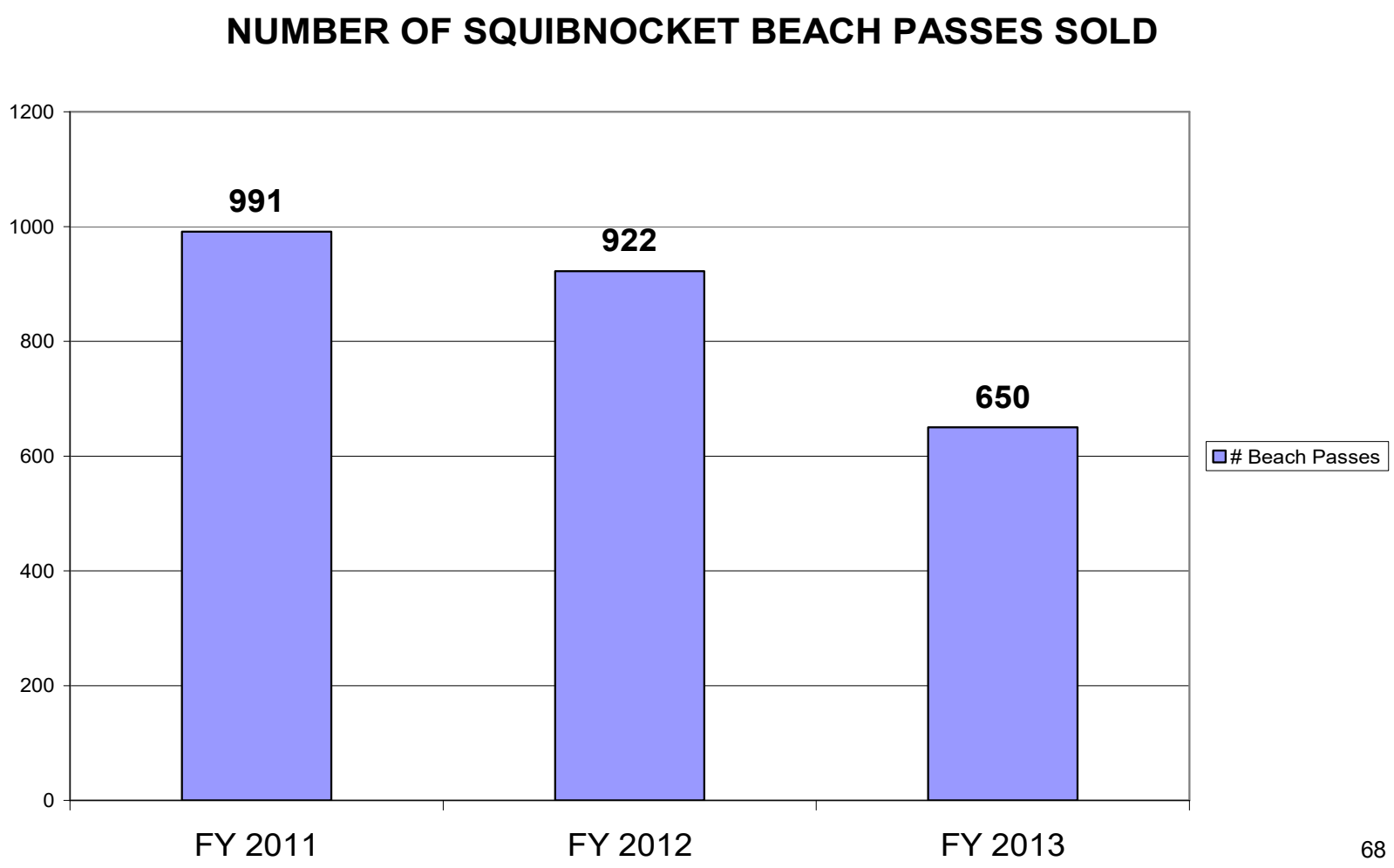
- $ 17,065

- 34.5 %

Declining Squibnocket Beach Pass Sales



Declining Squibnocket Beach Pass Sales



How did we get here?

- **The Committee met three times during which the current beach and parking concept was created.**

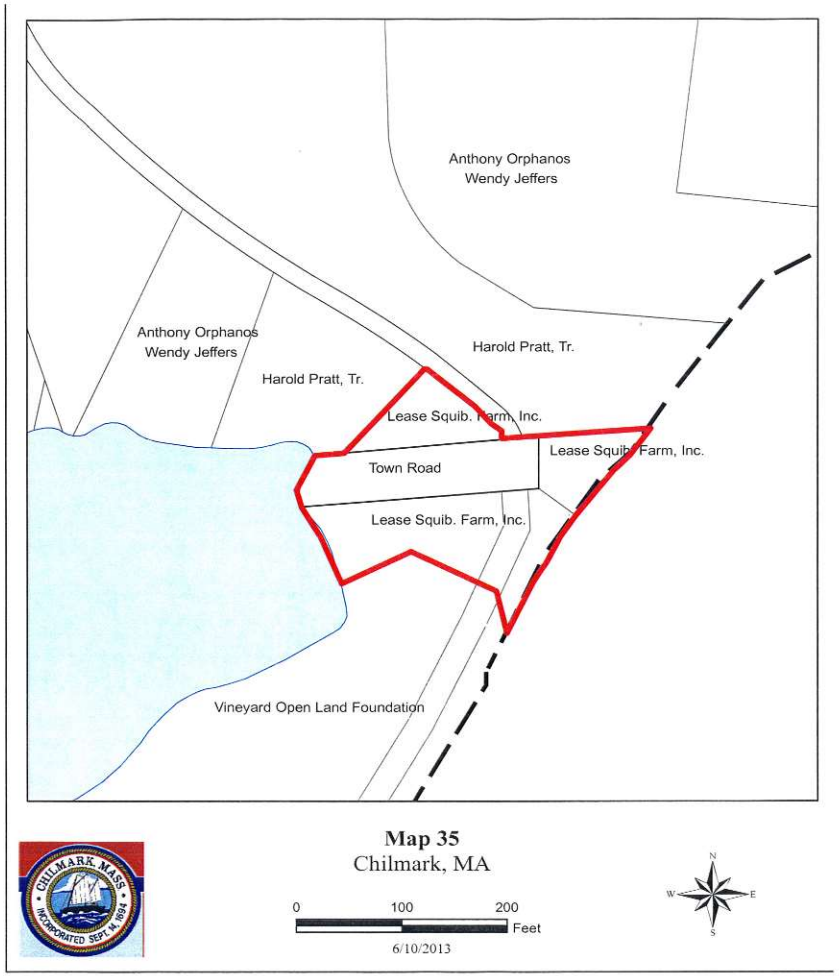
How did we get here?

- The Committee met three times during which the current beach and parking concept was created.

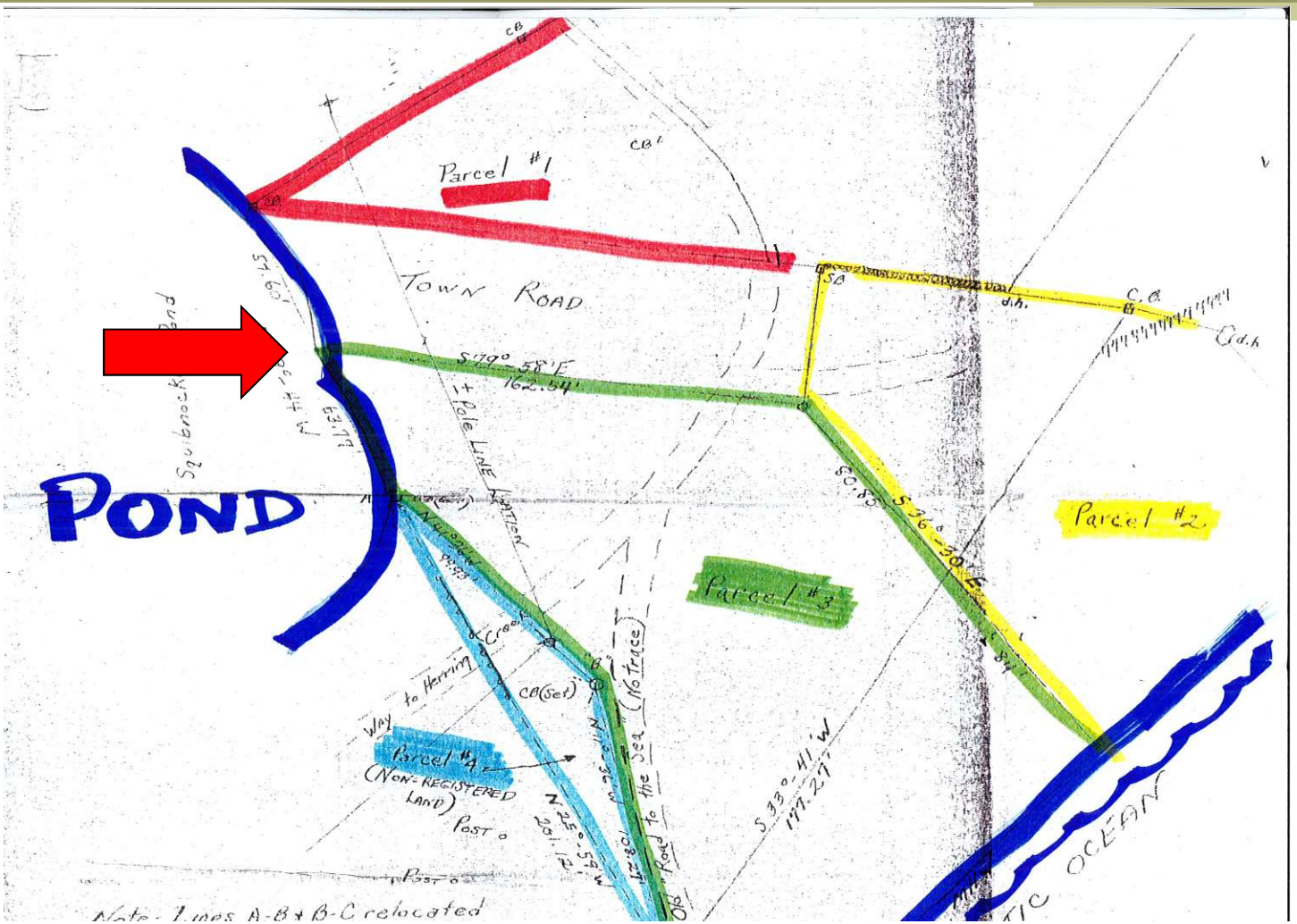
- **Several other options were considered and ultimately rejected.**

The Current Proposal - Summary

Current Lease 1950 - 2050 Assessors Map



1950 Survey of Leased Land (Notice Pond Shoreline)



Leased Land - Today
(Notice <u>No</u> Pond Shoreline)

1950 Survey of Land – Today (Notice Leased Land in Ocean)

New Beach & Parking Area Lease 2014 - 2113

New Beach & Parking Area Lease 2014 - 2113

- The current concept on land owned by the Vineyard Open Land Foundation (VOLF) solves all of the Town's problems:
  - Expanded beach,
  - Stable parking area location,
  - At a reasonable cost that won't increase taxes.

New Beach & Parking Area Lease 2014 - 2113

- **Re-new the lease of the existing beach and parking area, <u>and</u> lease 10.5-acres of additional land abutting the currently leased land in order to:**

New Beach & Parking Area Lease 2014 - 2113

- **Re-new the lease of the existing beach and parking area, <u>and</u> lease 10.5-acres of additional land abutting the currently leased land in order to:**
  - **Expand the Town Beach shoreline (5 X larger).**
    - **Current Squibnocket Beach = Approx. 280 feet**
    - **<u>+ Additional Beach = + Approx. 1,125 feet</u>**
    - **New Total Squib. Beach = Approx. 1,405 feet**

Source: Assessor's Map

New Beach & Parking Area Lease 2014 - 2113

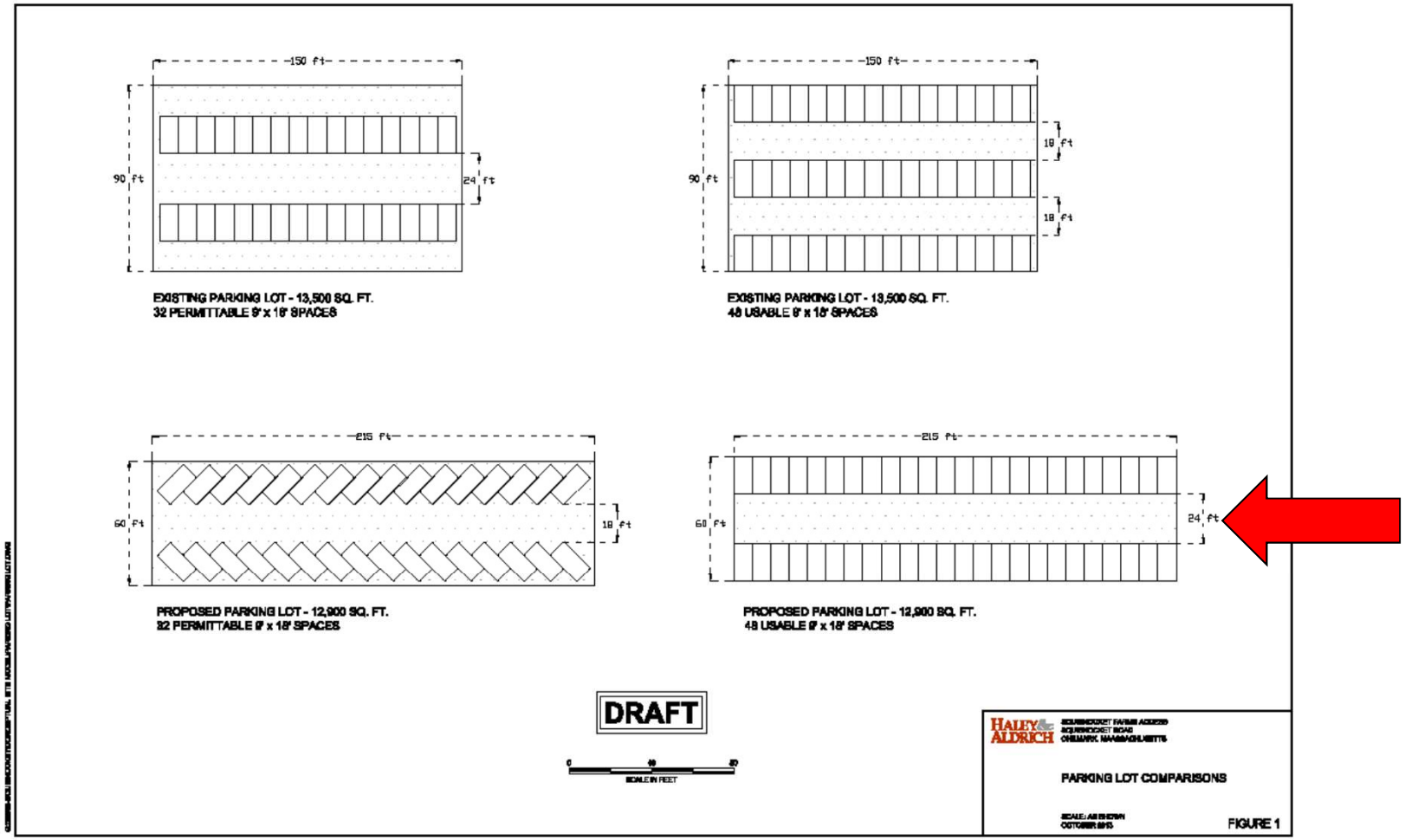
- **Relocate the Parking Area – the roadway will not pass through the parking area. The new parking area will be more efficiently designed and accommodate more than the 40-car maximum for the current lot.**

New Beach & Parking Area Lease 2014 - 2113

- Relocate the Parking Area – the roadway will not pass through the parking area. The new parking area will be more efficiently designed and accommodate more than the 40-car maximum for the current lot.

- **The new parking area will also be on naturally protected ground.**

Parking Lot Design Options



New Beach & Parking Area Lease 2014 - 2113

- **The proposed parking area is approximately <u>1,100 feet</u> from the closest home. The current parking area is 600 feet from the closest home.**

New Beach & Parking Area Lease 2014 - 2113

- The proposed parking area is approximately 1,100 feet from the closest home. The current parking area is 600 feet from the closest home.

- **There will be native vegetation screening added between the new parking area and Squibnocket Farm Rd. to the north.**

New Beach & Parking Area Lease 2014 - 2113

- **Relocate the security gate past the parking area.**

New Beach & Parking Area Lease 2014 - 2113

- Relocate the security gate past the parking area.
- **Relocate the commercial skiff (10 HP Max.) and recreational boat launch path for Squibnocket Pond access.**

Current Skiff Launch Path for Squibnocket Pond Access

New Beach & Parking Area Lease 2014 - 2113

- **Add an accessible walking path from the proposed new parking area to the shore.**

New Beach & Parking Area Lease 2014 - 2113

- Add an accessible walking path from the proposed new parking area to the shore.

- **Stable and porous parking area surface.**

New Beach & Parking Area Lease 2014 - 2113

- **Combine the currently leased land with the additional 10.5-acres of land abutting the current beach.**

Have a new, 99-year lease that expires in year 2113,

New Beach & Parking Area Lease 2014 - 2113

- **Combine the currently leased land with the additional 10.5-acres of land abutting the current beach.**

Have a new, 99-year lease that expires in year 2113,

For a total rental payment of $400,000 to the Squibnocket Farm Homeowner's Association.

New Beach & Parking Area Lease 2014 - 2113

- **The Community Preservation Committee reviewed the proposal and voted unanimously to recommend that voters consider using $400,000 of existing CPA reserve funds to pay for the new 99-year lease with $10,000 added for related and legal expenses.**

- **This article will not be on the April 28th warrant.**

New Beach & Parking Area Lease Concept 2014 - 2113

New Beach & Parking Area Illustrated Concept 2014 - 2113

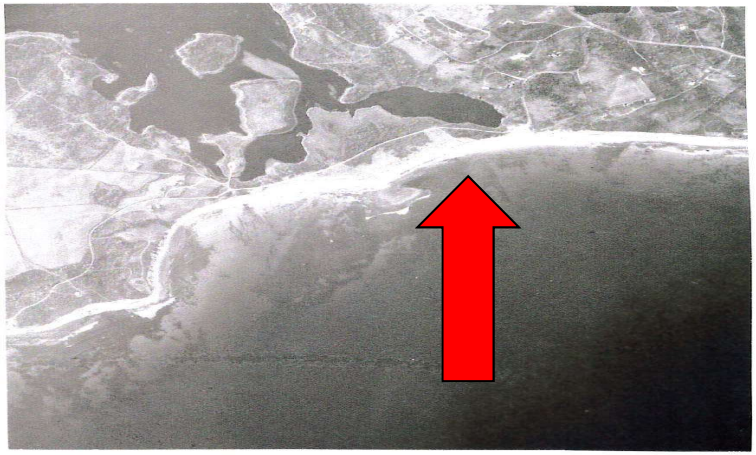
View of Total Proposed Town Beach to the Mussel Bed

Revetment and Barrier Beach Re - nourishment

Revetment and Barrier Beach Re - nourishment

- There may be an opportunity to return the current beach to its original barrier beach state. The ocean would most likely have a natural water exchange with the wetlands and pond during significant storm events.

Squibnocket Beach - Early 1900's
No Revetment



Revetment and Barrier Beach Re - nourishment

- **The Town hired two independent coastal geologists to evaluate an exit strategy and plan for removing <u>all</u>, <u>part</u> or <u>none</u> of the revetment and re-nourishing the barrier beach with sand.**

Revetment and Barrier Beach Re - nourishment

- The Town hired two independent coastal geologists to evaluate an exit strategy and plan for removing all, part or none of the revetment and re-nourishing the barrier beach with sand.

- **They presented their findings on March 11.**

Revetment and Barrier Beach Re - nourishment

- **Jim O'Connell has returned tonight to share his findings and answer questions.**

Independent Consultants Scope of Work

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- **Evaluate the Town's entire beach and parking proposal and its effects on the barrier beach and adjacent Squibnocket Pond.**

Independent Consultants Scope of Work

- Evaluate the Town's entire beach and parking proposal and its effects on the barrier beach and adjacent Squibnocket Pond.

- **Review and evaluate the existing conditions land survey, published shoreline erosion data, FEMA flood data and their integration into the project.**

Independent Consultants Scope of Work

- **Analyze the existing and proposed parking area locations and project the impacts of future erosion and possible sea level rise.**

Independent Consultants Scope of Work

- Analyze the existing and proposed parking area locations and project the impacts of future erosion and possible sea level rise.

- **Address questions and concerns raised at the previous public meetings regarding the project.**

Independent Consultants Scope of Work

- **Offer alternatives analysis and considerations for the current proposal.**

Independent Consultants

1. Greg Berman, PG, GISP, M.S. Geological Oceanography; Coastal Processes Specialist; Woods Hole Oceanographic Institute.

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2. Jim O'Connell, M. A. Geography/Geomorphology; Coastal Geologist & Land Use Specialist; Brant Rock, MA.

Jim O’Connell - Coastal Geologist

Chilmark, Martha's Vineyard

Squibnocket Town Beach Parking Lot & Revetment Project

Public Discussion Forum
April 9, 2014

Existing Squibnocket Beach Parking Lot & Revetment

Presentation by
Jim O'Connell
Coastal Advisory Services
JimOConnell28@gmail.com

Google earth

1995 Imagery Date: 3/11/2012 41°18'55.32" N 70°45'56.31" W elev 0 m eye alt 1.56 km

Chilmark, Martha's Vineyard

Squibnocket Beach Parking Lot & Revetment Project

1. Review 'existing conditions' land survey by Vineyard Land Surveying & Engineering - integrate published *Shoreline Change Data* and *FEMA FIRMs;*

2. Analysis of existing & proposed parking area locations & potential project impacts;

3. Proposed project's potential effects on the barrier beach & Squibnocket Pond;

4. Possible '*alternatives*' to the project;

5. Answers to questions in 'Consultant's Assessment'.

Jim O'Connell, CAS

www.linkmv.com

New Beach & Parking Area Plan 2014 – 2113

Town's Current Proposal

New Beach & Parking Area Lease Concept 2014 – 2113

PURPOSE

1. Provide stable, '*long-term*' Town 'beach parking'
with a
2. 'recreational beach'
and
3. 'small boat access' to Squibnocket Pond

*existing & future *Issues*

1. *No High Tide Beach*

2. Flanking Erosion

(east & west sides)
(future revetment extensions?)

3. Frequent storm damage associated costs $$

With on-going *erosion* and *relative sea level rise* =

Lowering of fronting beach =

Increased wave energy =

Increased future frequency of storm damage & overwash =

Increased repair costs $$

Coastal Resources

FiG. 6

Squibnocket Beach Parking Lot

wetlands

Squibnocket Pond

Squibnocket Rd

coastal bank

barrier beach/dune

coastal bank

mapped habitat
(NHESP)

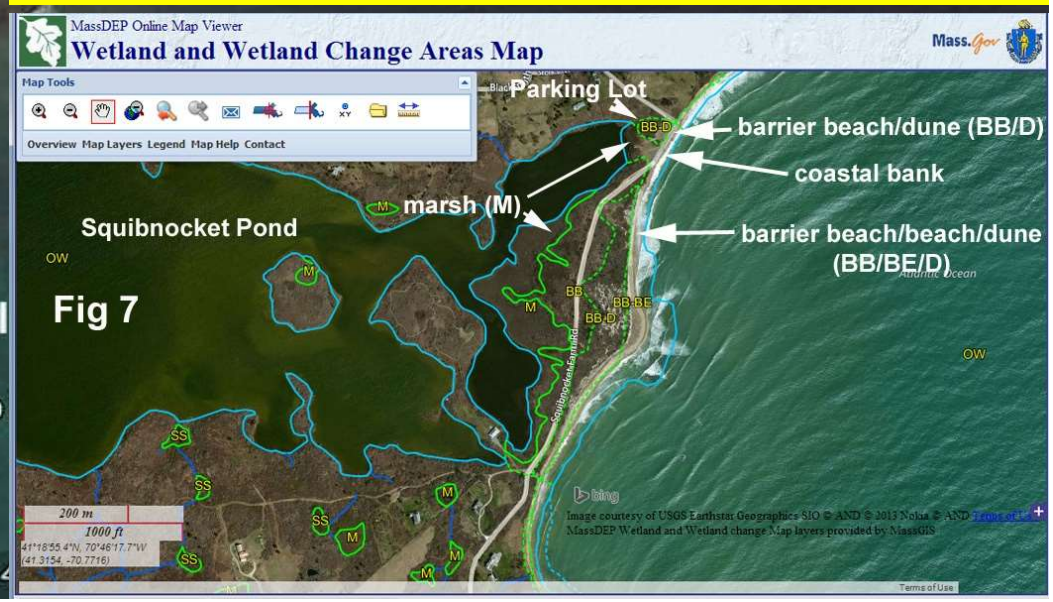
barrier beach/dune/beach

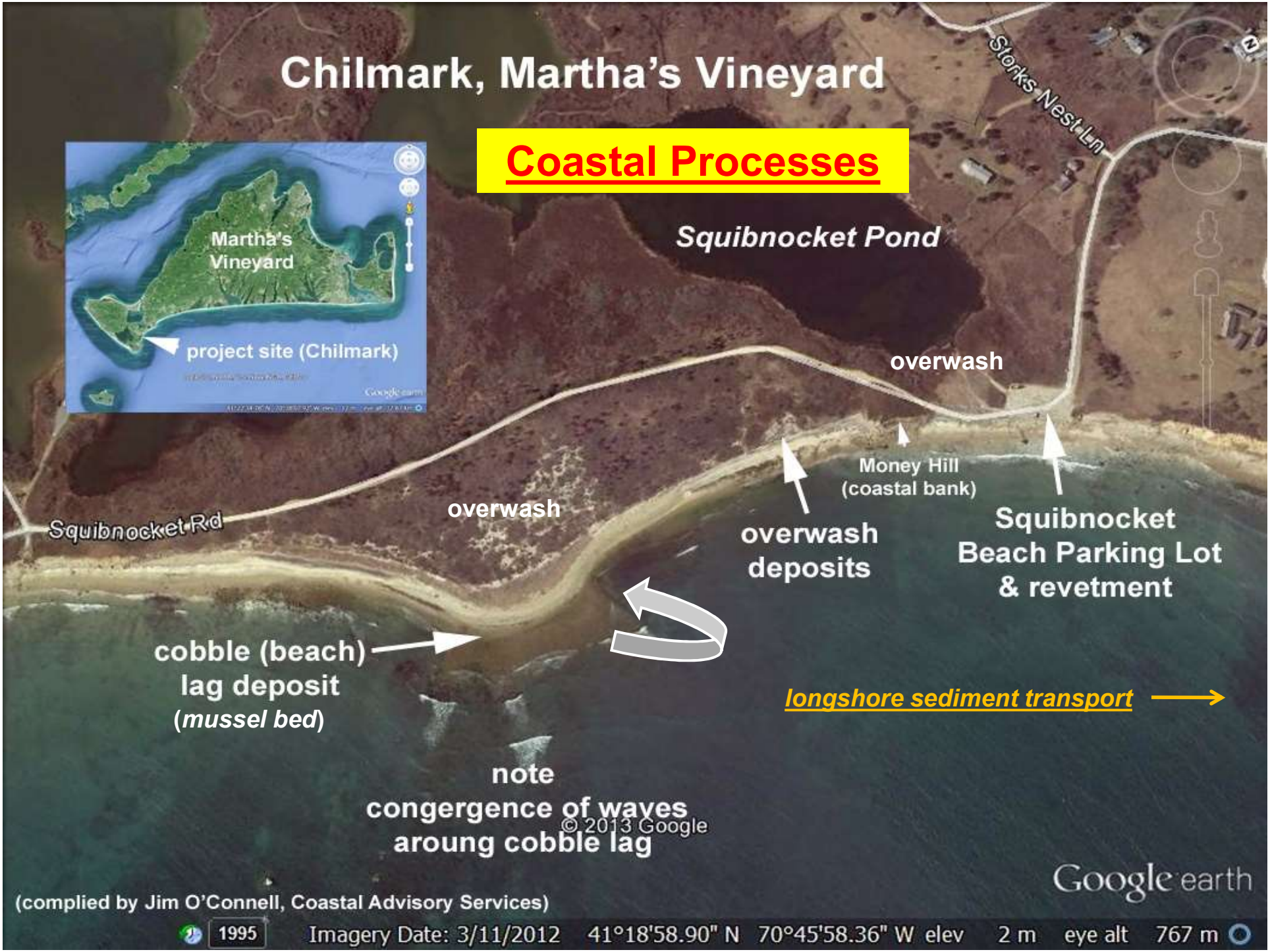
Squibnocket Farm Rd

coastal bank

1995 Imagery Date: 3/11/2012

resources areas = 'regulatory requirements'




Chilmark, Martha's Vineyard
Coastal Processes
Martha's Vineyard
project site (Chilmark)
Squibnocket Pond
Storks Nest Ln
overwash
Money Hill
(coastal bank)
Squibnocket Rd
overwash
overwash
deposits
Squibnocket
Beach Parking Lot
& revetment
cobble (beach)
lag deposit
(mussel bed)
longshore sediment transport
note
congergence of waves
aroung cobble lag
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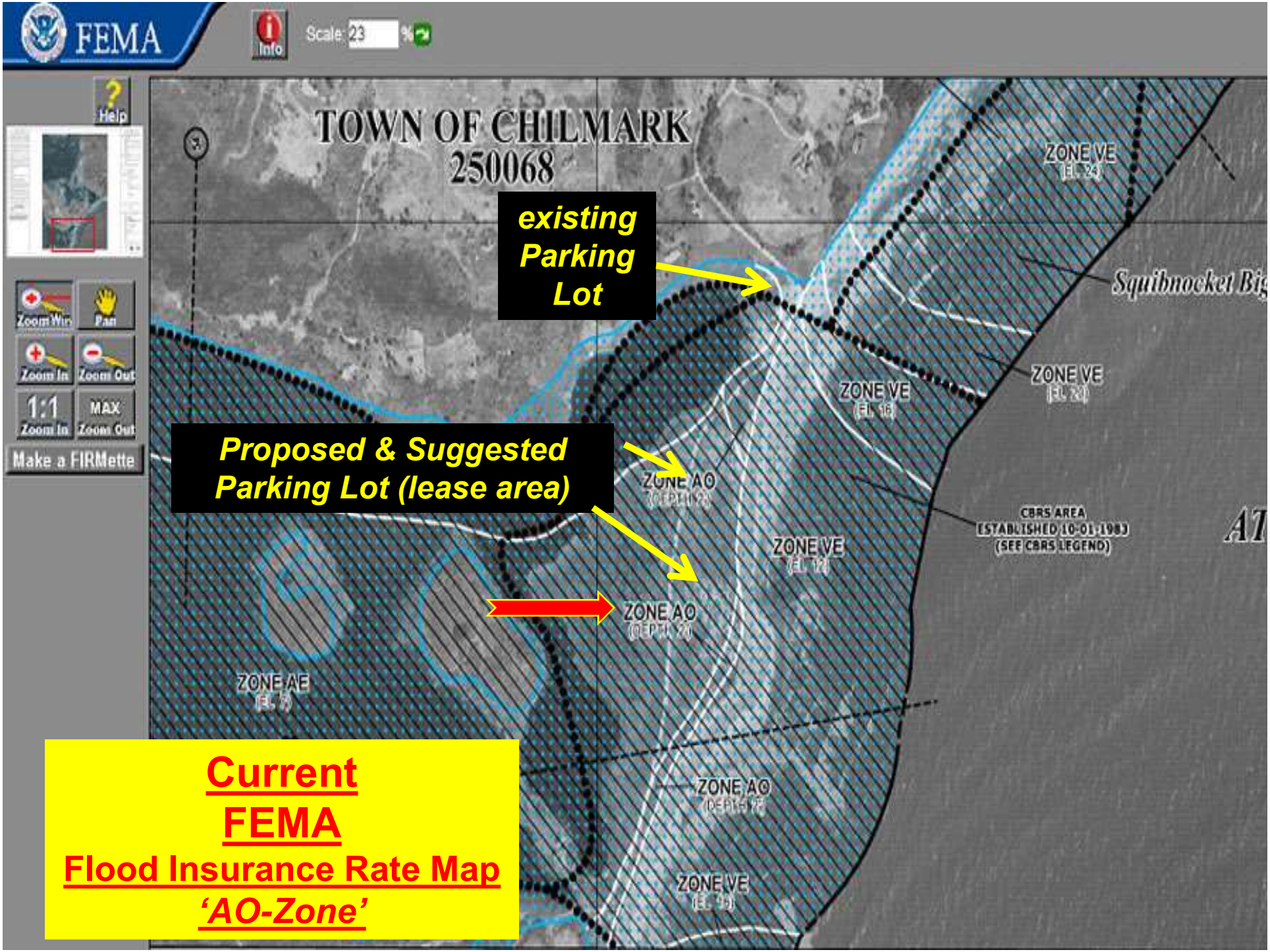
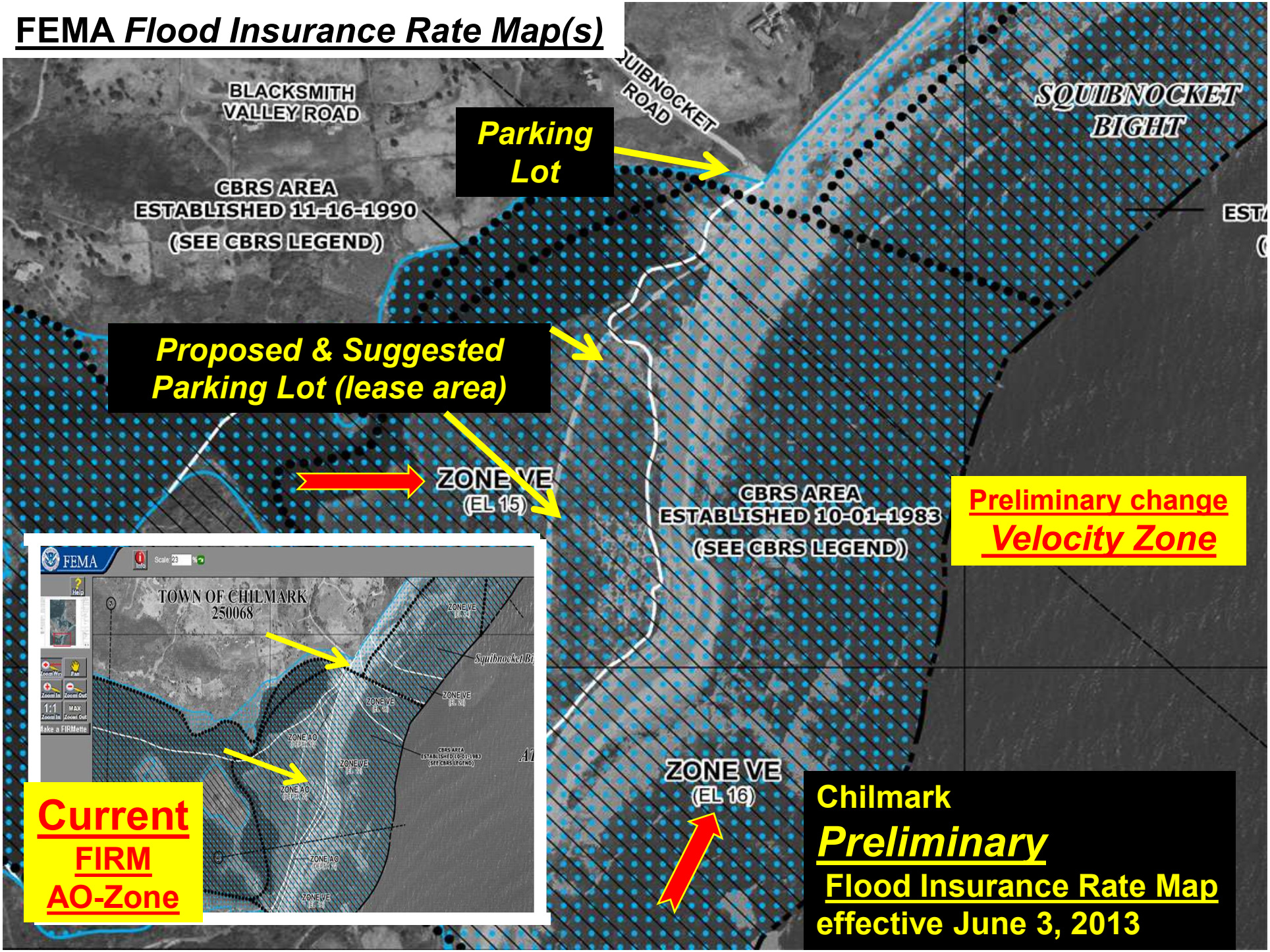
(complied by Jim O'Connell, Coastal Advisory Services)
1995
Imagery Date: 3/11/2012 41°18'58.90" N 70°45'58.36" W elev 2 m eye alt 767 m



Current FEMA Flood Insurance Rate Map 'AO-Zone'

FEMA *Flood Insurance Rate Map(s)*



Low Elevations = on-going overwash & coastal storm damages

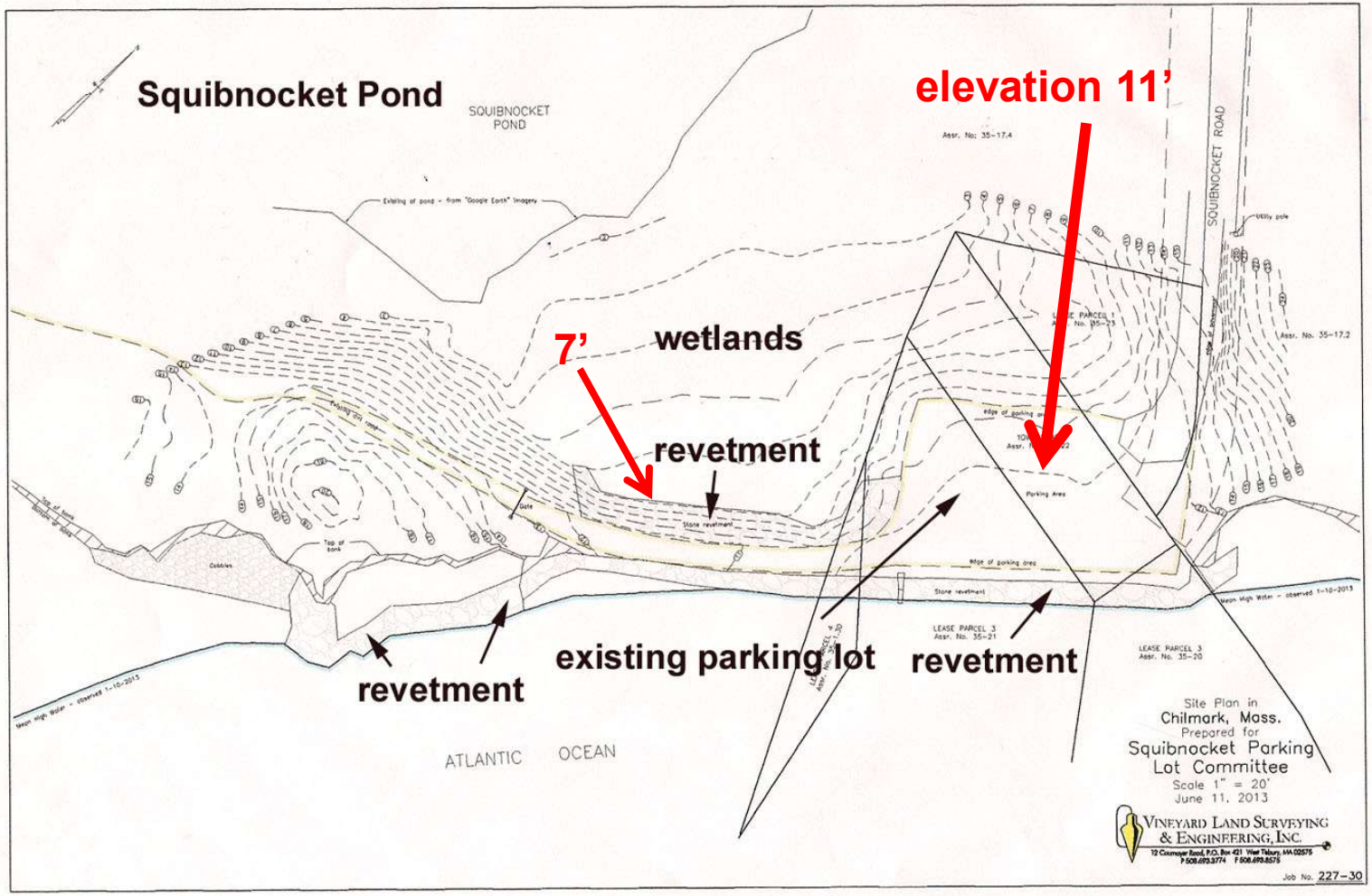
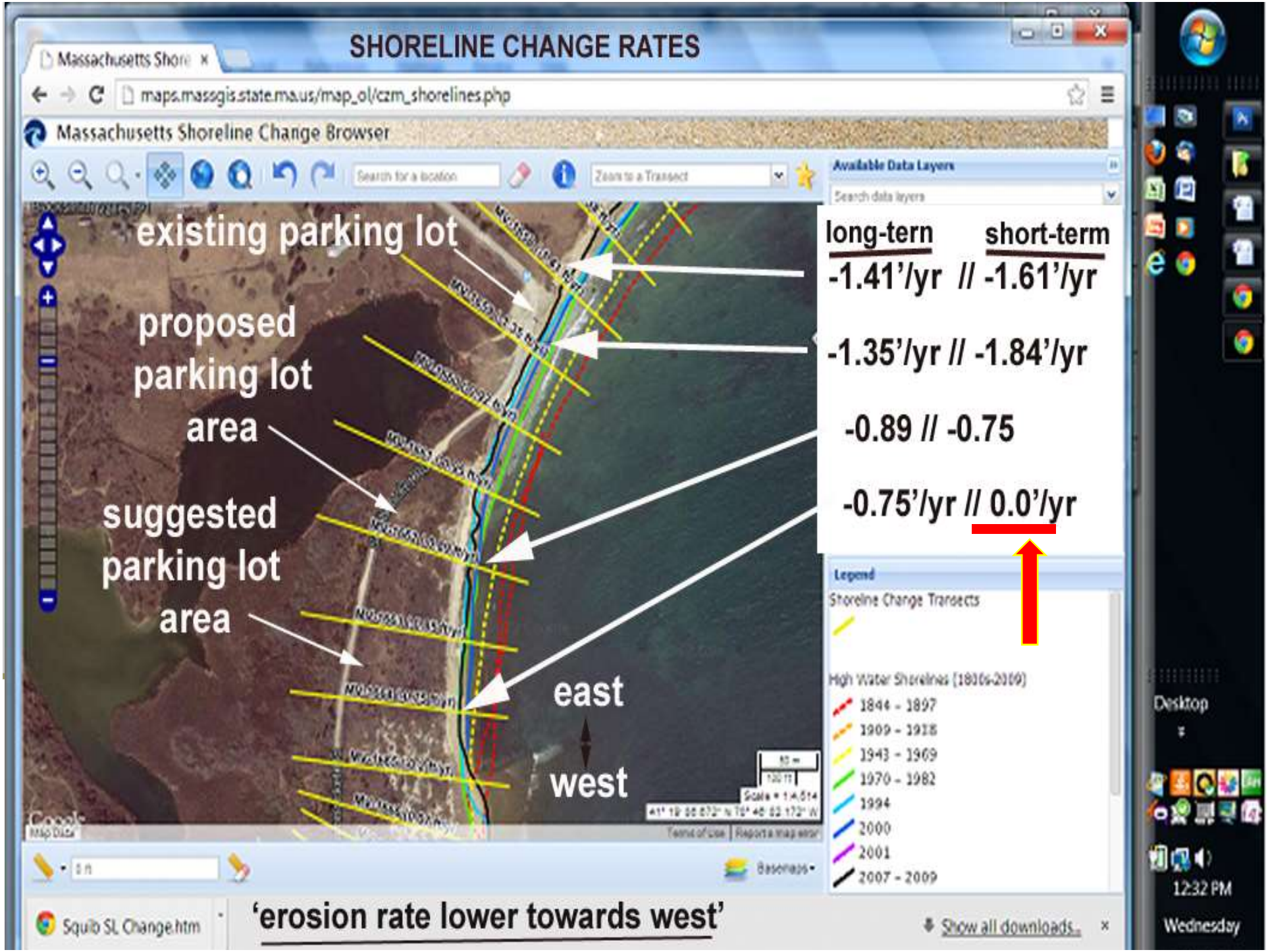
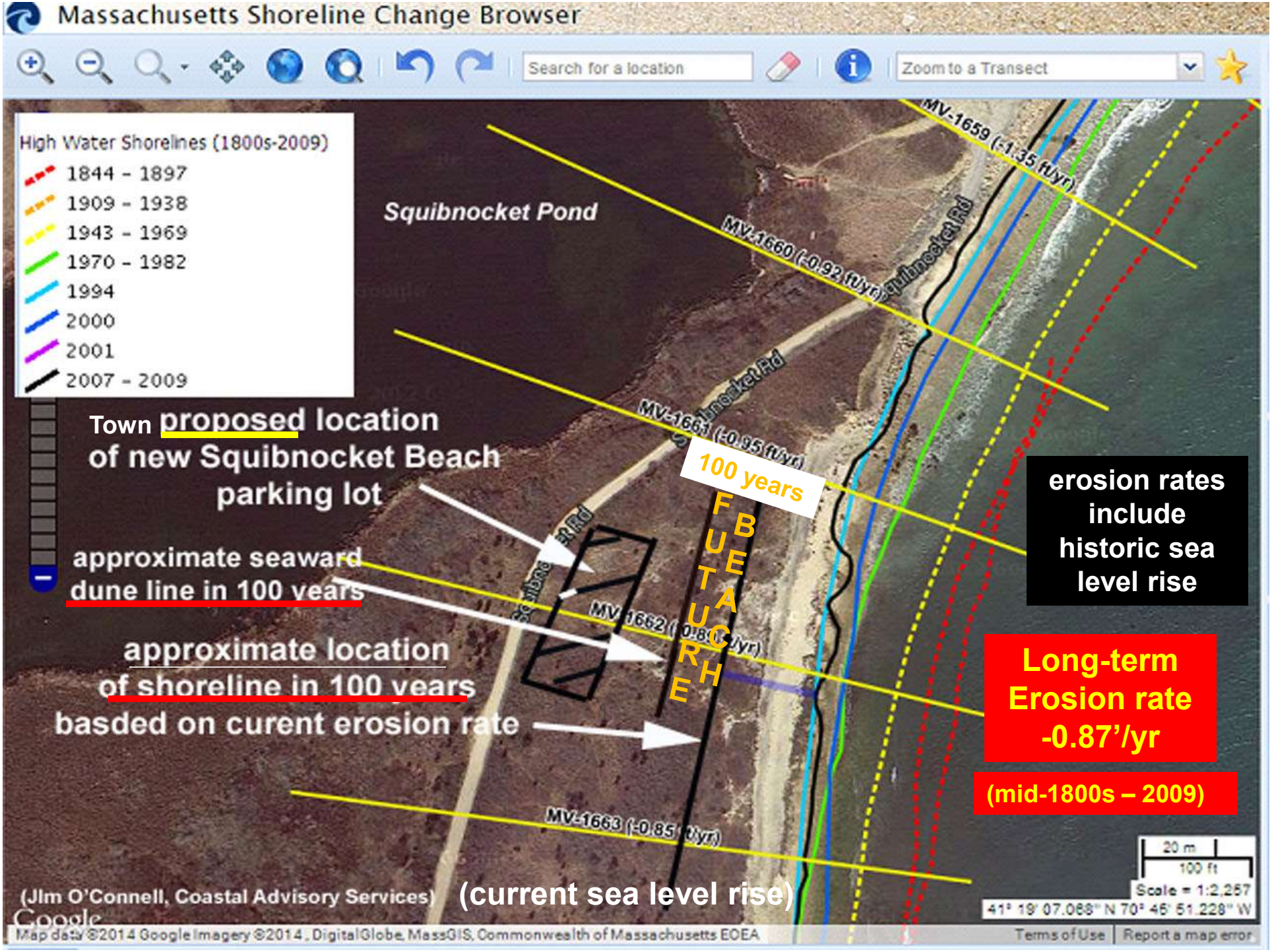


Fig 12. Topographic Survey Squibnocket Beach Parking Lot Area (Vineyard Surveying)


SHORELINE CHANGE RATES
Massachusetts Shore
maps.massgis.state.ma.us/map_ol/czm_shorelines.php
Massachusetts Shoreline Change Browser
Available Data Layers
existing parking lot
proposed parking lot area
suggested parking lot area
east
west
long-tern
short-term
-1.41'/yr // -1.61'/yr
-1.35'/yr // -1.84'/yr
-0.89 // -0.75
-0.75'/yr // 0.0'/yr
Legend
Shoreline Change Transects
High Water Shorelines (1806-2009)
1844 - 1897
1909 - 1918
1943 - 1969
1970 - 1982
1994
2000
2001
2007 - 2009
Squib SL Change.htm
'erosion rate lower towards west'
Show all downloads...
Desktop
12:32 PM
Wednesday


Massachusetts Shoreline Change Browser
Search for a location
Zoom to a Transect
High Water Shorelines (1800s-2009)
1844 - 1897
1909 - 1938
1943 - 1969
1970 - 1982
1994
2000
2001
2007 - 2009
Squibnocket Pond
MV-1659 (-1.35 ft/yr)
MV-1660 (-0.92 ft/yr)
MV-1661 (-0.95 ft/yr)
MV-1662
MV-1663
Squibnocket Rd
100 years
FUTURE BEACH
Town proposed location of new Squibnocket Beach parking lot
approximate seaward dune line in 100 years
approximate location of shoreline in 100 years basded on curent erosion rate
erosion rates include historic sea level rise
Long-term Erosion rate -0.87'/yr
(mid-1800s – 2009)
(Jim O'Connell, Coastal Advisory Services)
(current sea level rise)
20 m
100 ft
Scale = 1:2,257
41° 19' 07.068" N 70° 45' 51.228" W
Google
Map data ©2014 Google Imagery ©2014, DigitalGlobe, MassGIS, Commonwealth of Massachusetts EOEA
Terms of Use
Report a map error

New Beach & Parking Area Plan 2014 – 2113

with 'suggested' new Parking Lot Location for Discussion

Fig 11. Existing, Proposed and Suggested Squibnocket Beach Parking Lot Locations

***recommendation**

Move proposed New Parking Area to West

recommendation

'Move proposed Parking Lot location slightly farther WEST

WHY?* *Erosion rates less as you move west

AND

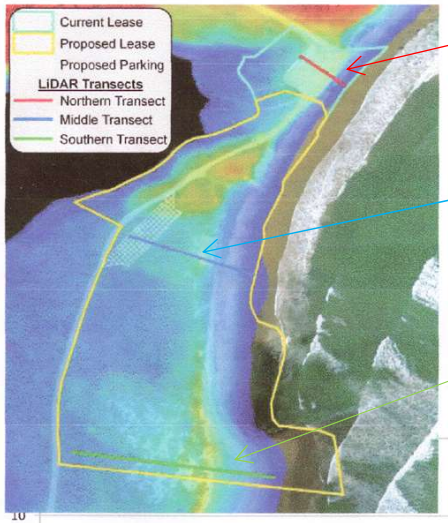
fronted by 'cobble lag deposit' break-up wave energy & reduce overwash

Long-term erosion rate 0.0'/yr

(mid-1800s – 2009)

Topographic profiles extracted from 2012 Post-Sandy USACE LIDAR Data

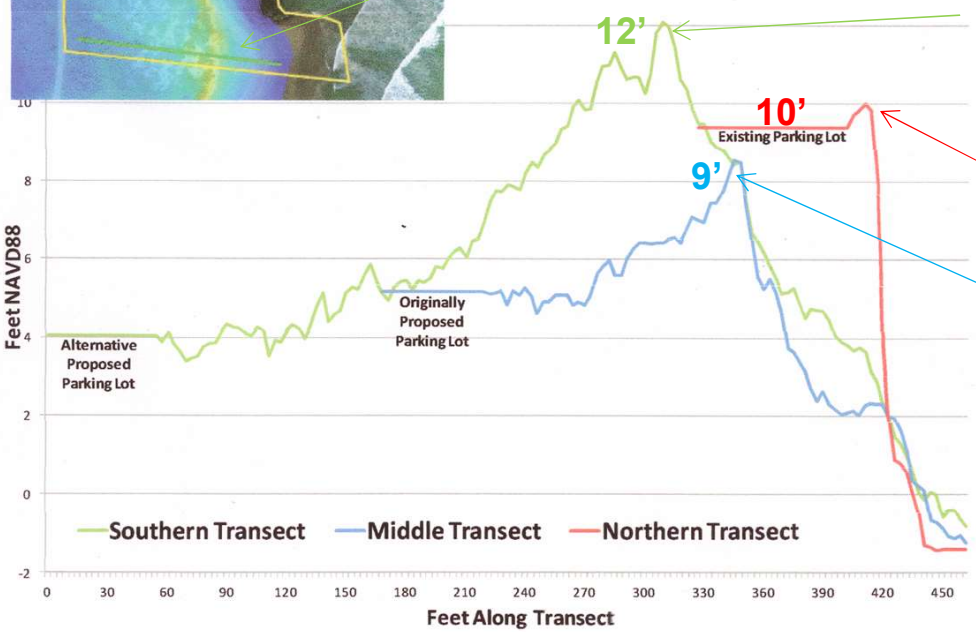
Figure 9. Three topographic profiles were extracted from 2012 Post Sandy USACE LiDAR data (downloaded from NOAA Digital Coast) along transects, represented by colored lines in the figure below. The topographic profile for the existing parking lot (red in both the map and graph), the originally proposed parking lot (blue in both the map and graph), and the alternative parking lot location (green in both the map and graph), all intersect at the elevation 2' NAVD88. The topographic profiles have also been smoothed along the existing or proposed parking lots to help identify these areas.



Existing Beach Parking Lot

Proposed Beach Parking Lot (Town)

Suggested Parking Lot (consultant)



suggested parking lot location

existing parking lot location

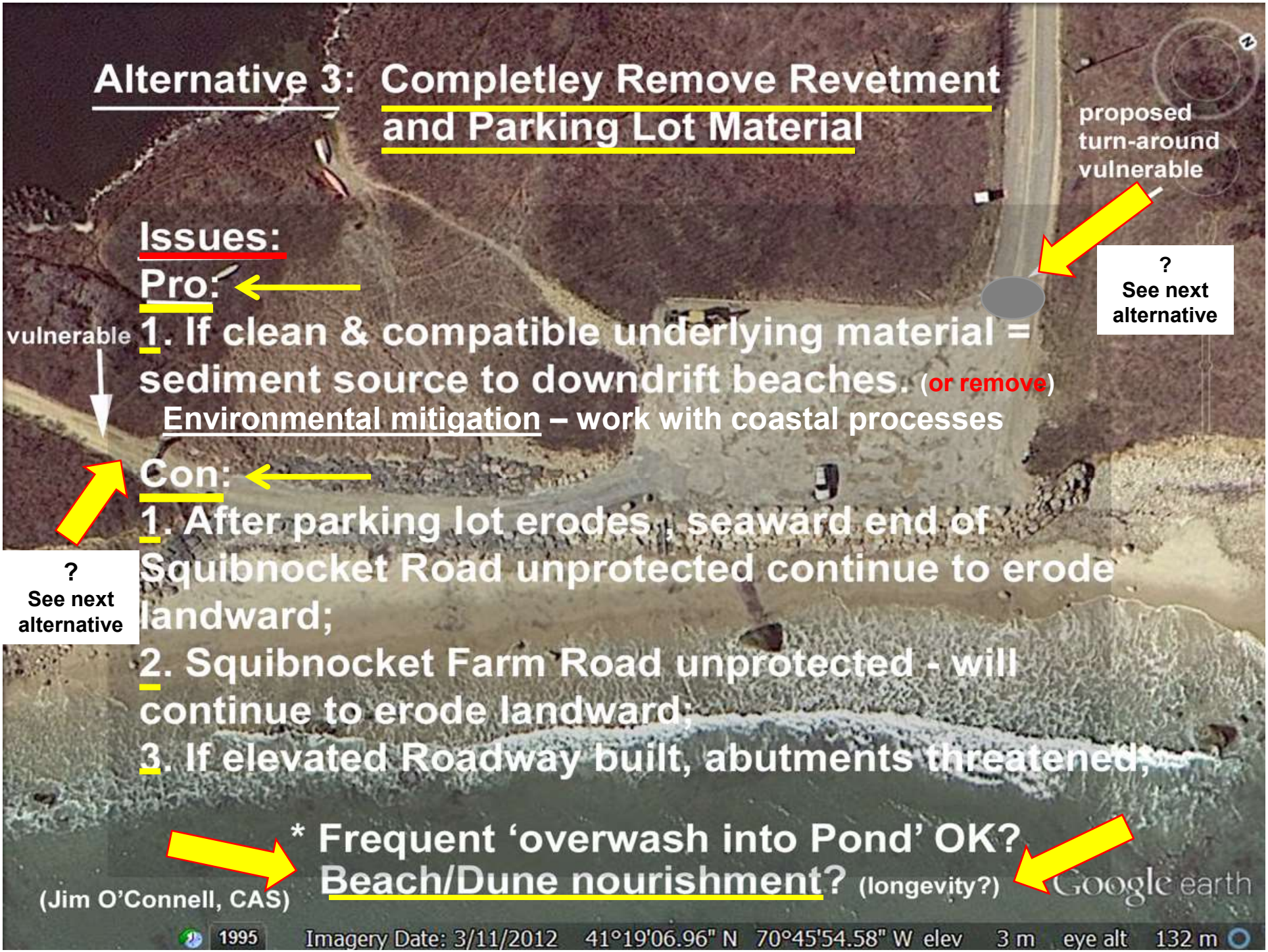
proposed parking lot location

(note elevations)

(Greg Berman, WHOI Sea Grant/ Cape Cod Cooperative Extension)
(modified by Jim O'Connell, CAS)

Squibnocket Pond
existing Squibnocket
Beach Parking Lot
proposed Squibnocket
Beach Parking Lot
suggested Squibnocket
Beach Parking Lot
Google earth
1995
Imagery Date: 3/11/2012 41°18'55.32" N 70°45'56.31" W elev 0 m eye alt 1.56 km

Alternative 1: Do Nothing (future significant increased frequency storm damage & repair expense) (erosion & RSLR)
(loss of fronting beach)
Alternative 2: Raise Existing Parking Lot & Add Larger Armor Stone to Revetment & Future Revetment Extension East & West Sides
(loss of fronting Beach & future expense)
hot spot
hot spot
revetment extension?
revetment extension?
March 11, 2012
(Jim O'Conell, CAS)
Google earth
1995
Imagery Date: 3/11/2012 41°19'06.96" N 70°45'54.58" W elev 3 m eye alt 132 m


Alternative 3: Completley Remove Revetment and Parking Lot Material
proposed turn-around vulnerable
?
See next alternative
Issues:
Pro:
vulnerable
1. If clean & compatible underlying material = sediment source to downdrift beaches. (or remove)
Environmental mitigation – work with coastal processes
Con:
1. After parking lot erodes , seaward end of Squibnocket Road unprotected continue to erode landward;
2. Squibnocket Farm Road unprotected - will continue to erode landward;
3. If elevated Roadway built, abutments threatened;
?
See next alternative
* Frequent 'overwash into Pond' OK?
Beach/Dune nourishment? (longevity?)
(Jim O'Connell, CAS)
Google earth
1995
Imagery Date: 3/11/2012 41°19'06.96" N 70°45'54.58" W elev 3 m eye alt 132 m

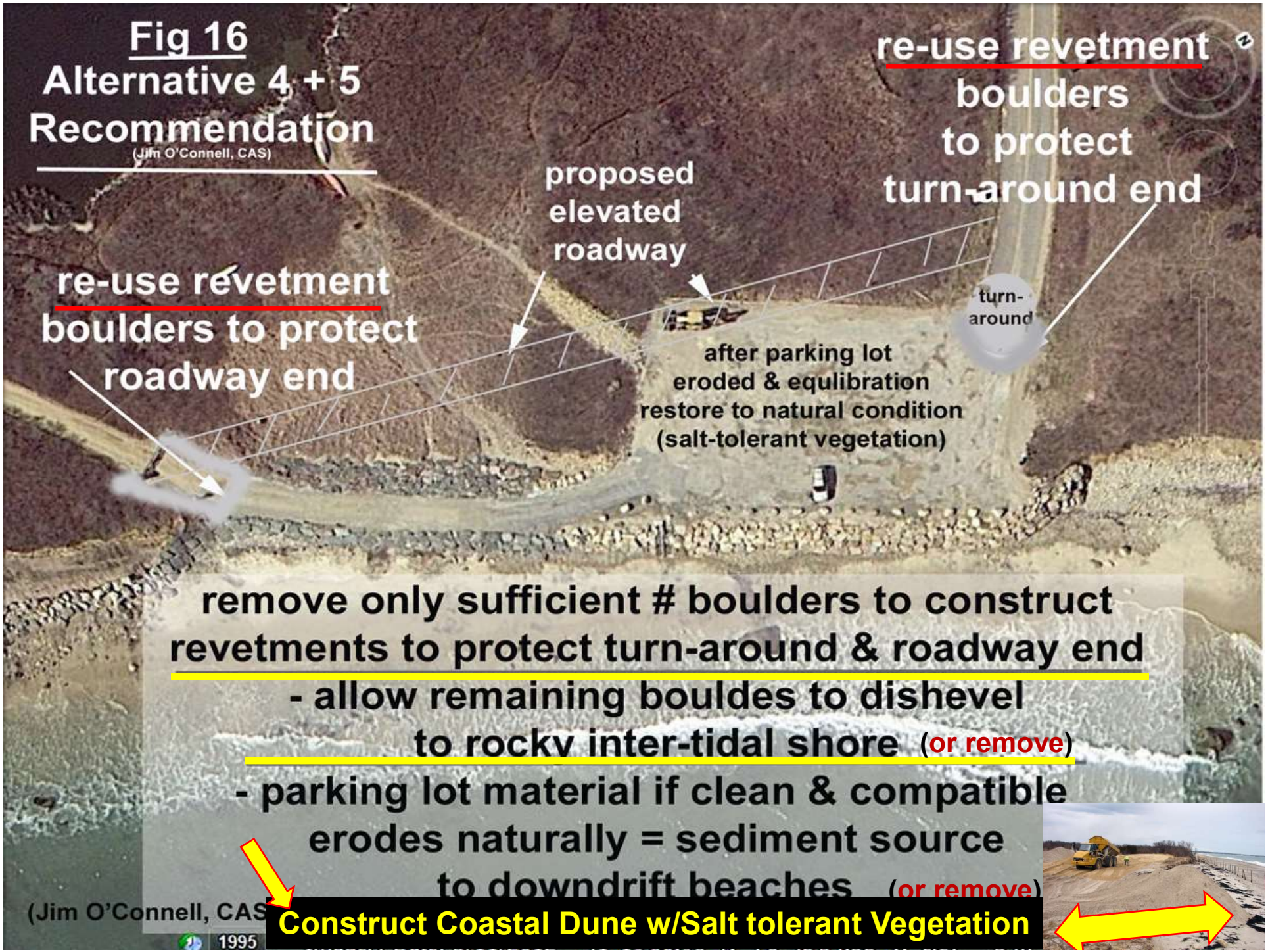


Fig 16
Alternative 4 + 5
Recommendation
(Jim O'Connell, CAS)
re-use revetment
boulders
to protect
turn-around end
proposed
elevated
roadway
re-use revetment
boulders to protect
roadway end
turn-
around
after parking lot
eroded & equlibration
restore to natural condition
(salt-tolerant vegetation)
remove only sufficient # boulders to construct
revetments to protect turn-around & roadway end
- allow remaining bouldes to dishevel
to rocky inter-tidal shore (or remove)
- parking lot material if clean & compatible
erodes naturally = sediment source
to downdrift beaches (or remove)
(Jim O'Connell, CAS
1995
Construct Coastal Dune w/Salt tolerant Vegetation

coastal dune (barrier beach)

pre-revetment & parking lot removal

post-revetment & parking lot removal and dune restoration

12/30/2001
1992
2012
East of
Jobbs Pond,
MV
Image MassGIS, Commonwealth of Massachusetts EOEA
Dec 31, 2000
Google earth
1992
Imagery Date: 12/31/2000 41°21'03.10" N 70°34'32.58" W elev 1 m eye alt 430 m

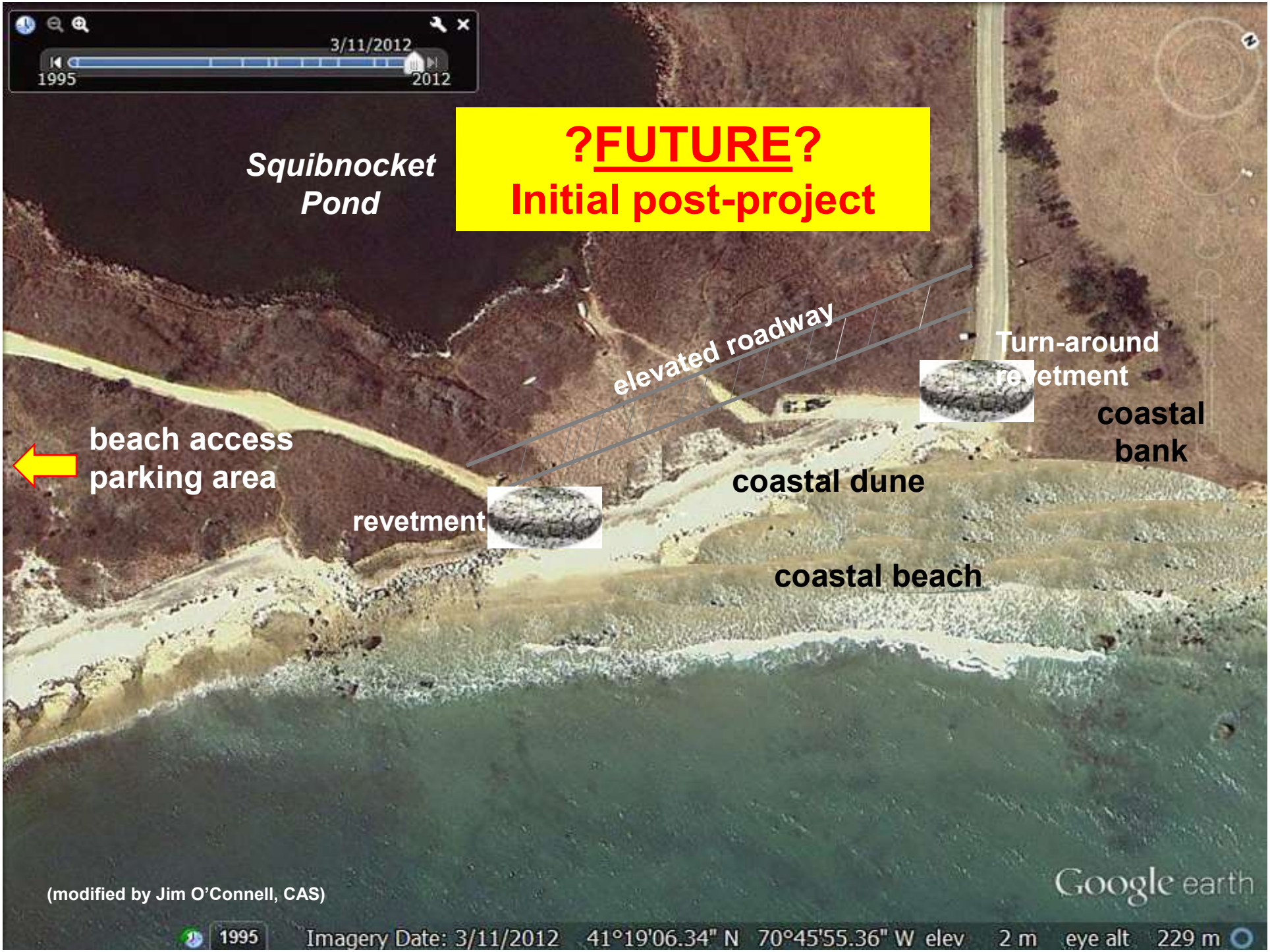
5/20/2010
1992
2012
May 2010
Google earth
1992
Imagery Date: 5/20/2010 41°21'03.10" N 70°34'32.58" W elev 1 m eye alt 430 m

6/29/2011
June 2011
Google earth
1992
Imagery Date: 6/29/2011 41°21'03.10" N 70°34'32.58" W elev 1 m eye alt 430 m

3/11/2012
March 2012
Google earth
1992
Imagery Date: 3/11/2012 41°21'03.10" N 70°34'32.58" W elev 1 m eye alt 430 m

? What would Squibnocket Beach look like if we had not done anything there? Is there any reason to think it can't go back to that?

What will Squibnocket Beach look like in the future if we remove the revetment & lot?


3/11/2012
1995
2012
Squibnocket Pond
?FUTURE?
Initial post-project
elevated roadway
Turn-around revetment
coastal bank
beach access parking area
coastal dune
revetment
coastal beach
(modified by Jim O'Connell, CAS)
Google earth
1995
Imagery Date: 3/11/2012 41°19'06.34" N 70°45'55.36" W elev 2 m eye alt 229 m

Parking Area

(considerations)

*porous gravel parking area

*parking area as landward as possible
(abut roadway)

*removable, low, elevated beach access walkway
(winter removal allows vegetation to remain)

*transplant salt-tolerant woody vegetation to front parking area
(Rosa Rugosa/Virginia Rose/Bayberry)

*possible low crested dune fronting parking area
(additional protection)

Squibnocket
Pond
Squibnocket Beach
Parking Lot &
Revetment
Discussion
Q/A
Jim O'Connell
Coastal Advisory Services
(JimOConnell28@mail.com)
Google earth
1995
Imagery Date: 3/11/2012 41°18'55.32" N 70°45'56.31" W elev 0 m eye alt 1.56 km

Budgeting Cost Estimates
Town's Construction Elements

Budgeting Cost Estimates
Town's Construction Elements

- Surveying & permitting: $ 15,000
- Construct new beach parking area, walking path & skiff launch: $ 98,800
- Remove, restore current parking area surface: $ 90,000
- Revetment removal, beach restoration (if done): $ 63,600

Total: **$267,400**

Note: These estimates are inflated + 20 %.

Budgeting Cost Estimates
Town's Construction Elements

- **Surveying & permitting:** **$ 15,000**

Construct Beach Parking Area, Walking Path, Skiff Launch

- **Total:** **$ 98,800**
  - Archaeological survey: $ 7,000
  - Clear, construct parking area, stabilize surface: $ 55,200
  - Parking area amenities (stops): $ 5,000
    (total parking area = $67,200)
  - Create walking path to beach: $ 2,000
  - Construct accessible walkway: $ 5,000
  - Create skiff launch path: $ 9,600
  - Plant parking area screening: $ 15,000

Remove, Restore Current Parking Area Surface

- **Total:** **$ 90,000**

- **Remove, dispose existing soil cement surface:** **$ 38,400**
- **Create new turnaround:** **$ 19,200**
- **Grade lot surface:** **$ 4,200**
- **Truck in, spread topsoil:** **$ 10,200**
- **Landscape parking area surface:** **$ 18,000**

Revetment Removal, Beach Restoration (if done)

- **Total:** **$ 63,600**

- **Remove all of the 210' revetment: $ 38,400**
- **Truck in, spread 300 yards white beach sand: $ 25,200***

* **There may be an opportunity to use the Menemsha Channel dredging sand (if done) provided it matches the current beach sand grain size.**

U. S. Dep't. of Interior Grant

U. S. Dep't. of Interior Grant Update

- **$100 Million Hurricane Sandy Coastal Resiliency Competitive Grants Program (expect over 400 applications from all states affected by Sandy).**
  - **Grant application submitted January 17, 2014 seeking $364,600.**
  - **Notify selected grant recipients early May 2014.**

MA. Green Infrastructure for Coastal Resilience Grant

- **Maximum $1.3 million available for this pilot grant program—announced February 27, 2014. Maximum $500,000 per application.**

- **Grant application submitted March 10 seeking $280,000.**

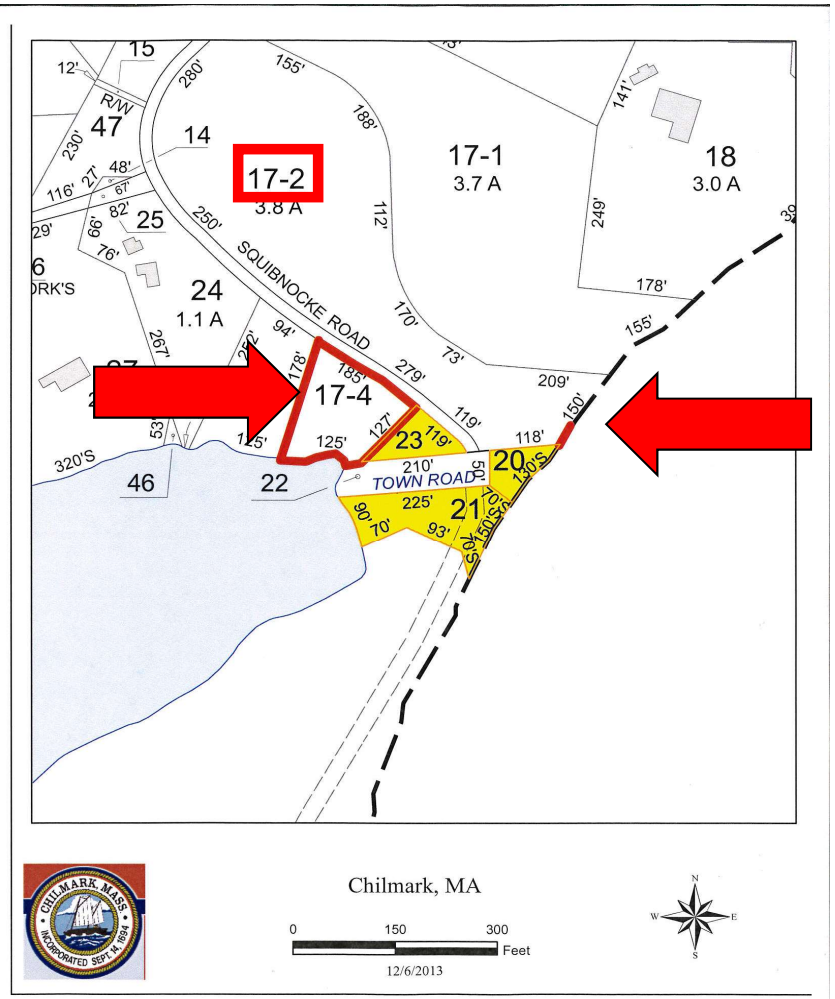
- **May notify selected grant recipients by April 28, 2014.**

Alternatives to the Current Plan

Alternatives to the Current Plan

- **The following alternatives to the Town's current plan were evaluated and ultimately rejected.**

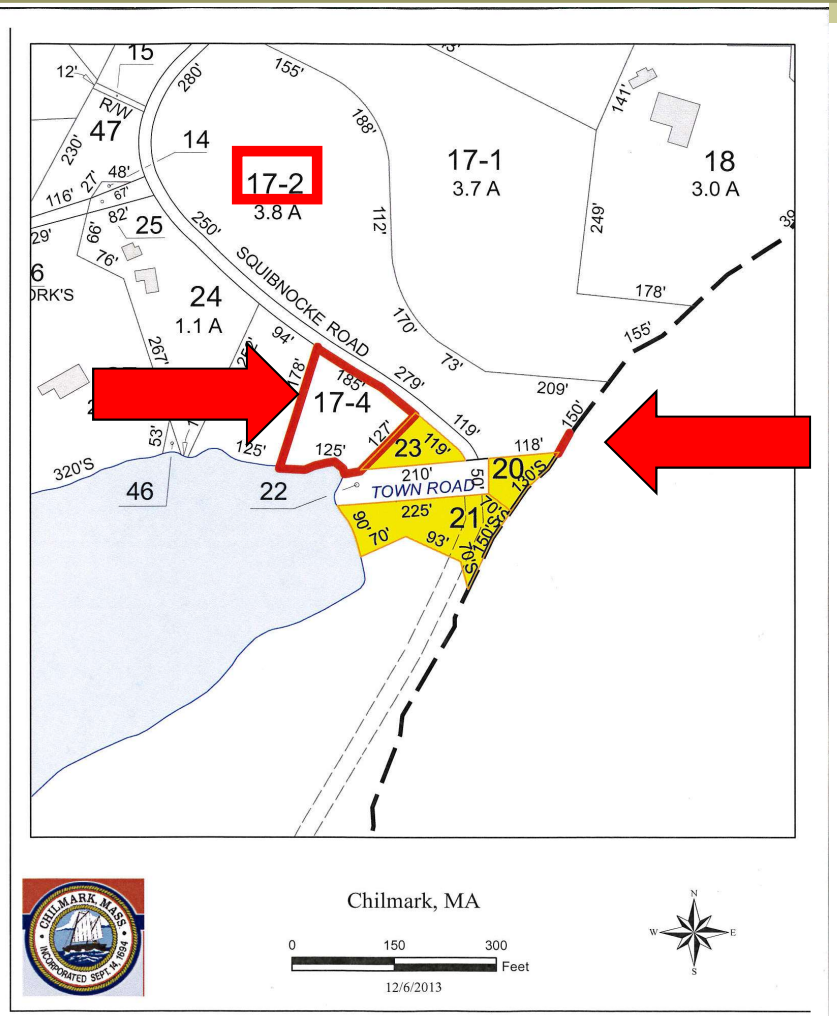
Alternative # 1: Map 35 Lots 17- 2, 17- 4



Alternative # 1: Map 35 Lots 17- 2, 17- 4

- Lease a portion of shoreline on Lot 17 – 2.
- Lease Lot 17 – 4, the lot just north of the Town's currently leased land for a new parking area.
- Both lots have the same owner.

Alternative # 1: Map 35 Lots 17- 2, 17- 4



Alternative # 1: Map 35 Lot 17- 4

- **Alternative # 1 was not pursued because:**

Alternative # 1: Map 35 Lot 17- 4

- **Alternative # 1 was not pursued because:**
  - **The topography of Lot 17 – 4 has a significant elevation drop from Squibnocket Road to the pond.**

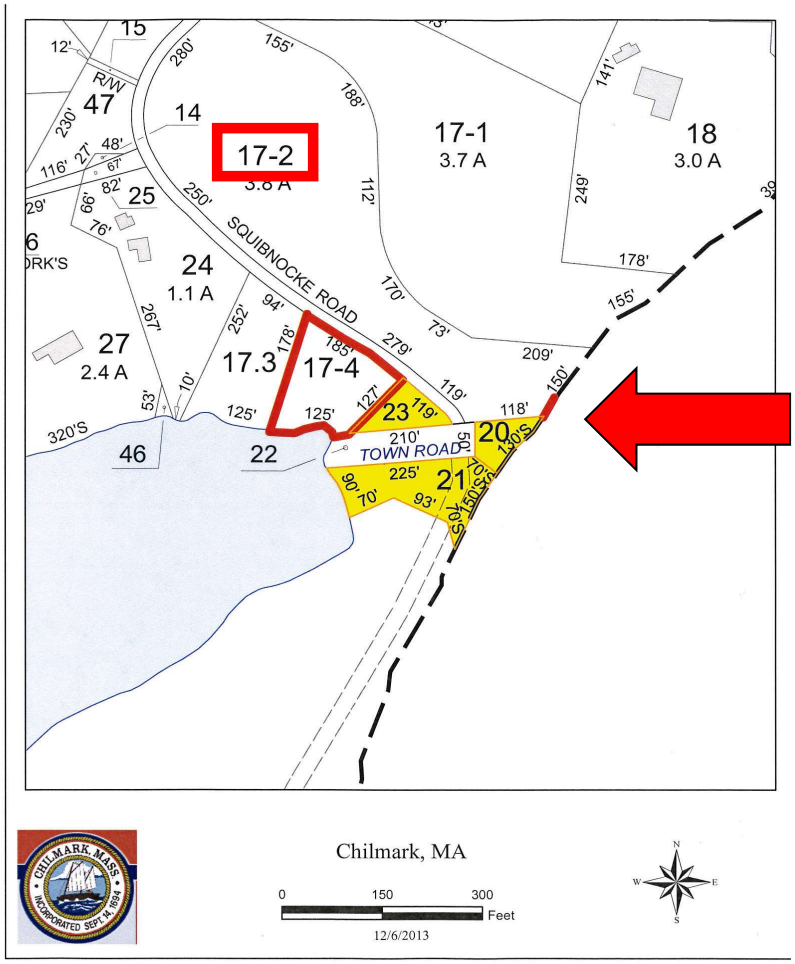
Alternative # 1: Map 35 Lot 17- 4

- Alternative # 1 was not pursued because:
  - The topography of Lot 17 – 4 has a significant elevation drop from Squibnocket Road to the pond.
  - **A large portion of this lot is a wetland and wetland buffer zone—difficult to fill in and create a level parking area.**

Alternative # 1: Map 35 Lot 17- 4

- Alternative # 1 was not pursued because:
  - A large portion of this lot is a wetland—difficult to create a level parking area.
  - **Consequently, the possibility of a lease for a new parking area, its cost and terms were not pursued.**

Alternative # 1: Map 35 Lot 17- 2



Alternative # 1: Map 35 Lot 17- 2

Alternative # 1: Map 35 Lot 17- 2

- Alternative # 1 was not pursued because:
  - Lot 17 – 2 is for sale for over $3 million.
  - The cost to lease about 50-75 feet of shoreline and beach would impact the sale price.

Alternative # 1: Map 35 Lot 17- 2

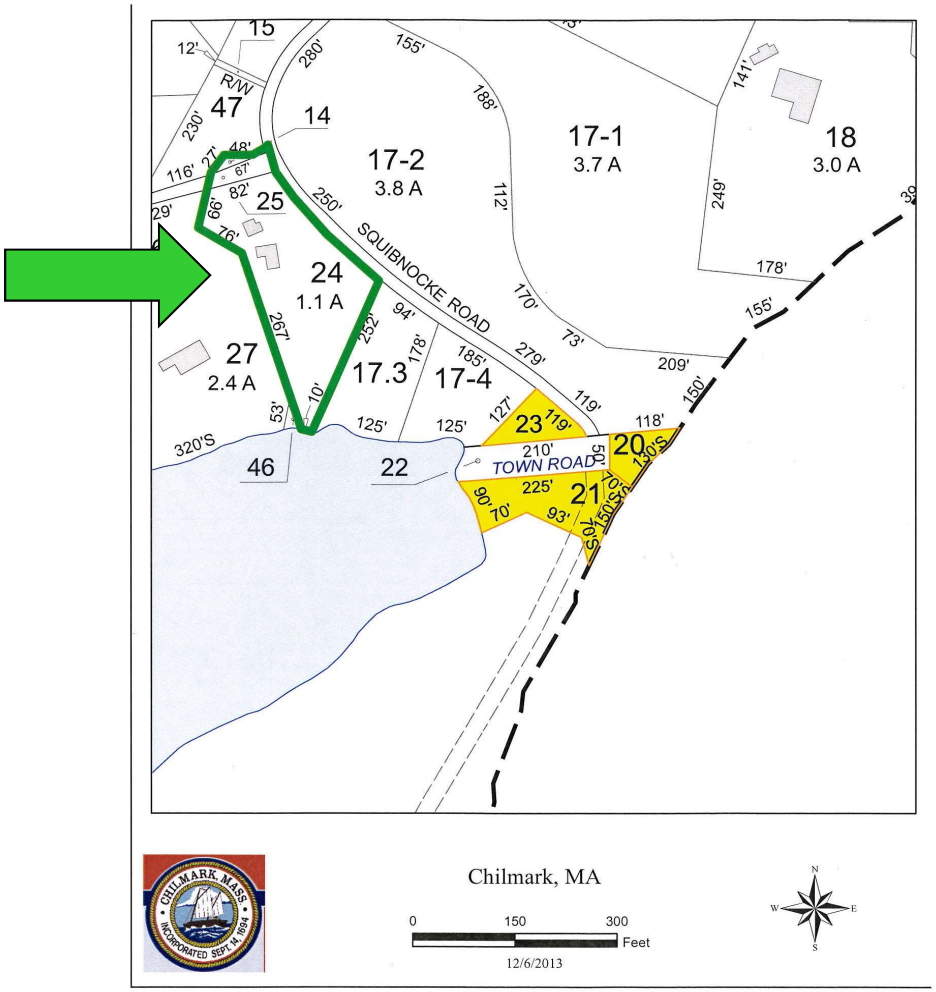
- Alternative # 1 was not pursued because:
  - Lot 17 – 2 is for sale for over $3 million.
  - **After review, this section of shoreline is exposed and subject to erosion. Mean high tide level is near the coastal bank. The current proposal to lease 10.5-acres seemed more feasible. Lot 17 - 2 was not pursued further.**

Alternative # 2: Map 35 Lot 24

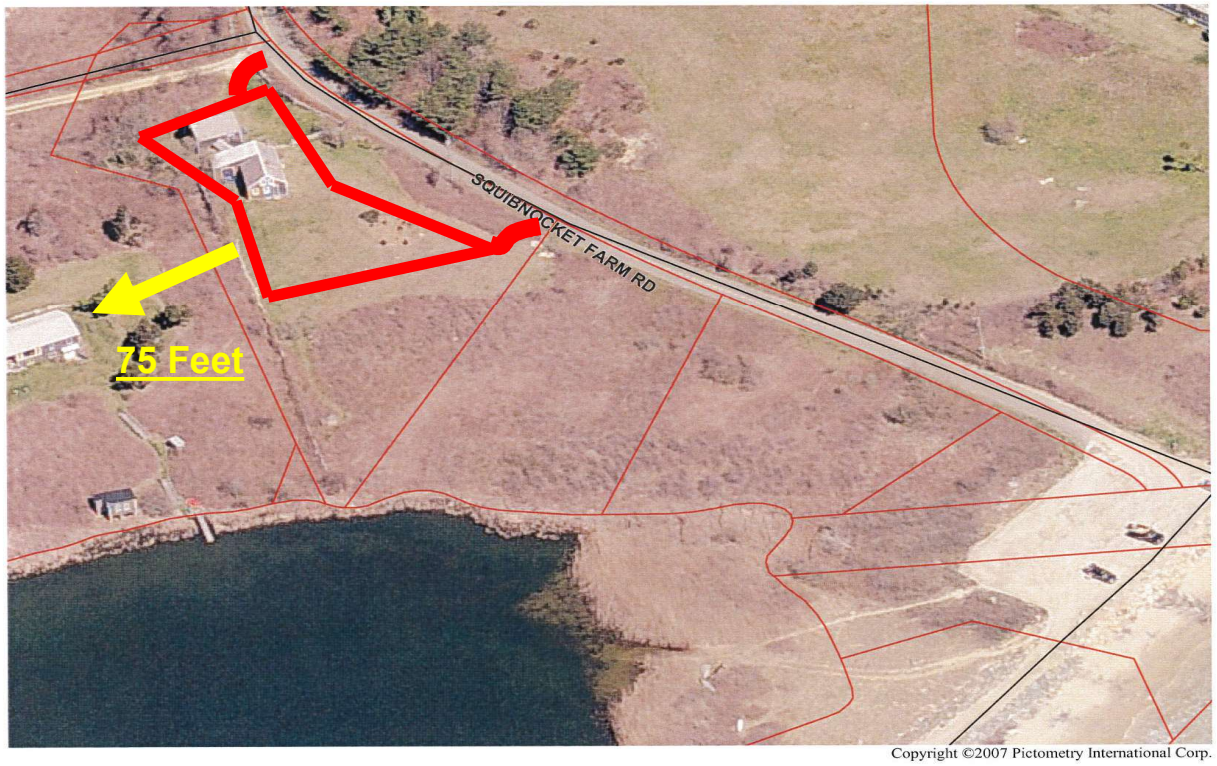
Alternative # 2: Map 35 Lot 24

- Purchase Lot 24 which is for sale for $2.6 million.
- Use this lot as a new parking area.

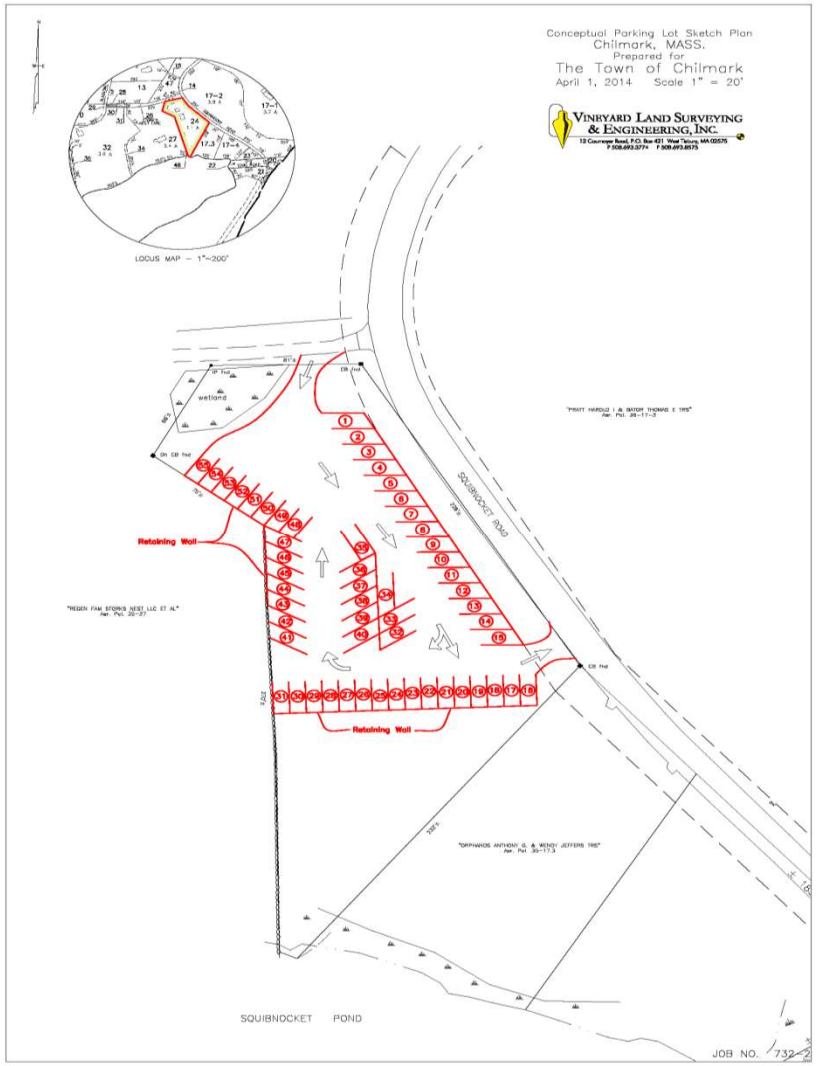
Alternative # 2: Map 35 Lot 24



Alternative # 2: Map 35 Lot 24



Alternative # 2: Map 35 Lot 24



Alternative # 2: Map 35 Lot 24

- **Alternative # 2 was not pursued because:**

Alternative # 2: Map 35 Lot 24

- Alternative # 2 was not pursued because:
  - Significant demolition is required -- the Historic 18th century Capt. Hilliard Mayhew house, out building, septic, well and,
  - significant redevelopment changes to the land's existing natural grade are also required.

Alternative # 2: Map 35 Lot 24

- Alternative # 2 was not pursued because:
  - The parking area would be approximately 75 feet from the closest home—significant noise impact.

Alternative # 2: Map 35 Lot 24

- Alternative # 2 was not pursued because:
  - This option does not solve the need for additional and accessible beach shoreline or provide Squibnocket Pond kayak/skiff access.

Alternative # 2: Map 35 Lot 24

- **Alternative # 2 was not pursued because:**
  - **Too expensive. The Selectmen did not want to incur additional debt service payments which would raise taxes.**

The Current Proposal

Next Steps to the April 28, 2014 Annual Town Meeting

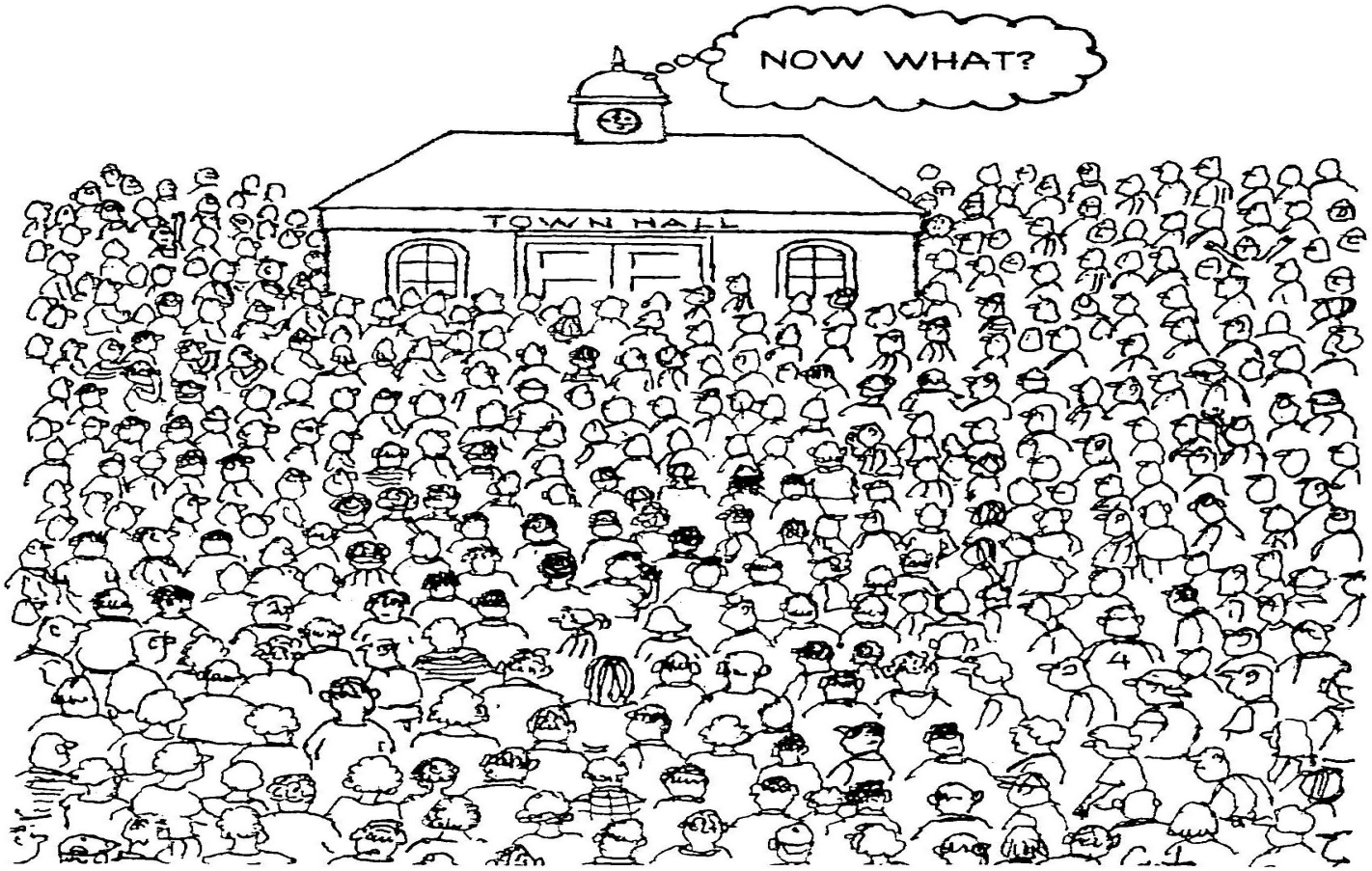
Next Steps to the April 28, 2014 Annual Town Meeting

- **Before proceeding with additional planning and negotiations the Selectmen are proposing a non-binding referendum on the Warrant to assess the Town's interest in pursuing this project.**

Next Steps to the April 28, 2014 Annual Town Meeting

ARTICLE # 28: To see if the Town will vote in favor of the Board of Selectmen proceeding with developing a plan involving Squibnocket Beach, including improvements to and relocation of the access road, the new construction of a raised roadway; the addition of approximately 1000 feet of beach to be added to the existing beach; the relocation and expansion of the existing parking area, and the construction of improvements to allow access for boating in Squibnocket Pond. The proposed project will involve the negotiating of a new or amended lease for the existing beach which will expand the length of its term by approximately 64 years, and will provide for a 99 year lease of approximately 10.5 acres of land to be used for the expanded beach, parking area, and boat water access. This article is to assess the Town's interest in pursuing this project. Should the Town vote in favor of pursuing this project, the Selectmen will hold a future Special Town Meeting in October 2014 to vote on the terms of any lease, to appropriate funding, including from Community Preservation Act funds, and to consider any necessary zoning by-law or other by-law changes needed to allow the project to proceed.

Open Discussion

See you on April 28th

Thank you!