



Our Rising Tides

Anne Reynolds



Our Rising Tides

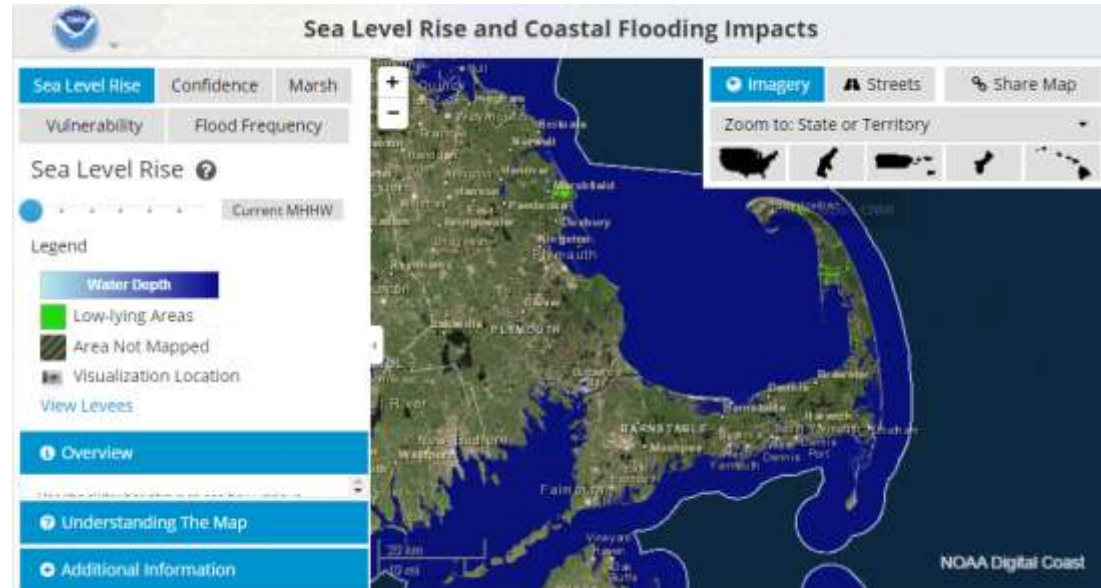
Anne Reynolds

10 December 2015



Existing Sea Level Rise Applications

NOAA
Digital Coast



TNC
Coastal
Resilience



769 Miles of Coast line





UNDERSTANDING IS REQUIRED

Sea Level Rise



Why create a Sea Level Rise Application?

Local Data

Analysis and
identification of
problem areas

Interaction of
Public with data to
familiarize with
local risk



Creating the SLR Data – Data Source

Creating the SLR Data – Data Sources

LiDAR
Data

(2012)



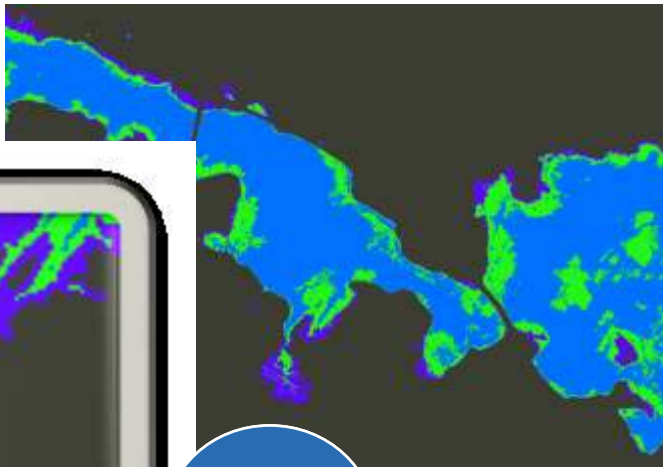
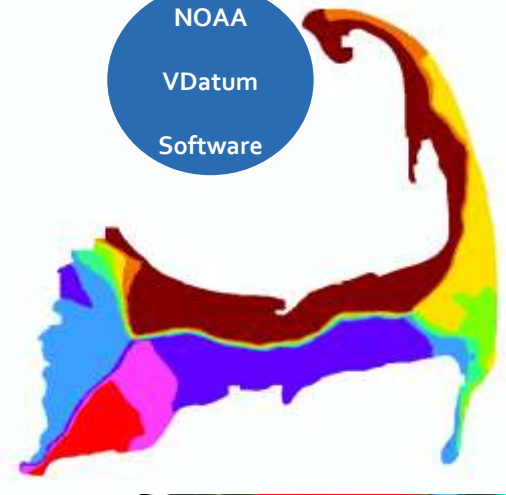
Tidal Datums

Highest Observed	
Mean Higher High Water	MHHW
Mean High Water	MHW
Mean Tide Level	MTL (DTL) (MSL)
Mean Low Water	MLW
Mean Lower Low Water	MLLW
Lowest Observed	

NOAA

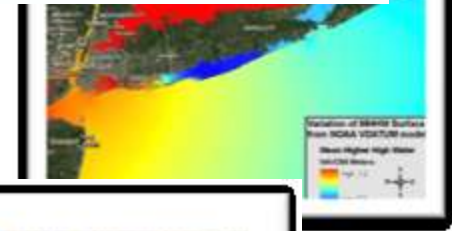
VDatum

Software



Raster

Processing



Vector

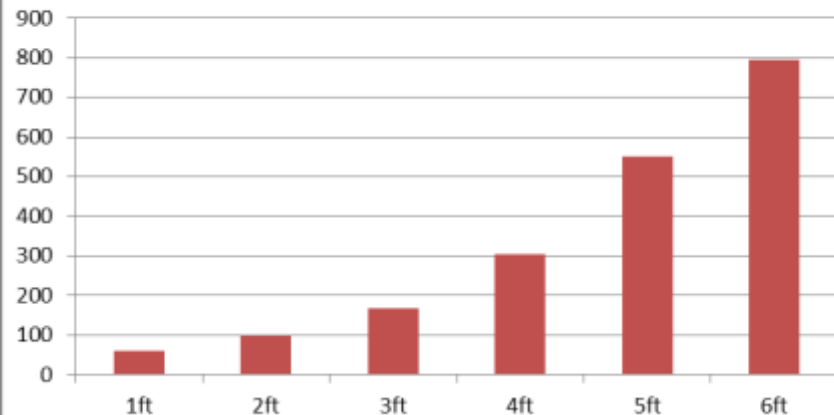
Processing



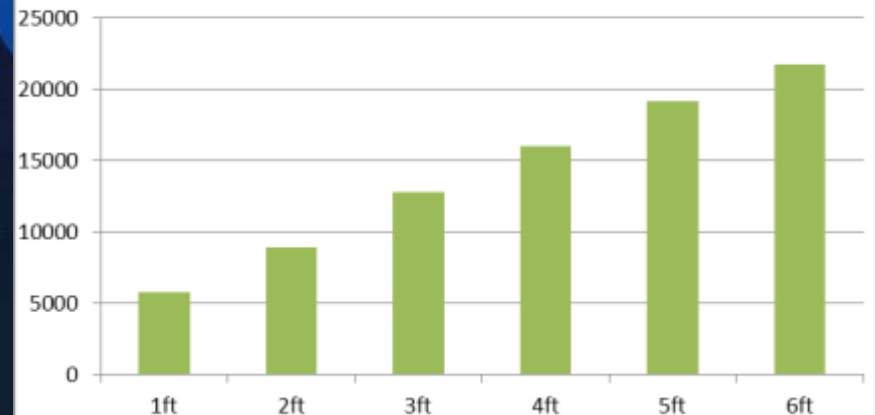
Using the SLR Data – The Impact

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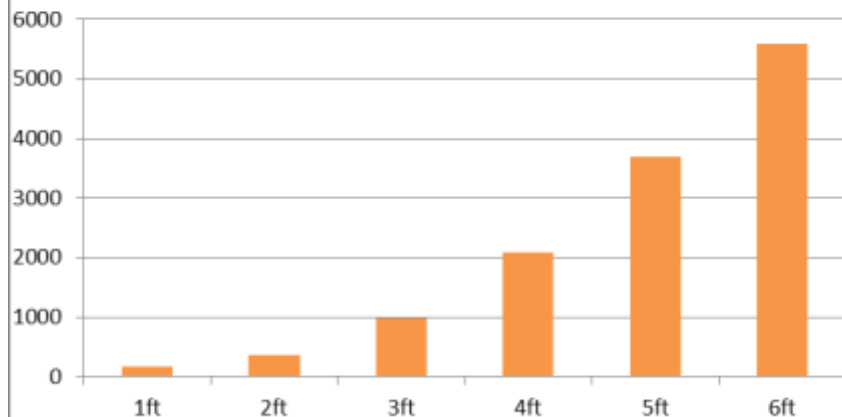
Lost Businesses



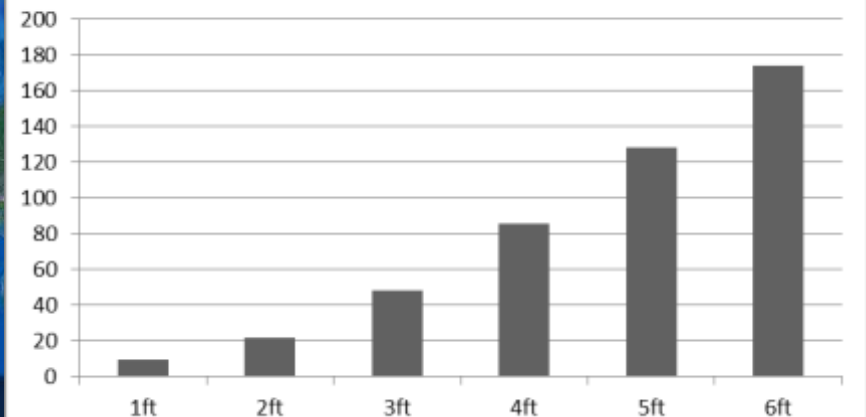
Lost acres



Submerged Structures

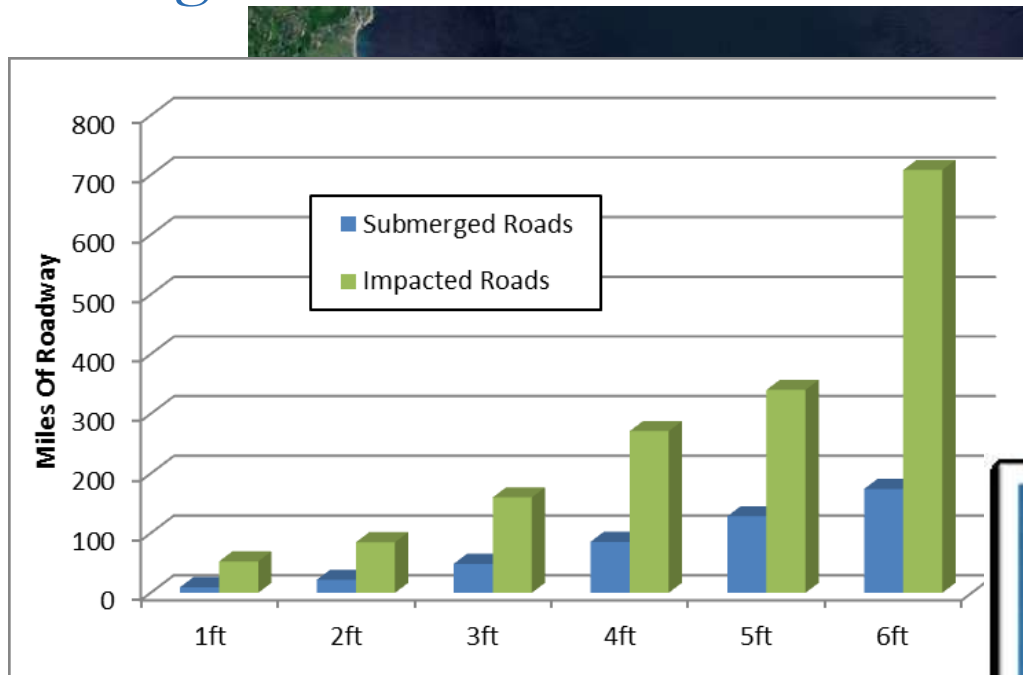


Submerged Roads (Miles)



Using the SLR Data – Network Analyst

Using the SLR Data – Network Analyst



Using the SLR Data – Application Development

Using the SLR Data – Application Development

Esri ArcServer REST

 Cached dataset – Level 17 – 1:4,500

Esri JavaScript API

Dojo Digit

Simple Application:

 1 Page

 ~100 lines of JS

Data Available from Cape Cod Commission ArcGIS

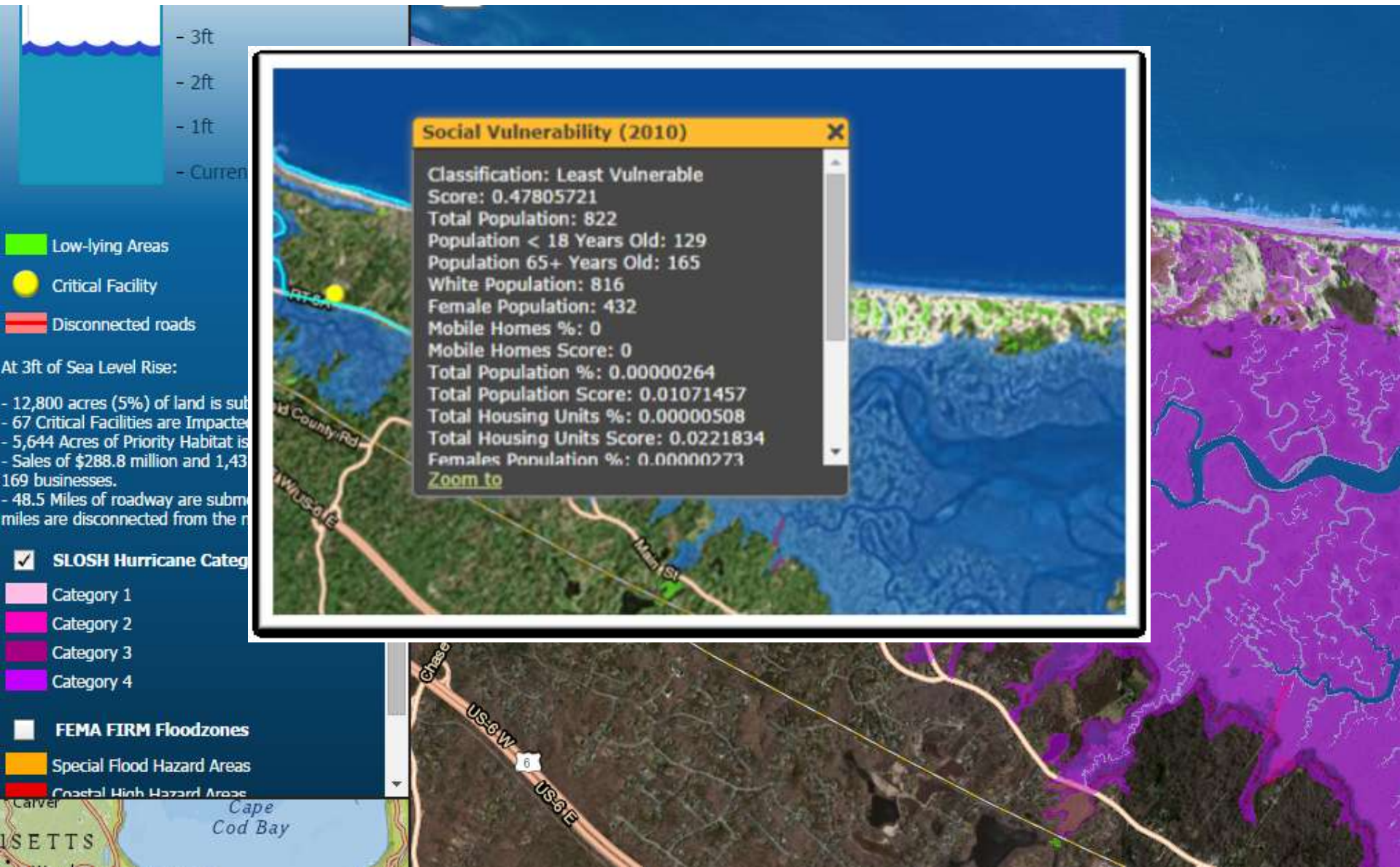
<http://www.capecodcommission.org/sealevelrise/>

Using the SLR Data – Application Development

Cape Cod Sea Level Rise

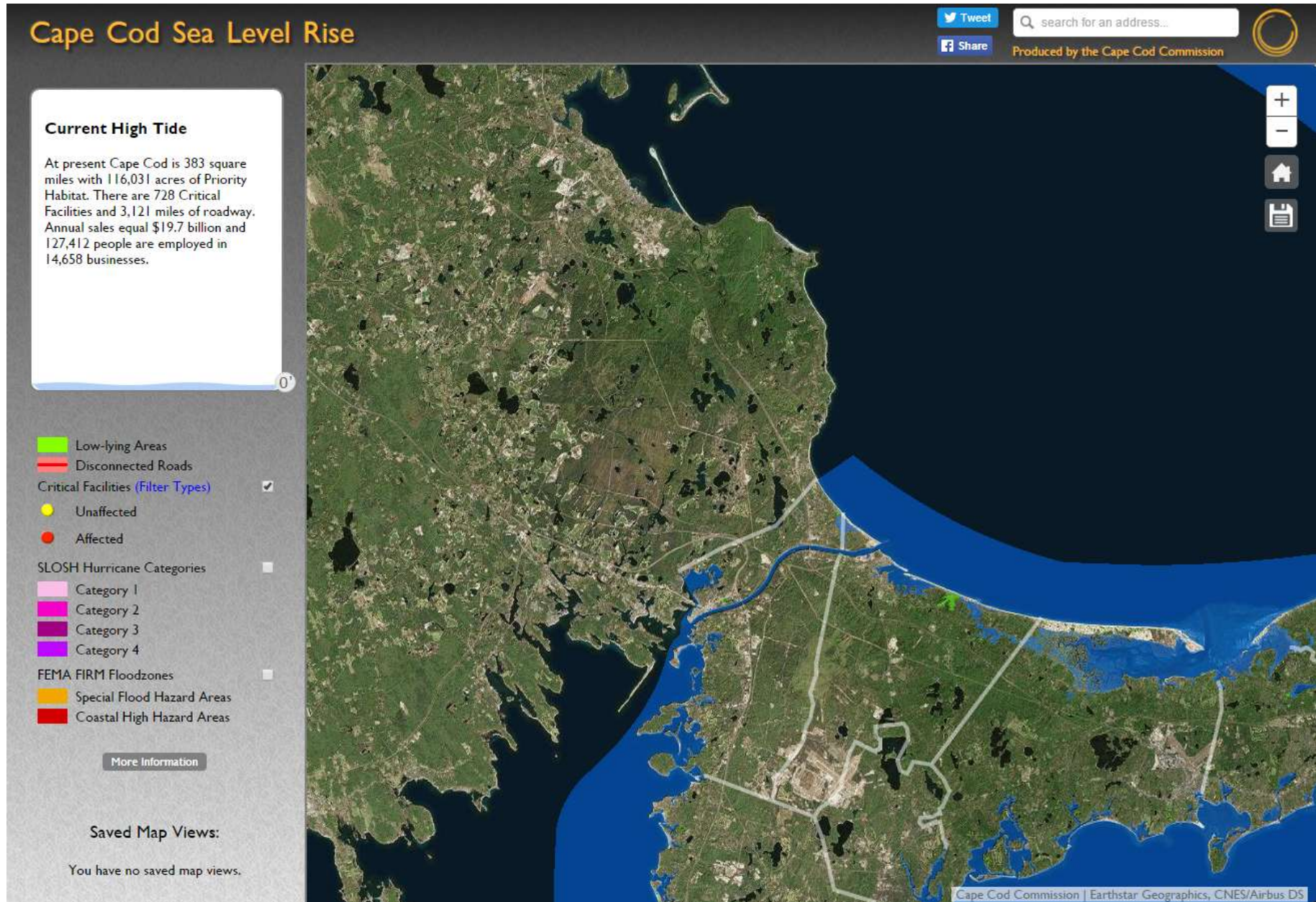


Using the SLR Data – Application Development

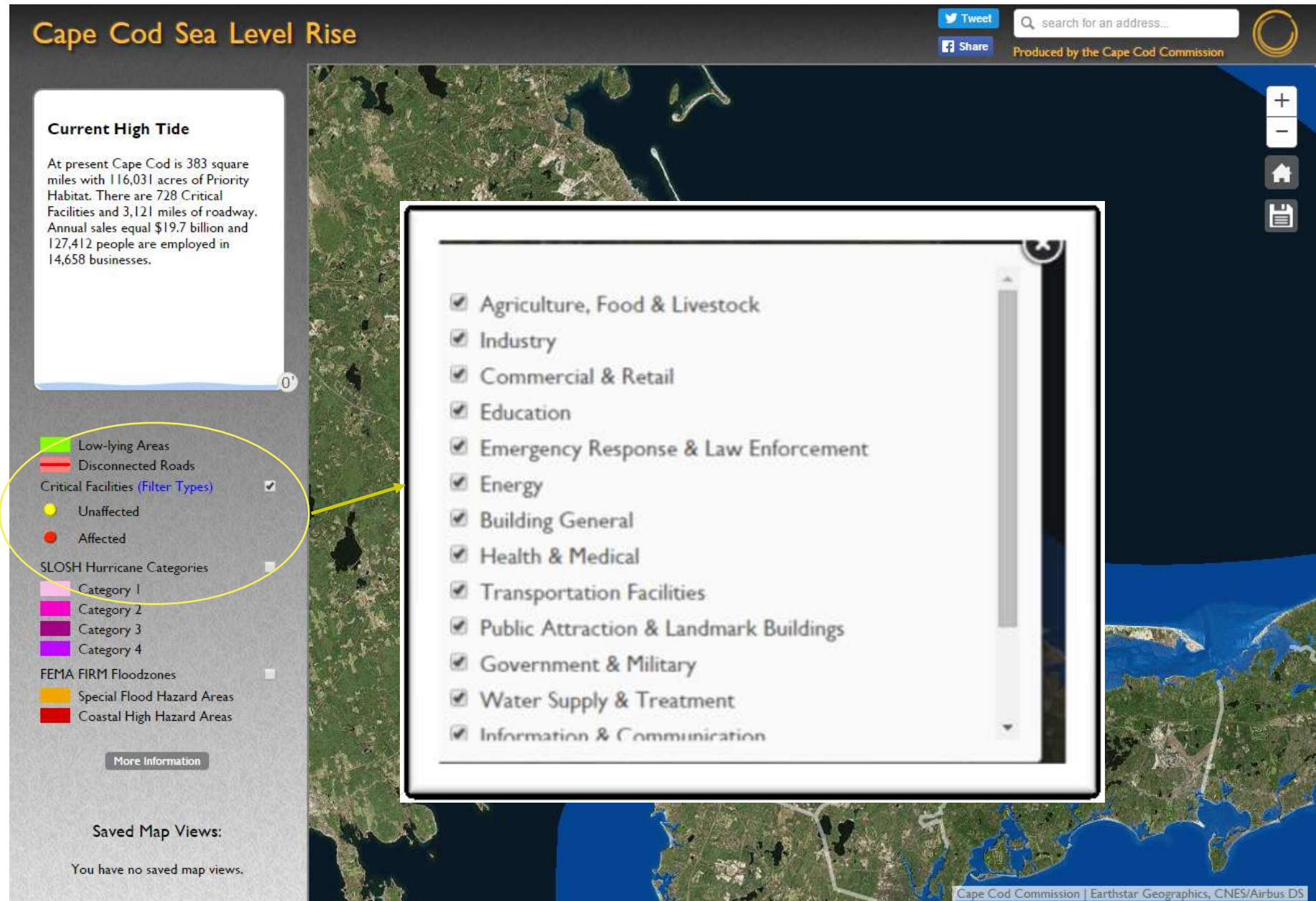


Using the SLR Data – Application Development 2.0

Using the SLR Data – Application Development 2.0



Using the SLR Data – Application Development 2.0



Using the SLR Data – Application Development 2.0

Cape Cod Sea Level Rise

At present Cape Cod is 383 square miles with 116,031 acres of Priority Habitat. There are 728 Critical Facilities and 3,121 miles of roadway. Annual sales equal \$19.7 billion and 127,412 people are employed in 14,658 businesses.

0'

Low-lying Areas
Disconnected Roads
Critical Facilities (Filter Types)
Unaffected
Affected
SLOSH Hurricane Categories
Category 1
Category 2
Category 3
Category 4
FEMA FIRM Floodzones
Special Flood Hazard Areas
Coastal High Hazard Areas

More Information

Saved Map Views:
You have no saved map views.

Map Title:
Created By:
Description:
Save Map

Produced by the Cape Cod Commission

Ca



Using the SLR Data – Application Development 3.0

Using the SLR Data – Application Development 3.0

