"Advancing the Bioeconomy in Northcentral Texas"
ATIP Foundation USDA Rural Development (TX) Rural Business Development Grant

2019 RBDG Grant Proposal

Through the initial scoping for the grant proposal, in consultation with the steering committee, the following broad activities have been identified as essential to further prepare the region for economic development with the business participants and broader industry expansion in the North Texas innovation cluster:

1. **Identify and analyze business opportunities** (biomass feedstocks, suppliers & service providers, access to capital, workforce training)
2. **Identify, train, and provide technical assistance**;
3. **Assist in the creation of new rural businesses related to advancing the bioeconomy;**
4. **Conduct Local Community and multi-County Economic Development Planning; and**
5. **Establish centers for Training, Technology and Trade**

Task 1. Identify and analyze business opportunities...

DELIVERABLE: a comprehensive database that will identify, document and analyze business opportunities that will utilize local rural materials and human resources.

Description: Essentially, the deliverable will be an extensive database that will identify (1) biomass available for conversion to fuel, commodities, products or power; (2) suppliers and service providers that can support the industry; (3) sources of capital; and (4) availability and sources of training for the skill sets needed.

Specific components include:

(1) **Biomass**: we need to document every source of biomass in the region. As one example, the number of cows on each individual farm and in the aggregate, and the contact information for the owners. Other biomass sources include but are not limited to other animal production operations, crop residues, bioenergy crops, storm-generated woody biomass, municipal wastes, and sewer sludge. These data on available biomass are essential in assisting a startup company, relocating a company into the region, or expanding existing services such as transport and depo facilities. Every company with whom we have spoken has invariably first asked about the availability, quantity, and sources of biomass for conversion to electricity, commodities, etc.

(2) **Suppliers & Service Providers**: we need to know where the suppliers and service providers are that can and will support this industry. One of the largest companies planning to locate to the region will need to obtain numerous tanker trucks and drivers to collect and transport animal manure from animal production farms to the processing facility.

(3) **Capital**: In addition to USDA loan guarantees, for which we are providing assistance, we are

working with banks in the 4-county region to assist them in becoming USDA guaranteed government lenders. This will provide local sources of capital, particularly important for smaller companies.

(4) **Workforce Training**: Companies also invariably ask about the availability of a local workforce. We are currently working with the North Central Texas Workforce Board, that serves the 4-county Region. The Board has designated agribusiness as a primary high demand sector and is using our model to assist in developing the training capabilities needed within the region.

This includes the establishment of an "Unmanned & Autonomous Systems (UAS) Training Academy" at the Mineral Wells Regional Airport, which will support feedstock assessments and precision agriculture. We are currently working with AG4, a startup company that has moved from Australia to Parker County and plans to install sensors that will be read by UAS aerial devices. They have indicated they will use the training provided at the UAS Academy to train and skill their workforce, which demands FAA certification.

Task 1 is the most complex and demanding multi-faceted task, involving several sectors whose representation has been recruited as part of current Steering Committee in the current TX biochar/bioeconomy initiative. A database will be generated to document and guide activities for each of the enumerated activities (a) through (d) below.

Task 1(a) Generate a resource assessment report and heat maps to identify and quantify regional available feedstocks and to support business attraction and preliminary information for project feasibilities

- Dairy Waste- conduct meetings with area dairymen to gather information on dairy locations, animal populations, manure collection methods, and current management practices, proximity to the pipeline;
- Agricultural and processing residuals such as wheat straw and corn stover, meet with area farmers and farm organization to verify quantity available at price points, use existing USDA NASS and other data sets;
- Purpose grown crop for remediation of phosphorus levels, waste-water treatment facility (WWTF) spray fields, or otherwise, including sorghum, miscanthus, switchgrass, and others as appropriate, work with U. S. Department of Energy National Renewable Energy Laboratory (NREL) and estimate predictive yields based on Biofuel Ecophysiological Traits and Yields Database;
- Invasives- Confirm problem with state and Federal agencies, quantify feedstock supply and location of any invasive plants such as Juniper, Mesquite, *Arundo donax*, etc. that would be appropriate for utilization, supporting regional conservation with market creation;
- Downed trees- Processing potential in an area has been affected by major natural disasters over the past 3 years including Severe Storms, Tornadoes, Straight-line Winds, and Flooding and will likely have ongoing needs for storm debris removal;
- Recycling and other appropriate post-sorted municipal wastes with community partners and appropriate business agents; and
- Other feedstocks as determined significant by staff and partnering organizations.

Task 1 (b) Identify current suppliers and service providers of dairy operations and other biomass-generating enterprises. This would include businesses that provide services to other industries, such as oil and gas pipelines, servicing industrial machinery, and other ancillary businesses that may find opportunity in the bioeconomy. Evaluate their interest and capacity to expand operations in a broader bioeconomy effort. Identify challenges to operations (logistic, regulatory, fiscal) and potential solutions to issues.

Task 1 (c) Identify fiscal resources in community, and working with the banking & finance sector, explore mechanisms to become lenders of USDA guaranteed loans, other sources of federal and state loan programs, and regional private investment funding options.

Task 1 (d) Identify and assess current training programs for harvest/collection of biomass feedstocks, training needs of potential new enterprises (e.g., biomass depots and pre-processing facilities), special equipment operational training (transport, pre-digester or pre-pyrolysis processing). Work with enterprises being recruited by this initiative (current collaborators, others) to identify training needs should they locate to the region.

Task 2. Identify, train, and provide technical assistance...

DELIVERABLE: Develop capability of economic development organizations to provide technical assistance

Description: We will provide technical assistance to the managers and staffs of the Chambers of Commerce and Economic Development Corporations in the region, the goal being to enable their staffs to provide technical assistance to entrepreneurs and managers in their areas, relative to the Bioeconomy.

We will continue to train their management teams, providing information and data to them, in order to establish their capability to provide the same direct technical assistance to companies in their service areas as we (ATIP) are providing currently.

Task 3. Assist in the creation of new rural businesses...

DELIVERABLE: A list of companies that were established or recruited, the number of jobs created, and the amount of capital investment made as a result of our efforts in the 4-county region, as well as companies we are assisting that are not yet open for business.

Description: Currently, we are directly assisting in the creation of seven new rural businesses. As two examples of our seven prospects;

- **AG4 Group** is a start-up precision agriculture Company from Australia. We are assisting them in raising capital, and developing a relationship with Tarleton State University, where they have established a demonstration plot for their sensor technology, that will be read by drones.
- **BargerTech Ltd.** is a renewable energy company, that plans to build a facility in our 4-county region that will convert dairy manure into biogas and multiple commodities. We are

assisting them with preparing their 9003 USDA Loan Guarantee Application. We have introduced them to Taite McDonald, Holland & Knight (D.C.) who is representing them in their Phase 1 Application; to Chris Cassidy, USDA Renewable Energy Advisor, who has counseled them on their Technology; and to the Stephenville Economic Development Authority, who is assisting them in organizing the dairymen in the area.

Task 4. Conduct Local Community or multi-County Economic Development Planning;

DELIVERABLE: A strategic plan for the development of the bioeconomy in the four County area, supported by all economic development corporations that serve the 4-county area.

Description: when we convened the initial meeting of the Regional Steering Committee, the Chambers of Commerce, Economic Development Corporations, and City and County Governments did not know what "Biochar" or the "Bioeconomy" was, in any literal sense. They were certainly not sufficiently knowledgeable to develop a strategic plan to develop the industry or advance the bioeconomy. As a result of our first year's efforts, they are now ready and committed to work with us in a collective, collaborative manner to develop a true strategic plan for the growth of the Bioeconomy as a primary industrial sector in the 4-county region.

Task 5. Establish centers for Training, Technology and Trade.

DELIVERABLE: The establishment of the Mineral Wells Unmanned & Autonomous Systems (UAS) Training Academy and Test Center at the Mineral Wells Regional Airport.

Description: The center will be established to support the growth of the Unmanned & Autonomous Systems (UAS) Sector. During our past tenure as a USDA Federal Partnership Intermediary, the ATIP Foundation became aware of the broad and diverse use of UAS by the agricultural industry. Given the role UAS plays in precision agriculture, the Training Academy will provide all training leading to FAA certifications, which will be required as the FAA is moving to standardize certifications for the industry.

It will also provide a flight test center, which will enable testing in an Innovation Zone airspace up to 4,000 feet. Given that there are currently 240 Systems under development and only 7 Test Centers in the US, this will serve to attract the UAS Sector, notably precision agriculture, to the region.