



## Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan

**Date of Status Update:**

**Date of Next Status Update:** 1/1/2012

**Date of Work Plan Approval:** 6/23/2011

**Project Completion Date:** 6/30/2014

**Is this an amendment request?** \_\_\_\_\_

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**Project Title: Supporting Community-Driven Sustainable Bioenergy Projects**

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**Location:**

**Counties Impacted:** Statewide

**Ecological Section Impacted:** Lake Agassiz Aspen Parklands (223N), Minnesota and Northeast Iowa Morainal (222M), North Central Glaciated Plains (251B), Northern Minnesota and Ontario Peatlands (212M), Northern Minnesota Drift and Lake Plains (212N), Northern Superior Uplands (212L), Paleozoic Plateau (222L), Red River Valley (251A), Southern Superior Uplands (212J), Western Superior Uplands (212K)

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<b>Total ENRTF Project Budget:</b>	<b>ENRTF Appropriation \$:</b>	150,000
	<b>Amount Spent \$:</b>	<u>0</u>
	<b>Balance \$:</b>	150,000

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**Legal Citation:** M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 07

**Appropriation Language:**

\$75,000 the first year and \$75,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with Dovetail Partners, Inc., in cooperation with the University of Minnesota to assess feasibility, impacts, and management needs of community-scale forest bioenergy systems through pilot studies in Ely and Cook County and to disseminate findings to inform related efforts in other communities.

## **I. PROJECT TITLE:** Supporting Community-Driven Sustainable Bioenergy Projects

**II. PROJECT SUMMARY:** This project is needed to guide development of sustainable community-scale forest bioenergy programs in NE Minnesota and to provide examples from the region to assist communities statewide considering similar projects. Locally produced, community-based renewable energy systems hold significant promise for increasing energy security, reducing carbon emissions, and contributing to local economies. Over the past decade much has been learned about the physical availability of forest-derived biomass for large, regional (~25 MW) bioenergy facilities. Very little attention has been devoted, however, to small systems (~1 MW). Improving our ability to assess trends and opportunities at this scale will allow for long-term, sustainable forest management planning and project investment; thereby replacing energy production boom and bust cycles with efforts that are environmentally sensitive, economically-beneficial, and community-supported.

The goals of this project are to develop and share information and tools that address key questions about the viability of community bioenergy systems. During the first phase, existing models and planning tools will be adapted to evaluate feasibility, impacts, and management needs for community-scale and other small bioenergy applications being proposed in Ely and Cook County. During the second phase of the project, the information and tools developed in Ely and Cook County will be shared with communities, land managers, policymakers, investors, and others interested in the long-term prospects and viability of locally produced bioenergy. The outcomes of the project will be identification and use of strategies to:

- Estimate and sustainably manage fuel supplies within context of changing forest conditions and market demands during a projected 30-year bioenergy facility life span;
- Estimate and manage a range of potential environmental, social and economic impacts of a community bioenergy system, including forest harvest, use, disposal, and transportation;
- Apply biomass production standards and harvesting guidelines for protecting air and water quality, habitat and biodiversity, and minimized wildfire risk;
- Reduce greenhouse gas emissions;
- Win broad support by communities, forest industry, public lands managers, and others.

## **III. PROJECT STATUS UPDATES:**

**Project Status as of** *(Insert Date of First Status Update Report):*

**Project Status as of** *(Insert Date of Second Status Update Report):*

**Project Status as of** *(Insert Date of Third Status Update Report):*

**Project Status as of** *(Insert Date of Fourth Status Update Report):*

## **IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1:** Assess feasibility and impacts of forest biomass energy in Ely and Cook County

**Description:** The project will be initiated through community meetings to ensure strong teamwork and broad communication. The UMN research group will adapt existing models to localized fuelsheds to estimate current and future forest biomass feedstocks under a variety of forest management scenarios and supply targets and will be used to forecast changes in forest carbon stocks resulting from forest type restoration, firewise treatments, and other practices. Biomass supplies at specified price and policy levels will be estimated. Costs and financial arrangements needed to supply energy under a number of heat and power scenarios will be analyzed. Dovetail Partners will review available information regarding the life cycle impacts (i.e., harvest, use, disposal, transportation, etc.) of alternative energy systems and report on environmental impacts (i.e., carbon emissions, sequestration, air quality, water quality, biodiversity, wildfire) of different systems and management scenarios. Community coordinators and the project team will meet and communicate regularly with key community groups (residents, businesses,

officials, timber industry, public forest managers, etc.) to address issues related to forest management, biomass feedstocks, spatial scale, and the supply chain. Activity 1 will be evaluated through interviews and surveys.

**Summary Budget Information for Activity 1:**

**ENRTF Budget: \$ 133,375**  
**Amount Spent: \$ 0**  
**Balance: \$133,375**

**Activity Completion Date:**

<b>Outcome</b>	<b>Completion Date</b>	<b>Budget</b>
1. Informed input gathered from community leadership and stakeholders on community bioenergy issues through meetings, surveys, and newsletters.	December 2012	\$48,560
2. Physical supply and financial models for assessing locally sourced biomass.	September 2012	\$33,000
3. Report on results of model in Ely and Cook County, with identification of financial arrangements of alternative energy technologies in these communities.	December 2012	\$33,000
4. Review of life cycle and environmental impacts of locally-sourced bioenergy systems	January 2013	\$18,815

**Activity Status as of** *(Insert Date of First Update Report):*

**Activity Status as of** *(Insert Date of Second Update Report):*

**Activity Status as of** *(Insert Date of Third Update Report):*

**Activity Status as of** *(Insert Date of Fourth Update Report):*

**Final Report Summary:**

**ACTIVITY 2:** Broadly disseminate case studies and decision tools

**Description:** We will share the expertise, tools, and knowledge gained in this project to accelerate learning in other rural communities and among land managers and policymakers. Our team will produce useful information, including models, inventory protocols, analytical matrices, and fact sheets needed in assessing the physical and economic feasibility of locally produced community bioenergy systems and their impacts. We will make the results of the project and information about Ely and Cook County case studies available online and through a variety of outlets (e.g. community and/pr conference presentations). Evaluation by key groups at mid-point and conclusion.

**Summary Budget Information for Activity 2:**

**ENRTF Budget: \$ 16,625**  
**Amount Spent: \$ 0**  
**Balance: \$16,625**

**Activity Completion Date:**

<b>Outcome</b>	<b>Completion Date</b>	<b>Budget</b>
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1. User-friendly decision tools and fact sheets on community bioenergy systems and impacts	June 2013	\$ 6,185
2. Dissemination online and presentations	June 2013	\$ 10,440

**Activity Status as of** (Insert Date of First Update Report):

**Activity Status as of** (Insert Date of Second Update Report):

**Activity Status as of** (Insert Date of Third Update Report):

**Activity Status as of** (Insert Date of Fourth Update Report):

**Final Report Summary:**

## V. DISSEMINATION:

**Description:** We will regularly disseminate project information, products, and results through a website (<http://www.dovetailinc.org>). Products will include models and other tools for evaluating local biomass energy resources, costs, impacts, and social acceptance. We will make presentations and/or information available to partner groups (e.g., Firewise, Minnesota Forest Resource Council, Clean Energy Resource Teams (CERTs), and to other key sectors, including county land departments, forest products industry and logging contractors, environmental and conservation organizations, and public and private forest landowners. We will also report the outcome of this project to state policymakers and others interested in the role of community-scale bioenergy in reducing the state's greenhouse gas emissions.

**Status as of** (Insert Date of First Update Report):

**Status as of** (Insert Date of Second Update Report):

**Status as of** (Insert Date of Third Update Report):

**Status as of** (Insert Date of Fourth Update Report):

**Final Report Summary:**

**VI. PROJECT BUDGET SUMMARY:**

**A. ENRTF Budget:**

<b>Budget Category</b>	<b>\$ Amount</b>	<b>Explanation</b>
Personnel:	\$ 6,500	Matt Frank, 15%FTE to provide technical support for online dissemination and project activities.
Professional/Technical Contracts:	\$ 7,500	Jim Bowyer – Review life cycle impacts of identified bioenergy systems.
	\$ 7,500	Steve Bratkovich – Summarize environmental impacts and guidance for biomass harvest.
	\$ 25,000	Cheryl Miller - Provide overall project management, including coordinating and overseeing activities, timelines, and products. Produce materials and make presentations during dissemination phase.
	\$ 60,000	University of Minnesota – Adapt statewide models for local biomass estimates and costs, conduct assessments. Dennis Becker, Steven Taff, and graduate students will conduct work in contract.
	\$ 40,000	Local coordinators in Ely and Cook County to conduct outreach effort, gather and present local information on biomass energy issues. <i>Specific contractors to be determined.</i>
Travel Expenses in MN:	\$ 3,500	To cover expenses of project team travel to Ely and Cook County over two year grant period
<b>TOTAL ENRTF BUDGET:</b>	<b>\$ 150,000</b>	

**Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: 1.25**

**B. Other Funds:**

<b>Source of Funds</b>	<b>\$ Amount Proposed</b>	<b>\$ Amount Spent</b>	<b>Use of Other Funds</b>
<b>Non-state</b>			
Cook County	\$ 113,500	\$	To conduct preliminary feasibility of alternative bioenergy technologies from 2010-2012
<b>State</b>			
CURA/CAP Student Research Assistant	\$4,440		Summer 2011 research assistance
<b>TOTAL OTHER FUNDS:</b>	<b>\$ 117,900</b>	<b>\$</b>	

**VII. PROJECT STRATEGY:**

**A. Project Partners:** The main partners in this project are the City of Ely and its Alternative Energy Taskforce (Kurt Soderberg) and Cook County and its Cook County Local Energy Project (George Wilkes). These partners will be providing in-kind support to the project including expenditures for room rental, volunteer time, and materials at quarterly meetings and reports estimated to total \$6,800 per community for a total of \$13,600 during the project. Dovetail Partners will also be providing in-kind support to the project, including staff time and office resources estimated to total at least \$15,000. Other organizational partners are Firewise (Paul Nelson), Minnesota Forest Resources Council (Lindberg Ekola), CERTs (Bill Mittlefehldt), and the US Forest Service (Patricia Johnson). None of these partners will receive money from the appropriation.

**B. Project Impact and Long-term Strategy:**

**C. Spending History:**

<b>Funding Source</b>	<b>M.L. 2005 or FY 2006-07</b>	<b>M.L. 2007 or FY 2008</b>	<b>M.L. 2008 or FY 2009</b>	<b>M.L. 2009 or FY 2010</b>	<b>M.L. 2010 or FY 2011</b>
City of Ely			\$1000		
Iron Range Resources			\$4000		
Blandin Foundation			\$5000		
CERTS				\$5000	
MN Office of Energy Security (ARRA)				\$50,000	
Cook County			\$2500		
Cook County Hospital			\$2500		
City of Grand Marais			\$2500		

**IX. MAP(S):**

**XI. REPORTING REQUIREMENTS:**

Periodic work plan status update reports will be submitted not later than January 31, 2012, September 30, 2012, and January 31, 2013. A final report and associated products will be submitted between June 30 and August 1, 2013 as requested by the LCCMR.

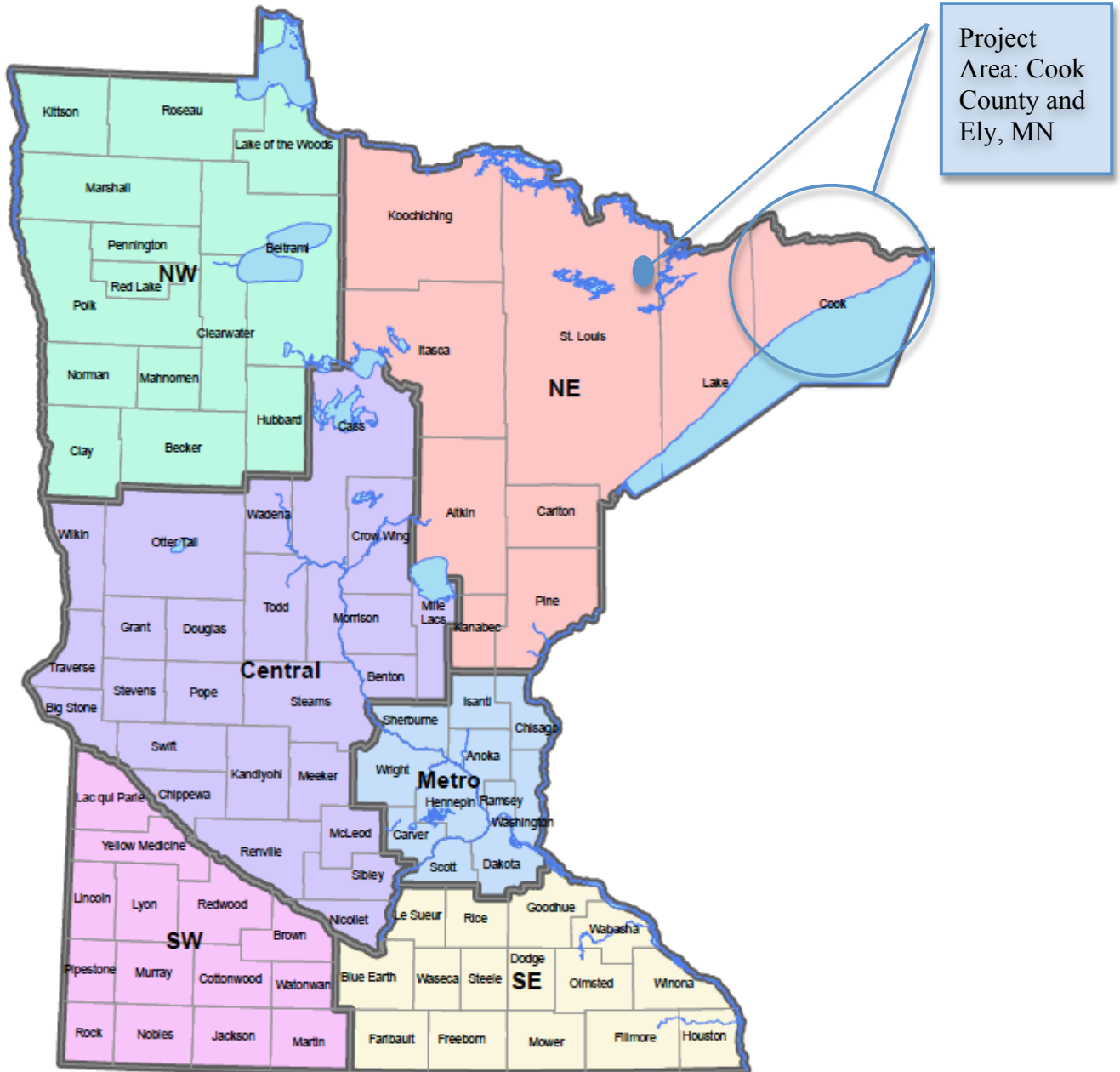


### Supporting Community-Driven Sustainable Bioenergy Projects

Activities/Outcome	September 2011 - January 2012	February 2012 - September 2012	October 2012 - January 2013	February 2013 - June 2013
1.1 Gather informed community input				
1.2 Create physical supply and financial models for assessing locally sourced biomass				
1.3 Conduct and report results of models in Ely and Cook County				
1.4 Review LCA and environmental impacts of bioenergy systems				
2.1 Create decision tools and fact sheets				
2.2 Disseminate online and in presentations				



## Minnesota (By Geographic Region)



Source: <http://www.lccmr.leg.mn/maps/lccmr-regions.pdf>