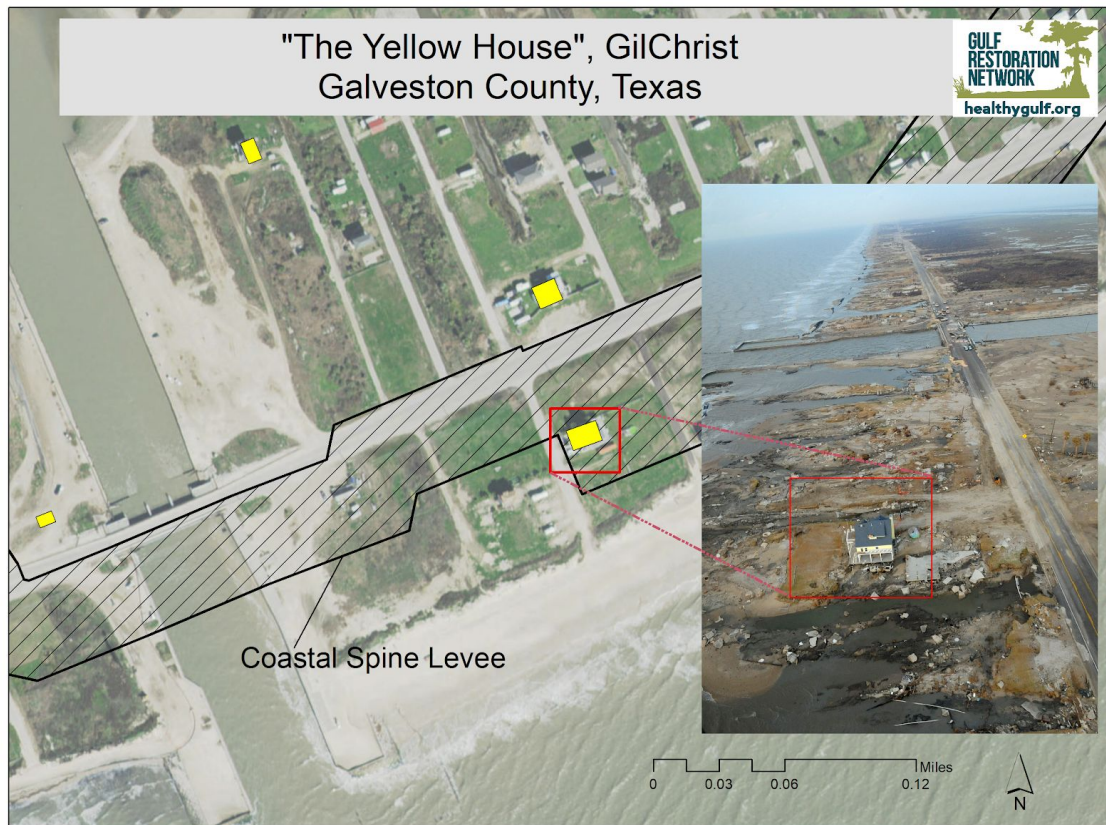


Divided We Fail

How the Texas Coastal Barrier impacts local communities



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, HGAC

Map and Analysis: Gulf Restoration Network 2019

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Summary

Gulf Restoration Network (GRN) completed two key analyses regarding property affected by the Texas Coastal Barrier proposal. The proposal is outlined in a Draft Integrated Feasibility Report and Environmental Impact Statement (DIFR-EIS)¹ for the Coastal Texas Protection and Restoration Study, and was conducted by the US Army Corps of Engineers and the Texas General Land Office. These agencies offer as their preferred alternative a new levee in coastal Galveston county, along with other expensive structures like movable surge barrier gates. The entire levee proposal is referred to herein as the Coastal Barrier.

GRN used map data from a public records request (FOIA) from the US Army Corps of Engineers (USACE), along with data from Galveston county. [Click here to view GRN's interactive map](#) that shows the proposed placement of the coastal spine according to the FOIA data. Property ownership and buildings were each analyzed separately with respect to the Coastal Barrier. GRN excluded the City of Galveston proper from any analysis due to the existing seawall.

Looking at property ownership, real estate costs in the DIFR-EIS are estimated at approximately \$660 million². GRN's estimate exceeded that. GRN found over 12,200 tracts or properties worth more than \$2 billion that would be in harm's way as a result of the Coastal Barrier. Existing structures were also underestimated according to the GRN analysis. The USACE estimated 1,000 structures would be impacted by the Coastal Barrier³. GRN found 3,800, upwards of three times more than the calculation by the USACE. Furthermore, the GRN result of approximately 3,800 buildings is low because the dataset used was five years old.

Methods: Property Ownership

Parcels, or mapped tracts of real estate, were obtained from the Galveston County Assessor for the Coastal Barrier region. Parcels were trimmed and tabulated based on whether they overlap entirely with the proposed levee, or if they were geographically located toward the Gulf of Mexico from the levee. Property on the Gulf of Mexico side of the levee would flood more easily if the Coastal Barrier were in place. The analysis was restricted to Galveston Island and Bolivar Peninsula. High Island area parcels above 5 ft in elevation were omitted.

Property values were calculated using the US dollar value for 2018 from the Galveston County Assessor.

Methods: Buildings

¹ USACE, 2018. [Coastal Texas Protection and Restoration and Feasibility Study, Draft Integrated Feasibility Report and Environmental Impact Statement](#).

² USACE 2018. Coastal Texas Protection and Restoration Study, [Real Estate Appendix E](#), p. 10-2, Table 10-1.

³ USACE 2018. Coastal Texas Protection and Restoration Study, [Real Estate Appendix E](#), p. 9-1 .

Buildings data were from The Houston Galveston Area Council (HGAC). For this dataset, buildings were automatically identified by a computer program using aerial photographs. The dataset was current to 2014. The resulting buildings numbers are assumed to be low because the underlying dataset is out of date, and because spot-checks showed many (up to half) the buildings in current photos were excluded (see Figure 1).

Results

GRN found approximately 3,800 buildings either directly in the path of the Coastal Barrier or on the Gulf of Mexico side.

	<u>Buildings</u>
Under the Levee	299
Gulf of Mexico Side of the Levee	3,508
Combination	3,807

The USACE only lists 1,000 structures as presumed impacted in their Real Estate Appendix for the levee.

Over 12,000 properties, worth over \$2 billion, were either within the levee's path or on the Gulf of Mexico side. Examples of results for localized areas are in Figures 2 and 3.

	<u>Property Parcels</u>
Under the Levee	1,819
Gulf of Mexico Side of the Levee	12,176
Combination	13,995

Conclusion

After a year of discussing the project with hundreds of residents, GRN is disturbed that the USACE is selecting a levee project that will punish residents who have built their island homes to weather another Ike--a much stronger storm surge that the Coastal Barrier USACE's proposed barrier is built to handle. Rather than reward coastal residents and property owners for taking personal financial responsibility for their flood protection, and hold them up as an example for other coastal Texas coastal communities, the Coastal Barrier USACE's project will damage or eliminate property and homes on Galveston Island and Bolivar Peninsula. The USACE's real estate appendix only lists 1,000 structures. GRN found more than triple this number, and the true number could be more than 6 times the USACE's estimate.

The moral hazard of punishing residents for protecting themselves is most clearly represented by the "Yellow House", a Gilchrist home that withstood Hurricane Ike in 2008 (see cover of this report). This home is slated to be demolished by the Coastal Barrier.

For More Information

Review or download GRN's GIS data used in this analysis [here](#) and the [HGAC dataset](#). Data dictionary:

Buildings on the Gulf of Mexico side of the Coastal Barrier project

<buildings_floodside_int_diss.shp>

Buildings within the levee and on the Gulf of Mexico side of the Coastal Barrier project

<buildings_flood_spine_corrected_diss.shp>

Limitations

This report does not consider damages within the ring levee in City of Galveston. Such damages could include local subsidence and compromised slab foundations.

The property values for this analysis did not include the aesthetic damages to coastal views, ecological damages, or restrictions to beach access of properties in question. Including these values would drive the actual property values even higher than the findings of this report.

This report does not consider the property damages related to a large increase of water flow through San Luis Pass, which would result in marsh loss, velocity hazards, and loss of fishing opportunities in the now slack waters of that pass. The USACE did not consider the damages of an increase of up to 13.7% of water flow that once flowed through Bolivar Roads, will now flow through San Luis Pass, with vast impacts to sediment flows, flood risk behind the structure, and habitat--a vast increase in scour. Residents in Pointe West have valid concerns about this.

For additional technical details of the data, analysis or methods, or for further questions, please contact Naomi Yoder at Gulf Restoration Network, 504-525-1528 or naomi@healthygulf.org.

Figures



Figure 1. Sample illustrating underestimate of Buildings analysis. Spot check in Crystal Beach, Bolivar Peninsula shows that almost half of the existing buildings (in the aerial photograph) are omitted from the Buildings data used in GRN estimates. This area is representative of the remainder of the study area. The GRN estimate of buildings impacted by the proposed Coastal Barrier project is low.

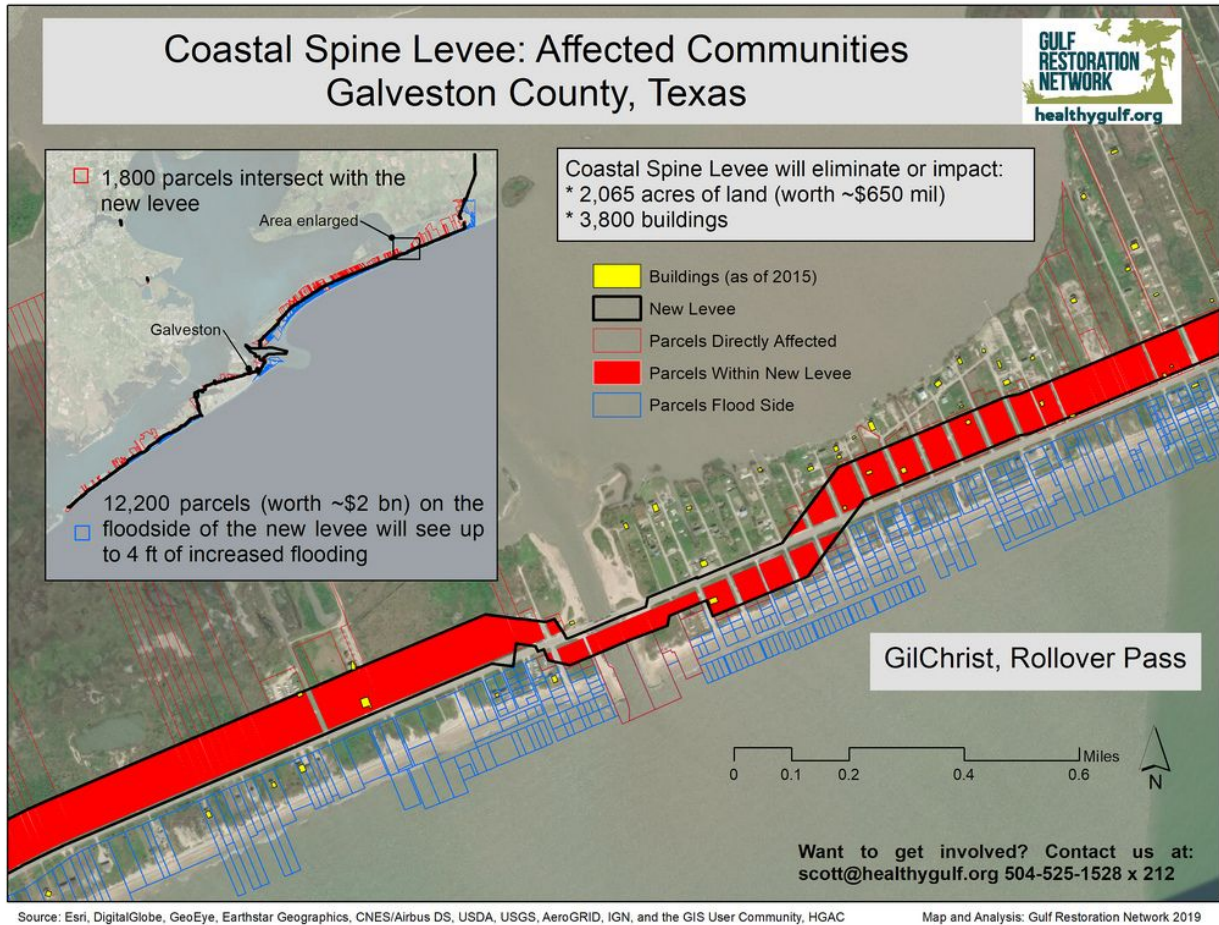


Figure 2. Gilchrist, TX, overview of impact of coastal barrier project on buildings (2015) and parcels (2018).

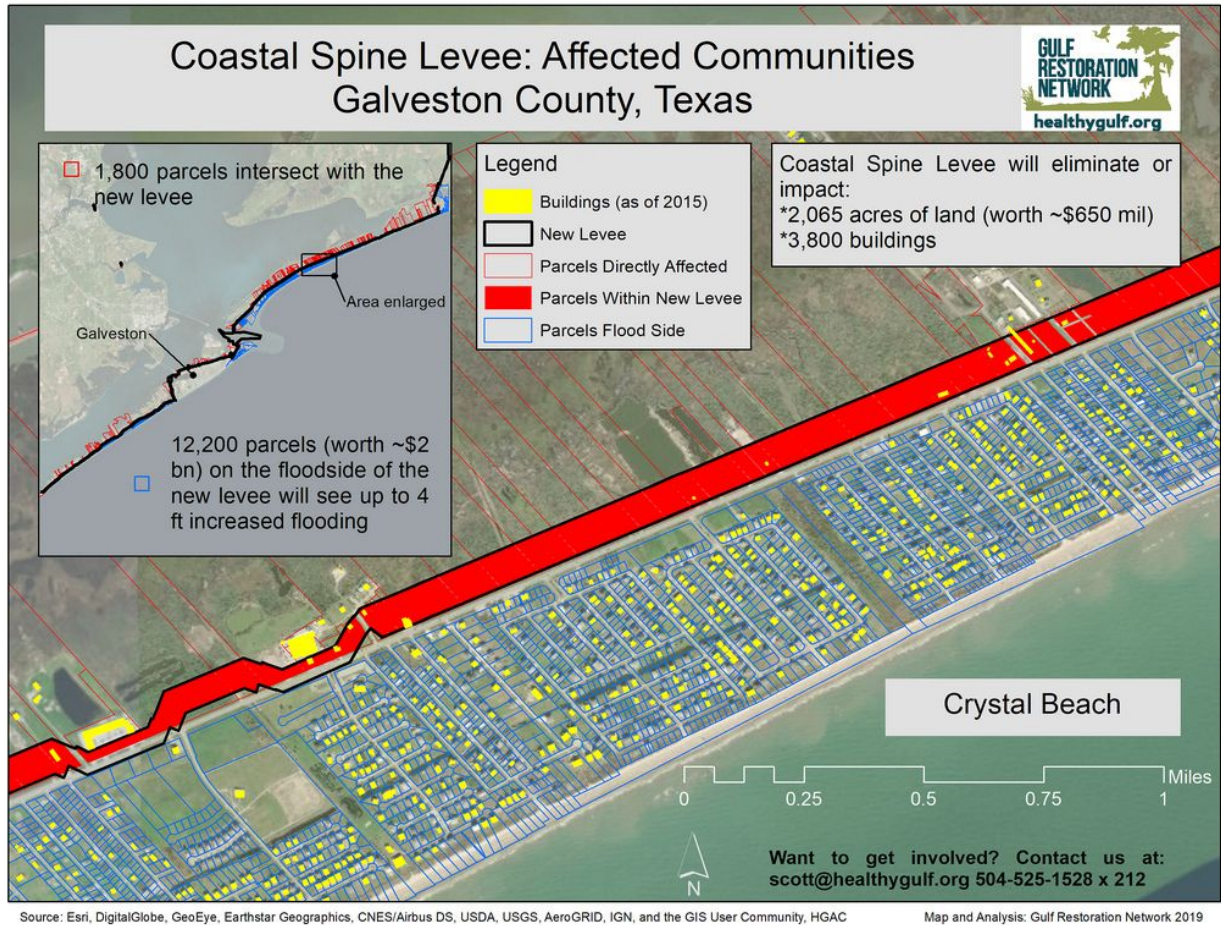


Figure 3. Crystal Beach, TX, overview of impact of coastal barrier project on buildings (2015) and parcels (2018).