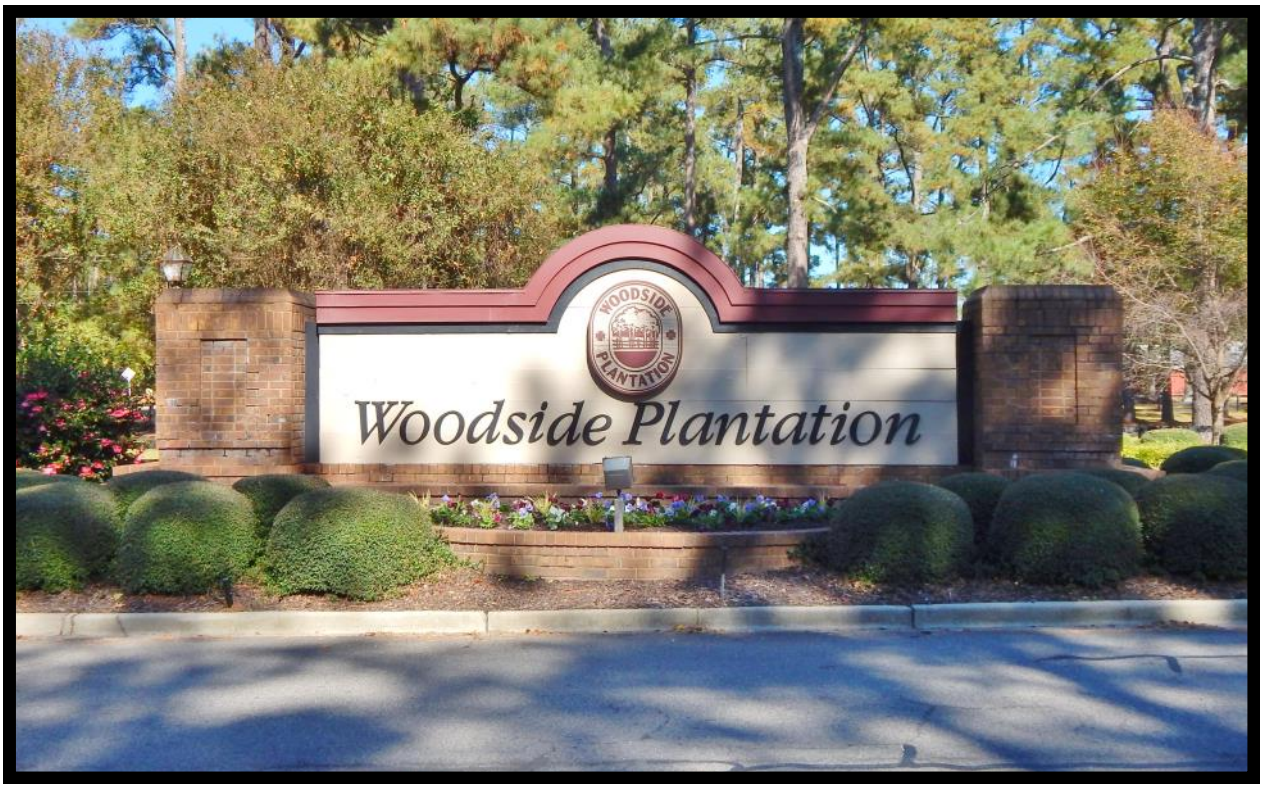
Community Wildfire Protection Plan

WOODSIDE PLANTATION

AIKEN COUNTY



MARCH 2015

Prepared by:
Bill Wiley
Andy Johnson
SC Forestry Commission

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EXECUTIVE SUMMARY: HAZARD AND RISK ASSESSMENT

Technically, wildfire hazard is a function of the forest fuel situation as it affects wildfire ignition and resistance to control; risk is defined as the probability of a wildfire starting.

A wildland fire hazard and risk assessment was conducted in Woodside Plantation in November 2014 by the SC Forestry Commission. The assessment instrument rates wildfire hazard and risk as "Low," "Moderate," "High," and "Extreme." According to the survey, Woodside Plantation's rating is "**High.**" See Appendix A for the rating score sheet.

The assessment instrument, the *South Carolina Wildfire Hazard & Risk Assessment Scoresheet,* was developed by the SC Forestry Commission and based on National Fire Protection Administration guidelines (NFPA 1144). It takes into consideration accessibility, vegetation, topography, building construction and roofing assembly, availability of fire protection resources, placement of gas and electric utilities, and other factors.

The following factors are primary wildfire safety concerns in your community:

Highly flammable natural vegetative litter in and around community.
Minimal defensible space around some homes.
Many homes feature flammable landscape mulch.
Flammable landscape plants. Next to many homes.

The remainder of this plan discusses specific hazard and risk issues in detail, and provides recommended mitigation measures to reduce the threat of wildfire.

* * *

COMMUNITY COLLABORATION

Community Representatives:
Mary Shultz, POA Board
John Carman, Firewise Representative

County Government:
Aiken Public Safety
Fire Captain Brian Brazier

State Government:
SC Forestry Commission: Bill Wiley, Andy Johnson

APPROVED:_____
Steve Moore, Firewise Coordinator
SC Forestry Commission

OBJECTIVES

Using National Fire Plan funds, the South Carolina Forestry Commission has committed personnel to assess the danger from wildland fire to communities within our state.

Wildland fire experts from the Forestry Commission, in cooperation with community leaders, have completed an assessment of Woodside Plantation with regard to the threat from wildland fire. This report shows the results of that assessment.

The objectives of this report are to identify wildfire threats and provide recommendations to mitigate those threats. By implementing these recommendations, community leaders and residents can reduce wildland fuels and decrease structure ignitability, thus better protecting the community and its essential infrastructure.

Specifically, the plan includes community-centered actions that will:

Educate citizens about wildfire, its risks, and ways to protect life and property.
Focus on collaborative decision-making and citizen participation.
Develop and implement effective mitigation strategies.
Develop and implement effective community covenants and codes.

In addition to improving wildfire safety, Woodside Plantation can earn national recognition as a Firewise Community/USA. The criteria are as follows:

Having a wildfire expert conduct a wildfire hazard/risk assessment. (Done.)
Developing a Community Wildfire Protection Plan. (Done.)
Establishing a Firewise Council to address wildfire protection concerns. (Done)
Annually investing at least $2 per capita in wildfire protection work.
Sponsoring an annual Firewise workday or event involving community members.
Submitting an annual report documenting Firewise activities.

The Forestry Commission is available to assist property owners with mitigation practices recommended in this report. For more information, contact the SC Forestry Commission Unit Office at phone 803-943-3915.

COMMUNITY WILDFIRE PROTECTION PLAN

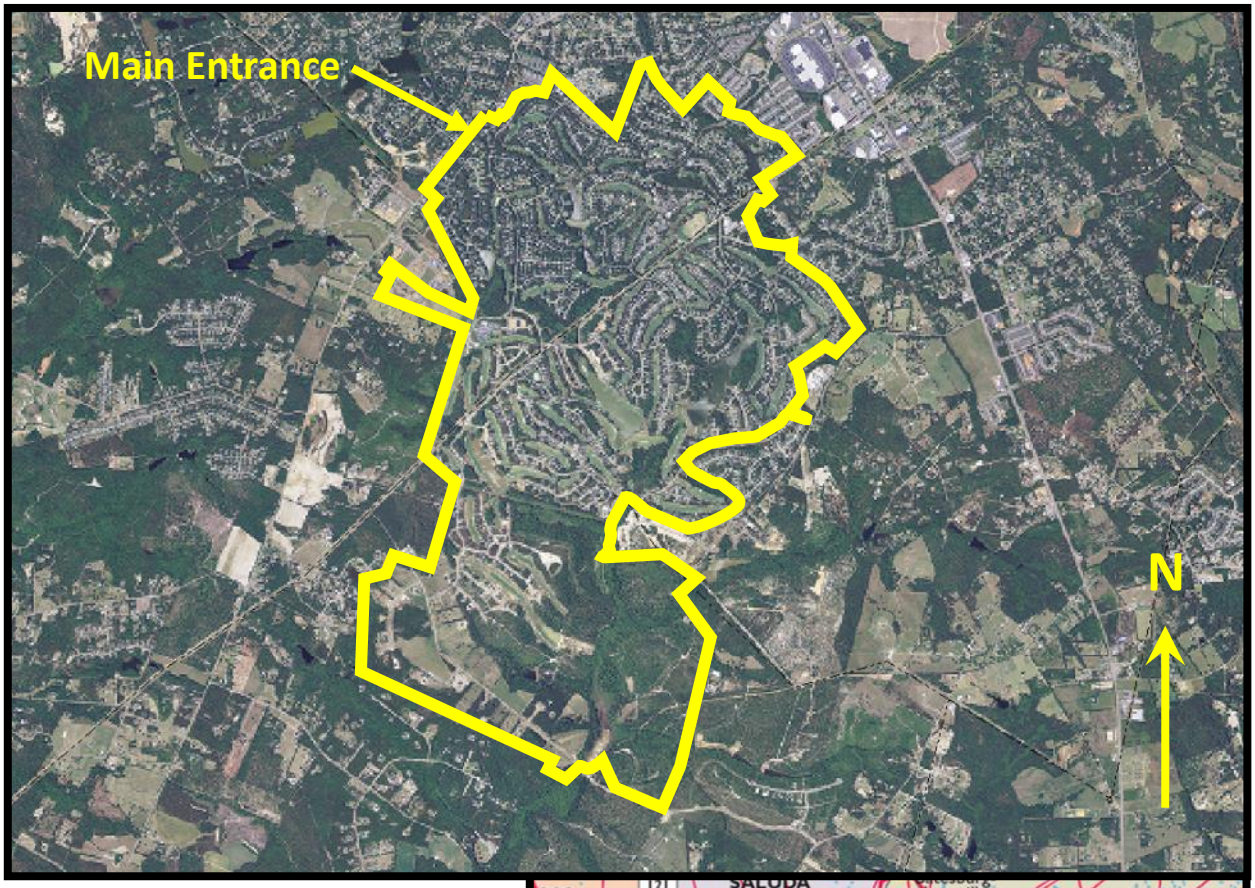
PART 1

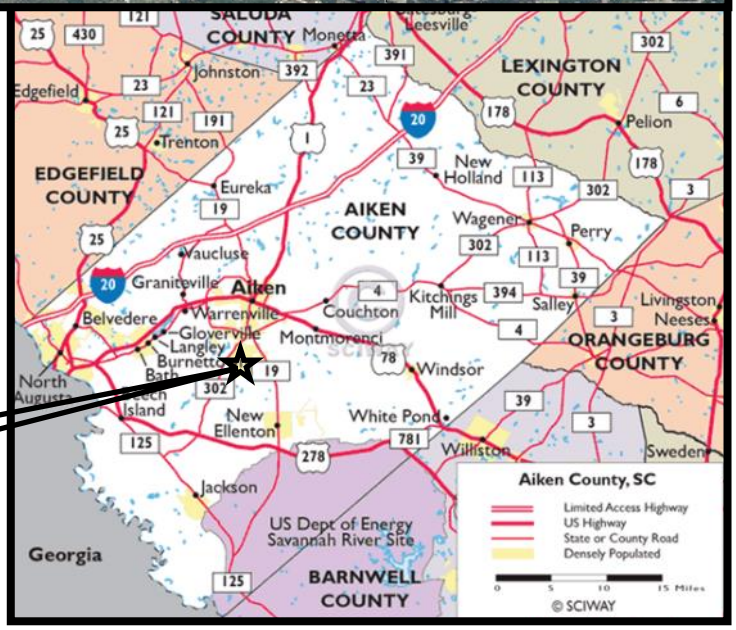
WILDFIRE HAZARD AND RISK

On the next several pages are findings from the Wildfire Risk Assessment conducted in November 2014, including pictures to illustrate significant points. Most pictures came from the assessment; other pictures serve for illustration.

1.1 COMMUNITY DESCRIPTION

Location: Woodside Plantation is Gated Active Lifestyle Community, located in Aiken County, South Carolina on Silver Bluff Road at the southern edge of the Aiken city limits. The main entrance to the community is at 33.504 North Latitude, 81.743 West Longitude.





Terrain: This area is characterized by gently rolling terrain with mostly well drained loamy sand, sand and sandy loam soils. There are a few areas with steeper slopes; notably near streams and lakes. There are several lakes and ponds throughout, many as part of the golf courses.

Forest Cover: The dominant forest type in this area is pine with an understory of young trees and shrubs. The primary tree species are loblolly and longleaf pine. The understory is young pines and various hardwoods including oaks, sweetgum and hickories on upper slopes and maples and gums in bottoms and lower slopes in addition to hardwood shrubs. Some of these shrubs, such as waxmyrtle are very flammable.

Forest Fuels: Forest fuel includes any natural material, living or dead, that will burn. Fuel accumulation throughout the area is heavy. The primary surface fuel consists of pine needles and hardwood leaves. Other significant fuels include low brush and dead limbs and logs as well as an occasional pile of dead debris.

Fire History: Wildfire is relatively common in the vicinity of Woodside Plantation, with 38 fires being reported to the SC Forestry Commission within a five mile radius during the last five years. Other brush fires have been extinguished by Aiken Public Safety. Most of these fires where two acres or less. However, fire can be devastating in South Carolina's sandy uplands. Historically, debris burning has been the primary fire cause in this area of Aiken County. Other causes are children, lightning and equipment use.

Infrastructure: Woodside Plantation is served by a system of two lane hard-surface roads of mostly standard width. Many roads have dead ends that end in cul-de-sacs allowing limited turn around by fire apparatus. These dead ends could also make it more difficult for residents to leave in a wildfire evacuation. Some road shoulders can be driven if necessary for access/ exit.

There are paved walkways along Woodside Plantation Drive and a few other streets.

Driveways are all weather.

Street signs are decorative metal on brick pillars. Letters are lighter colors against a dark background. However, since they are not reflective, they may be difficult to see and read if there is heavy smoke from a nearby wildfire.

Stop signs are mounted on wood posts.

Infrastructure (cont.):
Address numbers are posted at street side on mail boxes as well as on some house fronts.

Flammable plants around mailbox posts can cause the posts to burn

Utilities including electricity, gas and sewer are all underground, an excellent Firewise factor. However, many electric transformer cabinets and pedestals are surrounded by vegetative growth and debris. During a fire, this can burn creating intense heat that can damage internal components. See Appendix G: Electric Transformers.

Pine straw and vines surround pedestal

Vegetative debris removal is handled by individual residents with pick up handled by the city of Aiken.

Many residents have in-ground irrigation on their property. This can be very important in controlling the spread of a nearby wildfire.

Development: Development in Woodside Plantation began in the mid 1980's. There are 1900 homes on approximately 3400 acres. There is an additional area in the developmental planning stage.

Structure Density: Structure density is relatively high. Distance between homes ranges from just under 15 feet to more than 30 feet. This nearness to adjacent homes could be an issue in the event of structure fires. Radiant heat from nearby burning homes can affect your own.

Construction: All homes are site-built, mostly single story structures. In addition to stand-alone homes, there are also some condominiums. Exterior faces of all but a very small percentage of homes are brick and stucco, with a few being vinyl and wood. Wood shakes are used in eaves of some newer homes.

Roofing is asphalt-fiberglass throughout.

Some homes have gutters; most are covered, but many are not.

Eaves, soffits and crawl spaces are enclosed.

Where there are chimneys, most have chimney caps.

Spark arrestor screens like this one were not seen during the risk assessment.

Many homes have garden hoses attached.

Landscaping: There is a wide variety and density of landscape plantings, most being less flammable. However, flammable plant species such as pampas grass, arborvitae and junipers are used in beds throughout the neighborhood., many planted next to homes. Most mulching material in the community is pine straw. There is also shredded hardwood used at some homes.

See Appendix E for a plant flammability list.

Defensible space is an area around the home that is managed for firefighter access and reduced fuels (see Appendix C). The general recommendation is to have 30 feet between the homes and wildland. Most homes have open lawn areas in the front. However, many side yards have restricted access largely due to nearness of adjacent homes and landscape plantings between homes. In the rear and to the side of many homes distance to wood lines is less than 30 feet.

There are a good many decks and wood fences in the neighborhood, some of these quite close to wood lines. These can carry flames to homes. There are also some metal and brick fences.

Yards are well maintained.

Fire Suppression Resources Available: Quick, effective initial attack is the key to managing wildland fires. Rapid response by firefighters depends on early detection and accurate reporting. Residents should immediately report suspicious smoke or fire to Aiken County 911.

Firefighting resources presently available to Woodside Plantation are listed below. Response times are estimates based on ideal response conditions.

AIKEN PUBLIC SAFETY— STATIONS 4 AND 5

< 5 MINUTES

SOUTH CAROLINA FORESTRY COMMISSION

25-30 MINUTES

Water Supply: Water for firefighting is available with hydrants located throughout the community.

In the event of a persistent, long-duration wildfire, larger ponds could serve as helicopter dip sites. In such emergencies, the SCFC has an agreement with the SC National Guard to call on them to assist in structure protection through the use of a helibucket and their Blackhawks. Such use has to be approved by the Governor.

1.2 WILDFIRE HAZARD

Wildfire Hazard: **The type, condition, amount, and arrangement of forest fuels that contribute to wildfire ignition and resistance to control.**

Fine fuels are usually the first to ignite and contribute to the early spread of a wildfire. The primary fine fuel in Woodside Plantation is pine needles. Other fine fuels include leaf litter and low herbs and forbs. Fine fuel is present in heavy concentrations throughout the community's wooded areas and surrounding woodlands.


Pine needles with leaf litter

Intermediate fuels consist of dead branch wood, vines, and living brush. Some of these intermediate fuels (drooping branches, vines and draped pine needles) can create a fuel ladder that can carry ground-level flames into the upper branches or crowns of trees. Intermediate fuels are also found in heavy concentrations throughout Woodside Plantation.

Heavy fuels like dead logs and stumps do not ignite readily, but once ablaze they will burn for a long time. These fuels contribute significantly to fire intensity, fire duration, and smoke production. Smoke production is a special concern as it can create significant health and safety problems. Heavy fuel concentrations are moderate to heavy throughout the community. Some of this type fuel remains from ice storm damage early in 2014, mostly outside the boundaries of Woodside Plantation.

1.3 WILDFIRE RISK

***Wildfire Risk*: The chance of a wildfire starting, as influenced by forces of nature and the activities of people.**

In South Carolina, over 95% of all wildfires are caused by people and their activities. Wildfire risk is related to weather conditions, and risk increases when outdoor activities coincide with periods of low humidity, high wind, or drought.

Risk factors affecting Woodside Plantation include both internal and external influences. External risks include wildfires encroaching from woodlands, grasslands, or rights-of-way adjacent to the community. Such fires could be accidental or incendiary in origin.

Risk of wildfire originating within the community is moderate. The most significant sources of ignition within the community may be related to:

1. **Vehicle-related ignitions along roadways. These include careless smoking, hot exhaust systems and brakes, and sparks from dragging metal such as trailer safety chains.**

2. **Structure fires spreading to adjacent vegetative fuels or other structures.**

3. **Careless disposal of coals and ashes from fireplaces and barbeque grills.**

4. **Equipment malfunction, including sparks from yard maintenance equipment.**

COMMUNITY WILDFIRE PROTECTION PLAN

PART 2

ACTION PLAN

On the next several pages are recommendations specific to the Woodside Plantation community as a whole and individual residents as well as general Firewise recommendations. Pictures are used to illustrate good Firewise practices, most of which show scenes in the community.

2.1 COMMUNITY ACTION

The following recommendations were developed and are listed in priority order based upon which actions would most significantly mitigate the wildfire hazards in Woodside Plantation. However, the community and/or developer should take these recommendations under consideration and determine their own priority and timeframe for implementing the actions desired.

Continue involvement and coordination of the Firewise Council within the Property Owner's Association (POA).

To enhance effectiveness, a Firewise Council has been established to facilitate timely and appropriate wildfire protection efforts. The core of the council is the Common Area Landscaping Committee of the POA. The SC Forestry Commission and Aiken Public Safety are available for advice. Including the developer would also be helpful. The committee should meet periodically to review progress and plan future activities. Among the committee's duties can be liaison with wildfire experts, writing grants for Firewise funding, publicizing community activities, and coordinating special events and workdays.

Reduce concentrations of volatile brush near homes.

Heavy forest fuels in common areas can be reduced by mechanical mastication (mulching) or other methods within 30-60 feet of homes. The same can be done on vacant lots. Homeowners who do not want brush on their lots reduced can be given an opportunity to opt out. Anyone opting out must clearly flag their boundary lines so the contractor can avoid their property. Grant funds may be available from the Forestry Commission to help with this project.

Enroll as a participant in the Forestry Commission's Red Flag Fire Alert Program.

The Red Flag Fire Alert Program serves as a warning that wildfire danger is increasing. Participation requires a signed agreement between the Homeowner's Association and the Forestry Commission. Under terms of the agreement, the Forestry Commission will supply a Red Flag Fire Alert pennant to the community. The Commission will notify the community immediately when an Alert is activated. The community must agree to fly the flag prominently and take it down as soon as the Alert is over. An agreement form is available by calling 803-325-1926.

Organize a community-wide wildfire hazard reduction workday.

Designate a day for a community wildfire hazard reduction event. The event can begin with a morning briefing, then residents spend the morning on hazard reduction projects at their homes. The Forestry Commission can provide an educational exhibit and wildfire experts to conduct individual home hazard/risk assessments.

Designate wildfire safety zones within the community.

Wide expanses of green space and ponds could serve as emergency safety zones in the event residents cannot evacuate. These should be carefully selected, prominently marked, and publicized within the community.

Implement a sustained public awareness effort among residents.

Incorporate wildfire safety messages into community newsletters, e-mail notices, or community bulletin boards. Distribute printed material (available from the Forestry Commission and the Firewise website) at community events. See Appendix F.

Require spark arresters on all chimneys.

While not a major issue, sparks from chimneys can cause unwanted ignitions; arresters are an inexpensive way to eliminate this wildfire source. The local building code may already address this; if not, add the requirement to neighborhood covenants. Spark arresters are available at most building supply outlets for about $40.

Encourage residents to plan and prepare for wildfire emergencies.

Residents should keep garden hoses attached to outside faucets at all times (weather permitting) and insure that in-ground sprinklers are functional; all family members should know how to manually activate sprinklers in case of evacuation. Essential documents and photos should be stored in a fireproof safe or kept in a container that can be easily transported in event of evacuation. When evacuating, residents should close all windows, doors, crawl space entrances, and garage doors.

Fire- and Water-proof Box

Reduce fuels around the cabinets that house electrical service components.

While the underground electrical service is an excellent Firewise factor, the above-ground service cabinets are vulnerable to wildfire. Cabinets are mostly metal and mounted on concrete pads. However, even metal cabinets will not protect sensitive circuitry if subjected to significant heat. Where possible, prune flammable plantings away from electrical service components (as at right). Mulch around these installations with crushed brick or stone. This may require coordination with electric service providers. See Appendix H.

2.2 INDIVIDUAL ACTION

The following recommendations were developed and are listed in priority order based upon which actions would most significantly mitigate the wildfire hazards in Woodside Plantation. However, the homeowners and the community should take these recommendations under consideration and determine their own priority and timeframe for implementing the actions desired.

Clear fine fuels that are immediately adjacent to homes.

Residents should clear fine fuels immediately adjacent to their own homes. These fuels, including pine straw mulch, can ignite from wind-borne embers originating in wildfires burning up to a mile away. Substitute mulch materials include shredded hardwood, large pine bark nuggets, or crushed brick.

Pine straw mulch next to home with vinyl sid-

Pine needles collecting in shrubbery is also a concern. It should be removed periodically, especially during the December to April fire season.

Even in less flammable shrubs, such needle collection can cause shrubs to burn

Avoid highly flammable landscape material.

Landscaping with highly flammable material is discouraged. Pine straw mulch should not be used within 5 feet of any flammable structural component; juniper ground cover should be no closer than 6 feet. Pampas grass should not be planted within 15 feet of flammable structural material; it should be cut back in February or March to prevent accumulations of dead material. Maintain 15-20 feet of separation between waxmyrtle plantings and structures.

Pampas grass

Waxmyrtle

Establish and maintain defensible space.

Defensible space is an area around the home that is maintained in such a way as to retard fire spread and allow firefighting access. Where allowable with lot line set backs, residents should maintain a minimum of 30 feet of defensible space between the home and adjacent woodlands. The average defensible space in Woodside Plantation is approximately 30 feet. However, several homes have less than 20 feet on one or more sides. See Appendix C for a more complete explanation.

Clear dead logs and brushy vegetation from within 30 feet of any structure.

Residents are encouraged to use suitable deadwood for fireplace or wood stove fuel. Wood fuel should be stacked at least 30 feet from any structure. Unusable deadwood could be piled at roadside for removal by city of Aiken crews.

Keep roofs clear of vegetative debris.

Pine straw and dead leaves accumulate quickly on rooftops, especially in roof valleys, behind chimneys, and in gutters. Residents should be especially careful to clear their roofs and gutters frequently during the December-April wildfire season.

2.3 SUSTAINABILITY

To accurately assess progress and effectiveness of the Action Plan, the Woodside Plantation Firewise Committee should do the following:

1. Annually review the wildfire risk assessment to determine if hazard and risk have changed.

2. Update Action Plan based on the assessment. Plan at least one community Firewise work-day or activity each year.

3. Publish an annual report detailing hazard mitigation work and other projects which have been initiated and/or completed. Include a financial statement of funds received, funds expended, and in-kind services utilized. The report should include a "state of the community" section that critically evaluates Firewise progress and needs.

COMMUNITY WILDFIRE PROTECTION PLAN

APPENDICES

APPENDIX A

South Carolina 's Wildfire Hazard & Risk Assessment Scoresheet

** This document is based upon the NFPA 1144

Community: Woodside Plantation **Lat/Long: 33.504 N/81.743 W**

County: Aiken

A. Means of Access

1. Ingress and egress

a. Two or more roads in/out	0	0
b. One road in/out	7	

2. Road width

a. Greater than or equal to 24 feet	0	2
b. Greater than or equal to 20 feet and less than 24 feet	2	
c. Less than 20 feet	4	

3. All-season road condition

a. Surfaced road, grade is less than or equal to 5%	0	0
b. Surfaced road, grade is greater than 5%	2	
c. Non-surfaced road, grade is less than or equal to 5%	3	
d. Non-surfaced road, grade is greater than 5%	5	
e. Other than all-season	7	

4. Fire service access (road length)

a. Majority of dead-end roads are less than or equal to 300 feet long	0	5
b. Majority of dead-end roads are greater than 300 feet	5	

5. Fire service turnaround capability

a. Turnarounds or cul-de-sacs have a radius of at least 50 feet	0	2
b. Turnarounds or cul-de-sacs have a radius less than 50 feet	2	
c. Dead ends have no cul-de-sacs or turnarounds	5	

6. Street signs

a. Present, lettering 4 inches high, non-flammable and reflective	0	3
b. Present but wooden, non-reflective, or lettering less than 4"	3	
c. Not present	5	

B. Vegetation

1. Characteristics of predominate vegetation within 300 feet

a. Light: short grasses and shrubs less than 2 feet high	5	20
b. Medium: tall grasses and shrubs 2-6 feet high (palmetto-gallberry understory)	10	
c. Heavy: dense brush, bay vegetation, shrubs over 6 feet high	20	
d. Slash: harvesting residue; insect/disease/fire-killed timber	25	

2. Defensible space

a. More than 100 feet defensible space between structure and wildland	1	17
b. 71 - 100 feet defensible space between structure and wildland	3	
c. 30 - 70 feet defensible space between structure and wildland	10	
d. Less than 30 feet defensible space between structure and wildland	25	

C. Topography within 300 feet of structures

1. Slope

a. Slope is less than or equal to 9%	1	1
b. Slope 10% to 20%	4	
c. Slope 21% to 30%	7	
d. Slope > 30%	10	

D. Additional Rating Factors (rate all that apply)

1. Miscellaneous

a. Topographical features that adversely affect wildland fire behavior and/or firefighting	0-5	1
b. Areas with a history of high fire occurrence.	0-5	4
c. Areas that are periodically exposed to severe fire weather and strong dry winds	0-5	2
d. Structure-to-structure fire spread likely due to close spacing	0-5	2

E. Roofing Assembly

1. Roof composition of the majority of homes

a. Metal, ceramic tile, slate, or other non-flammable material	0	5
b. Asphalt/fiberglass shingles	5	
c. Wood shakes/shingles	25	

F. Building Construction

1. Building construction of homes, siding, eaves, and deck

a. 75% of homes with noncombustible siding, eaves, and deck	0	5
b. 75% of homes with noncombustible siding and eaves, but combustible deck or fence	5	
c. 75% of homes with combustible siding, eaves and deck, or 75% mobile homes	10	

2. Building setback relative to slopes of 30% or more

a. Not applicable	0	0
b. Greater than or equal to 30 feet from slope	1	
c. Less than 30 feet from slope	5	

G. Available Fire Protection

1. Water source availablility

a. Pressurized water availability - >1000 gpm; hydrants <1000' apart	0	1
b. Pressurized water availability - >500 gpm; hydrants <1000' apart	1	
c. Pressurized water availability- <500 gpm	3	
d. No pressurized water, but draft water point on-site	5	
e. No pressurized water, but draft water point off-site within 1 mile	7	
f. Available water more than 1 mile distant	10	

2. Organized response resources

a. Nearest station is within 5 miles of structures	1	1
b. Nearest station is more than 5 miles from structures	5	

3. Fixed fire protection

a. Outdoor sprinkler system	1	1
b. None	5	

H. Placement of Gas and Electric Utilities

1. Placement of utilities

a. Both underground	0	0
b. One underground, one aboveground	3	
c. Both aboveground	5	

I. Totals for Home or Subdivision (total of all points) 72

Assessor's Name(s) Mary Shultz & John Carman (Woodside Pltn); Andy Johnson & Bill Wiley (SCFC)

Date 11/3/14

Hazard Assessment	Total
Low	< 40
Moderate	40-69
High	70-112
Extreme	> 112

APPENDIX B

STRUCTURE IGNITABILITY

A structure's ability to survive a wildfire is directly related to material and design. This is especially significant where fire hazard is high and fire suppression is difficult.

Researchers at the US Forest Service Fire Sciences Laboratory in Missoula, MT have studied structure survival on large wildfires around the country. Some of their findings are as follows:

1. Roof materials are the single most important factor in construction.

a) Ceramic or metal roofing materials are probably the safest. Some ceramics are made to look like wood shakes.
b) Fiberglass-asphalt shingles do not ignite readily. In some cases they melt rather than ignite.
c) Wood shingles pressure treated with fire retardant may provide some protection for up to five years. Observations indicate that the effective life of the treatment may be as little as eighteen months. Re-treatment by spraying on retardant may be effective for about a year.

2. Wood siding does not ignite readily unless exposed to direct flame.

a) Siding (T-111 or board) is more likely to ignite when direct flame is applied to the edges.
b) No flammable materials should be allowed within 3' of wood siding.
c) Firewise alternatives to wood siding include brick, stucco, and hardiplank.

3. Expanses of glass, especially on down-slope side of homes, can increase vulnerability.

a) Double-paned glass reduces the amount of heat energy transmitted into the home. If the outside pane breaks from the heat, the second pane still affords some protection.
b) Double-paned tempered glass is best; double-paned non-tempered is adequate.
c) Pane size is significant. Large windows are more likely to break under heat; several smaller panes are preferable to one large sheet of glass.

4. A clean, simple exterior design minimizes surface exposed to heat and flame.

a) Avoid designs that include many angles and set-backs in exterior walls. Limit valleys and dormers in roof construction.
b) If the house or deck overhangs a slope, the underside should be sealed or screened, and kept immaculately clean of any flammables. Fire under the structure may be pulled into the underbelly as air chimneys around support posts.
c) Support posts under decks should be non-flammable.
d) Vents should be non-flammable and screened with one-eighth inch non-flammable mesh.

5. Gutters should be installed on an as-needed basis.

a) Use gutters only to deflect water from entrances and move water away from the structure.
b) Covered gutters are preferable.
b) Open gutters must be kept clear of vegetative debris, especially during fire season.

6. Structure density can be significant.

a) For single story homes with 18' roof peaks, there should be a minimum horizontal separation of 25-30' between homes.
b) Two-story homes should be separated by 50-60' of horizontal distance.

APPENDIX C

DEFENSIBLE SPACE

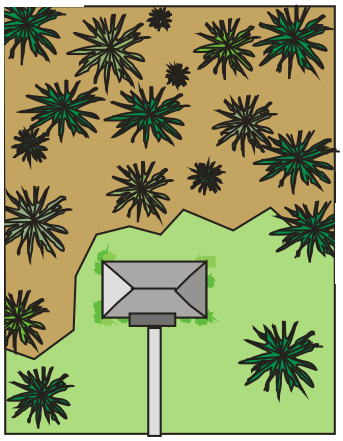
Defensible space is the managed area between the home and the wildland. It involves both fuel management and spatial management. The most critical area is within a 30-foot radius of the home.

<u>Fuel management</u> reduces fire intensity and slows its spread.

Avoid highly flammable landscape plants near house.
Use less-flammable mulch within three feet of flammable structural components.
Water landscape plants and keep mulch moist during dry periods.
Keep roof and gutters free of pine straw and dead leaves.
Prune tree branches that touch or hang over the house.
Remove tree branches within 10 feet of the ground if foliage is flammable.
Thin trees to prevent branch contact between trees.
Clear dead plant material from the yard.
Store firewood at least 30 feet from important structures.
Clear natural underbrush within 30 feet of the home.
Do not attach flammable fences to the house.

Poor Fuel Management

Good Fuel Management



<u>Spatial management</u> provides adequate room for firefighting access.

Insure garden fences and walls have openings or functioning gates.
Don't allow structural landscape elements to impede access.
Make sure vehicles and recreational equipment won't block firefighters.

APPENDIX D

FUEL MITIGATION ZONES

A fuel mitigation zone is a specified area of wildland where the natural fuel has been physically modified or reduced. Fuel mitigation is designed to reduce the intensity of an oncoming wildfire as it approaches a high value area. Lower fire intensity provides two benefits: firefighting efforts are more effective, and vulnerable structures are subjected to less radiant heat.

Fuel mitigation may be accomplished by prescribed burning, mowing, herbicide application, mastication, or thinning. Selecting a mitigation method should consider environmental and aesthetic values, cost, contractor availability, and the physical fuel situation.

In some cases, 8-10 foot wide cleared firebreaks are integrated into the fuel mitigation zone for added protection. Such firebreaks can be valuable as walking trails or wildlife observation corridors.

Large scale fuel mitigation projects must consider the following:

Cost. The cost may range from $25 per acre (prescribed burning) to more than $500 per acre (mastication). Firewise grants may be available for some projects.

Environmental Impact. Some mitigation may be limited by air and water quality considerations. Low impact methods like mowing, mastication, and chipping are especially useful in sensitive environmental situations.

Maintenance. If fuels include living brush or accumulations of pine straw and dead leaves, the area will need to be re-treated every two to five years. While cost will generally decrease after the initial treatment, communities must still budget for regular maintenance of fuel mitigation zones.

Lack of consensus. For various reasons, some property owners may resist modifying the wildland. Handling such situations may require negotiation and diplomacy, depending on ownership of property in the mitigation zone and the community's legal structure.

Fuel mitigation is most critical within 30 feet of structures. If feasible, less intense fuel mitigation should be employed from 30-100 feet from structures.

APPENDIX E: PLANT FLAMMABILITY

E = Evergreen ***SE = Semi-evergreen*** ***D = Deciduous***

High Flammability
Arborvitae (Thuja spp) E
Cedar, eastern red (Juniperus virginianus) E
Eucalyptus (Eucalyptus spp) E
Gallberry (Ilex glabra) E
Juniper, Chinese (Juniperus chinensis) E
Juniper, Creeping (Juniperus horizontalis)E
Miscanthus Grasses (Miscanthus spp.) [**Also an invasive species]**
Mountain laurel (Kalmia latifolia) E
Pampas grass (Cortaderia selloana) SE **[Also an invasive species]**
Pine (Pinus spp.) E
Podocarpus (Podocarpus spp) E
Staggerbush (Lyonia ferruginea) D
Switchcane, Large (Arundinaria gigantea) SE
Switchcane, Small (Arundinaria tecta) SE
Waxmyrtle (Myrica cerifera) E
Yaupon, dwarf (Ilex vomitoria) E
Yew (Taxus spp) E

Moderate Flammability
Abelia, glossy (Abelia x grandiflora) E
Azalea (Rhododendron spp) E
Boxwood (Buxus spp) E
Laurelcherry, Carolina (Prunus caroliniana) E
Leyland cypress (Cupressocyparis leylandii) E
Rhododendron (Rhododendron spp) E or D
Sago palm (Cycas revoluta) E

Low Flammability
Adam's needle (Yucca filamentosa) E
Butterfly bush (Buddleia spp) D
Beautyberry, French mulberry (Callicarpa dichotoma) D
Camellia (Camellia japonica) E
Coontie (Zamia pumila) E
Forsythia (Forsythia spp) D
Gardenia (Gardenia spp) E
Hydrangea (Hydrangea spp) D
Holly, Blue (Ilex x meserveae) E
Holly, Foster (Ilex x attenuata) E
Holly, winterberry (Ilex verticillata) E
Indian hawthorne (Rhaphiolepis indica) E
Magnolia, southern (Magnolia grandiflora) E
Needle palm (Rhapidophyllum hystrix) E
Oleander (Nerium oleander) E
Pittosporum (Pittosporum spp) E
Pyracantha (Pyracantha coccinea) E
Sasanqua (Camellia sasanqua) E
Viburnum (Viburnum obovatum, V. dentatum, V. spp) SE

APPENDIX E, CONTINUED

Fire-Resistant Evergreen Groundcovers
Ajuga, Bugleweed (Ajuga reptans)
Asian Jasmine (Trachelospermum asiaticum)
Liriope (Liriope spp)
Pachysandra (Pachysandra terminallis)
Periwinkle, dwarf (Vinca minor) **[An invasive species and not recommended]**
Phlox, creeping (Phlox ovata)
Sedum, Stonecrop (Sedum spp)
Thyme, creeping (Thymus serpyllum)

APPENDIX F: INFORMATIONAL RESOURCES

Using community notification resources already in place (newsletters, e-mail, bulletin boards, etc.) provide wildfire protection information to residents of Woodside Plantation. This may include:

- Printed material available on request from the SC Forestry Commission
  - Living With Fire
  - Flammable Plants List
  - Homeowner's Checklist
  - Be Firewise Around Your Home

- Internet resources, including:
  - www.trees.sc.gov
  - www.firewise.org
  - www.disastersafety.org
  - www.flash.org

APPENDIX G: ELECTRIC TRANSFORMERS

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The Big Green Box

BY MEGAN McKOY-NOE

THEY'RE BIG. They're often green. They generally sit on concrete, often within housing developments. Some folks don't like these "electrical boxes" (a common nickname for pad-mount transformers) and try to hide them with bushes, fences, or flower beds. But stay clear: even small additions around pad-mount transformers create hazards.

To improve aesthetics of new neighborhoods, developers often put in underground power lines. While this eliminates utility poles and overhead wires, it requires installing pad-mounted transformers in some front yards. Unfortunately some homeowners, concerned about curb appeal, attempt to screen pad-mount transformers from view—creating an unsafe situation for all concerned, including Mid-Carolina Electric lineworkers.

"We realize landscaping represents an investment of time and money," shares Jeremy Alcorn, MCEC's vegetation management coordinator. "We respect the effort and care our members invest in making their properties attractive. However, landscaping around electrical equipment interferes with our ability to deliver reliable power."

Mid-Carolina Electric recommends leaving at least 10 feet of clear space in front of pad-mount transformers. Linemen repair units while they are energized so homeowners don't experience an interruption in service. To ensure safety, they use an 8-foot fiberglass hot stick that requires about 10 feet of "elbow room" in front of the access panel.

"In some cases, consumers may leave plenty of space in front of the transformer, but grow vegetation on the other three sides," explains Alcorn. "This invites other problems. For example, plant roots can interfere with its operation. Overheating is another big concern that can cause service interruptions when air circulation is compromised."

Pad-mounted transformers surrounded by vegetation or a structure may overheat and cause service interruptions when the air circulation around them is compromised. Allow at least four feet of space on both sides and behind the transformer.

Members should also be aware that plantings along rights of way—strips of land owned by a member on which the co-op places poles, wires, and other equipment like pad-mount transformers—could be damaged by co-op vehicles.

"Occasionally, we may need to repair a transformer, and eventually transformers must be upgraded and replaced," says Alcorn. "To perform this work, line trucks must be driven into the right of way and the transformer lifted out. Although we try to minimize the impact, plants will be damaged if they're in the way."

Call before you dig!

Because underground service continues from the transformer to your home, you should never dig anywhere in your yard without first calling 811 to find out where cables are buried.

MEGAN McKOY-NOE *writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives. Horry Electric Cooperative in South Carolina and GreyStone Power Corporation in Georgia contributed to this article.*

While this may be more aesthetically pleasing, it is very dangerous for our employees and may cause power outages.

Keep roots away and air flowing around your home's pad-mount transformer by leaving at least 10 feet of space around the equipment.

BABY STONE

Transformers need to be *left alone*

- **Never** let anything grow closer than 10 feet from a pad-mount transformer. (The access panel is marked by a handle, lock, and sticker on the front.)
- **Never** enclose a pad-mount transformer with fencing, shrubs, or anything else with less than a 10-foot-wide gate or opening.
- **Never** allow children to play near pad-mount transformers.
- **Never** pour waste oils, chemicals, or other liquids on or near a pad-mount transformer. These liquids can seep into the ground and damage underground cables.

This sticker, placed on all MCEC pad-mount transformers alerts homeowners to danger as well as instructions on planting around the transformer.

BABY STONE