Annex 19: Williamson County Parks and Preserves

ANNEX 19: WILLIAMSON COUNTY PARKS AND PRESERVES

INTRODUCTION

Organization and Jurisdiction

No information has been received.

CURRENT /HISTORICAL MITIGATION ACTIONS AND PROGRAMS

No information has been received.

PUBLIC EDUCATION AND OUTREACH PROGRAMS

No information has been received.

CAPABILITIES ASSESSMENT

Emergency Response Capabilities

No information has been received.

Policies

No information has been received.

Regulations

No information has been received.

Ordinances and Codes

No information has been received.

IDENTIFY CRITICAL INFRASTRUCTURE AND COMMUNITY VALUES AT RISK

No information has been received.

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, wildlife 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.

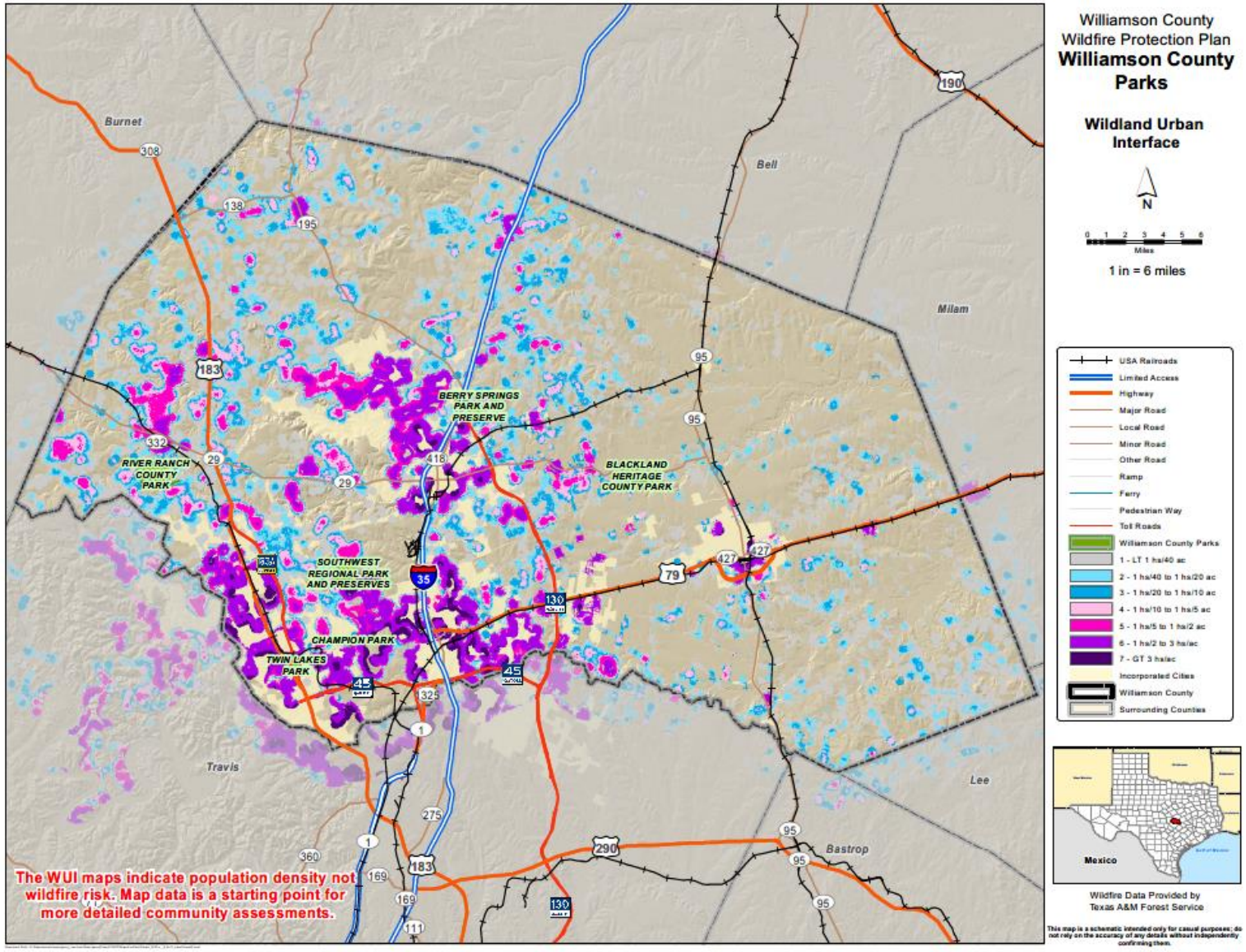
Per the Texas A&M Forest Service "The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially increases the risk from wildfire. In Texas nearly 85 percent of wildfires 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).

While there are no residents within the Williamson County Parks and Preserves project area, the rapid increase in population within the County impacts encroachment of developed areas into 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.

Table 19-1. Williamson County Parks and Preserves Wildland Urban Interface

	Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
	LT 1hs/40ac	4,088	1.7 %	127,130	40.1 %
	1hs/40ac to 1hs/20ac	4,149	1.7 %	50,177	15.8 %
	1hs/20ac to 1hs/10ac	6,467	2.6 %	40,989	12.9 %
	1hs/10ac to 1hs/5ac	9,792	4.0 %	30,020	9.5 %
	1hs/5ac to 1hs/2ac	17,664	7.2 %	25,781	8.1 %
	1hs/2ac to 3hs/1ac	119,284	48.4 %	36,470	11.5 %
	GT 3hs/1ac	84,992	34.5 %	6,639	2.1 %
	Total:	**246,436**	**100.0 %**	**317,207**	**100.0 %**

Figure 19-1. Williamson County Parks and Preserves Wildland Urban Interface



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

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.

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.

Figure 19-2 and its associate table shows that the county primarily consists of Dry Climate Grass at 21.1%, Moderate Load at 20.1%, Agricultural at 20.3%, followed by Urban / Developed Land with 7.6%. Figure 19-2 is a Williamson County Parks and Preserves Wildland Urban Interface map showing all the surface fuel types.

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.

Figure 19-2. Williamson County Parks and Preserves Surface Fuels by type

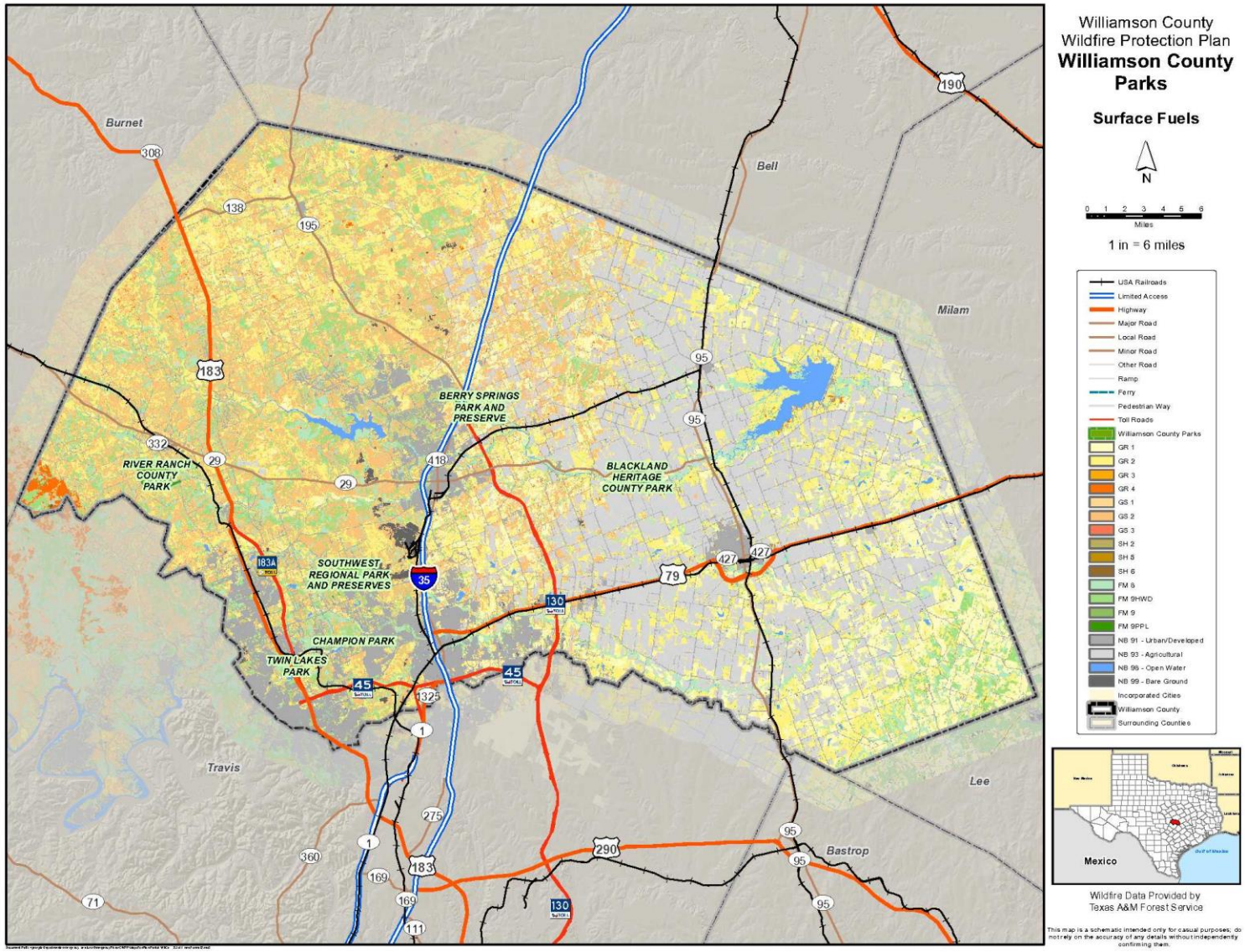


Table 19-2. Williamson County Parks and Preserves Surface Fuels by Type

	Surface Fuels	Description	FBPS Fuel Model Set	Acres	Percent
	GR 1	Short, Sparse Dry Climate Grass (Dynamic)	2005	78,871	10.8%
	GR 2	Low Load, Dry Climate Grass (Dynamic)	2005	153,796	21.1%
	GR 3	Low Load, Very Coarse, Humid Climate Grass (Dynamic)	2005	0	0.0%
	GR 4	Moderate Load, Dry Climate Grass (Dynamic)	2005	2,927	0.4%
	GS 2	Moderate Load, Dry Climate Grass-Shrub (Dynamic)	2005	146,352	20.1%
	SH 5	High Load, Dry Climate Shrub	2005	134	0.0%
	FM 8	Closed timber litter (compact)	1982	46,696	6.4%
	FM 9 HWD	Hardwood litter (fluffy) - Low Load for Texas	Custom	45,717	6.3%
	NB 91	Urban/Developed	2005	92,532	12.7%
	NB 93	Agricultural	2005	147,465	20.3%
	NB 98	Open Water	2005	9,551	1.3%
	NB 99	Bare Ground	2005	3,158	0.4%
			Total:	**727,200**	**100.0%**

Vegetation

The Vegetation map describes the land cover and vegetation types across the Bartlett 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 Grassland/Herbaceous vegetation that can be grazed (31.2%), Cultivated Crops (20.4%), and Juniper/Deciduous Forest (8.2%).

Figure 19-3. Williamson Vegetation County Parks and Preserves

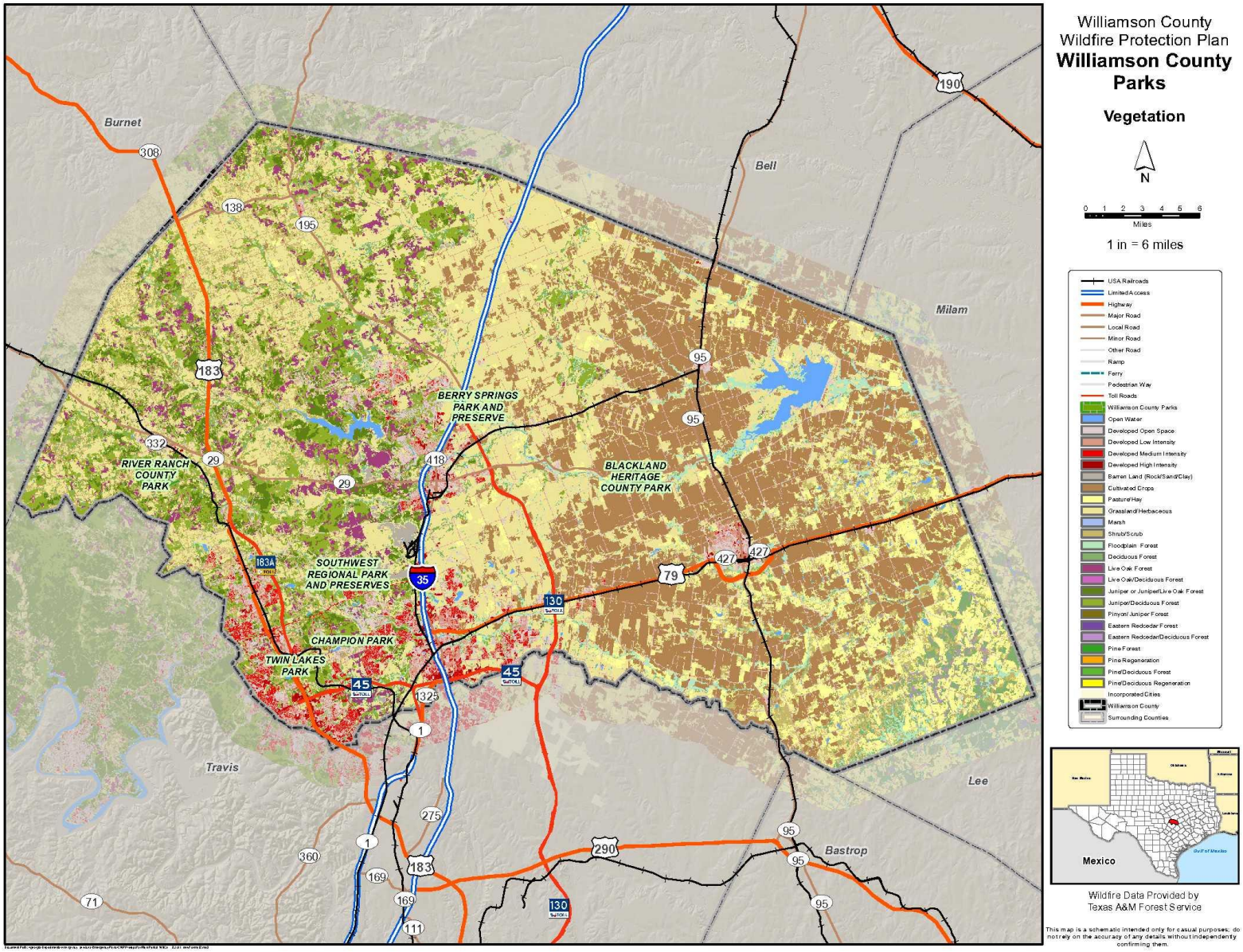


Table 19-3. Williamson County Parks and Reserves Vegetation

	Class	Description	Acres	Percent
	Open Water	All areas of open water, generally with < 25% cover of vegetation or soil	7,903	1.1 %
	Developed Open Space	Impervious surfaces account for < 20% of total cover (i.e. golf courses, parks, etc…)	43,318	6.0 %
	Developed Low Intensity	Impervious surfaces account for 20-49% of total cover	35,710	4.9 %
	Developed Medium Intensity	Impervious surfaces account for 50-79% of total cover	10,417	1.4 %
	Developed High Intensity	Impervious surfaces account for 80-100%of total cover	3,231	0.4 %
	Barren Land (Rock/Sand/Clay)	Vegetation generally accounts for <15% of total cover	2,799	0.4 %
	Cultivated Crops	Areas used for the production of annual crops, includes land being actively tilled	148,432	20.4 %
	Pasture/Hay	Areas of grasses and/or legumes planted for livestock grazing or hay production	43,689	6.0 %
	Grassland/Herbaceous	Areas dominated (> 80%) by grammanoid or herbaceous vegetation, can be grazed	227,019	31.2 %
	Marsh	Low wet areas dominated (>80%) by herbaceous vegetation	6	0.0 %
	Shrub/Scrub	Areas dominated by shrubs/trees < 5 meters tall, shrub canopy > than 20% of total vegetation	47,585	6.5 %
	Floodplain Forest	> 20% tree cover, the soil is periodically covered or saturated with water	16,124	2.2 %
	Deciduous Forest	> 20% tree cover, >75% of tree species shed leaves in response to seasonal change	32,561	4.5 %
	Live Oak Forest	> 20% tree cover, live oak species represent >75% of the total tree cover	24,392	3.4 %
	Live Oak/Deciduous Forest	> 20% tree cover, neither live oak or deciduous species represent >75% of the total tree cover	1	0.0 %
	Juniper or Juniper/Live Oak Forest	> 20% tree cover, juniper or juniper/live oak species represent > 75% of the total tree cover	22,947	3.2 %
	Juniper/Deciduous Forest	> 20% tree cover, neither juniper or deciduous species represent > 75% of the total tree cover	59,388	8.2 %
	Eastern Red cedar/Deciduous Forest	> 20% tree cover, neither eastern red cedar or deciduous species represent > 75% of the total tree cover	1,678	0.2 %
		Total:	**727,200**	**100.0 %**

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 Williamson County Parks and Preserves area but is dominated by 34.8% of the area classified as non-burnable, 32.5% of the area is 4 -8 feet, 18.9% of the area is projected to be 0-2 feet at 18.6%, and almost 12% of the total area is projected to have potential flame lengths of 20 – 30 feet plus.

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 19-4. Williamson County Parks and Preserves Flame Length

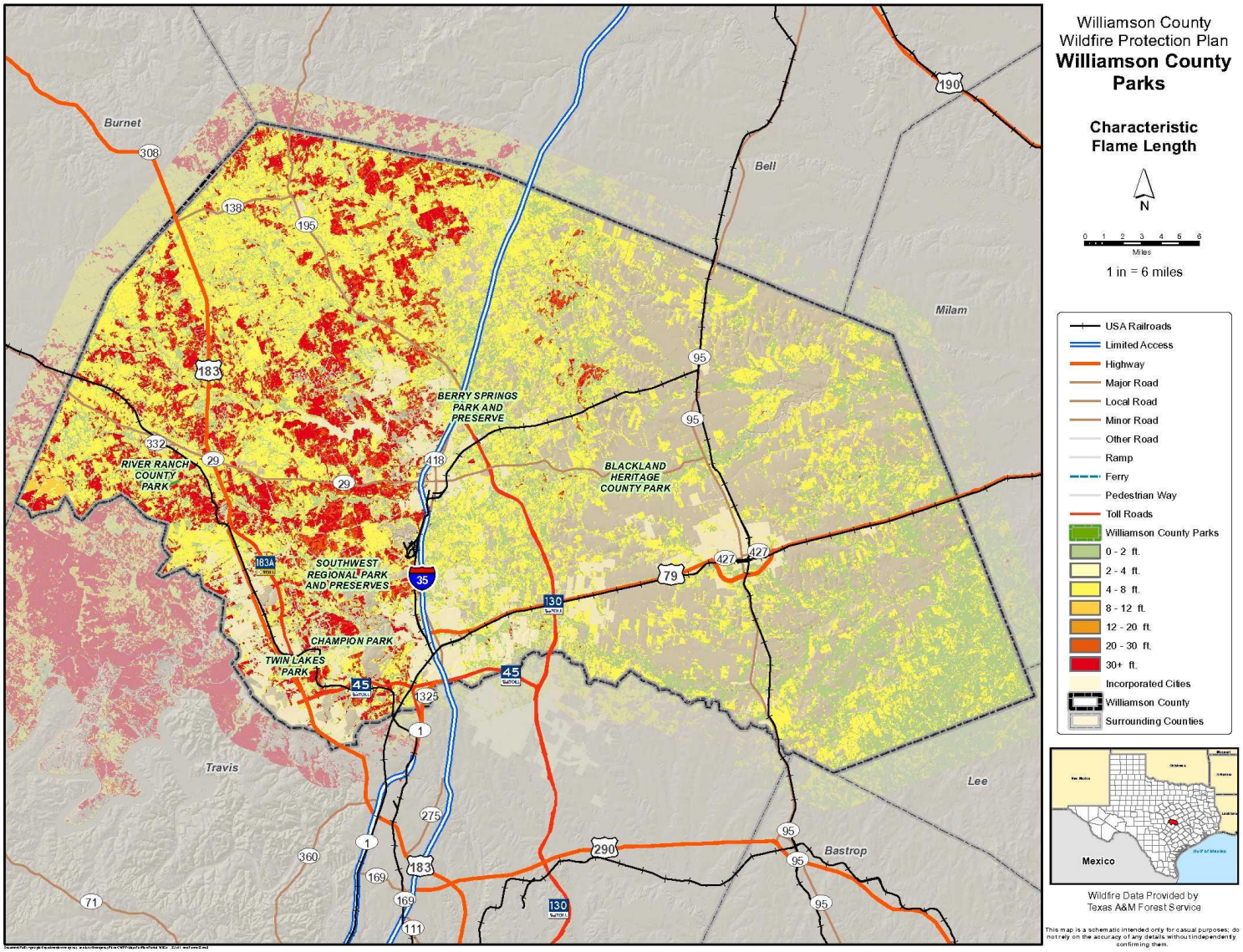


Table 19-4. Williamson County Parks and Preserves Flame Length

	Flame Length	Acres	Percent
	Non-Burnable	252,706	34.8 %
	0 - 2 ft	137,748	18.9 %
	2 - 4 ft	11,312	1.6 %
	4 - 8 ft	236,230	32.5 %
	8 - 12 ft	2,754	0.4 %
	12 - 20 ft	77	0.0 %
	20 - 30 ft	36,696	5.0 %
	30 + ft	49,676	6.8 %
Total:		**727,200**	**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. Approximately 25.4% of the area within the Williamson County Parks and Preserves area is designated as non-burnable. Approximately 40% of the area is designated as low (categories 1), and 31% as moderate (categories 3 and 4).

Figure 19-5. Williamson County Parks and Preserves Wildfire Threat

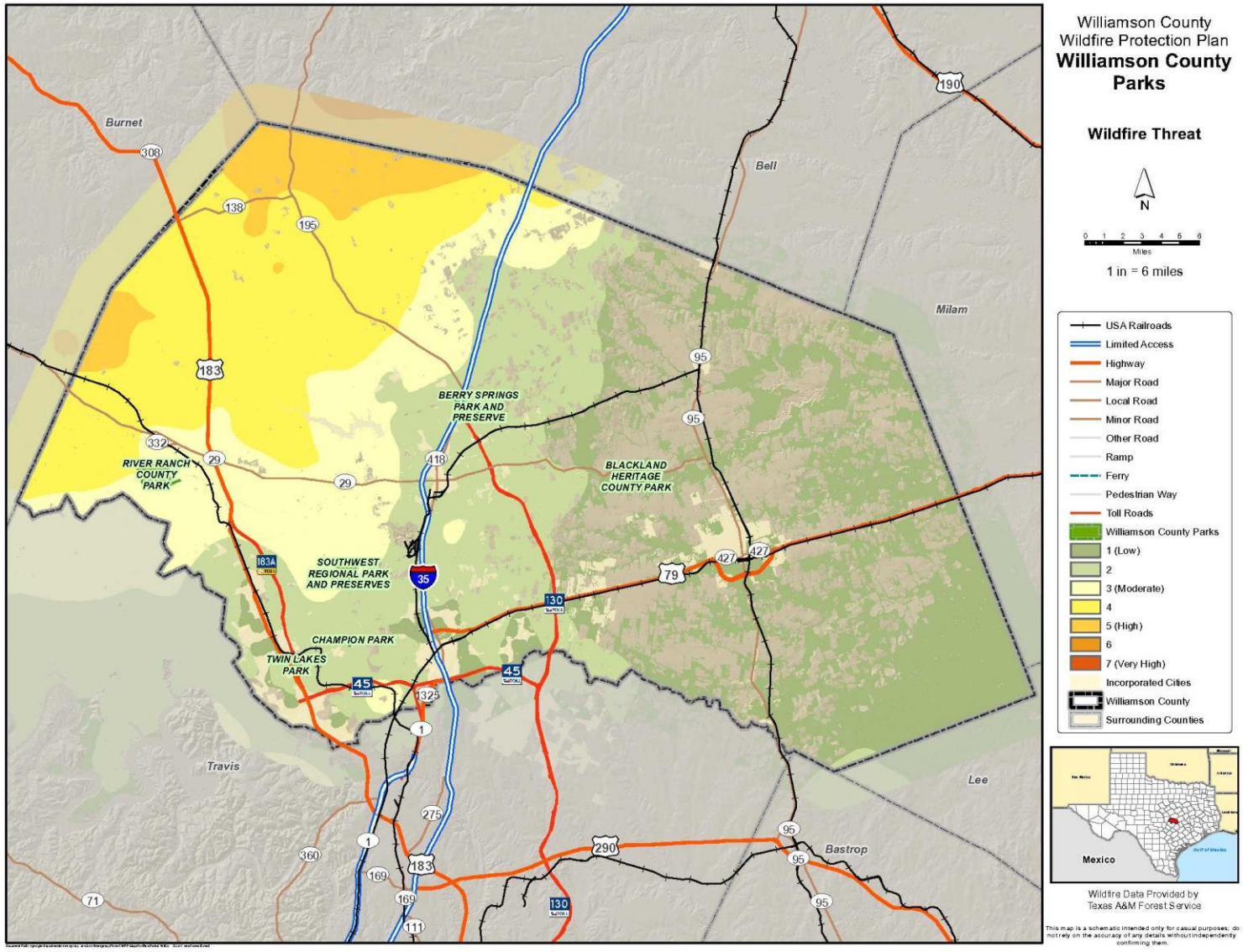


Table 19-5. Williamson County Parks and Preserves Wildfire Threat

	Class	Acres	Percent
	Non-Burnable	184,491	25.4 %
	1 (Low)	159,424	21.9 %
	2	130,477	17.9 %
	3 (Moderate)	94,422	13.0 %
	4	127,699	17.6 %
	5 (High)	30,687	4.2 %
	6	0	0.0 %
	7 (Very High)	0	0.0 %
	Total:	**727,200**	**100.0 %**

WILDFIRE MITIGATION ACTIONS AND FUELS REDUCTION PROJECTS

River Ranch Project

River Ranch is a county park in development and consist of 1011 acres along the San Gabriel River south of Liberty Hill. The park is heavily wooded and adjoins several neighborhoods along the perimeter.

Project Description:

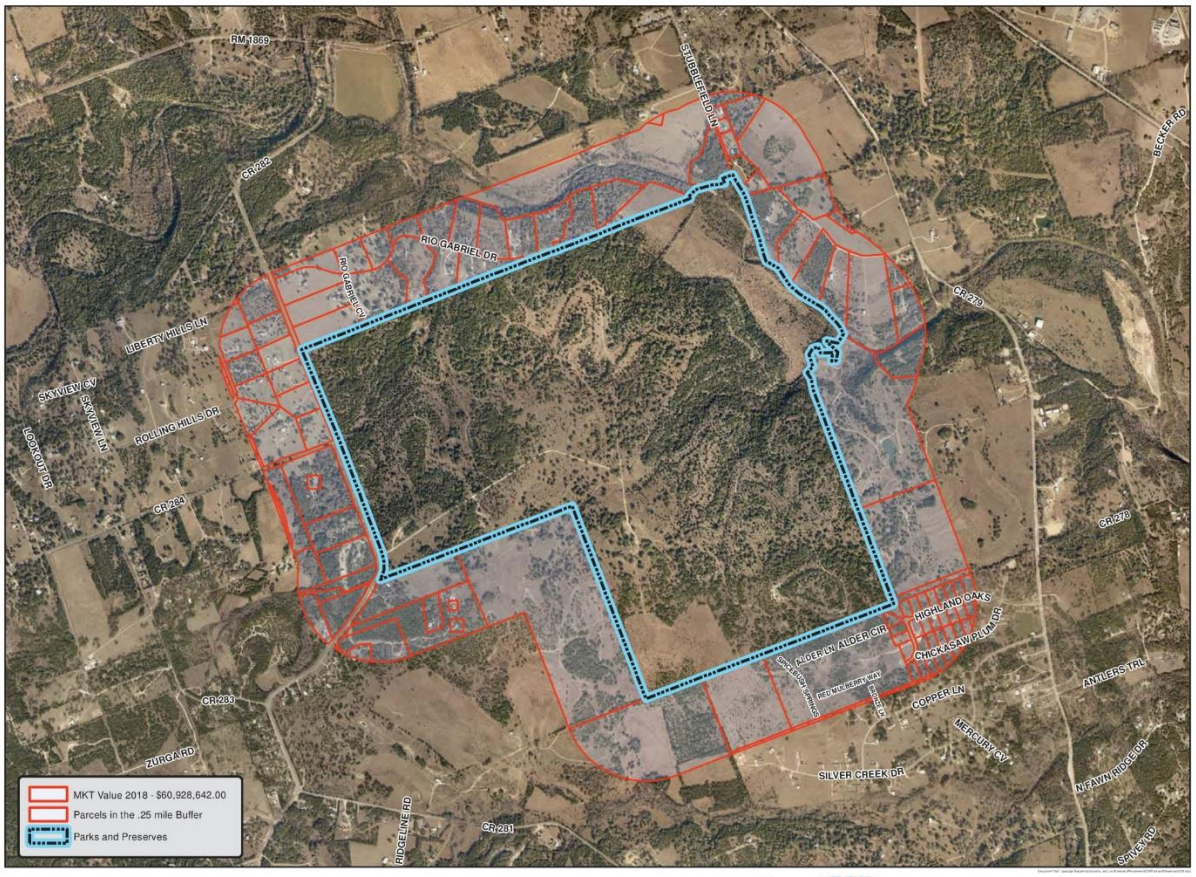
To construct a 50-foot-wide shaded fuel break along the perimeter of the park excluding areas adjoining county roads.

Estimated Cost:

$300,000 - $500,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Brushy Creek Greenbelt – West Project

The Brushy Creek Greenbelt is located between the Cities of Austin and Cedar Park on the southside of Brushy Creek between US HWY 183 and Parmer Lane.

Project Description:

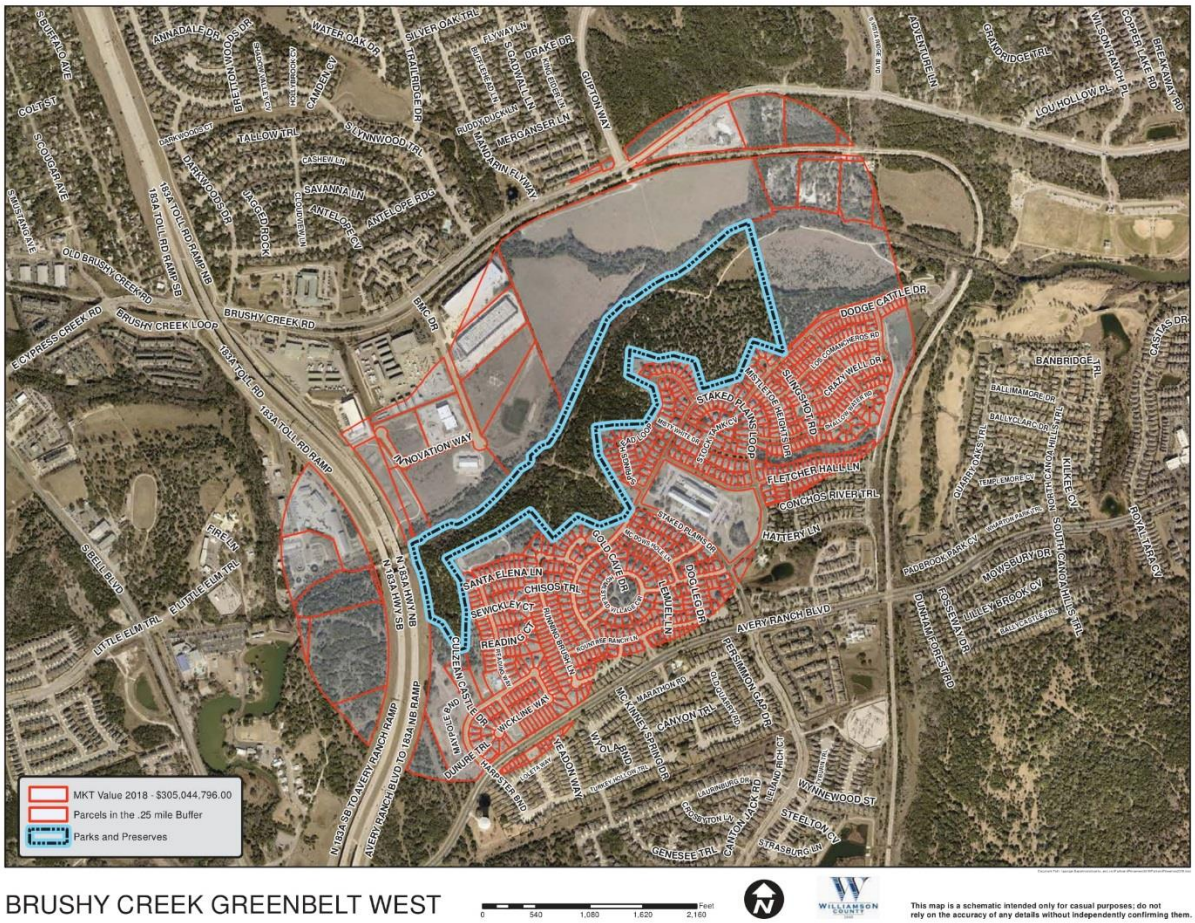
To construct an 8000-foot-long, 50-foot-wide shaded fuel break along the perimeter of the Avery Ranch subdivision.

Estimated Cost:

$75,000 - $100,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Beck Preserve Project

The Beck Preserve is a 41-acre tract of land that contains environmentally sensitive features located on the northside of RM 620 and between Great Oaks Drive and Cornerwood Drive. Commercial real estate borders several areas of the preserve, but no residential dwellings.

Project Description:

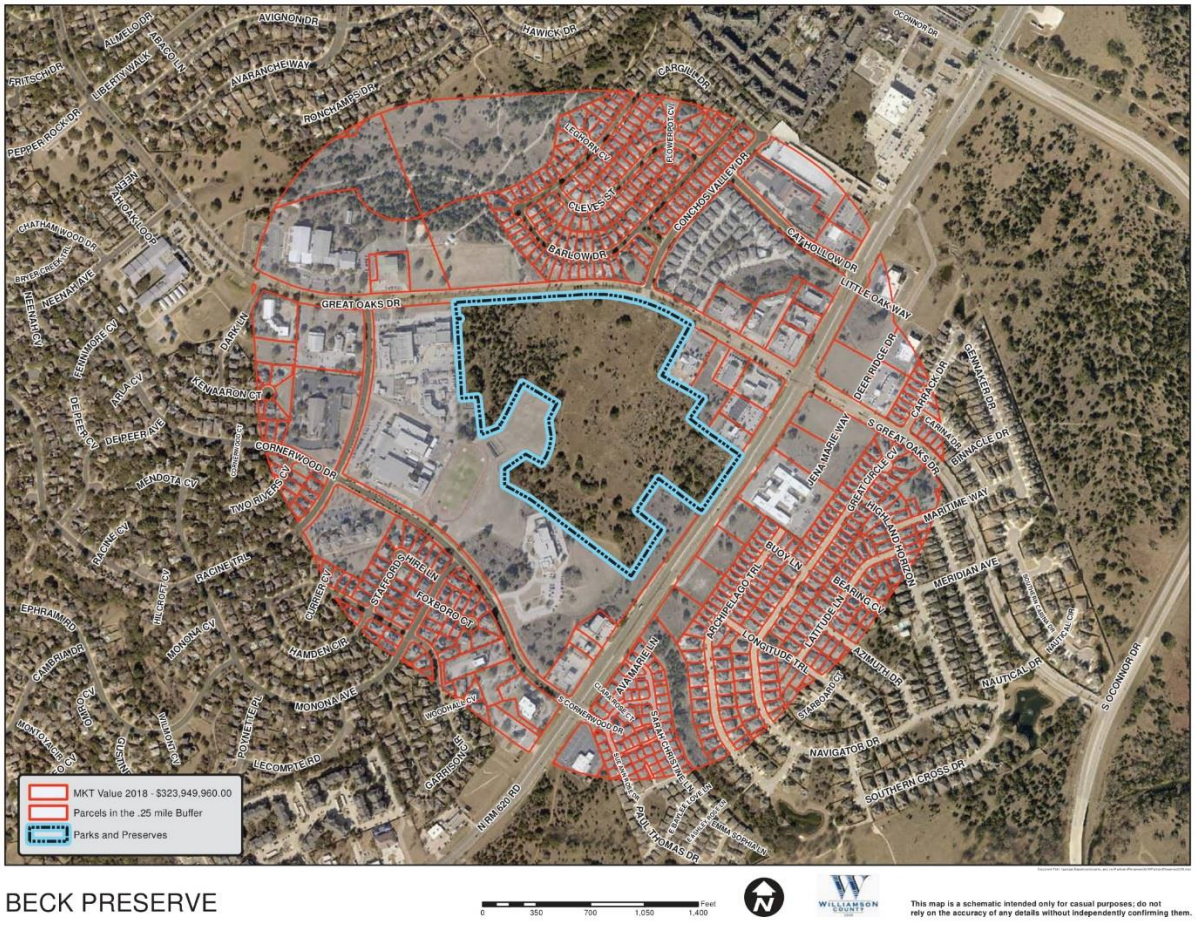
To construct a 50-foot-wide shaded fuel break, along the perimeter of the preserve that adjoins the commercial spaces and remove dead fuels.

Estimated Cost:

$10,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Brushy Creek Greenbelt – East Project

The Brushy Creek Greenbelt – East consist of thin parcels of land along the Brushy Creek that borders neighborhoods to the south. The parcel is located Parmer Lane, to the west, and Great Oaks, to the East.

Project Description:

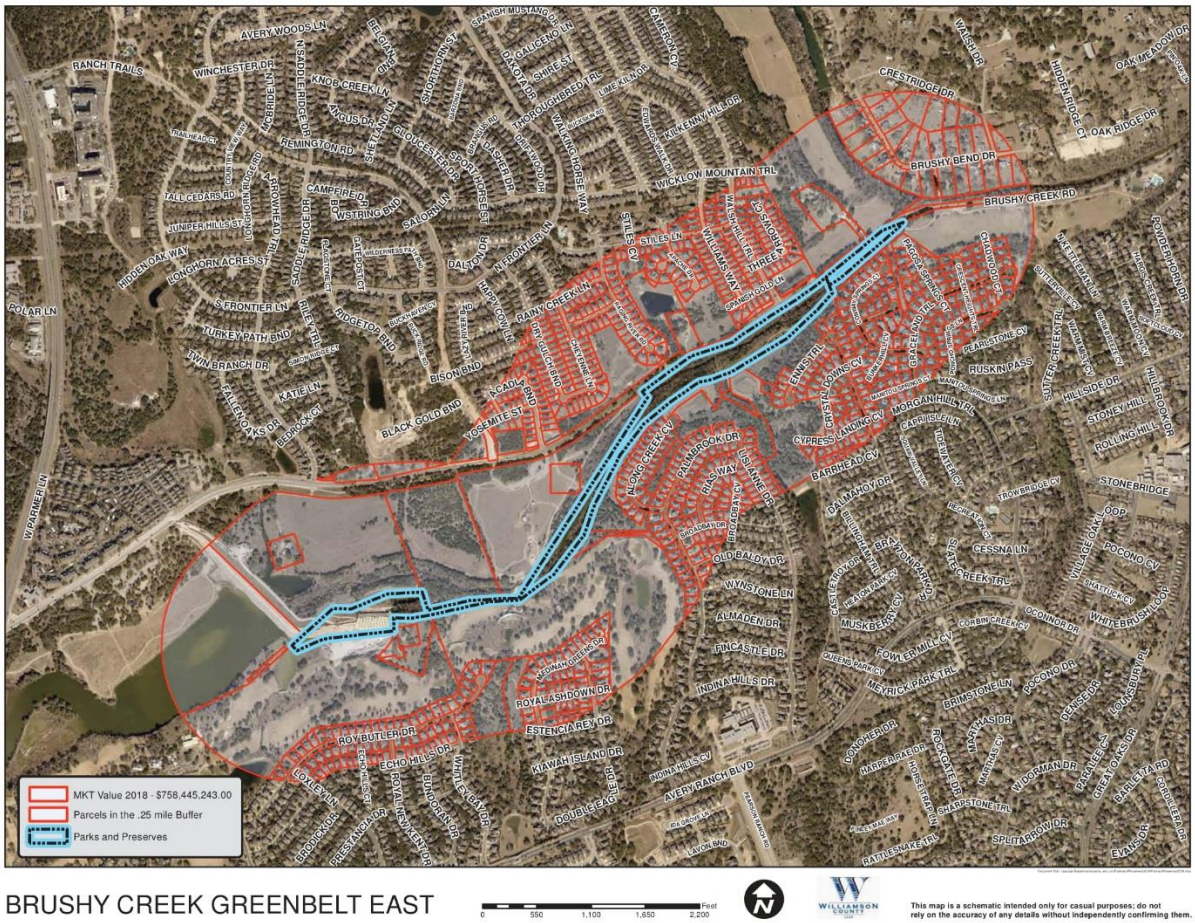
To create a shaded fuel break through the parcel, by limbing up all trees and removing slash and ladder fuels.

Estimated Cost:

$10,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Cat Cave Preserve Project

The Beck Preserve is a 4.5-acre tract of land that contains environmentally sensitive features located on the border between Woodland Park and Sun City subdivisions.

Project Description:

To construct a 50-foot-wide shaded fuel break, along the perimeter of the preserve that adjoins the residential spaces and remove dead fuels.

Estimated Cost:

$5,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).

CAT CAVE PRESERVE

Ducksworth Bat Cave Preserve Project

The Ducksworth Bat Cave Preserve is a 5.6-acre tract of land that contains environmentally sensitive features located in the Woodland Park subdivision near the intersections of RM 2338 and RM 3405.

Project Description:

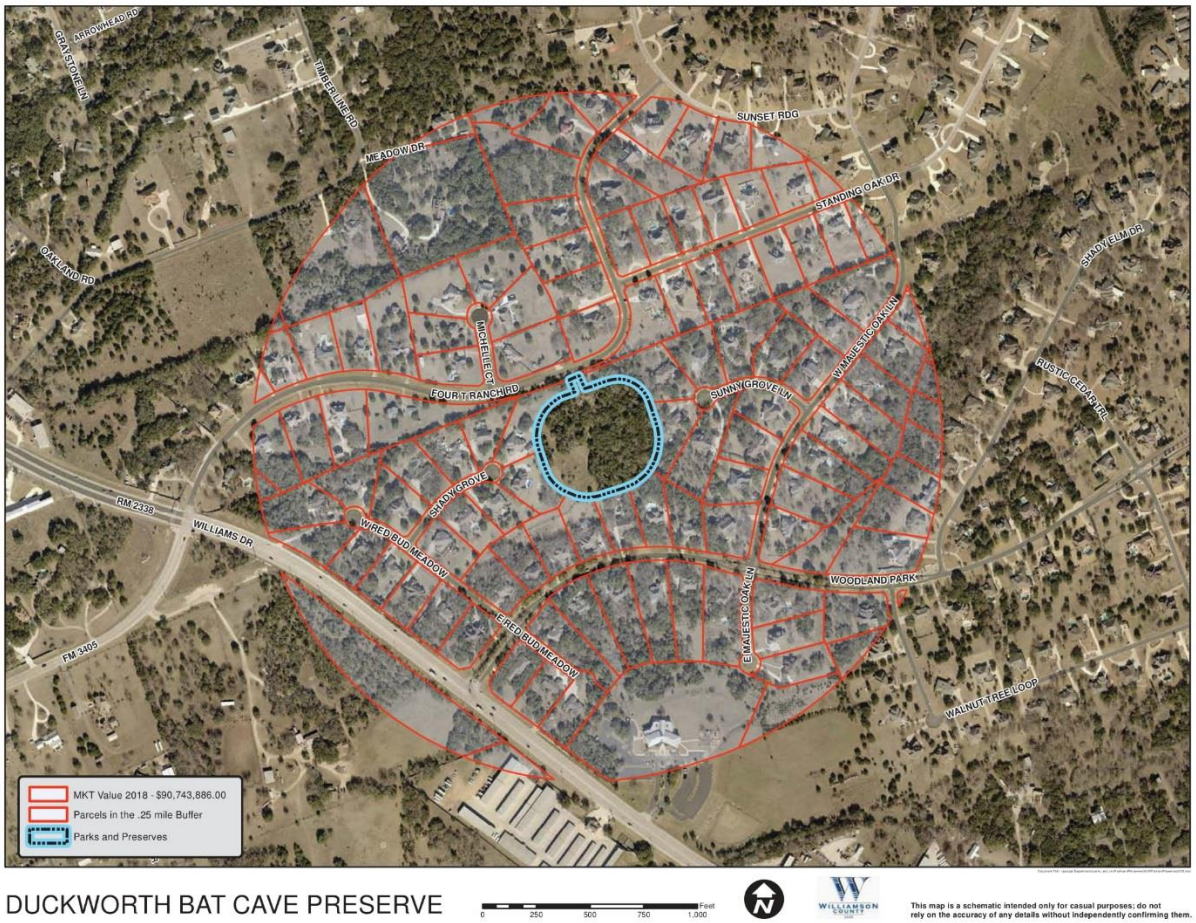
To construct a 50-foot-wide shaded fuel break, along the perimeter of the preserve that adjoins the commercial spaces and remove dead fuels.

Estimated Cost:

$5,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Lake Creek Greenbelt Project

The Lake Creek Greenbelt is listed as a 13.7-acre preserve along Lake Creek located between US HWY 183 and Parmer Lane.

Project Description:

To construct a 50-foot-wide shaded fuel break along the perimeter of the preserve excluding areas immediately adjacent to the creek.

Estimated Cost:

$10,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).

Pricilla's Well Preserve Project

The Pricilla's Well Preserve is a 51.5-acre tract of land that contains environmentally sensitive features along Ronald Reagan Blvd. between RM 2338 and State HWY 195.

Project Description:

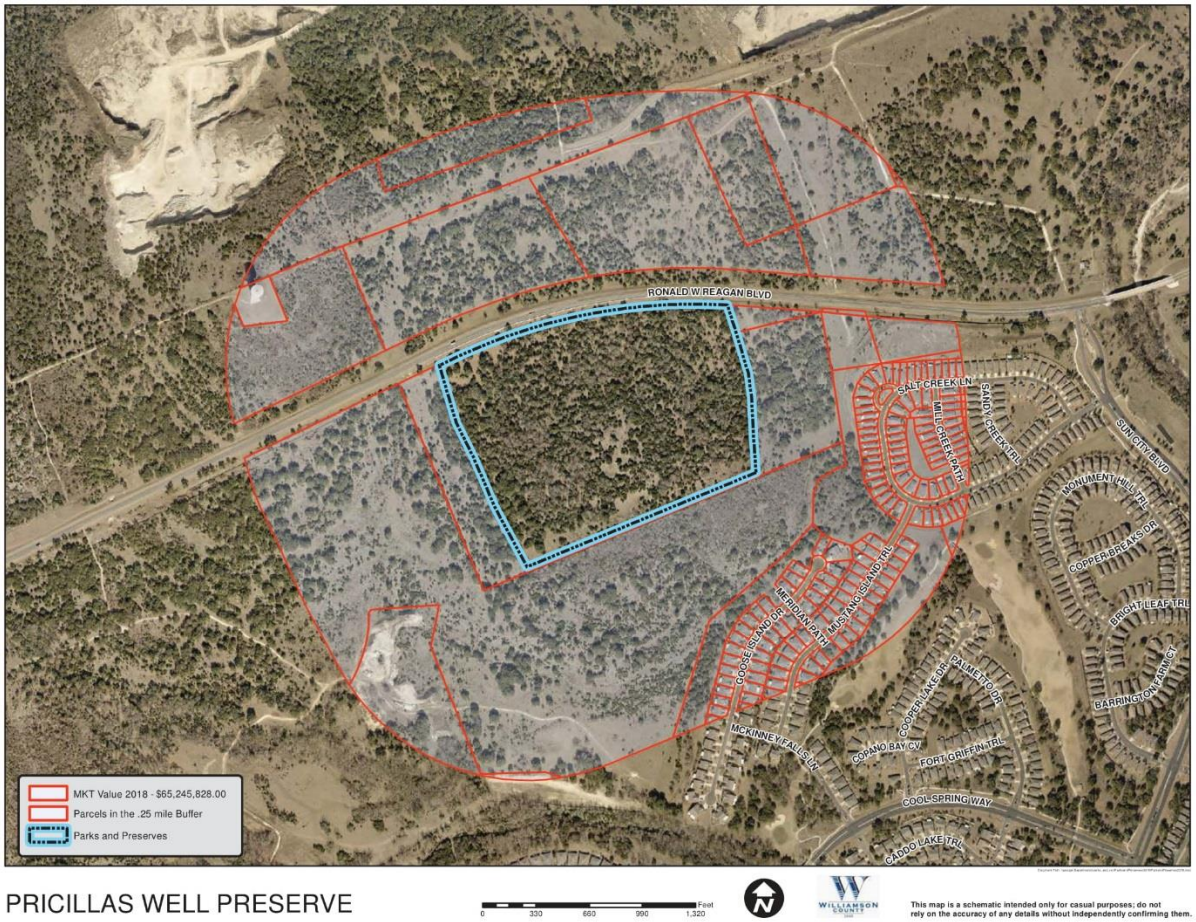
To construct a 50-foot-wide shaded fuel break along the perimeter of the preserve excluding areas immediately adjacent to the roadway.

Estimated Cost:

$25,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).



Pricilla's Well Preserve Project

The Twin Springs Preserve is a 145-acre tract of land that contains environmentally sensitive features located between FM 3405 and Lake Georgetown.

Project Description:

To construct a 50-foot-wide shaded fuel break along the perimeter of the preserve excluding areas immediately adjacent to the roadway.

Estimated Cost:

$100,000

Possible Funding Sources:

FEMA Hazard Mitigation Grants, Texas A&M Forest Service Fuel Mitigation Grant, and Williamson County General Fund (matching funds).

TWIN SPRINGS PRESERVE

0 480 960 1,440 1,920 Feet

This map is a schematic intended only for casual purposes; do not rely on the accuracy of any details without independently confirming them.