# Annex 2 Development Governance



## Annex 2: *An Assessment of the Alignment Between City of Smithville Codes and Resiliency Measures*

# Background and Purpose

In 2024, the City of Smithville, Texas was awarded a Texas General Land Office (GLO) Resilient Communities Program (RCP) grant to support the development of a new Comprehensive Plan. As part of the grant requirements, the city must adopt or update governing regulations that both align with and help implement the Comprehensive Plan. These ordinances are intended to establish the rules for how real property within the city may be used and specify the types of construction permitted on those properties, ensuring that future development reflects the City's long-term vision and is more resilient to natural hazards.

In that vein, the two primary focuses of this memo, the first in a series of three, are to 1) evaluate how well Smithville's adopted development-related regulations support community resilience against the City's most significant natural hazards and 2) recommend which sections of the Code should be prioritized to better align regulations with the Comprehensive Plan objectives.

A second memo will present a range of common approaches for closing significant gaps in existing policies. In collaboration with the consultant, the City will select four to six of these strategies that address the most pressing issues and recognize the resources available for short- and long-term implementation and enforcement. The third and final memo will recommend ways the city can structure ordinances to effect these selected strategies.

# Methodology

To conduct this assessment, the most significant natural hazards affecting Smithville were first identified and reviewed. The 2022 Bastrop County Hazard Mitigation Action Plan served as the primary source for identifying specific natural hazards most relevant to Smithville and the surrounding region. The Plan ranked the relative threat and likely impact of hazards within the region by each hazard's historical frequency and potential severity.

| Hazard | Recent Occurences | Potential Severity |
|---|---|---|
| Flood | Highly Likely | Substantial |
| Wildfire | Highly Likely | Minor |
| Extreme Heat | Highly Likely | Limited |
| Tornado | Likely | Limited |
| Drought | Likely | Limited |
| Hurricane Wind | Unlikely | Limited |
| Lightning | Highly Likely | Limited |
| Hail | Highly Likely | Limited |
| Thunderstorm Wind | Highly Likely | Limited |
| Winter Storm | Highly Likely | Limited |
| Dam/Levee Failure | Unlikely | Limited |
| Earthquake | Unlikely | Limited |
| Expansive Soils | Highly Likely | Limited |
| Infectious Disease | Unlikely | Substantial |
| Cyberattack | Highly Likely | Major |
| Hazardous Material Release | Likely | Limited |
| Pipeline Failure | Unlikely | Minor |

It also identified at the County and local levels the presence or absence of certain Plans, Policies, Ordinances, Programs, and staff positions typically associated with resiliency.

| COMMUNITY CAPABILITY CHECKLIST | Bastrop County | Smithville |
|---|---|---|
| **Plans** | | |
| Capital Improvements Plan | x | x |
| Community Wildfire Protection Plan | x | |
| Master or Comprehensive Plan | | x |
| Continuity of Operations | x | x |
| Emergency Operations Plan | x | x |
| Evacuation Plan | x | x |
| Hazard Mitigation Plan | x | x |
| Stormwater Management Plan | x | |
| **Policies/Ordinances** | | |
| Building Codes | x | x |
| Fire Code | | x |
| Floodplain Ordinance | x | x |
| Stormwater Ordinance | x | |
| Subdivision Regulations | x | x |
| Wildfire Ordinance | x | |
| Zoning Ordinance/Land Use Restrictions | | x |
| **Programs** | | |
| Floodplain Maps/Flood Insurance Studies | x | x |
| Hydrologic/Hydraulic Studies | x | x |
| Mutual Aid Agreement | x | x |
| National Flood Insurance Program Participant | x | x |
| NFIP Community Rating System Participant | x | |
| Property Acquisition Program | x | x |
| Public Education/Awareness Programs | x | x |
| Stream Maintenance Program | | x |
| Storm Drainage Systems Maintenance Program | x | x |
| Warning Systems/Services | x | x |
| | x | x |
| **Staff/Departments** | | |
| Building Code Official | | x |
| Emergency Manager | x | x |
| Engineer | x | x |
| Environmental Conservation Specialist | x | |
| Floodplain Administrator | x | x |
| GIS Coordinator | x | x |
| Personnel with Hazard Knowledge | x | x |
| Planner | x | x |
| Public Information Official | x | x |
| Resource Development/Grant Writer | x | x |

Based on these findings, this memo will focus on reviewing the city's adopted codes and regulations to determine whether they enhance, undermine, or are silent on resilience to these specific hazards. Additionally, the memo will evaluate current zoning ordinances for the presence or absence of best practices that support hazard resilience, ensuring that local land use policies align with the region's most significant risks.

Subsequently, the adopted development-related sections of the City's code—including building construction codes and standards (Article 3.02), Substandard Buildings (Article 3.03) Floodplain Management (Article 3.04), Fire Protection (Article 5.03), Subdivision (Chapter 10), and Zoning (Chapter 14)—were systematically evaluated against "best practices" and common resiliency strategies, with special attention placed on the absence or presence of measures specifically meant to address the most frequent and impactful hazards identified in the

aforementioned Hazard Mitigation Plan. The review considered not only the appropriateness and completeness of the technical provisions within each section, but also the adequacy of the administrative framework necessary for effective enforcement. Where applicable, individual code components were assessed against a checklist of recognized best practices and qualitatively ranked using a four-tier system, as shown below. Commentary, section references, and relevant excerpts were provided to support these rankings. Detailed findings and supporting documentation are included in the Appendices at the end of this memo.

| | |
|---|---|
| Tier 1 | **Best Practice Fully Implemented**<br>*The best practice is fully addressed in the adopted code, with no revisions required. The code effectively supports community resilience.* |
| Tier 2 | **Best Practice Adequately Addressed with Minor Adjustments Needed**<br>*The best practice is generally addressed in the adopted code, but minor edits are recommended for clarity and/or completeness to ensure optimal effectiveness.* |
| Tier 3 | **Best Practice Not Addressed or Partially Addressed – Revisions Advised**<br>*The best practice is partially addressed by the adopted code, but further analysis, policy discussion and/or revisions are advised to fully achieve the intent and enhance resilience.* |
| Tier 4 | **Best Practice Not Addressed or Inadequately Addressed - Revisions Critical**<br>The best practice is not addressed in the adopted code or addressed ineffectively, indicating a significant gap in resilience measures that requires immediate attention and implementation. |

# Conclusions & Recommendations

## Building construction and fire protection codes and standards

Smithville adopted the 2006 International Code Council (ICC) Family of Codes in 2006. Each new edition of the International Building Code (IBC) and related codes incorporates the latest scientific research, lessons learned from recent disasters, and advancements in building technology to enhance requirements for hazard resistance- including wind, flood, seismic, wildfire, and extreme weather events. New editions of the IBC are released every three years, with the last edition being released in 2024. The Alliance for National & Community Resiliency (ANCR) advises against communities adopting building codes that are more than nine years or three editions out of date. Accordingly, it is recommended that the Comprehensive Plan includes a near-term action item to adopt a more recent code. As a starting point, the following table, excerpted from a white paper produced by the International Code Council, *Resilience Contributions of the International Building Code*, organizes building code techniques to improve resilience by chapter/section, strategy, and hazard. While thereport focused on the 2018 version of the Code, the organizational framework has remained largely consistent in subsequent editions.

Table 2: Select IBC Provisions Contributing to Resilience

| Selected Code Topic | Relevant Sections (2018 IBC) | Supported Resilience Strategy | Relevant Hazards |
|---|---|---|---|
| Critical facilities identification | 307 | • Emergency planning<br>• Community operations<br>• Response and recovery | • Flooding<br>• Hurricanes<br>• Tornadoes<br>• Blizzards<br>• Terrorist<br>• Wildfire |
| Hazardous or combustible materials | 413, 414 | • Isolating risks | • Terrorist<br>• Fire<br>• Flooding<br>• Hurricanes<br>• Tornadoes |
| Storm Shelters/Areas of Refuge | 423, 1009, 1026 | • Shelter in place/Refuge<br>• Robustness<br>• Community protection | • Tornado<br>• Terrorist<br>• Fire |
| Flammability of materials | Chapter 6, 7, 8 | • Fire resistance<br>• Egress<br>• Indoor environmental quality<br>• Smoke exposure | • Fire<br>• Secondary to other hazards |
| Protection of openings | Chapter 7, 1609.2 | • Structural integrity<br>• Debris impacts | • Hurricanes<br>• Tornadoes |
| Fire suppression/ protection. Smoke control | Chapter 9 | • Fire resistance<br>• Egress<br>• Property protection | • Fire<br>• Secondary to other hazards |
| Communication | 907, 908, 917 | • Public safety<br>• Evacuation | • Fire<br>• Terrorist<br>• Earthquake<br>• Tsunami<br>• Tornadoes |
| Means of egress | Chapter 10 | • Evacuation<br>• Fire protection<br>• Accessibility | • Flooding<br>• Hurricanes<br>• Tornadoes<br>• Blizzards<br>• Terrorist<br>• Wildfire |
| Accessibility | Chapter 11 | • Inclusive communities<br>• Community cohesion<br>• Evacuation | • Public welfare<br>• Secondary to other hazards |
| Occupant health | Chapter 12 | • Indoor environmental quality<br>• Indoor air quality<br>• Access to sanitation | • Public health<br>• Fire<br>• Extreme heat/cold |
| Exterior envelope performance | Chapter 14 | • Property protection<br>• Debris impacts<br>• Hazard spreading | • Fire<br>• Flooding<br>• Hurricanes<br>• Tornadoes |
| Roof assemblies | Chapter 15 | • Fire resistance<br>• Debris impacts<br>• Sealing | • Fire<br>• Hurricanes<br>• Tornadoes<br>• Extreme heat/cold |

Table 2 *continued*: Select IBC Provisions Contributing to Resilience

| Selected Code Topic | Relevant Sections (2018 IBC) | Supported Resilience Strategy | Relevant Hazards |
|---|---|---|---|
| Moisture protection | 1209, 1402, 1503 | • Durability<br>• Mold, mildew, rot<br>• Property protection | • Blizzards<br>• Hurricanes<br>• Flooding<br>• Thunderstorms |
| Hazard Maps | 1608, 1609, 1611, 1613, 2603 | • Identifying risk | • Tornado<br>• Hurricane<br>• Seismic<br>• Pests<br>• Snow<br>• Rain |
| Continuous load paths | Chapter 16 | • Structural integrity<br>• Anchorage and bracing | • Earthquake<br>• Tornadoes<br>• Hurricanes |
| Identification of risk | 1604.5 | • Public safety<br>• Emergency planning | • Earthquake<br>• Tornadoes<br>• Hurricanes<br>• Blizzards |
| Elevation of structures | 1612 | • Flood mitigation<br>• Property protection | • Flooding<br>• Hurricanes<br>• Sea level rise |
| Tsunami | 1615, Appendix M | • Identifying risk<br>• Elevation above inundation<br>• Minimum design loads<br>• Evacuation/refuge | • Tsunami |
| Special inspections | Chapter 17 | • Verification of performance<br>• Structural integrity<br>• Fire resistance | • Earthquake<br>• Fire<br>• Hurricanes<br>• Flooding<br>• Tornadoes<br>• Blizzards |
| Soils and foundations | Chapter 18 | • Load support<br>• Subsidence | • Earthquake<br>• Sea level rise<br>• Drought<br>• Flooding |
| Material performance | Chapters 19-26 | • Fire resistance<br>• Structural integrity<br>• Product safety | • Flooding<br>• Hurricanes<br>• Tornadoes<br>• Blizzards<br>• Terrorist<br>• Wildfire |
| Safety during construction | Chapter 33 | • Public safety<br>• Fire safety<br>• Means of egress | • Fire<br>• Civil unrest |
| Fire Districts | Appendix D | • Fire safety | • Fire |
| Flood Resistance | Appendix G | • Flood mitigation<br>• Property protection | • Flooding<br>• Hurricanes<br>• Sea level rise |

When determining which version is most appropriate for Smithville, there are several facets to consider beyond simply the technical changes:

1) State requirements – Texas law establishes the 2012 International Building Code (IBC) as the minimum commercial building code and the 2012 International Residential Code (IRC) as the minimum residential code for municipalities. It also requires the use of the 2015 International Energy Conversation Code ( IECC) and the 2020 National Electric Code (NEC) for both industrialized and municipal construction, unless a city adopts stricter standards. For industrialized and modular buildings, the 2021 IBC is mandated. Texas law prohibits requiring residential sprinklers.

2) Regional precedent – Aligning Smithville's codes with the neighboring jurisdictions can simplify compliance for regional contractors. Neighboring cities may also have developed amendments or modifications that are pertinent to Smithville.

3) LOCAL DYNAMICS – Smithville does not currently have many local modifications to the 2006 Code. It is common for jurisdictions to amend model codes to address unique local conditions, economic factors, or policy preferences, but doing so does create an additional layer of cost and effort to the adoption process. Additionally, it is important to consider the associated training costs for the building official, inspectors, and local design professionals—especially if there are an abundance of local amendments for which custom materials would need to be created.

4) Cost-Benefit – Newer codes may require costlier materials (e.g., fire-resistant insulation) or designs (e.g., storm shelters) that increase construction costs. They may also have the longer-term effect of creating longer- term savings, such as the energy-efficient provisions that reduce utility expenses over time. Adopting updated codes can also enhance the City's eligibility for certain federal and state grants, thought it may introduce additional administrative complexity.

5) Stakeholder Input – The International Code Council (ICC) code development process incorporates feedback from a wide range of stakeholders, including government officials (e.g., code enforcers, fire marshals), industry professionals (e.g., builders, architects, engineers), and the general public (e.g., residents, advocacy groups). This inclusive process ensures that updates address critical concerns such as safety, accessibility, and sustainability.

6) Future Proofing – Each time new Code is adopted, there is a cost to the aforementioned stakeholders associated with the learning curve. Skipping intermediate editions (e.g., jumping from 2015 to 2021 or 2024) may reduce future transition costs. Additionally, Cities on newer codes can more easily integrate emerging technologies (e.g., modular construction or renewable energy systems).

Regarding administrative authority, Chapter 1 of the 2006 Building and Fire Codes contains provisions that address the duties and powers of the Building Official and Fire Code Official, respectively; permits and construction documents; inspections; enforcement, violations, and stop work orders; and board of appeals. Smithville has also adopted separate language in Chapter 3, Article 2, Division 2, which in some instances partially addresses some of these same topics, which could create confusion in places where they differ. When the City adopts a more recent version of Code, it is recommended that this portion of local Code be updated, as well.

An important amendment to the Code is needed to clearly identify the position designated as the Fire Code Official. Although Chapter 1 of the 2006 International Fire Code grants significant authority to the Fire Code Official, the local Code does not specify which staff position holds this role. While Article 5.02 of the local Code grants certain authorities to the Fire Marshal, it does not explicitly assign responsibility for reviewing construction documents for compliance with the adopted Fire Code. Additionally, Section 9.02.006, which outlines the inspection authorities of the Building Official, does not include the Fire Code within that role's responsibilities. Even if these duties have been informally assigned in practice, it is recommended that the Code be amended to explicitly state which position(s) are responsible for construction plan review, permit issuance, and inspections related to the Fire Code.

# Floodplain management

The Floodplain Management Ordinance was updated in April 2023 and, overall, incorporates many best practices. However, there are a few areas that may warrant further updates or consideration and could be referenced in the implementation plan for the Comprehensive Plan.

- **Future Condition Hydrology**: Although the Code defines the "Area of Future Conditions Flood Hazard," it does not contain clear requirements to regulate development based on projected future conditions in addition to current FEMA flood maps.
- **Low Impact Development (LID):** The ordinance does not reference Low Impact Development practices.
- **Substantial Improvement Threshold**: The Code does not require cumulative tracking of the value of improvements over time to determine substantial improvement; it appears to evaluate improvements on an event-by-event basis.
- **Setbacks from Rivers & Streams**: The ordinance does not establish mandatory setbacks from rivers and streams within the floodplain.
- **Compensatory Storage**: There is no requirement in the Code for compensatory storage to offset reductions in floodplain volume due to development.

# LAND USE-RELATED REGULATIONS: ZONING AND SUBDVISION ORDINANCES

## Evaluation Approach and Context

In this evaluation, the City of Smithville's zoning, subdivision, and related ordinances were reviewed against a compilation of widely recognized planning techniques that support resilience in the built environment. These techniques were grouped by theme—land use, housing, environmental protection (including floodplains, steep slopes, riparian zones, and the wildland-urban interface), and critical infrastructure (water, stormwater, power, and transportation). It is important to note that, while some regulatory areas—such as the building code for resilience to hail, wind, flooding, or extreme temperatures; the fire code for fire protection; and flood damage prevention ordinances—are very directly related to natural hazard resilience and tend to have clear, uniform standards across jurisdictions, zoning and land use regulations tend to be more abstract and indirect in their relationship to hazard resilience. Because zoning is inherently shaped by local needs, community character, economic context, and policy preferences, this stage of review focuses solely on identifying whether a particular technique is present in the regulations, rather than assessing how fully or effectively it is addressed.

The presence of a regulatory tool in local ordinances does not, by itself, confirm its adequacy or the success of its implementation. Rules that appear comprehensive on paper may vary widely in effectiveness depending on local capacity, intent, and evolving priorities. As such, this initial stage is not intended to evaluate the completeness or suitability of these techniques, but to chart the tools that are available for Smithville's use.

## High-Level Findings

As a fundamental first step, it is best practice to make references to requiring consistency with the Comprehensive Plan, which the Smithville Subdivision Code does in Section 1.4 Zoning Code does in Section 1.7.

However, this analysis further revealed that there are a lot of unutilized zoning and subdivision tools available to the City to help it direct its development pattern should it wish to. A recommended action item in the Comprehensive Plan is to review this checklist in the appendix of this memo against the City's priority land use goals to identify which gaps to pursue.

There are certain tools already in use that should be evaluated for their effectiveness and completeness against development goals, such as:

**Accessory Dwelling Units (ADUs)**: Permitting Accessory Dwelling Units (ADUs) is a widely recommended strategy for diversifying and expanding the housing supply, making more efficient use of existing infrastructure, and enhancing financial stability for property owners. Many cities have implemented ADU programs designed to minimize neighborhood impacts. Smithville could consider reviewing its current regulations and comparing them with those of peer communities to identify potential improvements.

Currently, Smithville permits ADUs by right in most districts, namely SF-2 (Section 2.2.2.B), TH (Section 2.2.3.B), MF (Section 2.2.4.B): MH (Section 2.2.5.B); MR (Section 2.2.7B); C-1 (Section 2.2.8.B); C-2 (Section 2.2.9.B); C-3 (Section 2.2.10.B); CBD (Section 2.2.11.B), under the term attached "Garage Apartments." The City requires some additional standards, namely:

- *A garage apartment shall share at least one (1) common wall with or be located above a private garage of a single-family residential dwelling.*
- *A garage apartment may only be used as a dwelling unit for one (1) family.*
- *One additional off-street parking space shall be required when a property has a garage apartment.*

One common barrier to financing more affordable housing types is the high cost associated with parking requirements. Many cities with a mismatch in housing supply and demand are re-evaluating these requirements to avoid excessive costs and constraints on housing development. By reducing parking mandates, cities can make it easier and more cost-effective to build affordable homes. Reducing parking requirements also has important environmental benefits. Lower parking mandates mean less impervious cover from large lots and paved spaces, which helps minimize stormwater runoff and urban flooding—an increasingly urgent issue for many communities.

**Mixed Use Standards–** While its approach is relatively subtle, the current Code allows mixing of residential and other uses within several commercial districts, notably the C-1 Neighborhood Shopping District (Section 2.2.8.B) and the C-2 General Commercial District (Section 2.2.9.B), *where multi-family housing and townhouses are permitted by right*. In the Central Business District, the Code more actively manages mixed use by requiring:

> "*No more than fifty (50) percent of the gross floor area of the ground floor of any building within the Central Business District, exclusive of the area used for utilities and building service, shall be used for storage, residential uses, or a combination thereof.*"

The Code also includes provisions for Planned Development Districts (Section 2.2.16), which are commonly used to enable mixed-use projects and offer regulatory flexibility. Minimum district size standards help prevent PDDs from being misused as a workaround for variances; however, specifics on qualifications and expectations for eligible projects are otherwise limited. If recurring themes arise in PDD applications, the City may wish to integrate these requirements directly into the Code. An action item for

the Comprehensive Plan could be to evaluate whether current mixed-use regulations sufficiently support long-term land use goals.

**Compatibility**: To prevent nuisances and ensure compatibility between residential and non-residential uses, the Code includes several provisions. For example:

- Sections 2.2.5.D.5 MH Additional Site Design Standards, 2.2.8.D.3 C-1 Neighborhood Shopping District, 2.2.9.D.4 C-2 General Commercial Additional Design Standards, 2.2.10.D.3 C-3 Highway Commercial District Additional Site Design Standards , 2.2.13.D.1 General Industrial District, and 2.2.15.D. 4 Community Facilities District Additional Site Design Standards require a masonry wall as a noise barrier. However, the effectiveness of these barriers may vary, as the specifications for such walls are not clarified in the Code—wall height, material, and placement all influence sound attenuation and should ideally be defined for consistent results.
- Other standards address screening of outside storage (2.2.9.D.2, 2.2.13.D.2), parking lots (3.5.1.H), and residential fences.
- Other standards address screening of outside storage (Sections 2.2.9.D.2, 2.2.13.D.2), parking lots (Section 3.5.1.H), and residential fences (Section 3.6.2).
- The City places additional design standards on Industrial Uses (Section 2.2.13.D.3 ). These standards may need review to stay current with emerging subcategories (such as Data Centers), as industrial land uses rapidly change.
- The Code also mandates paved parking spaces (Section 3.5.1.G) to minimize dust and improve compatibility. However, this could unintentionally restrict Low Impact Development (LID) strategies, such as permeable pavement and green infrastructure, which offer more resilient stormwater management solutions and minimize impervious cover.

**Open Space:** Open space requirements play a direct and indirect role in supporting a variety of resiliency strategies, including environmental sustainability and community well-being. In the current Code, certain districts—specifically Townhouse and Multi-family—are required to maintain minimum percentages of open space. However, standards such as in Section MF District 2.2.4.D.2, which states

> *"Open space shall be used for people, planting, and visual appeal,"*

are noticeably vague. This lack of specificity can lead to significant variation in the quality, utility, and cost of maintaining open spaces within new developments.

**Pedestrian Connectivity**: The Subdivision Code (Article 6) requires sidewalks on both sides of the street: 4ft wide in residential areas and 10ft wide where streets abut business properties. These standards promote pedestrian connectivity within new developments.

However, there are opportunities to improve these provisions depending on the City's walkability goals as outlined in the Comprehensive Plan. The effectiveness of connectivity options—sidewalks versus trails— often depends on the overall compactness of land uses. In neighborhoods where uses are more clustered, wider sidewalks or additional trail connections may better support pedestrian activity.

**Connectivity & Continuity:** Subdivision Article 3.1 of the current Code addresses street network continuity through several provisions. It:

- Requires all arterial and collector streets to be continuous or aligned with existing streets,
- Limits the use of dead-end streets to situations where natural features prevent connectivity, and
- Requires stub-outs to adjacent tracts to allow for future connections.

A well-connected street and pedestrian network—with multiple route options—is essential for efficient navigation in everyday life and is particularly critical during natural disasters or other emergencies. The existing Code provisions support these objectives, but the Comprehensive Plan could evaluate opportunities to strengthen them, such as:

- Expanding guidance on block length to further improve connectivity,
- Clarifying design expectations for stub-outs, or
- Encouraging multimodal connections for pedestrians and cyclists in addition to vehicle routes.

# Summary of Priorities and Next Steps

Building on this broad assessment, the next phase will involve the City—guided by the Comprehensive Plan now in progress—to identify a handful of techniques or code areas for deeper focus. It is recommended that this effort prioritize the addition or enhancement of approximately four to six zoning and subdivision techniques that would most effectively advance Smithville's resilience goals. Focusing on a manageable number of targeted improvements will allow City resources and attention to be concentrated where they can yield the greatest impact. The subsequent memoranda will analyze these prioritized topics in detail, presenting a structured framework of guiding questions to support the customization of local code provisions. These considerations will address local resource and staffing needs, monitoring and enforcement capacity, likely development impacts, legal feasibility, cost-effectiveness, and the potential for unintended consequences, among other factors. The objective is to ensure that Smithville's regulatory tools are not only robust and comprehensive in law, but also practical, actionable, and reflective of the community's aspirations and operational realities.

# Appendix A

## Detailed Assessment of Building Codes Compared to Best Practices

The following list of best practices ensures the City has given itself the appropriate regulatory authority to enforce a recent version of the International Building Code (IBC) as part of routine development-related business, as well as authority to act swiftly in the immediate aftermath of a natural disaster.

The review of building codes covers the full family of International Code Council (ICC) codes—including the International Building Code (IBC), International Residential Code (IRC), International Plumbing Code, International Mechanical Code, and International Electric Code[1]— as well as the National Electrical Code, which collectively govern the vertical construction of buildings for both residential and commercial uses.

This evaluation is conducted under two primary umbrellas: First, it considers whether the city has the appropriate administrative authority and procedures in place-such as permitting, inspections, and code enforcement-to effectively implement and uphold these standards. Second, recognizing that, with each iteration, the IBC family of codes endeavors to incorporate building science that advances resiliency, this evaluation concentrates on whether the city's codes are current (within three versions of the latest) and if local amendments are prone to strengthen or undermine resilience to the hazards most relevant to the community. This approach ensures the city is both adopting up-to-date, hazard-relevant requirements and has the necessary mechanisms to enforce them. Technical and Constructions Codes and Standards are addressed in Article 3.02 of the Smithville's Code of Ordinances.

| ESTABLISHMENT OF RESPONSIBLE OFFICIAL | |
|---|---|
| 1 | **BEST PRACTICE**: *Establish the position of Building Official.* |
| **COMMENTARY**: Generally sufficient. To make the language more comprehensive, consider adding details about qualifications, responsibilities, and reporting structure. | |
| **Code Section Reference: *9.02.006*** | |

The City does not appear to have adopted the International Fuel Gas Code.

***Adopted language*** - *There is hereby created the office of building official/inspector. One person, selected as under the respective ordinances provided, may serve in the multiple capacity as building inspector, electrical inspector, gas inspector and plumbing inspector. His salary shall be designated by the city council. His duties being such as required and defined under the present ordinances of the city, and any ordinances that may be hereafter passed by the governing body thereof.*

## AUTHORITY TO APPLY BUILDING CODES

| | |
|---|---|
| **2** | **BEST PRACTICE:** *Establish the Building Official as having the authority to interpret and enforce adopted International Building Code (IBC), International Residential Code (IRC), and related codes with binding decisions.* |

**COMMENTARY:** This is addressed in Chapter 1 of the 2006 International Building Code, which is adopted in Section 3.02.031 of Local Code.

**Code Section Reference:** *3.02.031*

***Adopted language –***

*3.02.03*

*(a) The purpose of a building code is to provide for orderly growth and conformity to regulations that provide safety, security, and engineering reliability for the citizens and the community. The spacing, construction types, sizes, materials of construction and labor components all help provide some measure of these objectives.*

*(b) There is hereby adopted by the city council, for the construction, enlargement, moving, removal, conversion, demolition, occupancy, equipment, use, height, and area of buildings and structures, that certain building code known as the International Building Code, being particularly the 2006 edition thereof, and such portions as are hereinafter deleted, modified, or amended, of which at least one (1) copy has been and is now filed in the office of the city secretary, and the same is hereby adopted and incorporated as fully as if set out at length herein, and the provisions thereof shall be controlling in the construction of all buildings and structures within the corporate limits of the city.*

| | |
|---|---|
| **3** | **BEST PRACTICE:** *Establish the Building Official as having the authority to approve and deny permits (Power to review, approve, conditionally approve, or deny building permits, occupancy permits, and related applications based on compliance with the codes).* |

**COMMENTARY:** This is addressed in Chapter 1 of the 2006 International Building Code, which is adopted in Section 3.02.031 of Local Code. Of note, Local Code Section 3.02.034 also establishes the requirement for a permit, but does not expressly extend authority to Building Official to enforce. Instances where the IBC and local code address the same topic in different manners could create confusion.

**Code Section Reference:** § 3.02.034

***Adopted language –***

***(a)*** *Any person, firm, corporation or agent who shall violate a provision of this division or any provision of the International Building Code adopted herein by reference, or fail to comply therewith, or with any of the requirements thereof, or who shall erect, construct, demolish or move any structure or has erected, constructed, moved or demolished a building or structure in violation of a detailed statement or drawing submitted and approved thereunder, shall be guilty of a misdemeanor. Each person shall be guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this code is committed or continued, and upon conviction of any such violation such person shall be punished within the limits and as provided by state laws.*

***(b)*** *Any person, firm, corporation or agent who fails to pull a permit with the city, prior to any work being done that requires a permit, shall be charged the amount of the permit, plus a penalty of two times that amount, therefore making the permit fee three times the normal amount.*

| | |
|---|---|
| **4** | **BEST PRACTICE:** *Establish the Building Official as having the authority to approve alternative materials and methods (Ability to review and approve innovative materials, designs, or construction methods if they meet or exceed code requirements. And require pre-approval of alternative construction methods or materials).* |

**COMMENTARY:** This is addressed in Chapter 1 (Section 104.11) of the 2006 International Building Code, which is adopted in Section 3.02.031 of Local Code.

**Code Section Reference:** *3.02.031*

***Adopted language –*** *See above for excerpt.*

| | |
|---|---|
| **5** | **BEST PRACTICE:** *Establish the Building Official as having the authority to make recommendations for or grant, as applicable, variances within defined limits.* |

**COMMENTARY:** This is partially addressed in Chapter 1 of the 2006 International Building Code, which is adopted in Section 3.02.031 of Local Code, which, in Section 112 establishes a Board of Appeals. However, it is also common for a Building Official to have the authority to grant such variances and for a secondary body, such as a Board of Adjustment, to hear appeals to administrative decisions or hear cases that are beyond the authority of the Building Official. If a variance process is established, it is imperative for the Code to establish clear parameters and decision-making criteria to ensure the intent of the Code is not undermined and resiliency measures are still achieved.

**Code Section Reference:** *3.02.031*

***Adopted language –*** *See above for excerpt.*

## AUTHORITY TO INSPECT & INVESTIGATE

| | |
|---|---|
| **6** | **BEST PRACTICE:** *Establish the Building Official as having the authority to establish required inspections at key stages of construction, enter construction sites at reasonable times to verify compliance with the permit, and mandate independent third-party testing when necessary.* |

**COMMENTARY**: The establishment of the Building Official position in Section 9.02.006 includes the duty and authority to inspect building, electrical, gas, and plumbing work; it is unclear why certain other adopted codes, such as the mechanical and residential codes, were omitted from this list. This authority should be extended to all adopted Codes. It is recommended that this authority also appear in Article 3.02, Construction Codes and Standards, to improve clarity.

While Section 3.03.001(5) and (6) of the Substandard Building Article do require compliance with the Building and Electrical Code, reliance on this Article or Subsection for authority to require compliance with permits during construction is not recommended.

**Code Section Reference**:

***Adopted language –***

*There is hereby created the office of building official/inspector. One person, selected as under the respective ordinances provided, may serve in the multiple capacity as building inspector, electrical inspector, gas inspector and plumbing inspector. His salary shall*

*be designated by the city council. His duties being such as required and defined under the present ordinances of the city, and any ordinances that may be hereafter passed by the governing body thereof.*

| | |
|---|---|
| **7** | **BEST PRACTICE**: *Establish the Building Official as having the authority to issue Stop-Work Orders when construction does not comply with approved plans or code requirements and/or poses a safety risk (e.g. to substandard or hazardous construction), require corrections, and set deadlines.* |

**COMMENTARY:** This is addressed in Chapter 1 (Section 114) of the 2006 International Building Code, which is adopted in Section 3.02.031 of Local Code.

**Code Section Reference**: *3.02.031*

***Adopted language –*** *See above for excerpt.*

| | |
|---|---|
| **8** | **BEST PRACTICE**: *Establish the Building Official as having the authority to declare buildings unsafe or uninhabitable, revoke Certificates of Occupancy, and require repair, demolition, or evacuation if they threaten public safety.* |

**COMMENTARY**: The Code adequately addresses this best practice in cases of emergency. However, "emergency" should be more clearly defined. Additionally, it may be advisable to broaden, with parameters, this authority beyond "imminent danger," as there may be instances when revocation of a CO is appropriate, but not necessarily due to a traditional emergency.

**Code Section Reference:**: **§ 3.03.004 Appeals; authority of building official in cases of emergency.**

***Adopted language –***

*(a) The owner, agent or person in control shall have the right, except in cases of emergency, to appeal from the decision of the building official, as provided hereinafter, and to appear before the city council at a specified time and place to show cause why he should not comply with said notice.*

*(b) The decision of the building official shall be final in cases of emergency which, in his opinion, involve imminent danger to human life or health. He shall promptly cause such building, dangerous structure or portion thereof to be made safe or cause its removal. For this purpose he may at once enter such structure or land on which it stands, or abutting land or structures, with such assistance and at such cost as he may deem necessary. He may order the evacuation of adjacent structures and may require the protection of the public by appropriate fences or such other means as necessary, and for this purpose may close a public or private right-of-way.*

| | |
|---|---|
| **9** | **BEST PRACTICE**: *Establish the Building Official as having emergency response authority, including the power to inspect buildings post-disaster, restrict occupancy, and mandate emergency repairs.* |

**COMMENTARY:** The Code addresses this best practice.

| **Code Section Reference:** | § 3.03.004(b) Appeals; authority of building official in cases of emergency. |
|---|---|
| ***Adopted language –*** *See excerpt in of this code section on previous best practice.* | |
| | |

## AUTHORITY TO ENFORCE COMPLIANCE

| | |
|---|---|
| **10** | **BEST PRACTICE:** *Establish the Building Official as having the authority to issue violations/citations and fines for non-compliance.* |

**COMMENTARY:** The Code addresses this best practice.

**Code Section Reference:** 3.03.07

***Adopted language –***

*Any person who shall willfully refuse or fail to leave a building which has been ordered vacated under the terms of this article, or who shall enter an area around such building that has been declared to be dangerous and notice of which declaration shall have been posted, and any person who shall interfere with or hinder the vacation, repair, or demolition of any building under the terms of this article, shall be deemed guilty of a misdemeanor and shall be subject to a fine in accordance with the general penalty provision as set forth in section 1.01.009 of this code, and each and every day's violation shall constitute a separate and distinct offense. In case the owner or occupant of any substandard building or structure ordered vacated, repaired or demolished under the terms of this article shall be a corporation, and shall violate any provision of this article, the president, vice-president, and treasurer of such corporation or any manager, agent, or employee of such corporation shall also be severally liable for the penalties herein provided.*

| 11 | **BEST PRACTICE:** *Establish the Building Official as having the authority to power to request administrative warrants for forced inspections if property owners refuse access and to refer cases for legal enforcement.* |
|---|---|

**COMMENTARY:** The Code addresses this best practice.

**Code Section Reference:** 3.03.06

***Adopted language –***

*It shall be the duty of the city attorney to enforce the orders of the city council or the building official, upon appeal, by filing action in the appropriate court of the state when so authorized by the city council.*

| 12 | **BEST PRACTICE:** *Establish the Building Official as having the authority to place liens on properties to recover costs when the city must remediate hazardous conditions.* |
|---|---|

**COMMENTARY:** While the adopted Code does not grant this authority directly to the Building Official, it does address the underlying intent of this best practice.

**Code Section Reference:** *See 3.03.005(3)*

***Adopted language –***

*The city shall have the power to demolish and remove said buildings and structures at the expense of the owner of the property or premises and assess the expenses on the land on which it stood or to which it was attached, and shall provide for such assessment, the mode and manner of giving notice and the means of recovering such expenses. If the city has to demolish and clean said lot, it shall not relieve the owner from prosecution for failure to comply with the provisions as set forth in any part of this article.*

| CURRENCY | |
|---|---|
| **13** | **BEST PRACTICE:** Adopt and a Family of Codes published by the International Code Council no greater than three versions out of date. |
| **COMMENTARY:** This best practice is advised by the Alliance for National and Community Resilience, which is a coalition of public and private stakeholders that "aims to provide communities with tools that support holistic understanding for their current resilience and opportunities to improve." | |

**Appendix A**: Detailed Assessment of Building Code Compared to Best Practices

**Appendix A**: Detailed Assessment of Building Code Compared to Best Practices

The International Building Council (IBC) publishes a new "family" of I-Codes every three years, with six updates since the 2006 version of the I-Codes adopted by Smithville. Per the IBC, with each iteration, the intent is to balance the efficiency and predictability of time-tested methods with the utilization of new and smarter technological advances. While adoption of a more recent Code is highly recommended, consideration must be given to which version is most appropriate for the City, such as State requirements, regional precedent, local dynamics, the cost-benefit, stakeholder input, and future proofing.

There many are resources available to compare the changes between versions, including those that focus on particular hazards faced by Smithville.

**FLOOD**: With each update to the family of I-Codes, FEMA provides analysis, including a comparison to the prior version, of changes that are directly related to flood resilience. Documentation for Codes 2009-2021 is available here: https://www.fema.gov/node/flood-resistant-provisions-international-codes. Documentation for the 2024 code is available here: https://www.fema.gov/sites/default/files/documents/fema-flood-provisions-2024-international-codes.pdf.

**WIND**: With each update to the family of I-Codes, FEMA documents those changes to the International Building Code, International Existing Building Code, and International Residential Code pertaining to wind-resistance. FEMA's summaries of codes 2015 through 2021 are available here:

https://www.fema.gov/emergency-managers/risk-management/building-science/building-codes?page=4

**WILDFIRE**: In 2015, the IBC published its first iteration of its International Wildland-Urban Interface Code (IWUIC). The IWUIC establishes requirement for land use and the built environment within designated Wildland-Urban Interface areas using prescriptive and performance provisions. It addresses several key components:

1. Ignition-Resistant Construction
2. Defensible Space
3. Emergency Vehicle Access
4. Water Supply
5. Fire Sprinklers

6. Chimney's with Spark Arrestors

It is intended as a supplement to the adopted building and fire codes of the jurisdiction and, like the other I-Codes, is updated every three years.
https://iccsafe.org/wp-content/uploads/IWUIC-and-Resilience-MEDRES.pdf

**Appendix A**: Detailed Assessment of Building Code Compared to Best Practices

~~**EXTREME WEATHER:** Texas mandates the baseline application of the 2015 International Energy Conservation~~ Code, alone with some State specific mandates. Cities are allowed to adopt amendments as long as they are not less stringent . This paper provides information on how the IECC addresses resiliency: 19-18078_GR_ANCR_IECC_Resilience_White_Paper_BRO_Final_midres.pdf

**Code Section Reference:**

| Code Type | Codification Section | Adopting Ordinance & Date |
|---|---|---|
| **2006 International Building Code** | 3.02.031 | Ordinance adopting 2001 Code; 2001 Code, sec. 3.101; Ordinance 2604-434 adopted 4/10/06 |
| **2006 International Residential Code** | 3.02.071 | Ordinance 2604-434 adopted 4/10/06 |
| **2006 International Plumbing Code** | 3.02.101 | Ordinance adopting 2001 Code; 2001 Code, sec. 3.501; Ordinance 2604-434 adopted 4/10/06 |
| **2006 International Gas Code** | 3.02.141 | Ordinance adopting 2001 Code; 2001 Code, art. 3.600; Ordinance 2604-434 adopted 4/10/06. |
| **2006 International Electrical Code** | 3.02.233(b) | 1987 Code, ch. 3, sec. 10V; Ordinance 9909-353 adopted 9/13/99; Ordinance adopting 2001 Code; 2001 Code, sec. 3.922; Ordinance 2604-434 adopted 4/10/06 |
| **2006 International Mechanical Code** | 3.02. 301 | Ordinance adopting 2001 Code; 2001 Code, art. 3.1300; Ordinance 2604-434 adopted 4/10/06 |
| **2006 International Property Maintenance Code** | 3.02.331 | Ordinance 2016-520 adopted 8/8/16; Ordinance adopting 2020 Code. |
| **2006 International Building Code** | 3.02.031 | Ordinance adopting 2001 Code; 2001 Code, sec. 3.101; Ordinance 2604-434 adopted 4/10/06 |

**Appendix A**: Detailed Assessment of Building Code Compared to Best Practices

# Appendix B

## Detailed Assessment of the Fire Code Compared to Best Practices

In the context of enhancing community resiliency through regulation, evaluating the City's Fire Code involves examining how well it supports the community's ability to prepare for, withstand, and recover from fire-related hazards. The following list of best practices identifies whether the City has given itself the appropriate regulatory authority to enforce a recent version of the Fire Code as part of routine development-related business, as well as authority to act swiftly in the aftermath of natural disasters, such as wildfires.

Like the building code, this evaluation is best approached under two main umbrellas: administrative standards and technical standards. On the administrative side, standards for best practices are comparable in scope to those applicable to the building codes—the authority and responsibilities of the fire code official, the processes for issuing permits, conducting inspections, and maintaining records, as well as the systems for code enforcement, appeals, and coordination with other agencies. These administrative elements are critical because they determine how effectively the technical requirements of the fire code are implemented and maintained, directly impacting the community's overall resilience to fire hazards. On the technical side, the evaluation focuses on currency of adopted Code, clarity regarding administration and enforcement, and, to the extent applicable, adopted amendments.

Fire Protection is addressed in Section Article 5.03 of the Smithville Code of Ordinances.

| CURRENCY | |
|---|---|
| 1 | **BEST PRACTICE**: *Adopt a Fire Code that is no more than nine years older than the most recently published version.* |
| **COMMENTARY**: It is highly recommended that the City evaluate adopting a more recent version of the Fire Code. | |
| **Code Section Reference**: 5.03.001 | |

**Appendix B**: Detailed Assessment of FIRE CODE Ordinance Compared to Best Practices

| |
|---|
| ***Adopted language –***<br>The city hereby adopts the 2006 edition of the International Fire Code. |
| |

## ESTABLISHMENT OF RESPONSIBLE OFFICIAL

| 2 | **BEST PRACTICE**: *Establish the position of a Fire Marshal.* |
|---|---|

**COMMENTARY:** The Code addresses this best practice. To make the language more comprehensive, consider adding details about qualifications, express responsibilities, and reporting structure.

**Code Section Reference:** 5.02.001

***Adopted language –***

*The office of city fire marshal is hereby created. The city fire marshal shall have all of the authority, duties and power stated in city ordinances for the position of fire marshal. The city manager shall appoint a qualified person to be confirmed by the city council to serve as city fire marshal.*

## AUTHORITY TO APPLY & INTERPRET FIRE CODE

| 3 | **BEST PRACTICE**: Identify the Official responsible for enforcement of the Fire Code and other safety regulations. |
|---|---|

**COMMENTARY**: Chapter 1 of the 2006 International Fire Code extends many authorities to the Fire Code Official. However, local Code does not make clear which staff position this is. While the Local Code extends several authorities to the Fire Marshal in Article 5.02, it does not expressly establish the responsibility for this position to review construction documents against the adopted Fire Code. *Section* ***9.02.006***, which enumerates the inspection authorities of the Building Official, does not list the Fire Code as within this position's purview either. Even if the delegation of authority and responsibility has been worked out in practice, it is recommended that this gap is closed in Code to specify the position(s) responsible for construction plan review, permit issuance, and inspection relative to the Fire Code.

**Code Section Reference:** None

***Adopted language –N/A***

| | |
|---|---|
| **4** | **BEST PRACTICE**: Establish the power and responsibility to recommend updates to fire codes and safety regulations based on emerging hazards or lessons learned from past events is essential for maintaining resilience. |

**COMMENTARY**: This best practice is not expressly within the current Local Code. However, Section 104.1 of the 2006 International Fire Code does give the Fire Code Official broad authority and responsibility to enforce, interpret, and clarity the fire code, which is sufficient for day to day operation. The City may wish to more clearly establish the expectation and responsibility of the Fire Code Official to evaluate for necessary updates and make recommendations to City Council on the same on a routine basis.

**Code Section Reference**: None

***Adopted language – N/A***

## AUTHORITY TO INSPECT & INVESTIGATE

| | |
|---|---|
| **5** | **BEST PRACTICE**: Establish authority to enter premises for protection and preventative measures. |

**COMMENTARY**: The Code addresses this best practice.

**Code Section Reference**: *5.02.003*

***Adopted language –***

*The fire marshal, the fire chief or any officer or member of the Smithville Volunteer Fire Department designated by the fire chief shall have the right and authority to enter any building or upon any premises in the city at any time during business hours for the* ***purpose of making investigations for fire protection and fire prevention purposes****.*

| | |
|---|---|
| **6** | **BEST PRACTICE**: Establish authority to examine premises where fire has occurred. |

**COMMENTARY**: The Code addresses this best practice.

**Code Section Reference**: *5.02.006*

***Adopted language –***

*The fire marshal shall have the authority, at all times of the day and night, when necessary in the performance of the duties imposed upon him by the provisions of this chapter, to enter upon and examine any building or premises where any fire has occurred, and other buildings and premises adjoining or near the same, which authority shall be exercised only with reason and good discretion.*

## AUTHORITY TO ENFORCE COMPLIANCE

| | |
|---|---|
| **7** | **BEST PRACTICE**: Establish authority to eliminate fire-related hazards. |

**COMMENTARY**: Between the Substandard Building Article 3.03 and Section 5.02.008, the Code addresses this best practice.

**Code Section Reference**: *5.02.008*

***Adopted language –***

*Whenever the fire chief, the fire marshal or any member of the Smithville Volunteer Fire Department shall find in any building, or upon the premises or other place, combustible or explosive matter or a dangerous accumulation of waste paper, boxes or highly inflammable substances, especially liable to fire, and which is so situated as to endanger property, or shall find violations of this chapter or the code of the city, he shall order the same remedied or removed within a specified time. This order shall be complied with by the owner or occupant of such premises or buildings within the time specified, subject to review by the fire chief or fire marshal upon request by the owner or occupant within this time limit.*

## AUTHORITY TO ASSESS PENALTIES FOR VIOLATIONS

| | |
|---|---|
| **8** | **BEST PRACTICE**: Establish penalties for violations. |

**COMMENTARY**: Section 109.3 of the 2006 International Fire Code establishes the authority to enforce penalties, but defers to local code for the amount and other particulars. Local Code does not appear to have

| |
|---|
| penalties specific to the Fire Code. The City Attorney should weigh in on whether the penalty section under the building code 2.02.034 is applicable and sufficient in lieu. |
| **Code Section Reference**: |
| ***Adopted language –*** |
| |

## RESPONSIBILITY TO MANAGE RECORDS

| | |
|---|---|
| **9** | **BEST PRACTICE**: Establish responsibility of keeping records for purposes reporting and recovery |

| |
|---|
| **COMMENTARY**: The Code addresses this best practice. |
| **Code Section Reference:** 5.02.009 |
| ***Adopted language –*** |
| *The fire marshal shall keep in his office a record of all fires occurring within the city, together with all facts, statistics and circumstances, including the origin of the fire and the amount of loss. He shall make all necessary reports concerning fire department operations as may be required by the city or the state department of insurance.* |
| |

# Appendix C

## Detailed Assessment of the Floodplain Ordinance Compared to Best Practices

The City of Smithville adopted its Floodplain Ordinance April 2023 under the delegated authority of the Texas Flood Control Insurance Act, Texas Water Code, Section 16.315 for the purposes of "minimize(ing) flood losses." This ordinance is codified in Article 3.04.

| ADMINISTRATIVE OVERSIGHT | |
|---|---|
| **1** | **BEST PRACTICE**: *Designate a floodplain administrator.* |
| **COMMENTARY**: The Code addresses this best practice by designating the Building Official as the Floodplain Administrator. It is advisable to ensure the job description for this position also includes the qualifications and certifications necessary to perform associated duties. | |
| **Code Section Reference**: 3.04.007 (a) | |
| ***Adopted language –***<br>*Designation of floodplain administrator.*<br>*The building official is hereby appointed the floodplain administrator to administer and implement the provisions of this article and other appropriate sections of 44 CFR (Emergency Management and Assistance, National Flood Insurance Program regulations) pertaining to floodplain management.* | |
| | |
| **2** | **BEST PRACTICE**: *Establish enforcement penalties.* |
| **COMMENTARY**: The Code includes an enforcement penalty. | |
| **Code Section Reference**: 3.04.010 | |

***Adopted language –***

*No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this article and other applicable regulations. Violation of the provisions of this article by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this article or fails to comply with any of its requirements shall upon conviction thereof be fined according to city ordinance, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation.*

## STATUTORY AUTHORITY

| | |
|---|---|
| **3** | **BEST PRACTICE**: *Recognize the statutory authority that grants the City the authority to adopt and administer a floodplain ordinance.* |

| **COMMENTARY**: Addressed. |
|---|
| **Code Section Reference**: 3.4.001 |
| ***Adopted language –***<br>*The legislature of the state has in the Flood Control Insurance Act, Texas Water Code, section 16.315, delegated the responsibility to local governmental units to adopt regulations designed to minimize flood losses. Therefore, the city council does ordain as follows.* |
| |

## CURRENCY

| 4 | **BEST PRACTICE**: *Adopt a floodplain ordinance that is based on current data.* |
|---|---|

| **COMMENTARY**: The Code addresses this best practice. |
|---|
| **Code Section Reference**: 3.04.006(b) |
| ***Adopted language –*** |
| *Basis for establishing the areas of special flood hazard.*<br>*The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Bastrop County, Texas and Incorporated Areas," dated May 9, 2023, with accompanying flood insurance rate maps and/or flood boundary-floodway maps (FIRM and/or FBFM) dated May 9, 2023, and any revisions thereto, are hereby adopted by reference and declared to be a part of this article.* |

## STANDARDS & DESIGN

### FREEBOARD

| 5 | **BEST PRACTICE**: *Require new construction, substantial improvements, and critical facilities (e.g. hospitals, fire stations, emergency centers) to be elevated above the Base Flood Elevation (BFE) by at least 2 feet (or more in high-risk areas).* |
|---|---|

**COMMENTARY**: Partially addressed. In Section 3.04.008(b) the Code requires new construction and substantial improvements of residential and nonresidential structures within areas of special flood hazard have the lowest floor (including basement) elevated to or above the Base Flood Elevation. However, it goes on to say in Section 0.04.008(d)(2)(A) that in areas designated as AO/AH, the lowest floor must be elevated at least two feet above the BFE or the highest adjacent grade for non-residential structures.

**Code Section Reference: 3.04.008(b), (d)(2)(A)**

***Adopted language –***

**3.04.008(b)**

**(1)** *Residential construction.*

*New construction and substantial improvements of any residential structure shall have the lowest floor (including basement) elevated to or above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit a*

*certification to the floodplain administrator that the standard of this subsection, as proposed in section **3.04.007(c)(1)(A)**, is satisfied.*

(2) Nonresidential construction.

New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to or above the base flood level or, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the floodplain administrator.

3.04.008(d)(2)(A)

All new construction and substantial improvements of nonresidential structures;

(A)

Have the lowest floor (including basement) elevated to or above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified); or

## PROHIBITIONS IN FLOODWAYS

| 6 | **BEST PRACTICE:** *Prohibit development in floodways and high risk areas.* |
|---|---|

**COMMENTARY**: Substantially addressed. The Code effectively bans encroachments—including fill, new construction, substantial improvements, and other development—within the adopted regulatory floodway unless it can be proven through hydrologic and hydraulic analysis that the project will result in no increase in flood levels during a base flood. This mirrors the NFIP standard at 44 CFR 60.3(d)(3), which is widely regarded as the minimum best practice for floodplain management in the U.S. It should be noted that will this language is typical—most communities stop at the "no-rise" (no increase in flood elevation) rule – and meets Federal minimums, it is not especially restrictive. While this is effective at preventing clear harm, it still allows potentially risky development if certified by engineers, and cumulative or indirect impacts can slip through.

**Code Section Reference**:

***Adopted language –*** *3.04.008(e)*

*Floodways.*

*Located within areas of special flood hazard established in section **3.04.006(b)** are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles and erosion potential, the following provisions shall apply:*

*(1) Encroachments are prohibited, including fill, new construction, substantial improvements and other development, within the adopted regulatory floodway, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.*

*(2) If subsection **(e)(1)** above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this section.*

*(3) Under the provisions of 44 CFR chapter I, section 65.12, of the National Flood Insurance Program regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first completes all of the provisions required by section 65.12.*

## STORAGE AND PROCESSING OF INAPPROPRIATE MATERIALS IN FLOODWAY

| 7 | **BEST PRACTICE:** *Prohibit storage and/or processing of hazardous, flammable, explosive, or, in times of flooding potentially buoyant or obstructive materials in the flood hazard areas.* |
|---|---|

**COMMENTARY:** The Ordinance does not contain an explicit, standalone section that categorically prohibits the storage or processing of hazardous, flammable, explosive, or potentially buoyant or obstructive materials in the flood hazard areas. However, the ordinance does require the floodplain administrator to consider the danger that materials may be swept onto other lands to the injury of others when reviewing development permits for properties in flood hazard areas. This includes evaluation of the susceptibility of the proposed facility and its contents to flood damage and the effect such damage may have on surrounding properties.

Additionally, all new construction or substantial improvements must be constructed by methods that minimize flood damage, and enclosures (including storage areas) below the lowest floor must be designed to allow the automatic entry and exit of floodwaters—meaning buoyant or hazardous materials could pose a compliance problem if not addressed.

**Code Section Reference:** 3.04.007*(c)(2)(c)*, **Sec. 3.04.008(e)**

***Adopted language*** –

*3.04.007(c)(2)(c)*
*Approval or denial of a floodplain development permit by the floodplain administrator shall be based on all of the provisions of this article and the following relevant factors. C) The danger that materials may be swept onto other lands to the injury of others;*

*3.04.008(e)*

*(e)*

*Floodways. Located within areas of special flood hazard established in section 3.04.006(b) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles and erosion potential, the following provisions shall apply:*

*(1) Encroachments are prohibited, including fill, new construction, substantial improvements and other development, within the adopted regulatory floodway, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.*

*(2) If subsection (e)(1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this section.*

*(3) Under the provisions of 44 CFR chapter 1, section 65.12, of the National Flood Insurance Program regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first completes all of the provisions required by section 65.12.*

| | |
|---|---|
| **8** | **BEST PRACTICE**: *Require a no-rise certification for development in floodways.* |

**COMMENTARY:** Addressed. This language matches the FEMA/NFIP "no-rise" requirement that any development in the floodway is prohibited unless a qualified engineer certifies—using hydrologic and hydraulic analysis—that there will be no increase in flood height.

**Code Section Reference**: Section 3.04.008(e)(1),

***Adopted language –***

Encroachments are prohibited, including fill, new construction, substantial improvements and other development, within the adopted regulatory floodway, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

| 9 | **BEST PRACTICE:** *Use future conditions hydrology (not just current FEMA Flood maps) to anticipate changes in flood risk.* |
|---|---|

**COMMENTARY**: No. Term is defined in code, but it there is no clear requirement to regulate development based on future conditions.

**Code Section Reference:** ***3.04.005 Area of future conditions flood hazard.***

***Adopted language –***

The land area that would be inundated by the 1-percent annual chance (100-year) flood based on future conditions hydrology.

## LOW IMPACT DEVELOPMENT

| 10 | **BEST PRACTICE**: *Require detention ponds, permeable surfaces, and green infrastructure, collectively known as Low Impact Design (LID) to slow stormwater runoff.* |
|---|---|

**COMMENTARY:** LID is not referenced at all in the Code.

**Code Section Reference**: None

***Adopted language – N/A***

## SUBSTANTIAL IMPROVEMENT THRESHOLD

| 11 | **BEST PRACTICE**: *Establish a substantial improvement threshold to facilitate older structures being re-built under current regulations.* |
|---|---|

**COMMENTARY:** ."Substantial improvement" is measured by the value of work on a structure relative to its pre-improvement market value. It includes structures that have incurred substantial damage, regardless of the actual repair cost. Smithville's Code sets this threshold at 50 percent in the definitions of substantial damage and substantial improvement, which is relatively common. A threshold of 30 percent is advised as "best practice" in areas where substantial flood risk is of concern.

**Code Section Reference**:

***Adopted language –***

***Substantial damage.***

*Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.*

***Substantial improvement.***

*Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:*

*(1)*

*Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or*

*(2)*

*Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."*

| 12 | **BEST PRACTICE:** *Cumulatively track the value of improvements over time rather than by event.* |
|---|---|

**COMMENTARY:** The Code does not require the value of improvements to be tracked over time and be measured against the substantial improvement threshold.

**Code Section Reference:** None

***Adopted language N/A***

## BUFFERS & SETBACKS

| 13 | **BEST PRACTICE:** *Require improvements to be set back from rivers and streams.* |
|---|---|

**COMMENTARY:** There are no setbacks from rivers and streams established in the floodplain ordinance.

**Code Section Reference:** None

***Adopted language –N/A***

| 14 | **BEST PRACTICE:** *Require a "No Adverse Impact" certification for new development.* |
|---|---|

**COMMENTARY:** While the Code does require that new development within the floodplain avoids causing increased flood hazards to other properties (Section 3.04.008(a)(2)) and prohibit encroachments in the floodway (Section 3.04.008(e)), the floodplain management ordinance does not use the phrase, nor require "No Adverse Impact" certification specifically.

**Code Section Reference:** None

***Adopted language –***

## FILL RESTRICTIONS

| 15 | **BEST PRACTICE**: *Prohibit or limit fill in the floodplain.* |
|---|---|

**COMMENTARY:** Partial. Smithville does not outright prohibit all fill in the floodplain, but it places significant restrictions on where and how fill can be used. In regulatory floodways, fill is generally prohibited unless proven to have no impact on flood levels. In other parts of the floodplain, any fill must not collectively cause more than a one-foot rise in base flood elevation.

- **Regulatory Floodway –**: Encroachments, including fill, new construction, substantial improvements, and other development, are prohibited within the adopted regulatory floodway unless hydrologic and hydraulic analyses show no increase in flood levels during the base flood discharge.
- **Floodplain (Zones A1-30 and AE, without a designated floodway** –No fill or other development is permitted unless it can be demonstrated that the cumulative effect of the proposed fill and all other existing and anticipated development will not increase the base floodwater surface elevation by more than 1 foot at any location.

**Code Section Reference:** Section 3.04.008(e)(1); Section 3.04.008(e)(3);

***Adopted language –***

Section 3.04.008(e)(1)

Encroachments are prohibited, including fill, new construction, substantial improvements and other development, within the adopted regulatory floodway, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

Section 3.04.008(e)(3)

Under the provisions of 44 CFR chapter 1, section 65.12, of the National Flood Insurance Program regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first completes all of the provisions required by section 65.12.

| 16 | **BEST PRACTICE:** *Require compensatory storage for any development that reduces floodplain capacity.* |
|---|---|

**COMMENTARY:** Compensatory storage is not required for development that reduces the floodplain.

**Code Section Reference**: None

***Adopted language –*** *N/A*

## ELEVATIONS & FLOODPROOFING

| 17 | **BEST PRACTICE:** *Require improvements to be anchored to prevent flotation, collapse, or lateral movement of the structure (e.g. manufactured homes).* |
|---|---|

**COMMENTARY:** Addressed.

**Appendix C**: Detailed Assessment of Floodplain Ordinance Compared to Best Practices

**Code Section Reference:** Multiple, see below

***Adopted language –***

3.04.008 (a) *(1) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;*

**3.04.008** *(b)(3) Enclosures.*

*New construction and substantial improvements with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:*

*(A) A minimum of two openings on separate walls having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding shall be provided.*

*(B) The bottom of all openings shall be no higher than 1 foot above grade.*

*(C) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.*

**3.04.008 *(b) (4)***

*Manufactured homes.*

*(A) Require that all manufactured homes to be placed within zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.*

*(B) Require that manufactured homes that are placed or substantially improved within zones A1-30, AH, and AE on the community's FIRM on sites (i) outside of a manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.*

*(C) Require that manufactured homes being placed or substantially improved on sites in an existing manufactured home park or subdivision within zones A1-30, AH and AE on the community's FIRM that are not subject to the provisions of subsection (4) of this section be elevated so that either:*

*(i) The lowest floor of the manufactured home is at or above the base flood elevation; or*

*(ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.*

**3.04.008** *(b)(5) Recreational vehicles.*

*Require that recreational vehicles placed on sites within zones A1-30, AH, and AE on the community's FIRM either (i) be on the site for fewer than 180 consecutive days, or (ii) be fully licensed and ready for highway use, or (iii) meet the permit requirements of section 3.04.007(c)(1), and the elevation and anchoring requirements for "manufactured homes" in subsection (4) of this section. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions.*

| 18 | **BEST PRACTICE:** *Require non-residential buildings in flood zones to elevate or "dry floodproof"* |
|---|---|

**COMMENTARY:** Addressed.

**Appendix C**: Detailed Assessment of Floodplain Ordinance Compared to Best Practices

**Code Section Reference:** 3.04.008 (a) *(4)* & 3.04.008**(b)(2)**

***Adopted language –***

3.04.008 (a) *(4) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;*

3.04.008**(b)(2)** Nonresidential construction.

*New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to or above the base flood level or**, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.** A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for*

*the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the floodplain administrator.*

## INFILTRATION & FLOOD-RESISTANT MATERIALS

| | |
|---|---|
| **19** | **BEST PRACTICE:** *Require new structures to be built with materials resistant to flood damage.* |

**COMMENTARY:** Addressed.

**Code Section Reference:** 3.04.008(a) *(3)*

***Adopted language –***

(a) *(3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;*

| | |
|---|---|
| **20** | **BEST PRACTICE:** *Require water supply, sanitary sewage, and OSSF systems to be designed to minimize or eliminate infiltration of floodwaters into the system.* |

**COMMENTARY:** Addressed.

**Code Section Reference:** 3.04.008

***Adopted language –***

*(a) (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;*

*(a) (6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters;*

*(a)**(7)** On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.*

3.04.008***(b)(2)*** *Nonresidential construction.*

*New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to or above the base flood level or**, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.** A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the floodplain administrator.*

# Appendix D

## COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

This checklist presents a targeted framework of zoning, subdivision, and infrastructure strategies designed to enhance community resilience. It outlines techniques that promote sustainable land use, housing diversity, and environmental protection, particularly in sensitive areas such as floodplains, steep slopes, riparian zones, and the wildland-urban interface. It also addresses climate-adaptive infrastructure—including water, stormwater, power, and transportation systems—and highlights tools like Planned Development Districts, Transfer of Development Rights, and cluster development that support flexible, resilient growth. Excerpts from the City's zoning and subdivision code are interspersed throughout in light grey boxes, illustrating where the current code aligns with the techniques, in whole or in part. A technique lacking a Code reference conveys that the Code does not currently employ the strategy. This document serves as a neutral inventory, not an evaluation of code quality or effectiveness, recognizing that effective zoning must reflect each community's specific goals and comprehensive plan.

Looking ahead, the city will review which parts of its current Code are least aligned with the goals and strategies outlined in its updated comprehensive plan. That evaluation will guide the second memo, which will present best practices and policy options for revising or drafting ordinance language around selected techniques. A third memo will follow, offering tailored sample code language for potential inclusion in a new or amended ordinance.


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# RESILIENCE OF THE BUILT ENVIRONMENT

## Land Use

### **TECHNIQUES** | MIX OF USES

- **Form Based Code:**
  - Regulate building form, frontage, and relationship to public spaces rather than only land use, ensuring cohesive, attractive streetscapes and predictable built environments.
  - Establish build-to lines, minimum and maximum building heights, and transparency requirements for ground floors to activate public spaces.

Section 3.10.2 Front Yard Encroachment

Porches of dwellings may extend into front yard a maximum distance of ten (10) feet from the main line of the

- **Prioritize Public Spaces and Community Focal Points**:
  - Require the integration of accessible parks, plazas, greens, and squares as central gathering places within neighborhoods.
  - Promote the design of streets and public spaces that foster social interaction, events, and community life, drawing inspiration from historic town squares and main streets.

Definitions

6.1.81 *Mixed Use:*
*A mix of residential, office, retail, industrial, community facilities, and commercial uses, or any combination*

C-1 Neighborhood Shopping District (Section 2.2.8.B), C-2 General Commercial District (Section 2.2.9.B) allow mixed use via by-right multi-family and townhouses.

2.2.11.B Central Business District - Mixed Use allowed by right.

Note:

*storage, **residential uses**, or a combination thereof. The lawful use of any building, structure, or land existing on the effective date of this ordinance may continue, although such use does not conform to the provisions of this Section. Such lawful use shall, however, be subject to Section 1.15 Non-Conforming Structures and Uses.*

## **TECHNIQUES** | COMPATIBILITY

3.3.8 General Development Standards; Open Space

*Whenever one or more residential, institutional, commercial or industrial buildings are proposed to be located in a cluster or grouping which has a different arrangement, orientation; or other site planning variation from that of other buildings, structures or uses in the area or on adjacent properties, the architectural design, location, orientation, service and parking areas of such buildings shall be planned so as not to adversely affect the use of adjacent or other properties in the area, as determined by the planning and zoning commission.*

- **Performance Standards**:
  - Establish maximum allowable levels for noise (dBA), ground-borne vibration (mm/s or in/s), and particulate matter (PM2.5, PM10) at property lines or within sensitive receptor zones. Require ongoing compliance monitoring and enforcement.

2.2.5.D.5 MH Additional Site Design Standards

2.2.8.D.3 C-1 Neighborhood Shopping District

2.2.9.D.4 C-2 General Commercial Additional Design Standards

2.2.10.D.3 C-3 Highway Commercial District Additional Site Design Standards

2.2.13.D.1 General Industrial District

2.2.15.D. 4 Community Facilities District Additional Site Design Standards

2.2.11.D.1. Central Business District Additional Design Standards

*Any retail or office use not specifically identified in this Section 2.2.11 which does not produce noise, odor, dust, vibration, blast or traffic in excess of those retail or office uses enumerated above may be permitted in the Central Business District with a special use permit.*

Section 3.5.1G Parking Paved Surface Required:

*All parking spaces shall be paved with a sealed surface pavement and maintained in a manner that no dust will result from continued use.*

- **Restrict High-Impact Uses**:
  - Prohibit or conditionally permit uses known to generate excessive noise, vibration, or air pollution within proximity to sensitive receptors. Require additional mitigation or alternative siting for such uses.

2.2.13.D.3 Industrial Additional Design Standards

*The following uses may only be conducted if completely enclosed in a building:*

*a. The manufacture, compounding, processing, packaging or treatment of such products as bakery goods, candy, cosmetics, dairy products, drugs, perfumes, pharmaceuticals, perfumed toilet soap, toiletries, and food products.*

*b. The manufacture, compounding, assembling or treatment of articles or merchandise from the following previously prepared materials: bond, cellophane, canvas, cloth, cork, feathers, felt, fiber, fur, glass, hair, horn, leather, paper, plastics, precious or semi-precious metals or stone, shell, textiles, tobacco, wood, yard, and paint not employing a boiling process.*

*c. The manufacture of pottery and figurines or other similar ceramic products, using previously pulverized clay, and kilns fired only by electricity or gas.*

*d. The manufacture and maintenance of electric and neon signs, commercial advertising structure, light sheet metal products, including heating and ventilating ducts and equipment, cornices, eaves, and the like.*

*e. Manufacture of musical instruments, toys, novelties, and rubber and metal stamps.*

*f. Automobile assembly, painting, upholstering, rebuilding, reconditioning, body and fender works, truck repairing and overhauling, tire retreading or*

*recapping, and battery manufacturing.*

*g. Machine shop.*

*h. Foundry casing lightweight nonferrous metal not causing noxious fumes or odors.*

*i. Assembly of electrical appliances, electronic instruments and devices, radios and phonographs, including the manufacturing of small parts only, such as coils, condensers, transformers, crystal holders, and the like.*

- **Screening:** Require screening of unsightly, but functional site elements such as a refuse areas, maintenance equipment, and outside storage.

2.2.9.D.2 C-2 General Commercial Additional Design Standards

*(2) No article or material stored or offered for sale in connection with uses permitted in the C-2 General Commercial District shall be stored or displayed outside of a building unless it is screened by permanent ornamental walls, fences or planting that it cannot be seen from adjoining streets or lots when viewed by a person standing on ground level; provided, however, that no screening in excess of seven (7) feet in height shall be required.*

Section 2.2.13.D.2 Industrial Additional Site Design Standards

*All salvage yards shall be screened by ornamental walls, fences, or evergreen planting such that the operations of the salvage yard and associated salvaged materials cannot be seen by a person standing at ground level at any place immediately adjacent to the lot on which the salvage operation is located.*

Fences & Walls

3.6.1 Barbed Wire Prohibited.

*It shall be unlawful for any person or persons to make, build, construct, or erect any fence to be composed wholly or in part of metal fencing wire constructed with sharp edges or points arranged at intervals along the strands, such as barbed wire, razor wire, or concertina wire, on or along the line of any street, alley, avenue, sidewalk, land or lot in the City of Smithville; provided, however, that such wire may be used at a minimum height of 5 feet along the tops of fences along the lines of alleys.*

*3.6.2 Maximum Height of Residential Fences.*

*The maximum heights for fences, walls, hedges, and other enclosures are as follows:*

*(1) Within 15 feet of the intersection of two street lines on a corner lot, the maximum height is 3 feet.*

*(2) Between the front building line and the public right of way on any lot, other than within 15 feet of the intersection of two street lines on a corner lot, the maximum height is 4 feet.*

*(3) For all other portions of a lot, the maximum height of an ornamental fence that has a ratio of solid portion to open portion not in excess of one to four, not including a chain link or similar fence, is 8 feet and the maximum height of all other fences, walls, hedges, and other enclosures is 6 feet.*

3.5.1.H Off Street Parking Lots in Residential Districts

*All sides of the lot within or abutting the Residential District shall be enclosed with an opaque ornamental fence, wall or dense evergreen hedge having a height of not less than five (5) feet nor more than six (6) feet. Such fence, wall or hedge shall be maintained in good condition.*

*2. No parking shall be permitted within a front yard setback line wherever the parking lot is located in a Residential District or immediately abuts the front yard of a residential unit. In all other cases no setback shall be required.*

*3. All yards shall be lands with grass and shrubs and maintained in good condition at all times.*

*4. Driveways used for ingress and egress shall not exceed twenty-five (25) feet in width exclusive of curb returns.*

*5. All of the lot used for parking and driveway purposes shall be paved with a sealed surface pavement and maintained in such a manner that no dust will be produced by continued use.*

*6. Whenever lighting is provided, the intensity of light and arrangement of reflectors shall be such as not to interfere with Residential District uses.*

*7. No sign of any kind shall be erected within the off-street parking lot except information signs used to guide traffic and to state the condition and terms of the use of the lots. Only non-intermittent white lighting of signs shall be permitted.*

- **Plat and Plan Requirements:**
  - Require subdivision plats to delineate buffer zones, identify sensitive receptors, and document compliance with environmental compatibility standards.
  - Mandate that subdivision layouts minimize the exposure of new lots to major sources of noise, vibration, and air pollution.

## **TECHNIQUES** | HOME BASED BUSINESSES

- **Residential Character and Use:**

- Maintain the home-based business to remain clearly secondary to the residential use of the dwelling, with no exterior evidence of business activity, structural alterations, or signage visible from the street.
- Strictly prohibit outdoor storage of equipment, materials, or stock is permitted, and hazardous materials.

– **Operator and Employment:**
  - Require the business to be operated by a full-time resident of the dwelling.
  - Limit employment of non-resident staff (e.g., only residents and one additional non- resident employee permitted on-site at any time; require special approval for additional employees).

– **Business Types and Activities:**
  - Permit only low-impact, non-polluting businesses (e.g., consulting, crafts, remote services, tutoring).
  - Prohibit uses that generate excessive noise, vibration, glare, fumes, odors, or electrical interference detectable off-site.
  - Prohibit retail sales, auto repair, animal care, and any business involving hazardous materials or significant foot traffic.

– **Floor Area and Location:**
  - Conduct the business wholly within the principal dwelling or an approved accessory structure; allow use of garages or accessory buildings with limits.
  - Set a maximum percentage of the dwelling's floor area for business use (e.g., 25–30%), while allowing flexibility if there is no neighborhood impact.

– **Parking and Traffic:**
  - Provide off-street parking for any business-related vehicles or visitors, ensuring parking does not encroach on required yards or public rights-of-way.
  - Prevent the business from generating traffic, deliveries, or parking demand beyond what is typical for the neighborhood; prohibit queuing, browsing, or increased pedestrian activity.

– **Signage**: Prohibit exterior signs or business displays, except for a small, non-illuminated nameplate if permitted by local code.

– **Multiple Home Occupations**: Allow more than one home-based business per dwelling, provided the combined impact does not exceed the standards for a single business.

- **Special Structures and Housing Types**: Permit home occupations in all types of residential structures, with special parking or operational restrictions for multi-unit buildings or shared parking situations.
- **Performance Standards**: Use performance-based standards to allow flexibility while ensuring that home-based businesses do not create nuisances or hazards for neighbors.

Definitions

*6.1.61 Home-based Business:*

*Any home-based business carried on solely by the inhabitants of a dwelling which is clearly incidental and secondary to the use of the dwelling for dwelling purposes, which does not change the character thereof, but which is conducted entirely within the main or accessory buildings; provided that no trading in merchandise is carried on and in connection with which there is no display of merchandise or advertising sign other than one (1) nonilluminated nameplate not more than four (4) square feet in area attached to the main or accessory building, and no mechanical equipment is used except such as is customary for purely domestic or household purposes. A beauty or barber shop, tea room or restaurant, rest home or clinic, doctor's or dentist's office, child care center, tourist home, or cabinet, metal or auto repair shop shall not be deemed a home occupation.*

Home Based Businesses are allowed by Special Use Permit in all of the residential districts. SF1, SF2, TH, MR, MF, MH, and MHS

**§ 5.4Special Use Permits (SUPs)**

***5.4.1*** *Special use permits are intended to allow for certain uses that are not permitted in a particular zoning district by right, but which may be permitted under certain circumstances and application of certain conditions. Such special uses shall be permitted through the issuance of a Special Use Permit (SUP).*

***5.4.2*** *The special use is granted only to the applicant and is limited to that which is specifically described in the special use permit application, as amended and approved by the Planning and Zoning Commission and the City Council.*

***5.4.3*** *Special Use Permits require an annual renewal, for which there is an annual renewal fee, for the permit to remain in effect. Rates are established by resolution of the City Council and are on file in the office of the City Secretary.*

***5.4.4*** *The permit must be completed within six months of the date approved by City Council or the permit becomes null and void and the applicant must reapply for the special use, thereby starting the process over in its entirety, including cost.*

***5.4.5*** *Whenever a special use permit is required, the planning and zoning commission may require a special use permit application to be accompanied by a site plan showing existing improvements on the land and proposed development of the property. The application shall provide the following information:*

A. *Date, scale, north point, title, name or owner and name of person preparing plan;*
B. *Location of existing boundary lines and dimensions of the tract;*
C. *Centerline of existing water courses, drainage features, and location and size of existing and proposed streets and alleys;*

*D. Location and size to the nearest one-half (1/2) foot of all proposed buildings and land improvements;*
*E. Clear designation of areas reserved for oil [off] street parking and for off-street loading; the location an[d] size of points of ingress and egress; and the ratio of parking space to floor space.*

*5.4.6 The special permit application shall go before the Planning and Zoning Commission and the City Council, following the same procedure as a zoning amendment, as defined in [section] 5.2 Zoning Review Procedure.*

# Housing

## TECHNIQUES | HOUSING DIVERSIFICATION & AFFORDABILITY

- **Accessory Dwelling Units**: Legalize accessory dwelling units without discretionary approvals to expand affordable housing options, support multigenerational living, and increase density without altering neighborhood character. Reduces development costs and improves housing flexibility.

Definitions

6.1.52 *Garage Apartment:*

4.2 Garage Apartments Additional Standards

*4.2.1 A garage apartment shall share at least one (1) common wall with or be located above a private garage of a single-family residential dwelling.*
*4.2.2 A garage apartment may only be used as a dwelling unit for one (1) family.*
*4.2.3 Where garage apartments are permitted, the rental, lease, or receipt of compensation for the use of a garage apartment is allowed.*
*4.2.4 Where garage apartments are permitted, the use of a garage apartment as a permanent residence is allowed.*
*4.2.5 Installation of a separate gas or electrical meter in a garage apartment is not prohibited.*
*4.2.6 One additional off-street parking space shall be required when a property has a garage apartment.*
*4.2.7 All property development regulations applicable to the principal residence shall be applicable to the garage apartment, including, but not limited to, setbacks, yards and height limitations.*

- **Permitting Housing Types**: Allow a wide range of housing types in most residential districts, including single-family homes, duplexes, triplexes, townhouses, multifamily apartments, manufactured homes, accessory dwelling units (ADUs), and single-room occupancy (SRO) units.

- **Residential Minimum Lot Size and Setbacks**: Remove or reduce minimum lot size and lot width requirements to enable smaller, more affordable lots and houses. Reduce front setbacks to maximize land use efficiency.

Setbacks (front, side, and rear) and minimum lot sizes. are established in Subsection C of every Zoning District

Section 2.2.17 Zero Lot Line Garden Home District A.

*Description.*

*The PD-Z - Zero Lot Line Garden Home District, or PDZ District, is designed to allow subdivisions designed for single family dwellings with no setback on one side yard and double the usual side yard on the other side, the same being for each lot in a block. Such single-family dwellings are defined as "zero lot line garden homes."*

- **Adaptive Reuse**: Allow residential use in former commercial or industrial zones and encourage mixed-use development to increase housing supply.
- **Parking Minimums:** Lower or remove mandatory parking minimums.

Section 3.5.1.F1, 2

*Amount of Off-Street Parking and Loading Required:*

*Off-street parking and loading facilities shall be provided in all Districts in accordance with the following schedule:*

*1. Dwelling, single-family or duplex: Two (2) parking spaces for each separate dwelling unit within the structure.*

*2. Dwelling, multiple-family: Two (2) parking spaces shall be provided upon the lot for each dwelling unit. No parking shall be permitted in the required front yard. No parking shall be allowed within four (4) feet of any building, nor closer than two (2) feet to the side yard lines. No parking space shall be used for storage of any truck, truck-trailer, or van, except panel and pickup trucks not exceeding one (1) ton capacity. Boat and travel trailers may be parked in a required parking space when the operator or owner of such vehicle resides upon the premises. All parking spaces shall be so arranged as to permit vehicles to be parked and removed without moving one car to facilitate the movement of the other. All parking areas shall be paved according to the city's standard paving specifications.*

- **Incentives**: Offer density bonuses, reduced parking requirements, or expedited permitting for developments that exceed minimum affordability or diversity requirement.

- **Affordability Requirements**: Implement inclusionary zoning, requiring a percentage of new units to be affordable to households at various income levels, with long-term affordability ensured through covenants or deed restrictions.

# RESILIENCE OF THE NATURAL ENVIRONMENT

## Hazard and Environmental Protection Zones & Overlays

### **TECHNIQUES** | FLOODPLAINS:

- **Identification of Flood-prone Areas on Plat:** Require subdivision plats to clearly identify flood- prone areas and include floodplain notes referencing FIRMs and flood zones. Show the 100-year (base flood) and 500-year elevation on all subdivision plans and plats.). Require plats to state that improvements are subject to additional floodplain management regulations; or inform of the need to submit an elevation certificate or the need to purchase flood insurance.
- **Residential Lot Location**: Ban residential plats and structures in 100/500-year floodplains and velocity zones to prevent life/property loss.
- **Buildable Area:** Prohibit the creation of new lots in the floodplain unless they have a minimum area (usually equivalent to the full building envelope) with a natural grade elevation above the regulatory floodplain.
- **Critical Facility Location**: Protect critical facilities to the 500-year flood level or flood of record, whichever is greater, and ensure that any critical facility has dry-land access (see the following section).
- **Public Facility Location**: Prohibit the location of reserved lands within a subdivision for new school sites and fire stations within the floodplain.
- **Open Space Dedication**: Require floodplain areas to be set aside as permanent open space or conservation land, protected by easement or covenant.
- **Infrastructure Location**: Require roads, utilities, and other infrastructure to be located outside the floodplain where feasible, or elevated/protected if unavoidable.
- **Stormwater Management**: Require subdivisions to demonstrate that stormwater facilities will not increase flood risk and will remain functional during flood events.
- **Review & Permitting:** Require all development, fill, or land disturbance in the floodplain to obtain a floodplain development permit that may

require engineering studies (e.g., for base flood elevation or floodway delineation).

- **Building Height Maximum Relief:** In floodplains, increase the maximum height limit a commensurate amount to the required elevation a structure must be above Base Flood Elevation.
- **Conservation/Drainage Easements:** Require a permanent conservation (preferred) or drainage easement for areas of lots in the floodplain that are not allowed to be developed. Incentivize conservation easements of floodplains by allowing for a density bonus on lots or dwelling units.

## **TECHNIQUES** | RIPARIAN ZONES

- **Buffer Structure:** Define a riparian zone or tiers of riparian zones (e.g. "inner" is X feet (e.g. 35') from water's edge and "outer" extends from the edge of the inner zone to a total buffer width of Y feet (e.g. 100')). Disallow all disturbance in the inner zone except for select activities (e.g., permitted stream crossings, removal of hazardous vegetation, approved restoration projects). In the outer area limited disturbance allowed (e.g., trails, selective timber harvesting, utilities with municipal approval), provided no more than X% (e.g. 20%) of the area is altered.
- **Vegetation:** Require buffers must be planted and maintained with native vegetation; where no buffer exists, require new plantings as part of any subdivision or land development.
- **Prohibited Uses:** Prohibit storage of hazardous materials, landfills, septic systems, and other high-pollution uses within specified setback distances (often 100–300 feet depending on use).
- **Permitted Uses**: Expressly permit passive recreation (e.g., trails), utility crossings, and restoration activities, subject to municipal approval and compliance with all federal, state, and local regulations.
- **Buffer Expansion**: Increase buffer width where steep slopes (e.g., >25%) or floodplains are present, or where adjacent wetlands or critical habitats extend beyond the standard buffer.
- **Management & Maintenance**: Require buffers to be protected by recorded covenants or conservation easements, with maintenance and management requirements specified and enforced in perpetuity.

## **TECHNIQUES** | STEEP SLOPES:

- **Disturbance Limits:** On slopes of 15–25%, limit disturbance to a specified percentage of the area (e.g., 30%), subject to best management practices for erosion and sediment control. On slopes

exceeding 25%, either strictly limited (e.g., 5–10%) or prohibited disturbance except for essential infrastructure or conservation purposes.

- **Buffer Requirements:** Establish a standard buffer (e.g., 50 feet) from the edge of steep slope hazard areas. Allow adjustment based on a geotechnical report, but create an absolute minimum under which waivers are not granted (e.g., 15 feet).
- **Permitted & Prohibited Uses**: Allow only low-impact uses such as passive recreation or conservation are permitted as of right. Establish most development-related uses as conditional and subject to additional review. Prohibit certain uses (e.g., waste disposal, outdoor storage).
- **Site Plan & Review**: Require any proposed disturbance of steep slopes to be subject to submission of a detailed site plan, including topographic mapping, drainage analysis, erosion control measures, and geotechnical evaluation.
- **Minimum Buildable Area**: Require that each new lot in a subdivision contain a minimum percentage of buildable area outside of steep slopes (e.g., at least 25% of the lot area must be non-steep slope).
- **Vegetation Protection**: Generally prohibit removal of vegetation within steep slope areas and buffers unless necessary for approved development and accompanied by a revegetation plan.

## **TECHNIQUES** | WILDLAND-URBAN INTERFACE:

- **Emergency Access: Require** all new subdivisions and developments provide at least two points of emergency vehicle access and maintain minimum road widths for fire apparatus.
- **Water Supply**: Mandate adequate water supply for firefighting be provided, including hydrants or alternative water sources, as specified in the fire code.
- **Defensible Space**: Establish a "minimum defensible space" that must be maintained around all structures (typically 30–100 feet, depending on hazard severity), kept free of flammable vegetation and combustible materials.
- **Building Construction: Structures** must use ignition-resistant materials for roofs, siding, decks, and vents. Additional requirements may apply based on proximity to wildland fuels and slope.

- **Vegetation Management:** Require an ongoing maintenance plan for landscaping to reduce fuel loads and ladder fuels is required. Removal of invasive or highly flammable species may be mandated.

- **Fire Protection Plan: Require** major developments submit a wildfire mitigation or fire protection plan, addressing site layout, landscaping, emergency access, and water supply.
- **Hazardous Uses:** Restrict storage of flammable materials, placement of LPG tanks, and other high- risk activities or require additional setbacks and mitigation measures.

# Resource Sensitive Development Strategies

## TECHNIQUE | PLANNED DEVELOPMENT DISTRICT

*A zoning tool that enables landowners in designated planned development districts to propose innovative projects with a mix of uses and flexible code standards, allowing for creative, community-focused development that promotes resiliency. This approach encourages developments tailored to local needs, supports adaptability, and ensures projects are context-sensitive and sustainable.*

### FUNDAMENTAL PROGRAM ELEMENTS

- **Designation of Planned Development Districts:** Identify areas where a tailored approach to zoning is appropriate—often locations with unique community goals, environmental considerations, or opportunities for mixed-use, resilient development.
- **Mix of Uses:** Permit a broad range of residential, commercial, civic, and recreational uses within a single district or project, supporting walkable neighborhoods and economic diversity. The mix is determined through a collaborative planning process to ensure alignment with community objectives.
- **Code Flexibility:** Allow deviations from standard zoning requirements (such as setbacks, density, building heights, or parking) when the proposed project demonstrates clear public benefits and furthers resiliency goals. Flexibility is granted through a negotiated development plan, subject to approval by local authorities.
- **Community Fit and Engagement:** Require meaningful engagement with stakeholders and alignment with adopted plans or policies. Projects must demonstrate how they address local priorities, such as climate adaptation, affordable housing, or public amenities.

- **Approval Process:** Establish a transparent process for reviewing and approving planned developments, including submission requirements, evaluation criteria, and opportunities for public input. Approval is contingent on meeting both the intent of the code and specific community goals.

- **Implementation Mechanism:** Upon approval, codify the negotiated development standards and uses in a binding agreement or ordinance, ensuring that the project's unique attributes are enforceable and permanent.
- **Monitoring and Adaptation:** Set up a system to monitor project implementation and outcomes, allowing for adjustments if community needs or conditions change over time. This may include periodic reviews or triggers for plan amendments.

2.2.16 Planned Development District

*Description. The Planned Development District, or PDD, is a district which accommodates planned associations of uses developed as integral land use units such as industrial districts, offices, commercial or service centers, shopping centers, residential developments of multiple or mixed housing including attached single-family dwellings or any appropriate combination of uses which may be planned, developed or operated as integral land use units either by a single owner or a combination of owners. Property zoned as a PDD shall follow the procedures set forth in Section 5.3.*

*B. Uses.*

*An application for a PDD shall specify the base zoning district and the use or the combination of uses proposed. Uses which may be permitted in a PDD are those specified in the Master Use Table. Any requested use that is not permitted within the specified base zoning district must be identified as such in the PDD application. In selecting a base zoning district, the uses allowed in the base district must be similar or compatible with those allowed in the PDD. Special Use Permits allowed in a base zoning district are allowed in a PDD only if specifically identified at the time of PDD approval.*

*C. Dimensions.*

*A PDD shall be a minimum of 2.5 acres in size. In the case of residential Planned Development Districts for single- family or duplex categories, the proposed lot area shall be no smaller than the lot sizes allowed in the base zoning district. Minor dimensional changes in a limited number of the proposed lots, in order to provide improved design, may be permitted if the application demonstrates the need for the requested change.*

*D. Approval of PDD zoning.*

*In approving the development plan and the Ordinance establishing the Planned Development District, after recommendation by the Planning and Zoning Commission, the City Council shall approve the maximum height, floor-area ratio, density, and minimum off-street parking and loading standards within the limits of those specified in the districts listed for the specific uses involved as is appropriate for the development. Approval of the development plan and the ordinance establishing the PDD shall also construe the establishment of the standards for yards, signs, building spacing, site coverage, access,*

*screening or landscaping, building area, open*

*space pedestrian-ways, public or private streets, alleys and any development deemed by council to be observed in a Planned Development District. Such standards shall be specified in the Ordinance establishing the district.*

## **TECHNIQUE**| TRANSFER OF DEVELOPMENT RIGHT (TDR) PROGRAM

*A zoning tool that allows landowners in designated preservation areas ("sending districts") to sell their unused development rights to developers in areas planned for growth ("receiving districts"), enabling higher density or intensity in those locations while permanently protecting open space, farmland, or other sensitive lands in the sending area.*

**FUNDAMENTAL PROGRAM ELEMENTS**:

- **Identification of Sending Districts**: Identification of areas for preservation due to agricultural, environmental, scenic, or historic value are mapped as sending districts.
- **Identification of Receiving Districts**: Identification of areas capable of accommodating additional growth, with adequate infrastructure and services, are mapped as receiving districts.
- **Methodology for Valuation**: Determine approach to calculating the number of transferable rights, typically based on the underlying zoning and any local formulas or assessments.
- **Incentives:** Establish the incentive structure. (e.g. Developers may purchase TDRs to exceed base zoning limits for density, height, or floor area, up to a maximum established by the code and subject to environmental and infrastructure capacity.)
- **Transfer Mechanism: e**.g. Upon transfer, establish a standardized format for permanent conservation easements or restrictive covenants, which is recorded in order to prohibit future development on the portion of land from which rights are transferred.
- **Monitoring Mechanism**: Establish a process to ensure compliance with easement restrictions in sending areas and proper application of rights in receiving areas.

## **TECHNIQUE** | CLUSTER DEVELOPMENT

*A land use approach that concentrates homes on smaller lots within a portion of a site, allowing the remaining land to be preserved as shared open space or for environmental protection, without increasing overall density. This design promotes compact neighborhoods, protects sensitive areas, and provides residents with access to parks, trails, or natural features.*

**Appendix D**: Comparative Inventory of Zoning & Subdivision Techniques

**FUNDAMENTAL PROGRAM ELEMENTS**:

- **Open Space Preservation Thresholds**: Establish that at least X% (e.g. 30–60%) of the gross site area must be preserved as common open space, protected by conservation easement, deed restriction, or dedication to the municipality or a land trust.

Subsection C establishes a minimum open space percentage based on gross land area for the following zoning districts:

TH -30%

MF - 30%

Lot Coverage Standards for **Buildings** are established in Subsection C for the following Zoning Categories (by lot area):
SF-1: 40%
SF-2: 40%

TH: 70%

MF: 70%

MHS: 40%

- **Qualifying Open Space Layout Characteristics**: Establish requirements for the quality and composition of dedicated open space (e.g. contiguous, accessible to residents, and configured to protect significant natural features, such as wetlands, riparian corridors, steep slopes, wildlife habitat, and agricultural land.)

MF District 2.2.4.D.2

*"Open space shall be used for people, planting, and visual appeal."*

- **Qualifying Development Layout Characteristics**: Establish that development must be sited on the least environmentally sensitive portions of

the property, avoiding hazard-prone areas and minimizing disturbance to natural resources.

- **Lot and Dimensional Standards**: For example:
  - Minimum lot sizes and lot widths may be reduced (e.g., lots as small as 3,000–6,000 square feet, or as specified by district), provided all lots have access to interior streets and abut common open space to the front or rear.

- Cluster groups (modules of homes) should be separated by open space or natural features, and may be limited in size (e.g., no more than 15 units per cluster group).

– **Design and Environmental Standards**: For example:
  - Buildings should be oriented to maximize scenic views, solar access, and community interaction, while minimizing visual impacts on open space and adjacent properties.
  - Infrastructure (roads, utilities) should be designed efficiently, minimizing impervious surfaces and avoiding sensitive areas.
  - Disturbance to woodlands, hedgerows, mature trees, and agricultural soils should be minimized.

– **Open Space Management**: Require a plan for the long-term management and maintenance of common open space to be provided, specifying responsible parties (e.g., homeowners' association, land trust, municipality). Specify how land may be used (e.g. Open space may be used for passive recreation, community gardens, agriculture, habitat protection, or other low- impact uses as defined in the code.)

# Open Space & Parks

## TECHNIQUES | OPEN SPACE

– **Preserve Minimum Open Space**:
  - Require that a minimum percentage of the gross tract area (e.g., 40% for conservation subdivisions, 8% for form districts) be preserved as open space, with at least X% (e.g. 75%) of that open space in a contiguous tract.
  - Allow only a portion of constrained land (e.g., wetlands, floodways) to count toward open space requirements to ensure preserved areas are ecologically valuable and usable.

– **Ensure Connectivity**: Require open space to adjoin neighboring open spaces, greenways, or protected areas to create an interconnected network for wildlife, recreation, and stormwater management.

– **Prioritize Conservation Areas:**
  - Mandate inclusion of primary conservation areas—such as floodplains, wetlands, steep slopes, riparian buffers, habitat for threatened species, and archaeological sites—within the protected open space.

- Strongly encourage inclusion of secondary conservation areas, such as mature forests, significant trees, scenic viewsheds, agricultural soils, and existing trails, to the maximum extent feasible.

– **Design for Resilience:**
  - Encourage or require the use of open space for nonstructural stormwater management (e.g., bioswales, wetlands), erosion control, flood mitigation, and urban heat reduction.
  - Allow limited, low-impact access (e.g., trails or bike paths) within green space, not exceeding a small percentage of the total area.

– **Plat and Plan Requirements:**
  - Require subdivision plats to clearly delineate all open space, conservation areas, and community spaces, with notes on allowed uses and management obligations.
  - Mandate that open space be protected in perpetuity through conservation easements, deed restrictions, or dedication to a land trust or public agency

– **Management and Maintenance:**
  - Require establishment of an open space management entity (e.g., HOA, land trust, municipality) responsible for ongoing stewardship, maintenance, and enforcement of conservation standards.
  - Prescribe detailed standards and schedules for maintenance, including vegetative management and invasive species control.
  - Allow for municipal maintenance if HOA or private maintenance is insufficient.

## **TECHNIQUES** | PARKS

– **Require Park Dedication and Connectivity**:
  - Mandate that a minimum percentage of land in new subdivisions be dedicated for public or private park space, with priority for locations that connect to existing greenways, trails, or natural resource corridors.
  - Require subdivision plats to clearly delineate all park and open space areas, demonstrate connectivity to existing networks, and identify ecological or hazard mitigation functions.

- **Proximity and Location of Parks**:
  - Require well-designed, accessible public spaces, greens, and parks within walking distance of all homes and businesses.
  - Integrate plazas, courtyards, and pocket parks into larger developments.
- **Flexible Park Types**:

- Allow a range of park types—including pocket parks, linear parks, and community greens—provided they meet minimum size, access, and connectivity standards.
- Permit integration of stormwater features, community gardens, or natural areas as part of required park space, provided recreational and ecological functions are maintained.

– **Usability**: Create standards for functionality

– **Encourage Resilient Materials and Maintenance**:
- Specify the use of durable, climate-adapted materials and native plantings to reduce maintenance costs and enhance resilience to drought, flooding, and heat.
- Require long-term maintenance plans and stewardship agreements for all park spaces.

## Landscaping, Vegetation, and Urban Forestry

### TECHNIQUES | LANDSCAPING

– **Plant Selection and Water Conservation**:
- Require the use of native, drought-tolerant, low-flammability, and climate-adapted plant species to reduce irrigation needs and increase survivability.
- Limit the use of high-water-demand turfgrass; encourage or require xeriscaping and water- conserving irrigation systems.

– **Soil Health and Preparation**: Mandate soil amendments or preparation to improve water retention, infiltration, and plant health before planting.

– **Canopy Coverage/Shade and Urban Heat Mitigation**:
- Require the planting of shade trees along streets (e.g. street trees every 30 feet of frontage), in parking lots, and in open spaces to reduce heat island effects and improve comfort.
- Specify minimum tree canopy coverage or tree planting ratios per lot, per square footage of development, or for by land use (e.g. e.g., 40% for single-family residential, 50% of open space for multifamily and mixed-use, 30% for commercial and institutional, 20% for

industrial).

- Require phased developments to demonstrate compliance with canopy goals at full build- out, with updated plans submitted as each phase is platted.

– **Stormwater Management and Green Infrastructure**:

- Encourage or require landscaped bioretention areas, bioswales, and rain gardens to manage runoff, increase infiltration, and filter pollutants.

- Set minimum percentages of permeable or landscaped surfaces for all developments to support stormwater absorption and reduce flooding.

- **Fire-Resistant Landscaping (WUI Areas)**: Where wildfire risk is present, require defensible space with noncombustible materials and fire-resistant plantings around structures.
- **Buffering and Screening**: Require landscaped buffer zones between incompatible uses, along property lines, and adjacent to public rights-of-way, with plant groupings or continuous hedges for visual screening and habitat.
- **Maintenance and Longevity**:
  - Require permanent maintenance plans for all landscaped areas, including replacement of dead or diseased plants and regular irrigation system checks.
  - Prohibit invasive species and require prompt removal if detected.
- **Landscape Plan Review: All** development and subdivision applications must include a detailed landscape plan demonstrating compliance with resilient landscaping standards.

## **TECHNIQUES** | VEGETATION

- **Vegetation Protection and Restoration:**
  - Designate and map vegetation protection areas in zoning and subdivision codes, prioritizing locations with native species, wildlife habitat, riparian corridors, wetlands, and steep slopes.
  - Prohibit or strictly limit the removal of native vegetation in primary protection areas; allow only minimal, regulated disturbance in secondary protection areas, subject to mitigation or restoration requirements.
  - Require restoration of degraded areas with native plantings as part of development approvals.
- **Development Siting and Lot Design**:
  - Require site analysis to identify existing vegetation and ecological features before lot layout or infrastructure placement.
  - Protect existing significant trees and prioritize their retention during site planning and construction.
  - Mandate that open space and conservation areas be delineated and protected before siting building lots and roads, ensuring

connectivity of preserved areas for wildlife movement and ecosystem function.

- Encourage or require clustering of development to maximize contiguous vegetation preservation and minimize habitat fragmentation.

– **Tree Preservation and Replacement**:
  - Require replacement or mitigation for any protected trees removed, with standards for minimum caliper, species selection, and planting location.
  - Mandate tree protection measures during construction (e.g., fencing, root zone protection, no-disturbance buffers)

– **Buffering and Connectivity**:
  - Require vegetated buffers along waterways, wetlands, and property frontages to increase permeable surfaces, provide wildlife corridors, and absorb runoff.
  - Connect on-site vegetation protection areas to off-site greenways, parks, or preserves wherever possible, creating larger, resilient habitat networks.

– **Plat and Plan Requirements**:
  - Subdivision plats must clearly delineate all vegetation protection areas, buffers, and restoration sites, and include notes on permitted uses and maintenance obligations.
  - Require review and approval of vegetation conservation plans as part of the subdivision and site plan process.

# Resilience of INFRASTRUCTURE

## Transportation & Connectivity

### TECHNIQUES | WALKABILITY & CONNECTIVITY

- **Internal/Intra-site Connectivity Standards**:
  - **Block Length**: Set maximum block lengths (e.g., 400–1,000 feet depending on density), with shorter blocks in denser areas to ensure frequent intersections and more direct pedestrian route. For longer blocks, require pedestrian connections at a greater frequency (e.g. every 300 feet) and their permanent dedication via pedestrian easements.

**Subdivision § 4BLOCKS.**

*In general, intersecting streets, determining block lengths, shall be provided at such intervals as to serve cross traffic adequately, and to meet existing streets or customary subdivision practices in the neighborhood. Where no existing plats control, the blocks shall be not more than six hundred (600) feet in length nor less than three hundred (300) feet in length except in unusual cases. In an unusual case where a block is allowed to be more than six hundred (600) feet long a connecting sidewalk four (4) feet wide and located on a four (4) foot dedicated easement may be required across the middle portion of such block for pedestrian use. Block widths shall not exceed three hundred (300) feet nor be less than two hundred forty (240) feet, except in unusual cases.*

  - **Access to Destinations**: Require direct, safe pedestrian routes to key destinations such as schools, shopping centers, and parks.

- **External/Inter-site Connectivity Standards**:
  - **Connectivity to Future Pedestrian Networks**: Mandate alignment and extension of street networks to connect with adjacent developments and destinations.
  - **Connectivity to Existing Pedestrian Networks**: Subdivisions must provide multiple connections to existing street and pedestrian networks, with block perimeters not exceeding 2,000 feet.

- **Sidewalk and Pathway Standards**
  - **Minimum Widths:** Specify minimum sidewalk widths (often 5–8 feet in residential, wider in commercial or mixed-use areas) to accommodate comfortable two-way pedestrian flow.
  - **Continuity and Condition:** Require continuous sidewalks on both sides of the street, with standards for maintenance, ADA-compliant curb cuts, and crosswalks.

**Subdivision** § 6SIDEWALKS.

*Generally, residential sidewalks shall be required on both sides of the street; shall not be less than four (4) feet in width, parallel to and not more than two (2) feet above or below the adjacent curb grade; and shall be located one (1) foot inside the dedicated street line and situated wholly within the dedicated street. Sidewalks abutting business property shall have a minimum width of ten (10) feet. Parkways, the area between curbs and the right-of-way line, shall be excavated or filled to a grade parallel with the longitudinal street grade, and the ground elevation at the right-of-way line shall be not more than two (2) feet, nor less than three (3) inches above the elevation of the top of the adjacent curb. Landing walks of a width not less than eighteen (18) inches may be installed abutting the rear of the curb.*

- **Direct and Accessible Pedestrian Routes:**
  - **Universal Access:** Require universally accessible, direct pedestrian routes from building entrances to public sidewalks, transit stops, and between all principal buildings in a development.
  - **Connections to Adjacent Zones:** Mandate pedestrian connections to sidewalks or walkways on adjacent properties and across land use boundaries, preventing isolated developments and supporting seamless mobility.
    - **Pedestrian-Scaled Lighting**
      - **Height and Spacing:** Require pedestrian lights 9–15 feet above sidewalks, spaced no more than 60 feet apart, and positioned to illuminate walkways without glare or light trespass.
      - **Illumination Levels:** Set minimum lighting levels (e.g., 0.5 foot-candles minimum, 1.5 foot-candle average) to enhance safety and comfort at night.
      - **Shielding and Direction:** Mandate fixtures that direct light downward and minimize spillage onto adjacent properties or into the night sky.

- **Urban Form and Design Standards**
  - **Street Hierarchy:** Design local streets to prioritize pedestrian and bicycle movement, with traffic calming measures and low design speeds.
  - **Lot Design**: Reduce minimum lot sizes and setbacks to allow buildings to be closer to the sidewalk, supporting active street life.
  - **Building Orientation:** Require buildings to front the street with entrances and windows facing sidewalks, fostering active, engaging

pedestrian environments.

- **Human-Scale Elements:** Include requirements for street trees, benches, shade, and weather protection (awnings, arcades) to make walking more comfortable and attractive.

– **Mixed-Use and Density Requirements**

- **Land Use Mix:** Encourage or require a mix of uses within walking distance (e.g., housing, shops, schools, parks) to minimize travel distances and support daily walking trips.
- **Compact Development:** Set minimum density standards to bring destinations closer together, making walking more viable.

## **TECHNIQUES** | STREET/ROAD DESIGN

– **Internal/Intra-site Connectivity Standards**: Discourage or limit cul-de-sacs in favor of loop streets and grid patterns.

**Article 3.1 Streets. 1.9 DEAD-ENDS**

*Dead-ends courts or places may be permitted where the form or contour of the land makes it difficult to plat with connecting streets; however, except in unusual cases, no dead-end streets will be approved unless such dead-end streets are provided to connect with future streets in adjacent land. Such courts or places shall provide proper access to all lots and shall generally not exceed four hundred (400) feet in length and a turn-around shall be provided at the closed end, with an outside radius or [of] at least sixty (60) feet to the face of the curb and minimum radius of seventy (70) feet to the property line.*

– **External/Inter-site Connectivity Standards**:
  - **Connectivity to Future Street Networks:** Mandate alignment and extension of street networks to connect with adjacent developments and destinations.
  - **Connectivity to Existing Streets Networks**: Subdivisions must provide multiple connections to existing street networks, with block perimeters not exceeding 2,000 feet.

**Article 3.1 Streets. ALIGNMENT**

*All arterials and the collector streets shall be continuous or in alignment with existing streets, unless variations are deemed advisable by the administration after consideration of recommendations by the Building Inspector and/or administration. Curvilinear streets shall be allowed. Off-center street intersections shall not be approved.*

**Article 3.1 Streets.1.8 CONTINUITY**

*The system of streets designated for the subdivision, except in unusual cases, must connect with streets already dedicated in adjacent subdivisions; and where other than adjacent connections are platted, must in general be reasonable projection of streets in the nearest subdivided tracts, and must be contained [continued] to the boundaries of the tract subdivided, so that other subdivisions may connect therewith. Reserve strips of land*

*controlling access to or egress from other property or to or from any street or alley or having the effect of restricting or damaging the adjoining property for subdivision purposes or which will not be taxable or accessible [assessable] for special improvements shall not be permitted in any subdivision unless such reserve strips are conveyed to the City in fee simple.*

- **Street Design:**
  - **Street Hierarchy:** Design local streets to prioritize pedestrian and bicycle movement, with traffic calming measures and low design speeds.
  - **Complete Streets and Public Realm:**
    - Adopt "Complete Streets" standards requiring all new and reconstructed streets to safely accommodate pedestrians, cyclists, (transit), freight, and emergency vehicles.
    - Require street trees, lighting, and stormwater management features that enhance both resilience and user comfort.

Definitions.

6.1.8 *Alley:*

*A minor right-of-way, dedicated to public use, which affords a secondary means of vehicular access to the back or side of properties otherwise abutting a street, and which may be used for public utility purposes.*

**Section 3.2.1. General Development Standards; location of buildings**

Only one main building on land used for a single-family dwelling, a two-family dwelling, a manufactured home outside an MH Park, or a townhouse with permitted accessory buildings may be located upon a lot or un-platted tract. **Every single-family dwelling, two-family dwelling, and townhouse shall face or front upon a street or officially approved place, other than an alley**, which means of access shall have a minimum width of twenty (20) feet.

- **Right of Way Dedication**: Require dedication of land for future transportation corridors, greenways, or emergency access as identified in the comprehensive plan.[2]
- **Emergency operations and evacuation access**
  - Adequate ingress and egress of the subdivision and circulation within the subdivision.
  - Require driveway width, length and slope adequate for firefighting vehicles and equipment.[3]
  - Require multiple driveways for multifamily and commercial developments.
  - Require visible street signage and addresses; and access points into a subdivision.

**Article 3.1 Streets. 1.6 SURFACE**

*Surfacing of all streets shall be mandatory, and must be completed and inspected by the Building Inspector before streets are accepted for maintenance by the City. The minimum acceptable surface for arterials is two (2) inches of rock asphalt or hot mix asphaltic concrete, either hot or cold lay; for collector streets and residential streets one [and] one-half (1-1/2) inch of rock asphalt or hot mix asphaltic concrete. The type of surface course to be used shall be designated by the Building Inspector. All street construction shall be performed by a bonded contractor who has filed a faithful performance bond for the City.*

**Section 2.2.5.D.2 MH Additional Site Design Standards**

2. Streets and Walkways:

*Each MH Park shall have direct access to a public street and each manufactured home space shall have direct access to a public street or to a private street provided by the owner of the MH Park. If the MH Park owner uses private streets, they will dedicate a minimum of 15 feet as an emergency access easement. If the private street does not join at both ends to a public street, a turn-around will be provided with a minimum sixty (60) foot diameter. Private streets will be paved and guttered to city specifications and will provide a 48-inch wide pedestrian access to each home from the street.*

- **Ingress & Egress Standards**
  - Require new streets, public or private, within a subdivision have access to an existing "dry" road during the 100- year flood.

[2] House Bill 3699 (HB 3699) limits cities to requiring the dedication of right-of-way only for projects that are included in a funded Capital Improvement Plan (CIP).

[3] These dimensions must be carefully considered and not recommended to be wider than absolutely necessary so as not to undermine other aspects of resilient design, such as walkability.

- Require the surface of new streets within subdivisions to be built to at least the 100-year flood elevation.
- Prohibit building segments of new driveways below the 100-year flood elevation.

– **Road Design Standards**
  - Size culverts and bridges (other than driveway culverts) to a 100-year storm frequency.
  - Require road surfaces to be elevated to or above the base flood elevation or allow only a nominal amount of water to flow over the road during the 100-year flood event.

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# **Utilities** (water, power, stormwater)

## **TECHNIQUES** | GENERAL

– **Resilience Assessment:** Major developments and subdivisions must submit a utility resilience assessment, addressing hazard exposure, redundancy, and emergency access.

– **Critical Facility Protection:** Utilities serving critical facilities (e.g., hospitals, emergency shelters) must have backup power, redundant connections, and prioritized restoration plans.

– **Utility Placement, Layout and Access:**
  - Prohibit or restrict the placement of critical utility infrastructure (e.g., substations, pump stations, lift stations, major mains) in high-risk areas such as floodplains, unstable soils, or wildfire-prone zones, unless no feasible alternative exists; require elevation, floodproofing, or fire-resistant design where unavoidable).
  - Subdivision plats must show all proposed utility ROWs, easements, and access routes, ensuring they are accessible for maintenance and emergency repairs.
  - Require utility lines to be undergrounded in new subdivisions where feasible, reducing vulnerability to wind, ice, and wildfire hazards.

2.2.5D.3 MH Additional Design Standards

Utility Services:

*In the layout of Manufactured Homes (MH) Parks, the owner shall provide a utility easement appropriate to the number and size of each utility. Each lot will be served by an electrical utility pole for meter placement. Water will be supplied to a water meter furnished by the city with the MH Park owner responsible for the line from the meter to the home. Sewer service will be provided by the city with the MH Park owner responsible for the line from the sewer main to the home. Solid Waste service may be provided either through individual home pick up or group*

*by the owner. Drainage plans must be drawn up by the owner and submitted to the City prior to approval of the MH Park. Gas service will be supplied by the natural gas supplier for the city.*

2.2.5.D.4 MH Additional Design Standards

Fire Protection and Tie Down Requirements:

*Each manufactured home will have fire resistant skirting around the base of the home with the appropriate number of vents, screens and/or openings. This must be a condition of rental of the space and needs to be accomplished within 30 days of placement of the home. Each home will conform to the tie down requirements of the Texas Department of Housing and Community Affairs for a Non-Hurricane Zone. This requirement will also be a condition of rental of space in the MH Park.*

- **Co-location and Multi-Use Corridors:**
  - Require the use of existing corridors (e.g., along roads, railways) for new utility lines where feasible to minimize land disturbance and facilitate maintenance.
  - Allow compatible uses (e.g., trails, pollinator habitats) within utility ROWs to maximize community benefit and support environmental goals.
- **Redundancy and Future-Proofing:**
  - Mandate multiple utility connections and looped systems in subdivisions to provide backup service routes and minimize the risk of widespread outages.
  - Require ROWs and easements to be wide enough to accommodate future upgrades, additional circuits, or new utility types (e.g., fiber optics, distributed energy resources.[4]

- **Sustainable Infrastructure:** Promote energy-efficient and demand-responsive utility design, such as advanced metering and smart grid technologies, to reduce stress on the grid during extreme events.

- **Maintenance and Enforcement:**
  - Require long-term maintenance agreements for private infrastructure, with regular inspections and enforcement mechanisms to ensure ongoing functionality.

[4] These dimensions must be carefully considered and not recommended to be wider than absolutely necessary so as not to undermine other aspects of resilient design, such as walkability.

- Include a mechanism during final platting, such as a maintenance covenant, where the local government has the ability to take over maintenance of the infrastructure that is not being maintained by the Property Owners' Association and assess subdivision property owners for the cost of any such maintenance.

## **TECHNIQUES** | POTABLE WATER

- **Source Water and Watershed Protection:**
  - Establish and enforce source water protection zones with land use restrictions, setbacks, and buffer requirements around wells, reservoirs, and surface water sources.
  - Require an Integrated Pest Management Plan to manage the use of fertilizers, pesticides, and herbicides.
  - Encourage or require green infrastructure (e.g., rain gardens, permeable pavement, riparian buffers) to protect recharge areas and reduce runoff pollution.
- **Placement and Accessibility:** Require subdivision plats to show all proposed water lines, easements, and access routes, ensuring accessibility for maintenance and emergency repairs.
- **System Layout:**
  - Require water lines to be located in protected corridors and at appropriate depths to minimize risk of damage from hazards or construction.
  - Mandate hydrant placement and spacing in accordance with fire and safety codes.
- **Utility Certification and Capacity:** Require certification from an approved water utility or provider confirming that potable water of sufficient quality and quantity will be available to all lots in the subdivision, consistent with state standards.
- **Adequate Fire Suppression Supply:** All new developments and subdivisions must demonstrate access to an adequate and reliable water supply for fire suppression, meeting or exceeding the standards established by the local fire code and water utility.
- **Minimum Flow Rates by Use Type:**

  The potable water system must provide minimum flow rates tailored to the type of development:

- Single-family residential: [Insert required flow rate, e.g., 500 gallons per minute]
- Multifamily residential: [Insert required flow rate, e.g., 1,000 gallons per minute]
- Nonresidential/commercial: [Insert required flow rate, e.g., 1,500 gallons per minute] Flow rates must be certified by a licensed engineer or water utility provider.

– **Distributed Water Sources for Firefighting:**

- Developments must ensure distributed water sources for firefighting, such as hydrants, cisterns, or ponds, are strategically located throughout the site.
- Hydrants must be spaced and sited in accordance with fire code requirements and within a specified maximum distance from all structures.
- Where hydrants are not feasible, approved cisterns or fire ponds of sufficient capacity must be provided and maintained for emergency use.

– **Water Conservation and Efficiency:**
  - Require the use of water-efficient fixtures, drought-tolerant landscaping, and leak detection systems in new developments.
  - Encourage or require water metering, water audits, and the use of reclaimed or recycled water for non-potable uses.

## **TECHNIQUES** | WASTEWATER

– **Design and Technology Standards:**
  - Require the use of advanced or alternative treatment technologies in vulnerable or high- risk areas to improve resilience and reduce contaminant loads.
  - Mandate backflow preventers, watertight manholes, and other protective features in flood- prone zones.
  - For conservation or cluster subdivisions, allow flexibility to site community or on-lot systems in protected open space where soils are most suitable, with access easements for maintenance.

– **Operation, Maintenance, and Monitoring:**
  - Require regular inspection, maintenance, and pump-outs for OWTS, especially in areas vulnerable to natural disasters or with high environmental sensitivity.
  - Establish responsible management entities (e.g., utility or HOA) for ongoing operation and compliance monitoring of community or shared systems.
  - Require data-sharing platforms and operation/maintenance plans to ensure system functionality and regulatory compliance.

– **Source Water and Environmental Protection:**
  - Establish minimum setbacks from water bodies, wells, and wetlands to protect source water and sensitive environments.

- Limit the percentage of open space in conservation subdivisions that can be used for sewage facilities, balancing flexibility with environmental protection (e.g., 30–50%).

- **Adequacy Certification:**
  - No plat application shall be approved unless the subdivider demonstrates that an adequate wastewater system will serve each phase of the subdivision concurrent with development.
  - Require certification from a licensed engineer or utility provider regarding system adequacy and compliance with applicable standards.

## **TECHNIQUES** | STORMWATER

- **Watershed-Based and Overlay Zoning:**
  - Use watershed or sub-watershed boundaries as the basis for zoning and land use planning to direct development away from sensitive areas and protect water quality.
  - Apply overlay districts or impervious cover overlays to restrict or condition development in areas critical for stormwater management.

§ 7DRAINAGE.

*7.1 DRAINAGE REQUIRED*

*Structures for drainage shall be constructed in such locations and of such size to adequately serve the subdivision and the contributing drainage area.*

*7.2 DRAINAGE DITCHES*

*Before the approval of the final plat, the developer and/or owner of the subdivision shall:*

*a. Enclose all existing open drainage ditches in concrete or corrugated metal structures of such size as will adequately serve the subdivision and adjacent drainage area; or*

*b. Make an escrow deposit with the City Secretary of sufficient funds to perform such work upon the understanding that such work will be done by him within eleven (11) months following the approval of the final plat, or the City will be authorized to use said escrow deposit to perform work; or*

*c. Furnish a bond to the City Secretary, payable to the City in an amount sufficient to perform such work as determined by the City Building Inspector, conditioned that he will have the work done according to specifications within eleven (11) months following the approval of the final plat.*

*7.3 STORM SEWERS AND CURB INLETS*

*Storm sewers shall be provided and curb inlets located as to properly drain all streets and intersections. Sufficient curb inlets shall be provided so as to limit the maximum length of water flow on paved streets to five hundred*

*(500) feet. The size and location of all sewers and curb inlets shall be approved by the City Building Inspector and/or the City administration.*

- **Performance and Incentive Zoning:**
  - Set maximum impervious surface limits for zoning districts or specific overlays, capping site- and area-wide imperviousness.
  - Use performance zoning to require post-development stormwater runoff rates and volumes to not exceed pre-development conditions.
  - Offer density bonuses or other incentives for developments that exceed minimum standards or integrate green infrastructure.
- **Green Infrastructure and Low Impact Development (LID):**
  - Explicitly allow and encourage green infrastructure practices—such as bioretention areas, rain gardens, filter strips, swales, green roofs, and constructed wetlands—within required setbacks, open spaces, and landscaped areas.
  - Require or incentivize the use of green infrastructure for stormwater treatment, attenuation, and infiltration at decentralized locations throughout the site.
- **Urban Growth Boundaries and Infill:**
  - Establish urban growth boundaries to limit sprawl and protect rural and sensitive lands, reducing new impervious surfaces in critical areas.
  - Encourage infill and redevelopment in areas with existing infrastructure, paired with stormwater retrofits.
- **Site Design and Layout:**
  - Require subdivision layouts that minimize road length, reduce paved surfaces, and preserve natural drainage patterns and open space.
  - Permit reduced frontage and flexible lot arrangements to support compact development and minimize impervious cover.
  - Require any pond, retention basin, or other waterbody to be included on one lot where possible, or at least to be entirely

contained within a single subdivision.

- **Open Space and Multi-Purpose Design:**
  - Encourage or require that open space, buffers, and landscaping serve multiple functions, including stormwater treatment, habitat, and recreation.

- Allow stormwater facilities to be counted toward open space requirements if designed for multi-purpose use and public benefit.

– **Stormwater Plan Review:** All major developments and subdivisions must submit detailed stormwater management plans for review and approval, including maintenance and inspection provisions.

– **Maintenance and Enforcement:**
  - Require long-term maintenance agreements for private stormwater systems, with regular inspections and enforcement mechanisms to ensure ongoing functionality.
  - Include a mechanism during final platting, such as a maintenance covenant, where the local government has the ability to take over maintenance of any stormwater facility that is not being maintained by the OA and assess subdivision property owners for the cost of any such maintenance.

– **Financial Planning**:
  - **Reserve Study**: Require a reserve study from the developer to identify ongoing maintenance costs of all stormwater and flood protection infrastructure with reasonable maintenance and replacement cycles as a condition of preliminary plan or final plat approval.
  - Require the developer, especially in a phased subdivision, to identify annual maintenance costs of stormwater and flood protection infrastructure and fund the maintenance of such facilities until the HOA is established.