WILSONIA
Community Wildfire Protection Plan

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Introduction and Objectives

This document is the Community Wildfire Protection Plan for the residents of Wilsonia who have homes and cabins within the Kings Canyon National Park boundary. It includes information about the fire protection problems associated with the community of Wilsonia and the surrounding area. The majority of this plan is based on information developed by David Dulitz in March 2004 in his preparation of the Wilsonia Fire Plan and the subsequent information that is based on the existing condition of Wilsonia from a fire protection standpoint. The recommendations were all developed by Mr. Dulitz in 2004. The Wilsonia Village Inc (WV) fire safety committee has started to implement some of the recommendations. Since the original report was written in 2004, the percentages quoted and other numbers were current as of that date.

Wilsonia Village, Inc. and specifically the Wilsonia Fire Safety Committee within this organization provides the structure to carry out this CWPP. This plan must be approved prior to applying for money from various funding sources. There is grant money available periodically through various programs dealing with the problem of fire in the wildland-urban interface. The National Park Service has shown a willingness to work with the community to help with projects and obtain grant money. The Sequoia Fire Safe Council is another resource for specific projects. A fund could also be established within the structure of Wilsonia Village, Inc. to accomplish various fire safe projects.

Recommendations are given in this plan for various fire protection strategies that may be undertaken by the community. These recommendations are for Wilsonia Village, Inc. and also for the National Park Service

Objective Statement: The objective of this CWPP and of the WVI Fire Safety Committee is make the Village of Wilsonia as fire safe as possible while maintaining the integrity of the Wilsonia Historic District. Therefore all projects undertaken will be evaluated to insure that they do not affect the integrity of the Wilsonia Historic District status.

The Problem

The vegetation of the Sierra Nevada Mountains has long coexisted with the disturbance mechanism of wildfire. Long before the arrival of Europeans to California, wildfire played an important role in shaping the ecology of the Sierra's. Tree ring studies have chronicled a frequent fire history in the Sierra Nevada (Swetnam 1992). These fires were started either by lightning or by Native American ignitions. The frequent fires resulted in more open forests than we have today with reduced stand density of small trees, younger stands of chaparral, and a mosaic of age classes in most vegetation types. In the early 1900's aggressive fire control policies greatly reduced the number and size of wildfires. As a result, the forests grew denser with high proportions of small trees in dense stands. The species mix in the forests shifted in the favor of the more shade tolerant species such as white fir (*Abies concolor*) and incense cedar (*Calocedrus decurrens*). Chaparral stands grew older with a higher proportion of dead wood. These conditions also led to higher

intensity fires when they did occur. After 100 years of active fire suppression, we find that the number of large, high intensity fires seems to be increasing.

The Wilsonia subdivision, which dates back to the early part of the 1900's, was built when fire protection was not a major consideration in the planning of a mountain community. The subdivision was built with narrow roads, small lots, no fire protection water supplies and flammable building materials. The situation today in Wilsonia is little changed with the exception of some upgrades to fire resistant construction techniques and a reduction in density of housing in some areas.

The California Fire Alliance, a group of organizations with fire protection responsibilities throughout the State, has listed Wilsonia as a community at risk from fire. The criteria for the ranking include the ranking of fuel hazards, probability of fire, and area of surface housing density that would create wildland-urban interface fire protection strategy situations. Communities at risk are ranked within three threat levels from one to three with three being the highest threat level. Wilsonia is ranked at level three.

The fire protection problem at Wilsonia is two fold. The surrounding area has the fuels and topography that could support a major wildfire and threaten the community. Wind driven crown fires in the mixed conifer forest generate a tremendous source of embers or fire brands. This can result in ignition of structures and spot fires a considerable distance from the actual fire front. Fire resistant building materials and design play a major role in the susceptibility of structures from this type of ignition source. The advancing fire front and spot fires in vegetation can also ignite structures. Vegetation clearance around structures is important in reducing the threat. Fuel reduction projects in the surrounding area are also important in reducing the level of fire intensity and improving the ability to control the fire as it approaches the community.

A fire could also originate from within Wilsonia either from a vegetative source or a structural source. A fire starting from within Wilsonia would have the potential to damage structures within the community and also threaten the surrounding forest area. Fires in structures within Wilsonia also have the potential to involve adjacent buildings because of the close proximity of buildings in some parts of the community. Wilsonia has had a long history of structures lost to fire and the average frequency for structure fires within the community may be as high as one every five years. To address the total fire protection problem at Wilsonia, both threats of fire from within the community and also from the surrounding area need to be taken into consideration.

Property Description

Located in northern Tulare County, Wilsonia consists of approximately 100 acres. The tract was subdivided into small lots in the early 1900's. Approximately 200 deeded privately owned cabins are currently present within the community. Many of the original lots in the subdivision are 50 feet wide by 90 feet deep or 4,500 square feet. Although some cabins exist on this lot size, many cabins were built on two or more lots to provide for a larger area around the cabins. A portion of Wilsonia comprising approximately 24

acres is owned by members of the Masonic Lodge and known as the Sierra Masonic Family Club tract. The National Park Service has purchased 66 lots within Wilsonia and may own as much as one-quarter of the land area within the community. With the exception of approximately 12 cabins, the National Park Service lots are largely vacant land. Several meadows exist within the property and remain as open space.

The wildland urban interface zone is an area 500 feet surrounding the community boundaries of Wilsonia. The NPS has an ongoing program of clearing excessive fuel materials about 200 feet from the Wilsonia boundary.

History

The history of Wilsonia dates back to 1889 when Daniel M. Perry patented 160 acres of land into private ownership. This was prior to acquisition of the Sequoia and Kings Canyon National Park. Upon the establishment of the parks, the land remained in private ownership. Perry sold the land to lumberman Smith Comstock on September 23, 1889. In 1895 Comstock transferred the land to John Stansfield and two years later Smith Comstock's daughter Effie purchased it. Mr. E. O. Miller purchased the land in 1900 and sold the property in 1918 to Andrew D. Ferguson.

Ferguson subdivided a portion of the property into lots in 1918 and began selling the lots for summer home sites. In the first few years lots were sold for between $75 and $200. Building started almost immediately and by the late 1920's Wilsonia had 180 landowners and contained 150 homes. The southern portion of Wilsonia was subdivided in 1921 and is know as the Mesa Addition. Sixty acres of Wilsonia was sold to the Federal Government in the 1930's leaving 100 acres. The 100 acres includes the original subdivision, the Mesa Addition, Sierra Masonic Family Club Tract, and several protected meadows.

In 1919, the northeast 20 acres of Wilsonia was sold to the Sierra Masonic Family Club (SMFC) Tract. Only Masons and their families have membership in the SMFC Tract and only members may own a cabin in the tract. The cabins are individually owned while the members jointly own the land. Much later, four acres were purchased by the SMFC to provide an additional buffer area.

The residents of the area reportedly had a pivotal influence in the election of President Woodrow Wilson in 1916. The votes that were counted in the valley after a delay in transit, due to a storm, and these votes swung the state and nation in electoral votes in favor of Woodrow Wilson. Andrew Ferguson was also a supporter of Wilson, and hence the name Wilsonia.

In 1995 Wilsonia became a Historic District and as such is listed in the National Register of Historic Places.

Historic Preservation

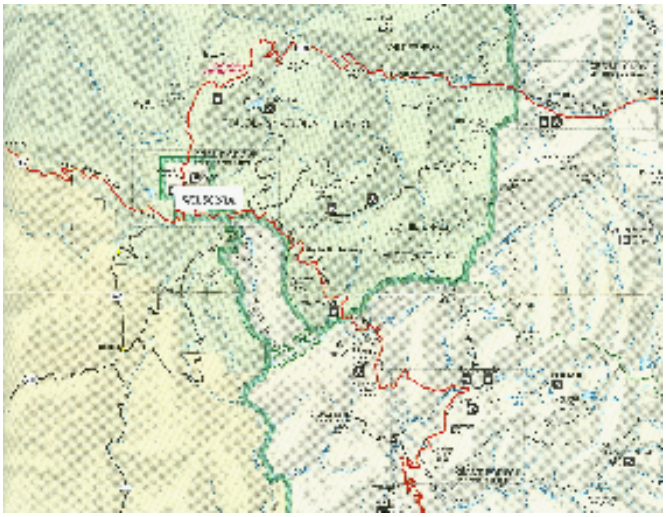
The community of Wilsonia was added in 1996 to the National Register of Historic Places as a representative recreational mountain community. One hundred thirty nine of the cabins in the community contribute to the historic significance of the community. The majority of the contributing cabins were built between 1918 and 1945 and were built with rustic materials including wood and stone. It is important that the historic character of these cabins be retained, while at the same time, attempting to reduce the risk of destruction of these same cabins from fire.

Guidance in preserving historic structures is contained in Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995. National Park Service representatives can make interpretation of these standards on a case-by-case basis. For example, there may be some leeway in the regulations to allow the replacement of a deteriorated shake roof with a simulated shake roof made from Class A shingles.

Maintaining the historic registry designation in Wilsonia is important to the Wilsonia Village Inc., Wilsonia Historic District Trust and the Fire Safe Committee. Therefore, all decisions made by the committee will consider the effects of any proposed actions on the historic designation, and work to help maintain that important designation.

Surrounding Properties

Wilsonia is inside the Grant Grove sub district of Kings Canyon National Park. It is also in close proximity to the Giant Sequoia National Monument that is administered by the United States Forest Service. Closely adjacent to Wilsonia to the northwest is Grant Grove Village. Grant Grove Village consists of a visitor center and lodge facility with amenities for the National Park visitors. Also nearby are three public campgrounds and one picnic area. Immediately adjacent to Wilsonia on the west are Park Service housing units, fire station, and maintenance buildings.

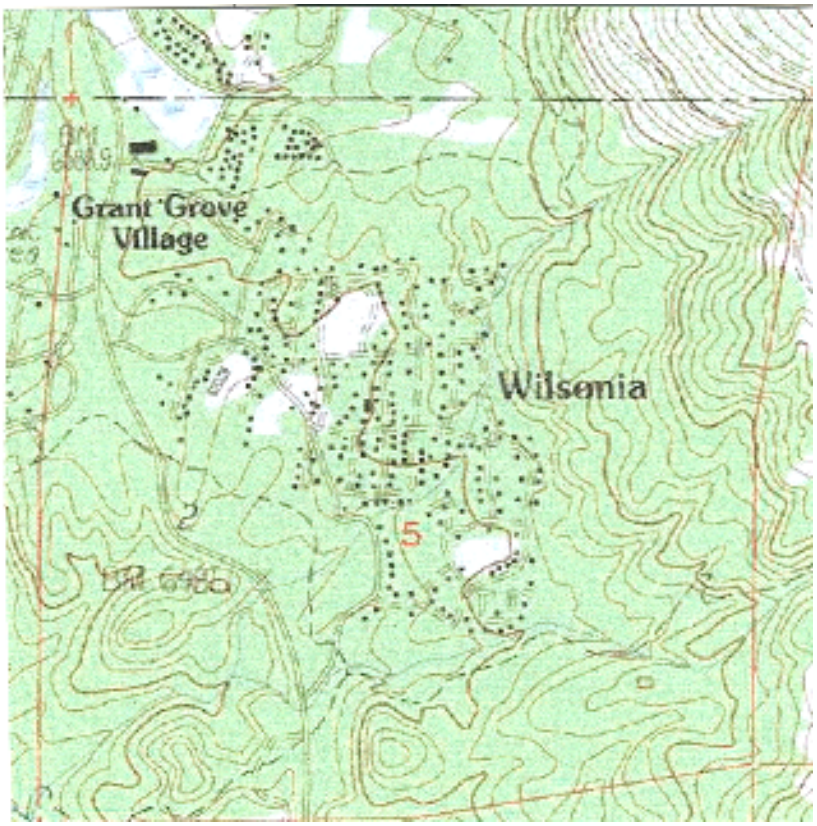


Location Map

Topography

The property is on a southwest facing aspect with an average elevation of 6,600 feet. The community is located on a gentle bench with moderate slopes when compared to the adjacent topography. The elevation difference within the community is approximately 500 feet.

Wilsonia is in the watershed of the Kings River. Runoff from Wilsonia ends up in Sequoia Creek and Sequoia Lake. To the northwest of Wilsonia is the Kings River canyon with an elevation difference of approximately 5,000 feet. To the east of Wilsonia is Park Ridge with a high point of 7,540 feet at Park Ridge Lookout.



Topographic Map (not to scale)

Weather

Wilsonia is located at an elevation that shows great contrasts in weather. In winter, snow is common and may build up to 10-12 foot depths. Some winter storms may also be entirely rain. Summer and fall thunderstorms bring the chance of precipitation. Some thunderstorms occur as dry events with lightning but little rain. Winds are generally light from the north. Local winds blow upslope during the day and down slope during the night. Thunderstorms can bring strong, erratic winds for a short time during the storm event.

National Weather Service weather records are available at Grant Grove, immediately adjacent to Wilsonia. Precipitation averages 42.07 inches. Hottest months are July and August with average high temperatures of 74 degrees F. Coldest months are January and February with average highs of 42 degrees F

The typical fire season runs from late May to late October. Fire weather can be severe during any summer or early fall month. Live fuel moisture levels would start at high levels in early spring and decrease during the summer and early fall months. The combination of lower live fuel moisture levels and severe fire weather conditions would make August and September the highest risk months for a catastrophic wildfire.

Vegetation and Fuel Type

Wilsonia is in a mixed-conifer forest. Tree species in the area include ponderosa pine (*Pinus ponderosa*), sugar pine *(Pinus lambertiana)*, incense cedar, white fir and California black oak (*Quercus kellogii*). Predominant understory vegetation includes chinquapin (*Castanopsis chrysophylla),* whitethorn (*Ceanothus cordulatus),* greenleaf manzanita *(Arctostaphylos patula),* bracken fern *(Pteridium aquilinum),* gooseberries and currants *(Ribes spp.)* and azalea *(Rhododendron occidentale).* Giant sequoia *(Sequoiadendron giganteum)* is present in the surrounding forest and a few in Wilsonia. Several meadow areas exist within the community with common meadow grasses as the biggest vegetative component.

The fuel type within and surrounding Wilsonia is timber with litter and understory, National Fire Danger System Fire Behavior Fuel Model 10. A fuel model is a mathematical representation of various fuel types used in mathematical fire spread models. Fuel models describe fuels in terms that fire behavior models can understand such as fuel load, size, shape, compactness, etc. In Fuel Model 10, fires burn in the surface and ground fuels with greater intensity than other fuel models. Dead and down fuels include greater quantities of 3-inch or larger limb wood resulting from large trees and over mature forests or natural events that create a large load of dead material on the forest floor. Fires burning in tree crowns, spotting, and torching of individual trees is more frequent in this situation, leading to potential fire control difficulties (Anderson 1982).

Dead and Down Fuel Loading

Within the timber with litter and understory fuel type, a significant amount of dead fuel exists on the ground. The dead fuel is an accumulation of leaves, twigs, limbs, and fallen trees. The dead fuel exists in a sporadic pattern and is often in “jackpots” where large trees have fallen. The dead fuels can contribute to a significant amount of fuel for a wildfire and also provides fuel ladders that carry fire up into live trees.

Untreated forest stands surrounding Wilsonia may have as much as 100 tons per acre of dead and down fuels. Over the years the dead and down fuel loading within Wilsonia has been significantly reduced due to cleanup efforts of landowners. The National Park

Service has also completed a cleanup effort on federally owned lots within Wilsonia and also in a buffer around the community. These efforts have reduced the average dead and down fuel loading within Wilsonia to an estimated value of less than ten tons per acre. Dead and down fuel loadings in the treated area around Wilsonia are estimated to be approximately 30 tons per acre.

Fire Behavior Models

Fire behavior can be estimated using a computer program (Behave Plus 2.0.2). The program will estimate various fire behavior outputs for different fuel types, fire weather, fuel moistures, and topography. Outputs include rate of spread, fire line intensity, flame length, crown scorch height, and maximum spotting distance.

Computer runs were made for Fuel Model 10 with two weather scenarios. Terrain slope was considered to be 30% for all models.

The first scenario is a "worst case" where fire weather is extreme. Air temperature is 95 degrees, wind speed is 25 miles per hour, and 1-hour fuel moisture (fine fuels) is 5%. These types of conditions may only occur on a few days each year at Wilsonia but represent the conditions that result in catastrophic fires.

The second scenario is called average weather. Air temperature is 75 degrees, wind speed is 5 miles per hour, and 1-hour fuel moisture is 6%. This scenario would represent the approximate "average" fire conditions that occur during the fire season at Wilsonia.

Detailed results of these computer simulations are shown in the appendix. Results are shown below, in tabular form, for each of the two fire scenarios. This output is a good overall indicator of fire intensity and shows good relative damage potential and fire control problems.

	Wilsonia Extreme Weather	**Wilsonia Average Weather**
Rate of Spread	5484 ft. /hr.	567 ft./hr.
Heat Per Unit Area	1324 BTU/square ft.	1248 BTU/square ft.
Fireline Intensity	2017 BTU/sq. ft./sec.	197 BTU/sq. ft./sec.
Flame Length	14.9 ft.	5.1 ft.
Scorch Height	76 ft.	26 ft.

These results show great differences in fire intensities for the different fire weather scenarios. Rate of spread during extreme weather is nearly ten times that of average conditions. Fire line Intensity is also ten times greater during extreme weather. The scorch height of 76 feet in the extreme weather scenario is high enough to kill large trees.

The results of these computer simulations are not intended to provide precise fire behavior predictions but should be used to get a feeling for the relative fire behavior for different weather conditions at Wilsonia.

Fire Protection

Wilsonia is located within the direct wild land protection area of the National Park Service. The National Park Service also provides the structural protection. The nearest fire engine is NPS Engine 51 located at the National Park Service Grant Grove Fire Station immediately adjacent to Wilsonia. The response time for this engine is approximately 5 minutes. This engine is fully staffed during fire season. Engine 52 is dedicated to structural fire protection and staffed on an on call basis. The next available engine would be USFS Engine 32 at Hume Lake with a response time of 20 minutes and then USFS Engine 31 from Pinehurst with a response time of 30 minutes. California Department of Forestry and Fire Protection (CALFIRE) engines are available at Badger and Squaw Valley with approximate response times of between 30-45 minutes. The Badger and Squaw Valley CALFIRE stations are also staffed full time in the winter months for structural fire protection.

CALFIRE operates an air tanker base jointly with the U.S. Forest Service at the Porterville and Fresno Airports that provides initial attack air tanker response. A National Park Service helicopter is located at Ash Mountain. The NPS Arrowhead Interagency Hotshot crew is stationed at Swale Work Center, approximately 10 minutes from Wilsonia. The USFS Horseshoe Meadow Interagency Hotshot crew is located at Pinehurst, approximately 30 minutes from Wilsonia. Other trained fire fighting hand crews are available from the CALFIRE Miramonte Conservation Camp with an approximate response time of 45 minutes.

Fire Equipment Response to Wilsonia

<u>Low Response</u>
Engine (2): KNP E-51, SQF E-32 (LK)
Crew: (1) KNP C-6
Water Tender: none
Helicopter (1): KNP H-552
Air Tanker:
Air Attack:
Prevention (1): SQF PT-32
Overhead (2): SQF BC-31, KNP DIV-2/DO

<u>Moderate Response</u>
Engine (3): SQF E-31 (PH), FKU E-4378(SV), TUU E-4166(BG)
Crew: (2) SQF C-3, FKU MM C-1
Water Tender (1):
Helicopter (1): SNF H-520 (Trimmer)
Air Tanker: (1)
Air Attack: (1)
Prevention:
Overhead (1): TUU BC-4111

High Response
Engine (2): FKU E-4373 (SC), FKU E-4393(SV)
Crew: (2) FKU MM C-2, FKU MM C-3
Water Tender: none
Helicopter (1): SQF H-522 (Pepper)
Air Tanker:
Air Attack:
Prevention (1):
Overhead (2):

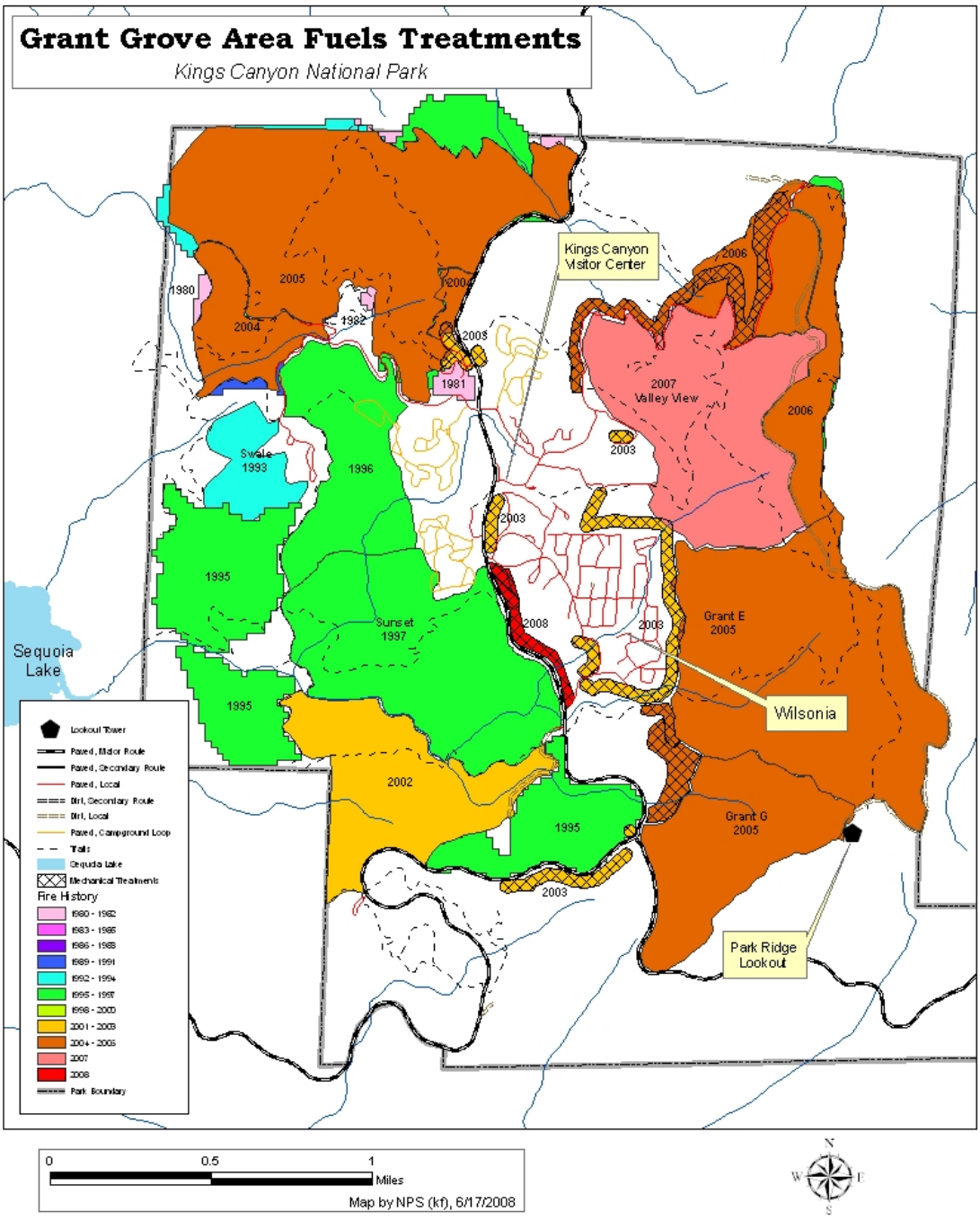
2001 Fire in Wilsonia

Fire History

The National Park Service keeps records of both natural fires and wildfires in the Grant Grove area. A map of these burned areas is shown at the end of this section.

The immediate area of Wilsonia has not been burned by a wildfire since the Park Service has kept records. The most significant wildfire in the surrounding area was the McGee Fire, which burned 17,500 acres in 1955. The McGee fire burned in the Kings River canyon west of Wilsonia and threatened the entire Grant Grove area. It burned to within two miles of Wilsonia. In 1993 wildfires burned again within two miles of Wilsonia within the old McGee Fire burn. The Highway fire burned into the old McGee burn below Cherry Gap in 2001.

The National Park Service has conducted many prescribed burns in the Grant Grove area from 1980-2007 as shown on the map below. These prescribed burns have not included the immediate area of Wilsonia.



Fire Safe Assessment of Individual Properties

An effort was made to make a fire risk assessment of every structure within Wilsonia. Outbuildings were considered to be part of the structure on each lot. A total of 196 lots with structures were inspected. The inspection of each property was made from the access road right-of-way unless the landowner was present and granted access to the property. As a result, some omissions may have resulted from not being able to see all of the lot or structure. The intention of this survey was not to draw attention to problems on individual properties but to get an idea of the overall trends of fire safe conditions within the entire community. Results of the inventory for seven criteria are described below.

1. Fire Resistant Roofing Materials – Each structure was evaluated for the type of roofing material. Wood shake or shingle roofs were considered to be flammable roofing materials. Wood shakes or shingles are not only easy to ignite, but they also typically contain various "nooks and crannies" that will trap wind blown embers and cause ignition of the roof. Composition shingles, metal roofing, or tile was considered to be fire resistant. A total of 69% of the structures inspected had fire resistant roofs. Thirty one percent had roofs made from wood shakes or shingles.

2. Fire Resistant Siding- Each structure was evaluated for the type and condition of siding material. The siding on a structure is another ignition location during a wildfire either by direct contact with flames, radiant heat, or flying embers lodging in cracks and crevices in the wood. Embers can also enter the wall cavity through cracks in the siding. Wood shake or shingle siding was considered to be flammable siding regardless of age or condition. Other types of siding were evaluated on the basis of type and condition. Various types of wood siding, including board, board and bat, plywood, logs, and log cabin siding were considered to be fire resistant if no large cracks were present, the wood was sound, and the siding was painted or stained to prevent deterioration. Thirty four percent of the structures evaluated had fire resistant siding. Sixty-six percent had some type of flammable siding. Other options for fire resistant siding are a new fire resistant spray and shingles impregnated with fire resistant material.

3. Proper Firewood Storage- An evaluation of the firewood stack was made on each property where firewood was stored to determine if the firewood contributed to the fire hazard of the structure. Proper storage consisted of having the firewood stored more than 30 feet from the structure or placed in a fire resistant type of outbuilding. Only 15% of the structures evaluated had proper storage. Eighty-five percent had improper firewood storage.

4. Thirty Foot Vegetation Clearance – All structures were evaluated to see if they met the standards of California Public Resources Code (PRC) 4291 regarding vegetation clearances around structures. The code requires the removal of vegetation that can transmit fire from the natural growth to a building or structure.

This does not mean complete removal of vegetation within 30 feet of a structure, but it does require manipulation of the vegetation so that it is less likely to carry a fire to the structure.

Ground fuels such as grass and pine needles must be removed from an area immediately adjacent to the structure.

Pine needles should not accumulate on roofs.

Trees should be limbed up from the ground.

Tree limbs should be trimmed at least ten feet from chimneys or stovepipes.

Trees and brush should be thinned so that there is adequate space between plants so that fire is less likely to spread from plant to plant.

Landowners are not required to treat vegetation beyond their property lines so only the lot containing the structure was evaluated if property lines were within 30 feet of the building.

Fifteen percent of the structures inspected met the standards for vegetation clearance. Eighty-five percent did not meet the standards of PRC 4291.

In 2006, the 30 foot clearance area was expanded to 100 feet. Based on the evaluations made by Nicole Ver, Forestry Technician, NPS in 2006, the results are shown on Appendix D

5. Spark Arrester Screens on Chimneys and Stovepipes – The openings of chimneys and wood burning stovepipes were inspected for the presence of at least a one-half inch minimum mesh opening spark arrester screen. The screen must fit tight against the opening to prevent large embers or firebrands from escaping from chimney or stovepipe opening. Twenty nine percent of the structures with chimneys or stovepipes were in compliance in 2004. Seventy-one percent either had no screens or screens that were unserviceable.

6. House Numbers – Each primary structure on the property was inspected to see if the house number was plainly visible from the public roadway. The house number sign not only had to be present but the numbers had to be large enough to be seen from the roadway and the sign could not be obstructed by vegetation. Sixty seven percent of the structures had adequate house numbers. Thirty-three percent had no house numbers or numbers that could not be seen from the roadway. It should be noted that the inspection was done during the daylight hours so it is not known how many of the signs had numbers that would reflect light to be seen at night.

7. Enclosure of Overhanging Decks and Foundation Spaces – Structures with overhanging decks, stairs, stoops, or foundation spaces were inspected to see if

these spaces were enclosed with a tightly constructed fire resistant material. The enclosure of these openings in structures is to prevent flying embers from lodging under the structure providing an ignition source. Thirty percent of the structures had enclosed overhangs or foundation spaces. Seventy percent had unenclosed openings or openings enclosed with flammable material.

Community Risk Assessment

All structures have equal priority with the exception of the Sierra Masonic Family Club water tanks which serve about 24 cabins.

Perceptions of the Wilsonia Landowners

In 2004 a questionnaire was sent out to all Wilsonia landowners with the intention of assessing the perceptions of the landowners as to the fire safe condition of their property and Wilsonia in general. Questions were also asked concerning priorities for future fire safe projects in Wilsonia and the perception of ongoing fire safe projects. Two hundred eighty four questionnaires were mailed out via the periodic newsletter of Wilsonia Village, Inc. A total of 61 questionnaires were returned. A copy of the questionnaire is included in the appendix. Results of the questionnaire are as follows:

Question #1 asked the respondents to select a statement that best describes the perception of the risk of wildfire in Wilsonia. Residents overwhelmingly agreed that Wilsonia had either a moderate or high risk for wildfire.

Sixty-five percent of the respondents thought that it was very likely that Wilsonia could be damaged by fire.

Thirty-three percent thought that there was a moderate risk for wildfire.

Only one respondent indicated that there was not much chance for a wildfire in Wilsonia.

Responses to this question showed a high level of awareness to the potential risk of wildfire to Wilsonia.

Question #2 asked the property owner to assess the fire safe condition of their property. Three-quarters of the respondents indicated that some work was needed on their property to make it fire safe.

Sixty-two percent thought that minor work was needed.

Twenty-five percent thought that their structure and property were very fire safe.

Thirteen percent thought that major work was needed.

Even though the majority of landowners thought that at least some work was needed on their property to make it fire safe, a significant number (25%) indicated that that their property is currently very fire safe. The inventory of fire safe condition of each property in Wilsonia showed that every lot with a structure needed some fire safe improvements. This indicates a misperception of many landowners as to what actually is a fire safe condition.

Question #3 asked to best describe their situation to make fire safe improvements to the structure on the property.

Fifty-six percent would be willing to make some fire safe improvements on their structure but did not know what to do.

Twenty-one percent indicated that things were fine the way they are, no need to do any fire safe work.

Eighteen percent did not want to change the look of their structure.

Five percent did not have the time or money to make fire safe improvements.

Question #4 asked about the willingness to do fuels reduction work on their property.

Forty-two percent of the respondents indicated that they do yearly maintenance for fuel reduction.

Twenty-seven percent would be willing to do fuels reduction work but did not know what to do.

Fifteen percent did not have any way of disposing of plant material.

Thirteen percent thought that things were fine the way they were.

Three percent did not have the time or money to do any fuels reduction work.

Question #5 asked for the length of stay in Wilsonia each year.

Thirty-seven percent stayed from two weeks to one month.

Twenty-nine percent stayed from one month to three months.

Twenty percent stayed three months to six months.

Eight percent stayed less than two weeks.

Five percent stayed fulltime.

Average stay of respondents is eleven weeks.

Question #6 asked respondents to prioritize various fire protection improvements or activities. Listed below are the average priorities indicated by the respondents:

Priority #1 – Clear vegetation away from homes and outbuildings
Priority #2 – Do more fuel reduction projects on the surrounding land (Park Service)
Priority #3 – Improve water system to provide for fire equipment access, i.e. hydrants
Priority #4 – Improve access for fire equipment
Priority #5 – Make structural improvements to improve fire safety, i.e. fire resistant roofs
Priority #6 – Improve house signs and house numbers
Priority #7 – Provide an evacuation and notification plan for emergencies
Priority #8 – Provide educational opportunities on fire safe activities

Question #7 asked for an opinion on the fuel reduction project recently undertaken by the National Park Service on lots within Wilsonia and on surrounding land.

Forty-four percent thought that the project looked fine but more vegetation, snags or dead logs could have been removed.

Thirty-four percent thought the project looked fine and could be used as a model for other projects in Wilsonia.

Ten percent of the respondents had not seen the project.

Seven percent thought that too much vegetation had been cut.

No one thought that the project was not needed, that it looked fine before.

Question #8 asked the respondents to rate the current fire protection given to Wilsonia by the National Park Service.

Forty-four percent thought that it was adequate.

Forty-one percent said that it needed improvement.

Fourteen percent thought that the fire protection was very good.

Question #9 asked if the respondent had participated in any community FIRESAFE program.

Thirty-nine percent did not know that FIRESAFE programs were being held.

Thirty-three percent said they had attended a FIRESAFE program.

Twenty-nine percent had not attended a program.

Comments: The majority of the returned questionnaires had written comments in the space provided on the form. A summary of the pertinent comments is listed below. If more than one respondent had the same type of comment, the number of respondents is shown in parenthesis at the end of the comment.

1. Pleased with the National Park Service fuel reduction project. (7)
2. The Masonic Tract is a good example of vegetation control.
3. Some cabin owners never do any cleaning of vegetation
4. Roads are in poor condition. (2)
5. I am concerned about burning the existing slash piles. (7)
6. Need to leave some dead trees and vegetation for wildlife.
7. Need to be able to cut firewood on surrounding area for no charge.
8. Need more cleanup after logging and have logger repair damage to roads from logging equipment.
9. Want to keep Wilsonia's quaint look with wood cabins and narrow roads.
10. I don't want to cut any trees from my property.
11. We are willing to live with the risk of fire. (2)
12. National Park Service needs to clean up their lots.
13. We are very concerned about the risk of fire to Wilsonia. (2)
14. National Park Service needs to clean up their cabins.
15. Concerned in winter about chimney fires.
16. Need to do more vegetation control within Wilsonia. (2)
17. Inspections needed and enforcement of debris cleanup. (3)
18. Thirty-foot clearance is not possible.
19. Need year round access.
20. Need to create aesthetically pleasing house numbers.
21. Need more storage for water or hydrants. (3)
22. Park Service needs to do more fuel reduction on surrounding land. (4)
23. Need to keep slash dump open for use.
24. Need help in pruning high branches in trees.
25. Education of all cabin owners is important.
26. Park Service needs to be committed to structural fire protection.
27. Costs of fire safe improvements are important to consider.
28. Needed to spray trees during recent tussock moth outbreak. (2)
29. Park Service needs to get more familiar with streets and addresses in Wilsonia. (2)

Smoke Management

Smoke from various types of burning is an important and sensitive issue. Smoke from fuel reduction burns can cause significant air pollution and health effects. Some people with breathing difficulties or allergies can be especially sensitive to even small amounts of smoke. Smoke contains small particles that can contribute to area wide air pollution. Smoke can blow offsite in the wind and effect areas miles away from the project site. It is important to consider smoke effects when planning for various fuel treatments by burning. It must also be remembered that wildfires produce great quantities of smoke.

Fuel management treatments that produce some smoke themselves may reduce or eliminate the wildfire smoke event at some later time.

The issue of smoke management can be broken into two areas; the amount of smoke produced and the dispersal of smoke.

The amount of smoke produced in a project is a variable that can be controlled to some extent by various practices. In general, the hotter the fire the less smoke produced for a given amount of fuel burned. Low intensity smoldering fires will produce more smoke than high intensity fires with large flames. Dry fuels will produce less smoke than wet or green fuels. Therefore, in order to reduce the amount of smoke from a fire, it is desirable to burn dry fuels as intensely as possible. Pretreatment of fuel by cutting, piling, and allowing drying before burning will produce considerable less smoke than broadcast burning in high moisture conditions. It is also desirable to burn the fuels in a relatively short period of time in order to take advantage of short-term weather conditions that will disperse smoke to specific target areas. For example, burning piles in midday will typically vent smoke upslope. A broadcast burn that extends into the nighttime hours may allow smoke to settle into low spots and down slope in drainages.

The dispersal of smoke is mainly a function of topography, winds, and atmospheric conditions. Smoke can be trapped in inversions that occur when cool dense air accumulates in the bottom of canyons and valleys (Schroeder and Buck 1970). The San Joaquin Valley typically has an inversion, especially in the winter, when cold air, fog, and air pollutants become trapped in the lower atmosphere. Smoke created underneath this inversion layer will remain trapped. Small local inversions can also occur in valleys during the nighttime hours. One of the main considerations for “burn and no burn day” designations by the San Joaquin Valley Air Pollution Control District is the presence of an inversion layer. Wilsonia is at an elevation that is mainly above the San Joaquin Valley inversion on most days.

Regional winds at Wilsonia are mainly from the north or northwest. Winds will blow from the south before the passage of a storm front during the winter months. These regional winds are less important in smoke dispersal than local winds or slope winds. Slope winds are local daily winds present on sloping topography. They blow upslope during the day as a result of surface heating, and down slope at night because of surface cooling. On a typical day at Wilsonia, smoke would blow up canyon in the direction of Grant Grove Village and Park Ridge during the daylight hours and down canyon in the direction of the Park Entrance Station and Big Stump in the nighttime.

Recommendations: Smoke dispersal could be a potential problem to Wilsonia residents and also to the National Park visitors in the Grant Grove area. It is recommended that small amounts of fuels that would typically be generated by individual landowners be hauled to the National Park Service fuel disposal area. This would eliminate the burning of numerous small piles within the community. If piles are proposed to be burned as part of larger projects within or adjacent to Wilsonia, it would be recommended that piles be covered with kraft paper, thoroughly dried for at least six

weeks and burned in late fall or winter when visitor and resident use is low. Chipping should also be considered as an alternative to burning. Burning should only be accomplished on burn days designated by the San Joaquin Valley Air Pollution Control District

The National Park Service has plans for prescribed burning in the area surrounding Wilsonia. It is recommend that Wilsonia Village, Inc. partnering with the National Park Service by providing information to individual landowners, via their newsletter or other means, concerning timing of proposed burns, predicted smoke effects, and benefits of proposed burns to the community. Wilsonia Village, Inc. should also be proactive in the planning process for prescribed burns in the area.

Fuels Management

Fire behavior is influenced by many factors including topography, weather, and fuel types. Since weather and topography are not easily modified, fuel types are the only fire behavior variable that can be changed by management activities. Treatments include the overall reduction of live fuels by removing individual plants, reduction in dead and down woody material, conversion to different plant species, and reduction in ladder fuels by thinning and pruning.

There are a wide variety of treatment methods available to treat fuels. Common treatment methods include prescribed burning, clearing with mechanical equipment, commercial harvesting, herbicides, hand cutting, chipping, mulching, piling and burning, and hauling cut fuels offsite. They have all proven to be effective in vegetation management and each has advantages and disadvantages in economic and ecological terms.

The fuels problem at Wilsonia can be broken into two basic areas. The first is within the boundaries of the Wilsonia community and the second is on the surrounding area managed by the National Park Service.

The only large owner of lots within Wilsonia is the National Park Service. They have recently undertaken a program of fuels reduction work on their lots within the community. Treatment included hand cutting of brush and small trees and pruning limbs from lower parts of tree crowns. The slash was disposed of by chipping in most cases, with burning of piles in some areas. This project was largely successful and was well received by the majority of the community. Some follow-up treatment may be needed on some lots and re-treatment will be needed in future years to maintain the effectiveness of the initial treatment.

Recommendation: The National Park Service should evaluate the completed fuels reduction project within Wilsonia within one year to determine the effectiveness of the project and to answer the following questions. Are there any National Park Service lots within Wilsonia that did not get treated? Were the lots treated to the known property lines? Are there any chip piles that should be spread out to reduce fuel accumulations? Are there any burn piles that need to be chunked, repiled and burned?

The National Park Service should consider treatment of the same lots within Wilsonia in approximately five years to remove accumulated dead and down fuel. Raise the pruning level on some trees, and cut resprouting brush.

The many varied private owners within Wilsonia, along with the small lot size, make large scale or comprehensive fuel reduction projects impracticable. Fuel reduction efforts must come from individual landowners on their own properties. State law, PRC 4291, requires a 30-foot defensible space around structures in wildland areas. The inventory of lots within Wilsonia showed that only 15% of the properties would currently be in compliance with PRC 4291. Some of the lots needed only minor work to be in compliance while others needed quite a bit of vegetation removed to create a defensible space around the structure. The idea behind the standard is not to create a bare firebreak around each structure but to reduce the fuel loading and the resultant fire behavior to a point where structures can be protected in most fire situations. The requirement is now 100 feet. Widespread compliance with these standards within Wilsonia, along with the work on vacant lots recently completed by the National Park Service, would reduce the fuel loading within the community to a relatively safe level.

To be in compliance with the standards of PRC 4291 takes a concerted effort by the landowner to maintain the fuels on their property in a fire safe condition. Some techniques such as cutting brush or thinning and pruning trees have long lasting effects. Other practices such as removing pine needles from roofs or mowing annual grasses must be done on at least an annual basis, or in some cases, more frequently. Compliance by a vast majority of landowners is imperative because of the small lot size in Wilsonia. The law requires the landowner to provide vegetation clearances only up to their own property lines. Many structures in Wilsonia are closer than 30 feet from the property lines. Therefore the fuel reduction work of your neighbor or lack thereof may have an effect on the defensible space for your structure.

At this time, there are no PRC 4291 compliance inspections being done in Wilsonia by any government entity. The inspections not only provide for increased compliance with the law but also provide for an educational opportunity for the landowner. A typical first inspection would point out violations to the landowner with recommendations on how to fix the problem. The inspector may point out problems to the landowner that they were not aware. Follow-up inspections would insure compliance. Compliance inspections are typically done by the governmental agency responsible for the fire protection in the area and the entity with the legal jurisdictional authority. In the case of Wilsonia, this is the National Park Service.

Recommendation: Educational materials should also be provided to all landowners detailing the requirements of PRC 4291. There are several brochures that are available free of charge through the Tulare County Fire Council, CALFIRE, or the U. S. Forest Service that could be mailed to each landowner. These brochures could be mailed out yearly in a spring version of the Wilsonia Village newsletter. An example is shown below.

Many recurring fuel reduction problems were found to exist on many of the properties within Wilsonia. The discussion below will detail some of these problems along with some recommendations to assist landowners in dealing with them.

Conifer Needles on Roofs - Many of the structures within Wilsonia have a buildup of conifer needles on the roof. This is a problem that requires at least yearly maintenance because conifers shed needles every year. The needle buildup can be an ignition source on any type of roof. Needle buildup can compound an already serious problem with flammable roofs such as wood shakes. Moisture levels of these dead needles drop to very low levels in summer and can be ignited by small embers. The problem can be corrected easily by sweeping the roof with a stiff broom some residents may not be physically able to sweep their roof and in that case the service should be hired out. A roof cleaning in late spring or early summer will suffice in most cases for the year unless a strong wind during the summer causes more needles to fall.

Recommendation: Wilsonia Village should maintain a list of contractors who would be willing to perform roof cleaning within Wilsonia and provide the list to the community. The service could also be provided on a selected day or weekend by volunteer members of Wilsonia Village for a donation into a fire protection fund.

Pine Needles on a Shake Roof Make for a Flammable Combination

Brush or Small Trees within 100 Feet of Structures – Continuous stands of brush or live trees have the capability of carrying a fire from plant to plant and eventually threaten structures. Most landowners would like to have some type of vegetative cover on their property in the form of small trees or shrubs. It is important to maintain spacing between plants to reduce the chances of a fire from spreading from one plant to another **within 100 feet of the structure.** A good rule of thumb is to have spacing between plants of at least 1 1/2 times the diameter of the crown to the tree or shrub. For example, if you have a brush plant or tree with a crown width of six feet, you should have a spacing of at least nine feet between adjacent plants. This rule of thumb can generally be used for trees and shrubs less than about 20 feet tall. Taller trees can be spaced closer together if tree crowns are pruned. The **100**-foot defensible space should be considered a minimum and consideration should be given to widen the zone on steep slopes especially on the downhill side of structures.

Recommendation: Landowners should thin stands of brush or small trees less than 20 feet tall to provide for a spacing of at least 1 ½ times the crown diameter of the plants.

Vegetation Immediately Adjacent to Structures – Many structures looked at in Wilsonia had flammable vegetation immediately adjacent to the building. This would allow even a low intensity ground fire to travel directly from the vegetation to the structure. There should be at least a ten-foot wide area around the perimeter of the structure that is cleared of flammable vegetation that can carry a fire. Some structures have a walkway or path around the building with a planting bed between the walkway

and the building. This provides for an effective barrier to fire spread if the planting beds are kept clean of flammable material. Structures without walkways around the building should have flammable material such as conifer needles, grass, brush and small trees raked or cleared from the ten foot perimeter zone.

Recommendation: Each landowner should maintain at least a ten-foot perimeter zone around all structures that is cleared of all flammable vegetation.

Tree Limbs Close to the Ground: Low intensity fires tend to spread through the ground fuels such as needles, leaves, grass and brush. Low intensity fires will not carry into tree crowns unless the crowns are low enough to the ground to be ignited directly by the flame or from radiant heat from the fire front. As fire intensity increases, there is increased likelihood that fire will travel from ground fuels to ignite increasing higher tree crowns. As fire intensity increases even further, the fire may be able to travel from tree crown to adjacent tree crowns resulting in a crown fire. Pruning low branches on trees has proven to be effective in reducing the ability of a fire to travel from the ground fuels into the tree crowns. Excessive pruning can reduce the vigor of trees so it is recommended that no more than one third of the live crown be removed in pruning. For example, a tree 30 feet in height should be pruned no higher than ten feet off the ground. Trees can be progressively pruned higher in future years as the tree continues to grow in height. Pruning over twenty feet in height becomes impractical as you get out of the reach of most hand held pruning saws.

Recommendation: Landowners should consider pruning all branches within 20 feet of the ground on trees that are taller than 60 feet in height. Trees less than 60 feet in height should be pruned no higher than one- third their total height.

Pruning the small trees behind this structure would complete a good job of vegetation clearance.

Tree Limbs Close to Roofs and Chimneys – It is common for limbs of large trees to grow outward into close proximity of roofs and chimneys. These limbs can carry fire from the tree onto the structure and can also be ignited by radiant heat or embers from chimneys or stovepipes. These overhanging limbs also contribute to the deposits of needles and leaves onto roofs. Pruning trees as recommended above will remove limbs in close proximity to the sides of buildings and eaves, but limbs higher up in the trees may grow too close to roof areas. These high limbs also pose a problem for landowners to prune because of the distance from the ground.

Recommendation: Landowners should maintain at least a ten-foot distance between tree limbs and roof areas, chimneys, and stovepipes. Tree climbers or bucket trucks can be used to remove limbs out of reach of landowners. Wilsonia Village, Inc. could coordinate with a tree climber or tree service company to provide selective limbing of larger trees to a group of landowners interested in the service. This would help reduce the cost to individual landowners.

The area immediately surrounding Wilsonia, managed by the National Park Service, is important to consider when evaluating the fire protection needs of the community. Until recently fuel loading immediately adjacent to the community was as high as 100 tons of dead and down fuel per acre. The recent National Park Service fuel reduction project at Wilsonia treated not only lots within the community but also a 200-foot buffer surrounding the subdivision. Fuels were treated by mechanically thinning small trees, cutting brush, and piling dead and down wood. Piles were either chipped or burned. In most areas, dead and down fuels were reduced by at least 75%. In some parts of the project, fuel loading still remains too high to provide for an adequate fire protection buffer for the community. There are also a large number of snags present within the treated area that could cause fire protection problems for the community. Snags can be a potential ignition source from lightning strikes and produce a large number of embers or firebrands that can be blown a considerable distance in the wind. The treated area is also too narrow in some areas to give an adequate buffer for the community during a high intensity wildfire.

Recommendation: The National Park Service should consider additional treatment of fuels in the area immediately surrounding Wilsonia. The treatment area should be expanded to provide for at least a 300-foot buffer around the community. Dead and down fuel loading should be lowered to a level lower than that achieved with the initial project. It is recommend a gradient of fuel reduction depending on the distance from structures and the natural barriers (roads or streams) between the treatment area and the boundary of the community. A dead and down fuel loading of less than ten tons per acre is recommended within 100 feet of the community increasing to an average of 30 tons per acre 300 feet from the boundary. All snags should be cut in the area within 200 feet of the community. Snag density from 200-300 feet of the community boundary should be no higher than one per acre. First priority should be given the area adjacent to the Sierra Masonic Family Club Tract where fuel loading and snag density remains the highest at this time.

Prescribed burning can be a very effective way of treating fuels. The National Park Service has conducted numerous prescribed burns in the Grant Grove area. The area west of State Highway 180 within the Park has been almost been entirely burned with prescribed fire in the period from 1980 to 1997. This burning has been effective in reducing fuel loadings in the area adjacent to Wilsonia that is susceptible to a fire that burns out of the rugged Kings River canyon to the east. Some of these areas will be ready for a second prescribed burn in the near future.

Prescribed burning is very important for the fire protection of Wilsonia. At this time it is believed that the biggest potential for a large wildfire that could threaten Wilsonia is from the south. A fire starting in the Sequoia National Monument in the Eshom Creek area has the potential to run uphill, jump the Generals Highway at the "Wye" and continue to the south boundary of Wilsonia.

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Recommendation: Wilsonia Village, Inc should support the National Park Service in its efforts to conduct prescribed burns in the Grant Grove area. They should work closely with the National Park Service in informing landowners within the community about timing of burns and potential smoke issues. Prescribed burning should not be conducted within the recommended 300-foot buffer around Wilsonia. Fuels in this buffer should continue to be hand piled and burned as was done in the 2003 fuels reduction project.

Disposal of Vegetation

The National Park Service maintains a vegetation dump area less than one mile from Wilsonia that is available to community residents free of charge. The dump is for vegetation only, no trash, construction materials, plastic bags, etc. At times the gate into the area is locked but keys are available at the Kings Canyon Visitor Center. This vegetation dump provides an excellent opportunity for residents to haul away their vegetation without the problems or expense of burning or chipping on site. There were some residents who had done some vegetation cleanup on their property but had left the material on site in piles or in plastic bags. Some of these owners may not have a vehicle suitable for hauling, may not be aware of the dump area, or may just not have the time or energy to haul the waste away. For whatever the reason, leaving the material in piles on the property partially negates the efforts to clean up the site.

Recommendations: Wilsonia Village, Inc. should make an educational effort to let all landowners know about the vegetation dump and how it can be accessed. If it appears that there are some landowners who do not have suitable vehicles to haul waste, volunteers with pickup trucks could haul vegetation on designated days for a donation into the Wilsonia Village, Inc fire protection fund.

Timber Harvesting Slash Disposal

Timber harvesting occurs in Wilsonia on private lots to remove dead or dying trees. Timber harvesting has also been occurring on adjacent National Park Lands to remove

hazardous dead trees that are a result of tussock moth mortality. Commercial timber harvesting generates large amounts of waste material, known as slash. Slash includes limbs, treetops, logs that can not be sold, small damaged trees and bush. This slash must be disposed of adequately to prevent an unacceptable buildup of dead and down fuel.

Cleanup of slash is occurring in varying degrees. The harvesting on National Park land is conducted under a contract that requires the timber operator to dispose of slash in a prescribed manner. Within Wilsonia slash disposal appears too dependent on the wishes of the landowner and efforts of the timber operator. Cleanup occurs in most cases but the amount of slash treated is variable. Timber harvesting within Wilsonia should not result in any increase in dead and down fuel loading. Slash should be thoroughly cleaned up in all cases.

Recommendation: Wilsonia Village, Inc. should work with the National Park Service to develop a standard for slash disposal for any timber harvesting within the community. It should include removal or chipping of all logging slash following timber operations. Both the timber operator and landowner should agree upon this standard in writing before harvesting. Provisions of the standard should be enforced by the National Park Service for each timber operation within Wilsonia.

Hazardous Trees

These trees would include property owners and those near public utility power and telephone lines. Tree trimming and tree removal of hazardous trees are required to ensure that occupants of cabins and structures are not damaged, due to a tree or limbs falling into power lines and other surrounding things. A fire could be started, if limbs and/or trees strike the power lines at any time.

Water System

A dependable and accessible water supply is essential in protecting communities from fire. The water systems at Wilsonia are adequate for domestic supply but inadequate for fire protection. There are two types of water systems within Wilsonia. The majority of the individual lots within the community have their own wells and supply water to the structure on the lot. The exception to this is the Sierra Masonic Family Club Tract, which operates a community water system to the structures in that area. The Masonic water system consists of a spring fed 20,000-gallon redwood tank with a two-inch plastic water line distribution system. Two 500-gallon rock cisterns between the spring source and the water tank supply additional storage. There are no fire valves on the redwood storage tank or cisterns nor is the tank accessible to fire equipment.

Water Tank for Masonic Family Tract

Over twenty years ago, 500-gallon concrete water tanks were installed above ground at various locations within Wilsonia. None of these tanks in a serviceable condition in 2003. Most of the tanks were either empty or only partially full. Many had cracks in the concrete shell and none had proper valves or fittings for fire hose access.

An Unserviceable 500-Gallon Water Tank

Fire valves in the Masonic Family Tract were also not serviceable because of improper fittings and the danger of collapsing the plastic supply lines if suction was applied by fire pumping equipment.

The National Park Service has a large water system that supplies the Grant Grove area. Storage in a metal water tank is approximately one million gallons. Fire hydrants exist within the system supplied by a four-inch water line. The water line is substandard and care must be taken to prevent damage to the line when fire hydrants are used by fire fighting equipment. There are plans to upgrade the water lines in the Grant Grove system sometime in the future. Fire hydrants exist adjacent to Wilsonia in the vicinity of the National Park Service housing units and fire station.

Recommendations: The installation of a complete system of fire hydrants supplied by four-inch underground lines is considered to be unpractical at this time because of the high cost for this type of system. It is recommend a combination of fire water sources that would provide the Wilsonia community with an adequate water supply in case of fire. The system would consist of the extension of nearby National Park Service water lines with three fire hydrants, two stationary water tanks, and installation of two fire hydrants tied to the Sierra Masonic Family Club Tract water system. Approximate locations of the hydrants and tanks are shown on the map at the end of this section. The installation of these three systems could be done simultaneously or in stages depending on funding sources. Details of the recommendation water improvements are outlined below.

Extension of National Park Service Water Line – The National Park Service has a system of hydrants on a four-inch water line servicing the Grant Grove area. This water line is in close proximity to Wilsonia in two locations. The line roughly parallels Fern Lane along the south access to the Park Service Housing units. A junction with this line could be made at that location and run south to the approximate location of the junction of Fern Lane and Manzanita Lane. A hydrant could be installed at that location. The line could then be extended east on Fern Lane and terminate with a hydrant near the junction of Fern Lane and Willow Lane. Another junction with the Park Service water line could be made at point where Park Road enters Wilsonia near the fire station entrance. The line could be extended southeast along Park Road and a hydrant installed near the junction of Park Road and Lilac Lane. It is recommend that this line, along with the Fern Lane extension, be at least a four-inch steel with standard hydrants such as those already in use on the existing system. The Fern Lane extension would require approximately 800 feet of new line and the Park Road extension would also require approximately 800 feet. The Fern Lane hydrants would be dependent on there opening of the west end of Fern Lane up to the National Park Service housing access *road* **which was accomplished in 2006.** ***This* will *allow fire equipment to access the proposed hydrants on Fern Lane. Of the three hydrant locations with the higher priority on the Park Road location, second priority on the Fern and Manzanita location and last priority on the Fern and Willow location. This project could be timed to coincide with the proposed replacement of water lines in the Grant Grove system to save money on the proposed extension. It must also be noted***

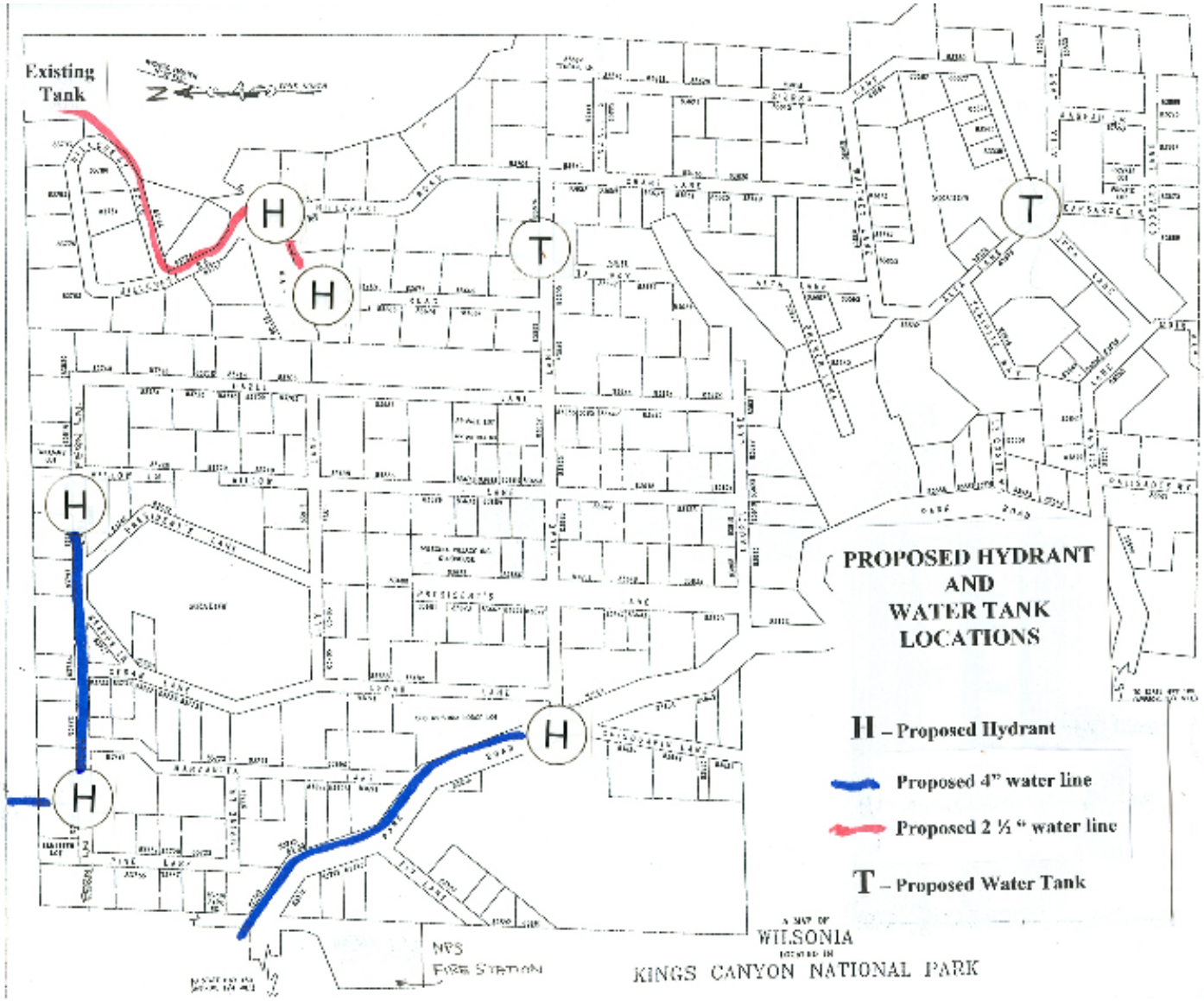
that this recommendation is for the use of National Park Service water for fire protection purposes only and not for any domestic use by landowners within Wilsonia.

Hydrants on the Sierra Masonic Family Club Tract System – Water storage on the Masonic Family Tract water system is sufficient to supply water to two small hydrants. The hydrants would need to be supplied with a 2-½ inch steel line with a direct attachment to the existing redwood water tank. The hydrants or fire valve should be at least 18 inches above grade and no more than 24 inches above grade, 8 feet from flammable vegetation, no closer than 4 feet nor further than 12 feet from a roadway and in a location where fire apparatus using it will not block the roadway. The hydrants should consist of a 2-½ inch frost proof valve with 2-½ inch male National Hose Thread (NHT) outlet fittings. All outlets should be capped and attached to the hydrant with a chain to prevent loss or theft. Hydrants are proposed at the junction of Hillcrest Road and Mason Road and at Mason Road near the lot at 83999 Mason Road. The pressure and flow from these hydrants would not meet the requirements for structural fire protection but could be used for wildland fire protection or to fill an engine not engaged in structural fire protection.

Water Tanks – Water tanks are proposed at two locations within the community. The tanks should be approximately 5,000 gallons in size and made of galvanized steel. Tanks should meet the specifications of the Tulare County Fire Department for new construction in the mountain areas of Tulare County. They should be placed on a level bed of crushed rock to facilitate drainage away from the bottom of the tank they should be equipped with a four inch valve on the outlet pipe placed underground in a covered box to protect from freezing. Box covers should be clearly marked "FIRE VALVE" to facilitate identification by fire crews. The outlet should consist of a 4-½ inch male NHT and 2 1/2 male NHT outlet fittings. This configuration may be accomplished by installing a 2-½ inch adapter to the 4-½ inch outlet. All outlets shall be capped and attached to the hydrant with a chain to prevent loss or theft. Tanks could also be painted green or brown to blend in with the landscape. Tank locations are proposed near the junction of Lilac Lane and Alta Way and at the junction of Sierra Lane and Alta Lane. Tanks could be initially filled with engines or water tenders eliminating the need to provide well water for the tanks.

All hydrants and fire valves should be plainly marked with reflective fire hydrant signs that can be clearly seen by fire crew at night from the roadway.

It is recommended that the existing 500-gallon concrete tanks be removed from Wilsonia. These tanks are no longer serviceable and are somewhat of an eye sore for the community. The presence of the tanks is also a distraction for unfamiliar fire crews who may think that they in a serviceable condition and waste time in trying to access water from them.


Existing Tank
H
H
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PROPOSED HYDRANT AND WATER TANK LOCATIONS
H – Proposed Hydrant
Proposed 4" water line
Proposed 2 ½ " water line
T – Proposed Water Tank
NPS
FIRE STATION
A MAP OF
WILSONIA
KINGS CANYON NATIONAL PARK

Access Roads

Roads are an important element of a fire protection plan as they allow access for fire fighting equipment and also for safe evacuation of the property. Roads must be designed and maintained to a standard that allows fire engines and other heavy equipment to safely negotiate and effectively operate on them. The following standards are required for any new construction:

1. Minimum of 10 feet wide.
2. Minimum of 15 feet vertical clearance.
3. Maximum grade 15% for all weather surfaces, 20% if paved.
4. Minimum horizontal inside curve radius of 50 feet.
5. Surface must be capable of supporting 40,000 lbs.
6. Roads less than 18 feet wide and longer than 150 feet long but less than 800 feet long need a turnout midpoint.
7. Roads less than 18 feet wide and longer than 800 feet need a turnout every 400 feet.
8. A turnaround with a 50-foot minimum radius shall be provided at each road terminus or structure.
9. Driveway gates shall be set back 30 feet from the public roadway.

The road system at Wilsonia is complete with no immediate plans for any new construction. Most of the existing roads within the subdivision do not meet the standards listed above for new construction. It is not recommended that any wholesale reconstruction of roads within Wilsonia because of many potential problems including, excessive cost, and encroachment on small lots, excessive tree removal, soil erosion, and a degradation of the quaint nature of the community. It is recommended that a network of selected roads within the community have minor upgrades that would facilitate access by fire equipment. These roads would provide for a minimum access network where most of the community could be accessed by fire equipment or by hose lays from that equipment. Tank and hydrant locations that are proposed in the previous section would be tied to this proposed network of major roads.

Maintenance of roads within Wilsonia is the responsibility of the Tulare County Road Department except for the Sierra Masonic Family Club Tract, where roads are maintained by the landowners. Roads within the entire community are in a degraded condition. It is not expected that any major improvements to the road system by Tulare County based on current budget conditions and past performance in **Wilsonia**. Any improvements suggested in my recommendations would most certainly require the majority of the funding to come from the community.

Roads are not plowed during the winter months. The low number of full time residents makes winter maintenance of roads impracticable.

When considering access for fire fighting equipment, one must consider the various types of equipment that could use these roads in the case of a fire. The National Park Service

engine at Grant Grove is able to negotiate the majority of the roads within Wilsonia, although it is a tight squeeze on curves or between trees in many locations. During major fire events, large structure protection engines from city and county fire departments are dispatched to perform structure protection in wildland areas. It should be anticipated that these large engines would be used in protection of Wilsonia in the case of a large fire in the area. Another consideration is that, most likely, fire crews that are unfamiliar with the area will be utilized. They are hesitant to put their engines and crews in jeopardy in areas with marginal access. Access problems are also exaggerated during nighttime and in conditions with reduced visibility due to smoke. It must be realized that there are many areas within Wilsonia that will not be accessible to most fire equipment.

OK for a Pickup, But a Tight Squeeze for a Large Fire Engine

Recommendations: It is recommend that efforts on improvements of access roads be concentrated on a planned network of roads that will provide fire control access to most of the community via direct access or by hose lays from fire equipment. The network would include a circle route through Wilsonia utilizing Park Road, Sierra Lane, Whitney Lane, Grant Lane, Lilac Lane, Hazel Lane, and Fern Lane. Lilac Lane between Park Road and Grant Lane would provide access for fire equipment through the middle of the community. The southern portions of Hillcrest Road and Mason Road would provide access into the Masonic Family Tract. This road network is currently accessible to the National Park Service engine at Grant Grove and could be made accessible to larger fire equipment if some work was done to widen the road surface, especially at corner locations. Location of this road network is shown on the map at the end of this section.

Other roads within the proposed network would need some work to insure safe access by fire equipment. This work would include removal of a few selected roadside trees to widen the roadbed and make corners easier to negotiate, widening culvert pipes, removal of signs or other obstructions on corners, patching of deteriorating asphalt,

and minor widening of road surfaces on selected corners to improve the turning radius. A few of the problem areas are listed below.

The turn at Hillcrest Road at Lilac Lane needs to be widened by removal of a tree and moving the overhead sign into the Sierra Masonic Family Club Tract. Hillcrest Road needs to have wider culverts and the curve straightened south of the Mason Road junction.

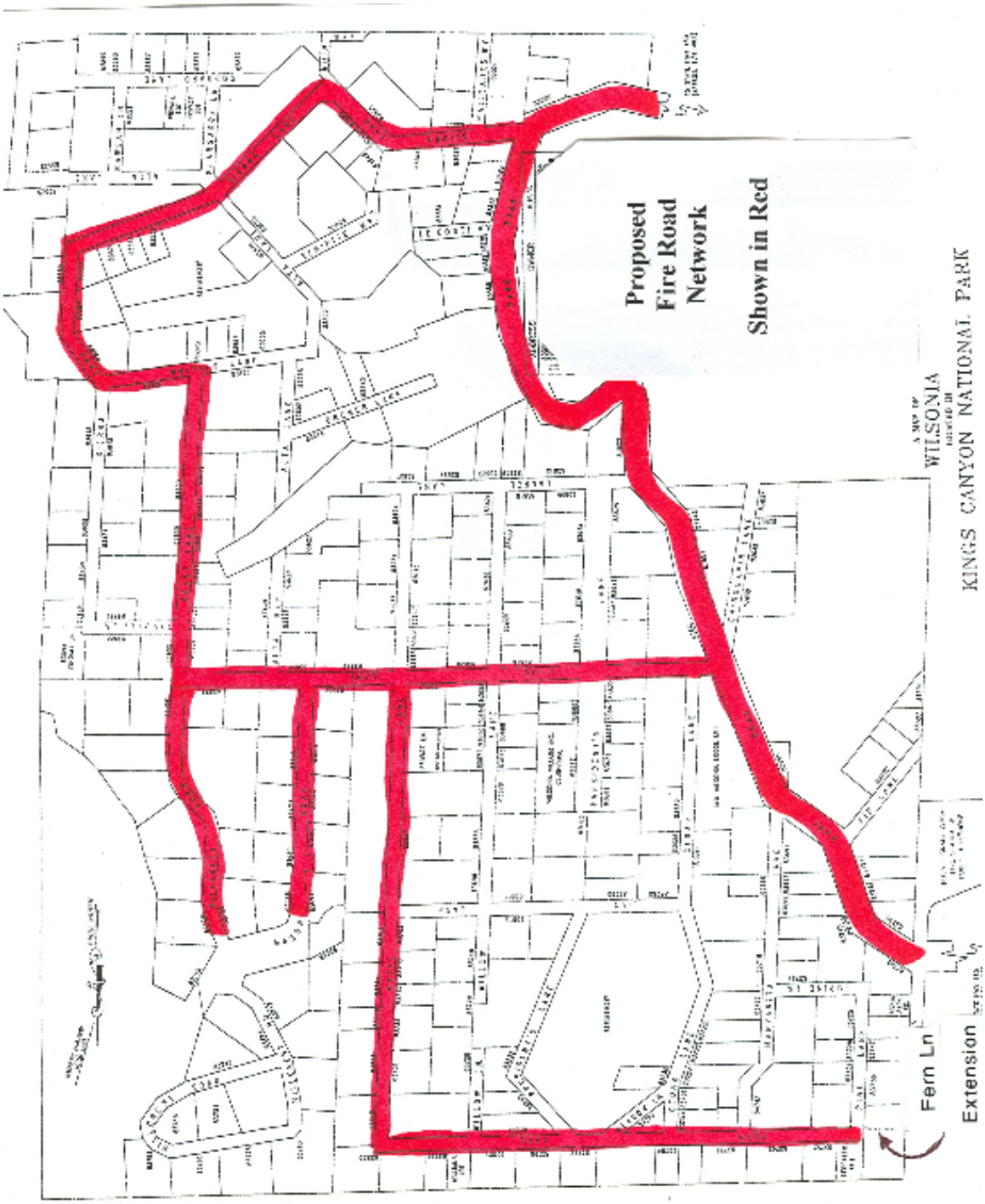
There is a narrow spot on Sierra Road south of Whitney Lane.

The corner at Whitney Lane and Grant Lane is narrow.

There are tight spots between trees on Fern Lane and Hazel Lane.

It is recommended that Wilsonia Village, Inc. head up a committee to evaluate the existing conditions of this proposed fire road network and come up with a detailed plan for road improvements that could then be prioritized by the community. The committee should include a representative(s) from Wilsonia Village, Inc. (including at least one representative of the Masonic Family Tract), National Park Service, Tulare County Road Department, and Tulare County Fire Department. The main job of the committee would be to walk the entire proposed fire road network and indicate specific problem areas for fire equipment and propose solutions. This could then be formulated into a plan of action that could be prioritized depending on funding options.

A map of Wilsonia should be posted on a signboard at a conspicuous site near the entrance to the community. It is recommended that the location of Park Road and Lilac Lane. The map should include all of the roads within the community and any roads designated for fire equipment. As water supplies are developed they should also be included on the map. This map would be valuable for unfamiliar fire crews to the area and also of value to general visitors of the community. The map should also me made available to all local fire crews in the area, i.e. NPS, CALFIRE, and USFS.



Road Signs and House Numbers

Visible road signs and house numbers are very important for fire crews to find the proper address when responding to an emergency call. This is especially important in Wilsonia because of the "maze" of narrow winding roads throughout the community. In doing fieldwork for this project, it took Mr. Dulitz several days to become familiar with the

road network. An unfamiliar fire crew responding to an emergency call could spend considerable time finding a specific road or structure, especially at night. Good visible road signage and house numbers can go a long way in reducing response times for emergency crews.

The existing road signs in the community consist of a 4 by 4 post with the road name in white letters on a brown background placed vertically on the post in reflective numbers. Most of the signs to be intact with just a few exceptions. These signs are adequate but there is much need for improvement. The brown background tended to make the signs blend in with the background and Mr. Dulitz drove by many of the signs without noticing. In most cases there is only one sign at a four-way intersection making them difficult to find if you are concentrating your attention to only one side of the roadway.

Example of Wilsonia Road Sign

Recommendation: Wilsonia Village, Inc. should investigate a new design for road signs for the community. It is recommended upsizing the signs to a six by six post with at least four-inch reflective letters on a visible background color. For example, bright green background with white letters. The signs should be placed in visible locations, clear from vegetation, at each road intersection. At four way intersections two signs should be placed on each side of the roadway.

House numbers within the community vary from very good visible numbers to no numbers at all. Thirty-three percent of the structures in the community had no numbers,

numbers too small to read from the roadway, or numbers obscured by vegetation. Emergency crews responding to a specific structure would have difficulty in finding the right house about one-third of the time.

Tulare County Fire Department requires a house number sign for any new construction with numbers a minimum of four inches high with a one-half inch line width with the numbers clearly visible from the roadway.

Recommendation: Wilsonia Village, Inc. should educate the landowners on the importance of house numbers. Wilsonia Village, Inc. has purchased house number signs and sell them to individual landowners with profits going into a fire protection fund.

Evacuation Planning

Evacuation plans in mountain communities are important because of the limited access, extreme fire potential, and conflicts on highways with emergency traffic. There is currently no evacuation plan for Wilsonia or the Grant Grove area. Evacuation plans are prepared by the fire protection and law enforcement agencies responsible for a given area. The National Park Service is planning on developing an evacuation plan for the Grant Grove area sometime in the near future. These plans would typically include:

1. Types of evacuations

2. Notification information

3. What to expect in typical evacuations

4. Guidelines on what to take with you

5. Measures to take to protect your structure

6. What to do with pets and livestock

7. Maps showing evacuation routes and staging areas

Prompt notification of residents is an important part of any evacuation plan. Wilsonia Village, Inc. is considering the purchase of an auto dialer that would be valuable in notification of Wilsonia residents by phone. It is also important that all residents have copies of the evacuation plan that can be referenced in case of an emergency.

Recommendation: Wilsonia Village, Inc. should formally request the National Park Service to prepare an evacuation plan for the Grant Grove area including the community of Wilsonia. This plan should be prepared as soon as possible. Once the plan is prepared, Wilsonia Village, Inc. should work with the Sequoia Fire Safe

Council on printing a short version of the plan that can be made available to all residents in the area. **Update.**

Training and Education

There is a need for the residents of Wilsonia to become more knowledgeable concerning the fire preparedness of the community. In the questionnaires that were returned by residents, there were a substantial number who indicated that they would be willing to do some fire safe improvements on their property but did not know what to do. Wilsonia Village, Inc. is in a position to provide information to the landowners. They also have a key partner in the National Park Service who is experienced and willing to help in public education. The Sequoia Fire Safe Council is also a resource for printed material and for speakers on specific topics. The periodic newsletter published by Wilsonia Village, Inc. along with meetings on location in Wilsonia are excellent outlets for information to residents of the community. A number of the recommendations in this plan have addressed the need to provide residents with information on various fire safe topics. Additional topics are listed in the recommendations in this section.

Recommendations: Wilsonia Village, Inc. should become proactive in providing information to all the landowners within the community. Various programs can be given on site or printed in the periodic newsletter. Some suggested programs and possible speaker sources are as follows:

Fire Extinguishing Equipment, Maintenance and Use – Fire Extinguishing Company Representative

First aid, CPR - National Park Service

Evacuation Plans and Emergency Reporting Procedures – National Park Service

Vegetation Management and Fire Resistant Building Materials – Tulare County Fire Safe Council or Tulare County Fire Department

Propane Safety and Tank Maintenance – Propane Company Representative or Tulare County Fire Safe Council

Chimney and Stove Pipe Maintenance – Professional Chimneysweep

History of Wilsonia and Preservation of Historic Structures – National Park Service

Retail representative to explain fire resistant siding options

Recommendations to Reduce Structure Ignitability

Structures on wildland property pose obvious risks during wildfires. Not only are the buildings at risk to be destroyed or damaged, but they also divert fire-fighting resources to structural protection reducing the effort to suppress the wildfire. Landowners can employ certain strategies to reduce risks of structure loss during wildfires.

Construction standards for structures are important in reducing risks during wildfires. It is important to employ fire safe standards to any new construction. It is also possible to provide additional fire protection to existing structures during maintenance, remodeling, or by retrofitting. The specific construction standards discussed below have been proven to increase the likelihood of a structure surviving a wildfire.

Roofing should consist of a non-combustible, "Class A", shingle. Wood shakes or shingles should be avoided. A survey of Wilsonia showed that 31% of the structures had wood shake or shingle roofs. Roofs should also have a tight fit and finish along the roof edge to prevent embers from getting under edge of roof.

Balconies, unenclosed roofs, eaves, decks and floors should be protected on the underside so that flying embers do not become trapped under these surfaces with the possibility of igniting the structure. Buildings with exposed crawl spaces or built up on stilts should have the crawl space boxed in to prevent fire exposure to the underside of the building. Only 30% of Wilsonia structures had adequately boxed in overhangs or crawl spaces.

Perfectly Sealed Crawl Space on a Structure in Wilsonia
Also Note the Fire Resistant Siding, a Cement Based Product

All attic openings, vents, foundation vents, or other similar surfaces should be made of non-combustible material and be covered with a non-combustible screen. The screen openings should be no larger than 1/8 inch.

Chimney and stovepipe fires are an all too common occurrence in mountain areas. These fires create not only a hazard for the house involved, but also shower a heavy load of embers onto surrounding vegetation and structures. These fires are a result of an excessive buildup of soot and creosote in the chimney or stovepipe. Periodic maintenance can prevent almost all chimney fires. Chimneys and stovepipes should be inspected yearly and cleaned if needed. Professional chimneysweepers have the knowledge and equipment to perform the job easily. Homeowners can also buy cleaning brushes and do the job themselves. Every chimney or vent attached to a fuel-burning device shall also be equipped with a securely attached spark arrester that includes a wire mesh screen with openings no greater than 1/2 inch. Less than one-third of the chimneys or stovepipes in Wilsonia had adequate screens.

Windows should be limited on the sides of buildings facing high hazard fuels and should be dual or triple paned to resist breaking and radiant heat.

Exterior siding should be well maintained, free from rotten areas in the wood, with no cracks or crevices that would trap embers or allow embers to enter the stud cavity of the wall. Chinking on log construction should be periodically inspected and maintained to seal cracks between logs. Wood shingle siding should be avoided for the same reasons as for roofs. It should be noted that new construction projects, now occurring in Wilsonia, are still using shingles for siding.

Well Maintained Board and Bat Siding Provides Fire Resistance

Wood Shingles are just as flammable as siding as they are for roofs.

Outbuildings are just as important from a fire protection standpoint as the main structure. All outbuildings should be built and maintained to the same standards as main structures. Vegetation clearance should also be maintained around all outbuildings. Propane tanks should also be maintained in serviceable condition and vegetation should be cleared at least 10 feet from the tank

There are some buildings in Wilsonia that have been neglected for some time, possibly by absentee owners. These structures pose a hazard to the entire community as an ignition source and as a threat to adjoining buildings. Efforts should be made to contact landowners of abandoned or neglected structures to find out the intentions of the owners and attempt to arrange for clean up of the property. Annual PRC 4291 inspections would go a long way in identifying the problem properties.

Recommendations: Residents should be made aware of fire safe building standards. With help from the Sequoia Fire Safe Council, handout material showing fire safe building designs could be made available to all residents. Local building contractors can also be informed about fire safe construction. Upgrading older structures to a fire safe design is expensive. In most cases it does not make economic sense to make a lot of major fire safe improvements on an older structure, but it does make sense to utilize fire safe building materials in any maintenance and repairs to the structure. Routine maintenance will also go a long way in keeping a structure fire safe. A coat of paint or stain on wood siding will help prevent deterioration of the wood and prevent cracks and roughness that can trap embers. Overhangs and crawl spaces can also be enclosed with minimum expense.

Wilsonia Village, Inc. could work with a reputable chimneysweep to perform services for multiple owners in the community. Individual landowners could sign up for the service and save money compared to hiring a contractor for a single service in the community.

Fireplace and stovepipe openings shall have a spark arrester screen installed with an opening size no greater that 1/2 inch. These screens should be an inspection item on the annual PRC 4291 inspection and strictly enforced. Chimneysweeps can also inspect and install screens as part of their cleaning service.

Roof and Siding Material Safety Rating:

Roof Types:	Risk
1 Tile, Slate, Metal	Low
2. Composite/ Foam	Moderate
3. Wood Shingles	High

Siding Types:	
1. Stucco / Metal	Low
2. Log	Moderate
3. Wood / Vinyl	High

Firewood Storage

The use of firewood is common among the residents of Wilsonia. Of the 196 structures inspected as part of the fieldwork for this plan, 166 of the houses had some firewood stored on their property. Only 15% of those houses had the firewood stored properly. Firewood stacks represent a twofold problem for fire protection. They provide for an easy ignition source especially as the firewood ages and start to deteriorate. A piece of rotten firewood ignites easily when moisture conditions are low. Once ignited, a pile of firewood creates a long lasting intense heat source with many flying embers. An average cord of firewood weighs approximately one ton and creates a lot of heat energy when burned.

Firewood should be stored at least 30 feet away from structures and stacked tightly. If it is not possible to store firewood further than 30 feet from a structure than it should be stored in an enclosed fire resistant storage shed. Within Wilsonia it is common to see firewood stored on or under decks, stacked against walls or trees, or in loose piles near structures or propane tanks. Firewood should also not be stored for a long period of time. Firewood older than about two years starts to rot and deteriorate increasing the likelihood of ignition from flying embers.

Recommendation: Landowners should be informed of the proper methods of firewood storage and comply with them. This should be an inspection item on the annual PRC 4291 inspection. They should also be made aware that they could obtain a firewood permit from the National Park Service for a nominal fee and cut firewood per park regulations. There is no need to stockpile over a two years supply of firewood that will deteriorate and become a fire hazard.

Wilsonia Village, Inc. should look into a standard design for a fire resistant firewood storage shed that could be approved by the National Park Service for use by Wilsonia landowners. The shed should store at least one cord of wood, have a fire resistant roof and siding, and built on rot resistant wooden skids so that the shed could be portable with no need for a permanent foundation. A contractor or wooden shed company could be found that could build the design and sold to individual landowners. If sold through Wilsonia Village, Inc. profits could be used in a fire protection fund.

Forest Health

The forest health within Wilsonia has been improved over the past 20 years. This was due in part to the reduction in stand density from years of removing dead, dying and diseased trees. This process was accelerated somewhat by the white fir mortality caused recently by the Douglas-fir tussock moth, *Orgyia pseudotsugata.* The reduction of the number of trees within the community has resulted in an increase in vigor of the trees left in the stand. There are however, a large number of large over mature trees that remain susceptible to mortality form various factors.

Bark beetles pose a significant risk to the over mature trees within Wilsonia. Some mortality of large sugar pine due to mountain pine beetle, *Dendroctonus ponderosae,* is occurring on adjacent National Park Service land. There is a threat to sugar pine within Wilsonia if there are several years of below normal precipitation. Pine limbs are breeding sites for bark beetles that can build bark beetle populations up to the point that attacks on adjacent healthy trees can result. Green pine slash (limbs, tops, etc.) should be properly treated. It is important to dry the pine slash as quickly as possible. Limbs in piles or in shady areas are most susceptible to be successful breeding sites for bark beetles.

Douglas-fir tussock moth caused significant mortality in the area from 1999-2001. Dead trees have been almost completely removed from the community although there are still quite a few white fir with dead tops scattered throughout Wilsonia. The Douglas-fir tussock moth occurs in varied cycles. The population builds up rapidly to very high levels and then the population crashes to low levels where the moth is rarely seen. The periodicity of these cycles is unknown so it is impossible to say if and when the next outbreak will occur. The effect of the recent outbreak will be felt for some time in the surrounding stands. The high levels of mortality have resulted in large numbers of snags which will eventually fall and contribute to the dead and down fuel loading of the stands.

Douglas-fir tussock moth Mortality in a Timber Stand Northeast of Wilsonia

Annosus root disease, *Heterobasidion annosum,* is present in Wilsonia. Evidence of the disease was seen in several recently cut stumps and several live fir trees showed the typical systems of thinning and yellowing crowns. This disease can be serious in an urban setting as it rots the roots and stem of the tree that can result in tree failure. Treating recently cut stumps with borax can reduce the spread of the disease.

White pine blister rust, *Cronartium ribicola,* is present in the area. The disease attacks sugar pine with the younger trees being especially susceptible to mortality. Regeneration of sugar pine will be difficult within Wilsonia because of the disease.

In several areas of Wilsonia, there has been some tree planting following removal of dead or dying trees. In most cases, the trees were planted too close to existing trees or planted too close together. The resulting stands of small seedlings will be much too dense and require thinning to reduce stand density. They will eventually compete with existing trees and reducing overall stand vigor.

Recommendations:

Any green pine slash created in tree trimming or other vegetation management projects should be either chipped or hauled to the National Park Service slash disposal area. Pine firewood should be cut to short lengths (12 inches or less, split, and spread in the sun to accelerate drying. Pine firewood should not be piled until dry and not piled near live pine trees.

Any tree harvested within Wilsonia should be treated within four hours with a 1/8-inch thick covering of borax on the cut stump surface to help prevent the spread of annosus root disease. Wilsonia Village, Inc. should work with the National Park Service and potential logging contractors to ensure that this borax treatment takes place within the community.

Tree planting should be limited to very large openings. Removal of an individual tree or small group of trees does not necessarily require tree planting. The forest heath of Wilsonia is being improved by the reduction of stand density. Existing plantations should be thinned after several years to a spacing of no less than 20 feet. Sugar pine should not be planted because of the susceptibility to white pine blister rust.

Wilsonia Village, Inc. should periodically ask the National Park Service to assess Wilsonia for specific forest insect and disease problems.

Action Plan and Strategy

Federal agencies and private landowners within Wilsonia have been allowed to submit projects that provide protection and reduce risk. The following is a list of projects submitted, its priority, and the progress of those projects to date:

See Attached Appendix C

The community intends to assess the progress of the projects at least annually and invite input from the community and partners as to the priorities and any new projects that provide community protection. Additional projects will be added in an updated appendix to this plan.

Summary and Finalization of the Community Wildfire Protection Plan

This plan was:

1. Collaboratively developed. Interested parties and federal agencies within the vicinity of Wilsonia have been consulted
2. Identifies and prioritizes Wildfire protection projects and
3. Recommends measures to reduce the ignitability of structures throughout the area.

This report is intended to provide a long term planning framework for fire protection improvements and vegetation management for Wilsonia. This report contains a lot of recommendations, many of which involve considerable resources of both time and money to accomplish. It is not expected or desirable that all of the recommendations in this report be implemented immediately. It is hoped that Wilsonia Village, Inc. can use this report to understand the fire protection deficiencies within the community, establish priorities for projects and institute many of these recommendations over time. This report can also be used to apply for grant money to accomplish some of the recommended projects.

It is suggested that WVI should place a high priority on solving problems that are required by law, such as 30-foot clearance around buildings and spark arresters on chimneys. Secondly, I would look at any required maintenance activities that could incorporate the recommendations of this report at little or no cost. Also look at labor opportunities for specific projects. For example if a tree falling contractor is hired to remove a hazard trees from around structures, maybe the same contractor could be used to remove trees restricting road access or remove high limbs from around roofs and chimneys.

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:

David Bartlett,
SEKI Fire Management Officer

Brit Rosso,
Kings Canyon District Fire Management Officer

Sara De Jager
President Wilsonia Village Inc

H. “Gus” Colllin
President, Wilsonia Historic District Trust

References

Anderson, Hal E., Aids to Determining Fuel Models for Estimating Fire Behavior, National Wildfire Coordinating Group, U.S. Department of Agriculture General technical Report INT-122, April 1982

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Swetnam, Thomas W., Tree Ring Reconstruction of Giant Sequoia Fire Regimes, Laboratory of Tree Ring research, University of Arizona, September 1992

Appendix A

WILSONIA FIRE PLAN QUESTIONNAIRE

As part of a grant from the National Park Service, Wilsonia Village, Inc. has contracted with David Dulitz, a Professional Forester, to develop a fuels reduction and fire protection plan for Wilsonia. **Your help is needed!!** Please fill out this questionnaire and return it by October 20, 2003. Your comments are important in identifying the needs of the Wilsonia community in the development of this plan. The final report is expected to be completed by March 2004. The plan will assess the current fire safe status of Wilsonia and make recommendations for fire safe projects to improve your community.

1. Please put an X by the statement that best describes your perception of the risk of wildfire in Wilsonia.

   ____ I don't think there is much chance for a wildfire in Wilsonia.
   ____ There is a moderate risk for wildfire to damage Wilsonia.
   ____ It is very likely that Wilsonia could be damaged by fire.

2. Please put an X by the statement that best describes the fire safe condition of your property in Wilsonia.

   ____ I think that my structure and property are very fire safe.
   ____ I need to do some minor maintenance and clean up on my property.
   ____ My structure and property need some major work to make it fire safe.

3. Please put an X by the statement that best describes your situation to make fire safe improvements to the structure on your property.

   ____ I would like to make some fire safe improvements but I don't have the time or the money to do them.
   ____ I would be willing to make my property fire safe but I don't want to change the look of my structure.
   ____ I would be willing to make some fire safe improvements but I don't specifically know what I should do.
   ____ Things are fine the way they are; no need to do any fire safe work.

4. Please put an X by the statement that best describes your situation concerning fuels reduction work on your property.

   ____ I do yearly maintenance, like raking pine needles, but I do not want to cut or prune any trees or shrubs on my property.
   ____ I would be willing to do some fuel reduction work, but I don't have the time or money to do it.
   ____ I would be willing to do some fuel reduction work, but I have no way of disposing with the plant material that I remove.
   ____ I would like to do some fuel reduction work, but I don't know specifically what to do.
   ____ Things are fine the way they are, I don't want to change the appearance of the vegetation on my property.

5. How long do you occupy your cabin during a year?

____ Less than 2 weeks ____ 2 weeks-1 month ____ 1 month-3 months

____ 3 months – 6 months _____ Fulltime

6. Please prioritize the following possible areas of fire safe improvement to the Wilsonia Community by ranking the following list. Place a number (1 being most important to 8 being least important) next to each category.

____ Improve access for fire equipment.
____ Improve road signs and visibility of house numbers.
____ Clear vegetation away from homes and outbuildings.
____ Improve water system to provide for fire equipment access, i.e. hydrants.
____ Provide an evacuation and notification plan for emergencies.
____ Do more fuel reduction work on the surrounding land (Park Service).
____ Provide educational opportunities on fire safe activities.
____ Make structural improvements to improve fire safety, i.e. fire resistant roofs and siding.

7. Recently the National Park Service has done some fuel reduction work on land surrounding Wilsonia and on vacant lots within the tract. Please put an X by the statement that best describes your perception of this project.

____ I don't think that the project was needed, it looked fine before.
____ I think that they cut out too many trees and shrubs, it looks too bare.
____ It looks fine and could be used as a model for other projects in Wilsonia.
____ It looks fine but they should have removed more of the vegetation, snags and dead logs.
____ I have not seen the project so I can't make any comments.

8. How do you rate the current fire protection given to Wilsonia by the National Park Service?

____ Very good _____ Adequate _____ Needs Improvement

9. Have you participated in any community FIRESAFE program?

_____ Yes _____ No _____ Did not know such programs were being held

10. Please use the space below to make any comments concerning fire protection and fuels reduction in Wilsonia and the surrounding area. Your thoughts are very important in the development of a fire plan for your community. Feel free to attach additional sheets if you need more space.

Modules: SURFACE, SCORCH

Wilsonia Average Weather

Fuel/Vegetation

Fuel Model		10

Fuel Moisture

1-h Moisture	%	6
10-h Moisture	%	7
100-h Moisture	%	8
Live Herbaceous Moisture	%	
Live Woody Moisture	%	120

Weather

Midflame Wind Speed	mi/h	5
Direction of Wind Vector (from upslope)	deg	0
Air Temperature	oF	75

Terrain

Slope Steepness	%	30

Run Options

Calculations are only for the direction of maximum spread.
Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.
Wind and spread directions are degrees clockwise from upslope.
Wind direction is the direction the wind is pushing the fire.

Wilsonia Average Weather

Rate of Spread (maximum)	8.6	ch/h
Heat per Unit Area	1248	Btu/ft2
Fireline Intensity	197	Btu/ft/s
Flame Length	5.1	ft
Direction of Maximum Spread (from upslope)	0	deg
Maximum Wind Exceeded?	No	
Scorch Height	26	ft

Modules: SURFACE, SCORCH

Wilsonia Extreme Weather

Fuel/Vegetation

Fuel Model		10

Fuel Moisture

1-h Moisture	%	5
10-h Moisture	%	6
100-h Moisture	%	7
Live Herbaceous Moisture	%	
Live Woody Moisture	%	100

Weather

Midflame Wind Speed	mi/h	25
Direction of Wind Vector (from upslope)	deg	0
Air Temperature	oF	95

Terrain

Slope Steepness	%	30

Run Options

Calculations are only for the direction of maximum spread.
Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.
Wind and spread directions are degrees clockwise from upslope.
Wind direction is the direction the wind is pushing the fire.

Wilsonia Extreme Weather

Rate of Spread (maximum)	83.1	ch/h
Heat per Unit Area	1324	Btu/ft2
Fireline Intensity	2017	Btu/ft/s
Flame Length	14.9	ft
Direction of Maximum Spread (from upslope)	0	deg
Maximum Wind Exceeded?	No	
Scorch Height	76	ft

Appendix D

National Park Service
Sequoia & Kings Canyon National Parks
Fire Education, Information, & Prevention Technician

2006 Defensible Space Inspection Results

Defensible Space Background

Defensible space is a term conceived in the 1980's to describe landscape practices aimed at reducing the threat of wildfires to homes and structures. The common definition found in outreach materials is as follows:

> Defensible space is the area between a house and an oncoming wildfire where the vegetation has been modified to reduce the wildfire threat and to provide an opportunity for firefighters to effectively defend the house.

Current California state regulations, as outlined in Public Resources Code (PRC) 4291, require the creation and maintenance of a defensible space of 100 feet around structures in the wildland-urban interface. For properties within the jurisdiction of Sequoia & Kings Canyon National Parks (SEKI), the responsibility to inspect structures in accordance with PRC 4291 belongs to the parks. See Appendix A – Text of California PRC 4291.

Within the larger fire management program, the defensible space outreach efforts reside within the Fire Information and Education Program. Goal #3 of the Public Information and Education section of the Fire and Fuels Management Plan articulates the intended scope:

> Work with local communities, park residents, and park permittees to promote fire safety, fire prevention, defensible space, fire wise community planning, and fuels management.

Although defensible space issues have always been a concern for SEKI, a structured community outreach & inspection program is a recent development. The private community of Wilsonia, part of the Grant Grove developed area, has been the primary focus of the program. Government buildings at Grant Grove, Ash Mountain, and Lodgepole have also been incorporated.

History of Fire Prevention Positions

In 2003, an intern from the Fire Education Corps of the Student Conservation Association worked for the parks under the supervision of the Fire Education

Specialist. This intern provided defensible space evaluations to 24 requesting homeowners in the nearby community of Three Rivers and inspections of 130 buildings in four government housing areas – Buckeye, Ash Mountain, Lodgepole, and Grant Grove. These inspections were completed with a form provided by the Fire Education Corps.

In 2005, the parks created a new seasonal position primarily dedicated to the initiation of a defensible space program in Wilsonia. Stationed at Grant Grove and supervised by the Kings District Fire Management Officer, this Fire Prevention Technician established a relationship with the community and completed the first official defensible space inspections.

With a successful foundation laid the previous year, the parks again hired a seasonal position to build upon the defensible space program in 2006. Stationed at Ash Mountain and supervised by the Fire Education Specialist, the position maintained the Wilsonia community relationship, completed the second round of official inspections, and assumed additional responsibilities in areas of interpretation and information.

Results of 2006 Wilsonia Inspections

A new form to complete inspections was unveiled in 2006. This "Notice of Defensible Space Inspection" (LE – 100) should be much easier for property owners to understand than the previous version, "Notice of Fire Hazard Violation" (LE-38). Other agencies, like CALFIRE and the US Forest Service, performing inspections should be using the same form. The form should be self-explanatory. If a form made reference to any of five common topics, an insert with appropriate sections highlighted was included in the envelope.

See Appendix B - Notice of Defensible Space Inspection and Appendix C - Explanation of Common Notes on the "Notice of Defensible Space Inspection."

Three key observations arose after comparing the Wilsonia inspections of 2005 and 2006.

1. Defensible space in Wilsonia improved between 2005 and 2006. However, the magnitude of such improvement is nearly impossible to quantify. The below tables exhibit a slightly discernable downward trend in the number of violations per site. Recommendations made in 2005 and 2006 were embraced by some property owners.

2. Inspector biases and inspection form changes made worthy comparisons difficult. Further explanation accompanies the tables.

3. The creation of inspection protocols is critical. Consistency is necessary to track defensible space needs and maintain respect with community.

Number of Violations per Category

The table below is for reference and should not be compared for a quantitative picture of defensible space violations. Several factors contribute to the inability to make worthy comparisons between the two years. First, in 2006, new PRC 4291 regulations required vegetation management out to 100 feet or the property line – whichever was closer to structures. This "reduced fuel zone" had been recommended in previous years, but became mandatory for the first time. Second, a new inspection form was introduced in 2006. Third, the inspectors differed in interpretation and biases.

Number of Violations per Category in 2005 & 2006

PRC 4291 Category	# of Violations in 2006	# of Violations in 2005
30 Foot Zone: Maintain a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side of the structure or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. (a)	53*	104*
Reduced Fuel Zone: Maintain additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from the structure or to the property line. (b)	20	7
Dead and dying woody surface fuels	74*	NA*
Chimney: Remove that portion of any tree that extends within 10 feet of the outlet of a chimney or stovepipe. (c)	15	17
Trees: Maintain any tree adjacent to or overhanging a building free of dead or dying wood. (d)	13	45
Roof: Maintain the roof of a structure free of leaves, needles, or other dead vegetative growth. (e)	28	46
Outlet Screen: Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to a fireplace, stove, or other device that burns any solid or liquid fuel. (f)	2**	53**

Letters in parentheses reference the subsection of PRC 4291

* With no "woody surface fuels" category on the 2005 form, such violations were likely reflected in the "30 foot zone" category. This possibility could partly account for the large difference in the number of occurrences for the "30 foot zone" category between 2005 & 2006. Additionally, fuel reduction within this zone by Wilsonia property owners also appears to have contributed to the

lower number in 2006. The proportion by which each of the possibilities decreased the number of occurrences in 2006 cannot be determined.

**The large difference between 2005 and 2006 in the "outlet screen" category is most certainly due to inspectors' interpretations. The 2006 inspector only checked this category as a violation if the lack of a screen was confirmed. On the majority of 2005 inspection forms, this category appeared to be checked if the presence of a screen was not confirmed.

Number of Violations per Site

Although not by mathematical standards, a discernable trend of decreased violations per property can be observed. Again, the same three factors outlined in the first paragraph of the previous section make comparisons difficult in the table below. Cabins owned by the NPS were included in the 2006 results and probably not included in the 2005 results.

The difference in total number of sites between 2005 and 2006 is likely due to WVI map interpretations by the inspectors. Two lots have addresses, but no structures (83649 Chinquapin & 83867 Whitney). Two lots have two addresses (83893/99 Goddard & 83748/50 Park). Three lots have two distinct cabins per single address (83708 Fir, 83755 Pine, 83644 Hazel).

Number of Violations per Site

Number of violations per site	Number of Sites in 2006	Number of Sites in 2005
0	79	71
1	65	59
2	40	41
3	10	20
4	5	11
5	2	3
6	0	2

Sites with the Most Violations

A look at the sites with the most violations could point to those property owners who should be further contacted in proactive manners. Repeat offenders in the below lists would obviously be the highest priority for outreach efforts. However, caution should be noted that a handful of other properties are also in need of direct outreach even without an appearance on the lists. The magnitude of any single violation, especially in the "30 foot zone" category and the "dead and dying woody surface fuels" category, can be as serious as or more serious than multiple violations of lesser severity. Thus, a separate list was created that

incorporated the lists and subjective field knowledge to recommend properties that should be targeted in outreach efforts.

Sites with Most Violations in 2005

Sites with 6 Violations	Sites with 5 Violations	Sites with 4 Violations
83792 Fern	**83631 Grant**	83597 Alta
83648 Sierra	83637 Grant	83798 Fern
	83618 Sierra	**83801 Fern**
		83806 Fern
		83816 Fern
		83887 Goddard
		83825 Lilac
		83777 Meadow
		83572 Park
		83888 Tyndall
		83894 Tyndall

Bold notes sites for targeted outreach

Sites with Most Violations in 2006

Sites with 5 Violations	Sites with 4 Violations	Sites with 3 Violations
83740 Hazel (NPS)*	83682 Cedar	**83792 Fern**
83818 Laurel	**83690 Cedar (NPS)**	**83801 Fern**
	83708 Fir (NPS)	**83651 Hazel**
	83777 Meadow	**83703 Hazel**
	83618 Sierra	**83731 Hazel**
		83815 Laurel
		83832 Lilac
		83740 Park
		83681 Presidents (NPS)
* Clean-up completed 2006		**83615 Sierra**

Bold notes sites for targeted outreach

Recommended Sites for Targeted Outreach in 2007

83648 Alta	83631 Grant	83761 Lupine	83615 Sierra
83792 Fern	83644 Hazel	83777 Meadow	83618 Sierra

83801 Fern	83647 Hazel	83725 Pine	83648 Sierra
83798 Fern	83731 Hazel	83634 Presidents	83888 Tyndall
83875 Goddard	83832 Lilac		

Recommendations for 2007

Initiate Outreach Efforts with Targeted Property Owners

Wilsonia: Inspections are just one aspect to raising community and individual awareness about defensible space. Forms noting violations could be completed and mailed year after year with no progress. Properties that demonstrate no improvements, gross defensible space violations, or blatant neglect should be targeted for more direct outreach efforts. Each individual will have different reasons for non-compliance. Contacting targeted individuals could help cut to the source of the issues and move forward from there. The benefits of such outreach could be maximized if coordinated with the Wilsonia Fire Committee.

Clean-up NPS Cabins in Wilsonia

The parks' intentions toward government-owned cabins in Wilsonia need to be clarified. The neglect of these cabins weakens the general relationship with the community. While waiting for management level decisions, Engine 51, Crew 91, and/or Grant Grove maintenance should be tasked with general beginning-of-the-summer clean-up around NPS cabins. Largely this should be a quick "rake" around the properties to remove winter debris. In 2007, this could also include a junk clean-up of pallets, boards, etc.

Update Property Owner Information

Current property owner contact information is an extremely critical component to an effective defensible space program. No such information could be found within the parks at the beginning of the 2006 season. Now that such information has been obtained, the next critical step is to keep this information current and accurate. Thus, the inspector should coordinate with the parks concessions office on a scheduled basis to obtain an annual update from Tulare County.

Continue to Support the Wilsonia Fire Committee

Although the prevention technician attended all meetings of the Wilsonia Fire Committee, the presence of a fire management position was missed. When not committed to fires, the Kings District Fire Management Officer and the Engine 51

Captain should make concerted efforts to attend Wilsonia Fire Committee meetings.

The success of the parks' defensible space program in Wilsonia is due, in part, to the Wilsonia Fire Committee. This group takes an active role in the community and completes worthwhile projects. The parks should continue to support and encourage the committee. Especially valuable projects include the establishment of a community tool cache, a community volunteer truck brigade for debris disposal, and the completion of a Community Wildfire Prevention Plan.

Clarify Defensible Space Policies in the Parks

Park managers need to clarify the ambiguities in regards to employee housing policies, division responsibilities, and Mineral King permittees. Forward momentum in the creation and maintenance of defensible space around NPS housing, NPS cabins in Wilsonia, and Mineral King cabins cannot be achieved until these issues are resolved.

Protocol needs to be established to address violations observed on NPS property. Coordination needs to occur between the prevention technician, a management position (likely District Fire Management Officers), and a labor leader (likely Engine Captains, Hand Crew Supervisors, or Maintenance Supervisors). This relates to policy clarifications of division responsibility (namely fire and maintenance) toward cabins and vacant lots.

In 2005, the previous prevention technician made nearly identical suggestions. Specifics can be found in Boyd's reports located in Quarters 96, Ash Mountains Headquarters.

Consider Position Permanency

To maintain and strengthen the relationship with Wilsonia, park managers should consider the feasibility of spear-heading the prevention duties with a permanent position. While, the creation of a new dedicated position has numerous strengths, it is a slim possibility given budget constraints. With this recognition, the subsequent recommendation is that a permanent position from the district wildland fire engines should be in charge of a district's defensible space inspections.

Either possibility will allow the communities within a district to build a more stable relationship with a more stable employee. A permanent position could mitigate the steep learning curve associated with relationship building activities and community-specific details and provide for better consistency of inspections. Big

picture issues, like policy clarification, could also benefit from a permanent position.

Defensible space within park boundaries is just as much about community relationships as it is about the actual creation and maintenance of defensible space. A relationship has now been built and the importance of this cannot be overlooked. Yet, the real challenge, and potentially even more important work, lies in maintaining the relationship. The parks cannot afford to waste the progress made with the community of Wilsonia over the past two years.

Appendices

Appendix A
Text of California PRC 4291

Appendix B
Notice of Defensible Space Inspection

Appendix C
Wilsonia Priority Fire Protection Projects

Appendix D
Explanation of Common Notes on the “Notice of Defensible Space Inspection”

Appendix A: Text of California PRC 4291

CALIFORNIA CODES
PUBLIC RESOURCES CODE
SECTION 4291

4291. A person that owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, shall at all times do all of the following:

(a) Maintain around and adjacent to the building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side of the building or structure or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subdivision does not apply to single specimens of trees or other vegetation that is well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to any building or structure.

(b) Maintain around and adjacent to the building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from the building or structure or to the property line or at a greater distance if required by state law, or local ordinance, rule, or regulation. This section does not prevent an insurance company that insures a building or structure from requiring the owner of the building or structure to maintain a firebreak of more than 100 feet around the building or structure. Grass and other vegetation located more than 30 feet from the building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion. This subdivision does not apply to single specimens of trees or other vegetation that is well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a dwelling or structure.

(c) Remove that portion of any tree that extends within 10 feet of the outlet of a chimney or stovepipe.

(d) Maintain any tree adjacent to or overhanging a building free of dead or dying wood.

(e) Maintain the roof of a structure free of leaves, needles, or other dead vegetative growth.

(f) Prior to constructing a new building or structure or rebuilding a building or structure damaged by a fire in such an area, the construction or rebuilding of which requires a building permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the certification, upon request, to the insurer providing course of construction insurance coverage for the building or structure. Upon completion of the construction or rebuilding, the owner shall obtain from the local building

official, a copy of the final inspection report that demonstrates that the dwelling or structure was constructed in compliance with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the report, upon request, to the property insurance carrier that insures the dwelling or structure.

(g) Except as provided in Section 18930 of the Health and Safety Code, the director may adopt regulations exempting structures with exteriors constructed entirely of nonflammable materials, or conditioned upon the contents and composition of same, he or she may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding those structures.

No exemption or variance shall apply unless and until the occupant thereof, or if there is not an occupant, the owner thereof, files with the department, in a form as the director shall prescribe, a written consent to the inspection of the interior and contents of the structure to ascertain whether this section and the regulations adopted under this section are complied with at all times.

(h) The director may authorize the removal of vegetation that is not consistent with the standards of this section. The director may prescribe a procedure for the removal of that vegetation and make the expense a lien upon the building, structure, or grounds, in the same manner that is applicable to a legislative body under Section 51186 of the Government Code.

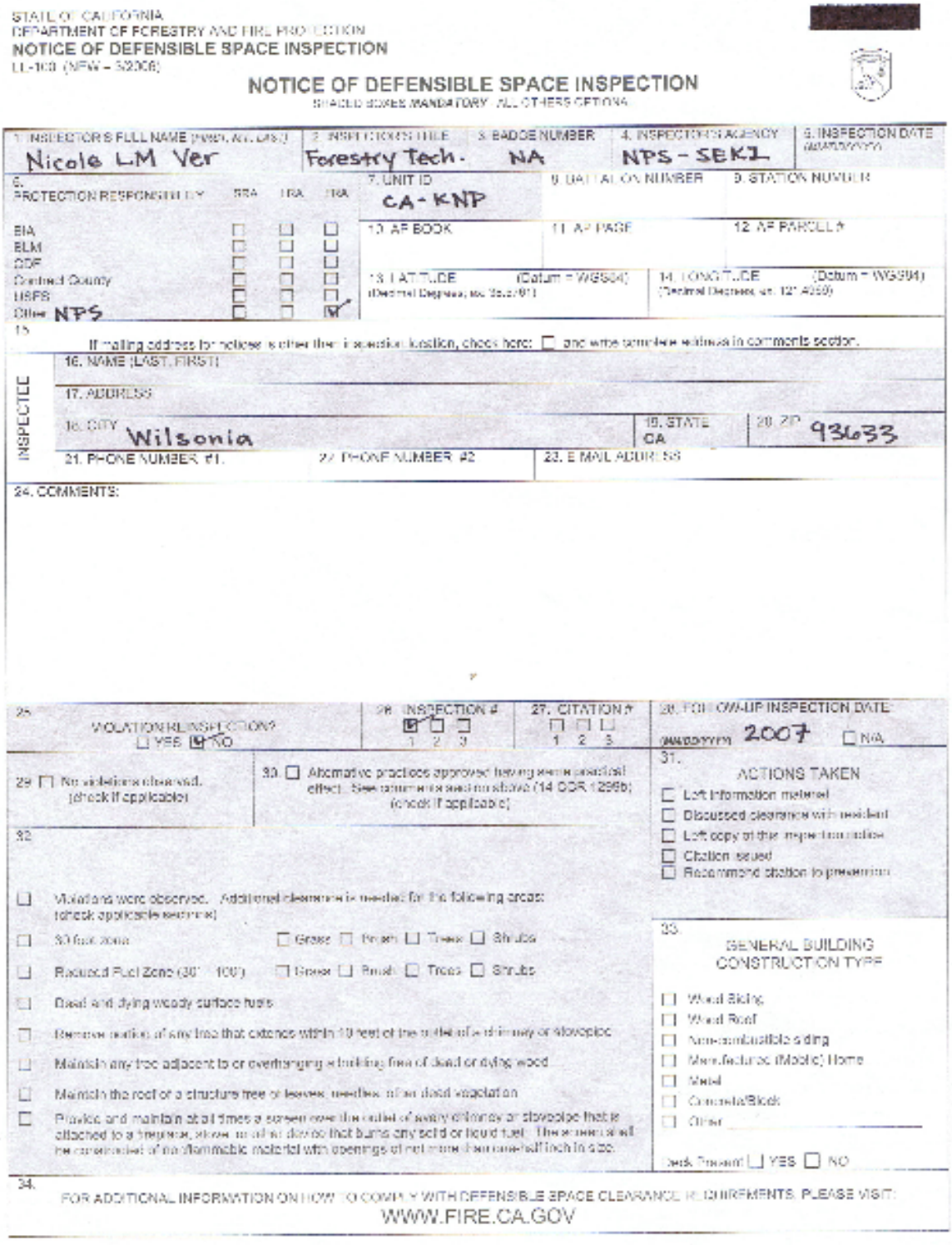
(i) As used in this section, "person" means a private individual, organization, partnership, limited liability company, or corporation.

4291.1. (a) Notwithstanding Section 4021, a violation of Section 4291 is an infraction punishable by a fine of not less than one hundred dollars ($100), nor more than five hundred dollars ($500).

If a person is convicted of a second violation of Section 4291 within five years, that person shall be punished by a fine of not less than two hundred fifty dollars ($250), nor more than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, that person is guilty of a misdemeanor and shall be punished by a fine of not less than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, the department may perform or contract for the performance of work necessary to comply with Section 4291 and may bill the person convicted for the costs incurred, in which case the person convicted, upon payment of those costs, shall not be required to pay the fine. If a person convicted of a violation of Section 4291 is granted probation, the court shall impose as a term or condition of probation, in addition to any other term or condition of probation, that the person pay at least the minimum fine prescribed in this section.

(b) If a person convicted of a violation of Section 4291 produces in court verification prior to imposition of a fine by the court, that the condition resulting in the citation no longer exists, the court may reduce the fine imposed for the violation of Section 4291 to fifty dollars ($50).

Appendix B: "Notice of Defensible Space Inspection" Form



STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
NOTICE OF DEFENSIBLE SPACE INSPECTION
LE-103 (NEW – 5/2006)

NOTICE OF DEFENSIBLE SPACE INSPECTION

SHADED BOXES MANDATORY. ALL OTHERS OPTIONAL

1. INSPECTOR'S FULL NAME (FIRST, MI, LAST)	2. INSPECTOR'S TITLE	3. BADGE NUMBER	4. INSPECTOR'S AGENCY	5. INSPECTION DATE (MM/DD/YYYY)
Nicole LM Ver	Forestry Tech.	NA	NPS - SEKI	

6. PROTECTION RESPONSIBILITY	RRA	IRA	NRA
BIA	☐	☐	☐
BLM	☐	☐	☐
CDF	☐	☐	☐
Contract County	☐	☐	☐
USFS	☐	☐	☐
Other NPS	☐	☐	☑

7. UNIT ID: CA-KNP
8. DATA ACQUISITION NUMBER
9. STATION NUMBER
10. AP BOOK
11. AP PAGE
12. AP PARCEL #
13. LATITUDE (Datum = WGS84) (Decimal Degrees, ex: 38.23451)
14. LONGITUDE (Datum = WGS84) (Decimal Degrees, ex: 121.45678)

15. If mailing address for notices is other than inspection location, check here: ☐ and write complete address in comments section.

INSPECTEE

16. NAME (LAST, FIRST)
17. ADDRESS
18. CITY: Wilsonia
19. STATE: CA
20. ZIP: 93633
21. PHONE NUMBER #1
22. PHONE NUMBER #2
23. E MAIL ADDRESS

24. COMMENTS:

25. VIOLATION REINSPECTION?	26. INSPECTION #	27. CITATION #	28. FOLLOW-UP INSPECTION DATE (MM/DD/YYYY)
☐ YES ☑ NO	☑ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	2007 ☐ N/A

29. ☐ No violations observed. (check if applicable)

30. ☐ Alternative practices approved having same practical effect. See comments section above (14 CCR 1299b). (check if applicable)

31. ACTIONS TAKEN
- ☐ Left information material
- ☐ Discussed clearance with resident
- ☐ Left copy of this inspection notice
- ☐ Citation issued
- ☐ Recommend citation to prosecutor

32.
- ☐ Violations were observed. Additional clearance is needed for the following areas: (check applicable sections)
- ☐ 30 foot zone ☐ Grass ☐ Brush ☐ Trees ☐ Shrubs
- ☐ Reduced Fuel Zone (30' - 100') ☐ Grass ☐ Brush ☐ Trees ☐ Shrubs
- ☐ Dead and dying woody surface fuels
- ☐ Remove portion of any tree that extends within 10 feet of the outlet of a chimney or stovepipe
- ☐ Maintain any tree adjacent to or overhanging a building free of dead or dying wood
- ☐ Maintain the roof of a structure free of leaves, needles, or dead vegetation
- ☐ Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to a fireplace, stove or other device that burns any solid or liquid fuel. The screen shall be corrosion resistant noncombustible material with openings of not more than one-half inch in size.

33. GENERAL BUILDING CONSTRUCTION TYPE
- ☐ Wood Siding
- ☐ Wood Roof
- ☐ Non-combustible siding
- ☐ Manufactured (Mobile) Home
- ☐ Metal
- ☐ Concrete/Block
- ☐ Other

Deck Present? ☐ YES ☐ NO

34. FOR ADDITIONAL INFORMATION ON HOW TO COMPLY WITH DEFENSIBLE SPACE CLEARANCE REQUIREMENTS, PLEASE VISIT: WWW.FIRE.CA.GOV

Appendix C: Explanation of Common Notes on the "Notice of Defensible Space Inspection"

Date: August 2006
From: Nicole Ver, Fire Education, Information, & Prevention Technician
Subject: Explanation of Common Notes on the "Notice of Defensible Space Inspection"

After recently visiting your property in Wilsonia, I have attached a copy of the defensible space inspection form. Below I have highlighted more information about issues that are pertinent to your cabin and lot. Please call me at (559) 565-4287 with any questions. I'm happy to schedule a consultation in Wilsonia if you would like more in-depth or site-specific recommendations.

Woodpiles
Woodpiles stacked close to any structure are an added fire risk to your property. If an ember lands on a pile, a ready-made bonfire could ignite, long flame lengths could lick the sides of your cabin, and your cabin could catch fire. This could happen even faster when woodpiles are already in direct contact with any part of the structure, such as a deck. The California Department of Forestry and Fire Protection recommends woodpiles should be at least 30 feet from all structures and vegetation should be removed within 10 feet of the woodpiles. If this is not possible, then the woodpiles should be completely covered from all angles with sturdy, fire-resistant material to ward off any flying embers. Thin plastic, like that of a garbage bag, is not resistant enough. Classic tarps should suffice. Even better, think about building a shed specifically designed for firewood storage.

Enclosing or Screening of Decks/Stairs/Foundations
Remember the Texas wildfires this past winter and spring? Some interesting observations were noted after the flames passed. Some homes that people assumed were low risk were burned and destroyed. Why? Embers collected in exposed areas such as unscreened wooden decks and open attic vents. The Texas Forest Service came to the conclusion that using 1/8" wire mesh screening under decks and in attic vents can make a home less vulnerable. Keeping embers out of sheltered locations in the first place prevents fire from festering above and below your cabin.

Limbing Tree Branches
In general, all trees on your property should have branches limbed so that they are not in direct contact with the ground or ground vegetation. This is to eliminate "ladder fuels" that allow fire to travel from the ground to the tops of trees. For taller trees, branches should be removed 10 feet above the ground. For shorter trees, the lower one-third of branches should be removed. Use your best judgment. Ideally, no branches should be in direct contact with any part of your cabin or attached decks. However, if all ladder fuels have been removed from below, the risk should be minimal.

Address Numbers
Clear address numbers that are visible from the road help emergency crews (fire, medical, etc.) quickly find your home. Please consider posting or improving the visibility of your cabin address. According to current Tulare County specifications, all address numbers should be a minimum of 4 inches tall and be of a reflective color that contrasts sharply with the background.

Debris Piles and the NPS Yard Debris Disposal Site
Yard debris from your Wilsonia property can be disposed of at the Grant Grove Yard Debris Disposal Site. A key to unlock the gate may be borrowed at the Kings Canyon Visitor Center. *Directions to the disposal site:* turn left on Highway 180 from the south end of Park Road, take a nearly immediate right on a dirt road (signs for the South Boundary Trail posted here), unlock the gate, follow the dirt road about ½ mile, veer right to an obvious pile of natural debris (opposite the large logs). Please do not dump plastic bags, construction waste, or manufactured lumber here – just natural debris (branches, twigs, needles, cones, etc).

Appendix D: Wilsonia Map