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Linking Habitat Restoration to Bioenergy: an East-Central Minnesota Partnership

**Annual report to the Minnesota Legislature,
Environment and Natural Resources; Energy, Utilities, Technology and
Communications; Environment, Energy and Natural Resources Finance
Committees**

(Laws of 2007, Chapter 57, Article 2, subd. 6)

Submitted by the
Minnesota Department of Natural Resources
Division of Ecological Resources

April 14, 2008

Date of Report: April 14, 2008

Date of Next Annual Report: April 1, 2009

I. PROJECT TITLE

Linking Habitat Restoration to Bioenergy: an East-Central Minnesota Partnership

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II. EXECUTIVE SUMMARY

The Department of Natural Resources, Division of Ecological Resources (DNR) received \$500,000 from the legislature as part of the 2007 environment, natural resources, energy, and commerce finance bill. The appropriation language is provided in Appendix 1.

“Linking Habitat Restoration to Bioenergy” is an innovative new project that unites two separate but linked aspects of environmental health: habitat restoration and bioenergy. The goal of this effort is to restore valuable habitats while providing a local source of energy. The funding provided by the legislature for this project is helping to facilitate habitat restoration efforts that might not have otherwise occurred while making the woody material generated as a by-product available to facilities that convert this material to energy.

Overall Status of Project as of April 14, 2008:

- A 50% time project manager began implementing the project in December 2007.
- Data about habitat restoration projects that could generate woody biomass within 75 miles of St. Paul were compiled; over 7,000 acres were identified. A contact list was created.
- The project is being conducted in two phases. Phase 1 pilot project sites were selected from the list of potential habitat restoration sites to develop procedures and test feasibility. In Phase 2, procedures developed in Phase 1 will be applied to additional sites until all project funds are expended.
- A process and criteria for selecting and implementing Phase 1 pilot habitat restoration project sites were developed.
- A Grant Agreement template was developed.
- Management Plan templates and examples were selected.
- Management Plan Review Team was established to review management plans to ensure that ecological restoration principles are adequately addressed and that plans include considerations for exotic invasive species management, threatened

and endangered species, and short- and long-term maintenance and management strategies.

- Harvest Plan templates and examples were developed.
- Potential woody biomass removal service contractors were identified and a list of contacts was compiled. This list is dynamic and will be updated as more contractors are identified.
- Service Contract templates and examples were created.
- A Cooperative Agreement was developed with Environmental Wood Supply, LLC, a subsidiary of District Energy St. Paul, a local energy generation facility. The agreement defines roles and responsibilities of the DNR and Environmental Wood Supply, LLC related to the project.
- Four Phase 1 pilot projects were identified and implemented as described in detail in Section III, Result 3.
- A fact sheet was prepared to describe the project.

III. PROJECT RESULTS

Result 1: Compile information about habitat restoration sites with woody by-products within 75 miles of St. Paul.

Description: Information will be compiled on site location, distance from St. Paul, contact, acres, and biomass potentially available through contacts with public and private landowners and managers of sites undergoing habitat restoration.

Status as of April 14, 2008:

Planned and active habitat restoration sites comprising over 7,000 acres were identified and a contact list was created. Additional habitat restoration sites and acreage are added to this list as they are identified. Organizations involved in habitat restoration and management were also identified and are included in the contact list.

For practical purposes, the 75-mile radius for woody biomass procurement specified in the legislation will be measured from the Wood Recycling Center at 2165 Pigs Eye Lake Road, St. Paul where woody material is collected and processed for use by District Energy St. Paul.

Result 2: Coordinate with Environmental Wood Supply, LLC, their subsidiaries and contractors, document their business requirements related to the project, and develop an agreement covering respective roles and responsibilities of the DNR and Environmental Wood Supply, LLC.

Description: Project manager will make contacts at Environmental Wood Supply, LLC and determine their business requirements through conversations and meetings. An agreement will be developed that reflects the needs of industry and the state.

Status as of April 14, 2008:

Barb Spears, project manager, met with Jeff Guillemette of Environmental Wood Supply, LLC to tour the Wood Recycling Center wood yard and discuss project site and logistic requirements. A Cooperative Agreement was drafted and signing is in progress.

Result 3: Conduct Phase 1 pilot projects during winter 2008 to test feasibility, criteria, costs and procedures.

Description: Phase 1 pilot projects will be selected from the list of potential sites, and implemented during winter 2008 to take advantage of frozen ground conditions. Criteria for Phase 1 project sites include: a current habitat restoration management plan, adequate biomass volume, accessibility for equipment and trucks, and capacity of the grantee to immediately implement the project.

Status as of April 14, 2008: Phase 1 Pilot Projects

- **Pilot Knob Hill, City of Mendota Heights.** Oak savanna and mesic prairie restoration. Located 10 miles from the Wood Recycling Center in St. Paul. This is a unique site of significant cultural, historic and natural significance with many entities, including the DNR Metro Greenways program, involved in purchasing the land (a/o January 31, 2008) and working to restore its varied features. The City of Mendota Heights received funding to remove overgrown mixed hardwoods from three acres. Cutting, staging, grinding, and transport of the material was completed on March 8 with a total of 16 semi-truckloads of material equaling 1,280 cubic yards and 320 tons for use by District Energy in St. Paul. KMSP-TV, Channel 5 aired a 2:19-minute segment on this project titled "Pilot Knob Energy Project in Mendota Heights" on March 7 at 6:00 p.m.
- **Hastings Sand Coulee SNA, DNR.** Sand-gravel prairie restoration. Located 24 miles from the Wood Recycling Center in St. Paul. Approximately 6.8 acres of planted red pine, white pine, mixed spruce and encroaching red cedar was cut and staged for future grinding and transport. District Energy contractors will grind and collect the material when road and site soil conditions allow during spring or early summer 2008.
- **Indian Mounds Park, City of St. Paul.** Oak savanna and oak forest restoration. Located 1 mile from the Wood Recycling Center in St. Paul. Approximately 9 acres of predominantly buckthorn with additional mixed tree species will be removed. Cutting will begin the end of May/early June. On June 21, 300-400 volunteers will move the material to staging area(s) for collection by Environmental Wood Supply, LLC. The volunteer coordination is in partnership with Hands-on Twin Cities and Minnesota Conservation Corps. The City of St. Paul Mayor's office, KARE-11 TV and other sponsors are coordinating public relations and media activities.
- **Zumbro Falls Woods SNA, DNR.** Oak forest and oak savanna restoration. Located 75 miles from the Wood Recycling Center in St. Paul. Approximately 25 acres of planted red pine, white pine, and encroaching mixed hardwoods to be removed and thinned resulting in approximately 500 cords of biomass material. The initial site visit with DNR SNA and Forestry staff and Environmental Wood

Supply, LLC, determined that the size and complexity of this project warranted the delay in the actual harvesting until frozen ground conditions in late-fall 2008/early-winter 2009. DNR Foresters and Society of American Foresters (SAF) worked closely with the MN SAF Student Chapter on March 29 to mark the trees and boundaries of the specific biomass harvest areas and collect additional information necessary to solicit bids for biomass removal contractors.

Procedures followed in Phase 1:

- Make initial contact with landowner/manager to assess distance from the Wood Recycling Center in St. Paul, habitat restoration goals, written management plan, species to be removed, estimate of acreage/biomass volume, overall site characteristics, potential staging area(s), and accessibility for equipment and trucks.
- If proposed project appears viable, visit the site with Environmental Wood Supply, LLC representative to ensure that the project will meet their needs.
- Upon approval of project site, complete Grant Agreement to encumber project funds and activate the project.
- Management Plan: request file copy. If none, request that one be written. If one exists but is more than 10 years old, request updated plan. If the plan is less than 10 years old, review and determine if project site(s) involved are adequately addressed. If not, request an amendment to update information on site(s) involved in this project.
- Provide management plan templates and examples to grantees as needed.
- Management Plan Review Team reviews management plan for site.
- Harvest Plan: request file copy. This provides more details and information on the site-specific considerations and process for removing undesirable woody plant material during habitat restoration activities.
- DNR project manager reviews and approves Harvest Plan in consultation with Environmental Wood Supply, LLC and others as appropriate.
- Provide list of potential woody biomass removal service contractors to grantee to assist in their efforts to solicit bids. Obtaining a minimum of 3 bids is recommended utilizing this list and other sources.
- Provide Service Contract templates and examples to grantees. This relates directly to the Harvest Plan but is more specific with regards to actual work and expectations of the service contractor.

Result 4: Analyze results of pilot projects and develop criteria, process, and metrics for Phase 2.

Description: Phase 2 of this project will be informed by lessons learned in implementing Phase 1 and will further develop the criteria and process for future projects to be implemented.

Status as of April 14, 2008:

- Criteria being evaluated and revised include: distance, volume of biomass, habitat restoration goals, site and access considerations, verified land ownership and management responsibility, a management plan in place that describes the habitat restoration objectives, short-term management prescriptions, long-term maintenance and monitoring strategies, invasive species considerations, benefits to threatened and endangered species, a harvest plan that describes site harvest boundaries, site characteristics, road access, staging areas, ecological concerns, appropriate harvest methods, community relations considerations.
- The overall process of initiating and facilitating a project through to completion is being evaluated and written guidelines developed.
- Lack of resources for follow-up maintenance including prescribed burning/chemical treatment costs is in some cases preventing projects from being implemented; options that would provide additional resources for grantees are being researched.
- Grant Agreement language is being evaluated for efficacy.
- Costs for pilot projects are being evaluated for future project cost projections – see second table in Section IV below.
- Considerations for local public relations are being addressed related to concerns over cutting trees and shrubs, heavy equipment and associated loud noise during operations, semi-trucks moving material, and end use of material.

Result 5: Conduct Phase 2 projects beginning spring 2008.

Description: Phase 2 projects will be selected from the list of potential sites and newly identified sites. Projects will be implemented as site-specific conditions warrant.

Status as of April 14, 2008:

- A contact form has been created to assist in capturing information during initial discussions to identify potential project sites.
- Initial contacts have been made with landowners and managers of potential Phase 2 project sites.
- The initial list of potential sites has been incorporated into a database that is being updated as new potential project sites are identified and includes the current status of each project.

IV. PROJECT BUDGET

Total available: \$500,000

Amount Expended as of March 31, 2008: \$20,005

Amount Remaining: \$479,995

Summary of Expenditures through 3/31/08

Expense category	Expended as of 3/31/08
Project Salary and support costs (project manager)- excluding report preparation	\$6,010
Cost of preparing report	Project funds: \$540 In-kind : \$400
Grants	\$13,455
Balance	\$479,995
Project Funds Total	\$500,000

Phase 1 Project Costs by Site (project funds for cutting and staging only)

Site name	Acres harvested	Project funds	Cost per acre	Tons	Cost per ton*
Pilot Knob Hill	3	\$6,880	\$2,290	320	\$21.50
Hastings Sand Coulee SNA	6.8	\$8,700	\$1,280	372 (est)	\$23.40 (est)
Indian Mounds Park	9 (est)	\$15,015 (est)	\$1,660 (est)		
Zumbro Falls SNA	25 (est)	\$75,000 (est)	\$3,000 (est)		

*Cost per ton is calculated based on the actual costs for on-the-ground cutting, moving, and staging of woody plant material and does not include project management or other project-related costs.

Appendix 1.

Laws of 2007, Chapter 57, Article 2, subd. 6

Of this amount, \$500,000 is transferred to the Department of Natural Resources for the Ecological Services Division to prepare, authorize, and implement habitat restoration plans on public or private properties to fulfill ecological principles of restoration ecology, while providing roadside access to the byproduct of the management actions at no cost to the operator of a biomass-fueled cogeneration facility located in St. Paul. The division may provide grants or otherwise transfer some or all of these funds to other public or private entities to accomplish these purposes. If a higher value nonbiomass market is available for some of the byproduct of this management, the division is authorized to sell the material to that market, provided that all of the proceeds are spent for the further purposes of this appropriation. The nonbiomass market sales of material from this management cannot exceed 20 percent by weight of the total byproducts produced by all approved activities under this appropriation. The restoration activities shall take place on land located within 75 miles by road of the city of St. Paul. The division shall consult with the operator of the biomass facility and other appropriate parties regarding planned projects to be funded with this appropriation. The division shall report annually to the legislative policy and finance committees for natural resources and energy regarding the expenditures and results of the program. This appropriation does not cancel but is available until spent.