

**Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)**

LCCMR ID: 161-F3+4

Project Title: Establishing a Grass-Based Bioenergy Economy in Northwest Minnesota

Category: F3+4. Renewable Energy

Total Project Budget: \$ \$770,600

Proposed Project Time Period for the Funding Requested: 3 yrs, July 2011 - June 2014

Other Non-State Funds: \$ 0

Summary:

Growing a grass-based bioenergy economy in Northwestern Minnesota: A new conservation and business collaboration to facilitate technology transfer, test best production practices, and maximize environmental and conservation benefits.

Name: Charles Naplin

Sponsoring Organization: Pembina Trail Resource Conservation and Development Council

Address: 2605 Wheat Dr
Red Lake Falls MN 56750

Telephone Number: 218-253-2646 x4

Email pembinatrail@yahoo.com

Web Address http://www.pembinatrailrcd.org

Location

Region: NW

Ecological Section: Lake Agassiz, Aspen Parklands (223N), Red River Valley (251A)

County Name: Kittson, Marshall, Norman, Pennington, Polk, Red Lake, Roseau

City / Township:

<input type="checkbox"/> Funding Priorities	<input type="checkbox"/> Multiple Benefits	<input type="checkbox"/> Outcomes	<input type="checkbox"/> Knowledge Base
<input type="checkbox"/> Extent of Impact	<input type="checkbox"/> Innovation	<input type="checkbox"/> Scientific/Tech Basis	<input type="checkbox"/> Urgency
<input type="checkbox"/> Capacity Readiness	<input type="checkbox"/> Leverage	<input type="checkbox"/> Employment	<input type="checkbox"/> TOTAL <input type="checkbox"/> %

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Establishing a Grass-based Bioenergy Economy in NW Minnesota

I. PROJECT STATEMENT

Locally produced grass-based biomass has the potential to become a revolutionary new tool for conservation that benefits wildlife, improves water quality, mitigates global climate change and increases biodiversity on the landscape. Perennial grass-based energy will also benefit rural communities by spawning new industries, creating high paying jobs, and offering alternative and profitable options on marginal agricultural lands.

To collectively capture each of these benefits requires overcoming multiple barriers. Uncertainties resulting from immature markets; untested production and harvest techniques; and limited risk management options currently impede landowners from integrating bioenergy crops into their operations. Similarly, because the technologies for converting grass-based biomass are largely unfamiliar to local energy producers and consumers, there are few local market opportunities for perennial biomass. This project seeks to bridge these gaps by building the knowledge base necessary for biomass production while stimulating local market creation by facilitating relationships between regional communities and international market leaders.

Northwest Minnesota has abundant grassland resources; innovative communities with a strong desire to strengthen their local economic base; and a demonstrated need for additional ecosystem services such as floodwater retention. These factors make the region a strong candidate for initiating an effort to establish a perennial grass-based bioenergy economy.

The project will provide a comprehensive regional strategy for developing a conservation-based bioenergy industry by: testing perennial biomass harvest and production techniques; importing innovative end-use technologies for converting biomass into energy, thereby creating new business opportunities and jobs; identifying the highest priority landscapes for establishing dedicated conservation-based energy crops; and quantifying the ecosystem services that perennial biomass crops can provide.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Perennial biofuels harvest and establishment restoration trials Budget: \$ 286,800

The project will conduct biomass production/harvest trials on up to 500 acres of public and private grasslands. These harvests will result in improved prairie management while serving as a catalyst for the development of a regional biomass harvesting industry.

Restoration of approximately 100 acres of private and/or public native grasslands within existing priority habitat complexes will provide a field-scale test for determining maximally productive native plant community composition with respect to biomass production, enhancing wildlife habitat, capturing soil carbon, and improving water quality and retention.

Outcome	Completion Date
1. Complete biomass harvest from up to 500 acres, identification of existing and emerging markets, and transportation to facilities	Spring 2014
2. Restore up to 100 acres of prairie and wetland complexes with low-input/high-diversity plant communities suitable for bioenergy production	Fall 2013
3. Measure soil carbon on restored lands to establish a baseline for long-term bioenergy harvest activities	Spring 2014

Activity 2: Landscape level restoration modeling and mapping Budget: \$ 171,000

Design and implement a landscape-scale model detailing highest potential ecosystem service benefits such as flood water control, carbon storage, and wildlife habitat, derived from grass-

based biomass production in the region. The model will leverage federal and state funding by identifying specific locations within the region that are likely to maximize environmental benefits while providing competitive economic returns to landowners.

Outcome	Completion Date
1. Creation of baseline and predictive Ecosystem Services and biodiversity models for prioritizing biofuel restoration opportunities	Winter 2013
2. Landscape GIS analysis and fuelshed map overlaying highest potential biomass production areas with highest priority conservation needs	Spring 2014

Activity 3: Spur business opportunities through innovative partnerships **Budget: \$ 195,200**
 Facilitate new business opportunities and job creation by encouraging local utilization of biomass products in the region. Through the introduction of new technologies and cultivating business relationships with international industry leaders the project will create new opportunities for local manufacturers, energy producers, and energy consumers.

Outcome	Completion Date
1. Identification of local manufacturers, energy demand centers, and community leaders to promote the utilization of grass-based biomass.	Winter 2013
2. Establish new relationships between international bioenergy industry leaders and regional businesses resulting in the formation of strategic partnerships and new business opportunities.	Spring 2014

Activity 4: Local stakeholder outreach and coordination **Budget: \$ 117,600**
 Organize and convene local stakeholder workshops to engage public and private land managers in a planning process that balances environmental and economic benefits from native perennial biofuel production.

Outcome	Completion Date
1. Convene and coordinate stakeholder workgroups	Winter 2013
2. Develop summary report detailing challenges/opportunities for state	Spring 2014
3. Project administration and fiscal management	Spring 2014

III. PROJECT STRATEGY

A. Project Team/Partners

Pembina Trail RC&D Council - (Project Administration)

The Nature Conservancy - (Community outreach, GIS mapping and modeling, restoration expertise, biomass harvest coordination)

MN Dept. Natural Resources – (Grassland management expertise, biomass harvest assistance)

BioBusiness Alliance of Minnesota – (Business and market development)

Agricultural Utilization Research Institute – (Technical support)

Great Plains Institute – (Stakeholder facilitation and community outreach)

B. Timeline Requirements

The project will be conducted over a three year period.

C. Long-Term Strategy and Future Funding Needs

The project will test and demonstrate the economic and ecologic benefits of a regional grass-based bioenergy industry. In addition to testing targeted conservation strategies that maximize environmental benefits with fewer dollars, the project will create a viable model for providing economic returns to landowners sufficient to minimize the need for future investments in grassland restoration, protection, and management.

2011-2012 Detailed Project Budget

INSTRUCTIONS AND TEMPLATE (1 PAGE LIMIT)

Attach budget, in MS-EXCEL format, to your "2011-2012 LCCMR Proposal Submit Form".

IV. TOTAL TRUST FUND REQUEST BUDGET (3years)

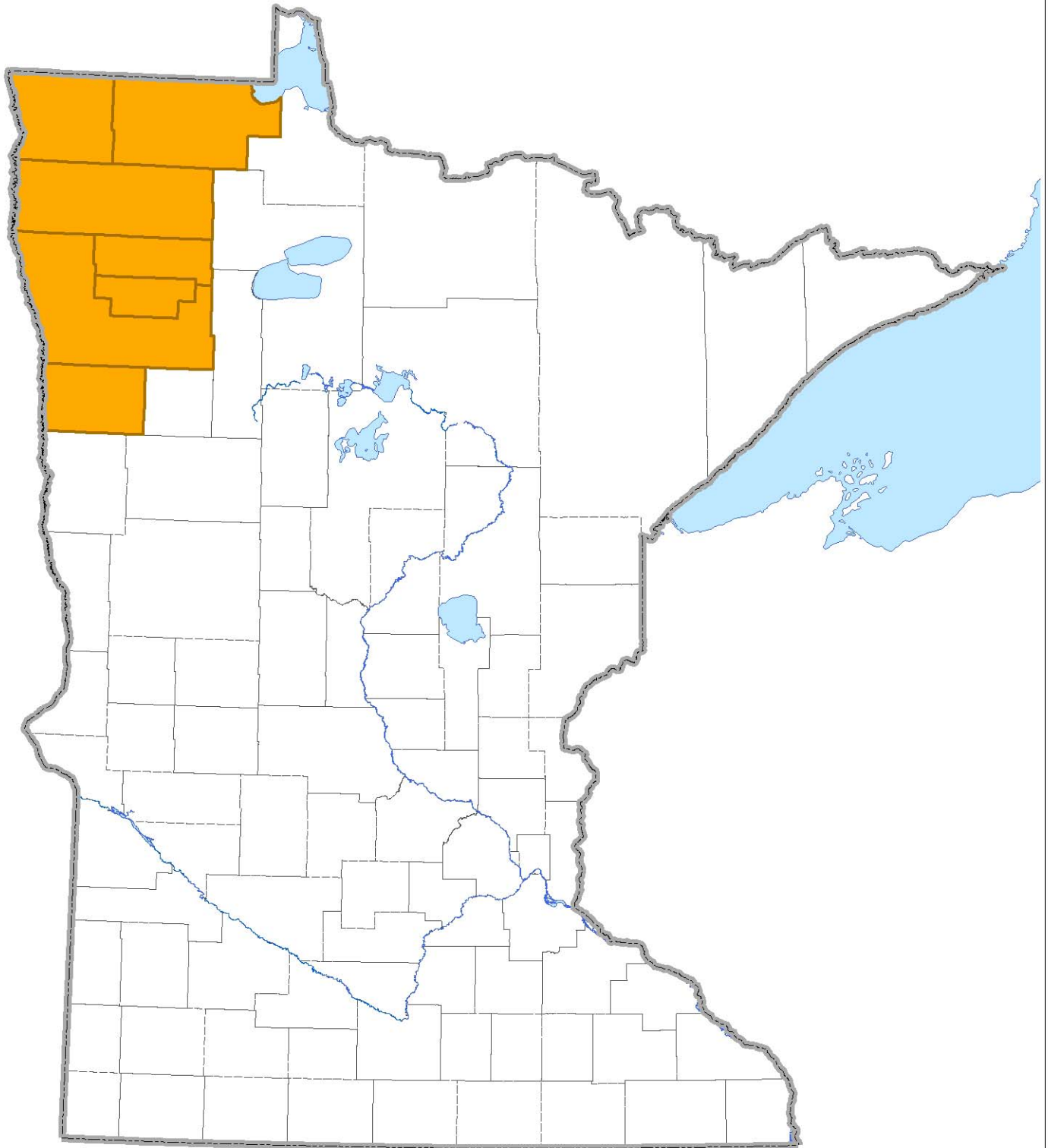
BUDGET ITEM <i>(See list of Eligible & Non-Eligible Costs, p. 13)</i>	AMOUNT
Personnel: Pembina Trail Resource Conservation & Development Council - Fiscal agent and project administration (RC&D Council - .10 FTE)	\$ 15,000
Contracts:	
The Nature Conservancy - Biomass harvest & restoration coordination; GIS mapping; Business & Market development; Stakeholder outreach, carbon measurement	\$ 265,600
Biomass Harvesting Contractors (TBD)	\$ 100,000
Grassland restoration contractors (TBD)	\$ 120,000
Biobusiness Alliance of Minnesota - Business & Market development	\$ 100,000
Great Plains Institute - Community Outreach & Facilitation	\$ 70,000
Landscape Modeling (TBD)	\$ 100,000
Equipment/Tools/Supplies: <i>In this column, list out general descriptions of item(s) or item type(s) and their purpose - one row per item/item type.</i>	NA
Acquisition (Fee Title or Permanent Easements): <i>In this column, indicate proposed # of acres and name of organization or entity who will hold title.</i>	NA
Travel: <i>Be specific. Only in-state travel essential to completing project activities can be included.</i>	NA
Additional Budget Items: <i>In this column, list any additional budget items that do not fit above categories. List by item(s) or item type(s) and explain how number was reached. One row per type/category.</i>	NA
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 770,600

V. OTHER FUNDS



SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period:		
Other State \$ Being Applied to Project During Project Period: <i>Indicate any additional state cash \$ (e.g. bonding, other grants) to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.</i>	\$ -	<i>Indicate: Secured or Pending</i>
In-kind Services During Project Period: Pembina Trail RC&D (\$5,000); TNC - Indirect Expenses (\$59,120), TNC Private Contributions (\$75,000); BioBusiness Alliance of MN (\$90,000); Great Plains Institute (\$20,000). All in-kind services encompass staff time and travel	\$ 249,120	Pending
Remaining \$ from Current ENRTF Appropriation (if applicable): <i>Specify \$ and year of appropriation from any current ENRTF appropriation for any directly related project of the project manager or organization that remains unspent or not yet legally obligated at the time of proposal submission. Be as specific as possible. Describe the status of \$ in the right-most column.</i>	\$ -	<i>Indicate: Unspent? Not Legally Obligated? Other?</i>
Funding History: <i>Indicate funding secured prior to July 1, 2011 for activities directly relevant to this specific funding request. State specific source(s) of funds.</i>	\$ -	

Establishing a Prairie BioEnergy Economy in Northwest Minnesota

Pembina Trail Resource Conservation and Development Council



Legend

-  LCCMR Project Area
-  County



Map Created by: C.J.W.C., TNC, 2010/3/11
M:\mxd\Special Project\MIN\LCCMR\Biomass Proposal\
LCCMR Biomass Project Map.mxd



PROJECT MANAGER QUALIFICATIONS

Charles Naplin is the Chairman of the Pembina Trail RC&D Council and will serve as the council's administrative project contact. Project partners (The Nature Conservancy, BioBusiness Alliance and the Great Plains Institute) will have responsibilities to implement and manage project activities under the coordination and direction of the Pembina Trail RC&D Council..

ORGANIZATION DESCRIPTION

Pembina Trail Resource Conservation & Development (RC&D) Association was incorporated on February 4, 1992 and is a public nonprofit 501(c) 3 with a governing Council of 14 member-at-large representatives appointed by sponsoring County Boards and Soil & Water Conservation Districts. The mission of the Pembina Trail RC&D Council is to provide leadership and assistance in coordinating the development of our human and natural resources. Geographical area served by the Pembina Trail RC&D includes the counties of Kittson, Marshall, Norman, Polk, Pennington, Red Lake and Roseau.

Pembina Trail RC&D projects fall under four natural resource conservation and development areas: land management, land conservation, water management and community development. Current goals of the council include reducing erosion/sedimentation, cultivating renewable energy opportunities in northwest Minnesota, increasing awareness of invasive plant species identification and treatment, protecting water quality and community development. The RC&D council works cooperatively with staff from the USDA Natural Resources Conservation Service to provide technical assistance in these efforts.

Pembina Trail RC&D has over 18 years of experience in planning and implementing conservation projects with partners in northwest Minnesota. Pembina Trail RC&D has the ability and experience to manage a LCCMR grant and the capability to implement the proposed project.