

Coastal Flood Exposure Mapper

SCAHM Annual Conference 2020

David Betenbaugh (Contractor - CSS, Inc.)
NOAA Office for Coastal Management

NOAA's Office for Coastal Management



Challenges

- Storm preparedness
- Erosion
- Development
- Habitat loss
- Sea level rise
- Threats to water quality

NOAA's Office for Coastal Management

Learn About the Programs

Coastal Zone Management



Coral Reef Conservation



Digital Coast: Data, Tools, and Training



National Estuarine Research Reserves



Digital Coast Partnership

- American Planning Association
- Association of State Floodplain Managers
- Coastal States Organization
- National Association of Counties
- National Estuarine Research Reserve Association
- National States Geographic Information Council
- The Nature Conservancy
- Urban Land Institute
- NOAA Office for Coastal Management





More Than Just Data

Dive into the Digital Coast to Get the Data, Tools, and Training Communities Need to Address Coastal Issues.



What is Digital Coast?

This NOAA-sponsored website is focused on helping communities address coastal issues and has become one of the most-used resources in the coastal management community. The dynamic Digital Coast Partnership, whose members represent the website's primary user groups, keeps the effort focused on customer needs.

Learn more in our [About](#) section, or just dive in. And please provide feedback as often as possible. Hearing from you is what makes the Digital Coast work.

Top

5

Popular [Staff Picks](#)

1. Sea Level Rise Viewer
2. Data Access Viewer
3. Introduction to Lidar
4. Historical Hurricane Tracks
5. Flood Exposure Mapper



Coastal Flood Exposure Mapper

[LAUNCH](#)

GEOGRAPHY

East Coast, West Coast, Gulf of Mexico, Pacific, and Caribbean



BASED ON

Multiple authoritative data sets



TIME COMMITMENT

Approx. 15 minutes

NOAA Office for Coastal Management

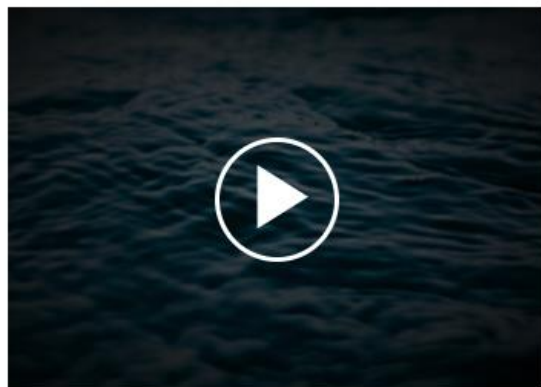
Overview

This online visualization tool supports communities that are assessing their coastal hazard risks and vulnerabilities. The tool creates a collection of user-defined maps that show the people, places, and natural resources exposed to coastal flooding. The maps can be saved, downloaded, or shared to communicate flood exposure and potential impacts. In addition, the tool provides guidance for using these maps to engage community members and stakeholders. *The current geography includes the East Coast, West Coast, Gulf of Mexico, and islands in the Pacific and Caribbean.*

Features

- Visualize people, places, and natural resources exposed to coastal flood hazards
- Share online maps to communicate with and engage stakeholders

About the Tool (2:45)





Coastal Flood Exposure Mapper

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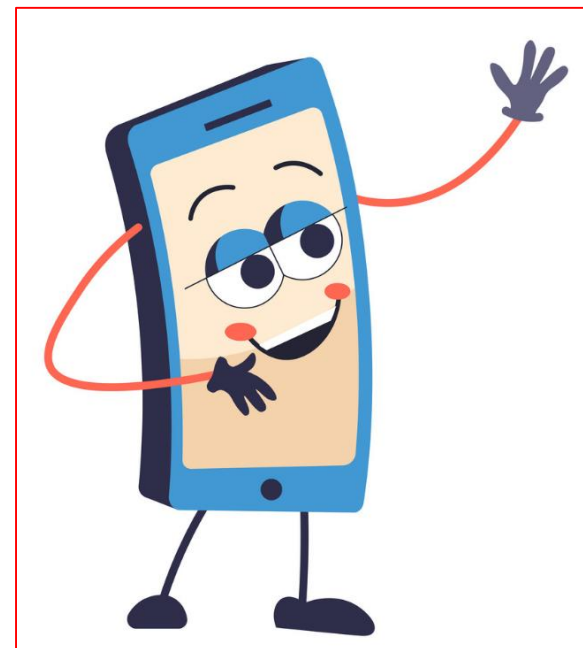
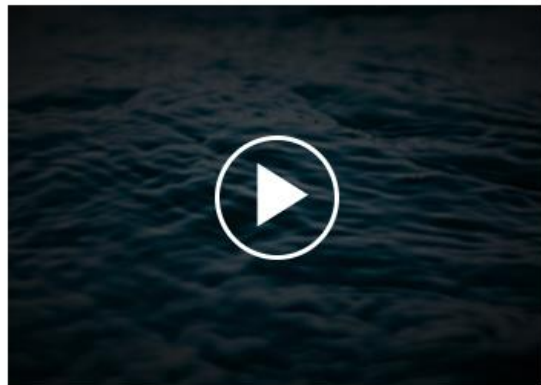
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About the Tool (2:45)





Coastal Flood Exposure Mapper

Help start your community discussions about hazard impacts with maps of your area that show people, places, and natural resources exposed to coastal flooding.

GET STARTED



Coastal Flood Exposure Mapper

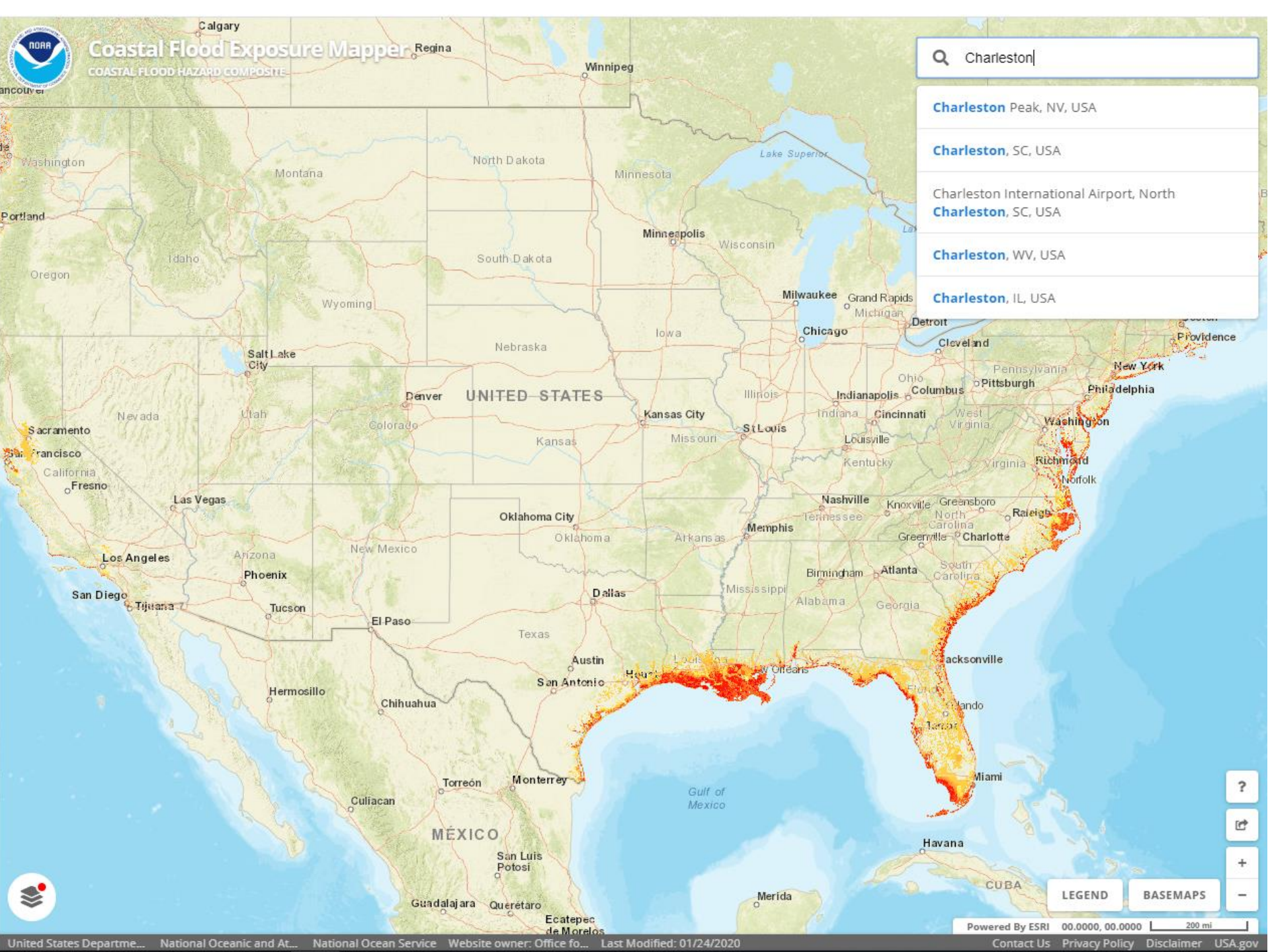
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GET STARTED



Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

Search Charleston

Charleston Peak, NV, USA

Charleston, SC, USA

Charleston International Airport, North Charleston, SC, USA

Charleston, WV, USA

Charleston, IL, USA

UNITED STATES

MÉXICO

Gulf of Mexico

LEGEND

BASEMAPS

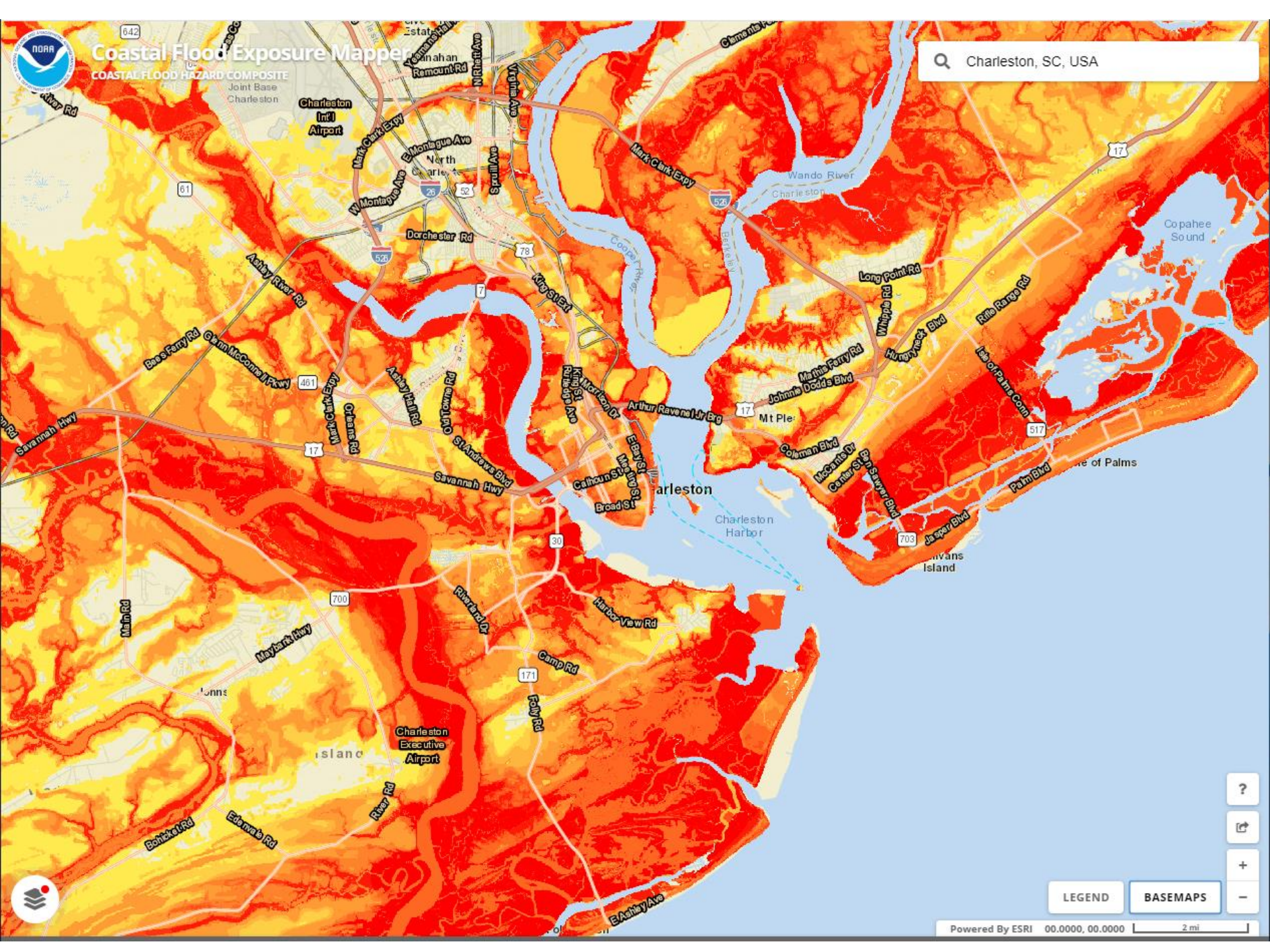
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Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE
Joint Base Charleston

🔍 Charleston, SC, USA



LEGEND BASEMAPS

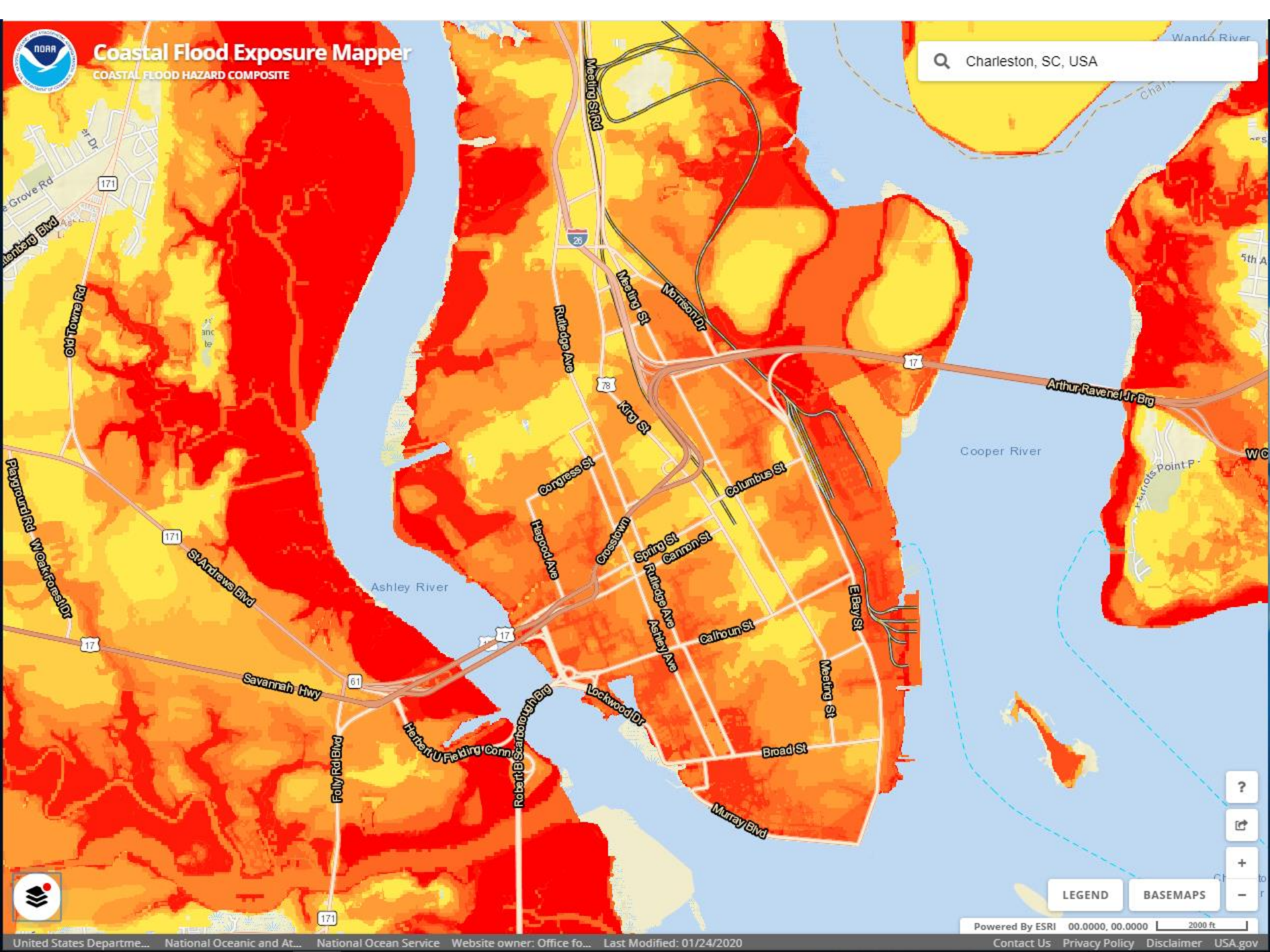


Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE



Charleston, SC, USA



LEGEND

BASEMAPS

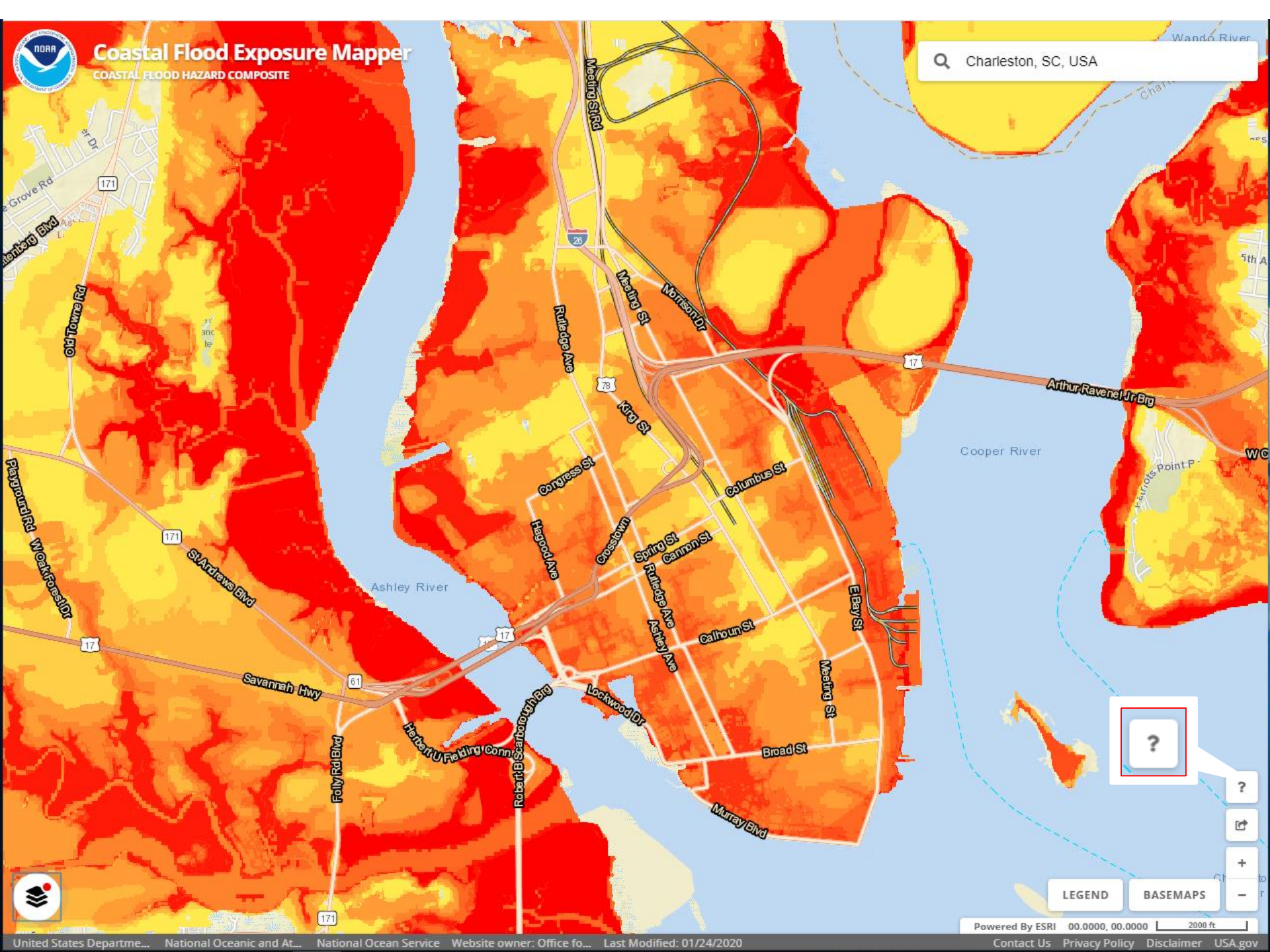
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Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



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About Coastal Flood Exposure Mapper

The information in this product is based on the Roadmap for Adapting to Coastal Risk approach to assessing coastal hazard risks and vulnerabilities. The Roadmap for Adapting to Coastal Risk was developed by NOAA as an approach to help communities assess coastal hazard risks and vulnerabilities. With this approach, communities looked at how hazards were impacting their people, places, and natural resources and identified planning, policies, and actions to help reduce these impacts. We developed the Coastal Flood Exposure Mapper to help communities kick-start conversations about coastal risks. The mapper enables users to explore maps that show people, places, and natural resources exposed to coastal flood hazards and create a collection of maps to share and communicate about flood exposure.

Disclaimer

The purpose of this mapping application is to provide a preliminary look at exposure to common types of coastal flooding. The viewer is a screening-level tool that uses nationally consistent data sets and analyses and should be used as such. Data and maps provided can be used at several scales to help gauge impacts and prioritize actions, but should be verified with a site visit. The data and maps in this tool illustrate the scale of potential flooding, not the exact location, and do not account for all physical or anthropogenic processes. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. This tool should be used strictly as a planning reference tool and not for navigation, permitting, or other legal purposes.

Additional Resources

[Tools Home Page](#)

[Frequently Asked Questions](#)

[Data Sources](#)

[Map Services](#)

[ArcGIS Online Tutorial](#)

[Tips for Using these Maps](#)

[Additional Data Considerations](#)

[Digital Coast Topic Pages](#)

[Digital Coast Academy Case Studies](#)

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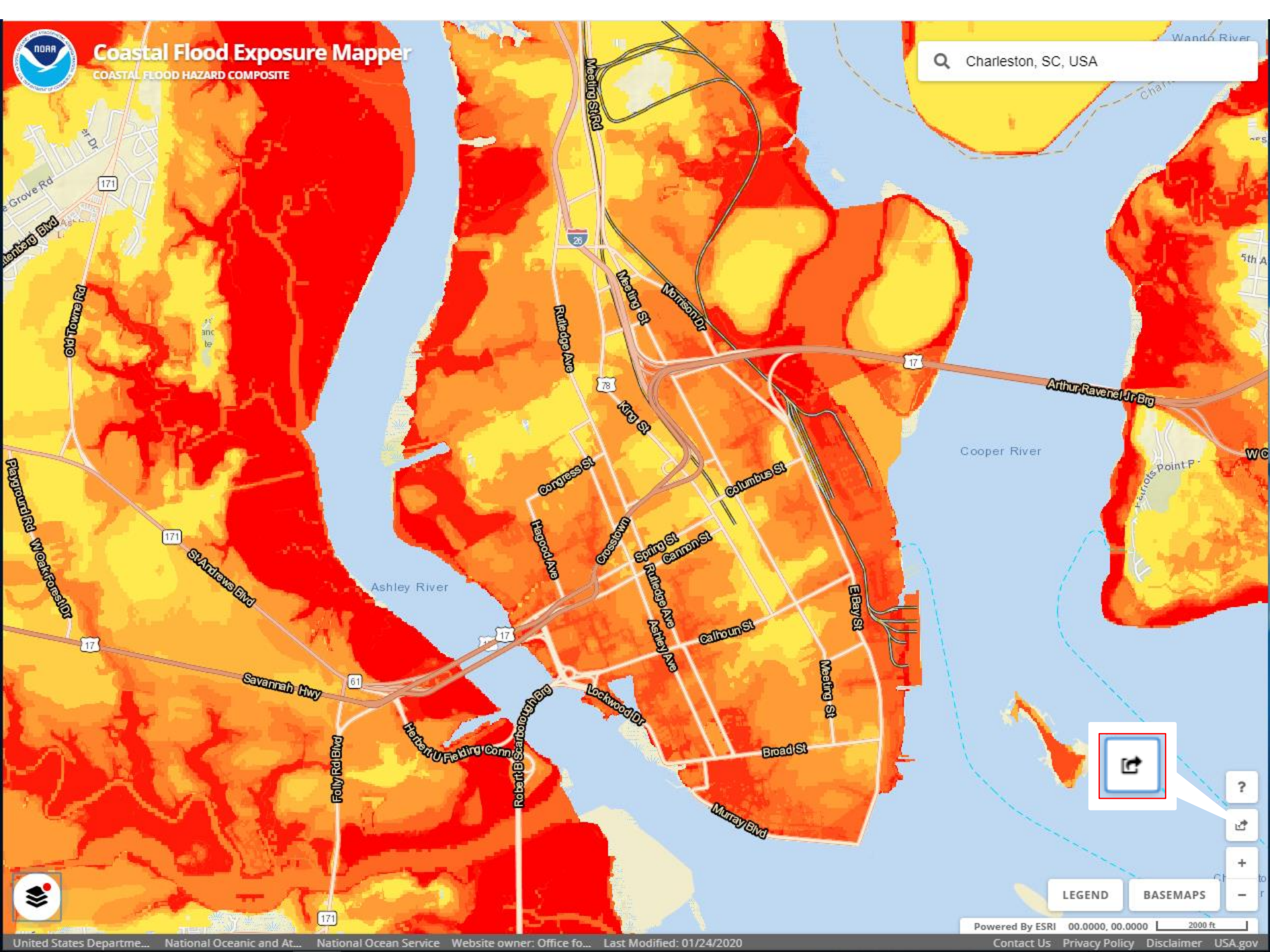
[Digital Coast Academy Case Studies](#)



Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



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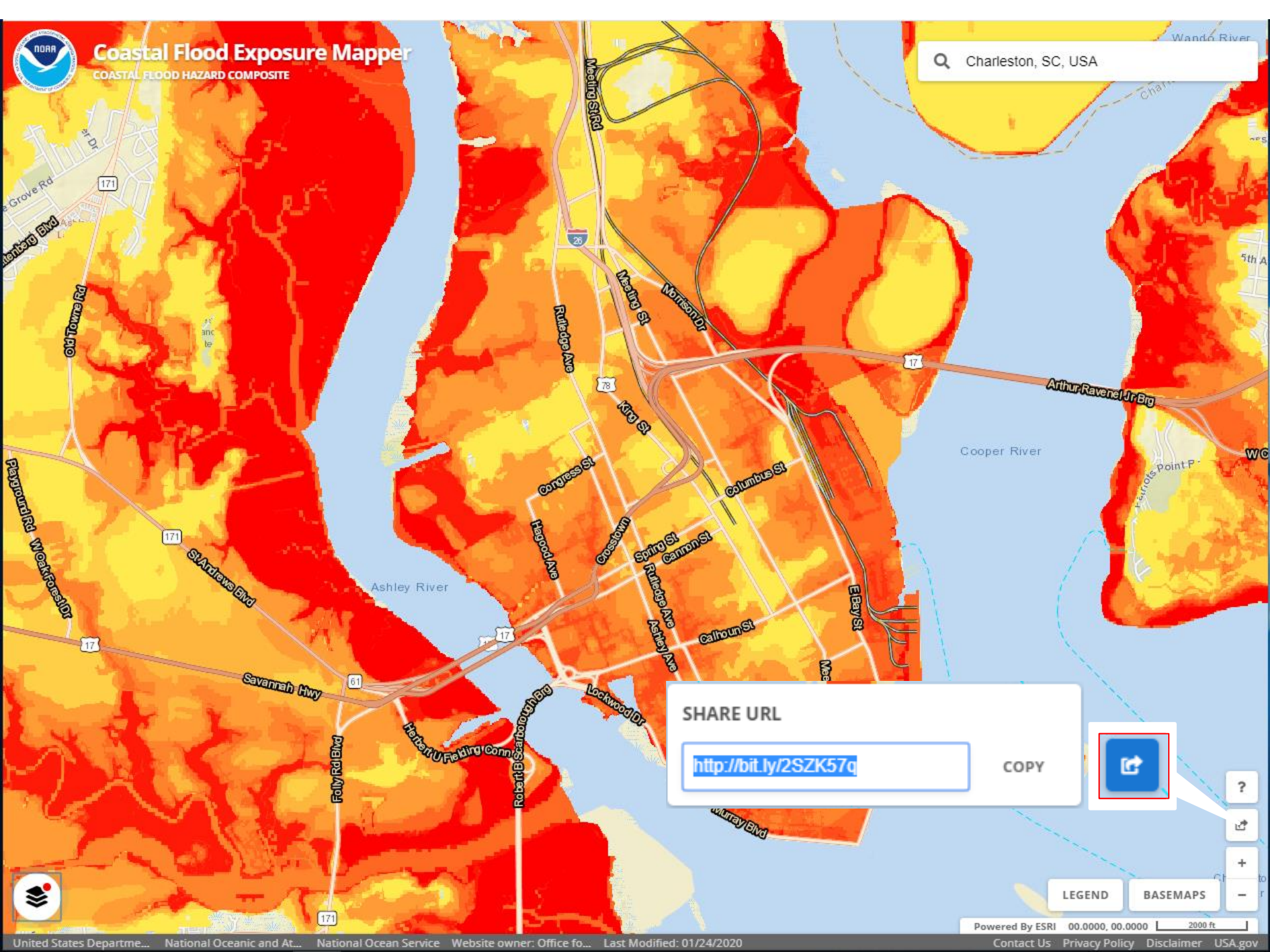


Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE



Charleston, SC, USA



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<http://bit.ly/2SZK57q>

COPY



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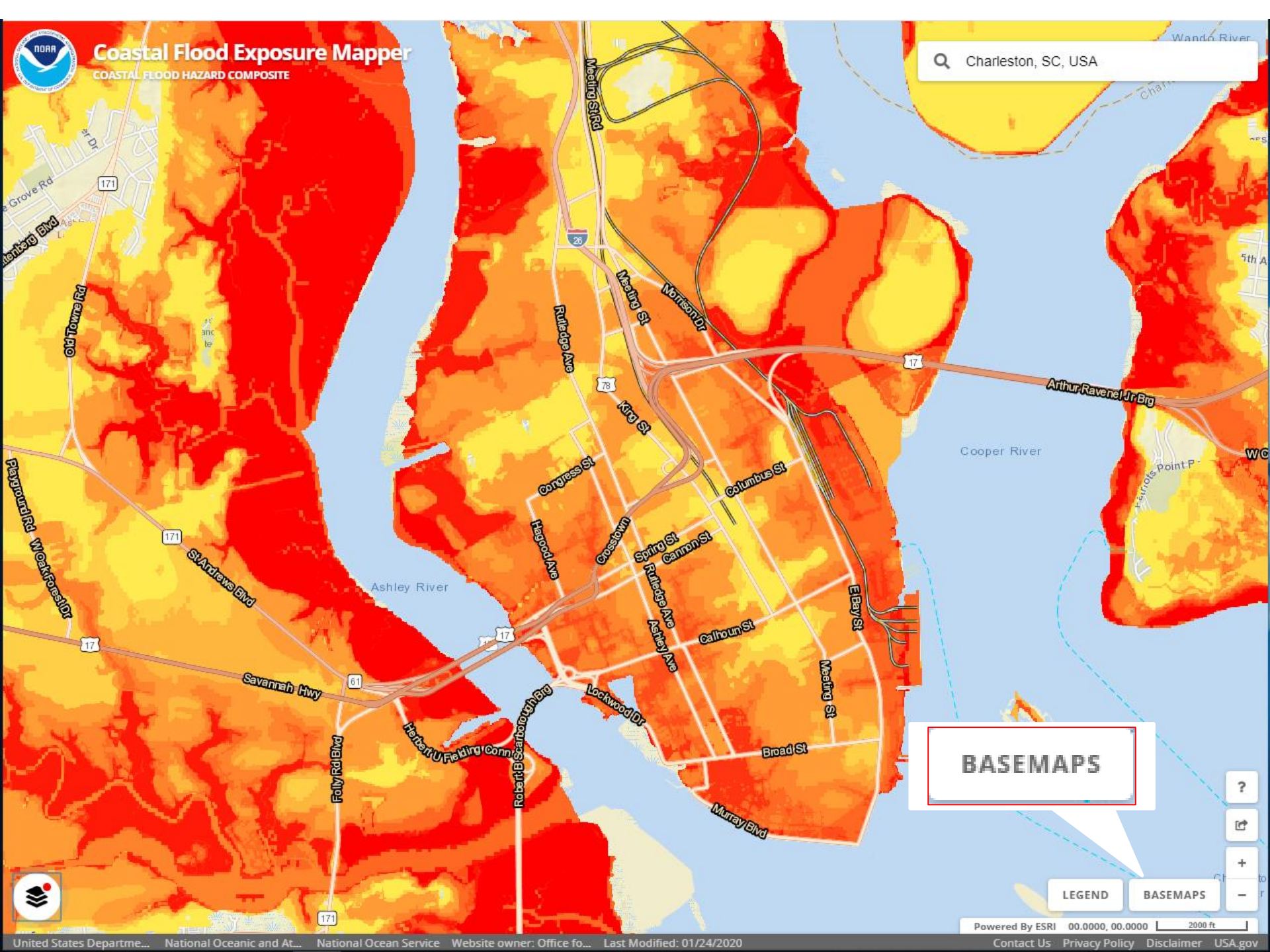
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Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



BASEMAPS

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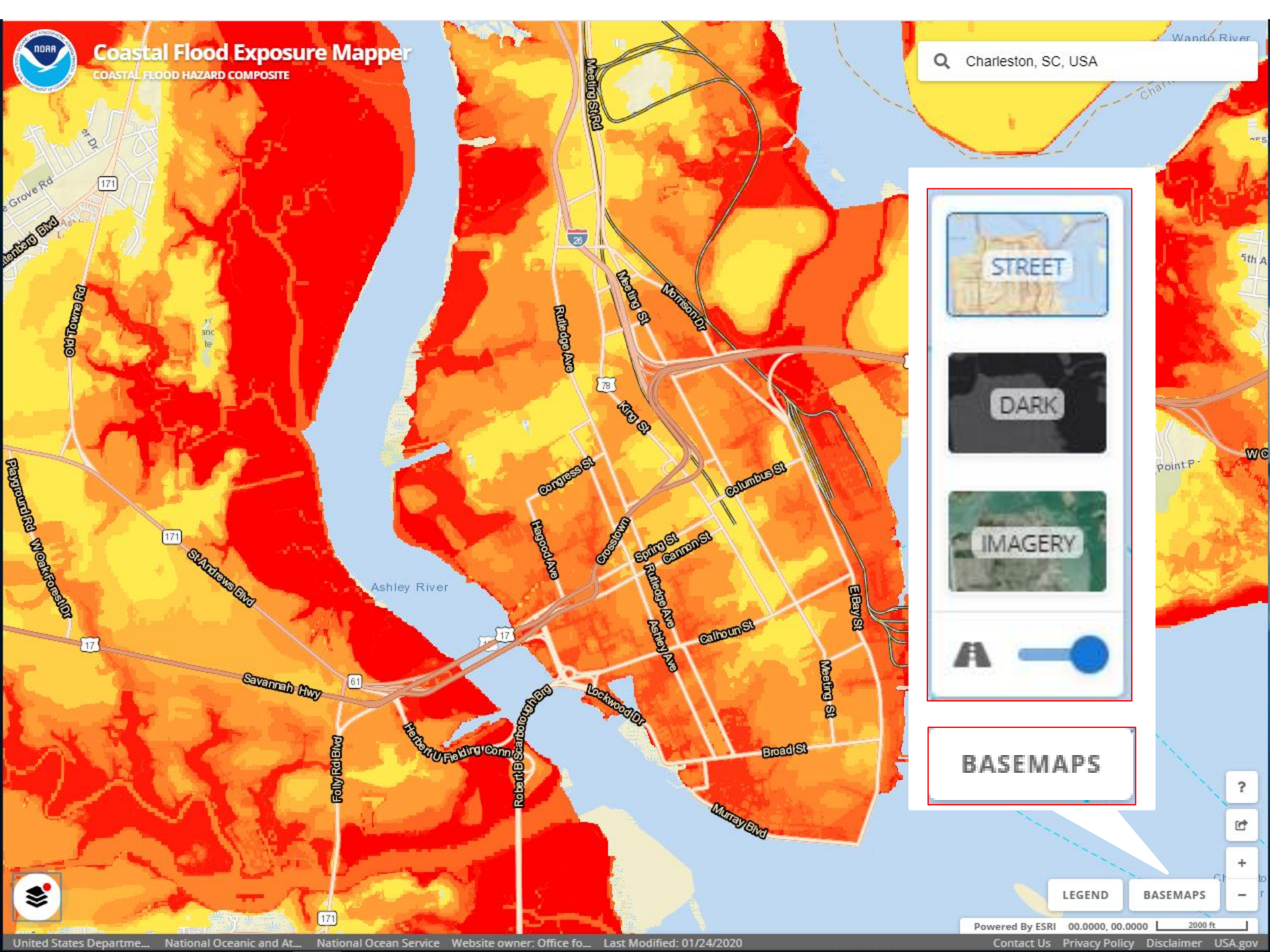




Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



BASEMAPS

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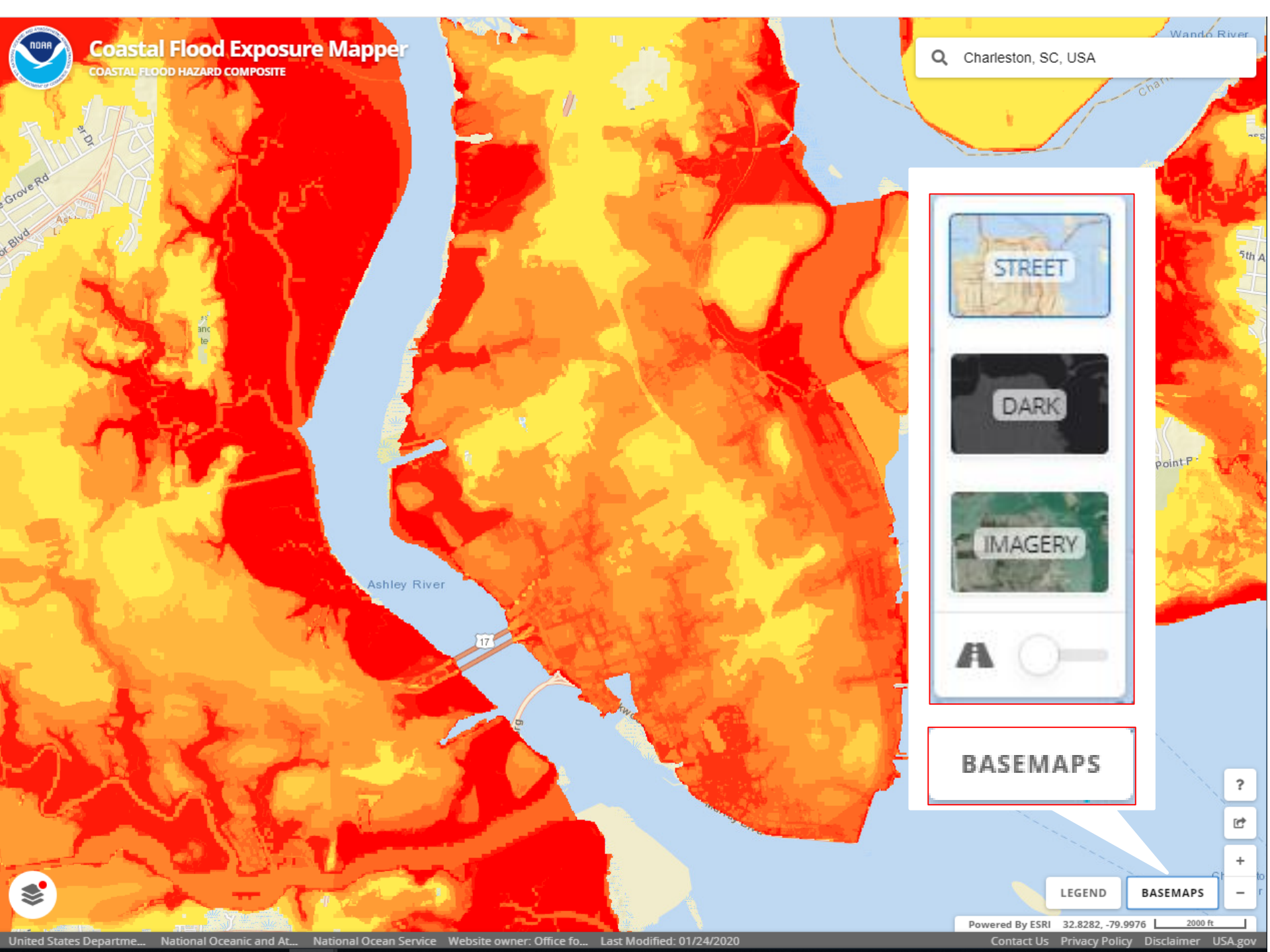




Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



BASEMAPS

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BASEMAPS

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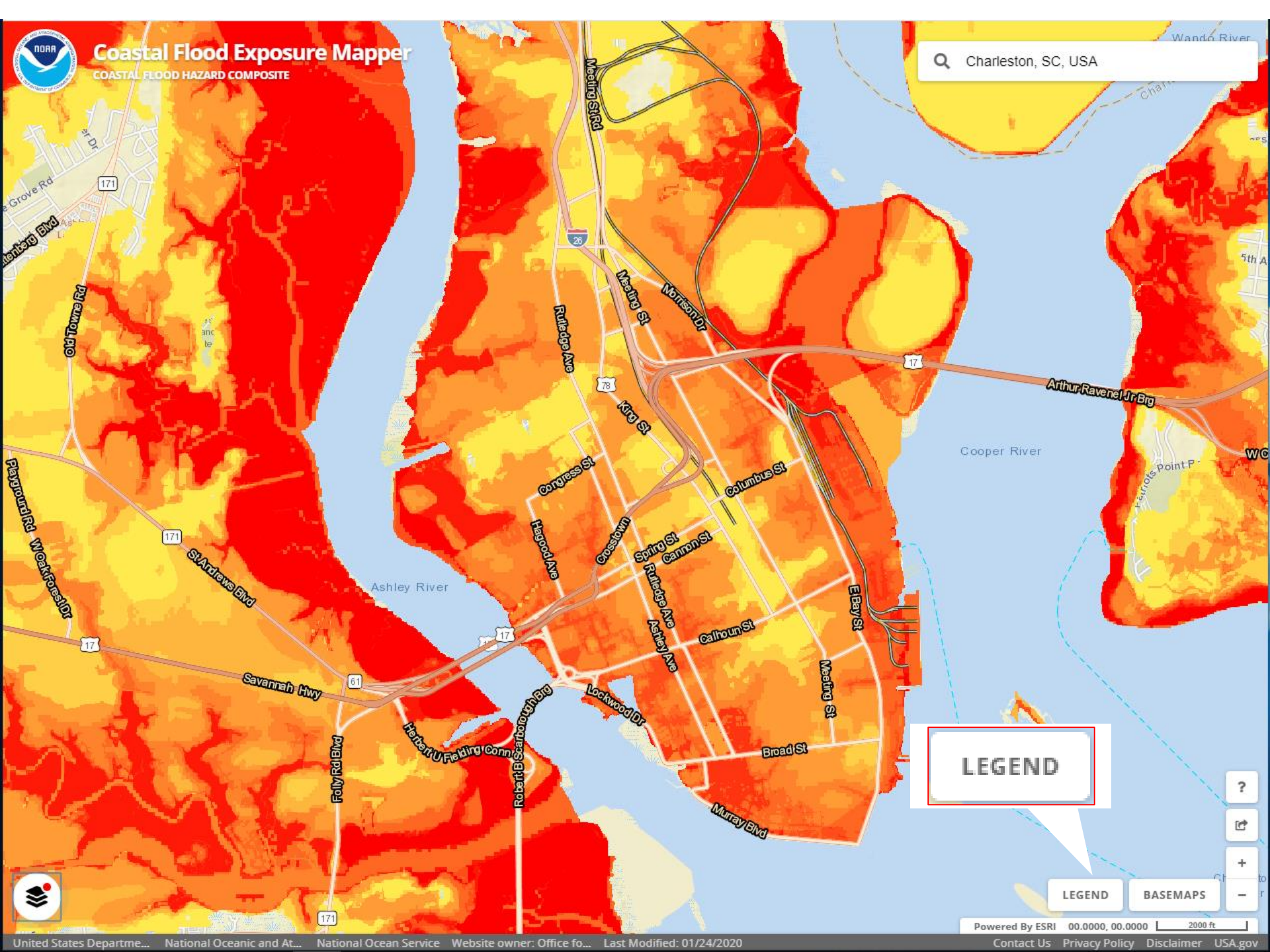


Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE



Charleston, SC, USA



LEGEND

LEGEND

BASEMAPS

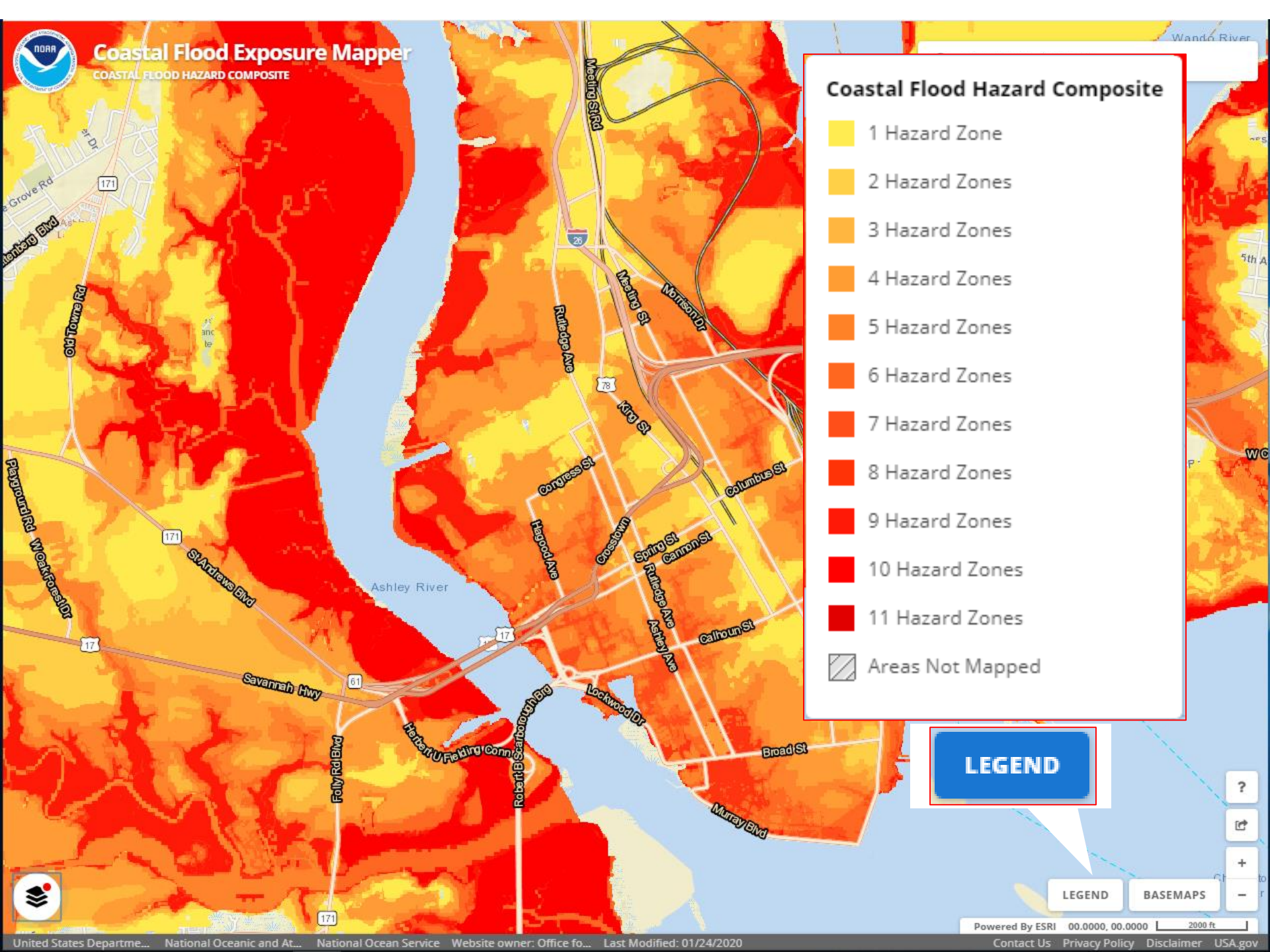
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Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE



Coastal Flood Hazard Composite

- 1 Hazard Zone
- 2 Hazard Zones
- 3 Hazard Zones
- 4 Hazard Zones
- 5 Hazard Zones
- 6 Hazard Zones
- 7 Hazard Zones
- 8 Hazard Zones
- 9 Hazard Zones
- 10 Hazard Zones
- 11 Hazard Zones
- Areas Not Mapped

LEGEND

LEGEND

BASEMAPS

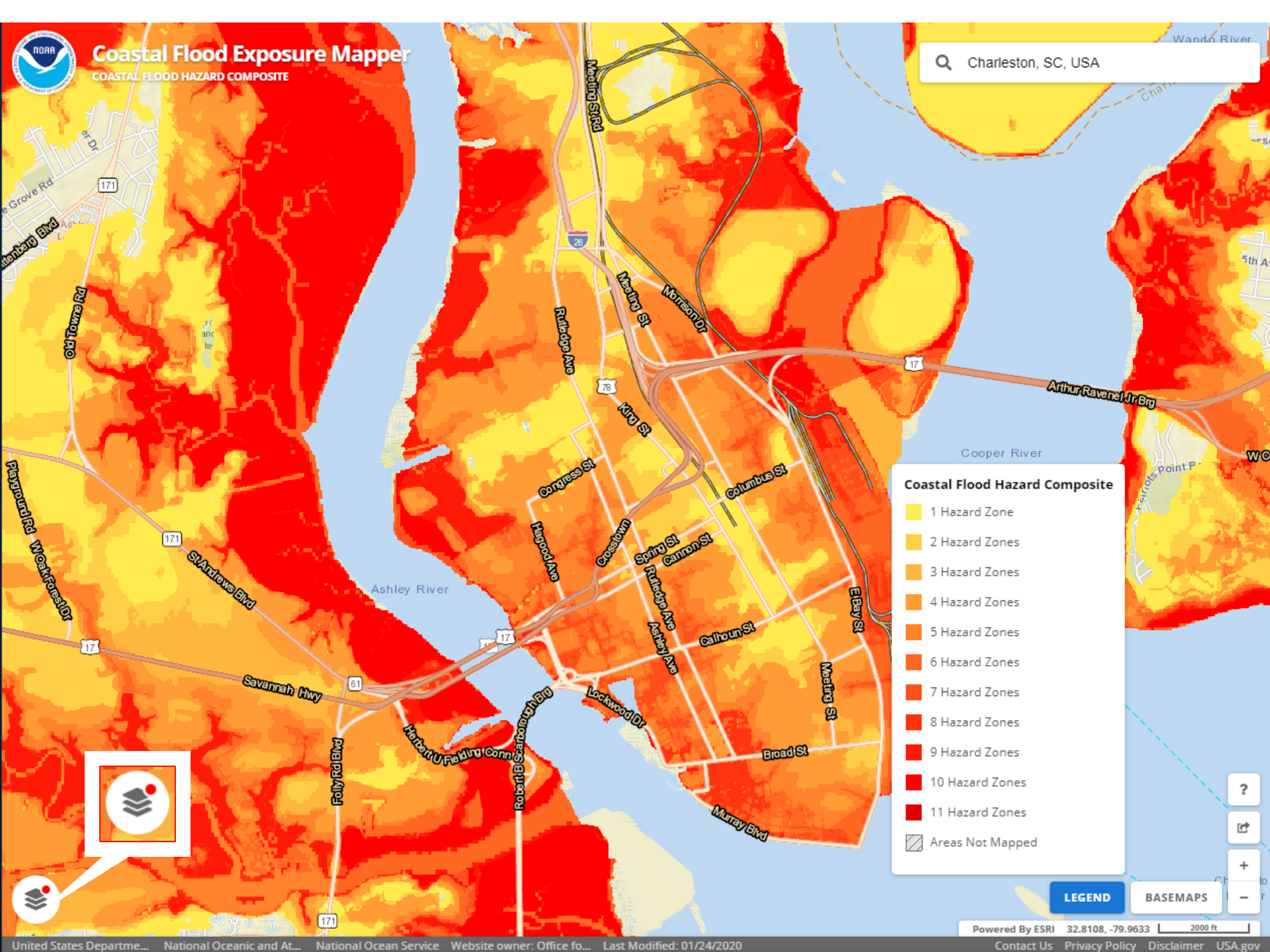
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Coastal Flood Exposure Mapper

COASTAL FLOOD HAZARD COMPOSITE

🔍 Charleston, SC, USA



Coastal Flood Hazard Composite

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- Areas Not Mapped

LEGEND **BASEMAPS**

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CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 0

HAZARD LAYERS

- | | | | |
|--------------------------------|-------------------------------------|--|--|
| Coastal Flood Hazard Composite | ☒ | | |
| High Tide Flooding | ☐ | | |
| FEMA Flood Zones | ☐ | | |
| Tsunami | ☐ | | |
| Storm Surge | ☐ | | |
| Sea Level Rise | ☐ | | |

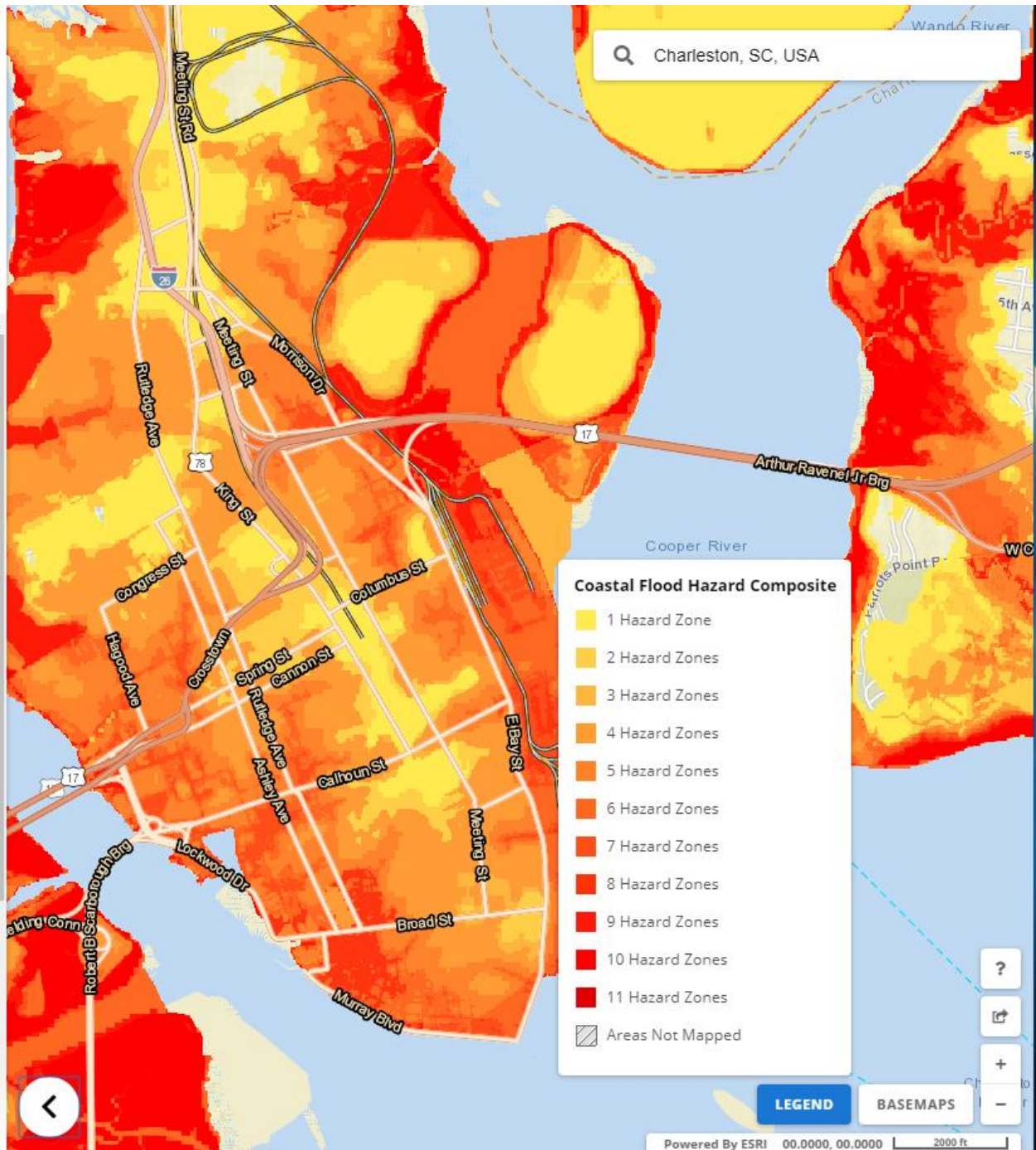
SOCIETAL EXPOSURE

- | | | | |
|--------------------|--------------------------|--|--|
| Population Density | ☐ | | |
| Poverty | ☐ | | |
| Elderly | ☐ | | |
| Employees | ☐ | | |

INFRASTRUCTURE EXPOSURE

- | | | | |
|---------------------|--------------------------|--|--|
| Development | ☐ | | |
| Critical Facilities | ☐ | | |
| Development | ☐ | | |

SAVE MAP



Flood Hazard Layers

- Coastal Flood Hazard Composite
- Shallow Coastal Flooding
- FEMA Flood Zones
- Storm Surge Scenarios
- Sea Level Rise Scenarios
- Tsunami Run Up

Societal Layers

- Population Density
- Percent in Poverty
- Percent Elderly (65 and Up)
- Employees

Infrastructure Layers

- Development
- Critical Facilities
- Development Patterns

Ecosystem Layers

- Natural Areas and Open Space
- Potential Pollution Sources
- Natural Protection
- Wetland Potential



CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 0

HAZARD LAYERS

- | | | | |
|--------------------------------|-------------------------------------|--|--|
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| Tsunami | ☐ | | |
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| Sea Level Rise | ☐ | | |

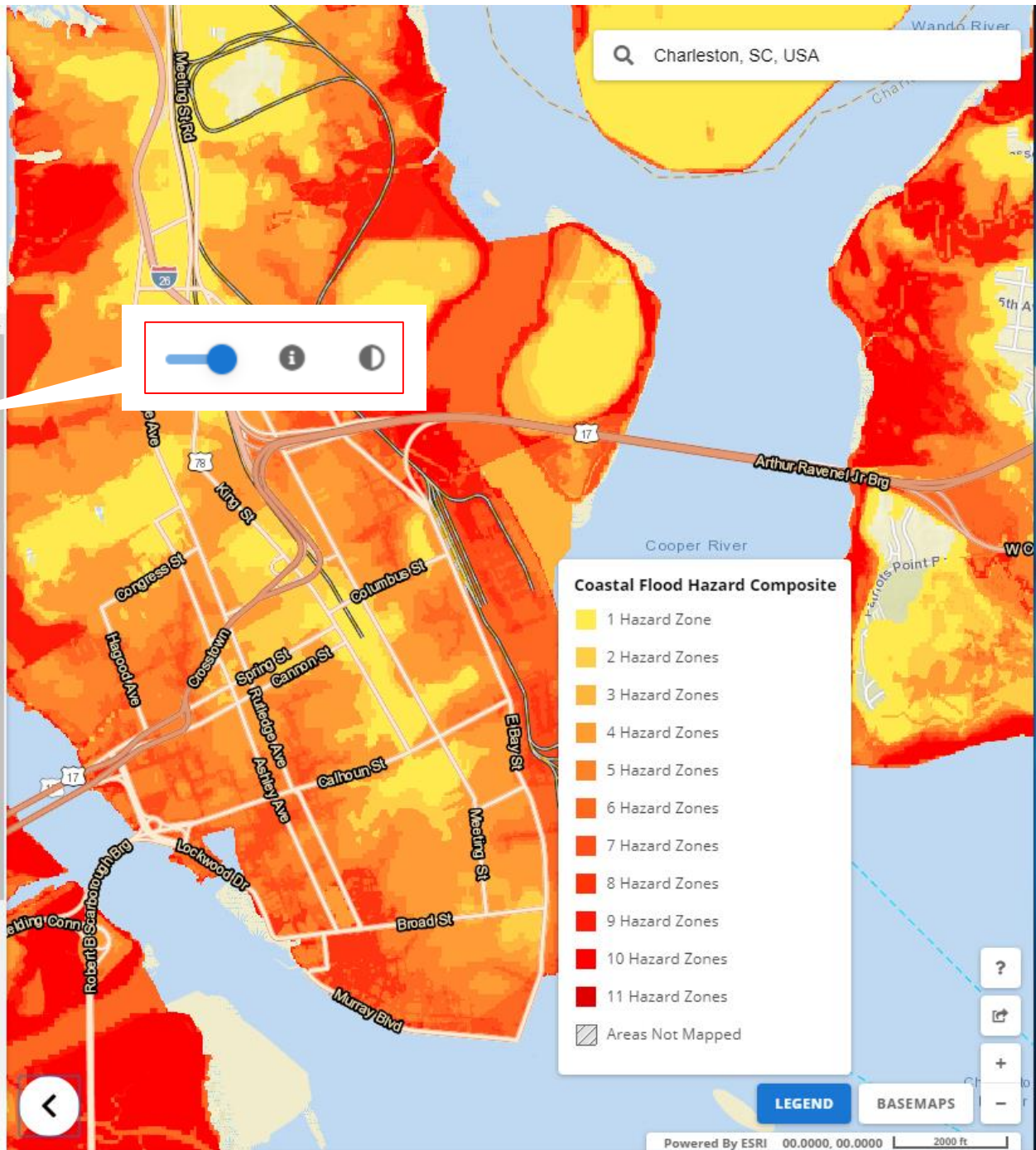
SOCIETAL EXPOSURE

- | | | | |
|--------------------|--------------------------|--|--|
| Population Density | ☐ | | |
| Poverty | ☐ | | |
| Elderly | ☐ | | |
| Employees | ☐ | | |

INFRASTRUCTURE EXPOSURE

- | | | | |
|---------------------|--------------------------|--|--|
| Development | ☐ | | |
| Critical Facilities | ☐ | | |
| Development | ☐ | | |

SAVE MAP





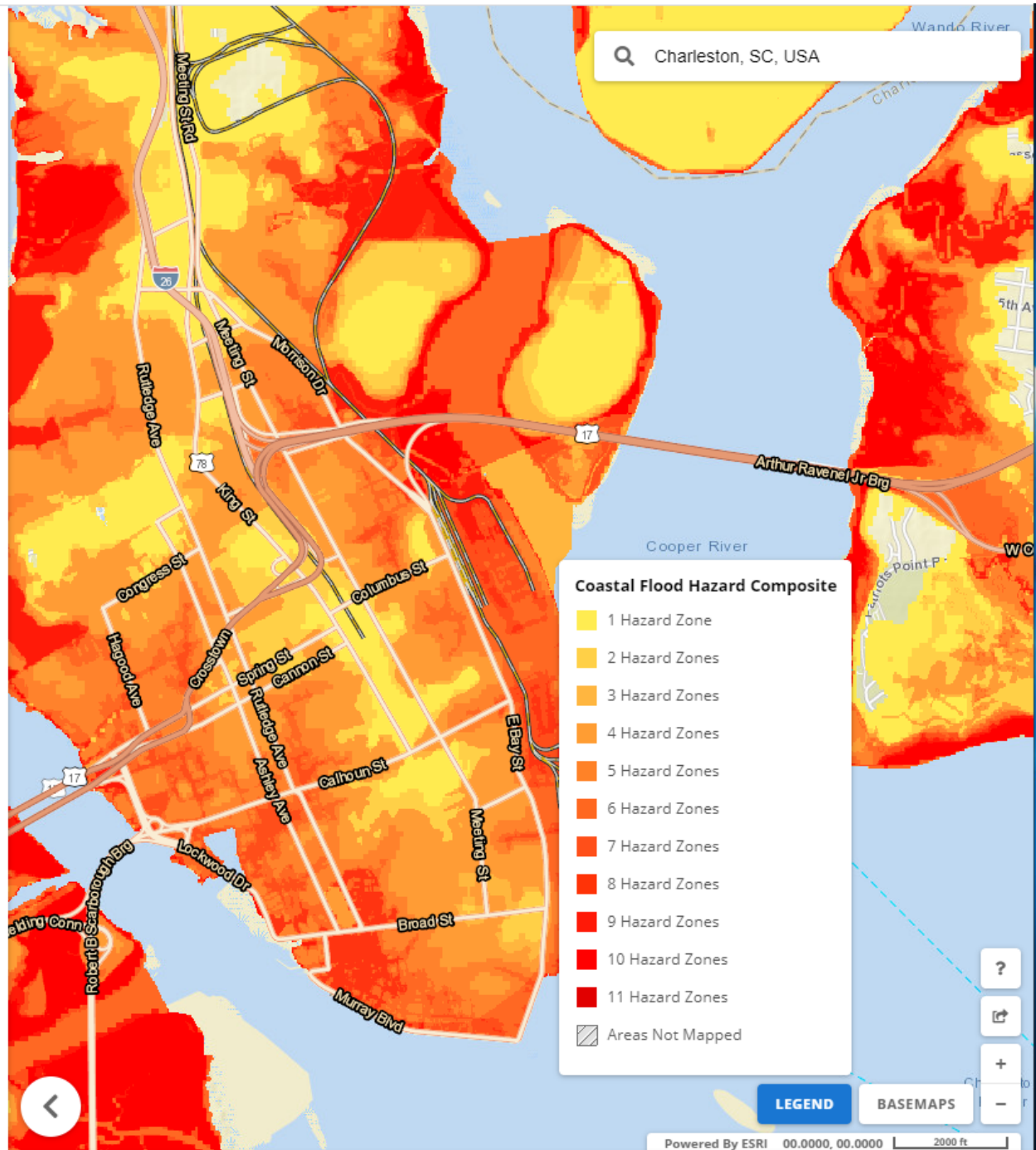
ABOUT

Coastal Flood Hazard Composite

This map shows areas prone to flooding from one or more of the following hazards:

- High tide flooding
- High risk (1% annual chance for A and V zones) and moderate risk (0.2% annual chance) flooding (designated by the Federal Emergency Management Agency)
- Storm surge for category 1 through category 3 hurricanes
- Sea level rise scenarios of 1, 2, and 3 feet
- Tsunami run-up zones (where available)

The darker the color on the map, the more flood hazard zones there are for that area. Click on the map to see the number and types of hazards that may occur in a location. Additional information about each category mentioned above are provided in the maps that follow.





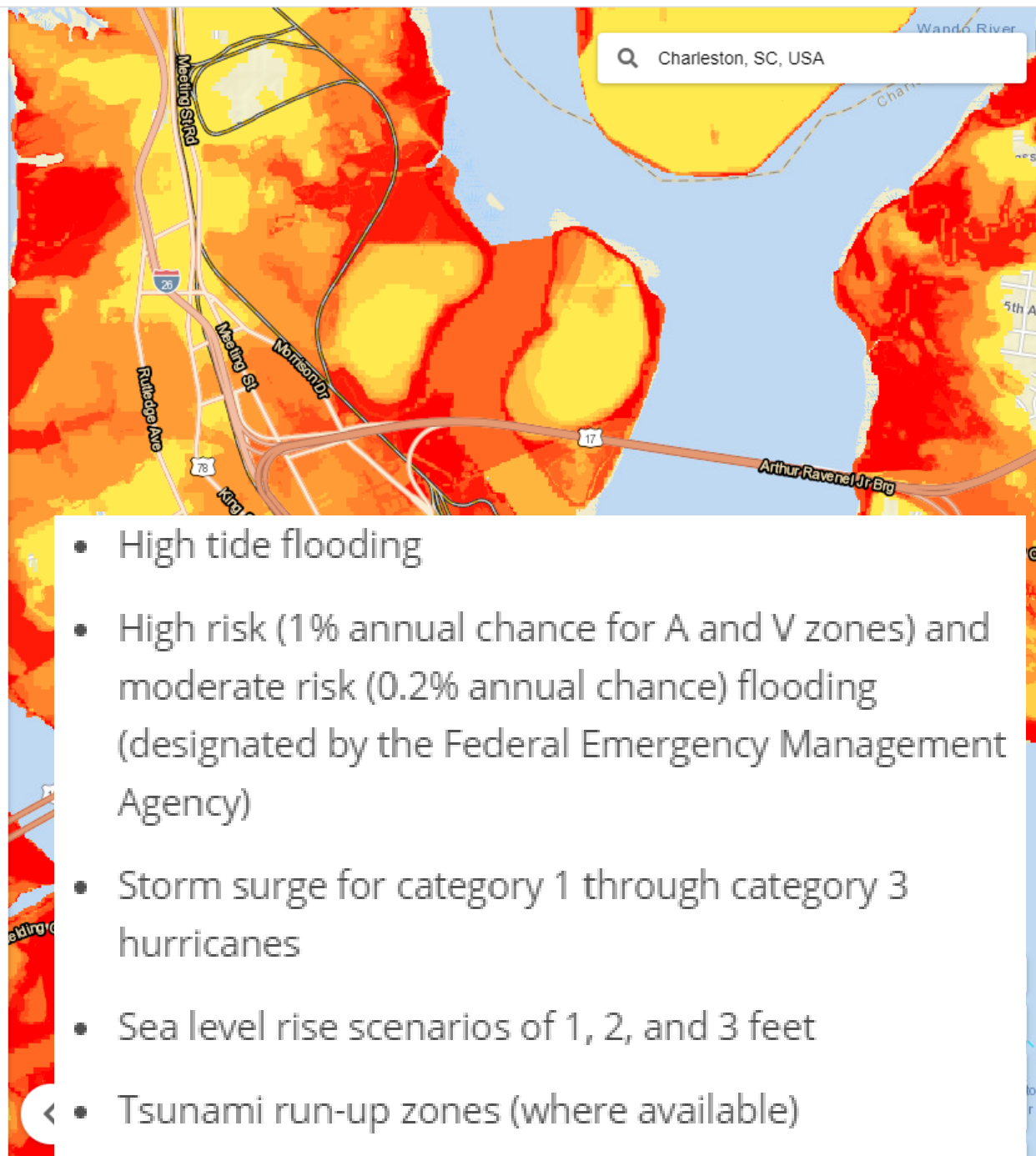
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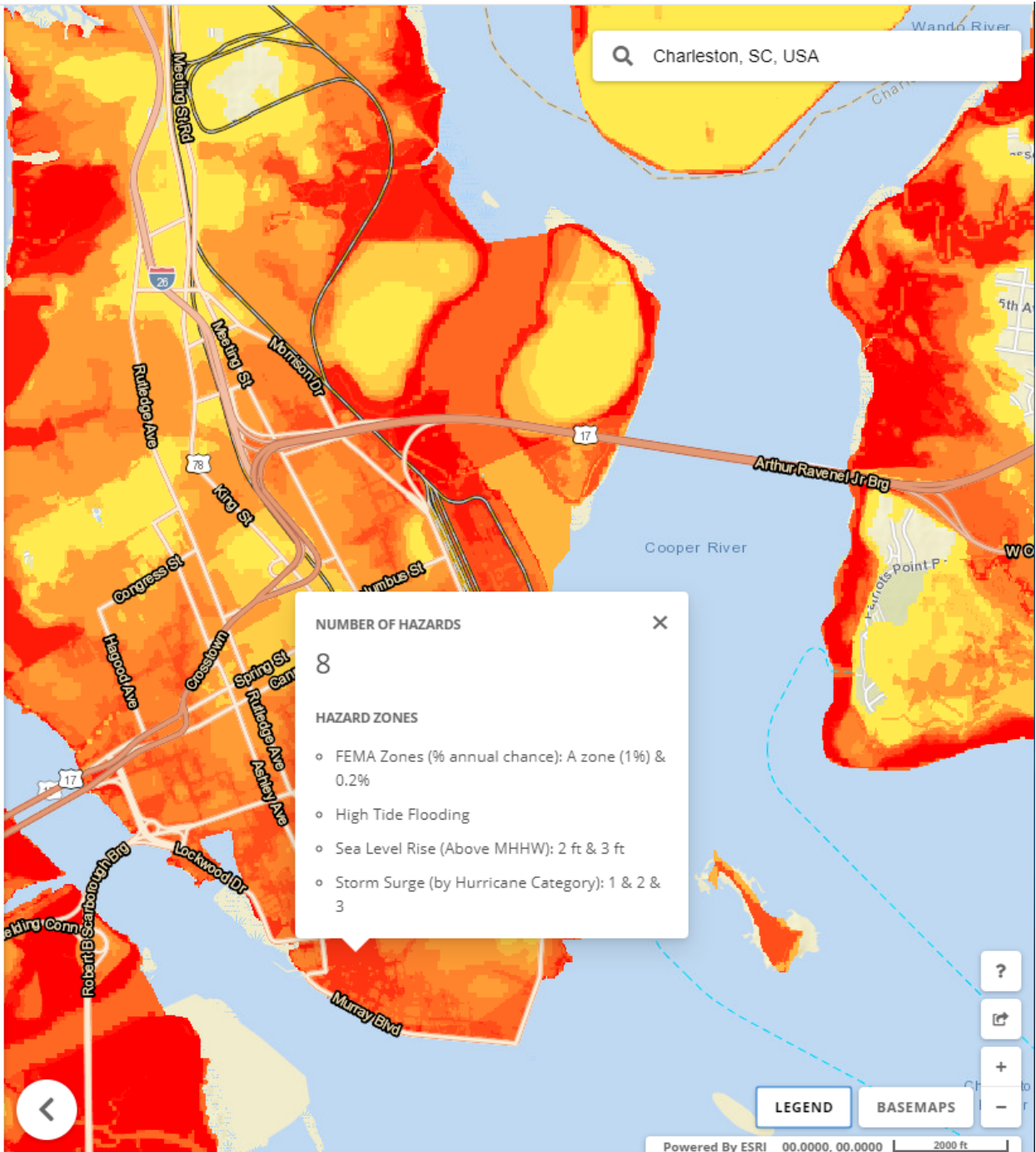
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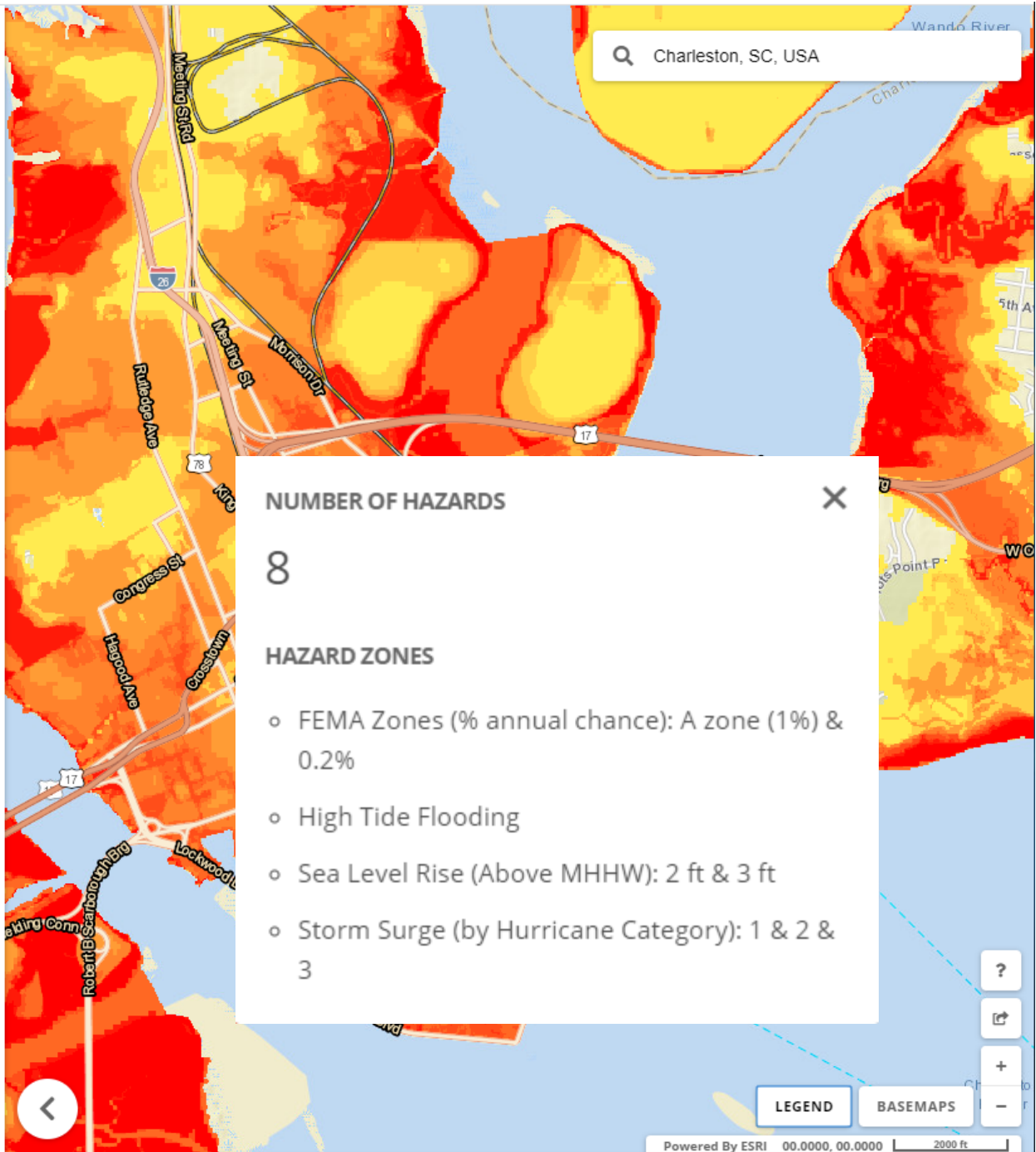
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CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 0

HAZARD LAYERS

- Coastal Flood Hazard Composite ☒
- High Tide Flooding ☐
- FEMA Flood Zones ☐
- Tsunami ☐
- Storm Surge ☐
- Sea Level Rise ☐

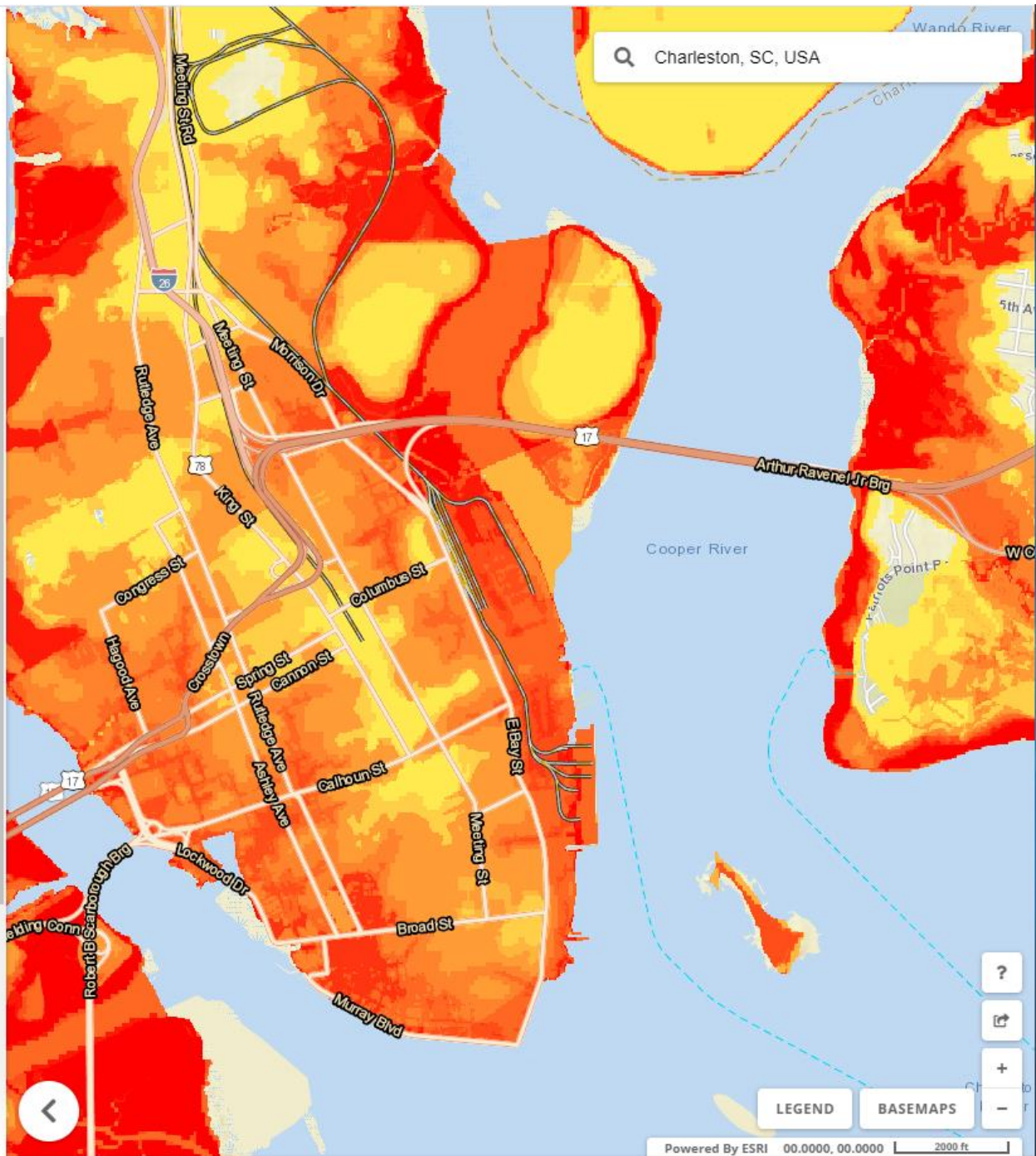
SOCIETAL EXPOSURE

- Population Density ☐
- Poverty ☐
- Elderly ☐
- Employees ☐

INFRASTRUCTURE EXPOSURE

- Development ☐
- Critical Facilities ☐
- Development ☐

SAVE MAP



Charleston, SC, USA

LEGEND

BASEMAPS

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CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 0

HAZARD LAYERS

- Coastal Flood Hazard Composite ☒
- High Tide Flooding ☐
- FEMA Flood Zones ☐
- Tsunami ☐
- Storm Surge ☐
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SOCIETAL EXPOSURE

- Population Density ☐
- Poverty ☐
- Elderly ☐
- Employees ☐

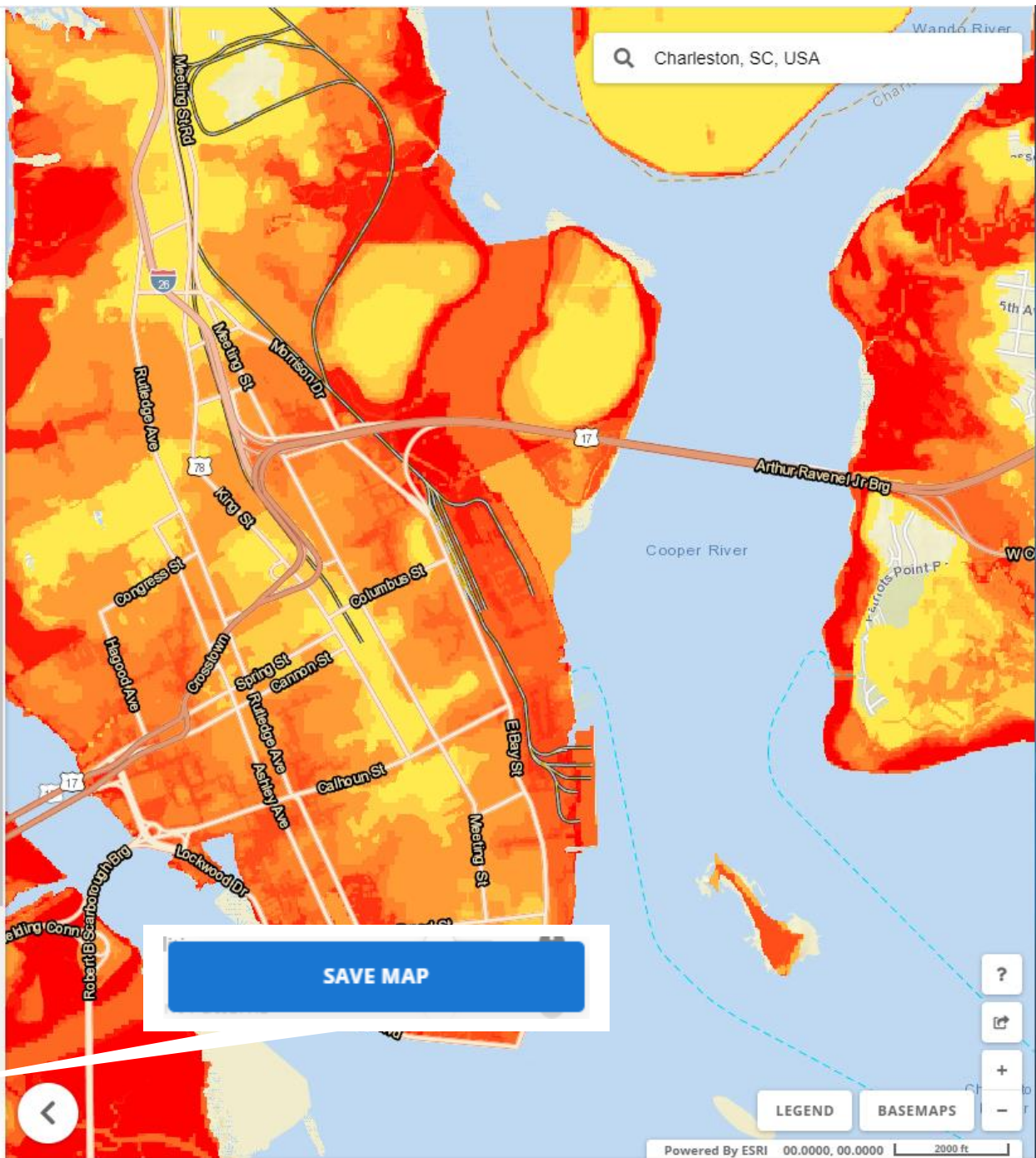
INFRASTRUCTURE EXPOSURE

- Development ☐
- Critical Facilities ☐
- Development ☐

SAVE MAP

SAVE MAP

Q Charleston, SC, USA



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CREATE

My Map

ACTIVE LAYERS

SAVED MAPS

0

HAZARD LAYERS

- Coastal Flood Hazard Composite ☒
- High Tide Flooding ☐
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- Sea Level Rise ☐

SOCIETAL EXPOSURE

- Population Density ☐
- Poverty ☐
- Elderly ☐
- Employees ☐

INFRASTRUCTURE EXPOSURE

- Development ☐
- Critical Facilities ☐
- Development ☐

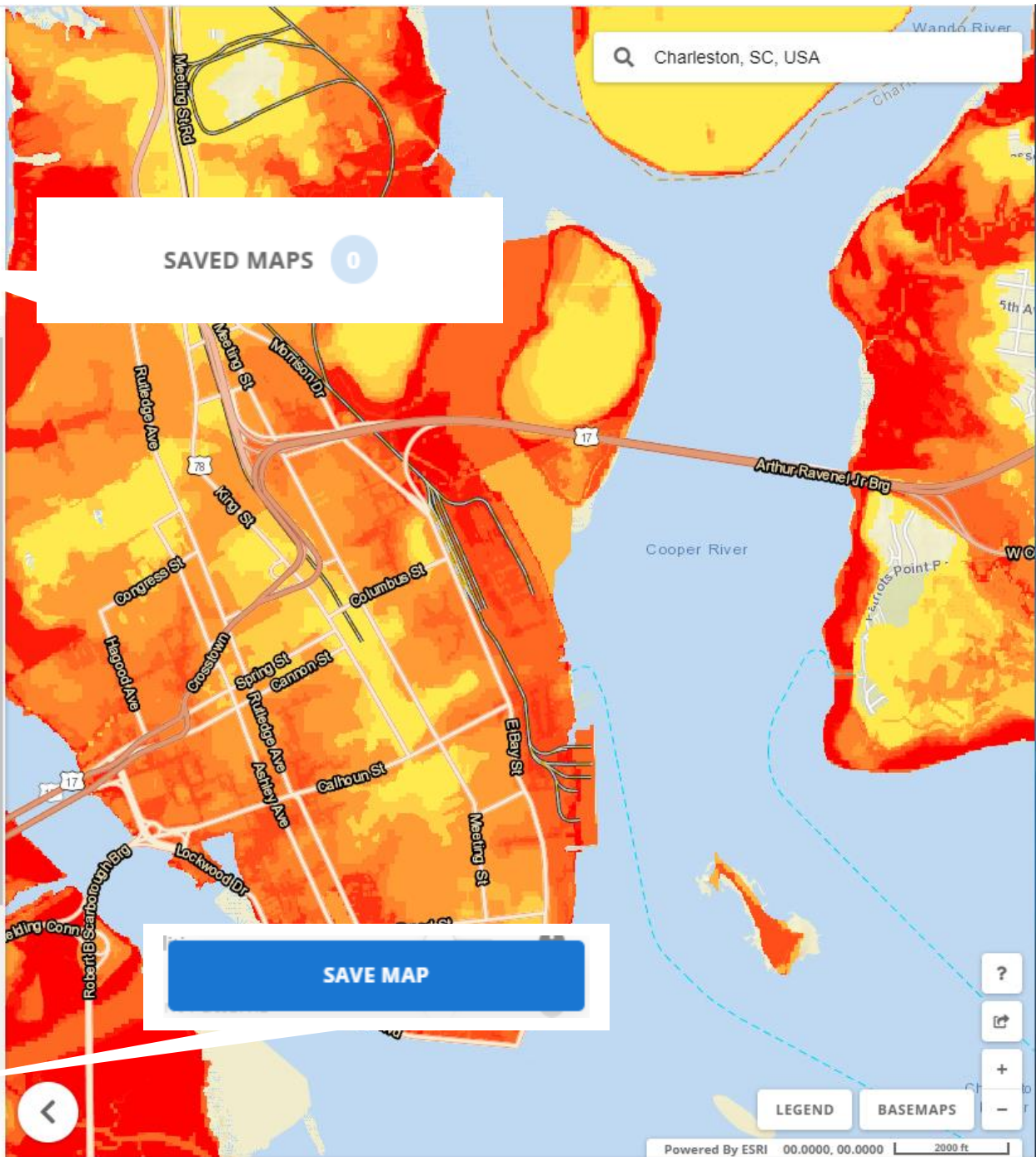
SAVE MAP

SAVED MAPS

0

SAVE MAP

Q Charleston, SC, USA



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CREATE

My Map

ACTIVE LAYERS

SAVED MAPS

1

HAZARD LAYERS

- | | | | |
|--------------------------------|-------------------------------------|--|--|
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INFRASTRUCTURE EXPOSURE

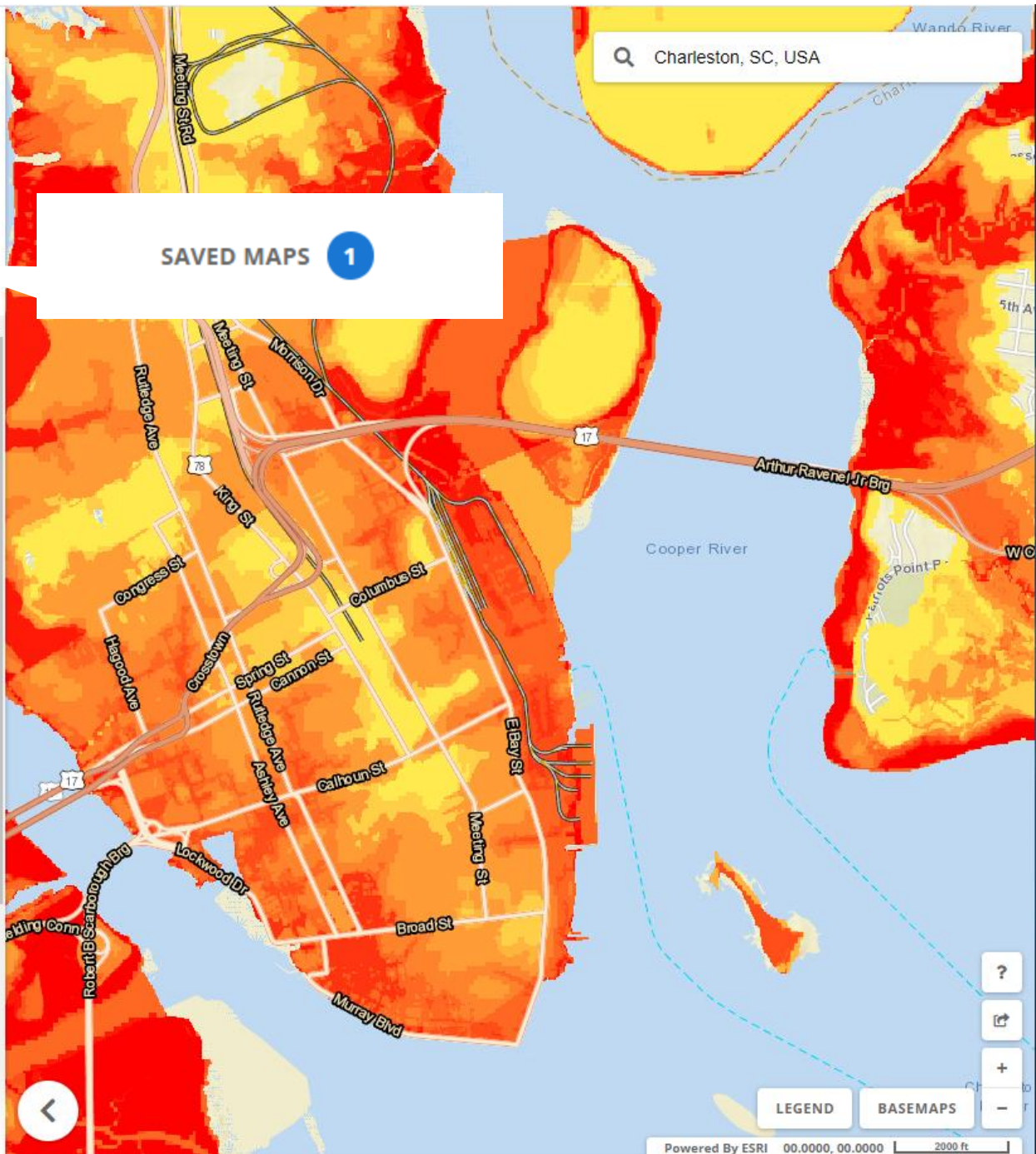
- | | | | |
|---------------------|--------------------------|--|--|
| Development | ☐ | | |
| Critical Facilities | ☐ | | |
| Development | ☐ | | |

SAVE MAP

SAVED MAPS

1

Charleston, SC, USA





CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 1

HAZARD LAYERS

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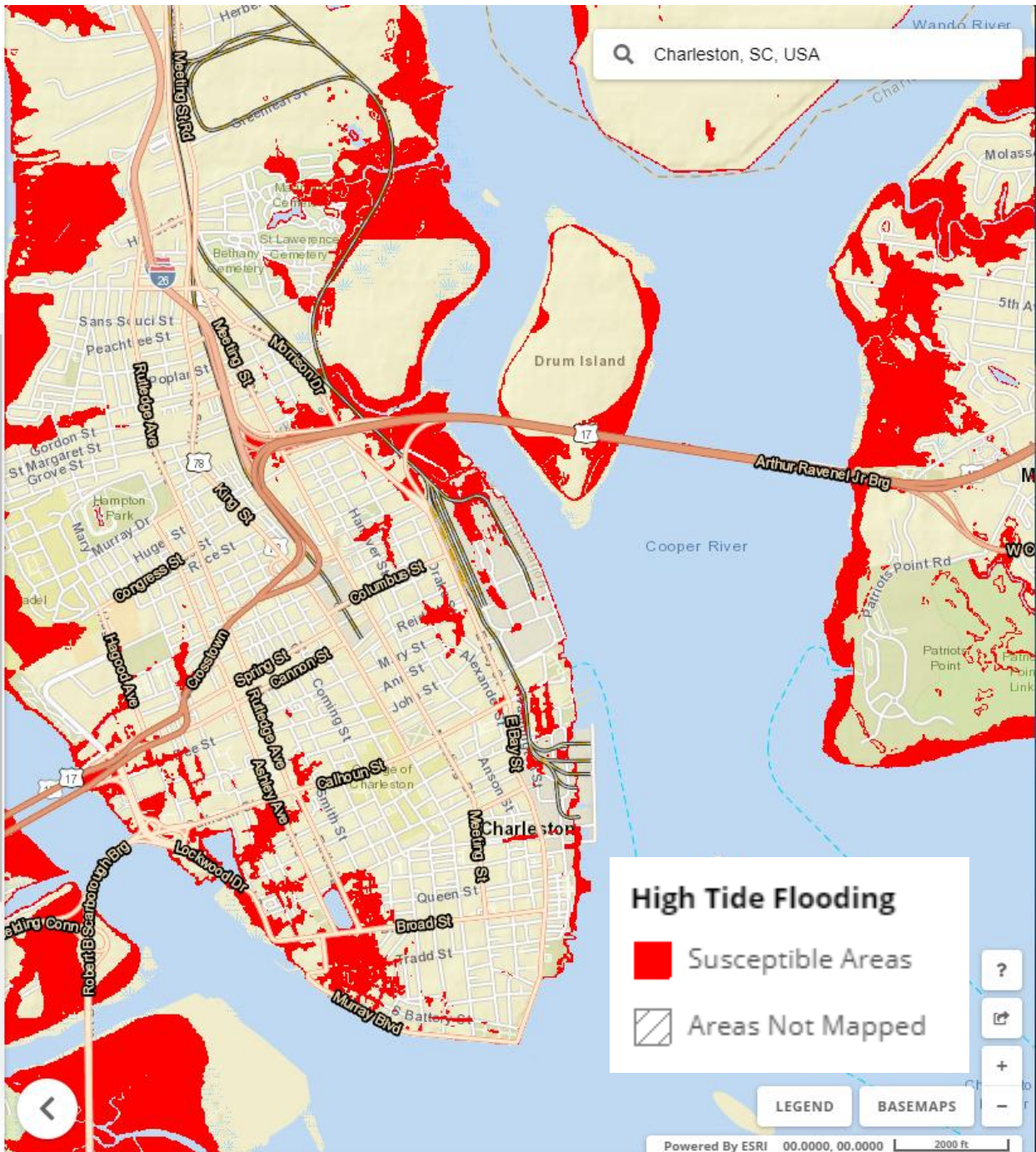
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SAVE MAP



High Tide Flooding

Susceptible Areas

Areas Not Mapped

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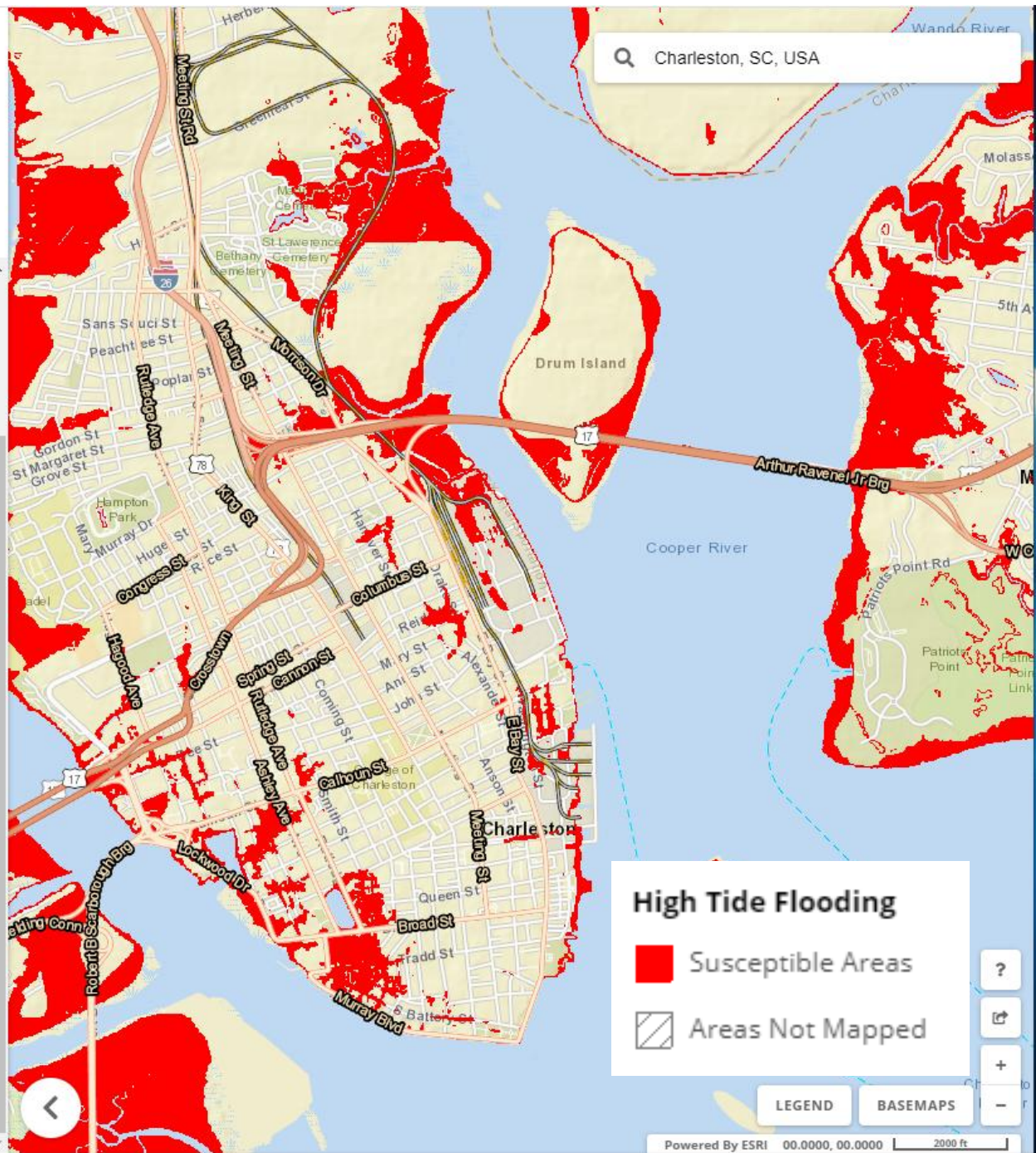


ABOUT

High Tide Flooding

have increased 5- to 10-fold since the 1960s in several U.S. coastal cities. In a sense, today's flood will become tomorrow's high tide, as sea level rise will cause flooding to occur more frequently and last for longer durations of time.

The flood thresholds used in this map are derived from national flood thresholds from NOAA Technical Report NOS CO-OPS 086: Patterns and Projections of High Tide Flooding along the U.S. Coastline Using a Common Impact Threshold. The derived thresholds used here provide a national definition of coastal flooding and impacts for quantifying and communicating risk. These thresholds may deviate from National Weather Service (NWS) impact thresholds, which take into account local flood risk and are used to issue NWS coastal flood watches, warnings, and advisories





ABOUT

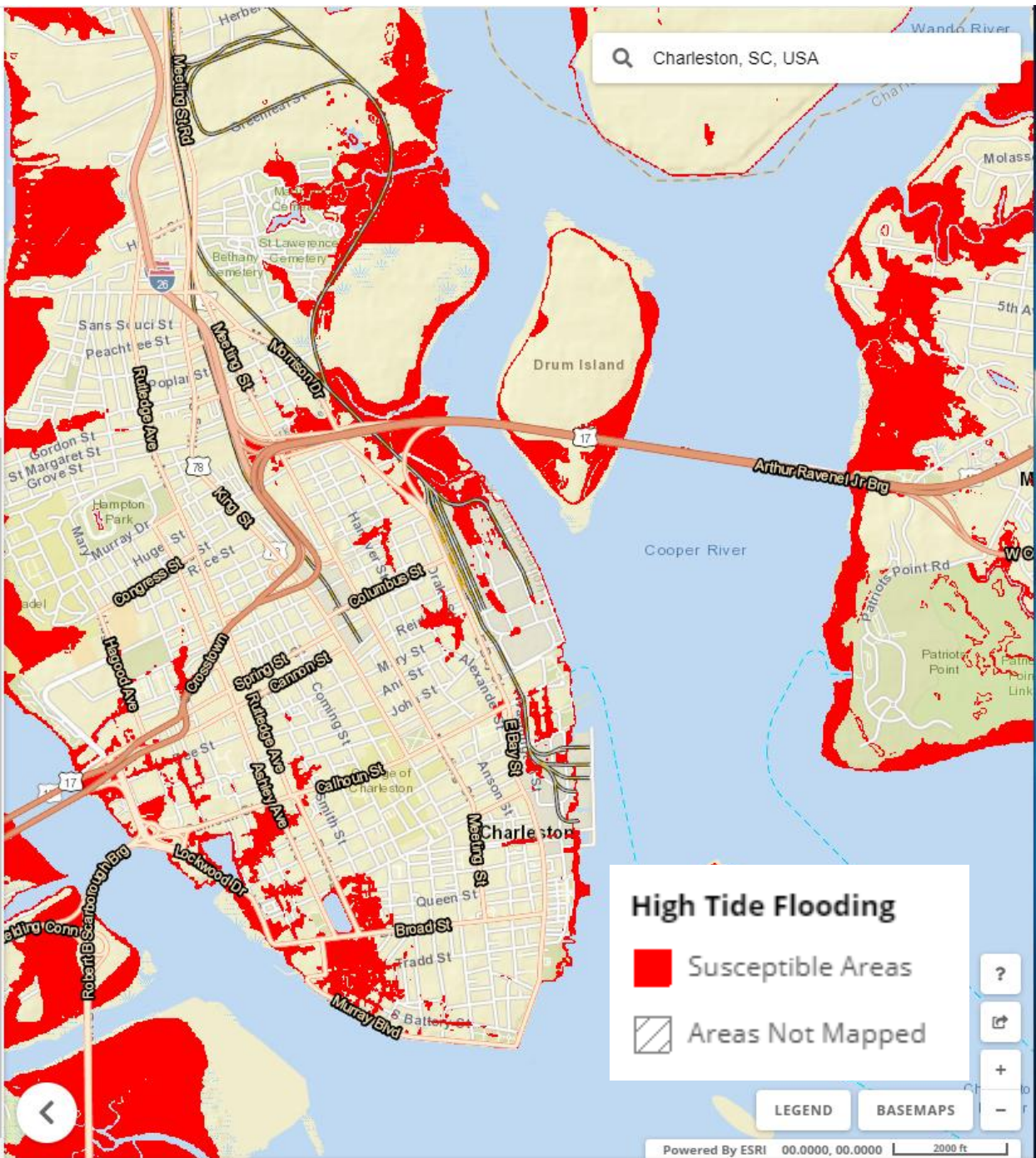
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Tidal Flooding Impacts

▶ Play





CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 1

HAZARD LAYERS

- | | | | |
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| Tsunami | ☐ | | |
| Storm Surge | ☐ | | |
| Sea Level Rise | ☐ | | |

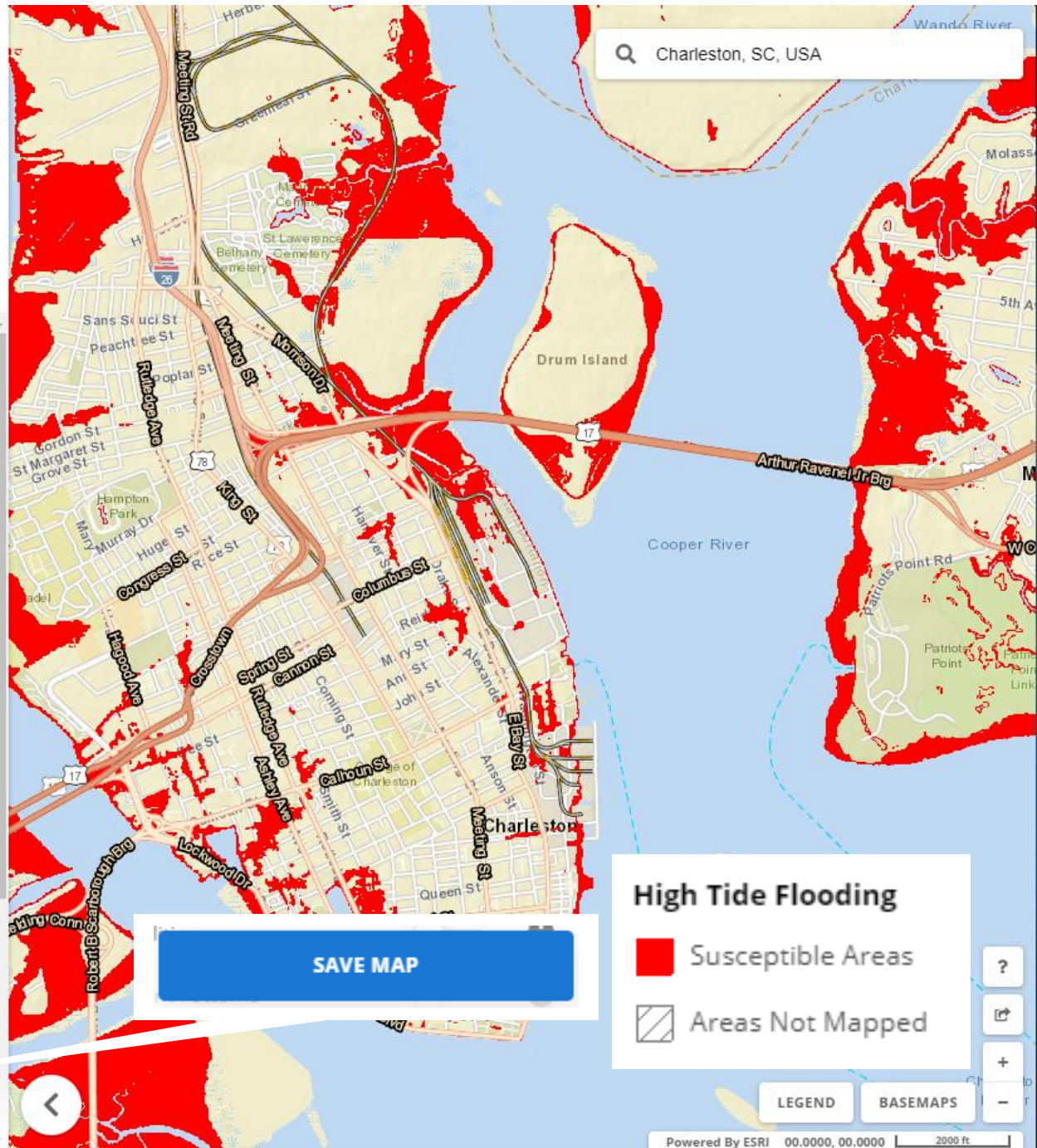
SOCIETAL EXPOSURE

- | | | | |
|--------------------|--------------------------|--|--|
| Population Density | ☐ | | |
| Poverty | ☐ | | |
| Elderly | ☐ | | |
| Employees | ☐ | | |

INFRASTRUCTURE EXPOSURE

- | | | | |
|---------------------|--------------------------|--|--|
| Development | ☐ | | |
| Critical Facilities | ☐ | | |
| Development | ☐ | | |

SAVE MAP



High Tide Flooding

- Susceptible Areas
- Areas Not Mapped

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft

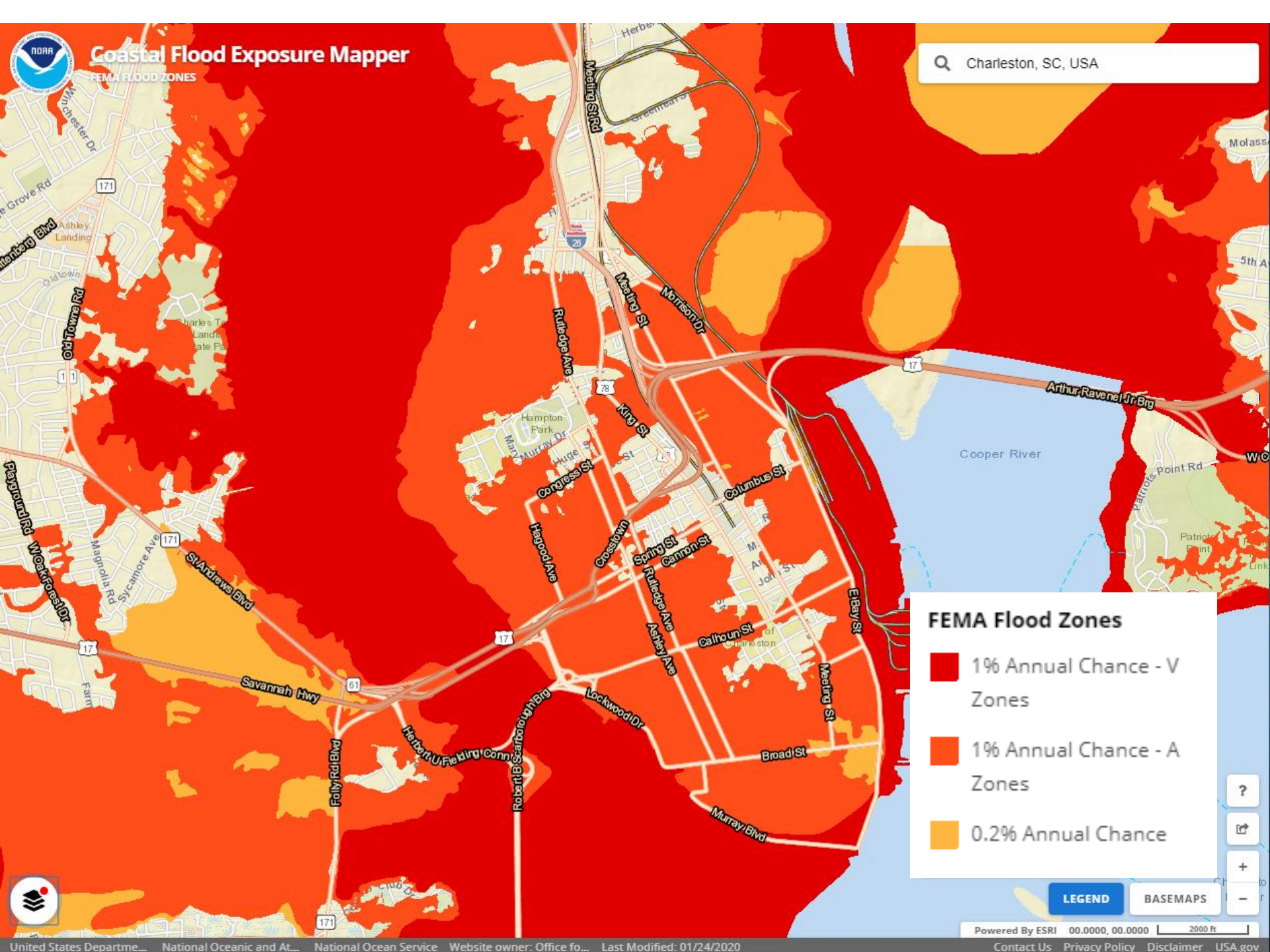


Coastal Flood Exposure Mapper

FEMA FLOOD ZONES



Charleston, SC, USA



LEGEND

BASEMAPS

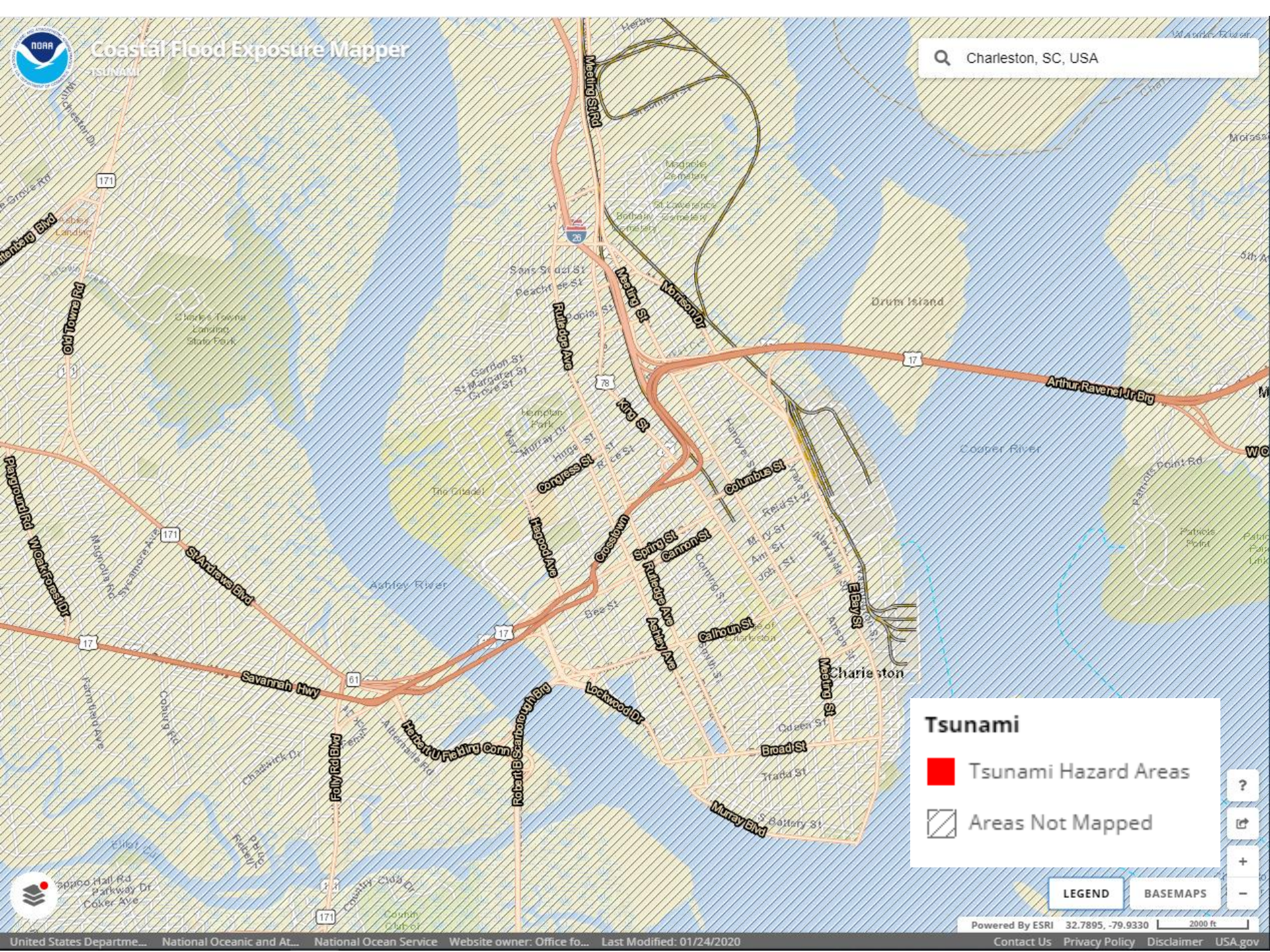
Powered By ESRI 00.0000, 00.0000 2000 ft



Coastal Flood Exposure Mapper

TSUNAMI

🔍 Charleston, SC, USA



Tsunami

 Tsunami Hazard Areas

 Areas Not Mapped

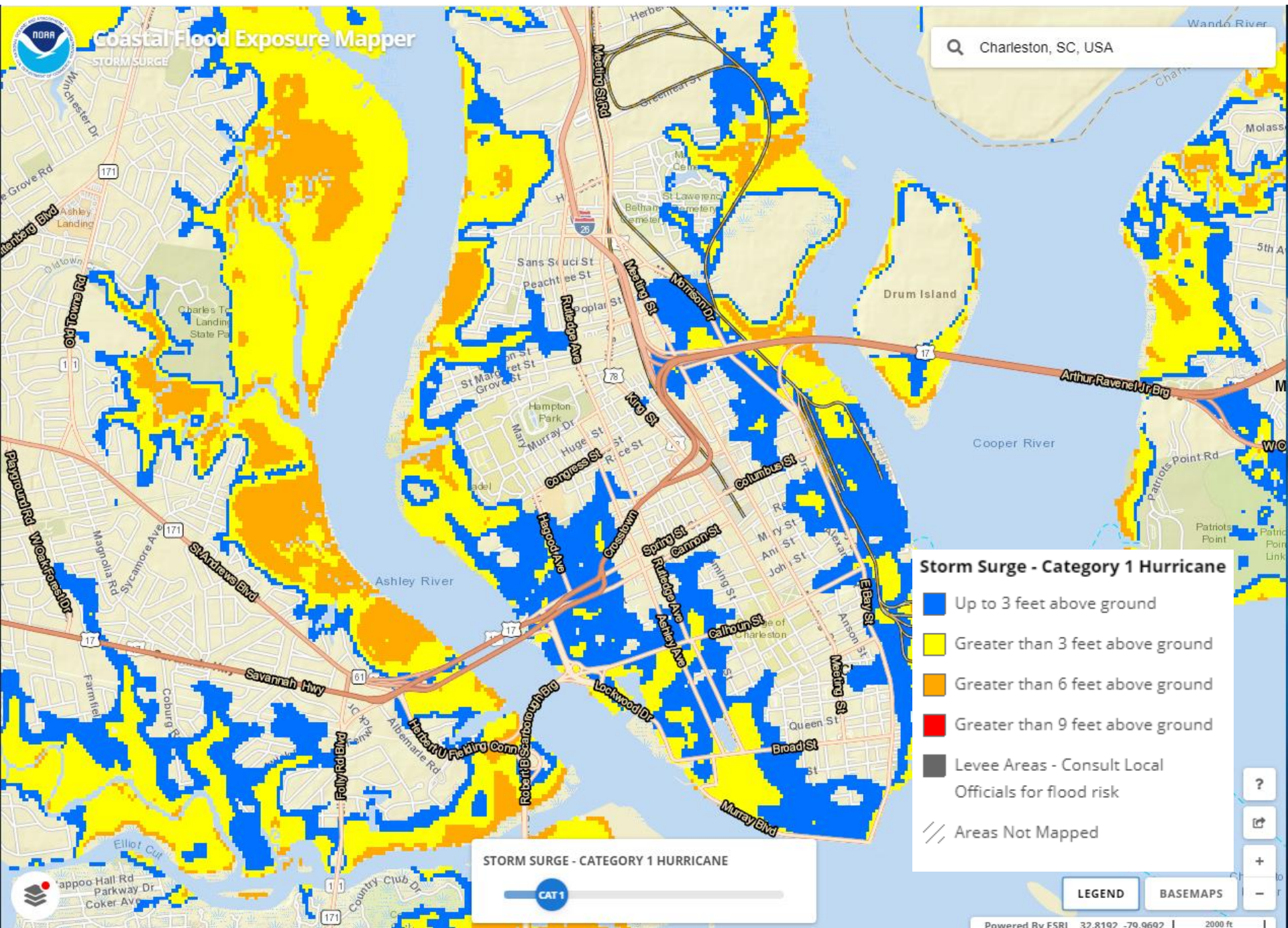
LEGEND BASEMAPS

Powered By ESRI 32.7895, -79.9330 2000 ft



Coastal Flood Exposure Mapper

🔍 Charleston, SC, USA



Storm Surge - Category 1 Hurricane

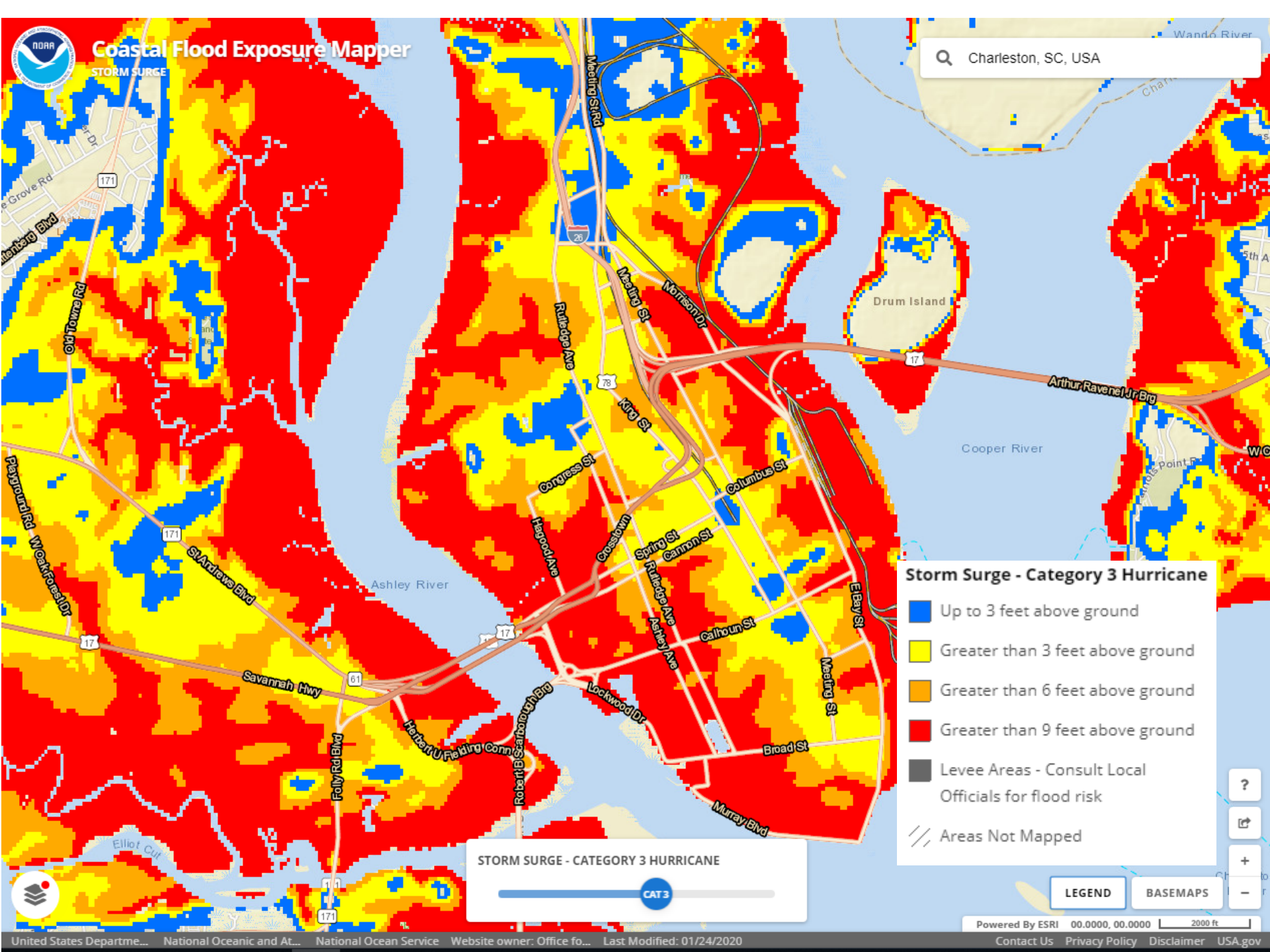
- Up to 3 feet above ground
- Greater than 3 feet above ground
- Greater than 6 feet above ground
- Greater than 9 feet above ground
- Levee Areas - Consult Local Officials for flood risk
- Areas Not Mapped

STORM SURGE - CATEGORY 1 HURRICANE

CAT 1

LEGEND BASEMAPS

Powered By ESRI 32.8192, -79.9692 2000 ft



Coastal Flood Exposure Mapper

STORM SURGE



Charleston, SC, USA

Storm Surge - Category 3 Hurricane

-  Up to 3 feet above ground
-  Greater than 3 feet above ground
-  Greater than 6 feet above ground
-  Greater than 9 feet above ground
-  Levee Areas - Consult Local Officials for flood risk
-  Areas Not Mapped

STORM SURGE - CATEGORY 3 HURRICANE

CAT 3

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft

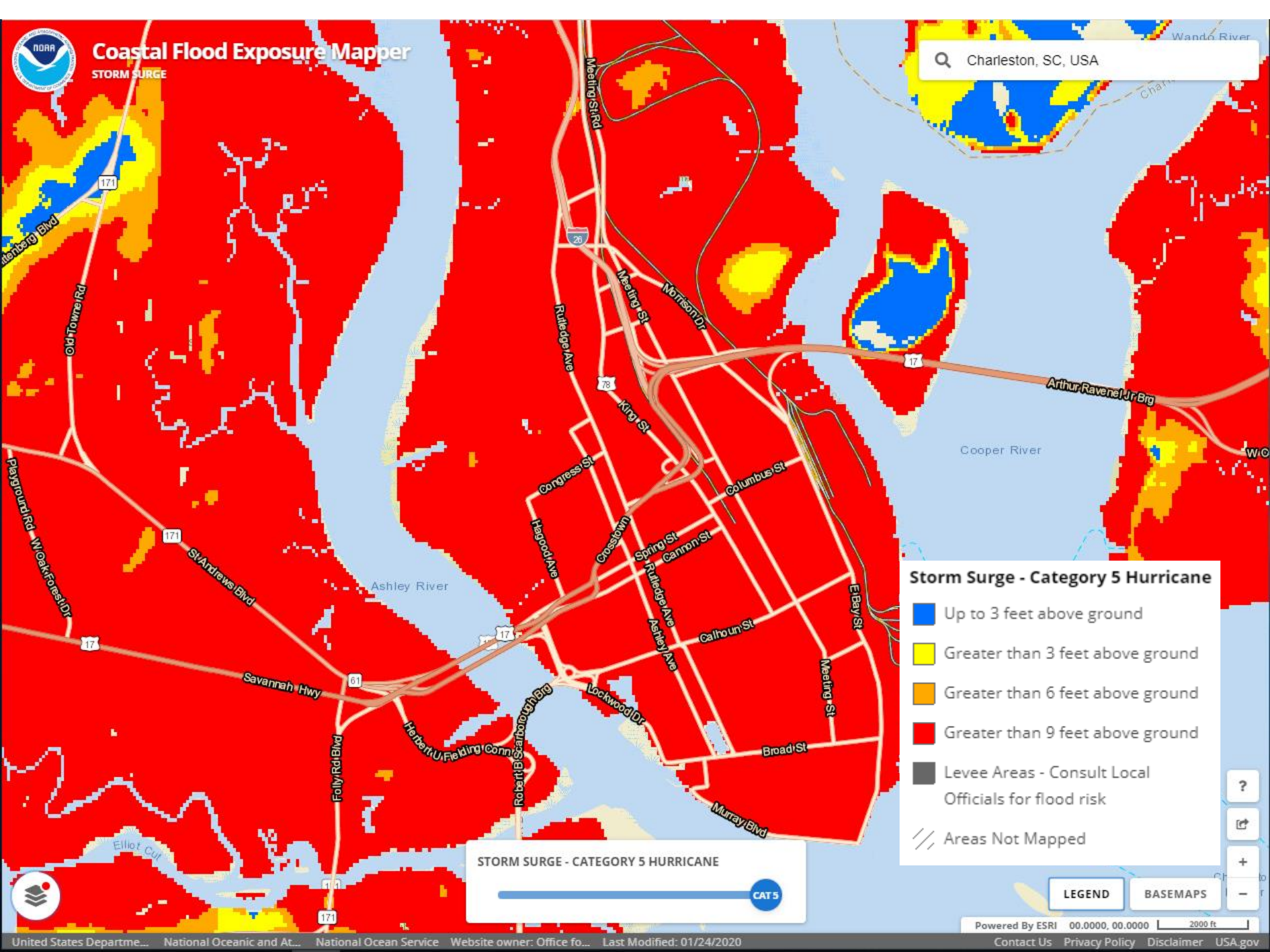


Coastal Flood Exposure Mapper

STORM SURGE



Charleston, SC, USA



Storm Surge - Category 5 Hurricane

- Up to 3 feet above ground
- Greater than 3 feet above ground
- Greater than 6 feet above ground
- Greater than 9 feet above ground
- Levee Areas - Consult Local Officials for flood risk
- Areas Not Mapped

STORM SURGE - CATEGORY 5 HURRICANE



CAT 5

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft



Coastal Flood Exposure Mapper

SEA LEVEL RISE

Charleston, SC, USA



SLR - 0ft above MHHW

Water Depth

- Low-lying Areas
- Area Not Mapped
- Leveed Areas

SLR - 0FT ABOVE MHHW

0ft

LEGEND **BASEMAPS**

Powered By ESRI 00.0000, 00.0000 2000 ft



Coastal Flood Exposure Mapper

SEA LEVEL RISE



Charleston, SC, USA

SLR - 3ft above MHHW

Water Depth

Low-lying Areas

Area Not Mapped

Leveed Areas

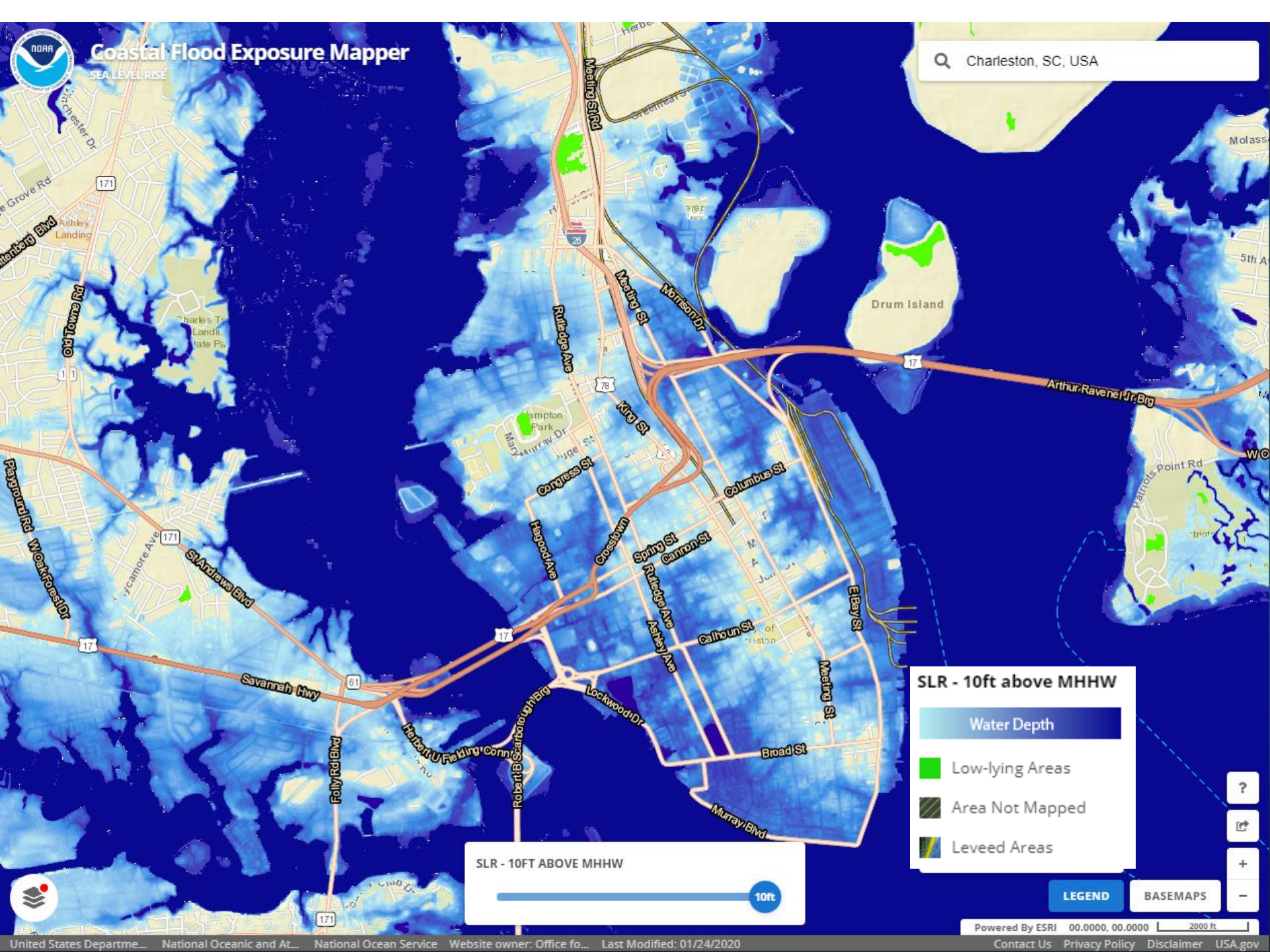
SLR - 3FT ABOVE MHHW

3ft

LEGEND

BASEMAPS

Powered By ESRI 32.8129, -79.9793 2000 ft



Coastal Flood Exposure Mapper

SEA LEVEL RISE



Charleston, SC, USA

SLR - 10ft above MHHW

Water Depth

Low-lying Areas

Area Not Mapped

Leveed Areas

SLR - 10FT ABOVE MHHW

10ft

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft



CREATE

My Map

ACTIVE LAYERS

Coastal Flood Hazard Composite



High Tide Flooding



FEMA Flood Zones



Tsunami



Storm Surge



Sea Level Rise



SOCIETAL EXPOSURE

Population Density



Poverty



Elderly



Employees



INFRASTRUCTURE EXPOSURE

Development



Critical Facilities



Development Patterns



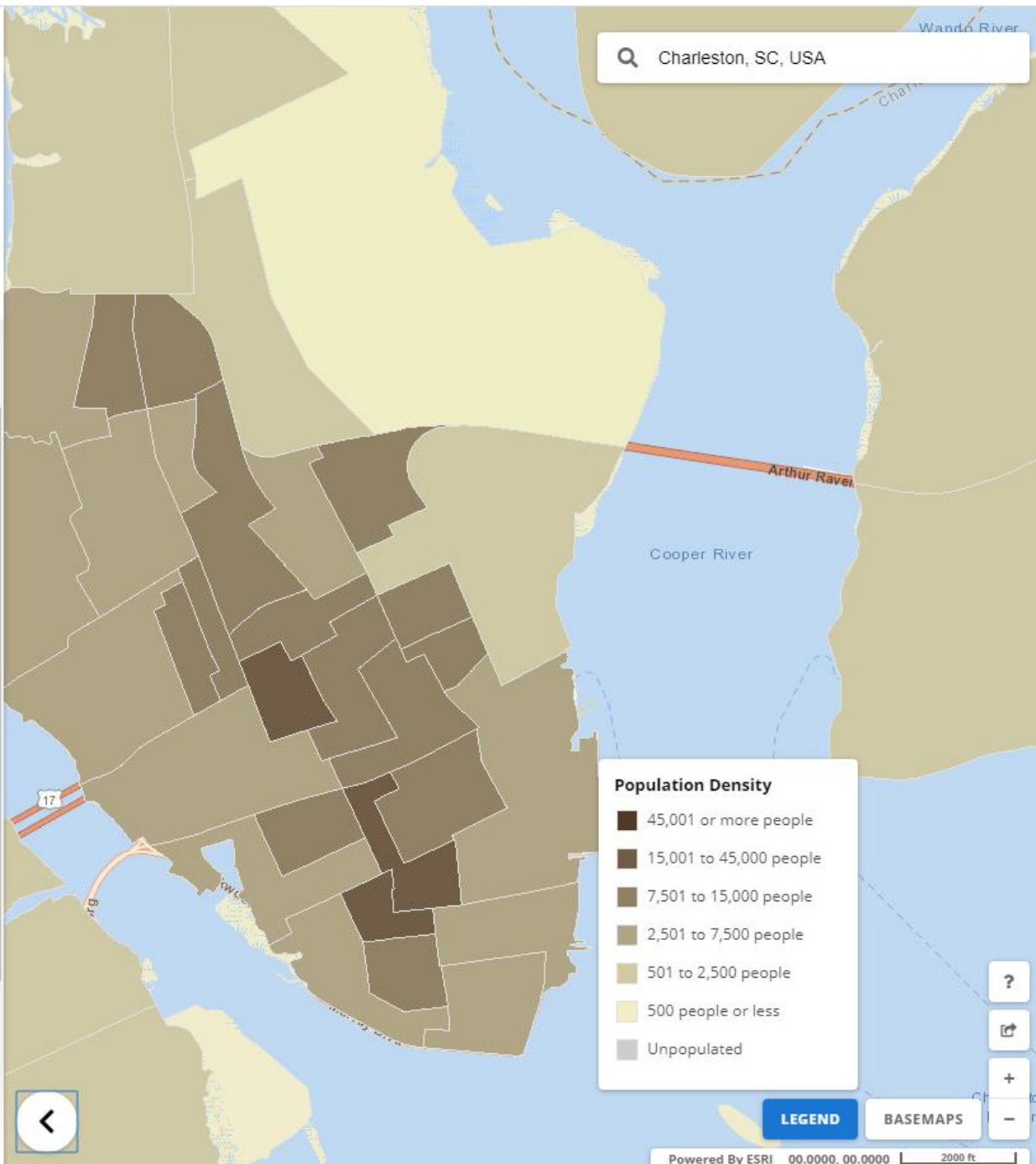
ECOSYSTEM

SAVE MAP

SAVED MAPS

5

Charleston, SC, USA





CREATE

My Map

ACTIVE LAYERS

Coastal Flood Hazard Composite



High Tide Flooding



FEMA Flood Zones



Tsunami



Storm Surge



Sea Level Rise



SOCIETAL EXPOSURE

Population Density



Poverty



Elderly



Employees



INFRASTRUCTURE EXPOSURE

Development



Critical Facilities



Development Patterns



ECOSYSTEM

SAVE MAP

SAVED MAPS

5

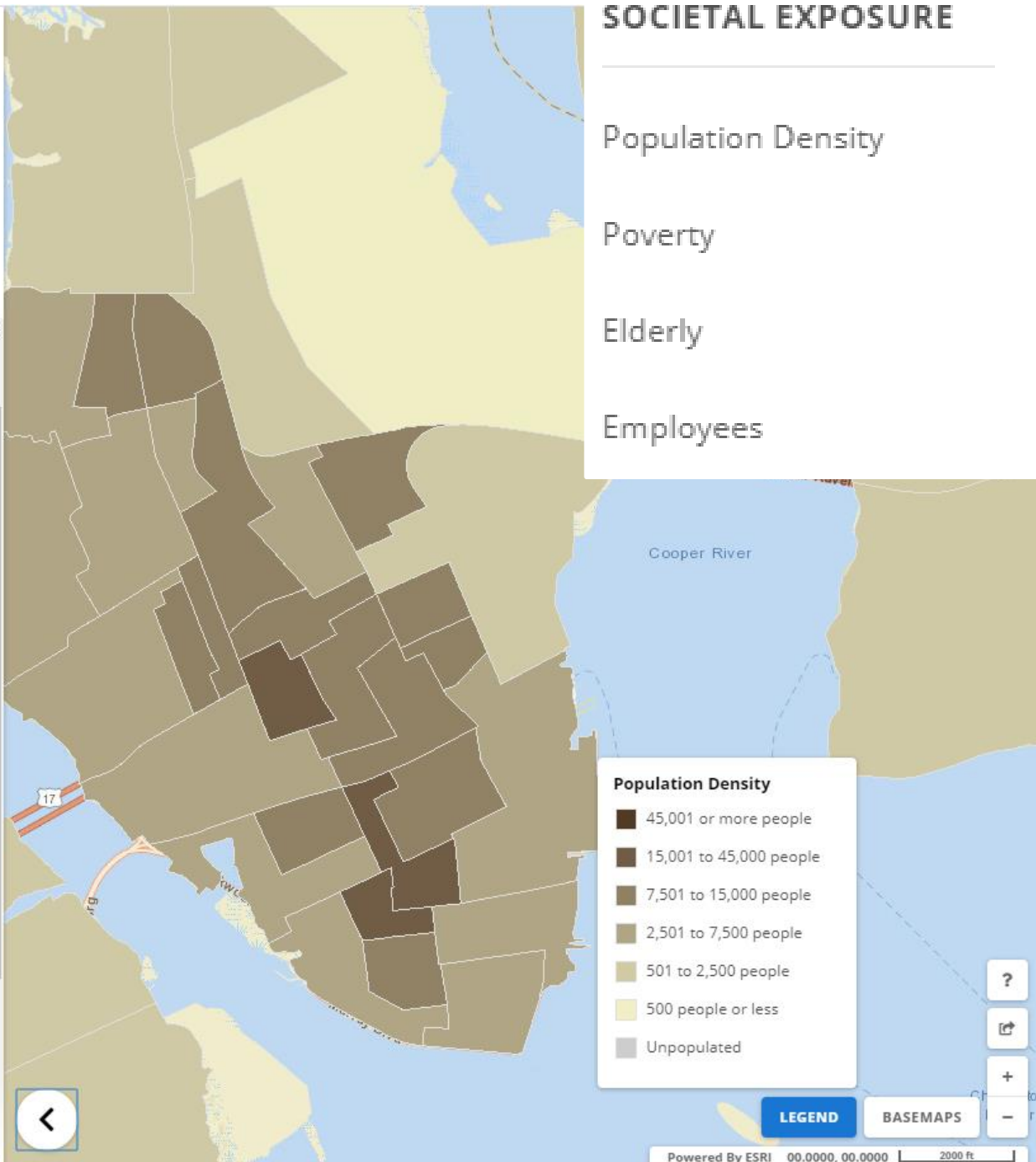
SOCIETAL EXPOSURE

Population Density

Poverty

Elderly

Employees



Powered By ESRI 00.0000, 00.0000 2000 ft



CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 5

HAZARD LAYERS

- | | | | |
|--------------------------------|-------------------------------------|--|--|
| Coastal Flood Hazard Composite | ☐ | | |
| High Tide Flooding | ☐ | | |
| FEMA Flood Zones | ☒ | | |
| Tsunami | ☐ | | |
| Storm Surge | ☐ | | |
| Sea Level Rise | ☐ | | |

SOCIETAL EXPOSURE

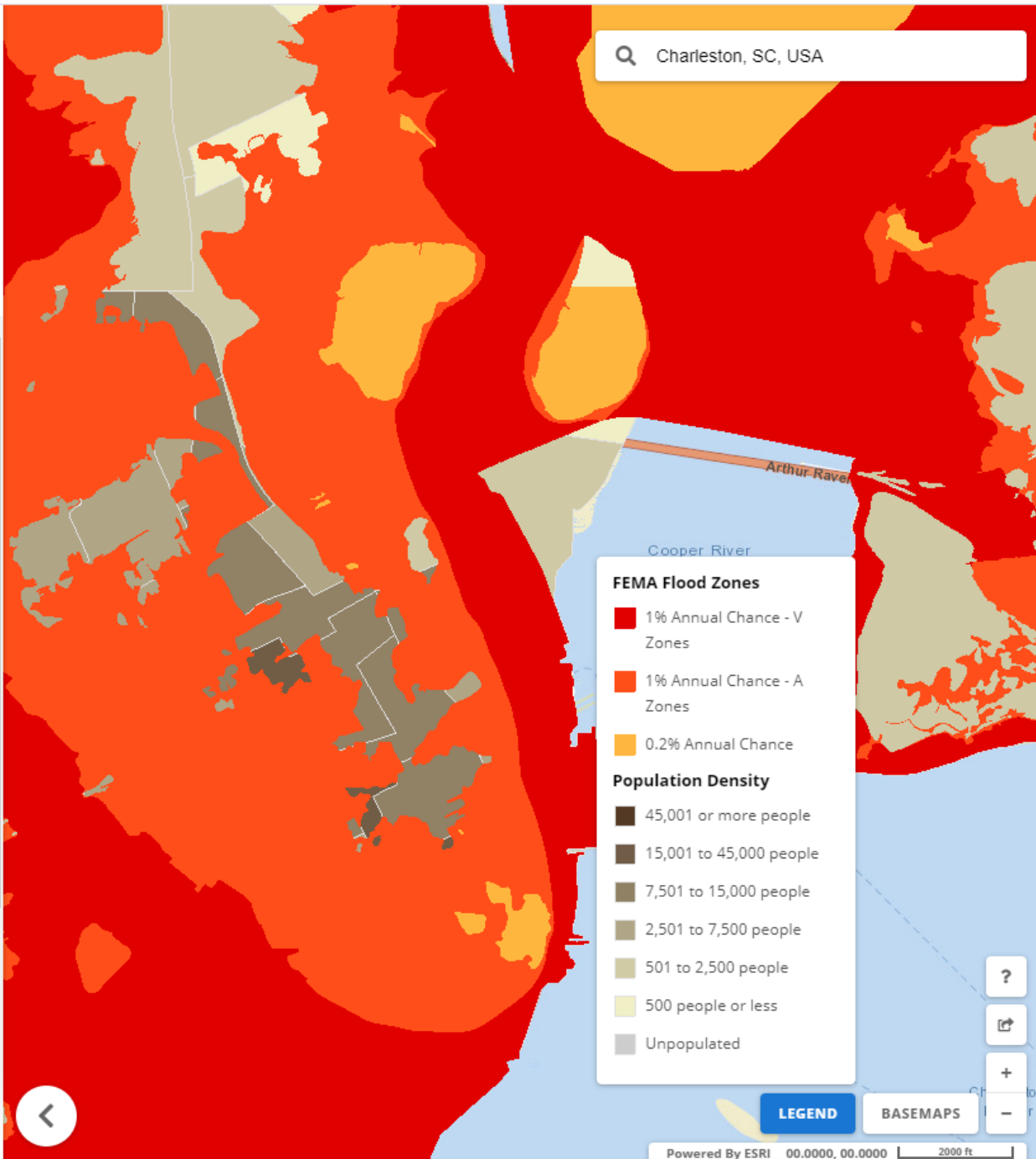
- | | | | |
|--------------------|-------------------------------------|--|--|
| Population Density | ☒ | | |
| Poverty | ☐ | | |
| Elderly | ☐ | | |
| Employees | ☐ | | |

INFRASTRUCTURE EXPOSURE

- | | | | |
|---------------------|--------------------------|--|--|
| Development | ☐ | | |
| Critical Facilities | ☐ | | |
| Developments | ☐ | | |

SAVE MAP

Charleston, SC, USA



Powered By ESRI 00.0000, 00.0000 2000 ft



CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 5

HAZARD LAYERS

- Coastal Flood Hazard Composite ☐
- High Tide Flooding ☐
- FEMA Flood Zones ☒
- Tsunami ☐
- Storm Surge ☐
- Sea Level Rise ☐

SOCIETAL EXPOSURE

- Population Density ☒
- Poverty ☐
- Elderly ☐
- Employees ☐

INFRASTRUCTURE EXPOSURE

- Development ☐
- Critical Facilities ☐

SAVE MAP

Q Charleston, SC, USA

FEMA Flood Zones

- 1% Annual Chance - V Zones
- 1% Annual Chance - A Zones
- 0.2% Annual Chance

Population Density

- 45,001 or more people
- 15,001 to 45,000 people
- 7,501 to 15,000 people
- 2,501 to 7,500 people
- 501 to 2,500 people
- 500 people or less
- Unpopulated

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft

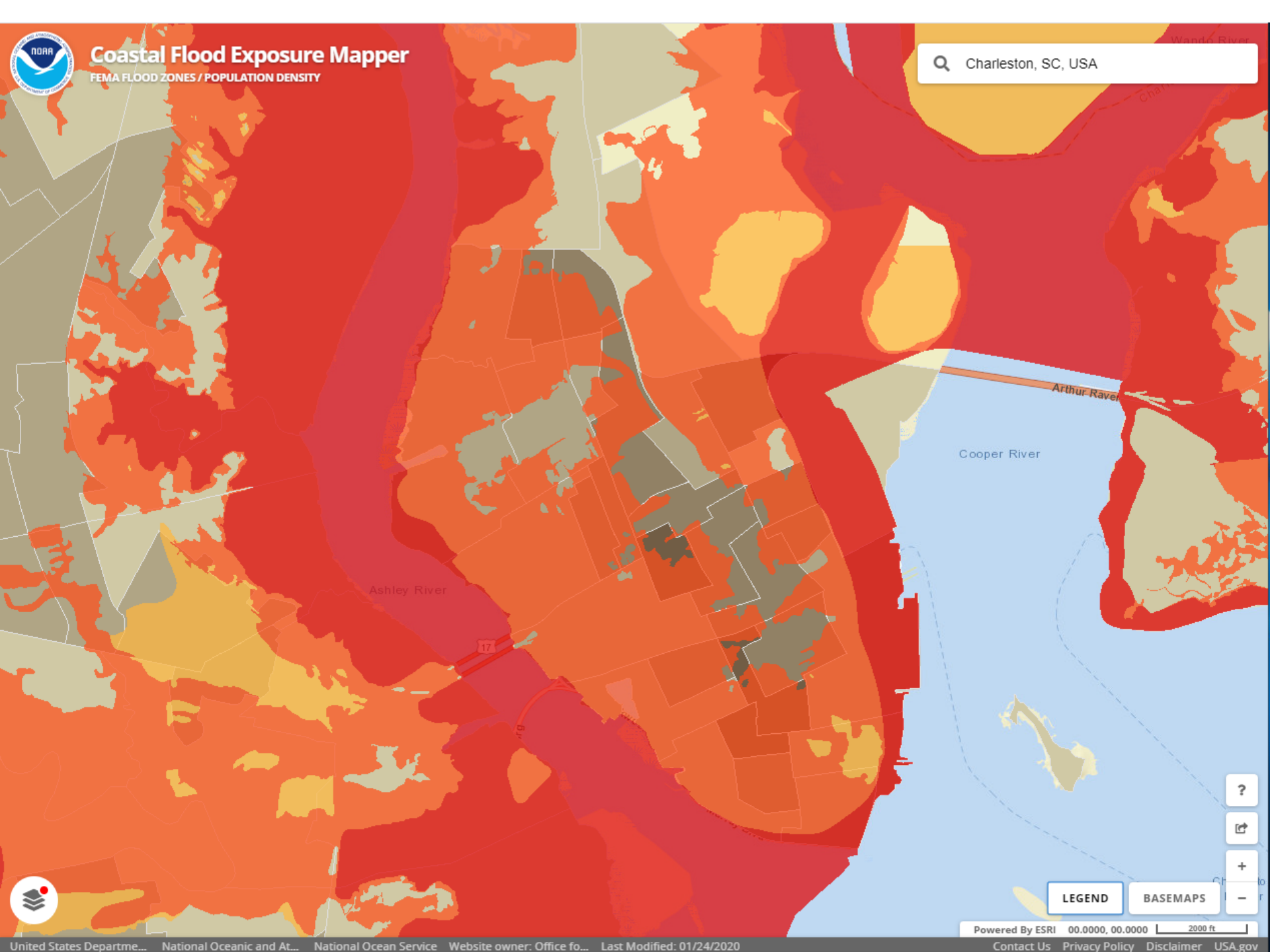


Coastal Flood Exposure Mapper

FEMA FLOOD ZONES / POPULATION DENSITY



Charleston, SC, USA



?



LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft



CREATE

My Map

ACTIVE LAYERS

SAVED MAPS **6**

Sea Level Rise



SOCIETAL EXPOSURE

Population Density



Poverty



Elderly



Employees



INFRASTRUCTURE EXPOSURE

Development



Critical Facilities



Development Patterns



ECOSYSTEM EXPOSURE

Natural Areas and Open Space



Potential Pollution Sources



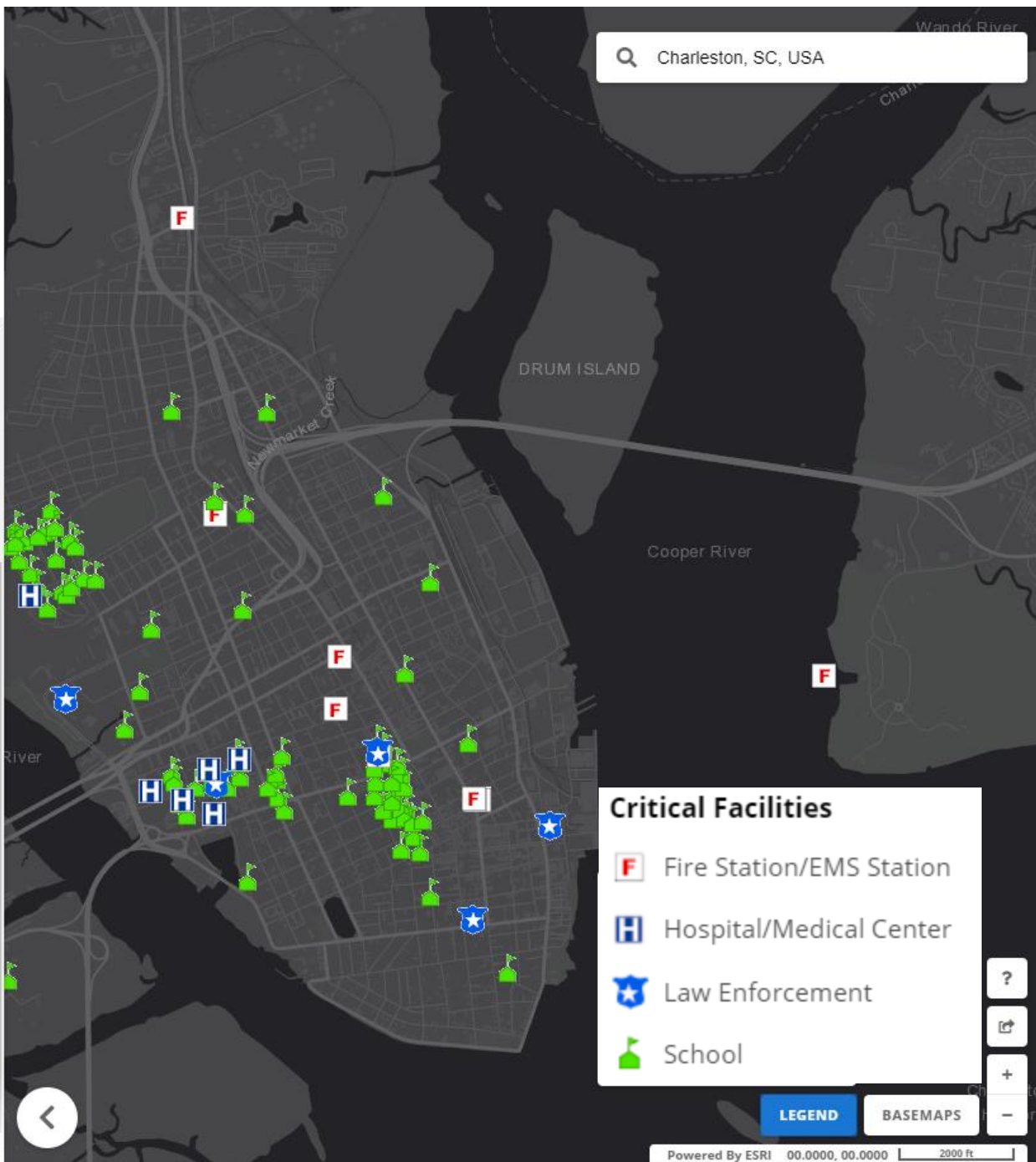
Natural Protection



Wetland Potential



SAVE MAP





CREATE

My Map

ACTIVE LAYERS

SAVED MAPS **6**

Sea Level Rise



SOCIETAL EXPOSURE

Population Density



Poverty



Elderly



Employees



INFRASTRUCTURE EXPOSURE

Development



Critical Facilities



Development Patterns



ECOSYSTEM EXPOSURE

Natural Areas and Open Space



Potential Pollution Sources



Natural Protection



Wetland Potential



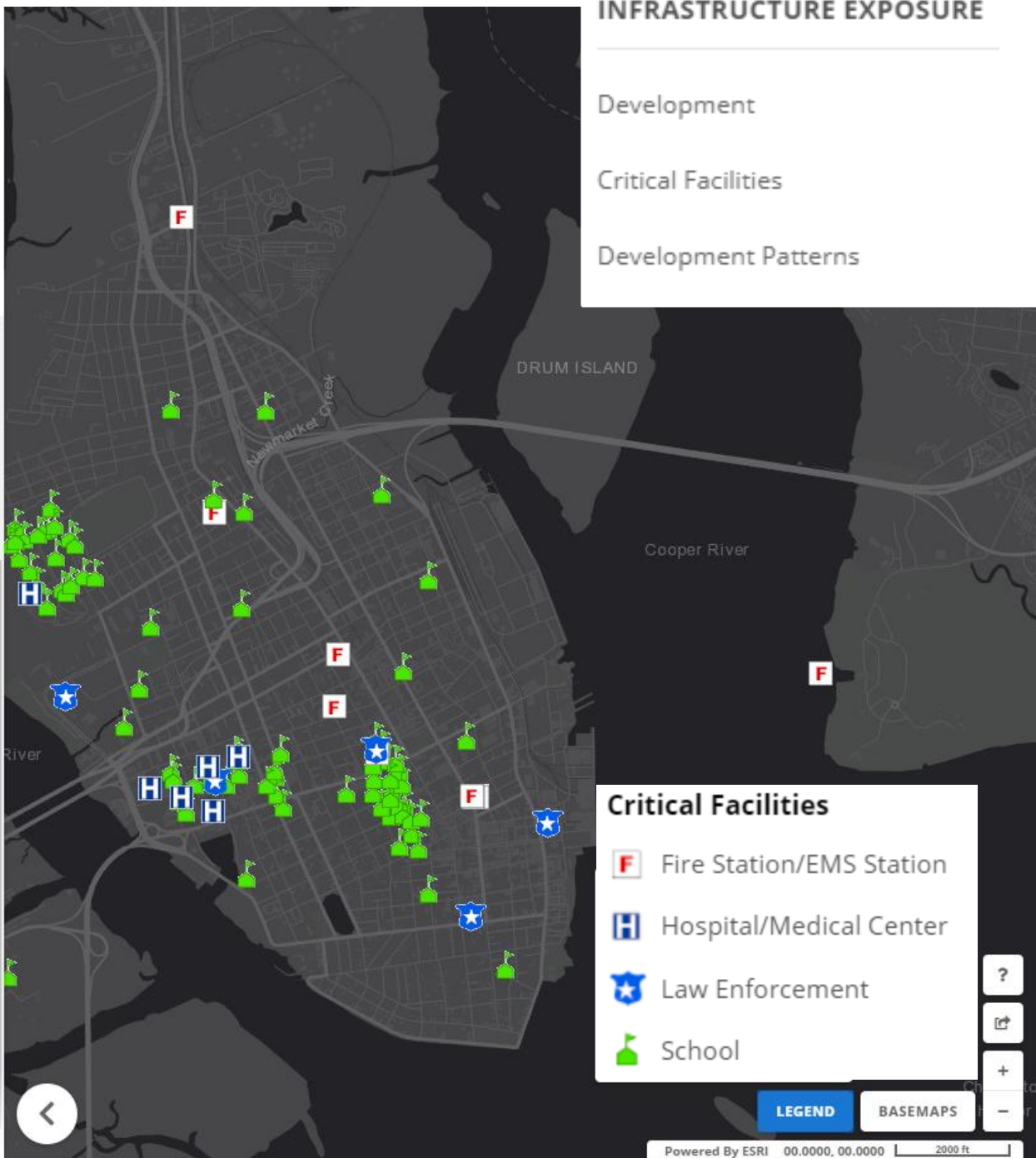
SAVE MAP

INFRASTRUCTURE EXPOSURE

Development

Critical Facilities

Development Patterns



Critical Facilities

F Fire Station/EMS Station

H Hospital/Medical Center

★ Law Enforcement

🚩 School

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2000 ft



CREATE

My Map

ACTIVE LAYERS

SAVED MAPS 6

Coastal Flood Hazard Composite



High Tide Flooding



FEMA Flood Zones



Tsunami



Storm Surge



Sea Level Rise



SOCIETAL EXPOSURE

Population Density



Poverty



Elderly



Employees



INFRASTRUCTURE EXPOSURE

Development



Critical Facilities

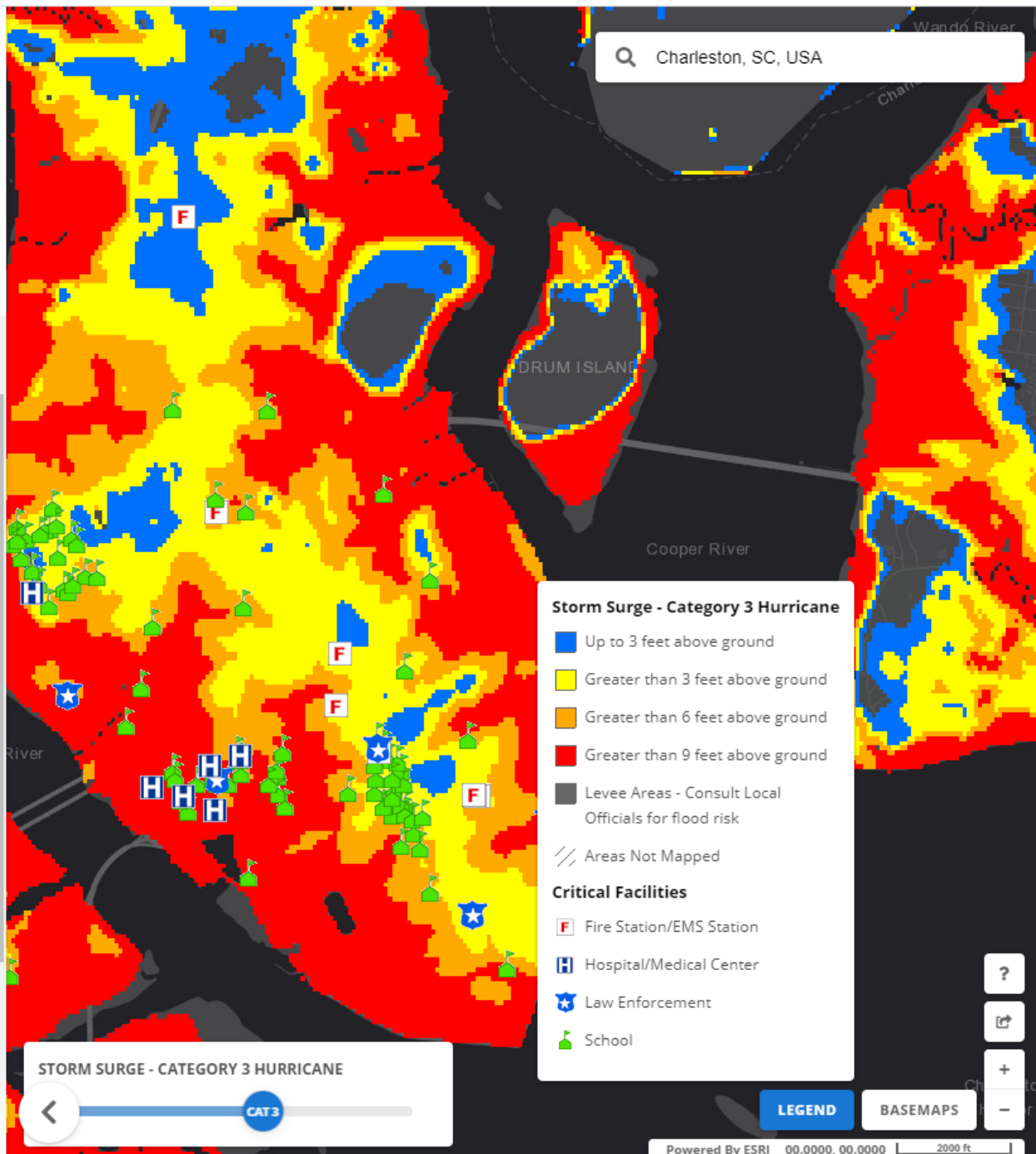


Development Patterns



ECOSYSTEM

SAVE MAP



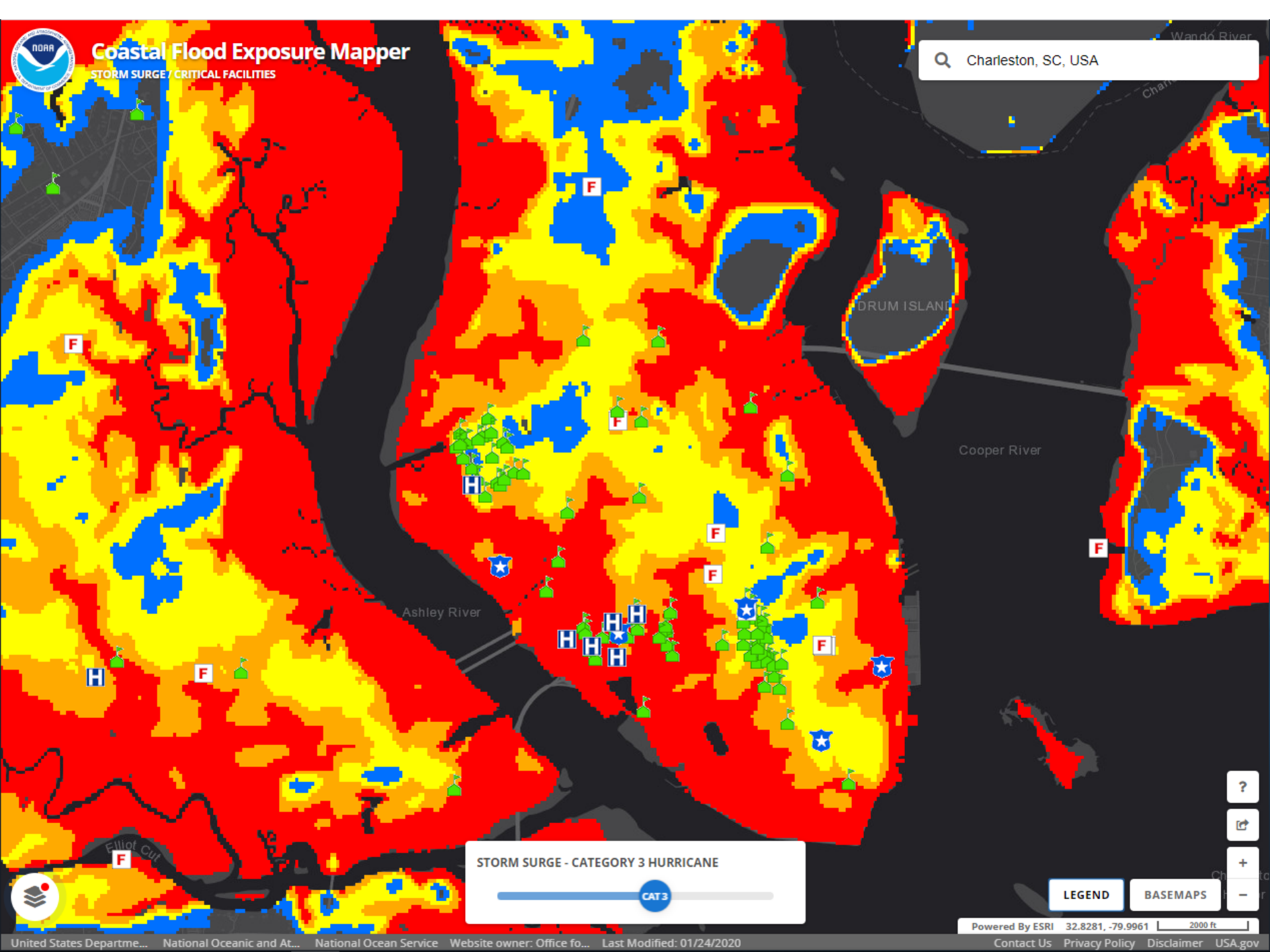


Coastal Flood Exposure Mapper

STORM SURGE / CRITICAL FACILITIES



Charleston, SC, USA



STORM SURGE - CATEGORY 3 HURRICANE



LEGEND

BASEMAPS

Powered By ESRI 32.8281, -79.9961

2000 ft



MANAGE

Saved Maps

ACTIVE LAYERS

SAVED MAPS 7



2/28/2020

Coastal Flood Hazard Composite

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2/28/2020

High Tide Flooding

Click to add a custom description



SHARE COLLECTION



Charleston, SC, USA

Charleston Harbor

JOHNS ISLAND

JAMES ISLAND

LONG ISLAND

Stono River

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



MANAGE

Saved Maps

ACTIVE LAYERS

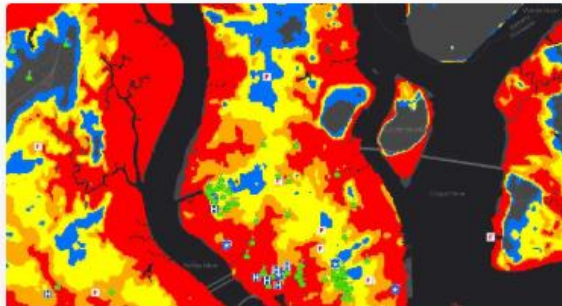
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description



2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

Click to add a custom description

SHARE COLLECTION



Charleston, SC, USA

Charleston Harbor

JOHNS ISLAND

JAMES ISLAND

LONG ISLAND

Stono River

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



MANAGE

Saved Maps

ACTIVE LAYERS

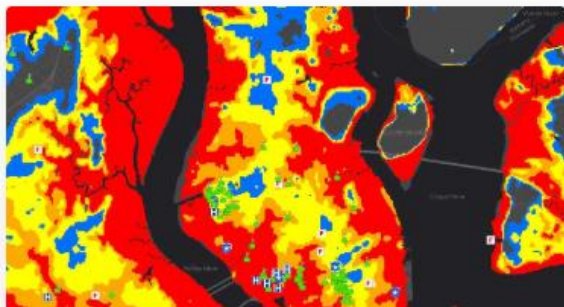
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description



2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

Click to add a custom description

SHARE COLLECTION



Charleston, SC, USA



Charleston Harbor

JOHNS ISLAND

JAMES ISLAND

LONG ISLAND

Stono River

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



MANAGE

Saved Maps

ACTIVE LAYERS

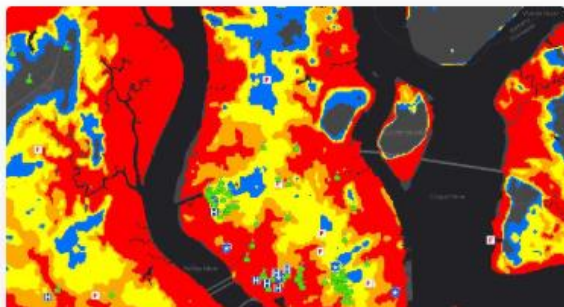
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description

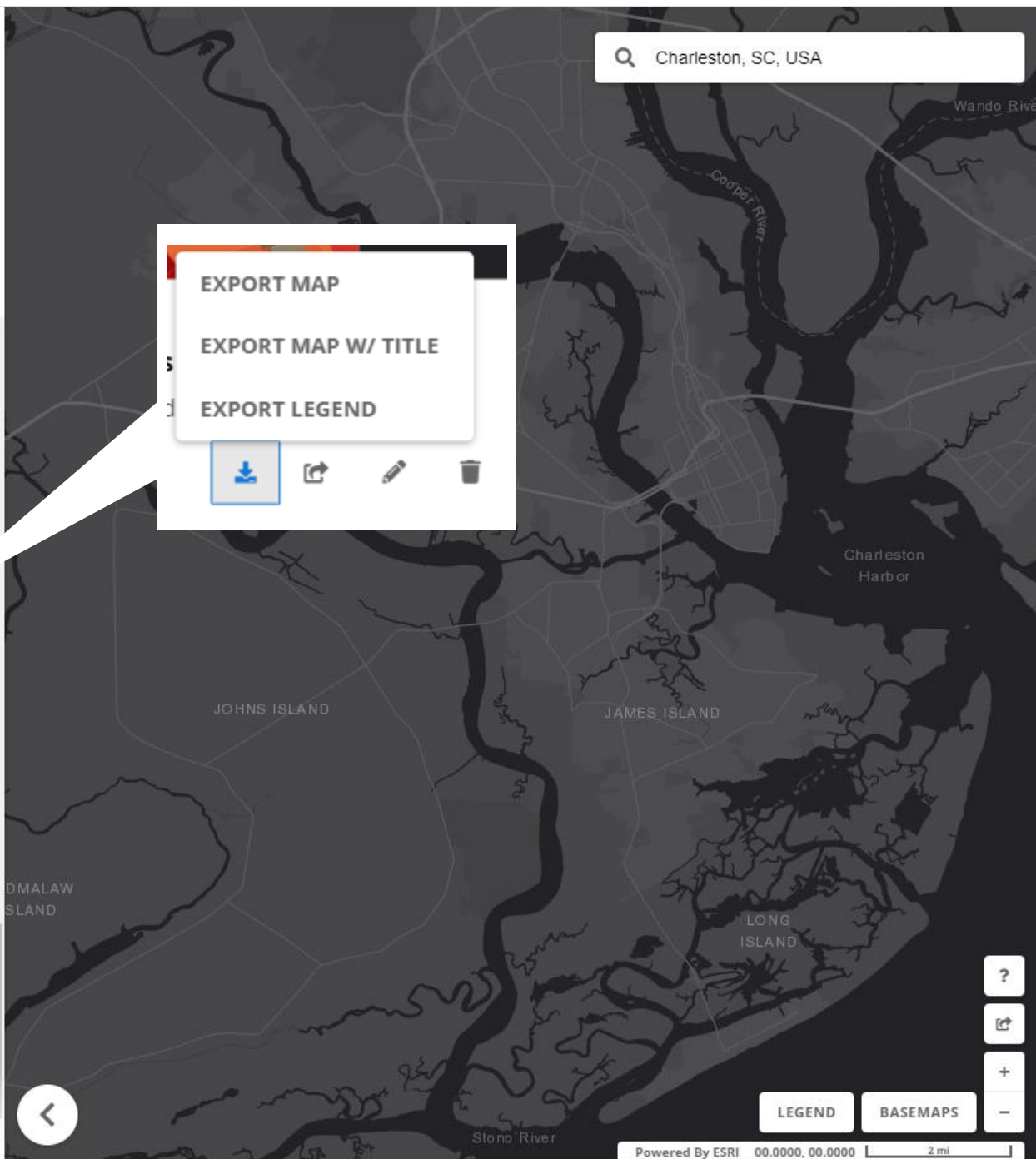


2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

Click to add a custom description

SHARE COLLECTION



Charleston, SC, USA

EXPORT MAP

EXPORT MAP W/ TITLE

EXPORT LEGEND



LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



MANAGE

Saved Maps

ACTIVE LAYERS

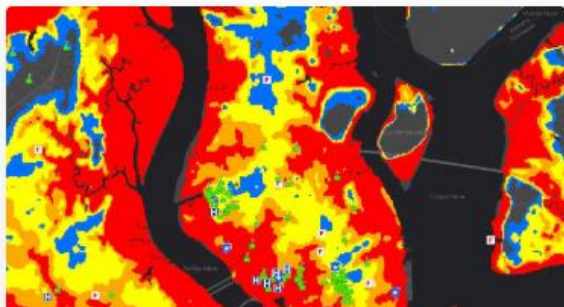
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description

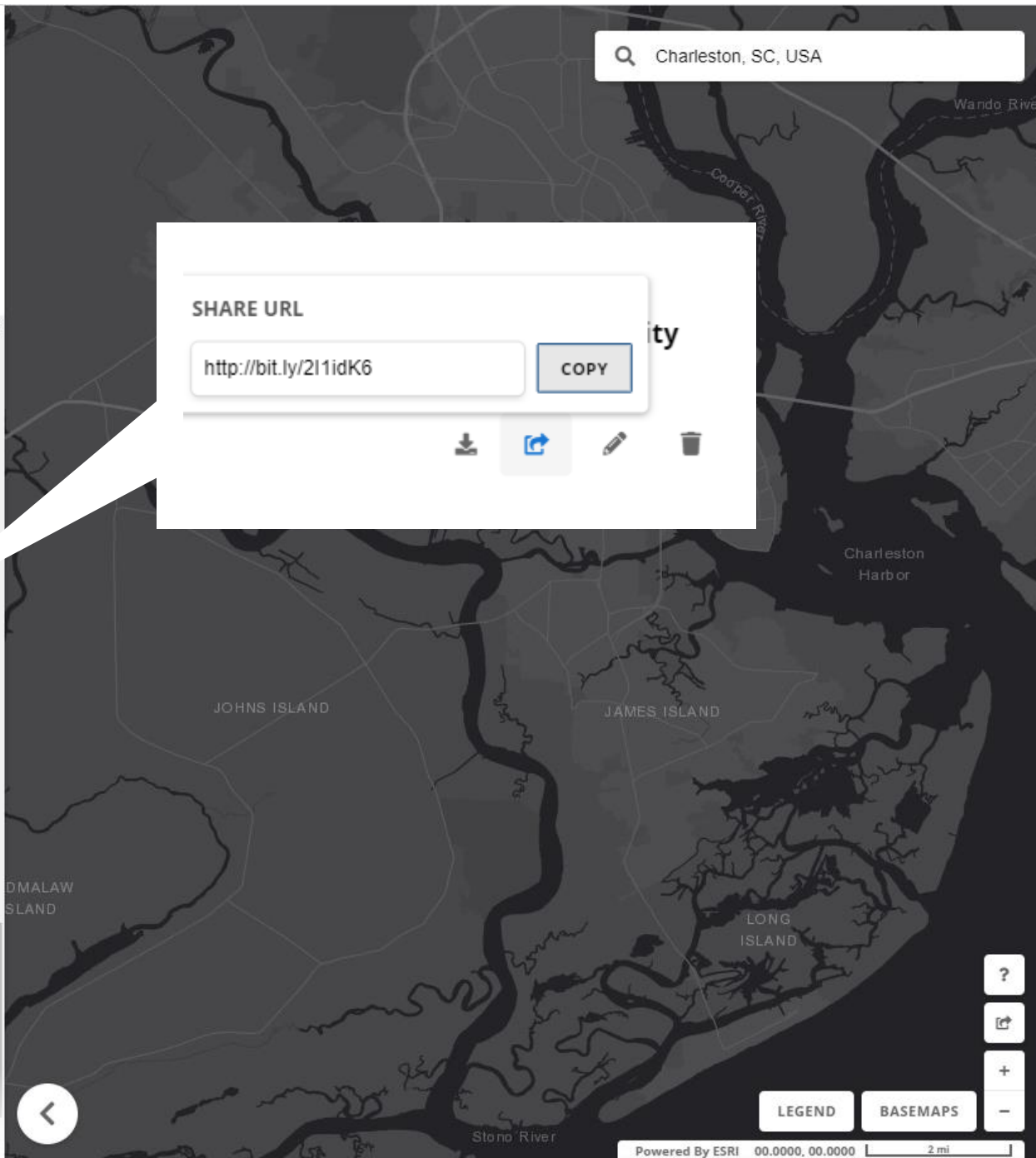


2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

Click to add a custom description

SHARE COLLECTION



Charleston, SC, USA

SHARE URL

<http://bit.ly/2l1idK6>

COPY



LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



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ACTIVE LAYERS

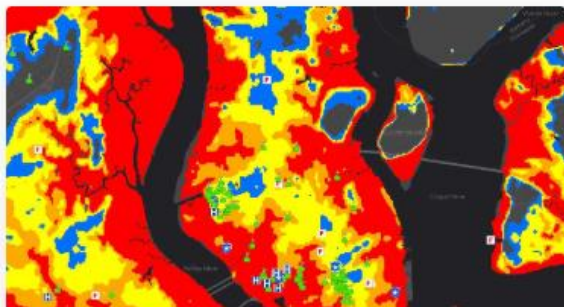
SAVED MAPS **7**



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description

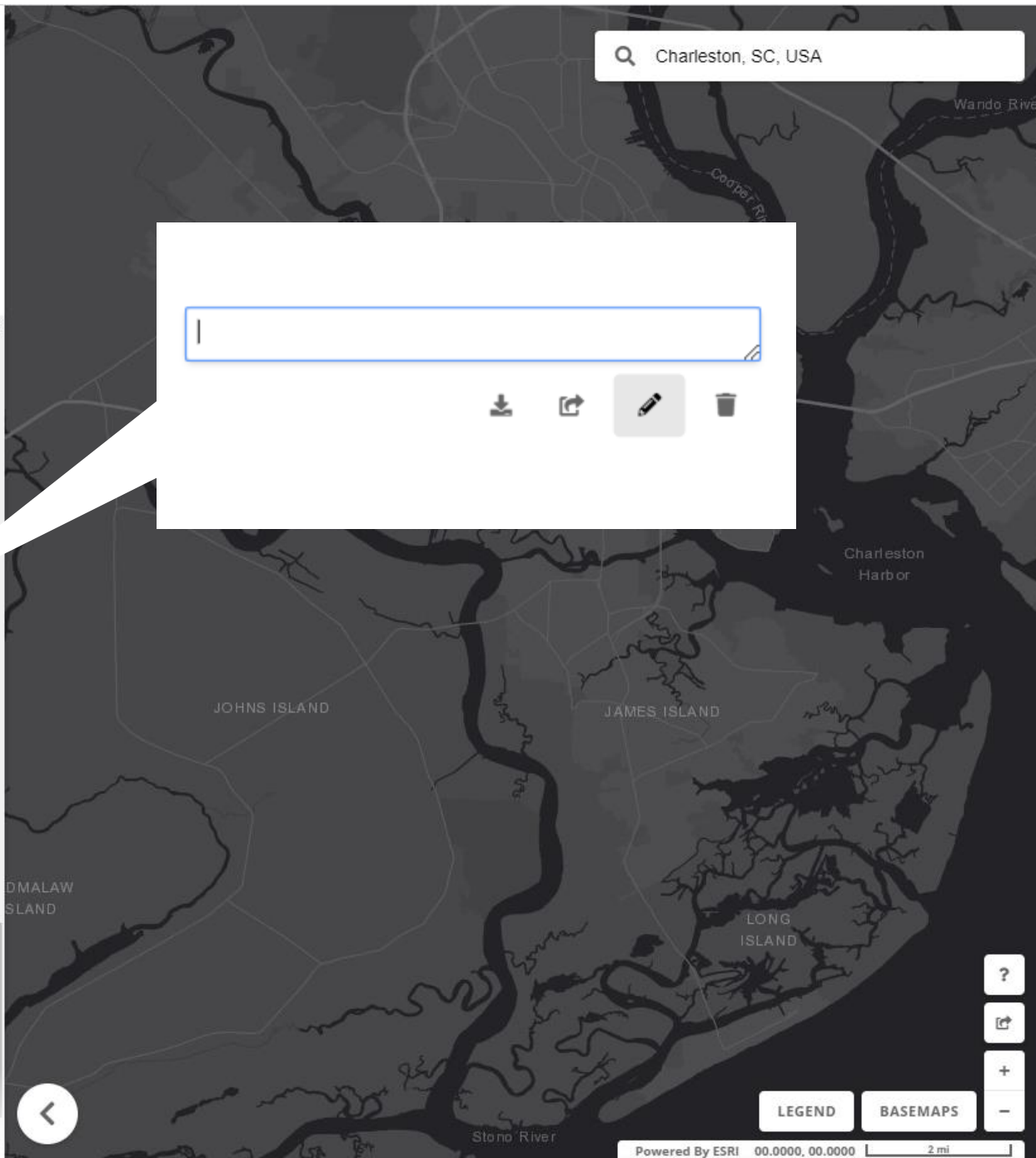


2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

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Charleston, SC, USA



LEGEND

BASEMAPS

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ACTIVE LAYERS

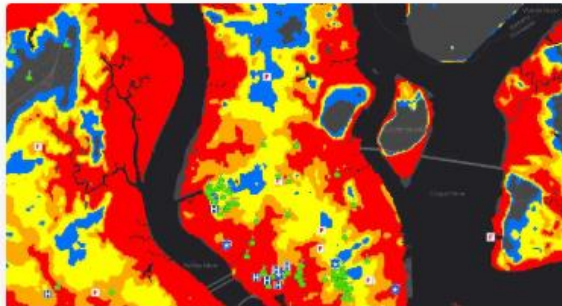
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description



2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

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SHARE COLLECTION



Charleston, SC, USA

SHARE COLLECTION

LEGEND

BASEMAPS

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Charleston, SC, USA

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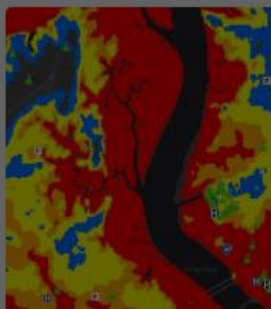
ACTIVE LAYERS



2/28/2020

FEMA Flood Zones /

Click to add a custom des



2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

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LEGEND

BASEMAPS

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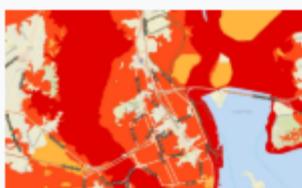
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Coastal Flood Hazard Composite
<http://bit.ly/2wOWdzA>



High Tide Flooding
<http://bit.ly/38aHb4h>



FEMA Flood Zones
<http://bit.ly/32CRJbq>

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COPY ALL



MANAGE

Saved Maps

ACTIVE LAYERS

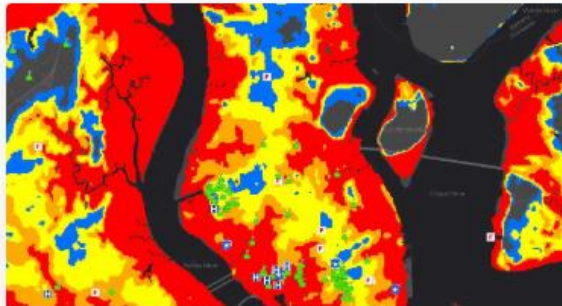
SAVED MAPS 7



2/28/2020

FEMA Flood Zones / Population Density

Click to add a custom description



2/28/2020

Storm Surge - Category 3 Hurricane / Critical Facilities

Click to add a custom description

SHARE COLLECTION



Charleston, SC, USA

Wando River

Cooper River

Charleston Harbor

JOHNS ISLAND

JAMES ISLAND

LONG ISLAND

Stono River

?

+

+

-

LEGEND

BASEMAPS

Powered By ESRI 00.0000, 00.0000 2 mi



MANAGE

Saved Maps

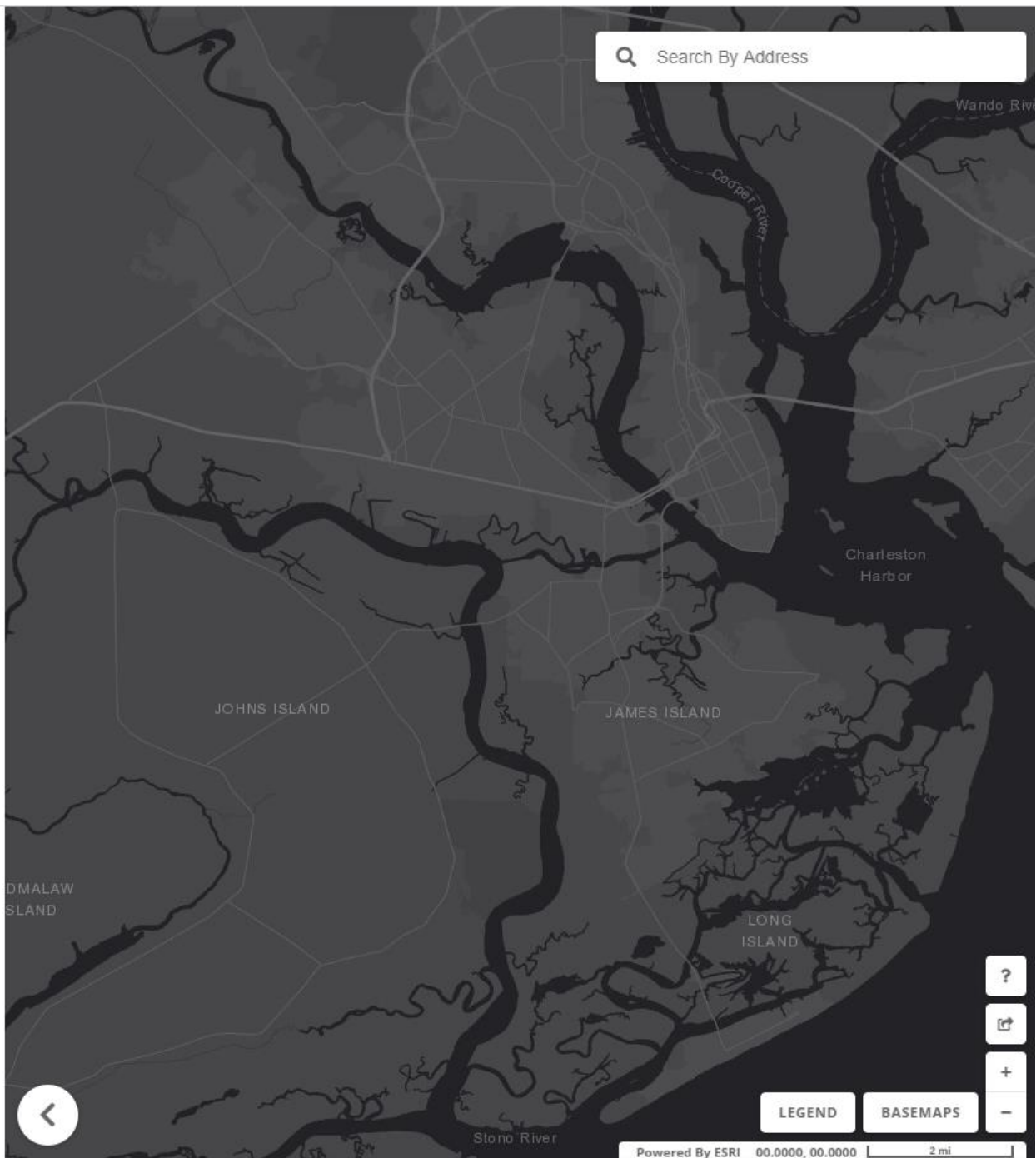
ACTIVE LAYERS

SAVED MAPS 0



There are no saved maps

Add layers to the map and click save map.



Questions?

David.Betenbaugh@noaa.gov