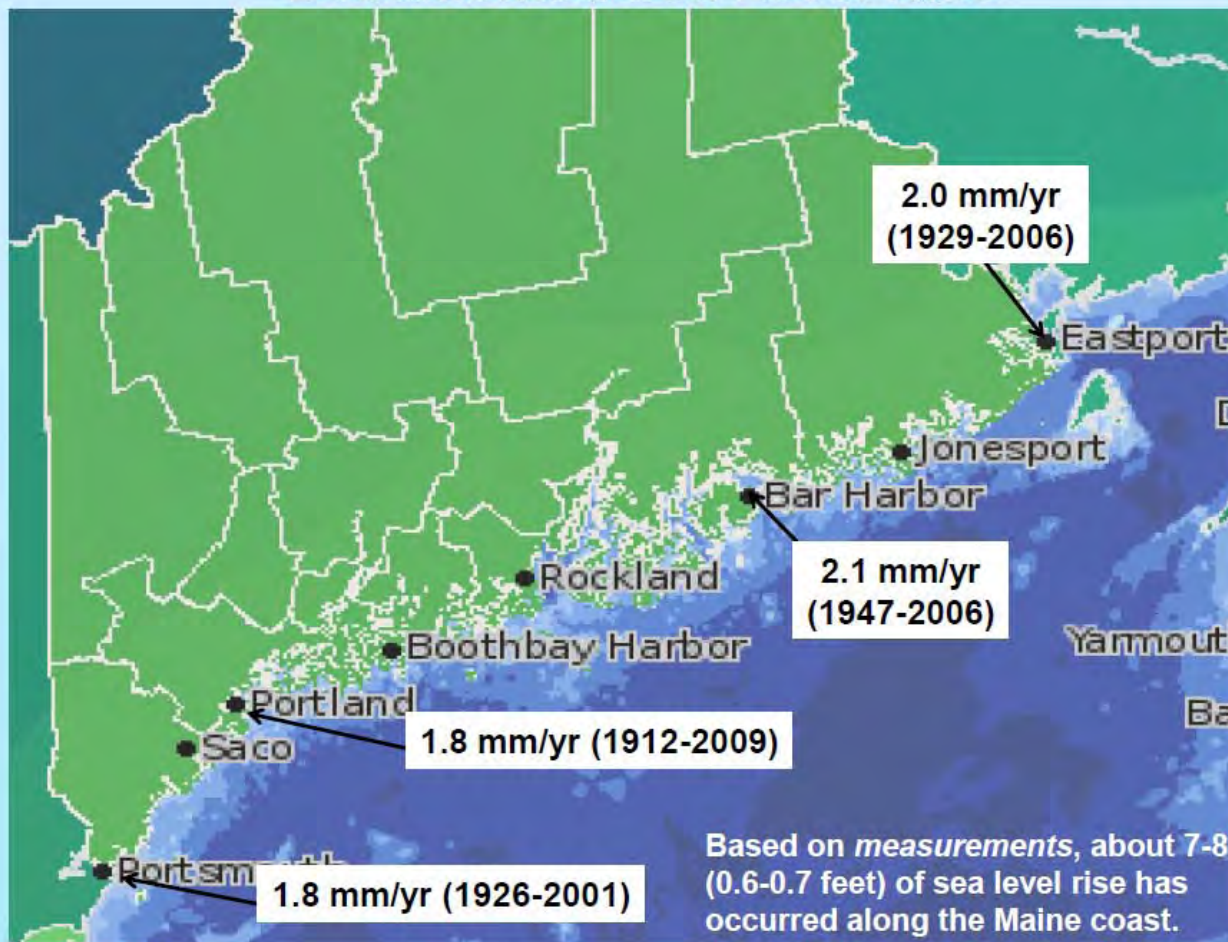


# Past Sea Level Rise

## Documented Sea Level Rise



Data courtesy of NOAA CO-OPS

Source:  
*Adapting to Sea Level Rise*  
Presentation,  
Slovinsky/Lockman

# A Changing Climate

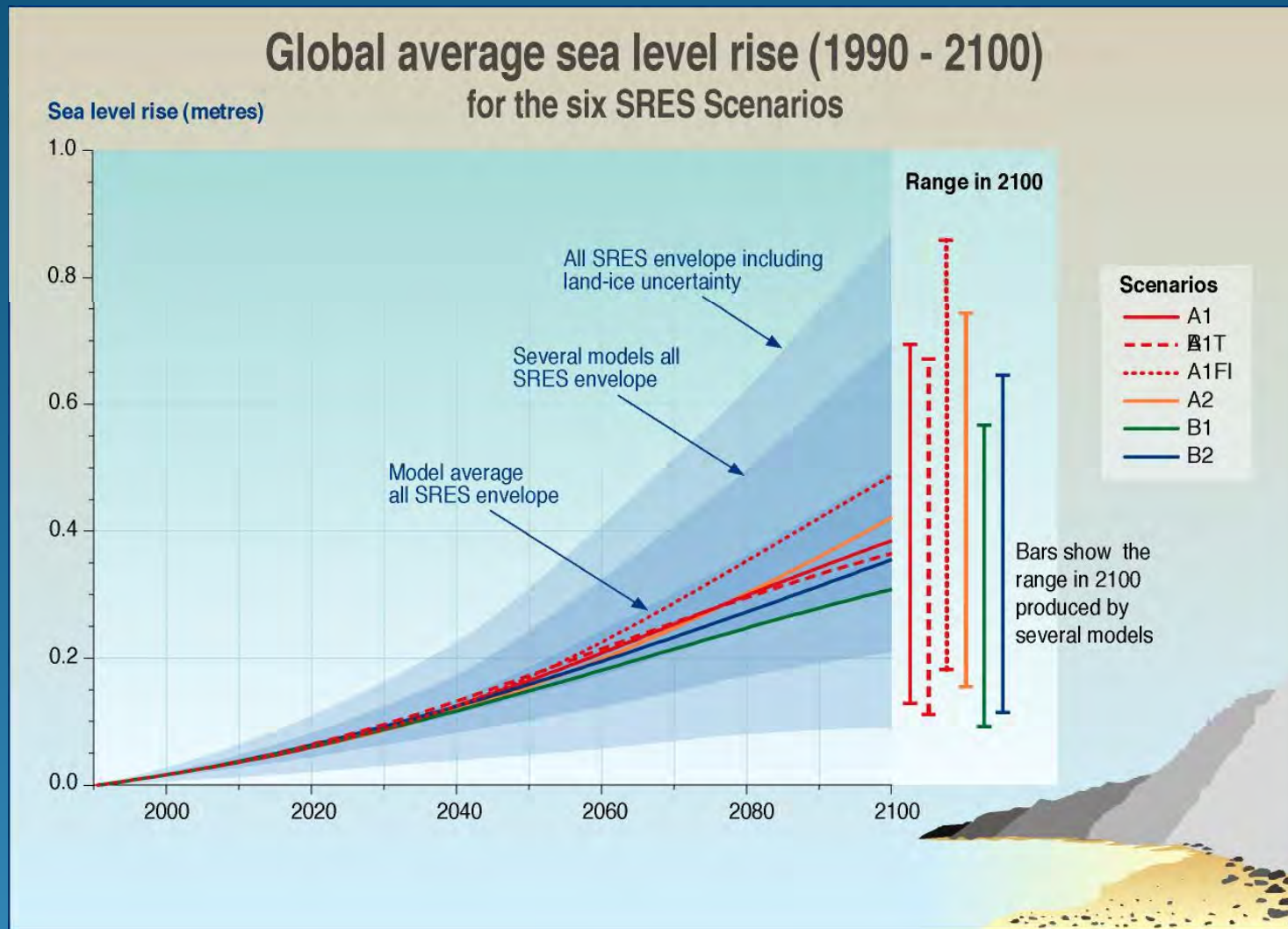
Evidence that surface temperatures around the globe have been rising.

The increased temperatures are expected to affect numerous aspects of our earth's climate as well as other natural processes.

2 key potential threats to coastal communities:

- Sea Level Rise
- Stronger Storm Events

# Continued Sea Level Rise

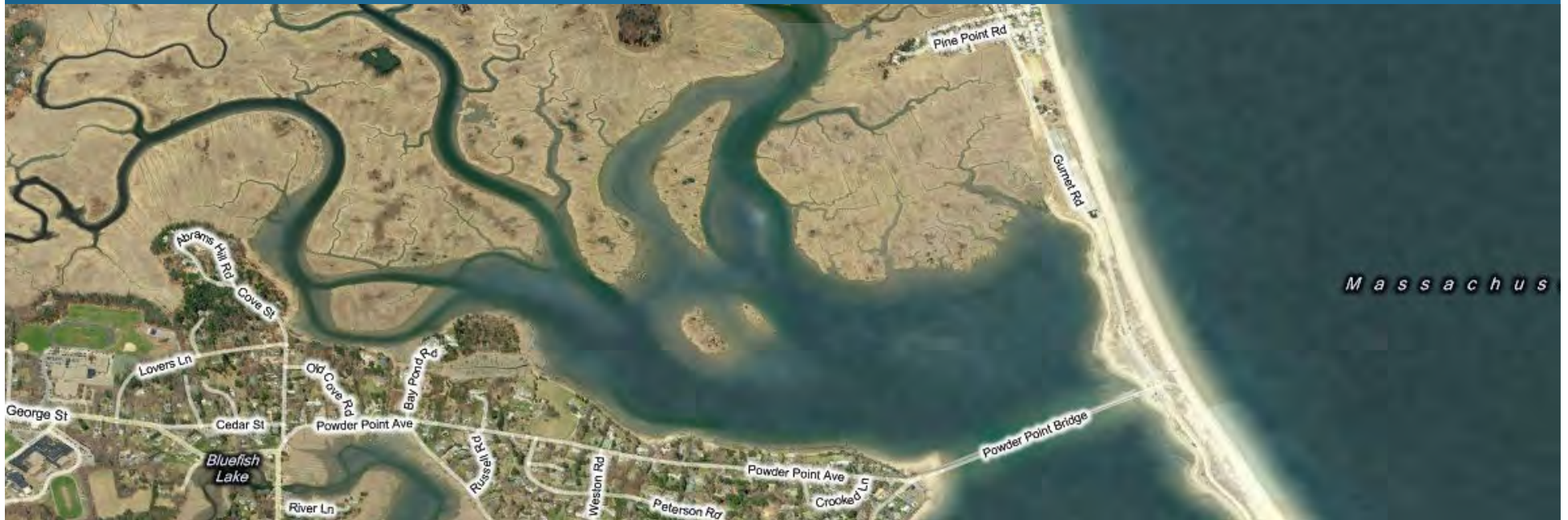


Source:  
IPCC,  
Fourth  
Assessment  
Report, 2007



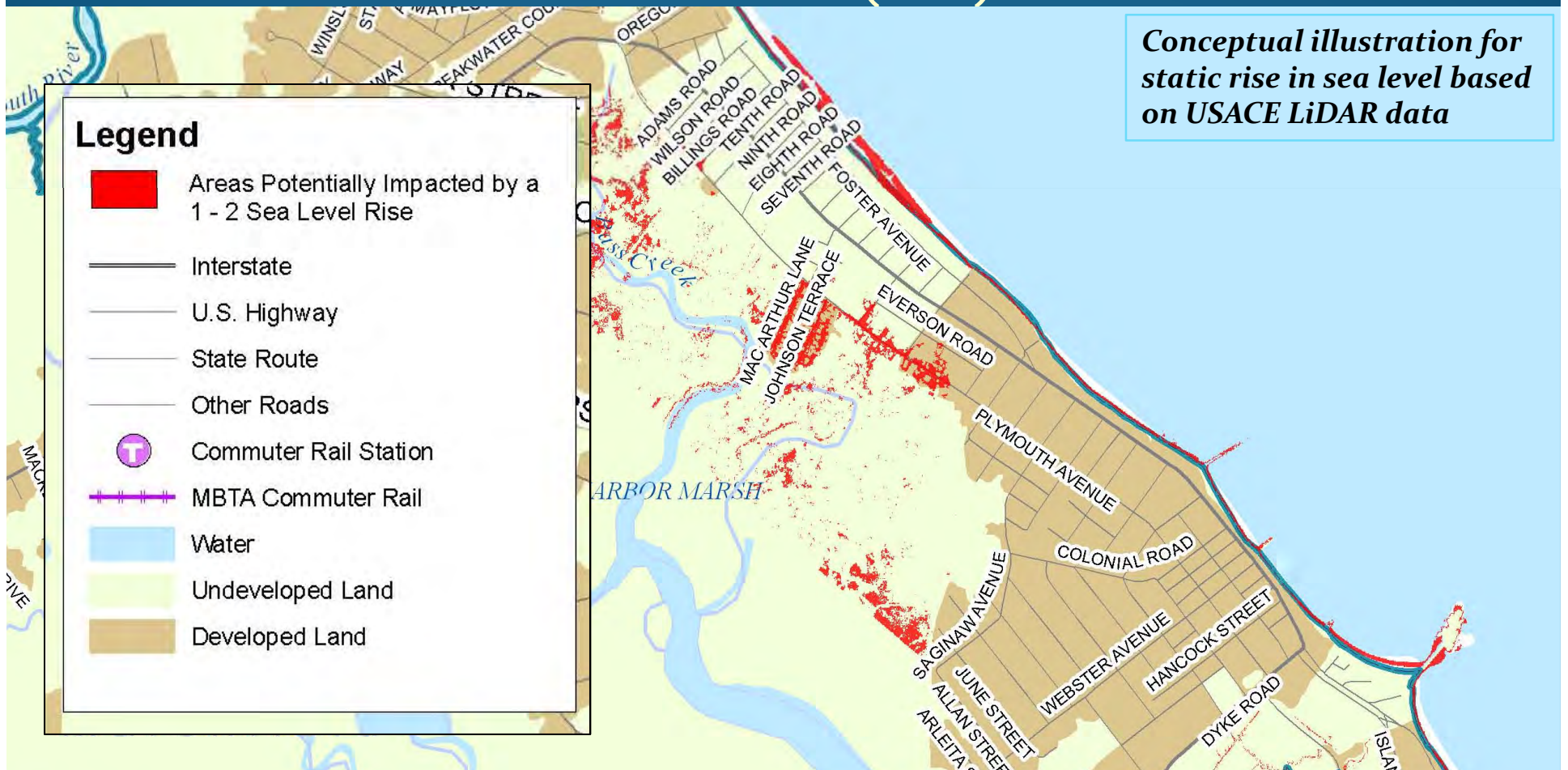
# Stronger, More Frequent Storms

With the possibility of more intense and/or more frequent storm events , result would be a greater stress to the coastlines, both for the existing natural features and for man-made coastal structures



# Potential Impacts

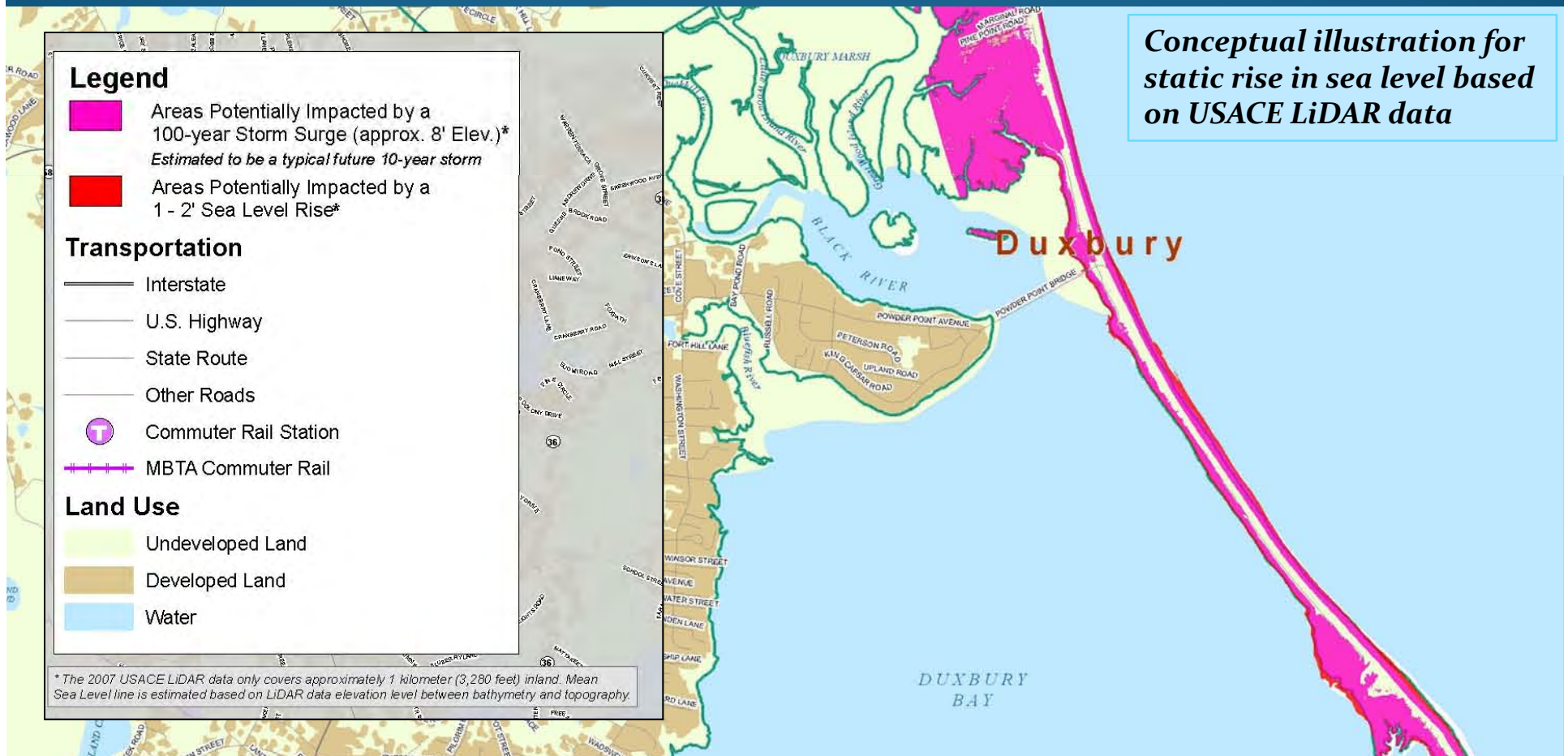
## Potential for 2' Sea Level Rise (SLR)





# Potential Impacts

## 2' SLR with 8' rise in sea level



# Potential Impacts

**As result, prior assumption about certain infrastructure will likely not hold true for the future. This includes:**

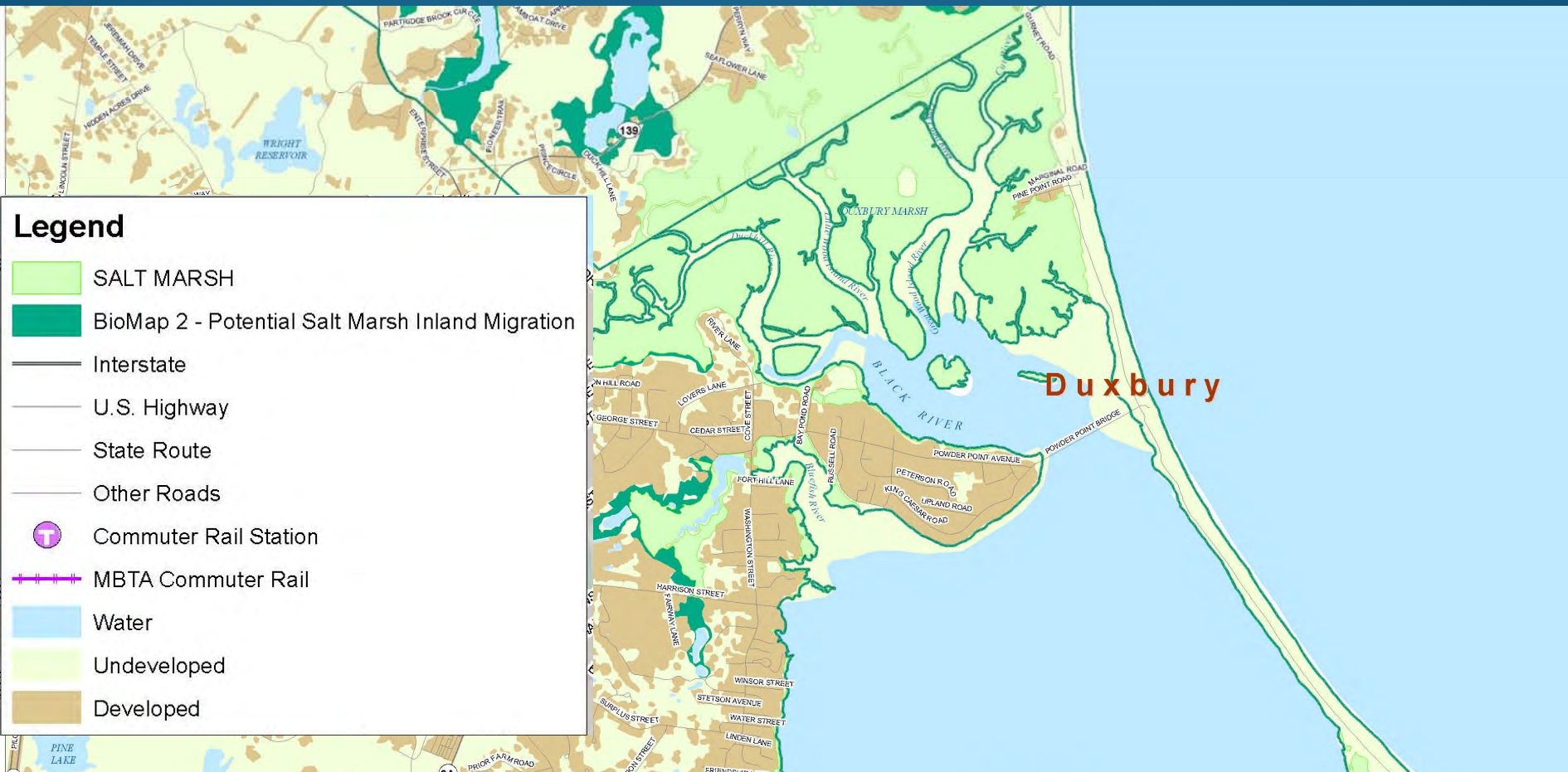
- Design and performance of coastal structures
- Shoreline changes in front of coastal structures



*Source:  
Jason Burtner,  
MA CZM*

# Potential Impacts

## Migration/Loss of Environmental Features





# Planning Ahead

**Adaptation = anticipate and respond to potential future conditions**

- Protect
- Accommodate
- Retreat

**Identify a menu of Adaptation Strategies for roadways and buildings as well as for open space**

- Many of the strategies mutually supportive

# Adaptation for the Built Environment

## Property

- Land Acquisition: Undeveloped lands, Vulnerable Properties that have sustained significant damage, etc.



Source: MassDEP



Source: NOAA Ocean and Coastal Resource Management