Community Wildfire Protection Plan

SUNSET VALLEY

Revised 2021

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EXECUTIVE SUMMARY

The City of Sunset Valley's Community Wildfire Protection Plan (CWPP) is a written document, mutually agreed upon by local and state representatives and community stakeholders that identifies how Sunset Valley will reduce its risks from wildland fire. Making the decision to develop a CWPP, Sunset Valley has joined Firewise communities across the country in taking an active role to influence the reduction of wildland fuels. These actions will maintain our community's healthy ecosystems and reduce the risk wildfires pose to property, critical infrastructure, natural resources, and most importantly, lives in Sunset Valley.

After the 2011 wildfire in neighboring Bastrop County, the City of Sunset Valley realized that it was necessary to plan and mitigate for potential wildfires and provide educational opportunities for our residents. The plan was first adopted in 2012 and revised in 2021.

This plan was prepared following the requirements for a CWPP, as described in the Healthy Forest Restoration Act. (1) Collaboration: The CWPP was collaboratively developed by local and state government representatives, in consultation with other interested parties. (2) Prioritized Fuel Reduction: The CWPP identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect the community and essential infrastructure; and, (3) Treatment of Structural Ignitability: The CWPP recommends measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

The plan also addresses the community response to a wildfire, including evacuation, emergency responder access, and water supply for fighting wildfires.

The result of this plan is a list of strategies for the community working with regional stakeholders to meet the following goals:

> Goal 1: Reduce the wildland fire risk to lives and property in the City of Sunset Valley, and
>
> Goal 2: Support Austin Fire Department by identifying risks, ensuring appropriate training of Sunset Valley staff and maintaining critical fire suppression infrastructure.
>
> Goal 3: Promote future development and redevelopment within the City to be fire resistant within their wildland environment
>
> Goal 4: Provide adequate wildfire firefighting infrastructure and provide residential evacuation plans and responder access plans for implementation in the event of a wildfire.

1.0 Purpose, Authority, and Plan Development

Community Wildfire Protection Plans are authorized and defined in Title I of the Healthy Forest Restoration Act (HFRA), passed by Congress on November 21, 2003 and signed into law on December 3, 2003.

The City of Sunset Valley City Council authorized the development of a written document that outlines recommendations and priorities regarding wildland fire preparedness and mitigation in the City of Sunset Valley and its extraterritorial jurisdiction (ETJ).

1.1 Collaboration

HFRA requires that the local government, local fire authority, and a state forestry representative mutually agree to the contents and actions recommended in the CWPP. For the development of this plan, the City requested data, advisory input and draft recommendations from representatives of local and regional organizations, including: Austin Fire Department, Austin Independent School District, Texas Forest Service, and Travis County Emergency Management.

1.2 Statement of Intent and Goals for plan development

The goals of this Community Wildfire Protection Plan are to:

1) Identify wildland fuel hazards throughout the City;
2) Identify critical structures and community assets needing protection;
3) Develop collaborative preparedness and mitigation activities to reduce hazardous fuels and structure ignitability on both public and private lands within the City.

1.3 Lead Planning Team

The Core Planning Team assigned by the City Council to review and make recommendations to this plan are the Planning and Environmental Committee, Public Safety Committee, and the Public Works Committee, with the City Council having final approval of the Community Wildfire Protection Plan.

1.4 Planning Process

A. COMMUNITY PREPARATION

In June 2011, the City convened a team of representatives from local government, local fire departments, and the Texas Forest Service to discuss and gain collaborative consensus on:

1. Intent to develop the City's Wildfire Plan
2. Process for achieving a plan document
3. Specific issues and risks to be included in the document

In 2020-2021, this plan was revised to determine which goals had been met and establish new goals as needed. The revised plan was reviewed by the Austin Fire Department's Wildfire Division. The Austin Fire Department also conducted a review of all streets within the City of Sunset Valley and provided recommendations for infrastructure improvements.

B. RISK ASSESSMENT

a) Develop community profile - collaborative establishment of maps defining inhabited areas of risk, areas containing critical human infrastructure, and forest areas at risk for large-scale fire disturbance.
b) Develop a community risk assessment –assessment of: fuel hazards; risk of wildfire occurrence; homes, businesses, and essential infrastructure at risk; other community values at risk (environmental, historical, cultural, endangered species, etc.); and the local preparedness capabilities to protect and address these risks.

C. PRIORITY SETTING

Establish community priorities and recommendations –to determine priority fuel reduction, structural protection, identified values protection, and improvements to fire response capabilities.

D. ACTIONS AND EVALUATION

1). Develop action priority-related implementation.
2). Finalize the Community Wildfire Protection Plan
3). Obtain commitment to annual funding of Community Wildfire Protection Plan by the City during the budget process.
4). Implement, monitor, evaluate, and revise the plan as necessary.

2.0 COMMUNITY PROFILE

The City of Sunset Valley is located in Travis County, Texas (figure 1); and is wholly surrounded by the City of Austin. The first land transaction in the area dates back to 1835, but it wasn't until the early 1950s that the residential community of Sunset Valley was developed. In September 1954, Sunset Valley was incorporated as a municipality and is governed by the Mayor and City Council. Sunset Valley is organized as a General Law City with jurisdiction over all areas of the City. There is a homeowners' association in the Meadows subdivision which will be contacted for inclusion as a cooperative partner in proposed future mitigation activities.

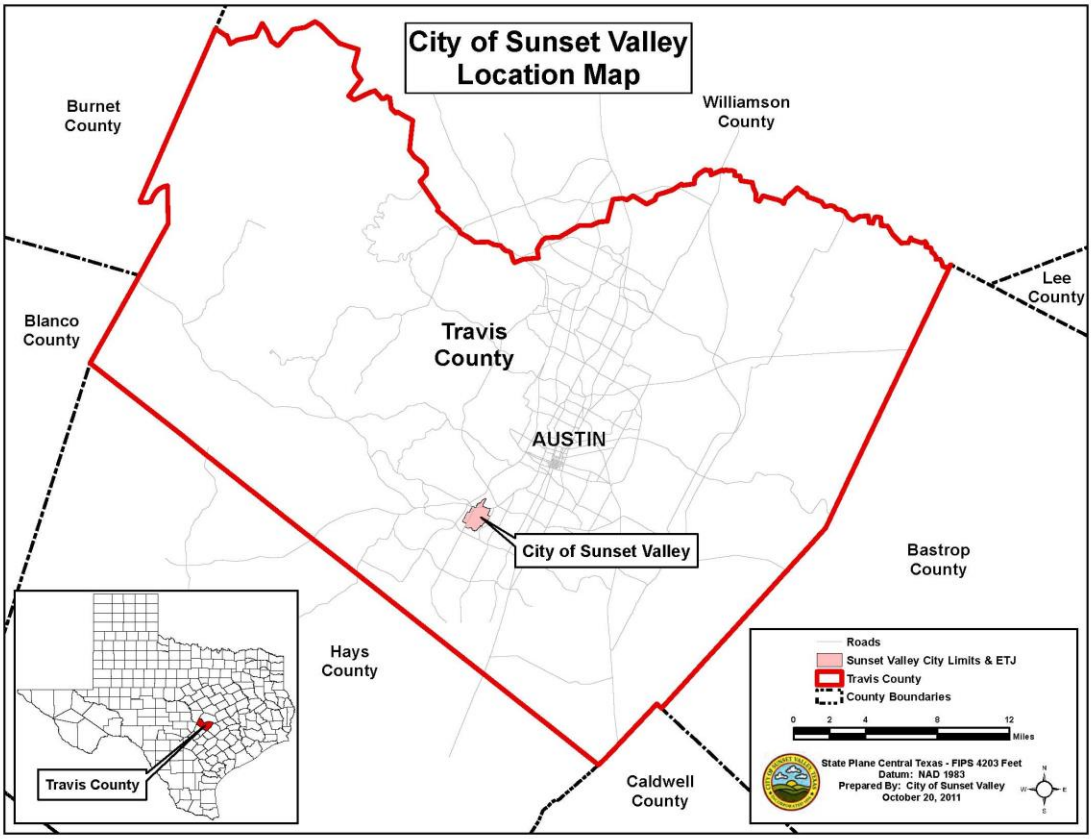


Figure 1: Location of the City of Sunset Valley

2.1 Population and Development

According to the Texas Demographic Center, in 2019 the population of Sunset Valley was 663 in 2020. Residential development is limited to redevelopment of existing lots, and a few opportunities for larger lot subdivision in the older neighborhoods. Commercial development is also limited to redevelopment of existing space in the shopping centers, and certain lots along Brodie Lane and Highway 290 frontage road.

2.2 Climate

Drought is a major climatic issue in Central Texas. Several months of extensive drought occur on a 5 to 7 year cycle, broken by rains that may cause severe flooding. Seasonal rains generally occur in April-May and October-November encouraging the growth of foliage that during the drought periods become wildfire fuel.

2.3 Structure Inventory

The majority of structures in the community are residential and located on private property (figure 2). Governmental facilities include buildings owned and operated by the City of Sunset Valley, as well as the Austin Independent School District (AISD). There are three commercial shopping areas in the City, which comprise the dense development along the City's major thoroughfare, Brodie Lane. Highway 290 includes a mixture of commercial and residential properties, with the potential for more commercial development. Structures in the ETJ are primarily residential with the exception of one commercial establishment on Country White Lane.

2.4 Climate

Drought is a major climatic issue in Central Texas. Several months of extensive drought occur on a 5 to 7 year cycle, broken by rains that may cause severe flooding. Seasonal rains generally occur in April-May and October-November encouraging the growth of heavy foliage that during the drought periods becomes wildfire fuel.

2.5 Conservation and Open Spaces

The City of Sunset Valley has five dedicated conservation areas and a trail system (figure 3) that are maintained in accordance with the City's Open Space Management Plan. Residential areas abut all of the described areas. Below are descriptions of these open spaces.

A. SOUTH HILLS CONSERVATION AREA

The South Hills Conservation Area is located at the southern edge of the City of Sunset Valley, along the western edge of the Cherry Creek neighborhood. The tract is 42.83 acres. The South Hills Conservation Area has a peak elevation of approximately 740 feet above sea level and the lowest elevation is 670 feet. Soils within the area include Ferris-Heiden along slopes and flats. The extant plant community of the South Hills Conservation Area is: Ashe Juniper-Oak Series.

Land Use and Building Footprints

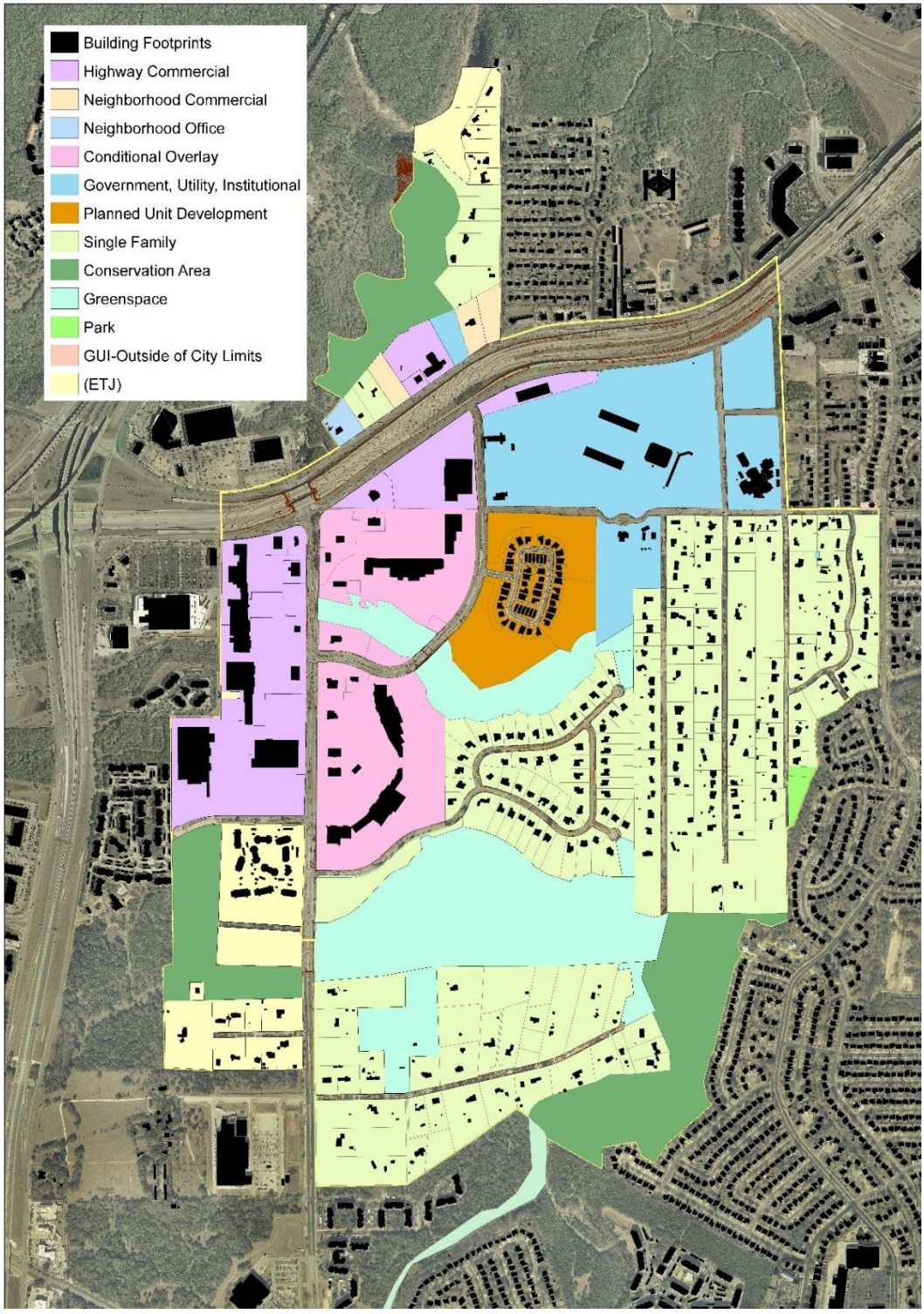


Figure 2: Land Use and Building Footprints

B. GAINES GREENBELT

The Gaines Greenbelt is located at the northern edge of the City of Sunset Valley, and connects with the City of Austin's Barton Creek Greenbelt. The area is bisected several times by Gaines Creek. Gaines Creek is ephemeral and is a tributary for Barton Creek. The tract is 22.08 acres in extent. The Gaines Greenbelt has an elevation varying from 570 to 660 feet along the plateau. The soil of the Gaines Greenbelt is mostly Tarrant soils and rock outcrops. This is a soil that is commonly found on steep slopes along rivers. The plant community of the Gaines Greenbelt is that of an Oak – Juniper woodland.

C. INDIAN GRASS PRAIRIE PRESERVE

The Indian Grass Prairie Preserve is located along Williamson Creek between Country White Lane, Home Depot Boulevard, Brodie Lane, and an apartment complex. Part of the western boundary is adjacent to watershed protection lands of the City of Austin. Contained within the preserve area are a radio tower, an associated small building, and a gravel road. A wastewater line is also located north of Williamson Creek. The area comprises 21.43 acres in extent. Located approximately 700 feet above sea level, the Indian Grass Prairie Preserve has several interesting physical features. The substrate of the Indian Grass Prairie Preserve is Edwards Limestone and a cave occurs along the northern edge of the area. This cave, commonly called Sunset Valley Cave (Goat's Head Cave), and Rattlesnake Sink is a recharge feature for the Edwards Aquifer. The cave is composed of two main chambers and is home to a variety of invertebrate species. The Indian Grass Prairie Preserve is located within the Edwards Aquifer recharge zone.

The site is bisected by Williamson Creek, which is composed of Mixed Alluvial Land. Mixed Alluvial Land is comprised of beds of exposed limestone and gravelly alluvium (USDA, 1974). The majority of the site is composed of Tarrant and Speck soils. Tarrant soils are well-drained clay soils found atop limestone. Speck soils are reddish brown and also overlay a limestone substrate. The plant community of the Indian Grass Prairie Preserve is that of a Plateau Live Oak – Midgrass vegetative community (*Quercus spp*.).

D. COUGAR CREEK GREENBELT

The Cougar Creek Greenbelt is located along the Sunset Valley Branch (commonly called Cougar Creek) of Williamson Creek. The tract extends from Brodie Lane, across Ernest Robles Way, and south of Jones Road. The tract is approximately 47 acres in extent including the Villas PUD.

The Cougar Creek Greenbelt has an elevation ranging from 680 to 700 feet above sea level. Soil types include Crawford clay, Speck stony clay loam, and Tarrant soils. The construction of berms along the tributary along with a nearby re-irrigation system has caused the formation of an ephemeral wetland on a southwestern portion of the property. The berms were constructed to constrain the flow of the creek, a concrete dam was also constructed at the terminus of the berm. The plant community of the Cougar Creek Greenbelt is that of a Plateau Live Oak (*Quercus spp*.) – Midgrass series.

The area has seen significant disturbance due to previous land uses practices prior to the City of Sunset Valley acquiring the land. This has resulted in the presence of species typically found in disturbed areas.

E. SUNSET VALLEY NATURE AREA

The Sunset Valley Nature Area is located between Lovegrass Lane and Oakdale Drive. The tract surrounds a portion of the main branch of Williamson Creek and connects with the South Hills Conservation Area. Brodie Lane separates the Sunset Valley Nature Area from the Indian Prairie Grass Preserve. The flow of Williamson Creek is ephemeral and no permanent body of water is located on the tract. The tract is 64.59 acres in extent. The elevation of the Sunset Valley Nature Area extends from approximately 670 to 700 feet. A third of the tract has an Edward's Limestone substrate and the remainder of the site is Buda Limestone. The tract is bisected by Williamson Creek, which is composed of Mixed Alluvial Land (Md). The majority of this tract is composed of Tarrant and Speck soils. The Sunset Valley Nature Area is considered to be a Plateau Live Oak (*Quercus fusiformis*) - Midgrass plant community.

2.6 Wildlife Description

Wildlife observed within the City of Sunset Valley includes White-tailed Deer (*Odocoileus virginianus*), Coyote (*Canis latrans*), Raccoon (*Procyon* 8 *lotor*), Striped Skunk (*Mephitis mephitis*), Virginia Opossum (*Didelphis virginiana*), Eastern Cottontail Rabbit (*Sylvilaus floridanus*), Bobcat (*Lynx rufus),* Common Gray Fox (*Urocyon cinereoargenteus*), Nine-banded Armadillos (*Dasypus novemcinctus*), Squirrels (*Spermophilus sp*.), Porcupine (*Erethizon dorsatum*), Ringtail Cats (*Bassariscus astutus*) and other various rodent species. Texas Rat Snake (*Elaphe obsoleta lindheimeri*), Prairie Kingsnake (*Lampropeltis calligaster calligaster*), Western Diamondback Rattlesnake (*Crotalus atrox*), Rough Earth Snake (*Virginia striatula*), Red-eared Slider (*Trachemys scripta elegans*), Texas River Cooter *(Pseudemys texana*), Green Anole (*Anolis carolinensis*), Reticulated Gecko (*Coleonyx reticulates),* American Toad *(Bufo americanus)* , and other reptiles and amphgibians have been identified in Sunset Valley. Central Texas is along a migratory bird path and has a rich diversity of bird species. Over 100 bird species have been identified in Sunset Valley.

2.7 Endangered Wildlife Description

The Gaines Greenbelt is unique in that it provides habitat for the endangered Golden-cheeked Warbler (*Dendroica chrysoparia)*. Golden-cheeked Warblers nest in the Ashe-Juniper and Oak woodlands surrounding canyons and ravines. These small songbirds (~4.5 inches) were listed as endangered in 1990, their decline is related to habitat loss and fragmentation. Migratory in nature, these birds spend the winter in Mexico and Central America, and Central Texas is the only place where these birds nest and raise their young.

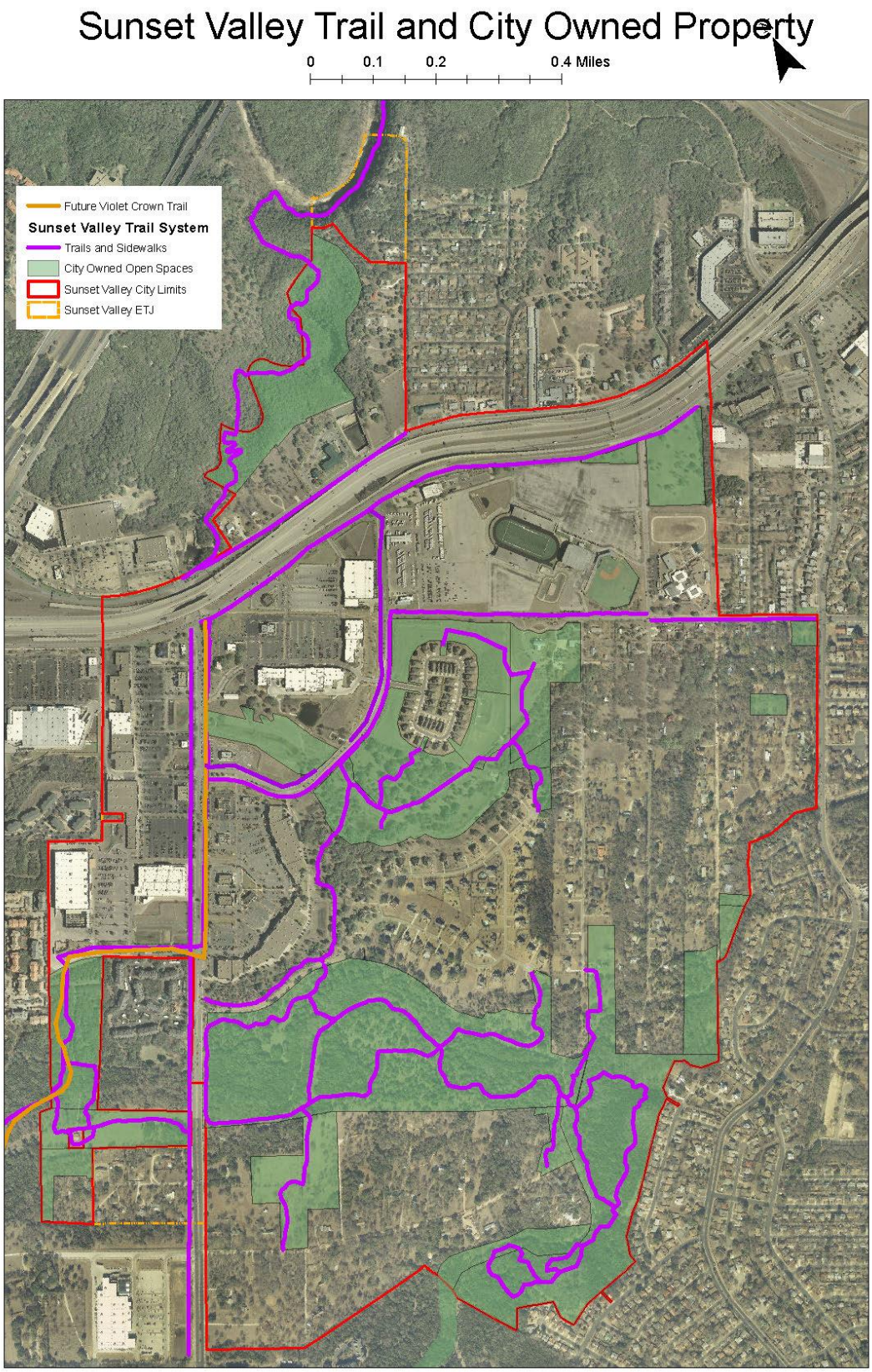


figure 3. Trail and City Owned Property

3.0 COMMUNITY RISK ASSESSMENT

3.1 Historical Fire Occurrence

Sunset Valley has not experienced a wildfire that has burned acres. There have been incidents of grass fires primarily along the major thoroughfares in the City, and quickly extinguished with handheld suppression equipment.

Drought conditions, extreme weather – high winds and lighting resulting in downed power lines, and human error, such as illegal trash burning, fireworks, unsafe disposal of burning tobacco materials, and human carelessness are reported to be factors in the recent wildfires in Travis, Bastrop and Hays Counties.

According to the Texas Forest Service, from the beginning of 2011 to October 31, 2011, 27,976 fires burned 3,959,040 acres (double the previous record), 2,862 homes, and over 2,700 other structures. On September 4, 2011, a firestorm known as the Bastrop County Complex Fire engulfed Bastrop, Texas and by September 30th had destroyed more than 1,600 homes, burned over 34,000 acres, and killed two people. This fire is now regarded as the most catastrophic wildfire in Texas history. Bastrop County is adjacent to Travis County and approximately 35 miles due east of Sunset Valley.

3.2 Access/Egress/Evacuation/Emergency Notification

Evacuation from the City, in conjunction with fire and emergency vehicle entry will challenging and dangerous for both residents and responders as neighborhoods in Sunset Valley are characterized by single entrance/exits and narrow roadways with limited turning space. Because residential roadways expected to provide escape routes may become impassible depending on the size of the wildfire and the direction of blowing smoke, alternate vehicular and pedestrian routes have been identified. Figure 4 identifies the primary evacuation routes along paved roadways and figure 4 identifies potential evacuation routes if the primary routes are unavailable. These are subject to change based on the nature of the emergency. First responders will provide information and directions based on the nature of the incident.

The City's Code Red System will be utilized to send emergency information to all individuals who have signed up as part of the system. Residents, business owners, and those working in the commercial areas are encouraged to sign up for this service. In the case of an emergency the City will issue an alert notifying residents of actions they shall take.

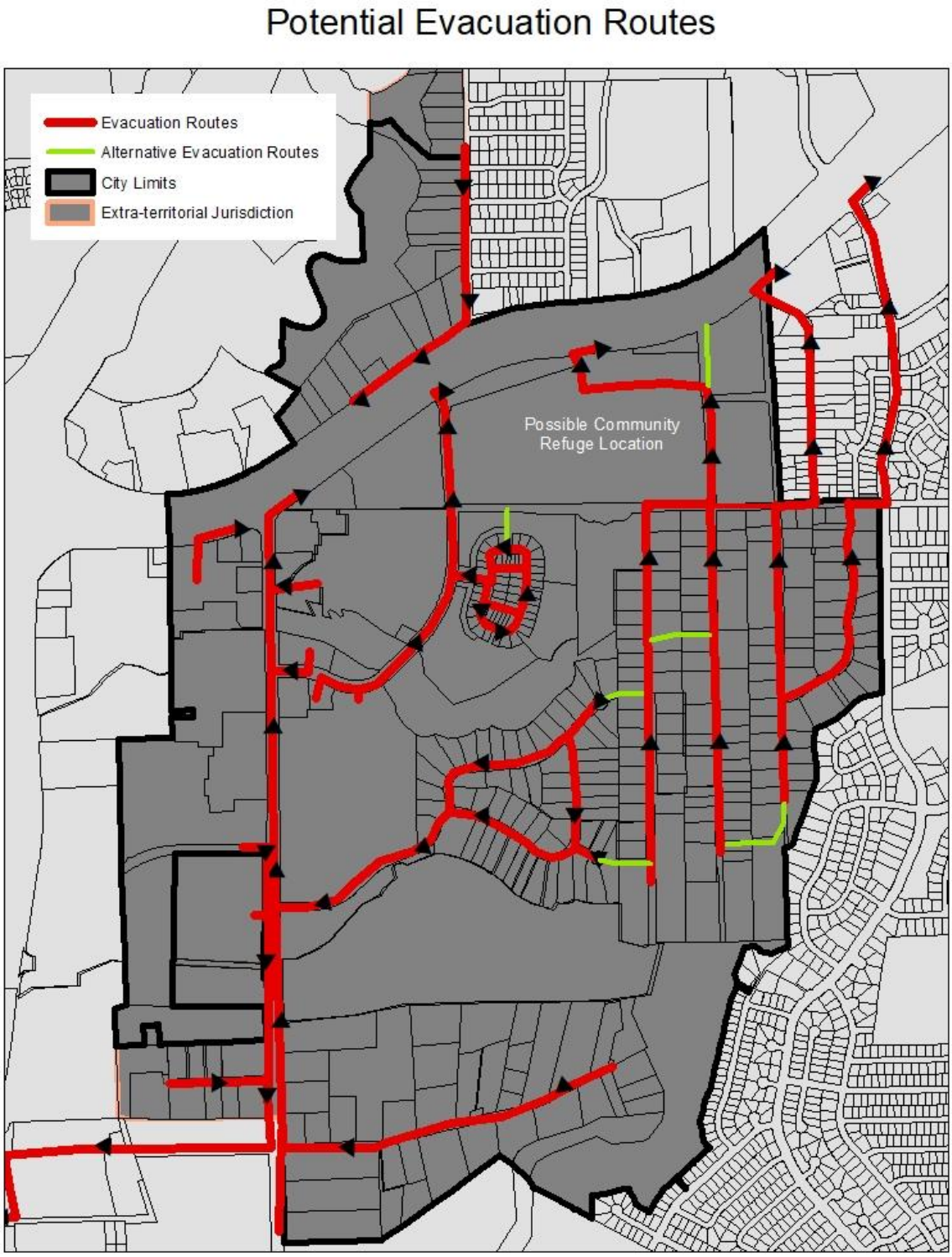


Figure 4: Primary Evacuation Routes

3.3 Topography

Topography in Sunset Valley is characterized by rolling hills, with elevation varying from 570 to740 feet. With the exception of the Gaines Greenbelt, topography is not an impediment to fighting wildfires in Sunset Valley.

3.4 Predominant Construction Materials

Residential construction materials vary throughout the City. Recent site-built subdivision houses are built with non-flammable or flame-resistant materials, while homes built in earlier eras are more likely some type of wood construction.

3.5 Critical Water Sources

The major water source in the Travis County which could provide potential water drafting is the Colorado River (figure 6). The City may also utilize the groundwater well as a source of additional water.

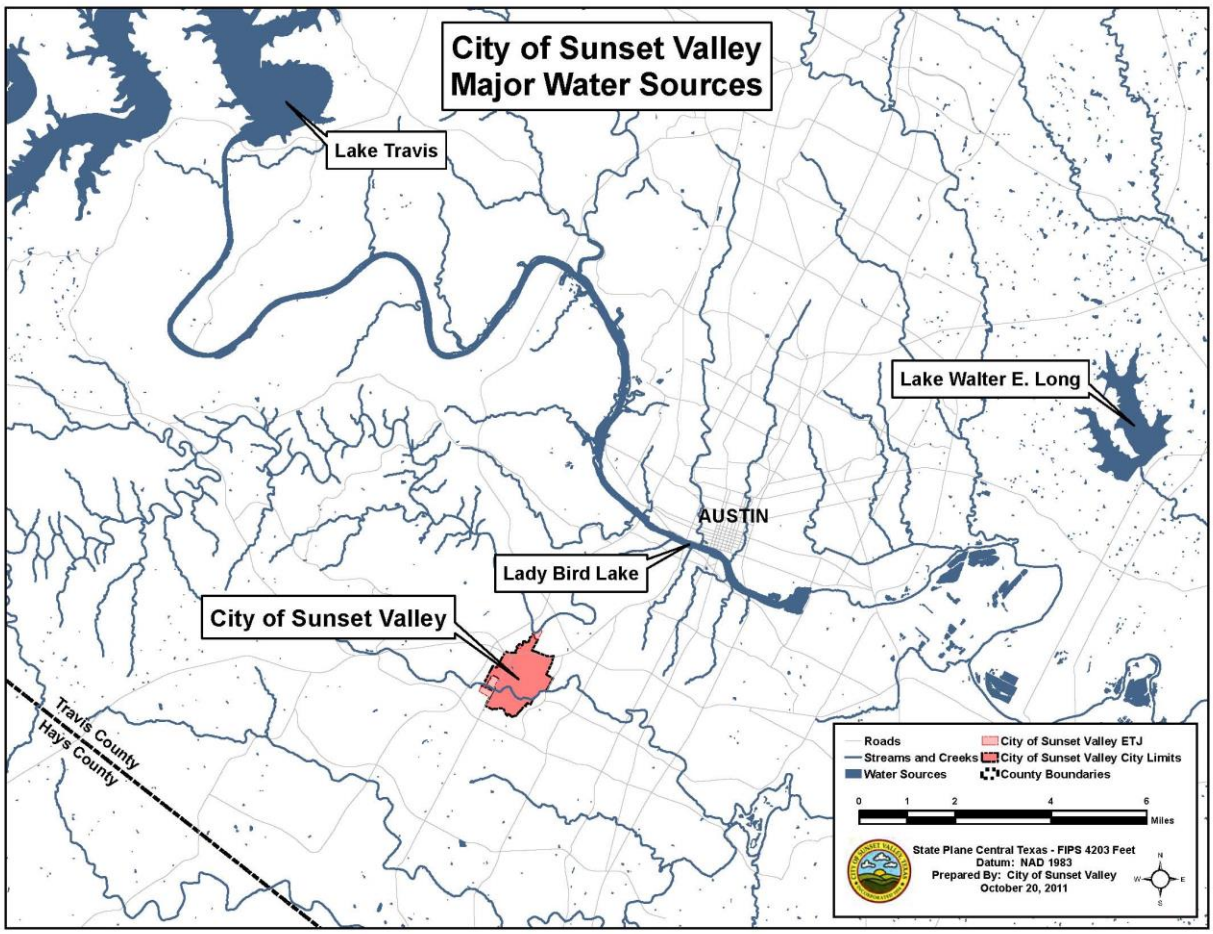


Figure 6. Major Water Sources

3.6 Fire Fighting Capabilities

The City contracts the Austin Fire Department for fire and emergency medical response services. The location of nearby fire stations can be found in figure 7.

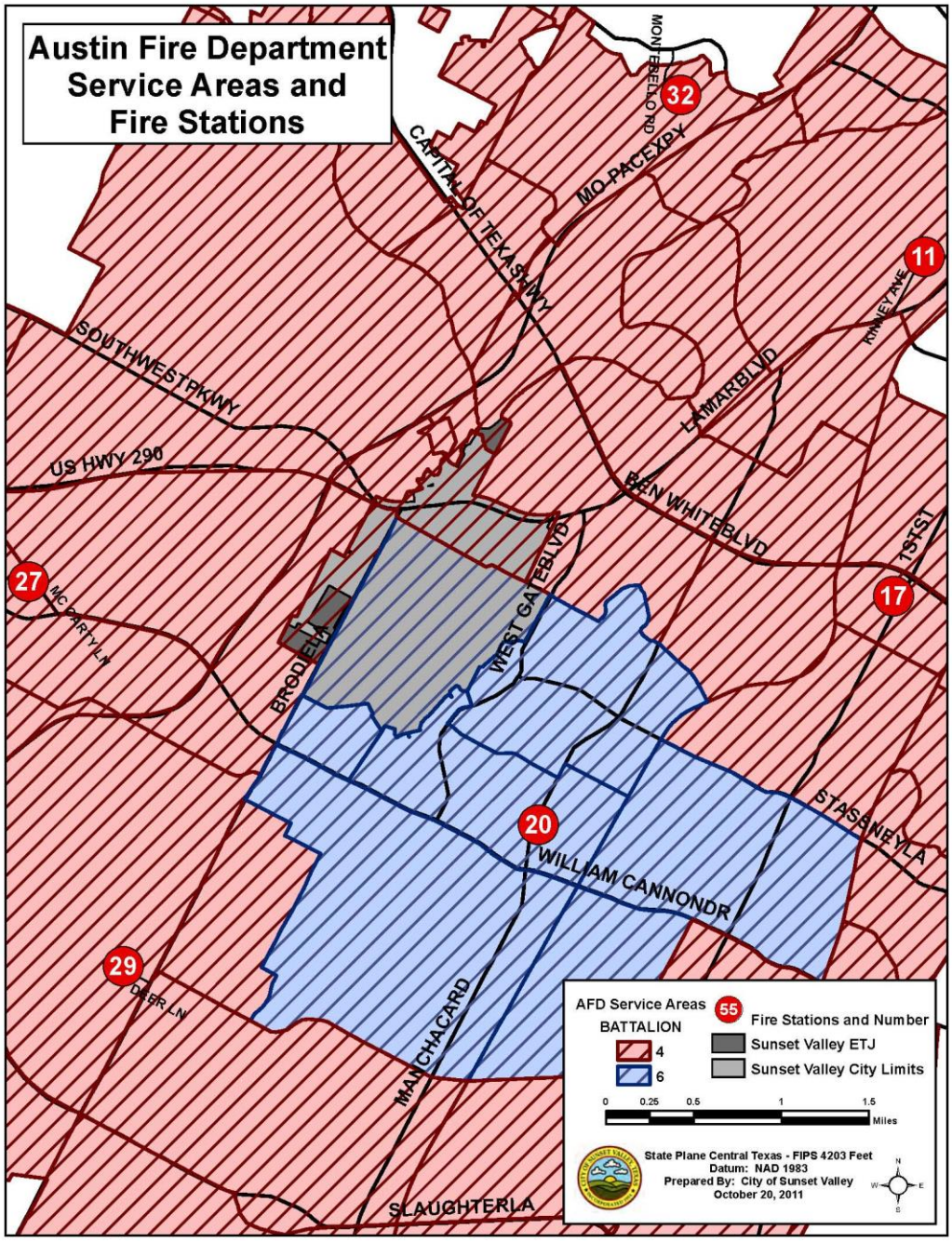


Figure 7. Fire Station locations

3.7 Fire Hydrants

Most of the City is connected to the public water system (PWS), though private wells are in use on many properties. In 2011, there were some parts of the City that did not have adequate pressure for the fire hydrants. This was specifically related to Lone Oak Trail

and Pillow Road. In 2012, the City began a project to loop the water lines in this area as well as make other improvements. This project addressed the water pressure issues on these streets and was completed by 2013. Sunset Valley tests city-maintained hydrants each year for compliance with the City of Austin Fire specifications. Fire hydrants that do not pass the standards set forth are repaired and retested. As of 2021, all hydrants have passed their annual test.

3.8 Expected Fire Behavior

According to Texas Forest Service, fire behavior in Central Texas is wind and fuel driven. Strong wind events will cause the most severe fire behavior. With winds above 20 mph, flame lengths in grass may reach 15–20 feet. In heavy juniper, spotting of blown burning embers up to six tenths (.06) of a mile is possible.

Critical fire behavior situations include: live fuel moisture less than 80 percent, humidity below 25 percent; and eye level winds greater than 8 mph can cause high flame lengths, resulting in fires crowning in juniper and hardwoods.

Continuing drought conditions will increase the risk for extreme fire seasons in Sunset Valley. With appropriate defensible space around these homes and the mitigation of fuels near residential developments, wildfire risk, even in extreme conditions can be reduced.

3. 9 Wildfire Assessment

Sunset Valley covers approximately one square mile and has over 200 acres of greenspace. The majority of the green spaces are in tracts ranging from 20 to 65 acres in extent located throughout the City. This means that the majority of the City is a Wildland Urban Interface, where human-made structures and infrastructure meet or intermix with wildlands or vegetation fuels. In other words, the WUI are places where potentially flammable vegetation fuels meet or overlap with homes. The WUI describes an area within or adjacent to private and public property where mitigation actions can prevent damage and loss from wildfire. Fire risk differs throughout the City, based on maintenance, season and vegetation. Fire hazard will range from low in the commercial areas, to medium and high in less maintained and high vegetative areas of the City. A wildfire risk score map has been prepared to show areas of increased risk (Figure 8). Anticipated flame lengths under the most unfavorable environmental conditions are also demonstrated in Figure 9. Finally, a conflagration hazard map (Figure 10) was prepared based on the proximity of buildings to one another and the level of response complexity within the area. Property owners will be encouraged to have their property assessed for wildfire risk; and education and mitigation support will be provided based upon the results of the risk assessment.

A. Objective

To provide base information on the status of the Wildland Urban Interface issues that might have an impact of the safety of persons and/or property in Sunset Valley, Texas.

B. Method

Windshield and walking surveys were conducted throughout the city limits of Sunset Valley with the Austin Fire Department. In 2021, additional assessments were conducted using Geographic Information System (GIS) analysis. Descriptions of each area and recommendations for each greenspace and residential area were documented and discussed.

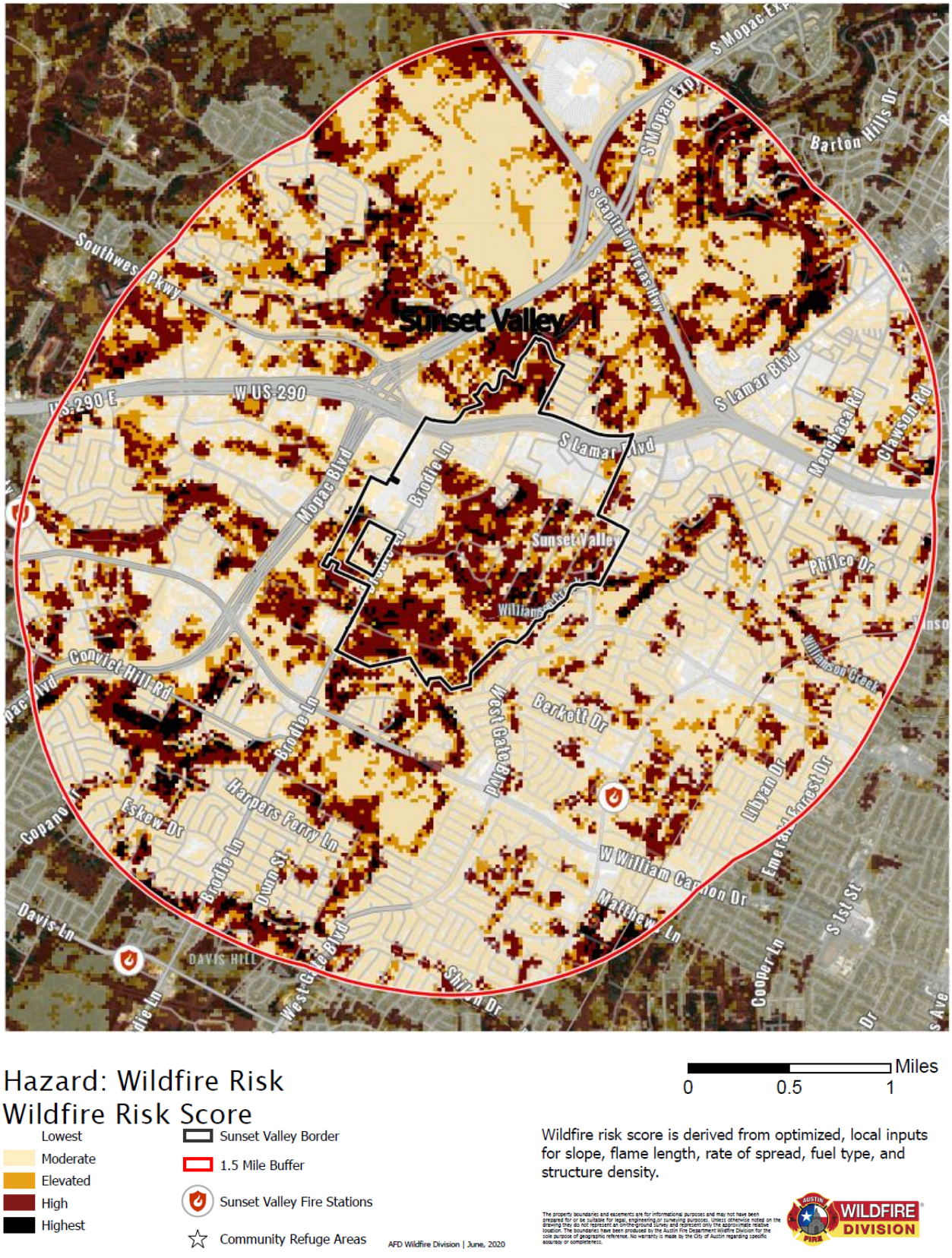


Figure 8: Wildfire Risk Score

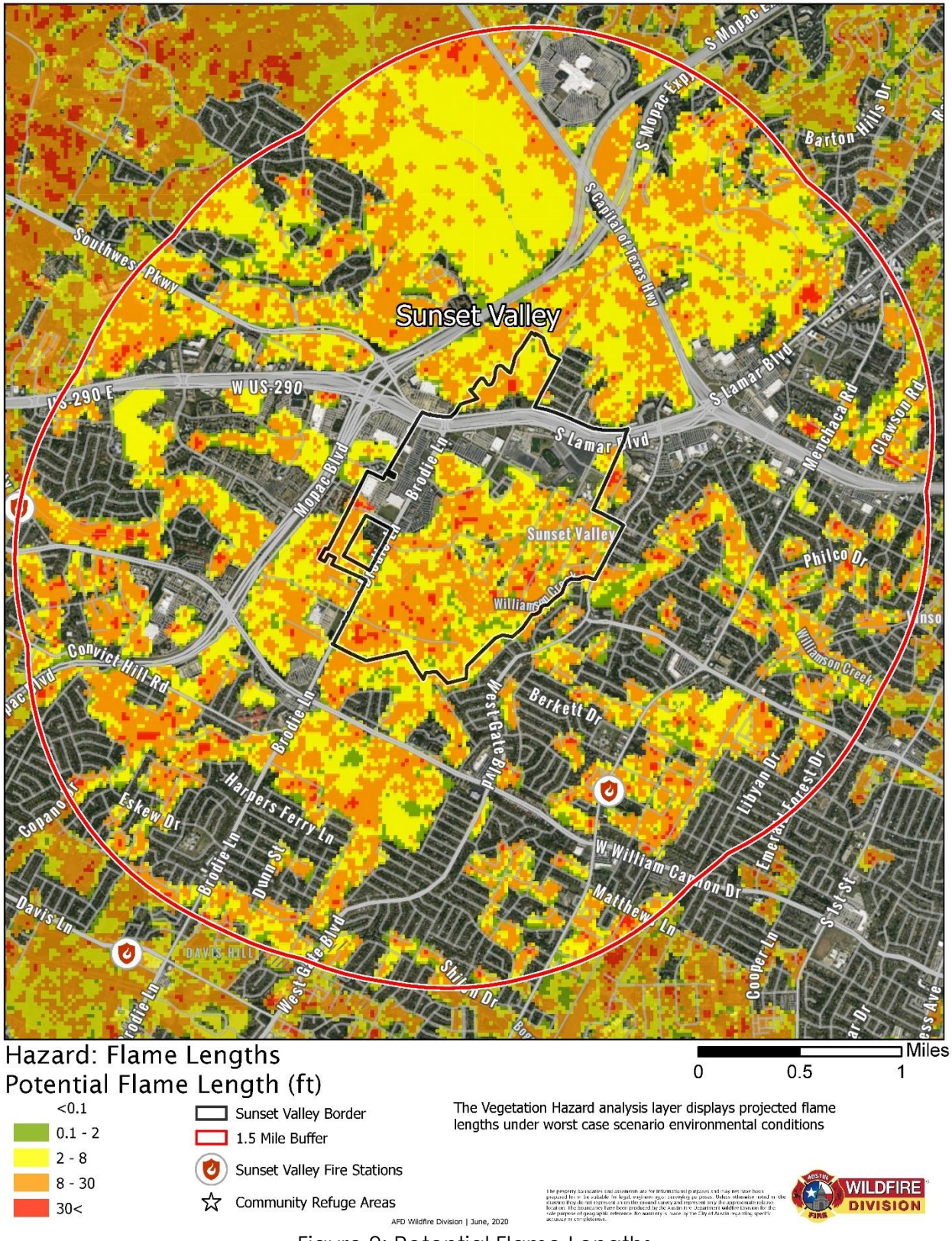


Figure 9: Potential Flame Lengths

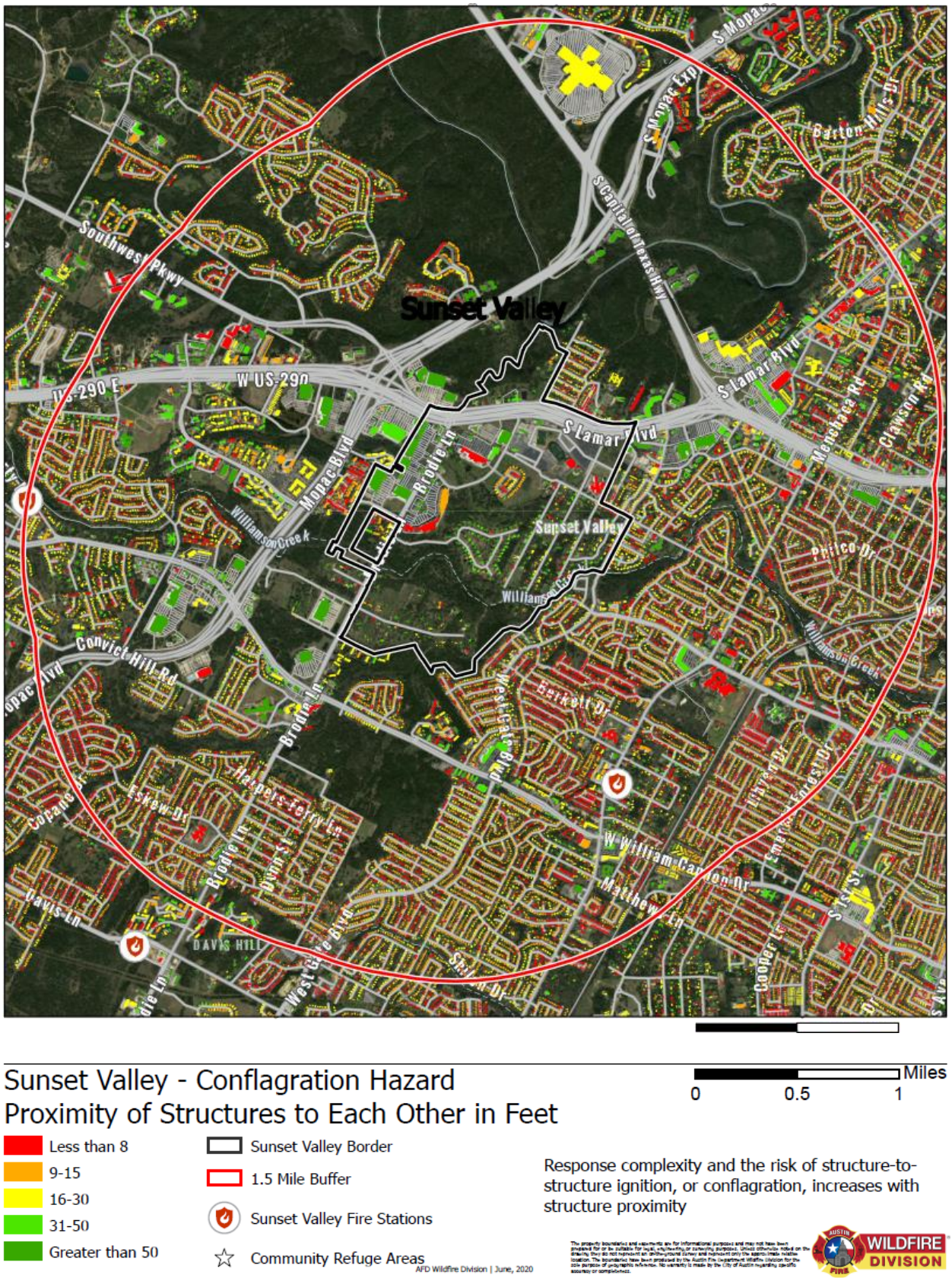


Figure 10: Conflagration Hazard

C. Wildland Assessment and Recommendations

Fire is a natural part of an ecosystem. However, with increased urbanization fire has been removed from the environment and wildland fuels have been allowed to accumulate. The wildland areas of Sunset Valley consist of closed canopy oak-juniper woodland, mixed oak-prairie, and grassy prairie areas. In many instances these plant communities flow seamlessly into the residential areas. These plant communities represent ground, ladder, and canopy fuels in a patchwork across the City. In most areas the encroachment of Ashe Juniper has increased and during prolonged droughts this poses an increased fuel risk. When the moisture content of Ashe Juniper falls below a specific threshold the tree's flammability increases.

South Hills Conservation Area

Description: The most southern greenspace within Sunset Valley is the South Hills Conservation Area consisting of 42.83 acres. Elevations in the South Hills Conservation Area range from 670 to 740 feet above sea level. This area is a predominately oak-juniper woodland, with approximately 90% canopy cover. Due to the lack of light at ground level there is significant dead wood in the understory, however there is little grass in these areas. The most common trees on this tract are Ashe Juniper (*Juniperus asheii*) and Cedar Elm (*Ulmus crassifolia*). Along the eastern boundary, Live Oak (*Quercus fusiformis*), Sugar Hackberry (*Celtis laevigata*), Texas Persimmon (*Diopyros texana*), and Pencil Cactus (*Opuntia leptocaulis*) are more prevalent. Shin Oak (*Quercus durandii var. breviloba)*, Texas Ash (*Fraxinus texensis*), Mexican Buckeye (*Ungnadia speciosa*), and various other trees are also present. Grasses such as Side-oats Grama (*Bouteloua curtipendula*), Silver Bluestem (*Bothriochloa laguroides*), and Tall Dropseed (*Sporobolous asper*) are common in open areas. This greenspace borders the Cherry Creek Neighborhood which is located within the City of Austin. Homes within this neighborhood have smaller lots and the homes are in close proximity to the greenspace.

Completed Activities: A brush truck accessible path was completed in 2012 along the border with the City of Austin properties. This area is maintained for accessibility. A shaded fire break is also maintained along the border with the Cherry Creek Neighborhood.

Recommendations: The South Hills Conservation Area has a thick canopy and high brush content. This area also has steep hillsides and stability of the hillsides should be considered with any removal. Thinning of Ashe Juniper in conjunction with contour mulching is recommended in this area. This will allow small amounts of Ashe Juniper to be removed over time and protect the hillsides from erosion. The fire breaks must be inspected twice per year and maintained according to the inspection results. Removal of dead wood on an annual basis is also recommended.

Sunset Valley Nature Area

Description: The Sunset Valley Nature Area is 64.59 acres and is considered to be a mixed oak (*Quercus fusiformis*) - prairie plant community. Elevations range from 680 to 700 feet above sea level. Trees found commonly in the upland area include Live Oak (*Q.fusiformis*), Cedar Elm (*Ulmus crassifolia*), Juniper (*Juniperus asheii*), and Honey Mesquite (*Prosopsis gradulosis*). The understory is composed of Texas Croton (*Croton fruticulosis*), Elbowbush (*Foresteria pubescens*), and Yaupon (*Ilex vomitoria)*. The grassland areas are composed of Side Oats Grama (*Bouteloua curtipendula*), Purpletop (*Tridens flavus*), Curley Mesquite (*Hilaria berlangeri*), and Buffalo grass (*Buchloe dactyloides)*. This area has significant Juniper encroachment throughout and has approximately 70% canopy cover. Continual clearing has helped reduce the amount of Juniper. Williamson Creek runs through the center of this greenspace and much of the juniper has been removed from the central creek bed. Two distinct neighborhoods border this greenspace: Lovegrass Lane and Oakdale Drive. The homes that neighbor this wildland have large one acre or larger lots and the homes are not located near the property boundary.

Completed Activities: The shaded firebreak along the southern fence line was completed in 2013. A shaded firebreak along the northern border was also completed. These areas are maintained to allow access.

Recommendations: Many of the trails within this area are brush truck accessible and an increase in accessibility is recommended. Widening the access from 762 Oakdale is recommended. Increased Juniper and brush control to restore the prairie areas and reduce ladder fuels is also recommended throughout the greenspace. Protection of the riparian areas, buffering trails and private property, while reducing fuel loads is the balance that should be found within this greenspace. Removal of dead wood on an annual basis is also recommended.

Cougar Creek Greenbelt

Description: The Cougar Creek Greenbelt is a 23.37 acre area that encompasses the Sunset Valley tributary of Williamson Creek. On the eastern portion of the greenbelt, two berms have been constructed parallel to the creek to help in flood control. Elevations in this greenspace range from 680 to 700 feet above sea level. The plant community of the Cougar Creek Greenbelt is that of a mixed oak (*Quercus spp.*) - prairie. Live Oak (Quercus fusiformis) and Cedar Elm (*Ulmus crassifolia*) are the dominant canopy trees, with Agarita (*Berberis trifoliata*), Elbowbush (*Foresteria pubescens*), Prickly Pear (*Opuntia lindheimeri*), and Pencil Cactus (*Opuntia leptocaulis*) common understory species. Other common woody plants include Ashe Juniper (*Juniperus ashei*), Honey Mesquite (*Prosopsis gladulosis*), Prairie Sumac (*Rhus lanceolata*), and Sugar Hackberry (Ce/tis laevigata). This area has had some Juniper and Mesquite encroachment and there are several thick brush areas. The area has significant grassy open areas and approximately 30% canopy cover. Common grasses include Buffalo grass (*Buchloe dactyloides*), Annual bluegrass (*Poa annua*), and Silver Bluestem (*Bothriochloa laguroides*). Among other common grasses were several invasive species including Bermuda grass (*Cynodon dactylon)*, Johnsongrass (*Sorghum halapense*), Common Oats (*Avena fatua*), Wheat (*Triticum aestivum*), and King Ranch Bluestem (*Bothriochloa ischaemum*).

Completed Activities: Since 2011, the City has removed mesquite and other brush in this area. Additionally, the area is mowed annually to reduce the accumulation of grasses.

Recommendations: Continual maintenance of the open grassy areas through brush removal and seasonal mowing. Removal of dead wood on an annual basis is also recommended.

Indian Grass Prairie Preserve

Description: The Indian Grass Prairie Preserve is located along Williamson Creek between Country White Lane, Home Depot Boulevard, Brodie Lane, and the Grand Reserve apartment complex. Part of the western boundary is adjacent to watershed protection lands of the City of Austin. Contained within the preserve area are a radio tower, an associated small building, and a gravel road. A wastewater line is also located north of Williamson Creek. The area comprises 21.43 acres in extent and is approximately 700 feet above sea level. The plant community of the Indian Grass Prairie Preserve is that of a mixed oak – prairie plant community and has approximately 60% canopy cover. The site consists of an open prairie area located near the radio tower. Many invasive species such as Johnson (*Sorghum halepense*) and Bermuda grass (*Cynodon dactylon*) inhabit this area. Native species found here include Silver Bluestem (Bothriochloa laguroides), Indiangrass (*Sorghastrum nutans*), Purple Threeawn (*Aristida purpurea*), Curley Mesquite (*Hilaria berlangerii*), and Side Oats Grama (*Bouteloua curtipendula*). This area is also being encroached by Honey Mesquite (*Prosopsis gradulosa*). The major tree species include Live Oak (Quercus fusiformis), Ashe Juniper (Juniperus asheii), Cedar Elm (*Ulmus crassifolia*), Sugar Hackberry (Ce/tis laevigata), and Texas Ash (*Fraxinus texensis*). The understory is composed of Elbowbush (*Foresteria pubescens*), Texas Persimmon (*Diospryos texana*), and Wafer Ash (*Ptelea trifolioliata*). The northern section of the property has a significant Ashe Juniper presence.

Completed Activities: The City has entered into an agreement with the City of Austin for construction of the Violet Crown Trail. Once constructed, this trail will provide accessibility within the area. Woody vegetation has been removed from the open fields to maintain the prairie status.

Recommendations: This area has existing roads that can be used for brush truck access to parts of the property. It is recommended that brush be thinned in areas near the apartment complex. This will require working in conjunction with the apartment complex as much of their property is heavily wooded. Removal of dead wood on an annual basis is also recommended.

Gaines Greenbelt

Description: The Gaines Greenbelt is located at the northern edge of the City of Sunset Valley, and connects with the City of Austin's Barton Creek Greenbelt (Figure 11). This area is bisected several times by Gaines Creek, which is ephemeral and is a tributary for Barton Creek. The tract is 22.08 acres in extent. Elevations range from 570 to 660 feet above sea level. Topographically this area has steep cliffs and is a series of hills and valleys. The plant community of the Gaines Greenbelt is that of an Oak - Juniper woodland (*Quercus spp.* and *Juniperus ashei*). Although mostly wooded, the area does support a few small, open grasslands. The most common tree on this tract is Ashe Juniper (*Juniperus ashii*). Other common trees are Live Oak (Quercus fusiformis), Texas Oak (Quercus texana), Cedar Elm (*Ulmus crassifolia*), Shin Oak (*Quercus durandii var. breviloba*), Texas Ash (*Fraxinus texensis*), Sugar Hackberry (*Celtis laevigata*), and Escarpment Black Cherry (*Prunus serotina*). Shrubs and small trees of the understory include Texas Persimmon (*Diospyros texana*), Carolina Buckthorn (*Rhamnus caroliniana*), and Red Buckeye *(Aesculus pavia*). The slopes and cliffs provide habitat for various ferns including the Southern Shield Fern (*Thelypteris kunthii)*, Purple Cliffbrake (*Pallaea atropurpurea*), Alabama Lipfern (*Cheilanthes alabamensis*), and Blackstem (*Asplenium resiliens*).

The Gaines Greenbelt is unique in that it is included in the designated and Federally protected habitat for the endangered Golden-cheeked Warbler (*Dendroica chrysoparia*). Golden-cheeked Warblers nest in the Ashe-Juniper and Oak woodlands surrounding canyons and ravines. These small songbirds ('"4.5 inches) were listed as endangered in 1990, their decline is related to habitat loss and fragmentation. Migratory in nature, these birds spend the winter in Mexico and Central America, and Central Texas is the only place where these birds are known to nest and raise their young.

Completed Activities: Small amounts of brush have been removed from this area.

Recommendations: Due to the sensitive nature of this habitat and the difficult topography, brush truck accessibility is not recommended. Vegetation management, specifically invasive species, outside of the Golden Cheek Warbler breeding season is recommended. Residents living in homes bordering this area should have an increased educational focus to understand defensible space along this tract.

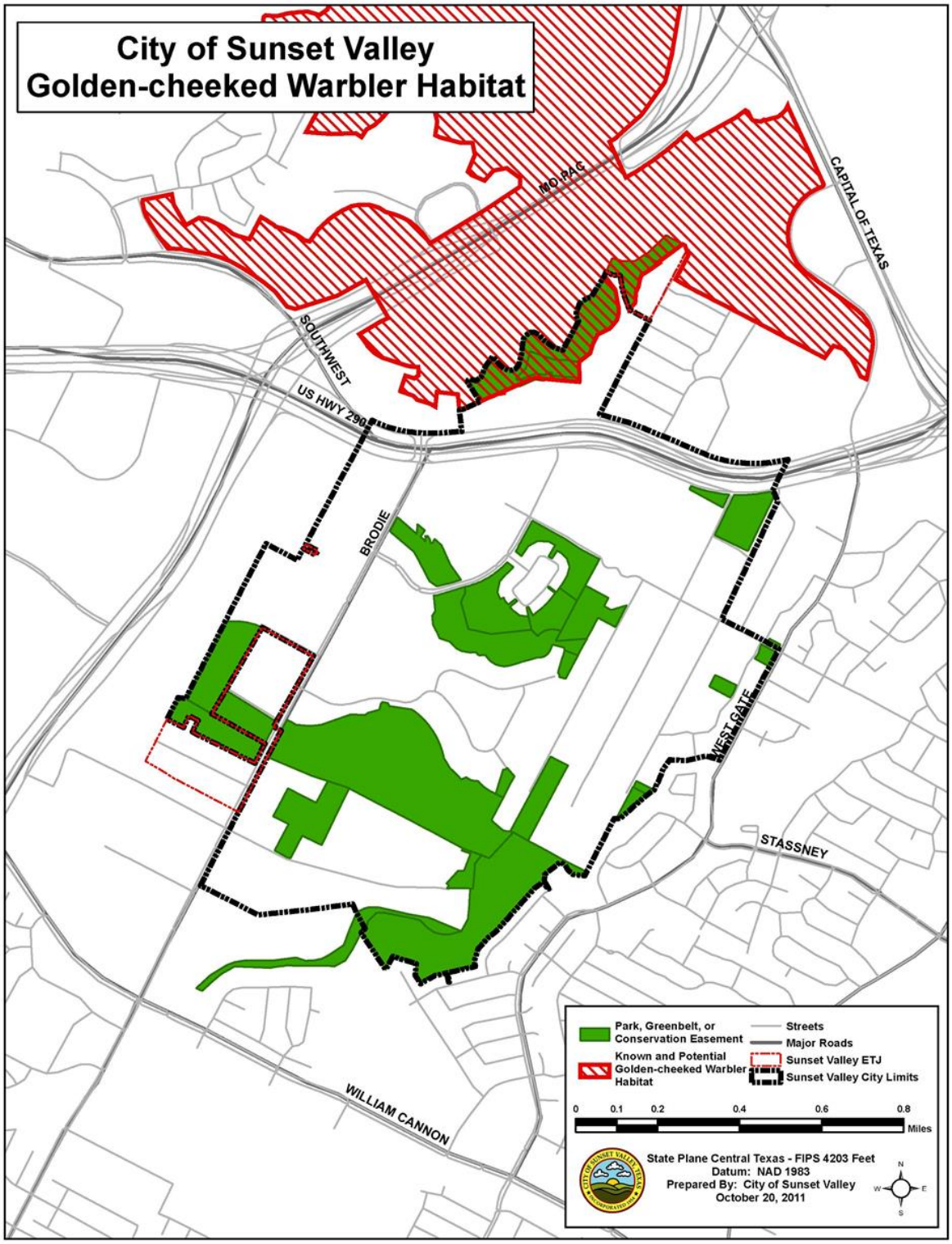


Figure 11: Golden Cheek Warbler Habitat

Annual Maintenance Activities and Estimated Costs

Location	Fire Break Maintenance*	Mowing	Dead Wood Removal	Brush Thinning
South Hills Conservation Area	Maintain Shaded Fire Break along southern border.	Mowing of firebreak maintenance monthly during the growing season.	Removal of dead wood in woody areas.	Selective removal of Juniper and Mesquite.
Sunset Valley Nature Area	Maintain shaded fire break along northern and southern borders.	Trails mowed monthly during the growing season. Annual mowing of open areas.	Removal of dead wood in woody areas.	Selective removal of Juniper and Mesquite.
Cougar Creek Greenbelt		Tract mowed annually or biannually depending on growth throughout the year. Trails mowed monthly during the growing season. Berms mowed quarterly for compliance with Dam Maintenance Plan.	Removal of dead wood in woody areas.	Selective removal of Juniper and Mesquite.
Indian Grass Prairie Preserve			Removal of dead wood in woody areas.	Selective removal of Juniper and Mesquite.
Gaines Greenbelt			Removal of dead wood in woody areas outside of Golden Cheek Warbler Breeding Season.	Due to the presence of Golden Cheek Warbler habitat the removal of Ashe Juniper is not recommended. Invasive Species can be removed as per the Gaines Greenbelt Management plan.

*Fire Breaks are maintained on a rotating basis annually for large scale brush removal. Year 1 South Hills, Year 2-3 Sunset Valley Nature Area.

Anticipated Annual Costs	
Fire Break Maintenance	$18,000
Mowing	$6,700
Dead Wood Removal	$6,000
Brush Thinning	$6,000
Total	$42,000

D. Neighborhood and Commercial Area Assessments

Sunset Valley has a mixture of residential, commercial, and governmental facilities including an elementary school and a regional AISD sports complex. Nearly all roads in the City, with the exception of major thoroughfares (Jones Road, Brodie Lane, and Highway 290) are dead-end streets. This plays a role in access and evacuation plans within Sunset Valley. Sunset Valley has several distinct neighborhoods and commercial areas as seen in the Figure 11. For all neighborhoods, there are also infrastructure considerations such as hydrant fire flow and street conditions that may need to be addressed. With dead end streets, alternative routes for evacuation across private property are being considered. These routes could be used in the case of wildfire or flooding. Overall education and raising awareness are key components to wildfire preparedness. Over 90% of wildfires have a human cause. Educating people on fire's role in an ecosystem and prevention is essential.

The neighborhoods have been broken down into four areas (Figure 12):

Area 1: Jones Road, Lone Oak Trail, Pillow Road, Reese Drive, and Sunset Trail

Area 2: Lovegrass Lane, Yellowtail Cove, Curley Mesquite Cove

Area 3: Oakdale Drive, Brodie Lane, Country White Lane

Area 4: Stearns Lane, Westbound Highway 290

Area 5: Sunflower Trail

Area 6: Brodie and Eastbound HWY 290 Commercial Area

Area 7: AISD and City Facilities

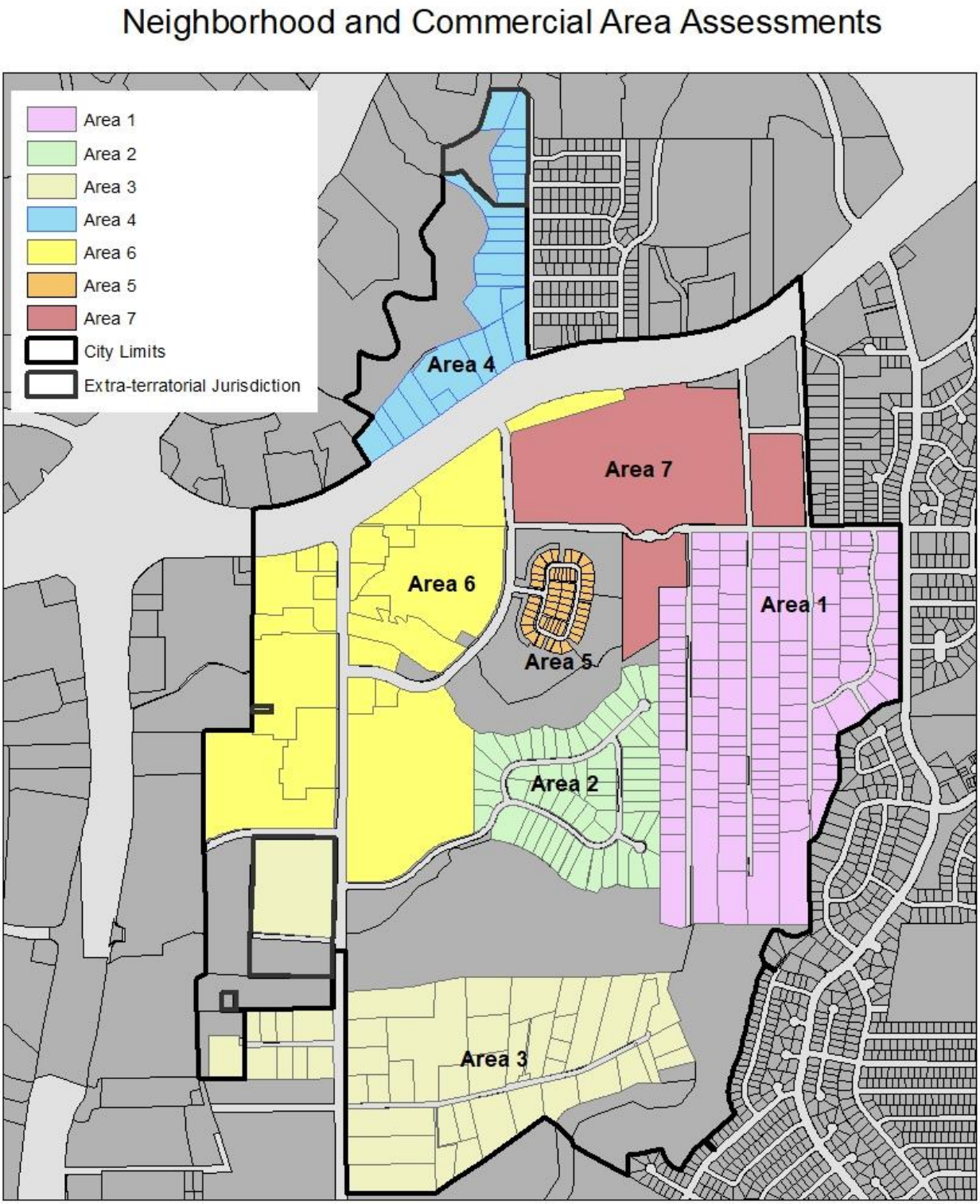


Figure 11: Neighborhood and Commercial Area Assessment Map

Area 1 Recommendations: This area includes homes on large lots, however many of these homes lack defensible and survivable space around structures. This is especially important with the homes that border the greenspaces. Education on Firewise principles including evacuation plans, landscaping, building materials, and defensible space is highly recommended. Residents in this area may also have livestock and evacuation plans need to address livestock removal. Turnarounds and fire truck access to Lone Oak Trail need to be considered. It is recommended that the turnarounds at the ends of these streets be extended to allow fire trucks to turn around. Additionally, the streets are narrow and access can be limited at times. Parking regulations that limit parking should also be considered. Cars that park on opposite sides of the street too close to one another could prohibit access by emergency responders.

Area 2 Recommendations: Homes in this area have large lots. These houses have similar building materials and are mostly masonry with composite asphalt roofs. Education efforts for this area should focus on Firewise landscaping and evacuation plans. The City Council should consider parking regulations and accommodations to allow better access for fire response.

Area 3 Recommendations: Oakdale Drive is one of the areas within the City of Sunset Valley most vulnerable to wildfire. There is greenspace on three sides of the neighborhood and there is a single access point from Brodie Lane. Country White Lane is part of Sunset Valley's extraterritorial jurisdiction and is in a similar situation as Oakdale Drive. The homes within this area are on large lots and some of these lots are heavily wooded. Education on Firewise principles including evacuation plans, landscaping, building materials, and defensible space is highly recommended. Residents in this area may also have livestock and evacuation plans need to address livestock removal. Additionally, a turnaround at the end of Country White Lane and additional fire hydrants should be included in future plans for the City to address needs in that area if the area is ever annexed by the City.

Area 4 Recommendations: This area is more urbanized and is also uphill from the wildland fuels. Homes in Sunset Valley's on Stearns Lane are particularly at risk due to greenbelt on three sides, steep slopes, and dead end roads. A fire in the Gaines or Barton Creek Greenbelt could move rapidly upslope to these homes. Education on Firewise principles including evacuation plans, landscaping, building materials, and defensible space is highly recommended. The buildings along HWY 290 should be built to meet WUI standards. The City should adopt the WUI code as part of a code revision process.

Area 5 Recommendations: Homes in this area have small lots surrounded by a primarily grassland open space. These houses have similar building materials and are mostly masonry with composite asphalt roofs. The homes in this area are near one another and this increases the response complexity in the case of fires. Additionally, the roads are narrow and parking is allowed on the street. This greatly affects access for emergency vehicles. The City Council should consider improving and enforcing parking regulations.

Area 6 Recommendations: The businesses in this area have a substantial amount of concrete. Landscaping should be evaluated for potential issues annually. In addition, any new construction should conform to WUI building code standards. The City should adopt WUI code as part of the code revision process. Business owners and managers will be encouraged to sign up for Code Red to receive accurate and timely information in emergency situations.

Area 7 Recommendations: The Toney Burger Center and Sunset Valley Elementary are areas of potential redevelopment in the future as the needs of the Austin Independent School District change. Any new development on these properties should be built to conform to WUI standards. Landscaping on all properties within this area should be evaluated annually for any potential issues and addressed accordingly.

3.8 Fuels Identification

Wildland fuels are broken into four basic categories classified on their vertical distribution: ground fuels (organic soils, forest floor duff, stumps, dead roots, and buried fuels), surface fuels (litter layer downed woody materials, and dead and live plants to 6ft in height, Ladder fuels (vine, shrubs, tall grass and draped foliage) and Canopy fuels (tree crowns). The plant communities within Sunset Valley: grassland, mixed oak- prairie, and oak-juniper woodland. Wildfire would move through these areas in different patterns depending on the type of fuel. The grassland areas are dominated by a mixture of grasses including side oats grama, Indian grass, KR bluestem, little bluestem, and various forbs. These areas consist of mostly fine or one hour fuels that burn quickly. Mixed oak-prairie areas are predominantly grasslands with occasional oak and understory areas. Although the composition of these areas is dominated by grasses occasional ladder and canopy fuels are also present. The areas with trees and ladder fuels are in isolated islands. The final plant community is the oak-juniper woodland. This is a predominately closed canopy area consisting of Live Oak (*Quercus fusiformis*), Ashe Juniper (*Juniperus asheii*), Yaupon (*Ilex vomitoria*), *Elbowbush* (*Foresteria pubescen*), Agarita (*Mahonia trifoliata*) and greenbriar (*Smilax bona nox*). This area also has several invasive species including Japanese Ligustrum (*Ligustrum japonica*) and Heavenly Bamboo (Nandina domestica). The fuels in this area vary from ground to canopy. The encroachment of Ashe Juniper is the most prevalent increase in fuel load throughout the area.

3.10 Firefighting Capacity

Since 1998, the City of Sunset Valley has contracted with Austin Fire Department for fire suppression and emergency response services. In figures 8-10 the location of fire stations is included. The Austin Fire Department has developed plans to build a new fire station at 5410 West HWY 290. This may decrease response times in Sunset Valley.

As the City continues to improve infrastructure additional hydrants should be considered along Sunset Trail and Country White Lane. Additionally, fire flow testing and modeling should be considered for City infrastructure. Modeling should consider the use of multiple hydrants in use at one time.

4.0 SITUATION SUMMARY AND RISKS

A. Situation: Historical fire behavior in Sunset Valley may not represent future expectations in the event of a wildfire in the City.

Risk**:** Potential loss of life due to lack of understanding wildfire behavior.

B. Situation: Residential and commercial development to meet the needs of a community wanting to remain "rural" and in a natural setting.

Risk: Inadequate ingress and egress for emergency vehicles and evacuation.
Risk: Inadequate wildfire defensible space around structures.
Risk: Inadequate operational space for firefighting and emergency equipment.
Risk: The safety of first responders is at risk in neighborhoods with inadequate accessibility.

C. Situation: Unequal firefighting water resources exist in portions of the City.
Risk: Streets with few hydrants.
Risk: Potential loss of life and property due to water hydrants with inadequate pressure and sizing.

D. Situation: Lack of homeowner understanding regarding wildfire behavior, defensible space, Firewise landscaping material and Firewise building construction and construction materials.
Risk: Potential loss of life due to lack of understanding wildfire threat.
Risk: Potential loss of life due to use of flammable construction materials.
Risk: Potential loss of structures due to inappropriate landscaping materials.
Risk: Potential dangers to life and property from wildfires due to inadequate or non-existent wildfire defensible space around homes.

E. Situation: Lack of Governmental planning and allocation of resources to address and mitigate wildfire risks.
Risk: Potential loss of life and property
Risk: Inability to efficiently coordinate with regional partners in emergency situations
Risk: Potential threat to surrounding non-Sunset Valley communities from wildfires that originate in the City of Sunset Valley
Risk: Potential litigation

5.0 PRIORITY SETTING

Goal 1: Reduce the wildland fire risk to lives and property in the City of Sunset Valley.

Objective 1: Implement and maintain an on-going public information and education campaign addressing wildfire preparedness actions. These homeowner education programs include the "Ready, Set, Go! Wildfire Preparedness for Homeowners" Workshop, which covers Firewise construction, rehabbing for fire prevention, non-flammable construction materials, and strategies on how families can effectively create defensible space around their home. Annual outreach activities include educational table at the Public Works Spring Cleaning Event, and acknowledgment/recognition of positive activities during Wildfire Awareness Week and in National Fire Prevention Week.

Tactic 1: Utilize existing resources, such as Texas Forest Service and Austin Fire Department Public Education programs and materials.
Tactic 2: Host an annual educational event in May before the summer wildfire season
Tactic 3: Distribute educational materials at existing City activities, such as National Night Out (October) and Public Works Open House (April).
Tactic 4: Utilize City newsletter and website to distribute wildfire preparedness information and resources.
Tactic 5: Implement Neighborhood Strategies identified in Section 3.9 (D) Neighborhood Risk Assessment including education on evacuation routes.
Tactic 6: Offer Firewise information to persons moving or researching a possible move into Sunset Valley.

Objective 2: Conduct wildfire mitigation on public land and on priority assets in the City.

Tactic 1: Maintain and adhere to the Park and Open Space Management Plan.
Tactic 2: Implement Fire Break Maintenance described below for each of the identified Wildland Areas.

A. South Hills Conservation Area.
The South Hills Conservation Area has a thick canopy and high brush content. This area also has steep hillsides and stability of the hillsides should be considered with any removal. Thinning of Ashe Juniper in conjunction with contour mulching is recommended in this area. This will allow small amounts of Ashe Juniper to be removed over time and protect the hillsides from erosion. The fire breaks must be inspected twice per year and maintained according to the inspection results. Removal of dead wood on an annual basis is also recommended.

B. Gaines Greenbelt.
The eastern edge of the Gaines Greenbelt that borders the houses on Stearns Lane is a plateau that drops down into the main portion of the Gaines Greenbelt. The topography makes the removal of vegetation and the formation of a fire break difficult. This area is also critical habitat for the endangered Golden-cheeked Warbler. The area

shall be maintained with current land management practices to maintain diversity through removal of invasive species and monitoring increased encroachment of young Ashe Juniper. It is recommended that residential properties that border this area increase their defensible space.

C. Indian Grass Prairie Preserve.
This area has existing roads that can be used for brush truck access to parts of the property. It is recommended that brush be removed in areas near the apartment complex. This will require working in conjunction with the apartment complex as much of their property is heavily wooded. Removal of dead wood on an annual basis is also recommended.

D. Cougar Creek Greenbelt.
Continual maintenance of the open grassy areas through brush removal and seasonal mowing. Removal of dead wood on an annual basis is also recommended.

E. Sunset Valley Nature Area.
The Sunset Valley Nature Area is the largest greenspace in Sunset Valley. Many of the trails within this area are brush truck accessible and an increase in accessibility is recommended. Widening the access from 762 Oakdale is recommended. Increased Juniper and brush control to restore the prairie areas and reduce ladder fuels is also recommended throughout the greenspace. Protection of the riparian areas, buffering trails and private property, while reducing fuel loads is the balance that should be found within this greenspace. Removal of dead wood on an annual basis is also recommended.

Tactic 3**:** Develop mitigation plans for priority assets.

Goal 2: Support Austin Fire Department by identifying risks, ensuring appropriate training of Sunset Valley staff and maintaining critical fire suppression infrastructure.

Objective 1: Develop a strategy for at risk properties to include:

Tactic 1: Conduct home assessments for property owners identifying risks and mitigation strategies.
Tactic 2: Identify on-site hazards, including terrain and structure challenges.
Tactic 3: Identify water sources and the placement of utilities.
Tactic 4: Develop area specific hazard maps.
Tactic 5: Develop Firewise Rebate Programs to encourage use of non-flammable construction materials for existing structures.

Objective 2: Sunset Valley Emergency Management Preparedness.

Tactic 1**:** Conduct annual table top exercise with cooperative stakeholders.
Tactic 2: Develop Emergency Management Plan.

Goal 3: Promote future development and redevelopment within the City to be fire resistant within their wildland environment

Objective 1: Incorporate wildfire planning and mitigation measures into City development processes for private and public projects.

Tactic 1: Adopt building and construction codes that require flame resistant building materials for all new construction. This includes adoption of WUI building code. The new WUI code would require that all new homes and businesses constructed near wildland areas be built with special ignition-resistant construction materials to protect them from burning embers, which often set structures ablaze in a wildfire when they fall on wooden roofs, blow in through vents or lodge under boards. E
Tactic 2: Information on wildfire, defensible space and non-flammable construction materials will be made available when homeowners and contractors apply for development and construction permits with the City. Similar information will be available on the City's website: www.sunsetvalley.org.
Tactic 3: Distribute information on flame resistant building materials to property owners and builders.
Tactic 4: Distribute information on defensible space and landscape maintenance to property owners.
Tactic 5: Develop safety factors and guidelines for ingress, egress, and evacuation;
Tactic 6: Determine and mitigate water supply adequacy, standards of road width which will allow emergency vehicles access and effective operation.
Tactic 7: Make available Wildfire Risk Assessments on new home constructions and remodels requiring construction permits.

Goal 4: Provide adequate wildfire firefighting infrastructure in the event of a wildfire.

Objective 1: Improve efficiency and efficacy of water resources.

Tactic 1: Conduct a detailed fire flow analysis and modeling of the City's infrastructure with feedback from the Austin Fire Department.
Tactic 2: Determine locations for future fire hydrants.
Tactic 3: As part of utility improvements construct water lines and hydrants to meet current and future residential fire protection needs.

6.0 PLAN IMPLEMENTATION

Implementation will require collaboration, action, and leadership among the City's stakeholders, residents, and staff to realize the fulfillment of the recommendations of this Community Wildfire Protection Plan. Implementation will be led by the City staff, providing reports to the Council, as requested, and submitting requests for project funding in accordance with the established budget process.

This plan will be reviewed every two years by the Public Safety Committee, Planning and Environmental Committee and the Public Works Committee to recommend to the City Council plan revisions and prioritized actions, as needed.

Education and Wildland Management Checklist

Provide date of activity and all applicable notes. If a goal is completed mark the completion date.

Goal/Objectives	2022	2023	2024	2025	2026
Annual Education Event					
City Newsletter Article					
Information available to residents/realtors					
Neighborhood Strategies: Jones, Lone Oak, Pillow, Reese, Sunset Trail					
Neighborhood Strategies: Sunflower, Lovegrass, Yellowtail, Curley Mesquite					
Neighborhood Strategies: Oakdale, Brodie, Country White Lane					
Neighborhood Strategies: Stearn's, HWY 290					
Firebreak Maintenance/Inspection: South Hills Conservation Area					
Firebreak Maintenance/Inspection Sunset Valley Nature Area					
Maintenance/Inspection: Cougar Creek Greenbelt					
Maintenance/Inspection: Cougar Creek Greenbelt					
Maintenance/Inspection: Gaines Greenbelt					
Widen access at 762 Oakdale					
Thin Brush in the Indian Grass Prairie Preserve					
Partnership with Grand Reserve Apartments					
Table Top Planning Activity					

Roadway Study for Sunset Valley

Lt. Paul Rodriguez

Austin Fire Department

June 21, 2021

Roadway Study for Sunset Valley

In an effort to improve the passageways for Austin Fire Department's responding units, Sunset Valley requested that we perform a study to address certain streets in the city. Those streets included:

I. Sunset Trail
II. Reese Drive
III. Pillow Road
IV. Lone Oak Trail
V. Oakdale Drive
VI. Country White Lane
VII. Sunflower Trail

We did reach out to our plan and fire reviewers for City of Austin (COA) minimum requirements regarding road width and end-of-road turnarounds. I have included those requirements at the end of this report.

Most road widths in Sunset Valley are 20'-24', however, the requirements for Austin are 25'. While I attempted to count the number of structures on each of the above roads, I found Google Earth was easier to see rooftops and long driveways to determine an approximate number of homes on each of the above streets. I also compared my measurements with Google Earth and their measuring tool is fairly accurate.

On the turnarounds, my measurements were for the maximum distance from corner-to-corner, not measured according to the dimensions on the provided roadway information.

The hydrant map at the end of the report is fairly accurate with determining hydrant locations, however, it does not have the main dimensions. I did speak to a resident at the end of Pillow that stated work had been done in previous years that should have connected the water mains of Pillow Road and Lone Oak Trail. It is not shown on the hydrant map, so unsure if this was completed.

The street assessments are as follows:

I. Sunset Trail
   A. Approximately 20 homes and additional structures on this road.
   B. Low water crossing.
   C. Runs from Jones Road to Reese Drive; no turnaround needed.

II. Reese Drive
   A. Approximately 25 homes and additional structures on this road.
   B. Only road with a bridge, but no load limits posted.
   C. From Jones Road until it dead ends into neighborhood park. Maximum turnaround length is 57' utilizing parking lot.

III. Pillow Road
   A. Approximately 31 homes and additional structures on this road.
   B. Low water crossing.
   C. From Jones Road until it dead ends at a hammerhead turnaround. Maximum turnaround length is 79'.
   D. Unsure if water mains connect to Lone Oak Trail.

IV. Lone Oak Trail
   A. Approximately 31 homes and additional structures on this road.
   B. Low water crossing.
   C. Runs from Jones Road until it dead ends into cul-de-sac turnaround. Maximum turnaround length is 42'.

V. Oakdale Drive
   A. Approximately 31 homes and additional structures on this road.
   B. Runs from Brodie Lane until it dead ends into modified hammerhead turnaround. Maximum turnaround length is 80'.

VI. Country White Lane
   A. Approximately 9 homes and additional structures on this road.
   B. Runs from Brodie Lane until it dead ends into dirt driveway. No city turnaround.

VII. Sunflower Trail
   A. Approximately 52 homes in this loop.
   B. Parking allowed on inside lanes. Street width reduced to 14'. Day of assessment there were trash cans in street, limiting roadway access another 2'-3'. Would be hard pressed for an engine to make the turns, much less for an aerial apparatus.
   C. Loop begins at Ernest Robles Way and is one way only, counterclockwise.

This assessment is based on just my findings. If additional information is needed, please reach out and we will find an appropriate solution.

THE TURNAROUNDS ILLUSTRATED IN FIGURES A, B, AND C BELOW MEET FIRE DEPARTMENT REQUIREMENTS FOR APPARATUS ACCESS ROADS. THE ADDITIONAL 3 m (10') RIGHT-OF-WAY (DENOTED BY THE DOTTED LINE IN FIGURES B AND C SHALL NOT HAVE ANY OBSTRUCTIONS OVER 305 mm (1') IN HEIGHT TO ALLOW FOR TRUCK OVERHANG.

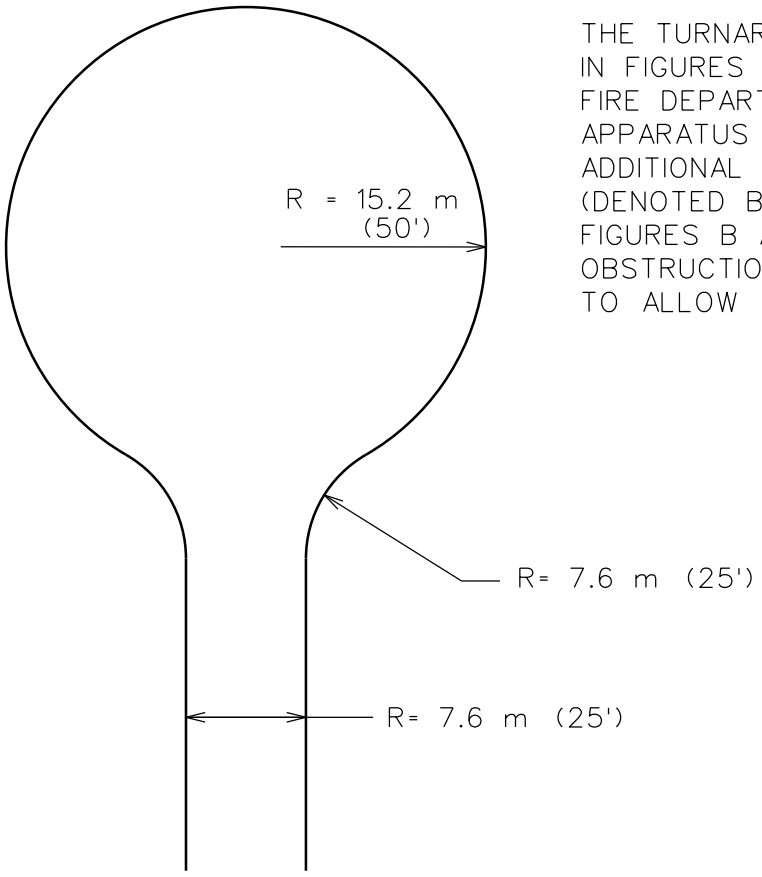


FIGURE A

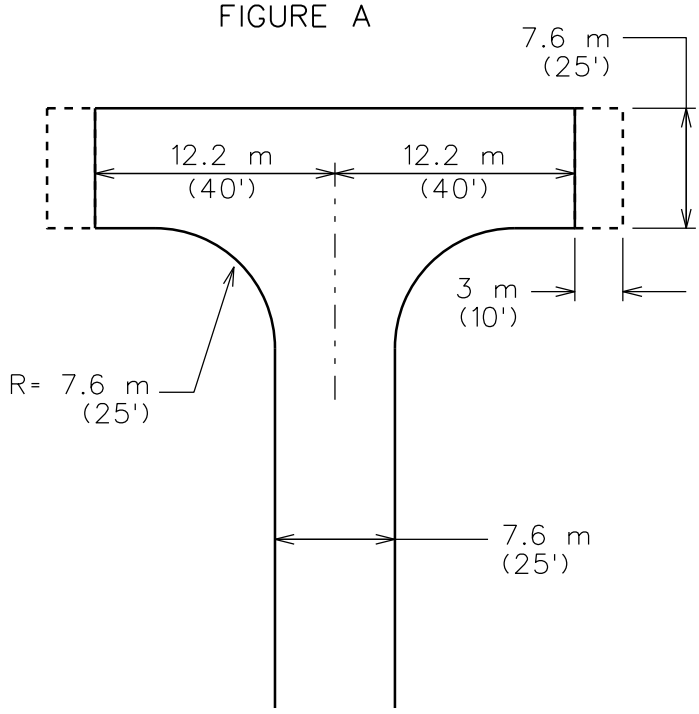


FIGURE B

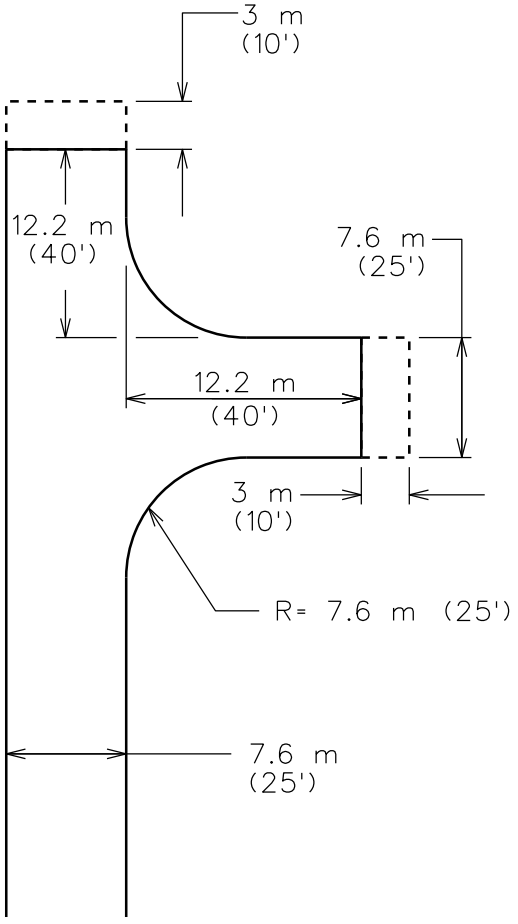
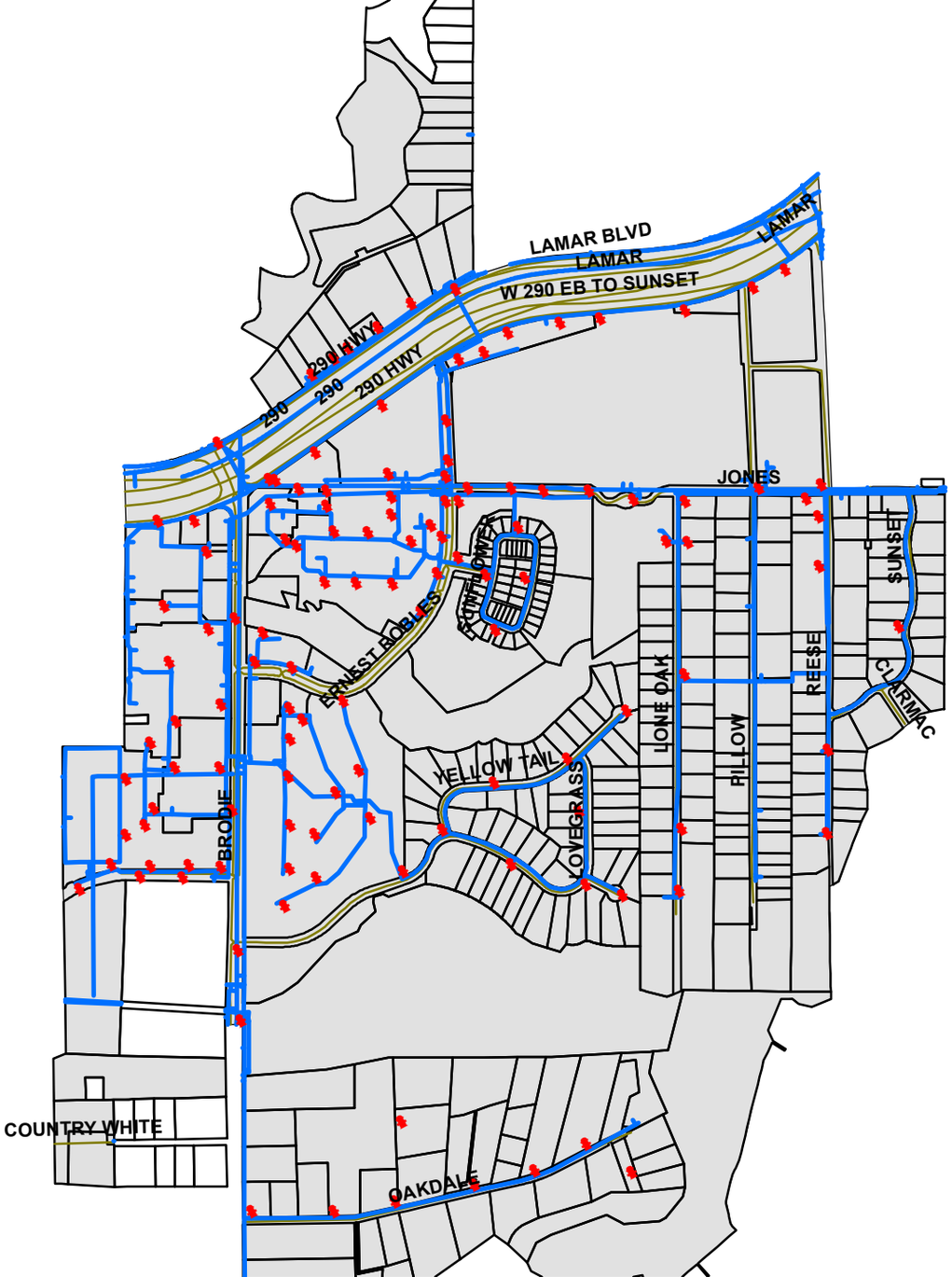


FIGURE C

CITY OF AUSTIN FIRE DEPARTMENT		ACCESS ROADWAY TURNAROUNDS	
RECORD COPY SIGNED BY CARL D. WREN	*9/14/05* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 901S-2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JONES
SUNSET
CLARNIAC
REESE
LONE OAK
FILLOW
YELLOW TAIL
LOVEGRASS
BRODIE
ERNEST ROBLES
COUNTRY WHITE
OAKDALE