



# The Status of Texas Residential Building Codes

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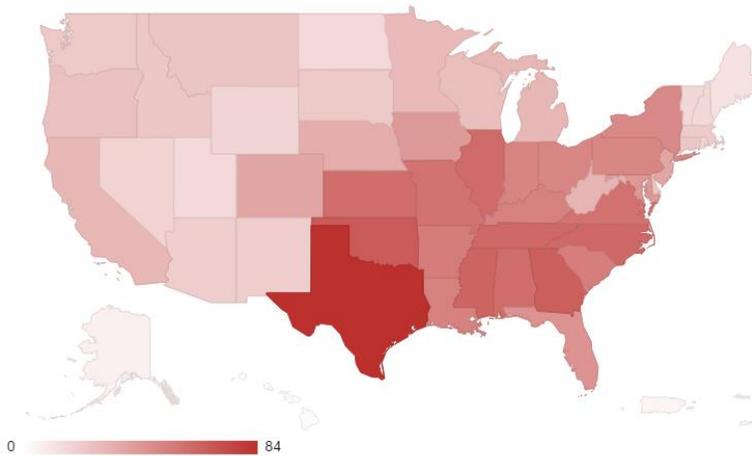
# Executive Summary

Texas is a unique state. Its population is growing at an exponential pace by more than 2.7 million individuals in the last six years, an astounding 11 percent increase. It is the second largest state in the country with more than 268,000 square miles, and it is regionally diverse from large cities to small towns to rural areas. Its diverse geography includes coastal plains, hills, mountains, and forests.

However, the features that make Texas distinctive also make it more vulnerable to severe weather. Dust storms, floods, hail, hurricanes/tropical storms, ice, snow, supercell thunderstorms, tornadoes, and wildfires impact the Texas built environment and cause billions of dollars in damage. Last year, [NOAA reported](#) that Texas led the country, by a wide margin, with 84 of the total 203 U.S. billion-dollar weather and climate disasters from 1980-2016. Additionally, Texas had 54 major disaster declarations for flooding as of August 2016, and that is the most for any state or tribal government during any time.

Severe weather cannot be controlled, but there are proven ways to strengthen buildings and communities to mitigate weather catastrophes. Disaster losses, as well as response and recovery costs, can be reduced through more resilient residential construction.

Building codes, or minimum construction standards, are the first step. Accordingly, the potential for an improved residential building code system is an important topic of discussion for Texas, one of the nation’s most disaster-prone states.



**1980 – 2016 Billion-Dollar Weather and Climate Disasters by State**

The Texas residential building code system is not considered a model for the nation, or even other disaster-prone states in part because of the different standards for cities vs. counties. Many cities maintain a strong and effective building code system, but most counties do not. So, while both are equally vulnerable to disasters, their residents enjoy widely disparate levels of protection.

Concern over the city/county disparity issue, along with other aspects of the residential code system, seems to be growing since the Texas Residential Construction Commission (TRCC) Act sunset in 2009. The concerns are mounting along with the rising financial impact of disasters and increased cost to taxpayers.

This paper examines input and survey responses from building officials, leaders, and industry experts regarding the status of residential building codes in Texas to shed light on this important public policy issue. One of the central questions is whether Texas can, or should, adopt a statewide building code system to protect its residential structures thereby protecting citizens, reducing disaster losses, and decreasing taxpayer expense.

While the survey responses reflect an overall skepticism of the potential for a statewide residential building code system in Texas, it reveals interim options to help improve the Texas residential building code system. Texas problems require Texas solutions, and it is the authors' hope that sharing insights from Texans with experience in building and building code adoption and enforcement can lead to stronger, more disaster-resilient Texas homes.

## Introduction

This paper aggregates building officials and stakeholder survey responses regarding the history, status, and improvement potential of Texas residential building codes. The respondents' feedback addressed the impact of the TRCC on residential codes in cities and counties and lessons learned from the TRCC. It also assessed the potential to improve the safety and performance of Texas homes.

The discussion is material as Texas has a deadly history of natural disasters and remains vulnerable to a wide spectrum of extreme weather. Many in the public and private sector are concerned with the ability of the Texas residential built environment to withstand severe weather events and provide minimum life safety and property protection.

In 2015, Texas topped all states with the largest amount of estimated insured catastrophe losses of more than \$3 billion, excluding losses covered by the National Flood Insurance Program (NFIP).<sup>i</sup>

From 1986 through 2015, Texas had an estimated \$55 billion in inflation-adjusted insured catastrophe losses, again excluding NFIP covered losses.<sup>ii</sup> The opinions of those with experience

2015 Rank	State	Estimated Insured Losses (\$ millions)
1	Texas	\$3,382.9
2	California	1,229.8
3	Massachusetts	1,192.0
4	Illinois	969.2
5	Oklahoma	942.6

in the adoption, administration, and enforcement of residential codes in Texas illustrate potential avenues to address the safety of the state's built environment.

## Methodology

The authors gathered insight for this paper through telephone, email, in-person interviews, and expertise provided by Texas State Collaborative stakeholders. Interviews focused on those with direct involvement with Texas building codes, especially building officials responsible for the application and enforcement of the codes at the local level. State officials with interest in building code issues also provided insights for this paper.

Building officials are responsible for building code enforcement and compliance and have significant influence as to how the existence of an applicable code impacts a community. The building code official interview questions included:

- What was your experience with the TRCC relating to the adoption and enforcement of residential building codes?
- How has the TRCC sunset affected your role regarding residential building codes, if at all?
- How has the sunset affected residential building codes in Texas overall, in your opinion?
- What changes, if any, would you like to see regarding the adoption and enforcement of residential building codes in Texas?
- What current code(s) are you enforcing in your jurisdiction?
- Has there been any resistance from the building industry to the enforcement of these codes?

The *Sunset Advisory Commission Final Report on the TRCC*<sup>iii</sup> also was used in the research for this document, as was information from the [Texas Municipal League website](#).

## History – The Texas Residential Construction Commission

The Texas Legislature established the TRCC in 2003 to oversee specific areas of residential construction. The Commission's original charge was to register builders, residential construction companies, and contractors, as well as new residential construction projects. It established an inspection process and created a dispute resolution procedure. While the goals of those actions were important to the overall improvement of residential construction, it was limited to establishing criteria to determine defects and warranty items. The TRCC did not result in improved building code adoption and enforcement.

Before the advent of the TRCC, the Texas Legislature in 2001 adopted the *International Residential Code for One- and Two- Family Dwellings* (IRC) and the *National Electrical Code* for residential construction. It authorized cities to amend the codes to meet local concerns.<sup>iv</sup>

The TRCC provided for limited statutory warranties and building and performance standards, and that such standards “require substantial compliance with the nonelectrical standards contained in the version of the *International Residential Code for One- and Two- Family Dwellings* published by the International Code Council that is applicable under Subsection (d)...”, which in turn provided:

(1) for residential construction located in a municipality or the extraterritorial jurisdiction of a municipality, the version of the International Residential Code applicable to nonelectrical aspects of residential construction in the municipality under Section 214.212, Local Government Code;

(2) for residential construction located in an unincorporated area not in the extraterritorial jurisdiction of a municipality, the version of the International Residential Code applicable to nonelectrical aspects of residential

construction in the municipality that is the county seat of the county in which the construction is located; and

(3) for residential construction located in an unincorporated area in a county that does not contain an incorporated area, the version of the International Residential Code that existed on May 1, 2001.<sup>v</sup>

The closest that the Texas Legislature has come to a statewide code is the combination of the IRC adoption for cities, and then the TRCC limited statutory warranties and building and performance standards as referenced above. The adoption of municipal building codes coexisted with the TRCC until the sunset of the TRCC in 2009, but they focused on different priorities.

The July 2009 *Sunset Advisory Commission Final Report* criticized several aspects of the TRCC. The report found that the TRCC's registration of contractors did not protect the public or effectively regulate the residential construction industry. The TRCC registration process also was confusing to homeowners and created consumer distrust.

Most of the building officials interviewed for this paper provided negative impressions of the TRCC. Some believe that it was too short-lived to have any significant impact, either positive or negative.

One of the key concerns focused on the TRCC three-part inspection program that provided "an inspection mechanism for homes built in unincorporated areas not otherwise subject to a permitting or inspection process,"<sup>vi</sup> and allowed for the use of third-party inspectors. However, since builders hired the third-party inspectors, the process created a potential conflict of interest.

The Sunset Commission stated that the County Inspections Program, "although ... well-intentioned has the potential to provide false security to those purchasing homes or completing remodeling projects in rural areas lacking building code oversight."<sup>vii</sup>

An unintended consequence of the TRCC inspection process occurred when a county authority reduced staff and operations of its inspection department because it assumed it would no longer be responsible for inspections. This decision weakened the integrity of the code system in that location. Interviewees suggest that this may have occurred in additional locations as well.

The TRCC was not renewed during the 81<sup>st</sup> legislative session under sunset review and expired on Sept. 1, 2009. Despite that action, the statutory language described as a continuance of the Residential Construction Inspection Program previously administered by the TRCC still exists today regarding a residential building code standard, notices, and inspections for counties.<sup>viii</sup>

There is a widespread sentiment among building officials that counties have limited enforcement authority, rendering the language meaningless. *(See editor's note at the conclusion of the paper regarding a law change effective September 1, 2017, that provides county residential building code enforcement authority.)*

In the end, the TRCC provided little or no progress toward improving residential building code adoption or enforcement. TRCC focused on the establishment of criteria for quality of construction and the resolution of construction defects.

## Code Adoption and Enforcement – Basic Community Safety

Communities must adopt processes to adopt and enforce building codes effectively. Once they incorporate these mechanisms, codes can serve effectively as a minimum construction standard.

One of the critical mechanisms for effective code enforcement is a rigorous process of plan review, permit issuance, periodic inspections throughout construction along with the ultimate issuance of documentation once the building project is complete. The documentation is called a *Certificate of Occupancy*, and it verifies the residence passed all inspections during construction and is safe to occupy.

The above-described process is critical for successful code enforcement, but adequate staffing is required for effective implementation. Unfortunately, not all jurisdictions have adequate staffing because of limited financial resources and shortages of trained personnel.

The surveyed building code officials described the adoption of modern building codes in their home rule cities as achievable. However, smaller cities and counties without home rule authority have more difficulty adopting and enforcing residential building codes, often due to limited resources.

Survey participants discussed that smaller jurisdictions could benefit from extraterritorial jurisdiction (ETJ) agreements to share resources for code enforcement with larger jurisdictions. An ETJ is defined by Fort Worth, TX as “an area outside the city limits where cities can regulate some activities through agreements with the county.” Such agreements could pool resources of established building code departments with smaller cities and counties. However, ETJ agreements can also increase larger jurisdictions’ workload.

## Summary of Interview Feedback

The following survey responses provide an “on the ground” perspective of residential building codes in Texas.

### **I. The Top Topic – *Discussion of a statewide Texas residential building code***

The top of mind topic when discussing the status of building codes in Texas is the potential for a statewide building code. Statewide building codes are defined as those with mandatory adoption and enforcement for both incorporated and unincorporated areas, and provisions that prohibit any weakening amendments at the local level. A statewide building code is the strongest commitment a state can make to achieve building safety through minimum building standards and serves as an important tool for populous, growing, and disaster-prone states like Texas. Even so, Texas does not have a statewide residential building code. Many of the survey respondents discussed the potential barriers and benefits of having such a system. They also cited alternatives to achieve safer construction in the absence of a statewide residential code.

Many survey respondents were skeptical of Texas’ potential to adopt a statewide residential building code because of limited resources, opposition to unfunded mandates, the culture of home rule jurisdictions, and geographic considerations. Local officials indicated that resource shortages currently hindered enforcement outside of their immediate jurisdictional boundaries in ETJ agreements, especially in larger geographical areas. Most Texans reside and pay taxes within the state’s major metropolitan areas, and the financial disparities in government funding for smaller populations in unincorporated areas are stark. The resource gap can hamper the unincorporated areas’ capacity to issue permits and conduct residential inspections in rural areas.

### **A) Home Rule – A top issue for most respondents**

Survey participants observed the possibility of local jurisdictions using home rule authority as a potential obstruction to the adoption of a statewide residential building code. As described by the Texas Municipal League, home rule cities are those in the state that have populations of more than 5,000 and have adopted home rule charters.<sup>ix</sup> Home rule allows cities to govern at the local level, providing actions do not conflict with the state constitution or other laws. In contrast, general law—non-home rule cities in Texas—have smaller populations and are limited to state authorized actions.<sup>x</sup> Approximately 75 percent of Texas cities are general law cities.<sup>xi</sup>

One building code official survey respondent noted that counties and non-home rule cities could benefit from a statewide adopted code because those jurisdictions do not have home rule authority. Cities and counties with smaller populations and/or large geographic areas are concerned with the feasibility of administering a building code with limited building department staff and other trained personnel. A state-adopted code would allow counties to concentrate on permitting and enforcement since many do not have the personnel to create and develop localized building codes.

### **B) Cost – A key concern for builders, but good investment for consumers**

Another factor impeding the adoption of a statewide building code is that the building industry and related trades perceive code enforcement as a financial hardship. This is the most common perception of the construction industry in Texas and nationwide. Residential developers and builders often view the additional measures necessary to meet the requirements of the code as prohibitive—driving up the cost of housing and adversely affecting demand for new construction.

For the most part, the building official survey participants did not focus on costs. This is likely because those building officials are already charged with adopting and enforcing building codes as a priority in their communities. As a result, their roles would not be

affected significantly by a statewide residential building code. However, unincorporated areas or those cities without a residential building code or enforcement of same would be more likely to consider the cost of building codes as potentially prohibitive.

While it is true that building to code can cost more upfront, the result is a structure that is stronger, safer, and more durable. Extreme weather damage to code-compliant homes will be mitigated, and rebuilding costs will be lower. A [study](#) of the homes built to the Florida Building Code during Hurricane Charley proves this point. The findings indicated a 60 percent reduction in the frequency of insurance claims and a 42 percent reduction in the severity of home damage in 2004.<sup>xii</sup> More recently, a 2016 [benefit-cost analysis](#) of the Florida Building Code found that every one dollar spent generated 4.8 dollars in savings.<sup>xiii</sup>

**“... 4.8 dollars in losses were saved for every one dollar spent on new construction.”**

It is important to differentiate the cost issue based on the identity of the payer. Upfront costs for code-compliant homes may be slightly higher for the builder. However, the longer-term cost savings to the homeowner and community are proven.

Building codes are based on life safety and accessibility for those who occupy the structure. The costs incurred are considered necessary to achieve societal benefits. Codes are developed using many factors including science, new technologies, and lessons learned from past natural and man-made disasters.

A code-compliant structure usually results in lower costs in the long run and consumers benefit when jurisdictions update, adopt and enforce building safety and fire prevention codes. Another cost study offered by the National Institute of Building Sciences shows that every dollar spent on building safer and stronger reduces natural disasters losses by up to four dollars. Additional economic benefits of building to the latest codes include energy savings, reduced maintenance costs, and lower insurance premiums.

Model codes published by organizations such as the International Code Council and the National Fire Protection Association are developed through processes that allow input from architects, builders, code officials, elected officials, emergency managers, engineers, insurers, the public, scientists, and much more. The Building Officials Association of Texas (BOAT) join their peers across the nation to develop model codes. These codes can help control construction costs by establishing uniformity in the construction industry that allows building and materials manufacturers to do business consistently across multiple locations.

### **C) Geographic Customization – *One key to overcoming resistance to a statewide code***

While other states cite natural perils that pose a statewide threat as reasons for a statewide code, Texas offers diverse public opinion and fragmented support on the topic. The survey respondents described the difficulty of reaching consensus to support a singular, statewide building code standard that would apply to all Texas homes due to the diversity of the type of natural hazards that threaten the state. Coastal homes and inland homes may confront different hazards, e.g., hurricanes, storm surge, tornadoes, wildfires, and winter weather. Floods threaten nearly all areas of the state, so that is one constant addressed by model codes. Earthquakes are not a major concern in Texas. However, induced seismicity from wastewater injection in conjunction with oil extraction has generated smaller magnitude events in and around Dallas and Fort Worth.

Historically, many states have adopted statewide codes following a natural disaster. Florida did that after Hurricane Andrew in 1992. Louisiana and Mississippi adopted building codes after Hurricane Katrina in 2005. Often, disasters make a case for building codes, and state leaders then act.

Texas may be an anomaly when it comes to code adoption in post-disaster scenarios. Several survey respondents cited the large and diverse of the state as a setback for acceptance of a statewide model code, citing a perception that it is not possible to adequately address the needs of a large geographic area like Texas through one, all-encompassing code.

However, it is important to note that model codes, including the IRC, specifically account for local conditions—such as weather and geography. For example, a wind speed map establishes design requirements to protect against high winds based on the scientifically-documented risks in each region. What might be required for a coastal area may not be the same for a region that doesn't experience high-wind events.

Similarly, flooding provisions incorporate flood risks into design requirements. This ensures that only those who are at risk from a relevant hazard are required to build with that hazard in mind. Application of these codes along with the expertise of building officials to meet the needs of their jurisdictions allow for successful implementation.

#### **D) Residential Energy Codes – *Already enforced statewide in Texas***

The notion of statewide codes in Texas is not without precedent. There are statewide requirements for homes to comply with the energy efficiency requirements of Chapter 11 of the IRC.<sup>xiv</sup> What are the factors that led to success for this type of regulation, and how does that differ from consideration of a minimum residential construction code in Texas?

One respondent noted that a widespread education effort overcame the initial negative feedback from homebuilders regarding the residential energy provisions. Perhaps if a similar education effort supported the residential code, opponents would abandon opposition to a statewide Texas code.

## II. Residential Building Code System Improvements – *What can be done in the absence of a statewide code?*

Despite overall skepticism as to the near-term possibility of the adoption of a statewide building code for Texas, those surveyed did identify opportunities for potential improvements to residential building codes in their state.

### A) Home Rule Exercise – *Latest model code adoption*

One suggestion was that jurisdictions that have not yet adopted and enforced the latest version of the code should proceed to do so under home rule authority, even without state support. The respondent explained that regularly updating the codes is an achievable and reasonable goal, and would be a responsible exercise of home rule authority.

### B) Licensure as Code Enforcement

One survey participant noted that professional licensure of the building industry could provide code enforcement benefits to localities. The TRCC provided guidance on how the creation of a new regulatory mechanism for Texas builders might be pursued. However, the Sunset Commission's Report found the TRCC's method of regulating builders failed to protect consumers adequately from potential harm. The TRCC only required registration, which the Sunset Commission identified as "the least restrictive form of regulation, generally requiring only the identification and listing of practitioners by the regulating entity."<sup>xv</sup>

The Sunset Commission found that by failing to require builders to satisfy basic criteria to capability and financial soundness, that regulation did not block unqualified builders and problems could occur before enforcement actions could be taken.<sup>xvi</sup> Arguably, Texas already has the infrastructure for the regulation of professions under the Texas Department of Licensing and Regulation. It includes existing regulation of air

conditioning and refrigeration contractors, electricians, and industrialized housing. The Sunset Commission also noted many states already are managing contractor licensing on a more stringent level with positive results.

In addition to contractor licensing, the licensing or certification of building code officials is critical to the success of a statewide building code. Inspectors, plans examiners, and in some cases, permit clerks, could be subject to licensure/certification requirements, as they also have an important role and impact on the safety and durability of construction. It is challenging to enforce regulations on the construction industry if the individuals providing the enforcement are not licensed to certify they have the knowledge to perform their jobs.

### **C) Creation of a State Building Commission**

One survey respondent provided feedback about the status and possible required steps necessary to advance the establishment of a statewide building commission through beneficial regulatory consolidation. While not supported by all respondents, as some fear the loss of home rule authority, the concept of a statewide commission could consolidate and incorporate the governance elements of building-related processes under one agency.

A statewide building commission could bring different building regulations under one umbrella of authority and thereby streamline the process to create efficiency and continuity. While the respondent acknowledged that some oppose the creation of a commission over concerns over cost, as well as loss of home rule powers, these are common concerns that can be studied formally and overcome through deliberate action.

## Conclusion

The surveyed participants provided valuable insight into the impact of the TRCC on residential construction, as well as viable options to improve the built environment in Texas. Unfortunately, the TRCC left vestiges of regulation that now cloud the issue of county authority to enforce building codes. Thus, too many Texans live under the threat of disasters without the life safety and property protection of modern codes.

This unfair gap between city and county standards may be the most important area for Texas leaders to address.

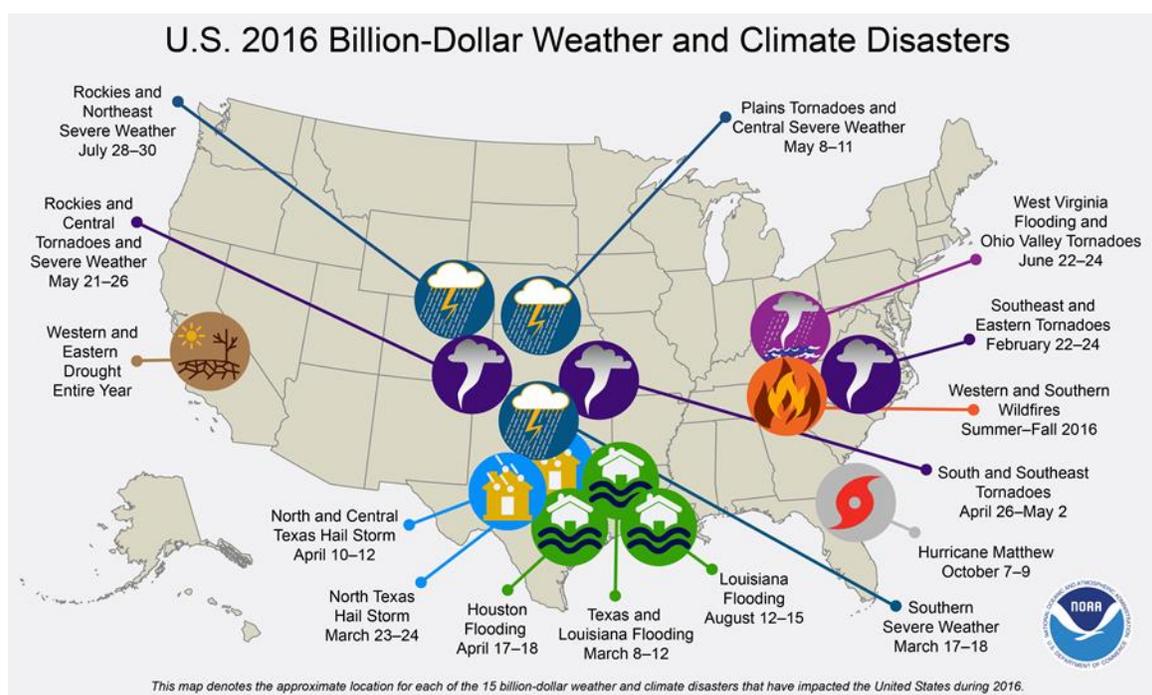
And although the TRCC did not achieve its objectives, it did provide informative lessons about regulatory mechanisms for Texas residential construction, including the challenges that must be overcome to serve families who are building, buying and selling homes.

Participants identified home rule, cost considerations, and geographic disparity as challenges to a statewide residential code, but also raised and examined potential paths to improve the Texas building code system. The respondents were mostly pessimistic regarding an adoption of a statewide residential building code. However, the presence of statewide residential energy code remains an example of success in this realm.

Texas' distinct status requires custom solutions. Disasters, economic studies, and engineering analysis prove that minimum standards for construction result in a better investment for homeowners and communities, especially those that face the broad spectrum of severe weather events present in Texas. Nonetheless, the cultural and political challenges identified by the survey respondents must be considered in creating a solution if Texas is going to improve its residential built environment and advance the safety of its citizens.

Texas solutions and options exist, including the viable concept of a statewide residential building code, adoption of the most recent model codes in home rule jurisdictions, building professional licensure, and a state building commission.

We cannot prevent disasters, but by working together, we can save lives and limit the damage. The Texas State Collaborative stakeholders stand ready to support Texas leaders as they explore and address this critical, societal need.



For more information about issues facing the built environment in Texas, including hyper-local analyses of various jurisdictions' top weather perils and residential building codes, visit the [Texas State Collaborative website](#).

**Editor's Note:** Post-publication of this commentary in March 2017, Texas Governor Greg Abbott signed House Bill 2040 into law on June 14. According to the [legislative analysis](#), House Bill 2040 closes a gap in the county's enforcement of the residential building code by allowing the county to use its current enforcement authority if a builder does not provide notice that the home shows substantial compliance with the code. While existing law gave counties the authority to mandate that all homes in the unincorporated areas be built to code and have a minimum of three independent third-party code inspections, as well as receive notice of compliance, the question of enforcement authority was unclear. The [bill text](#) and associated documents provide additional information about House Bill 2040 and its provisions.

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