Local Public Entity Solutions for the Forest Biomass Markets in the South Central Sierra

Prepared for:
Sierra Business Council and the Mariposa County Resource Conservation District

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The report is intended to support the objectives of the Central Sierra Woody Feedstock Aggregation Pilot Project and relied on constant communication and direction from the region's team members. Additional support on Joint Power Authorities and identifying contract innovation is listed below.

The Central Sierra OPR Pilot Project Team

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Overview and Purpose

Despite an excessive number of dead trees, brush, and small-diameter wood that needs to be removed from California's forests, existing and proposed wood waste utilization projects face a close-to-insurmountable challenge when it comes to demonstrating sufficient and long-term access to woody feedstock sources. There are several reasons why a feedstock agreement is difficult to obtain: (1) volatile markets, sometimes due to fire salvage, (2) declining USDA Forest Service budgets and staffing capacity, (3) the low value of biomass as compared to its high transportation costs, (4) the administrative challenges of contract management and (5) lack of skilled workforce and housing for those workers. All these factors lead to the vexing reality that while feedstock agreements are a necessary component to securing financing for new wood product businesses, they are exceedingly difficult to obtain. Without a minimum contract term of ten years, many lenders and investors deem wood products and bioenergy projects as too risky (CLERE, 2020).

In response to this challenge, a new concept was proposed. More recently referred to as the California Forest Residual Aggregation for Market Enhancement (CAL FRAME) model, the concept proposes to develop an efficient biomass removal and utilization process using local government, or other institutional arrangements, for forest health projects using a new and transparent intergovernmental framework. In 2021, the Governor's Office of Planning and Research (OPR) was provided $3 million from the Wildfire and Forest Resilience Early Action Package to address economic development opportunities; $2.5 million was allocated to support new long-term wood feedstock pilot projects (CAL FRAME), which OPR used to fund 5 projects throughout the State. These pilots will develop plans to improve feedstock supply chain logistics within each target region via an institutional arrangement that bears the structure, authority, and resources to aggregate and initiate long-term feedstock contracts. Each project will explore and assess market opportunities to improve biomass feedstock availability in their region.

In the South Central region of California one such grant was awarded to the Mariposa Resource Conservation District, called the Central Sierra Woody Feedstock Aggregation Pilot Project ("Central Sierra OPR pilot project" or "Project Area")—including Alpine, Amador, Mariposa, Tuolumne and Calaveras Counties—has a timber market with mixed forestland ownerships that manage the surrounding forests for varying objectives. In the coming decades, regional strategies to develop community and ecological resilience to reduce high-intensity wildfires will need to expand fuel reduction and forest restoration treatments, which will produce large quantities of commonly unmerchantable forest-based biomass and sawmill residue.

In collaboration with its subcontractors will provide a Central Sierra Supply Organizational Study that will include things like a feedstock availability analysis, consideration of a new local government structure and the development of a financing model to support operations of that regional entity (i.e., Joint Powers Authority or other similar entity) that will act as a broker for woody feedstock. The report will identify and verify key components to organizational success, such as efficacy of High-Resolution Imagery as a data source, ability to conduct community-wide vegetation management. The report will also consider how such an entity could negotiate or offer long-term feedstock contracts, and how it could secure federal funding to complement state and local investments; as well as develop strategies to gain community support, encourage private landowner participation and develop small landowner fuel reduction projects and aggregation of the associated biomass. This information will synthesize research findings and recommendations into a report, which will be used to inform the development of a Legal Structure Implementation Plan and Entity Action Plan.

This Report establishes the chosen potential governance structure and provides information for the development of the financial analysis that will be a different part of the overall report package. The Report begins with the clear understanding that unmerchantable biomass is either pile burned or left in woods to decay in this region due to a variety of reasons including complicated market dynamics and the high costs of removal. Adding new infrastructure and/or expanding existing infrastructure to handle expected increases in residue from fuel reduction treatments will be necessary. A “biomass supply entity” could operate as a centralized, public process to procure and administer the flow of biomass from supplier to buyer. Such an entity could be a Joint Powers Agency (JPA), which could be made up of several special districts or local governments in the region that choose to tackle this problem. This could also be a Community Services District or Climate Resilience District (CRD) but has been identified as a less preferable option than a JPA. This is primarily because of the limitations in the region's capacity, which would require a substantial commitment from local individuals to support and fund special district development. Furthermore, the use of a CRD might be too restrictive for the envisioned activities related to managing forest biomass and bringing communities together to recognize the importance of contributing to the entity's funding through assessments.

This Report also discusses how a new public price mechanism for forest biomass waste could support new longer term contracting pathways for feedstock availability for offtake users. This report builds on some findings from the feedstock supply availability and cost analysis conducted by TSS Consultants about feedstock sourcing area (FSA). An aggregation entity could negotiate between buyers and sellers of feedstock or enter into long-term contracts with biomass suppliers or users itself, in order to meet lender and investor requirements and to complete business finance and development. An entity handling these contract negotiations would seek partners with similar risk tolerance for long-term agreements. An agreed-upon formula rate would be used to determine prices through forward contracts, with fixed and variable inputs that can be updated based on real-time market data. A "collar" would be placed

on the formula rate to limit price variability within an acceptable range, preventing off-takers from taking advantage of subsidies. Combining the formula rate and collar concepts into a Formula Rate Contract with Collar (FRCWC) would define and reduce financial risk for both parties over the contract term. An indemnification term associated with an insurance product would protect against feedstock shortage or the disappearance of the biomass offtake business. By satisfying investor requirements, the aggregation entity has the potential to overcome one of the largest barriers restricting infrastructure development from capital markets (CLERE, 2020).

In summary, this Report is meant to provide the basis for the next work products of the Pilot, including laying a foundation for an entity action plan, and for the financial analysis for how the budget of the new recommended local government entity will be sustainable. This Report explains why the three member JPA Pilot is recommended, and the potential activities of the JPA, including the building blocks for developing a price mechanism for forest biomass waste products for utilization. Future work will describe more specifically how to bring this JPA to fruition in the South-Central Sierra region.

SECTION ONE: JOINT POWERS AUTHORITIES

California has a long history of exercising joint powers with more than 1,800 joint powers authorities (JPA), according to a guidebook on JPAs written by the California Senate in 2007 (Cypher et al., 2007). California Government Code Section 6500 *et seq.* allows special districts, cities, counties, as well as state or federal agencies, to agree to create another separate legal entity, or jointly exercise overlapping powers common to each participating agency. Member agencies create JPAs to deliver more cost-effective services, eliminate duplicative efforts and consolidate services into a single entity. Commonly, joint powers are exercised to work on projects like groundwater management, transportation planning, road construction, or habitat restoration to name a few. They can also be created to provide a service or manage energy procurement. An agency is not required to have the acronym "JPA" in its organization's name. For example, many agencies which unify planning jurisdictions will operate under the name "Council of Governments" (COG). JPAs play an extensive role in the local and regional management of California today.

The formation of a JPA is unique in public governance because it is not created by signatures on petitions or approved by a vote. Rather, a JPA is a voluntary collaboration of multiple public agencies to define mutually held powers to handle a common or complex issue. JPAs operate as a public agency, and as such are subject to the Ralph M. Brown Act, Public Records Act, Political Reform Act, and other public interest laws that ensure political transparency.

It is very important to note that the powers defined within a JPA agreement must be already held by the member agencies. A new agency cannot be established to provide services or take responsibility for activities that are outside of its members' legislative purview. For example, waste treatment agencies cannot form a JPA to provide ambulance services, or a transportation agency cannot form a JPA for firefighting.

Understanding the basic process for establishing the use of joint powers is an important basis for determining whether this tool is appropriate to manage finance, oversee construction, provide a service, or deliver another local government need. The first and most important tenet of JPA law is that the enabling agreement between the entities determines the scope of authority. First, the entities must agree on what they wish to accomplish, determine the breadth of their overlapping authorities, and then decide which member agency's administrative rules will govern the implementation of those goals. After reviewing these factors, they must decide whether to create a separate legal entity ("JPA") to handle the effort, or simply share responsibilities within a Joint Powers Agreement by and between the partner agencies.

A. Joint Powers Agreements that Do Not Create a Separate Entity

The most common reason existing government entities choose to enter into a Joint Powers Agreement is so that they can act within a broader area with their neighbors to solve common problems, beyond their individual jurisdiction. Being able to provide services or otherwise act within other geographic areas allows jurisdictions to consolidate and share resources. If entities choose this path and use joint powers authorities to act in one another's areas (but not to create a separate entity through the Agreement) the process is very simple to set up. The Agreement is much like any other contract between two or more parties, where each is responsible for whatever it has signed up to do, as described in the contract, and the agencies remain responsible for all their actions and obligations. There is no separate entity, and therefore the other noticing requirements of the statute do not apply, and the agencies are limited to whatever finance and bonding mechanisms they have within their own enabling powers (CA Gov. Code, § 6542).

An interesting example of such an agreement was done in 2015 when two state Conservancies—the Coastal Conservancy and the Sierra Nevada Conservancy—entered into such an agreement (Coastal Conservancy, 2015). In this case, the Coastal Conservancy wanted technical assistance from its sister agency which included handling grant funds, and so the need prompted the use of the JPA agreement mechanism. The ensuing JPA agreement allowed for the sharing of resources for implementation within a region that covers multiple jurisdictions. While an Agreement without the creation of a separate entity is easy to set up, the use of them is not much different than a standard contract, and so many local governments choose instead to create a new entity to utilize the many advantages of the JPA law.

B. Joint Powers Agencies

The more common use of the Law is for a group of entities to come together to establish a legally independent organization that will serve the common interests of those groups, as defined by those member agencies. This new organization will typically have representatives from the member agencies on its governing board. As a legally separate entity, it can enter into contracts, sue or be sued, and is required to conduct annual audits. They can also hire staff, obtain financing to build public facilities, and manage property. These entities can also take advantage of the one independent power given under the JPA law: the power to issue bonds, which is a complex process described by Article II of the Statute. A basic understanding of JPA functions is needed to understand how they could potentially solve the issues related to forest biomass feedstock supply chains.

C. The Finances of JPA Management

The first type of financial burden to discuss is the administrative cost of "keeping the lights on." This includes staff (including benefits), insurance, and other business hard costs like equipment, any brick-and-mortar related expenses, software or online services, as well as the general fees collected from the JPA by the state and county. These administrative costs should be calculated based on the level of public services and the complexity in nature of those services, as well as what the members of the JPA are willing to offer from their internal resources. These costs can be relatively easily calculated and then built into the agreement between the parties that is set up when the JPA is organized. The responsibility for unforeseen costs should also be provided for within foundational documents. In general, administrative costs for the management of a JPA should be shared by member agencies committed to the purpose of the JPA, but unique arrangements can always be made.

The costs for the administration of a JPA are generally a small proportion of the overall budget if there is a large capital project, planning effort, or joint property maintenance scheme at the center of the entity's purpose. The primary tools for covering both the administrative costs and project costs are described below.

i. Fees and Assessments

Local governments (and JPAs who are comprised of such entities) can charge fees for services that they provide. For example, a JPA can provide a fee for service to pay for contract negotiation and ongoing implementation, to develop a forest management planning document, or to provide business or technical support. If a JPA administered fuel reduction services, landowners could pay for those services, or if a JPA owns personal or real property, it could lease those to the public. Service fees will be an integral part of any governance structure implemented within the region.

A JPA could also install special assessments by following certain procedures. An assessment is a tool used for a one-time cost to help offset a specific community improvement or need, while a fee is generally charged for the use of a public facility or to pay for a public service. A fee can be recurring and is used to cover costs associated with the use of a public pool, for example, or a fee that is charged to use an Electric Vehicle (EV) lane. Sometimes fees and assessments are combined. Local government must ensure that these fees and assessments are not imposed as a tax, which is a critical part of the implementation of any such system *("Overview of Proposition 218...").*

ii. Bonds

If a JPA would like to finance infrastructure improvements, they have independent authority to arrange capital financing by selling bonds. As used in this context, "bonds" means

revenue bonds, notes, or other evidence of indebtedness (CA Gov. Code, § 6540). General Obligation Bonds that are paid by taxes of local governments are not covered under the JPA law. Revenue bond issuance is tied to a revenue stream for repayment of indebtedness, such as fees, assessment, or the expected income from the new project being financed. Local governments often need voter approval when issuing any bonds, but JPAs can issue revenue bonds without holding an election, as long as member agencies of a JPA adopt a local ordinance that permits the JPA to issue a bond. For more about JPA bonds, The California Debt Financing Guide is an excellent resource (CDIAC, 2019).

Another type of relevant bond that is separate from JPA authority that is sometimes invoked by local entities that are part of a JPA is the Mello Roos Act of 1983. This law allows for the creation of Community Facilities Districts (CFD) that can finance community improvements. To establish a CFD, a two-thirds affirmative vote of property owners is required if there are no more than 12 registered voters living within the proposed district. However, if more than 12 registered voters are living in the district, a two-thirds vote of registered voters is required, which gives the CFD the ability to sell bonds to raise money to fund public improvements such as roads, schools, parks, police services, and other amenities desired by the community. It also provides the CFD with taxing authority on district residents when the tax is used to pay off the bond principal, interest, and administrative fees. This tool is generally used in association with land development in more populated areas and may not be useful in rural areas.

It is not clear whether a JPA that handles biomass waste would want to invest in the development of infrastructure, but the tools to do so are available through this financing tool.

iii. Tax Increment Financing

Tax Increment Financing (TIF) strategies are often associated with JPAs issuing bonds due to the unique advantage it offers, and again, is relevant if a JPA would like to develop infrastructure. TIFs pay for infrastructure improvement projects by harvesting the future value of the property taxes associated with the improvement project. In other words, a JPA would be collecting money from constituents for 10 years in the future to pay for projects today. Before a piece of 2012 legislation that dissolved Redevelopment Agencies, Project Financing Agreements (PFAs) were common with community redevelopment projects for infrastructure improvements using TIFs. Today, TIFs were re-introduced through two new types of PFAs that were developed to offset redevelopment costs for local government agencies (CALED, 2019). Enhanced Infrastructure Financing Districts (EIFD) and Community Revitalization and Investment Authorities (CRIA) are both examples of other government entity structures working to finance certain projects using innovative financing. The California Association on Local Economic Development released a booklet titled “FAQ on California’s New Tax Increment Financing Tools” which delves into this subject, thoroughly (CALED, 2019).

iv. Community Measures for Parcel Tax or Sales Tax

In some circumstances, communities come together and decide that an issue is important enough to self-impose a parcel tax. Such an effort requires dedicated community outreach and resources to work with the population about the issue, including things like listening sessions and working groups. The valuation of the measure could also impact the outcome, for example, a 1-cent tax might be more successful than a 10-cent tax in a rural area. Documents about successful community parcel tax efforts are available and could be used as examples in the Region (MWPA, 2023). Another tax option includes submitting to the voters an imposition of a general sales tax increase, which may only be submitted for voter approval at an election for city council or board of supervisors.

v. Endowments and Grants

The most common way that work is done to handle biomass today is through state or federal grants. As of 2022 in California over $98.4 million dollars has been distributed through the Cal Fire Forest Health Grants and $16 million through the forestry workforce development grants, and over $93 million through USFS grants related to forest health through their WIG and Community Wood Development programs, but only until very recently did any of those programs consider biomass removal from those projects or build in requirements for biomass utilization. Generally, the main approach for dealing with biomass removal and utilization has been through temporary transportation subsidies and trying to increase demand for biomass through power purchase agreement requirements through electricity procurement programs at the California Public Utilities Commission. How the utilization of biomass can occur without government financial support remains unclear.

Another possible solution is looking to private endowments that could support the ongoing efforts of biomass removal and utilization. An example of a locally engaged group is Shasta County's McConnell Foundation which is based in Redding, CA. The McConnell Foundation, founded in 1988, supports nonprofits, educational institutions, and government agencies in the region where their contributions span arts, education, recreation, health, social services, and wildfire mitigation. They are currently funding fuel reduction projects in Shasta, Trinity, and Siskiyou counties to protect structures, evacuation routes, and nearby wildlands from urban-initiated fires. Identifying foundations or nonprofit entities that have an interest in the South Central region could be a positive solution for the funding needs of the new JPA.

D. Conclusion

This paper describes how flexible the JPA law allows local governments to be when it comes to providing public services. As mentioned earlier, there are thousands of JPAs in the state, but currently, there does not appear to be an entity in the entire study area that could be used to incorporate the ideas of forest biomass removal, management, and disposal. As such, the exploration of new entities is warranted, as well as considering other institutional

arrangements. Funding these entities and their activities is an important part of any review and shall be covered in the next section.

SECTION TWO: COULD A LOCAL GOVERNMENT ENTITY IMPROVE FOREST BIOMASS FEEDSTOCK SUPPLY CHAINS?

The need to expand infrastructure for biomass processing is recommended by recent Statewide strategies to reach carbon neutrality by 2045. In December of 2022, the California Air Resources Board (CARB) approved its latest AB 32 Scoping Plan, which will significantly guide greenhouse gas (GHG) reduction strategies throughout the State. The Scoping Plan calls for treating 2 – 2.5 million acres of forests, shrublands/chaparral, and grasslands annually with regionally specific management strategies, including prescribed fires, thinning, harvesting, and other management actions. The 2022 Scoping Plan anticipates that these activities will restore health and resilience to overstocked forests, prevent carbon losses from severe wildfires, reduce health costs related to wildfire emissions, and improve water quantity and quality. This will likely drive further increases in forest management activities and biomass waste that will need disposal. The report specifically highlights the need to expand infrastructure for biomass removal from these types of "climate-smart management" (Scoping Plan, page 252).

The goal of a regional entity is to cover costs and enable the expansion of biomass outlets to support additional acres treated in areas with high wildfire risk. This goal is complicated by a number of factors. Ultimately, the option for JPAs or Special Districts to effectively improve forest supply chains comes down to properly placed incentives, ensuring long-term risk hedging, and strong participation from various actors along the supply chain. Above all, this solution has the advantage of government partnerships, like local government entities, not needing to generate profit, having voluntary participation, and not replacing existing businesses. Below we look at the nuance of each of these aspects.

A. Background

Barriers to biomass utilization have been well documented throughout the West over the last two decades (Becker, 2010; Sundstrom, 2013; Nicholls, 2018; Dysthe, 2021; Sanchez, 2022). The three primary barriers that have dominated California's forest supply chain are (1) high costs of biomass removal and low value of end-use products, and (2) lack of guaranteed feedstock supply to support the development of new wood utilization businesses, and (3) lack of workforce in rural areas.

Within the project area is a large region that includes just over 3.9 million acres, of which the most significant vegetation cover type is conifer dominated forestland at 1,558,803 acres (making up about 40% of the area). (see TSS Biomass Feedstock Supply Availability and Cost Analysis for the Central Sierra Region of California, April 2023). Land ownership within the FSA includes forestland managed by various public agencies (e.g., USDA Forest Service, Bureau of Land Management, National Park Service) as well as private landowners (industrial and non-

industrial). The Project Area contains the entirety of the Stanislaus National Forest and portions of three other National Forests: Eldorado, Sierra, and Humboldt-Toiyabe. Interviews with USFS forest managers on these forests confirm significant interest in and planning for forest restoration and fuels thinning projects over the next five years.

Private forest ownership, made up of small non-industrial ownership (typically family owned) and industrial (e.g., Sierra Pacific Industries) make up most of the private forestland ownership within the FSA. Non-industrial forest owners are typically families managing various resources, including the production of sawlogs as a long-term revenue source. Industrial forest owners are focused on active forestland management, including sawtimber output and fuels reduction activities (to protect timber assets). There are four biomass power facilities that have historically sourced biomass feedstock generated within the project area, two of which are within the project area. Adding new infrastructure and/or expanding existing infrastructure to handle expected increases of residue from fuel reduction treatments will be desirable, including but not limited to those listed in the TSS Report, especially as the state's goals aim to at least double the scale of the forest sector to achieve their carbon neutrality goals. However, prospective wood product businesses face high barriers to market entry in California and often face a nearly insurmountable challenge in securing long-term feedstock supply contracts. Without a guaranteed supply contract, facilities are not eligible for loans, debt servicing, or other financing strategies (CLERE, 2021).

The cost of transporting biomass feedstocks (chips and/or small logs) represents the single most significant expense when procuring biomass. Variables such as diesel fuel cost, workers compensation expense, and acquiring and sustaining a workforce (locating qualified drivers) are all factors that significantly impact the cost to transport bulk commodities. Based on TSS' experience who has provided research under this Pilot Project, forest-sourced biomass fiber requires approximately 2.6 gallons of diesel to collect, process, and transport a BDT of chipped biomass fiber with an average round trip haul distance of 100 miles. Insights gathered from discussions with commercial transport companies reveal that the present cost of transporting woody biomass feedstocks falls within the range of $130 to $150 per hour. In recent months, diesel fuel price escalation has had a major impact on biomass fuel prices. Considering the full spectrum of activities involved, including collection, processing, loading, and transport, the total cost for these processes can be calculated. Given an 80-mile haul at a rate of $140 per hour for transport and a cost of $70 per BDT for collection, processing, and loading, the overall cost sums up to $115 per BDT. `

The next section will focus on how a public entity could manage price volatility in biomass markets to promote the use of long-term contracts and will discuss how we can learn from sophisticated energy market contract mechanisms when procuring forest biomass. By using a newly developed model to develop a price control mechanism, there may be a way to

address both the price and long-term supply issues in a single contract template and allow both loggers and end-user wood utilization companies to hedge their risks over the long term. Other key factors identified for any government entity's success includes providing insurance tools, third party environmental review, and other related services for those who are a part of this market.

B. Contract Template Innovation: A Publicly Managed Price Mechanism

i. The Price Problem

A key driver when deciding to conduct fuel reduction projects continues to be whether merchantable timber will be removed and whether there is a favorable timber price at the time of harvest. Consequently, the economic feasibility of removing biomass from operations is tied to timber price. As such, management actions that target fuel reduction often try to incorporate high-value sawlogs into a harvest to generate sufficient revenue to offset (at least partially), the costs of biomass removal.

Revenue generated only from biomass removal (i.e. fuel reduction projects) does not typically cover costs, and therefore, a variety of policy incentives have been created over the years to address this issue (The Beck Group, 2019, Swezy, 2020). These policies and related funding have mostly targeted upstream forest treatment implementation (aka. cutting the tree) or tail-end wood utilization (aka. bioenergy or non-construction-based wood products). Due to effect of the subsidies acting on either side of the supply chain, a natural tension has developed throughout the forest supply chain. Should loggers or landowners pay for the costs of biomass removal when they receive CAL FIRE, NRCS or FEMA-based subsidies to perform treatments? Or should it be end-user facilities that receive an incentivized Power Purchase Agreement (PPA) for utilizing high-hazard feedstock? As most entities in this supply chain are profit-maximizing enterprises, identifying a way to cooperate and share the cost burden will be essential moving forward.

a. <u>The Cost of Biomass Removal</u>

The cost of biomass removal and transport to market ($/BDT), and the price for biomass purchased as feedstock by an end-user ($/BDT) are the two components at play in this market. A well-understood "financial gap" occurs when the price for biomass does not cover the costs of operations and has been the subject of many discussions over the last several years. External markets, like diesel fuel pricing and workforce, exacerbate the difficult economics to fuel reduction treatments and biomass removal as well (e.g., the commodity price of lumber). Eventually, factors on both the demand-side (off-taker) and supply side (supplier) impact forest landowners' willingness, options, and ability to manage their land. Due to price instability in

markets, landowners are hesitant to manage their lands. Without the landowner's confidence to enter into fuel reduction projects, long-term feedstock contracts are not possible.

In 2021, Camille Swezy developed a harvesting cost model (HCM) for forest health treatments being conducted on National Forest System (NFS) lands located in Plumas County. For one harvest, the cost of biomass removal and hauling from an integrated harvest to a nearby proposed mixed wood campus was estimated to be $67/BDT when including a 30% overhead charge to account for administration, insurance, and profits. CLERE Inc performed a sensitivity analysis on the model developed by Swezy (2021) to illustrate how prices may be impacted by a variety of factors. When only examining a 15% deviation from baseline, some of the largest levers attributed to biomass costs are the following: (1) operator productivity, (2) contractor haul rates, (3) diesel fuel prices, and (4) transportation distances. These four aspects of the HCM are highly dependent on each other, and as such are hard to separate as salient variables, nevertheless they are central to determining reasonable prices for biomass, or at least, a reasonable starting place for the negotiation of a long-term feedstock supply agreement. They are also consistent with the TSS report mentioned above as key points in determining delivered prices. How often the price is updated, and at what sensitivity points might a change be triggered are details that should be further explored when considering the build-out of this concept, which are explored below.

b. Other Considerations that Impact Price

Insurance: Overhead fees are a crucial component in logging operations, encompassing expenses related to administration, insurance, and profit margins. In recent years, the rates for general liability and business insurance have gained significant importance. Victor Insurance Services, serving as the official contract broker for workers' compensation and liability insurance for the California Logging Association (CLA), imposes stringent prerequisites on logging companies. To qualify for underwriting, companies must demonstrate a track record of three years of operations or equivalent experience and provide four years of loss run data (Victor Insurance, accessed: January 2023). These stringent requirements and the substantial costs associated with insurance can pose considerable challenges for starting new logging ventures. Currently, the industry standard dictates an overhead surcharge of 30% on top of base costs (Swezy, 2021). It is worth noting that if insurance expenses rise, there is a potential for these increased costs to be transferred to the final biomass price, thereby exacerbating the financial disparity between buyers and sellers. Nonetheless, it is acknowledged that these considerations pose analytical challenges and were thus excluded from the sensitivity analysis discussed earlier. The team is committed to exploring ways to incorporate these factors into a pricing mechanism once additional information becomes available to enhance the modeling of these expenses.

Subsidies: Policy tools like grant subsidies or lucrative PPAs are widely used to incentivize fuel reduction projects. While facilities must battle with economic performance due to feedstock cost variability, PPAs have been used to provide guaranteed revenues to facilities that procure high-hazard fuel as defined by CAL FIRE. However, existing facilities have begun to lower their payments for feedstock if they are aware that a supplier receives a subsidy to remove biomass. While it makes sense why facilities would not want to pay market rate for feedstock that is already being subsidized for removal, this essentially nullifies the purpose of the subsidy to the supplier (to remove additional biomass that would have otherwise not been removed). Consequently, any feedstock contract that extends beyond 10 years will need to withstand subsidy variation. The following section will provide some tools which have been used in the energy sector to overcome these issues.

Harvest Activities Impact on Market Price: An issue that could complicate things further is the potential for an increase in treated acres (driven by state and federal goals) to lower lumber prices. While there is no publicly available research yet on how these goals may have this potential consequence, it is well understood that large disturbance-based events (i.e. post-fire salvage) or heavy management of large industrial forests can drastically alter lumber prices. Consequently, this may discourage landowners from conducting an integrated sawlog with biomass harvest to realize a better value for their timber at a later date. However, it may also be the case that California's sawmill capacity is more of a determining factor of lumber prices rather than disturbance-based events. This will need to be acknowledged and incorporated into market solutions.

Prevailing wages are beginning to serve as a significant cost variable in projects subsidized with state or federal funds. These mandated wage rates, often higher than standard market wages in rural areas, can significantly impact project budgets. While they ensure fair compensation and quality workmanship, they may increase labor costs for contractors and governments to the point where projects become untenable, preventing work from happening at all. Accurate estimation and adherence to prevailing wage requirements are critical to project planning and cost management, as failure to comply can lead to legal consequences and potential funding repercussions. Consequently, prevailing wages play a pivotal role in the financial aspects of projects receiving government subsidies, necessitating careful consideration and budget allocation.

c. Modeling the Purchase Price of Biomass

When we apply the costs to remove and haul biomass from Swezy's model ($67/BDT) to the current biomass price range offered at a facility ($45 - 55/BDT) we see there is a gap of

$10+/BDT. This has been the source of many policy interventions over the last decade including American Forest Foundation's Forest Biomass Transportation Incentive (FBTI), CALFIRE's new transportation subsidy and the USFS Biomass Transport Incentive Pilot (BTIP). The problem continues today and is exacerbated by state goals to treat 1 million acres per year starting in 2025. A new decision support system from University of California Davis (UC Davis) researchers focuses on the economic viability of biomass facility infrastructure based on feedstock cost sensitivities that could be slightly modified to provide a basis for an agreed upon regional price.In 2020, UC Davis researchers began developing an integrated economic and environmental decision support system to allow users to quickly evaluate the economic feasibility and environmental performance potential when siting a biomass utilization facility in California. It is currently under beta-testing and validation and is referred to as the Forest Resources and Renewable Energy Decision Support System (FRREDSS). In its many features, FRREDSS offers the ability to calculate a 20-year cash flow model with sensitivity to feedstock costs, in addition to a comprehensive life cycle assessment. It relies on the source code of the University of Colorado's Fuel Reduction Cost Simulator (FRCS) to calculate the costs of biomass removal (Fight, et al., 2006). FRREDSS also uses a transportation model to identify hauling costs. A user interface has been developed for users to select a location on a map and input a potential facility's coordinates into the model.

The FRREDSS model can be particularly useful in understanding how much biomass material would be available to a facility under certain price conditions. For example, it has the ability for users to customize aspects like hauling wage, diesel prices, and harvest systems just to name a few. The model then calculates how much feedstock procurement costs would be based on forest biomass data from a modeling framework that integrates Forest Inventory and Analysis (FIA) data from the US Forest Service (USFS), the Forest Vegetation Simulator (FVS), and FastEmap (Field and SatelliTe for Ecosystem MAPping) in the surrounding area. Over time, feedstock costs increase due to the facility's interest to optimize the least-cost feedstock first.

This is important because both facilities and loggers are interested in the same goal: consistency. Logging operators want a reliable place to send the material to but are faced with the risk of facilities unwillingness or inability to offer delivered feedstock pricing to address the full cost of operations. Meanwhile, facilities want a reliable stream of feedstock but may face supply insecurity for some percentage of their total feedstock requirements due to the price they need to pay for it. Both entities would benefit from hedging their risk. The FRREDSS provides a space to look at what an average price over 10 years may look like for both entities to trade biomass. This has been done in several ways in the energy sector for decades and offers the opportunity to bring price stability between these two entities.

ii. The Recommended Solution to the Price Problem: Formula Rate Contract with Collar (FRCWC)

The wholesale energy market is built on highly sophisticated contracting mechanisms to hedge risk over the long term. The forest-based feedstock procurement market for biomass utilization is plagued with similar long-term risk issues. Learning from existing energy-based market mechanisms may help with the goal of price stability along the biomass supply chain. Capital markets generally stipulate that a minimum of 60% to 70% of the annual biomass feedstock supply should be secured under long-term contracts that align with the debt service period. This requirement helps mitigate financial risks associated with biomass projects and ensures a stable revenue stream for debt repayment. By securing a significant portion of the feedstock supply through long-term agreements, biomass projects can enhance their attractiveness to investors and lenders, fostering financial stability and sustainability in the capital markets.

The central concept to helping both sides of a feedstock agreement reach a level of comfort in signing a longer-term contract is price stability. As we discussed above, supply can be inconsistent. Finding a path forward to allow for known contract pricing for biomass is critical. To do this, a central buyer market design could be used to control the price offered on 60-90% of the biomass produced over the life of a 10-year contract. This could leave something like 10-40% of the feedstock price to be uncontrolled (ie. purchased on the spot market) to allow for some opportunities to make (or lose) money on feedstock procurement. These percentages would be based on how much the off taker deems as "hard to procure" or "high-risk." These numbers would be communicated during contract negotiations. Similarly, a logger may be interested in having a guaranteed buyer for 60-90% of the biomass it produces. It would have the option to enter into an agreement with the off-taker, and then have market prices dictate where it would be able to haul the remaining 10-40% of its biomass.

The goals would be for an entity handling these contracts to seek out partners who have the same risk tolerance and pair them for potential long-term agreements. In order to identify a price through a forward contract, an agreed upon formula rate might be developed. Below we describe this concept in more detail.

a. First, set a formula rate for a percentage of the feedstock covered by the contract.

A formula rate is an agreed upon financial model—often used by utilities—that update inputs to calculate a charge or rate for service, such as the electricity charge per kWh. Many of the inputs are fixed but some are variable (cost of capital, depreciation, revenue requirement, interest rate etc.). These updates may directly tie into real time market data, or if the utility wants to change any fixed inputs, it can be submitted to the regulatory body for review and

possible approval. If the inputs are approved, then they get plugged into the previously approved formula rate model and the new charges for the next year are adopted. Note that the formula does not change, just the variable inputs and the resulting charge. In this case a "regulatory body" for the purposes of these contracts must be identified to make this price mechanism work. The entity should be a public agency to ensure transparency, rationality, and equity, and it is a main function to be explored by a new Joint Powers Agency or Special District described in this Report.

b. Additionally, we need to place a "collar" on the formula rate.

Generally, a "price collar" is used to limit price variability to within an acceptable range. In business and investments, a collar agreement is a common technique to "hedge" risks or lock in each range of possible return outcomes. Effectively, a collar sets a ceiling and a floor for a range of values: interest rates, market value adjustments, and risk levels. This can be employed to ensure that off-takers are not taking advantage of suppliers who are subsidized through things like CAL FIRE or FEMA-based grants. One potential application of the collar could be to tier PPA contract offerings similar to a tax bracket. If a facility receives over a certain amount in PPA, then they must provide a minimum $/BDT to the logger.

c. A Formula Rate Contract with Collar (FRCWC)

Combining these two concepts into one contract provision could reduce and define the amounts of financial risk that both parties would be subject to for the term of the contract, allowing parties to understand the potential for return on investment and business model outcomes. The essential component of this new provision would be an indemnification term that would be associated with an insurance product that is adequately protected against the risk of the lack of feedstock or disappearance of the biomass offtake business.

iii. Caveats and Conclusion

Please note that this contract methodology is geared towards Licensed Timber Operators and related businesses, rather than non-commercial timberland owners. Private timberland owners would more likely need to use different factors to negotiate prices if they want to directly sell their biomass to bioenergy or wood products businesses in their area. In addition, existing and new offtake businesses could benefit from this new price contract mechanism to provide more stability to their sourcing requirements, but the benefits will be more valuable to those trying to obtain financing for development or upgrades. The new JPA or Special District that is planning to be a matchmaker for the wood handlers and off takers would also greatly benefit from having this stable price calculation methodology to base negotiations. In most cases it is best that this price mechanism be managed by a public agency of some kind and absorb the costs of the contract risk associated with this tool, which will now be discussed.

C. Contract Indemnification and Insurance Innovation

The Risk Problem: Insurance for feedstock supply contracts (separate and apart from other insurance products)

As mentioned earlier, insurance availability and cost can have an impact on biomass price. The reliability and capability of a business to execute a long-term feedstock supply contract is also hampered by indemnification requirements. To support businesses on both the supply and the demand side of wood products, an innovation could be used to strengthen confidence in contracting insurance provided by a JPA or special district geared at indemnification risk. Potentially an entity could rely on **insurance pooling** techniques that have been used in the past by agencies for self-insurance and personnel-associated risks. More research needs to be done to understand if the entity would need to be a party to the feedstock contract, or if it could simply facilitate insurance products for third parties. If insurance risk could be reduced through pools held by a JPA or other entity, this could significantly improve business outlooks. Note that this tool could be made available in conjunction with the price mechanism provision innovation discussed in the previous section or could be made available separately.

Another insurance issue comes from reports related to the costs and availability of new insurance policies for newly trained truck drivers. Policies covering in-forest activities are equally as expensive. Looking at other ways to provide reduced or subsidized insurance products for wood products businesses is another potential role of a JPA or other such entity.

Finally, there is the tangentially related issue to forest biomass supply chains, which is the largest insurance issue of all: homeowners' insurance in forested areas. Potentially a government entity could not only manage biomass feedstock aggregation but also provide private landowner insurance- possibly in partnership with the State of California. If there is interest in creating such an entity, research is needed to explore the concept further.

D. Environmental Review, Business Support, Equipment Leasing and Other Services

A JPA or special district could provide one or more of other services for landowners, forestry professionals, wood products businesses, tribes, local agencies, and non-profit organizations to overcome additional challenges these entities face when implementing forest health programs and biomass removal and utilization. The JPA could also coordinate the removal of biomass from small private landholdings in the region.

i. Environmental Review

One such service could be the provision of **environmental review** for different aspects of a given project, whether this is to comply with the state law known as the "California Environmental Quality Act" (CEQA), or the federal law called "National Environmental Protection Act" (NEPA), which both play a role in most of the activities that are part of a biomass feedstock supply chain. There is a significant lack of staffing at the USFS to conduct the environmental planning that is required to complete fuel reduction projects on federal lands, which slows down progress. Additionally, this kind of review can be very expensive and seemingly complex for private non-industrial timberland owners. An entity could provide these environmental review services at a reduced fee that would entice more entities into performing fuel reduction and forest health projects and could also potentially contract that work out to local non-profit or consultant groups that may have skills in these areas.

ii. Business Support

Another idea that has been contemplated is the provision of other **business support-related services**, like assisting with business plans, feedstock analysis, market analysis, and/or financial modeling; connecting businesses with finance professionals or suitable lending programs; and, offering key technical assistance such as consulting Registered Professional Foresters, third party engineering reviews, and financial or legal counsel, to name a few. These types of business support services could assist new loggers, bioenergy or wood utilization facilities, small landowners, or tribal enterprises who are involved in the sale or purchase of timber or biomass.

Centralizing grant applications and administration at a new local agency could boost businesses, local governments, tribes, and non-profit organizations. These potential services would improve coordination among those pursuing funding, avoid duplication of efforts, and reduce competition. This would, in turn, limit the number of precious resources a given entity expends to secure grant funds. Consolidated grant support could also provide capacity where it is currently lacking, namely grant writing, administration, and financial reporting, and create a more comprehensive and sustainable approach to the region's forest health programming which may serve to attract future large-scale investments. In certain circumstances, a centralized entity motivated to organize around funding can adopt business competitions to spur new business opportunities, as exemplified by the Northern Sonoma Air Pollution Control District's (NSAPCD) BioBiz Competition. While NSAPCD was not affiliated with a JPA, their BioBiz Competition was an intergovernmental, community-driven effort that awarded two businesses over $45,000 to start their company.

In a similar vein, a government entity may offer assistance for workforce training and development to meet the region’s current and future forest sector needs. The entity could do this by connecting entities to programs already in existence including those led by Shasta College, the Sierra Institute for Community & Environment, and GoBiz, among others, which

could train and certify individuals for a diversity of job classifications (e.g., sawyers, fire practitioners, heavy equipment operators, truck drivers, licensed timber operators, forestry technicians, etc.). If desired, the entity itself could also spearhead its own workforce training program though it would be important to avoid duplicating efforts with others working in this space.

iii. Equipment Leasing

Another possibility is that an entity may **own equipment and lease** it for use in the field to those who have met certain training regiments. It could be responsible for equipment maintenance and could carry the insurance to offset those business expenses. This type of arrangement could reduce the financial strain for entities working in the woods, improve their chances of long-term success, and decrease their working capital needs, while at the same time strengthening their ability to perform and potentially expand their forest management and fuel reduction activities.

iv. Owning Infrastructure

Many entities own and manage public infrastructure. Examples exist in the context of irrigation and water JPA agencies, waste management JPA agencies and transportation systems JPA agencies. In this context, financing tools, including attractive federal tax credits that will be discussed further in Section 4 below, could be utilized. The possible benefits of owning public infrastructure are removing the needs for high profit margins, the transparency and support for biomass feedstock coming from closely overseen sources, and the efficiencies of regional coordination. Additionally, these facilities could be public/private partnerships. The benefits of publicly owning biomass conversion or wood products facilities should not be overlooked. If the JPA was to work with groups of private landowners to coordinate fuel reductions projects, and then aggregating those individual contracts into a larger project would allow more effective biomass removal and delivery to off take facilities, then the JPA would support the acceleration of fuels reduction with a biomass utilization component on private lands.

v. Other

A JPA or special district could also provide mapping, software, or other computing services associated with biomass feedstock utilization. This may include deploying a feedstock aggregation and mapping tool which is currently under development at Cal Poly San Luis Obispo. The tool can help to facilitate individual forest landowners to remove excess biomass from their land while at the same time assisting forest sector businesses and facilities to estimate potential workflow, the volumes of available material, the cost of service and transportation, and staffing needs to remove material and transport it to a facility for

utilization. Taken together, the exercising of this tool may enhance the removal of excess biomass from non-industrial private lands.

Under California's Short-Lived Pollutant Reduction law (SB 1383), every jurisdiction must provide organic waste collection services, including green waste, beginning in 2022. A theoretical entity may support compliance with this law by aggregating green waste, together with forest residuals, and facilitating its disposal through the entity's fuel supply contracts with biomass utilization facilities. This service could be particularly helpful to local governments by limiting the costs of equipment, transportation, storage, administration, and reporting.

There are most likely even more ways that a new government entity could serve the needs of those involved in the industry than just those mentioned here, which should be further explored.

E. Conclusion

There are many different reasons that a group of local entities may choose to start a JPA or special district, or similar entity. When it comes to the management of biomass waste from forest health and fire reduction activities, the key issues to solve include contract price and insurance mechanisms, and the provisions of other environmental services. How these tools are delivered, and to what degree of involvement by the new entity, are up for discussion, and are outlined in Section 3.

SECTION THREE: EXAMPLES OF JOINT POWER AUTHORITIES

A. Examples of Joint Powers Agencies

Most JPAs are made up of city and county partners, and a handful of specific types of special districts. For example, Irrigation and Water Districts are one of the oldest types of special districts to partner with cities and counties to get work done together under JPA law. Water and power management are the most common use of JPA authority today. JPAs also work especially well for waste management because waste hauling, sorting, and recycling processes can require expensive equipment and facilities. With a JPA in place, smaller local governments can work together to cover the costs of equipment for these important local waste-themed activities. JPA law also used to establish Councils of Government (COGs) and Open Space Districts. These agencies can offer planning services for the purpose of establishing consensus about the transportation or open space needs of an area, and how to interconnect various solutions over multiple jurisdictions. The following examples are types of JPA entities that could be interested in focusing on the issues around forest biomass waste removal and disposal.

i. Joint Irrigation, Water and Power Districts

As mentioned earlier, Irrigation and Water Districts are two of the oldest types of special districts to partner with cities and counties to get work done together under JPA law. Looking to such entities for examples of contracts and fee/cost management could be an important tool for any future JPA dealing with biomass markets. Additionally, many of these entities have a vested interest in land management and fire reduction, as evidenced in the interviews that took place through another Cal FRAME Pilot (Tahoe Central Sierra Cal FRAME Project Water Agency Role in Forest Health Report, 2023). Many of these special districts will already have administrative staff that could be used for a JPA or have the means to easily process administrative and personnel services, but at the same time, they are not as bureaucratic as a city or county, which could make such a district a great administrator/member of a biomass focused JPA.

<u>Example: Tuolumne Public Power Agency</u>

Tuolumne Public Power Agency (TPPA) is a Joint Powers Authority (JPA) in California that was formed in 1983 to provide low-cost electrical energy to local government agencies in Tuolumne County. TPPA's members include the County of Tuolumne, the City of Sonora, all public schools K-12, Columbia Community College, Special Districts such as utilities, fire and community service districts, as well as other local JPAs. TPPA was created after the Flood

Control Act of 1962 authorized the construction of the New Melones Project and required that the Counties of Tuolumne and Calaveras be given up to 25% of the power generated from that hydroelectric project. The JPA was formed so that local agencies could participate in the program. TPPA's governing body is the County Board of Supervisors. TPPA has contracts in place with Western Area Power Administration (WAPA) for power purchase and with PG&E for power distribution. TPPA's member agencies met in 2012 to review and revise the original agreement, resulting in an amended and restated JPA authorized and filed by the California Secretary of State in February 2013.

Relevant Links:

https://www.tuolumnecounty.ca.gov/643/Tuolumne-Public-Power-Agency

ii. Waste Management Authorities

Waste management is often accomplished through a JPA mechanism. JPAs work especially well in this context because waste hauling and sorting, and recycling processes can require expensive equipment and facilities. With a JPA in place, smaller cities can join together to cover the costs of equipment for these important local waste-themed activities. Including waste management authority as a member of biomass waste focused JPA would make a lot of sense for many reasons. First, they already have processes in place for dealing with wood waste; they most likely have storage space or can be a repository for wood that doesn't make it to utilization and could even partner with companies that want to utilize wood at their location. Second, they understand the complex world of waste regulations. Third, they are known to be the waste haulers in their local area and have existing land use authorities to do their work. Finally, they have existing administrative systems and fee structures that can handle biomass waste-associated issues. In summary, having a waste management authority on a biomass-themed JPA is ideal. An example will be covered later in this Section.

a. Example One: Western Placer Waste Management Authority

A regional agency established in 1978 through a JPA agreement between Placer County and the cities of Lincoln, Rocklin, and Roseville to own, operate, and maintain a sanitary landfill and all related improvements. The WPWMA's critical facility elements include the Western Regional Sanitary Landfill and Materials Recovery Facility (recycling, composting, household hazardous waste, construction and demolition, and public drop-off). One of the waste streams the WPWMA manages is wood waste which is predominantly processed into biomass fuel. Most of the wood received and processed by the WPWMA is dimensional lumber from construction and demolition activities, however, the WPWMA does receive limited amounts of forestry and urban tree waste. The WPWMA typically recovers and markets for reuse between 25,000 and 30,000 tons of woody material per year.

To address market changes, the WPWMA has begun working with other, smaller entities to "diversify" its biomass market outlets. Most notably, in 2018 the WPWMA entered into a limited site use agreement with Biogas Energy, Inc. which allowed Biogas Energy to site a pilot-study level biomass operation on the WPWMA's property that utilizes woody biomass to produce bio-oil and bio-char using fast pyrolysis technology. Biogas' Energy's operation was funded primarily through grant funding from the California Energy Commission. The WPWMA was also approached by Pioneer Energy (a Placer County-based Community Choice Aggregator) and Wisewood Energy (a biomass technology developer and operator) about siting a small to medium size (~ 1 to 3 MW) biomass facility on the WPWMA's property to generate electricity for sale to Pioneer. This project is still in the planning stages and the WPWMA has not yet entered into any contractual relationships. Finally, the WPWMA has been approached by an entity with a preliminary concept to develop a co-located anaerobic digestor (AD) and woody biomass facility. The AD facility would process non-woody biomass materials including food waste, sludge, and other similar organic materials while the biomass facility would process both urban and forestry-type wood wastes.

Relevant Links: https://wpwma.ca.gov/

b. Example Two: Amador County Integrated Waste Management Authority

The Amador County Integrated Waste Management Authority Joint Powers Authority (JPA) is a partnership between the County of Amador and the cities of Amador City, Ione, Jackson, Plymouth, and Sutter Creek, formed to manage the solid waste and recycling programs within the county. The JPA oversees the implementation of programs and policies related to waste reduction, recycling, composting, and disposal. Its goals include promoting sustainable waste management practices, minimizing waste sent to landfills, and protecting public health and the environment. The JPA also provides educational resources and outreach programs to the community to promote responsible waste management behaviors.

Relevant Links:
https://www.amadorgov.org/home/showpublisheddocument
https://www.amadorgov.org/departments/environmental-health/solid-waste

iii. Open Space Districts and City/County Parks

Open space park districts are another common special district in California. Additionally, most cities and counties provide extensive park and recreational services. Providing this very popular community value requires significant local government effort, and like the other examples of JPAs above, the provision of such services can often be improved when many agencies work together. Note that ground restoration, vegetation and trail management, and

fuel break maintenance are essential activities that can be shared with an Open Space District and its government partners. Local governments generally enjoy public support to use local general funds for park management. Depending on the volumes of woody biomass waste coming from any particular park(s), a biomass-themed JPA could benefit from the inclusion of a Park District as a member.

Example: Tuolumne Regional Park JPA

The Tuolumne River Regional Park JPA was formed as an agreement between Stanislaus County and the Cities of Ceres and Modesto. The responsibilities of the JPA include service as an advisory body on the acquisition, development, maintenance, and operation of the park it oversees, as well as other lands it owns and manages. Members of the JPA are appointed by their respective legislative bodies and serve at their direction and cannot include paid City or County employees. The JPA is responsible for providing and facilitating the Environmental Impact Reviews pursuant to California Environmental Quality Act requirements for the development of the lands under its authority.

Relevant Links: **https://www.modestogov.com/2624/Tuolumne-River-Regional-Park-JPA**

iv. Councils of Governments, Housing, and Transportation Services

JPA law also is at the core of Councils of Government, or COGs. These agencies can offer planning services to establish a consensus about the needs of an area and how to interconnect various solutions over multiple jurisdictions. State laws rely on COGs to prepare regional housing needs assessments, for example, that direct strategies within the county and city regional plans. COGS often look at broad systems and take land use and the associated parks, open space, wildlands, and fire risk and services into account when they build plans for their communities, and as such, a COG could be a potential member of a biomass-themed JPA. In the JPA spotlight in section F (below) we will go into further detail about the Eastern Sierra COG.

Example: Golden State Finance Authority

Rural County Representatives of California (RCRC) is a forty-county member-support organization with the purpose of advocating for the issues that impact the rural counties of California. Over the years it has developed multiple public service entities including the Golden State Finance Authority (GSFA) and Golden State Natural Resources (GSNR). GSNR is a non-profit, 501(c)3, forest resiliency company, and GSFA is a Joint Powers Authority whose purpose is to provide affordable housing and contribute to the social and economic well-being of California residents. GSFA could develop and own infrastructure improvements and could potentially participate as a member in a JPA contemplated within this Project, particularly if public infrastructure ownership is a goal. Such participation would be valuable because of the

Authority's relationship with RCRC, as well as its understanding of financing mechanisms to fund public infrastructure improvement projects.

Relevant Links: https://www.gsfahome.org/

v. State-wide Entities

In some circumstances local governments across the entire state choose to tackle issues through the use of Joint Powers Authority law. These are typically created in order to deal with challenges that face both urban and rural entities alike. An example is described below.

Example: RCRC Environmental Services JPA

The Rural County Representatives of California Environmental Services Joint Powers Authority (ESJPA) was created in 1993 to provide support to rural counties in California in complying with a growing number of state and federal mandates related to solid waste management. The ESJPA serves as a local government agency and offers regulatory advocacy, technical assistance, and evaluation of proposed legislation to its 26 rural county members. One of the primary goals of the ESJPA is to assist its members in meeting solid waste diversion targets. The ESJPA provides guidance on regulations and technical support to its members to ensure that they are able to comply with regulatory requirements and achieve waste diversion goals. The ESJPA also acts as the lead agency on many regional grants, such as the Tire Amnesty grant, which provides funding to assist rural counties in managing waste tires.

In addition to its primary focus on solid waste management, the ESJPA also supports local public awareness initiatives related to waste reduction and recycling. The ESJPA administers grants for recycling and hazardous waste management programs and provides technical support to county staff to ensure that these programs are effective in promoting environmental sustainability in rural communities. ESJPA's board meetings provide a forum for county solid waste managers to share ideas and collaborate on common problems.

Overall, the Rural County Representatives of California Environmental Services Joint Powers Authority (ESJPA) plays a vital role in supporting rural counties in meeting solid waste regulations and diversion targets in California. By providing technical support, regulatory advocacy, and public awareness initiatives, the ESJPA helps to promote environmental sustainability and waste reduction in rural communities.

All five counties in the Pilot region are members of the ESJPA.

Relevant Links: https://smmc.ca.gov/our-partners/

B. Entities Closely Relevant to our Interests with CAL FRAME

The different examples listed above are substantive and provide general context, but the entities outlined below are entities that are engaged in activities closely tied to land and natural resource management. The first two entities are located within the Project Area, and should be carefully considered as the efforts are developed to solve for the biomass waste disposal issue.

i. Upper Mokelumne River Watershed Authority (UMRWA)

The Upper Mokelumne River Watershed Authority (UMRWA) is the water management group for the Mokelumne-Amador-Calaveras (MAC) region and is a Joint Powers Agency comprised of six water agencies and the counties of Amador, Calaveras, and Alpine (UMRWA, 2023). They hold eight Board of Director seats and are supported by a part-time Executive Officer and several part-time contractors. UMRWA was formed in 2000 to address then-existing and emerging issues related to watershed restoration, water quality, and water supply. During its 22-year existence, the Authority has served as a venue for developing constructive, community-supported solutions to water and watershed issues.

UMRWA's activities are focused on watershed and forest restoration projects and cooperative regional water resource planning initiatives. The agency pursues and secures grant funding, contributes member funds, and leverages federal and state investments for widespread regional benefit. UMRWA has completed over $15 million in planning and implementation grants, including numerous Department of Water Resources (DWR) and Sierra Nevada Conservancy (SNC) grants. In 2017 - 2019, UMRWA received three SNC grants which were leveraged with USDA Forest Service (USFS) funding to support fuel reduction treatment on over 4,100 acres. In 2021, the agency completed a culvert replacement and drainage improvement project along 58 miles/338 drainage structures within the Power Fire burn scar that was funded by the National Fish and Wildlife Foundation. The agency has also completed several other Proposition 50 and 84 grants as part of the state's Integrated Regional Water Management Program (IRWMP).

UMWRA is an active member of the Amador Calaveras Consensus Group (ACCG), a mature and diverse forest collaborative. It holds a Master Stewardship Agreement and Supplemental Project Agreements with the USFS, and functions as a key partner for contracting environmental planning and permitting, and forest fuel reduction and restoration projects. In 2018, the ACCG adopted a 5-year strategic plan which established the goal to develop a comprehensive landscape assessment for all lands within the ACCG focus area. In 2020, UMRWA, together with the ACCG and with funding from the SNC, developed GIS products that aid in landscape planning, including tracking fuel reduction-related projects and identifying

high-risk areas for future predicted wildfires. Using this information, UMWRA went on to initiate a phased, landscape-level program known as the Forest Projects Plan (FPP), in partnership with the USFS and the ACCG. The FPP aims to reduce wildfire risk and intensity, improve forest health and resilience, and enhance and protect wildlife habitat on National Forest System lands in and adjacent to the Mokelumne River watershed which is effectively an island of unburned area surrounded by lands impacted by recent large wildfires.

UMRWA, in cooperation with the USFS, has led collaborative planning and development of the FPP Phase 1 environmental planning documents in compliance with the National Environmental Policy Act (NEPA) which were completed in late 2022, addressing 25,671 acres of non-commercial actions to reduce ladder fuels on the Eldorado National Forest, Amador Ranger District (RD). UMRWA worked closely with the USFS and ACCG throughout the planning process, far exceeding the scoping requirements, completing permitting quickly and under budget, and securing an ACCG letter of consensus support. In mid-2022, UMRWA was awarded a CALFIRE grant to implement the restoration of up to 3,000 acres of the Phase 1 project area. The agency and the USFS recently developed an implementation plan that outlines the sequence for restoration of the remaining areas within the FPP Phase 1 footprint.

UMRWA initiated FPP Phase 2 planning in mid-2022, which is expected to include the ladder fuels and prescribed burn treatments provided in Phase 1 but will also include additional forest management actions such as commercial tree removal, fuel break construction and maintenance, meadow and aspen restoration, and road decommissioning/maintenance within an up to 220,000-acre study area that spans the Amador Ranger District and the Stanislaus National Forest, Calaveras RD. UMRWA anticipates utilizing a staged-decision-making approach for FPP Phase 2 given the size of the evaluation area, its span across two National Forests, and the expected comprehensive set of management actions. UMRWA anticipates it will take 2 to 3 years to work with the ACCG and the USFS to achieve FPP Phase 2 NEPA compliance, during which time it will continue to implement FPP Phase 1.

UMRWA dedicates significant resources to support work and to pursuing grant funds for its forest health program. Through its work, UMRWA has demonstrated a commitment to working closely with its partners and to responding to concerns early in the planning process to achieve collaboratively supported projects that result in mutual gains. While this approach can sometimes demand considerable time and resources, UMRWA and its partners have been successful with it, building trust and rapport that may pay future dividends to be able to more quickly and comprehensively to meet state and federal priorities for forest health.

The possibility of directing biomass towards beneficial use pathways is of interest to the organization, but at this time none of the biomass produced from these projects are being utilized.

ii. Central Sierra Economic Development District (CSEDD)

The CSEDD was established in 1976 under a joint power's agreement between the counties of Alpine, Amador, Calaveras, Mariposa and Tuolumne as well as the cities of Sonora and Angels Camp. In the original contract of incorporation, the stated intent of this joint exercise of powers is to "promote economic growth by means of planning and coordinating the efforts of members and the private sector within the territorial limits of the members. To promote more jobs for the unemployed and underemployed residents of the members. To improve the social and physical environments of the members. To prevent unnecessary duplication of effort on behalf of members." The CSEDD is a JPA by law and by practice and also holds the federal designation as an Economic Development District.

The CSEDD is an Economic Development District which requires official federal recognition from the Economic Development Administration. In order to gain this designation, a district must have an EDA approved Comprehensive Economic Development Strategy. An EDD is a multi-jurisdictional entity, sometimes crossing state borders and commonly including multiple counties. Their purpose is to help facilitate local and regionally driven economic development planning, combining involvement of public, private, and non-profit sectors to "establish a strategic blueprint… for regional collaboration." The CEDS for CSEDD was originally published in 2017, though they are currently working with CSU Chico on a newly updated version. The original CEDS included no mention of a forest biomass market as a strategy for economic development, but CSEDD published Objective 9, an addendum to the original strategy, specifically focused on "developing a diversified value-added forest economy." This objective included a multitude of action and strategy items to help facilitate the establishment of a forest product economy, with heavy reliance on biomass forest waste to energy conversion. These include:

1. Keep sawmills and other forest-based industries open and operating to reduce waste biomass in forests and therefore reducing fire danger and restoring forest health
2. Keep existing infrastructure such as forest roads and transportation routes open and up to date in the region.
3. Work on bringing additional infrastructure to the communities services by the CSEED to assist in growing, retaining, expanding and attracting forest based industries.
4. Train local economic development organizations on how to attract industries that can use materials, such as waste biomaterial, extracted from the forest.
5. Expand partnerships within regional universities and colleges on how to find new commercial uses for materials that can be extracted from the forest.
6. Encourage linkages between industries within the forest industry.

7. Work on workforce issues that will appear as technology changes and new technologies emerge within the forest-based industry.

Among these action items is an expressed intent to partner with other stakeholders such as the US Forest Service to accomplish these objectives and expand the network of forest partnerships for mutual benefit in the region. It is clear by these explicit action items that this JPA is poised and eager to engage with the emerging forest product market in a way that meaningfully contributes to forest health and economic development in their region.

Relevant Links:

1. Original CEDS- https://www.csedd.org/ceds
2. Objective 9- https://www.csedd.org/_files/ugd/c4ac4f_23e635b1809c47e0a7dc6b2cd9a6c6a8.pdf

iii. Marin Wildfire Prevention Authority

MWPA is a JPA funded through Measure C, a ten-year parcel tax estimated to raise $19 million annually. It was formed as a cross-jurisdictional authority for the Marin County area to advise and administer fire safety and preparedness efforts. It is predominantly made up of fire districts and includes 17 member agencies.

Their budget is broken down as follows: the projects featured on the MWPA website are cross-jurisdictional projects known as "Core Projects" (60% of MWPA budget) as well as Defensible Space and Home Hardening projects (20% of MWPA budget); the remaining 20% of the budget goes to MWPA member agencies for Local Wildfire Prevention Mitigation projects (Local).

Vision Statement: Marin Wildfire Prevention Authority communities are informed, prepared, fire-adapted, resilient, and capable of withstanding a major fire limiting the loss of life and major property damage while protecting our rich environmental diversity.

Mission Statement: The Marin Wildfire Prevention Authority leads the development of fire-adapted communities using sound scientific, financial, programmatic, and ecological practices, vegetation management, community education, evacuation, and warning systems with the support of its member and partner agencies.

The primary goals of this organization include:

Vegetation Management:

MWPA's vegetation management programs are designed to reduce hazardous fuels and achieve measurable fuel reduction as outlined in their CWPP (Community Wildfire Protection Plan). They provide funding for specific local wildfire mitigation projects within each member's service area. Determining the appropriate level of vegetation management in each area is based on the best available science and the needs of the individual areas in question. The stated objectives of this project realm include maintaining appropriate levels of vegetation in the wildland-urban interface (WUI), wildlands (200 feet from roads), along roadsides, and along fire roads. These types of projects may vary depending on wildfire risk, proximity to communities and roads, vegetation type, topography, etc. MWPA assists member agencies during environmental compliance for core projects to ensure compliance with local, state, and federal environmental laws and regulations.

Detection, Alert, and Evacuation:

MWPA administers programs to improve detection, alert, and evacuation systems with Measure C "core funds" (60% of their budget) for cross-jurisdictional projects. Other projects are funded through local funds. Some project examples include evacuation ingress/egress risk assessments and subscriptions to warning programs.

Grants:

MWPA has a resident grant program that pairs with their defensible space and home hardening evaluation program to help residents remediate issues found during fire-safety home inspections. These grants will assist the community and reduce the burden of creating defensible space around homes, focusing on those with access, disability, and financial need.

Public Outreach and Education:

MWPA works with partners to share specific, actionable, measurable, and verifiable information and assistance to support the public role in creating fire-adapted communities, reducing risks, and minimizing disaster impact. Fire Safe Marin is its key partner for this work.

Defensible Space and Home Hardening:

MWPA and its partners provide technical resources to conduct defensible space evaluations to help residents protect their homes. They provide follow-up assistance (through the grants program) to alleviate the financial burden of addressing these upgrades.

A working group of the Marin Wildfire Prevention Authority/Ecologically Sound Practices Partnership has started a Biomass Recovery study, working in concert with resource haulers and processors, to identify responsible ways to manage the increased amounts of organic material being generated by both wildfire prevention activities and curbside collection programs. The Biomass Recovery study is based on the solution/proposal endorsed by

Drawdown: Marin, a county-wide campaign to reduce greenhouse gas emissions dramatically and prepare the County for climate change impacts.

The objectives of the study are:

- To conduct a biomass inventory for the entire county (starting with data from all those who are managing biomass).
- To connect and collaborate with waste managers in Marin and Sonoma Counties.
- To conduct a feasibility analysis on biomass recovery pathways.
- To conduct an optimization analysis on biomass recovery options to assess GHG emissions and sequestration.
- To implement findings in a pilot project or existing resources.

Relevant links:
https://marin.granicus.com/MetaViewer.php?view_id=33&clip_id=9768&meta_id=1034220

East Bay Hills Efforts to start a Wildfire Prevention Authority

The effort to form the East Bay Wildfire Prevention and Vegetation Management coalition is a grassroots effort of community organizations in partnership with county staff and elected officials. Initially, the group secured endorsements for a potential JPA and made preliminary presentations to elected bodies and commissions to obtain support for a joint resolution that will allow local jurisdictions to explore the formation of the JPA.

From December 2021 through July 2022, more than 20 jurisdictions and agencies participated in several workshops for jurisdiction and agency representatives to explore and consider a governing structure, goals, funding strategies, and implementation approach. These workshops resulted in the nomination of a smaller working group composed of both fire professionals and elected officials from Alameda and Contra Costa Counties, and the Cities of Berkeley, Oakland, Richmond, and Pinole.

In the fall of 2022, the working group made the recommendation to pursue the development of a Memorandum of Understanding (MOU) in lieu of forming a new JPA. The hesitancy around creating a Wildfire Prevention JPA were primarily around fire agencies' concern about losing control of incidents and approaches to fuel reduction, and citizens' concerns about limitations on land use or development that could impact property value, as well as concerns about costs to run the JPA. There is some skepticism about whether a new agency is necessary. The group, however, did decide that working together in some fashion would be of some benefit, and so in November 2022, a law firm was retained to negotiate an

MOU Agreement. The drafting of an MOU is seen as a first step to coordination. The draft MOU is now publicly available and out for public review at the time of this publication.

This MOU provides a comprehensive breakdown of the organizational structure, roles, decision-making processes, and general terms of partnership. This MOU sets forth a cooperative structure detailing the responsibilities of each group. These duties encompass organizing meetings, defining goals, designating a financial liaison, overseeing fundraising efforts, and managing the budget. Provisions are made for the addition of new participants, outlining exit protocols for all parties, and detailing for collaborating staff under this MOU. It's important to note that this MOU does not represent a joint venture or shared authority. Its sole purpose is to benefit the affiliated agencies by setting up protocols for discussion of vegetation management and other wildfire prevention actions. In essence, this MOU serves as a foundation for a coordinated strategy among agencies, with a primary focus on wildfire mitigation in the East Bay Hills.

Relevant links: https://eastbaywildfirejpa.org/

iv. Eastern Sierra Council of Governments

The Eastern Sierra Council of Governments is an instructive entity when seeking out functioning JPA models. The ESCOG was established in 1995 by a JPA Agreement between the Counties of Inyo and Mono and the Town of Mammoth Lakes. In 1999, the JPA was amended to include the City of Bishop as a member. Its purposes include providing a forum for discussion of regional issues of interest to members, identifying and planning for the solution of selected regional issues requiring multi-governmental cooperation, facilitating actions and agreements among the members for project development, and conducting other regional functions as the members deem appropriate. It is also tasked with identifying funding sources and applying for and receiving funding for the planning and implementation of programs of regional importance.

In 2020, due in part to the need to address the forest health crisis, the four member agencies agreed to reformulate the entity and create a Joint Powers Authority giving it the ability to apply for and receive funding among other activities. ESCOG established the Sustainable Recreation and Ecosystem Management Program to seek and integrate responsible ecosystem management, natural resource conservation, sustainable outdoor recreation, and economic development using the best available science to advance resilience in the area. The program is empowered to apply for, pursue and administer grants and other funding to finance and manage projects that accomplish these objectives. This program is currently being implemented in partnership with state and federal agencies to scale up restoration projects in the region including fuels management projects for fire resilience. The ESCOG is contracting

with a non-profit partner to implement many programs. This recent effort is an excellent model for this region to consider.

Relevant Links: https://escog.ca.gov/

SECTION FOUR: USING A NEW SPECIAL DISTRICT FOR FEEDSTOCK MANAGEMENT

A. Explaining Alternate Government Entity Options

Community Services Districts: A Community Service District (CSD) is a type of California Special District, operating as a form of local government to provide specific community needs. These districts are authorized by CA Code 61000 et seq and currently make up approximately 10% of the 3,300 special districts in the state. They were originally established by California Government Code in 1955, but the existing code was overhauled in 2006 by SB 135. The new California Community Service District Law, enacted by SB 135, strengthened existing law by laying out formal procedures for directors, defining roles for general managers, requiring all CSDs maintain a 5-person board of directors, among other things. Before SB 135, California had 318 special districts compared to its now 3,300. The principal organizational strength of a CSD is its ability to provide focused service to its jurisdiction. Unlike most special districts which usually provide a single service, CSDs often provide multiple services from a broad range of possibilities including water, garbage collection, wastewater management, security, fire protection, public recreation, street lighting, mosquito abatement services, etc. They serve jurisdictions within defined boundaries, usually within one county but sometimes serving territory that crosses multiple counties. CSDs primarily generate funding through issuing bonds or by forming improvement districts to manage the issuing of bonds, much like a city or county may do. In areas where a CSD is in place, property owners pay a tax to the CSD for services provided instead of the county or city. CSDs are limited to a maximum tax levy of 1% of assessed valuation unless there is voted upon approval to exceed 1% tax. The funding mechanism for each CSD is determined by the district's board of directors and may vary depending on the type and level of services provided. The board of directors for CSDs are often elected by voters within their jurisdiction but, depending on size, often rely on city councils or county board of supervisors to govern them. CSDs require an elected board when the district reaches or exceeds 500 registered voters within its boundaries, ten years after its formation, or if LAFCO specifies a lesser number of voters or time frame for election in its resolution for the formation of the CSD. The board is responsible for appointing a general manager who is responsible for implementing the policies of the operation of the CSD established by the board.

Climate Resilience Districts: In September 2022, California passed legislation (SB852, Dodd) allowing the creation of climate resilience districts (CRDs). This bill created a new category of special districts in California which can be formed by cities, counties, special districts, or combinations of those entities. These districts can raise and allocate funding for eligible

projects and their operating expenses, using tax increment financing, voter-approved supplemental property taxes or fees, and other funding sources. The creation of CRDs addresses a major gap in governmental climate change strategies by giving local communities and governments resources to address climate challenges unique to their areas. This contrasts with standard strategies, where broad climate plans and resolutions are brought down from the state level and local governments can see the dilution of their specific community needs to be eligible for funding. CRDs allow regional climate programs to focus resources on the most urgent local issues as needed.

CRDs are mainly funded through tax increment financing (TIF), a financial tool used to support development projects in a specific geographic area. TIF works by freezing the property tax revenue for affected taxing entities while allocating the increase in property tax revenue from participating agencies, referred to as the "increment," to the development district. The increment starts small but grows over time, and bonds are sold based on expected revenue growth over a 30–45-year period. TIF funds are typically used for capital projects that improve property values, and once the bond payment period is complete, the property tax revenue returns to the participating taxing entities at its increased level. CRDs are legally a type of EIFD with more limited purposes but additional financing powers. EIFDs have three possible funding sources, including tax increment financing (non-schools, with permission), revenue from infrastructure projects, and a share of the local sales tax. CRDs have more potential funding sources, such as benefit assessments, special taxes (with a 2/3 vote for specified purposes), property-related fees, gifts, fees, and grants from public and private entities, and service charges. Additionally, unlike EIFDs, CRDs can issue both revenue and GO bonds.

Objective Uses: When choosing between a CRD and a CSD, the first step is to identify the specific objectives the organization seeks to achieve. CRDs are crafted to finance initiatives addressing climate change mitigation, adaptation, and resilience. These initiatives encompass challenges such as rising sea levels, extreme temperature fluctuations, droughts, wildfire threats, and flooding risks. Priority is afforded to projects that employ natural infrastructure or aid underfunded or vulnerable communities. Projects that qualify for CRD funding include wetland revitalization, levees, living coastlines, temperature-controlled buildings and roads, augmented shading, facilities designed for severe weather conditions, fire prevention strategies, water conservation, and infrastructural elevation. Conversely, the advantage of Community Service Districts over CRDs lies in their capacity to offer specialized services attuned to specific community and environmental needs. For comprehensive local projects like those in the NorthStar Example, establishing a CSD becomes essential. This would not only cater to essential public services in rural and non-metropolitan areas within the state but also oversee environmental initiatives and forest management. Through their varied services, CSDs elevate the standard of living and enhance the well-being of their inhabitants.

In summary, both Community Service Districts (CSDs) and Climate Resilience Districts (CRDs) play pivotal roles within California's intricate local governance and infrastructure development framework. CSDs, with their extensive history and wide-ranging services, serve as a cornerstone for delivering diverse local services tailored to immediate community needs. Conversely, the introduction of CRDs signifies California's forward-thinking approach, focusing on the urgent matter of climate change. CRDs, characterized by their targeted financing and project scopes, ensure that communities not only prepare for forthcoming environmental challenges but also take proactive measures to mitigate them. The decision between a CSD and a CRD depends on the specific goals and requirements of a community, whether they seek comprehensive service offerings or climate-centered solutions. Moreover, it is essential to consider the similarities and differences with Joint Power Authorities when examining the broader landscape of local government structure.

B. CSD's compared to JPA's: Similarities and Differences

California Community Service Districts (CSDs) and Joint Powers Authorities (JPAs) are both types of special districts in California. They share key similarities as well as critical differences. Both CSDs and JPAs are created to provide essential services and facilities to the communities they serve, such as fire protection, water supply, wastewater treatment, and solid waste collection. As mentioned, they are both types of districts that are governed by a board of directors, responsible for setting policies, approving budgets, and overseeing operations. Fiscally, they are both authorized to issue bonds and levy taxes and fees to fund their operations.

The two structures differ, however, in that CSDs operate as local government agencies that provide essential services and facilities to communities within their jurisdictions, while JPAs are created by two or more local governments or local agencies to jointly provide services or facilities that benefit all participating jurisdictions. CSDs are typically established in rural or unincorporated areas, while JPAs may be formed by cities, counties, or other local government entities in both urban and rural areas.

CSDs are usually governed by a locally elected board of directors, while JPAs are governed by a board of directors made up of representatives from each participating jurisdiction. Another significant difference between CSDs and JPAs is the type of services they are most often established to provide. CSDs are authorized to provide a wide range of specific services, including fire protection, water supply, wastewater treatment, street lighting, solid waste collection, and park and recreation facilities, among others. JPAs, on the other hand, are most often created for more specific overarching purposes, such as regional transportation planning, economic development, or joint purchasing of goods and services.

Finally, the process for forming CSDs and JPAs is also different. CSDs are established through a petition process initiated by residents of an area or by a county board of supervisors or city council, and the formation of a CSD requires the approval of the Local Agency Formation Commission (LAFCO). JPAs, on the other hand, are established through a joint powers agreement between two or more local governments, which must be approved by each participating jurisdiction's governing body. Regarding LAFCO, both CSDs and JPAs can be subject to oversight by Local Agency Formation Commissions (LAFCOs). [1]

In summary, while both CSDs and JPAs are types of special districts in California, they differ in their governance structure and the process for their formation, and there are some differences between their options for funding mechanisms and services provided.

C. Successful Entity Examples

Example of a Successful CSD: Northstar Community Service District

Situated within Nevada County, California, the locality of Northstar accommodates an approximate populace of 16,180 residents. Within the broader expanse of Nevada County, enveloping the NSCD region, the estimated populace as of July 2022 attained a total of 102,293 individuals. The Northstar Community Services District (NCSD) came into existence in 1990 as a local government body, dedicated to offering essential governmental services to the Northstar region. Over the years, the District has remained committed to providing a diverse range of crucial services, including water supply, sewer collection, solid waste management, recycling services, fire protection, vegetation management, snow removal, road surface maintenance, and trail construction and maintenance. To finance these services, the district relies on property and parcel taxes, along with water, sewer, and solid waste user fees. The governance of the NCSD is overseen by a five-member elected Board of Directors, each representing registered voters from the communities served by the district. The primary responsibility of the Board is to provide thoughtful and responsible leadership by shaping District policies. Meanwhile, the day-to-day operations are under the supervision of a General Manager appointed by the Board.

[1] LAFCOs are independent agencies responsible for overseeing changes in the boundaries and organization of local government agencies, including the creation, consolidation, and dissolution of special districts. LAFCOs have the authority to review and approve the formation of CSDs and JPAs, as well as to review and approve boundary changes and other organizational changes to these districts. LAFCO review and approval is required for the creation or dissolution of CSDs or JPAs, as well as for the annexation or detachment of territory from these districts.

The Northstar Community Services District (CSD) operates with a dedicated workforce of 55 employees, each fulfilling a crucial role in serving the community. Within this diverse team, 29 emergency services employees, including highly skilled Firefighters and Paramedics, prioritize the safety and well-being of residents. Additionally, 10 Utility Service workers ensure essential tasks related to utilities are efficiently handled, while 7 Administrative employees manage critical aspects such as General Management, IT, HR, Accounting, and customer service. The CSD also benefits from the expertise of 4 Specialists, including Engineers and Foresters, dedicated to effective Fuels management. This large team enables the Northstar CSD to proficiently deliver essential services and cater to the diverse needs of the community.

To maintain their day-to-day expenses and ongoing projects, the Northstar CSD employs various financing strategies. They raise revenue locally through property taxes, parcel taxes, user fees from the services they provide, and special assessments. This locally supported funding ensures a stable and dedicated financial source, empowering Northstar to tailor their budgets to meet the specific needs and priorities of the community. Note that the mean valuation of residences in Northstar stands at approximately $553,200.00, which is about 9% above the statewide average home value in California, which could play a factor in resident's willingness to pay for important services, including wildfire reduction.

Operating as a locally governed entity, the Northstar CSD enjoys the flexibility to make agile decisions, expedite project implementation, and promptly respond to changing circumstances. This avoids bureaucratic delays and enables the district to plan for the long term, making sustainable investments in infrastructure and services for the benefit of the community. Furthermore, their commitment to transparency, accountability, and community engagement fosters trust among residents regarding the use of funds. Leveraging local partnerships and accessing grants further enhances their ability to support and expand their projects. This comprehensive approach to financing empowers the Northstar CSD to efficiently execute initiatives that directly address the unique requirements of the areas they serve.

Since 1995, the Northstar Community Services District has been actively implementing Fuels Management and Forest Health projects within its boundaries. The primary aim of these projects is to prevent catastrophic wildfires in the "Open Space/Common Areas" while simultaneously improving the overall health of the forest. The Northstar area faces a higher risk of wildfires due to its surrounding forests, wet winters, and dry summers. Climate change and drought conditions have led to the accumulation of dead trees and dry brush, posing significant fire hazards. To mitigate this risk, the Northstar Fire Department has been collaborating with the community to update the Community Wildfire Protection Plan (CWPP). This plan assesses the specific wildfire risks facing the community and proposes effective mitigation efforts. Although the Northstar Fire Department has already addressed many of the identified wildfire risks according to the CWPP, additional funding is required to fully meet the scope of needs. As

wildfires continue to grow in size, speed, and destructiveness, it is crucial to allocate additional resources for enhanced protection against wildfire emergencies. This includes investments in early fire detection systems, emergency warning mechanisms, and the establishment of fire-safe evacuation routes. By implementing these measures, the community can be better prepared to combat the growing threat of wildfires and safeguard its residents and environment.

On June 28, the Northstar Community Services District Board took a significant step in securing funding for a crucial wildfire prevention project. They placed Measure U, a wildfire prevention parcel tax measure, on the November 2 ballot. The main objective is to ensure the complete implementation of the Community Wildfire Protection Plan (CWPP) by providing necessary resources for the Northstar Fire Department. Measure U proposes a parcel tax of up to $219 per parcel, annually, for a duration of 10 years. This tax will establish a stable and dedicated source of local funding specifically earmarked for wildfire prevention efforts. The funds raised through this measure will be utilized for various essential initiatives, including clearing dry brush, removing dead trees, and addressing fire hazards to reduce the risk of wildfires and promote forest and watershed health. It also aims to implement vegetation management around neighborhoods and critical infrastructure to enhance protection, improve evacuation routes to enhance community safety during potential wildfire emergencies, maintain and add firebreaks in strategic locations to prevent the spread of wildfires, offer homeowners convenient and cost-effective disposal options for pine needles and green waste, including Green Waste Dumpster rental rebates and 5 annual curbside pickups, and provide matching funds to major landowners and condominium associations for their fire prevention compliance work. It is important to note that all the money raised by Measure U will be dedicated to lowering the risk of wildfires within the Northstar community. Furthermore, these funds are protected from being diverted by the State. To ensure accountability and transparency, an independent citizens' oversight committee will oversee the allocation of funds, ensuring that they are utilized as promised. Additionally, there is a provision for low-income property owners to seek an exemption from the cost of Measure U. Importantly, the funds generated by Measure U will not be used to treat new developments, emphasizing their focus solely on wildfire prevention within the Northstar community. By supporting Measure U, residents can take proactive measures to safeguard their community from the devastating impact of wildfires and protect the cherished environment they call home.

The Northstar CSD also has another project currently underway that aims to establish a biomass energy facility to address the disposal of woody material generated from regional forest fuels reduction and defensible space work. This initiative is driven by the need to mitigate local wildfire risks and manage the increasing amounts of woody biomass that have become costly to dispose of properly in the area. The Northstar Community Services District

(NCSD), responsible for local services and the generation of substantial volumes of woody biomass, is spearheading this effort to create a sustainable and cost-effective disposal outlet for the material. To fund the project, the NCSD has successfully secured grants totaling over $3.5 million from reputable organizations such as the US Forest Service, CAL FIRE, Placer County Water Agency, and the Tahoe Fund. In addition to grants, the project's sustainability and financial viability will be supported by revenue generated from the sale of energy produced by the facility. The project will serve as a valuable resource for the community, allowing them to utilize their own woody biomass in a manner that benefits both local wildfire mitigation efforts and energy needs. Overall, the biomass facility project offers a comprehensive solution to the challenges posed by woody biomass disposal and provides significant benefits to the Northstar community. It aligns with the NCSD's commitment to local wildfire mitigation efforts, environmental sustainability, and cost-effective energy solutions, making it a valuable asset for the community's present and future needs.

Example of A Successful Climate Resilience District: Sonoma County Regional Climate Protection Authority

The Sonoma County Regional Climate Protection Authority (RCPA) is an example of a successful CRD. It began under the Sonoma County Transportation Authority and went through the creation process to become a CRD- now known as the Sonoma County RCPA. Its mission is to mobilize regional climate action in Sonoma County by connecting local priorities to climate action and resilience, identifying regional-scale policies and solutions, and enabling and coordinating member and partner implementation. The RCPA worked closely with Senator Dodd and CivicWell on SB852 to grant RCPA funding authorities in the bill, and in 2023, it became the first CRD in the state under the legislation. The RCPA is guided by a community-led steering committee and led by a local government coalition to enact significant coordinated climate action in the region.

Because this legislation is so nascent in its implementation, beyond RCPA there are sparse examples of successful CRD projects throughout the state. There is, however, a ripe opportunity to put this new authorization to the test on the local level and harness this new category of special district to generate funds for locally determined climate mitigation or adaptation projects.

SECTION FIVE: DISCUSSION DRAFT MODEL ENTITY APPROACH

A. Central recommendation:

A JPA is formed to be either (1) directly involved in funding public infrastructure like a biomass utilization campus, a sort yard, or biomass conversion or utilization facilities, or (2) to provide a menu of community services and may own equipment to lease to new businesses or the community, or could do both.

After the research conducted under this report, including gathering of local input, the concept of creating a JPA that would own or manage the development of a wood utilization facility, or provide services, was seen as preferable over the creation of a special district or a Wildfire Prevention Authority. The drawbacks to those pathways are discussed below. The chosen pathway is now discussed. They would then enter into contracts with feedstock providers (e.g., landowners or forest sector contractors) using the new FRCWC or other contract mechanisms. This JPA would likely look to use public property belonging to one of its members or could also involve leasing private lands to serve as a host site for the desired infrastructure. Most likely this would be a public/private partnership that would involve participation from the private sector, but the JPA itself would be made up of government agencies only. As government agencies do not seek profit but only need to ensure that projects meet costs, this pathway forward could be a viable option.

An important and innovative opportunity at the federal level became available in 2022 through the Inflation Reduction Act that could offer significant financial benefits to a JPA that takes this approach. Certain applicable entities, which clearly include state or local government (including a Joint Powers Authority with members of a local government) could develop a facility and then elect a "direct pay option" for close to a dozen renewable energy-related credits covered in the bill. The direct pay option allows for the JPA, in this case, to opt to receive the value of the tax credit as cash money, instead of as a tax deduction. This is far preferable for a public agency that has no tax liability.

A second pathway under this bill is that taxpayers (i.e., private project developers) may also elect to transfer the energy-related credits covered in the bill to an unrelated taxpayer. The transferred credit must be exchanged for cash and is not included in the transferor's income, nor is it deductible by the transferee. The transferee also cannot further transfer any tax credits it received in a transfer. This pathway does not appear to be relevant to a JPA but it could become relevant if the IRS makes an interpretation described below.

Direct pay in either scenario is available on a facility-by-facility basis and must be made in the taxable year when the facility is placed in service. Once elected, direct pay applies for the

entire credit period. However, for the Clean Hydrogen Production Credit, Carbon Capture Credit, and Advanced Manufacturing Production Credit, the "applicable entity" restriction does not apply to the first five years of these credits for any taxable year before December 31, 2032. Additionally, domestic content requirements also must be met for direct pay eligibility, which is (i) 100% of any steel or iron that is a component of the facility was produced in the United States, and (ii) 40% of manufactured products that are components of the facility were produced in the United States.

Two issues of interpretation are currently under review at the IRS. First, whether an "applicable entity" is broadly a "tax-exempt entity" which could go beyond local government to include non-profit entities under 501(c). Second, whether the transfers of tax credits (by private developers) to an "applicable entity" then turn those credits in for cash, even though that entity has no ownership interest in the facility. The first scenario would allow a broad array of non-profit organizations to get involved in the development of renewable energy projects, and the second scenario would allow local governments to support private development by buying the tax credit associated with a new facility and then reimbursing itself through the direct payment process. No direction has been issued by the Federal Government on these two issues at this time, but it will be important to follow, especially the second issue, as that could allow for flexible financing with JPA entities.

Other more traditional funding mechanisms such as bonds, TIF, or other government-sourced indebtedness could also be used to support such projects, as well as fees, assessments, or self-imposed parcel tax measures. The only approach where bond authority is really relevant. General Obligation bonds through the counties would also be another source. Grant dollars from state and federal sources, as well as possibly seeking more long-term endowments or support from the private sector could also be possible. A public-private partnership with investors and local businesses could also support owning infrastructure.

Second, this new JPA Agency could provide contract management that could include managing a public biomass price mechanism discussed above. JPA staff could also provide a menu of other services, such as forest management planning that could include environmental review under CEQA or NEPA, insurance resources for landowners and wood products entrepreneurs, green waste program management, or connections to commercial lending professionals. Staff for the JPA could also serve one-to-four-year stints at USFS offices under the Federal Intergovernmental Personnel Act which could significantly improve USFS fuel reduction and land management activities (IPA, 1970). Such a JPA could also support workforce development activities in the wood products industry. This could include not just educational support, but helping newly trained employees obtain insurance, and even possibly equipment. The JPA could purchase high-priced equipment that could be leased to businesses or property owners, and then maintained and insured by the JPA to help businesses defray those costs.

All of these activities could also occur at the JPA described under Scenario A. Essentially this scenario is any and all services that the members want to provide but avoiding any public infrastructure or land ownership. Costs for the administration and personnel for such a JPA could be covered for infrastructure through a bond mechanism as discussed above, and through a fees-for-services approach, including costs for contract management and services, but would also likely need some support from the general funds of the member agencies and even possibly ongoing modest support from the state of California.

Another approach would be to avoid creating a new entity, but rather, have the local governments enter into a Joint Powers Agreement to help facilitate the use of the contract template and provide third party pathway recommendations to needed risk reduction strategies across their respective geographies. This pathway would likely require a partnership with state and possibly federal entities to help the local agencies pay for this work, and could include such a partnership, which could be modeled after the current Sierra Nevada Conservancy/Coastal Conservancy Joint Powers Agreement.

B. Potential JPA Members

After conducting research, including some discussion with community leaders, the project team has determined that the Mariposa County Resource Conservation District, The County of Tuolumne, and the Upper Mokelumne River Watershed Authority (UMRWA) work together to form a new JPA. The basis for this decision is that these three entities cover the entire geography of the Pilot area, all three entities are actively engaged in fuel reduction activities, have high capacity and a strong reputation, and are hopeful that the biomass coming from their projects can make its way to the existing and emerging wood products facilities.

In coming months, the State will make funds available to the entities to study the best way to fund this endeavor, as well as support both existing and emerging facilities, as well as look into ways to help private landowners manage their forested acres. Through the final year of the pilot, the JPA concept can be fully vetted to determine if the parties should go this path.

The UMWRA

As mentioned earlier, this organization has a high capacity and is currently working on or planning several forest thinning projects. They also have access to contractors and staff at the member agencies for project management. The JPA is also well funded by its members. There is nothing in the state law that would prevent a JPA from sitting as a member of another JPA, and in this case, their participation would cover three of the counties of the region. As the JPA model is developed, it could be that the parties agree to different voting rights depending on funding contributions or geographical cover, or it may be decided that each member has the same voting rights as the other. These distinctions need to be determined in the next steps of the project.

Mariposa County Resource Conservation District

Resource Conservation Districts are organized under Division 9, Chapter 3 of the Public Resources Code as legal subdivisions of the State. As a special district of the State, the Mariposa County Resource Conservation District (MCRCD) is engaged in multiple collaborative efforts to improve watershed and forest health and implement projects on the ground, administering and implementing grants, coordinating project partners, fiscal management, contracting, environmental compliance and communication with the public. The MCRCD is engaged in multiple collaborative efforts to improve watershed and forest health and implement projects on the ground. The mission statement of the district is to encourage and facilitate cooperative solutions to local resource conservation issues. They provide technical, financial and educational resources to meet the needs of local land users. All funds managed by the MCRCD are audited annually by an independent auditor.

What the RCD brings to this venture is our unique position as a local government entity that is empowered to bring partners from every sector together to help communities care for the land, air, water, and wildlife. They have access to funding only available through RCDs to benefit agencies and residents in Mariposa. Their mission focuses on a wide range of resource issues; from watershed health which includes water storage, water conservation, and water quality, to forest health and fuels reduction, to habitat restoration, clean energy, and recreational opportunities. They are dedicated to providing funding and assistance to organizations and individuals to ensure the timely and cost-effective completion of beneficial projects.

During the past six years, the RCD has secured $24 million in state and federal grants to implement resource conservation projects within the County. These funds have been secured with multiple partners including Mariposa County, Yosemite National Park, the Sierra National Forest, Mariposa County Public Works, the Southern Sierra Miwuk Nation, Sierra Foothill Conservancy, CCC, and communities like Wawona and Yosemite West. Their partnerships with these organizations benefit thousands of individual residents and tourists by improving the safety and aesthetics of our area. In addition, they provided hundreds of grants to individual residents for things like home hardening, and hazard and downed tree removal at their homes. And finally, they leveraged $20 million in matching funds or in-kind services to extend the reach of these projects. The result is that in the past six years, the RCD has brought more than $44 million dollars of beneficial projects to Mariposa County.

The five-member, appointed Board of Directors voted at its September 6, 2023, meeting to pursue exploration of a Joint Powers Authority for the purpose of aggregating biomass and supporting accelerated and more efficient removal of biomass from California's forests. This effort is part of the ongoing Central Sierra Pilot Program for Woody Biomass funded by the Governor's Office of Planning and Research, and for which MCRCD is the grantee.

Tuolumne County

Tuolumne County is in the Sierra Nevada region of the U.S. state of California. Known for its natural beauty, forests, and proximity to Yosemite National Park, it's a predominantly rural county. A significant portion of Tuolumne County is covered by the Stanislaus National Forest, one of the oldest national forests in the United States. Forest management in Tuolumne County is of great importance, especially because of the frequent and sometimes devastating wildfires that California and its forested areas face. Proper forest management can help reduce the risk of these fires and mitigate their impacts. For instance, the 2013 Rim Fire was one of the largest wildfires in California's history and affected a large part of Tuolumne County. Beyond fire risks, the health of the forest is vital for the overall ecosystem, including wildlife and water resources. Ensuring forests are not too densely packed can prevent disease and pest outbreaks. Moreover, forests have an economic significance. Timber, non-timber products, recreation, and tourism associated with forests, including the attraction of Yosemite National Park, are vital contributors to the county's economy.

In Tuolumne County, there's a collaborative spirit when it comes to forest management. Entities ranging from local government, state agencies, federal departments like the U.S. Forest Service, local tribes, conservation organizations, and private entities often work hand in hand. The county has also been at the forefront of innovative projects, such as the Heartwood Biomass project, which aims to convert potential wildfire fuels into valuable products, achieving both risk reduction and economic benefits. Additionally, forest management efforts in the county have garnered support in the form of grants and funding from both state and federal sources, aiding in forest restoration activities and promoting community resilience. All in all, forest management in Tuolumne County is a comprehensive endeavor that seeks a balance between reducing fire risks, maintaining ecological health, and ensuring economic growth, all achieved through the collaborative efforts of various stakeholders.

The Rural Community Assistance Corporation (RCAC) secured funding for the $14.5 million Heartwood Biomass project in Tuolumne County, California. The project aims to create 16 jobs and stimulate the local economy through sustainable forestry practices. It will transform potential wildfire fuel from dense forests into products such as firewood bundles, wood chips, and agricultural posts. The facility will also generate its own heat and electricity from biomass. This initiative stems from the aftermath of the 2013 Rim Fire and consequently, a $70.4 million National Disaster Resilience grant was secured for community recovery and future resilience. Part of this grant was used to create a $17 million Biomass Utilization Fund, from which the Heartwood Biomass project will receive $9.7 million. The project has also attracted private capital, including an investment from Blue Forest. Collaborative efforts include contributions from Yosemite-Stanislaus Solutions, T-Five Ranches, Sierra Resource

Management, Mother Lode Job Training, and various local forest product businesses. The project also received grants from CAL FIRE and the U.S. Forest Service. The facility is expected to be operational by June 2024, serving as a sustainable development model. The RCAC, founded in 1978, partners with small rural and Indigenous communities to improve their quality of life.

The Forest Service's 10-year Wildfire Strategy has selected the Stanislaus National Forest for a significant boost in resources. This move, termed the Stanislaus Landscape Project, spans a decade and will address over 245,000 acres with various measures, including extensive controlled burns. The main areas of focus are along California Highway 108, with natural features like rivers and ridges directing the efforts. The prioritization of these regions is based on their importance to local communities, habitats, and resources. The overarching Wildfire Crisis Strategy is a collaborative effort involving multiple federal bodies, tribes, states, and local communities. It aims to address up to 50 million acres across different jurisdictions. Within the Stanislaus Landscape Project, a holistic approach is taken, incorporating mastication, biomass removal, timber harvesting, and more. The objective is to foster a landscape resilient to threats like wildfires, pests, and droughts, benefiting both local communities and ecosystems.

The Social and Ecological Resilience Across the Landscape (SERAL) project is set to roll out in three stages, with this being the initial phase. This phase will introduce fuel management structures to offer strategic fire control tools within the SERAL area. These structures encompass strategically placed fuel breaks, prepared roadsides, and defensible spaces to minimize the chances of fires escalating from the ground to the tree canopy. They also facilitate better access, safety zones, and efficient movement of fire management resources within the treated area, enhance the penetration of fire retardants into the forest canopy, and set the stage for subsequent forest health initiatives. The project will employ mechanical fuel reduction methods to establish and maintain parts of the proposed fuel break network in the most critical potential wildland fire operational areas (PODs). These methods are restricted to mastication, biomass removal, machine piling for burning, or hand thinning in the fuel break network's areas within or along the priority PODs' borders. The SERAL project's overarching goals are to rejuvenate forest health and resilience in California, safeguard the upper watersheds, promote long-term carbon storage in forests, and reduce forest carbon loss from unusually large, high-intensity wildfires.

In conclusion, Tuolumne County, nestled amongst dense forests and near Yosemite National Park, has faced substantial challenges, notably the 2013 Rim Fire. Collaborative efforts from entities like the Tuolumne River Trust, Tuolumne Fire Safe Council, and Yosemite-Stanislaus Solutions have been pivotal in addressing these issues. Through a focus on forest restoration, fire prevention, and sustainable energy, and backed by projects such as the Heartwood Biomass, the SERAL project and continual work of the Fire Safe Council, the county

underscores the importance of forward-thinking strategies to support the region's economic and ecological well-being.

c. Nonprofit Collaborators in Tuolumne County (non-members)

One highlight of the County is the **Yosemite-Stanislaus Solutions (YSS)** which was established to focus on forest health and wildfire resilience. The Yosemite Stanislaus Solutions (YSS) collaborative was formed in 2010 with over 30 members to improve forest management and restoration efforts in the Stanislaus National Forest, prompted by a destructive wildfire in 2013 and subsequent fire-related challenges in California. Tuolumne County, representing YSS, entered a Master Stewardship Agreement (MSA) with the Stanislaus National Forest in 2018, working on projects with diverse stakeholders, including the timber industry, tribal and local government, and environmental organizations. They've secured nearly $30 million in funding to treat 22,000 acres, focusing on the Rim Fire area, with projects including fuel reduction, thinning, reforestation, and firebreak installation, supporting the local wood products industry and workforce. YSS functions as a collaborative platform, allowing multiple agencies, interest groups, and individuals to contribute to recovery and restoration efforts. It seeks to gather diverse ideas and viewpoints to ensure broad support and timely project execution. This collaborative effort promotes forest health, economic opportunities, and community safety, offering a model for western forest management and long-term economic viability.

Another important County entity is the **Tuolumne River Trust**. The 2013 Rim Fire, spanning 257,000 acres, was the largest wildfire in Sierra Nevada history at that time. It severely affected the upper Tuolumne River watershed, which was already grappling with historic drought conditions and a tree mortality crisis. In response, the Tuolumne River Trust (TRT) has collaborated with organizations like the Stanislaus National Forest, Tuolumne County, and Yosemite Stanislaus Solutions (YSS) to secure substantial funding for restoration projects. These projects aim to benefit local communities and restore resilience to the region's forested landscapes. TRT recognizes the importance of careful planning, beginning with landscape-level forest health assessments and prioritizing restoration efforts in meadows that are most in need. They work closely with collaborative partners, incorporating advanced technologies and local knowledge to devise effective strategies that yield cumulative benefits. This approach allows them to maximize the ecological impact of their efforts in the central Sierra Nevada. The TRT's restoration work focuses on two main programs: Forest Restoration and Meadow and Wildlife Habitat Restoration. They are actively engaged in numerous initiatives within the Stanislaus National Forest, partnering with organizations such as the Wildlife Conservation Board, California Department of Fish and Wildlife, CalFIRE, Sierra Nevada Conservancy, AmeriCorps NCCC, and various other stakeholders.

The third and final nonprofit of note is **The Tuolumne Fire Safe Council** which focuses on mitigating wildfire hazards and reducing the devastating consequences of wildfires in Northern Tuolumne County. Their mission revolves around saving lives and safeguarding property through wildfire preparedness, prevention, and education. One of their key activities involves designing and building shaded fuel breaks to prevent wildfires from becoming destructive. An example of their success was halting the spread of the 2015 Oak Fire using the East Big Hill Shaded Fuel Break, which protected the Cedar Ridge community. The council's history traces back to the mid-1990s when the Tuolumne Calaveras Fire Safe Council was established. In 2001, four new fire safe councils were formed to address local issues more effectively. The Tuolumne Fire Safe Council, serving north Tuolumne County, was one of them, officially incorporated in 2002. Over the years, they have engaged in various projects, including fuel reduction, firebreak construction, public education, and patrolling high fire hazard areas. They also operate the Plainview Slash Site under a lease from the Bureau of Land Management. In 2021, the council expanded its service area to cover the entire county, changing its name to the Tuolumne Fire Safe Council. The organization's work is essential because all communities in Tuolumne County face wildfire threats due to terrain, vegetation, weather conditions, and large accumulations of natural fuels. Historic wildfires in the area, such as the 1987 Stanislaus Complex fire and the 2013 Rim Fire, underscore the need for proactive measures. The council's fuel breaks play a crucial role in slowing or halting wildfires and providing a base for firefighting efforts.

C. Rejected Approaches

First Rejected Approach: A Wildfire Prevention JPA.

A JPA could be created with the primary focus of paying for fuel treatment activities and would also require that associated biomass waste that is created from these projects is utilized and not open burned or left to decay and exacerbate fire risk. Such a JPA could also facilitate the use of the new contract template using the developed price structure, or negotiate other agreements between local businesses, and require the utilization of the biomass. These entities are generally funded through community parcel taxes or sales tax measures. In 2021, Tuolumne County introduced Measure V, a proposed parcel tax aimed at funding fire services. This measure would have imposed an additional annual tax of $150 for developed parcels and $75 for undeveloped ones within the Tuolumne County Fire Authority’s jurisdiction. If it had been approved, the tax was estimated to generate approximately $4.2 million in its inaugural year. Regrettably, Measure V faced rejection from more than two-thirds of Tuolumne County voters, with preliminary results indicating that 68% of the votes were against the tax. Despite this setback, county officials and fire chiefs expressed their disappointment and emphasized the urgent need to address the funding challenges identified in a 2019 study. Criticism of the

measure primarily revolved around concerns about its perceived fairness, particularly regarding the varying tax amounts for different parcel sizes. It is unclear how open the community would be to a WPA model through community measures.

Second Rejected Approach: CRD/CSD Entities

While this special District approach is very appealing for some regions, this region has very spread-out populations centers, and low capacity. Creating new districts would take a significant commitment of local individuals who could pool time and resources to the development of the entity. Additionally, the CRD approach would be too narrow for the activities that are envisioned to deal with forest biomass, as those issues go beyond the issue of climate change. Additionally, communities need to be unified in seeing the value of paying an assessment so that the entity can run, which is a key component that could be difficult in this region.

Local Challenges: Yosemite Alpine CSD (A failed CSD Model)

The Yosemite Alpine Community Service District (YACSD) is situated within the larger area of Fish Camp, California. Established as an independent district in 1969 through Resolution NO. 69-45 by the Mariposa County Board of Supervisors, the YACSD currently provides essential services, including water supply, snow removal, and road maintenance, to approximately 37 residents in the Yosemite Alpine Village. In May 1999, the Silvertip Resort submitted an application to construct a 137-room hotel and conference center in Fish Camp, California. An Environmental Impact Report (EIR) was conducted, which determined that the resort's development plans would not adversely impact the quantity or quality of water provided by the Yosemite Alpine Community Service District. Nevertheless, despite the EIR findings, the YACSD Board of Directors remained resolute in their opposition to the Silvertip Development project. This disagreement led to a protracted legal battle between the Silvertip Resort owners and the YACSD, commencing in 2003 and extending well into 2019. Additionally, the YACSD initiated legal action against Mariposa County. The ongoing and prolonged litigation substantially depleted the YACSD's reserves, originally designated for water system maintenance. In 2018, the YACSD Board of Directors made the difficult decision to sell their entire water system to Umpqua Bank to cover the mounting legal expenses resulting from the ongoing litigation. The cost of repurchasing the water system, which exceeds $514,000, will ultimately be borne by the property owners within the YACSD community.

The Yosemite Alpine Community Service District (YACSD) was selected by the Mariposa County Civil Grand Jury (MCCGJ) for an audit, alongside another community service district in Mariposa County. The primary reason behind this decision was the fact that special districts had not undergone a grand jury audit in a significant period. During their research, the MCCGJ

noted that the YACSD was among the Special Districts that had failed to submit their Financial Transactions Reports for the Fiscal Year 2018-19 reporting year.

As they delved deeper into the reasons behind this failure, the MCCGJ uncovered evidence of an ongoing dispute between certain property owners within the Yosemite Alpine Village (YAV) and the developers of the proposed Silvertip development. A significant portion of the YACSD's water infrastructure is situated on land owned by the Silvertip resort. This situation arose from an easement granted in 1969, allowing the YACSD to drill two wells and install water conveyance pipes in the meadow area of Silvertip for the purpose of supplying water to YACSD. This easement set off a two-decade-long legal battle over easements and water rights. As a result, YACSD property owners now bear a $514,000 loan over 15 years, and Mariposa County faces immeasurable losses in Transient Occupancy Tax (TOT) revenue. Furthermore, the risk of wildfires in the area is a major concern, and YACSD no longer has access to over 500,000 gallons of water from a neighboring entity to aid in firefighting efforts. Additional findings highlighted insufficient Staffing, ageing infrastructure, and a lack of transparency between the Board of directors and homeowners specifically regarding the litigation and proposed settlements with silvertip developers.

In summary, the Yosemite Alpine Community Service District (YACSD) has faced a series of complex challenges over the years. YACSD found itself in a prolonged dispute with the Silvertip Resort development, resulting in extensive legal battles that depleted its financial reserves intended for essential water system maintenance. In essence, YACSD's example underscores the complex dynamics at play in community development, resource management, and governance. Moving forward, YACSD faces the critical task of addressing these challenges to secure a sustainable future for the Yosemite Alpine Village community.

D. Conclusion

In summary, the Pilot team recommends exploring the creation of JPA that would focus on biomass utilization by and between the County of Tuolumne, The Mariposa Resource Conservation District, and the Upper Mokelumne River Watershed Authority (UMRWA) in order to determine if such an entity would be conducive to more success utilization of biomass in California.

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