



**EXHIBIT A  
PROPOSAL COVER PAGE**

Proposal Type

Concept Proposal for Demonstration Projects and Processes

Organization Name (Lead Applicant)

County of Humboldt - Economic Development Division

Organization Type

- Federally recognized Indian Tribe
- California State Indian Tribe
- Public agency
- Local or state agency/special district
- Resource Conservation District
- Non-profit organization
- Public utility
- Other: \_\_\_\_\_

Contact Name/Title

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Title: Economic Development Coordinator

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Organization Address (City, County, State, Zip Code):

520 E St, Eureka, Humboldt, CA 95501

Authorized Representative (if different from the contact name)

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number (include area code): \_\_\_\_\_

Certification of Authority

By signing below, the person executing the certificate on behalf of the proposer affirmatively represents that s/he has the requisite legal authority to do so on behalf of the proposer. Both the person executing this proposal on behalf of the proposer and proposer understand that the NCRP is relying on this representation in receiving and considering this proposal. The person signing below hereby acknowledges that s/he has read the entire Request for Proposals document and has complied with all requirements listed therein.

Official Authorized to Sign for Proposal

Kenneth Spain  
Signature

03/13/2020  
Date

**NORTH COAST RESOURCE PARTNERSHIP**

**2020 DEMONSTRATION PROJECT**

**REGIONAL FOREST and FIRE CAPACITY PROGRAM**

**GRANT APPLICATION**

**COUNTY OF HUMBOLDT**

**UNITED STATES FOREST SERVICE**

## EXHIBIT C

### CONCEPT PROPOSAL FOR DEMONSTRATION PROJECTS AND PROCESSES

Project Name: USFS Bio-Mass – Converting Waste to Cash Flow

1. Project Intent – The USFS currently uses revenue gained from timber sales to pay for logging slash clean up. Clean up, which is typically piling slash and burning it, is time consuming and expensive. This project is intended to study the most cost-effective means available to create a product from the waste stream in place of burning. The greatest obstacles to selling the biomass are having a viable end user (buyer), a higher value product to sell and the cost of transporting the product to a reasonable point for the private sector to haul it to their facilities. The County of Humboldt approved a request from the Forest Service to enter into a Good Neighbor Agreement to encourage cooperation between the two entities. This application is intended as a first step in strengthening our relationship. This study will utilize existing data, add practical application (test the models) in an effort to develop a product that will help County Economic Development recruit businesses to the North Coast area. We recognize there have been numerous studies done on this topic, however, innovation in harvesting biomass, pellet manufacturing, storage and shipping technologies dictate the need for updating the information and testing it in the field. It is time to take it out of the classroom and evaluate it in the forest. Experienced based product development is a proven methodology that is being tried in other typographies and needs to be conducted here as well.

Problem Statement – What’s the cost of doing nothing...what’s at risk from fuels build-up? The USFS has multiple ways to collect the biomass that must be removed from the forest to reduce the fire danger. This can include making clean up from timber sales a part of the bid requirements for the private sector; clean up the debris themselves; work with other organizations to assist in cleaning areas. However slim profit margins for timber sale purchasers and declining federal budgets and staffing inhibit the pace and scale that fuels reduction can be implemented. Turning the waste stream into a viable product to be manufactured locally and exported to replace coal in coal fired electric generation plants in Asia will be a win-win for our forests, our economy and the overall reduction of greenhouse gas emissions.

Setting & Background – Most of the biomass from logging and forest cleanup is being burned. Biomass availability for existing operations comes from unutilized treetops and limbs produced during commercial timber operations, along with smaller whole trees and shrubs produced from stand-alone non-commercial fuels reduction operations. In both cases, the resulting biomass is typically hand piled or tractor piled (sometimes chipped and left in place on the ground) and later burned.

Traditional end users of forest biomass (waste stream) have been for use as low-grade fuel for electrical generation plants, soil production, firewood, and wood chips. Collecting and transporting the debris from the forest in most instances is too costly to afford removal except when close to highways or facilities that can use the by-product. The Forest Service estimates on average 10% of

tree sales are leftover biomass which is collected and burned. This is extremely costly and adds particulate matter to the air. Almost all biomass removed from thinning operations and invasive specie removal is handled in a similar manner to logging cleanup.

Project Implementation – The County of Humboldt Economic Development Division (EDD) will work with the USFS Regional Supervisor and Staff from the Six Rivers National Forest, Humboldt State University and private sector companies in studying how biomass might be removed and at what cost in comparison to current practices. A major goal of this study is to develop price points for multiple variations of terrain, transport and fuel sources. County ED and Forest Service staff will work together with NCRP in developing a detailed plan and final budget and timeline. The Forest Service will test the concept on the ground. Although this study will be specific to Forest Service forest management, it is anticipated to be transferrable and scalable to Federal, State and private forests. It will also provide disadvantaged communities throughout the Six Rivers area with opportunities for employment and increased tax base.

Expected Benefits – This project aims to reduce fire risk, improve forest health, provide safer communities, create more jobs for local residents (which are traditionally higher paying), reduce the carbon footprint in the USA and Asia, and encourage businesses to locate or expand in California. Asian electric generation facilities that are coal fired are seeking lower carbon alternatives as a fuel source. This could, as it is already doing in Europe and Western Asia, be a long-term renewable source. Innovation in black pellets over the past 2-3 years has revolutionized the pellet industry. Unlike in other areas of America and other countries, this source would be a waste byproduct of forest management.

Should the study show more cost-effective means for the Forest Service to remove logging biomass, they may be able to remove that task from loggers bidding on timber sales and thus increase sales revenue. Cost vary significantly due to logging systems required on each sale. Most often, and in graduating cost, are ground based, cable and helicopter logging.

It is the goal to create a product that reduces or possibly even eliminates the cost to the Forest Service to remove the biomass from the forest without burning it. This plan will address the varying costs associated with multiple grades/slopes and the practicality of the cost to the private sector. All aspects of this study will be tied to reducing catastrophic wildfires.

This project, if successful, would add to the strengths of the North Coast Region where more than 89% of the geographic area is considered economically disadvantaged and 57% is considered severely economically disadvantaged. The high cost of energy in the area is a disincentive to business recruitment, should this project prove successful the low cost of fibrous material could help offset the cost of electricity and make the go-no go decision for business to be reasonably assured of their fiber supply.

Meeting NCRP RFFC Objectives – This plan will evaluate new equipment and practices, production processes, transportation methods, policy enhancements and see where regulation and permitting changes may be necessary to facilitate the end goal of reducing fire danger and increase resiliency of our National Forests. The plan intends to produce a scalable model. By utilizing innovation in the wood pellet industry, a new product (and thus market) will be born.

This demonstration project is consistent with the goals of the Regional Forest and Fire Capacity Program. It will utilize the combined strengths and knowledge base of the US Forest Service, Humboldt State University, and Humboldt County, the latter of which is currently the NCRP Administration and Contracts Lead and Fiscal Sponsor for this grant. The United States Forest Service will provide in-region National Forest expertise as well as policy, research, and planning representatives at the local, regional and federal level.

HSU's Forest Advisory Council and Schatz Energy Group will be asked to serve as Academic Partners and provide local experts. At least one HSU student intern in Environmental Economics has already shown an interest in working on the project.

## 2. Specific Project Goals/Objectives

Determine the financial feasibility of removing biomass from the forest to a transfer point that will provide usable fiber for manufacture of black pellets that utilize the most innovative process in the market today. A direct objective is to determine if there is the possibility of providing an affordable cost of raw fiber to the pellet industry. Businesses that have shown a strong interest have voiced a major concern that there needs to be a cost savings in fiber to offset the local expense of electricity and the level of taxation in our state. Specific manufacturers that the county and Forest Service have met with are awaiting the outcome to make their go/no go decision to locate here. This will provide a scalable model for other regions to make the same determination in biomass removal and hopefully entice industry to their areas as well.

## 3. Meeting NCRP Goals/Objectives and intent of RFFC Program Block Grant

This study will help timber owners, public and private, a means to determine at what rate the removal of fire prone materials can be removed, and how this is affected on various land, road and area basis. It will also help landowners to determine a long term, sustainable supply level for sale to the private sector.

## 4. Scalability/Replicable/Measurable/Innovative/Results in Scope & Scale of Multi-Benefit Forest Management in North Coast

The results from this study will help the USFS and the County to determine the sustainable amount of biomass that would be available to the private sector and at what cost. There are multiple businesses interested in locating pellet manufacturing facilities on the Samoa Peninsula. One of those businesses has emerged as the most innovative producer in the Nation. Two of the businesses have proposed operations which would produce a particular type of black pellet that would be used in place of coal in Asian markets and another proposed a facility producing white pellets.

The results of this study will provide scalability primarily to areas with like terrain. It will be replicable in those areas such as the National Forest lands along the coast and western interior of California, Oregon, Washington and British Columbia, Canada.

Establishing cost for removal and preparation for transport to market will provide a basis for a market price. None exists currently. The potential manufacturers have stated that having a known price will be a decision point for locating in California. This innovative approach that can be duplicated throughout the North Coast in a measurable manner is key to having end users that will help offset the use of coal without coal fired electrical generation plants having to make extremely expensive alterations to their plants in order to add wood pellets to their fuel source as is the case with white pellets. This will further reduce the greenhouse effect internationally which will be considered in the carbon footprint analysis in this study.

Innovations in the pellet manufacturing industry over the past three years has been revolutionary. By removing and utilizing volatile compounds from fiber and using it in the production process, the resulting product can be stored

This is an opportune moment to establish an alternative to burning biomass in the forest. Establishing an alternative use for forest biomass is expected to free up the USFS throughout the North Coast from having to pay for cleanup and burning from their merchantable timber revenues, or at least offset that expense, so that they can use revenues for more desirable forest management practices.

#### 5. Need for the Project/Forest Health/Climate Change-Extreme Event Resiliency

States up and down the West Coast of the US and National agencies have launched major new funding efforts to reduce extreme fire danger and improve the health of the forests as well. This project will help identify ways to turn dead trees, waste from logging, cleanup and other causes of wildfires to be removed quicker which will help reach those goals much quicker.

Climate change is a worldwide problem and by creating a replacement for coal, carbon emissions will be significantly reduced. We intend to show in this study how the recent innovations in the production of black pellets, such as using volatile compounds emitted in the process to be captured and used instead of being released when produced and burned, will revolutionize the way woody debris can be disposed.

The need for this study has never been more important or timely. The problem matched with a potentially cost-effective solution provides a win-win solution to a long-standing challenge.

#### 6. Location and Size of Project/Communities Served

The initial location will be the Six Rivers National Forest lands. Communities served will be identified in the study but are primarily those counties and communities surrounding the SRNF. The initial target is to study the cost of removing and transporting biomass to a pickup point for the private sector that is no further than 50 miles from the Samoa Peninsula. Multiple potential locations will be identified, including the cost associated with each being the most economically and environmentally advantageous.

It is the plan to make this a scalable model that will spread the new jobs associated with each location a primary concern; a spread-the-wealth approach to community/economic development. By hiring locally, the carbon footprint would be reduced significantly. The study will also look at the

potential savings of having temporary housing (most likely tiny homes) used onsite, again, to reduce the carbon footprint of commuting to and from the forest.

7. Partnerships/Local Political Support

On March 3, 2020 the County of Humboldt and the USFS/Six Rivers National Forest formally agreed to a Good Neighbor Agreement showing the political support for this type of partnership. This is a great step toward a cooperative solution to a common problem. The Humboldt State University, who has partnered with the SRNF for several decades, will also be a partner in this effort. The SRNF Supervisor, Ted McArthur, serves on the HSU Forest Advisory Council. County Economic Development has been partnering with HSU and Schatz Energy Lab by providing intern opportunities to students.

8. Quantifiable, Measurable Benefits from Project

The main benefits to be quantified by this study are the expense of removing and transporting the raw material out of the forest and identifying the amount of carbon reduction possible by not burning the biomass in the forest and using it for a fuel in place of coal. The study will project a range of new jobs to be created and the financial impact on local economies.

This outcome will hopefully be the creation of a new market for the West Coast. The focus will be on supply for the pellet industry, but will look at other, potentially higher valued uses of biomass being removed. A recent proposed environmental document on the Six Rivers N.F. would allow larger diameter timber to be removed across the forest (increasing from 8 to 12 inches) for stand-alone non-commercial fuels reduction projects, which would expand the opportunity for available biomass and uses such as mass-timber construction.

Ms. Spanberger, Chair of the US House Agriculture Committee in a presentation on Innovative Wood Products: Promoting Rural Economies and Healthy Forests on February 26, 2020, regarding implementing sustainable forest management practices is quoted as saying “The National Forest Products Laboratory has been studying the use of biomass for nano technologies for particular use of nano-cellulose for additives for food coatings, transparent flexible electronics, biomedical applications among many other potential applications. There are studies already underway for mass timber and fiber insulation for the construction industry allowing faster construction and lower emission profiles”.

9. Scientific Studies/Plans/Designs/Reports Completed for the Project

Approach to Data Collection /Performance Measures (acres treated, volume or tons/acre, costs/ton or per acre/Project Reporting Outcomes/Lessons Learned

As mentioned initially, this study will build upon existing work and put it to the test in the field. Our initial findings will be put into action on a pilot basis beginning with the “low hanging fruit”. This will likely be on relatively flat ground, 10% slope or less, cover multiple sources such as from timber sales, thinning/clearing and undesirable species removal. The USFS and HSU have an enormous amount of existing data to draw from. We will develop performance measures with NCRP as part of the negotiations should we be selected for funding.



**North Coast Resource Partnership Grant Application Budget**

**Exhibit C - Budget**

Staffing		Staff Person	Staff Role	Time Dedicated	Percent of Time	Burden Hourly Rate	Staff Costs	Materials	HSU/Research Consultants	Total Project Cost
<b>County of Humboldt</b>		Economic Development Coordinator	Kenneth Spain	Grant Administrator-Report Writing	10 months	10%	54.37	11,308.96	1,000.00	
		Economic Development Specialist	Ryan Heitz	Grant Research and Support	As needed	5%	39.52	4,110.08		
							<b>Total County Amount</b>	<b>15,419.04</b>		<b>15,419.04</b>
<b>US Forest Service</b>										
Wa DC Office-Enterprise Unit	Social Scientist	Christy Prescott	Project Manager-Research-Report Lead	10 months	40%	125.00	104,000.00	2,000.00		
Six Rivers National Forest	Forest Silviculturist	Jeff Jones	Data Collection and Analysis Includes Field Work	10 months	20%	62.00	25,792.00			
	Vegetation Program Manager Forest Supervisor	Ted McArthur	Oversight and Coordination with Field Staff		5%	100.00	10,400.00			
Field Work	Implementation Testing in the Field	Undetermined	Determining Actual Costs by observation and review	12 weeks		Varies	15,000.00			
							<b>Total Forest Service Amount</b>	<b>155,192.00</b>	<b>3,000.00</b>	<b>158,192.00</b>
<b>HSU Forest Mgmt Program</b>		Forest Mgmt Program-Intern		Research and Report Editing					5,000.00	
		Schatz Energy-Intern		Research and Report Editing					3,000.00	
									<b>8,000.00</b>	<b>8,000.00</b>
<b>Totals</b>										<b>181,611.04</b>
<b>Contingency- 10%</b>										<b>18,161.10</b>
<b>Grand Total</b>										<b>199,772.14</b>

# PROPOSED TIMELINE

## NCRP GRANT APPLICATION

County of Humboldt Economic Development/US Forest Service

### Proposed Grant Schedule

#### USFS Bio-Mass – Converting Waste to Cash Flow

##### Timeline:

1. **March 13, 2020** Submit application.
2. **March 15-29, 2020** Respond to questions from NCRP Review Team
3. **March 30, 2020** Attend TPRC Project Review and Scoring meeting.
4. **April 3, 2020** Policy Review Panel considers/approves TPRC recommendation. If selected, project participants will meet to discuss specifics of the project, roles, responsibilities, etc.
5. **April 14 or 21, 2020** Joint presentation of USFS, County and HSU proposal to County of Humboldt Board of Supervisors to obtain permission to formalize an agreement for the project.
6. **May 8, 2020** Develop detailed project scope and budget with NCRP staff and finalize sub-grant agreements.
7. **May 19, 2020** Agreement presented to Board of Supervisors for final approval. USFS seeks approval from FS Headquarters.
8. **June 15, 2020** Project kick-off.
9. **June and July 2020** Project staff develop current costs the Forest Service incurs under current practices in removing and disposing/burning biomass.
10. **July-Sept. 2020** Costs are summarized for multiple slopes, distances, road conditions, etc. to provide cost centers for comparison to alternative means of moving material to locations favorable to private sector access points. On-site analysis with field staff and contractors.
11. **Sept.-November 2020** Carbon footprint and greenhouse gas reductions studied and quantified based on multiple input factors (location, road availability, material source slopes, timber sales-vs-clearing, etc.); cost centers modified for as many options as reasonable. External reports surveyed and information collected from recent data studies.
12. **Dec 2020-Feb 2021** On-site pilot demonstration of proposed alternatives. Result, discussion, conclusion and recommendations summarized in report format. Final greenhouse gas comparisons, including end use as replacement for coal in Asian coal fired electrical generation plants.
13. **Feb-Apr 2021** Draft and final reports for Converting Waste to Cashflow developed and submitted to NCRP.