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**Williamson County Interjurisdictional CWPP**

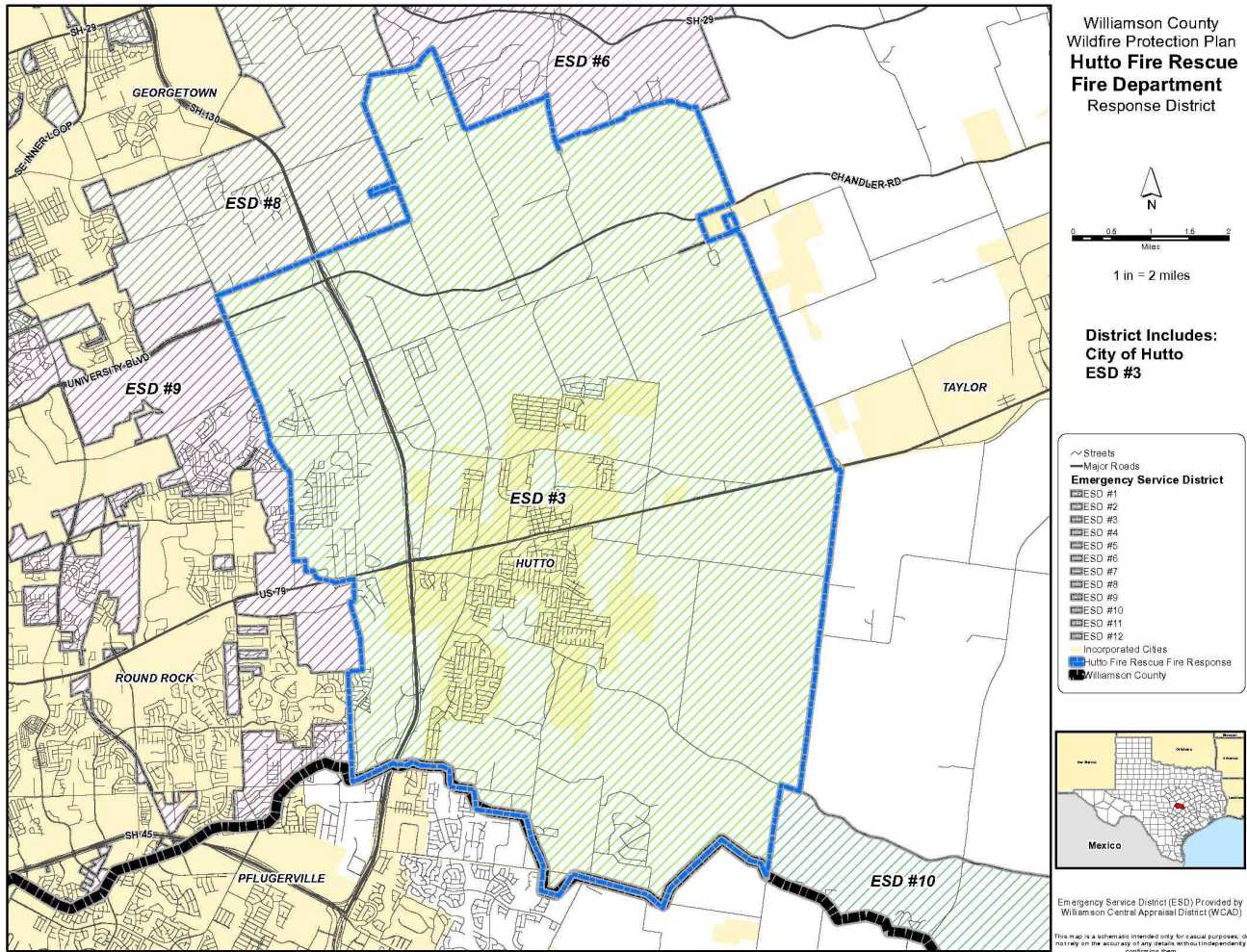
## **Annex 8: Hutto Fire Rescue**

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# ANNEX 8: WILLIAMSON COUNTY ESD #3 / HUTTO FIRE RESCUE

## INTRODUCTION

### Organization and Jurisdiction



Hutto Fire Rescue responds to all fire, motor vehicle collisions, and emergency medical situations throughout the Hutto community. Emergency Medical Services (EMS) is provided by Williamson County EMS. There is an ambulance staffed full-time in Hutto (housed in the fire station) by Williamson County Paramedics. All Hutto Fire Rescue full-time and part-time firefighters, as well as some volunteer firefighters, are trained to at least the Emergency Medical Technician – Basic level.

Name:	Williamson County ESD #3 / Hutto Fire Rescue
Address:	501 Exchange Blvd., Hutto, TX 78634
Department Type (volunteer or paid):	Combination
Number of Stations (please provide address of each station):	1
Municipalities covered:	City of Hutto (7.5 sq. miles) and surrounding 58 square miles
Types of Services Provided (Firefighting, EMS, emergency response, HAZMAT, dispatch, training, etc.):	All
Firefighting Personnel:	
Full-Time Paid Firefighters	24
Part-Time Paid Firefighters	6
Volunteer Firefighters	5
Non-Firefighting Support Personnel:	
Non-Firefighting Paid Staff	1
Non-Firefighting Volunteers	0
Firefighting Equipment List quantity, type, etc.):	2 Class A Engines 2000 gallon tender 2 400-gallon brush trucks Hand tools, wildland packs, etc.
Other Firefighting Resources (Mutual aid, state resources, etc.):	Auto aid agreements with Taylor and Round Rock Mutual aid agreements with all surrounding municipalities in Williamson (Pflugerville and County)

## CURRENT /HISTORICAL MITIGATION ACTIONS AND PROGRAMS

Hutto Fire Rescue identified the following activities and programs the department has regarding wildfires:

In-house training for all firefighters

Literature available to hand out to public

Currently working on a wildfire program (FireWise; Ready Set Go) – but the Department does have information available if residents ask

## PUBLIC EDUCATION AND OUTREACH PROGRAMS

Hutto Fire Rescue provides the following public education and outreach programs to the community:

- Literature available to hand out to public
- Currently working on a wildfire program (FireWise; Ready Set Go) – but the Department does have information available if residents ask
- Provide programs for schools – fire prevention week but conduct year round due to the size of school system and only one station
- Bounce house for community events

Hutto Fire Rescue maintains a Facebook page to use as an effective tool to communicate with residents. They use their Facebook page to post updates on fires, accidents, and rescue incidents; share public service announcements; and inform people of upcoming events. Additionally, Hutto Fire Rescue maintains a website (<http://www.huttofirerescue.org/>) that provides information about the Department, services they provide, and public education information.

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	2 (city) 8B (ESD #3)	2012
Storm Ready certification	Yes	Williamson County	
Firewise Communities classification	No		
Natural Disaster/Safety Programs in/for Schools	Yes		
Public Education Program/Outreach (through website, social media)	Yes		

## CAPABILITIES ASSESSMENT

### Emergency Response Capabilities

The department and City of Hutto follow the Williamson County Emergency Operations Plan. Hutto Fire Rescue has the following emergency response capabilities:

- The department participates in search and rescue; however, they only start the process and need the specialty team from Williamson County
- Wildfire-specific training and equipment
- Mutual aid
- Training and certifications – all firefighters are trained to Texas State wildfire courses
- Flood response / rescue – the department has participated; however, Williamson County has specialty teams for this
- Recently purchased two brush trucks specially for wildland fire fighting
- Two Type VI engines (brush trucks) and Tactical Tender specially designed for wildland fire fighting
- Department has special equipment (hoses, etc.) to start fighting wildfires until the forest service takes over

### Policies

Hutto Fire Rescue has specific policies for wildfire and all hazards response.

### Regulations

Hutto Fire Rescue has specific regulations for wildfire and all hazards response.

### Ordinances and Codes

Hutto Fire Rescue follows the 2009 International Fire Code with amendments.

### Plans, Reports and Studies

At the time of this planning process, Hutto Fire Rescue does not have plans, reports or studies pertaining to wildfire or other natural hazards.

## Resources

None identified

## IDENTIFY CRITICAL INFRASTRUCTURE AND COMMUNITY VALUES AT RISK

### Critical Infrastructure within the Hutto Fire Rescue

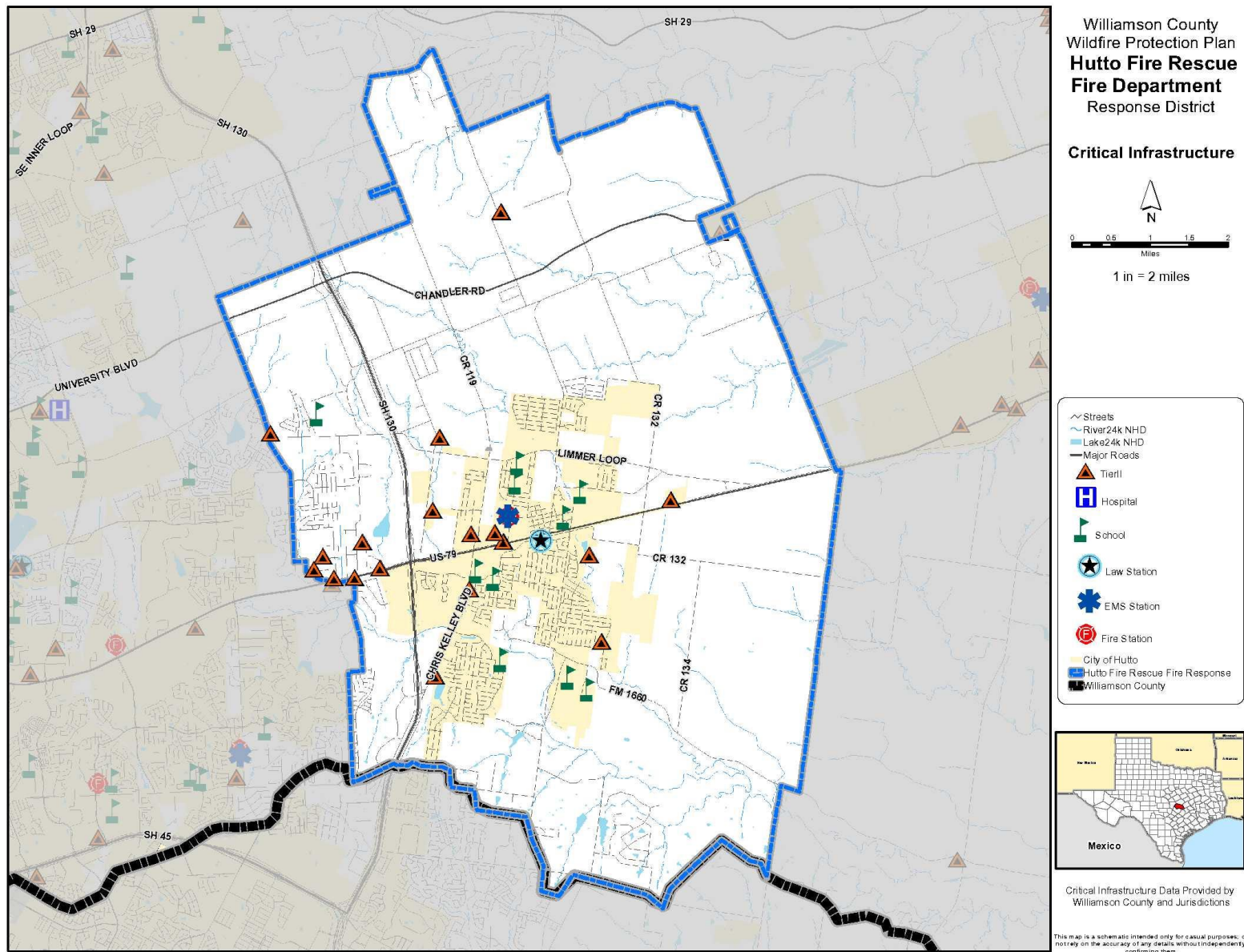
One of the critical elements of the Community Wildfire Protection Plan is to analyze where the critical infrastructure within the district is located in comparison to the highest risk areas for wildfire. Critical facilities typically fall within the following categories: Hospitals, Schools, Law Enforcement, Fire, EMS and Tier II facilities. Within the Hutto Volunteer Fire Department. The following summarizes the general types of critical infrastructure located within the District.

Hutto Fire Rescue Critical Infrastructure Summary	
Facility Type	Number of Facilities
Hospitals	0
Schools	10
Law Enforcement	1
Fire	1
Emergency Medical Services (EMS)	1
Tier II Facilities	18

As mentioned above, once the critical facilities are identified, the next step is to assess where and which facilities may be located in high risk areas and to then determine whether these facilities are candidates for special actions / measures like hardening, increased fire proofing, wildfire mitigation or relocation, etc. This plan analyzed impacts based in five wildfire factors: Wildland Urban Interface, Flame Length, Surface Fuels, Vegetation and Wildfire Threat as mapped and defined by the Texas State Forest Service and Texas A&M. More detail is provided later in this annex as to the level and possible impacts of these five characteristics.



Figure 1. Hutto Critical Infrastructure



## Wildland Urban Interface Fire Hazard and Environment

As mentioned previously in the Williamson County Community Wildfire Protection Plan (CWPP) on the national level, following the establishment of the National Fire Plan via Executive Order due to the 2000 national wildfire season, work throughout the country was undertaken to identify areas at high risk from wildfire; this work would be used to identify the location of hazardous fuel reduction projects designed to reduce this risk. Communities across the nation that are considered to have a WUI have been identified; this list was subsequently published in the Federal Register.

Loss of structures due to wildland fires has been attributed to many factors, one of which is the proximity of hazardous fuels to homes and communities. During periods of hot, dry weather, the buildup of vegetation that has occurred on some Federal, State, and private lands in the vicinity of communities poses a potentially high risk of damage to homes and other structures, disruption to the local economy, or loss of life.

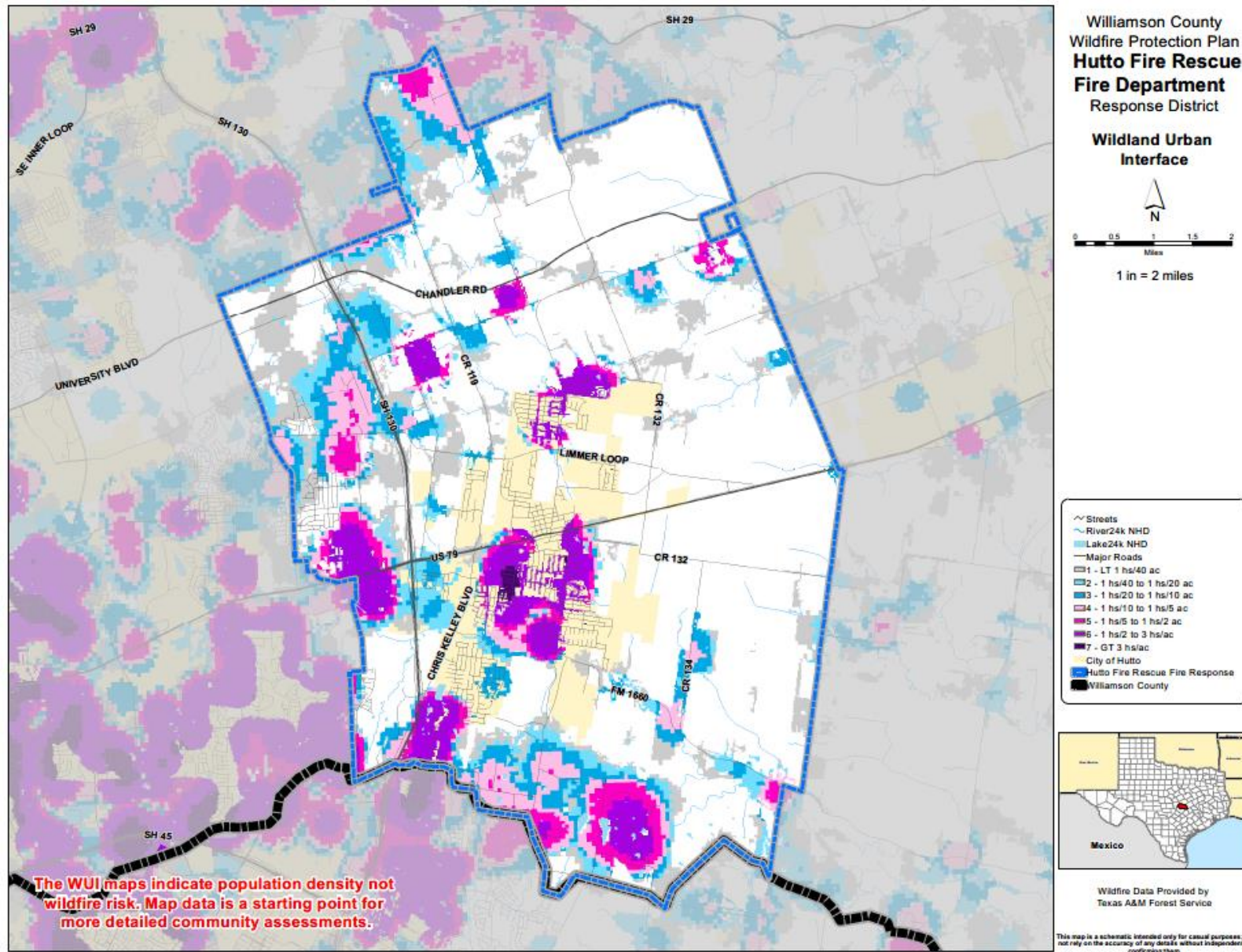
Other factors—including weather conditions and patterns, and the hazardous fuels conditions in the immediate vicinity of homes, businesses, and other structures—play important roles in the spread of wildland fire. Reducing hazardous fuel near communities may reduce, but not eliminate, wildfire risks to these communities. Some risk is inherent to communities that exist in fire-dependent ecosystems. Private landowners may help reduce this risk by creating defensible space around their homes and businesses, and by using fire-resistant materials in building those structures. Without such precautionary measures, fuel reduction on Federal land in the vicinity may be ineffective in significantly reducing community risk.

Per the Texas A&M Forest Service “The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially increases the risk from wildfire. In Texas nearly 85% of wildfires occur within two miles of a community.” Texas is one of the fastest growing states in the Nation, with much of this growth occurring adjacent to metropolitan areas. This increase in population across the state will impact counties and communities that are located within the Wildland Urban Interface (WUI).

For the Hutto Fire Rescue project area, it is estimated that 9,177 people or 67% of the total project area population (13,756) live within the WUI. The Texas A&M Forest Service WUI dataset is derived using advanced modeling techniques based on the Where People Live dataset and LandScan USA population count data available from the Department of Homeland Security, HSIP Freedom Data Set. WUI is simply a subset of the Where People Live dataset. The primary difference is populated areas surrounded by sufficient non-burnable areas (i.e. interior urban areas) are removed from the Where People Live data set, as these areas are not expected to be directly impacted by a wildfire.



Figure 2. Wildland Urban Interface





	Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
	LT 1hs/40ac	101	1.1 %	3,707	28.6 %
	1hs/40ac to 1hs/20ac	138	1.5 %	1,867	14.4 %
	1hs/20ac to 1hs/10ac	427	4.7 %	2,338	18.0 %
	1hs/10ac to 1hs/5ac	623	6.8 %	1,837	14.2 %
	1hs/5ac to 1hs/2ac	833	9.1 %	1,293	10.0 %
	1hs/2ac to 3hs/1ac	6,307	68.7 %	1,850	14.3 %
	GT 3hs/1ac	748	8.2 %	67	0.5 %
	<b>Total:</b>	<b>9,117</b>	<b>100.0 %</b>	<b>12,958</b>	<b>100.0 %</b>

### Surface Fuels

Surface fuels are important to categorize for they account for the surface fire potential. Canopy fire potential is computed through a separate but linked process. The Texas Wildfire Risk Assessment (TWRA) Summary Report for Williamson County accounts for both surface and canopy fire potential in the fire behavior outputs.

Surface fuels are typically categorized into one of four primary fuel types based on the primary carrier of the surface fire:

- Grass
- Shrub/brush
- Timber litter
- Slash

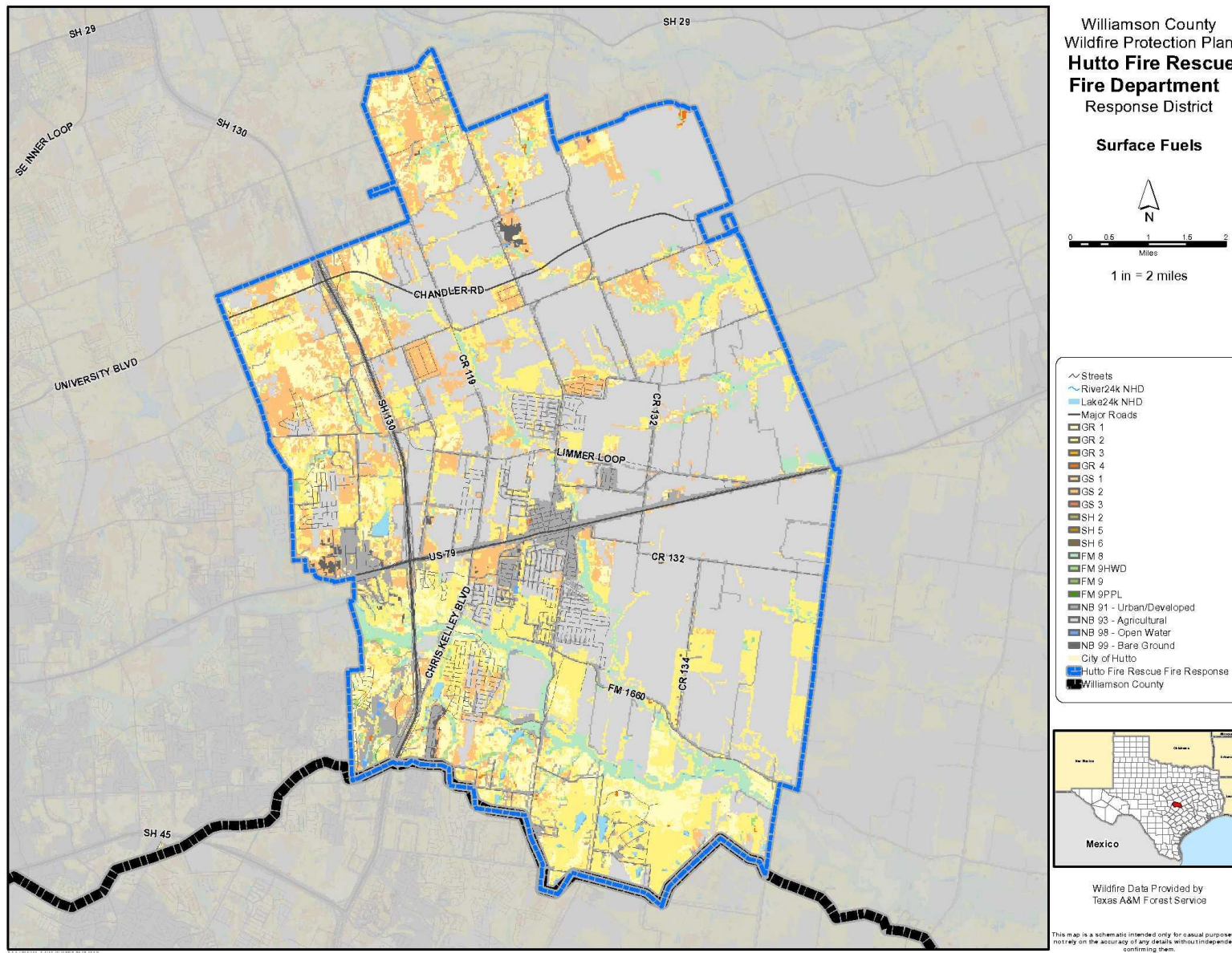
There are two standard fire behavior fuel model sets published for use. The Fire Behavior Prediction System 1982 Fuel Model Set (Anderson 1982) contains 13 fuel models and the Fire Behavior Prediction System 2005 Fuel Model Set (Scott and Burgan 2005) contains 40 fuel models. The TWRA uses fuel models from both sets, as well as two additional custom fuel models devised by Texas A&M Forest Service.

#### DEFINITIONS

**Surface fuels**—Surface fuels, or fire behavior fuel models as they are technically referred to, contain the parameters needed by the Rothermel (1972) surface fire spread model to compute surface fire behavior characteristics, such as rate of spread, flame length, fireline intensity, and other fire behavior metrics.

Figure 3 and the associated table shows that the county primarily consists predominantly of Agricultural Land (46.1%), followed by Low Load, Dry Climate Grass at 18.1%, Urban Developed Land at 11.1%, Moderate Load, Dry Climate Grass-Shrub at 10.0% and Short, Sparse Dry Climate Grass (Dynamic) at 9.4%. Figure 3 is a Hutto area map showing all the surface fuel types.

Figure 3. Hutto- Surface Fuels by type



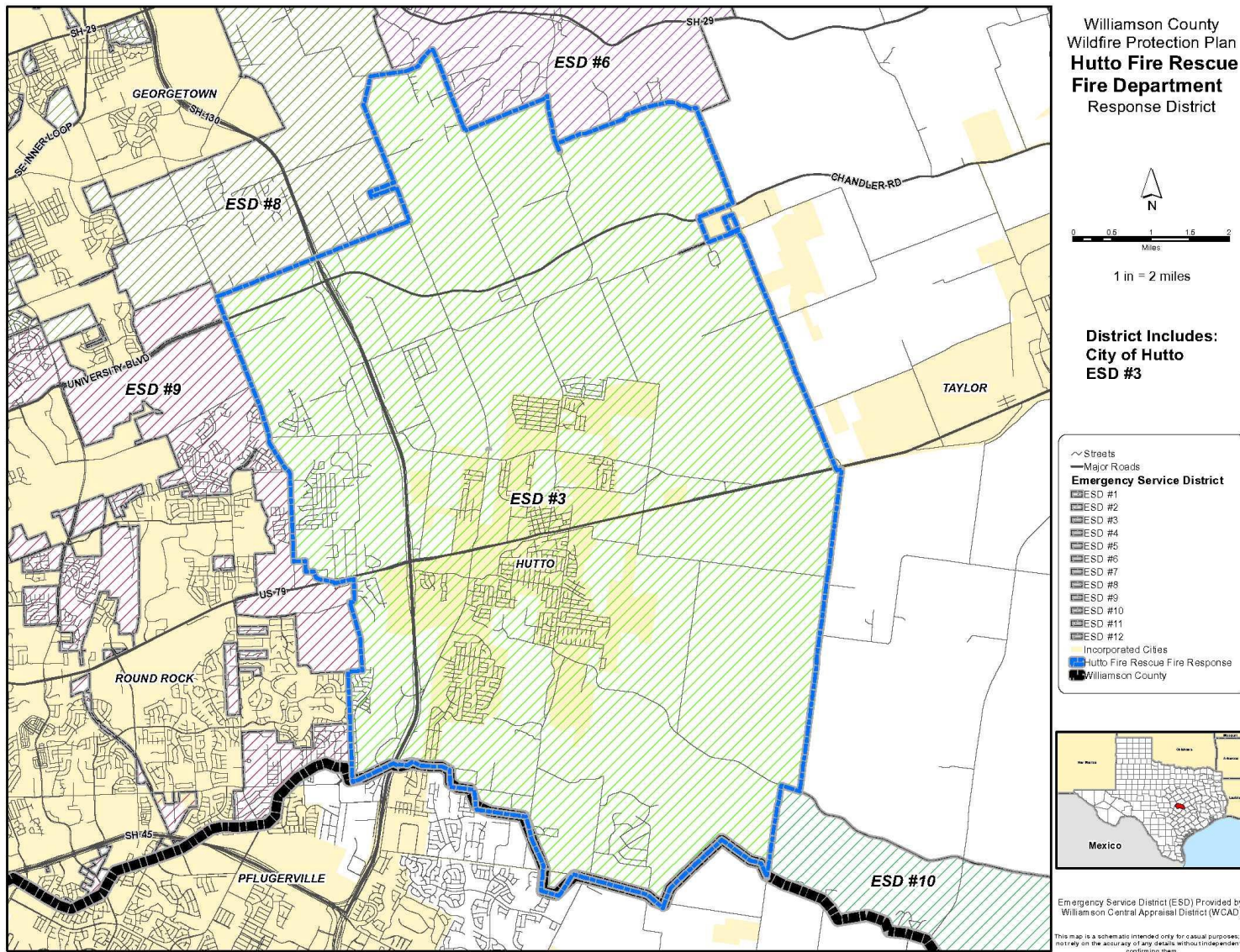
	Surface Fuels	Description	FBPS Fuel Model Set	Acres	Percent
	GR 1	Short, Sparse Dry Climate Grass (Dynamic)	2005	3,392	9.4 %
	GR 2	Low Load, Dry Climate Grass (Dynamic)	2005	6,494	18.1 %
	GR 4	Moderate Load, Dry Climate Grass (Dynamic)	2005	30	0.1 %
	GS 2	Moderate Load, Dry Climate Grass-Shrub (Dynamic)	2005	3,591	10.0 %
	FM 8	Closed timber litter (compact)	1982	1,435	4.0 %
	FM 9 HWD	Hardwood litter (fluffy) - Low Load for Texas	Custom	190	0.5 %
	NB 91	Urban/Developed	2005	3,981	11.1 %
	NB 93	Agricultural	2005	16,574	46.1 %
	NB 98	Open Water	2005	148	0.4 %
	NB 99	Bare Ground	2005	119	0.3 %
Total:				35,954	100.0%

## Vegetation

The Vegetation map describes the land cover and vegetation types across the Hutto area. In the Texas Wildfire Risk Assessment (TWRA), the Vegetation dataset is used to support the development of the Surface Fuels, Canopy Cover, Canopy Stand Height, Canopy Base Height, and Canopy Bulk Density datasets. The vegetation classes with descriptions are shown in the following table. It should be noted that the area is dominated by Cultivated Crops (46.4%), Grassland/Herbaceous lands (36.4%), followed by Developed Open Space (5.8%), Developed Land at a Low Intensity (4.8%) and Pasture/Hay (2.3%).



Figure 4. Hutto Vegetation





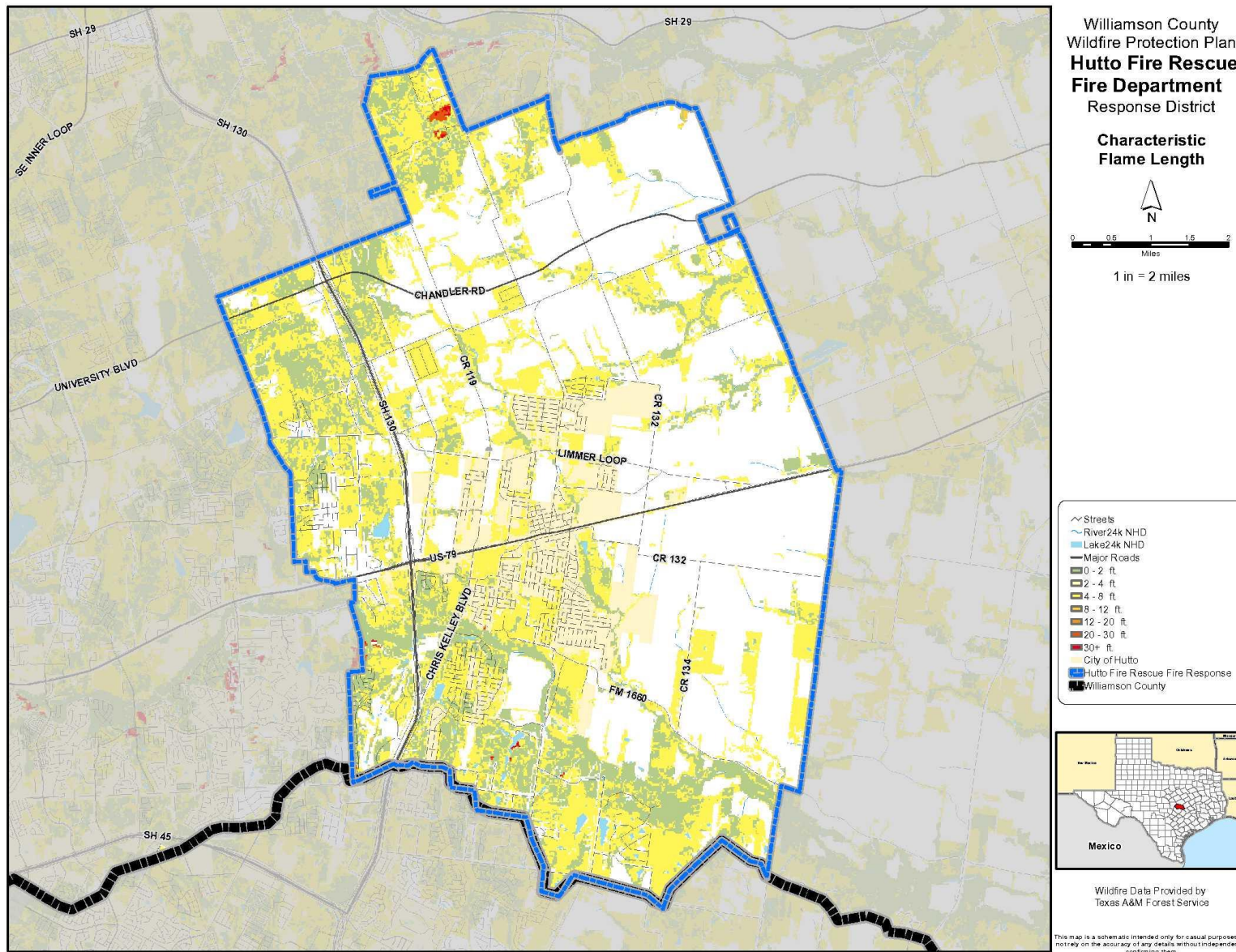
	Class	Description	Acres	Percent
	Open Water	All areas of open water, generally with < 25% cover of vegetation or soil	99	0.3 %
	Developed Open Space	Impervious surfaces account for < 20% of total cover (i.e. golf courses,	2,072	5.8 %
	Developed Low	Impervious surfaces account for 20-49% of total cover	1,738	4.8 %
	Developed Medium	Impervious surfaces account for 50-79% of total cover	136	0.4 %
	Developed High	Impervious surfaces account for 80-100% of total cover	48	0.1 %
	Barren Land (Rock/Sand/Clay)	Vegetation generally accounts for <15% of total cover	92	0.3 %
	Cultivated Crops	Areas used for the production of annual crops, includes land being	16,695	46.4 %
	Pasture/Hay	Areas of grasses and/or legumes planted for livestock grazing or hay	809	2.3 %
	Grassland/Herbaceous	Areas dominated (> 80%) by grammanoid or herbaceous vegetation,	13,094	36.4 %
	Floodplain Forest	> 20% tree cover, the soil is periodically covered or saturated with water	796	2.2 %
	Deciduous Forest	> 20% tree cover, >75% of tree species shed leaves in response to	266	0.7 %
	Live Oak Forest	> 20% tree cover, live oak species represent >75% of the total tree	6	0.0 %
	Juniper or Juniper/Live Oak Forest	> 20% tree cover, juniper or juniper/live oak species represent > 75% of the total tree cover	2	0.0 %
	Juniper/Deciduous Forest	> 20% tree cover, neither juniper or deciduous species represent > 75% of the total tree cover	101	0.3 %
<b>Total:</b>			<b>35,954</b>	<b>100.0 %</b>

## Flame Length

Characteristic Flame Length is the typical or representative flame length of a potential fire based on a weighted average of four percentile weather categories. Flame Length is defined as the distance between the flame tip and the midpoint of the flame depth at the base of the flame, which is generally the ground surface. It is an indicator of fire intensity and is often used to estimate how much heat the fire is generating. Flame length is typically measured in feet. Flame length is the measure of fire intensity used to generate the response index outputs for the TWRA. Flame length characteristics are varied in the Hutto area but is dominated by 57.9% of the area is designated as non-burnable, 27.1% of the area having a projected flame length of 4-8 feet, followed by 0-2 feet at 13.9%, and 2-4 feet flame lengths are estimated at only 0.8% of the total area.

Flame length is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently. To account for this variability, four percentile weather categories were created from historical weather observations to represent low, moderate, high, and extreme weather days for each weather influence zone in Texas. A weather influence zone is an area where, for analysis purposes, the weather on any given day is considered uniform. There are 22 weather influence zones in the State of Texas.

Figure 5. Hutto Flame Length



	Flame Length	Acres	Percent
	Non-Burnable	20,821	57.9 %
	0 - 2 ft	5,005	13.9 %
	2 - 4 ft	301	0.8 %
	4 - 8 ft	9,743	27.1 %
	8 - 12 ft	30	0.1 %
	20 - 30 ft	39	0.1 %
	30 + ft	14	0.0 %
Total:		35,954	100.0 %

### Wildfire Threat

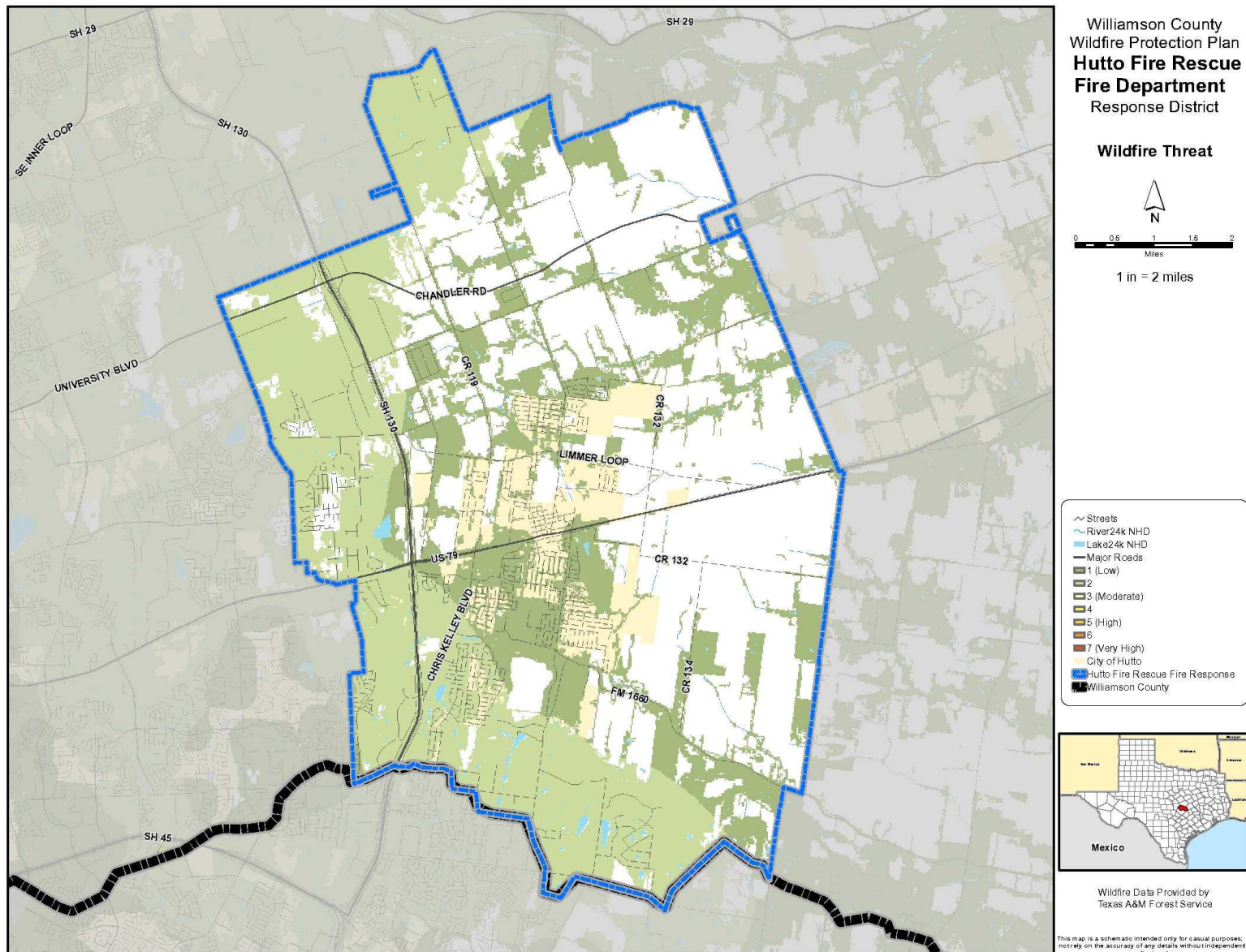
Per the Texas A&M Forest Service Wildfire Threat is the likelihood of a wildfire occurring or burning into an area. Threat is derived by combining a number of landscape characteristics including surface fuels and canopy fuels, resultant fire behavior, historical fire occurrence, percentile weather derived from historical weather observations, and terrain conditions. These inputs are combined using analysis techniques based on established fire science.

The measure of wildfire threat used in the Texas Wildfire Risk Assessment (TWRA) is called Wildland Fire Susceptibility Index, or WFSI. WFSI combines the probability of an acre igniting (Wildfire Ignition Density) and the expected final fire size based on rate of spread in four weather percentile categories. WFSI is defined as the likelihood of an acre burning. Since all areas in Texas have WFSI calculated consistently, it allows for comparison and ordination of areas across the entire state. For example, a high threat area in East Texas is equivalent to a high threat area in West Texas.

To aid in the use of Wildfire Threat for planning activities, the output values are categorized into seven (7) classes. These are given general descriptions from Low to Very High threat. It should be noted that a significant area of Hutto (49.5%) is designated as non-burnable. The balance of the area or more than 50% as low (categories 1 and 2). Overall, Hutto has a lower threat of wildfire than other areas of Williamson County.



Figure 6. Hutto Wildfire Threat





	Class	Acres	Percent
	Non-Burnable	17,787	49.5 %
	1 (Low)	7,787	21.7 %
	2	10,380	28.9 %
Total:		35,954	100.0 %

## WILDFIRE ASSESSMENTS

Community Wildfire Risk Hazard Analysis (CWRHA) were conducted on select communities or subdivisions within this fire district. The CWRHA's are essential in identifying areas that are at risk for catastrophic wildfires leading to the destruction of private and commercial property along with environmentally sensitive areas. Assessments were performed overall of the community and not on individual home sites, which may not indicate increased totals for small or site-specific hazards.

Assessments were performed locally developed assessment criteria that addresses specific criteria and assigned a numerical value indicating the potential risk to the identified assessment area. Assessment areas include:

- Community Access / Egress
  - Access / Egress Points
  - Primary Road Width
  - Secondary Road Terminus
  - Accessibility (surface grade)
  - Subdivision Bridges
  - Roadway Fuels
  - Street Signs
- Home Site Hazards
  - Driveway Characteristics
  - Dominant Trees
  - Ladder Fuels
  - Vegetation
  - Slope of Property
  - Defensible Space
  - Lot Size
- Building Construction Hazards
  - Roofing Materials
  - Siding
  - Soffits
  - Foundation Type
  - Fencing
- Additional Factor Hazards
  - Fire Control Water Supply
  - Utilities
  - Surrounding Environment
  - Undeveloped Lots / Areas

*Note: Assessments did not include local firefighting capabilities as Williamson County maintains strong auto-aid and mutual-aid agreements amongst the local fire departments which greatly enhances the capabilities of each fire district.*

The CWRHA's were conducted utilizing the Crisistrack software and mobile application, which provides a comprehensive report for each selected assessment area. (available upon request)

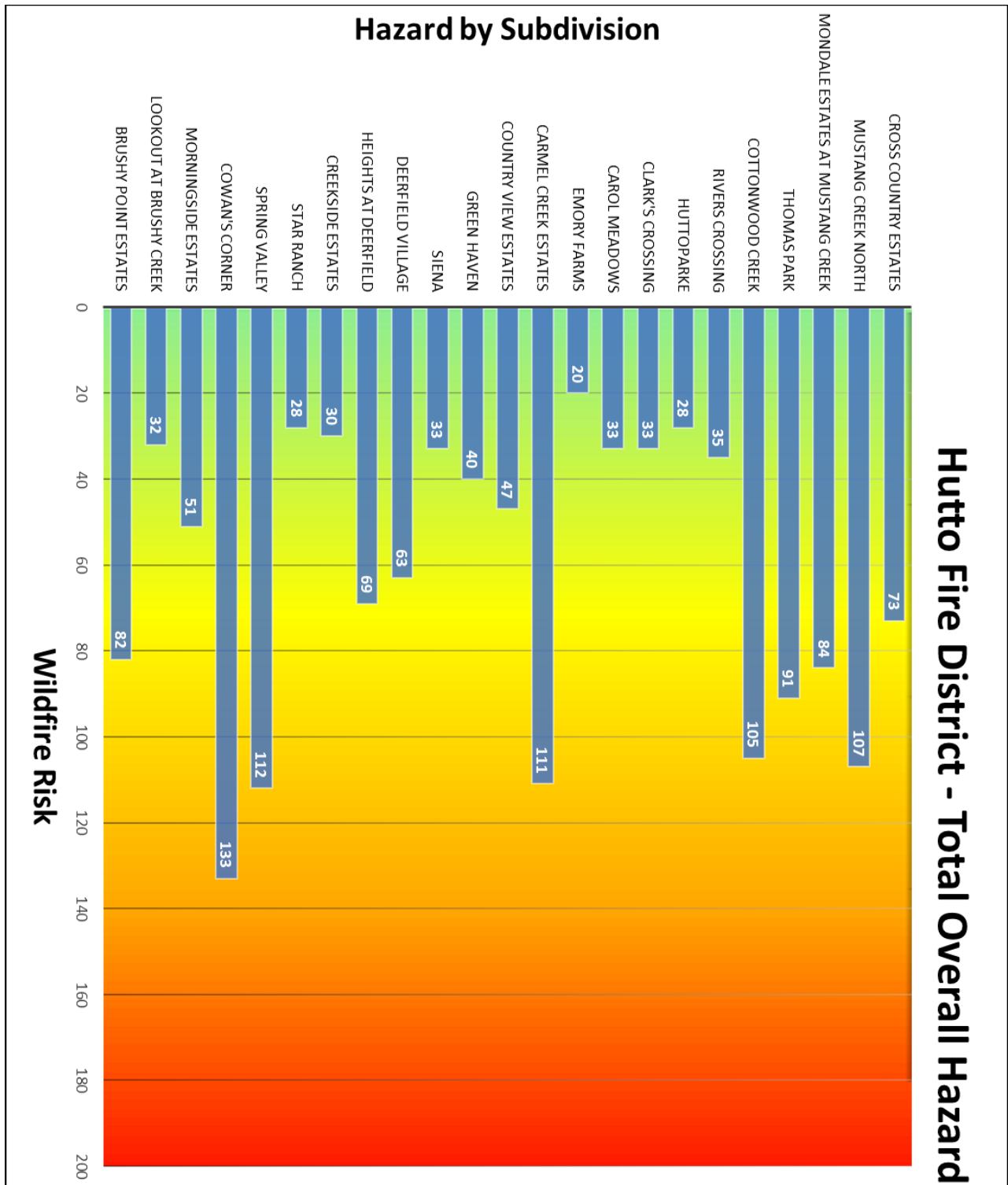
## Assessment Scoring

Section	Min	Mid	Max
Community Access/Egress Rating	0	19	38
Site Hazard Rating	5	62	119
Building Construction Hazard Rating	10	35	60
Additional Hazard Factors	0	25	50
<b>Total Hazard Factors</b>	<b>15</b>	<b>141</b>	<b>267</b>

## Community Assessment by Category

NAME	Total Community	Total Site Hazard	Total Construction Hazard	Total Additional Hazard	Total Overall Hazard
Brushy Point Estates	7	45	20	10	82
Lookout At Brushy Creek	4	33	10	5	32
Morningside Estates	0	26	10	15	51
Cowan's Corner	0	73	30	30	133
Spring Valley	9	48	10	45	112
Star Ranch	2	16	10	0	28
Creekside Estates	2	16	10	2	30
Heights at Deerfield	11	16	30	12	69
Deerfield Village	2	16	30	15	63
Siena	2	21	10	0	33
Green Haven	2	21	10	7	40
Country View Estates	4	21	10	12	47
Carmel Creek Estates	4	39	30	38	111
Emory Farms	2	6	10	2	20
Carol Meadows	2	16	10	5	33
Clark's Crossing	2	16	10	5	33
Huttoparke	2	16	10	0	28
Rivers Crossing	2	16	10	7	35
Cottonwood Creek	7	36	40	22	105
Thomas Park	4	30	40	17	91
Mondale Estates at Mustang Creek	9	38	10	27	84
Mustang Creek North	11	26	40	30	107
Cross Country Estates	11	30	10	22	73

## Community Wildfire Hazard Rating





## WILDFIRE MITIGATION AND FUELS REDUCTION

### A. MITIGATION

Mitigation efforts for communities and subdivisions within the Hutto Fire District should focus on wildfire public education and the benefits of Firewise Programs. Education consisting of Ready-Set-Go and private property fuels reduction should be the primary focus of education.

### B. FUELS REDUCTION PROJECTS

No publicly owned properties requiring fuels reduction have been identified in the Hutto Fire District.

The Hutto Fire District is comprised primarily of developed communities, subdivisions, neighborhoods on lots less than one acre in size and large tracts of cultivated crop land. Limited green space or undeveloped areas are noted which reduces the opportunity for large fuels reductions programs.