



2014

Strategic Plan for the Placer County Wildfire Protection and Biomass Utilization Program



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Wildfire Protection & Biomass Policy Team**



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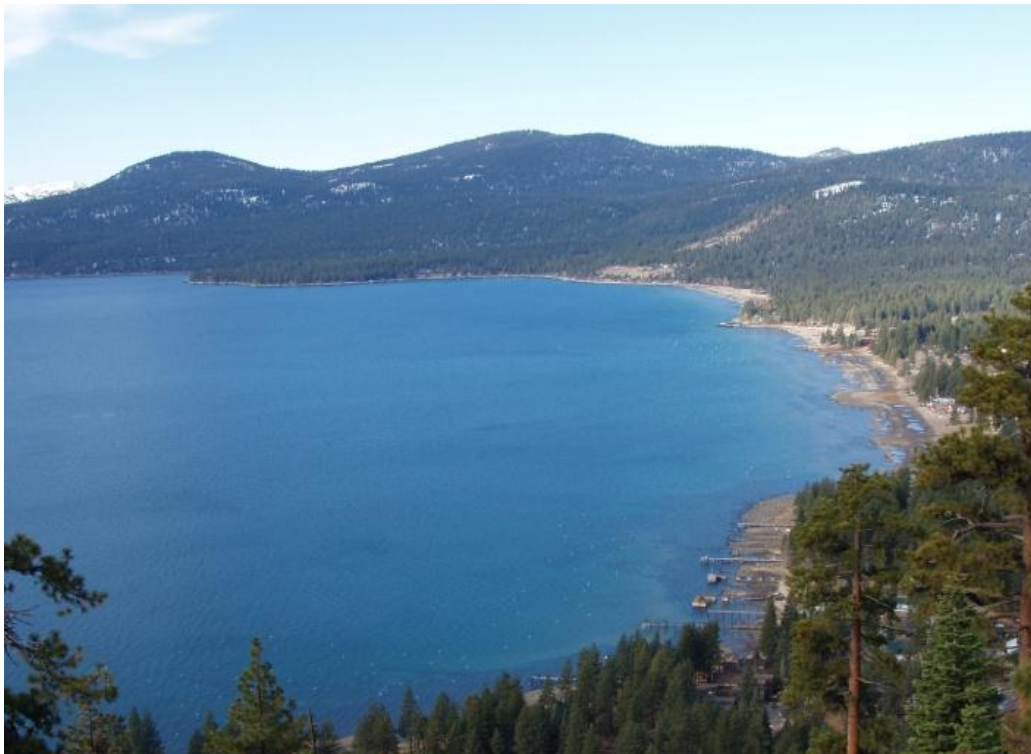
WILDFIRE PROTECTION AND BIOMASS UTILIZATION VISION

The Wildfire Protection and Biomass Utilization vision, created in 2007, has served Placer County well and will continue to guide this program into the future:

In order to improve the County and its lands; by protecting residents, their property, and our environment; and to assure the future ability to maintain an enjoyable quality of life; we will continue to seek ways to reduce the effects of catastrophic wildfires, and convert unwanted woody biomass into a beneficial commodity. The Wildfire Protection and Biomass Utilization Program was developed in Placer County to help achieve this vision. The goal of the Program is to promote projects that will diminish the threat of catastrophic wildfires, improve public health and safety, reduce pollution, and enhance our environment. In addition, Placer County will advance environmentally friendly renewable biomass resources to produce heat and/or electrical power, alternative transportation fuels, or beneficial bio-based chemicals and products.

It is the intent of Placer County to advance this vision in ways that are clear to all citizens so they understand that the County intends to protect its communities and the natural environment in conjunction with promoting forest health in practical ways. It is our hope that this mission will gain acceptance and support from all groups and individuals living and working in Placer County and from those outside who care about the county and the natural resources it contains.

Lake Tahoe and Surrounding Forested Lands



EXECUTIVE SUMMARY

This Strategic Plan Update continues to provide the path for Placer County to help protect residents, communities, forests and important forest resources from the threat of wildfire and to efficiently manage and use biomass that is a large component of that threat. Implementing the elements of this Plan will make Placer County a safer, healthier and more enjoyable place for all.

In 2007 the County identified and implemented several key actions to help meet Program objectives. These include educating public citizens; developing strategic alliances with public and private partners; conducting coordinated and transparent planning; and obtaining grant funding. All these actions have helped so far and will continue to be part of future strategy. To accomplish wildfire safety objectives, the County will continue to implement established programs and engage agencies and citizen groups while implementing several new programs. To accomplish biomass utilization objectives, the County will continue to pursue the construction and operation of a biomass energy facility at Cabin Creek in eastern Placer County, and will coordinate or conduct technical studies designed to determine if it is feasible to establish other biomass facilities in the County. Placer County undertook a stewardship contract¹ with the Lake Tahoe Basin Management Unit (LTBMU) of the U.S. Forest Service (USFS) and desires to create another contract with the Tahoe National Forest (TNF) to ensure a long-term, economically feasible, supply of biomass removed from the forest throughout the County. In conjunction with these actions, the County will solicit interest and assistance from public and private stakeholders.

The update of this Strategic Plan focuses on the elements that were successful and attempts to fulfill those sustainable programs and add more coverage and diversity in the County. Staff has determined that adding a few complementary goals and revisions of the objectives to the program will help focus the next stage of work. The next five years are designed to sustain the operations that have been built and then expand the influence of these ideas into long-term working groups, advocacy to improve legislation, and bring an increased renewable energy surge to Placer County and the rural California watershed. These steps will not only allow Placer County to become more fire safe, have less toxic emissions in the air, enhance the experience of the forested region, but also bring about economic development that focuses on renewable energy, other biomass products, and overall cost savings to the surrounding community. Cost savings will include the potential savings from lowered firefighting costs, fewer respiratory health-related issues, and less expensive property insurance. Further, the goals set forth in local, state and federal guidelines regarding energy, land use and air quality will continue to be met as the quality of life grows within the region.

Implementation of this updated strategic plan will likely see less grant funding than was previously acquired. It is expected that as private business enters the biomass utilization marketplace some of the projects will be funded partially or solely by private investments. However, staff will continue to work with all partners, agencies and citizen groups to pursue funding in focused areas.

¹ See page 29 for discussion of stewardship contract

Working with all related agencies and groups to reduce fire hazard and improve fire safety measures is a major goal of the County. The number of focused groups and plans has been ~~ã } & ! ^ æ • ã } * Á æ } å Á c @ ^ Á Ô [~ } c ^ q • Á ^ ~ ~ [! chavÁ set the stage~~ for a more maintenance-related approach in the future. But there are still many opportunities for expansion of key programs and continuing to develop new programs that provide significant benefits to the County. The Community Wildfire Protection Plan (CWPP), having recently been updated (located on website at <http://www.placerfirealliance.org>), now provides the direction for implementation of several critical projects throughout the County. All related government agencies are striving to combine funding and project boundaries to be able to stretch resources and increase the overall ability to reduce fire hazard in communities and recreation areas.

Biomass activities and projects have become important steppingstones to increased wildfire hazard reduction and long-term sustainability of ~~c @ ^ Á Ô [forested areas~~. By focusing on working with all agencies and private investors Placer County has become a leader in the potential for biomass utilization. A proposal for a small biomass to energy facility located at Cabin Creek, near Lake Tahoe at the Cabin Creek solid waste management site, promises to help manage biomass waste by converting it to energy rather than open burning that is the current common practice. In addition, the potential for more forest biomass to energy projects and/or facilities seems likely. This can provide renewable energy and fire safe areas while helping protect communities and important forest resources.

Implementation of this overall vision can be seen in phases. The first phase largely consisted of creating the original Strategic Plan, understanding our potential, setting up programs, securing funding, building stakeholder relationships, performing analyses, permitting a facility and other critical factors to implement the direction of the Board.

The next phase of implementation as described in this Strategic Plan update will continue the progress made by the County in its attempts to bring in other private funding to examine other energy creation options, establish additional fire safe areas and seek more improvements in biomass handling and economics.

Working with the Placer County Air Pollution Control District (PCAPCD) and other agencies to improve air quality will continue to be a focused effort of the County. The future will see an increased emphasis on conducting programs and attracting projects that take advantage of air quality benefits derived from utilizing biomass waste in all forms of energy production. The reduction of atmospheric carbon in Placer County associated with such utilization can provide marketplace credits that should improve the economics of projects that produce the biomass and thereby help expand the program in Placer County and other areas.

1. INTRODUCTION

Nearly half of all land in Placer County is forested. Much of the forestland has an abnormally heavy accumulation of woody biomass due to decades of fire suppression and forest management activities- including lack of management in many areas. In addition to contributing to poor forest health, excess biomass can fuel unnaturally large and intense wildfires that affect many valuable natural resources. The current level of sustainable forest management on public and private forestlands includes a focus on environmental, economic, and social values. This balance between environmental, economic and social values is particularly true on the public forestlands. The resulting land management practices do not remove a volume of biomass equal to current annual growth and do not reduce the overall amount of biomass at risk to disease, insects, and wildfire to an acceptable level. To address this issue, Placer County established the Wildfire Protection and Biomass Utilization Program to address problems associated with biomass accumulation. As one element of the Program, the 2007 Strategic Plan was prepared to provide effective implementation of program actions.

Typical Forested Land within Placer County



This 2013 Strategic Plan updates the 2007 Strategic Plan in a way that is intended to provide continuing, consistent guidance to the Program that recognizes changes and progress since 2007. This Strategic Plan will: 1) provide a measure of success of the goals and objectives reached during the term of the original document, 2) identify new opportunities and possibilities that exist for Placer County and its many partners to improve on the wildfire protection and biomass utilization activities for the foreseeable future, and 3) recommend actions to continue or transition beyond 2007 Strategic Plan actions that have been successful or completed.

This document will provide an outline of the program and practices that have been sustainable to date. Next, evidence of success will be outlined specific to original goals and objectives. Third, specific updates to approved program attributes will be detailed by showing original and enhanced future guidelines for the County. Finally, details regarding new program opportunities and schedules will be provided to guide future program implementation and monitoring.

1.1 Program History

The Placer County Board of Supervisors (BOS) recognized a significant issue with the threat of catastrophic wildfire in the County and desired to protect its citizens from the devastating effects of such a wildfire. In May 2005, the BOS formally allocated an increase in funds for wildfire hazard mitigation and other fire safety activities. In April 2006, the BOS authorized the County Executive Officer (CEO) to hire a Biomass Manager to examine options for reducing the abundance of flammable woody biomass in the County and putting it to use. At that same time the Board created a Wildfire Protection & Biomass Policy Advisory group in support of its stated direction. Both of these actions greatly increased the focus by the County and set a coordinated effort in motion that has been able to develop lasting partnerships, secure significant funding and formalize public policy to accomplish many projects and programs that have been able to reduce the risk of catastrophic fire. During 2007 a Strategic Plan was developed and adopted by the BOS to set a five-year strategy to create a sustainable program for Placer County. The Placer County Fire Safe Alliance was reinvigorated and added partners to achieve the goals set forth in the Strategic Plan.

With the personnel in place, during the following few years, a series of actions were implemented after grant funds were secured including the following: 1) in 2008, 2009 and 2010 several grants were secured to focus on developing a biomass to energy facility, 2) implementation of fuel load reduction projects, 3) and providing Clean Air funds to reduce air emissions from the region by diverting excess biomass to energy facilities in lieu of open burning. During 2011, additional grants were awarded including those for a specific biomass facility design and a community collaborative health review of the proposed biomass to energy facility. In 2012 a biomass to energy facility at Cabin Creek was given a permit to build and now in 2013 investment partners are close to a decision to construct and operate the first 100% forest waste-operated facility in the country. Over that timeframe Placer County assisted over fifteen other California counties in their desire to have a similar program. In addition, the County participated in several legislative actions to support the common efforts in both Sacramento and Washington D.C. to promote biomass utilization and reduce the risk of catastrophic fire by recognizing the economic and environmental value of these actions.

provided the unique opportunity to lead the state in implementing elements of the Bioenergy Action Plan². The Board of Supervisors developed lasting partnerships and capitalize on state and federal funding for biomass programs. This

² The 2012 Bioenergy Action Plan was prepared by

Updated Strategic Plan will provide direction for Placer County and its partners to address the issues related to catastrophic wildfire and biomass removal and utilization.

1.2 Program Area

Placer County, California is located east of Sacramento between Nevada and Yuba Counties (to the north), Sutter County to the west and El Dorado County (to the south). The County stretches from the edge of the Central Valley, east through the foothills and Sierra Nevada to Lake Tahoe and the Nevada border (Figure 1). Approximately 248,199 acres are forested. This includes considerable portions of the Tahoe National Forest and Lake Tahoe Basin Management Unit.

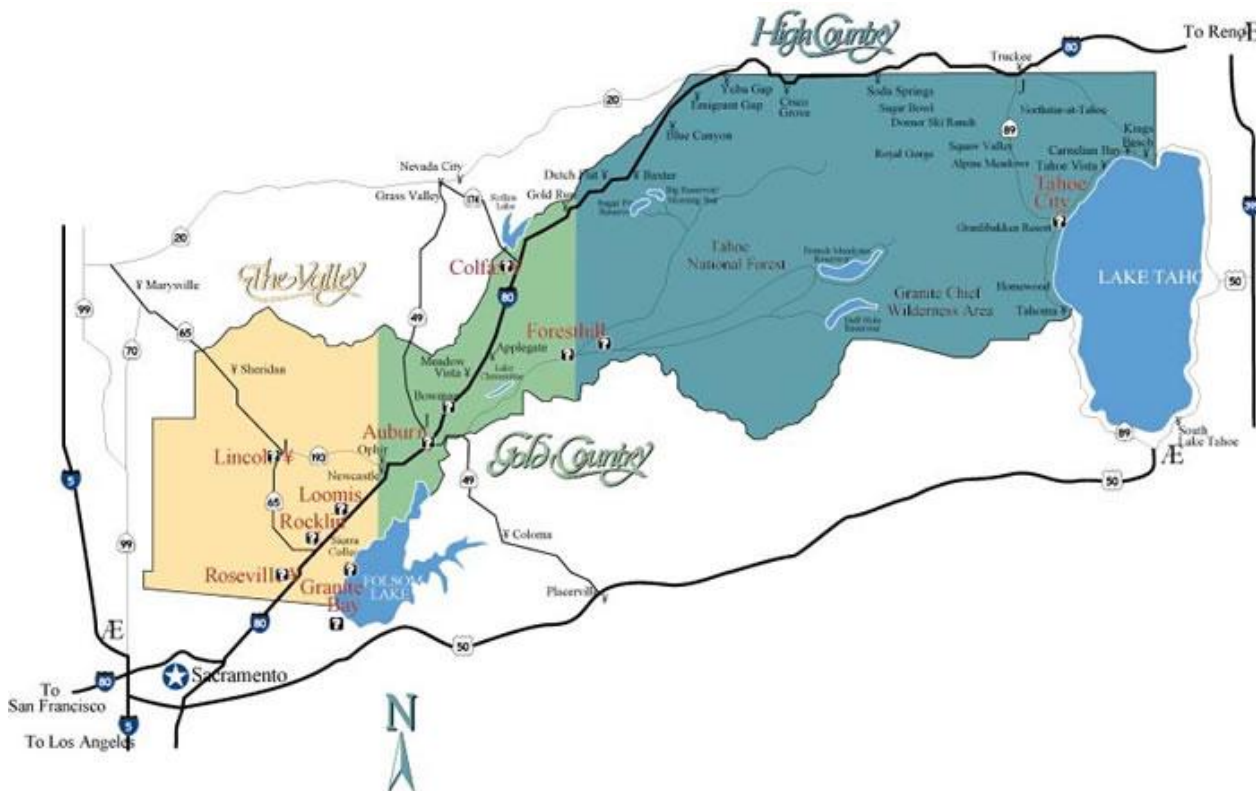


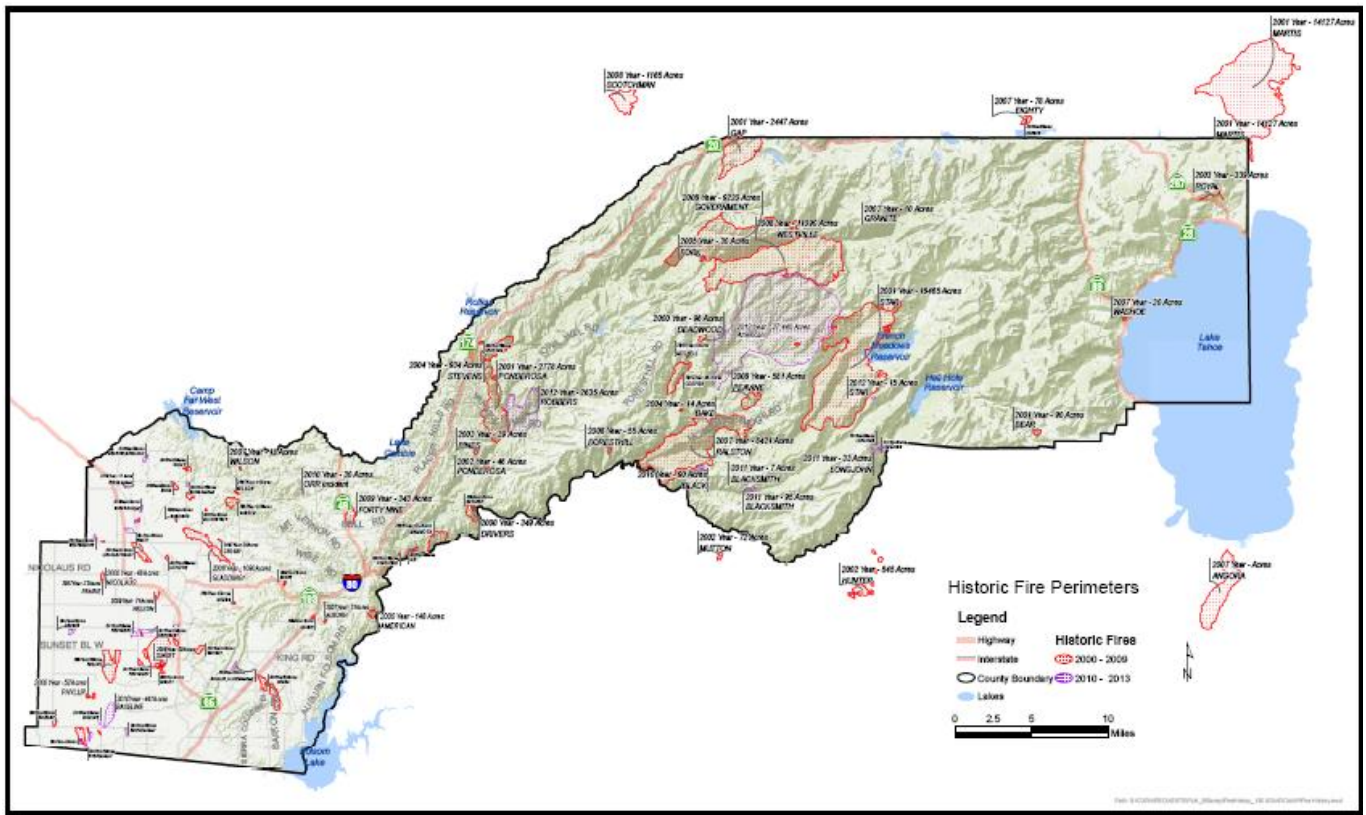
Figure 1. Placer County

Overall, Placer County has experienced modest population growth during the last decade. The majority of the growth has occurred in western Placer County where forested land cover is limited. The population grew from 248,199 people in 2000 to 348,432 in 2010. This represents a 28.71% increase. While the forested areas of the County saw little growth between 2000 - 2010 the area is populated with over 70,000 permanent residents and approved general plans for the area have a significant holding capacity for growth. In addition to permanent residency, the area also has a significant amount of temporary residents and tourism activity. Projected growth will be in communities along the Wildland-Urban Interface (WUI) in both forested and oak woodland environments.

To help protect people and their property from potentially catastrophic wildfires, the National Fire Plan (as drafted by federal agencies in 2000) directs funding to be provided for projects designed to reduce the fire risks to communities. A fundamental step in achieving this goal was the identification of communities that are at high risk of damage from wildfire. Thirty-eight³ of the 1,289 communities currently categorized as at-risk are located in Placer County. Some of these communities have already been affected by wildfire.

Since 2001⁴, nine major fires have occurred in Placer County (i.e., the Gap, Ponderosa, Star, Ralston, Government, Westville, the American Complex, Robbers and American fires) (Figure 2). These fires negatively affected over 77,000 acres of forest and important forest resources, cost millions of dollars to fight, and resulted in injuries to dozens of firefighters. In addition over 70 smaller fires were fought within the county.

Figure 2. Historic Fire Perimeters Since 2000



shore is located within the County. The population growth of permanent residency in the Lake Tahoe Basin (Basin) has actually decreased over the past ten years and the overall population of the Basin at any given time is highly linked to the number of visitors. Lake Tahoe is a national and international tourist destination, and the Basin provides numerous other benefits including

³ Calif Fire Alliance web site
⁴ CAL FIRE incident history web site

water supply, terrestrial and aquatic habitat, and aesthetic enjoyment. In 2007 the devastating Angora fire in El Dorado County burned approximately 3,100 acres and consumed 254 homes bringing significant focus on improving wildfire hazard reduction and community safety conditions surrounding this world treasure. In 2013, the American fire, in the watershed of the North Fork of the American River burned approximately 27,500 acres. While no communities were immediately threatened, many valuable resources were heavily impacted.

1.3 Accomplishments/Actions that supported the 2007 Strategic Plan

Placer County set out with an ambitious but reachable set of goals, objectives and program strategies to be achieved during the first five years (2008 . 2012) of this Strategic Plan. Many departments within the County, agency partners, business entities and citizens assisted the County in the success of program. The following information will outline a brief description of how each Goal & Objective was addressed and provides a matrix with an abbreviated description of the more relevant activities will follow. Each of the activities has a more detailed report [~ c | ã } ^ â Á [} Á c @^ Á Ô [~ } c ^ q • Á , ^ à • ã c ^ È Á

Original 2007 Goals:

1. Reduce the risk of catastrophic wildfires in Placer County. Progress in meeting this objective has been realized through the efforts of each of the Fire Safe Councils Ç Ø Ù Ô q • D and fire agencies in developing strategic fuel breaks and in increasing public education. The County has put in place sustainable programs for removing significant amounts of excess biomass from the WUI and wild land forests. In addition a new Hazardous Vegetation Abatement (HVA) on Unincorporated Parcels pilot ordinance was adopted and has been showing promising results at getting more parcels fire safe.
2. Protect Placer County citizens and visitors from the consequences of catastrophic wildfires. Evacuation route planning and the California Department of Transportation (Cal Trans) I-80 corridor project are two key projects to protect Placer County citizens and visitors to this area. The Interstate 80 project has significantly reduced fuel loads along 37.6 miles of highway to prevent roadside fire starts and evacuation planning can help expedite traffic movement if a fire does start. With a reduction in open-pile burning the smoke and toxic air emissions have been lessened throughout the county.
3. Continue to explore beneficial uses for excess biomass in Placer County. Several projects have led to the possibility of multiple uses for biomass now and in the future. Specifically the County has developed a series of on-the-ground projects to analyze the benefits of removing and utilizing biomass for energy instead of open burning. The County has been successful in studying and entitling a biomass to energy facility with a private partner in the Tahoe area. Lastly, the County has partnered with a private firm to study and implement tests in the western county area of a technology that creates transportation fuels for vehicles from biomass.
4. Continue to improve air quality in Placer County. Positive impacts have been accomplished via several biomass removal projects in both the Foresthill area and north and west Tahoe areas and our program to remove biomass piles for energy instead of open burning has

been implemented. The County has engaged several federal, state and local partners in these projects. Several reports have been posted on our website that reflects the magnitude of the emission reductions and the collaboration between agencies. The County, with its partners (PCAPCD, USFS and Sierra Pacific Industries), was awarded a 2010 Clean Air Award from the U.S. Environmental Protection Agency (EPA) for actions related to the program implementation.

Original 2007 Objectives:

1. Determine the feasibility and options for removing excess woody biomass from lands within the County. Through programs created by the direction of the Strategic Plan, the County has been able to develop economical options for removing biomass with a number of local, state and federal partners while working with private companies to look at the sustainable future of this process. This included several projects in cooperation with the LTBMU that involved extensive study of the logistics and economics of processing and transporting biomass. Reports documenting these efforts can be located on the biomass webpage.
2. Determine the feasibility and options for transporting excess biomass from the source to a biomass processing and/or utilization facility. As part of the biomass utilization facility at Cabin Creek project, existing research on logistics requirements/options to move material throughout the area was reviewed and documented in a report. The most feasible routes and transportation methods were evaluated and options to reduce travel miles and emissions were defined.
3. Determine the feasibility and options for converting excess biomass into electrical power, alternative transportation fuels, or another commodity beneficial to the citizens of Placer County. Staff has been able to develop two projects that utilize forest biomass for conversion to energy. Specifically a biomass to electricity project and biomass to transportation fuel project have been in progress and potentially can use forest-sourced biomass within Placer County. Several reports have been documented as a part of our Department of Energy grant programs and are located on our webpage.
4. Identify and secure funding for Program activities. As defined in the grant success section, the County was able to acquire over \$10,000,000 in grant funding to examine feasibility of potential projects, provide for fire safe programs, lower air pollution from open burning by removing waste biomass, and to evaluate the health impacts of biomass to energy projects.
5. Continue to promote the Program and strategies. Staff was able to work with many agencies, community groups and the general public to increase education, collaboration and development of strategies and projects that allowed the County to lower the fire risk in key areas and utilize biomass for a variety of products. Section 4.4 of this strategy provides specific information on this objective. The level of safety and conservation within the forested area has increased over the past five years. Staff has been involved with multiple other counties and agencies to assist in the promotion of ideas and programs that were a part of the direction of the strategic plan and are continually asked to come and provide assistance.

6. Continue and expand management practices that protect Placer County from the adverse effects of wildfire. Through the increased collaboration and sharing of best practices between all agencies in Placer County, programs have been expanded to work towards the reduction of the effects of wildfire throughout the county. Outreach from the County Fire Safe Councils c [Á ã {] ¡ [ç ^ Á c @ ^ Á] ~ à | ã expansions of [the Hazardous Á æ} á A Vegetation Abatement ordinance are key factors in this reduction.
7. Continue to seek and evaluate information on new strategies that will protect the County from the adverse effects of wildfire. Working with various agencies and implementing new programs to assist each other with complementary projects allows more areas to be protected. A large amount of thinning and defensible space clearing near homes and business has helped reduce the potential effects of wildfires on the treated areas.
8. Examine the feasibility of the various alternatives for removing excess biomass from wild-lands in Placer County. Through projects related to study of the feasibility of a biomass utilization facility at Cabin Creek, homeowner-related hazardous biomass removal programs and various biomass removal field projects, staff was able to look at several options for removing biomass near infrastructure. Economics played a large role in the determination of best practices.
9. Coordinate with resource agencies, other counties, fire protection organizations (e.g., Fire Safe Councils), utilities, consultants, and the public to improve the level of fire protection in the County. The Placer County Fire Safe Alliance continues to expand. Additional fire agencies and local organizations have joined the Alliance efforts to share best practices and co-develop fire prevention strategies. Options have been developed for organizations to share more of the cost of treating and removing hazardous biomass materials.
10. Identify the various beneficial uses and markets for excess biomass in Placer County. To date staff efforts within the energy market have focused only on removing waste biomass material throughout the county. Periodically staff has been asked by the California Energy Commission and other agencies to reflect on the experiences that have occurred within our county with regard to the best options going forward with biomass to energy. Staff will continue to review other options.
11. Determine the most beneficial use(s) for excess biomass in Placer County. Staff has evaluated various potential uses of excess biomass material. To date, only the energy market has shown significant potential for any kind of economic return that could lead to sustainable operations. At this point short hauling distance- generally 30 miles or less- coupled with cost sharing with other agencies are generally necessary to make economics of biomass utilization favorable. There is potential to increase economic feasibility with funding related to reduction of carbon, criteria air pollutants, avoided wildfire, and damage to watersheds and wildlife habitat. With the exception of carbon, there is currently no program available to generate such funding. And even funding for carbon reduction-related utilization of biomass is still a program in its infancy.
12. Market biomass utilization opportunities to private biomass business enterprises. Staff has been successful with one private business partner to potentially build a small biomass to

energy facility at Cabin Creek. A second project with a private business to build a biomass to transportation fuel facility will yield a demonstration program during 2014 and 2015 that could eventually lead to a commercial scale facility being built in the western part of the county. There is definite potential for other bioenergy projects in the County.

The Placer County Team has been able to document and share many of the studies and field operations through published papers, publically available reports and responses to outreach requests from various agencies. Placer County has presented extensive information about various successful processes and findings to assist others in developing biomass-related functions.

In addition to the accomplishments referenced in the above Goals and Objectives section and discussed further in this document, the Placer County Team has been able to document and share results of many of the studies and field operations through published papers, through publically-available reports and through a variety of invited presentations around the state and country all of which are located on our websites.

1.4 Websites

Two separate websites were made operational to allow the public to understand what Placer County was accomplishing in the areas of Biomass Utilization and Wildfire related activities.

The Placer County Biomass website is structured to provide information regarding the grants that are being accomplished, a sample of the presentations and press coverage of the program, and a summary of all programs and projects activities. The biomass website is at <http://www.placer.ca.gov/Departments/CommunityDevelopment/Planning/Biomass.aspx>.

The Placer County Fire Safe Alliance (PCSFSA) website is structured to provide information regarding the PCFSA and each of the FSC areas. Information on the site includes public information, schedule of events and meeting agenda and minutes. The PCFSA website is at <http://www.placerfirealliance.org>.

1.5 Unmet obligations of the 2007 Strategic Plan








There was only partial achievement of some proposed actions in the 2007 Strategic Plan. Below is an accounting of those items. Included is a discussion of whether those items should continue to be on the list of recommended actions or dropped off at this juncture.













1. Along with the update of the 2007 Community Wildfire Protection Plan (CWPP) and the addition of the Greater Lincoln FSC, the Granite Bay and Loomis plans were not included in the updated plan. These two areas will be added to the next CWPP update or a separate CWPP document if needed prior to the next scheduled CWPP update.
2. The continued decline in grant funding has prevented the completion of many of the planned projects defined in the current 2007 Placer County CWPP. While there have been positive results in each FSC area, less than half of the projects were funded. These projects are still important, and will continue to be the focus of the new 2013 CWPP.











3. The agriculture waste removal/mulch program was not implemented due to other higher priorities. This program will be reviewed to determine feasibility for future implementation.

1.6 Grant success in support of the 2007 Strategic Plan








Placer County has been able to compete and win over \$6,365,000 in grant funding to support the BOS directives. Further, another \$4,217,000 of funding and in-kind matching dollars was also put into these projects. Below is a matrix of the grants that have been completed and/or are in current operational mode.

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2007		Clean Air	Biomass Box Program	\$70,000	
				\$10,000	
2007		Fuel Break	Grand Oaks Open Space	\$29,000	Grand Oaks Homeowners Association
				\$12,000	
2008		Clean Air	Fire Prevention Assistance Program	\$60,000	
				\$15,000	
2008		Clean Air	National Forest Biomass Removal Program	\$60,000	
				\$15,000	

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2008		Grant	Assessment of Small Scale Biomass Facility	\$25,000	
				\$27,000	
2008		Strategic Opportunity	Biomass Removal on National Forest Lands	\$49,500	 
				\$250,000	
2008		Congressional Directed	Biomass Utilization Pilot Project Phase I	\$492,000	
				\$123,000	
2009		Clean Air	USFS American River Biomass Removal Program	\$40,000	
				\$25,000	
2009		Clean Air	Regional Biomass Removal Program	\$45,000	
				\$25,000	
2009		Congressional Directed	Biomass Utilization Pilot Project Phase II	\$1,427,250	

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2009		Fuel Reduction	Alpine Meadows WUI Fuel Reduction and Forest Health	\$175,000	
				\$932,250	
2009		Alternative & Renewable Fuel and Vehicle Transportation Program	Forest Waste Biomass to Methane Fuel Conversion Process	\$1,229,966* (Technology partners received funding)	 
				\$1,232,257	
2010		Clean Air	Tahoe Region Community Biomass Removal Program	\$22,000	
				\$10,000	
2010		Clean Air	USFS LTBMU Biomass Removal Program	\$40,000	
				\$35,000	
2010		Clean Air	State Agency Biomass Removal Program	\$35,000	 
				\$15,000	

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2010		Fuel Break	South Ridge Open Space	\$25,000	South Ridge Homeowners Association
				\$15,000	
2010		Congressional Directed	Biomass Utilization Pilot Project Phase III	\$1,000,000	
				\$1,000,000	
2010		USFS	Chipper Grant	\$313,500	
				\$78,375	
2010		Prop 84	American River Canyon Shaded Fuel Break . Aeolia	\$100,000	
				\$5,000	
2011		Clean Air	North Tahoe Fire Protection District Biomass Conversion Program	\$35,000	
				\$25,000	
2011		Resource Advisory Committee	Scotch Broom Pull	\$2,000	
				\$0.00	

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2011		Woody Biomass Utilization	Engineering Design of a Biomass Power Generation Facility	\$150,000	
				\$37,500	
2011		Resource Advisory Committee	Last Chance Integrated Vegetation Management Biomass Removal Project	\$50,000	
				\$144,000	
2011	 Robert Wood Johnson Foundation	Health Impact Assessment	Placer County Cabin Creek Biomass Energy Facility	\$125,000*	 California Department of Public Health 
				(PC portion \$25,000)	
				\$35,000	
2012		Planning	Gillis Hill	\$17,500	
				\$0.00	
2012		Community Assistance	Chipper Grant	\$400,000	
				\$0.00	

YEAR	FUNDING AGENCY	GRANT	TITLE	GRANT FUNDING	PARTNERS
				MATCHING FUNDS	
2012		Public Assistance	Chipper Grant	\$750.00	
				\$0.00	
2012		Strategic Opportunity	American River Canyon Shaded Fuel Break	\$146,690	
				\$121,920	
				\$0.00	
2012		Prop 84	American River Canyon Shaded Fuel Break . Maidu North	\$100,000	
2012		Prop 84	American River Canyon Shaded Fuel Break . Maidu South	\$100,000	
				\$0.00	
			TOTAL for Placer County (including matching funds)	\$9,252,492	
			Total with Partners (including matching funds)	\$10,582,458	

Short Summary Descriptions

The following are brief descriptions of each of the grant projects and their status:

2007

Biomass Box Program . The County received a Clean Air Grant award from the PCAPCD for \$70,000 to encourage County residents to clear defensible space around their homes to improve fire safety and survivability. Secondly, it provides a means for collection and utilization of the resultant brush, tree limbs, natural debris, etc. for use as fuel for producing energy.

Through the implementation of this grant, 3,361 green tons of waste biomass material was collected and converted to 2052.6 megawatts (MW) of electrical energy (enough to power 228 homes for one year). Because this material was burned in a controlled facility instead of open burning the net air pollution reduction was 88.6 % or over 300 tons of pollutants. All funds were expended on projects and documented in a report located on our Biomass Web page.

Grand Oaks Open Space . A USFS Grant through the California Fire Safe Council Grant Clearinghouse for \$29,000 to clear eight acres and apply the Shaded Fuel Break Prescription. An additional matching amount was provided by the Grand Oaks Homeowners Association and a funding mechanism for long-term sustainability for the project was developed. The fuel break was completed and all funds were expended.

2008

Fire Prevention Assistance Program . A Clean Air Grant award from the PCAPCD for \$60,000 to implement a program to provide fire prevention assistance. This complemented other annual County fire prevention programs such as defensible space inspections, shaded fuel break maintenance and others. Biomass boxes were placed into communities that require/desire defensible space treatments. Utilization of the program accelerated after the Angora Fire in Lake Tahoe. All funds were expended on projects and documented in a report located at the Biomass Web page.

National Forest Biomass Removal Program . A Clean Air Grant award from the PCAPCD for \$60,000 to Placer County has implemented programs to provide fire prevention assistance and reduce air pollution. While working with the USFS in Placer County it was determined that a large amount of accessible woody biomass materials is piled and burned at the end of any forest thinning operation due to the high cost of alternative options. The USFS and Placer County pooled resources to process, remove, chip and haul the accessible materials to nearby biomass energy facilities. All funds were expended on projects and documented in several reports located on our Biomass Web page.

Assessment of Small Scale Biomass Facility . A grant from the USFS and High Sierra Resource Conservation and Development Council funded a study to evaluate existing technologies that produce electrical energy and heat from biomass materials with air pollutant emissions low enough to be able to be permitted and other attributes that will allow the

technology to be utilized in eastern Placer County. The study assessed the possibility of combined heat and electrical power (CHP) generating technology, utilizing locally available fuels (i.e. woody biomass fuels easily accessible and obtainable with no new access road construction in the forest) that would otherwise be wasted resources. Biomass technologies, both direct combustion and gasification systems were evaluated, with the goal of being environmentally compatible and allowable in eastern Placer County. Results were very positive and further analysis is continuing. All funds were expended on projects and documented in a report located on our Biomass Web page.

Biomass Removal on National Forest Lands . A \$49,500 strategic opportunity grant was received from the Sierra Nevada Conservancy for the primary objective of the removal of multiple tons of woody biomass material from National Forests within the Sierra Nevada

This project was proposed and sponsored by Placer County in a partnership, with the following organizations; USFS, PCAPCD, and Sierra Pacific Industries (SPI). Placer County served as the lead partner in the implementation of this project. Placer County proposed that woody biomass material that is a byproduct of fuels treatment activities be removed and utilized as fuel for clean, renewable energy rather than the normal practice of on-site piling and burning or scattering. The project facilitated the removal of the woody biomass from the TNF and the LTBMU. All funds were expended on two projects and documented in a separate reports located on our Biomass Web page.

Biomass Utilization Pilot Project (Phase I) - \$492,000 Congressionally Directed Grant . (Congressman John Doolittle); via the U.S. Department of Energy (DOE) award No. DE-FG36-08GO88026 to facilitate a comprehensive project that integrates all facets of feasibility for the successful deployment of a woody biomass to energy project located in eastern Placer County. Such a facility is critical to serving the hazardous forest fuels reduction programs in this region in future years. In order to accomplish this, a series of analytical and investigatory studies were undertaken to provide a private partner with due diligence grade information that can be used to assess the feasibility of planning, constructing and operating a small (1 to 3 megawatts) biomass energy facility. All funds were expended on research and analyses and have been documented in a multiple reports located on our Biomass Web page.

2009

American River Biomass Conversion Program . A Clean Air Grant award from the PCAPCD for \$40,000 to implement programs to provide fire prevention assistance and reduce air pollution. While working with the USFS in our region Placer County has forged a partnership to process, remove, chip and haul the accessible biomass material to nearby biomass to energy facilities. The TNF developed a 5-year plan for forest management that includes many thinning projects within Placer County on the American River Ranger District. The TNF will be the leader in these activities. It is critical for the County to have this partnership to ensure that as much waste material as possible can be processed, transported, and utilized for energy production rather than open burned in the County. All funds were expended on projects and documented in a report located on our Biomass Web page.

Regional Biomass Conversion Program . A Clean Air Grant award from the PCAPCD for \$45,000 provided residents in all urban forested areas throughout the County with information, training and assistance of clearing away defensible space around their homes and businesses. This is critical for the protection of citizens, improvements, wildlife habitat, watersheds and forest health. Placer County worked with Resource Conservation Districts, local Fire Departments and Districts and businesses to develop these materials and messages. The intent was to work directly with the public and private business to allow materials to flow into regional facilities and operations rather than being burned in the open. To that end, Placer County used the funding to work with a regional biomass operation that took biomass material and ground it into chips then transported the chips to the nearest energy facility. Placer County developed several landings designated throughout the County where woody biomass was stored until a portable tub grinder could come to chip the material before it was hauled by truck to the biomass plants. This program is slated for completion by the end of 2013 and all funds would be expended.

Biomass Utilization Pilot Project (Phase II) - \$1,427,250 Congressionally Directed Grant . (Senator Diane Feinstein); via DOE award No. DE-FG36-08GO88026 to begin the environmental and land use feasibility studies associated with a biomass to energy facility in eastern Placer County. Under this grant Placer County was to complete a number of actions: 1) prepare environmental studies pursuant to the California Environmental Quality Act, the National Environmental Protection Act, 2) obtain New Source Review Permitting from the PCAPCD and the Tahoe Regional Planning Agency (TRPA), 3) prepare the necessary land use studies to support the receipt of entitlements from the TRPA and Placer County. These agencies, collectively, govern the proposed site, facility, emissions, and eventual operations. This grant has produced some substantial results which can be viewed in multiple reports on the Biomass Web Page. Progress will continue with these funds through 2015 and the completion of the Cabin Creek biomass to energy facility.

Alpine Meadows Fuel Break - \$175,000. A project to hand thin fuels and improve stand conditions on 20 acres of national forest. The project was for fuel reduction work adjacent to 5 acres of previously-treated National Forest land. The project is located in the Tahoe National Forest between Snow Crest Road and Mineral Springs on both sides of Alpine Meadows Road. The main component of the grant is fuels reduction within the Bear Creek owned by the Alpine Springs County Water District and held in common by residents of Alpine Meadows Estates and Juniper Mountain. Fuels include the removal of small diameter fir and pine as well as shrubs. An addition the fuels reduction portion of the project included the aspen (*Populus tremuloides*), vegetation. The fuel break was completed and all funds were expended.

Forest Waste Biomass to Methane Fuel Conversion Program Demonstration Project. The Technology Development Program has funded a technology development company (G4 Insights, Vancouver B.C.) to conduct a demonstration project in Placer using forest-sourced biomass. This biomass will be converted by the demonstration unit into bio-methane (nearly identical to fossil-based natural gas) which will then be compressed for use in a Placer County-owned Compressed Natural Gas (CNG)-fueled vehicle in a feasibility test. Placer County is providing in-kind services for the demonstration project. The use of forest-sourced biomass for transportation fuel will open up another potential product stream that could increase the feasibility of future Placer County

hazardous fuels reduction projects. G4 Insights, through its subcontractor, TSS Consultants, is also preparing a feasibility study for the siting of a facility in Placer County that would use the biomass to bio-methane technology. This grant has produced a prototype system that will convert biomass to fuel and be tested during 2014 in a county vehicle. G4 Insights has been expending funds according to their plan.

2010

Lake Tahoe Basin Management Unit Biomass Removal Program. A Clean Air Grant award from the PCAPCD for \$40,000 to expand the program to projects that are removing existing biomass piles as well as excess biomass from forest thinning projects and to utilize the biomass for energy in lieu of burning or scattering on site. This new project should assist in lowering the overall costs of biomass removal and reduce many days of future burning within this region. The LTBMU has realized the value of increased safety and the value of reduced health risk from lowered air pollution levels due to the material not being burned while continuing to reduce risk of a catastrophic fire. The work under this program has shown strong support from Placer County residents and participating partners. The project was completed in 2013 and was part of an integrated operation for both tree thinning and biomass removal in the Lake Tahoe area. This funding has been expended and a report is expected to be completed by early 2014 on will be on our biomass website.

Tahoe Regional Community Biomass Conversion Program. A Clean Air Grant award from the PCAPCD for \$22,000 to continue funding of a valuable program for citizens in eastern Placer County. Placer County works with many Fire Agencies, Fire Safe Councils and homeowner associations to organize and promote the collection of all woody materials cleared from the urban forest by providing drop areas in various locations within all communities that have a need. The intent of this continued program (besides reducing emissions) is twofold; 1) assist the community with the clean disposal of woody biomass using one joint process, and 2) set in place a reliable source of woody biomass for the proposed Cabin Creek biomass facility which could be operational by 2014/2015. This grant project is on-going and all funds should be expended by the end of 2014.

State Agency Tahoe Basin Biomass Removal Program. A Clean Air Grant award from the PCAPCD for \$35,000 was awarded to the County/State agency team to remove biomass from lands that are owned by both the California State Tahoe Conservancy and the State Parks. Multiple projects within the Lake Tahoe Basin were conducted and several tons of material and potential emissions were removed and processed into energy. These projects were accomplished in the wildland-urban interface (WUI) and have helped provide further safe zones for the area residents. This project has been completed and all funds expended during 2013 and a report is expected by the end of 2013 and will be located on our biomass web page.

Placer County Chipper Program . A CAL FIRE WUI grant for \$313,500 providing a low-cost curbside chipping service to help landowners in their efforts to reduce fire hazards by creating defensible space and converting large brush piles for burning into small biodegradable chips useful for mulching or landscaping. The Chipper Program is supported in part through federal and state grants secured by Placer County RCD in partnership with Placer County, Placer

CAL FIRE, PCAPCD, California Fire Safe Council, and Tahoe National Forest. The projects were completed and all funds were expended.

Biomass Utilization Pilot Project (Phase III) - \$1,000,000 Congressionally Directed Grant . (Senator Diane Feinstein); via DOE award No. DE-FG36-08GO88026 to continue work on the Cabin Creek biomass to energy facility (considered to be Phase II of the work program). The grant funds were used to develop extensive environmental analysis and related studies for the proposed Biomass Energy Facility at Cabin Creek. The studies were approved by the Placer County BOS and the project was approved for implementation. These funds will be used to assist in the development of the facility and are projected to be utilized during 2014 and 2015 to complete the project.

South Ridge Open Space Grant . A \$25,000 USFS grant through the California Fire Safe Council, Grant Clearinghouse for application of the Shaded Fuel Break to 10 acres. The South Ridge Homeowners Association contributed approximately \$15,000 and developed a mechanism to fund future sustainability of the project. The fuel break was completed and all funds were expended.

American River Canyon Shaded Fuel Break, Aeolia . A Proposition 84 grant through the California Conservation Corps (CCC) for \$100,000 to treat Aeolia Drive and the Olive Orchard area of U.S. BOR Lands adjacent to the City of Auburn. The Aeolia Heights Homeowners continue maintenance by implementing an herbicide treatment funded with homeowner funds. The fuel break was completed and all funds were expended.

2011

North Tahoe Fire Protection District Biomass Conversion Program. A Clean Air Grant award from the PCAPCD for \$35,000 was provided to the County/North Tahoe team for use in bringing back a program to remove biomass from their jurisdiction that often is chipped back onto properties or burned in the open. A variety of projects are planned that will reduce the need for open burning and provide relief for many residents in disposing of the annual materials. This program is on-going with a variety of community events and funds are expected to be completed by the end of 2014.

Engineering Design of a Biomass Power Generation Facility - The USFS awarded a \$150,000 Woody Biomass Utilization grant to support the Lake Tahoe Regional Biomass to Energy Facility Technology Integration (i.e., the Cabin Creek facility) and Facility Design. This work allowed the proposed Cabin Creek biomass utilization facility to be designed to meet Placer County standards. The results allowed for this proposed facility to be moved to the project-permitting stage. Since this grant completion the County has obtained a conditional use permit and is now seeking an authority to construct permit and final design approvals for the project.

Last Chance Integrated Vegetation Management Biomass Removal Project . A USFS Resource Advisory Committee (RAC) Grant for \$50,000 to assist in processing, transporting, and utilizing for energy, the excess biomass generated on the Last Chance forest management project located in the upper Middle Fork American River watershed in the Tahoe National Forest. The contractor for this project has kept detailed records for equipment time

and fuel use to allow analysis of the benefits of renewable energy produced compared to energy from fossil fuels used and offset. In addition the piles of material were located on a University of California based research project that greatly benefited from the material removal and avoided burning. This project has been completed during 2013 and all funds expended. A full report is expected to be on the biomass web page during the first part of 2014.

Placer County Cabin Creek Biomass Energy Facility . A Health Impact Assessment Grant from the PEW Charitable Trust and the Robert Woods Foundation for \$125,000 to perform a Health Impact Assessment (HIA). The HIA was performed by the Sequoia Foundation in collaboration with the Placer County Departments of Planning and Health and Human Services with technical support from the California Department of Public Health, was a year- long process to assess the potential health effects related to the proposed biomass energy facility (BEF). Health impacts related to air quality, wildfires, greenhouse gas emissions, traffic and transportation, water quality, noise, and economic and energy security were considered. Both Positive and negative health effects were considered in the assessment, and recommendations were made to protect and improve community health. Community Input was solicited and incorporated in many phases of the assessment. The project is complete, all funds were expended and a report is available on the biomass web page.

Scotch Broom Challenge . A USFS Title II Resource Advisory Committee (RAC) Grant for \$2,000. A combined Nevada and Placer Country grant to support community Scotch Broom eradication events. Placer Sierra Fire Safe Council received \$2,000 of the total \$6,000 grant. The project was completed and all funds were expended.

2012

Placer County Chipper Program . A CAL FIRE Prop 40 Community Assistance Grant (CAG) for \$400,000 secured through a partnership of Placer Country RCDE department, PCAPCD, and CAL FIRE. The program is on-going and all funds are anticipated to be expended by 2014.

Placer County Chipper Program . A PG&E Community Assistance Grant for \$750 to support completed and all funds were expended.

Gillis Hill Fuel Break . A Sierra Nevada Conservancy grant for \$17,000 for environmental compliance work for this CWPP program in the Placer Sierra Fire Safe Council area. This project also aims to tie in a network of shaded fuel breaks from Colfax to Foresthill. The Foresthill Fire Safe Council has been working over the past years to complete many projects that will increase fire safety for the communities and allow adequate ingress and egress into the canyon. The Gillis Hill Ridge fuel break will increase the effectiveness of the network by allowing emergency personnel to gain the access needed to protect both the communities of Colfax, Iowa Hill, Foresthill, and many others. This project will also aim to increase forest health, watershed health and quality of the American River. The fuel break project is on-going and all funds are anticipated to be expended by 2014.

American River Canyon Shaded Fuel Break Robie Point to Portland. A Proposition 84 grant was received for \$146,690 from the Sierra Nevada Conservancy (SNC) to apply a Shaded Fuel Break to approximately 60 acres in the American River Canyon near the City of Auburn. A collaborative project with the City of Auburn, State Parks, U.S. BOR, and CAL FIRE. Matching and funding of approximately \$122,000 was obtained from the collaborative agencies. The fuel break was completed and all funds were expended.

American River Canyon Shaded Fuel Break for fuels treatment of the Maidu North area (Gate 143) through Proposition 84 funding by the CA Conservation Corp. (CCC). Applied approximately \$100,000 to the Shaded Fuel Break to treat approximately 10 acres on U.S. BOR lands in the Auburn area. The fuel break was completed and all funds were expended.

2. PLAN GOALS

The original primary goals of the program were proven to be valuable and will continue with minor updates:

1. Reduce the risk of catastrophic wildfires in Placer County.
2. Protect Placer County citizens and visitors from the consequences of catastrophic wildfires.
3. Continue to explore beneficial uses for excess biomass in Placer County.
4. Assist efforts to improve air quality in Placer County.

Additional goals for the Program in 2013 will be:

1. Continue to seek and explore options for increasing economic viability/efficiency of sustainable forest management that helps to reduce wildfire effects and maintains or improves forest health.
2. Continue to promote biomass energy and help others working to develop biomass utilization strategies in their communities.
3. Continue to provide information about Placer County Programs to a wide spectrum of public and private interests.

3. PLAN OBJECTIVES

The original primary goals of the program were admirable and many of them were achieved. During the next five years the following objectives will guide activity prioritization:

1. Continue to explore and expand management practices and strategies that help protect Placer County and its residents from the adverse effects of wildfire.

