

CHAPTER 4- OBJECTIVES AND PROJECTS

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4 SUMMARY OF OBJECTIVES

The objectives of this plan are to:

1. Protect human life
2. Protect property from wildfires
3. Reestablish pre-European Settlement conditions
4. Minimize ignitions
5. Decrease wildfire intensity and damage
6. Protect important public and private infrastructure
7. Reduce epidemics of forest pests and disease due to drought and overstocking
8. Improve forest health
9. Increase wildfire permeability and resiliency.
10. Maintain scenic vistas throughout the planning unit

The Greater Pine Grove Community Conservation and Wildfire Protection Plan compliments four existing plans adopted by the Amador County Board of Supervisors. These plans are the Amador County General Plan, the Amador County Multi-Hazard Mitigation Plan (2006), the Amador County Generic Community Wildfire Protection Plan (2005), and the Pioneer Volcano Community Conservation and Wildfire Protection Plan (2012).

AMADOR COUNTY GENERAL PLAN

Amador County General Plan Safety Element includes the following goals:

“c. Progressive improvements in fire protection services, facilities and equipment per the Board of Fire Underwriters and Fire Marshall standards; increased water pressure, additional equipment and personnel, etc,

d. Present and planned systems of evacuation routes, fire access trails and fire breaks, and of regulatory measures pertaining to seismic and fire safe construction, location and clearance around structures, etc.”

AMADOR COUNTY MULTI-HAZARD MITIGATION PLAN

The goals defined for the purpose of the Multi-Hazard Mitigation Plan as broad based public policy statements are:

- *“Represent basic desires of the community,*
- *Encompass all aspects of community, public and private,*
- *Are nonspecific, in that they refer to the quality (not the quantity) of the outcome,*
- *Are future-oriented, in that they are achievable in the future; and*
- *Are time-independent, in that they are not scheduled events.”*

Action item #7 of the County’s Multi-Hazard Mitigation Plan includes projects that were identified in the Amador County Generic Community Conservation and Wildfire Protection Plan.

“Issue/Background: The Amador County Generic Wildfire Protection Plan divides the county into nine distinct areas. Each of these areas is rated as to its relative risk from wildfire. The next step in the planning process is to develop CWPP’s for each of these nine areas. These plans will contain area specific mitigation measures to protect life and property from wildfire.”

AMADOR COUNTY GENERIC COMMUNITY WILDFIRE PROTECTION PLAN

The Amador County Generic Community Wildfire Protection Plan and the Amador County Multi-Hazard Mitigation Plan (action Item # 7) include a list of critical fuel management projects within the Greater Pine Grove Planning Unit that are also included in this plan. These projects are the:

1. Rams Horn/Shake Ridge Fuelbreak
2. Surrey/Lupe Fuelbreak
3. Hale/Rancheria East Fuelbreak
4. Lupe Road Fuelbreak
5. Hale/Rancheria South Fuelbreak
6. Defender grade Fuelbreak
7. Ponderosa South Fuelbreak

4.1 COMMUNITY PROJECTS

Table 1 represents a list of projects identified as important for the community (individual residents, road associations, government, etc.) to accomplish using their resources. All projects listed in table 1 can be accomplished by residents working together. While there is a proposal in Table 2 Section 8.1.2 for roadside fuel reduction, residents should not wait for this project to be funded. Much of the roadside fuel reduction can be accomplished by citizens working together.

Residents should not depend on the creation of fuelbreaks, fuel management zones (FMZ), or other large-scale measures for their protection. These measures take years to fund and construct. Even if all these projects were completed, there is no guarantee that they will not be breached during adverse fire conditions. Therefore, regardless of the large-scale fuel reduction measures proposed in Table 2 and 3, the best protection from wildfire for residents and businesses is compliance with defensible space regulations. For this reason, defensible space is the first item listed in Table 1

Many do not understand that fire fighters will perform a type of structure triage during wildfires. This triage will rate structures based on their potential for safety and firefighter safety. All structures will fall into one of three categories.

1. Not threatened
2. Threatened – defensible
3. Threatened – not defensible

Homes falling into category 3 either because they lack defensible space or are located along long narrow roads with large amounts of roadside fuels will likely be passed over. Appendix H provides a guide for meeting the current defensible space requirements.

Tables 2 and 3 list large scale projects, existing or proposed, that are beyond homeowners or local community groups capabilities. These projects will be the responsibility of government or other large organizations.

4.1.1 HOMEOWNER AND LOCAL COMMUNITY PROJECTS

TABLE 1

Community, Structure, or Area at Risk	Type of Treatment	Method of Treatment/implementation	Overall Priority
Greater Pine Grove Planning Unit	Strict compliance with defensible space regulations	Individual property owners	Very High
Greater Pine Grove Planning Unit	Roadside fuel reduction	Reduce fuel along 30 miles of public and private roads a minimum of 20 feet from each road edge. Clearance of greater than 20 feet (up to 40 feet) on downslope side when slopes exceed 10%.	Very high
Greater Pine Grove Planning Unit	Street address signs	Replace wooden and other street address signs with a county standard street sign	Very High
Greater Pine Grove Planning Unit roads where Scotch Broom is present	Roadside Scotch Broom Eradication	Herbicides and/or hand removal. Amador Fire Safe Council has tools for this purpose available for loan at no cost.	Very High
Toyon Road Area	Alternate egress for Toyon road to Highway 88	Open existing alternate access	Very High
Toyon Road Area	Alternate egress for Penrose Way to Climax Road	Create an escape route along existing right-away	Very High
Greater Pine Grove Planning Unit	Identify with a standard sign all private water tanks and swimming pools.	Install reflective roadside sign near water sources. Residents should contact their local fire department for information about the appropriate sign.	High
Greater Pine Grove Planning Unit (private roads)	Street signs	Replace wooden and other street signs not meeting current county standards with a county standard road sign	High

8.1.2 EXISTING LARGE SCALE PROJECTS

TABLE 2

2 - EXISTING FUEL REDUCTION PROJECTS						
Community, Structure, or Area at Risk	Project Name	Method of Treatment	Funding Needs	Acres	Priority	Expected Completion Date
Shake Ridge Road Area	Stone Jug	Mastication, tractor, and/or hand crews	\$73,172	55	5	In progress using CAL FIRE CAG funding. Project sponsor is the Amador Resource Conservation District, scheduled to be completed 2012-2013
Greater Pine Grove Planning Unit, Pine Acres (north and south)	AFSC FMZ 1	Mastication with herbicide maintenance	\$9,848 every 5 to 7 years	55	On going	Completed in maintenance mode – AFSC project
Greater Pine Grove	AFSC FMZ 2	Mastication with	\$11,252 every 5	66	On	Completed in maintenance

Planning Unit, Pine Acres (north and south)		herbicide maintenance	to 7 years		going	mode = AFSC project
Greater Pine Grove Planning Unit, Pine Acres (north and south)	AFSC FMZ 3	Mastication with herbicide maintenance	\$5503 every 5 to 7 years	20	On going	Completed in maintenance mode = AFSC project
Greater Pine Grove Planning Unit, Pine Acres (north and south)	Mt Zion Fuelbreak	Mastication with herbicide maintenance	\$9,511 every 5 to 7 years	52	On going	Completed in maintenance mode – AFSC project
Greater Pine Grove Planning Unit, Pine Acres (north and south)	Newsom FMZ	Hand crew with herbicide maintenance	\$5,141 every 5 to 7 years	17	On going	Completed in maintenance mode - AFSC project
Greater Pine Grove Planning Unit, Pine Acres (north and south)	PG&E RW between Aqueduct Road and Tabeaud Road	Multiple	\$5,936	24	On going	Completed in maintenance mode – PG&E project currently in need of rehab to reduce surface fuels
Greater Pine Grove Planning Unit, Pine Acres (north and south)	Pine Acres FMZ	Hand crew with herbicide maintenance	\$12,987 every 5 to 7 years	80	On going	Completed (2011) - in maintenance mode. CAL FIRE and AFSC project
Greater Pine Grove Planning Unit private roads	Roadside fuel reduction	Roadside chipping (estimated 30 miles @ \$1000/mile)	\$146,000 additional	146 ac est.	On going	In progress needs refunding

The following table lists additional large-scale fuel reduction projects proposed to improve protection from wildfire.

8.1.3 PROPOSED LARGE-SCALE FUEL REDUCTION PROJECTS

TABLE 3

3 - PROPOSED FUEL REDUCTION PROJECTS						
Community, Structure, or Area at Risk	Project Name	Method of Treatment	Funding Needs	Acres	Priority	Expected Completion Date
Jackson Pines Area	BLM FMZ	Mastication and/or hand crews	\$96,012	83	(4a)	Proposed –pending funding, To be completed as part of the Mt Zion extension
Greater Pine Grove Planning Unit, Pine Acres (north and south)	Pine Acres Hwy 88 link (extension of Pine Acres Project)	Mastication and/or hand crews	\$30,358	17	1	Proposed –pending funding

Greater Pine Grove Planning Unit, Pine Acres (north and south)	Pine Acres Wildwood link (extension of Pine Acres Project)	Mastication and/or hand crews	\$53,410	40	1	Proposed –pending funding
Greater Pine Grove Planning Unit, Pine Acres (north and south)	Pine Acres PG&E link (extension of Pine Acres Project)	Mastication and/or hand crews	\$45,392	32	1	Proposed –pending funding
Toyon Road Area	Toyon FB	Mastication and/or hand crews	\$55,945	43	2	Proposed –pending funding
Greater Pine Grove Planning Unit	Mitchell Mine FB	Mastication and/or hand crews	\$252,635	242	3	Proposed –pending funding
Jackson Pines Area	Mt. Zion extension	Mastication and/or hand crews	\$63,797	51	4	Proposed –pending funding
Volcano Road Area	BLM FMZ	Mastication and/or hand crews	Unknown	Unknown	(3a)	Proposed –pending funding, to be completed as part of the Mitchell Mine FB. This is a retreatment of an existing BLM fuels project.
Shake Ridge Road Area	Stone Jug	Mastication, tractor, and/or hand crews	\$73,172	55	5	In progress using CAL FIRE CAG funding. Project sponsor is the Amador Resource Conservation District, scheduled to be completed 2012-2013
Sutter Creek Road and Sutter Highlands Areas	Rancho	Mastication and/or hand crews	\$106,742	94	6	Proposed –pending funding

4.2 ADDITIONAL ACTIONS

➤ *Action items are identified with this arrow throughout this chapter.*

4.2.1 DESIGNATION OF WILDLAND URBAN INTERFACE

The wildland-urban interface (WUI) is a general term describing the area where homes and wildland meet. It also has a federal definition as the “line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel as defined in the Federal Register.”¹ It is within the WUI that specific federal management actions take place in order to reduce fuel risks. These actions are based on guidelines established by the Healthy Forest Restoration Act (HFRA). According to HFRA, “the HFRA provides administrative procedures for hazardous-fuel-reduction projects on USFS and BLM lands in the WUIs of at-risk communities. The act encourages the development of Community Wildfire Protection Plans under

which communities will designate their WUIs, where HFRA projects may take place.”² At the same time, federal agencies are charged with developing WUI designations for the properties they manage.

As required by HFRA, this Plan accepts the WUI designation for Greater Pine Grove Planning Unit. This designation was developed combining Bureau of Land Management, Community-Identified High Risk and Hazard Areas, Community-Identified Project Areas, Community Assets, CAL FIRE’s WUI designation, and issues of topography, landscape characteristics, access, fire threat designation, fire weather, etc. Projects in these designated areas should be prioritized for funding and implementation under the National Fire Plan. The following map outlines the proposed WUI designation for Greater Pine Grove Planning Unit.

- *Bureau of Land Management accept WUI designations defined in this plan and previously identified by CAL FIRE*
 - *Bureau of Land Management work with Amador Fire Safe Council and other interested community members to reach agreement on projects proposed within WUI areas in Greater Pine Grove Planning Unit*
 - *Bureau of Land management agrees to complete the projects proposed on BLM lands in this plan.*

4.2.2 DESIGNATION OF COMMUNITIES AT RISK

Most eligible communities have already been designated as a Community at Risk, either by federal or state designation. The California Fire Alliance has a process to add new communities to this list.

- *All communities within the Greater Pine Grove Planning Unit are currently designated as Communities at Risk.*

4.2.3 DEFENSIBLE SPACE

Through this planning process, much of Greater Pine Grove Planning Unit has been identified as being either especially hazardous, with high fire risk, or both. It makes sense to focus enforcement of existing regulations in this area as well as to place stricter regulations on any new developments there.

The following statement from the California Attorney General’s office provides the legal framework for local governments to take action to ensure local fire safety:

“The Legislature of the State of California hereby finds and declares that the unrestricted use of grass-, grain-, brush-, or forest-covered land within the State is a potential menace to life and property from fire and resulting erosion.... Counties, cities and counties, cities, and districts may adopt ordinances, rules, or regulations to provide fire prevention hazard conditions.”³

Target Areas in Greater Pine Grove Planning Unit for Defensible Space, Fire Safe Construction, and Alternate Access Programs:

- Areas rated Very High risk regardless of other factors
- Areas rated High Risk served by long narrow dead-end roads not meeting current length/lot size standards.
- Areas rated High Risk where slopes exceed 10%.
- Areas rated High Risk where fuel types are FM2 or FM10

- Areas rated Suburban or Urban structure density regardless of fuel type or slope.
- *Focus fire safety efforts in the Target Areas listed above, including defensible space, fire-resistant building, and providing for alternate access routes.*

4.2.4 DEFENSIBLE SPACE IN NEW DEVELOPMENTS

Development pressures are increasing in Greater Pine Grove Planning Unit. This can be seen especially in the interface between wildlands and residential areas. The Toyon Road area is an example of development that does not meet adequate fire safety standards.

As more lands are being developed, the risk to existing homes generally increases. The County of Amador has a responsibility to current residents to minimize the impact on them from future development. One way to do this is to ensure that all new development adheres to accepted fire safety standards.

- *The County of Amador explores options to mandate and enforce fire safe standards for new developments.*

4.2.5 FUEL REDUCTION

Reducing hazardous fuel is a challenge for most communities in the western United States. The amount of accumulated fuel is far greater than most communities can afford to handle, hence the need to prioritize projects. The research is still unclear regarding the most effective and efficient way to reduce fuel without compromising ecosystem health. Research by Mark Finney at the Fire Science Lab⁴ challenges current theories in landscape-level fuel treatments and models strategic locations for fuel reduction treatments. That said, it is generally agreed that such treatments should be focused first around communities in the wildland-urban interface. Many residential areas in the planning unit qualify for such treatments, and thus were identified at the community meetings and are listed in this document.

Fuel reduction treatments need to begin within the Wildland Fuel Reduction Zone (see Appendix C). Beyond this, strategic locations around neighborhoods and communities should be identified and prioritized for creating shaded fuelbreaks. "Fuelbreaks are never designed to stop fires but to allow suppression forces a higher probability of successfully attacking a wildfire."⁵ The combination of home construction modifications with effective defensible space and shaded fuelbreaks around communities is one of the best-known strategies to protect communities from wildfire.

There is no "one size fits all" prescription for shaded fuelbreaks. For example, the width can vary widely, ranging from 50 to 300 feet. "A shaded fuelbreak is created by altering surface fuel, increasing the height to the base of the live crown, and opening the canopy by removing trees."⁶ Sample prescriptions are described in Appendix C. In addition to initial implementation, maintenance of fuelbreaks is often costly. Maintaining the shade helps to reduce these costs by slowing regeneration.

"Manual treatment is very expensive, and mechanical treatment is only feasible on gentle terrain. Prescribed fire can be effective (Schimke and Green, 1970) but there is potential for fire escape along the edges. Late winter burns, where the previous year's production is cured, the perennials have not yet greened up, and the adjacent forest is not very flammable, may be a possible cost-effective treatment to avoid risk of escape from maintenance burns and achieve effective maintenance at low cost."⁷

A program should be developed in conjunction with CAL FIRE and cooperators to regularly burn shaded fuelbreaks where they are not in immediate proximity to residential development. To maintain fuelbreaks most effectively throughout the Greater Pine Grove Planning Unit, an "Adopt a Fuelbreak" program could be

developed by the Amador Fire Safe Council, CALFIRE, and the Bureau of Land Management in cooperation with community or neighborhood groups, homeowner’s associations, and others whereby each group would be responsible for ongoing maintenance of their adopted fuelbreak. This should be done in cooperation with experienced fire professionals to ensure participant safety and fuelbreak effectiveness.

- *The Amador Fire Safe Council develops an “Adopt a Fuelbreak” program for maintenance of fuelbreaks. Work with CAL FIRE, tribes, and other fire professionals to employ prescribed fire techniques where appropriate.*

Section 4.2, Table 2 – Large-Scale Projects includes the shaded fuelbreaks and other fuel-reduction projects that were prioritized for implementation in Greater Pine Grove Planning Unit. Some of these projects were identified at community meetings and others resulted from this planning process. Projects were prioritized based on CDF fire threat level and assets at risk, with an emphasis on human population centers.

- *Amador Fire Safe Council and Cal Fire work with appropriate agency and community partners to fund and implement the following identified strategic fuelbreaks and fuel reduction efforts throughout Greater Pine Grove Planning Unit.*

4.2.6 WUI BUILDING STANDARDS

The County of Amador has adopted the latest revisions to the California Building Code Chapter 7a (2007).

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on the WUI standards.*

4.2.6.1 ROOFING (WUI)

Efforts should be made to eliminate all untreated wood shake roofs. Shake roofs are a leading cause of home loss in wildfires. Research shows that homes with a non-combustible roof and clearance of at least 30 to 60 feet have an 85-95% chance of survival in a wildfire.⁸

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on the importance of replacing wood shake roofs.*
- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council explore incentives for homeowners to replace wood shake roofs.*

4.2.6.2 VENT OPENINGS (WUI)

Provided that adequate defensible space is maintained, screening of vent openings with ¼” mesh corrosion-resistant steel screens will minimize the entry of embers (during the ember blizzard that comes with a wildfire) into attics (most important) and crawl spaces.

In 2007, the California State Fire Marshall promulgated regulations affecting buildings constructed in any Fire Hazard Severity Zone. These regulations require:

704A.2 Attic Ventilation.

704A.2.1 General. *When required by Chapter 15, roof and attic vents shall resist the intrusion of flame and embers into the attic area of the structure, or shall be protected by corrosion resistant, non-combustible wire mesh with ¼ inch (6 mm) openings or its equivalent.*

704A.2.2 Eave or Cornice Vents. *Vents shall not be installed in eaves and cornices.*

Exception: *Eave and cornice vents may be used provided they resist the intrusion of flame and burning embers into the attic area of the structure.*

These requirements became effective January 1, 2008. However, the rationale for these new requirements applies to all structures located in areas prone to wildfire. Homeowners and businesses owners of structures constructed before 2008 are encouraged to update their vent openings to this new standard.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on importance of steel vent screening.*
- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council explore incentives for homeowners to encourage steel screening of vent openings.*

4.2.6.3 WINDOWS (WUI)

Double-pane windows are far more effective in their ability to survive a wildfire, as well as being smart for energy conservation within your home.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on need to have double-paned windows throughout their homes.*
- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council explore existing incentive programs to upgrade windows to double pane, such as through local energy companies.*

4.2.6.4 DECKS (WUI)

If adequate defensible space is maintained, most solid wood decking is fire-resistant enough to withstand short-term heat load. The next greatest threat from decks is firefighter safety. Many new materials (synthetics) ignite more easily than wood and have a rapid structural collapse when subjected to high heat loads, creating a situation where firefighters could fall through.⁹

In 2007, the California State Fire Marshall promulgated regulations affecting buildings constructed in any Fire Hazard Severity Zone. These regulations require:

704A.4 DECKING, FLOORS AND UNDERFLOOR PROTECTION

704A.4.1 Decking.

704A.4.1.1 Decking Surfaces. *Decking, surfaces, stair treads, risers, and landings of decks, porches, & balconies where any portion of such surface is within 10 feet (3048 mm) of the primary structure shall comply with one of the following methods:*

- 1. Shall be constructed of Ignition Resistant Materials and pass the performance requirements of SFM 12-7A-4, Parts A and B.*
- 2. Shall be constructed with heavy timber, exterior fire retardant treated wood or approved non-combustible materials.*
- 3. Shall pass the performance requirements of SFM 12-7A-4, Part A, 12-7A-4.7.5.1 only with a net peak heat release rate of 25kW/sq-ft for a 40 minute observation period and: a. Decking surface material shall pass the accelerated weathering test and be identified as Exterior type, in accordance with ASTM D2898 and ASTM D3201 and; b. The exterior wall covering to which it the deck is attached and within 10 (3048 mm) feet of the deck shall be constructed of approved noncombustible or ignition resistant material.*

Exception: Walls are not required to comply with this sub-section if the decking surface material conforms to ASTM E-84 Class B, flame spread. The use of paints, coatings, stains, or other surface treatments are not an approved method of protection as required in this Chapter.

704A.4.2 Underfloor and Appendages Protection

704A.4.2.1 Underside of Appendages and Floor Projections. The underside of cantilevered and overhanging appendages and floor projections shall maintain the ignition-resistant integrity of exterior walls, or the projection shall be enclosed to the grade.

704A.4.2. Unenclosed Underfloor Protection. Buildings shall have all underfloor areas enclosed to the grade with exterior walls in accordance with section 704A.3.

Exception: The complete enclosure of under floor areas may be omitted where the underside of all exposed floors, exposed structural columns, beams, and supporting walls are protected as required with exterior ignition-resistant material construction or be heavy timber.

These requirements became effective January 1, 2008. However, the rationale for these new requirements applies to all structures located in areas prone to wildfire. Homeowners and businesses owners of structures constructed before 2008 are encouraged to update their decks to this new standard.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on importance of fire-safe decking.*

4.2.6.5 OUTBUILDINGS

Outbuildings (e.g. storage, wood, and tool sheds) with less than thirty feet of separation from main structures place homes at a high risk of loss, because if they catch fire, they can more easily catch the house on fire.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on need for separation of heat loads from their residence.*
- *Amador Fire Protection District and CAL FIRE enforce clearing 30-100 feet around structures, as per State law.*

4.2.6.6 WOODPILES

Woodpiles with less than thirty feet of separation from structures often place homes at a high risk for loss.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on need to have a minimum of thirty feet separation of firewood piles and woodsheds from their residence.*

4.2.6.7 PROPANE TANKS

Tanks with less than ten feet of clearance around them and thirty feet of separation from houses may place homes at a risk of loss.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on need to have vegetative and flammable material clearance around propane tanks near their residence.*
- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council educate residents on need to keep propane tanks and other flammable materials at least thirty feet from homes and outbuildings.*

4.2.7 UTILIZATION

4.2.7.1 SMALL DIAMETER WOOD PRODUCTS

- *Amador Fire Safe Council, CAL FIRE, timber industry, the Amador Calaveras Consensus Group, and economic development community work with local wood processing and manufacturing businesses to develop markets for small-diameter wood products.*

4.2.7.2 BIOMASS

As of this writing, Buena Vista Biomass Power (BVBP) has applied for a use permit that includes repowering and conversion of an existing 18.5-megawatt electric generating facility to a renewable wood waste biomass facility. BVBP has contracted with the Sacramento Municipal Utilities District (SMUD) to provide SMUD with 100% of the facility's output, which will assist SMUD in achieving their Renewable Portfolio Standard goal of 33 percent renewable energy usage by 2020. The proposed fuel supply for the project is solely renewable wooded biomass, derived from a variety of sources including clean urban wood waste, agricultural byproducts from orchard operations, and forest residuals from forest clearing for wildfire fuel reduction. The proposed project is expected to consume 110,000 bone dry tons (BDT) of woody biomass annually and has been certified as a renewable energy facility by the California Energy Commission based on the proposed use of solely woody biomass as its fuel source.

- *Plan partners research methods for supplying woody biomass from forest fuel reduction projects to this facility. For example:*
 - *Consider including collection and transportation as a budget item in future grant application*
 - *Consider grants for neighborhood central collection points for woody biomass.*

4.2.8 FIRE PROTECTION

Local fire agencies need to prepare for paid staffing available from Measure M funding. To qualify for staffing there must be living quarters for the firefighters.

- *Replace Amador Fire Protection District's Pine Grove station with a new facility having living quarters for firefighters.*
- *Mark all firefighting water sources (hydrants, tanks, swimming pools, etc.) with a standard metal sign and reflector that is visible from the road and from both directions of travel*
- *Maintain a database and GIS map of all water sources, type of source, and location*

4.2.9 SIGNAGE OF ROADS AND STRUCTURES (ADDRESSING)

Throughout Greater Pine Grove Planning Unit, firefighters and other emergency personnel are faced with the challenge of finding homes quickly and safely during an emergency. At a minimum, existing Amador County standards that require streets and homes to be visibly addressed must be enforced. This enforcement action needs to be explored creatively.

- *Amador Fire Safe Council and the Amador County Office of Emergency Services explore grant opportunities for purchase of street and address signs.*
- *Fire Departments, Law Enforcement, CAL FIRE, Amador Fire Safe Council and Amador County explore incentives for private signage conformance, including public education*

4.2.10 WATER

Water is critical for successful fire suppression. Minimum fire-fighting water requirements for developments not on a hydrant system are 2,500 gallons. Areas served by hydrants should meet National Fire Protection Association (NSPA) standards.

- *Cal Fire, Amador Fire Protection District, and Amador Fire Safe Council explore funding for a water storage tank program on private lands not adjacent to federal lands.*
- *County Assessor does not increase property values and taxes when water storage is added to private properties for fire protection.*
- *Amador Fire Safe Council, County of Amador, Fire Chiefs, and CAL FIRE explore incentives for increasing water storage on private properties.*
- *The Amador Water Agency continue to work with the Amador Fire Protection District and other interested community groups to develop a fire hydrant maintenance policy that insures all hydrants are painted in accordance to the National Fire Protection Association’s (NFPA) standards; are tested periodically to insure they are in working order; are free of obscuring vegetation; and whose locations are marked with a standard reflective device visible at night for no less than 100 feet in both directions.*
- *All water purveyors develop a plan to provide adequate fire flow for their service areas and associated costs of implementing the plan¹⁰.*

4.2.11 EDUCATION

Many people are happy to create a fire-safe home if they understand why it is to their advantage. To this end, educational programs targeted at local residents are very successful.

- *Amador Fire Safe Council work with CAL FIRE, United States Forest Service, Bureau of Land Management, Amador County, insurance industry, and others to implement a countywide community fire safety education program, including Public Service Announcements in all local media.*

Educational programs in the local schools are a great way to get the word out about fire safety and emergency preparedness. Several curricula exist and likely would only need minimal adjustments to be used in Greater Pine Grove Planning Unit. Community projects such as “fire safety education” signs created by schoolchildren can be very effective. Informative signs could be created by local children and placed in high fire risk and hazard areas throughout the community.

- *Amador Fire Safe Council work with agencies and School District to implement fire safety curricula in all grade levels throughout the Pioneer/Volcano in conjunction with community educational projects.*
- *Amador Fire Safe Council work with insurance industry to fund and develop a service-learning program in local high schools focused on fire safety and defensible space.*

As stated elsewhere, development and real estate are healthy industries in Greater Pine Grove Planning Unit. Through those ventures, new people are moving to the planning unit many of them from urban areas. These new residents often do not have experience with fire in a wildland-urban interface. Educational programs are needed targeting both the development and real estate industries, as well as their clients.

- *The Amador Fire Safe Council CAL FIRE, BLM, Fire Chiefs, and Amador County Office of Emergency Services target fire safety educational efforts to real estate and development industries.*
- *The Amador Fire Safe Council, CAL FIRE, BLM Fire Chiefs, and Amador County Office of Emergency Service target fire safety educational efforts to new planning unit residents, especially those coming from urban areas and others with little experience with fire in the wildland-urban interface.*
- *The Amador Fire Safe Council develops a welcome-neighbor program where a welcome basket with fire safety information is given to new residents. These baskets can be distributed by realtors, insurance agencies, and the Chamber of Commerce.*

4.2.12 POLICY

There are several policies the Amador County Board of Supervisors can implement that will assist fire agencies. These are

- *Establish a process wherein the Building Department notifies the Information Technology Department of any swimming pools or water tanks constructed in the unincorporated area.*
- *Establish a process wherein the Building Department notifies the Information Technology Department of new hydrants.*
- *Require the Information Technology Department to maintain a GIS based database of all water sources (tanks, hydrants, ponds, and swimming pools) in the unincorporated area and post that data on the County's website - the data to be downloadable in a map and table format. The map to indicate locations of water sources along with streets and other information needed to locate the water sources. The table will include at a minimum the volume of water, physical location, and type of water source. Where type of water source is a hydrant include type of hydrant and fire flow (if available).*
- *The County create additional signage standards to augment existing signage standards that includes water tanks*

¹ *Federal Register* (January 4, 2001), Vol. 66, No. 3, pp. 751–754, “Implementation Direction for Identifying and Prioritizing Hazardous Fuel Reduction in Wildland-Urban Interface/Intermix,” Region 5.

² Healthy Forests Initiative and Healthy Forests Restoration Act (February 2004). Interim Field Guild, Title I, Wildland-Urban Interfaces Within or Adjacent to At-Risk Communities, FS-799.

³ Office of State Fire Marshal, Fire Hazard Zoning Guide, Appendix D,
osfm.fire.ca.gov/pdf/fireengineering/zoning/AppendixD.pdf

⁴ www.firelab.org/index.php?option=com_content&task=view&id=43&Itemid=82,
outreach.cof.orst.edu/resilientfire/finney.htm

⁵ Agee, J.K. et al. (2000). “The Use of Shaded Fuelbreaks in Landscape Fire Management.” *Forest Ecology and Management* 127: pp. 55–66.

⁶ Agee et al. (2000). p. 56.

⁷ Agee et al. (2000). p. 60.

⁸ Foote, Ethan. (August 2004). “Wildland-Urban Interface Ignition-Resistant Building Construction Recommendations.” Community Wildfire Protection Plan Workshops. California Fire Alliance and the California Fire Safe Council.

⁹ Further information on this available through the California State Fire Marshal’s Building Materials Listing,
osfm.fire.ca.gov/bmlisting.html.

¹⁰ Refer to 1991 Bartholomew Engineering study