

FLOOD & WIND DAMAGE SIGNIFICANTLY INCREASES IN COMING YEARS

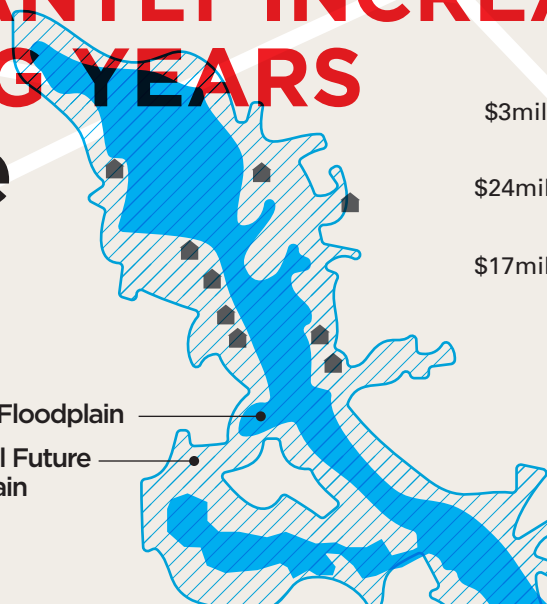


Hinesville Riverine Flood Scenarios

Although there may not be a significant number of homeowners currently living in a flood zone, with a changing climate indicating increasing flood events, property owners should consider adding flood insurance to protect their homes.

Current Floodplain

Potential Future Floodplain



\$3mil

Current cost of floods

\$24mil

Potential future cost

\$17mil

Potential cost with mitigation/
Green Infrastructure

36% reduction
in costs with types of Mitigation/
Green Infrastructure when compared
to the maximum projected cost of a
"100 year flood"

Tybee Island Storm Surge Flood & Wind Scenarios

WHAT IS A
100 YEAR
FLOOD?

"The flood having a 1-percent chance of being equalled or exceeded in any given year; also known as the base flood. If your house is located within a "100 year flood" zone it has a **26% chance of suffering flood damage** during the term of a 30-year mortgage."



\$256mil

Current cost of
floods

\$579mil

Potential
future cost

\$398mil

Potential cost with
Mitigation/Green
Infrastructure

\$181 million

estimated savings with Mitigation & Green Infrastructure & no new development when compared to the maximum projected cost of a "100 year flood."

Mitigation initiatives such as hurricane shuttering could save up to \$19 million in wind damage cost.

Types of Mitigation/Green Infrastructure



Building codes and/or zoning that will enhance resiliency in the floodplain



Ordinances requiring shuttering or secondary water proofing



Implement smart growth ordinances requiring land conservation measures, wetland conservation or creation, rainwater harvesting, bioretention, bioswales, permeable pavement or other green infrastructure practices



Protect, conserve and when needed enhance sand dunes

A recent study by the National Institute of Building Sciences shows that for every 1 dollar spent on mitigation, on average 6 dollars can be saved on losses from natural hazards.

BEHIND THE NUMBERS

STUDY SCOPE

118 different current and future wind and flood scenarios were modeled to evaluate potential damages from hurricane wind and storm surge on Tybee Island and riverine floods in the City of Hinesville, Georgia. We examined current as well as future development with and without green infrastructure mitigation options such as increased dune height for coastal flooding, flood water infiltration and retention for riverine flood, and enhanced building codes for hurricane winds.

STUDY FINDINGS

Future risks such as **increased rainfall and sea level rise will present a significant impact to Georgia coastal communities**. It is important to foster awareness and understanding of the role of natural resources in protecting communities and citizens from the effects of tropical storms, hurricanes, riverine flooding events and future hazards such as sea-level rise. **Green Infrastructure practices and policy changes can help mitigate those risks and strengthen community resilience.**

WHAT IS MITIGATION?

Actions that reduce the social and economic impacts of hazards on the community.

WHAT IS GREEN INFRASTRUCTURE?

Natural and nature-based engineered systems that mimic natural processes—can be used to make communities better prepared and more resilient to extreme weather and coastal hazards that are becoming more frequent with climate change.

EFFECTS OF MITIGATION

Current losses from coastal floods are estimated at **\$256 million** for the 100 year flood (12.4' in surge). In the future, changes to hurricane strength, sea level rise and increased building density could increase Tybee Island losses by as much as **\$322 million**.

But, If Green Infrastructure projects and smart growth policies are implemented, future losses could be reduced by as much as \$181 million based on the studied methods.

In the Hinesville area the future 1% annual chance flood is expected to have damages as much as **300-800% higher** than current estimates of flood losses. **This is in part due to many people living on the fringe of the current floodplain.** The implementation of Green Infrastructure projects can reduce future losses by 36% based on the studied methods.



For additional information contact Kelly (O'Rourke) Hill, Coastal Resources Specialist, Georgia Department of Natural Resources Coastal Resources Division, Kelly.Hill@dnr.ga.gov or visit:

coastalgadnr.org/ResiliencewithGreenInfrastructure

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