SILVER HILLS

BOERNE, TX

WILDFIRE RISK ASSESSMENT
03/18/2026

TEXAS A&M
FOREST SERVICE

NFPA
FIREWISE USA™
Residents reducing wildfire risks

The Firewise USA® program is designed to provide an effective management approach for preserving wildland living aesthetics while preparing communities for wildland fires. The program can be tailored for adoption by any community or neighborhood association that is committed to ensuring its citizens maximum protection from wildland fire. The following community assessment is intended as a resource to be used by Silver Hills Firewise Committee for creating a wildfire safety action plan. The plan developed from the information in this assessment should be implemented in a collaborative manner, and updated and modified as needed, no less than every three years.

The Firewise USA® program acknowledges that there are many reasons and values that lead a person to live in the wildland urban interface (WUI) and that there may be a desire for certain flammable components to exist on their property. It is important for homeowners to understand the implications of the choices they are making as they directly relate to the ignitability of their home ignition zones during a wildfire.

One of the main goals of the Firewise USA® program is for residents to focus on those items that they know they can control. Becoming aware of the threat wildland fire presents is the first and most important step any landowner can take. After that, making an effort to work on items that residents do have control over, whether big or small, will reduce the chance of home and structure loss in a wildland fire.

This document will fulfill the risk assessment section and will be valid for 5 years before the community needs to be reassessed.

Assessment Process

The site assessment was completed by Dayziah Petruska, Wildland Urban Interface Coordinator with the Texas A&M Forest Service on March 18th, 2026. The site assessment consisted of a drive through the community to assess structure vulnerability and broader ecological conditions.

Included in this written assessment are generalized observations made while visiting Silver Hills. The assessment examines the ease with which structure ignitions could occur under severe wildfire conditions and how these ignitions might be avoided within the structure ignition zones of affected residences. The assessment does not focus on specific homes but examines the residential community in Silver Hills as a whole. By addressing these generalized vulnerabilities, residents should be able to reduce their individual exposure to loss with additional small investments of time and effort.

Silver Hills is located in the wildland urban interface, where undeveloped areas of natural fuels vacant parcels around and within the subdivision that are intermixed with structures. Wildfires will happen--exclusion is not a choice. The variables in a wildfire scenario are when and where the fire will occur. The good news is that by addressing community vulnerabilities, residents will be able to substantially reduce their exposure to loss. Relatively small investments in time and effort can reap great rewards for wildfire safety.

The Structure Ignition Zone

A house burns because of its interrelationship with its immediate surroundings. To avoid a home ignition, a homeowner must eliminate wildfire's potential relationship with the house. This is accomplished by interrupting the natural path fire takes in the structure ignition zone (SIZ). The SIZ, which encompasses recognition for a variety of structures that are susceptible to wildfire damage, is also sometimes referred to as the Home Ignition Zone, a term still used by the National Fire Protection Agency. This zone includes a house and its immediate surroundings within 100 to 150 feet and determines the potential for home ignition during a wildfire. Changing a fire's path by modifying the structure ignition zone is an important task that can result in avoiding home loss. To accomplish this, flammable items such as dead vegetation must be removed from the area immediately around the structure to prevent flames from contacting it. Also, reducing the volume of live vegetation and ladder fuels, flammable material that take a fire on the ground and carries it higher, will affect the intensity of the wildfire as it enters the structure ignition zone.

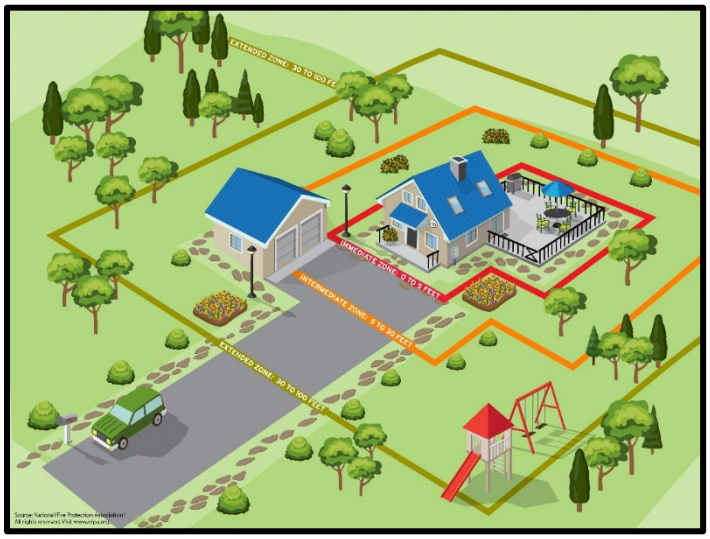

Figure 1: A layout of the structure ignition zones. The first five feet are the most important for protecting the structure.

Beyond radiant heat and direct flame contact, ember wash is a considerable threat to the home. When these embers land, depending on where that is, they can ignite vegetation on the roof, the gutters, the interior of the attic, or the garden beds around the house. To decrease the risk, flammable items should be removed from around the structure. Clearing vegetation in direct contact with the house will reduce the chance of flames physically connecting with the structure. Creating patches of fuel using isolated garden beds will cut down fire intensity by breaking up the continuous fuel leading up to the structure. A less intense fire stays closer to the ground,

which gives off less radiant heat when it burns. Removing ladder fuels, vegetation and other flammable vegetation that connect the tree canopies to the ground also helps with this.

For more information on the Structure Ignition Zone topic visit https://tfsweb.tamu.edu/ProtectYourHome/

Characteristics of a Severe Case Wildland Fire that Threatens the Area

Fire intensity and spread rate depend on the fuel type and condition (live or dead), the weather conditions prior to and during ignition, and the topography. Generally, the following relationships are true between fire behavior and the fuel, weather, and topography.

Figure 2: Xeriscaping reduces the chance of structure ignition by the reducing amount of fuel that is available to burn.

- Fine fuels, defined as fuel with a diameter less than 1/4 in (ex. grasses, needles, twigs), ignite more easily and spread faster with higher intensities than coarser fuels, which are generally fuels greater than ¼ in in diameter (ex. large branches, logs, shrubs). For a given fuel, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensity. Fine fuels take a shorter time to burn out than coarser fuels.
- The weather conditions affect the moisture content of the dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content will be. Lower fuel moisture produces higher spread rates and fire intensities.
- Wind speed significantly influences the rate of spread and fire intensity. The higher the wind speeds, the greater the spread rate and intensity.
- Topography influences fire behavior principally by the steepness of the slope. However, the features of the terrain such as narrow draws, saddles and so forth can influence fire spread and intensity. In general, the steeper the slope, the higher the uphill fire spread and intensity.

Embers are another characteristic of wildfire that are not often considered by homeowners. Embers are small burning pieces of vegetation or wood that are carried by the wind ahead of wildfire. An ember shower can be carried over a mile away from wildfire and create spot fires, which ignite vegetation on the roof, gutters, garden beds, and enter vents. Ember showers lead to structure loss even if the wildfire is not within the boundaries of the neighborhood. Wildfire researchers know that embers are the leading cause of home loss in wildfire due to post-fire assessments.

Site Description

Silver Hills neighborhood, located off FM 3351 North, has homes in both Kendall and Comal Counties with lot varied lot sizes and 175 dwellings. Within the community, there are two private parks. Historically the Texas Hill Country experienced wildfire on a 2–6 year return interval but with the arrival of settlers and continued urbanization, wildfire has been suppressed. This suppression has allowed this fire dependent ecosystem to have an overgrowth of fuels and an increase in extremely flammable species (*Juniperus spp.).*

Vegetation within Silver Hills is predominantly native grass, scattered hardwood trees, and heavy loads of juniper. Within the community structure's immediate and intermediate structure ignition zones, up to fifty feet from structures, vary in landscape type but most are comprised of short grass, landscaped beds, and ornamental hedges. While Silver Hills itself has been doing work on POA owned property to reduce risk, the surrounding properties are heavily wooded; providing a potential fuel load and source of ember wash if a wildfire was to start. All vegetation and the topography of Silver Hills are characteristic of the Texas Hill Country.

Observations and Recommendations

The fire resiliency of structures within Silver Hills will be heavily dependent on the fuel within the Structure Ignition Zone and how resistant the structures are to embers. Homes in Silver Hills mostly have fire resistant siding, rated non-combustible roofs, and some have elements of low flammability landscaping such as green turf grass, rock mulch, and low flammability ornamental landscaped areas. The extent of choosing how to landscape and take care of the structure ignition zone is the responsibility of the individual homeowner's preferences but can also be adopted within the ordinances of the POA. There is no single landscape choice that is the only fire-resistant option. Fire mitigation is about taking an accumulation of choices to reduce risk, and there are multiple ways to achieve the same goal.

A majority of the structures observed are built with fire-resistant metal roofing materials. While there are buildings made partially out of non-fire-resistant materials on-site, that does not mean residents are powerless to decrease potential damage or loss to those structures from wildfires. Neither does the presence of fire-resistant construction exclude the possibility of fire impact if the structure ignition zone is not managed.

There are also many characteristics of the site that residents are unable to change:

- Topographical features that could adversely affect wildfire behavior.
- Predominate vegetation characteristics across the community.
- Infrastructure such as roadways and utility line rights-of-way.

Immediate Zone (0-5 ft from the structure)

The Immediate Zone of the SIZ includes the structure itself and the area within the first 5 feet surrounding it. This is the most important area in which to take immediate action as it is the most vulnerable to embers and where even small flames can come into direct contact with the structure. Both research and firefighter's first-hand accounts tell us that a well-prepared Immediate Zone makes the biggest difference in home survivability and first responder safety.

Figure 3: Although there are combustible materials within the Immediate Zone, the lack of ladder fuel, no wooden structures touching the home, and home construction all reduce risk while keeping desired landscape features.

Homes throughout Silver Hills were generally built of fire-resistant materials. The majority of homes have fire resistant roofs and siding with mostly manicured lawns that break up fuel continuity. In many instances, structures have various types of vegetation growing under or in front of windows, right against the wall of the structures, and directly under eaves. In a wildfire situation, these plants could potentially ignite, and the resulting embers and heat produced put the structures at an increased risk. Plants should be pruned or removed in areas within the intermediate zone. If the owner decides to keep the plants, proper maintenance (including watering and pruning dead leaves or branches) should be kept up to reduce risk.

Wooden attachments directly contacting the home, such as fences and decks, were uncommon within Silver Hills. For fencing, a metal fence is recommended to reduce fire risk and Silver Hills did a great job of utilizing metal and stone fencing. If a wooden fence is used, it is important to ensure the panels directly in contact with the home are comprised of a non-combustible metal panel. Vents, chimneys, undersides of decks, and other openings should be screened with 1/8" metal screens to prevent embers from entering homes and debris from gathering. Gutters, roofs, and interior corners should be kept free of flammable debris to reduce chances of ignition in a wildfire situation.

Intermediate Zone (5-30 ft from the structure)

While the 0-5 feet of a structure is important to stop embers, your intermediate 5–30-foot zone is where you can make the most difference in stopping a surface fire from approaching a home.

In Silver Hills there are varying landscape styles throughout the community. Majority of lawns were comprised of short grasses, some hardwood trees, and various sized shrubbery close to the home; a few homes even utilized xeriscaping, the landscaping style utilizing rocks and native vegetation to reduce fuel loads while requiring very little water. Some homes even used a shaded fuel break style of landscape by limbing-up the junipers and keeping the vegetation underneath mowed short. Structures with heavy vegetation loading in the intermediate zone are at a higher risk to wildfire related home loss than the structures with a well-manicured lawn due to the heavy fuel loading and potential for the flames to burn closer to the structure. A homeowner can create islands of vegetation in their landscaping to decrease the fire's ability to move toward the structure by breaking up the horizontal fuel continuity. The islands are landscaping beds lined with brick, stone, or pavement that are used to slow the spread of a surface fire.

Figure 4: Rock landscaping beds reduce structure loss risk by breaking up horizontal fuel continuity between the structure and fuels while also reducing risk of landscape plants igniting.

It's understood that sometimes homeowners do not want to remove woody vegetation from their yards. To decrease risk from a crown fire, remove ladder fuels by restricting the height of vegetation close to the ground and "limb up" taller vegetation. "Limbing up" is the process of pruning off branches and any other vegetation between the ground and approximately (6 feet) or double the height of the vegetation beneath taller trees. This helps decrease the chance of a fire traveling from the ground to the canopy of trees or other taller woody vegetation.

Extended Zones (30-100 ft from the structure)

The extended zone is the area 30-100 feet from the structure. This area's purpose is to interrupt the fire's path and keep flames at a lower intensity.

There are many areas throughout Silver Hills where structures back up to or neighbor wooded "undeveloped" land. If these areas are within the owners' lot, it is encouraged to reduce the density of the vegetation on their property by both selective removal and limbing up of remaining trees combined with reducing the amount of heavy woody debris build-up. This can create a smaller version of a shaded fuel break. If the area is owned by the HOA these areas could undergo vegetation management, with the support of residents, to create fuel breaks and better access, which will also benefit the general health of the land and the people.

Additionally, it was observed that Silver Hills has one way in and one way out, which can present challenges for evacuation and first responder access. Driveways and roads should be clear of overhanging vegetation and obstacles so they should be accessible to emergency vehicles. Because of the layout of Silver Hills, evacuation preparedness should be considered at a community level in case of a wildfire.

For more information and best practice for pruning both young and mature trees visit https://tfsweb.tamu.edu/abouturbanandcommunityforestry/urbanforestryinformationsheets/

For more information on evacuation preparedness visit https://tfsweb.tamu.edu/protectyourcommunity/

Figure 5: Dense and overhanging vegetation can limit the access of emergency vehicles to the structure. These trees should be pruned to allow vertical access of at least 13.5 feet.

Next Steps

After reviewing the contents of this assessment and its recommendations, Silver Hills will create an action plan to fit the observations of this assessment in cooperation with the Texas A&M Forest Service. The written action plan will need to be updated every three years.

Assuming the assessment area seeks to achieve national Firewise USA® recognition status, it will integrate the following standards into its continued plan of action:

1. Maintain a local Firewise board comprised of residents and other applicable stakeholders. This group will collaborate on developing the site's risk reduction priorities, develop a multi-year action plan based on the risk assessment, and oversee the completion of the annual renewal requirements needed to retain an "in good standing" status. Action plans are a prioritized list of risk reduction projects/investments for the participating site, along with suggested homeowner actions and education activities that participants will strive to complete annually or over a period of multiple years. Action plans are developed by the board and need updating at least every three years.
2. Enlist a WUI coordinator to complete an assessment and create a plan from which it identifies agreed-upon, achievable local solutions.
3. At a minimum, each site is required to invest the equivalent of one volunteer hour per dwelling unit in wildfire risk reduction actions annually (the rate is based on the annual National Hourly Volunteer Rate; which is updated every year in April). Qualifying expenditures include contractor costs, rental equipment, volunteer activities, grants, etc. Residents completing select home modifications, along with any qualifying work performed at their home and in the adjacent home ignition zones can contribute related hours and/or costs towards meeting the sites collective investment amount.
4. Each participating site is required to have a minimum of one wildfire risk reduction educational outreach event or related activity annually.
5. Every year participating sites must submit an annual renewal to maintain their "In Good Standing" status. The annual renewal application can be accessed through the Firewise USA™ online management portal (https://portal.firewise.org/).

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