



**Item #10-3-2
Action**

Land Use & Housing Committee

February 25, 2010

RUCS Forest Management Contract

Issue: Staff is seeking to commence work on the Rural-Urban Connections Strategy (RUCS) Forest Management topic by executing a contract for consulting services.

Recommendation: That the Land Use & Housing Committee recommends that the Board authorize the Executive Director to direct staff to negotiate and execute a contract with TSS Consultants for consulting services related to the RUCS Forest Management topic.

Discussion: A Request for Proposal (RFP) was re-issued for the RUCS Forest Management topic on November 12, 2009. The initial RFP included a budget of \$35,000; however, only one proposal was received. The second release of this RFP allowed for flexibility in the scope or budget if the consulting team could not complete all desired work within the given budget. Two proposals were received on December 3, 2009 and reviews were conducted by an expert panel in late December. Staff met with the selected consultant team, TSS Consultants, in January to assess and refine the data development tasks for the project. A revised scope of work (Attachment B) was submitted on February 22, 2010.

Should the Board give approval to proceed; work would commence in April and be completed in August. The budget for this contract is \$49,996 and would be paid for with federal earmark funds provided by Senator Boxer in 2005. The additional \$14,996 is within the administrative signing authority of the Executive Director. The scope of work includes writing working papers, convening stakeholders, gathering data, and presenting findings to the committee and board. The topics that will be addressed in this work are listed in Attachment A.

Approved by:

Mike McKeever
Executive Director

MM:RS:DS:sb

Attachments

Key Staff: Rebecca Sloan, Director of External Affairs & Member Services, (916) 340-6224
David Shabazian, Senior Planner, (916) 340-6231

**Land Use & Housing Committee**

July 30, 2009

Rural-Urban Connections Strategy: Forest Management Issues Overview

Issue: This item offers a brief overview of the issues that will be addressed in the forest management topic, which is part of the Rural-Urban Connections Strategy project.

Recommendation: None, this item is informational.

Discussion: As the RUCS team begins to study forest management, staff is asking the committee to provide input and guidance on issues to be included in working papers. A consultant will help convene stakeholders and develop reports on current conditions, innovations, and implementation. The issues to be addressed include:

- **Wildland-Urban Interface.** Development can fragment or reduce habitat, introduce invasive species displacing native flora and fauna, impact recreation areas, increase fire suppression and hence fuel load and fire severity, increase erosion which reduces water quality, and increase dumping, trespassing and other types of encroachment.
- **Hydrology and Watershed Management.** A forest's ability to absorb, filter, and supply water is correlated with how it is managed. Overgrowth, fire, roads, development, insects, and disease can affect stream flows, riparian habitat, water quality, flooding, and the region's reliance on Sierra water supply.
- **Fire.** The frequency and severity of fires in the Sierra Nevada have been on the rise. These fires cause the loss of life and property, increase runoff and foul waterways, damage or destroy valuable timber, release carbon into the atmosphere, and are expensive to fight.
- **Climate Change.** Changes in precipitation patterns and rising temperatures are forecasted to lead to reductions in water supply and drier summer conditions, which may increase fire risk.
- **Carbon Sequestration.** Our forests support fast growing conifers that absorb large amounts of carbon dioxide. Proper management can sustain or increase this function. Carbon trading markets are an economic opportunity already being tested at a few sites in the region.
- **Energy Production.** Forests produce a large amount of biomass that can be converted to energy and create economic opportunity. Cogeneration currently produces electricity; future cellulosic fermentation can produce ethanol.
- **Timber Harvest.** Harvest volumes in the Sierras have steadily declined since the late 1980s. Clear cutting, road building, habitat, and other impacts, along with increased regulations and international competition have reduced harvests and greatly impacted timber-related rural economies.
- **Recreation.** Forests provide a number of recreational opportunities, which connect urban residents with the region's rural assets and are an important component of rural economies.
- **Regulations.** Regulations and permitting affecting forest management address issues such as timber harvest, water and air quality, wildfire, habitat, recreation, and archeological sites.

Approved by:

Mike McKeever
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**SACRAMENTO AREA COUNCIL OF
GOVERNMENTS
PROPOSAL FOR
RURAL-URBAN CONNECTIONS STRATEGY
FORESTRY MANAGEMENT
SCOPE OF WORK REVISION**

February 23, 2010



Prepared by:
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Task 1 – Working Papers

Current Conditions Working Paper

This project will focus on conifer-dominated forests occurring in the foothills and Sierra Nevada. There are three SACOG counties that have significant conifer forest resources: Yuba, El Dorado and Placer Counties. SACOG has identified nine issues relevant to forest management policy in these counties. It is seeking a synthesis of existing information that addresses current knowledge on these issues. That synthesis, in turn, will be used as the baseline for future policy deliberations and for outreach to stakeholders.

The nine issues identified to date are of incredible scope. Nevertheless, there may be other issues of equal or more significance to policy-makers. Consequently, in our approach to developing a synthesis of current conditions, TSS will begin with the nine issues, seek input from stakeholders on other potential issues (see Task 2, below) and possibly nominate additional issues (not to exceed two).

Given the preponderance of federal forest land in the three counties, it is likely that one issue of importance to stakeholders and ultimately to SACOG will be intergovernmental coordination on resource management and sustainable economic development. There are some instances in the counties and cities where the benefits of coordinated management are being realized (e.g., fire hazard reduction through fuels treatments across multiple ownerships). In view of the magnitude of resource management challenges, staff and budget limitations and increasing uncertainty about what the future will bring, collaborative regional planning and implementation is a necessity.

Once the range of issues has been identified, TSS will seek out readily accessible information on the subjects of interest. There have been a number of pertinent studies in the forested areas of the three counties and additional studies are underway. For example, the CALFIRE, Forest and Range Assessment Program (FRAP) is currently conducting the 2010 Assessment. It is due to be completed in June 2010 but a wealth of information is already available. In general, FRAP is an important source of mapped and statistical data on forest conditions in the Sierra. We have strong working relationships with the staff at FRAP and expect full cooperation from them in creating our synthesis of current conditions in the three counties.

For the federal lands (i.e., lands managed by the USDA Forest Service (USFS) and Bureau of Land Management (BLM)), forest planning and environmental documents will be a source of information on current conditions. Studies conducted under the auspices of the USFS, such as the Sierra Framework and Sierra Nevada Ecosystem Project (SNEP), although somewhat dated are still valuable sources of synthesized data. Our team includes a former USFS Forest Supervisor (Tahoe National Forest) who has excellent access to USFS personnel and archives.

Examples of reports and studies available from the three counties that TSS may utilize include; on-going General Plan updates, economic development plans and strategic visions, and conservation planning efforts; Agricultural Commission data and studies; mapping and studies conducted by Resource Conservation Districts (e.g., watershed assessment for the South Fork

American River, fuel management treatment maps, etc.); studies available from various interest groups (e.g., Sierra Nevada Conservancy); tourism association studies; and research papers prepared by various organizations (e.g., UC Berkeley, UC Davis, Forest Service Pacific Southwest Station, etc.). Our project team has contacts and experience working with all these entities.

In addition to providing a paper on current conditions, TSS will also provide a bibliography of all pertinent information found during the course of our research.

Innovation Working Paper

SACOG has a unique opportunity to assist local governments and private industries to act as responsible stewards of their forested landscapes while contributing to the environmental and economic health of the region. The Current Conditions Working Paper will identify crucial planning issues that need to be addressed within forested communities. The Innovation Working Paper will describe opportunities for SACOG's regional planning capabilities to enhance forested community economic viability and overall environmental health.

Using the nine topics outline in the RFP and guidance from the Forest Management Working Group, TSS will provide SACOG with programmatic suggestions for key topics. Examples of issues and goals include:

- Explore Options and Provide Guidance to Local Businesses to Expand Forest Management and Forest Resource Options

Forested lands in the SACOG region currently are overgrown and at risk for catastrophic wildfire. At the same time, they contain significantly underutilized resources, particularly in the wildland-urban interface zones. Waste biomass from defensible space clearing activities and forest fuel reduction treatments are currently pile burned at the site of generation due to economic conditions that do not allow them to have an alternative use. The working paper will describe options for SACOG to stimulate the development of regional residential and commercial biomass collection and processing programs to utilize these resources for energy generation or other value added products. Providing economic value to woody biomass wastes will support the development of infrastructure required for conducting vitally important fuels management.

The working paper will also describe options for SACOG to accelerate the deployment of small-scale renewable biomass power plants that are sized to use sustainable biomass wastes from forest management operations.

- Enhance Transportation Systems and Local Tourism

Biomass resources are often utilized at distances far from the point of origin – thus a key to increasing the economic value of biomass resources in forested communities is the development of efficient transportation infrastructure. The working paper will evaluate the integration of existing rail networks with roadways, and assess potential new rail connections. Local communities that have the ability to employ their rail/road networks to

utilize these resources will be at a significant advantage for increased economic development. At the same time, these rail networks would provide an opportunity for increased intra-regional tourism, connecting the foothill and mountain communities with valley communities through reliable transportation networks. An example of a tourism-oriented rail system in a rural area is the “Skunk Train” in Mendocino County.

- Increase Forest and Watershed Health and Regional Air Quality

The working paper will critically evaluate the need for targeted forest fuels treatment operations to reduce wildfire risk, intensity, and damage to local ecosystems. Conduct of fuels treatment projects will be supported by the development of a biomass utilization and transportation infrastructure as described above. Watershed health will be improved through reduced wildfire intensity. Increased biomass utilization (compared to current practice of in-forest pile burning) will enhance local air quality, mitigate health risk from smoke inhalation and reduce the incidence of control burn escape.

- Become State Leader in Fostering Local Intercommunity Efforts to Meet California’s Greenhouse Gas Reduction Goals outlined in AB32

California’s plan to reduce greenhouse gas emissions identifies the forests’ significant role in capturing and storing carbon. Targeted forest fuel reduction operations will: 1) increase carbon sequestration by improving forest health and stimulating forest growth; 2) reduce both the intensity and size of forest fires, thereby reducing the amount of sequestered carbon (and criteria and toxic air pollutant emissions) released into the atmosphere during wildfires; and 3) produce renewable energy that offsets the burning of fossil fuels for power generation. There is an opportunity to advance the use of greenhouse gas offsets benefits to economically facilitate rural community protection and conservation of forested lands.

Implementation Working Paper

In the Implementation Working Paper, TSS will provide strategies to realize innovations within the capabilities of the public and private section in the SACOG region. It is anticipated that strategies will include suggestions for new policy or policy changes and suggestions for various kinds of political or financial support that will assist implementation. Support could include direct funding, helping find external sources of funding, providing incentives, or helping develop appropriate legislation. The Implementation Working Paper will also describe potential utilization of the updated I-PLACE3S model for planning assistance and targeted implementation of strategies identified in the Innovation Working Paper.

Also included in the Implementation Working Paper will be ideas on overcoming barriers that now hamper successful implementation, who to involve (key individuals and organizations) to improve likelihood of successful implementation, known sources of funding that could aid implementation, and (if available) examples of existing legislation in other parts of California or the U.S. that could be applicable in the SACOG jurisdiction.

This paper will also include a case review and summary of prior attempts to monetize ecosystem services as a potential source of revenue for property owners. Lessons learned from previous

attempts to generate revenue from ecosystem services will be helpful for land use planning, economic development and other purposes.

Deliverables: Three working papers on forest management including current condition, innovations, and implementation.

Task 2 – Working Group

TSS will assemble a core project workgroup, consisting of a diverse range of stakeholders with expertise in forest management and direct responsibility for forest-land management. This workgroup will play a critically important role in the project and will have the following key responsibilities:

- Attendance and participation at the two working paper workshops.
- Review outlines and drafts of working papers to ensure inclusion of a range of stakeholder perspectives.
- Ongoing consultation regarding issues and opportunities related to economic and environmental challenges and opportunities in the region's forested areas, and best utilization of planning tools within the context of the RUCS project. Guidance from the stakeholders regarding valued attributes and future land management policies is very important.

An initial “kick-off” meeting will be held in April 2010 to: 1) review the project work plan; 2) solicit input on the Current Conditions Working Paper; 3) prioritize issues (utilizing a strategy like Nominal Group Technique); and 4) gain commitment from working group members to engage in the process through to conclusion (not all initial attendees may agree).

A second meeting will be convened to review innovation and implementation concepts. Outline briefings of the working papers will be distributed prior to the workshop. The purpose of this second meeting will be to review proposed guidance, record comments on the draft papers and identify grounds for potential consensus or conflict in regard to innovation and implementation.

All comments and communications between the project team and working group members whether formal or informal will be recorded (notes taken) and provided to SACOG in outline format. All workshop presentation materials and working paper draft outlines developed by the project team will be made available prior to and following the workshops through the SACOG website.

The workgroup will include 2-4 individuals from each of the following categories:

- Public Land Managers and Agencies (examples: USFS, BLM, California State Parks, California Department of Forestry and Fire Protection, local Fire Agencies (including Fire Safe Councils)).

- Private Forest Land Owners (examples: California Forestry Association, Forest Landowners of California).
- Environmental Organizations (examples: The Nature Conservancy, Pacific Forest Trust, Sierra Nevada Alliance, South Yuba River Citizens League, Trust for Public Land).
- Forest-dependent Businesses (examples: Sierra Pacific Industries, Soper-Wheeler Company, recreation representatives, Associated California Loggers).
- Local Utilities (examples: Placer County Water Agency, El Dorado Irrigation District, Nevada Irrigation District, Yuba County Water Agency, PG&E, SMUD).

Deliverables: Stakeholder contact list, two workshops, workshop summary reports, workshop presentations, email correspondence with stakeholders for feedback and other purposes.

Task 3 – Forest Lands Inventory Update

TSS will form a I-PLACE3S working group consisting of TSS staff and SACOG GIS staff to assess current data availability in the I-PLACE3S model, set goals and objectives for SACOG I-PLACE3S model update to inventory the use of forested lands, evaluate data availability, and provide SACOG existing data sets for forested lands as determined by the working group.

The data assessment and evaluation conducted by TSS will include assessment of spatial data accuracy and quality from various sources including, but not limited to, local municipalities, county, state and federal agencies, Resource Conservation Districts, FRAP, other public agencies, private sources and publically accessed GIS data clearinghouses.

As determined and required by the I-PLACE3S working group, TSS will identify current relevant spatial data sets available to the public, as public domain, or acquirable from private sources that are of superior quality or supplemental to and would improve the current forestry data possessed by SACOG. TSS will tabulate a list of those data sets, describe them and provide information on their accessibility for SACOG's review.

TSS will work with SACOG GIS staff to upload and provide compatible data sets that would improve the functionality of the current I-PLACE3S model.

Deliverables: Identifying relevant spatial data sets including defining location and types of land use in forested area, assisting SACOG staff with understanding and accessing datasets, and assisting SACOG staff with uploading and interfacing datasets with I-PLACE3S model.

Task 4 – Costs and Revenues

The economic issues affecting the forested areas of the SACOG region are complex and interrelated and not amenable to simple econometric evaluation. They are framed by relatively recent and dramatic changes in land tenure and ownership, the loss of infrastructure and economic output based on resource extraction, the looming specter of catastrophic wildfire,

federal land management rendered ineffective by legal challenges and an uncertain future in the face of climate change. Within national forests, management that is important for protection and enhancement of forest resources has declined significantly due to a number of factors. This decline led to closure of many processing facilities/mills (e.g., recent closures of Sierra Pacific Industries sawmills at Quincy, Camino and Standard). The current depressed timber market has led to further declines in forest management on both public and private lands and further facilities closures. A shortage of processing facilities that help pay for forest management activities makes management of forestlands more difficult and the lack of management is resulting in forests becoming more susceptible to the negative effects of wildfire. At the same time, some nonindustrial private forestlands have experienced intermittent periods of rapid residential development. As the current stagnation in the real estate market ends, growth pressures are sure to re-appear. Forestland may succumb (conversion to non-timber uses) to growth pressures in some locations.

There are some other aspects of forestland planning that are somewhat unique. Some products such as aesthetics, water quality, wildlife habitat and water yield are not subject to simple econometric analysis. Environmental attributes do not have readily accessible markets unlike timber and crop markets. Consequently, in conventional forest economic modeling these products usually act as constraints placed on alternatives. For example, specified lands may be subtracted from the management land base. There are other options. Future land use choices can be based on maximizing environmental and ecological services provided by forests rather than wood products. In fact, that is the direction that national forests in the region appear to be headed. The US Forest Service management emphasis in the Sierra Nevada, as evidenced by recent policy statements is on “ecological restoration”, not commodity production, or even recreation.

To capture this range of issues in a modeling framework, TSS will work with SACOG to employ its I-PLACE3S model for developing future land use and economic scenarios in the forested land of its member jurisdictions. TSS will research and assign economic and environmental attributes to GIS polygons based on best available data and estimates in the literature. Alternative scenarios can be modeled by changing attribute values or land use arrangements.

An important component of forest modeling is an optimization algorithm, commonly a linear program or dynamic modeling approach. In forest modeling, data inputs are commonly used to derive solutions based on “objective functions” such as “maximize present net value” or “maximize long term sustained yield”. These functions need not be purely driven by economics. The modeler can make numerous choices to derive socially optimum solutions. For example, specified lands can be set aside from management, stand management activities can be used to increase growth, alternative pricing assumptions can be used, etc. The modeling algorithm itself can be conditioned with constraints such as “maximize present net value subject to the constraint that carbon storage does not decline over time.” TSS will work with SACOG staff to assess the feasibility of incorporating such an optimization model in the I-PLACE3S model.

As a first step towards understanding policy choices, we will work with the SACOG GIS and modeling staff to define relevant attributes and parameterize the I-PLACE3S model for the forestland component. Data requirements for forest modeling include:

- Land classification: from our past conversations, we assume that SACOG GIS staff can conduct spatial analysis that will help define what lands are capable and available for management. As a first cut, some lands that should be excluded from consideration for intensive management include steep slopes (>40 percent), riparian zones and wetlands (as defined by buffers), geologically unstable areas and scenic corridors. TSS will work with the GIS staff to develop this analysis.
- Forest growth: as noted earlier in this scope of work, much of the forestland is overly dense and prone to catastrophic wildfire. That situation is highly unstable. Even without wildfire, overstocked stands are subject to drought stress and insect attack. Increased mortality in turn exacerbates fire hazard in a vicious cycle. For I-PLACE3S, some attributes of interest may include timber volume, potential fire severity and site class (productivity). TSS will work with modeling staff to develop this attribute list and in the context of other tasks, assess the availability of data to populate the model.
- Product prices: stumpage value data are available for the region from the State Board of Equalization. These are available by site class and forest type, both of which are mapped for the region. But, conventional timber products may not be most important consideration. Ecological monetary benefit to land owners due to benefits derived from services such as carbon sequestration or reduced emissions, decreased local air pollutants, water resource quality, and cultural resources and recreation availability are among the ecosystem services TSS envisions SACOG considering within the scope of land use planning. TSS and SACOG's cooperative approach to incorporating ecosystem service attributes into the I-PLACE3S model will understand that the evolving status of ecosystem services markets and monetary recognition of ecological benefits from financial markets is in its infancy. Additionally, the value of these services is often defined by a lack of state or federal policy that has not developed yet.

With these constraints in mind, cost and revenue data for ecosystem services may not be readily available and may come with high uncertainty. TSS will work with SACOG's GIS team to identify pertinent ecosystem services, investigate frameworks for calculating potential costs and revenue streams for ecosystem services as variables for the I-PLACE3S model (and provide attribute values if available and reliable), and investigate cost and revenue data uncertainty and the risk the I-PLACE3S model is exposed to by incorporating ecosystem services cost and revenue data.

Providing input for economic analysis will benefit from other tasks, including our assessment of GIS data availability. We are confident that at least the following land cover data will be available to SACOG for use in I-PLACE3S modeling:

- Ownership class (e.g., national forest, park district, land trust, agriculture, timber industry, timber investment management organization, or private nonindustrial);
- Timber production zone status (i.e., TPZ or non-TPZ); and

- Forest community type (e.g., mixed conifer, ponderosa pine, etc. as defined by the USFS Forest Inventory and Analysis Program);
- Accessibility to existing highway and railway corridors.

Deliverables: Cost and revenue attribute data associated with various industries and ecosystem services in the forested areas of the SACOG region based on available data and methodologies in existing literature. Assigning attributes spatially to land use polygons (or types of land use) as appropriate based on constraints from data availability and data uncertainty risk. Optimization models (if determined to be feasible).

Task 5 – Presentations

The TSS team has significant experience with forestry-related policy and technical presentations. TSS has recently presented topics discussed in the proposal to California Board of Forestry, California Energy Commission, Sierra Nevada Conservancy, The Nature Conservancy and CALFIRE. A combination of the project manager Chris Clavin, the working group facilitator Richard Harris, and the forest policy manager Steve Eubanks will be responsible for presentations to the SACOG Land Use and Housing Committee and SACOG Board of Directors.

All TSS team findings and results generated will be synthesized into a summary Microsoft power point presentation to discuss the following topics:

- Task 1 – Working Papers – Summary of draft final versions and conclusions from use of website for comments.
- Task 2 – Working Groups – Summary of working group structure, action and findings and concepts where agreement or disagreement was expressed.
- Task 3 – Forest Lands Inventory Update – A summary of the available relevant forest inventory special data to provide to the SACOG model.
- Task 4 – Costs and Revenues – A summary the cost and revenue data that is relevant to the SACOG modeling capability and the potential future options and scenario data.

Hardcopies of related papers/documents will also be provided in both Microsoft Word and PDF format.

Deliverables: PowerPoint presentations, Committee and Board presentations.

Proposed Project Schedule

Dates are approximate

April 2, 2010: Contract award, execute contract

April 7, 2010: Start of Project/Kickoff Meeting – Form I-PLACE3S working group, determine scope of spatial data objectives, cost and revenue attribute objectives within spatial data.
Working groups: TSS will develop contact list, decide on several optional dates in late April for first working group meeting, begin draft of Current Conditions Working Paper.

Week prior to 1st Workshop - provide outline of Current Conditions Working Paper, finalize date of first working group meeting, release outline of paper to stakeholders, plan working group logistics. Provide preliminary list of updates to I-PLACE3S model, incorporate into stakeholder working group workshop agenda.

Early May 2010: Current Conditions/Kick-off Stakeholder Workshop. Provide facilitation to working group. Describe total effort, take notes, document agreed on positions and themes for the paper. Generate draft final paper with peer review team and release to web site for further review from stakeholder team members. Begin drafting the next two papers and provide outline of each prior to the next working group session.

Early May 2010: Confirm task 3 and 4 objectives with I-PLACE3S working group based on stakeholder work group input. Begin majority of Task 3 and 4 work.

May 24, 2009: Current Conditions Working Paper Complete

June 3, 2010: Current Conditions Presentation to SACOG Land Use and Housing Committee

Week of July 5, 2010: Innovations and Implementation Stakeholder Workshop. Provide facilitation to working group. Describe total effort, take notes, document agreed on positions and themes for the two papers. Generate draft final papers with peer review team and release to web site for further review from stakeholder team members.

July 19, 2010: Innovations and Implementation Working Papers Complete, Mapping and cost and revenue data complete and reported to I-PLACE3S Workgroup.

August 5, 2010: Final Presentation to SACOG Land Use and Housing Committee

August 19, 2010: Final Presentation to SACOG Board of Directors

COST PROPOSAL

	Task 1	Task 2	Task 3	Task 4	Task 5	
						Total
Labor	\$8,630.00	\$10,740.00	\$7,540.00	\$12,660.00	\$6,430.00	\$46,000.00
Travel & Expenses	\$517.80	\$1,277.40	\$452.40	\$759.60	\$988.80	\$3,996.00
Total Estimated Cost	\$9,147.80	\$12,017.40	\$7,992.40	\$13,419.60	\$7,418.80	\$49,996.00