



# SURVEY OF COASTAL TEXAS BUILDING CODES

## Executive Summary

### Overview

Texas has consistently scored in the bottom 25% in the IBHS [Rating the States](#) report, which rates statewide code and enforcement activities every three years. The state of Texas has a significant risk of damaging hurricanes; there have been 47 landfalling hurricanes since 1900, and any given 50-mile stretch of Texas coastline will experience a hurricane, on average, once every 6 years<sup>1</sup>. Additionally, the state has a large and growing coastal population. Approximately one-third of the total population of Texas, over 7 million people, lives in vulnerable coastal areas.

IBHS conducted a survey of Texas building officials and local code administrators to understand the building code adoption and enforcement by individual local jurisdictions in this vulnerable coastal region of Texas. Our survey showed that within the coastal areas surveyed, there are over 264,000 single-family housing units and more than 840,000 residents<sup>2</sup> with no building code protection.

### KEY FINDINGS

- Coastal communities of Texas are not uniformly protected by high-wind design standards and codes. There are significant differences between incorporated cities and county jurisdictions. Of the 10 counties surveyed, only 2 have adopted a building code, while all the incorporated cities surveyed have adopted a building code.
- The cities of Alvin, Beaumont, and San Benito had the most comprehensive protection of the jurisdictions surveyed, with a modern code adopted, a strong roof inspection program, permitting requirements for new construction and re-roof, contractor licensing, and training programs. Conversely, Harris County and the City of Houston—with the largest population of the counties and cities surveyed, and across the entire state—fell in the “Average” category along with the rapidly growing area of Sugarland with a modern code adopted and only some degree of permitting and/or licensing.
- Building code enforcement, which includes construction permitting and inspections is the responsibility of the local jurisdiction and can vary widely. All the incorporated cities surveyed require permitting for new residential construction. However, only half of the surveyed counties require permits. (See sidebar on page 2.)
- The roof is the first line of defense against hurricane winds and water intrusion, yet only 1 of the 10 surveyed counties require roof cover or sheathing inspection on new construction. The top 3 performing cities were the only jurisdictions (city or county) to require inspections for new AND re-roof sheathing and cover (i.e., shingles, tiles, metal etc.) attachment.
- Some of the deficiencies in unincorporated areas of coastal counties are mitigated by the Texas Windstorm Insurance Association (TWIA) code and inspection requirements for those who are not able to insure their property on the open market.



Two examples of damage to older versus newer construction after Hurricane Harvey.

## Introduction

The importance of strong, well-enforced building codes developed over the past two decades (i.e., modern codes) was clearly demonstrated in 2017 and 2018 as several devastating hurricanes made landfall in the United States. The damage, displacement, and financial loss from these storms highlighted the need to adopt modern building codes in vulnerable coastal areas along the Gulf Coast of Texas.

The survey results focus on the following factors that influence losses:

- Whether residential building codes have been adopted and enforced throughout communities in coastal areas of Texas
- High-wind design and construction standards applied in hurricane-prone regions, roofing and re-roofing construction and inspection requirements, and roofing contractor licensing

## TEXAS WINDSTORM INSURANCE ASSOCIATION (TWIA) REQUIREMENTS

TWIA is a nonprofit insurance organization administered by the Texas Department of Insurance (TDI). TWIA supplies windstorm and hail property insurance coverage to residents in 14 counties that border the Texas Gulf Coast and 5 cities located within Harris County who are declined by open market insurance companies. Currently, TWIA coverage is governed by the 2006 *International Residential Code (IRC)* with Texas Revisions, and the 2006 *International Building Code (IBC)* with Texas Revisions. A proposed rule change by the TDI to use the 2018 editions of the IRC and the IBC for TWIA-provided coverage is currently pending approval.

All the jurisdictions surveyed for this study are in whole or in part within TWIA high-wind zones (also called *designated catastrophe areas*).

## What We Did

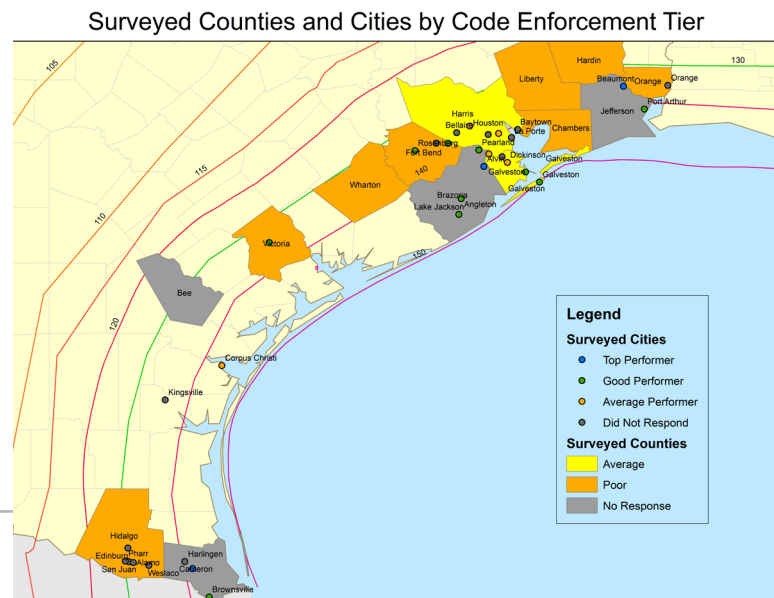
The study was limited to coastal jurisdictions falling in whole, or in part, within a region where the 2015 IRC requires that structures be constructed to wind load standards above what is specified in the IRC (such as ICC-600, ASCE 7, or the Wood Frame Construction Manual). The set of jurisdictions included in this study accounted for about 90% of the population of the coastal region.<sup>3</sup> The responses were provided by local government officials, typically the chief building inspector or building official.

*Within the counties, 18 cities were also surveyed. Refer to the Local Jurisdiction Ratings table for their results.*

Local government authority and jurisdiction in Texas is regulated by the state constitution and statutory limitations. Generally, counties in Texas have limited regulatory authority under state law. Municipal government can have one of two forms: general law or home rule. General law municipalities have similar restrictions to those at the county level. However, home rule municipalities are more autonomous and can enact local ordinances, as long as they do not conflict with the state constitution or statutes. Unlike some other states, Texas does not allow for consolidated city-county governments.

In June 2017, a law took effect allowing a county to use its current enforcement authority if a builder does not provide notice that a home shows compliance with the state residential building code. Previous law gave counties the authority to mandate that all homes in unincorporated areas be built to code, have a minimum of three independent third-party code inspections, and receive notice of compliance, but did not give clear enforcement authority.

Additionally, recent legislation allows counties with a population over 250,000, or those adjacent to such counties, to adopt and enforce a local building code.



## LOCAL JURISDICTION RATINGS

Type	Jurisdiction	County (if municipality)	Single-Family Housing Units <sup>2</sup>	Population <sup>2</sup>
City	Alvin	Brazoria	5,554	25,500
City	Beaumont	Jefferson	34,469	117,729
City	San Benito	Cameron	5,975	24,442
City	Victoria	Victoria	17,632	66,139
City	Angleton	Brazoria	5,285	19,245
City	Brownsville	Cameron	38,905	182,110
City	Galveston	Galveston	17,666	49,443
City	Lake Jackson	Brazoria	8,420	27,407
City	Missouri City	Fort Bend	22,373	71,732
City	Pearland	Brazoria	32,369	106,238
City	Port Arthur	Jefferson	17,168	54,913
City	Rosenberg	Fort Bend	7,871	34,908
City	Texas City	Galveston	13,698	46,811
City	Corpus Christi	Nueces	85,819	320,050
City	Dickinson	Galveston	5,374	19,583
City	Deer Park	Harris	9,480	33,517
City	Friendswood	Galveston	11,691	38,272
County	Galveston		7,882	36,202
City	Houston	Harris	423,049	2,240,582
City	Harlingen	Cameron	26,262	65,467
County	Harris		450,395	1,760,156
City	La Porte	Harris	13,723	35,371
City	Sugar Land	Fort Bend	30,140	86,777
County	Chambers		7,596	22,822
County	Fort Bend		127,129	402,385
County	Hardin		11,430	32,314
County	Hidalgo		79,190	251,538
County	Liberty		12,544	49,207
County	Orange		12,260	39,249
County	Victoria		7,363	24,994
County	Wharton		6,506	18,635

Rating	Criteria for Rating
Top Performer	Meets Good Performer criteria AND requires roofing/re-roofing inspections and licensed roofers.
Good Performer	Adopted a code, references high-wind requirements, requires permits, training for code enforcement officers, and requires licensed general contractors.
Average	Adopted a code but does NOT meet all criteria in the Good Performer.
No Code	No adopted building code.

# Building Codes in Texas

In 2001, Texas adopted a statewide residential building code, but adoption at the local level is not mandatory and a statewide process for enforcement does not exist. As a result, code adoption and enforcement among local jurisdictions in Texas are inconsistent (see “Local Jurisdiction Ratings”).

All 21 of the incorporated cities that responded to the IBHS survey have adopted a building code. However, only 2 out of 10 counties that responded have adopted a building code for unincorporated areas. As a result, many Texas residents are not receiving the protections and benefits of a modern building code. According to population projections from the 2010 census, the Houston Metropolitan area (Fort Bend, Harris, Galveston, and Brazoria Counties) may exceed 14 million people by 2050, remaining one of the fastest growing areas in the United States. Cameron County in South Texas is also expected to see more than a 100% increase in population. The population of unincorporated areas currently with no building code protection could exceed 2 million by 2050. It is imperative that residents have the protection offered by strong building codes with quality enforcement in place before rapid development takes hold.

Although Texas requires electricians, plumbers<sup>4</sup>, and HVAC technicians to be licensed to perform work, the state does not require licensing for general contractors or roofing contractors. Local jurisdictions can choose to require registration or licensure and just over one-half of the 31 total jurisdictions (both incorporated cities and counties) that responded require registration of general contractors and roofing contractors.

Only one of these jurisdictions (Alvin in Brazoria County) requires a competency test before issuing a license but this only applies to general contractors.

## Recommendations

The 2018 edition of the IBHS *Rating the States* report gave Texas a score of 34 out of 100 points. Only 3 of the 18 states most vulnerable to catastrophic hurricanes had lower scores. The following recommendations provide ways to help ensure more people have the protection offered by strong building codes and a quality enforcement program:

- Adoption of a high-wind building code by local jurisdictions in vulnerable areas, along with inspection and enforcement of the code’s requirements.
- Establish a coordinated approach and close partnerships between the local building officials and the TWIA/TDI wind mitigation program inspector. Because buildings are made of many components and assemblies that work as a system, authorities conducting oversight of construction need to work closely to ensure compliance.
- The roof is the first line of defense for a home experiencing strong winds and damage often begins here. Inspections of roof sheathing and cover for both new and re-roofing construction should be requirements.
- Train and certify building officials and inspectors. This will help ensure codes are uniformly enforced by trained personnel.

---

### ENDNOTES

<sup>1</sup> Source: NOAA HURDAT

<sup>2</sup> Housing units and population are based on 2010 census data augmented with 2015 data supplements.

<sup>3</sup> We did not receive any responses from the local governments immediately impacted by the landfall wind and storm surge impacts of Hurricane Harvey (2017).

<sup>4</sup> The 2019 session of the state legislature transferred some of this regulatory authority to the Texas Department of Licensing and Regulation.

IBHS thanks the Texas building officials and the local code administrators who responded to our Texas Coastal Code Questionnaire. We recognize their hard work and dedication.