

South Carolina Office of Resilience State & Local Resilience Planning



Agenda

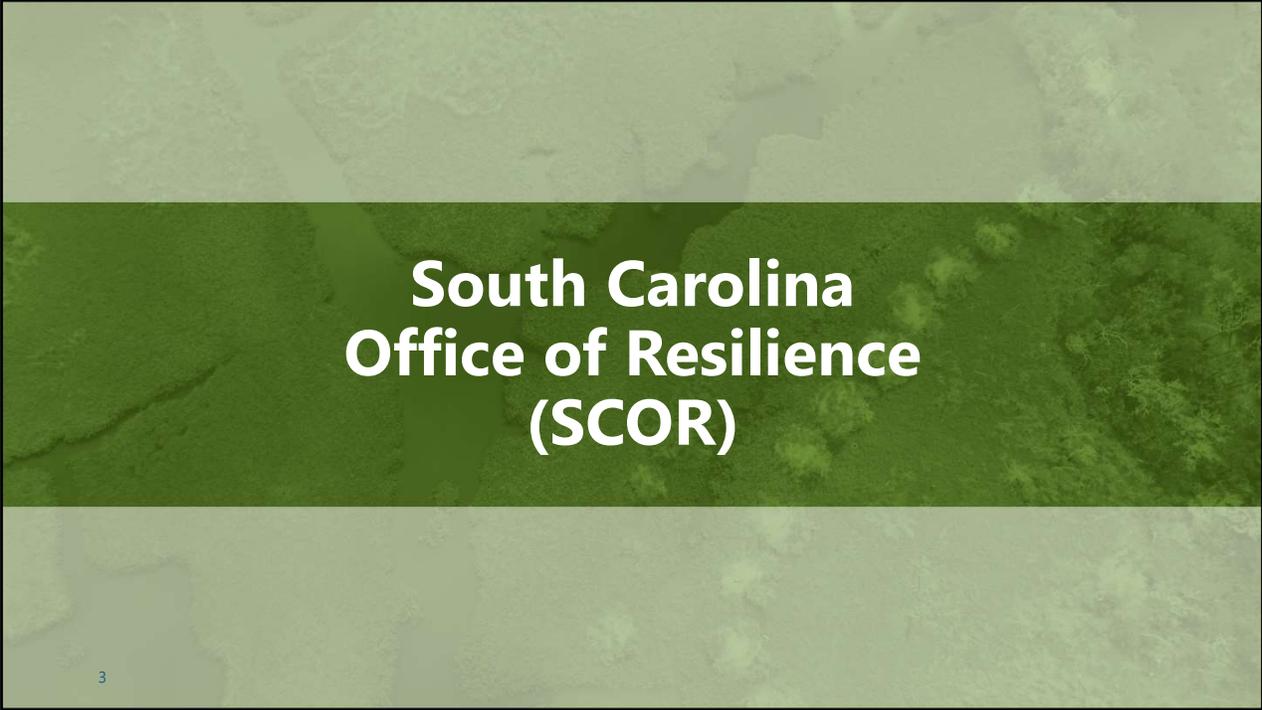
- South Carolina Office of Resilience
- Strategic Statewide Resilience & Risk Reduction Plan
- Resilience Elements in Comprehensive Plans
- Resources for Communities
 - Resources from SCOR and Partners
 - Future Resources



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What we'll be talking about

- office, how it came about
- SCOR duties related to the resilience plan
- How you can plan on a local level
 - Resilience element in comp plan
 - Resources we and partners have for you
 - What we want to do in the future to help you



**South Carolina
Office of Resilience
(SCOR)**

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Previously the Disaster Recovery Office

Timeline

- **2015** - Flooding Associated with Hurricane Joaquin, Disaster Recovery Office created
- **2016** - Hurricane Matthew
- **2018** - Hurricane Florence
- **October 2018** - Floodwater Commission Established
- **September 2020** - Disaster Relief and Recovery Act
 - created SCOR, directed to develop & implement the state resilience plan
- **April 2021** - Ben Duncan confirmed as Chief Resilience Officer
- **July 2021** - SCOR receives state funding
- **August 2021** - Resilience Planning Director Hired
- **September –November 2021** - Planning Staff Hired



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Timeline of recent major storms, and timeline of how SCOR was established as state agency

Related Resources

- History of SCOR: <https://scor.sc.gov/resilience/history>
- Floodwater Commission:
- Governor McMaster established the South Carolina Floodwater Commission by [Executive Order 2018-50](#).
 - The Commission was charged with developing short- and long-term recommendations to alleviate and mitigate flood impacts to the state with special emphasis on communities located near the coast or rivers.
- Disaster Relief and Recovery Act ([SC Code §48-62](#)).
 - The act created the South Carolina Office of Resilience (SCOR) The Act directed SCOR to develop Implement the Strategic Statewide Resilience and Risk Reduction Plan (SSRRRP).

Disaster Recovery Programs (CDBG-DR)

Disaster Grant	2015 Severe Storm	2016 Hurricane Matthew	2018 Hurricane Florence
Grant Authority	HUD	HUD	HUD
Grant Amount	\$126 Million	\$95 Million	\$72 Million
Service Area	22x IA Declared Counties (8x MIDs)	24x IA Declared Counties (4x MIDs)	8x IA Declared Counties (3x MIDs)

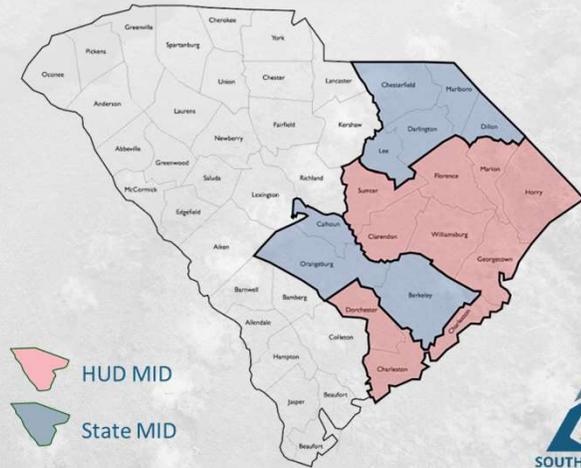


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- Address long term unmet needs after a disaster
- Constructed completed in the 2015 program in October 2021 (1830 homes)
- Webpage: <https://scor.sc.gov/programs/disaster-recovery>

Mitigation Program

Program	Allocation
Infrastructure	\$100,000,000
Housing Buyouts	\$35,000,000
Match*	\$5,000,000
Planning*	\$13,000,000



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*accepting applications, go to <https://scor.sc.gov/mitigation> for more information

- Webpage: <https://scor.sc.gov/mitigation>
- mitigation activities that will increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future disasters.

Plans & Studies:

- Identify flood reduction projects that can be funded through infrastructure
- Hazard Mitigation Plans update
- Resilience Plan/Element

Buyouts:

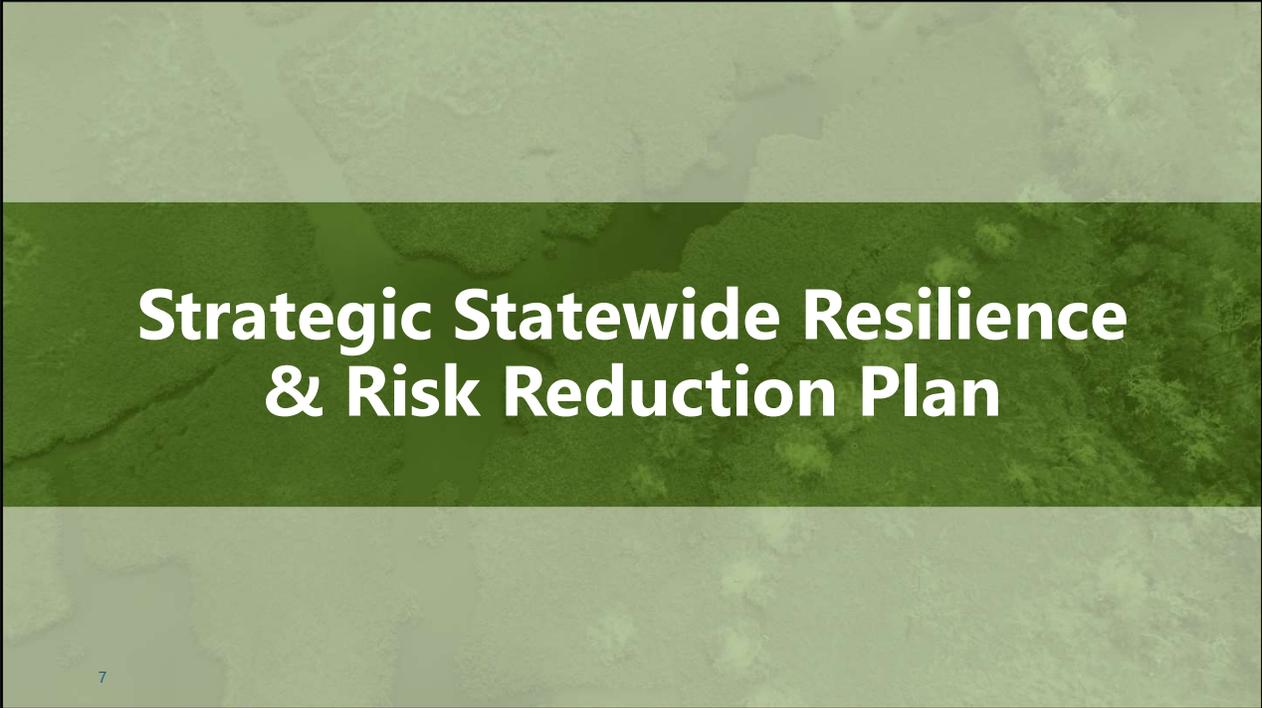
- Coordinated through counties and municipalities
- Targeted communities in the floodplain

Infrastructure

- Public infrastructure to reduce future flood risk (does not include maintenance)

Match

- Provides local match funds required for federal grants (generally 25% local match) allowing access for smaller communities.

The image features a central rectangular area with a background of an aerial photograph of a forest. A semi-transparent map of a state is overlaid on the top and bottom portions of this area. The text is centered in the middle of the forest image.

Strategic Statewide Resilience & Risk Reduction Plan

Legislative Guidance

- The Act stated that the plan should be developed with the principles recommended in the South Carolina Floodwater Commission Report.
- Intended to serve as a framework to guide state investment in flood mitigation projects. adopts programs and policies to protect the people and property of South Carolina from damage and destruction of extreme weather events.
- The Act directed that the initial version of the plan be completed by July 1, 2022. *



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Disaster Relief and Resilience Act (Section 48-62-30): https://www.scstatehouse.gov/sess123_2019-2020/bills/259.htm

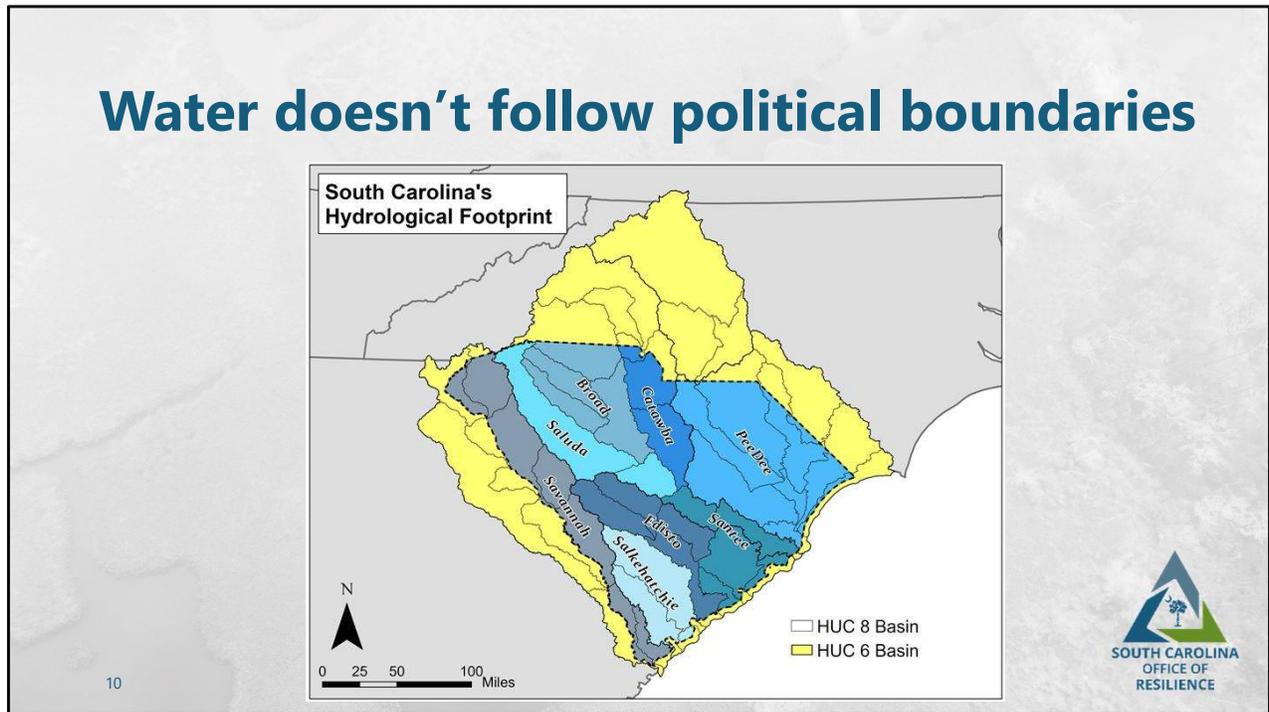
- "initial version of this plan shall be completed by July 1, 2022", however, there is a proviso in the state budget to extend the deadline to July 1, 2023 (as of 5/18/22)

Resilience Planning Assumptions

- The plan will not try to provide solutions to prevent changes to the climate but will offer recommendations for how the state may minimize the expected impacts from the anticipated extreme weather events.
- Resilience Planning will utilize an adaptive management approach so that it can adjust to changing conditions and integrate new data sources as they become available.
- Initial Plan recommendations will focus on flooding.
 - Other extreme weather events /disasters to be addressed in more detail in subsequent versions of the plan



Water doesn't follow political boundaries



Since water doesn't follow political boundaries, we are planning on the watershed scale, and considering those watersheds that are shared with neighboring states as seen in this map of the state's hydrological footprint.

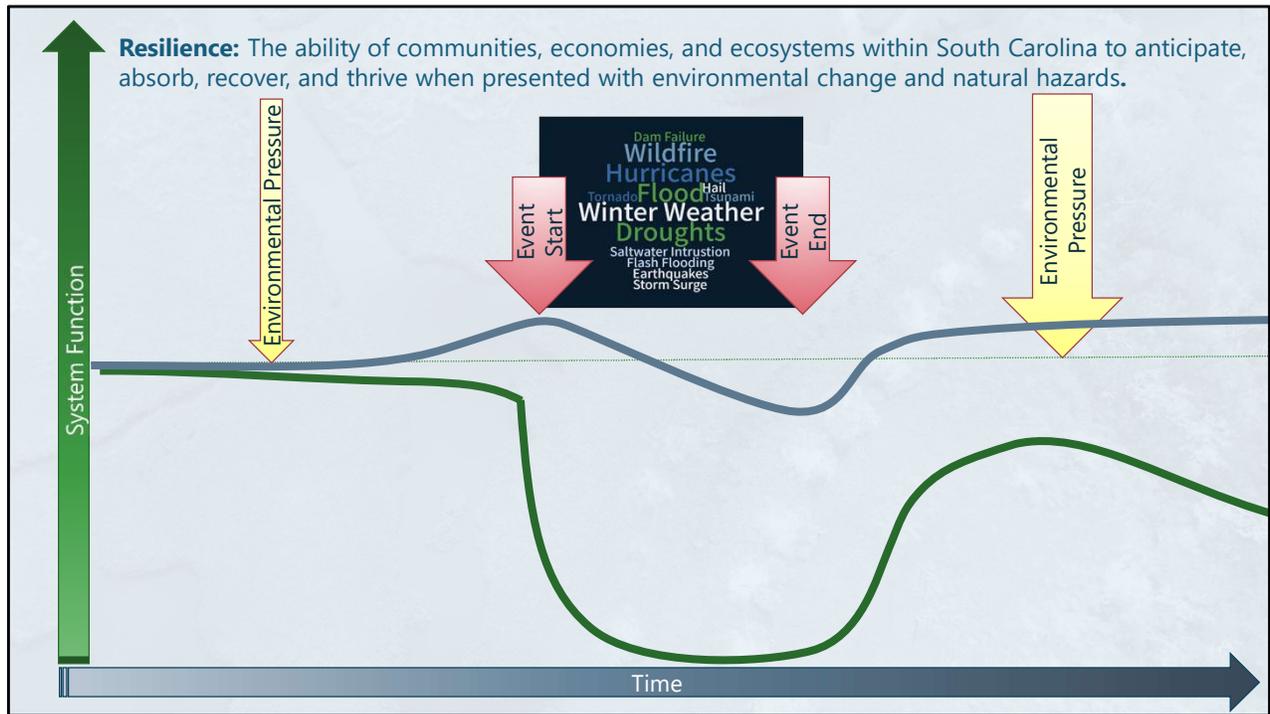
Resilience Definition

Resilience: The ability of communities, economies, and ecosystems within South Carolina to **anticipate**, **absorb**, **recover**, and **thrive** when presented with environmental change and natural hazards.

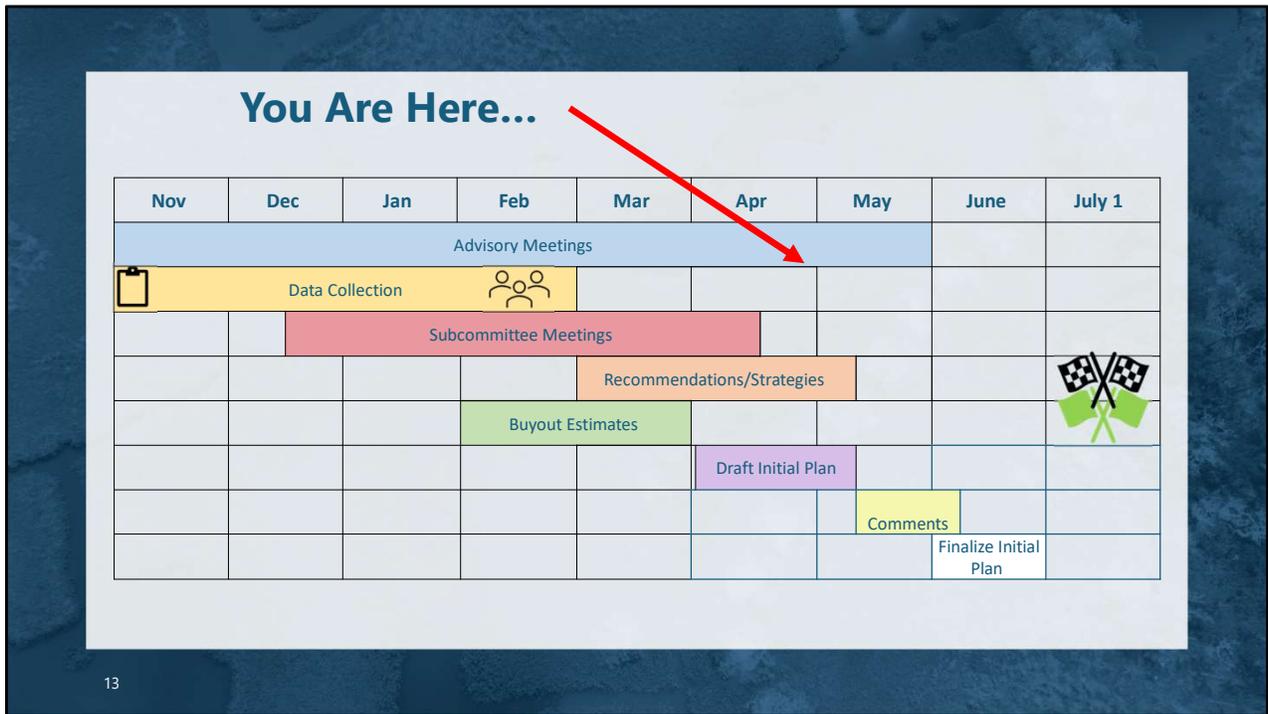


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This is our working definition of resilience. Our recommendations are organized based on the 4 concepts in the definition: anticipate, absorb, recover and thrive.



This graphic is a representation of a resilient system (top line) vs. a less resilient system.



With our short initial timeline, the following schedule allowed us to stay on track.

We have 6 subcommittees: environmental, economic, infrastructure, cultural resources, community services and building codes and zoning. These groups have been working to identify vulnerabilities & recommendations on how that sector can better anticipate, absorb, recover and thrive.

Outline

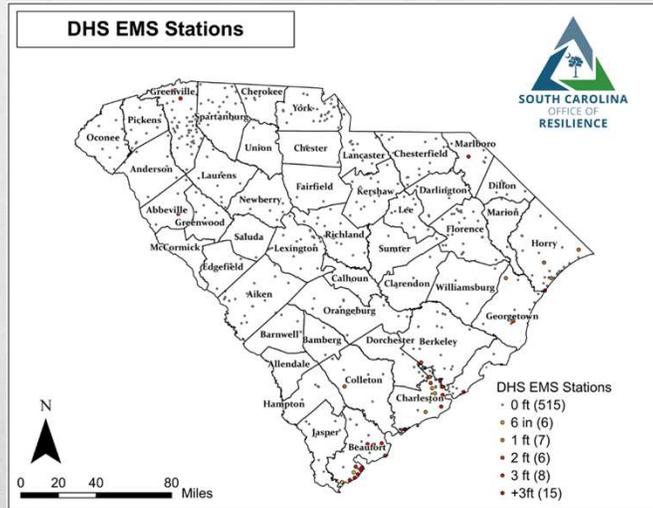
- Background
- Defining & Measuring Resilience
- Hazards Overview
- Climate Trends
- Population & Land Use Trends
- Current Processes
- Flood Vulnerability
- Funding
- Recommendations (Anticipate, Absorb, Recover, Thrive)



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This is currently how the plan document is organized.

Vulnerability Assessment (Example)



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We are using a flood risk data set from the First Street Foundation and overlaying it with as many data sets as we can to identify those facilities and sites most vulnerable to flooding now and in the future. The data set includes specific property level elevation and value to allow us to see specific inundation levels from various flood events.

Developing Recommendations



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We are organizing our recommendations by whether they help communities anticipate, absorb, recover, and thrive. This pie shows some of our draft recommendation themes and where they fit into this organization.

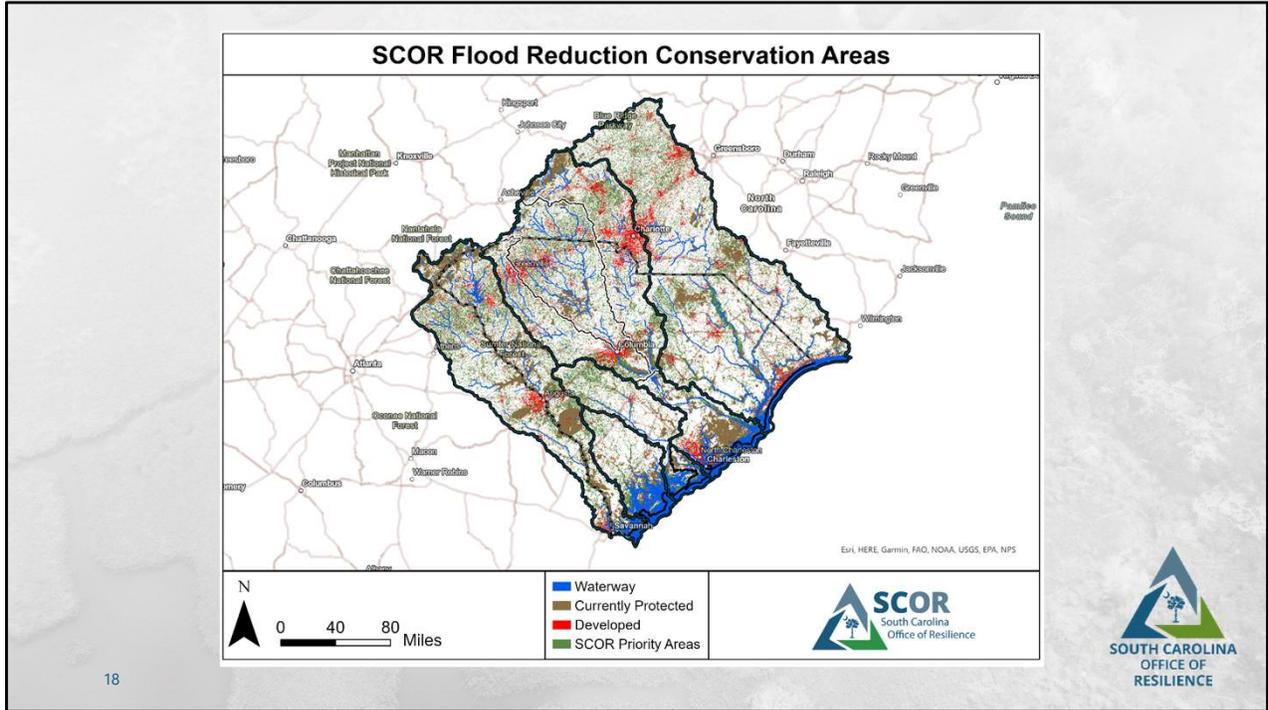
Conservation

- **Riverine:**
 - the land with the lowest runoff potential
 - areas with appropriate land use and good soils
 - potential for low runoff areas upstream to help those downstream
- **Coastal Non-Tidal:**
 - the land with the lowest runoff potential
- **Coastal Tidal:**
 - areas under two meters above sea level
 - allow for any rising tides, sea level, or marsh migration.
 - Similar to how the low runoff areas help to absorb impacts of heavy rain, these low-lying areas will allow the coast to absorb what the tides bring.



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This is the process we used to identify areas that should be conserved to mitigate flooding. Not to say these are the only areas important to conserve, but these areas would be most beneficial in reducing flood risk.



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Here is a statewide map showing these conservation areas. We plan to make downscaled versions of this map for easier use by communities.

Buyout Estimate

Tier	Criteria	Count	Value
1	<ul style="list-style-type: none"> • Repetitive Loss in FEMA Floodway and seaward of SCDHEC Setback • Repetitive Loss in FEMA Floodway 	170	\$51,224,395
2	<ul style="list-style-type: none"> • Seaward of SCDHEC Baseline • Properties in Floodway 	5,700	\$1,272,157,742
3	<ul style="list-style-type: none"> • Seaward of SCDHEC Setback • FEMA Repetitive Loss 	3,503	\$1,412,369,377
4	<ul style="list-style-type: none"> • Properties flooding >6ft in 2021 Scenario 	29,385	\$9,711,484,513
5	<ul style="list-style-type: none"> • Properties flooding >6ft in 2051 Scenario 	16,775	\$6,649,508,995



The legislation specifically asked for us to estimate the number and cost of residential properties that may be appropriate for buyouts. This table shows our identified criteria and the number and value of those properties.

Resilience Planning – Public Outreach

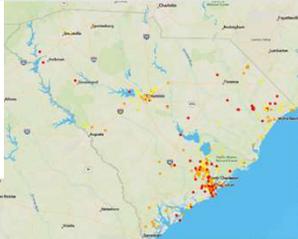
1.

Survey

Public can **identify areas where they've experienced flooding** on a map



Nearly 500
responses received



2.

Q&A

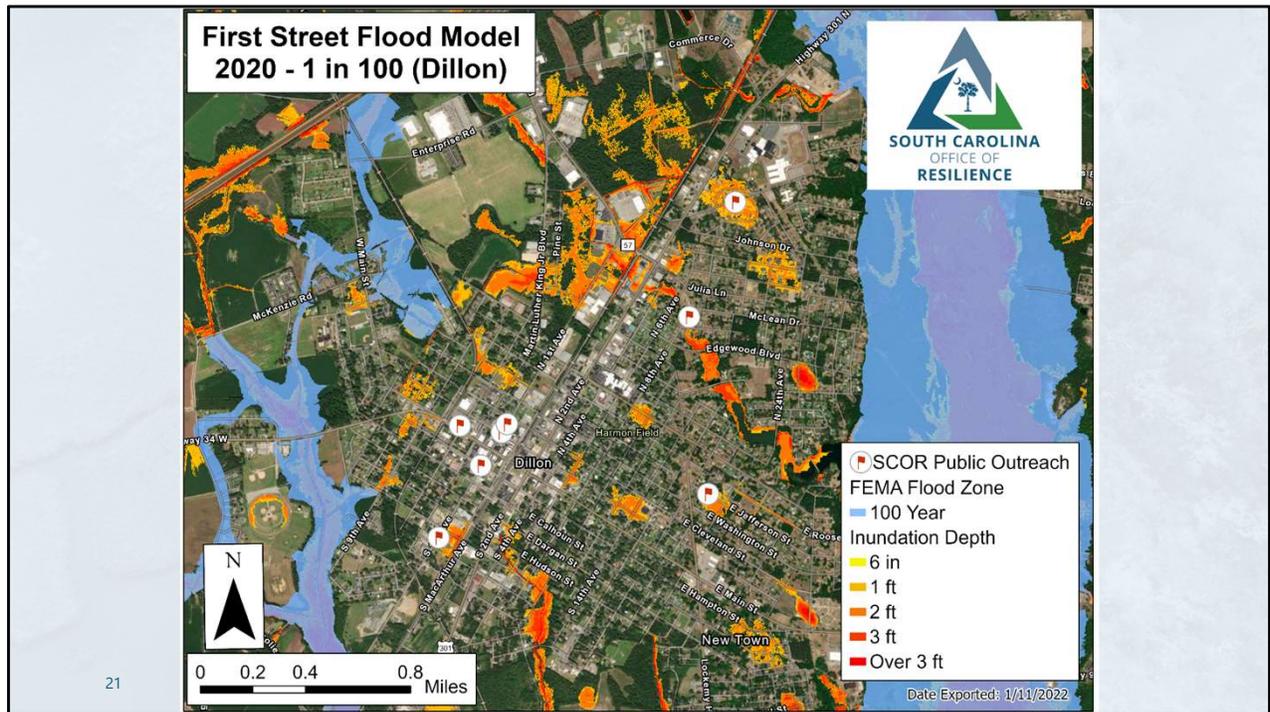
- Citizens can submit **questions/comments** via email, web, social media
- Virtual weekly **“office hours”** – citizens can speak with Resilience planning team member directly

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More info at scor.sc.gov/resilience.

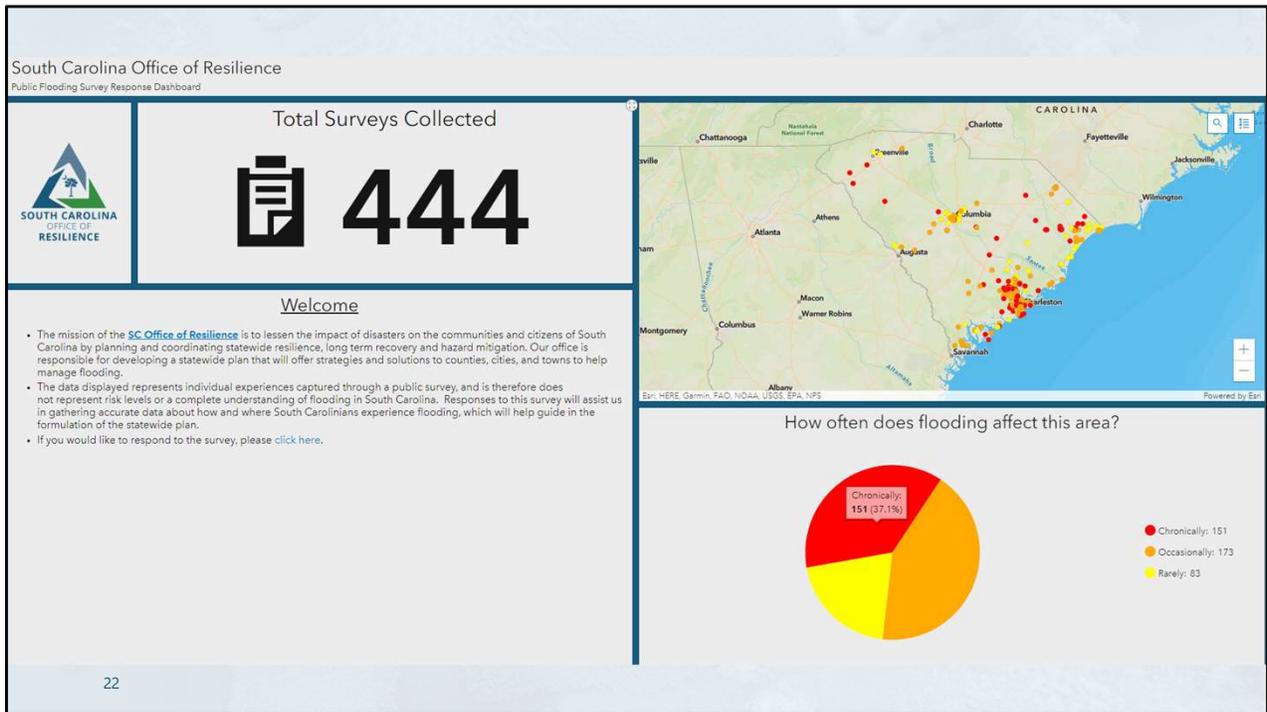


Part of our public outreach has been a survey where the public can identify where they have experienced flooding. Use the QR code or this link to fill out the survey and share: <https://survey123.arcgis.com/share/58d1be8df8004aaaae917395d2a9a2a3>



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We are taking these survey results and seeing a correlation between areas identified by our First Street flood model and observed flooding. Many people are experiencing flooding outside of the FEMA identified flood zone.



On our website, you can see the results of this survey.

<https://www.arcgis.com/apps/dashboards/6972b4799d7542fbb755adf9a9330cd4>



Resilience in Comprehensive Plans

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Legislative Guidance

1

A resilience element that considers the impacts of flooding, high water, and natural hazards on individuals, communities, institutions, businesses, economic development, public infrastructure and facilities, and public health, safety, and welfare

2

Planning that promotes resilient planning, design, and development

3

Element shall be developed in coordination with all preceding elements in SC Code Section 6-29-510 and integrated into the goals and strategies of each of the other plan elements

4

The local comprehensive planning entity must undertake an inventory of existing resilience conditions

*The words "undertake an inventory of resilience conditions" should be taken in their plain and ordinary meaning which would involve an itemization or listing of present conditions of the things or systems that enable a community to anticipate, absorb, recover, and thrive when presented with environmental change and natural hazards. As a starting point, SCOR suggests that communities begin by looking at the 7 **FEMA community lifelines** as well as **Baseline Resilience Indicators for Communities (BRIC)** which provides resilience characteristics and scores for all South Carolina counties (University of South Carolina, n.d.)*

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Planning which is coordinated with adjacent and relevant jurisdictions and agencies.

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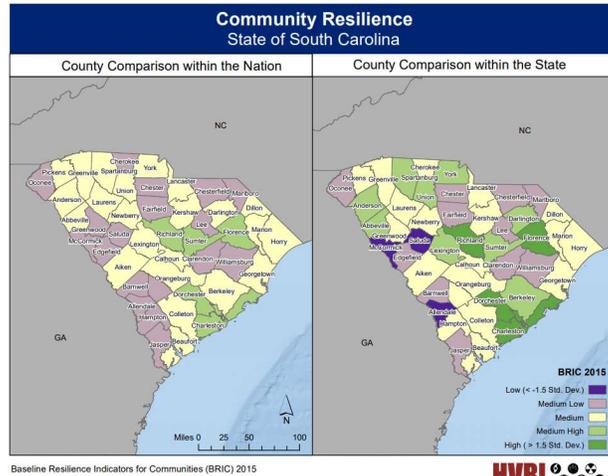


This slide shows the requirements under the law for Resilience elements now required to be in comprehensive plans. Our office will be working on further guidance and best management practices in the future.

<https://scor.sc.gov/sites/default/files/Documents/SCOR%20Guidance%20for%20Resilience%20in%20Comprehensive%20Plans%20%E2%80%93%20January%202022.pdf>

Resources

Resilience Indicators - How resilient is your community?



What are the drivers of resilience in your counties?



			SOCIAL	ECONOMIC	INFRASTRUCT	COMCAPITAL	INSTITUTION	ENVIRONMENT	BRIC_2015
1	GEO.ID	Name							
2324	45013	Beaufort County, South Carolina	0.630892169	0.425549295	0.21953746	0.285958266	0.446666384	0.661415787	2.670019361
2325	45015	Berkeley County, South Carolina	0.703379918	0.48238479	0.236639283	0.338286957	0.394433234	0.627687292	2.782811475
2326	45017	Calhoun County, South Carolina	0.641715919	0.477777243	0.190499154	0.378564	0.407419895	0.615680088	2.711656299

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<http://artsandsciences.sc.edu/geog/hvri/bric>

If you want to start looking at how resilient your community in and what areas drive this score, please see UofSC's BRIC indicators here: https://sc.edu/study/colleges_schools/artsandsciences/centers_and_institutes/hvri/data_and_resources/bric/index.php

Resources for Resilience Planning

- <https://scor.sc.gov/resilience/resources>

General
Data
Environmental
Community Services/Equity
Infrastructure
Economic Activity
Codes, Zoning, Regulations, and Planning
Funding Opportunities

 <p>South Atlantic Coastal Study - SC Appendix (PDF)</p>	<ul style="list-style-type: none"> • Study/data • Strategies for Grand Strand & Charleston Metro area 	<p>US Army Corps of Engineers South Atlantic Division</p>	<p>1/26/22</p>
 <p>SC Floodwater Commission Report (PDF)</p>	<ul style="list-style-type: none"> • Principles • General information 	<p>SC Floodwater Commission (created by Gov. McMaster)</p>	<p>1/26/22</p>
 <p>South Carolina Hazard Mitigation Plan (PDF)</p>	<ul style="list-style-type: none"> • General • Statewide plan 	<p>SC Emergency Management Division</p>	<p>1/26/22</p>



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Our website contains a list of resources for resilience planning, organized by topic. <https://scor.sc.gov/resilience/resources>

sceagrants.org/resilience-planning/

Contact Us Search Q f t i

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South Carolina Resilience Planning Archive

The S.C. Sea Grant Consortium is working to compile a comprehensive survey of resilience planning efforts across South Carolina, including state agencies, counties, municipalities, non-governmental organizations, colleges and universities, and private companies.

[GLOSSARY](#) [SUBMIT A REPORT](#) ←

Search the Archive

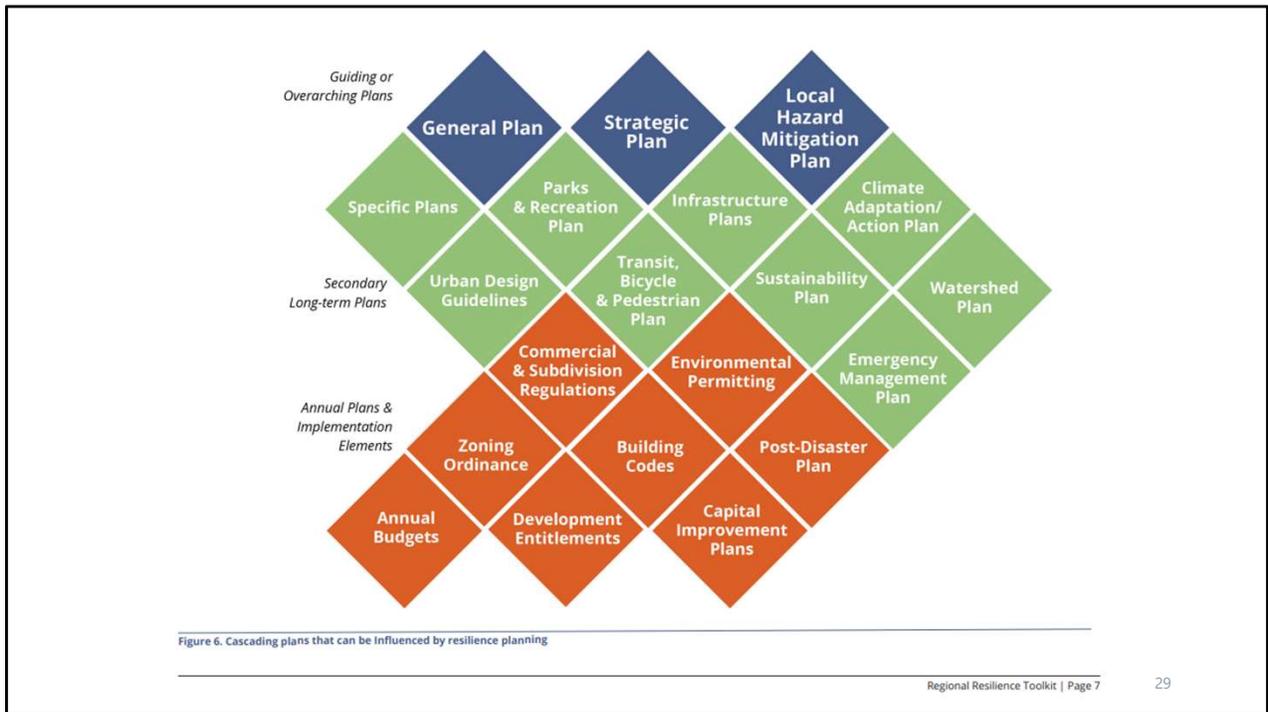
Publication Type Reset Show 25 per page Search:

Title	Year	Organization	Organization Type	Publication Type	Future Conditions Considered?	Link
SC Consolidated Annual Performance Evaluation Reports - Archive of Past Reports	2022	SC Dept. of Commerce	State Agency	Community Development Block Grant Mitigation Plan	No	View Report
South Carolina Forest Inventory & Analysis	2022	SC Forestry Commission	State Agency	Forestry Plan	No	View Report

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There is a lot of resilience related planning work going on in the state that planners can learn and draw from. Our partners at SC Sea Grant Consortium is maintaining an archive of these plans that can be easily searched and used from planners. You are also welcome to submit other plans your organization has put out or think would be helpful.

<https://www.sceagrants.org/resilience-planning/>



It isn't just comprehensive plans, resilience can be implemented through other plans. The image above shows all the types of plans and implementation strategies that can relate to resilience planning. https://www.epa.gov/sites/default/files/2019-07/documents/regional_resilience_toolkit.pdf

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NEWS & MEDIA

Newsletter

Check out previous editions of the SCOR newsletter.

Want to sign up to receive SCOR monthly newsletters? Sign up [here](#).

<p>February 2022</p>  <p>February 2022 Monthly Report</p> <p>February 8, 2022</p> <p>The SC Office of Resilience has held its first SCOR 2022 in January. Chief Resilience Officer Ben Custer visited State Park State Park to give an overview of SCOR in a session at the SC East Park Resilience Summit. Meeting on resilience SC Resilience Conference attendees in March. The SCOR Regional Resilience Summit is a virtual meeting in January 2022 and is open to all SCOR members.</p> <p>Looking forward, SCOR will continue to focus on development of the next Resilience Plan, increasing the resilience capabilities of the Hurricane Resilience housing recovery program, supporting the Hurricane Resilience housing recovery program and continued development of the Resilience Hub and State Park State Park Resilience Summit.</p> <p>Resilience Planning</p> 	<p>January 2022</p>  <p>January 10, 2022 Monthly Report</p> <p>Over the past few days, the SC Office of Resilience and Ben Custer have been busy with a lot of work to ensure the things that you, the public, want to happen are being done. We have been busy with a lot of work to ensure the things that you, the public, want to happen are being done. We have been busy with a lot of work to ensure the things that you, the public, want to happen are being done.</p> <p>As you know, we have been busy with a lot of work to ensure the things that you, the public, want to happen are being done. We have been busy with a lot of work to ensure the things that you, the public, want to happen are being done.</p> <p>As Ben Custer Resilience Officer, it is my responsibility to the SC Office of Resilience. We are grateful to Governor McMillan and his leadership in strengthening the program to help our most vulnerable and resilient and are the greatest in continuing to serve citizens across the state of South Carolina in a technological way.</p> <p>—Chief Resilience Officer Ben Custer</p> <p>If you want to update your email preferences or unsubscribe from this newsletter, visit here.</p> <p>Resilience Planning</p> <p>The SC Office of Resilience is responsible for developing the Strategic Resilience Roadmap and the Resilience Plan, which was publicly released in August 2021. SCOR is focused on developing recovery plans for State Parks and the State Park Resilience Summit, as well as other State Parks, and coastal State Parks, and population and emergency events that impact our most vulnerable.</p> <p>Throughout the fall, the resilience team has been gathering and compiling data and conducting field visits. We are currently in the process of finalizing the Resilience Plan and submitting it to the Governor's Resilience Commission and other stakeholders, including other state agencies, local government, and other stakeholders. We are currently in the process of finalizing the Resilience Plan and submitting it to the Governor's Resilience Commission and other stakeholders, including other state agencies, local government, and other stakeholders.</p>
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<https://scor.us6.list-manage.com/subscribe?u=e0d802b4291fa93d5244f7003&id=df571f789>

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