ABSTRACT FOR THE NEW MEXICO WOODY BIOMASS

RESOURCE ASSESSMENT SYSTEM

A Project of Sustainable Communities, Inc.

A New Mexico 501(c)3 Organization

**THE CASE:**

The paradigm for forest management is changing drastically. Due to decades of fire suppression our nation’s forests are seriously overgrown, choking off healthy tree growth, leading to the subdual of natural flora and fauna and increased danger from wildfires. The consensus among climatologists and forest scientists is that if we do nothing or react too slowly, we will loose most of the forests in the southwestern US over the next 50 years. As record pace climate change occurs and the processes of desertification continue, we will also lose most of our fresh water resources that flow from our forested mountains. All agree that we must act now.

A solution is in hand and starting now we have a few short years to implement it. In order to save our forest genome for the very next generation - much less their children – and to save our supply of fresh water and everything that depends on it, we must implement sustainable forestry treatment regimes that clear away decades of overgrowth across large watershed-scale landscapes all across NM, simultaneously.

We know how to do it. Sustainable forestry management now focuses largely on thinning activity to help restore forest health and address fire danger, protecting watersheds, wildlife, riparian ecosystems as well as precious soils and the environment as a whole. However, treatment is an expensive process and it will yield many millions of tons of biomass, which must be turned into an asset and sold in order to defray treatment costs.

Because forest thinning is an expensive endeavor, bidders on publicly funded thinning projects are forced to find ways to utilize - or dispose of at their cost - the woody biomass derived from small diameter wood stock in order to conduct economically viable operations. Until now their options for use have been limited to more traditional wood products or to controlled burning. New Mexico businesses currently manufacture posts, poles, vigas, latillas, horse bedding, wood pellets for stoves, firewood, mulch products, flooring and molding, as well as other applications from small diameter wood. The next phase of businesses that will require the vastly larger volumes of wood feedstocks that will be generated through systemic statewide treatment are those that convert biomass to renewable energy products and other valuable chemicals that are currently derived from expensive fossil fuels via extractive technologies.

Technology development in renewable energy is now fully emerging all over the planet and just in time. A number of these businesses have sprung up around the State and more are on the way from Europe, Asia, our own NM National Labs and our entrepreneurial business sector. The primary factor that will attract these businesses to - and from - New Mexico and keep our locally grown resources here doing business and creating jobs for New Mexicans, will be the economic availability of the raw woody biomass material generated from our drive to save our forests and water. This means we must as a state organize a totally new supply chain for an old and reliable resource base, our precious New Mexico woodlands. We believe that among the first steps in building this supply chain is gaining a comprehensive understanding of the scope of the current resource base and developing an ability to accurately predict future woody biomass volumes.

**THE PROJECT OVERVIEW:**

This project will create a tool that will provide an empirical assessment of the long-term volume and harvesting costs of woody biomass in specific public and private forested areas. This tool will be key for the development and promotion of woody biomass based businesses, helping to bring back the wood economy within the new forest management paradigm, revitalizing the Southwest’s timber communities that have been devastated by the decline of traditional logging.

GIS, satellite imagery, software applications and other technology are often applied to traditional commercial timber resources rather than to the utilization of small diameter biomass. Nevertheless, there is an acute need to promote businesses that utilize small diameter biomass material in order to make expanded forest restoration treatments in the southwest commercially viable. This is a proposal to develop a model and replicable framework for determining the type, volume, availability and harvesting costs of current and future small diameter biomass material for commercial applications - including renewable energy generation - using the best existing technology, and scientifically sound sampling.

Much of the resulting data and information from this application will be web-based and available to the public at no cost. The not-for-profit Sustainable Communities Inc. will be the fiduciary agent and coordinate the effort. The New Mexico Forest and Watershed Restoration Institute (NMFWRI) will be in charge of coordinating field and analytical procedures. Local tonnage equations by species will be coupled with on-the-ground inventories and remotely sensed data to inform the software tool for estimating tonnage and harvesting costs per acre. The Trust for Public Land’s (TPL’s) GIS program will manage cutting-edge GIS modeling and the website development. AFE Advisors will create the remote sensing methodology with input from the project team and perform the remote sensing woody biomass analysis. The project team will work closely with NM stakeholders and education institutions and their students to provide job-training skills. We will provide an online tool that will estimate “bankable” assessment volumes that are highly accurate for small diameter woody biomass material created by sustainable forest-restoration and fire suppression treatments. The result will be to create jobs in low-income communities across New Mexico.

**PROJECT BENEFITS:**

* Turns community liabilities (unhealthy forests, fire devastation, watershed vulnerability, wastes) into community assets (forest restoration, “fire ready” communities, clean water, economic development).
* Improves the health and diversity of NM’s forest landscapes and watersheds.
* Replaces cost associated with firefighting, property loss and ecosystem destruction with net revenue and job creation.
* Is key to developing a renewable energy business sector in NM.
* Enhances local economic development activities throughout NM.
* Engages educational institutions across NM in the process on an ongoing basis. (Institutions are eager for real-life education opportunities for their students. Their engagement also reduces the costs of this project and will provide the means to fund those institutions’ continued participation.)
* Educates students of all ages in the many aspects of sustainable utilization of woody biomass for energy and other wood-based products.
* Creates a robust, sustainable and reliable energy and fuel resource for NM’s essential services and community power during supply disruptions.
* Provides users with the assessment tool they need now to protect and in the process utilize their woodland resources.
* Creates the potential in the first 5 years of use for 400 to 1200 new and permanent, direct, indirect and induced biomass-based jobs in NM resulting in $14,000,000 to $42,000,000 of new payroll (based on a current average salary of $35,000/year). These salaries also favorably and directly enhance local tax bases and bonding capacities.
* Further enables the robust, creative development and implementation of NM renewable energy technologies now being researched in our State’s National Labs, Universities, Community Colleges and among its many eager entrepreneurs.
* Supports a larger zero waste economic development initiative in NM and enables a shift in focus toward an efficient and sustainable zero waste economy.
* Will be a replicable tool for forest restoration across the U.S. and the world.