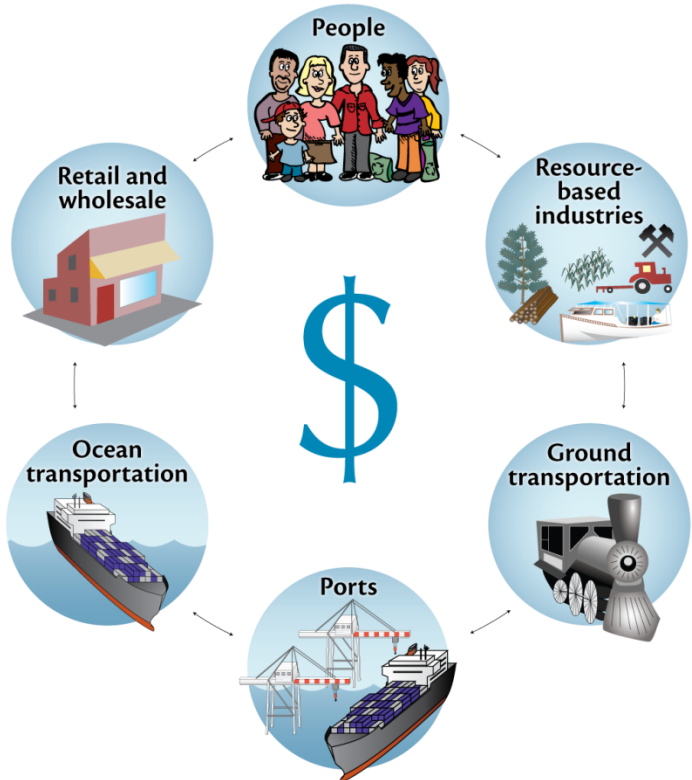


The Cost of Doing Nothing: Economic Impacts of Sea Level Rise in the Tampa Bay Area

Randy Deshazo, Director of Research, TBRPC
Sea Level Rise and Climate Resiliency Roundtable
January 2018

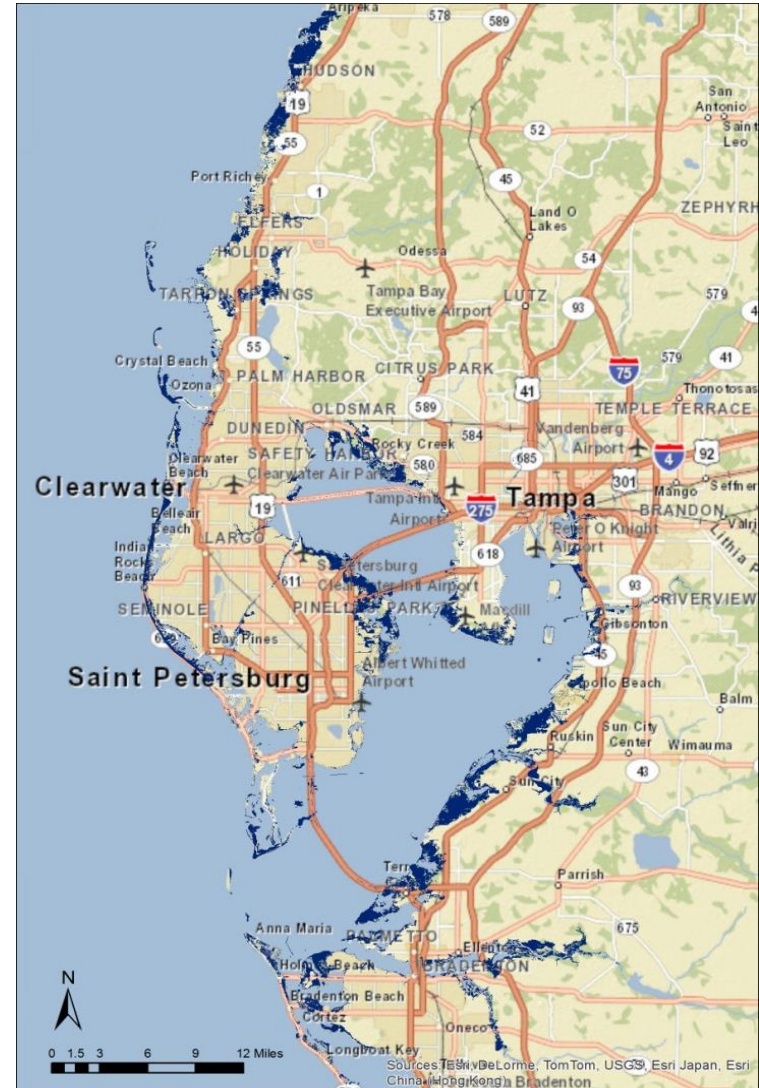


Sea Level Rise Economic Impacts



Conceptual diagram illustrating how sea-level rise affects non-coastal areas. Diagram courtesy of the Integration and Application Network (ian.umces.edu), University of Maryland Center for Environmental Science. Source: Boesch, D.F. (editor), 2008. Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change Phase I: Sea-level rise and coastal storms. Report of the Scientific and Technical Working Group of the Maryland Commission on Climate Change. University of Maryland Center for Environmental Science, Cambridge, Maryland. This report is a component of the Plan of Action of the Maryland Commission on Climate Change, submitted to the Governor and General Assembly pursuant to Executive Order 01.10.2007.07.

Impacts of property loss, job loss, loss of tourism dollars

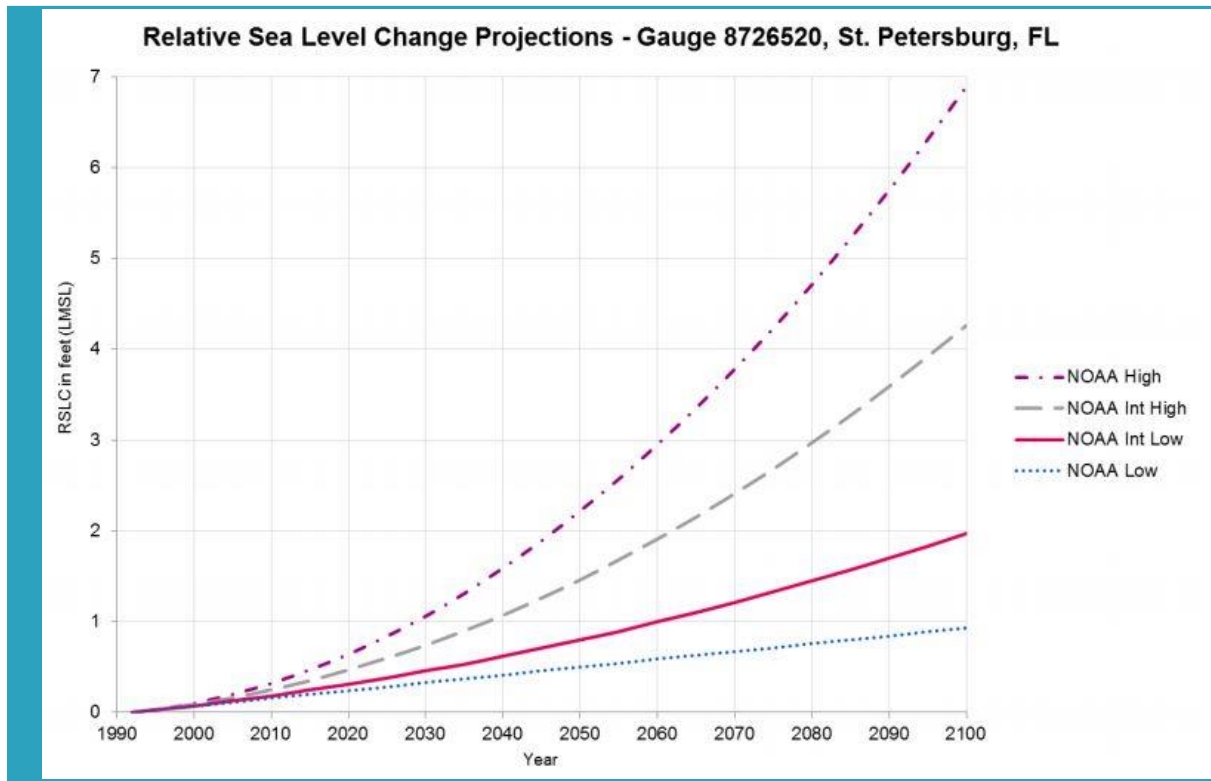


Sea Level Rise Projects in the US

- ▶ Miami Forever Bond (\$200 million)
- ▶ Miami Beach: stormwater improvements and raised roads (\$400 million)
- ▶ US Army Corps [plan](#) for Norfolk, VA (\$1 billion), floodwalls, surge barriers and tidal gates
- ▶ LA SAFE (Strategic Adaptations for Future Environments), \$90 million HUD grant, relocate 59,000 coastal residents (prohibitions on new homes, buyouts of existing homeowners, commercial development will have to put up bonds to cover eventual demolition)

What If: What Sea Level Change?

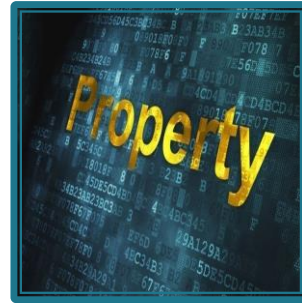
Illustration 1: Relative Sea Level Change in Feet



Assessing the Potential Impact



Sea Level Rise



Property Data



Economic Impact Model



When Mean Sea Level Increases by 2.0 Feet	Estimate
Value of Submerged Residential Property in 2015	\$14.9 Billion*
Value of Submerged Commercial Property in 2015	\$1.3 Billion*
Cumulative loss of Property Taxes (2020-2060)	5.4 Billion*
Job Losses in submerged areas	17,184

Impacts

- Methodical but selective process
- Meshing GIS with economic data
- Comparing Simulations

Property Loss



	Residential	Commercial	Industrial	Total
Acres	72,048	4,226	296	76,570
Parcels	29,297	2,316	186	31,799
Value	\$14.9 Bil	\$1.2 Bil	\$94.5 Mil	\$16.2 Bil
Est. 2015 Taxes	\$241.8 Mil	\$20.3 Mil	\$2.1 Mil	\$264.2 Mil

Submerged Jobs

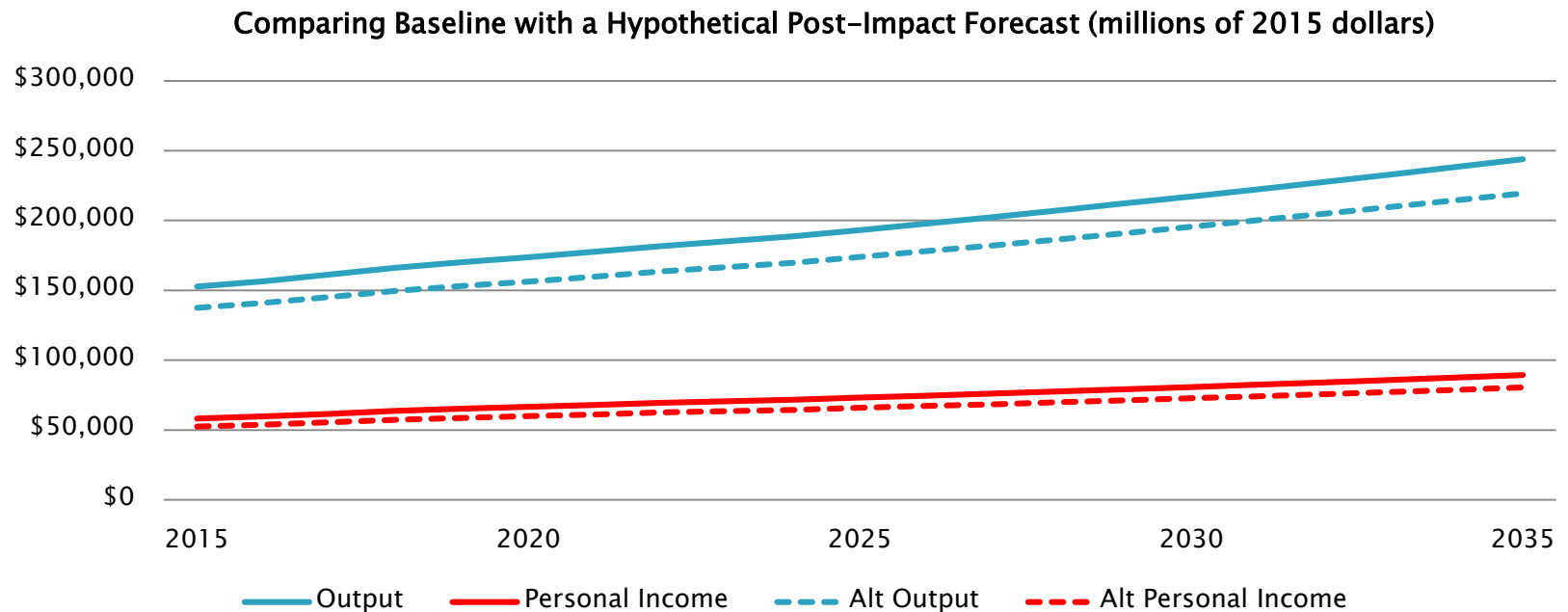


Tourism Losses

- ▶ Loss of beaches
- ▶ Loss of hotels and restaurants
- ▶ Loss of direct and indirect jobs
- ▶ In terms of lost tourism spending, \$2.5 billion in 2060 (in 2015 Dollars).

Simulations

- ▶ Compare some what-if set of conditions to a dynamic baseline.

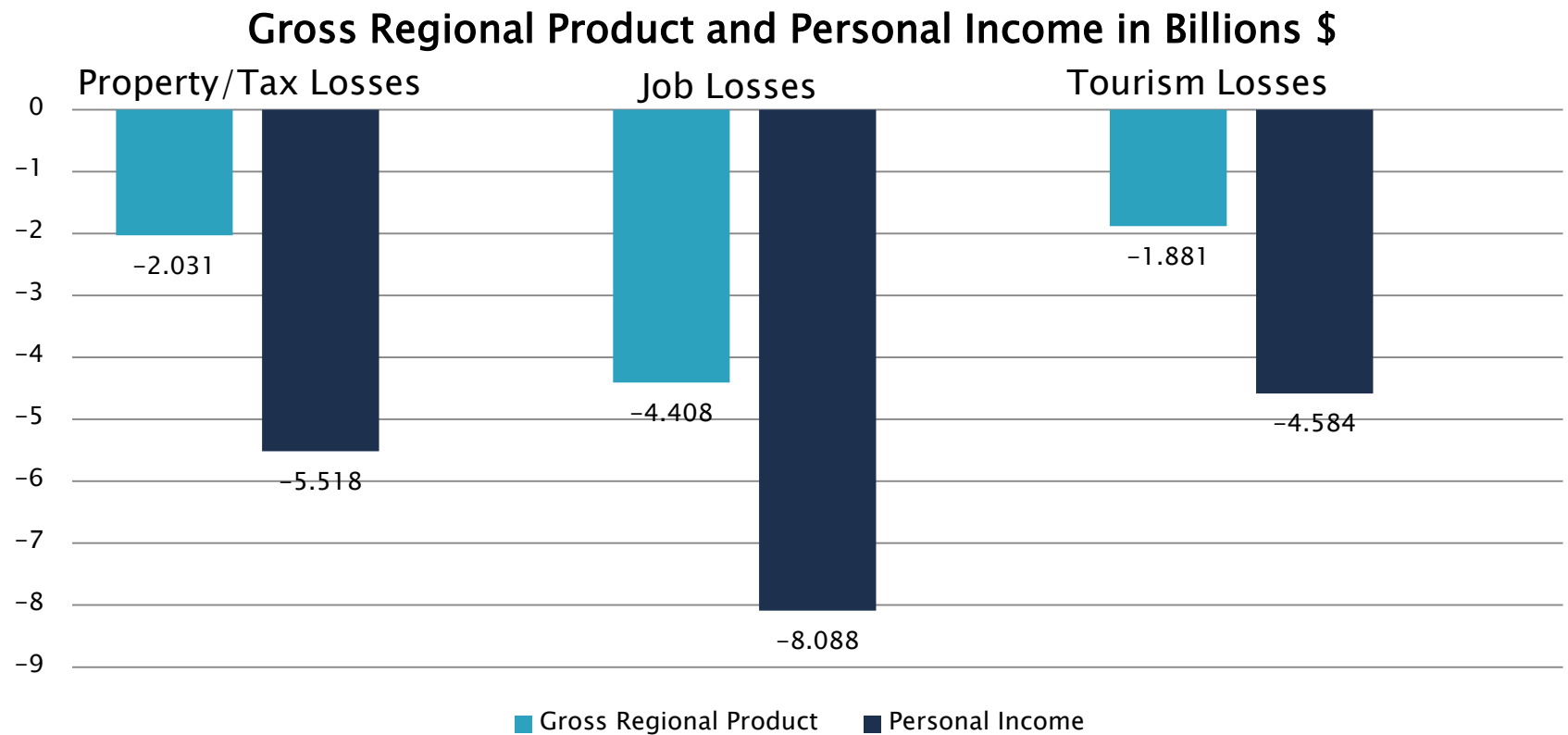


Comparing Simulations

Employment and Population (thousands)

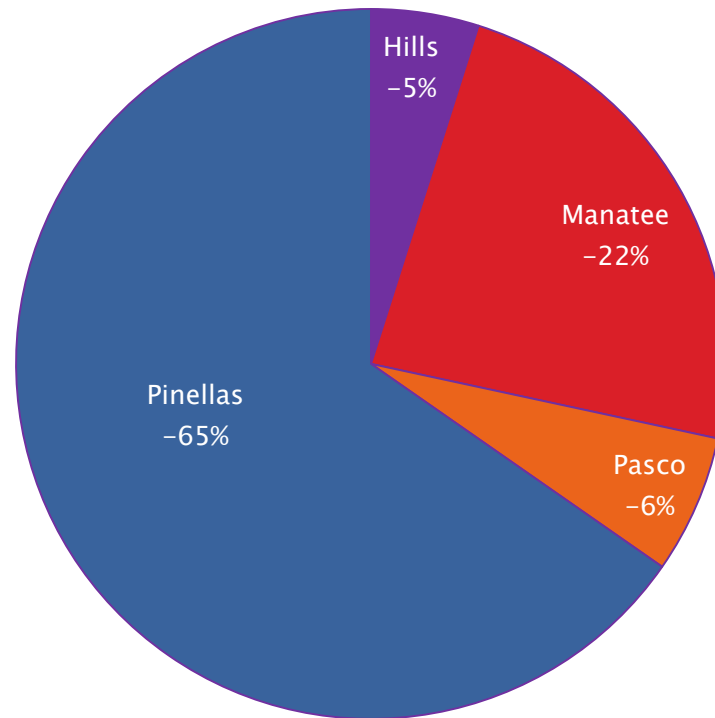


Comparing Simulations II



Uneven distribution of impacts

Share of Lost Personal Income by County in 2060



Putting it all into perspective

Category	Units	Baseline 2060 Data	Percent Impact of Composite Simulation on Baseline
Total Employment	Thousands (Jobs)	2,320	-2.55%
Population	Thousands	4,400	-2.50%
Labor Force	Thousands	2,141	-3.16%
Gross Regional Product	Billions of Fixed (2009) Dollars	371.5	-2.32%
Personal Income	Billions of Current Dollars	893.7	-2.17%

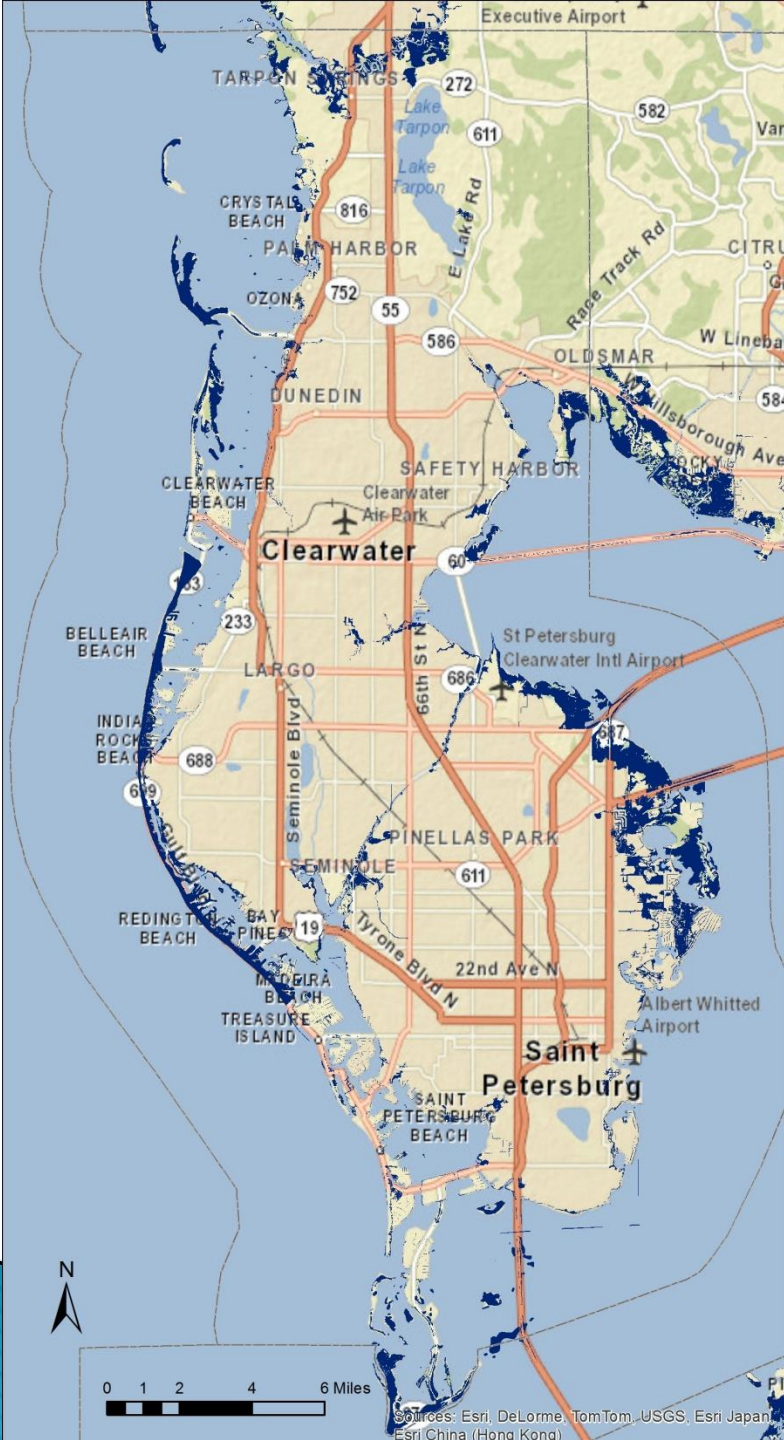
Making sense of the crystal ball

- ▶ Infrastructure costs rise
- ▶ As currently assessed, \$400 billion of property in Florida at risk by end of century⁽¹⁾
- ▶ Flood insurance costs may rise (sharply)
- ▶ Property values will fall
- ▶ **Implications for Planning Resilient Communities**
 - Shift costs to developers?
 - Accelerate flood resiliency capital projects?

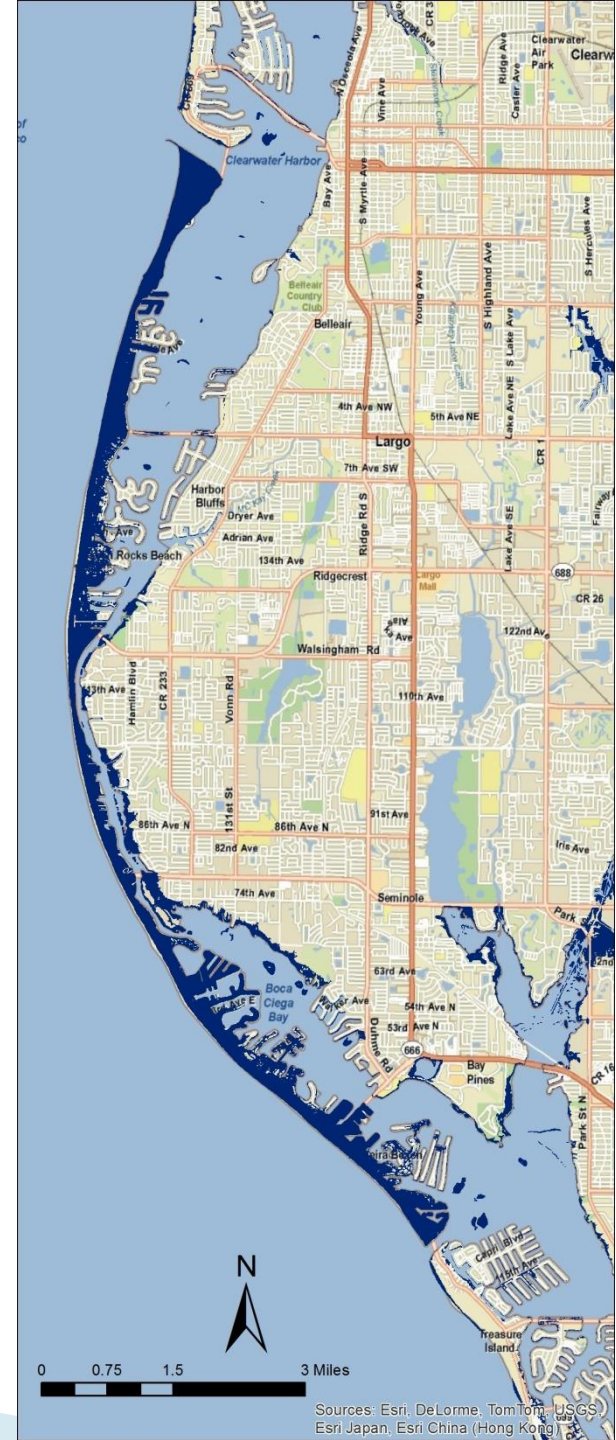
▶ (1) <https://www.bloomberg.com/news/features/2017-04-19/the-nightmare-scenario-for-florida-s-coastal-homeowners>

The End

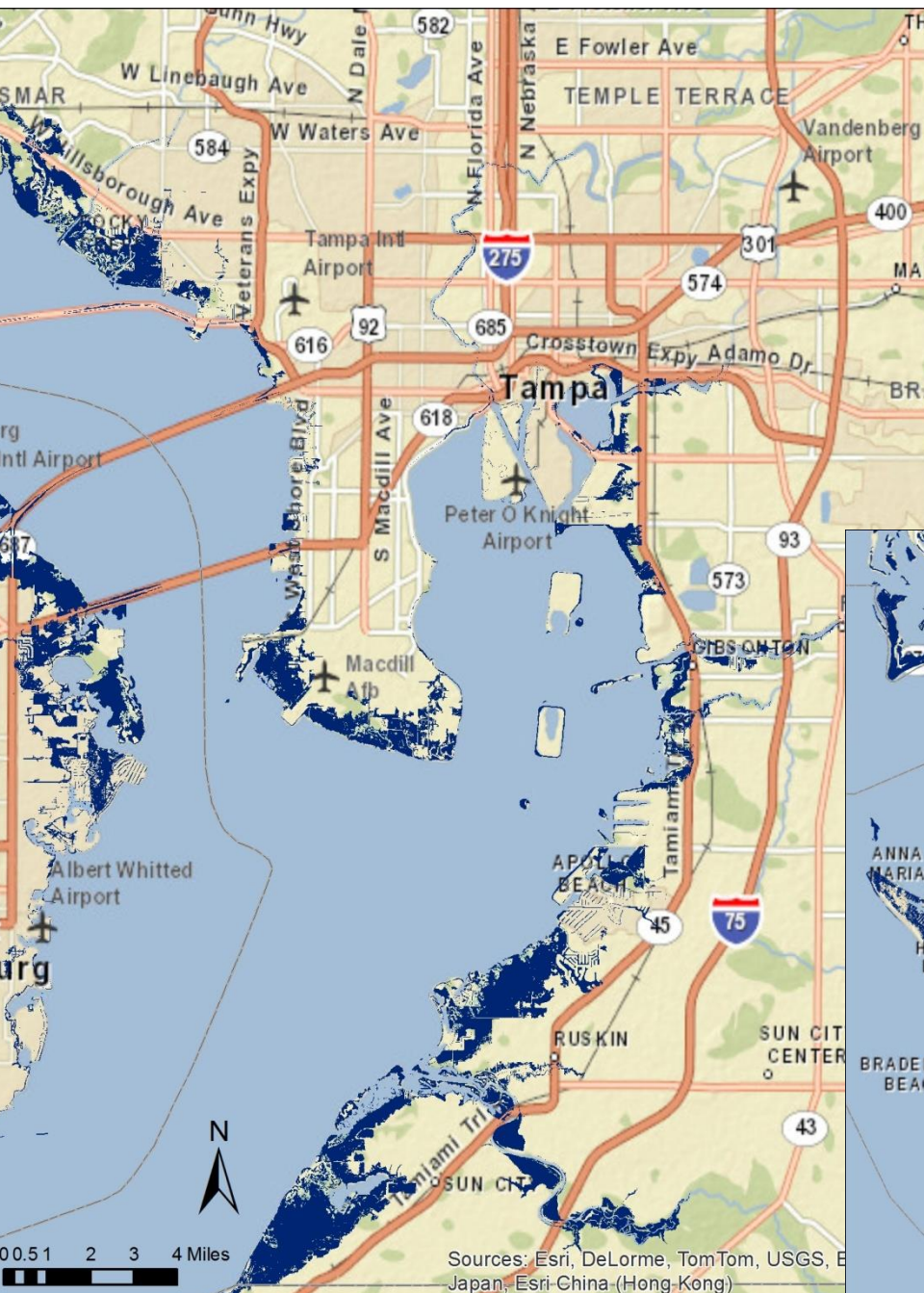
- ▶ Questions?
- ▶ Randy Deshazo, randy@tbrpc.org
- ▶ 727 570-5151 x 31



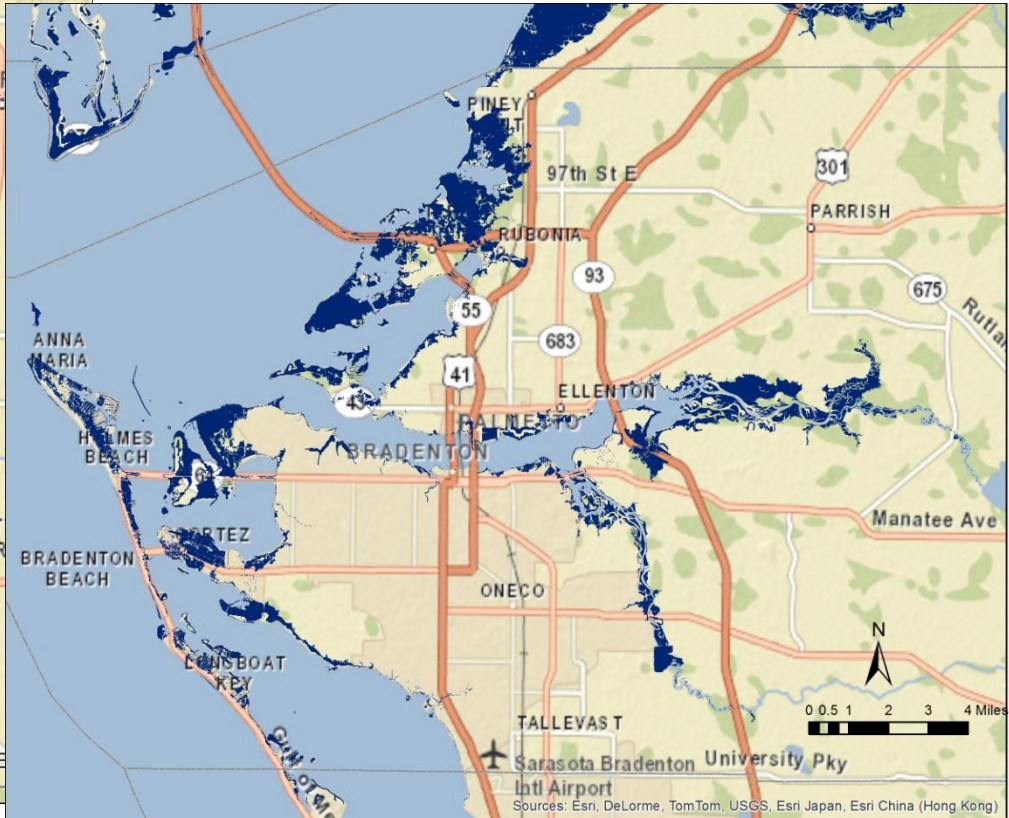
Sources: Esri, DeLorme, TomTom, USGS, Esri Japan, Esri China (Hong Kong)



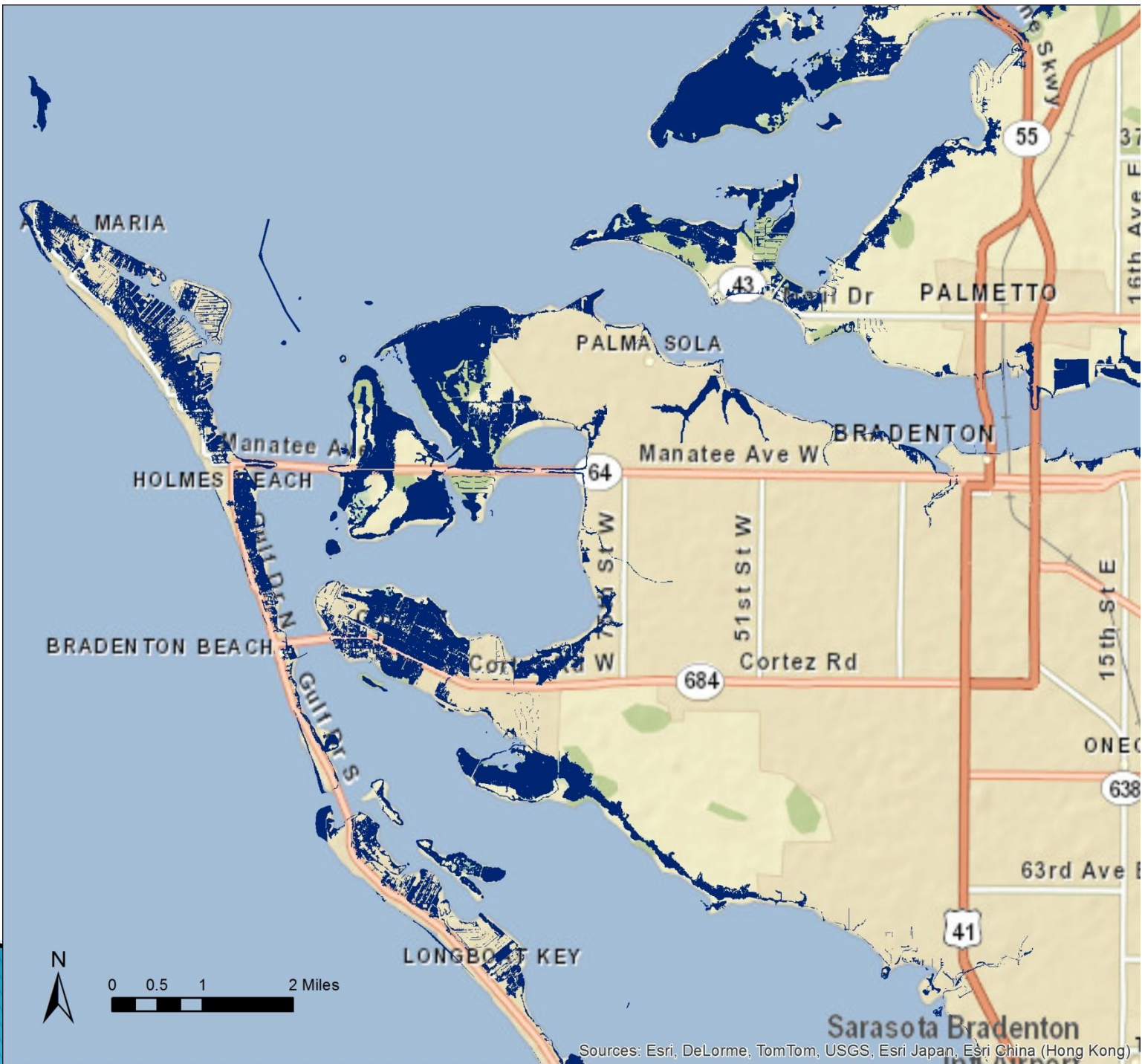
Sources: Esri, DeLorme, TomTom, USGS, Esri Japan, Esri China (Hong Kong)



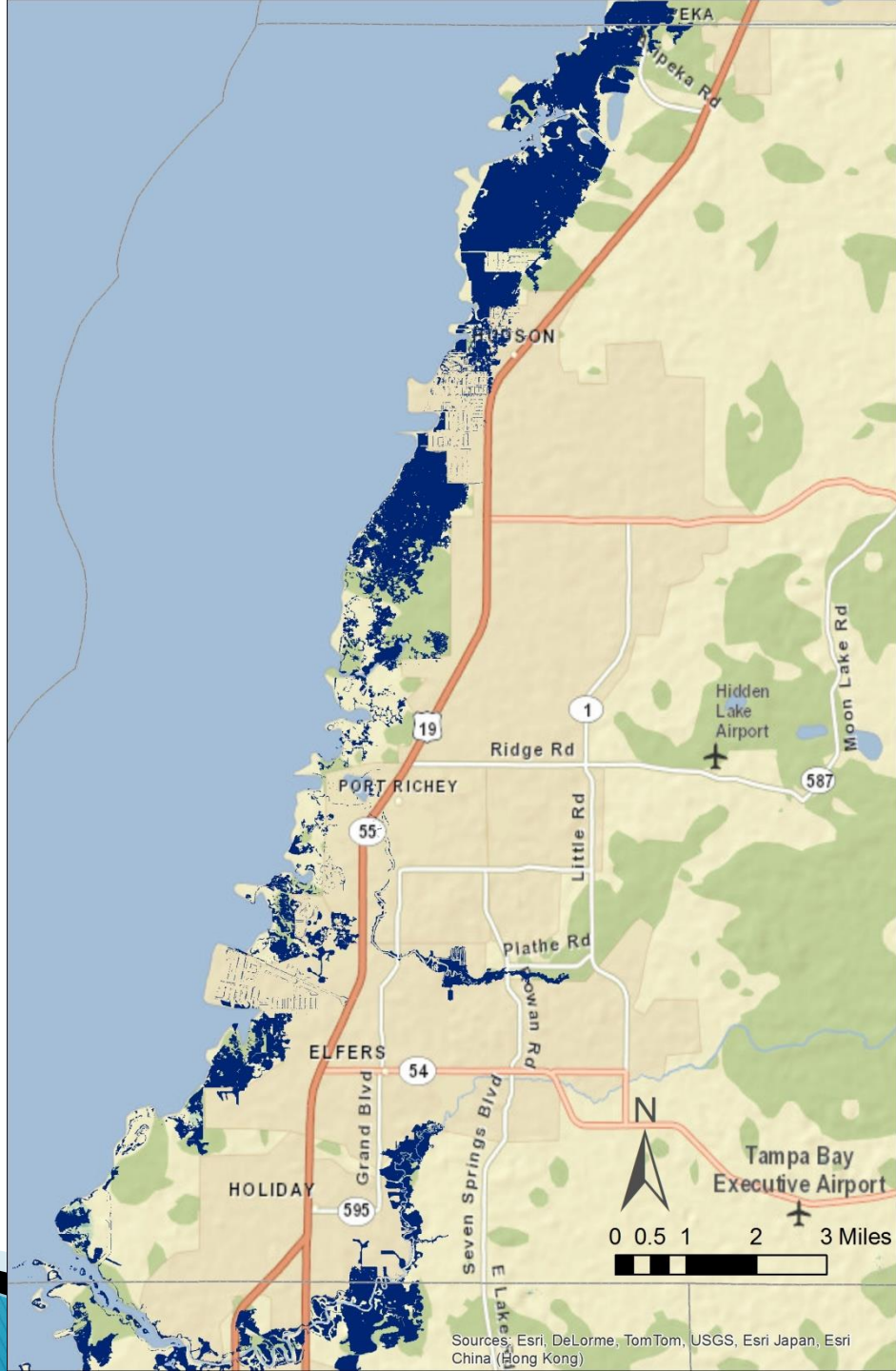
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