

Inquiring Minds Topic – 17 December 2021

Preparing for Rising Water

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One-fourth of US infrastructure is at risk of floods. These 4 states are in the most peril.

 [_news-press.com/story/news/nation/2021/10/11/infrastructure-risk-flooding-first-street-foundation-report/6050243001](https://www.washingtonpost.com/news-press.com/story/news/nation/2021/10/11/infrastructure-risk-flooding-first-street-foundation-report/6050243001)

- Flooding is the most expensive natural disaster in the United States.
- "The ways and places in which we live are likely to continue to be impacted by our changing environment."
- The highest concentration of community flood risk is in Louisiana, Florida, Kentucky and West Virginia.

One-fourth of the United States' "critical" infrastructure is at risk of flooding, a report released Monday warns.

The report pinpoints the nation's flood risk to critical infrastructure, such as utilities, airports, ports and emergency services such as police, fire and hospitals. That's in addition to residential properties, commercial properties, streets and local roads and social infrastructure such as schools and government buildings.

"Our work aims to determine the amount of flooding that would render infrastructure either inoperable or inaccessible," said Jeremy Porter of the First Street Foundation, which prepared the report.

First Street Foundation is a Brooklyn-based nonprofit research and technology group that works to define America's flood risk.

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In fact, according to the National Oceanic and Atmospheric Administration, flooding is the most expensive natural disaster in the United States and has cost the nation more than \$1 trillion in inflation-adjusted dollars since 1980.

The report, titled "The Third National Flood Risk Assessment: Infrastructure on the Brink," takes into account all types of floods, including slow-motion river flooding, fast-moving flash flooding, coastal flooding and storm surge from the ocean.

With an increasing number of flood events making headlines across the nation, there's now a greater awareness of the economic and human cost that flood-damaged infrastructure can create, report authors say.

"As we saw a few weeks ago following the devastation of Hurricane Ida, our nation's infrastructure is not built to a standard that protects against the level of flood risk we face today, let alone how those risks will grow over the next 30 years as the climate changes," said Matthew Eby, founder and executive director of the First Street Foundation.

"The impact of Hurricane Ida stretched across the country, crippling the electrical grid in southern Louisiana, flooding the transportation infrastructure in the NYC metro area, and killing nearly 100 people," the report notes. "It is clear, now more than ever, that the ways and places in which we live are likely to continue to be impacted by our changing environment."

States and cities most at risk

The highest concentration of community flood risk is in Louisiana, Florida, Kentucky and West Virginia: 17 of the top 20 most at-risk counties in the U.S. are in these four states, according to the report. Louisiana alone accounts for six of the top 20 most at-risk counties (parishes) and is home to the most at risk-county in the U.S., Cameron Parish.

When shifting focus from counties to cities, a large percentage of the cities in the top 20 list is made up of cities from the states of Louisiana (three cities) and Florida (six cities). Among those cities, the major population centers of New Orleans (ranked 2nd); Miami (8th); St. Petersburg, Florida (12th); and Tampa (14th) all rank highly in the "most at risk" cities list.

Millions of Americans think they're safe from flood waters: They aren't.

The report also found that risk to residential properties across the nation is expected to increase by 10% over the next 30 years; 12.4 million properties are at risk today, and 13.6 million will be at risk of flooding in 2051.

Over the next 30 years, because of the effects of climate change, an additional 1.2 million residential properties, 66,000 commercial properties, 63,000 miles of roads, 6,100 pieces of social infrastructure and 2,000 pieces of crucial infrastructure also will have flood risk that would render them inoperable, inaccessible or impassable.

"This report highlights the cities and counties whose vital infrastructure are most at risk today and will help inform where investment dollars should flow in order to best mitigate against that risk," Eby said.

Upgrading infrastructure can be expensive

Infrastructure upgrades can be expensive. Matthew Kahn, a professor of economics at the University of Southern California who was not involved in the report, said high-risk flood zones without proper investment in flood prevention have hidden costs.

If an area gains a reputation for being susceptible to extreme climate events, people won't buy homes and businesses won't house their headquarters there, Kahn said.

"Those cities that prove to not be climate resilient – they're going to be at a disadvantage," he said. "They're going to have brain drain."

Understanding which areas of the United States are prone to flooding will affect homebuying trends and steps homeowners make to protect their property: for example, adding stilts to a foundation or installing special sealants.

Those looking for a home have always taken location into account, considering factors such as crime rates and local schools. But climate change risk is the newest factor in the homebuying equation, Kahn said.

A Bloomberg analysis of housing data in the U.S. from 2007 to 2017 found that average prices of homes in high-risk flood zones declined in value over the decade.

"You're more likely to duck if you know the punch is coming," Kahn said.

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The complete First Street flood report can be accessed at [Highlights From The First National Flood Risk Assessment \(firststreet.org\)](https://www.firststreet.org/reports/highlights-from-the-first-national-flood-risk-assessment).

Another website of interest is [American Rivers | Rivers Connect Us](https://www.americanrivers.org/).

### **Discussion issues and questions:**

Including your childhood days, have you or anyone in your family ever experienced actual flooding that caused property damage and/or threatened life?

How stringent should zoning and construction requirements be?

- Is this a county issue?
- Should state or federal regulations be primary?

What remediation is needed?

- Who determines this?
- Should there be mandates? How enforced?
- Should relocating buildings be considered?
- Who pays?

Property damage:

- Who pays for response/rebuilding or relocating?
- Shall insurance be required? By whom (lenders, government)?

Flood prevention:

- Dikes, pumping stations, storm water drains, dams?
- Whose responsibility?
  - If the county or municipality, special tax levy on affected areas?
  - Federal assistance?

Response to flooding disasters:

- FEMA? Non-profit agencies? Local governments?
- Advance preparation - stockpiling, set-aside funds, shelters?

