

MEMO

TO: City of Martindale c/o Langford & Associates
FROM: Doucet, A Kleinfelder Company c/o Lindsey Oskoui, AICP & Kimberly Johnson-Hopkins
DATE: 30 December 2025
SUBJECT: Texas General Land Office Resilient Communities Program Grant:
An Assessment of the Alignment Between City of Martindale Codes and Resiliency Measures

BACKGROUND AND PURPOSE

In 2024, the City of Martindale, 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 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 is consistent with the city's long-term vision and more resilient to natural hazards.

In that vein, the two primary focuses of this memo are to 1) evaluate how well Martindale'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 objectives of the Comprehensive Plan. The City will work with the consultant team to identify a short list of priority topics that best reflect local needs and resources for implementation and enforcement. A subsequent memo will identify corresponding action items for the Comprehensive Plan.

METHODOLOGY

To conduct this assessment, the most significant natural hazards affecting Martindale were first identified and reviewed. The 2020 Caldwell County Hazard Mitigation Plan served as the primary source for identifying specific natural hazards most relevant to Martindale and the surrounding region. This plan recognized extreme heat, drought, wind, wildfire, tornadoes, and Lightning as threats of varying degrees. However, Caldwell County is in the process of rewriting the Hazard Mitigation Plan and should be available to the public late December of 2025.

“Maintaining a secure and sustainable future through the revision and development of targeted hazard mitigation actions to protect life and property.”

Subsequently, the adopted development-related sections of the City’s code—including building construction codes and standards ([Chapter 150](#)), Flood Damage Prevention ([Chapter 153](#)), Subdivision ([Chapter 154](#)), and Zoning ([Chapter 155](#)) — 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 <i>The best practice is fully addressed in the adopted code, with no revisions required. The code effectively supports community resilience.</i>
TIER 2	Best Practice Adequately Addressed with Minor Adjustments Needed <i>The best practice is generally addressed in the adopted code, but minor edits are recommended for clarity and/or completeness to ensure optimal effectiveness.</i>
TIER 3	Best Practice Not Addressed or Partially Addressed – Revisions Advised <i>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.</i>
TIER 4	Best Practice Not Addressed or Inadequately Addressed - Revisions Critical <i>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.</i>

CONCLUSIONS & RECOMMENDATIONS

BUILDING CONSTRUCTION AND FIRE PROTECTION CODES AND STANDARDS

Martindale adopted the 2021 International Code Council (ICC) Family of Codes and the 2020 edition of the NFPA Electrical Code in 2021. Despite this adoption, the City does not clearly define the Building Official’s authority in several key areas, including code interpretation and enforcement, inspections and permitting, stop-work orders, unsafe building declarations, emergency response, citations and fines, administrative warrants, and cost recovery through liens. Clearly articulating these authorities would strengthen enforcement consistency, enhance public safety, and align Martindale with best practices for municipal building code administration.

Similarly, although Martindale has adopted the 2021 International Fire Code (IFC) and related ordinances, the municipal code lacks clearly defined authority and procedures for fire protection enforcement. The City has not formally established a Fire Marshal or Fire Code Official, nor does it outline the responsibilities, administrative structure, or enforcement powers typically associated with that role. Key gaps include authority to enforce fire safety systems, conduct inspections, investigate fire incidents, eliminate hazardous conditions, issue violations and penalties, require emergency corrective actions, and maintain comprehensive fire-related records. Addressing these deficiencies would strengthen fire code compliance, improve life safety outcomes, enhance coordination during inspections and plan reviews, and align Martindale with best practices recommended by the IFC and NFPA standards.

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 include a mid-term action item (3–5 years) to consider adoption of 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 this report focused on the 2018 version of the Code, the organizational structure has not changed substantially in subsequent versions.

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 - Community operations - Response and recovery	- Flooding - Hurricanes - Tornadoes - Blizzards - Terrorist - Wildfire
Hazardous or combustible materials	413, 414	Isolating risks	- Terrorist - Fire - Flooding - Hurricanes - Tornadoes
Storm Shelters/Areas of Refuge	423, 1009, 1026	- Shelter in place/Refuge - Robustness - Community protection	- Tornado - Terrorist - Fire
Flammability of materials	Chapter 6, 7, 8	- Fire resistance - Egress - Indoor environmental quality - Smoke exposure	- Fire - Secondary to other hazards
Protection of openings	Chapter 7, 1609.2	- Structural integrity - Debris impacts	- Hurricanes - Tornadoes
Fire suppression/protection. Smoke control	Chapter 9	- Fire resistance - Egress - Property protection	- Fire - Secondary to other hazards
Communication	907, 908, 917	- Public safety - Evacuation	- Fire - Terrorist - Earthquake - Tsunami - Tornadoes
Means of egress	Chapter 10	- Evacuation - Fire protection - Accessibility	- Flooding - Hurricanes - Tornadoes - Blizzards - Terrorist - Wildfire
Accessibility	Chapter 11	- Inclusive communities - Community cohesion - Evacuation	- Public welfare - Secondary to other hazards
Occupant health	Chapter 12	- Indoor environmental quality - Indoor air quality - Access to sanitation	- Public health - Fire - Extreme heat/cold
Exterior envelope performance	Chapter 14	- Property protection - Debris impacts - Hazard spreading	- Fire - Flooding - Hurricanes - Tornadoes
Roof assemblies	Chapter 15	- Fire resistance - Debris impacts - Sealing	- Fire - Hurricanes - Tornadoes - 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 • Mold, mildew, rot • Property protection	• Blizzards • Hurricanes • Flooding • Thunderstorms
Hazard Maps	1608, 1609, 1611, 1613, 2603	• Identifying risk	• Tornado • Hurricane • Seismic • Pests • Snow • Rain
Continuous load paths	Chapter 16	• Structural integrity • Anchorage and bracing	• Earthquake • Tornadoes • Hurricanes
Identification of risk	1604.5	• Public safety • Emergency planning	• Earthquake • Tornadoes • Hurricanes • Blizzards
Elevation of structures	1612	• Flood mitigation • Property protection	• Flooding • Hurricanes • Sea level rise
Tsunami	1615, Appendix M	• Identifying risk • Elevation above inundation • Minimum design loads • Evacuation/refuge	• Tsunami
Special inspections	Chapter 17	• Verification of performance • Structural integrity • Fire resistance	• Earthquake • Fire • Hurricanes • Flooding • Tornadoes • Blizzards
Soils and foundations	Chapter 18	• Load support • Subsidence	• Earthquake • Sea level rise • Drought • Flooding
Material performance	Chapters 19-26	• Fire resistance • Structural integrity • Product safety	• Flooding • Hurricanes • Tornadoes • Blizzards • Terrorist • Wildfire
Safety during construction	Chapter 33	• Public safety • Fire safety • Means of egress	• Fire • Civil unrest
Fire Districts	Appendix D	• Fire safety	• Fire
Flood Resistance	Appendix G	• Flood mitigation • Property protection	• Flooding • Hurricanes • Sea level rise

As Martindale evaluates a potential code update within the next 3–5 years, the City should consider several factors beyond just the technical revisions.

- 1) **STATE REQUIREMENTS** – Texas law establishes the 2012 IBC as the minimum commercial building code and the 2012 IRC as the minimum residential code for municipalities. It also requires the use of the 2015 IECC and the 2020 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 with neighboring jurisdictions can simplify compliance for regional contractors. Neighboring cities may also have developed amendments or modifications that are pertinent to Martindale.
- 3) **LOCAL DYNAMICS** – Martindale does not currently have many local modifications to the 2021 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, through it may introduce additional administrative complexity.
- 5) **STAKEHOLDER INPUT** – The International Code Council (ICC’s) 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).

FLOOD DAMAGE PREVENTION

The City adopted the Flood Damage Prevention Ordinance in May 2012 in accordance with the most recently adopted Flood Control Insurance Act, Texas Water Code, section 16.315, which authorizes local government to exercise several land use control in order to minimize threats to life and property. 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.

- **Base Flood Elevation (BFE):** The ordinance does not require new construction or substantial improvements to be elevated at least 2 feet above the Base Flood Elevation or mention requirements to file Elevation Certificates and maintain records. Therefore, the city should adopt a revised Flood Damage Prevention Ordinance that establishes clear elevation requirements and includes Elevation Certificate submittal and record-keeping procedures to ensure compliance.
- **Hazard Mitigation / Comprehensive Planning Tie-in:** The ordinance focuses on floodplain management (floodways, subdivision, standards) but does not appear to integrate a broader hazard mitigation plan, long-term resilience strategy, or link directly to a comprehensive land-use/drainage/mitigation plan.
- **Setbacks from Rivers & Streams:** The ordinance does not establish mandatory setbacks from rivers and streams within the floodplain. This requirement is also not included in the Subdivision Ordinance, Zoning Ordinance, or Flood Damage Prevention Ordinance, and the City should adopt an ordinance that formally establishes setbacks to protect riparian areas and reduce flood risk.
- **Low Impact Development (LID):** The ordinance does not reference Low Impact Development practices. LID refers to design approaches that manages stormwater on site using natural systems, such as rain gardens, bioswales, permeable pavement, and other techniques that mimic natural hydrology.
- **Zoning/Land Use Controls:** While the ordinance addresses floodway and floodplain development, it does not outline provisions for prohibiting storage and/or processing of hazardous, flammable, exposure, buoyant, or obstructive materials.
- **Substantial Damage/ Substantial Improvement (SD/SI) Triggers:** The code does not outline clear trigger & procedures requiring structures that reach “substantial damage” (typically >50% per-loss market value) be brought to current code
- **No-Net Increase Runoff / Drainage Performance:** The code does not contain an explicit pre/post hydrology requirement for developments inside of Special Flood Hazard Area (SFHA).
- **Community Outreach, Community Rating System (CRS) Participation, and Incentives:** Chapter 153 of the Code is largely regulatory; however, the ordinance does not mention outreach or incentive language. Instead of incorporating this into an ordinance update, the City should develop a dedicated Community Outreach and Resilience Program to educate residents, promote flood awareness, and support activities

that align with broader community resilience goals, including potential participation in the Community Rating System (CRS).

- **Future -Conditions / Climate -Adjusted Planning:** The code relies solely on existing FEMA BFE and SFHA mapping without explicit language requiring future-conditions analysis, even though floodplain determinations should be based on *best available data*, which may include FEMA products or more accurate and/or more recent studies that incorporate climate change and evolving watershed conditions.
- **Subdivisions / Masterplan Integration:** The ordinance addresses subdivision proposals, but it lacks stronger language to require lot design that avoids SFHA and preserves drainage/open space.
- **Variance Criteria:** The ordinance has variance procedures in section 153.28, but the requirements should be revised to align with the RCP expectations when it comes to mitigation measures.

LAND USE-RELATED REGULATIONS: ZONING AND SUBDIVISION ORDINANCES

Evaluation Approach and Context

In this evaluation, the City of Martindale’s zoning, subdivision, and related ordinances were reviewed against a compilation of widely recognized planning techniques supporting 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 Martindale’s use.

High-Level Findings

Martindale’s zoning and subdivision codes provides a basic framework for management of the built and natural environment. For example:

- The zoning ordinance establishes base zoning districts with permitted uses, dimensional standards, and density controls. The city encourages compatibility by separating residential areas from more intensive commercial or industrial uses.
- The subdivision ordinance provides minimum requirements for lots, blocks, streets, and utilities to support basic infrastructure.
- The city uses site development standards such as setbacks and lot coverage to shape development patterns.
- Nonconforming uses and structures are regulated, limiting expansion and guiding future transition.
- Subdivision regulations require basic drainage consideration, though without advanced stormwater standards.
- The city regulates nuisances, unsafe conditions, and public health hazards (Chapter 91).
- Outdoor burning rules (Chapter 92) help limit air quality impacts and fire risks.

The code also outlines fairly standard procedures for administering said code. Administrative processes exist for rezoning, variances, and plat approvals, providing a standardized workflow for development decisions. Additionally, it contains processes for public notice and hearing pertaining to zoning changes, variances, and plats.

However, Martindale might consider incorporating some or all of the following more advanced planning techniques, which may directly and indirectly improve its resiliency against natural hazards. Additional, related concepts are enumerated in Appendix D:

Land Use & Design

- Comprehensive design standards for buildings, streetscapes, and/or neighborhood form beyond basic dimensional controls.
- Mixed-use or form-based zoning options, limiting flexibility and walkable development patterns.
- Clear infill development or redevelopment standards.
- Incentives or density bonuses for resilient design, open space preservation, affordable housing, or sustainable practices.
- Landscaping requirements beyond minimal standards.
- Improved interconnectivity and walkability through street design, sidewalk requirements.

Environmental Protection

- Low Impact Development (LID) requirements or green infrastructure standards to manage stormwater through natural systems.
- Riparian corridor or river/stream setback requirements, which limits protection of sensitive areas.
- Explicit protections for environmentally sensitive areas such as:
 - Floodplains

- Riparian Corridors
- Wetlands
- Wildlife Habitat
- Requirements for water quality treatment, detention, or erosion control beyond basic subdivision requirements and minimal state-law expectations.
- Tree Preservation standards
- Green space set asides

Zoning & Subdivision Administration

The city does not currently appear to employ certain programmatic and procedural tools that may improve the development process:

- Mitigation fees, impact fees, and/or developer contributions beyond basic subdivision standards.
- A timeframe and systematic process for periodic code updates
- Designation of a fire marshal, floodplain administrator, and/or resilience officer
- Amplification of administrative authority for building and planning enforcement.
- Subdivision review criteria that directly and formally incorporate resilience, sustainability, or hazard-response principles.
- Readily available development review manual or design guide
- Clear enforcement procedures with defined compliance timelines and corrective actions

NEXT STEPS

A follow-up memorandum will translate the above findings into specific recommendations and action items for the Comprehensive Plan update, rather than presenting detailed ordinance analysis in this section. The memo will identify priority code updates, programmatic initiatives, and implementation steps related to building and fire codes, flood damage prevention, land use regulations, environmental protection, and resilience planning for inclusion in the plan's implementation chapter.

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— 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 Construction Codes and Standards are addressed in [Section 150.002](#) of the Martindale’s Code of Ordinances.

ESTABLISHMENT OF RESPONSIBLE OFFICIAL

1

BEST PRACTICE: *Establish the position of Building Official.*

COMMENTARY: Martindale’s current code Section 150.002, Technical Construction Codes and Standards adopts the International Codes but does not explicitly establish the position of a Building Official.

To align with best practices, the City should formally create the position of Building Official and outline qualifications, responsibilities, and the reporting structure. This ensures clear authority for code enforcement, interpretation, and administration.

Recommendation:

Add a new section establishing the Building Official as follows:

“There is hereby created the office of Building Official. The Building Official shall be appointed by the City Council or City Administrator and shall have authority to administer, interpret, and enforce the provisions of all adopted building, residential, and related technical codes. The Building Official may also serve in multiple inspection roles as determined by the City and shall report directly to the City Administrator. “

Code Section Reference: [Section 150.002](#) Technical Construction Codes and Standards

Adopted language –

The City of Martindale hereby adopts the International Building Code, International Residential Code, and related technical construction standards as published by the International Code Council.

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 partially addressed in Section 150.002 of the Martindale Code of Ordinances, which adopts the 2021 International Codes (including the IBC and IRC). However, the local code does not clearly define or establish the authority of a designated Building Official to interpret and enforce these codes with binding decisions.

To fully align with best practices, Martindale should formally designate a Building Official.

Recommendation

Amend Section 150.002

- *Establish the position of Building Official*
- *Authorize that official to interpret, enforce, and render binding decisions under the adopted codes; and*
- *Provide an administrative appeal process consistent with IBC Chapter 1*

Code Section Reference: Refer to Code Above

AUTHORITY TO INSPECT & INVESTIGATE

3

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: Martindale's adoption of the International Building Code (IBC) and related technical codes under Section 150.002 of the Code of Ordinances references construction standards but does not explicitly establish the Building Official's authority to issue, approve, or deny permits.

To fully align with best practices, the City should amend its code to grant the Building Official clear administrative authority over all building and occupancy permits, consistent with Chapter 1 of the IBC. This clarification would ensure that permitting authority is explicitly vested in the Building Official rather than implied through general code adoption, reducing ambiguity and improving enforcement consistency.

Code Section Reference: Refer to Code Above

Adopted language – The City of Martindale hereby adopts the International Building Code, International Residential Code, and other related codes as published by the International Code Council for the regulation of construction, alteration, movement, enlargement, and occupancy of buildings and structures within the City.

4

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 authority is generally covered under Chapter 1 (Section 104.11) of the International Building Code (IBC), which the City of Martindale has adopted through Section 150.002 of its Code of Ordinances. However, Martindale's local code does not explicitly restate this authority or provide a clear administrative process for evaluating and approving alternative materials or methods.

To strengthen alignment with best practices, the City should consider adopting clarifying language that mirrors IBC Section 104.11, ensuring the Building Official has defined authority to approve or reject alternative methods and materials that achieve equivalent safety, strength, and performance outcomes.

Code Section Reference: Refer to Code Above

Adopted language – The City of Martindale adopts by reference the International Building Code (IBC), International Residential Code (IRC), and related codes as published by the International Code Council for regulating building construction, alteration, and use within the City.

5	BEST PRACTICE: <i>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.</i>
COMMENTARY: This is partially addressed in Chapter 1 of the 2021 International Building Code (IBC), adopted by the City of Martindale through Section 150.002 of the Code of Ordinances. The IBC establishes procedures for administrative review and appeals but does not clearly define the Building Official's authority to grant or recommend variances at the local level. In Martindale, variance requests are typically handled through the Board of Adjustment, as established in Zoning Ordinance Section 155.039, which provides authority to hear and decide upon variances from zoning and development standards. However, the City could benefit from clarifying the Building Official's role in this process specifically, the ability to recommend variances related to building code applications or technical standards before they advance to the Board. To strengthen compliance with best practices, Martindale should consider adding explicit variance criteria and administrative review steps to ensure consistency, transparency, and resiliency measures are upheld.	
Code Section Reference: Section 150.002 Technical Construction Codes and Standards and Zoning Ordinance – Section 155.039 Board of Adjustment	
<i>Adopted language – Martindale adopts the International Building Code (IBC), which includes provisions related to administrative review and appeals. Variances relating to the interpretation or application of the code may be reviewed by the Building Official and forwarded to the Board of Adjustment for consideration.</i>	
<i>Section 155.039 Board of Adjustment</i> <i>(A) The Council will serve as the Board unless and until the Council appoints members of a separate Board. If the Council appoints members of a separate Board the Board shall consist of five members to be appointed for a term of two years each. If the Council appoints members of a separate Board, the Council may appoint up to three alternate members to serve in the absence of one or more regular members when requested to do so by the Mayor or the Zoning Administrator. The initial appointments of members of a separate Board may occur at any regular Council meeting, and the terms of the initial members will be until the next general city election. Thereafter, Board members will be appointed by the Council for full two-year terms at the first regular Council meeting following the next general city election. The Council may authorize each member of the Council to appoint one member to the Board. The Council may remove a Board member for cause as found by the Council on a written charge after a public hearing. A vacancy on the Board shall be filled for the unexpired term by vote of the Council. An alternate member shall serve for the same period as a regular member and is subject to removal in the same manner as a regular member. A vacancy among the alternate members shall be filled in the same manner as a vacancy among the regular members.</i> <i>In the absence of a separate Board, any reference in this chapter to the Board means the Council serving as the Board.</i> <i>(B) Each case before the Board must be heard by at least 75% of the members.</i> <i>(C) The members of the Council may act as members of the Board of Adjustment, upon majority vote by the Council.</i> <i>(D) The Board shall select a Chair at its first meeting after regular appointments are made by the Council. If the Council is serving as the Board, the Council will elect a Chair and Vice-Chair of the Board by majority vote at the first regular Council meeting following each general city election. Meetings of the Board shall be held at the call of the Chair of the Board, and at other times as determined</i>	

APPENDIX A: DETAILED ASSESSMENT OF BUILDING CODE COMPARED TO BEST PRACTICES

by the Board or by the Mayor. All meetings of the Board shall be open to the public and notice shall be given in compliance with the Open Meetings Law. The Chair may administer oaths and compel the attendance of witnesses.

The Board shall keep minutes of its proceedings that indicate the vote of each member on each question or the fact that a member is absent or fails to vote. The Board shall keep records of its examinations and other official actions. The minutes and records shall be filed immediately in the office of the City Clerk and are public records.

(E) The Board shall have the authority prescribed in Tex. Loc. Gov't Code § 211.009 as it may be amended from time to time, including the right to hear and decide an appeal from a decision of the Zoning Administrator, to authorize in specific cases a variance from the terms of this chapter to grant special exceptions, and to hear and decide other matters authorized by this chapter or any other ordinance of the city.

(F) The concurrent vote of 75% of the members of the Board shall be necessary to:

- (1) Reverse an order, requirement, decision or determination of the Zoning Administrator;*
- (2) Decide in favor of an applicant on a matter on which the Board is required to pass under this chapter; or*
- (3) Authorize a variation from the terms of this chapter.*

(G) (1) Any of the following persons may appeal to the Board a decision made by the Zoning Administrator:

- (a) A person aggrieved by the decision; or*
- (b) Any officer, department or board of the city affected by the decision.*

(2) The appellant must file with the Board and the Zoning Administrator a properly completed notice of appeal, specifying the grounds for the appeal, within 20 days of the date of the decision.

(3) Upon receiving the properly completed notice, the Zoning Administrator will make all city records related to the appeal available to the Board. An appeal stays all city enforcement proceedings that relate directly to the matter that is being appealed unless the Zoning Administrator certifies in writing to the Board facts supporting the opinion of the Zoning Administrator that a stay would cause imminent peril to life or property. In that case, the proceedings may be stayed only by a restraining order granted by the Board or a court of record on application, after notice to the Zoning Administrator, if due cause is shown.

(4) The Board shall set a reasonable time for the appeal hearing and give public notice of the hearing and due notice to the parties in interest. A party may appear at the appeal hearing in person or by agent or attorney. The Board shall decide the appeal within a reasonable time. A member of the Council who serves on the Board may not bring an appeal.

(H) Any of the following persons may present to a District Court, county court or county court at law a verified petition stating that the decision of the Board is illegal in whole or in part and specifying the grounds of the illegality:

- (1) A person aggrieved by the decision of the Board;*
- (2) A taxpayer; or*
- (3) An officer, department, board or bureau of the city.*

(I) The procedures provided by Tex. Loc. Gov't Code, § 211.011, as it may be amended from time to time, shall govern the judicial review of the Board's decision.

6

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: Martindale has adopted the 2021 International Building Code (IBC) and 2021 International Residential Code (IRC) through Section 150.002 of the Martindale Code of Ordinances. Both codes contain administrative provisions that indirectly support emergency response actions—primarily in IBC Chapter 1, which authorizes the Building Official to determine unsafe structures, issue orders, and restrict use of buildings posing an immediate danger.

However, Martindale's local ordinance does not explicitly define emergency response authority, nor does it provide clear procedures for post-disaster inspections, red- or yellow-tagging structures, or mandating

immediate corrective actions. This can lead to uncertainty during emergency events when rapid, decisive authority is essential for public safety.

To align with best practices, Martindale should explicitly empower the Building Official to:

- conduct post-disaster safety assessments of buildings and critical infrastructure;
- issue orders to vacate, limit occupancy, or restrict access to hazardous structures;
- require emergency stabilization or temporary repairs when buildings pose an imminent safety threat;
- coordinate with emergency management officials and local law enforcement;
- document unsafe conditions and authorize demolition of structures beyond immediate repair, when necessary and consistent with State law.

Establishing these authorities in the local ordinance increases clarity for property owners, first responders, and city staff during emergency conditions.

Code Section Reference: Martindale Code of Ordinance – Section 150.002 Adoption of Technical Construction Codes, 2021 IBC- Sections 115 Unsafe Structures and Equipment and Section 116 Emergency Measures, and 2021 IRC Section R114 Unsafe Structures and Equipment

***Adopted language** – Adopted the IBC and IRC, including provisions related to unsafe structures and emergency measures. While these codes grant baseline authority to the Building Official, the local ordinance does not currently include supplemental emergency-specific authority. Additional clarification is recommended to support post-disaster response, occupancy restrictions, and emergency repair requirements.*

AUTHORITY TO ENFORCE COMPLIANCE

7

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

COMMENTARY: Martindale has adopted the 2021 International Building Code (IBC) and 2021 International Residential Code (IRC outlined in Section 150.002 of the Martindale Code of Ordinances. Both codes provide base provisions for addressing violations, including the authority to deem work unsafe, revoke permits, or stop work.

However, Martindale’s local code does not clearly or explicitly grant the Building Official independent authority to issue citations or administrative fines for construction-related violations. Enforcement authority in Martindale is currently more general and may rely on broader municipal authority rather than a building-specific enforcement process.

Best practices suggest that a city’s ordinances should explicitly authorize the Building Official to:

- issue formal notices of violation;
- issue citations for continued non-compliance;

- impose administrative penalties or fines when work is performed without permits, outside of approved plans, or in violation of code requirements; - escalate enforcement (stop-work orders, permit revocation) when violations are not corrected. Clarifying this authority helps ensure consistent enforcement, supports compliance during active construction, and promotes safety.	
Code Section Reference: 2021 International Building Code and Residential Code <i>Adopted language</i> – The current code adopts the IBC/IRC, which define violations generally but do not grant explicit local authority for the Building Official to issue citations or fines. Additional local ordinance language is recommended to clearly authorize enforcement actions, including administrative penalties and citations for non-compliance.	
8	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: Martindale adopts the 2021 International Building Code (IBC) and 2021 International Residential Code (IRC) through Section 150.002 of the Martindale Code of Ordinances. These adopted codes grant the Building Official general authority to access premises for inspections but rely on the local governing authority to establish procedures when access is denied. Currently, Martindale’s ordinances do not explicitly authorize the Building Official to obtain administrative warrants or define a process for forced entry inspections when a property owner refuses access. Likewise, the code does not directly outline referral procedures for legal enforcement when violations continue after denial of entry. Best practices recommend municipalities clearly authorize their Building Official to: - request administrative inspection warrants when entry is lawfully required but denied; - work with legal counsel or municipal court to obtain judicial approval; - refer cases for civil or criminal enforcement when violations persist or access is obstructed; - ensure due process while still protecting public safety. Providing clear authority reduces legal uncertainty, prevents delays in code enforcement, and ensures hazardous conditions can be addressed promptly.
Code Section Reference: 2021 IBC- Section 104.6 and 2021 IRC -Section R104.6 Right of Entry <i>Adopted language</i> – Martindale does not currently have adopted local ordinance language giving the Building Official the authority or request administrative warrants.	
9	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: Martindale currently does not grant the Building Official authority to place liens on properties to recover city costs for abating unsafe structures or hazardous conditions. While the City adopts the IBC/IRC (Chapter 150) and regulates nuisances (Chapter 91), there is no ordinance provision authorizing liens, special assessments, or recorded charges to recoup remediation expenses.

The City of Martindale should consider amending its municipal code to grant the Building Official authority to recover costs associated with abating unsafe structures, nuisances, or hazardous conditions. This could include provisions allowing the City to:

- Place liens on properties where abatement costs remain unpaid.
- Establish special assessments or recorded charges to secure reimbursement for remediation expenses.
- Ensure clear procedures for notification, appeal, and collection to maintain due process and transparency.

Implementing such measures would align Martindale with common practices in other jurisdictions, incentivize property owners to address unsafe conditions promptly, and reduce the financial burden on the City for public health and safety interventions.

Code Section Reference: None

Adopted language – No adopted language that authorize the Building Official or City to record liens for recovery of abatement costs.

CURRENCY

10

BEST PRACTICE: Adopt and a Family of Codes published by the International Code Council no greater than three versions out of date.

COMMENTARY: In December 2024, the City of Martindale adopted the 2021 International Code Council (ICC) Family of Codes and the 2020 National Fire Protection Association (NFPA) Electrical Code.

New editions of the ICC are released every three years, with the last edition being released in 2024 and the NFPA is currently on the 2023 edition. 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. While no significant changes to this section of regulations are recommended at this time, it is recommended that the City set an action item in the Comprehensive Plan to evaluate adopting a newer version of the IBC in the next three to five years.

While the City of Martindale's current adoption of the 2021 ICC Family of Codes and the 2020 NFPA Electrical Code is acceptable at this time, it is recommended that the City establish a proactive plan to maintain code currency and community resiliency. Specifically:

- Include in the Comprehensive Plan an action item to evaluate adopting the most recent editions of the ICC and NFPA codes within the next three to five years.

APPENDIX A: DETAILED ASSESSMENT OF BUILDING CODE COMPARED TO BEST PRACTICES

- Develop a periodic review process (e.g., every 3–5 years) to assess updates to building and fire codes and determine applicability to local conditions.
- Ensure that future code adoptions comply with guidance from organizations such as the Alliance for National & Community Resiliency (ANCR) to avoid using codes more than nine years or three editions out of date.

This approach will help Martindale maintain safe, resilient, and up-to-date building standards while providing predictability for developers, builders, and residents.

Code Section Reference: [Section 150.002](#)

Code Type	Codification Section	Date Adopted	Amendments
2021 International Building Code	Sec.150.002	8/3/21	No amendments
2021 International Residential Code	Sec. 150.002	8/3/21	No amendments.
2020 National Electric Code, 2015 International Electric Code	Sec. 150.002	8/3/21	No amendments.
2021 International Plumbing Code	Sec. 150.002	8/3/21	No amendments.
2021 International Mechanical Code	Sec. 150.002	8/3/21	No amendments
2021 International Fuel Gas Code	Sec. 150.002	8/3/21	No amendments
2021 International Energy Conservation Code	Sec. 150.002	8/3/21	No amendments
2021 Existing Building Code **for Residential Buildings Only**	Sec. 150.002	8/3/21	No amendments

At the time of adoption, there are no amendments to the codes above and the codes appear to have a neutral or positive impact on efforts toward resiliency.

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 150.002](#) of the Martindale Code of Ordinances.

ESTABLISHMENT OF RESPONSIBLE OFFICIAL

1

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

COMMENTARY: Do Not Meet --The City of Martindale's currently adopted fire-related ordinance includes foundational requirements such as adherence to the Texas Fire Code and the appointment of a Fire Chief. While these provisions provide a basic framework for fire safety enforcement, the ordinance does not explicitly establish a Fire Marshal position, nor does it outline the specific duties typically associated with that role.

Jurisdictions are encouraged to designate a clearly defined Responsible Official, ideally a Fire Marshal, to oversee fire code compliance, inspections, hazard mitigation activities, and enforcement. Martindale's existing ordinance partially aligns with this guideline through its reference to a Fire Chief, but it does not fully meet the GLO best practice due to the absence of a formally established Fire Marshal role, associated responsibilities, or administrative structure for code enforcement.

Code Section Reference: Chapter 150, Section 91.50 , and Section 92.07	
<i>Adopted language</i>	
<i>Chapter 150 - Section 150.002 Adoption of Codes</i>	
<i>The City of Martindale adopted the 2021 International Fire Code (IFC) in 2021.</i>	
<i>Chapter 91 – Section 91.50 Unsafe Buildings</i>	
<i>All buildings or structures which are unsafe, unsanitary, unfit for human habitation, not provided with adequate egress, or which constitute a fire hazard, otherwise dangerous to human life or which constitute a hazard to the safety, health or welfare of the public, by reason of inadequate maintenance, dilapidation, obsolescence, or abandonment, are considered unsafe buildings. All buildings in violation of the International Property Maintenance Code, as amended, shall constitute prima facie evidence that the building or structure is unsafe. All such unsafe buildings in the city limit and extra territorial jurisdiction are hereby declared a public nuisance and illegal and shall be abated by repair, rehabilitation or by demolition.</i>	
<i>Chapter 92 – Section 92.07 Outdoor Burning</i>	
<i>Chapter 92 regulates when, how, and under what conditions outdoor burning is allowed within the city. The ordinance generally prohibits open burning unless it is specifically permitted under state law or meets certain safety conditions. Acceptable burning typically includes activities such as agricultural, land management, firefighter training, or disposal of vegetation, but only when conducted in a safe manner and in compliance with the Texas Commission on Environmental Quality (TCEQ) rules.</i>	

AUTHORITY TO APPLY & INTERPRET FIRE CODE	
2	BEST PRACTICE: Identify the Official responsible for enforcement of the Fire Code and other safety regulations.
COMMENTARY: Do Not Meet - The ordinances do not clearly state who is responsible for enforcing the Fire Code. It is likely meant to be the Building Official or the Fire Marshal, but this has not been formally designated. The International Fire Code requires the city to officially appoint a “Fire Code Official,” so adding this into the City’s ordinances would remove any confusion. Doing so will make enforcement clearer, improve coordination during inspections and plan reviews, and help the City respond more effectively to fire-safety issues.	
Code Section Reference: Refer to Code sections above	
<i>Adopted language – Refer to Code sections above.</i>	

3	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: Do Not Meet- A best practice in fire code administration is to empower a designated official typically a Fire Marshal or Fire Code Official to recommend updates to fire codes and safety regulations. This authority allows a jurisdiction to respond proactively to emerging hazards, technological changes, and lessons learned from past fire incidents, ensuring that fire safety standards remain current and effective. The 2021 International Fire Code provides a modern technical framework. However, the ordinance does not designate an official responsible for recommending code updates, creating a gap in proactive fire safety management. Without this authority, the City lacks a formal mechanism to adapt its fire safety regulations in response to new risks or post-incident findings, which is a key element of resilience under GLO best practices. Establishing this authority formally would enhance public safety, strengthen regulatory oversight, and demonstrate the City's capacity to maintain a resilient fire safety program.	
Code Section Reference: Refer to Code Sections above	
<i>Adopted language – Refer to Code sections above</i>	

AUTHORITY TO INSPECT & INVESTIGATE

4	BEST PRACTICE: Establish authority to enter premises for protection and preventative measures.
COMMENTARY: The City adopted 2021 International Fire Code, Unsafe Buildings, and Outdoor Burning in the cities ordinance. However, the ordinance does not specially grant a designated official the authority to enter private or commercial premises for inspections or preventative measures. While the Fire Department, operated via Emergency Services District #3, may conduct operational inspections, this authority is not outlined in the city ordinance.	
Code Section Reference: Refer to Code Sections above	
<i>Adopted language – Refer to Code Sections above</i>	
5	BEST PRACTICE: Establish authority to examine premises where fire has occurred.
COMMENTARY: A critical component of fire safety management is the ability for a designated official typically a Fire Marshal or Fire Code Official to examine premises after a fire. This authority allows for: • Determining the cause and origin of fires • Identifying hazards or code violations that contributed to the incident • Recommending preventative measures to reduce future risk • Ensuring compliance with the adopted fire code and protecting public safety	

In Martindale, while the International Fire Code is adopted and unsafe buildings are regulated, there is no codified authority granting a city official the power to investigate post-fire incidents. Without this, the city lacks a clear mechanism for formal fire investigations and risk mitigation.

Code Section Reference: Refer to Code Sections above

Adopted language – Refer to Code Sections above

AUTHORITY TO ENFORCE COMPLIANCE

6

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

COMMENTARY: Effective fire safety management requires the ability to eliminate fire-related hazards through formal authority vested in a designated official. This includes:

- Identifying fire hazards in buildings, structures, and properties
- Ordering corrective actions, repairs, or abatement
- Ensuring compliance with fire code requirements
- Reducing risk to life, property, and infrastructure

In Martindale, while the International Fire Code is adopted and unsafe buildings are regulated under Chapter 91, there is no designated Fire Marshal or Fire Code Official codified with the authority to enforce hazard elimination. This creates a gap in proactive fire safety enforcement and limits the city's ability to demonstrate full compliance.

Code Section Reference: Refer to Code Sections above

Adopted language – Refer to Code Sections above

AUTHORITY TO ASSESS PENALTIES FOR VIOLATIONS

7

BEST PRACTICE: Establish penalties for violations.

COMMENTARY: The City does not have a formally codified authority granting a designated official the power to enforce penalties for fire code violations broadly.

Codify Enforcement Authority: Amend the city's fire or municipal code to explicitly designate a **Fire Marshal** or other qualified official with authority to:

1. Conduct inspections for compliance with the fire code.
2. Issue notices of violation and impose administrative penalties.
3. Coordinate with legal or municipal authorities to enforce abatement actions when necessary.

• Integrate Enforcement Procedures: Include procedures for inspections, citations, appeals, and penalty assessments to ensure clarity, fairness, and legal defensibility. • Align with Best Practices: Reference the International Fire Code (IFC) and NFPA guidance to ensure the enforcement framework meets national standards. • Outcome: Establishing this authority ensures effective fire code compliance, protects public safety, and reduces liability exposure for the City.
Code Section Reference: None
<i>Adopted language – None</i>

RESPONSIBILITY TO MANAGE RECORDS

8	BEST PRACTICE: Establish responsibility of keeping records for purposes reporting and recovery.
COMMENTARY: Even though the City Code of Ordinance outlines inspections, permitting, and abatement documentation, there is no guideline for maintaining fire related records at the municipal level. The City should establish formal guidelines for maintaining fire-related records at the municipal level. This should include defining the types of records to be retained (e.g., inspections, permits, abatements), retention periods, responsible personnel or departments, and procedures for secure storage and retrieval. Integrating these guidelines into existing administrative policies will ensure consistent recordkeeping, support accountability, and facilitate audits or compliance reviews.	
Code Section Reference: None	
<i>Adopted language – None</i>	

CURRENCY

10	BEST PRACTICE: Adopt and a Family of Codes published by the International Code Council no greater than three versions out of date.
COMMENTARY: The City adopted the 2021 International Fire Code (IFC) in 202, as the modern foundation for fire and building safety. This adoption generally aligns with the best practices, ensuring the city's regulatory framework incorporated contemporary safety standards.	
Code Section Reference: Chapter 150 - Section 150.002	
Adopted language – Chapter 150 <i>Chapter 150: Building Regulations adopts the 2021 International Fire Code, along with the other ICC codes for building, plumbing, mechanical, and energy.</i>	

APPENDIX C

DETAILED ASSESSMENT OF THE FLOOD DAMAGE PREVENTION ORDINANCE COMPARED TO BEST PRACTICES

Flood Damage Prevention is addressed in [Chapter 153](#) of the City of Martindale's Code of Ordinances.

ADMINISTRATIVE OVERSIGHT

1

BEST PRACTICE: *Designate a floodplain administrator.*

COMMENTARY: The City of Martindale's Code of Ordinances (Section 153.25) establishes that the Floodplain Administrator is appointed by the City Council through resolution. While this approach provides flexibility, it also means the Code does not specify which position should typically hold this responsibility. As Martindale continues to grow and development activity increases, it may be beneficial for the City to assign this role to a position more directly involved in the permitting process such as the City Engineer, Building Official, or Planning staff. These roles are commonly responsible for interpreting site plans, reviewing development applications, and coordinating with state and federal floodplain management programs.

Regardless of whether the Floodplain Administrator continues to be appointed on a case-by-case basis or is tied to a specific staff position in the future, it is recommended that the City ensure the relevant job description and associated training budget reflect the technical and regulatory responsibilities required for National Flood Insurance Program (NFIP) compliance.

Recommendation:

1. Assign the Floodplain Administrator to a Defined Role: Consider linking the role to an existing position involved in permitting (e.g., City Engineer, Building Official, Planning staff) for consistency and accountability.
2. Codify Responsibilities: Include the technical duties, authority, and decision-making powers required under NFIP in the job description or ordinance.
3. Provide Training and Resources: Ensure the appointed staff receives NFIP training, certification, and ongoing professional development, with budgeted resources for this purpose.
4. Optional – Update Ordinance Language: Amend the Code to specify the position or clarify the criteria for appointment, reducing ambiguity while retaining flexibility for City Council discretion.
5. Outcome: This approach ensures consistent floodplain administration, regulatory compliance, and strengthen community resilience.

Code Section Reference: Section 153.25 <i>Adopted language –</i> <i>Sec. 153.25 Designation of the Floodplain Administrator</i> <i>The City Council, by resolution, will appoint a person to serve as the Floodplain Administrator to administer and implement the provisions of this chapter and other appropriate sections of 44 C.F.R. (Emergency Management and Assistance-National Flood Insurance Program Regulations) pertaining to floodplain management.</i>	
2	BEST PRACTICE: <i>Establish enforcement penalties.</i> COMMENTARY: The City of Martindale’s ordinances provide general authority for enforcement but do not clearly define specific penalties for violations of floodplain or fire-safety regulations. Clearly defined penalties help ensure compliance, provide legal clarity, and reduce the risk of inconsistent enforcement. Penalties may include fines, stop-work orders, revocation of permits, or other remedies consistent with the severity of the violation. Including enforcement provisions in the Code also aligns with state and federal program requirements, such as the National Flood Insurance Program (NFIP) for floodplain management. The City of Martindale should amend its ordinances to include clearly defined enforcement provisions and penalties for violations of floodplain and fire-safety regulations. These provisions should specify a range of remedies, such as fines, stop-work orders, and permit revocations, proportionate to the severity of the violation. Establishing clear penalties will improve compliance, ensure consistent enforcement, and provide legal clarity. Additionally, codifying these enforcement mechanisms will help maintain alignment with state requirements and federal programs, including the National Flood Insurance Program (NFIP). Code Section Reference: None <i>Adopted language – None</i>
STATUTORY AUTHORITY	
3	BEST PRACTICE: <i>Recognize the statutory authority that grants the City the authority to adopt and administer a floodplain ordinance.</i> COMMENTARY: Under Texas Local Government Code, cities have the authority to regulate land use and development to protect public health, safety, and welfare. Specifically, Texas statutes provide municipalities the power to adopt floodplain ordinances and establish enforcement mechanisms. Recognizing this statutory authority in Martindale’s ordinances reinforces the City’s legal basis for administering floodplain management, applying development standards, and imposing penalties for violations. Code Section Reference: None <i>Adopted language – None</i>

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

COMMENTARY: Flood risks evolve over time due to changes in rainfall patterns, development, drainage, and river or stream flows. Martindale should regularly review and update its floodplain ordinance to reflect current data provided by the Federal Emergency Management Agency (FEMA), the Texas Water Development Board, or other recognized technical sources. Using up-to-date information supports accurate permitting, ensures compliance with the National Flood Insurance Program (NFIP), and minimizes future flood-related losses.

Code Section Reference: None*Adopted language – None***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: Elevating structures above the BFE adds a safety margin that reduces flood damage, minimizes potential losses, and helps maintain continuity of essential services during flood events. Critical facilities, in particular, should be designed with additional freeboard to ensure operational functionality during and after a flood. Establishing a freeboard requirement aligns with National Flood Insurance Program (NFIP) guidance and best practices recommended by FEMA and other floodplain management authorities.

Code Section Reference: None*Adopted language – None***PROHIBITIONS IN FLOODWAYS****6****BEST PRACTICE:** *Prohibit development in floodways and high risk areas.*

COMMENTARY: Floodways carry the bulk of floodwaters during high-flow events, and any encroachment can increase flood elevations, threaten life safety, and cause property damage. By restricting development in these areas, Martindale can minimize flood hazards, protect downstream properties, and maintain compliance with

the National Flood Insurance Program (NFIP). Exceptions may be allowed for public infrastructure or essential utilities if a certified engineering analysis demonstrates that the project will not increase base flood elevations.	
Code Section Reference: None	
<i>Adopted language – None</i>	
STORAGE AND PROCESSING OF INAPPROPRIATE MATERIALS IN FLOOD HAZARD AREAS & FLOODWAY	
7	BEST PRACTICE: <i>Prohibit storage and/or processing of hazardous, flammable, explosive, or, in times of flooding potentially buoyant or obstructive materials in the flood hazard areas.</i>
COMMENTARY: Materials such as fuels, chemicals, explosives, or loose debris can create significant hazards if released during flooding. Buoyant or obstructive materials can block floodwaters, damage infrastructure, or be carried downstream, increasing risk to people and property. By restricting storage and processing of such materials in flood-prone areas, Martindale can reduce the potential for hazardous spills, fires, explosions, or structural damage during flood events. Enforcement of this requirement supports compliance with NFIP standards and public safety objectives.	
Code Section Reference: None	
<i>Adopted language – None</i>	
8	BEST PRACTICE: <i>Require a no-rise certification for development in floodways.</i>
COMMENTARY: Floodways carry most floodwaters, and any encroachment can raise flood levels, endangering lives and property downstream. A No-Rise Certification ensures that proposed development does not adversely impact flood heights or floodplain function. This requirement aligns with National Flood Insurance Program (NFIP) standards and is a common best practice in municipal floodplain management.	
Code Section Reference: None	
<i>Adopted language – None</i>	
9	BEST PRACTICE: <i>Use future conditions hydrology (not just current FEMA Flood maps) to anticipate changes in flood risk.</i>
COMMENTARY: Flood risks evolve over time due to urban development, changes in impervious surfaces, and climate-related shifts in precipitation patterns. By considering future conditions hydrology, Martindale can better anticipate changes in flood behavior, reduce long-term risk to life and property, and ensure that new development remains resilient. This approach aligns with best practices recommended by FEMA and the Association of State Floodplain Managers (ASFPM) and supports more forward-looking, adaptive floodplain management.	
Code Section Reference: None	
<i>Adopted language – None</i>	

LOW IMPACT DEVELOPMENT	
10	BEST PRACTICE: <i>Require detention ponds, permeable surfaces, and green infrastructure, collectively known as Low Impact Design (LID) to slow stormwater runoff.</i>
COMMENTARY: Low Impact Development (LID) practices mimic natural hydrology by slowing, infiltrating, and filtering stormwater at its source. By incorporating LID into new development and redevelopment projects, Martindale can reduce the volume and velocity of runoff entering flood-prone areas, improve water quality, and enhance resiliency against flash floods. LID is consistent with best practices recommended by FEMA, the Texas Commission on Environmental Quality (TCEQ), and the Association of State Floodplain Managers (ASFPM).	
Code Section Reference: None	
<i>Adopted language – None</i>	
SUBSTANTIAL IMPROVEMENT THRESHOLD	
11	BEST PRACTICE: <i>Establish a substantial improvement threshold to facilitate older structures being re-built under current regulations.</i>
COMMENTARY: The substantial improvement threshold is typically defined as any reconstruction, rehabilitation, addition, or other improvement where the cost equals or exceeds 50% of the structure's market value. Applying this threshold ensures that older buildings in flood-prone areas are upgraded to meet current Base Flood Elevation (BFE), freeboard, and other floodproofing standards, thereby reducing long-term flood risk. Establishing a clear threshold also provides consistency in permitting, supports NFIP compliance, and promotes community resilience.	
Code Section Reference: None	
<i>Adopted language – None</i>	
12	BEST PRACTICE: <i>Cumulatively track the value of improvements over time rather than by event.</i>
COMMENTARY: Tracking improvements cumulatively prevents repeated smaller projects from bypassing the substantial improvement threshold. For example, multiple renovations over several years may collectively exceed the 50% threshold, triggering compliance with current floodplain standards. This approach promotes consistent enforcement, reduces long-term flood risk, and aligns with NFIP guidance for floodplain management.	
Code Section Reference: None	
<i>Adopted language None</i>	
BUFFERS & SETBACKS	
13	BEST PRACTICE: <i>Require improvements to be set back from rivers and streams.</i>
COMMENTARY: Some parts of the code addresses setbacks from watercourses, though. However, establishing setbacks from rivers and streams protects structures from floodwaters, streambank erosion, and	

channel migration. Setbacks also preserve riparian buffers, improve water quality, and provide space for floodplain conveyance. By integrating setback requirements into permitting and development standards, Martindale can reduce property damage, enhance public safety, and maintain ecological function. The required distance should consider the waterbody type, local topography, and potential flood hazards.	
Code Section Reference: Chapter 153 and Chapter 154	
Adopted language –	
14	BEST PRACTICE: <i>Require a “No Adverse Impact” certification for new development.</i>
COMMENTARY: Development within flood-prone areas can inadvertently increase flood heights, redirect flow, or worsen conditions for neighboring properties. A No Adverse Impact Certification, prepared and sealed by a licensed professional engineer, ensures that development will not negatively affect the floodplain or increase risk to others. Implementing this requirement aligns with best practices recommended by FEMA, the Association of State Floodplain Managers (ASFPM), and NFIP guidance, helping Martindale maintain resilience and community safety.	
Code Section Reference: None	
Adopted language – None	
FILL RESTRICTIONS	
15	BEST PRACTICE: <i>Prohibit or limit fill in the floodplain.</i>
COMMENTARY: Martindale’s current floodplain ordinance partially regulates the use of fill but does not fully meet best practices.	
The only section of code that addresses fill is § 153.44 (Floodways), which prohibits encroachments, including fill within the floodway unless a licensed engineer certifies that the proposed activity will cause no increase in flood levels. This meets minimum NFIP requirements for floodways.	
However, Martindale’s ordinance does not restrict fill anywhere outside the floodway, including the rest of the Special Flood Hazard Area (SFHA). Best practices recommend limiting fill throughout the entire floodplain to preserve natural flood storage, prevent increased flood heights, and avoid creating flood impacts on neighboring properties.	
Because Martindale only regulates fill in floodways—and not the full 100-year floodplain—the city does not fully meet the best practice. Additional standards such as prohibiting fill in SFHAs, requiring compensatory storage (cut-and-fill), or requiring a “No Adverse Impact” demonstration would be needed in order to fully align with resilient community standards.	
Code Section Reference: Section 153.44 - Floodways	
Adopted language – Section 153.44 Floodways	

APPENDIX C: DETAILED ASSESSMENT OF FLOOD DAMAGE PREVENTION ORDINANCE COMPARED TO BEST PRACTICES

- (A) Floodways located within areas of special flood hazard established in § [153.07](#) are areas designated as floodways.
- (B) Since the floodway is an extremely hazardous area due to the velocity of flood waters 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 division (B)(1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §§ [153.40](#) et seq.
 - (3) Under the provisions of 44 C.F.R. Ch. 1, § 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 44 C.F.R. Ch. 1, § 65.12.

16

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

COMMENTARY: Partially Meets – While section 153.44 requires a “no-rise” certification for any development or fill within the floodway, which helps prevent increases in flood elevations, the ordinance does not require compensatory storage for development that reduces floodplain storage outside the floodway. As a result, development can still decrease the floodplain’s ability to store floodwaters in other areas, potentially increasing flood risk for adjacent and downstream properties.

Adopting a compensatory storage requirement would strengthen Martindale’s flood resilience by ensuring that any loss of storage volume is offset by equal or greater replacement storage within the same watershed or hydraulic reach.

Code Section Reference [Section 153.44](#) Floodways

Adopted language – Section 153.44

- (A) Floodways located within areas of special flood hazard established in § [153.07](#) are areas designated as floodways.
- (B) Since the floodway is an extremely hazardous area due to the velocity of flood waters 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 division (B)(1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §§ [153.40](#) et seq.
 - (3) Under the provisions of 44 C.F.R. Ch. 1, § 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 44 C.F.R. Ch. 1, § 65.12.

ELEVATIONS & FLOODPROOFING	
17	BEST PRACTICE: <i>Require improvements to be anchored to prevent flotation, collapse, or lateral movement of the structure (e.g. manufactured homes).</i> COMMENTARY: Meets - Martindale's floodplain ordinance meets the minimum requirements for anchoring structures in flood hazard areas. Section 153.40(A) requires all new construction and substantial improvements to be adequately anchored to prevent flotation, collapse, or lateral movement, which mirrors the language of 44 CFR 60.3, the federal standard adopted by the GLO for NFIP compliance. Additionally, Section 153.45 provides anchoring requirements specific to manufactured homes, including the use of frame ties and over-the-top ties consistent with FEMA and State of Texas installation regulations. Because the GLO evaluates city ordinances based on whether they comply with NFIP baseline standards, Martindale's ordinance satisfies all required elements. While the ordinance fully meets NFIP/GLO expectations, the City may strengthen resilience by incorporating updated state installation standards or enhanced anchoring specifications for high-risk flood areas. However, these are optional enhancements and not required for compliance. Code Section Reference: Section 153.40 <i>Adopted language – Section 153.40</i> <i>(A) 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</i>
18	BEST PRACTICE: <i>Require non-residential buildings in flood zones to elevate or “dry floodproof”</i> COMMENTARY: Partially Meets - Martindale's current floodplain ordinances partially address flood-resistant design. Shallow-flood zones (AO/AH) require utilities and non-residential buildings to be watertight and resist hydrostatic forces, and subdivision standards direct that water and sewer systems be “constructed to minimize or eliminate flood damage.” However, there is no city-wide requirement that all new structures or utility systems be designed with flood-resistant materials or to prevent floodwater infiltration. Floodwater can compromise building materials, water and sewer systems, and OSSFs, creating health hazards and increasing repair costs. Code Section Reference: Chapter 153 and Chapter 154

APPENDIX C: DETAILED ASSESSMENT OF FLOOD DAMAGE PREVENTION ORDINANCE COMPARED TO BEST PRACTICES

Adopted language – Chapter 153

Chapter 153 – Flood Damage Prevention

This section covers general provisions, permit requirements, variances, and flood hazard reduction.

Chapter 154- Subdivision Regulations

Section 154.048 Flood Hazard and associated sections in the Subdivisions Regulations require developers to address flood hazards in plat design.

Section 154.093 Engineering Plans mandates that construction plans include water and sewer utility plans.

INFILTRATION & FLOOD-RESISTANT MATERIALS

19

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

COMMENTARY: Martindale’s current floodplain ordinance partially addresses flood-resistant design. For example, shallow-flood (AO/AH) zones require utilities and non-residential buildings to be watertight and resist hydrostatic forces. Subdivision standards also direct that water and sewer systems be “constructed to minimize or eliminate flood damage.”

However, there is no city-wide requirement that all new structures or utility systems be designed with **flood-resistant materials** or to prevent floodwater infiltration. Floodwaters can damage conventional building materials, compromise water and sewer systems, create health hazards, and increase recovery costs.

Code Section Reference: [Sections 153.26, 153.40, 153.42, 153.43, and 153.44](#)

Adopted language – Section 153.26 Duties and Responsibility of the Floodplain Administrator

(A) Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

- (1) Maintain, and hold open for public inspection, all records pertaining to the provisions of this chapter;
- (2) Review permit application to determine whether to ensure that the proposed building site project, including the placement of manufactured homes, will be reasonably safe from flooding;
- (3) Review, approve or deny all applications for development permits required by adoption of this chapter;
- (4) Review permits for proposed development to assure that all necessary permits have been obtained from those federal, state or local governmental agencies (including § 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required;
- (5) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Floodplain Administrator shall make the necessary interpretation;
- (6) Notify, in riverine situations, adjacent communities and the state coordinating agency, which is the Texas Water Development Board (TWDB) and also the Texas Commission on Environmental Quality (TCEQ), prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency;
- (7) Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;

APPENDIX C: DETAILED ASSESSMENT OF FLOOD DAMAGE PREVENTION ORDINANCE COMPARED TO BEST PRACTICES

(8) When base flood elevation data has not been provided in accordance with § 153.07, the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from a federal, state or other source, in order to administer the provisions of §§ 153.40 et seq; and

(9) When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(B) Under the provisions of 44 C.F.R. Ch. 1, § 65.12, of the National Flood Insurance Program Regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one foot, provided that the community first completes all of the provisions required by 44 C.F.R. § 65.12.

Section 153.40 General Standards

In all areas of special flood hazards the following provisions are required for all new construction and substantial improvements:

(A) 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;

(B) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;

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

(D) 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;

(E) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(F) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and

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

Section 153.42 Standards for Subdivision Proposals

Utilities (sewer, water) for subdivisions must be located and constructed to minimize or eliminate flood damage.

(A) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with §§ 153.02, 153.03 and 153.04 of this chapter.

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ 153.08 and 153.27 and the provisions of §§ 153.40 et seq.

(C) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or five acres, whichever is lesser, if not otherwise provided pursuant to §§ 153.26 or 153.26(H).

(D) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

Section 153.43 Standards for Areas for Shallow Flooding (AO/AH Zones)

(A) Located within the areas of special flood hazard established in § 153.07, are areas designated as shallow flooding. These areas have special flood hazards associated with flood depths of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident.

(B) Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

APPENDIX C: DETAILED ASSESSMENT OF FLOOD DAMAGE PREVENTION ORDINANCE COMPARED TO BEST PRACTICES

- (1) All new construction and substantial improvements of residential structures 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 two feet if no depth number is specified).
- (2) All new construction and substantial improvements of non-residential 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 two feet if no depth number is specified); or
 - (b) Together with attendant utility and sanitary facilities be designed so that below the base specified flood depth in an AO Zone, or below the Base Flood Elevation in an AH Zone, 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 of effects of buoyancy.
- (3) A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this section, as proposed in § [153.27](#) are satisfied.
- (4) Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

Section 153.44 Floodways

Encroachments into the designated floodway are prohibited unless a hydrologic/hydraulic study (by a licensed engineer) demonstrated no increase in flood levels.

- (A) Floodways located within areas of special flood hazard established in § [153.07](#) are areas designated as floodways.
- (B) Since the floodway is an extremely hazardous area due to the velocity of flood waters 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 division (B)(1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §§ [153.40](#) et seq.
 - (3) Under the provisions of 44 C.F.R. Ch. 1, § 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 44 C.F.R. Ch. 1, § 65.12.

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

COMMENTARY: While Martindale's current ordinances partially address flood-resilient design—primarily in AO/AH flood zones and in subdivision utility requirements—there is no city-wide standard explicitly requiring all water supply, sanitary sewer, or on-site sewage facilities (OSSF) to be designed to minimize or prevent floodwater infiltration.

Flooding can compromise utility systems, leading to contamination of drinking water, backups in sanitary sewer systems, and environmental hazards from failing OSSFs. Without clear standards, new development may be vulnerable to flood damage, and public health could be at risk during flood events.

It is recommended that Martindale adopt explicit language in the floodplain ordinance requiring all utility systems within Special Flood Hazard Areas (SFHAs) to be designed, elevated, or otherwise protected against floodwater infiltration. This would ensure consistency with NFIP guidance, support the long-term resilience of critical infrastructure, and protect public health and safety.

Code Section Reference: [Sections 153.42](#) , [153.43](#), [154.106](#), and [154.042](#)

Adopted language – Section 153.42 (Standards for Subdivision Proposals)

Public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.

(A) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with §§ [153.02](#), [153.03](#) and [153.04](#) of this chapter.

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ [153.08](#) and [153.27](#) and the provisions of §§ [153.40](#) et seq.

(C) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or five acres, whichever is lesser, if not otherwise provided pursuant to §§ [153.26](#) or [153.26\(H\)](#).

(D) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

Section 153.43 Standards for Areas for Shallow Flooding / AO-AH Zones

(A) Located within the areas of special flood hazard established in § [153.07](#), are areas designated as shallow flooding. These areas have special flood hazards associated with flood depths of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident.

(B) Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

(1) All new construction and substantial improvements of residential structures 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 two feet if no depth number is specified).

(2) All new construction and substantial improvements of non-residential 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 two feet if no depth number is specified); or

(b) Together with attendant utility and sanitary facilities be designed so that below the base specified flood depth in an AO Zone, or below the Base Flood Elevation in an AH Zone, 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 of effects of buoyancy.

(3) A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this section, as proposed in § [153.27](#) are satisfied.

(4) Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

Section 154.106 Construction Plans

Subdivision Plan-Submissions must include "Sanitary Sewer Plans" and Water Line Plans", showing layout of utilities.

(A) *Three complete sets of construction plans, specifications and contracts including performance, payment and maintenance bonds covering the construction, for or other satisfactorily written descriptions shall be filed with the appropriate staff as designated by the City Planner upon filing of final plat. These shall show features such as roadways, cross sections and longitudinal slope for drainage, full description of proposed pavement or street improvement, its grade and slope, dimensions and specifications concerning public utilities to be installed showing proposed position on the ground, specifications of materials and construction, and profile maps of all sanitary and storm sewers showing both ground surface and flow line, and other pertinent information of similar nature. These plans shall include, but not be limited to, the following:*

- (1) *Street plans;*
- (2) *Drainage plans;*
- (3) *Sanitary sewer plans;*
- (4) *Water line plans; and*
- (5) *Overall utility layout.*

(B) *All the plans shall comply with specifications and design standards as described in this chapter.*

Section 154.042 Drainage Easements

Subdivisions regulations requires drainage-way or storm-drain easements where needed, designed "to fulfill the requirements of the city's flood hazard area standards.

(A) *Easements across lots, along and abutting front lot lines or centered on rear or side lot lines shall be provided for utilities and drainage where necessary. Drainage easements must be exclusive and no improvements may be constructed therein. When the easements are shown on a subdivision plat, this exclusivity and restriction will be noted on the plat and included in any restrictive covenants. Drainage and utility easements will not be superimposed.*

(B) *Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.*

(C) *Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.*

(D) *When the tract to be subdivided includes an easement of the blanket form or is a portion of a tract which includes such an easement, the subdivider shall take action as is necessary prior to submission of the preliminary plat to have the easement removed or to have the easement redefined to a specific location and to a specific size or width.*

(E) *Public access easements may be provided to accommodate a required public sidewalk along and adjacent to the public street right-of-way where conflicts with natural features, utility equipment or other appurtenances make the location of the sidewalk within the right-of-way impractical. Private access easements may be provided to accommodate joint vehicular access to adjacent lots in the subdivision.*

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, 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, a second memo will review which parts of its current Code are least aligned with the goals and strategies outlined in its updated comprehensive plan and provide recommended action items for Code updates.

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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.

Zoning Districts & Mixed Use: [Section 155.075](#) Districts Established

(A) Districts established.

(1) In order to implement the city comprehensive plan and promote the purposes of this chapter, the following districts are established:

District Name	Map Symbol
<i>Single-Family Residential</i>	<i>R-1</i>
<i>One – and Two Single Family Residential</i>	<i>R-1A</i>
<i>Manufactured Home District</i>	<i>R-2</i>
<i>Multi-Family Residential (Low Density)</i>	<i>R-3</i>
<i>Multi-Family Residential (Medium Density)</i>	<i>R-4</i>
<i>Mixed Use</i>	<i>MU</i>
<i>Commercial</i>	<i>C-1</i>
<i>Heavy Commercial</i>	<i>C-2</i>
<i>Industrial</i>	<i>I</i>

Overall, the City's Code of Ordinance supports the idea of mixed-use development, which is one of the form-based code goals as per GLO.

Building Height Regulations: [Section 155.110](#) Table of Property Development Standards

In Table of Property Development Standards, maximum building heights are defined for each zoning district. For example, in R-1 (Single-Family) the maximum height is 28.5 feet.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

Setbacks & Build to Lines: [Section 155.112](#) Setbacks - (A) Generally. Under this chapter, a setback refers to the unobstructed, unoccupied open space between a structure and the property line of the lot on which the structure is located. Setbacks shall be unobstructed from the ground to the sky and measured as the horizontal distance between a property line and the furthestmost projection of the structure, except as provided otherwise in this chapter.

In addition, Table of Property Development Standards outline the front setbacks, rear, side, and street-side lot lines per zoning district.

Compatibility / Screening: [Section 155.060](#) (A) Purpose. The compatibility standards of this section are intended to preserve and protect low-density residential uses and neighborhoods by ensuring that new development and redevelopment is compatible with the character of the area in which it is located.

(B) Applicability. The compatibility standards in this section shall apply to all multi-family residential and all nonresidential development when it occurs on a lot:

- (1) Within 150 feet of the lot line of any property zoned R-1, R-1A or R-2;*
- (2) Across the street from or adjacent to a lot containing a single-family or duplex use; or*
- (3) Within 150 feet of the boundary of an area designated as a scenic corridor under § [150.025](#).*

(C) Exemptions. The following shall be exempt from compliance with the compatibility standards of this section:

- (1) Single-family or duplex uses;*
- (2) Multi-family development unless the development exceeds a gross density of six units per acre or a height of 35 feet;*
- (3) Structural alteration of an existing building when the alteration does not increase the gross square footage or height of the building; and*
- (4) A change in use that does not increase the off-street parking requirements over and above the existing use.*

(D) Buffer and screening standards.

(1) Nonresidential and multi-family residential development, including off-street parking areas associated with the development, shall be screened from view of adjacent single-family and duplex uses and R 1, R-1A or R-2 zoned property.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

(2) *The visual screening shall be accomplished through the use of opaque fences or landscaping along the adjacent lot line.*

(3) *Mechanical equipment, outdoor storage areas and refuse collection areas shall be completely shielded from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#), and R-1, R-1A or R-2 zoned property by an opaque fence or wall that is at least one foot taller than the site feature being screened from view, provided this shall not be interpreted as requiring screening fences or walls to be taller than ten feet.*

(4) *Fences, walls and buffers must comply with all other requirements of ordinances of the city.*

(E) *Additional site design standards. The following additional site design standards shall apply to development that is subject to the compatibility standards of this section:*

(1) *Public and commercial recreation uses. Public and commercial swimming pools, tennis courts, ballfields, tubing-related businesses and other intensive public or commercial recreational uses that involve outdoor activity shall be set back at least 100 feet from the lot line of property that is zoned R-1, R-1A or R-2, or that contains a single-family, duplex or multi-family use, or that is designated as a scenic corridor under § [150.025](#). For tubing-related businesses, this setback shall also apply to customer parking and vehicle/equipment storage areas, tubing-related businesses, including customer parking and vehicle/equipment storage areas, shall also be screened from view by an opaque fence or wall with a minimum height of eight feet. For a recreational use other than a tubing-related business, this setback standard shall be reduced to a minimum of 50 feet if the recreational use is screened from view by an opaque fence or wall with a minimum height of eight feet; and*

(2) *Dumpsters and solid waste receptacles. Dumpsters and solid waste receptacles shall be set back at least 20 feet from the lot line of property that is zoned R-1, R-1A or R-2, that contains a single-family or duplex use, or that is designated as a scenic corridor under § [150.025](#). Dumpsters and receptacles shall be completely screened from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#) and R-zoned property by an opaque fence or wall that is at least one foot taller than the dumpster or solid waste receptacle.*

– **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.

[Section 154.060](#) *Areas of Public Use*

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

(A) *The plat or a document attached to the plat must describe the water and sewer service facilities that will be constructed or installed to service the subdivision and contain a statement of the date by which the facilities will be fully operable.*

(B) *The engineer's certificate attached to the plat shall certify that the water and sewer service facilities described by the plat are in compliance with the model rules adopted under Tex. Water Code, § 16.343.*

(C) *If the source of the water supply intended for the subdivision is groundwater under the land being subdivided, the engineer's certificate attached to the plat shall certify that adequate groundwater is available to the subdivision in the form and with the content prescribed for the certificates by the State Commission on Environmental Quality.*

Section 154.061 Land Dedication

(A) *Except as provided in § 154.062 below, or for nonresidential subdivisions, land shall be dedicated by the subdivider in the amounts listed below or greater for community facilities or open space in any subdivision greater than five acres in size.*

(1) *Subdivision size over five acres up to and including 20 acres: 5% of the total land area zoned or intended for residential use.*

(2) *Subdivision size over 20 acres: 8% of the total land area zoned or intended for residential use.*

(B) *The location, size and functions of the land to be dedicated for community facilities or public open space must be deemed by the city to be suitable for the intended use. If the subdivider develops the site for the approved public use at the subdivider's expense and with approval of the city, the land area dedicated may be decreased to the extent that the value of the improvements is equal to or more than the market value of the land area prior to development, as determined by the County Tax Appraisal District, that is the difference between the minimum amount required and the amount actually dedicated.*

(C) *No property required to be dedicated for community facilities or public open space shall be in the 100-year floodplain except, however, that natural areas may include the 100-year floodplain if determined by the city to be suitable for leisure activities such as hiking, bicycling, picnicking and wildlife observance, and the area is deemed by the city as needed or acceptable for the use in that location.*

Section 154.062 Fee in Lieu of Land Dedication

(A) *In instances where dedication of land for community facilities or public open space is unacceptable, unsuitable, unneeded or infeasible within a subdivision, the subdivider may, at the city's discretion, pay a fee in lieu of land dedication specified in § 154.061 above in the amounts listed below based upon the market value prior to development as determined by the County Tax Appraisal District.*

(1) *Subdivision size over five acres up to and including 20 acres: 5% of market value of land area that is zoned or intended for residential use.*

(2) *Subdivision size over 20 acres: 8% of market value of land area that is zoned or intended for residential use.*

(B) For subdivisions greater than one acre in size up to five acres in size, where no land dedication is required, a fee shall be the equal to 5% of the market value of land area that is zoned or intended for residential use. No fee or land dedication is required for subdivisions one acre or less in size.

(C) Fees paid to meet the community facility and public open space requirements shall be deposited by the city in an account for use only in the acquisition of land, purchase of equipment or construction of improvements for public open space, including parks, playgrounds and natural areas

TECHNIQUES | COMPATIBILITY

– 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.

Section 155.084 *Industrial Use District*

3 (b) *No operation or activity shall at any time cause any earthborne vibration which results in a horizontal or vertical ground displacement in excess of 0.0002 inch at any facility property line.*

– 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.

Section 155.060 *Compatibility Standards*

(A) *Purpose. The compatibility standards of this section are intended to preserve and protect low-density residential uses and neighborhoods by ensuring that new development and redevelopment is compatible with the character of the area in which it is located.*

(B) *Applicability. The compatibility standards in this section shall apply to all multi-family residential and all nonresidential development when it occurs on a lot:*

- (1) *Within 150 feet of the lot line of any property zoned R-1, R-1A or R-2;*
- (2) *Across the street from or adjacent to a lot containing a single-family or duplex use; or*
- (3) *Within 150 feet of the boundary of an area designated as a scenic corridor under § 150.025.*

(C) *Exemptions. The following shall be exempt from compliance with the compatibility standards of this section:*

- (1) *Single-family or duplex uses;*

(2) Multi-family development unless the development exceeds a gross density of six units per acre or a height of 35 feet;

(3) Structural alteration of an existing building when the alteration does not increase the gross square footage or height of the building; and

(4) A change in use that does not increase the off-street parking requirements over and above the existing use.

(D) Buffer and screening standards.

(1) Nonresidential and multi-family residential development, including off-street parking areas associated with the development, shall be screened from view of adjacent single-family and duplex uses and R 1, R-1A or R-2 zoned property.

(2) The visual screening shall be accomplished through the use of opaque fences or landscaping along the adjacent lot line.

(3) Mechanical equipment, outdoor storage areas and refuse collection areas shall be completely shielded from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#), and R-1, R-1A or R-2 zoned property by an opaque fence or wall that is at least one foot taller than the site feature being screened from view, provided this shall not be interpreted as requiring screening fences or walls to be taller than ten feet.

(4) Fences, walls and buffers must comply with all other requirements of ordinances of the city.

(E) Additional site design standards. The following additional site design standards shall apply to development that is subject to the compatibility standards of this section:

(1) Public and commercial recreation uses. Public and commercial swimming pools, tennis courts, ballfields, tubing-related businesses and other intensive public or commercial recreational uses that involve outdoor activity shall be set back at least 100 feet from the lot line of property that is zoned R-1, R-1A or R-2, or that contains a single-family, duplex or multi-family use, or that is designated as a scenic corridor under § [150.025](#). For tubing-related businesses, this setback shall also apply to customer parking and vehicle/equipment storage areas, tubing-related businesses, including customer parking and vehicle/equipment storage areas, shall also be screened from view by an opaque fence or wall with a minimum height of eight feet. For a recreational use other than a tubing-related business, this setback standard shall be reduced to a minimum of 50 feet if the recreational use is screened from view by an opaque fence or wall with a minimum height of eight feet; and

(2) Dumpsters and solid waste receptacles. Dumpsters and solid waste receptacles shall be set back at least 20 feet from the lot line of property that is zoned R-1, R-1A or R-2, that contains a single-family or duplex use, or that is designated as a scenic corridor under § [150.025](#). Dumpsters and receptacles shall be completely screened from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#) and R-zoned property by an opaque fence or wall that is at least one foot taller than the dumpster or solid waste receptacle.

Chapter 91 Nuisance Code

Section 91.01 Public Nuisance Defined

The purpose of this subchapter is to provide clear regulations for the control of loud and disturbing noise within the city and its extraterritorial jurisdiction (ETJ). The objective is to control noise where necessary to allow all citizens to enjoy an environment free from unnecessary noise.

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

Section 154.043 – Blocks

(B) Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.

Section 154.060 – Areas for Public Use / Open Space

The subdivider shall give consideration to one or more suitable sites for public parks, playgrounds and other public community facilities in accordance with the comprehensive plan and associated plans and policies of the city. A school site approved by the school district for purchase by the district shall be considered an eligible community facility for the purpose of this subchapter. Any provision for schools, parks and the like, shall be indicated on the plat.

Section 154.062 – Fee in Lieu of Land Dedication

(A) In instances where dedication of land for community facilities or public open space is unacceptable, unsuitable, unneeded or infeasible within a subdivision, the subdivider may, at the city's discretion, pay a fee in lieu of land dedication specified in § 154.061 above in the amounts listed below based upon the market value prior to development as determined by the County Tax Appraisal District.

(1) Subdivision size over five acres up to and including 20 acres: 5% of market value of land area that is zoned or intended for residential use.

(2) Subdivision size over 20 acres: 8% of market value of land area that is zoned or intended for residential use.

(B) For subdivisions greater than one acre in size up to five acres in size, where no land dedication is required, a fee shall be the equal to 5% of the market value of land area that is zoned or intended for residential use. No fee or land dedication is required for subdivisions one acre or less in size.

(C) Fees paid to meet the community facility and public open space requirements shall be deposited by the city in an account for use only in the acquisition of land, purchase of equipment or construction of improvements for public open space, including parks, playgrounds and natural areas.

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.

Section 155.097 (C)(6)(a)

(a) A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner

(b) There shall be no signs or other exterior visible evidence of a home occupation

(d) The home occupation shall be conducted entirely within the principal residential building

Section 155.097 (C) (6) (c)

No outdoor storage of equipment, materials, or vehicles with more than two axels shall be visible from outside the dwelling.

Section 155.097 (C)(6)(e)

No equipment shall create undue noise, vibration, dust, smoke, or particulate emissions.

– 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).

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Section 155.097 (C) (6)(a)

A home occupation shall be conducted within a dwelling that is the bona fide residence of the principal operator.

Section 155.097 (C)(6)(f)

No more than one person other than members of the resident family shall be employed on the premises in connection with the home occupation.

– **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.

Section 155.097 (C) (6) Home Occupations

(6) Home occupations. The following home occupation standards are intended to permit residents to engage in home occupations within R and NC zoning districts that are compatible with residential land uses and to ensure that home occupations do not adversely affect the integrity of residential areas. These home occupation standards shall have no application in the MU District. A home occupation shall be considered an accessory use, subject to the following standards:

(a) A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner;

(b) There shall be no signs or other exterior visible evidence of a home occupation;

(c) There shall be no visible storage of equipment, materials or vehicles that have more than two axles;

(d) The home occupation shall be conducted entirely within the principal residential building;

(e) No equipment shall be used that creates undue noise, vibration, electrical interference, smoke or particulate matter emission, excessive power demands or odors. Home occupations shall comply with the operational performance standards of § [155.061](#); and

(f) Persons other than a member of the immediate family occupying such a dwelling may be employed; provided, however, no more than two persons other than family members shall be employed at any one time.

– **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.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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.*

Section 155.097 (C)(6)(a)

A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner

Section 155.097 (C) (6)(d)

The home occupation shall be conducted entirely within the principal residential building

- **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.

Section 155.097(C)(6)(d) – Home Occupation Standards

No exterior evidence of the home occupation shall be visible from the street.

No signs, displays, or advertising visible from the exterior of the dwelling are permitted, except as allowed by the zoning district regulations.

- **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.

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.

Section 155.098 Accessory Uses and Structures

(A) Principal uses classified as permitted uses by the district regulations of this subchapter and §§ 155.075 through 155.084 above shall be deemed to include accessory uses and activities that are customarily associated with and appropriate, incidental and subordinate to permitted principal uses.

(B) Accessory uses and activities shall be subject to the same regulations as principal uses unless otherwise stated.

(C) Accessory uses shall be as follows:

(1) Residential accessory uses. Residential accessory uses shall include but not be limited to the following accessory uses, activities and structures:

- (a) Fences and walls;*
- (b) Garages, carports, driveways and off-street parking areas;*
- (c) Gates and guardhouses;*
- (d) Home occupations, subject to the standards of § 155.097 above;*
- (e) Playhouses, patios, cabanas porches, gazebos and incidental household storage buildings;*
- (f) Radio and television receiving antennas and support structures;*
- (g) Recreational facilities for the use of residents;*
- (h) Keeping of domestic animals for noncommercial purposes;*
- (i) Solar energy systems; and*
- (j) Other necessary and customary uses determined by the Zoning Administrator to be appropriate incidental and subordinate to the principal use on the lot.*

(2) Retail, commercial and office accessory uses. Retail, commercial and office accessory uses shall include but not be limited to the following accessory uses, activities and structures:

(a) Dwelling units for security or maintenance personnel;
(b) Fences, walls, gates and guardhouses;
(c) Parking garages, driveways and off-street parking areas;
(d) Radio and television receiving antennas and support structures;
(e) Signs, subject to city ordinances regulating same;
(f) Solar energy systems; and
(g) Other necessary and customary uses determined by the Zoning Administrator to be appropriate, incidental and subordinate to the principal use on the lot.

- **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.

Section 155.110 *The Table of Uses*

(A) *The property development standards table of this section provides a summary of the development standards that apply within zoning districts.*

- **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.
- **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.
- **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).

[Section 153.08](#) *Establishment of Development Permit*

A floodplain development permit shall be required to ensure conformance with the provisions of this chapter.

Section 153.42 Standards for Subdivision Proposals

(A) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with §§ 153.02, 153.03 and 153.04 of this chapter.

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ 153.08 and 153.27 and the provisions of §§ 153.40 et seq.

(C) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or five acres, whichever is lesser, if not otherwise provided pursuant to §§ 153.26 or 153.26(H).

(D) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

- **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.

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- **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:

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- **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.

Section 154.040 Streets

(C) All subdivisions with a potential to serve more than 100 dwelling units, or more than 25 nonresidential lots, shall have at least two points of vehicular access consisting of improved streets connected to the city's thoroughfare system; or, a single entrance street divided by a median where the median extends to the nearest internal street which provides at least two routes to the interior of the subdivision. Residential driveways shall not be located on the sides of the divided street parallel to and within the length of an entrance median.

Section 154.040(l)

(l) Street right-of-way and pavement widths shall be as shown on the comprehensive master plan and, where not shown therein, shall be not less than as follows.

(1) Arterial streets: minimum right-of-way width 80 feet to a maximum of 140 feet, with the pavement width section to be based on standard details for the specific street class, depending upon the location and existing streets with which street is to be connected.

(2) Collector streets: right-of-way width 60 feet, and pavement width of 41 feet back-to-back of curb. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.

(3) Local streets:

(a) Residential street: right-of-way width 50 feet, and pavement width of 31 feet back to back of curb. The right-of-way shall be wider or supplemented with abutting easements where all utilities are to be located in the front of lots; and

(b) Local street in multi-family, commercial or industrial areas: right-of-way width 60 feet, with pavement width section as identified in standard details or greater if required for drainage. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.

- **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.

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- **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.

Section 155.084 Industrial Use District

(D) Performance standards for industrial districts.

(1) Flammable, toxic and hazardous materials.

(a) The storage, manufacture, utilization or dispensing of substances which may constitute or may cause danger to public health, safety or welfare shall be conducted only within the limits and conditions specified in the latest edition of the International Fire Code.

(b) The emission of toxic or explosive vapors, dusts or aerosols into the atmosphere shall not exceed, at the facility property line, more than 50% of the limit of such as is given in "threshold limit values" as adopted at the most recent meeting of the American Conference of Industrial Hygienists.

(c) No form of flammable, toxic, or other hazardous material shall be released into or upon any utility line, pit, dump, open ground, stream or drainageway.

(d) The container size, location, design and construction of any storage tank, building or facility for any flammable, toxic or other hazardous material shall be approved by the Fire Marshal and the Building Official as a part of the building permit application and shall be based upon the requirements of the International Fire Code and the International Building Code.

RESOURCE SENSITIVE DEVELOPMENT STRATEGIES

TECHNIQUE | PLANNED DEVELOPMENT DISTRICT

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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.

Section 155.146 PUD Planned Unit Development Overlay District

(A) Purpose.

(1) The purpose of planned unit development regulations is to allow more creative and imaginative design of land development than may be possible under district zoning regulations.

(a) Planned unit developments are intended to allow substantial flexibility in planning and design while maintaining consistency with the general provisions of this chapter and of the city's comprehensive plan.

(b) This flexibility often accrues in the form of relief from compliance with conventional Zoning Ordinance site and design requirements.

(c) Ideally, this flexibility results in a development that is better planned and makes more efficient use of resources than one produced in accordance with typical Zoning Ordinance standards.

- **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

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

public input. Approval is contingent on meeting both the intent of the code and specific community goals.

Section 155.045 Application Standards

An application for a zoning change, variance, special exception, special use permit, district overlay or any other action regarding zoning shall contain the minimum requirements of this section and shall comply with the terms herein.

(A) The application must be made by the title holders, their attorney-in-fact or a duly authorized agent.

(B) The application must contain the following minimum information:

(1) Name, mailing address and contact telephone number of the property owners, attorney-in-fact or agent;

(2) Legal description and street or mailing address, if any, of the property involved. A copy of the deed to the property, with recording data, and a copy of any power of attorney, or other information as will allow the Zoning Administrator to verify title to the property and the authority of any attorney-in-fact;

(3) The application shall be accompanied by the maps and plans as will enable the Zoning Administrator, the Board and Commission to make determinations as may be necessary under the terms of this chapter;

(4) A reference to the current zoning district or districts in which the property is situated;

(5) Information concerning the change or action requested, including appropriate reference to requested zoning district or districts;

(6) A statement that the information contained in the application is, within the knowledge of the applicant, true and correct;

(7) The application shall be accompanied by a nonrefundable fee in an amount to be set by the City Council, by resolution, from time to time; and

(8) The Zoning Administrator shall review the application for completeness with this subchapter. Within ten business days, written notice of the necessary documents or other information that the applicant failed to provide with the application shall be provided to the owner/applicant (as designated on the application form) for compliance. The written notice shall include the date the application will expire if the necessary documents or other information is not provided. Applications will expire within 45 days of the date the application is delivered to the city or sent to the city by certified mail if the applicant fails to provide the specified documents or other information required in the written notice to the applicant.

- **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.

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.

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.
- **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.)
- **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.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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:**

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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)

Section 155.076 R-1 Single-Family Residential

(8) Landscaping. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.

Section 155.079 R-3 Multi-Family Residential

(8) Landscaping.

(a) Single-family and duplex uses. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- (c) *Multi-family. A minimum of 20% of the total developed lot area shall be planted and maintained as landscape area.*

Section 155.146 PUD Planned Unit Development Overlay District

(6) *Landscaping. Landscaping shall be provided for residential and nonresidential developments. A minimum of two trees and eight shrubs shall be provided for each single-family residential unit on each single-family residential lot. Fifty percent of the required trees may be located in an open space as defined herein. The specific placement, forward of the rear building line, shall be left to the discretion of the developer. Whenever practicable, the preservation of existing trees is encouraged.*

- **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.

Section 155.110 Table of Property Development Standards

The Table of Property Development Standards summarizes the maximum impervious cover for each zoning district.

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

Section 154.043 Blocks

(B) In general, intersecting streets determining the block length and width shall be provided at intervals so as to serve cross traffic adequately and to meet existing streets or in accordance with customary subdivision practices.

(1) Where no existing subdivision controls, the block lengths shall generally not exceed 800 feet along local streets, 1,000 feet along collector streets, or 1,200 feet along arterial streets. Where no existing subdivision controls, the blocks shall generally not be less than 400 feet along local or collector streets, or 500 feet along arterial streets.

(C) Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.

– 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.

Section 154.043 Blocks

(C) Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.

(D) Where no existing subdivision controls, the block depth shall be platted to give lots with depth to width ratios of generally not more than two and one-half to one and in no case more than four to one, and the design shall be such that the block depth generally shall not exceed 350 feet. When possible, the block width and length shall be such to allow tiers of lots back to back.

– **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.

– **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.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.
- **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.

Section 154.040 Streets

(E) Where the proposed subdivision abuts upon an existing street that does not conform to the comprehensive master plan, the subdivider shall dedicate one-half of the right-of-way sufficient to make the ultimate full right-of-way width conform.

- **Street Design:**
 - **Street Hierarchy:** Design local streets to prioritize pedestrian and bicycle movement, with traffic calming measures and low design speeds.

Section 154.040 Streets

(I) Street right-of-way and pavement widths shall be as shown on the comprehensive master plan and, where not shown therein, shall be not less than as follows.

(1) Arterial streets: minimum right-of-way width 80 feet to a maximum of 140 feet, with the pavement width section to be based on standard details for the specific street class, depending upon the location and existing streets with which street is to be connected.

(2) *Collector streets: right-of-way width 60 feet, and pavement width of 41 feet back-to-back of curb. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.*

(3) *Local streets:*

(a) *Residential street: right-of-way width 50 feet, and pavement width of 31 feet back to back of curb. The right-of-way shall be wider or supplemented with abutting easements where all utilities are to be located in the front of lots; and*

(b) *Local street in multi-family, commercial or industrial areas: right-of-way width 60 feet, with pavement width section as identified in standard details or greater if required for drainage. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.*

- **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.

- **Right of Way Dedication:** Require dedication of land for future transportation corridors, greenways, or emergency access as identified in the comprehensive plan.¹

- **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.²
 - Require multiple driveways for multifamily and commercial developments.
 - Require visible street signage and addresses; and access points into a subdivision.

- **Ingress & Egress Standards**

- Require new streets, public or private, within a subdivision have access to an existing “dry” road during the 100- year flood.
 - 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.

¹ 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).

² 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.

- **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.

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.

154.042 Easements

(A) Easements across lots, along and abutting front lot lines or centered on rear or side lot lines shall be provided for utilities and drainage where necessary. Drainage easements must be exclusive and no improvements may be constructed therein. When the easements are shown on a subdivision plat, this exclusivity and restriction will be noted on the plat and included in any restrictive covenants. Drainage and utility easements will not be superimposed.

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.

(C) Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.

– **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.

Section 154.007 Definitions

ALLEYS. *Minor dedicated ways which are used primarily for utility lines and secondarily for vehicular service access to the back or the side of properties otherwise abutting on a street.*

EASEMENT. *A grant by the property owner to the public, a corporation or persons for the use of a strip or tract of land for specific purposes.*

Section 154.042 Easements

(A) *Easements across lots, along and abutting front lot lines or centered on rear or side lot lines shall be provided for utilities and drainage where necessary. Drainage easements must be exclusive and no improvements may be constructed therein. When the easements are shown on a subdivision plat, this exclusivity and restriction will be noted on the plat and included in any restrictive covenants. Drainage and utility easements will not be superimposed.*

(B) *Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.*

(C) *Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.*

(D) *When the tract to be subdivided includes an easement of the blanket form or is a portion of a tract which includes such an easement, the subdivider shall take action as is necessary prior to submission of the preliminary plat to have the easement removed or to have the easement redefined to a specific location and to a specific size or width.*

(E) Public access easements may be provided to accommodate a required public sidewalk along and adjacent to the public street right-of-way where conflicts with natural features, utility equipment or other appurtenances make the location of the sidewalk within the right-of-way impractical. Private access easements may be provided to accommodate joint vehicular access to adjacent lots in the subdivision.

– **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).³

Section 154.042 Easements

(C) Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.

[Section 154.091](#) Preliminary Plat Specifications

(18) Provide recording information for any existing easements (water, sanitary sewer, storm drainage, electric, telephone, gas, cable television, fire lanes and the like) and rights-of-way. Provide all bearing and distance information on proposed easements including easements filed by separate instrument.

[Section 153.42](#) Standards for Subdivision Proposals

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

- **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.
 - 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

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.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

being maintained by the Property Owners' Association and assess subdivision property owners for the cost of any such maintenance.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

Section 154.111 *Maintenance Bond*

Where public infrastructure improvements have been installed prior to recording of the plat, the property owner shall submit a maintenance bond from each contractor, three sealed sets of "as-built" plans or record drawings, one sealed set of "as-built" Mylars, and one CD containing a digital copy of all plans (in a format as determined by the City Engineer together with a letter stating the contractors' compliance in accordance with this chapter, and bearing sealed certification by the design engineer that all public improvements have been constructed in compliance with all city construction standards. The property owner also shall submit copies of the approved final plat with any required revisions on Mylars and in the format and number required by the City Engineer, together with all certifications required.

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.

Section 154.049 *Compliance with Minimum Stand Standards for Safe and Sanitary Water Supply and Sewer Services*

(B) The engineer's certificate attached to the plat shall certify that the water and sewer service facilities described by the plat are in compliance with the model rules adopted under Tex. Water Code, § 16.343.

- **Placement and Accessibility:** Require subdivision plats to show all proposed water lines, easements, and access routes, ensuring accessibility for maintenance and emergency repairs.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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:**

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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.
- **Performance and Incentive Zoning:**
 - Set maximum impervious surface limits for zoning districts or specific overlays, capping site- and area-wide imperviousness.

APPENDIX D: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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.

Section 155.110 Table of Property Development Standards

The Table Chart outlines the maximum lot coverage / impervious surface limits for each zoning district.

- **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.

Section 155.146 PUD Planned Unit Development Overlay District

(C) (5) *Open space. At least 30% of the open space required in herein shall be converted to common areas used for recreation or parks.*

Section 155.076 R-1 Single-Family Residential

(C)(8) *Landscaping. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.*

Section 154.042 Easements

(B) *Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.*

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

Section 154.093 Engineering Plans

(A)(1) *The developer shall have prepared a complete set of engineering plans showing details of all streets, alleys, drainage structures, water utility, sanitary sewer utility and electrical distribution system, combined with construction standards, specifications and related details, which are to be included for development.*

Section 154.106 Construction Plans

(A) *Three complete sets of construction plans, specifications and contracts including performance, payment and maintenance bonds covering the construction, for or other satisfactorily written descriptions shall be filed with the appropriate staff as designated by the City Planner upon filing of final plat. These shall show features such as roadways, cross sections and longitudinal slope for drainage, full description of proposed pavement or street improvement, its grade and slope, dimensions and specifications concerning public utilities to be installed showing proposed position on the ground, specifications of materials and construction, and profile maps of all sanitary and storm sewers showing both ground surface and flow line, and other pertinent information of similar nature. These plans shall include, but not be limited to, the following:*

- (1) *Street plans;*
- (2) *Drainage plans;*

(3) Sanitary sewer plans;

(4) Water line plans; and

(5) Overall utility layout.

(B) All the plans shall comply with specifications and design standards as described in this chapter.

Section 153.42 Standards for Subdivision Proposals

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ 153.08 and 153.27 and the provisions of §§ 153.40 et seq

– **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.

Section 154.107 Inspection of Improvements

(A) All construction, such as street grading, site grading, erosion control measures, street paving, drainage structures, curb and gutter, storm sewers, sanitary sewers and water mains shall be subject to inspection during the construction period by the city, and shall be constructed in accordance with the approved engineering plans and the standard specifications governing the work.

Section 154.111 Maintenance Bond

Where public infrastructure improvements have been installed prior to recording of the plat, the property owner shall submit a maintenance bond from each contractor, three sealed sets of "as-built" plans or record drawings, one sealed set of "as-built" Mylars, and one CD containing a digital copy of all plans (in a format as determined by the City Engineer together with a letter stating the contractors' compliance in accordance with this chapter, and bearing sealed certification by the design engineer that all public improvements have been constructed in compliance with all city construction standards. The property owner also shall submit copies of the approved final plat with any required revisions on Mylars and in the format and number required by the City Engineer, together with all certifications required.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

– **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.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

154.110 *Performance Bond*

Prior to the recordation of any approved subdivision plat, the subdivider must file with the City Secretary a bond executed by a surety company, holding a license to do business in the state, in an amount equal to the estimate cost of constructing the required improvements, as approved by the City Engineer, guaranteeing to the city that all the improvements shall be constructed and completed in a satisfactory manner and within a period of two years from the date of plat approval. The cost estimate shall include an escalator clause equal to the percent change according to a locally recognized construction cost index for the preceding calendar quarter. The bond shall be approved by the City Attorney and shall be made payable to and enforceable by the city. Upon substantial compliance and acceptance of all improvements by the City Engineer, the bond may be released in writing by the City Secretary and may be returned to the developer.

154.042 Easements

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.

MEMO 2

TO: City of Martindale c/o Langford & Associates

FROM: Doucet, A Kleinfelder Company c/o Lindsey Oskoui, AICP & Kimberly Johnson-Hopkins

DATE: 18 May 2026

SUBJECT: Texas General Land Office Resilient Communities Program Grant:
Implementation Guide for Aligning the City of Martindale's Development Codes with Resilience Objectives

BACKGROUND

The City of Martindale received funding through the Resilient Communities Program (RCP) primarily to prepare a new comprehensive plan that advances long term community resilience and hazard mitigation objectives. Within that broader planning effort, the City is undertaking a focused, two-part review of its development regulations, addressing building and fire codes, floodplain management, subdivision standards, and zoning and related land use regulations. The first memorandum ("Memo 1") documented Martindale existing regulatory framework, summarized how current ordinances address resilience objectives, and identified key gaps and opportunities. This second memorandum ("Memo 2") builds on that assessment by moving from diagnosis to action, organizing a focused set of priority implementation steps that the City can embed in its comprehensive plan implementation program, capital planning, and ongoing code update efforts.

APPROACH

Memo 2 is structured as an implementation-oriented document organized around the major components of the City's development regulations: building and fire codes; flood damage prevention regulations; and zoning and subdivision regulations. For each code category, the memo identifies a concise set of priority action items designed to meaningfully advance community resilience while remaining achievable within the City's staffing, funding, and political context. These high-priority actions will be incorporated into the Implementation section of the City's Comprehensive Plan currently being drafted to ensure continuity between regulatory updates and broader community goals.

To support alignment with the Comprehensive Plan and related implementation tools, each action item in Memo 2 is assigned to one of four recommended timeframes: urgent, near term, long term, or ongoing.

URGENT	<i>Urgent actions are intended for Near term advancement to address critical regulatory gaps, safety concerns, or time-sensitive opportunities. Recommend action within the next year.</i>
NEAR TERM	<i>Near term actions typically involve more complex updates or follow logically after foundational steps have been completed. Typically 1-3 years.</i>
LONG TERM	<i>Long term actions often entail significant policy shifts, extensive technical analysis, or major public engagement efforts. Typically 3-5 years.</i>
ONGOING	<i>Ongoing actions represent continuing practices the City should maintain and periodically review to ensure lasting impact.</i>

For each priority action, the memo also identifies potential sub-actions and key considerations that can influence success. These may include steps such as targeted stakeholder engagement, coordination with partner agencies, alignment with state and federal requirements, sequencing with planned infrastructure projects, or refinement of administrative procedures and enforcement practices. By breaking larger recommendations into manageable sub-tasks, the memo is intended to function as a practical work plan rather than a purely conceptual policy statement.

Finally, each recommendation concludes with a brief list of resources to assist with implementation, such as relevant state and federal guidance documents, model code provisions, technical assistance programs, and examples from peer communities. These resources give Martindale staff and decision-makers accessible starting points for drafting code language, designing public processes, and coordinating resilience investments with outside funding and technical support.

RECOMMENDATIONS

The recommendations that follow are organized into eight focused action items:

Building & Fire Code

1. Modernize Building and Fire Codes
2. Clarify Building and Fire Code Roles and Responsibilities

Flood Damage Prevention Regulations

3. Strengthen Floodplain Management Standards

Zoning & Subdivision Regulations

4. Consider refining zoning buffers or transition zones to support gradual “gentle density” near mixed-use or higher-intensity areas. This could include setbacks, screening, or step-down height limits to protect neighborhood while allowing flexibility.
5. Update standards to encourage connected street networks, sidewalks, trails, and stub-outs for future development. This includes emergency access, multimodal streets, and block size considerations to enhance walkability and accessibility.
6. Elevate standards for neighborhood livability, including noise, lighting, and environmental hazards. Consider trying these regulations to zoning and subdivision approvals to proactively manage emerging uses.
7. Integrate Low Impact Development (LID) and stormwater best practices into subdivision and site development standards. Reduce impervious cover where possible and include incentives for open space or green infrastructure.
8. Include zoning and subdivision standards that encourage conservation, open space connectivity, and preservation of natural features, especially when integrating “gentle density” housing types.

BUILDING & FIRE CODE

1. Modernize Building and Fire Codes

Martindale currently relies on the 2021 ICC family of codes, which is one edition behind the most recent International Building Code and International Fire Code, limiting the city’s ability to take advantage of current best practices for flood, wind, wildfire, and extreme weather resilience. Updating to a more recent

code family, while reconciling overlapping local provisions, will improve safety, alignment with state law, and eligibility for resilience-related funding.

NEAR TERM

Adopt a current family of International Building, Residential, Fire, Mechanical, Plumbing, Electrical, and Property Maintenance Codes and reconcile overlapping local administrative provisions to match the adopted code family's Chapter 1 framework, prioritizing hazard-resilience updates.

LONG TERM

Establish an ongoing building and fire code review policy. Adopt a policy to review each newly published International Code Council building and fire code family within 3–4 years of its release to assess relevance to Martindale's hazards, local capacity, and state law, and to consider a local update at least once every 9–12 years so the City remains within two editions of the most current codes while balancing staff and development community impacts.

ONGOING

Sub-actions and Key Considerations

- └ Evaluate appropriate target editions (e.g., moving to a code set within one version of current) with attention to Texas state minimums, local capacity, and regional precedents.
- └ Reconcile high-level administrative provisions in local code with the Chapter 1 framework of the adopted ICC codes so there is a single, clear structure for permits, inspections, enforcement, and appeals.
- └ Identify and, where needed, strengthen provisions directly tied to local hazards (wind, flood, wildfire, extreme heat, drought), using available FEMA and International Code Council hazard-focused summaries of the changes between editions as reference.
- └ Plan and budget for training and transition support for staff, contractors, design professionals, and key stakeholders, recognizing that a larger “jump” in editions can be more efficient than a series of incremental updates.
- └ Coordinate timing with other resilience initiatives (e.g., floodplain ordinance updates, street and drainage standards) so that vertical and horizontal infrastructure standards work together to reduce risk.

RESOURCES

International Code Council (ICC) Resilience Toolkit, ICC

An overview resource that frames resilience around strong, regularly updated building codes and highlights how I-Codes support disaster mitigation, health, building adaptability, and sustainable community outcomes, with links to related resilience white papers and partnerships.

<https://www.iccsafe.org/advocacy/resilience-toolkit/>

Resilient Building Codes Toolkit, Department of Housing and Urban Development, June 2022

A practical toolkit that builds the business case for resilient codes and provides searchable guidance, checklists, and state-by-state supplements to help communities upgrade and implement stronger, hazard-focused building codes, especially for CDBG-DR and MIT projects.

<https://www.hudexchange.info/resource/6701/resilient-building-codes-toolkit/>

Building Codes Save: A Nationwide Study Losses Avoided as a Result of Adopting Hazard-Resistant Building Codes, FEMA, November 2020

A nationwide benefit–cost analysis that quantifies how modern, hazard-resistant codes (like post-2000 I-Codes) avoid billions in flood, wind, and earthquake losses, demonstrating large long term savings and resilience gains from adopting and enforcing up-to-date codes.

https://content.naic.org/sites/default/files/inline-files/fema_building-codes-save_study.pdf

ASCE 24-24 Delivers Major Update to Flood Resistant Design Standards, Association of State Floodplain Managers, March 17 2025

A summary of the 2025 ASCE 24-24 update that raises flood-resistance expectations by revising design flood elevations, expanding applicable flood hazard areas, and better aligning flood-resistant design with ASCE 7-22 and long term risk, including sea-level rise.

<https://www.floods.org/news-views/flood-mitigation/asce-24-24-delivers-major-update-to-flood-resistant-design-standards/>

2019 Resilience Contributions of the International Building Code, International Code Council, 2019. NOTE This publication requires a subscription.

A subscription-based ICC publication that explains how the International Building Code’s specific provisions enhance resilience in the built environment, including disaster resistance, safety, adaptability, and sustainability, with examples of resilience outcomes tied to IBC adoption.

<https://codes.iccsafe.org/content/RESIBC2018RWPP1>

2. Clarify Building and Fire Code Roles and Responsibilities

Martindale has adopted the 2021 International Code Council (ICC) family of codes, but the City's municipal code does not clearly define the administrative roles and enforcement authority necessary to effectively implement these codes. In particular, the code does not clearly establish the responsibilities of the Building Official or a Fire Code Official/Fire Marshal, nor does it outline the procedures typically associated with building and fire code administration, such as code interpretation, inspections, stop-work orders, unsafe building declarations, emergency actions, and enforcement penalties.

Clarifying these roles and responsibilities would strengthen enforcement consistency, improve coordination between building and fire inspections, enhance public safety, and align Martindale with best practices for municipal and fire code administration.

URGENT

Amend local ordinances to explicitly designate the Fire Code Official, and to clearly allocate duties and authorities among the Building Official, Fire Marshal, and other relevant positions for construction document review, permit issuance, inspections, enforcement actions, and recommendations for code updates.

NEAR TERM

Establish a formal process for periodic code review and recommendations: Over the next 1–3 years, create and codify a procedure by which the Building Official and Fire Code Official jointly review emerging hazards, post-incident lessons learned, and changes in state or model codes at regular intervals and provide written recommendations to City Council on needed updates to the building and fire codes.

Sub-actions and Key Considerations

- └ Specify in code which position serves as the Fire Code Official and how that role relates to the Fire Marshal and Building Official for plan review, permitting, and inspection of new construction, tenant finish-outs, and change-of-use projects.
- └ Cross-reference and, where needed, amend Sections 9.02.006, 3.02 (Construction Codes and Standards), 5.02 (Fire Marshal), and 5.03 (Fire Protection) so that authorities for inspections, stop-work orders, unsafe/unsafe-to-occupy determinations, and appeals are consistent and non-overlapping.
- └ Add language establishing an expectation that the Building Official and Fire Code Official periodically review emerging hazards, post-incident lessons learned, and changes in state law or model codes and make recommendations to City Council on needed code updates.

- └ Verify with the City Attorney that penalty and enforcement provisions (including violations specific to the Fire Code) are clear, consistent, and enforceable, and that staff have authority to seek administrative warrants and recover costs when the City must remediate hazardous conditions.

FLOOD MANAGEMENT

3. Strengthen Floodplain Management Standards

The City of Martindale adopted its Flood Damage Prevention Ordinance in 2012 in accordance with state and federal requirements. While the ordinance establishes basic floodplain development standards, it does not yet incorporate several practices commonly used to strengthen flood resilience and reduce long-term flood risk. Updating the ordinance to reflect current best practices such as higher freeboard standards, Low Impact Development (LID), improved drainage performance requirements, and stronger subdivision design standards would help better protect life and property while supporting more resilient development patterns.

NEAR TERM

Strengthen Floodplain Management Standards. As part of a future update to the Flood Damage Prevention Ordinance, the city should evaluate opportunities to incorporate additional flood resilience and floodplain management practices, including higher elevation standards, improved drainage performance requirements, Low Impact Development techniques, and stronger development controls within Special Flood Hazard Areas.

Sub-actions and Key Considerations

- └ **Establish Freeboard Requirements.** Consider requiring new construction and substantial improvements to be elevated at least one to two feet above the Base Flood Elevation (BFE) and require Elevation Certificates to be submitted and maintained to document compliance
- └ **Integrate Floodplain Management with Hazard Mitigation Planning.** Strengthen coordination between floodplain regulations, hazard mitigation planning, and the Comprehensive Plan to ensure long-term flood risk reduction strategies are aligned.
- └ **Encourage Low Impact Development (LID).** Add provisions that recognize LID practices—such as rain gardens, bioswales, permeable pavement, and green infrastructure—as preferred approaches for managing stormwater and reducing runoff volumes.
- └ **Strengthen Drainage Performance Standards.** Consider establishing no-net-increase runoff or pre-/post-development hydrology requirements for development within or adjacent to Special Flood Hazard Areas.

- Ⓐ **Improve Subdivision Design Standards in Flood-Prone Areas.** Require subdivision layouts and lot design to avoid Special Flood Hazard Areas where feasible and preserve floodplain areas for drainage, open space, and natural flood storage.
- Ⓐ **Establish Setbacks from Rivers and Streams.** Consider establishing minimum setbacks from rivers and streams within the floodplain to protect riparian areas, water quality, and natural habitat, reduce structural exposure to flooding, and maintain natural channel functions.
- Ⓐ **Clarify Substantial Damage and Substantial Improvement Procedures.** Update ordinance language to clarify triggers and procedures requiring structures meeting substantial damage or improvement thresholds to be brought into compliance with current floodplain standards.
- Ⓐ **Evaluate Additional Floodplain Protections.** Consider provisions that limit hazardous material storage in flood-prone areas and update variance criteria to better align with federal floodplain management guidance.
- Ⓐ **Promote Community Flood Awareness and Resilience.** Develop a community outreach and resilience program that educates residents about flood risk, promotes preparedness, and explores potential participation in FEMA’s Community Rating System (CRS).
- Ⓐ **Protect and restore river corridors** – Implement riparian buffers, conservation easements, and environmentally sensitive setbacks along the river to safeguard water quality, habitat, and floodplain function.
- Ⓐ **Integrate floodplain areas into a greenway and trail network** – Preserve flood-prone land as accessible open space and linear parks, allowing passive recreation, trails, and habitat connectivity while maintaining natural flood storage and drainage functions.

RESOURCES

A Resource Guide to Floodplain Management in Texas (Quick Guide), Texas Water Development Board, 2023

Plain-language overview of NFIP minimums, higher standards, variances, enforcement, and local options for going beyond the minimum, tailored to Texas communities.

<https://www.twdb.texas.gov/flood/resources/doc/Texas-Quick-Guide.pdf>

Using Low Impact Development and Green Infrastructure to Get Benefits from FEMA Programs, US Environmental Protection Agency

Short, non-technical summary of how LID/green infrastructure can reduce flood risk and help communities earn FEMA funding and NFIP/CRS benefits.

<https://www.epa.gov/nps/using-low-impact-development-and-green-infrastructure-get-benefits-fema-programs>

GLO Floodplain Management Guidance (Chapter 7 – Floodplain Management) , Texas General Land Office

State-level guidance that links green infrastructure, LID, and smart development practices to flood risk reduction and provides examples relevant to Texas jurisdictions.

<https://www.glo.texas.gov/sites/default/files/2025-02/chapter-7-floodplain-management.pdf>

Planning for Hazards website including Stormwater Ordinance Model Code & Commentary, State of Colorado, ongoing

A web-based collection of hazard-focused model policies and regulations, including a stormwater ordinance, that provides best-practice model language with explanatory commentary and references to example communities for local adaptation.

<https://planningforhazards.colorado.gov/model-codes>

ZONING & SUBDIVISION

The Planning and Subdivision recommendations in this memo are intentionally focused and action-oriented—aimed at near-term changes Martindale can realistically implement to improve resilience within existing staffing, funding, and administrative capacity.

For reference, a more comprehensive checklist of resilient zoning and subdivision techniques (developed in Memo 1) is included as Appendix A. Appendix A functions as a broader “menu” of potential tools—covering land use, housing, hazard and environmental protection overlays, resource-sensitive development approaches, open space and landscaping standards, connectivity and street design, and utility/stormwater resilience strategies—that the City may choose to pursue in the future if/when resources, priorities, and community readiness support more intensive policy and code updates.

4. Refine Zoning Buffers and Transition Zones

Martindale’s current zoning includes basic setbacks and screening requirements, but standards for gradual transitions from higher-intensity or mixed-use areas to lower-density neighborhoods are limited. Clearer expectations for step-down heights, screening, and setbacks can protect existing neighborhoods while allowing compatible development near commercial or mixed-use centers.

NEAR TERM

Update zoning and subdivision regulations to refine buffers and transition zones that support “gentle density” and neighborhood compatibility near mixed-use or higher-intensity areas.

Sub-actions and key considerations

- ⌞ Review and update setback, height, and screening requirements in districts adjacent to mixed-use or higher-intensity zones.
- ⌞ Use step-down or graduated height limits to maintain neighborhood character.
- ⌞ Incorporate design elements such as landscaped buffers or masonry walls where appropriate to minimize visual or noise impacts.
- ⌞ Establish consistent corridor development standards for highways and major thoroughfare, including building placement, site layout, and materials, to prevent strip development and create an attractive gateway into the community.
- ⌞ Encourage architectural and design standards in downtown and visible corridors that reinforce the city’s identity, including brick, masonry, and regionally appropriate styles to maintain a distinctive local character.
- ⌞ Coordinate updates with other development standards (e.g., parking, open space, stormwater management) to ensure cohesive neighborhood-scale outcomes.

RESOURCES

EPA “Codes That Support Smart Growth Development, Environmental Protection Agency, updated 2021

A periodically updated compilation of code examples and guidance that support compact, walkable, mixed-use development patterns.

https://19january2021snapshot.epa.gov/smartgrowth/codes-support-smart-growth-development_.html

Sustainable Development Code Chapter 3.3 and Chapter 4.3. Mixed Use, Sustainable Development Code, ongoing

A web-based code resource highlighting up-to-date examples such as Madison’s mixed-use districts (MU1, MU2), with links to specific ordinance citations and concise summaries of key standards.

<https://sustainablecitycode.org/chapter/chapter-3/3-3/>
<https://sustainablecitycode.org/brief/mixed-use-zoning-4/>

Mixed Use Development Bylaw Model, Pioneer Valley Planning Commission, 2014

An overlay-district model ordinance for mixed-use centers, including purpose statements, use regulations, special permit criteria, and performance/design standards that can be adapted to small-city contexts.

https://pvpc.org/wp-content/uploads/2025/05/Mixed-Use-Development-Bylaw_Model_-_9_2_14.docx

Model Mixed-Use Zoning District Ordinance (Sec. 4.1), Model Smart Land Development Regulations, American Planning Association, 2006

A model mixed-use district that permits vertical and horizontal mixing of uses, links higher FAR to mixed-use projects, and includes detailed permitted-use and development standards tables.

<https://pinelandsalliance.org/wp-content/uploads/2018/04/mixed-use-model-ordinance-apa.pdf>

Form-Based Codes Institute – Library of Codes, Form Based Code Institute

Curated examples of adopted form-based codes from a variety of communities, including small cities, with filters for physical context, implementation method, and development type.

<https://formbasedcodes.org/codes/>

A Step-by-Step Guide for Communities: Form-Based Codes— Chicago Metropolitan Agency for Planning / ***Form-Based Codes Institute***, Chicago Metropolitan Agency for Planning in association with Form Based Code Institute, 2013

A practical guide explaining what form-based codes are, how to assess existing conditions, create a regulating plan, and integrate hybrid or overlay form-based districts with conventional zoning.

<https://formbasedcodes.org/wp-content/uploads/2013/11/CMAP-GuideforCommunities.pdf>

Flipping the Strip, American Planning Association Planning Magazine, 2016

Describes how communities adopt corridor design and development standards (e.g., building placement, parking location, and streetscape design) to prevent development and strengthen gateway corridors and community character.

<https://www.planning.org/planning/2016/apr/flippingthestrip/>

Community Character and Design Guidelines, City of Santa Clarita, 2009

These guidelines explain that architectural design standards help preserve and enhance community identity, encourage buildings to complement surrounding development, and guide materials and façade design so new development contributes to the overall character of the area.

<https://santaclarita.gov/wp-content/uploads/sites/42/migration/Community%20Character.pdf>

5. Enhance Connectivity and Multimodal Street/Block Design

Martindale’s subdivision standards currently provide minimal guidance on block length, street connectivity, pedestrian routes, or emergency access. Improved connectivity enhances walkability, emergency response, and integration with surrounding neighborhoods.

NEAR TERM

Within the next 1–3 years, update subdivision and street design standards to ensure connected street networks, sidewalks, trails, and logical stub-outs for future development.

Sub-actions and key considerations

- ⌞ Establish block length and perimeter standards to support vehicles, pedestrians, and emergency access.
- ⌞ Limit and condition cul-de-sacs and dead-end streets, allowing them only where needed for topography or natural resources and requiring pedestrian/bicycle connections from cul-de-sac heads to adjacent streets, open space, or future development.
- ⌞ Require both street and off-street trail/sidewalk stub-outs to adjacent undeveloped land where logical future connections are anticipated, so that vehicular and pedestrian networks can extend as the city grows.
- ⌞ Ensure continuous sidewalks on at least one (and, in many contexts, both) sides of local streets and provide shared-use paths or side paths on key corridors, with standards that emphasize direct, connected routes rather than fragmented segments.
- ⌞ Integrate emergency access requirements with connectivity, requiring at least two vehicular access points for larger developments while also using pedestrian connections and cross-access easements to improve egress options where appropriate

RESOURCES

Street Connectivity Minimums, Sustainable Development Code, 2018

Explains block-length and connectivity-index approaches to street connectivity and provides example ordinances (Franklin, TN; Lehi, UT; Cary, NC) that tie maximum block lengths, cul-de-sac limits, stub-outs, and pedestrian connections together to ensure multiple vehicular and walking routes in new development.

<https://sustainablecitycode.org/brief/street-connectivity-minimums-4/>

Increasing Pedestrian Mobility on Internal and Private Roads, Sustainable Development Code, 2019

Brief highlighting code provisions (e.g., Hardeeville, SC) that require sidewalks along both sides of subdivision streets and pedestrian ways through large blocks and private/internal roads to ensure walkability even where vehicular access is limited.

<https://sustainablecitycode.org/brief/increasing-pedestrian-mobility-on-internal-and-private-roads-2/>

Pedestrian Mobility to Adjacent Zones, Sustainable Development Code, 2019

Provides examples of code language requiring pedestrian connections from new development to sidewalks and walkways on adjacent properties, reinforcing expectations for cross-site pedestrian connectivity beyond the street grid itself.

<https://sustainablecitycode.org/brief/increase-pedestrian-mobility-to-adjacent-zones-3/>

Smart Codes: Model Land-Development Regulations, Marya Morris (ed.), APA Planning Advisory Service Report 556, 2009

A Planning Advisory Service report that assembles model zoning, subdivision, and development regulations to implement smart growth principles—such as mixed use, connectivity, and context-sensitive design—with chapter-by-chapter sample ordinance language (e.g., live/work, affordable housing bonuses, traditional neighborhood development) that local governments can adapt to modernize their codes.

<https://perma.cc/TN5N-Z935>

Article VI: Subdivision Design Standards and §31-101 Access, City of Fort Worth Code of Ordinances, 2023

These provisions require subdivisions to provide an “adequate system of streets with multiple routes and connections” and establish detailed standards for primary and secondary access, including when a second access point is required and how cul-de-sacs and stub-outs count toward connectivity, offering a strong model for making vehicular and emergency connectivity a core purpose of subdivision design.

https://codelibrary.amlegal.com/codes/ftworth/latest/ftworth_tx/0-0-0-29438

Town of Sunnyvale TX Subdivision Design Standards, Sunnydale, TX

Provides small-town subdivision design standards including expectations around half streets, access, and internal circulation, illustrating how a smaller North Texas community addresses basic street and access connectivity within its subdivision regulations.

<https://ecode360.com/45869404#45869405>

City of Cedar Hill Chapter 20 Subdivision Regulations, City of Cedar Hill, TX

Defines functional street types and emphasizes collector streets that carry traffic from local streets to arterials and provide circulation within residential developments, offering language that links internal subdivision layout to the broader street hierarchy.

<https://www.cedarhilltx.com/DocumentCenter/View/516/Subdivision-Regulations-as-amended-08-30-05?bidId=>

City of New Braunfels Subdivision Design Standards Review Checklist, City of New Braunfels, TX, 2019

Checklist that operationalizes subdivision standards, including adequate access, perimeter streets, and pedestrian connections (e.g., walkways between cul-de-sacs and parks or schools), showing how to translate connectivity expectations into review criteria staff can apply consistently.

<https://newbraunfels.gov/DocumentCenter/View/16255/Subdivision-Design-Standards-Review-Checklist>

Small Town and Rural Multimodal Networks, Federal Highway Administration, 2016

National but directly tailored to small towns and rural areas; provides design tools for sidewalks, sidepaths, and shared-use paths along local streets and within subdivisions, supporting requirements for connected pedestrian and bicycle networks in smaller communities.

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/?_gl=1*1uth7sv*_ga*ODM3NjE2NzQuMTc3MjE0NDA2MA..*_ga_VW1SFWJKBB*cze3NzlxNDQwNTkkbzEkZzEkdDE3NzlxNDUxNTQkajYwJGwwJGgw

<**PUBLICATION NAME**>, <Publishing Agency>, Date

One to two line summary of resource.

<spelled out hyperlink to resources>

6. ***Elevate Standards for Neighborhood Livability and Industrial Compatibility***

Martindale's zoning and subdivision regulations address basic buffering and screening between nonresidential and residential uses, but they do not yet anticipate emerging industrial-type uses such as data centers, logistics facilities, or light manufacturing with high noise or utility demands. Recent trends suggest that even small communities may receive interest in such uses, creating potential conflicts related to noise, lighting, traffic, and strain on local water and power infrastructure.

NEAR TERM

Within the next 1-3 years, update industrial and commercial compatibility standards in the zoning ordinance and related subdivision requirements to address noise,

screening, access, and site design for emerging industrial and quasi-industrial uses, including expectations for noise attenuation, low-impact site design, and buffer treatments when located near neighborhoods or sensitive uses.

Sub-actions and key considerations

- ⌞ Clarify how emerging uses such as data centers, logistics centers, and similar “high-infrastructure” facilities are classified in the use table, including whether they are permitted, conditional, or prohibited in specific districts and overlays.
- ⌞ Strengthen compatibility standards (e.g., landscaped buffers, fencing and wall design, mechanical equipment screening, and lighting limits) for industrial and heavy commercial uses abutting residential or mixed-use districts.
- ⌞ Establish or refine noise performance standards and screening expectations for generators, loading areas, and mechanical yards, especially for data centers and similar 24-hour operations.
- ⌞ Coordinate with drainage and LID standards to ensure paved areas and parking requirements for industrial uses do not increase downstream flood risk, and consider allowing or requiring low-impact development techniques (e.g., bio-swales, permeable paving) where feasible.

RESOURCES

Round Rock Texas Code Chapter 5 Compatibility Buffers, City of Round Rock, TX

Round Rock has a dedicated compatibility buffer section that sets minimum widths, planting requirements, and fence/wall options when nonresidential or multifamily development is adjacent to lower-intensity residential, using tables keyed to “triggering” and “receiving” districts.

https://www.zoneomics.com/code/round-rock-TX/chapter_5

Augusta, KS Compatibility Buffer Requirements, City of Augusta, KS

This code defines “compatibility buffers” and uses a height-compatibility setback calculation so taller structures have to move farther from lot lines when near smaller-scale uses.

<https://augustaks.citycode.net/index.html#!articleCompatibilityBuffers>

Data Center Model Ordinance, Penn Future, 2025

A recent model ordinance addressing water consumption, power consumption, noise, aesthetic impacts, and siting considerations for data centers.

7. Clarify and Elevate Open Space and Park Standards

Existing subdivision standards require dedication of park land or fees in lieu, but they provide limited guidance on the quality, function, and connectivity of open spaces within new neighborhoods and multifamily or townhouse projects. For a small community, ensuring that new open spaces are usable, connected, and support flood resilience and habitat is critical to long term quality of life and risk reduction.

NEAR TERM Within the next 1-3 years, strengthen open space and park requirements in the subdivision ordinance and zoning regulations to address both quantity and quality of open space, with a focus on functional, connected areas that support recreation, drainage, and conservation priorities identified in the Comprehensive Plan.

Sub-actions and key considerations

- └ Define minimum open space and/or neighborhood park requirements for new residential subdivisions (single-family detached, townhouse, and multifamily), such as minimum percentage of site area, minimum contiguous area, service radii for neighborhood parks, and limits on steep slopes or detention being counted in full.
- └ Establish qualitative standards for common open space and neighborhood parks (visibility from streets, accessibility, shade, seating, play or gathering features) to avoid leftover, low-utility fragments.
- └ Prioritize conservation of riparian corridors, floodplains, and tree stands by allowing or encouraging conservation or cluster subdivisions that trade smaller lots for larger preserved open space.
- └ Require or incentivize connectivity between on-site open spaces, sidewalks, and existing or planned trails or parks to support walkability, emergency access, and daily recreation opportunities.
- └ Clarify expectations for ownership and maintenance of common open space and parks (e.g., City, HOA, conservation partner), and determine under what conditions open space should be publicly dedicated versus privately owned with recorded maintenance obligations (including funding mechanisms such as HOAs or PID-like tools, if appropriate).

RESOURCES

Green Communities Criteria and Certification Location and Neighborhood Fabric, Enterprise, 2020

Provides small-town—appropriate standards for open space provision, connectivity to amenities, and reduced parking, including specific open space percentage and connectivity recommendations.

<https://www.greencommunitiesonline.org/location-neighborhood-fabric>

Cluster/Conservation Subdivision in Rural/Urban Area Brief, Sustainable Development Code, 2018

Summarizes best practices and ordinance examples for cluster/conservation subdivisions that trade smaller lots for permanently preserved, usable open space that can serve recreation, agriculture, or habitat functions.

<https://sustainablecitycode.org/brief/cluster-conservation-subdivision-in-rural-urban-area-9/>

Model Conservation Subdivision / Open Space Development Ordinance, South Carolina Department of Health and Environmental Control, circa 2009/2010

Provides model conservation/cluster subdivision language, including minimum open space percentages, primary conservation areas (floodplains, riparian corridors, steep slopes), and access standards that can guide the City's approach to preserving connected natural open space.

<https://des.sc.gov/sites/des/files/docs/HomeAndEnvironment/Docs/ModelOrdinances/ConservationSubdivision-OpenSpaceDevelopmentOrdinance.pdf>

City of Frisco Zoning Code Section 4.13.01 – Usable Open Space Requirements, City of Frisco, TX, 2021

Offers detailed “usable open space” standards (minimum size, slope, width, street frontage, tree and amenity requirements) that illustrate how to distinguish meaningful, functional common open space from remnant leftovers in higher-density residential projects.

<https://ecode360.com/45146592>

Open Space Development Model Ordinance, Environmental Protection Agency, March 2017

A model ordinance that treats open space as a stormwater and watershed protection tool, prioritizing resource buffers, habitat areas, and conservation easements, and including detailed provisions for long term protection and maintenance of conserved open space.

https://www.epa.gov/sites/default/files/2017-03/documents/os_model_ordinance1.pdf

City of Pflugerville Subchapter 14.5 Alternative Compliance Public Parkland and Open Space Standards, City of Pflugerville, TX

Clarifies when amenities within private residential developments do or do not count toward public parkland dedication, offering a helpful precedent for drawing lines between public park requirements and privately maintained open space in new subdivisions.

<https://online.encodeplus.com/regs/pflugerville/doc-viewer.aspx?secid=531#secid-531>

8. Support Gentle Density and Conservation-Oriented Neighborhoods

Offering a broader mix of housing types can strengthen Martindale’s long term resilience by serving a wider range of households over time, including different ages, income levels, and lifestyles. Martindale’s zoning framework already permits a variety of residential formats—single-family, duplex, townhouse, multifamily, manufactured housing, mixed residential, and garage apartments/ADUs—in multiple districts, and thoughtful missing-middle and conservation-oriented standards can build on this base by adding homes in small increments while keeping buildings compatible in scale, managing parking, and aligning new development with community goals for preserving trees, riparian corridors, and shared open space.

NEAR TERM

Over the next 1–3 years, refine Martindale’s existing residential and mixed-use districts to more effectively support “gentle density” housing—such as ADUs/garage apartments, duplexes, townhouses, small multifamily, and cottage-style clusters—while maintaining house-scale character and using clustering tools to preserve high-value natural areas and usable common open space.

Sub-actions and key considerations

- └ Make ADUs/garage apartments more usable in practice
 - Evaluate whether requiring ADUs to share a wall with or sit above a private garage is unnecessarily limiting, and consider allowing small detached backyard units with height, setback, and design controls to keep them low-impact.
 - Revisit the extra parking-space requirement for garage apartments to ensure it does not prevent ADUs on smaller lots, especially where on-street capacity and sidewalks are adequate.
- └ Calibrate standards for duplexes, townhouses, and small multifamily
 - Review minimum lot sizes, widths, and setback standards in duplex, townhouse, and multifamily districts to confirm that they support house-scale buildings and don’t effectively force larger, more intense projects than the community wants.

- Add simple building form standards (e.g., maximum building width, front entries facing the street, parking to the side or rear) so that duplexes and small multiplexes fit comfortably in predominantly single-family contexts.
- └ Introduce a cottage court / small cluster option
 - Create a “cottage housing” or “cottage court” provision allowing several small homes around a shared green, with shared parking and sidewalks, either as a use in existing districts or as an overlay.
 - Tie approval to specific open space and tree-preservation expectations so these projects are understood as amenity-rich, conservation-friendly neighborhoods rather than traditional apartments.
- └ Align conservation / cluster tools with missing-middle formats
 - Strengthen or add conservation/cluster subdivision language that allows smaller lots and missing-middle types in exchange for permanently preserved riparian corridors, floodplains, and wooded areas, consistent with your open space/park standards action.
 - Make clear that preserved open space must be connected, visible, and usable (trails, passive recreation) rather than leftover drainage fragments, so clustering is seen as a quality-enhancing tool.
- └ Right-size parking and access standards for smaller units
 - Revisit blanket two-space-per-unit and extra-space requirements in light of smaller units (ADUs, duplexes, cottages), and consider tiered parking minimums or shared-parking allowances to reduce cost and impervious cover while still addressing local concerns.
 - Pair any parking adjustments with access and connectivity standards (from your other action item) so that walking, biking, and short trips become easier options, especially near downtown and schools
- └ Strategic Redevelopment and Resilient Community Facilities
 - Encourage adaptive reuse of existing structures (such as silos) and explore opportunities for multi-use public facilities that can support emergency management and community needs.

RESOURCES

Local Policies that Support Missing Middle Housing and ADUs, Housing Solutions Lab, 2023

Case-study-based resource that highlights how several cities have legalized ADUs and allowed duplexes and small multifamily projects with calibrated lot sizes, setbacks, and parking standards, providing adaptable examples for small cities.

<https://www.localhousingsolutions.org/housing-policy-case-studies/local-policies-that-support-missing-middle-housing-and-adus/>

Tier 3 Cities Middle Housing Model Ordinance, Washington State Department of Commerce, 2024

A state-developed model ordinance (for smaller Washington cities) that provides example regulatory language to allow middle housing types—duplexes, triplexes, fourplexes, townhouses, and cottage housing—with clear definitions, lot and building standards, and common-open-space provisions; while some bolded elements are mandatory under Washington law, in Texas this document should be treated strictly as optional model language and a menu of ideas rather than any kind of requirement.

<https://www.cityofflp.gov/DocumentCenter/View/12105/Tier-3-Cities-Middle-Housing-Model-Ordinance-10-24-2024-Update>

Ordinances and Built Examples of Cottage Courts, National Association of Home Builders, 2017

A resource that profiles adopted cottage court ordinances and built projects, summarizing standards for unit counts, unit size, shared open space, height, lot coverage, parking, and building orientation that can be adapted to create a cottage-court or cottage-cluster option in Martindale.

<https://www.nahb.org/-/media/NAHB/advocacy/docs/top-priorities/housing-affordability/ordinances-and-built-examples-of-cottage-courts.pdf>

Designing Accessory Dwelling Unit Regulations, Urban Institute, 2020

Provides guidance on crafting ADU standards (unit size, height, setbacks, parking, lot size, owner-occupancy, and short-term rentals) that make ADUs feasible while addressing neighborhood concerns, with examples from multiple cities.

<https://www.urban.org/sites/default/files/2023-08/Designing%20Accessory%20Dwelling%20Unit%20Regulations.pdf>

Model Adaptive Reuse Ordinance, German Village Society (c.2017-2018)

A model ordinance framework that municipalities can adopt to facilitate and streamline adaptive reuse through supportive zoning and planning policies.

<https://germanvillage.com/model-adaptive-reuse-ordinance/>

APPENDIX A

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 (*based on the version of Code in effect at the time of preparation of RCP grant Memo 1*), 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.

At this stage, Memo 2 uses this checklist as a reference framework and “long list” to inform a narrower set of focused recommendations around planning and subdivision practices, tailored to Martindale’s current capacity and priorities. Over time, the City may return to Appendix A as resources and community readiness allow, selectively advancing additional techniques and translating them into detailed ordinance updates and sample code.

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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.

Zoning Districts & Mixed Use: [Section 155.075](#) Districts Established

(A) *Districts established.*

(1) *In order to implement the city comprehensive plan and promote the purposes of this chapter, the following districts are established:*

District Name	Map Symbol
<i>Single-Family Residential</i>	<i>R-1</i>
<i>One – and Two Single Family Residential</i>	<i>R-1A</i>
<i>Manufactured Home District</i>	<i>R-2</i>
<i>Multi-Family Residential (Low Density)</i>	<i>R-3</i>
<i>Multi-Family Residential (Medium Density)</i>	<i>R-4</i>
<i>Mixed Use</i>	<i>MU</i>
<i>Commercial</i>	<i>C-1</i>
<i>Heavy Commercial</i>	<i>C-2</i>
<i>Industrial</i>	<i>I</i>

Overall, the City's Code of Ordinance supports the idea of mixed-use development, which is one of the form-based code goals as per GLO.

Building Height Regulations: [Section 155.110](#) Table of Property Development Standards

In Table of Property Development Standards, maximum building heights are defined for each zoning district. For example, in R-1 (Single-Family) the maximum height is 28.5 feet.

Setbacks & Build to Lines: [Section 155.112](#) Setbacks - (A) Generally. Under this chapter, a setback refers to the unobstructed, unoccupied open space between a structure and the property line of the lot on which the structure is located. Setbacks shall be unobstructed from the ground to the sky and measured as the horizontal distance between a property line and the furthestmost projection of the structure, except as provided otherwise in this chapter.

In addition, Table of Property Development Standards outline the front setbacks, rear, side, and street-side lot lines per zoning district.

Compatibility / Screening: [Section 155.060](#) (A) Purpose. The compatibility standards of this section are intended to preserve and protect low-density residential uses and neighborhoods by ensuring that new development and redevelopment is compatible with the character of the area in which it is located.

(B) Applicability. The compatibility standards in this section shall apply to all multi-family residential and all nonresidential development when it occurs on a lot:

- (1) Within 150 feet of the lot line of any property zoned R-1, R-1A or R-2;*
- (2) Across the street from or adjacent to a lot containing a single-family or duplex use; or*
- (3) Within 150 feet of the boundary of an area designated as a scenic corridor under § [150.025](#).*

(C) Exemptions. The following shall be exempt from compliance with the compatibility standards of this section:

- (1) Single-family or duplex uses;*
- (2) Multi-family development unless the development exceeds a gross density of six units per acre or a height of 35 feet;*
- (3) Structural alteration of an existing building when the alteration does not increase the gross square footage or height of the building; and*
- (4) A change in use that does not increase the off-street parking requirements over and above the existing use.*

(D) Buffer and screening standards.

(1) *Nonresidential and multi-family residential development, including off-street parking areas associated with the development, shall be screened from view of adjacent single-family and duplex uses and R 1, R-1A or R-2 zoned property.*

(2) *The visual screening shall be accomplished through the use of opaque fences or landscaping along the adjacent lot line.*

(3) *Mechanical equipment, outdoor storage areas and refuse collection areas shall be completely shielded from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#), and R-1, R-1A or R-2 zoned property by an opaque fence or wall that is at least one foot taller than the site feature being screened from view, provided this shall not be interpreted as requiring screening fences or walls to be taller than ten feet.*

(4) *Fences, walls and buffers must comply with all other requirements of ordinances of the city.*

(E) *Additional site design standards. The following additional site design standards shall apply to development that is subject to the compatibility standards of this section:*

(1) *Public and commercial recreation uses. Public and commercial swimming pools, tennis courts, ballfields, tubing-related businesses and other intensive public or commercial recreational uses that involve outdoor activity shall be set back at least 100 feet from the lot line of property that is zoned R-1, R-1A or R-2, or that contains a single-family, duplex or multi-family use, or that is designated as a scenic corridor under § [150.025](#). For tubing-related businesses, this setback shall also apply to customer parking and vehicle/equipment storage areas, tubing-related businesses, including customer parking and vehicle/equipment storage areas, shall also be screened from view by an opaque fence or wall with a minimum height of eight feet. For a recreational use other than a tubing-related business, this setback standard shall be reduced to a minimum of 50 feet if the recreational use is screened from view by an opaque fence or wall with a minimum height of eight feet; and*

(2) *Dumpsters and solid waste receptacles. Dumpsters and solid waste receptacles shall be set back at least 20 feet from the lot line of property that is zoned R-1, R-1A or R-2, that contains a single-family or duplex use, or that is designated as a scenic corridor under § [150.025](#). Dumpsters and receptacles shall be completely screened from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#) and R-zoned property by an opaque fence or wall that is at least one foot taller than the dumpster or solid waste receptacle*

– **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.

Section 154.060 Areas of Public Use

(A) *The plat or a document attached to the plat must describe the water and sewer service facilities that will be constructed or installed to service the subdivision and contain a statement of the date by which the facilities will be fully operable.*

(B) *The engineer's certificate attached to the plat shall certify that the water and sewer service facilities described by the plat are in compliance with the model rules adopted under Tex. Water Code, § 16.343.*

(C) *If the source of the water supply intended for the subdivision is groundwater under the land being subdivided, the engineer's certificate attached to the plat shall certify that adequate groundwater is available to the subdivision in the form and with the content prescribed for the certificates by the State Commission on Environmental Quality.*

Section 154.061 Land Dedication

(A) *Except as provided in § 154.062 below, or for nonresidential subdivisions, land shall be dedicated by the subdivider in the amounts listed below or greater for community facilities or open space in any subdivision greater than five acres in size.*

(1) *Subdivision size over five acres up to and including 20 acres: 5% of the total land area zoned or intended for residential use.*

(2) *Subdivision size over 20 acres: 8% of the total land area zoned or intended for residential use.*

(B) *The location, size and functions of the land to be dedicated for community facilities or public open space must be deemed by the city to be suitable for the intended use. If the subdivider develops the site for the approved public use at the subdivider's expense and with approval of the city, the land area dedicated may be decreased to the extent that the value of the improvements is equal to or more than the market value of the land area prior to development, as determined by the County Tax Appraisal District, that is the difference between the minimum amount required and the amount actually dedicated.*

(C) *No property required to be dedicated for community facilities or public open space shall be in the 100-year floodplain except, however, that natural areas may include the 100-year floodplain if determined by the city to be suitable for leisure activities such as hiking, bicycling, picnicking and wildlife observance, and the area is deemed by the city as needed or acceptable for the use in that location.*

Section 154.062 Fee in Lieu of Land Dedication

(A) *In instances where dedication of land for community facilities or public open space is unacceptable, unsuitable, unneeded or infeasible within a subdivision, the subdivider may, at the city's discretion, pay a fee in lieu of land dedication specified in § 154.061 above in the amounts listed below based upon the market value prior to development as determined by the County Tax Appraisal District.*

(1) *Subdivision size over five acres up to and including 20 acres: 5% of market value of land area that is zoned or intended for residential use.*

(2) *Subdivision size over 20 acres: 8% of market value of land area that is zoned or intended for residential use.*

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

(B) For subdivisions greater than one acre in size up to five acres in size, where no land dedication is required, a fee shall be the equal to 5% of the market value of land area that is zoned or intended for residential use. No fee or land dedication is required for subdivisions one acre or less in size.

(C) Fees paid to meet the community facility and public open space requirements shall be deposited by the city in an account for use only in the acquisition of land, purchase of equipment or construction of improvements for public open space, including parks, playgrounds and natural areas

TECHNIQUES | COMPATIBILITY

– 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.

Section 155.084 *Industrial Use District*

3(b) No operation or activity shall at any time cause any earthborne vibration which results in a horizontal or vertical ground displacement in excess of 0.0002 inch at any facility property line.

– 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.

Section 155.060 *Compatibility Standards*

(A) Purpose. The compatibility standards of this section are intended to preserve and protect low-density residential uses and neighborhoods by ensuring that new development and redevelopment is compatible with the character of the area in which it is located.

(B) Applicability. The compatibility standards in this section shall apply to all multi-family residential and all nonresidential development when it occurs on a lot:

- (1) Within 150 feet of the lot line of any property zoned R-1, R-1A or R-2;*
- (2) Across the street from or adjacent to a lot containing a single-family or duplex use; or*
- (3) Within 150 feet of the boundary of an area designated as a scenic corridor under § [150.025](#).*

(C) Exemptions. The following shall be exempt from compliance with the compatibility standards of this section:

- (1) Single-family or duplex uses;*

(2) Multi-family development unless the development exceeds a gross density of six units per acre or a height of 35 feet;

(3) Structural alteration of an existing building when the alteration does not increase the gross square footage or height of the building; and

(4) A change in use that does not increase the off-street parking requirements over and above the existing use.

(D) Buffer and screening standards.

(1) Nonresidential and multi-family residential development, including off-street parking areas associated with the development, shall be screened from view of adjacent single-family and duplex uses and R 1, R-1A or R-2 zoned property.

(2) The visual screening shall be accomplished through the use of opaque fences or landscaping along the adjacent lot line.

(3) Mechanical equipment, outdoor storage areas and refuse collection areas shall be completely shielded from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#), and R-1, R-1A or R-2 zoned property by an opaque fence or wall that is at least one foot taller than the site feature being screened from view, provided this shall not be interpreted as requiring screening fences or walls to be taller than ten feet.

(4) Fences, walls and buffers must comply with all other requirements of ordinances of the city.

(E) Additional site design standards. The following additional site design standards shall apply to development that is subject to the compatibility standards of this section:

(1) Public and commercial recreation uses. Public and commercial swimming pools, tennis courts, ballfields, tubing-related businesses and other intensive public or commercial recreational uses that involve outdoor activity shall be set back at least 100 feet from the lot line of property that is zoned R-1, R-1A or R-2, or that contains a single-family, duplex or multi-family use, or that is designated as a scenic corridor under § [150.025](#). For tubing-related businesses, this setback shall also apply to customer parking and vehicle/equipment storage areas, tubing-related businesses, including customer parking and vehicle/equipment storage areas, shall also be screened from view by an opaque fence or wall with a minimum height of eight feet. For a recreational use other than a tubing-related business, this setback standard shall be reduced to a minimum of 50 feet if the recreational use is screened from view by an opaque fence or wall with a minimum height of eight feet; and

(2) Dumpsters and solid waste receptacles. Dumpsters and solid waste receptacles shall be set back at least 20 feet from the lot line of property that is zoned R-1, R-1A or R-2, that contains a single-family or duplex use, or that is designated as a scenic corridor under § [150.025](#). Dumpsters and receptacles shall be completely screened from view of adjacent single-family and duplex uses, scenic corridors designated under § [150.025](#) and R-zoned property by an opaque fence or wall that is at least one foot taller than the dumpster or solid waste receptacle.

Chapter 91 Nuisance Code

Section 91.01 Public Nuisance Defined

The purpose of this subchapter is to provide clear regulations for the control of loud and disturbing noise within the city and its extraterritorial jurisdiction (ETJ). The objective is to control noise where necessary to allow all citizens to enjoy an environment free from unnecessary noise.

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

Section 154.043 – Blocks

- (B) *Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.*

Section 154.060 – Areas for Public Use / Open Space

The subdivider shall give consideration to one or more suitable sites for public parks, playgrounds and other public community facilities in accordance with the comprehensive plan and associated plans and policies of the city. A school site approved by the school district for purchase by the district shall be considered an eligible community facility for the purpose of this subchapter. Any provision for schools, parks and the like, shall be indicated on the plat.

Section 154.062 – Fee in Lieu of Land Dedication

(A) *In instances where dedication of land for community facilities or public open space is unacceptable, unsuitable, unneeded or infeasible within a subdivision, the subdivider may, at the city's discretion, pay a fee in lieu of land dedication specified in § 154.061 above in the amounts listed below based upon the market value prior to development as determined by the County Tax Appraisal District.*

(1) *Subdivision size over five acres up to and including 20 acres: 5% of market value of land area that is zoned or intended for residential use.*

(2) *Subdivision size over 20 acres: 8% of market value of land area that is zoned or intended for residential use.*

(B) For subdivisions greater than one acre in size up to five acres in size, where no land dedication is required, a fee shall be the equal to 5% of the market value of land area that is zoned or intended for residential use. No fee or land dedication is required for subdivisions one acre or less in size.

(C) Fees paid to meet the community facility and public open space requirements shall be deposited by the city in an account for use only in the acquisition of land, purchase of equipment or construction of improvements for public open space, including parks, playgrounds and natural areas.

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.

Section 155.097 (C)(6)(a)

(a) A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner

(b) There shall be no signs or other exterior visible evidence of a home occupation

(d) The home occupation shall be conducted entirely within the principal residential building

Section 155.097 (C) (6) (c)

No outdoor storage of equipment, materials, or vehicles with more than two axels shall be visible from outside the dwelling.

Section 155.097 (C)(6)(e)

No equipment shall create undue noise, vibration, dust, smoke, or particulate emissions.

– 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).

Section 155.097 (C) (6)(a)

A home occupation shall be conducted within a dwelling that is the bona fide residence of the principal operator.

Section 155.097 (C)(6)(f)

No more than one person other than members of the resident family shall be employed on the premises in connection with the home occupation.

– **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.

Section 155.097 (C) (6) Home Occupations

(6) Home occupations. The following home occupation standards are intended to permit residents to engage in home occupations within R and NC zoning districts that are compatible with residential land uses and to ensure that home occupations do not adversely affect the integrity of residential areas. These home occupation standards shall have no application in the MU District. A home occupation shall be considered an accessory use, subject to the following standards:

(a) A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner;

(b) There shall be no signs or other exterior visible evidence of a home occupation;

(c) There shall be no visible storage of equipment, materials or vehicles that have more than two axles;

(d) The home occupation shall be conducted entirely within the principal residential building;

(e) No equipment shall be used that creates undue noise, vibration, electrical interference, smoke or particulate matter emission, excessive power demands or odors. Home occupations shall comply with the operational performance standards of § [155.061](#); and

(e) Persons other than a member of the immediate family occupying such a dwelling may be employed; provided, however, no more than two persons other than family members shall be employed at any one time.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.*

Section 155.097 (C)(6)(a)

A home occupation must be conducted within a dwelling which is the bona fide residence of the principal practitioner

Section 155.097 (C) (6)(d)

The home occupation shall be conducted entirely within the principal residential building

- **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.

Section 155.097(C)(6)(d) – Home Occupation Standards

No exterior evidence of the home occupation shall be visible from the street.

No signs, displays, or advertising visible from the exterior of the dwelling are permitted, except as allowed by the zoning district regulations.

- **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.

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.

Section 155.098 Accessory Uses and Structures

(A) Principal uses classified as permitted uses by the district regulations of this subchapter and §§ 155.075 through 155.084 above shall be deemed to include accessory uses and activities that are customarily associated with and appropriate, incidental and subordinate to permitted principal uses.

(B) Accessory uses and activities shall be subject to the same regulations as principal uses unless otherwise stated.

(C) Accessory uses shall be as follows:

(1) Residential accessory uses. Residential accessory uses shall include but not be limited to the following accessory uses, activities and structures:

- (a) Fences and walls;
- (b) Garages, carports, driveways and off-street parking areas;
- (c) Gates and guardhouses;
- (d) Home occupations, subject to the standards of § 155.097 above;
- (e) Playhouses, patios, cabanas porches, gazebos and incidental household storage buildings;
- (f) Radio and television receiving antennas and support structures;
- (g) Recreational facilities for the use of residents;
- (h) Keeping of domestic animals for noncommercial purposes;
- (i) Solar energy systems; and
- (j) Other necessary and customary uses determined by the Zoning Administrator to be appropriate incidental and subordinate to the principal use on the lot.

(2) Retail, commercial and office accessory uses. Retail, commercial and office accessory uses shall include but not be limited to the following accessory uses, activities and structures:

- (a) Dwelling units for security or maintenance personnel;*
- (b) Fences, walls, gates and guardhouses;*
- (c) Parking garages, driveways and off-street parking areas;*
- (d) Radio and television receiving antennas and support structures;*
- (e) Signs, subject to city ordinances regulating same;*
- (f) Solar energy systems; and*
- (g) Other necessary and customary uses determined by the Zoning Administrator to be appropriate, incidental and subordinate to the principal use on the lot.*

- **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.

Section 155.110 *The Table of Uses*

(A) The property development standards table of this section provides a summary of the development standards that apply within zoning districts.

- **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.
- **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.
- **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).

[Section 153.08](#) *Establishment of Development Permit*

A floodplain development permit shall be required to ensure conformance with the provisions of this chapter.

Section 153.42 Standards for Subdivision Proposals

(A) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with §§ 153.02, 153.03 and 153.04 of this chapter.

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ 153.08 and 153.27 and the provisions of §§ 153.40 et seq.

(C) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or five acres, whichever is lesser, if not otherwise provided pursuant to §§ 153.26 or 153.26(H).

(D) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

- **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).

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.

Section 154.040 Streets

(A) *All subdivisions with a potential to serve more than 100 dwelling units, or more than 25 nonresidential lots, shall have at least two points of vehicular access consisting of improved streets connected to the city's thoroughfare system; or, a single entrance street divided by a median where the median extends to the nearest internal street which provides at least two routes to the interior of the subdivision. Residential driveways shall not be located on the sides of the divided street parallel to and within the length of an entrance median.*

Section 154.040(I)

(I) *Street right-of-way and pavement widths shall be as shown on the comprehensive master plan and, where not shown therein, shall be not less than as follows.*

(1) *Arterial streets: minimum right-of-way width 80 feet to a maximum of 140 feet, with the pavement width section to be based on standard details for the specific street class, depending upon the location and existing streets with which street is to be connected.*

(2) *Collector streets: right-of-way width 60 feet, and pavement width of 41 feet back-to-back of curb. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.*

(3) *Local streets:*

(a) *Residential street: right-of-way width 50 feet, and pavement width of 31 feet back to back of curb. The right-of-way shall be wider or supplemented with abutting easements where all utilities are to be located in the front of lots; and*

(b) *Local street in multi-family, commercial or industrial areas: right-of-way width 60 feet, with pavement width section as identified in standard details or greater if required for drainage. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.*

- **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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.

Section 155.084 Industrial Use District

(D) Performance standards for industrial districts.

(1) Flammable, toxic and hazardous materials.

(a) The storage, manufacture, utilization or dispensing of substances which may constitute or may cause danger to public health, safety or welfare shall be conducted only within the limits and conditions specified in the latest edition of the International Fire Code.

(b) The emission of toxic or explosive vapors, dusts or aerosols into the atmosphere shall not exceed, at the facility property line, more than 50% of the limit of such as is given in "threshold limit values" as adopted at the most recent meeting of the American Conference of Industrial Hygienists.

(c) No form of flammable, toxic, or other hazardous material shall be released into or upon any utility line, pit, dump, open ground, stream or drainageway.

(d) The container size, location, design and construction of any storage tank, building or facility for any flammable, toxic or other hazardous material shall be approved by the Fire Marshal and the Building Official as a part of the building permit application and shall be based upon the requirements of the International Fire Code and the International Building Code.

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.

Section 155.146 PUD Planned Unit Development Overlay District

(A) Purpose.

(1) The purpose of planned unit development regulations is to allow more creative and imaginative design of land development than may be possible under district zoning regulations.

(a) Planned unit developments are intended to allow substantial flexibility in planning and design while maintaining consistency with the general provisions of this chapter and of the city's comprehensive plan.

(b) This flexibility often accrues in the form of relief from compliance with conventional Zoning Ordinance site and design requirements.

(c) Ideally, this flexibility results in a development that is better planned and makes more efficient use of resources than one produced in accordance with typical Zoning Ordinance standards.

- **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.

Section 155.045 Application Standards

An application for a zoning change, variance, special exception, special use permit, district overlay or any other action regarding zoning shall contain the minimum requirements of this section and shall comply with the terms herein.

(A) The application must be made by the title holders, their attorney-in-fact or a duly authorized agent.

(B) The application must contain the following minimum information:

(1) Name, mailing address and contact telephone number of the property owners, attorney-in-fact or agent;

(2) Legal description and street or mailing address, if any, of the property involved. A copy of the deed to the property, with recording data, and a copy of any power of attorney, or other information as will allow the Zoning Administrator to verify title to the property and the authority of any attorney-in-fact;

(3) The application shall be accompanied by the maps and plans as will enable the Zoning Administrator, the Board and Commission to make determinations as may be necessary under the terms of this chapter;

(4) A reference to the current zoning district or districts in which the property is situated;

(5) Information concerning the change or action requested, including appropriate reference to requested zoning district or districts;

(6) A statement that the information contained in the application is, within the knowledge of the applicant, true and correct;

(7) The application shall be accompanied by a nonrefundable fee in an amount to be set by the City Council, by resolution, from time to time; and

(8) The Zoning Administrator shall review the application for completeness with this subchapter. Within ten business days, written notice of the necessary documents or other information that the applicant failed to provide with the application shall be provided to the owner/applicant (as designated on the application form) for compliance. The written notice shall include the date the application will expire if the necessary documents or other information is not provided. Applications will expire within 45 days of the date the application is delivered to the city or sent to the city by certified mail if the applicant fails to provide the specified documents or other information required in the written notice to the applicant.

- **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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.

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.

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.
- **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.)
- **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

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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:**

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- 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)

Section 155.076 R-1 Single-Family Residential

(8) Landscaping. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.

Section 155.079 R-3 Multi-Family Residential

(8) Landscaping.

(a) Single-family and duplex uses. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.

(a) Multi-family. A minimum of 20% of the total developed lot area shall be planted and maintained as landscape area.

Section 155.146 PUD Planned Unit Development Overlay District

(6) Landscaping. Landscaping shall be provided for residential and nonresidential developments. A minimum of two trees and eight shrubs shall be provided for each single-family residential unit on each single-family residential lot. Fifty percent of the required trees may be located in an open space as defined herein. The specific placement, forward of the rear building line, shall be left to the discretion of the developer. Whenever practicable, the preservation of existing trees is encouraged.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.

Section 155.110 Table of Property Development Standards

The Table of Property Development Standards summarizes the maximum impervious cover for each zoning district.

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

Section 154.043 Blocks

(B) In general, intersecting streets determining the block length and width shall be provided at intervals so as to serve cross traffic adequately and to meet existing streets or in accordance with customary subdivision practices.

(1) Where no existing subdivision controls, the block lengths shall generally not exceed 800 feet along local streets, 1,000 feet along collector streets, or 1,200 feet along arterial streets. Where no existing subdivision controls, the blocks shall generally not be less than 400 feet along local or collector streets, or 500 feet along arterial streets.

(C) Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.

- **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.

Section 154.043 Blocks

(C) Where blocks in the vicinity of a school, park or shopping center are 1,000 feet or longer, the Commission may require a six-foot public pedestrian access easement near the middle of the block or at a street that terminates between streets at the ends of the block.

(D) Where no existing subdivision controls, the block depth shall be platted to give lots with depth to width ratios of generally not more than two and one-half to one and in no case more than four to one, and the design shall be such that the block depth generally shall not exceed 350 feet. When possible, the block width and length shall be such to allow tiers of lots back to back.

– **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.

– **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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- **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.
- **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.

Section 154.040 Streets

(E) Where the proposed subdivision abuts upon an existing street that does not conform to the comprehensive master plan, the subdivider shall dedicate one-half of the right-of-way sufficient to make the ultimate full right-of-way width conform.

- **Street Design:**
 - **Street Hierarchy:** Design local streets to prioritize pedestrian and bicycle movement, with traffic calming measures and low design speeds.

Section 154.040 Streets

(l) Street right-of-way and pavement widths shall be as shown on the comprehensive master plan and, where not shown therein, shall be not less than as follows.

(1) Arterial streets: minimum right-of-way width 80 feet to a maximum of 140 feet, with the pavement width section to be based on standard details for the specific street class, depending upon the location and existing streets with which street is to be connected.

(2) Collector streets: right-of-way width 60 feet, and pavement width of 41 feet back-to-back of curb. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.

(3) Local streets:

(a) Residential street: right-of-way width 50 feet, and pavement width of 31 feet back to back of curb. The right-of-way shall be wider or supplemented with abutting easements where all utilities are to be located in the front of lots; and

(b) Local street in multi-family, commercial or industrial areas: right-of-way width 60 feet, with pavement width section as identified in standard details or greater if required for drainage. The right-of-way may be required to be wider or supplemented with abutting easements where all utilities are to be located in the front of lots.

▪ **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.

- **Right of Way Dedication:** Require dedication of land for future transportation corridors, greenways, or emergency access as identified in the comprehensive plan.¹
- **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.²
 - Require multiple driveways for multifamily and commercial developments.
 - Require visible street signage and addresses; and access points into a subdivision.
- **Ingress & Egress Standards**

¹ 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).

² 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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- Require new streets, public or private, within a subdivision have access to an existing “dry” road during the 100- year flood.
- 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.

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.

154.042 Easements

(A) Easements across lots, along and abutting front lot lines or centered on rear or side lot lines shall be provided for utilities and drainage where necessary. Drainage easements must be exclusive and no improvements may be constructed therein. When the easements are shown on a subdivision plat, this exclusivity and restriction will be noted on the plat and included in any restrictive covenants. Drainage and utility easements will not be superimposed.

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.

(C) Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.

— **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.

Section 154.007 Definitions

ALLEYS. *Minor dedicated ways which are used primarily for utility lines and secondarily for vehicular service access to the back or the side of properties otherwise abutting on a street.*

EASEMENT. *A grant by the property owner to the public, a corporation or persons for the use of a strip or tract of land for specific purposes.*

Section 154.042 Easements

(A) Easements across lots, along and abutting front lot lines or centered on rear or side lot lines shall be provided for utilities and drainage where necessary. Drainage easements must be exclusive and no improvements may be constructed therein. When the easements are shown on a subdivision plat, this exclusivity and restriction will be noted on the plat and included in any restrictive covenants. Drainage and utility easements will not be superimposed.

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.

(C) Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.

(D) When the tract to be subdivided includes an easement of the blanket form or is a portion of a tract which includes such an easement, the subdivider shall take action as is necessary prior to submission of the preliminary plat to have the easement removed or to have the easement redefined to a specific location and to a specific size or width.

(E) Public access easements may be provided to accommodate a required public sidewalk along and adjacent to the public street right-of-way where conflicts with natural features, utility equipment or other appurtenances make the location of the sidewalk within the right-of-way impractical. Private access easements may be provided to accommodate joint vehicular access to adjacent lots in the subdivision.

– **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).³

Section 154.042 Easements

(C) Where alleys are not provided in a residential subdivision and utilities are to be provided in the rear of lots, a minimum seven and one-half-foot-wide utility easement shall be provided where needed along the rear of all lots within the subdivision. When one or more lots are located so that there is no similar easement in adjoining tracts, a minimum 15-foot wide easement will be provided.

Section 154.091 Preliminary Plat Specifications

(18) Provide recording information for any existing easements (water, sanitary sewer, storm drainage, electric, telephone, gas, cable television, fire lanes and the like) and rights-of-way. Provide all bearing and distance information on proposed easements including easements filed by separate instrument.

Section 153.42 Standards for Subdivision Proposals

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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

(E) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

- **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.
 - 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.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

Section 154.111 *Maintenance Bond*

Where public infrastructure improvements have been installed prior to recording of the plat, the property owner shall submit a maintenance bond from each contractor, three sealed sets of "as-built" plans or record drawings, one sealed set of "as-built" Mylars, and one CD containing a digital copy of all plans (in a format as determined by the City Engineer together with a letter stating the contractors' compliance in accordance with this chapter, and bearing sealed certification by the design engineer that all public improvements have been constructed in compliance with all city construction standards. The property owner also shall submit copies of the approved final plat with any required revisions on Mylars and in the format and number required by the City Engineer, together with all certifications required.

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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

- Encourage or require green infrastructure (e.g., rain gardens, permeable pavement, riparian buffers) to protect recharge areas and reduce runoff pollution.

Section 154.049 *Compliance with Minimum Stand Standards for Safe and Sanitary Water Supply and Sewer Services*

(B) The engineer's certificate attached to the plat shall certify that the water and sewer service facilities described by the plat are in compliance with the model rules adopted under Tex. Water Code, § 16.343.

- **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.
- **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.

Section 155.110 Table of Property Development Standards

The Table Chart outlines the maximum lot coverage / impervious surface limits for each zoning district.

- **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.

APPENDIX A: COMPARATIVE INVENTORY OF ZONING & SUBDIVISION TECHNIQUES

– 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.

Section 155.146 PUD Planned Unit Development Overlay District

(C) (5) Open space. At least 30% of the open space required in herein shall be converted to common areas used for recreation or parks.

Section 155.076 R-1 Single-Family Residential

(C)(8) Landscaping. A minimum of two trees and eight shrubs shall be preserved (if existing) or planted, and maintained for all new development.

Section 154.042 Easements

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.

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

Section 154.093 Engineering Plans

(A)(1) The developer shall have prepared a complete set of engineering plans showing details of all streets, alleys, drainage structures, water utility, sanitary sewer utility and electrical distribution system, combined with construction standards, specifications and related details, which are to be included for development.

Section 154.106 Construction Plans

(A) Three complete sets of construction plans, specifications and contracts including performance, payment and maintenance bonds covering the construction, for or other satisfactorily written descriptions shall be filed with the appropriate staff as designated by the City Planner upon filing of final plat. These shall show features such as roadways, cross sections and longitudinal slope for drainage, full description of proposed pavement or street improvement, its grade and slope, dimensions and specifications concerning public utilities to be installed showing proposed position on the ground, specifications of materials and construction, and profile maps of all sanitary and

storm sewers showing both ground surface and flow line, and other pertinent information of similar nature. These plans shall include, but not be limited to, the following:

- (1) Street plans;*
- (2) Drainage plans;*
- (3) Sanitary sewer plans;*
- (4) Water line plans; and*
- (5) Overall utility layout.*

(B) All the plans shall comply with specifications and design standards as described in this chapter.

Section 153.42 Standards for Subdivision Proposals

(B) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of §§ [153.08](#) and [153.27](#) and the provisions of §§ [153.40](#) et seq

– **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.

Section 154.107 Inspection of Improvements

(A) All construction, such as street grading, site grading, erosion control measures, street paving, drainage structures, curb and gutter, storm sewers, sanitary sewers and water mains shall be subject to inspection during the construction period by the city, and shall be constructed in accordance with the approved engineering plans and the standard specifications governing the work.

Section 154.111 Maintenance Bond

Where public infrastructure improvements have been installed prior to recording of the plat, the property owner shall submit a maintenance bond from each contractor, three sealed sets of "as-built" plans or record drawings, one sealed set of "as-built" Mylars, and one CD containing a digital copy of all plans (in a format as determined by the City Engineer together with a letter stating the contractors' compliance in accordance with this chapter, and bearing sealed certification by the design engineer that all public improvements have been constructed in compliance with all city construction standards. The property owner also shall submit copies of the approved final

plat with any required revisions on Mylars and in the format and number required by the City Engineer, together with all certifications required.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

– **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.

Section 154.117 *Ownership and Maintenance of Completed Public Facilities*

Upon acceptance of completed construction, all street improvements including construction of streets, alleys, thoroughfares, curbs, gutters, sidewalks, storm sewers and drainage channels within dedicated right-of-way and easements shall be and remain the property of the city. The Contractor shall be responsible for maintenance of the completed public improvement for a two-year period following acceptance by the city. After expiration of the two-year maintenance period, the improvements shall be maintained by the city.

154.110 *Performance Bond*

Prior to the recordation of any approved subdivision plat, the subdivider must file with the City Secretary a bond executed by a surety company, holding a license to do business in the state, in an amount equal to the estimate cost of constructing the required improvements, as approved by the City Engineer, guaranteeing to the city that all the improvements shall be constructed and completed in a satisfactory manner and within a period of two years from the date of plat approval. The cost estimate shall include an escalator clause equal to the percent change according to a locally recognized construction cost index for the preceding calendar quarter. The bond shall be approved by the City Attorney and shall be made payable to and enforceable by the city. Upon substantial compliance and

acceptance of all improvements by the City Engineer, the bond may be released in writing by the City Secretary and may be returned to the developer.

154.042 Easements

(B) Where a subdivision is traversed by a watercourse, drainage-way or channel, a storm drain easement or drainage right-of-way, conforming substantially with the course and of a width to fulfill the requirements of the city's flood hazard area standards and drainage standards, as calculated by the developer's engineer, will be provided. Non-restricted access shall be provided to all drainageways and storm system easements for maintenance by the responsible parties. Access shall be provided within 500 feet of all points where drainage easements exist, and parallel streets or parkways may be required for access to the easement.