CalFRAME
Tahoe Central
Sierra Pilot

Tahoe Central Sierra CalFRAME Pilot Project

A Regional Partnership to Protecting the Wildland Urban Interface and Forested Areas of Nevada, Placer and El Dorado Counties

Final Analysis

February 2025

PCWA
Placer County Water Agency

Acknowledgements

Thank you to the many stakeholders who participated in the Tahoe Central Sierra Cal FRAME Pilot Project. Without their sharing of information and ideas, this project would not have been possible.

This Final Analysis summarizes the activities conducted as part of the Tahoe Central Sierra Cal FRAME Pilot Project, the project's key findings and recommended next steps. The following Study Team members contributed to the preparation of the Final Analysis and authored the work products discussed herein:

Tahoe Central Sierra Team

Tony Firenzi, Placer County Water Agency

Kerri Timmer, Placer County

Consultant Team

Amy Lapin, Economic & Planning Systems, Inc.

Camille Swezy, CLERE Inc.

Catherine Silvester, Point View Environmental d/b/a

Christiana Darlington, Esq. Attorney at Law, CLERE Inc.

Clarke Stevenson, The Watershed Research & Training Center

Karen Quidachay, Landmark Environmental, Inc.

Regine Miller, Headwaters Environmental, Inc.

Michael Luken, MNJ Advisors

Tom Johnson, Thomas R Johnson LLC

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1.0 Why Care About Forest Biomass?

California is in the midst of a wildfire crisis due primarily to decades of fire suppression and resulting excess fuel load build-up, exacerbated by a warming climate. The contraction of California's wood market in the 1980s – 1990s and the lack of available facilities lead to excess forest biomass remaining in the woods, heightening fire risk and severity, contributing to uncontrolled air emissions, and reducing revenue-generating opportunities to help support forest health work. In 2024 alone, 1,013,960 acres were scorched by more than 7,000 individual fires, consuming entire communities and leaving others, including those downstream, at risk of irrevocable loss. The central Sierra Nevada itself has experienced several recent large-scale fires, the Rim (2013), King (2014), Caldor (2021), and Mosquito (2022) among them; yet there are still large expanses of unburned areas creating an opportunity for forest stewardship, risk reduction, and resource protection.

In 2024 alone, 1,013,960 acres were scorched by more than 7,000 individual fires, consuming entire communities and leaving others, including those downstream, at risk of irrevocable loss.

To help alleviate this risk many studies show that forest management activities, such as tree thinning and hazardous fuel reduction, can reduce fuel loads thereby changing wildfire behavior and severity, and allow for the re-introduction of beneficial fire as a long-term management tool. In addition, forest management can reduce harmful air emissions, preserve air quality, and protect greenhouse gas emission gains made in other sectors.

Beyond forest thinning activities, a 2016 study by Placer County Air Pollution Control District found that utilizing waste forest biomass for electricity production instead of otherwise open burning it, resulted in a significant reduction of criteria air pollutant, air toxic, and greenhouse air pollutant emissions. This is due to well controlled bioenergy facilities, efficient transport and processing, and displaced fossil fuels.

Placer County Air Pollution Control District Study on Mosquito Fire

46 Days
is the number of days the Mosquito Fire burned until it was fully contained.

77,000 Acres
is the area affected by the recent wildfire in Placer County.

6M Tons
is the total estimated GHG emissions from the Mosquito Fire.

1.2M Passenger Vehicles
is the estimated equivalent of emissions from the Mosquito Fire.

More recently, another Placer County Air Pollution Control District study shows that criteria air pollutant emissions of PM2.5 and non-methane volatile organic compounds (NMVOC) from the 77,000-acre Mosquito Fire, which occurred mostly in Placer County in 2023, were nearly ten times higher than the total county-wide annual emissions that same year, while nitrogen oxide (Nox) emissions total nearly half. Further, greenhouse gas emissions from the fire were about 50% higher than 2023 county-wide levels which is equivalent to ~1,200,000

passenger vehicles operating in California. Forest treatments are most effective and projects are most economically viable when logs and various types of biomass, including non-merchantable woody residues from tree harvests and wood product manufacturing, can be utilized beneficially.

By improving biomass market conditions and developing biomass utilization facilities, we can reduce wildfire risk, increase community and forest resilience, protect air quality and create a circular forest economy.

Cal FRAME Program Overview

The Governor's Office of Planning and Research (OPR), renamed July 1, 2024, to the Governor's Office of Land Use and Climate Innovation (LCI), initiated the California Forest Residual Aggregation Market Enhancement (Cal FRAME) Pilot Project in 2021, with funding from SB 85, to implement Task 3 in the California Wildfire and Forest Resilience Action Plan. Task 3 calls for creation of a sustainable wood products market in California. Cal FRAME is designed to address a fundamental challenge to creating such a market: the difficulty in meeting investor requirements for long-term feedstock supply contracts that hinders the establishment of new or expanded biomass utilization facilities.

Cal FRAME is designed to address a fundamental challenge to creating such a market: the difficulty in meeting investor requirements for long-term feedstock supply contracts that hinders the establishment of new or expanded biomass utilization facilities.

Cal FRAME explores regional biomass aggregation as one way to address this barrier by establishing a public entity to manage long-term, guaranteed biomass contracts between those who generate excess biomass and those who can use it. The Tahoe Central Sierra (TCS) Pilot Project is one of five regional Cal FRAME Study Teams funded by LCI. It focuses on Placer, Nevada, and El Dorado counties and is led by Placer County Water Agency (PCWA) in partnership with Placer County and a specialist consultant team.

Beginning in 2021, the TCS Study Team used key documents, prior studies, stakeholder engagement, and practitioner interviews to explore the challenges around finding utilization pathways for biomass produced from wildfire mitigation and forest health projects. The biomass supply chain was found to be volatile, inconsistent, and full of risk. In simple terms, biomass is hard to pick up and move, especially when there is no available outlet or when those who currently utilize biomass are not selling products priced high enough to pay for its removal and transport. In addition to understanding supply side risks, PCWA is trying to improve demand for biomass through development of a biomass to energy facility to serve its Ophir Road water pumping plant and future water treatment facility.

Purpose

The purpose of the TCS Pilot Project is to help create a financially sustainable wood utilization market to support ecological forest health and community fire prevention across the three-county study area. One potential pathway supported by public feedback is creation of a public entity to manage long-term biomass supply contracts in order to help ensure reliable access to biomass from fuels treatments and forest thinning projects on public and private lands.

Biomass utilization is complex. No single solution, including creating a public entity to manage guaranteed long-term biomass contracts, will solve the numerous challenges faced by those attempting to create a sustainable wood utilization market. However, a public biomass aggregation entity to accelerate excess biomass conversion and maximize the value of timber and excess woody biomass generated by ecological forest management and community fuel reduction activities is one of eight major strategies that, when taken together, can make progress toward the shared goal of improved forest health and wildfire risk reduction.

The Study Team's work reveals that the establishment of a biomass aggregation entity is of strong regional interest, can help to meet immediate biomass disposal needs, and is worthy of testing in an effort to support emerging biomass facilities in meeting investor requirements to achieve commercial operations, helping address risk of high severity wildfire.

2.0 Pilot Project Overview

As part of the TCS Pilot Project, the team conducted a series of studies, as summarized below, to generate a collaborative recommendation for an institutional arrangement to help overcome the TCS Region's biomass feedstock contracting challenges.

TASK 1

Assess the Role of Water Agencies in Forest Health and Feedstock Availability

As a water agency in the TCS Region, PCWA recognized that other water agencies with infrastructure and catchment areas in forested portions of the State have a strong involvement in forest management to protect water supply and infrastructure. As a result, many water agencies are needing to address the challenges of biomass removal. This study was conducted to understand the existing and potential roles of water agencies (e.g., County Water Agencies, Irrigation Districts, Community Service Districts, Public Utility Districts, and Municipal Utility Districts) in forest health and biomass feedstock aggregation and utilization. The role of water agencies is a unique element of the TCS Pilot Project. The study involved conducting interviews with key local government and water agency leadership in Northern California and researching the legal authorities and restrictions of these agencies related to forest management and biomass utilization. The study was prepared early in the project to provide background context and help inform future goals and policies of the biomass aggregation entity that is being explored. The study is presented in the Water Agency Role in Forest Health Report dated March 2023, prepared by Landmark Environmental, Inc. The report concluded that water agencies are pivotal in advancing forest health and wildfire resilience, with growing support and investment from the agencies and their rate payers. The agencies are well-equipped with statutory powers for these efforts. However, increasing the pace and scale of forest health projects will still require securing long-term biomass utilization contracts and overcoming existing challenges around biomass utilization.

Water agencies are pivotal in advancing forest health and wildfire resilience, with growing support and investment.

TASK 2

Evaluate Potential Governing Models and Funding Options and Strategies

Under Task 3 of the TCS Pilot Project, the Study Team evaluated potential organizational structures for a public biomass aggregation entity that could manage biomass feedstock across jurisdictions in the region. The goal of such an entity is to connect biomass producers with offtakers who could use the excess material to support existing and emerging wood utilization infrastructure. The evaluation built on the water agency report with additional legal research on the potential involvement of additional local, state and federal entities in a potential new JPA, whether as a separate legal entity (a Joint Powers Authority) or as a contractual arrangement without formation of a new entity (a Joint Powers Agreement). Other items researched included contracting limitations, conflicts of interest, and financing mechanisms, along with an evaluation of potential interest in and capacity to participate, barriers to participation, and other opportunities associated with such an entity. The evaluation is presented in the Legal Tools for Government Entities to Incentivize Utilization of Forest Biomass in California Report dated March 2024, prepared by CLERE Inc.

Potential organizational structures for a public biomass aggregation entity that could manage biomass feedstock across jurisdictions in the region: The goal of such an entity is to connect biomass producers with offtakers.

The report discusses different types of JPAs, including those focused on funding public infrastructure, providing community services, or acting as a Wildfire Prevention Authority with a focus on biomass waste disposal. Each model's feasibility depends on factors like stakeholder participation, funding mechanisms, and alignment with existing forest management efforts. The report emphasizes the importance of innovative contract management to achieve long-term forest resilience goals. Section 3 of this *Final Analysis Report* includes a summary of the potential model options evaluated in the study and their pros and cons.

In support of forming a new JPA, the TCS Study Team retained Economic & Planning Systems, Inc. (EPS) to evaluate potential funding sources and strategies to fund ongoing operations of a city/county/state agency-focused entity. The case study explored governance structures and key operational revenues and expenditures of eight existing entities providing similar functions. Section 3 of this *Final Analysis Report* includes a summary of prospective funding sources for a JPA in the TCS Region.

TASK 3

Conduct Stakeholder Outreach and Collaborative Engagement

Task 4 of the TCS Pilot Project assessed the status of previous work and the anticipated future challenges and opportunities of biomass related activity in the region through engaging a diverse range of existing and potential partners, in the TCS Region. This study consisted of: 1) reviewing existing documents pertaining to forest health and resilience in the TCS Region; 2) conducting stakeholder outreach and engagement on the concept of a biomass aggregation entity; 3) completing interviews with TCSI leadership, various local, state, and federal agencies in the TCS Region, logging and forestry professionals, and others; and 4) using expert review and professional judgment to explore additional tools and services that can reduce contract risk and help to overcome other barriers to disposal of excess biomass. The study results are presented in the *Community Collaboration Report* prepared by Placer County and Headwaters Environmental, Inc. (2024).

There is interest in creation of a biomass aggregation entity to support use of long-term supply contracts and offer other services

Key findings indicate that there is strong regional interest in the formation of a biomass aggregation entity to support restoration treatments in alignment with State and federal goals. Interviews revealed little concern for the actual type of an entity so long as it could act quickly and flexibly to incentivize forest management and biomass removal and utilization in an economically sustainable manner. Challenges associated with the biomass supply chain that were identified include logistical and economic hurdles, such as transportation costs and the lack of local biomass facilities. Overall, there is interest in creation of a biomass aggregation entity to support use of long-term supply contracts and offer other services including environmental review and permitting, grant pursuit and administration, and green waste management.

TASK 4

Conduct a Biomass Conversion Facility Case Study

A case study was conducted to evaluate the deployment of a biomass-to-energy plant at PCWA's waterworks site in Ophir, California, under Task 5 of the TCS Pilot Project. The study included regional biomass supply assessment, electrical grid interconnection design, insights from a public-private partnership with Arbor Energy and Resource Corporation, and solicitation for a public-private partnership. The proposed novel energy plant aimed to convert biomass into supercritical carbon dioxide and used the high-pressure fluid to run turbomachinery. The supercritical carbon dioxide would then be used for underground sequestration sold in the voluntary carbon market and benefitting from federal tax credits. However, due to the lack of sequestration infrastructure in California, Arbor Energy relocated their project to Louisiana, where such infrastructure is available. PCWA documented these experiences in the 2025 report *Tahoe Central Sierra Cal FRAME Project, Case Study: Biomass Plant in Ophir, California, a Public-Private Partnership Perspective*, detailing challenges, lessons learned, and efforts to secure new partners.

In support of the case study, CLERE Inc. completed a regional biomass supply study focused on quantifying the specific amount of biomass available to the Arbor Energy facility, discussing barriers to obtaining feedstock, and providing an overview of forest management and biomass-generating activities within a reasonable haul distance to the proposed site. The study drew from relevant information in TCSI's Phase I Restoration Wood Supply Assessment developed by The Nature Conservancy and Mason Bruce & Girard and involved interviews with the US Forest Service, Sierra Pacific Industries, consulting foresters, non-profits (such as Fire Safe Councils), Resource Conservation Districts, forest collaborative groups, and county governments in the TCS Region. Local timber operators were also interviewed to assess capacity and interest in processing and hauling biomass to the facility and to provide a range of potential prices for delivered biomass. The report identifies an average annual generation of 104,324 Bone Dry Tons (BDT) of biomass from timber harvests in the TCS Region and identifies the potential for an additional 320,000 BDT from increased forest restoration activities. To secure biomass supply for the Arbor Facility, recommendations include partnering with local logging operators, exploring opportunities to procure biomass from wildfire prevention projects in the WUI, and tracking local green waste initiatives. Finally, collaboration with regional stakeholders and government entities that conduct or otherwise support community green waste and/or ecological forest restoration activity is important to ensure a reliable biomass feedstock supply chain. Further details are presented in the Tahoe Central Sierra Cal FRAME Project Case Study: Biomass Supply Report (2024).

Average annual generation of 104,324 BDT of biomass from timber harvests. Potential for an additional 320,000 BDT from increased forest restoration.

3.0 Core Function, Structure and Funding

The primary role of a biomass aggregation entity would be to manage risk by aggregating and using long-term biomass contracts with Feedstock Supply Insurance and specific pricing mechanisms. Such services could help keep existing facilities running and support the development of new facilities.

The entity could function as a biomass broker, negotiating and managing long-term contracts between both suppliers and buyers. In this case, forest landowners or contractors would generate, process, transport, and utilize biomass. Alternatively, the entity could purchase, own, and sell the biomass material as part of its contract management, maximizing control of the material from source to use, while potentially offering an opportunity for revenue generation to support the entity's operations.

Whether a biomass broker, owner, or some combination of the two, the entity must offer the voluntary use of Feedstock Supply Insurance that protects all parties from price variability and changes in biomass supply. Without this insurance product, long-term contracts are seen as too risky for both biomass suppliers and buyers.

Feedstock Supply Insurance protects all parties from price variability and changes in biomass supply

In addition to indemnification insurance, the entity could provide (or facilitate connections to) additional types of insurance that further de-risk the biomass supply chain. These could include:

- Liability insurance for haulers or forest sector contractors who risk accidental fire ignition from their operations;
- Loggers broad form insurance to protect forest sector contractors against inadvertent damage to timberlands;
- Business interruption insurance to cover the loss of income during a covered loss that necessitates a temporary business shut down;
- Crop insurance to protect forest landowners against unexpected timberland losses; and
- Homeowners insurance that considers discounts for vegetation management.

In addition to managing long-term guaranteed biomass contracts, the entity could offer additional support services to its members and others in the supply chain to address gaps that impede biomass removal and utilization. Such services could be provided by the entity staff or its contractors and could generate enterprise revenue. Additional services most often identified by stakeholders include:

- Consolidated environmental review and permitting;
- Coordinated grant pursuit and administration;
- Green waste management to address defensible space and SB 1383 regulations.

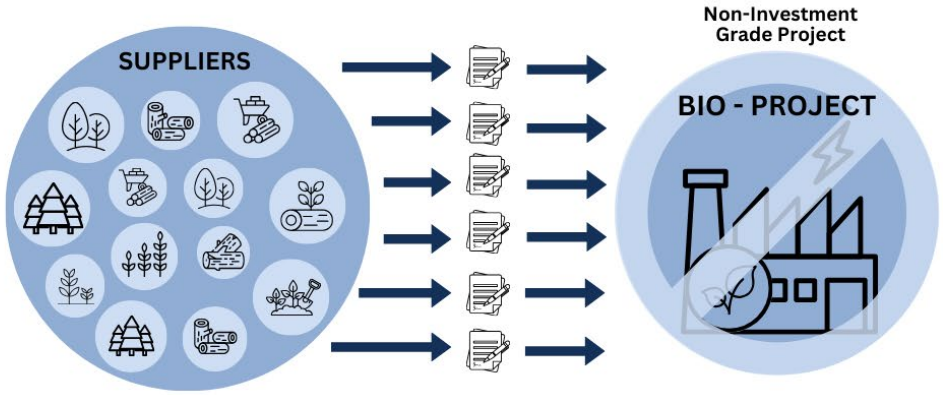
More on Feedstock Supply Insurance and a Biomass Pricing Mechanism

The Northeastern California Pilot Project Team, led by the Fall River Resource Conservation District and supported by CLERE Inc., Ecostrat, and the Watershed Research and Training Center, is evaluating Feedstock Supply Insurance, financing mechanisms similar to crop insurance and potential biomass pricing mechanisms which have applicability to the broader group of pilot projects. The discussion below is borrowed with permission from these researchers.

Why do we need Feedstock Supply Insurance?

New project development is bottlenecked by feedstock supply chain risk

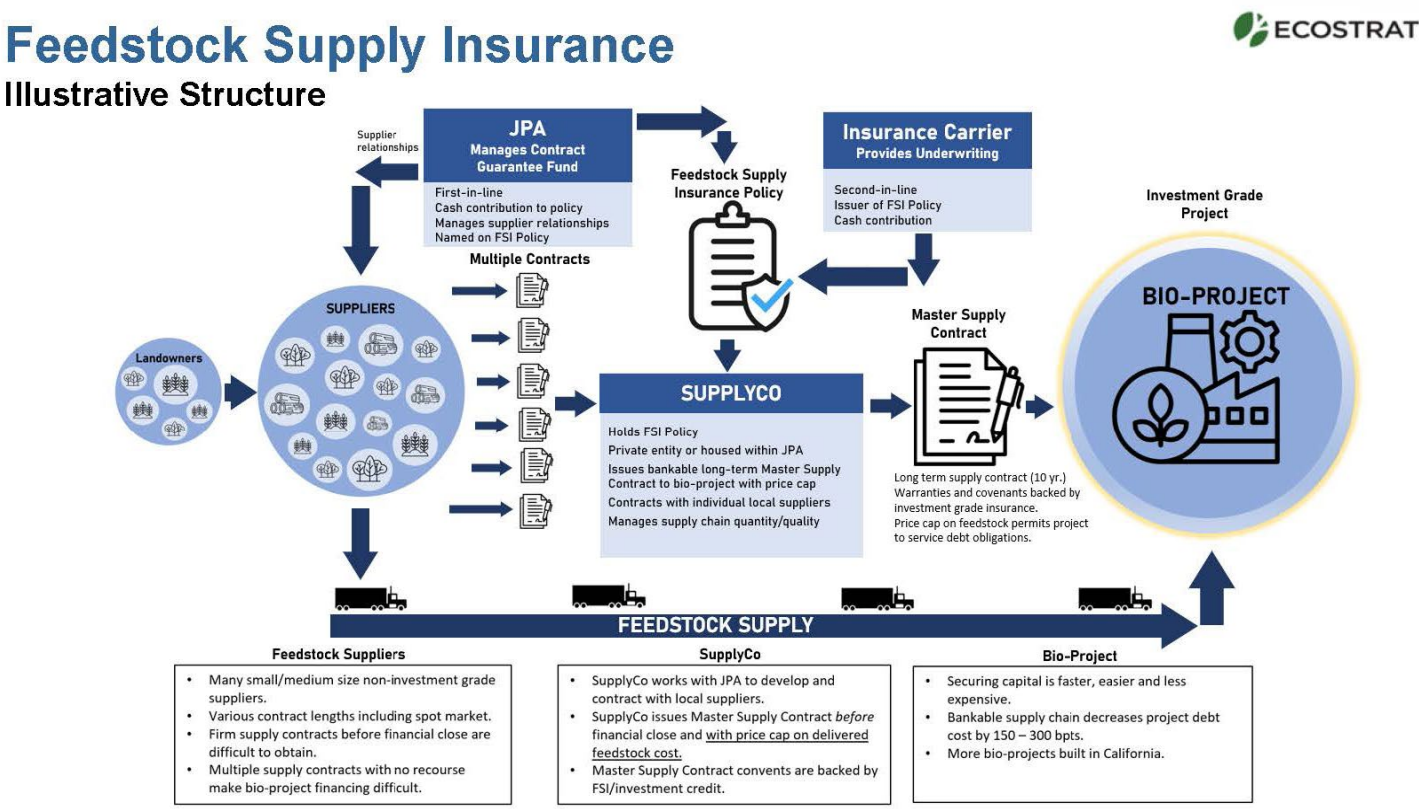
- **Biomass supply chains are subject to risk from multiple factors.**
- **Suppliers are small-medium size: almost never investment grade.**
- **Firm supply contracts before financial close are difficult to obtain.**
- **Multiple supply contracts with different terms make financing difficult.**
- **Bio-projects become difficult and costly to finance.**



Risks exist with both the supply and demand for biomass and its long-term availability. For example, supply-side risks that could affect buyers of biomass include the inconsistency in planning, transportation costs, funding, and successful implementation of forest management projects that generate biomass; uncertainty in availability of material; and unpredictable impacts of external drivers like wildfire, drought, and disease to timber and biomass supply. Demand-side risks affecting suppliers could include, for example, uncertainties around deploying new biomass technology and potential failure to launch. Reducing supply and demand risks is a key component of successfully establishing long-term biomass contracts.

In this illustrative scenario, the entity/theoretical JPA will likely be called upon to manage funds to reduce the risk of long-term biomass contracts. These funds will likely be sourced from the state and kept in a "Contract Guarantee Fund" that could also provide passive income to the JPA. The purpose of the JPA's Contract Guarantee Fund is to soften the blow for the insurance carrier's risk associated with business interruptions or Acts of God/emergencies (parametric insurance). This fund would serve as "first in line" to accept a risk of loss up to a certain amount and could be linked to a particular off-take project or could be more generally available.

In this public-private partnership framework, the JPA serves as the public manager of the Contract Guarantee Fund, and a private contracting entity ("Supply Co") enters into contracts with suppliers and one or more facilities. Supply Co would be protected by the Feedstock Supply Insurance policy and act as a biomass broker. Note that the JPA could hire its own staff to do this work, negating the need for a private "Supply Co." The intent of this approach is to de-risk long-term contracts for both buyers and sellers of biomass and increase their willingness to commit. Shifting contract risk from individual suppliers to a single, credible counterparty (Supply Co or JPA) that issues guaranteed master supply contracts could help to lower the cost of debt for emerging facilities seeking capital and make contract administration less burdensome for facilities.



Work is still needed to identify and define the roles, responsibilities, and contributions of Supply Co, the JPA, local feedstock suppliers, and other stakeholders. That said, a role the JPA could fill is to provide metrics that set the price for biomass to be offered by the JPA, assuming it manages the contracting in house, rather than using a private Supply Co. Contracts may or may not provide for a biomass facility's total need, but a price that both parties can agree on will be a pivotal part of any deal.

A potential requirement for participation in a feedstock contract backed by the Contract Guarantee Fund and Feedstock Supply Insurance, is to use a biomass pricing mechanism that will further de-risk long-term supply commitments. Due to the volatility of biomass prices, a nimble yet transparent inflation-based market design can improve biomass price stability, reliability, and risk over time for buyers and sellers. Another Pilot Project Team has researched existing methods and mechanisms for long-term pricing in commodity markets that attempt to hedge risk for long-term contracts, including forward contracts. Forward contracts allow changes to input costs, define economic uncertainties through an established methodology, and ensure price changes are well understood and agreed to before they occur.

Index-based pricing is a forward contract type that is relevant to the biomass industry. It is a transparent method for predicting and tracking price fluctuations based on key cost components that comprise the product under

contract, and frequently relies on publicly available data provided by the Bureau of Labor and Statistics' Producer Price Index.

A voluntary biomass pricing mechanism using index-based pricing could be developed and managed by the JPA to facilitate transparent and accurate biomass pricing over a 10- to 15-year period to catalyze new markets. However, a contract of this design does not need to sustain 100% of the feedstock demand requirement for a given facility. There may be more interest from existing facilities to use a contract of this type to satisfy 10 - 30% of feedstock demand, for example.

JPA Model Options

The Study Team evaluated pros and cons of four main approaches to JPAs. The concept of using a JPA to enhance forest biomass feedstock supply chains would create a more efficient and financially viable system for managing forest residues while shifting the associated risk away from the individual participating members to the entity itself.

Using a JPA would create a more efficient and financially viable system

Approach A: Watershed Authority JPA

A Watershed Authority JPA would involve counties, cities, and water agencies, drawing inspiration from the Upper Mokelumne River Watershed Authority (UMRWA). It would be funded through state grants or local contributions and would focus on feedstock aggregation from forest treatments in higher elevation watersheds and across land ownerships, leveraging the existing relationships and expertise of water agencies in forest health projects and JPAs. This approach risks duplicating existing efforts by various groups in the region and could introduce additional bureaucracy, potentially delaying responses to regional needs. Despite the potential hesitancy and capacity issues among water agencies to participate, this model promises dedicated management for planning and implementing forest health and wildfire risk reduction projects and has demonstrated success based on UMRWA as a model.

Approach B: State Agency JPA Entity or State Agency JPA Agreement (without entity creation)

A State Agency JPA Entity would involve collaboration among state conservancies, local agencies, and creating a new entity to support biomass utilization through a fee-for-service model and subgrant programs. It would aim to align with the state's interest in resilience hubs, offering a structured approach with dedicated staff. However, concerns include potential bureaucratic challenges and community buy-in for a state-run entity.

A State Agency JPA Agreement (without entity creation) could consist of amending an existing agreement between state agencies to include more members and services for biomass aggregation. This approach could expedite the process by utilizing existing frameworks and shared financial resources, albeit without dedicated staffing for the goals and maintaining the risks and liabilities for the agencies involved.

Under either structure, this approach looked at leveraging the Sierra Nevada Conservancy and California Tahoe Conservancy given the conservancies' existing relationships, leadership roles, and resource distribution in the region; however, there are concerns by TCS Region residents about the acceptance of a state-run JPA and its ability to deliver localized services due to the potential inefficiencies from bureaucratic complexities and state mandates involved. Additionally, implementing this approach necessitates persuading state agencies and their boards to adopt this role.

Approach C: Three County JPA

This approach looked at a JPA formed with the TCS Region counties and select city or special district partners. This approach would focus on region-specific solutions to biomass aggregation and forest restoration and would promote public-private partnerships with a focus on transparency and functionality. This approach was identified as the most suitable for offering municipal green waste services and could include support for insurance tools, as well. Anticipated challenges include securing participation among entities, coordinating existing programs across counties, and addressing potential skepticism from local residents.

Approach D: Wildfire Prevention Authority JPA

This JPA would comprise fire districts and potentially CAL FIRE to focus on fuel reduction and home hardening in high-risk foothill areas, as well as biomass utilization, to be funded through taxes or grants. Challenges would include the need for sales or parcel tax approval by voters, which has proved challenging in prior local efforts. Implementing this approach in the TCS Region would require careful tax strategy, voter communication, and strong involvement from local fire agencies.

Prospective Funding

In its report, *Funding Options and Strategies for New Joint Powers Authority* (2024), EPS evaluated potential funding sources of a JPA at the local, State, and federal levels; identified initial functions of a new entity; prepared a preliminary start-up budget; then prepared a formation and funding framework. Formation of the new JPA was envisioned in phases, initially forming as a JPA Agreement between identified members and, upon realizing early successes, expanding operations and forming as a separate JPA Entity. The timing of JPA Entity formation could accelerate depending on the desires of the members, funding availability, or a more immediate need for a separate entity to fund biomass aggregation and utilization at scale.

Similar to existing JPAs assessed as part of the study, EPS found that initially, the JPA Agreement would be primarily funded through member contributions, and the lead agency member of the JPA Agreement would pursue supplemental grant funding. Once a JPA Entity has been established, proposed revenue sources include: 1) grant revenue obtained from State funding; 2) annual member agency contributions; and 3) charges for services (e.g., assisting with the management of long-term contracts). The preliminary funding requirements were estimated to total approximately $443,000 in the first phase, $1.3 million in the second phase, and $12.8 million in the third phase. The aggregate expenditure was estimated at $14.5 million.

Proposed revenue sources include grant revenue, member agency contributions, and charges for services.

4.0 Where Do We Go from Here?

Many local governments within the region are working on local vegetation and ecological forest management, with a focus on community wildfire protection and forest health. These governments have varying degrees of forest management activity, biomass disposal needs, financial and staffing capacities, regulatory constraints, political support, and social acceptance. In the next phase of work, the Study Team will be outreaching to these governments and their elected officials, and to key state and federal resource agencies, to meaningfully explore whether it is of shared interest to work jointly toward biomass feedstock supply chain solutions and, if so, to understand potential participation in an aggregation JPA. We will be seeking agreement on the JPA's potential core functions and additional services, the processes and procedures necessary to implement its mission, and its geographic focus. Further financial analysis will be completed to refine the JPA start-up budget, evaluate the potential revenue that can be generated through fees or assessments, and hone the funding strategy.

The public-private partnership biomass contracting framework will be further evaluated to define partner roles and responsibilities and legal vehicles through which Feedstock Supply Insurance can be offered. Insurance specifics will be developed including the term length, calculation for insured loss values, loss triggers and insured events, and a sample feedstock supply contract that reflects the proposed framework, terms and conditions, performance obligations and warranties to the carrier will be prepared. One biomass utilization facility in the TCS Region will be selected as an insurance case study to assess the viability and cost ranges of Feedstock Supply Insurance, to develop an insurance instrument customized for feedstock and investment capital requirements of the specific project, and to obtain feedback from underwriters.

The Study Team will work with the anticipated hub members and their legal counsel and risk management staff to facilitate discussions leading to the draft foundational documents, likely to include a Joint Powers Agreement and Cost Sharing Agreement, that describe the services to be provided, provisions for the mutual exchange of member services without payment or consideration, and additional supporting agreements that reflect administration of the entity's services.

As a complement to this work, the Study Team will leverage the entity's access to woody biomass and other infrastructure-related supply chain advantages through the generation of a Bioeconomy Development Opportunity Zone Rating, which is an internationally recognized technical assessment of development potential for biofuel, renewable chemical or biogas product manufacturing. Ratings will be developed for one site in western Placer County and a second in Nevada County which can help to attract developers and

The generation of a Bioeconomy Development Opportunity Zone Rating will help attract developers and investments and accelerate biobased economic development throughout the region.

investments and accelerate biobased economic development throughout the region. This work will be coordinated with El Dorado County, who is independently pursuing a Bioeconomy Development Opportunity Zone Rating for a site in Camino.

Lastly, exciting work is underway to explore the entity potentially entering into a Good Neighbor Authority (GNA) agreement with the USFS. The GNA allows states, counties, and tribes to enter into a cooperative agreement with the USFS or the Bureau of Land Management to perform forest, rangeland, and watershed restoration activities on federal lands. Under GNA, states are authorized to retain GNA timber sale revenues. California has established the Good Neighbor Authority Fund, which is administered by CAL FIRE, for this purpose. Moneys in the fund can be used by state agencies to reinvest in forest health and fuels reduction projects on USFS or BLM lands for things like planning, implementation, maintenance and project administration. This mechanism has been used in other western states as a way for federal partners to fund and improve the pace and scale of work performed on federal lands and to improve coordination across land jurisdictions. Presently, counties and tribes are not authorized to retain GNA timber sale revenues which limits their ability to reinvest funds on federal lands, however, they could be granted this authority future legislation such as Fix our Forest or the proposed 2025 Farm Bill.

Work is underway to explore the entity potentially entering into a Good Neighbor Authority agreement with the USFS

Timeline 2024 - 2027