



Land Use & Natural Resources Committee

February 4, 2014

Forestry Guiding Principles

Issue: What policy should SACOG support at the state and federal levels related to forestry?

Recommendation: None. This item is for information only.

Discussion: At the January Board meeting, Director Hanley requested that SACOG adopt principles related to forestry as a part of the 2014 state and federal advocacy principles. In 2010, SACOG, as part of the Rural-Urban Connections Strategy project, hired a consultant to describe the current conditions in the forested lands of the SACOG region and to recommend innovations for forest management in the SACOG region. The reports produced by the consultant (Executive Summaries included as Attachments A and B) did an excellent job in describing the conditions of the forested lands in the SACOG region and the impact on the surrounding communities but didn't recommend any specific state or federal advocacy principles for Board consideration. This proposal is designed to fill that gap.

As outlined in the consultant report to SACOG, prior to settlement in the Sierra Nevada, timber stands averaged approximately 100 trees per acre and today timber stands range from 300 to 400 trees per acre in many areas. This problem has occurred because government policies that have emphasized suppressing wildfires without also implementing proactive stewardship management practices has left many forests crowded with small and unhealthy trees.

According to the Sierra Nevada Conservancy (SNC), overgrown forests increase the risk for catastrophic wildfires that can result in the loss of life and property, economic hardship for rural communities, loss of wildlife habitat, lower water quality through erosion and sedimentation, loss of water storage and hydropower, degradation of air quality, increased greenhouse gas emissions and loss of recreational opportunities. During the past five years, over 4.5 million acres of California forests have been impacted by wildfire. Costs to suppress these wildfires have averaged approximately \$1.2 billion per year. The SNC notes that many predict that the increasing size and severity of fires will continue unless increased forest thinning and restoration treatments are implemented.

The SACOG region has an important stake in supporting state and federal reforms that will help create healthier forests and communities. There is roughly 1.2 million acres of conifer forest in the El Dorado, Placer and Yuba counties and 60% of it is National Forest Land. Up to 50% of the water flow into the Sacramento-San Joaquin Delta comes from the Sierra. Interstate 80, Highway 50, Highway 49 and Highway 20 are vital transportation links that could be closed or impeded by a catastrophic wildfire. A large, catastrophic wildfire like the Rim Fire of 2013 – which burned an area equal to 40% of Sacramento County – would threaten the lives of local firefighters and residents and greatly diminish the economy and quality of life in the entire SACOG region.

Many local communities in our region have worked with fire safe councils and fire agencies to implement educational programs and ordinances to create more defensible space around homes, businesses and vital infrastructure. But given the broad impact of state law and the size of national

forest lands, local efforts needed to be supplemented in common-sense, bipartisan efforts at the state and federal levels.

For instance, last year Governor Jerry Brown signed a bipartisan measure, AB 744 (Dahle/Gordon), which established a five-year pilot program in Modoc, Siskiyou and Trinity counties that allows owners of private lands to remove trees with a stump diameter of 24 inches (from 18 inches) or less without the submission of an expensive and time-limited Timber Harvest Plan (THP). This measure was passed by an overwhelming bipartisan vote but it will not help the residents who live in the SACOG region.

Director Hanley has drafted a set of guiding principles for consideration by the Land Use & National Resources Committee and Board of Directors. The outcome of the committee's discussion will inform a final draft of guiding principles to assist the Board and staff in working with state and federal officials and stakeholders on forestry issues. Those final draft principles will be presented for action at the March committee meeting. Director Hanley is not asking for staff resources but would like for SACOG Directors and staff to stay abreast of efforts and opportunities to support reforms in three areas, as follows:

Guiding Principles:

1. Support legislation that reduces litigation and expedites the approval of sustainable forest thinning and fuel reduction projects in the national forests.
2. Support legislation that expedites the approval, duration and cost of Timber Harvest Plans based on sustainable forestry practices for private lands.
3. Support legislation that provides incentives to sustain bioenergy facilities.

Staff will bring additional updates to the Governmental Relations & Public Affairs Committee on state and federal legislation related to forestry as appropriate.

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Attachments

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Rural-Urban Connections Strategy

Forest Management: Current Conditions

Executive Summary



Introduction

This report describes the current conditions within the portions of Yuba, El Dorado and Placer Counties that are generally vegetated with coniferous forest types. It has been prepared for the Sacramento Area Council of Governments (SACOG) as a baseline document pursuant to SACOG's Rural-Urban Connections Strategy (RUCS). Forthcoming documents will describe potential planning and policy approaches to address resource management and land use issues within the forested region, which are discussed in this document.

This report was prepared utilizing readily accessible information about the study area. No original research was conducted. Early in the process, a stakeholder group was selected and a meeting was held to discuss the project. The input received at that meeting was used to guide the work. The stakeholder group was also provided the opportunity to review a draft of this report. Comments received from reviewers were incorporated into this final version.

The forested landscape consists of a complex and varied pattern of ecological conditions, land ownership and management history. There are considerable challenges facing the region, some of which are of global significance. Moving forward into the future, there will be a need for public and private local, regional, state and federal partners to collaborate on finding ways to address the challenges and opportunities to enhance economic development and protect the environmental quality that is the natural heritage of the region.

Forested Lands of Yuba, El Dorado And Placer Counties

The conifer forest types within the three counties are dominated by ponderosa pine, mixtures of pine, fir, Douglas-fir and incense cedar and true fir. There are roughly 1.2 million acres of conifer forest; 60 percent of it is National Forest Land. The National Forests located within the SACOG region are the Tahoe National Forest, El Dorado National Forest, and Plumas National Forest. The ownerships and uses section will describe the diversity of the stakeholders that have responsibility for maintaining these lands.

Historical Context

The forests of the Sierra Nevada have experienced over 150 years of management and use that has varied from outright exploitation to over-protection. Prior to the Gold Rush, much of the lower elevation conifer forest was exposed to frequent low intensity wildfire that created relatively open conditions. After about 1900, an aggressive policy of suppressing wildfires was implemented that has left many forest stands over-stocked with trees and brush, contributing to a high fire hazard. Prior to settlement in the Sierra Nevada, stands averaged approximately 100 trees per acre; today stands range from 300 to 400 trees per acre in many areas. In some locations, habitat degradation

has occurred due to wildfire, inadequate re-forestation after harvesting or other disturbance, or mortality caused by tree-killing insects and diseases. The timber harvest and forest products industry historically has been the largest industry that the forested lands support. Timber harvest levels within the Sierra Nevada have fluctuated over time for a number of reasons. Historical and current policies regarding active and passive management of the forested lands provide the context for the issues and challenges that currently face the stakeholders in the region.

Ownership and Uses

Rural communities are located throughout the forested landscape, generally along major road corridors. These communities have not experienced extreme growth pressures to date (compared to growth experienced within the Sacramento Valley). Existing general plans and zoning do not project substantial new growth in the future. That could change however, if development pressures and economics force changes in land ownership. In locations where rural community housing expansion has occurred, residents that have migrated to these communities generally have little knowledge about forest management strategies and responsibilities. This lack of understanding can lead to hazards and liabilities for the greater forested region, such as wildfire risk and erosion from unmaintained roads. Firesafe Councils and other organizations work to educate residents and play a crucial role in reducing the potential risk to human assets and natural resources within the wildland-urban interface.

The US Forest Service is the largest single landowner within the forested region; managing approximately 60 percent of the land. At the present time, management direction on the National Forests is primarily focused on ecosystem management and restoration rather than commodity (timber) production. Private forestland is owned by companies and individuals involved in timber production, numerous “rural residential” owners, and water and hydropower producers. Each of these entities manages their land according to their objectives, within the limitations of governing policies and regulations. Water and hydropower are by far the most important commodities currently derived from the forested region. Timber is still one of the top five crops in El Dorado and Placer Counties, but production levels have declined substantially over the past decade. The forested region sustains an immense amount of active and passive recreational use both on the National Forests and on private sites such as ski resorts. The diversity of ownership and uses within the Central Sierra Nevada along with the large number of stakeholders with diverse views present challenges to the development of a consensus-based approach to resource management in the region.

Existing Organizations and Service Providers

Governmental and non-governmental organizations provide a wide variety of technical and financial assistance to the residents of the forested region. Some of the most important of these are the Resource Conservation Districts, University of California Cooperative Extension and Firesafe Councils. Collaborative efforts between these various service providers and landowners, particularly in the area of fuels treatments, provide examples of attempts to actively manage and protect economic and environmental assets.

The Sierra Nevada Conservancy has recently proposed the “Sustainable Sierra Nevada Initiative” to promote fire hazard reduction and sustainable forest management throughout the Sierra Nevada. This initiative has promise for resolving some of the long-standing controversies over forest management in the region and provides a model for developing other innovative approaches to seek alternative forested land management opportunities in a forum where the stakeholders are very diverse.

Challenges and Opportunities

Rural Communities

Over the past 15 years, Placer and El Dorado Counties have experienced some of the greatest population increase in the state (change on a percentage basis). Yuba County growth has been more modest. Current population centers are located near major transportation corridors. Major industries within these communities rely primarily on service-based industries and on limited industrial timber production. Growth within these rural communities has been modest compared to the urban growth experienced in the Sacramento Valley; however, economic issues and natural disaster risks presented to Sierra rural communities are unique. The overall demographic makeup of the rural communities are diverse and there has been an influx of residents that have moved into these rural communities from urban and suburban locations. This influx of residents has introduced individuals who are not experienced with forest management practices and how to manage risks to human assets and the natural habitat. Although development pressure is limited, existing development presents a risk in the Wildland-Urban Interface (WUI) where human infrastructure including residences and commercial buildings intermingle with the natural forest landscape. This WUI zone is a location where risk to natural habitat and wildfire risk exist when residents do not properly manage the forested boundaries to their property. There is both a challenge and opportunity to provide targeted wildfire risk reduction treatment activities and education to residents to mitigate wildfire risk in areas where human assets exist.

Wildfire

A large proportion of the forested landscape is currently at risk of destruction by catastrophic wildfire. Human assets and settlements nestled within the forest landscape are accordingly at risk. A policy of fire suppression over the past 100 years has contributed to high accumulations of woody fuels in forest stands. Consequently when wildfires do occur, they tend to be severe, causing widespread tree mortality. Unnaturally dense forest landscapes are a partially a result of limited investments in active management to reduce fuel loads. Catastrophic wildfire events generally have a negative impact on forest watersheds and communities, and mitigating wildfire risk is a high priority for resource managers and rural communities. Treating overly dense forest landscapes through practices such as thinning can effectively reduce risk while providing rural communities economic activity, maintaining local jobs and forest infrastructure, and reducing the economic, environmental, and human health impacts of catastrophic wildfire on forested communities.

Timber Industry

The three counties have realized many economic benefits from the timber industry. Since the mid-

1990's, the level of harvest has declined drastically, processing facilities have closed and support industries such as logging companies have either closed or moved away from rural communities in the region. Annual revenues from timber production have gone from in excess of \$150 million in the 1990's to less than \$22 million in 2008. This is due to a number of factors including forest products sourced from out-of-state (Canada, Oregon, Washington), decreased public land timber harvest opportunities, poor local markets and regulatory costs. It is unlikely that a return to former harvesting levels will occur without significant state and federal policy changes. The reduction in level of harvest over the past 15 to 20 years has reduced the forest products infrastructure and local employment required to maintain this industry. Opportunities exist to redevelop local expertise and create opportunities for individuals that have previously worked in this industry to engage in other land management activities that support the economic and environmental goals of the local communities.

National Forest Management

Timber harvesting on national forests was a major driver of the timber industry up until the mid-1990's, accounting for more than half of the total harvest volumes in the three counties. Since the mid-1990's, policy changes, administrative and budget issues, litigation, and public controversy have all acted to limit the amount of active management of all types employed in National Forests. National forests are a key element of overall forest landscape management because they constitute more than 60 percent of the forested landscape in the SACOG forested region. The loss of economic opportunities afforded by timber harvest and active land management in National Forests have adversely affected central Sierra Nevada rural communities. Furthermore, substantial areas on National Forests within the SACOG region are over-stocked and present a high risk for catastrophic wildfire events. Although a return to a high level of commercial timber harvesting is counter to current national forest management policy that stipulates harvest levels at 30 percent of historic levels, current policy does support reducing fuel loads to achieve more fire-resistant forests. Implementing that policy represents an economic opportunity for businesses in rural communities and would help mitigate losses of property and impacts to assets (watersheds, recreation opportunities, sensitive habitat) during wildfire events occurring in National Forests. Modifications in national forest management are not decided at the local level, however SACOG and rural communities have an opportunity play an active role as the USDA and US Forest Service begin to incorporate considerations such as ecosystem services and carbon sequestration into their planning process.

Water Supply and Water Quality

Forested watersheds within the counties provide a significant amount of the water to domestic and agricultural users in the Sacramento region. These users are directly linked to the water supply and quality that is produced from these forested landscapes. There are several public and private entities responsible for managing that water supply. Some are also involved in hydroelectric power generation and are currently undergoing re-licensing pursuant to Federal Energy Regulatory Commission procedures. The outcomes of these procedures could affect the quantity of water available for downstream uses. Water suppliers also face potential economic impacts due to costs for upgrading and replacing infrastructure.

In general, the quality of water supplied from the Sierra Nevada is good; however, there are local instances of bacterial and chemical contamination and excessive erosion and sedimentation. The principal causes of water quality degradation are wildfires and low standard un-surfaced roads. Unlike land uses such as development or timber harvesting, neither of these causes is subject to control through state and federal water pollution control regulations. Land managers in upland watersheds who manage their properties to maintain high water quality from runoff and infiltration through their property are not currently compensated for these actions. A limited number of streams, creeks, rivers, and lakes located within the SACOG forested region are designated impaired waters or 303(d) water bodies. There has been increased focus by regional and state water boards to protect water-related biological resources and this is becoming increasingly part of the high standards forest managers must meet when implementing management plans. However, it is important to note that timber harvest plans are regulated and approved by CDF and overall economics of timber harvest are greater driving factors in commercial forest management compared to water quality issues. Within national forests, the Clean Water Act has a much more prominent role as the US Forest Service implements management plans.

Climate Change

Climate changes projected for the future will affect temperature and precipitation throughout the forested landscape. These changes, in turn will affect the snow pack, runoff rates and timing and ultimately, water supply. Ecological changes will occur as well as forest species adapt to the changed climate through shifts in their ranges of occurrence. The number, size and severity of wildfires are expected to increase. The forested lands are a component of California's global warming mitigation plan as directed by regulation under AB32. Forest land management for carbon sequestration and wildfire mitigation are important components of an overall climate change mitigation strategy, however due to the long-term nature and wide-scale impacts of climate change, it is expected that forest land owners will need to adapt their management strategies to changing climate patterns over the next 50-100 years. Opportunities to mitigate climate change impacts include carbon sequestration and renewable energy generation through biomass energy.

Biodiversity and Forest Health

The remarkable biodiversity of the Sierra Nevada is due to the wide range of environmental conditions and ecosystems that provide habitat for innumerable plant and wildlife species. Threats to the biodiversity in the forested landscape include forest pests (insects and diseases), exotic species, habitat degradation and fragmentation and conversion of forestland to uses other than resource management. Climate change will have a potential, but uncertain effect on biodiversity. The principal ways to reduce threats to biodiversity are to minimize land use conversions and implement forest management that enhances habitat and forest health.

Significant portions of the forested landscape are considered to be unhealthy due to over-stocking and high densities of brush. Over-stocking and high brush densities have generally been caused by successful wildfire suppression. Over-stocking creates stress and competition between trees for water and plant nutrients. Stress makes trees susceptible to mortality and to attack by insects and

disease. Opportunities in this area include implementing thinning and vegetation removal operations that bring the stocking down to a level that is more in balance with available water and nutrients.

Recreation

Public and private lands provide a wide variety of recreational experiences to residents and visitors to the three counties. Recreation opportunities include camping, water sports (rivers, lakes and reservoirs), hiking, skiing, biking, hunting, and fishing. Local communities benefit economically by providing services and goods to recreational users. There is unmet demand for some recreation activities that could justify investment and development in some locations. Recreation has become an essential part of the overall economic well-being of the region since the downsizing of other industries such as mining and wood products.

Transportation Infrastructure

Interstate 80, US Route 50, State Highway 49 and State Highway 20 are the backbones of the transportation system within the three counties. These roads are the major corridors for economic activity within the rural communities. They provide recreation users access to the forested landscapes and enable forest-based businesses to export their goods and services. Roads providing access within the forest are owned and maintained by the counties, the US Forest Service and private property owners. These roads are essential for developing resources such as energy from excess biomass. In recent years, declining budgets for road maintenance have adversely affected the operability of these roads. Poorly designed and maintained roads have been identified as a major source of erosion and sedimentation in central Sierra Nevada watersheds. Transportation infrastructure planning and investment for the future development of biomass-based energy industries can support these economic opportunities.

Carbon Sequestration

Existing data indicate that rates of carbon storage exceed carbon emissions in forested landscapes throughout the three counties. Under AB32, the California Air Resources Board has proposed that forested lands in California provide a net sequestration rate of 5 million metric tons/year of carbon dioxide – inclusive of current wildfire activity. California's forests currently exceed this sequestration rate. Carbon sequestration rates are predicted to increase over the next 50 years but may decline thereafter due to the effects of wildfire, insects and disease and climate change. Currently, there are limited or inadequate incentives for landowners to manage their land for increased rates of carbon sequestration. Markets for forest carbon sequestration credits have not been established within the United States and California for regulatory compliance. Some research has shown that active, sustainable management of some forests can increase the rate of carbon sequestration. Appropriate activities include reforestation of under-stocked areas, thinning to increase growth, and reducing the effects of wildfires. Carbon sequestration is an important area to monitor for opportunities as state and federal greenhouse gas regulations are expected to be implemented in the near future.

Biomass Energy Production

Biomass electrical energy generated in California is considered renewable energy and qualifies for the California Renewable Portfolio Standard. Federal law and regulations provide biomass energy a limited tax credit through the Production Tax Credit or the Investment Tax Credit for renewable energy generators, however this tax credit is less than the credit offered to other renewable energy technologies. Biomass energy facilities are not located within or near forested landscapes (they are located in Lincoln, Rocklin and Woodland); hence they are located at distances that make utilization of biomass from forested areas economically infeasible. Opportunities exist for investment in biomass transportation infrastructure and research and development for small-scale biomass utilization facilities.



Rural-Urban Connections Strategy

Forest Management: Innovations



Executive Summary

Introduction

This working paper presents innovative concepts for addressing issues and challenges described in the Current Conditions Working Paper. Within the Current Conditions Working Paper, 11 issues and opportunity areas (IOA) were identified as needing attention and future action in order to support economic development within the forested SACOG region. (See the summary at the end of the working paper for a matrix that outlines each of the IOAs and reference the Current Conditions Working Paper for an in-depth discussion of the 11 IOAs.) Two working group meetings were conducted to review the current conditions issues and opportunities and to identify innovation concepts that would aim to target multiple IOAs. These innovation concepts represent opportunities for SACOG, its members, communities, and individuals to work on ways to achieve fully sustainable management of forests in the SACOG region—and to do so in ways that benefit Sierra forest ecosystems, rural communities, and society as a whole.

Background

The economic and environmental health of many rural communities in Placer, El Dorado and Yuba Counties is often closely tied to forests and the resources they contain. This was more prevalent in the past when forest management was heavily focused on timber harvesting and wood products. Rural communities within the SACOG region formerly contained much more timber harvest-related infrastructure such as sawmills and logging companies. Since the early 1990's, timber harvest has declined dramatically in California, especially on national forest land. This has had a big effect on many communities and the resulting economic and social impacts have varied from place to place. Some communities have had more success adapting to the changes than others but all have felt the effect.

Today, there is general agreement among Sierra stakeholders that the level of timber harvest at its peak in the early 1990's was too high to be sustainable in the long-term. At the same time these stakeholders recognize the increase in size and intensity of wildfires and the damage they cause and generally understand that forests benefit from some level of active management. However, there are still many different opinions about what constitutes the appropriate level and type of active management. Ironically, due to disagreement on how to best manage risks, much forestland, both private and public, is not being actively managed. This results in unsustainable forest conditions where resource values are being negatively affected, possible economic and social benefits are not being realized and there is still broad social disagreement about what should be done to appropriately manage forests in terms of location, harvesting methods and the amount and size of trees that should be cut. There is an urgent need to resolve controversy and find a widely supported approach for managing forests. Without such support, current wildfire and forest health problems will be exacerbated by the predicted

effects of climate change. Some level of agreement among diverse stakeholders is one key element necessary for implementing a model for sustainable forest management.

Sustainable management can provide some of the economic benefits associated with a conventional timber industry while ensuring long-term protection and enhancement of forest resource values. To recognize the concepts of sustainability in a holistic but simple model, consider the following benefits of a fully sustainable forest management program:

- Private forest landowners are able to receive enough income from their lands to make continued management investments feasible and to reduce the need to divest some or all of their land over time. Therefore more forestland remains as working forest and continues to provide and protect multiple resource values.
- Public forestland management produces enough income to offset the cost of managing those lands. Costs are reduced in part because public acceptance of management practices reduces the number of appeals and court suits filed against forest management projects and associated legal costs.
- On public forestland, increased income and a lower level of controversy about forest management projects allow a greater focus on forest ecosystem maintenance and restoration on sufficient acres to provide long-term protection of all forest resources. An additional benefit is increased stability/certainty of forest products that allows forest management businesses to plan for the future and make wise investments in both staffing and equipment.
- Multiple benefits are derived from having forests managed in a sustainable manner. These benefits include:
 - Forest management businesses pay taxes and employ local residents who in turn support other local businesses. Improved economic conditions make local communities more livable.
 - There is a reduction in the size and severity of wildfires. This increases protection of communities and reduces negative impacts on water supply and water quality, wildlife habitat and sensitive species, air quality, soil productivity, recreation and scenic quality. Increased protection of local non-commodity resources like recreation and scenic quality that provide community income contributes to local community well being.
 - Healthy forests sequester more atmospheric carbon and less carbon and greenhouse gases are emitted into the atmosphere from wildfires, thus helping reduce the effects of climate change.
 - Assuming the expansion of local biomass energy production facilities (as described in a following section), excess forest biomass is utilized to provide energy in the form of electricity or fuel to local communities, reduce the use of fossil fuels, and provide local employment.

- Sustainable active management occurring in appropriate places across the landscape lessens the threat and effects of wildfire on the greater landscape and thus provides increased protection for areas where little or no active management takes place. These areas include wilderness, roadless areas, wild and scenic river corridors, and critical wildlife habitat.

Innovations for Achieving Sustainable Forest Management and Community Well-being

There are two prerequisites that seem necessary to achieve sustainable forest management and community well-being:

1. Active management of forests that produces economic value and ensures long-term protection of forests and forest resources.
2. For the first point to be achievable there needs to be a broad public consensus for management of forests.

There are many possible actions to consider in pursuit of these two prerequisites. Those actions include but are not limited to the following three broad innovation concepts:

1. Promote collaborative efforts to reach agreement among various interests on what constitutes desirable and appropriate forest management;
2. Utilize ecosystem services payments to reward forest landowners and public land agencies for long-term protection and enhancement of forest resources;
3. Maintain and re-establish local forest management infrastructure.

Included at the end of this working paper is a matrix overview of the innovation concepts and the related actions/programs that could be utilized to achieve each innovation concept's intended impact.

Innovation Concept 1

Promote collaborative efforts to reach agreement among various interests on what constitutes desirable and appropriate forest management.

Why This Is Important: Reaching a broad-based, stakeholder supported, regional agreement on forest management would allow a stable level of management to occur and would help move toward long-term sustainability and resource protection. Innovations Under Concept 1:

1. Support Regional Collaborative Efforts.

Regional-level collaborative efforts offer opportunities to develop the kind of agreement that would allow widespread implementation of sustainable forest management that can benefit forests, communities and the region in general. While this innovation is far

from novel for many organizations—including watershed groups, Fire Safe Councils and other local organizations —regional collaboration across many jurisdictions and agencies is uncommon when addressing forest management issues.

Impact of Innovation: While existing collaborative efforts have received support from a broad spectrum of interests, additional support for this particular effort (and others) will help create the kind of critical mass that is necessary to ensure success.

2. Support other, more local, efforts to reach agreement on forest management issues.

Regional collaborative efforts are important, but in regard to national forest management, in some cases, more local efforts can be undertaken successfully and more quickly to reach agreement on forest-specific issues/conflict.

Impact of Innovation: Similar impact as Innovation 1, but with focus on smaller geographic areas.

3. Support establishment of local “Forestry Certification Cooperatives.”

Such cooperatives would help landowners get their forest management operations certified as “sustainable.” Certification is completed by private organizations and is typically too expensive to pursue for owners of small and medium-sized forestland parcels. But if owners joined together in cooperatives, the cost would be more reasonable and worth pursuing. Organizations and/or local government entities could help establish a pilot cooperative and perhaps even help provide upfront funding to begin the certification process. Forestland owners who participate would be able to repay the certification fee over time. It would be worthwhile for these owners to pursue certification because their management activities would receive less outside scrutiny.

Impact of Innovation: Having forestland ownerships and their management certified as “sustainable” would lessen concerns about active forest management among those interests that are most active in opposing forest management activities. Addressing concerns early could result in less time and effort by forest landowners to deal with challenges to their management activities and perhaps, ultimately, even in streamline the processes necessary to plan and carry out management activities.

4. Support certification of national forests.

Similar to certification of private forestlands, certification of national forests can be completed in order to document and ensure that management is done in a sustainable manner. Organizations and/or public agencies can voice support for the concept by communicating with the Forest Service’s national office, the Secretary of Agriculture and California’s elected Representatives and Senators.

Impact of Innovation: Certifying national forest management as “sustainable” could

ultimately contribute to building consensus and achieving a stable level of management on national forests.

5. Develop education and outreach materials that can be used by a range of organizations to inform decision-makers and public and private stakeholders

Education and outreach can address be very effective in helping people understand issues related to forestry. Some of those issues include:

- The benefits of sustainable forest management for reduction of wildfire effects, protection and enhancement of forest resources, protection of communities, enhancing local economies, and reduction of fire suppression costs.
- The processes that landowners must follow to satisfy the laws and regulations that govern forest management—not the laws and regulations themselves.
- The benefits of maintaining forests in forestland ownership, such as watershed integrity and wildlife habitat, reducing vehicle-related impacts that result when rural areas are subdivided, and reducing the need for additional infrastructure and public safety investments associated with rural subdivisions.

Impact of Action: This action would raise awareness of the benefits of sustainable forest management and how regulatory processes can sometimes slow the implementation of certain forest management practices.

Innovation Concept 2

Utilize ecosystem services payments to reward forest landowners and public land agencies for long-term protection and enhancement of forest resources.

Why This Is Important: With few to no options to provide forest-based revenue streams for the management of forest resources, land management agencies and many private landowners depend on public funding to support their activities, especially fuels reduction activities. It seems quite reasonable for forest landowners to be compensated for helping to maintain a forest environment and forest resources that benefit the public at large. The public has demonstrated that they value these assets and services, show preference for maintaining them, and at times intervene to assert control over forest management. Innovations under Concept 2:

- 1. a. Conduct economic and accounting protocol studies that support the development and implementation of ecosystem services funding mechanisms.**
- b. Explore ways to develop and support implementation of systems that would provide monetary compensation for sustainable management of forest resources.**

Studies conducted by unbiased third parties can provide background information for establishing the actual framework for quantifying the dollar values of specific resources. Unbiased studies are needed to ensure credibility in setting the value of the resource, credibility in establishing the process for measuring the resource and credibility in

tracking the status of the resource over time. Stakeholder involvement in such studies would be of great importance.

Impact of Innovation: Finding appropriate ways to compensate landowners and public agencies for protecting resources would provide funding to allow additional forest management or stable income where current practices are being done in a sustainable manner and are protecting natural resources. Such funding would also provide incentives to manage for natural resources other than forest products and could potentially create a more direct financial link between natural resource users and suppliers.

2. Support and encourage the use of conservation easements for local forestland.

Conservation easements are legally binding agreements between a landowner and a private organization or public agency. A conservation easement limits certain kinds of uses and/or prevents development from taking place in perpetuity. Easements are individually tailored to meet desired resource protections and needs of the landowner. Landowners receive tax reduction benefits and/or direct payments in exchange for agreeing to the constraints on the use of their land. Forestland conservation easements provide long-term assurance and stability of forestland ownership and also provide additional economic feasibility for the owners to manage their forest in a sustainable manner, thus benefiting both society and landowners. Society benefits by having more forestland remain undeveloped.

Impact of Innovation: Conservation easements place certain constraints on management of the land in the easement; however, they reduce concerns about the management of the land in the easement and can reduce in property tax or direct payments to landowners. This results in the property owner having more income to invest in management and reduces the likelihood that the property will ever be sold and developed.

3. Support development of a guidebook for protection of watershed values in forestland areas being developed.

Communities within the forested area often have high impacts on watersheds because adequate water protection measures are not followed when new development occurs. Although not designed specifically to address protection of watershed values in forestland areas subject to commercial development, there are numerous examples of watershed protection guidebooks. Many are called “Best Management Practices” (BMP) handbooks and they incorporate the latest scientific and technical knowledge in the recommended watershed protection practices they contain. BMP handbooks usually address general forest management-related activities such as harvesting and road construction. However, the recommended protection measures these handbooks contain could easily be adapted to address land development impacts.

Impact of Innovation: A guidebook could be used by developers, community planners and county planners to implement actions that would ensure the long-term protection of watershed values in areas being developed. Having such a guidebook would

standardize permitting requirements and could help streamline permitting processes because planners could reference the guide as the basis for project approval and implementation.

Innovation Concept 3

Maintain and re-establish local forest management infrastructure.

Why This Is Important: Infrastructure involved in harvesting and processing wood has declined significantly in the last decade as harvest levels dropped. Such infrastructure at one time provided many family wage jobs in local communities. Forest management infrastructure consists of businesses that are involved in all aspects of forest management. These include mills or other facilities that process wood products, logging companies that harvest and transport wood products to these facilities, companies that harvest and process smaller, noncommercial products, consulting foresters who provide advice and services to landowners, support organizations that provide thinning services and energy facilities that accept non-merchantable biomass materials. With sustainable forest management there would be an opportunity to maintain and reestablish a variety of management related businesses. This would include an opportunity for opening mills for processing small logs, for more companies to conduct small log harvesting and businesses to produce products from what has historically been considered waste—small posts and poles, shavings/chips for animal bedding and landscaping, and biomass-to-energy conversion facilities.

Innovations Under Concept 3:

- 1. Support the Establishment of Organizations and Cooperatives Focused on Business Development, Job Creation and Training or Retraining of Employees for Forest Management-Related Employment.**

In an attempt to offset the impacts of reduced timber harvest, local community organizations were created with the objective of providing a new basis for community economic and social health to substitute for timber. In some cases, these organizations have focused on forest and watershed restoration. In other cases, they have focused on developing new forest products from formerly un-merchantable materials or on forest fuels reduction. In addition, there has been significant progress in the establishment of small sawmills, post and pole and landscape materials enterprises that are owned and operated by local firms. These enterprises typically service niche markets that are also local and utilize a variety of forest resources ranging from commercial timber to woody biomass material recovered from forest treatment activities. As these enterprises are headquartered within the local communities that they serve, they contribute to regional economic vitality and due to their small scale are sustainable long term.

Impact of Innovation: Sustainable forest management would offer the opportunity to maintain existing forest management infrastructure but also to expand infrastructure in some cases. This would especially be true in regard to developing businesses that utilize

raw materials that have typically been considered and treated as waste. Local organizations can be valuable in helping develop such businesses, find and develop markets for resulting products and train people to work in the new businesses. This innovation would provide a place for potential employees to go to learn a job skill and a place for employers to go to find employees that need less on-the-job training.

2. Support and encourage the use of stewardship contracting for implementation of USDA Forest Service forest management contracts--and encourage local Forest Service offices to utilize the stewardship contracting option of giving preferential consideration to local businesses.

USDA Forest Service forest management projects are normally accomplished through contracts. Stewardship contracts require the contractor to do various kinds of resource-specific work in addition to completing traditional forest management work. Contracts are awarded to the person or company that provides the best overall package of resource and economic benefits. One option that can be incorporated into the stewardship contracting process is the awarding of extra points to those contract proposals that include local businesses in accomplishing the contract work.

Impact of Innovation: Businesses in rural communities that are near national forests would receive additional points during the process of selecting the successful contractor. This would help support existing forest management businesses in rural communities and would encourage the establishment of new businesses.

3. Support preferential siting or permitting for biomass utilization facilities within high wildfire risk zones.

The primary factor influencing economic feasibility of biomass energy facilities is proximity of the facility to the fuel sources. Transport costs are very high. Siting small biomass energy facilities centrally located near sustainable sources of biomass—such as in and around communities where hazard reduction operations are occurring—is desirable. This would normally require new infrastructure—sites with buildings and biomass fuel storage space and in some cases, new transmission lines to tie into the electrical grid. Preferential siting would require identification of target areas that have good road access, high fuel loads, and transmission infrastructure. This concept could also give higher preference for opportunity areas where cogeneration (power and heat) could be effectively utilized. The result of this process could be a map identifying suitable sites for future location of biomass utilization facilities.

Impact of Innovation: Use of air emissions offset credits and preferred siting protocols would lessen the time and effort necessary for development of biomass power generation facilities by selecting optimized sites that are suitable and generally acceptable with the public.

Support implementation of Fire Safe Community Guidelines in forestland areas.

This innovation involves supporting adoption of standards that have been developed by the Firewise Community/USA organization to provide increased wildfire protection for

communities. These standards were developed by fire and planning professionals to guide and encourage the development of community plans that enable communities and homeowners to have pleasant living environments while ensuring the absolute safety of people, homes and other buildings.

Impact of Innovation: Community wildfire protection guidelines support sustainable management of forest vegetation while increasing fire safety in the wildland-urban interface.

4. Incorporate fire threat mapping into local and regional decisions about transportation and land use planning.

Well-researched fire threat mapping exists for most areas in the state. This mapping is typically used to help local and regional organizations and agencies plan distribution of funding for various forest management projects and for helping agencies plan and regulate future development. Increased use of fire threat mapping in land use planning decisions would allow future communities to strategically manage the forested landscape and reduce fire threat within their communities. Similarly, such mapping could also be used to guide decisions about adding or upgrading existing transportation infrastructure to improve access to high fire threat areas that would benefit most from treatment and restoration activities and to facilitate exit routes for community residents fleeing a wildfire event. One example of an attempt to inform and advise about the benefits of fire threat mapping within the context of land use planning is a Sierra Nevada Alliance report on an analysis of fire threat acreages within parcels that were zoned for current or future development.

Impact of Innovation: This action would help improve the economic viability and cost-effectiveness of hazard reduction work by improving access to high fire threat areas and to the forest products and biomass material that result as a byproduct from such work. This would allow and encourage additional hazard reduction work, thereby increasing public and community fire safety.

Support and encourage counties' participation in woody waste collection and handling programs.

Collection of woody waste that results from maintenance of small properties can be done to encourage such maintenance. Such woody waste can be utilized in various ways to offset the cost of the program—for example production of energy or miscellaneous products.

Impact of Innovation: This action would help encourage individuals to complete hazard reduction work on their property in the Wildland-Urban Interface area. This would contribute to better community fire safety and better protection of resources.