Storm Surge Risk and Sea-Level Rise: What the Future May Hold.

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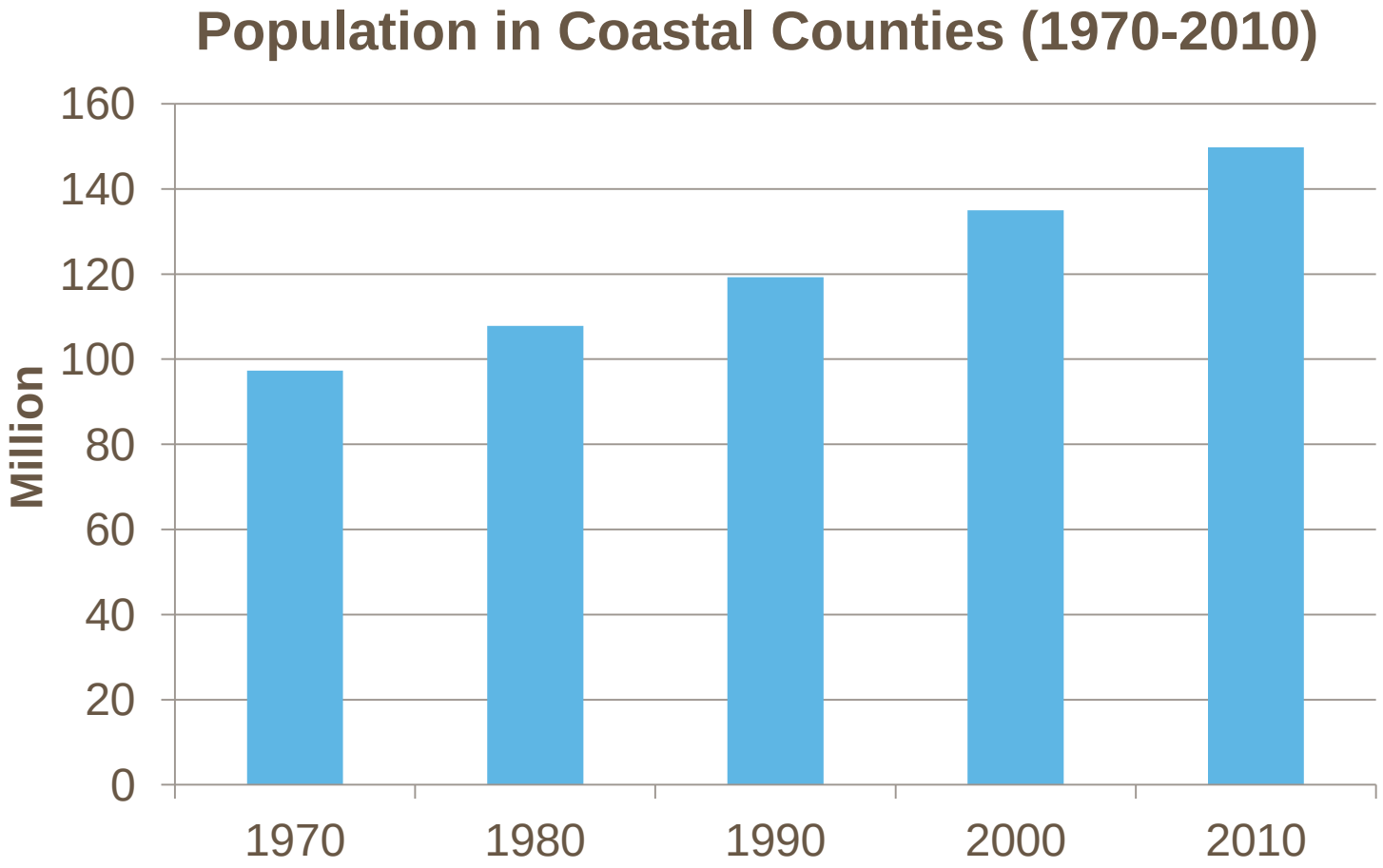
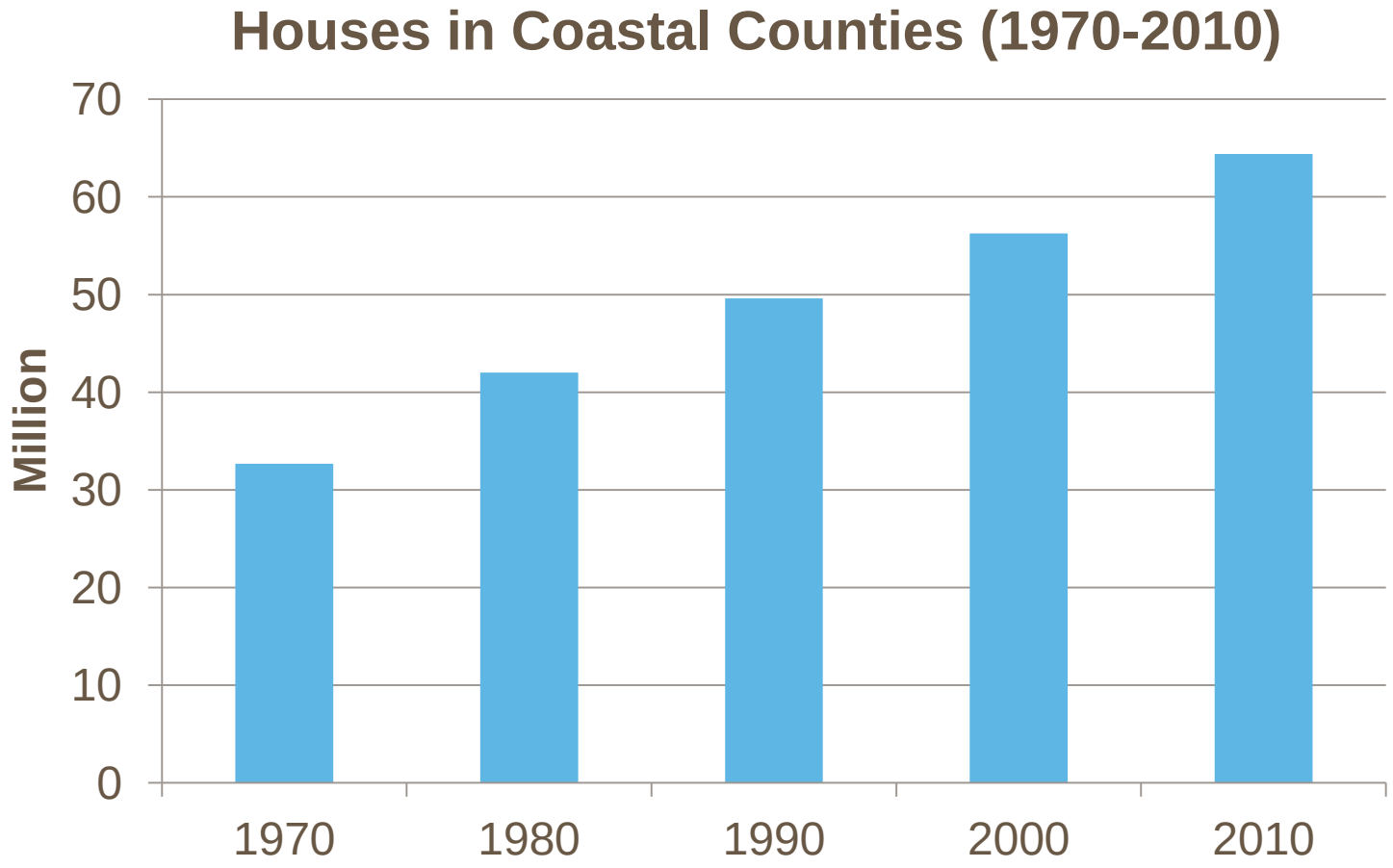
Sr. Hazard Scientist, CoreLogic

Storm Surge Risk to Residential Properties

- 4.2 million properties (Gulf Coast and East Coast)
- $1.14 Trillion residential property value
- **these are at-risk properties, not the total number of properties in the coastal counties.*



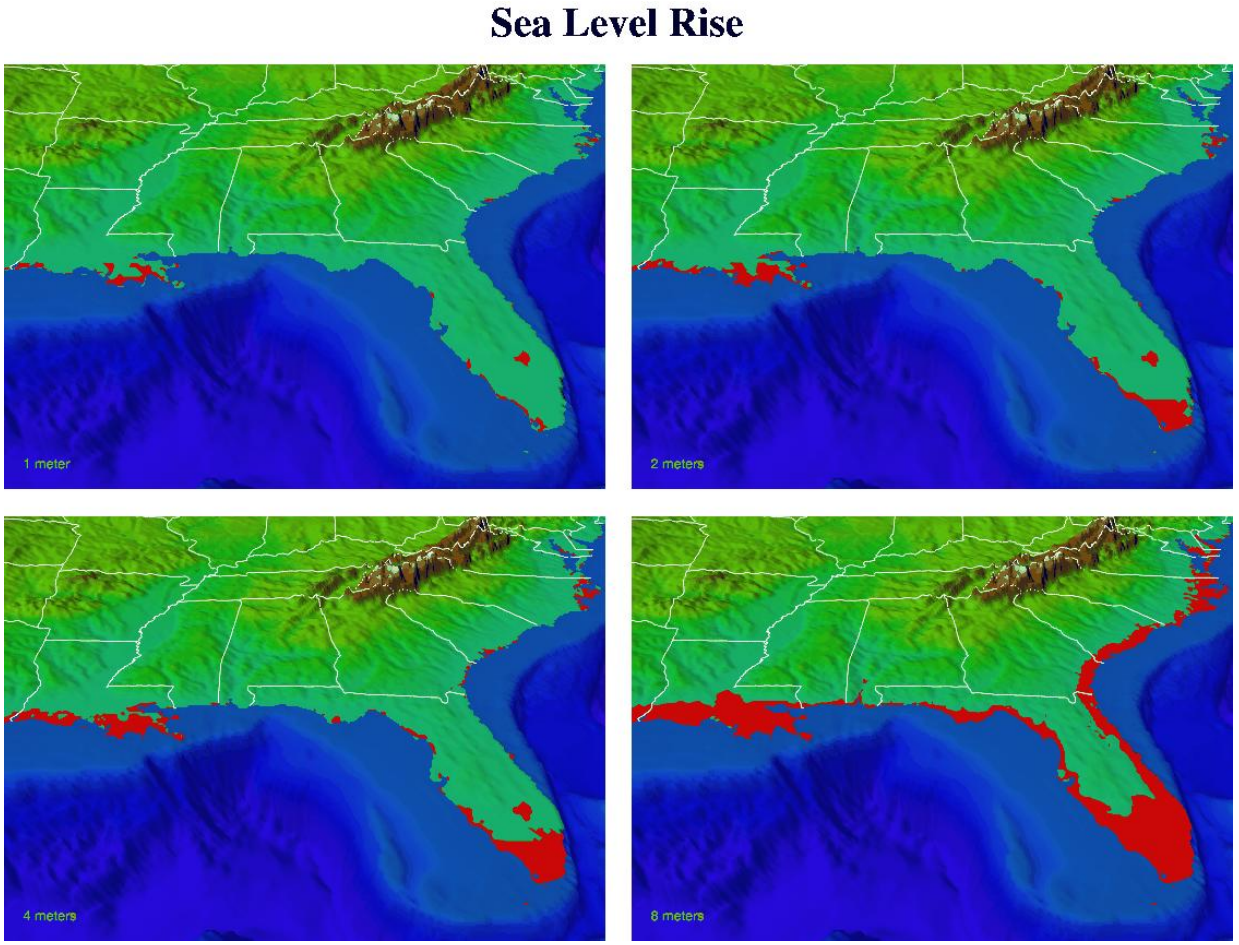


Jon K. Ayscue, The Johns Hopkins Univ.

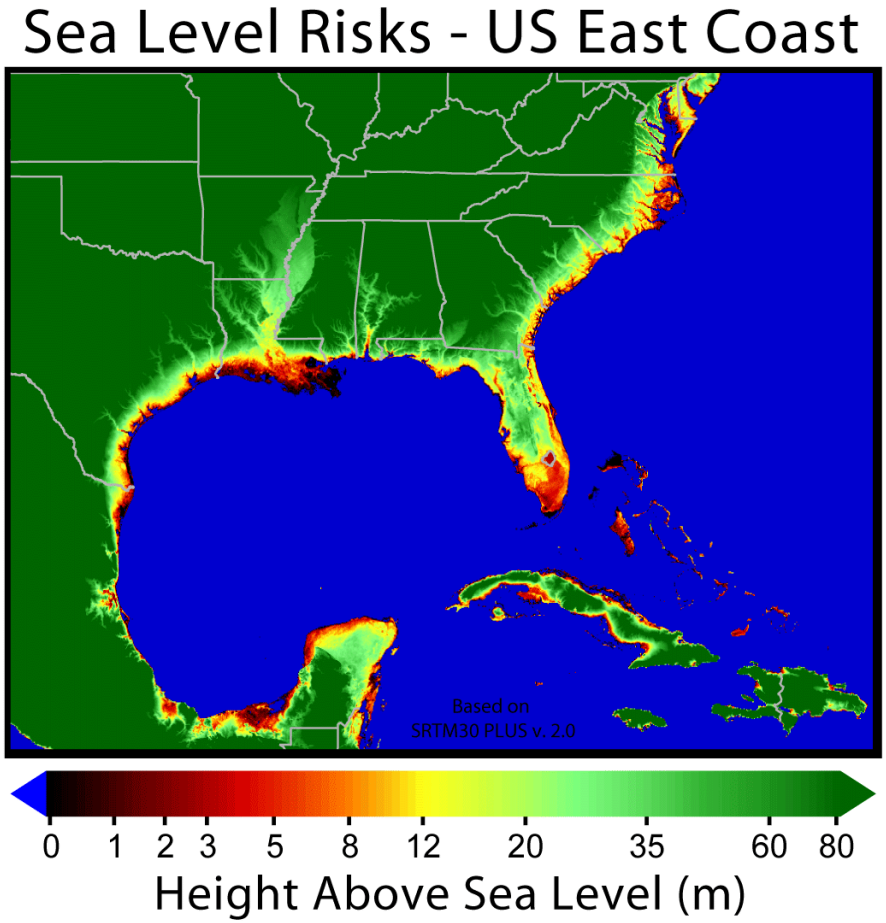
- *"While one does not usually think of New York as a state exposed to hurricanes, Long Island is a highly exposed region. Coastal property exposure for New York has increased from $301.7 billion to $595.6 billion between 1988 and 1993."*

- (IIPLR, **1995** – Insurance Institute for Property Loss Reduction and Insurance Research Council).

Sea-Level Rise: Example Graphic #1



Sea-Level Rise: Example Graphic #2



Actionable Information

- Images like these grab your attention, and are intended to stimulate discussion, but there is no property information.
- While it is important to consider the long term consequences of sea level rise (2m+), it is vitally important to analyze the first areas to be impacted.
- Most immediate area of concern: *Which properties will be affected by a 1 foot sea-level rise?*

Known

- Coastal property values will continue to increase in the future.
- Population will continue to increase along the coast.
- Sea-level rise will increase the amount of flood prone area and put more homes at-risk.

Unknown

- How quickly will sea-level rise occur (and ultimately to what level)?

Sea-Level Rise and Exposure

- We currently evaluate the potential exposure from Category 1 to Category 5 hurricane driven storm surge.

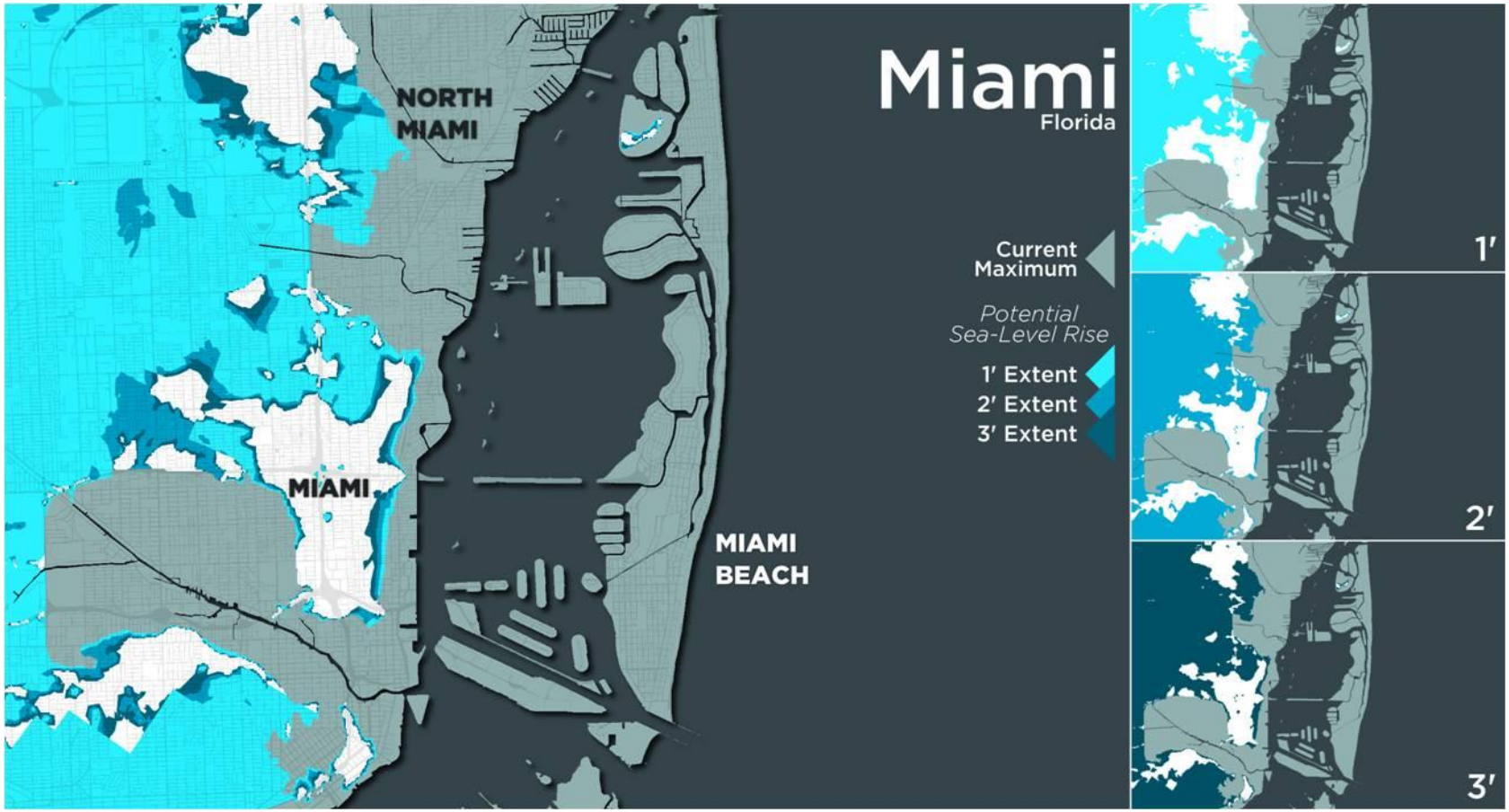
	Properties at risk	Estimated Value
Florida	1,478,858	$386.4 Billion
Louisiana	411,052	$71.9 Billion
New Jersey	350,577	$118.7 Billion
New York	270,458	$134.9 Billion
Texas	369,071	$50.9 Billion

- What if the storm surge height increased by 1 foot - 2 feet - 3 feet?

Sea-level Rise Analysis

- Does not account for the probable increase in number of homes in the risk area (new construction in the future).
- Also does not account for a likely increase in property value in the future.

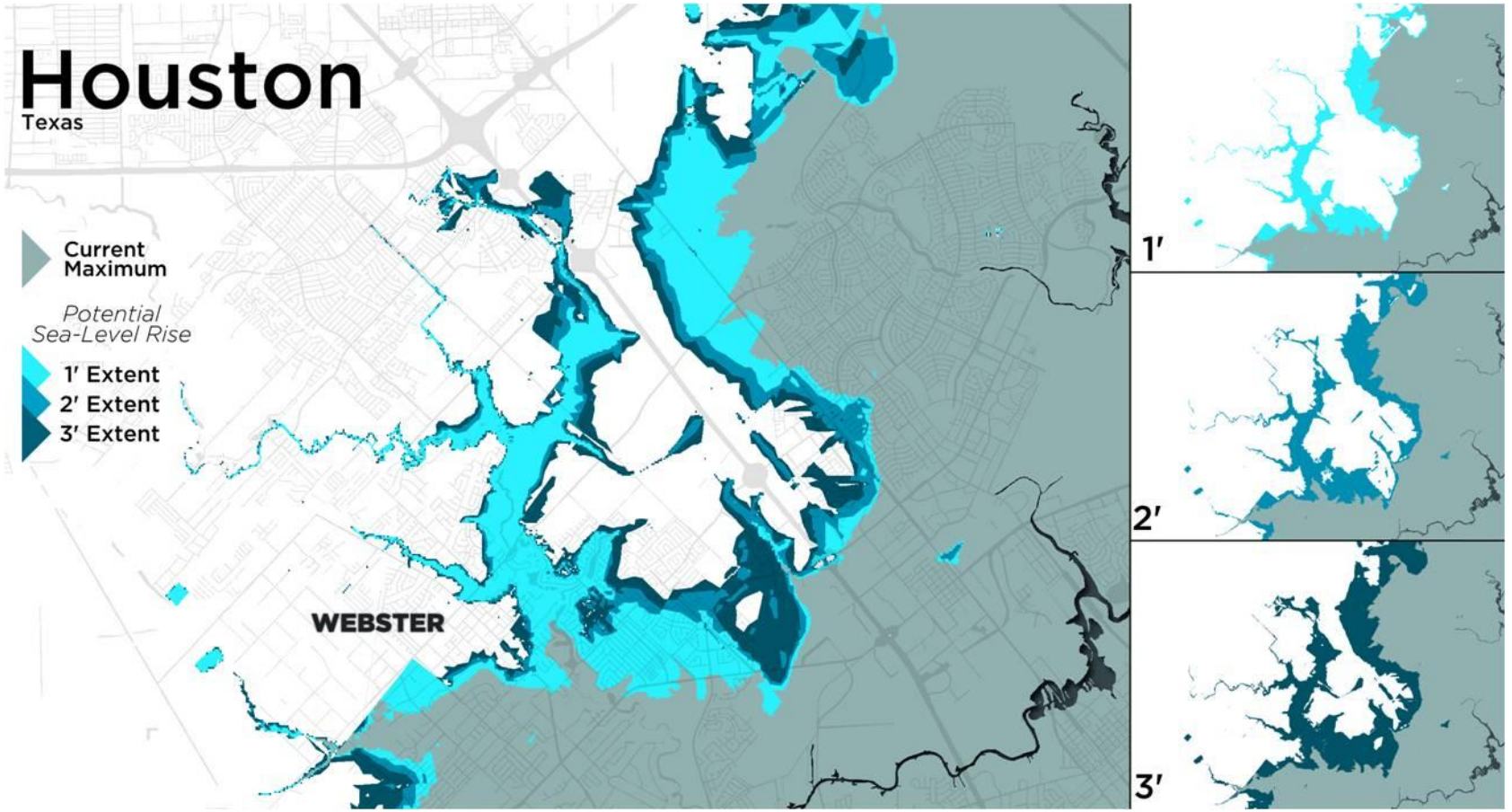
Miami, Florida



Miami, Florida

	Total Properties Potentially Affected (Current)	Total Estimated Structure Value (Current)	Increase in properties inundated by 1 ft rise	Increase in exposed value for 1 ft rise	Increase in properties inundated by 2 ft rise	Increase in exposed value for 2 ft rise	Increase in properties inundated by 3 ft rise	Increase in exposed value for 3 ft rise
Only Category 1 Hurricanes	*15,910*	*$14.6 Billion*	208,360 (+1209%)	+$44.6 Billion	256,885 (+1514%)	+$57.1 Billion	286,872 (+1703%)	+$63.9 Billion
Total of all Category Storms	*131,785*	*$48.2 Billion*	339,771 (+157.8%)	+$46.4 Billion	349,894 (+165.5%)	+$47.6 Billion	355,270 (+169.6%)	+$48.3 Billion

Houston, Texas



Houston, Texas

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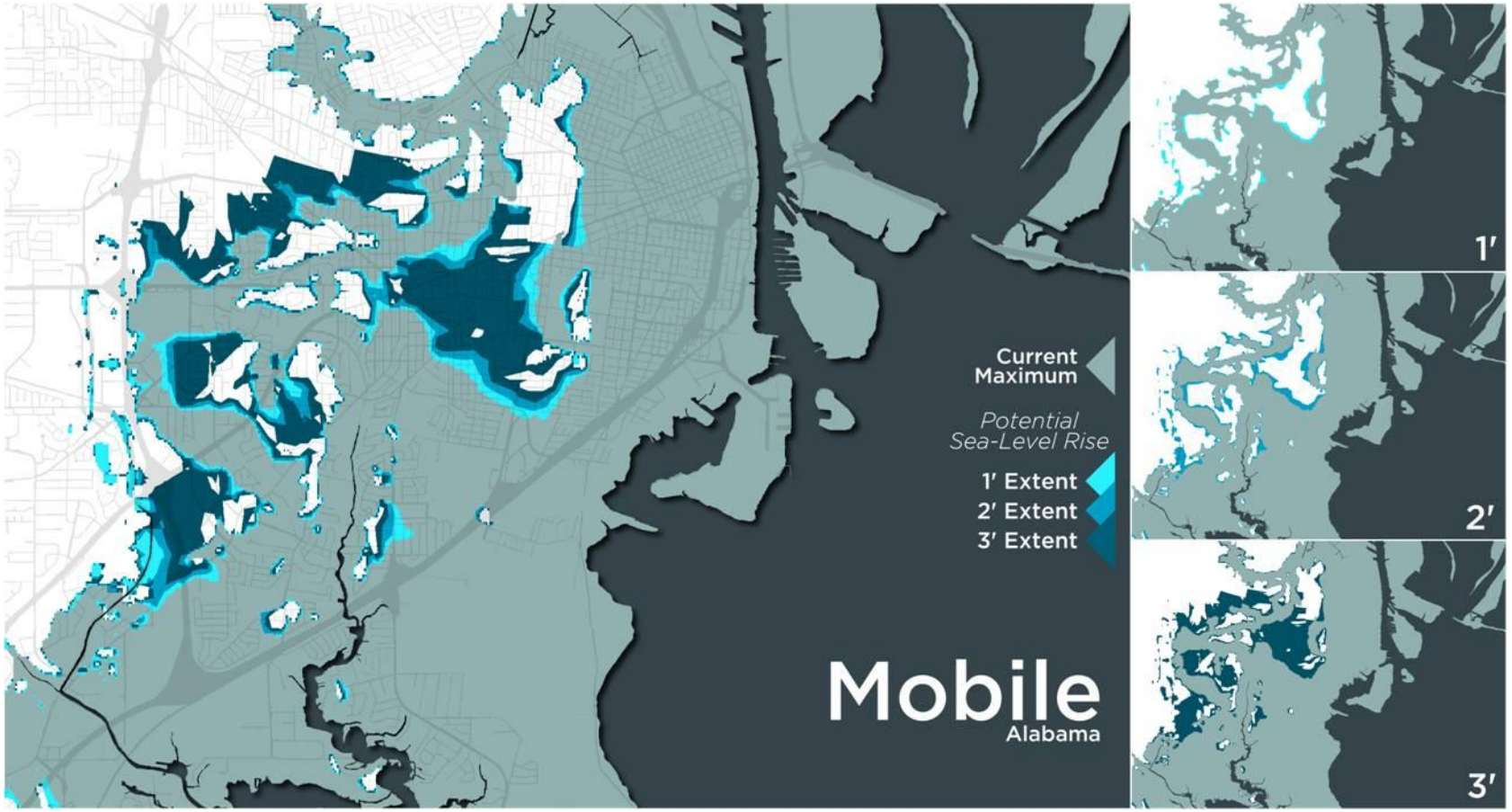
Only Cat 1 (extreme)	*11,655*	*$2.9 Billion*	14,694 (+26.1%)	+$585.8 Million	18,634 (+59.9%)	+$1.2 Billion	22,420 (+92.4%)	+$1.8 Billion
Total	*171,390*	*$27.0 Billion*	183,056 (+6.8%)	+$1.4 Billion	191,076 (+11.5%)	+$2.5 Billion	199,824 (+16.6%)	+$3.6 Billion

Mobile, Alabama



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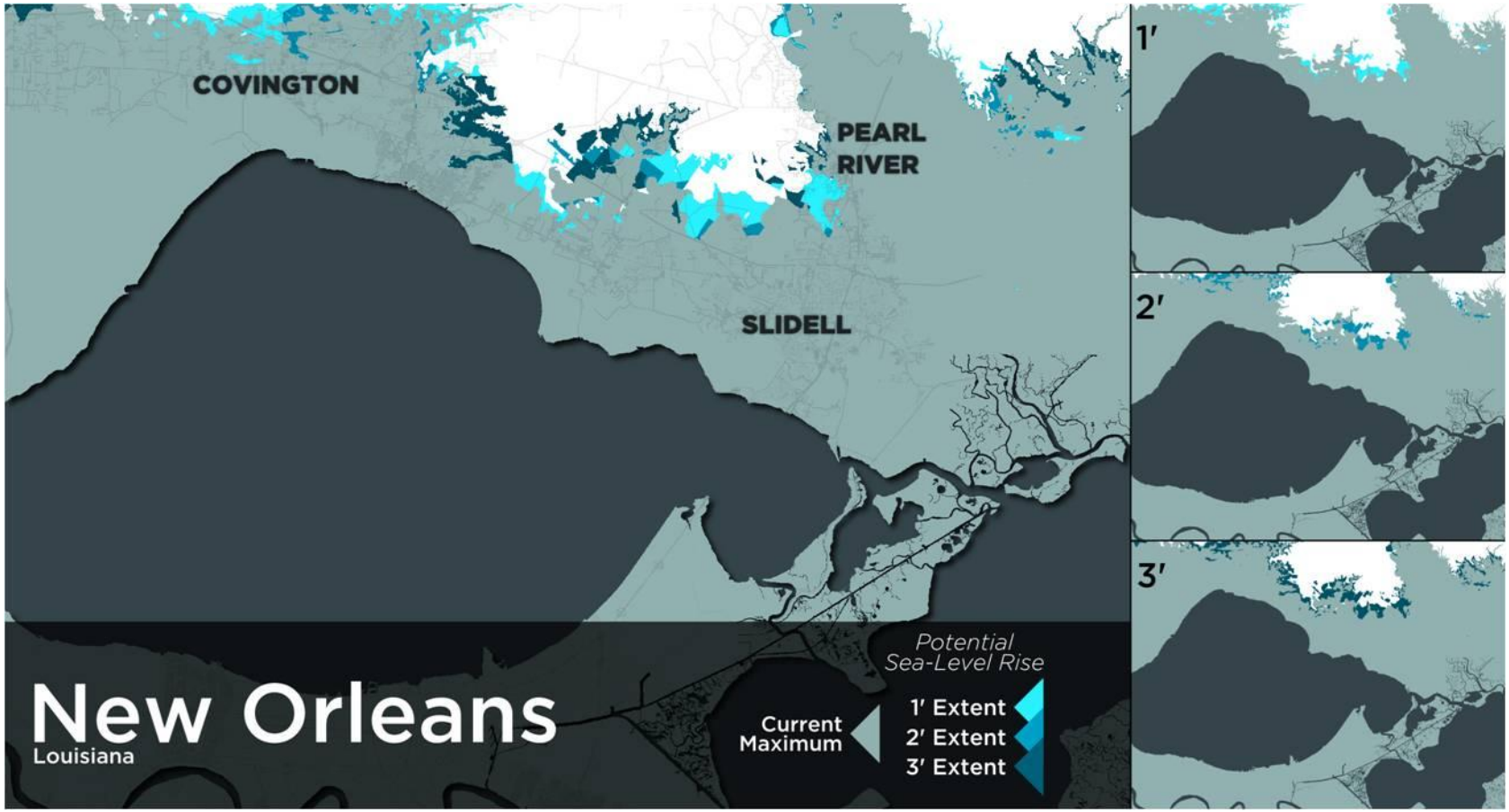
Only Cat 1 (extreme)	*1,987*	*$392.3 Million*	2,627 (+32.2%)	$120.3 Million	3,718 (+87.1%)	$261.0 Million	6,889 (+247%)	$736.5 Million
Total	*27,501*	*$3.2 Billion*	29,028 (+5.5%)	$159.1 Million	30,544 (+11.1%)	$306.5 Million	34,219 (+24.4%)	$704.0 Million

New Orleans, Louisiana



New Orleans, Louisiana

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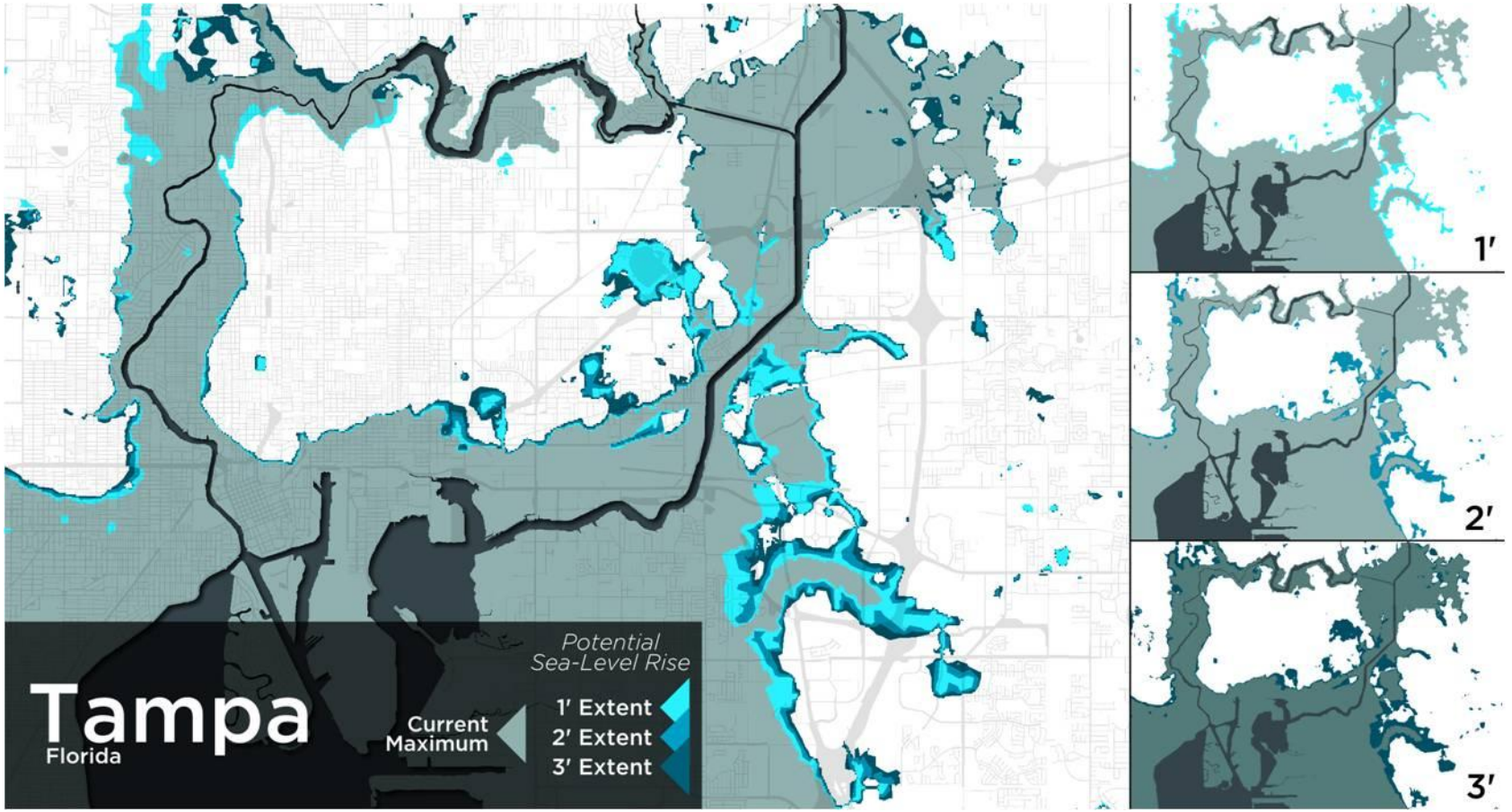
Only Cat 1 (extreme)	*3,572*	*$1.0 billion*	3,815 (+6.8%)	$45.1 Million	3,815 (+6.8%)	$45.1 Million	4,537 (+27.0%)	$268.2 Million
Total	*39,155*	*$8.0 billion*	41,181 (+5.2%)	$314.1 Million	42,019 (+7.3%)	$462.4 Million	42,747 (+9.2%)	$636.7 Million

Tampa, Florida



Tampa, Florida

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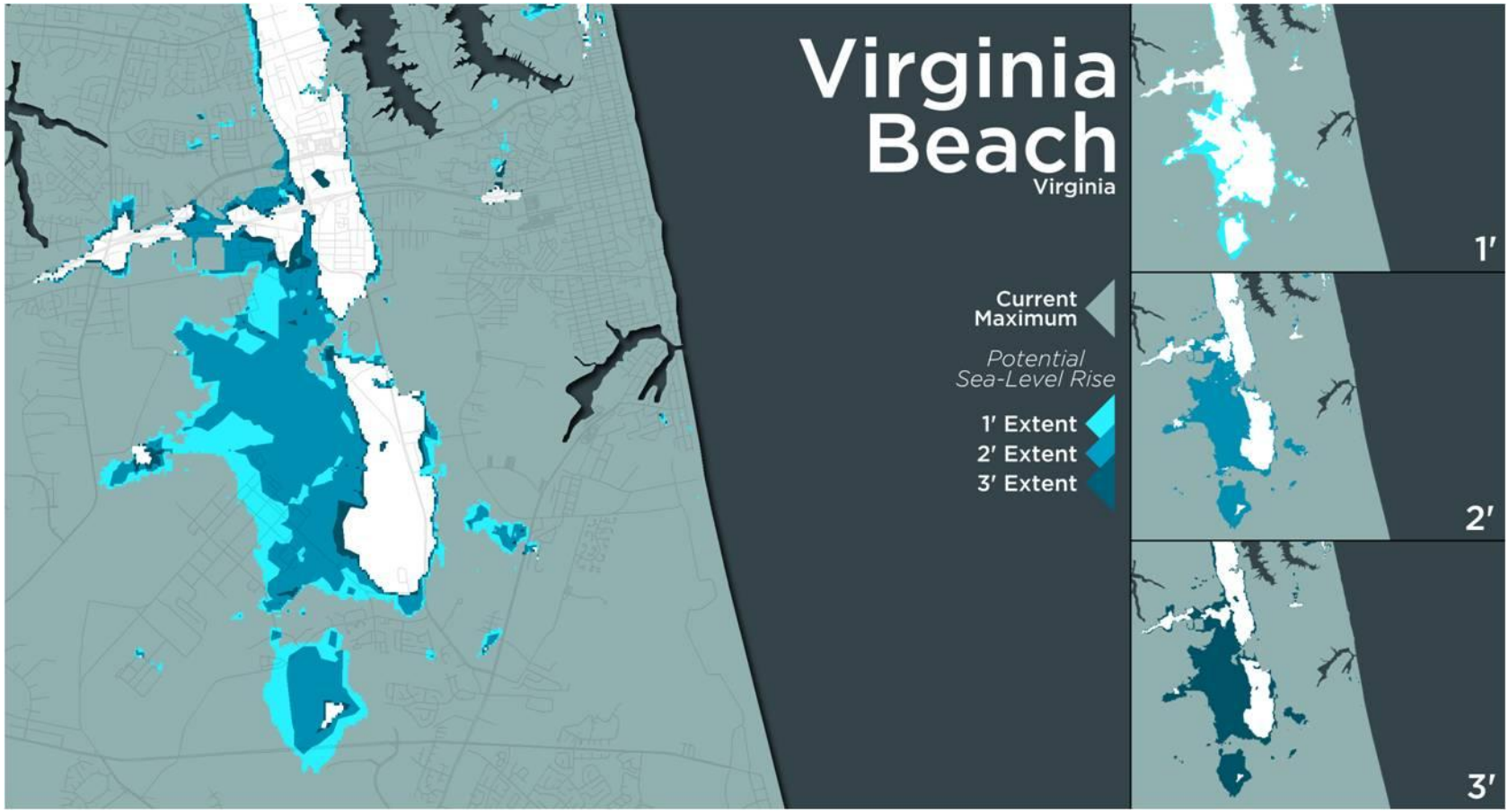
Only Cat 1 (extreme)	*15,905*	*$5.6 billion*	21,994 (+38.3%)	$1.1 Billion	24,072 (+51.3%)	$1.5 Billion	26,832 (+68.7%)	$2.1 Billion
Total	*77,012*	*$17.0 billion*	80,004 (+3.9%)	$319.9 Million	81,117 (+5.3%)	$444.7 Million	85,806 (+11.4%)	$965.3 Million

Virginia Beach, Virginia



Virginia Beach, Virginia

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Only Cat 1 (extreme)	*45,736*	*$12.2 billion*	63,244 (+38.2%)	$3.9 Billion	87,138 (+90.5%)	$9.3 Billion	104,501 (+128.5%)	$13.2 Billion
Total	*230,181*	*$53.2 billion*	233,638 (+1.5%)	$961.0 Million	238,106 (+3.4%)	$1.9 Billion	241,256 (+4.8%)	$2.7 Billion

New York, New York

New York, New York

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Only Cat 1 (extreme)	*110,167*	*$53.3 billion*	130,306 (+18.3%)	$10.0 Billion	150,743 (+36.8%)	$20.4 Billion	195,697 (+77.6%)	$41.0 Billion
Total	*417,195*	*$185.6 billion*	433,682 (+3.9%)	$6.9 Billion	449,433 (+7.7%)	$13.5 Billion	466,218 (+11.7%)	$19.7 Billion

Sea-level rise

- Not all properties in coastal counties will be affected by early sea-level rise.
- Potential mitigation may reduce impact of sea-level rise.
- Reduction in future residential growth in potential impact areas may reduce overall risk.