OVERVIEW

The *Resilience Report* is a screening tool to evaluate the potential impacts of multiple hazard types for a user-specified area of interest (AOI). The tool includes the following hazards: coastal flooding from sea level rise, storm surge, and high tide flooding; inland flooding (FEMA flood hazard areas); extreme heat; wildfire risk; severe thunderstorm risk (lightning and strong winds); and sinkhole formation risk.

REQUESTING THE RESILIENCE REPORT

The *Resilience Report* is requested from the AOI Tool in the Environmental Screening Tool (EST) Map Viewer.

1) **Log into the EST and open map viewer:** https://www.fla-etat.org/est/secure/
2) **Open AOI Editor** > click "Create" to draw a new AOI.
3) **Enter Project Information:** project name, type, description, and keep until date (how long to save the results). For Type, choose "Other Area of Interest".
4) **Draw Feature(s).** Click "Add Feature" to begin drawing the desired feature to be analyzed. Draw a point, line, or polygon on the map, and indicate a buffer amount (optional) around each feature.
    a. Draw one or more features. By default, each feature is analyzed separately. Optionally. features can be grouped into an "analysis area" to analyze together as a single analysis area. *Note: Currently, inland flood data is limited, so inland areas will show less results.*
    b. **Request Resilience Report.** When done drawing, select checkbox for "Resilience Report" under "Report Options" and then click "Run".
    c. **Wait for the Results.** Analyses will take about 1-3 minutes to run, depending on the number and size of features drawn. Features covering larger geographic areas will take longer to run.

Need help drawing an AOI? See the AOI Editor Tool Quick Guide.

ACCESSING THE REPORT

Two main ways to access the results report webpage:

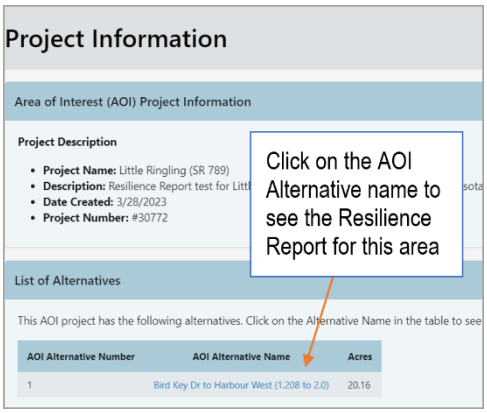
- In AOI Tool Editor ► a link will appear when the analyses are complete.
- In EST AOI Dashboard ► Click on AOI Project > Choose AOI Details > Link under "Resilience Report"

MAIN PAGES OF THE REPORT

1. PROJECT INFORMATION PAGE

This is the default landing page for the AOI Project. This page includes information the user submitted about the project and a list of AOI alternatives (or features) associated with the project.

The resilience report display results for one alternative at a time, unless they are grouped into an analysis area.



2. PROJECTS LIST PAGE

Includes a list of all non-expired projects for your organization that have requested a Resilience Report. A link to this page is available from the Resilience Report page. There is a search function to find the project of interest.

For help with EST Map Viewer or AOI Tool, contact the FDOT OEM Help Desk at help@fla-etat.org or 850-414-5334.

For questions about the Resilience Report data, please contact sls@geoplan.ufl.edu.

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3. RESILIENCE REPORT PAGE & DATA SOURCES

Contains the results of overlay analyses for the AOI:

Project and Feature Information

- **Project Description:** project name and description (submitted by user), date created and project number.
- **AOI Alternative Information:** alternative information (name, number, and size in acres).
- **Region and Location Information:** county, MPO, WMD, and FDOT District where the project is located.

Location Maps

One map zoomed into the AOI alternative and a context map showing the overview location. Also contains a link to the EST Map Viewer, where the user can view and interact with Resilience Report data layers.

Coastal Region Information

Indicates whether the AOI alternative intersects with:

- **Areas at Risk Due to Sea Level Rise - SLIP Study Area**. Projects that intersect this area and are state-financed may require a Sea-Level Impact Projection (SLIP) Study. (Section 161.551, F.S.).
- **Coastal Building Zone (CBZ)**. number of acres located in CBZ.
- **Coastal Construction Line (CCCL)**. Number of linear feet intersecting CCCL.

Sea Level Rise Scenarios (NOAA 2022)

Sea level rise projection values for the five NOAA 2022 SLR Scenarios: Low, Intermediate-Low, Intermediate, Intermediate-High, and High. SLR values are the 50th percentile values provided by NOAA.

SLR values are in feet referenced to Mean Sea Level with a baseline year of 2000 to align with NOAA SLR inundation depth layers. For more information, see 2022 Technical Report.

Sea Level Rise – Tide Station Information and Datums

Displays the tide station located closest to the AOI alternative, and the current MSL and MHHW datum values.

NOAA 2022 SLR Scenarios – Chart. Chart of SLR values, in feet, from 2040 – 2100.

NOAA 2022 SLR Scenarios – Feet by Decade. Table of SLR values, in feet for each decade between 2040 – 2100.

Sea Level Rise Exposure Analysis

Exposure analysis using the NOAA SLR inundation depth layers. Areas exposed to SLR would be permanently inundated under these future scenarios.

Summary of Sea Level Rise Exposure. Table showing acres and percentage of AOI exposed to SLR inundation 1 to 7 feet above MHHW (daily high tide).

Depth of Flooding Histograms. Histogram showing the depth of flooding for four scenarios – 1ft, 3ft, 5ft, and 7ft of SLR over MHHW.

Sea Level Rise Maps

Maps showing the extent of flooding for four scenarios – 1ft, 3ft, 5ft, and 7ft of SLR over MHHW. This region will not display if there are no SLR impacts.

Current High Tide Flooding

High tide flooding (HTF), also known as nuisance, tidal, or sunny-day flooding, is recurrent, temporary flooding that occurs during high tides and is expected to increase in frequency with rising sea levels. Data from NOAA.

NOAA delineates three HTF levels: minor, moderate, and major, using standard thresholds above MHHW:

- Minor HTF when tides exceed 0.55m (1.8ft).
- Moderate HTF when tides exceed 0.85m (2.8ft).
- Major HTF when tides exceed 1.2m (3.9ft).

Summary of AOI Exposure to Current High Tide Flooding. Table showing acres and percent of each AOI flooded under each HTF level.

High Tide Flood Days per Year (Current). Number of observed HTF days in the last meteorological year, which spans from May to April.

Acres Flooded – All Levels. Bar chart showing acres flooded under each HTF level.

Map of HTF Areas. Extent of minor, moderate and major HTF for the AOI.

Percent of Area Impacted by Current High Tide Flooding (HTF). Pie charts displaying percent of AOI alternative exposed to each HTF level. The percent flooded is shown in blue and percent not flooded is shown in green.

Projected Annual Days of Minor High Tide

Projected Days of Minor High Tide Flooding by SLR Scenario. Projected annual days of minor HTF per decade, under each NOAA 2022 SLR scenario. Projections can be used to understand how SLR will increase the frequency of tidal flooding events. Used in combination with percent of area impacted by current minor HTF, users can see what areas will be impacted by temporary minor HTF flooding and how often the flooding will recur. Only includes projections of minor HTF (not moderate and major).

Data from: NOAA CO-OPS Derived Product API v0.1.

Storm Surge Zones

Contains an overlay analysis of storm surge zones by hurricane category (1-5). Zones obtained from the Florida Division of Emergency Management and developed by Florida's Regional Planning Councils (August 2021). The data was derived from National Hurricane Center SLOSH model runs and provides a worst case snapshot of surge for each hurricane category (1-5).

Note: This data represents current storm surge and does not account for surge under future SLR conditions.

FEMA Flood Zones

Results of an overlay analysis of the 1% annual chance flood event ("100-year") and 0.2% annual chance flood event ("500-year"), as defined by the Federal Emergency Management Agency (FEMA). Data from FEMA's National Flood Hazard Layer and downloaded from Florida Geographic Data Library.

Note: This data represents current flood hazard areas and does not account for future climate conditions.

Extreme Heat

Extreme heat is represented by projections of annual days above 95 degrees Fahrenheit for future time periods.

Historic Data (1976 – 2005) Annual Days Above 95 degrees Fahrenheit. Historical climate data.

Projections for Early Century (2016 – 2045) Change in Annual Days Above 95 degrees Fahrenheit. Change in annual days above 95 degrees F relative to historical data.

Projections for Mid-Century (2036 – 2065) Change in Annual Days Above 95 degrees Fahrenheit. Change in annual days above 95 degrees F relative to historical data.
Data Source: 4th National Climate Assessment Scenarios. Derived from Localized Constructed Analogs (LOCA) data set, developed by the University of San Diego Scripps Institution of Oceanography. Projection values use the "Lower Emissions" scenario - Representative Concentration Pathway (RCP) 4.5.

Wildfire Risk

Wildfire Ignition Density is the likelihood of a wildfire igniting in an area. Historic wildfire ignition locations from 1981 to 2007 were modeled to create an average ignition rate map.

Summary of Wildfire Ignition Density Levels. Acres and percent of AOI by ignition level, from Level 1 (lowest ignition density and lowest wildfire risk) to Level 7 (highest ignition density and highest wildfire risk). Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal.

Favorable Geology for Sinkhole Formation

Represents areas with geology favorable to sinkhole formation. Includes four classes that represent areas where the geology is least favorable to most favorable to sinkhole formation: (1) Least Favorable, (2) Favorable, (3) More Favorable, (4) Most Favorable.

Data Source: Florida Geological Survey.

Severe Thunderstorm Risk

Lightning risk and strong winds are used as a proxy for assessing risks from severe thunderstorms. Data Source: FEMA National Risk Index (NRI), which summarizes risk at the census tract level. Analyses show the risk ratings from the census tracts that intersect the AOI. There are five risk levels, from highest risk to lowest: Very High, Relatively High, Relatively Moderate, Relatively Low, and Very Low.

Lightning Risk Summary Table. Lightning risk is calculated as the estimated the number of recorded lightning strikes each year for a specific area. Table shows the lightning risk ratings by census tracts that intersect the AOI.

Thunderstorm Strong Wind Risk Summary Table. Strong Wind Risks consists of damaging winds, often originating from thunderstorms, that are classified as exceeding 58 mph. Table shows the strong wind risk ratings by census tracts that intersect the AOI.

SAVING THE REPORT

A PDF version of the report can be saved using the download button in the top right corner of the page.

REQUESTING ACCESS TO THE TOOL

ETDM Contacts List

FDOT staff or consultants with FDOT IT accounts

- District users request access through your FDOT District ETDM Coordinator
- Central Office users request through Statewide ETDM Coordinator or contacting ETDM Help Desk
- Once approved by the ETDM Coordinator, submit an AARF selecting the EST – AOI Only application

MPO and FDOT consultants without FDOT IT accounts

- Request access through your MPO or FDOT Project Manager
- Your Project Manager can then request through the appropriate ETDM Coordinator
- The ETDM Coordinator can then email authorization to the ETDM Help Desk

MPO staff

- Request access through MPO ETDM Coordinator
- If MPO ETDM Coordinator position is vacant, contact the FDOT District ETDM Coordinator
- The ETDM Coordinator can then email authorization to the ETDM Help Desk