

Preliminary Vulnerability Assessment of Coastal Flooding Threats - Taylor County, Florida

North Central Florida Regional Planning Council
Northeast Florida Regional Council

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BACKGROUND

This project promotes the translation of science to policy and risk preparedness in Florida communities by increasing understanding of, access to, and utilization of a range of existing tools. Projected sea level rise impacts are another threat contributing to the vulnerability of Florida's at-risk coastal resources.

The tools available for estimating coastal flooding due to sea level rise can be used now to assist counties with their Community Rating Systems to reduce the costs of flood insurance to its residents. Taylor County was selected as the initial

PROJECT OVERVIEW

Projected sea level rise impacts threaten to exacerbate the vulnerability of Florida's at-risk coastal resources. Adapting to and mitigating sea level rise impacts will require that it be incorporated into all levels of hazard mitigation and land use planning in Florida. The Florida Department of Economic Opportunity (DEO), in partnership with the South Florida Regional Planning Council, University of Florida, and NOAA Office for Coastal Management will undertake a Training of Trainers intervention that will increase local capacity to project, assess, and respond to sea-level rise throughout the ten regional planning councils of the state.

PROJECT STUDY AREA

The preliminary vulnerability Analysis covers the coastal community of Steinhatchee in southern Taylor County. The Steinhatchee River flows past the community and into the Gulf of Mexico. Due to its location on the Florida peninsula and the shallow Gulf water, Taylor County has one of the largest potential storm surge height in Florida at over thirty feet.

PROJECT GOALS

1. Ensure that regional planners (i.e., regional planning councils) have the capacity to inform and lead their constituents in coastal adaptation.
2. Catalyze the understanding and context-appropriate use of coastal flooding assessment tools among Florida communities.
3. Provide local governments training to use the coastal flooding tools to gain additional points in the Community Rating System to reduce the rates that residents pay for flood insurance.

AVAILABLE TOOLS

- **FDOT/UF's Geoplan Sketch Planning Tool** – A free visualizer *and* modelling software package intended to promote stakeholder engagement, scoping/inventory, assessment/analysis, and planning, the Geoplan Sketch Planning Tool offers a variety of sea-level rise analyses related to transportation.
- **NOAA's Digital Coast: Sea Level Rise Viewer and Coastal Flood Exposure Mapper**– A free visualizer which can facilitate stakeholder engagement, scoping and inventory, and assessment and analysis, SLR Viewer offers an online interactive platform in map format to display a variety of sea-level rise scenarios.
- **NOAA's CanVis** – A free visualizer which is intended to elicit higher levels of stakeholder engagement, CanVis utilizes no data and modifies imagery to show potential inundation scenes.

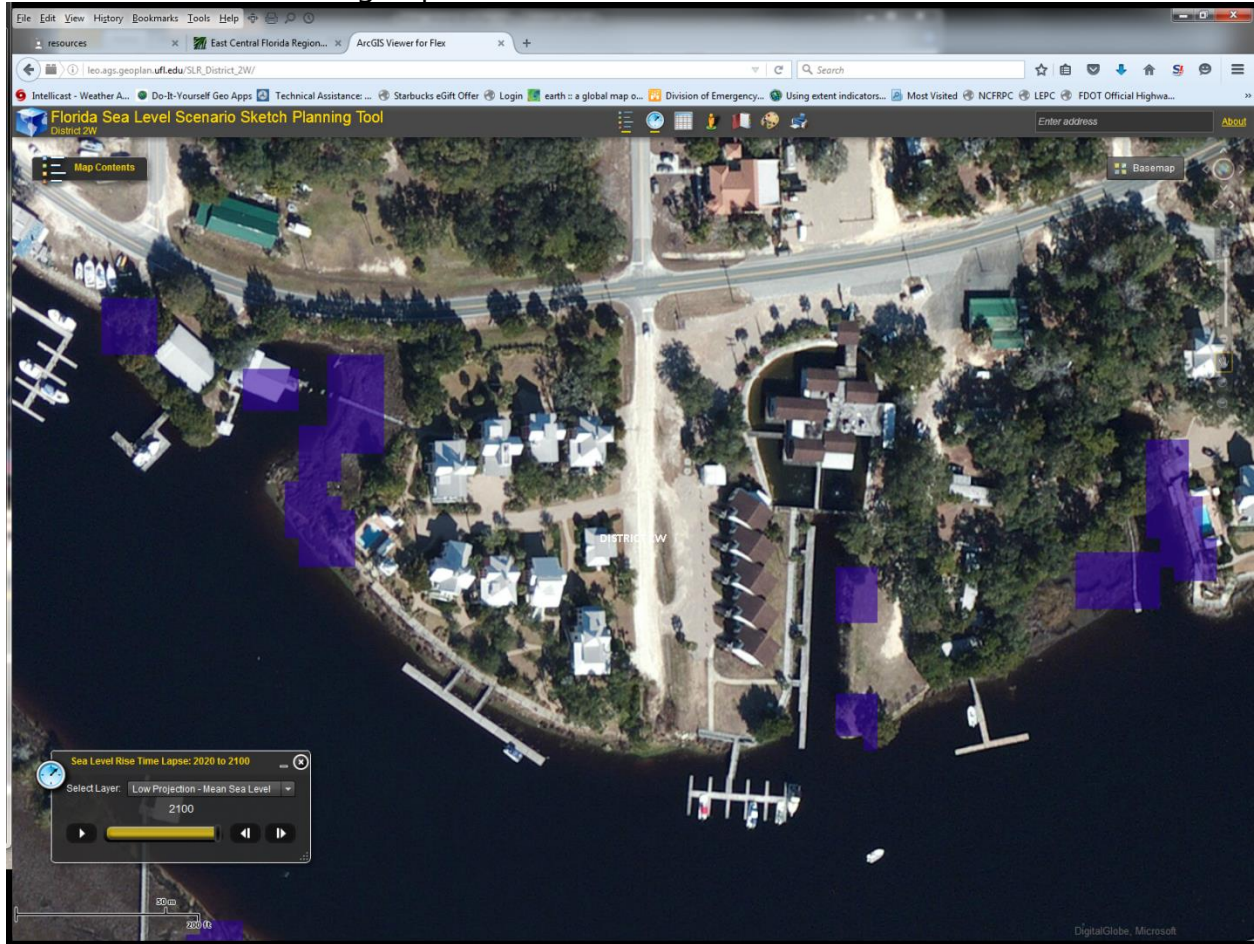
Using FDOT/UF's Geoplan Sketch Planning Tool

Sea Level Scenario Sketch Planning Tool Map Viewer visualizes various sea level scenarios at future time periods (2040, 2060, 2080, and 2100) in an effort to inform transportation planners and highlight infrastructure for potential avoidance, minimization, or mitigation. Users can view areas of projected inundation and potentially affected infrastructure.

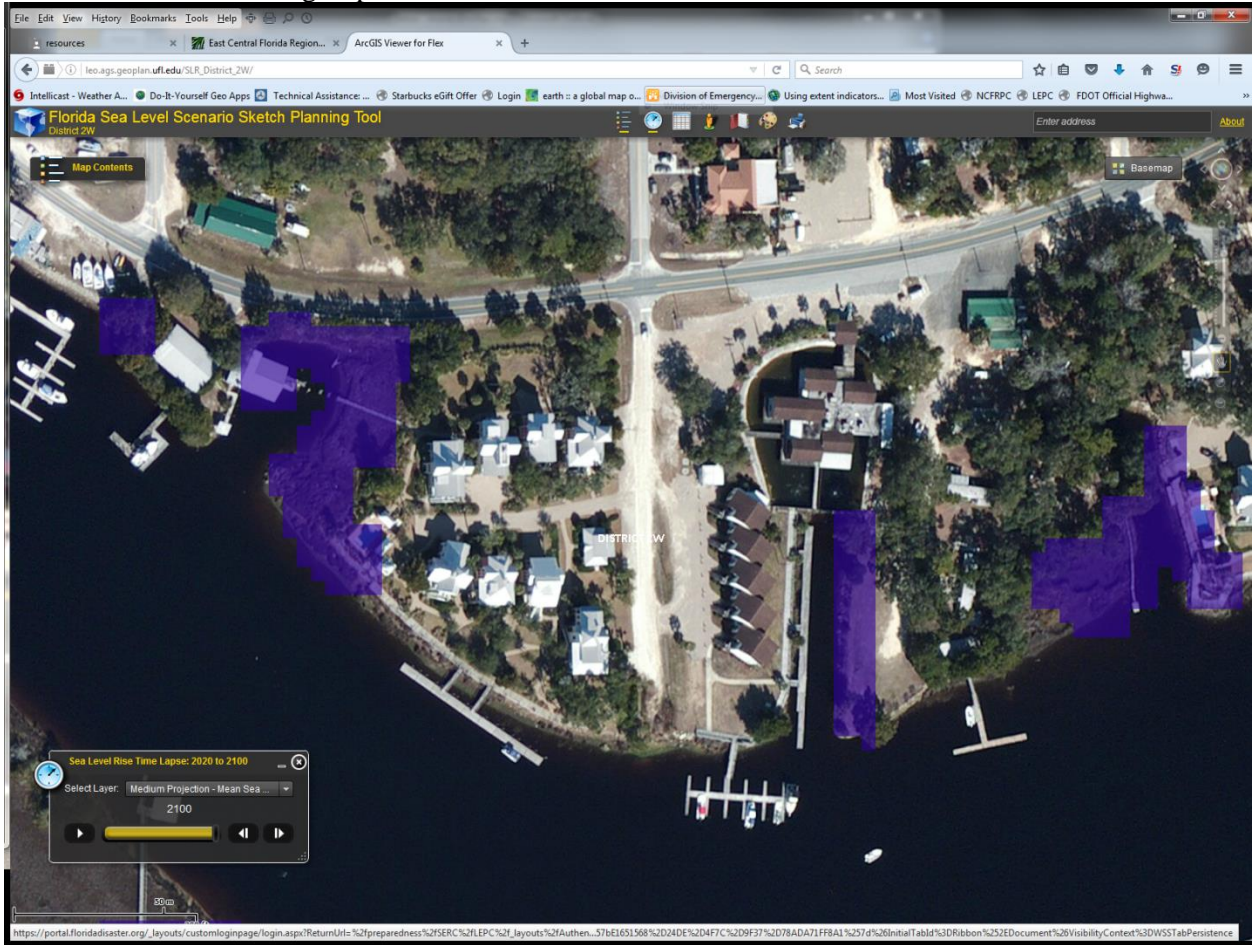
The inundation layers (called "inundation surfaces") were generated using three rates of SLR from the U.S. Army Corp of Engineers (USACE) sea level change methods: Low (Historic rate), Medium (Intermediate Curve), and High (High curve) and Florida tide gauge data from the National Oceanic and Atmospheric Administration (NOAA). Projected inundation was mapped at five tidal datums, but only two are displayed in the map viewer: Mean Higher High Water (MHHW) and Mean Sea Level (MSL).

The following illustrations show the 2100 projected coastal flooding for the US Army Corp of Engineers projections for low, medium, and high estimates. The area is in Steinhatchee, Taylor County near Fiddlers Restaurant.

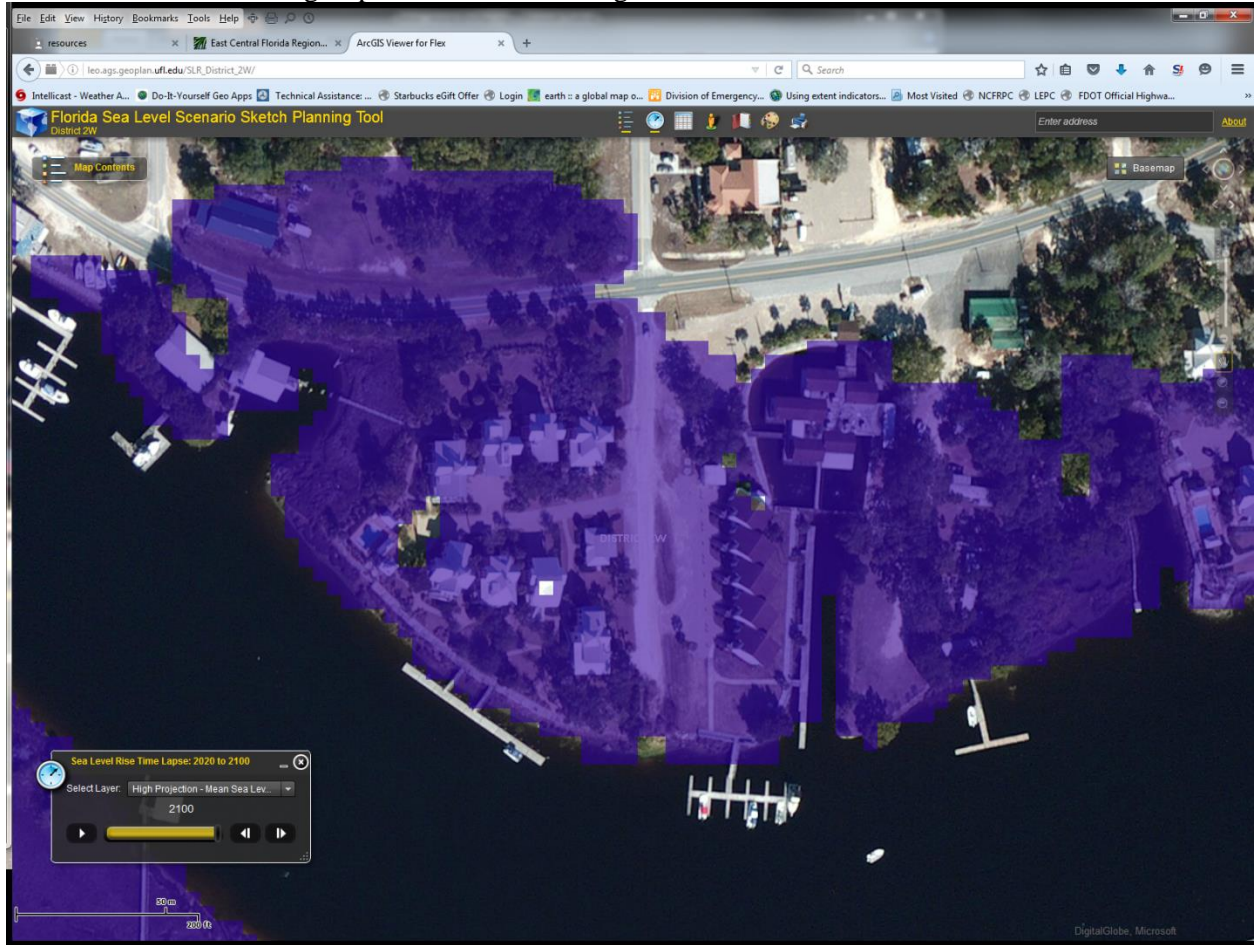
Potential Coastal Flooding Impacts in 2100 for a Low Rate of Sea Level Rise



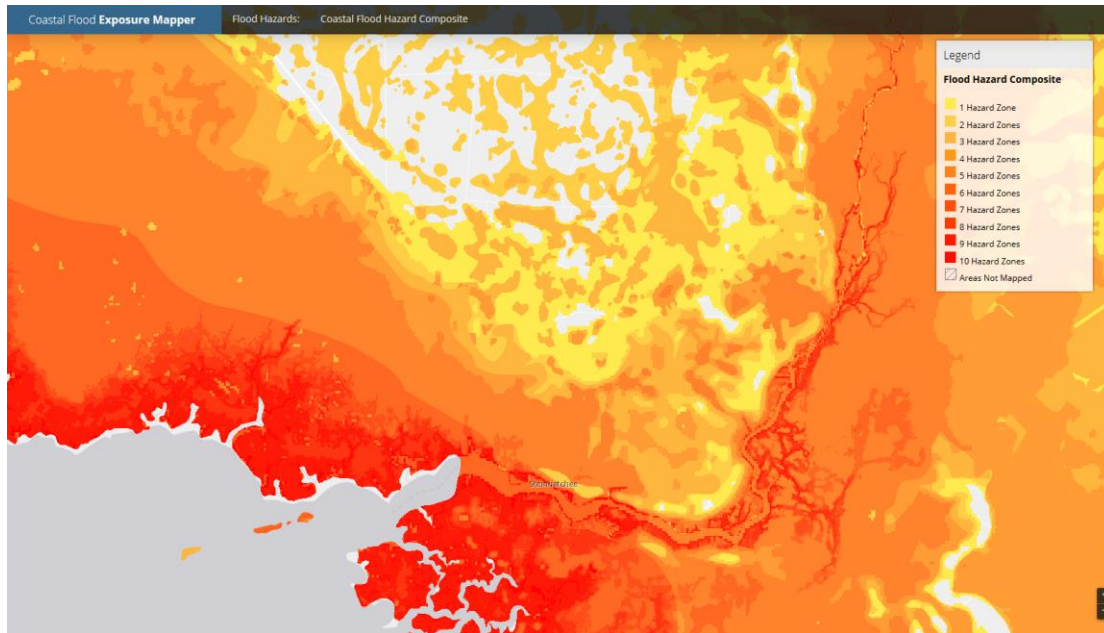
Potential Coastal Flooding Impacts in 2100 for a Medium Rate of Sea Level Rise



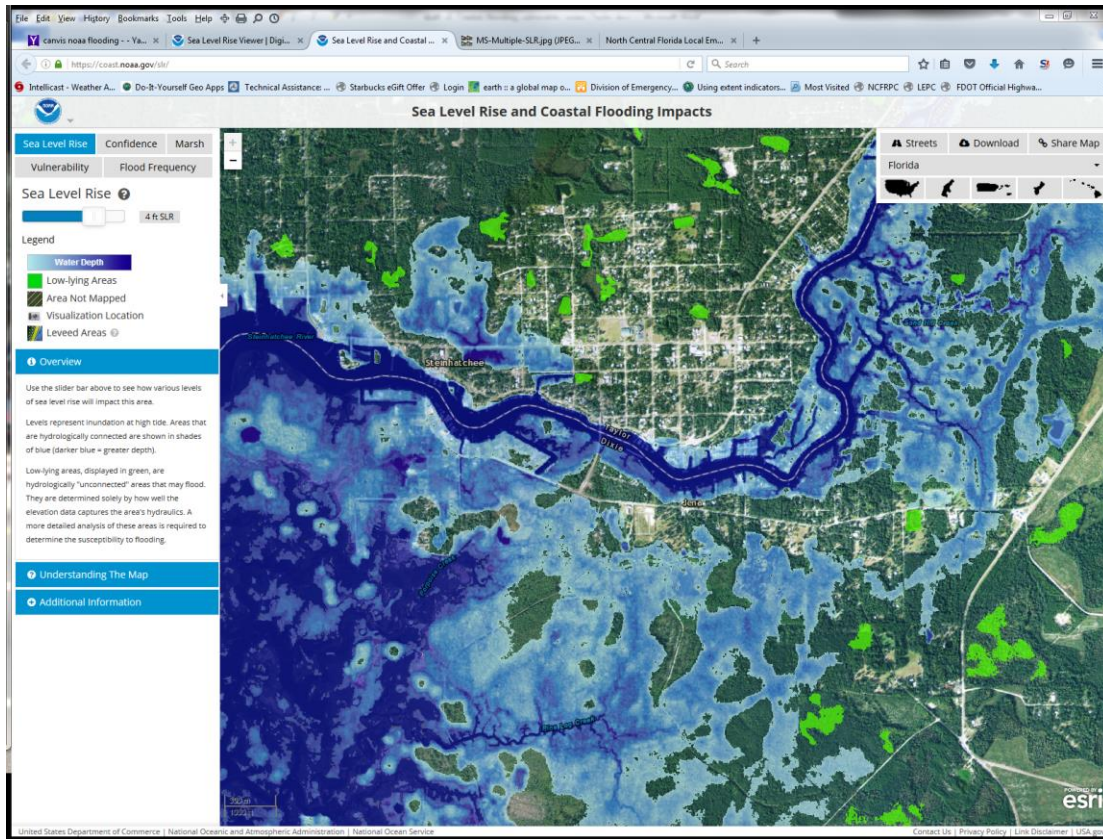
Potential Coastal Flooding Impacts in 2100 for a High Rate of Sea Level Rise



Using NOAA's Digital Coast: Sea Level Rise Viewer and Coastal Flood Exposure Mapper



Name	Description
Coastal Flood Hazard Composite	Spatial extents of multiple flood hazard data sets combined. Flood hazard data sets include shallow coastal flooding, Federal Emergency Management Agency (FEMA) flood data (V zones, A zones, and 500-year zones treated as individual layers), storm surge for Category 3 hurricane (from FEMA Hurricane Evacuation Studies), and sea level rise of three feet above mean high tide.



Sea Level Rise

Sea level rise inundation scenarios ranging from zero to six feet above mean higher high water (MHHW). Derived from data created for the Sea Level Rise and Coastal Flooding Impacts Viewer.