

Adoption of the International Wildland-Urban Interface Code

Overview

The *International Wildland-Urban Interface Code* (WUI) is designed to bridge the gap between enforcement of the *International Building Code* and the *International Fire Code* by mitigating the hazard of wildfires through model code regulations. This comprehensive wildland-urban interface code establishes minimum regulations for land use and the built environment in areas that have been identified as wildland-urban interface areas. Adoption of the WUI code will provide the Austin Fire Department authority to enforce building construction and vegetation maintenance standards that will improve identified WUI areas (figure 1) within Austin's City limits and limited purpose jurisdictional areas. The requirements of the WUI code will not be retroactively applied to existing areas and structures unless those areas and structures have been designated as distinct hazards (see examples below) to life or property. The requirements of the WUI code will apply only to those areas and components of existing structures that are being remodeled or replaced and to all new construction being built or brought into the WUI.

Issues addressed in the WUI code include:

- Identification of WUI areas
- Emergency access
- Water supplies, including man made and drafting
- Fire protection plans
- Building construction requirements based on surrounding fuels and potential fire hazard severity (figure 2), defensible space, and water supplies
- Fire protection requirements including: fire sprinkler systems (optional or conditional), defensible space, spark arresters, LPG installations and storage of combustible materials

Distinct Hazard examples:

- Structures close to wildland areas
- Structures not ignition resistant or not protected from embers
- Structures near steep slopes
- Lack of space or poor water supply for firefighting operations
- Vegetation that could allow high fire intensity or fire transfer from surface to aerial, i.e. to tree canopies
- Lack of natural or built fire breaks
- Limited access

Figure 1: Austin Wildland-Urban Interface Code Applicability

WUI Area Footprint

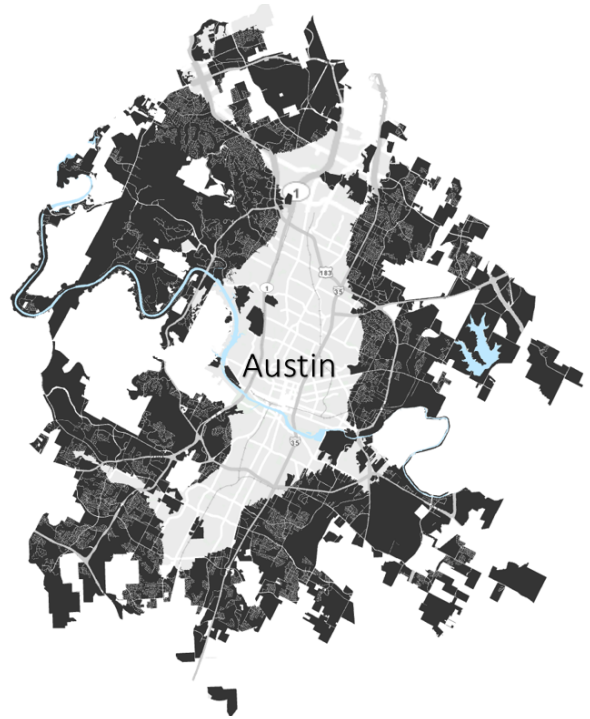
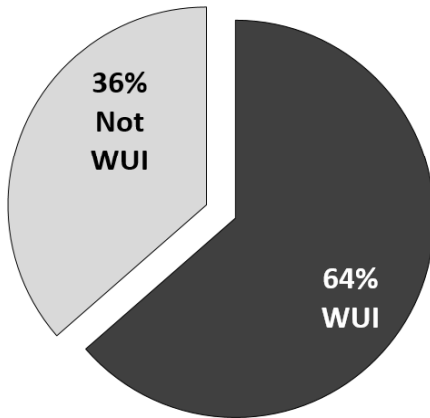
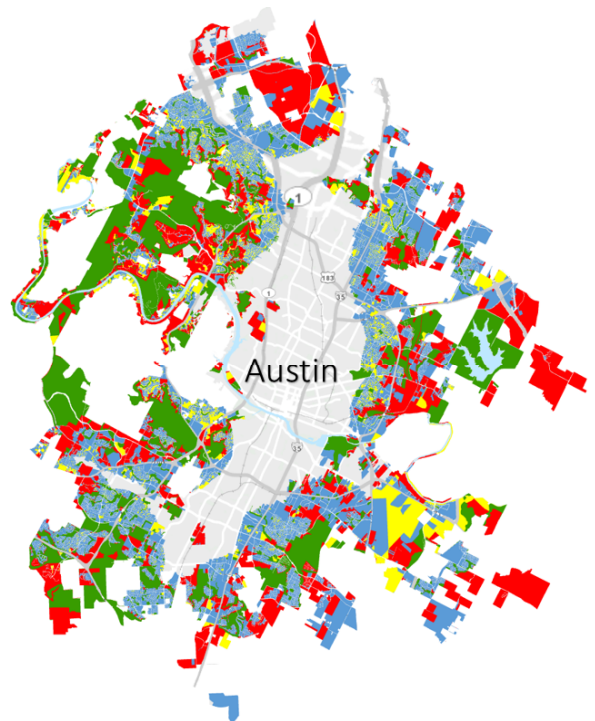
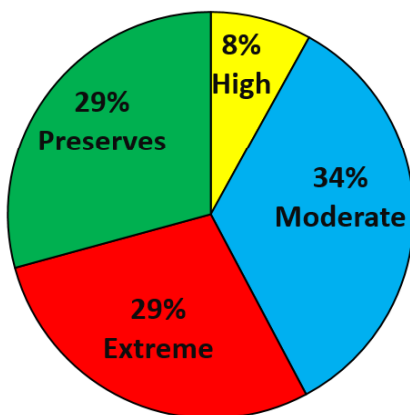


Figure 2: Austin Wildland-Urban Interface Hazard Zones

WUI Hazard Severity Zones



ORDINANCE NO. _____

AN ORDINANCE AMENDING ARTICLE 8 OF CITY CODE CHAPTER 25-12 BY ADDING SECTIONS 25-12-181 INTERNATIONAL WILDLAND-URBAN INTERFACE CODE, SECTION 25-12-182 CITATIONS TO THE WILDLAND-URBAN INTERFACE CODE AND SECTION 25-12-183 LOCAL AMENDMENTS TO THE WILDLAN-URBAN INTERFACE CODE.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

PART 1. Article 8 (*Reserved*) of City Code Chapter 25-12 (*Technical Codes*) is amended to change the title to Wildland-Urban Interface Code and add new sections 25-12-181, 25-12-182 and 25-12-183 to read as follows:

ARTICLE 8. WILDLAND-URBAN INTERFACE CODE *Reserved*.

§ 25-12-181 – WILDLAND-URBAN INTERFACE CODE.

(A) The International Wildland-Urban Interface Code and Appendices A through D, 2015 Edition, published by the International Code Council (“2015 Wildland-Urban Interface Code”), are adopted and incorporated by reference into this section with the changes described in Subsection (B) and amendments in Section 25-12-183 (*Local Amendments to the 2015 Wildland-Urban Interface Code*).

(B) The following sections are amended or deleted:

<u>101.1</u>	<u>102.4</u>	<u>102.4.2</u>	<u>103.1</u>	<u>103.2</u>
<u>103.3</u>	<u>104.1</u>	<u>104.2</u>	<u>104.3</u>	<u>104.3.1</u>
<u>104.4</u>	<u>104.5</u>	<u>104.6</u>	<u>104.7</u>	<u>105.1</u>
<u>105.2</u>	<u>105.3</u>	<u>106.2</u>	<u>107.1</u>	<u>107.2</u>
<u>107.3</u>	<u>107.4</u>	<u>107.4.1</u>	<u>107.4.2</u>	<u>107.5</u>
<u>107.6</u>	<u>107.6.1</u>	<u>107.7</u>	<u>107.8</u>	<u>107.1</u>
<u>108.1</u>	<u>108.2</u>	<u>108.3</u>	<u>108.7</u>	<u>108.8</u>
<u>108.9</u>	<u>108.1</u>	<u>108.11</u>	<u>108.12</u>	<u>109.1</u>
<u>109.1.1</u>	<u>109.1.2</u>	<u>109.1.2.1</u>	<u>109.1.2.2</u>	<u>109.1.2.3</u>
<u>109.1.3</u>	<u>109.1.4</u>	<u>109.1.4.1</u>	<u>109.1.4.2</u>	<u>109.1.4.3</u>
<u>109.2</u>	<u>109.2.1</u>	<u>109.2.2</u>	<u>109.3</u>	<u>109.4</u>
<u>109.4.1</u>	<u>109.4.2</u>	<u>109.4.3</u>	<u>109.4.4</u>	<u>109.4.5</u>
<u>109.4.5.1</u>	<u>109.4.5.2</u>	<u>109.4.5.2.1</u>	<u>109.4.5.3</u>	<u>109.4.5.3.1</u>
<u>109.4.5.4</u>	<u>109.4.5.5</u>	<u>109.4.5.6</u>	<u>109.4.6</u>	<u>109.4.7</u>
<u>109.4.8</u>	<u>110.1</u>	<u>110.2</u>	<u>110.3</u>	<u>110.4</u>
<u>111.1</u>	<u>111.2</u>	<u>111.3</u>	<u>112.1</u>	<u>112.2</u>
<u>112.3</u>	<u>112.4</u>	<u>112.5</u>	<u>113.1</u>	<u>113.2</u>
<u>114.1</u>	<u>114.2</u>	<u>114.3</u>	<u>114.4</u>	<u>202</u>
<u>302.1</u>	<u>302.3</u>	<u>402.1.1</u>	<u>402.1.2</u>	<u>402.2.1</u>
<u>402.2.2</u>	<u>403.1</u>	<u>403.3.2</u>	<u>403.3</u>	<u>404.1</u>
<u>404.2</u>	<u>404.3</u>	<u>404.3.1</u>	<u>404.3.2</u>	<u>404.4</u>
<u>404.5</u>	<u>404.6</u>	<u>404.7</u>	<u>404.8</u>	<u>404.9</u>
<u>404.1</u>	<u>404.10.1</u>	<u>404.10.2</u>	<u>404.10.3</u>	<u>501.1</u>
<u>Table 502.1</u>	<u>503.1</u>	<u>Table 503.1</u>	<u>504.1</u>	<u>504.3</u>
<u>504.5</u>	<u>504.7</u>	<u>504.7.1</u>	<u>504.8</u>	<u>504.9</u>
<u>504.1</u>	<u>504.11</u>	<u>505</u>	<u>506</u>	<u>602</u>
<u>603.2.2</u>	<u>603.2.3</u>	<u>Appendix D</u>		

(C) The city clerk shall retain a copy of the 2015 Wildland-Urban Interface Code with the official ordinances of the City of Austin.

Source: Ord. 201XXXXX-XX.

§ 25-12-182 – CITATIONS TO THE WILDLAND-URBAN INTERFACE CODE.

In the City Code, "Wildland-Urban Interface Code" means the 2015 Wildland-Urban Interface Code as adopted by Section 25-12-181 (*International*

1 Wildland-Urban Interface Code) and as amended by Section 25-12-183 (*Local*
2 *Amendments to the Wildland-Urban Interface Code*).

3 Source: Ord. 201XXXXX-XX.

4
5 **§ 25-12-183 - LOCAL AMENDMENTS TO THE WILDLAN-URBAN**
6 **INTERFACE CODE.**

7
8 The following provisions are local amendments to the 2015 Wildland-Urban
9 Interface Code. Each provision in this section is a substitute for the identically
10 numbered provision deleted by Section 25-12-181(B) (*Wildland-Urban Interface*
11 *Code*) or is an addition to the 2015 Wildland-Urban Interface Code:

12 **101.1 Title.** These regulations shall be known as the Wildland-Urban Interface Code
13 of the City of Austin ~~[NAME OF JURISDICTION]~~, hereinafter referred to as “this
14 code”. All references to jurisdiction in this code shall mean the City of Austin.

15 **102.4 Referenced codes and standards.** ~~The codes and standards referenced in this~~
16 ~~code shall be those that are listed in Chapter 7 (*Referenced Standards*) and Chapter~~
17 ~~80 of the Fire Code, as amended, establishes the codes and standards referenced in~~
18 ~~the Wildland-Urban Interface Code, and such codes and standards shall be~~
19 ~~considered as part of the requirements of this code to the prescribed extent of each~~
20 ~~such reference and as further regulated in Sections 102.4.1 and 102.4.2.~~

Commented [BM1]: 102.4 and 102.4.2 were amended to match the Fire Code. 102.4.1 was not changed as there were no conflicts identified as in the Fire Code conflicting mechanical and plumbing codes and standards.

21 **102.4.2 Provisions in referenced codes and standards.** Unless precedence is
22 specified by another ordinance of the City, w~~Where~~ the extent of the reference to a
23 referenced code or standard includes subject matter that is within the scope of this
24 code, the provisions of this code, as applicable, shall take precedence over the
25 provisions in the referenced standard.

26 **SECTION 103 FIRE PREVENTION ENFORCEMENT AGENCY**
27 **DESIGNATION OF THE CODE OFFICIAL**

Commented [BM2]: Changes in this section were made mostly to match the Fire Code.

28 **103.1 General** ~~Creation of enforcement agency.~~ The Austin Fire Department,
29 under the direction of the Fire Chief, is authorized to implement, administer and
30 enforce the Wildland-Urban Interface Code. All references to code official in this
31 code shall mean the Fire Chief. Appointments, deputies, authority of the code
32 official, compliance alternatives, appeals, permits, plans and specifications,
33 inspection and enforcement, certificate of completion, temporary structures and
34 uses, fees, service utilities, and stop work orders, shall follow the provisions of the
35 fire code, as amended, unless additional requirements specific to this code are left in

place or adopted locally. The department of ~~[INSERT NAME OF DEPARTMENT]~~ is hereby created and the official in charge shall be known as the code official.

107.1 General. Where not otherwise provided in the requirements of the ~~International Building Code or International~~ fire code, as amended, or other codes, as amended, permits are required in accordance with section 107.2 ~~through 107.10.~~

107.2 Permits required. Unless otherwise exempted, buildings or structures regulated by this code shall not be erected, constructed, altered, repaired, moved, removed, converted, demolished or changed in use of occupancy unless a separate permit for each building or structure has first been obtained from the code official.

~~For buildings or structures erected for temporary uses, see Appendix A, Section A108.3, of this code.~~

~~Where required by the code official, a permit shall be obtained for the following activities, operations, practices or functions within a wildland-urban interface area:~~

- ~~1. Automobile wrecking yard.~~
- ~~2. Candles and open flames in assembly areas.~~
- ~~3. Explosives or blasting agents.~~
- ~~4. Fireworks.~~
- ~~5. Flammable or combustible liquids.~~
- ~~6. Hazardous materials.~~
- ~~7. Liquefied petroleum gases.~~
- ~~2. Lumberyards.~~
- ~~9. Motor vehicle fuel dispensing stations.~~
- ~~10. Open burning.~~
- ~~11. Pyrotechnical special effects.~~
- ~~12. Tents, canopies and temporary membrane structures.~~
- ~~13.3. Tire storage.~~
- ~~14.4. Welding and cutting operations.~~

Commented [BM3]: Temporary uses and activities, operations, practices, or functions are all covered in the fire code as amended.

1 **108.1 General.** Plans, engineering calculations, diagrams and other data shall be
2 submitted ~~in at least two sets with each application for a permit as required by the~~
3 fire code, as amended, and as required by this code. ~~The construction documents~~
4 ~~shall be prepared by a registered design professional where required by the statutes~~
5 ~~of the jurisdiction in which the project is to be constructed. Where special conditions~~
6 ~~exist, the code official is authorized to require additional documents to be prepared~~
7 ~~by a registered design professional.~~

8 ~~**Exception:** Submission of plans, calculations, construction inspection~~
9 ~~requirements and other data, if it is found that the nature of the work applied for is~~
10 ~~such that reviewing of plans is not necessary to obtain compliance with this code.~~

11 **108.3 Site plan.** In addition to the requirement for plans in City Code Title 25, Land
12 Development including the fire code, as amended, and other codes, as amended, ~~the~~
13 ~~International Building Code~~, site plans and residential and commercial building
14 permit applications, shall include ~~topography, width and percent of grade of access~~
15 ~~roads, landscape and vegetation details if required to demonstrate defensible space~~
16 ~~or a vegetation management plan, locations of structures or building envelopes,~~
17 ~~existing or proposed overhead utilities, occupancy classification of buildings, types~~
18 ~~of ignition-resistant construction of buildings, structures and their appendages, and~~
19 ~~roof classification of buildings and site water supply systems.~~

20 **108.7 Vicinity plan.** In addition to requirements of the fire code as amended, the
21 requirements for site plans and residential and commercial building permit
22 applications, plans shall include details regarding the vicinity within 300 feet (91
23 440 mm) of lot lines, including other structures, slope, vegetation, *fuel breaks*, water
24 supply systems and access roads.

25 26 SECTION 202

27 DEFINITIONS

28 All definitions in Section 202 are adopted unless revised [R], new [N] or deleted
29 [D] as shown here.

30 **[R] FUEL, HEAVY.** Vegetation consisting of round wood 3 to 8 inches (76 to 203
31 mm) in diameter. See fuel models G, I, J, K and U for Closed Juniper Woodland
32 and Mixed Juniper Hardwood Forest described in Appendix D.

1 **[R] FUEL, LIGHT.** Vegetation consisting of herbaceous plants and round wood
2 less than ¼ inch (6.4 mm) in diameter. See fuel models ~~G, I, J, K and U~~ for Sparse
3 Dry Climate Grass described in Appendix D.

4 **[R] FUEL, MEDIUM.** Vegetation consisting of round wood 1/4 to 3 inches (6.4
5 to 76 mm) in diameter. See fuel models ~~G, I, J, K and U~~ for Aggrading Juniper
6 Shrub described in Appendix D.

7 **[R] GREEN BELT.** A series of connected open spaces that may follow natural
8 features such as ravines, creeks or streams ~~A fuel break designated for a use other~~
9 ~~than a fire break.~~

10 **[R] IGNITION-RESISTANT CONSTRUCTION, CLASS 1.** A schedule of
11 additional requirements for construction in wildland-urban interface areas based on
12 ~~extreme~~ fire hazard.

13 ~~**[D] IGNITION-RESISTANT CONSTRUCTION, CLASS 2.** A schedule of~~
14 ~~additional requirements for construction in wildland-urban interface areas based on~~
15 ~~high fire hazard.~~

16 ~~**[D] IGNITION-RESISTANT CONSTRUCTION, CLASS 3.** A schedule of~~
17 ~~additional requirements for construction in wildland-urban interface areas based on~~
18 ~~moderate fire hazard.~~

19 **[R] WILDLAND-URBAN INTERFACE AREAS.** Any developed area where
20 conditions affecting the combustibility of both wildland and built fuels allow for the
21 ignition and spread of fire through the combined fuel complex ~~That geographical~~
22 ~~area where structures and other human development meets or intermingles with~~
23 ~~wildland or vegetative fuels.~~

24 **[N] DISTINCT HAZARD.** Threat to life or property from conditions affecting
25 ignition, spread or intensity of wildfire or as determined by tables 502.1 and 503.1
26 or Appendix C.

28 **302.1 Declaration.** The Austin City Council ~~legislative body~~ shall declare the
29 *wildland-urban interface areas* within the jurisdiction. The *wildland-urban*
30 *interface areas* shall be based on the findings of fact. The *wildland-urban interface*
31 boundary shall correspond to natural or man made features.

32 **302.3 Review of wildland-urban interface areas.** The code official shall
33 reevaluate and recommend modification to the *wildland-urban interface areas* in

Commented [BM4]: Revised definition to allow inclusion of ember zone.

Commented [BM5]: Findings of fact to support the location of these areas will be drawn from the 2014 Austin-Travis County Community Wildfire Protection Plan and inputs used to establish the wildland-urban interface areas for Austin and Travis County; climate, topography, fuel configurations, both natural and built, and response capabilities.

1 accordance with section 302.1 on a 3-year basis or more frequently as deemed
2 necessary by the Austin City Council legislative body.

3 **402.1.1 Access.** New subdivisions, as determined by City Code Title 25, Land
4 Development, this jurisdiction shall be provided with fire apparatus access roads in
5 accordance with the fire code, as amended, ~~International Fire Code~~ and ~~access~~
6 ~~requirements in accordance with~~ Section 403.

7 **402.1.2 Water Supply.** New subdivisions, as determined by City Code Title 25,
8 Land Development, this jurisdiction shall be provided with fire apparatus access
9 roads in accordance with the fire code, as amended, ~~International Fire Code~~ and
10 ~~access requirements in accordance with~~ Section 404.

11 **402.2.1 Access.** Individual structures hereafter constructed or relocated into or
12 within *wildland-urban interface areas* shall be provided with fire apparatus access
13 and driveways in accordance with City Code Title 25, Land Development, the fire
14 code, as amended, ~~International Fire Code~~ and ~~driveways in accordance with~~
15 ~~Section 403.2. Marking of fire protection equipment shall be provided in accordance~~
16 ~~with Section 403.5 and address markers shall be provided in accordance with the fire~~
17 ~~code, as amended Section 403.6.~~

18 **402.2.2 Water Supply.** Individual structures hereafter constructed or relocated into
19 or within *wildland-urban interface areas* shall be provided with a conforming water
20 supply in accordance with City Code Title 25, Land Development, the fire code, as
21 amended, and Section 404.

22 **403.1 Restricted access.** Where emergency vehicle access is required because of
23 secured access roads or driveways or where immediate access is necessary for life
24 saving or fire-fighting purposes, the code official is authorized to require a key box
25 to be installed in an accessible location. The key box shall be of a type as required
26 by the fire code, as amended ~~approved by the code official and shall contain keys~~
27 ~~to gain necessary access as required by the code official.~~

28 **403.2.3 Service limitations.** A driveway shall not serve in excess of 8 ~~5~~ dwelling
29 units and shall be in accordance with City Code Title 25, Land Development, and
30 the fire code, as amended.

31 **Exception:** Where such driveways meet the requirements for fire apparatus
32 access roads in accordance with section 503 of the fire code, as amended
33 ~~International Fire Code.~~

34 **403.3 Fire apparatus access road.** Where required, fire apparatus access roads shall
35 be in accordance with the fire code, as amended ~~all weather roads with a minimum~~

width of 20 feet (6096 mm) and a clear height of 13 feet 6 inches (4115mm); shall be designed to accommodate the loads and turning radii for fire apparatus; and shall have a gradient negotiable by the specific fire apparatus normally used at that location within the jurisdiction. Dead-end roads in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds as *approved* by the code official. An all-weather road surface shall be any surface material acceptable to the code official that would normally allow the passage of emergency service vehicles typically used to respond to that location within the jurisdiction.

404.1 General. Where provided in order to qualify as a conforming water supply for the purpose of Table 503.1 or as required for new subdivisions in accordance with Section 402.1.2, adequate water supply shall be determined by the fire code Section 507.3 and Appendix B105.1 and B105.2, as amended ~~an approved water source shall have an adequate water supply for the use of the fire protection service~~ to protect buildings and structures from exterior fire sources or to suppress structure fires within the *wildland-urban interface area* of the jurisdiction in accordance with this section.

Exception: ~~Buildings containing only private garages, carports, sheds and agricultural buildings with a floor area of not more than 600 square feet (56 m²).~~

501.1 Scope. Buildings and structures located in the wildland urban interface area shall be constructed in accordance with City Code Title 25, Land Development including the fire code, as amended, other codes, as amended, *International Building Code* and this code.

Exceptions:

1. Accessory structures not exceeding the allowed square footage per City Code Title 25, Land Development including the fire code, as amended, and other codes, as amended, 120 square feet (11 m²) in floor area where located not less than 50 feet (15 240 mm) from buildings containing habitable spaces.
2. Agricultural buildings not less than 50 feet (15 240 mm) from buildings containing habitable spaces.

501.2 Objective. The objective of this chapter is to establish minimum standards to locate, design and construct buildings or portions thereof for the protection of life and property, to resist damage from wildfires, and to mitigate building and structure fires from spreading to wildland fuels. The minimum standards set forth in this chapter

Commented [BM6]: Sections 403.4, 403.4.1, 403.5, 403.6, 403.6.1, 403.6.2, and 403.6.3 proposed to be deleted because marking of roads and fire protection equipment and address markers are covered in the Fire Code and Land Development Code.

1 vary with proximity to 40 acre or greater contiguous wildland fuel areas ~~the critical~~
2 ~~fire weather~~, slope, and fuel type to provide increased protection, above the
3 requirements set forth in the fire code, as amended, and other codes, as amended,
4 *International Building Code*, from the various levels of hazard.

DRAFT

Table 502.1
Fire Hazard Severity

Fuel- Model ^b	Critical Fire Weather Frequency								
	<1 Day ^a			2 to 7 days ^a			>8 days		
	Slope (%)			Slope (%)			Slope (%)		
	<40	41 to 60	>61	<40	41 to 60	>61	<40	41 to 60	>61
Light	M	M	M	M	M	M	M	M	H
Medium	M	M	H	H	H	H	E	E	E
Heavy	H	H	H	H	E	E	E	E	E

Fuel Model ^a	Proximity to Contiguous (40 Acres) Wildland Fuels					
	150' to 1.5 miles			< 150'		
	Slope (%)					
	< 10	10 to 25	> 25	< 10	10 to 25	> 25
Light	M	M	M	M	M	H
Medium	M	M	H	E	E	E
Heavy	H	H	H	E	E	E

E = Extreme hazard;

H = High hazard;

M = Moderate hazard

a. Days per annum

b. Where required by the Fire Chief code official, fuel classification shall be based on the historical fuel type for the area.

503.1 General. Buildings and structures hereafter constructed, modified or relocated into or within the *wildland-urban interface areas* shall meet construction requirements in accordance with table 503.1. ~~Class 1, Class 2 or Class 2-3, i~~ Ignition resistant construction shall be in accordance with Sections 504, ~~505 and 506~~ *respectively*. Materials required to be ignition-resistant materials shall comply with the requirements of Section 503.2.

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION^a

	Fire Hazard Severity					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply ^b		Water Supply ^b		Water Supply ^b	
	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e
Defensible Space ^c						
Nonconforming	IR-2	IR-1	IR-1	IR-1 N.C.	IR-1 N.C.	Not Permitted
Conforming	IR-3	IR-2	IR-2	IR-1	IR-1	IR-1 N.C.
1.5 x Conforming	Not required	IR-3	IR-3	IR-2	IR-2	IR-1

	Fire Hazard Severity					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply ^b		Water Supply ^b		Water Supply ^b	
	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e
Defensible Space ^c						
Nonconforming	R	R	R	R	R	NP
Conforming	NR	R	R	R	R	R
1.5 x Conforming	NR	NR	NR	R	R	R

R = required

NR = not required

NP = not permitted

a. Access shall be in accordance with Section 403.

b. Subdivision shall have a conforming water supply in accordance with Section 402.1.

IR-1 = Ignition-resistant construction in accordance with Section 504.

IR-2 = Ignition-resistant construction in accordance with Section 505.

IR-3 = Ignition-resistant construction in accordance with Section 506.

N.C. = Exterior walls shall have a fire resistance rating of not less than 1 hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.

c. Conformance based on Section 603.

d. Conformance based on Section 404.

e. A nonconforming water supply is any water system or source that does not comply with Section 404, including situations where there is no water supply for structure protection or fire suppression.

Section 504

Class 1 Ignition Resistant Construction

504.1 General. Class 1 Ignition-resistant construction shall be in accordance with sections 504.2 through 504.11.

Commented [BM7]: Class 1, 2 and 3 ignition resistant construction sections from the model code were combined in 1 section. HBA representatives claim all new construction already meets class 3 standards. It is not necessary to have a separate section for class 2 since the only differences from class 1 were class B roof allowed and less protection of eaves. Therefor all new construction in WUI areas will require class A roofs. The less protective standard for eaves is added to section 504.3 here.

504.3 Protection of eaves. Eaves and soffits 50 feet (15 240 mm) or closer to a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel shall be protected on the exposed underside by ignition-resistant materials or by materials *approved* for not less than 1-hour fire-resistance-rated construction, 2-inch (51 mm) nominal dimension lumber, or 1-inch (25 mm) nominal fire-retardant treated lumber or ¾-inch (19.1 mm) nominal fire-retardant-treated plywood, identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*. Fascias are required and shall be protected on the backside by ignition-resistant materials or by materials *approved* for not less than 1-hour fire-resistance-rated construction or 2-inch (51 mm) nominal dimension lumber.

Combustible eaves, fascias and soffits more than 50 feet (15 240 mm) from a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel shall be enclosed with solid materials with a minimum thickness of ¾-inch (19 mm). Exposed rafter tails shall not be permitted unless constructed of heavy timber materials.

Commented [BM8]: From IWUIC IR class 2

504.5 Exterior walls. Exterior walls of buildings or structures 50 feet (15 240 mm) or closer to a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel shall be constructed with one of the following methods:

1. Materials *approved* for not less than 1-hour fire-resistance-rated construction on the exterior side.
2. *Approved noncombustible* materials.
3. Heavy timber or log wall construction.
4. Fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.
5. Ignition-resistant materials on the exterior side.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.

504.7 Appendages and structures. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks and fences (minimum 10 feet (3 048 mm) from attachment point), shall be not less than 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible* materials.

Commented [BM9]: 5' may be adequate or "at least" could be qualified as determined by Fire Chief or if the adjacent exterior components are ignition resistant.

2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.

3. Ignition-resistant building materials in accordance with Section 503.2.

504.8 Exterior glazing. ~~Exterior exterior~~ windows, window walls and glazed doors, windows within exterior doors, and skylights 50 feet (15 240 mm) or closer to a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel shall be tempered glass, multilayered glazed panels, glass block or have a fire protection rating of not less than 20 minutes.

504.9 Exterior doors. Exterior doors 50 feet (15 240 mm) or closer to a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel shall be approved *noncombustible* construction, solid core wood not less than 1 ¾ inches thick (44 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 504.8.

Exception: Vehicle access doors.

504.10 Vents. Attic ventilation openings, foundation or underfloor vents, or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered with *noncombustible* corrosion-resistant mesh with openings not to exceed 1/8 inch (3.3 mm) ¼ inch (6.4 mm), or shall be designed and *approved* to prevent flame or ember penetration into the structure.

Exception: Openings required to be clear by other codes, as amended, provided flame or ember penetration could not reach combustible materials or surfaces.

504.11 Detached accessory structures. Detached accessory structures 50 feet (15 240 mm) or closer to a 40 acre (4.05 ha) or greater contiguous area of light, medium and/or heavy fuel and less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials *approved* for not less than 1-hour fire resistance-rated construction, heavy timber, log wall construction, or constructed with *approved noncombustible* materials or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

603.2.2 Trees. Trees are allowed within the *defensible space* provided they are in accordance with Section 604.4 ~~the horizontal distance between crowns of adjacent~~

Commented [BM10]: This would address dryer vents or similar exhaust vents where debris accumulation could cause a fire hazard or impede equipment function.

1 trees and structures, overhead electric facilities or unmodified fuel is not less than 10
2 feet (3048 mm).

3 **603.2.3 Groundcover.** Fallen deadwood, Deadwood and litter, leaves, needles, and
4 other dead vegetative material shall be regularly removed from trees the ground in
5 the defensible space. Where ornamental vegetative fuels or cultivated ground
6 Ground cover vegetation and other plants not considered trees, such as green grass,
7 ivy, succulents or similar plants are used as ground cover, they are allowed in to be
8 within the designated defensible space, provided they meet conditions outlined in
9 the Fire Criteria Manual to reduce fire intensity and risk of structure ignition do not
10 form a means of transmitting fire from native growth to any structure.

11 **604.4 Trees.** Tree crowns extending to within 10 feet (3048 mm) of any structure
12 shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048). Trees
13 crowns within the defensible space shall be maintained pruned to remove limbs
14 located less than 6 feet (1829 mm) above the ground surface adjacent to the trees to
15 prevent fire from entering or spreading through tree canopies as defined in the Fire
16 Criteria Manual and in accordance with industry standards for tree care, transmission
17 to any structure and to provide a clear area for fire suppression operations. Overhead
18 electric line clearance shall comply with the City of Austin Utilities Criteria Manual
19 Section 1 - Austin Energy Design Criteria.

20 **606.1 General.** The storage of liquefied petroleum gas (LPgas) and the installation
21 and maintenance of pertinent equipment shall be in accordance with the fire code,
22 as amended, International Fire Code or, in the absence thereof, recognized standards
23 and NFPA 58.

24 **606.2 Location of containers or tanks.** LP-gas containers or tanks shall be located
25 within the defensible space in accordance with the fire code, as amended,
26 International Fire Code and NFPA 58.

Appendix D (replaced entirely)

FUEL MODELS FIRE DANGER RATING SYSTEM

30 (Section 3.2.1 from the Austin-Travis County Community Wildfire Protection Plan available on-
31 line at <http://www.austintexas.gov/wildfireprotectionplan> or by contacting the City of Austin Fire
32 Department. Section references and citations are as found in that plan.)

33
34 The most commonly used fire behavior fuel models assume that central Texas vegetation
35 is best described by fuel model variables representative of a shrub group that includes southern
36 California chaparral. However, recent research indicates that while Texas juniper woodlands

Commented [BM11]: Criteria can be defined to allow predictability based on structure ignition potential, proximity to contiguous fuel areas, existence of other structures or features that would prevent spread of ground fires, and quantifiable characteristics of landscape vegetative fuels such as vertical and horizontal continuity, and factors that would exceed a threshold of intensity given exposure during an extreme weather event and fire approaching or on a property. The intent is to establish minimum standards for public safety. Best practices for maintaining defensible space beyond this code would remain the responsibility of the property owner.

Commented [BM12]: Similar to addressing ground vegetation, tree criteria can be defined for predictability with the objective of breaking continuity and in some cases reducing canopy density to reduce risk of structure exposure to ignition from embers, excessive radiant heat, or conduction. Tree care industry standards definitions for canopy raising and thinning would be applied here.

1 may look similar to California chaparral communities, fuel loads and fire behavior are distinctly
2 different (White et al. 2009, White et al. 2010). Specifically, Ashe juniper and certain chaparral
3 species may appear to have similar growth forms and vegetative characteristics, but chaparral
4 species are highly flammable and cold and drought intolerant, which can lead to lots of dead fuel.
5 In contrast, central Texas vegetation has higher live-fuel moistures and less dead-fuel loads than
6 are usually associated with chaparral vegetation (White et al. 2009, White et al. 2010). Fires
7 originating in juniper woodlands have slower rates of spread than fires in chaparral vegetation
8 communities because the juniper canopy has a higher proportion of live, moist foliage. Also,
9 juniper woodlands often include hardwoods, such as oaks, that reduce the potential for canopy
10 fire spread with their relatively sparse arrangement of leaves and branches in the canopy.
11 Due to these attributes, active canopy fires are rare in mature juniper/hardwood forest.
12 However, when active canopy fire does occur (i.e., during extreme drought and high
13 temperatures) in central Texas woodlands, specifically closed juniper and aggraded juniper
14 woodlands (see below for further descriptions), the fire intensity causes stand-replacing fires
15 which is very similar to how fire behaves in lodgepole pine in western North America. For these
16 reasons, and for the purposes of this document and the model described in Section 4.0,
17 regionally specific fuel type data were developed for the Balcones Canyonlands Preserve by
18 White et al. (2009) to more accurately model fire behavior in central Texas.

19
20 **Sparse, dry-climate grass**, or grassland, is dominated by generally short grasses that
21 may be sparse or discontinuous (Scott and Burgan 2005). Pastures are also considered
22 grasslands.

23
24 **Aggrading juniper shrub** fuel type is dominated by live oak-juniper and juniper
25 savanna. It's present throughout the county and includes both Ashe juniper (*Juniperus*
26 *ashei*), predominantly in western Travis County, and eastern redcedar (*Juniperus*
27 *virginiana*), predominately in eastern Travis County. Juniper scorch and mortality values
28 by size class are nearly identical between these two *Juniperus* species (Engle and Stritzke
29 1995).

30
31 **Closed juniper woodland** has sufficient canopy closure to limit growth of tall grass (18
32 inches or more tall) to less than 50 percent of the ground cover. Juniper, including Ashe
33 juniper and/or eastern redcedar, and deciduous trees are the dominant vegetation types.

34
35 **Mixed juniper hardwood forest** fuel type is 25-percent juniper, 75-percent deciduous
36 class.
37

Austin Wildland-Urban Interface Code

- A Wildland-Urban Interface (WUI) Code will give the Austin Fire Department authority to enforce building construction and vegetation maintenance standards, which will improve the area for firefighting operations and reduce the likelihood of structures igniting from wildfire and of structure fires spreading to wildlands.
- The code will apply to all structures and premises in identified WUI areas within Austin's zoning jurisdiction (City limits and limited purpose jurisdiction). Existing structures and uses will not need to change if legal at the time of code adoption and if they do not constitute a distinct danger to life or property. Remodeled or relocated structures will need to meet code for replaced components only.
- WUI areas will be mapped and defined by proximity to 40 acre or larger wildland areas.
- Permitting and inspections will follow processes already established in the fire code. Permits for hazardous uses and activities are covered in the Fire Code.
- Site plan review for wildfire safety will require type of ignition resistant construction and roof classification in addition to information already required by the City's Land Development and fire codes; topography, access roads, landscape and vegetation details, locations of structures, overhead utilities, and occupancy classification of buildings.
- Access and water supply are not included since they are already required by the Fire Code. Private driveways longer than 150 feet will need to meet apparatus access standards. A fire protection plan could be used to reduce a hazard severity rating and allow otherwise unpermitted uses.
- Hazard severity will be based on proximity to a 40 acre or greater wildland area, topography, and the wildland vegetation as a fuel type.
- Building Permits for ignition resistant construction will be required per the following table:

	Fire Hazard Severity					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply ^b		Water Supply ^b		Water Supply ^b	
	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e
Defensible Space ^c						
Nonconforming	R	R	R	R	R	NP
Conforming	NR	R	R	R	R	R
1.5 x Conforming	NR	NR	NR	R	R	R

R-required NR-not required NP-not permitted

- Components of ignition resistant construction:
 - Class A roof
 - Protection of eaves – Protect exposed undersides and fascia backsides with 1 hour fire-resistance rated if within 50 feet of 40 acre or more contiguous wildland fuels area. Beyond 50 feet enclose soffits with minimum ¾" material and no exposed rafter tails unless heavy timber.
 - Gutters and downspouts ignition resistant and debris preventive
 - Exterior walls within 50 feet of 40 acre or more contiguous wildland fuels area 1-hour fire-resistance-rated or other approved materials or methods
 - Underfloor areas enclosed with exception for exposed fire-resistance-rated construction
 - Appendages and projections such as unenclosed accessory structures, decks, and fences 1-hour fire resistance-rated or other approved method and underfloor areas over 10 percent or greater slopes enclosed with 1-hour fire-resistance-rated construction.
 - Exterior glazing (windows) within 50 feet of 40 acre or more contiguous wildland fuels area tempered glass, multilayered glazed panels, glass block or fire protection rating of not less than 20 minutes.

Austin Wildland-Urban Interface Code

- Exterior doors within 50 feet of 40 acre or more contiguous wildland fuels area required to be non-combustible or have a fire protection rating of not less than 20 minutes.
- Vents and openings:
 - Maximum 144 square inches (1 foot by 1 foot)
 - Screened with 1/8" noncombustible corrosion resistant mesh to prevent ember penetration unless penetration area is minimum 1- hour fire-resistance-rated, and does not collect flammable debris
 - Not allowed in certain soffit, eaves, and roof overhangs
 - Gable and end dormer vents not allowed within 10 feet of lot line
 - Underfloor ventilation openings as close to grade as possible
- Detached accessory structures within 50 feet of 40 acre or more contiguous wildland fuels area and less than 50 feet from a habitable structure exterior walls 1-hour fire-resistance-rated, underfloor enclosed if over 10 percent slope unless exposure is 1-hour fire-resistance-rated.
- Defensible space
 - Applies to new and existing buildings, structures, and premises within wildland-urban interface areas. Existing for distinct hazards such as structures close to wildland areas, structures not ignition resistant and/or not protected from embers, structures near steep slopes, limited access, lack of space or poor water supply for firefighting operations, vegetation that allows for high intensity fire or that can transfer fire to tree canopies, and/or lack of natural or built fire breaks.
 - Fuel modification distance determined by hazard severity (fuel modification is defined as the method of modifying fuel load by reducing the amount of non-fire resistive vegetation or altering the type of vegetation to reduce the fuel load)
 - Moderate severity – 30 feet
 - High severity – 50 feet
 - Extreme severity – 100 feet
 - Trees and vegetation must allow space for firefighting operations. The vegetation will not maintain fire intensity beyond an identified threshold. Maintain vegetation so that it does not allow fire to transfer to or be carried into tree canopies.
 - Remove dead vegetated material from ground, roofs, gutters, and trees to maintain minimum clearances for firefighting operations, lower fire intensity, and to prevent fire from transferring to or being carried in tree canopies.
- Administrative rules chapter in Fire Criteria Manual
 - Interpretations, standards, review and permitting procedures
 - Inputs used to develop areas map
 - Ignition resistant construction application
 - Defensible space
 - further define distinct hazard and rank contributing conditions
 - define non-fire resistive vegetation
 - define threshold for fire intensity
 - define characteristics of vegetation density, arrangement, and composition that would reduce fire intensity and reduce risk of fire spread to tree canopies
 - define clear area for fire suppression activities

Additional Information

Model code on-line:

<https://codes.iccsafe.org/content/IWUIC2015>

Risk Analysis Storyboard:

<https://arcg.is/GGGC8>