



# Environment and Natural Resources Trust Fund (ENRTF)

## M.L. 2013 Work Plan

Date of Status Update Report: 10/1/2012

Date of Next Status Update Report: 12/31/2013

Date of Work Plan Approval:

Project Completion Date: 6/30/2015

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

**PROJECT TITLE:** Conservation Easement Stewardship Program, Phase III

**Project Manager:** Susan Damon

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**Location:** Statewide

**Total ENRTF Project Budget:**

**ENRTF Appropriation:** \$200,000

**Amount Spent:** \$0

**Balance:** \$200,000

**Legal Citation:** M.L. 2013, Chp. xx, Sec. xx, Subd. xx

**Appropriation Language:**

# DRAFT

**I. PROJECT TITLE:** Conservation Easement Stewardship Program, Phase III

**II. PROJECT STATEMENT:**

This is Phase III of a multi-phase project. Phase I (Conservation Easement Stewardship and Enforcement Program Plan-DNR, July 1, 2008 – June 30, 2011) included an inventory of DNR’s conservation easements, an assessment of DNR’s needs to bring its conservation easements up to minimum standards, and development of a conservation easement stewardship plan for both DNR’s existing conservation easements and future acquisitions. Phase II, which is currently in process, includes monitoring and preparation of baseline property reports for 180 existing conservation easements, development of a conservation easement stewardship training program, development of conservation easement enforcement protocols and identification of current fee title owners of all properties subject to DNR conservation easements.

Minimum standards for conservation easement stewardship include baseline property reports for all easements, regular monitoring and record keeping. As the holder of 983 conservation easements, the DNR must maximize efficiencies to meet its stewardship obligations. The main focus of Phase III is the development of technology to enhance conservation easement monitoring efficiency. In addition, Phase III accelerates the DNR’s ongoing efforts to bring stewardship of all existing conservation easements up to minimum standards, focusing primarily on conservation easements that were acquired before current minimum standards were developed. Project goals are to develop GIS tools that will enhance conservation easement stewardship efficiency and to evaluate the efficacy of these tools; to monitor some existing DNR conservation easements through remote sensing and others through traditional on-site methods; to prepare baseline property reports for at least 50 existing DNR conservation easements (north shore trout stream easements and wild and scenic river easements); and to improve and standardize conservation easement stewardship agency-wide. Goals will be achieved through development and evaluation of the efficacy and cost benefit of GIS tools to automate some mapping and violation detection functions that are essential components of conservation easement stewardship; through easement monitoring by remote sensing (using GIS, aerial photographs and LiDAR, acquired satellite imagery and LiDAR) and evaluation of the efficacy of this monitoring method; through on-site easement monitoring and baseline data collection; and through completion of baseline reports that document property conditions in relation to easement terms. In addition, project staff in the DNR Division of Lands and Minerals will coordinate agency-wide conservation easement stewardship activities and assist DNR staff with their transition to use of the conservation easement application in the DNR’s new land records system.

**III. PROJECT STATUS UPDATES:**

**Project Status as of December 31, 2013:**

**Project Status as of June 30, 2014:**

**Project Status as of December 31, 2014:**

**Project Status as of June 30, 2015:**

**IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1: Development of GIS Tools for Conservation Easement Stewardship; Conservation Easement Monitoring Through Remote Sensing**

**Description:**

This activity will develop and evaluate GIS tools used in conjunction with fused LiDAR (Light Detection and Ranging) and remote sensing imagery (1) to identify buildings, structures and other conditions that would warrant special attention during monitoring visits; and (2) to automatically adjust digital riparian conservation easement shapes (which are used for mapping and automatic updating of ownership information) to match changes in water courses over time. (Riparian easements usually describe the easement boundaries as being located a certain number of feet from the stream centerline.) This activity will utilize object based image analysis software to develop the automated algorithms. The goal is to improve both the quality and cost-effectiveness of DNR’s conservation easement monitoring through use of the GIS tools by (1) targeting specific easements or areas of concern for on-the-ground inspections; and (2) reducing staff time needed to manually adjust riparian conservation easement shapes to match changes in water courses.

Remote sensing methods, all incorporating object based image analysis with GIS, will be used on at least 50 existing conservation easements to assess compliance with easement terms. Methods will include use of GIS with current aerial imagery and/or DNR’s existing LiDAR data to evaluate easement properties. Monitoring of up to 20 of the easement sites will evaluate the use of high-resolution (.5m) satellite imagery combined with the existing LiDAR. The same sample of easement sites will be evaluated utilizing (1) existing FSA aerial imagery (leaf on); and (2) leaf-off aerial imagery (acquired for the National Wetland Inventory, if available for the easement site, or acquired from a vendor). On-site visits will be conducted on a sample of the easements to evaluate the efficacy of detecting violations through these remote sensing methods. A cost-benefit analysis of the various image sources will be conducted as well. Monitoring reports will be provided to easement administrators for follow up, and the results of the evaluation of efficacy and cost-effectiveness will be documented.

**Summary Budget Information for Activity 1:**

**ENRTF Budget:** \$ 88,788  
**Amount Spent:** \$ 0  
**Balance:** \$ 88,788

**Activity Completion Date:**

<b>Outcome</b>		<b>Budget</b>
<b>1.</b> Develop and evaluate GIS tools to identify buildings, structures and conditions for special attention during monitoring visits and to automatically adjust digital shapes of riparian conservation easements to changes in water courses	6/30/2015	\$62,846
<b>2.</b> Monitor at least 50 existing conservation easements with remote sensing methods; prepare monitoring reports	6/30/2015	\$ 11,714
<b>3.</b> Conduct on-site visits to a sample of easements monitored to evaluate efficacy of remote-sensing methods; document results of evaluation	6/30/2015	\$ 10,714
<b>4.</b> Develop a cost-benefit analysis of the use of automated tools to improve efficiency of conservation easement monitoring and to revise riparian easement GIS shapes	6/30/2015	\$ 3,514

**Activity Status as of December 31, 2013:**

**Activity Status as of June 30, 2014:**

**Activity Status as of December 31, 2014:**

**Activity Status as of June 30, 2015:**

**Final Report Summary:**

**ACTIVITY 2: Monitoring, Baseline Data and Reports; Agency-Wide Conservation Easement Stewardship Coordination**

**Description:** Stewardship of at least 50 existing DNR conservation easements will be brought up to minimum standards through on-site monitoring visits, collection of baseline data and completion of baseline property reports. The conservation easements will be wild and scenic river easements administered by the Division of Parks and Trails and trout stream easements administered by the Division of Fish and Wildlife, Duluth Area Fisheries Office. (Baseline data collection and report preparation for north shore trout stream easements is expected to require substantially more staff time than is required for typical trout stream easements in southeastern Minnesota. This is because many of the easements are in remote, wooded and difficult-to-access areas. In addition, some north shore trout stream easements acquired on tax-forfeited lands cover multiple parcels on one or more streams.) Methods and forms for conservation easement monitoring and baseline property report preparation developed in Phase I and refined in Phase II will be used for Activity 2.

Project staff in the Division of Lands and Minerals will coordinate agency-wide conservation easement stewardship. This outcome will include planning and facilitating regular meetings of DNR’s conservation easement stewardship working group and providing assistance to divisional staff with their easement stewardship activities. In addition, delivery of a portion of the DNR’s new land records system, including an application for conservation easement administration, is expected to be complete by July 1, 2013. Lands and Minerals Division project staff will provide technical and other assistance to DNR conservation easement monitors and supervisors during transition to the use of the conservation easement application.

**Summary Budget Information for Activity 2:**

**ENRTF Budget:** \$ 111,212  
**Amount Spent:** \$ 0  
**Balance:** \$ 111,212

**Activity Completion Date:**

<b>Outcome</b>		<b>Budget</b>
1. Monitor at least 50 existing DNR conservation easements and collect data for baseline property reports	6/30/2015	\$ 21,489
2. Complete baseline property reports for at least 50 conservation easements	6/30/2015	\$ 74,043
3. Coordinate agency-wide conservation easement stewardship; provide assistance to DNR staff in the use of the new land records system for conservation easement administration	6/30/2015	\$ 15,680

**Activity Status as of December 31, 2013:**

**Activity Status as of June 30, 2014:**

**Activity Status as of December 31, 2014:**

**Activity Status as of June 30, 2015:**

**Final Report Summary:**

**V. DISSEMINATION:**

**Description:** Monitoring data and baseline property reports created as part of this project will be entered into and stored in DNR’s land records system, where they will be accessible to staff who monitor or administer conservation easements. Baseline property reports will be provided to fee title owners of properties subject to

conservation easements. Monitoring reports from remote sensing will be provided to the DNR administrators of the easements monitored. GIS/remote sensing tools developed in Phase III, information about their use in the project and results of efficacy testing will be provided to GIS staff in other DNR divisions for possible adaption of the tools for other uses.

**Status as of December 31, 2013:**

**Status as of June 30, 2014:**

**Status as of December 31, 2014:**

**Status as of June 30, 2015:**

**Final Report Summary:**

**VI. PROJECT BUDGET SUMMARY:**

**A. ENRTF Budget:**

Budget Category	\$ Amount	Explanation
Personnel:	\$162,923	Unclassified staff (project manager, project specialist, project specialists/field staff)
Travel Expenses in MN:	\$1,000	Mileage, fleet, lodging, meals
Other:	\$18,900	One-year license for object based image analysis software for remote sensing; high-resolution satellite and leaf-off aerial imagery of up to 20 selected easements for remote sensing
Direct and necessary services:	\$17,177	DNR costs for the appropriation
<b>TOTAL ENRTF BUDGET:</b>	<b>\$200,000</b>	

**Explanation of Use of Classified Staff:** N/A

**Explanation of Capital Expenditures Greater Than \$3,500:** N/A

**Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation:** 1.65

**Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation:** N/A

**B. Other Funds:**

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
<b>Non-state</b>			
	\$ 0	\$	
<b>State</b>			
Various	\$ 2,000	\$	In-state travel expenses (mileage, fleet, lodging, meals) for project staff to monitor conservation easements and collect baseline field data (Activity 2)
<b>TOTAL OTHER FUNDS:</b>	<b>\$ 2,000</b>	<b>\$</b>	

**VII. PROJECT STRATEGY:**

**A. Project Partners:** Project staff in the Lands and Minerals Division will be responsible for overall project coordination, quality control, report writing, some baseline report preparation and development of GIS tools and remote sensing under Activity 1. Field staff, who will be based in the DNR Parks and Trails and Fish and Wildlife Divisions, will be hired for most monitoring, baseline data collection and baseline report writing. Project staff will collaborate with all DNR divisions that administer conservation easements on Outcome 3 of Activity 2.

**B. Project Impact and Long-term Strategy:** Activity 1 of this project will develop and evaluate GIS tools that have the potential of reducing the amount of staff time needed to monitor conservation easements and to update riparian easement GIS shapes, which are used for easement monitoring and landowner identification. The tools also have other potential uses in connection with DNR land management. Activity 2 of project will address approximately 12% of DNR’s unfunded conservation easement baseline property report backlog identified in the Phase I project.

**C. Spending History:**

Funding Source	M.L. 2007 or FY08	M.L. 2008 or FY09	M.L. 2009 or FY10	M.L. 2010 or FY11	M.L. 2011 or FY12-13
A \$15,000 appropriation from the Legislature partially funded a minimum standards report	Ch. 57, art. 1, § 4, subd. 2				
A \$520,000 appropriation from the ENRTF funded the Conservation Easement Stewardship and Enforcement Program Plan—DNR (Phase I)		Ch. 367, § 2, subd. 5(h)			
A \$500,000 appropriation from the ENRTF funded the Conservation Easement Stewardship and Enforcement Program, Phase II					First Special Session, ch. 2, art. 3, § 2, subd. 4(m)

**VIII. ACQUISITION/RESTORATION LIST:** N/A

**IX. MAP(S):** N/A

**X. RESEARCH ADDENDUM:** N/A

**XI. REPORTING REQUIREMENTS:**

Periodic work plan status update reports will be submitted not later than December 31, 2013, June 30, 2014, December 31, 2014, and June 30, 2015. A final report and associated products will be submitted between June 30 and August 15, 2015 as requested by the LCCMR.

Attachment A: Budget Detail for M.L. 2013 Environment and Natural Resources Trust Fund Projects								
Project Title: Conservation Easement Stewardship Program, Phase III								
Legal Citation:								
Project Manager: Susan Damon								
M.L. 2013 ENRTF Appropriation: \$200,000								
Project Length and Completion Date: June 30, 2015								
Date of Update: October 1, 2012								
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	Develop GIS Tools for CE Stewardship			Monitoring, Baseline Data & Reports				
<b>Personnel (Wages and Benefits)</b>	\$60,692	\$0	\$60,692	\$102,231	\$0	\$102,231	\$162,923	\$162,923
Project manager 1/6 FTE 2 yrs 72% salary/28% benefits (est. \$31,085)								
Project specialist .5 FTE 2 yrs 65% salary/35% benefits (est. \$66,148)								
2 project specialists/field staff .5 FTE up to 2 yrs 63% salary/37% benefits (est. 65,690)								
Direct and Necessary Services for the Appropriation	\$8,196	\$0	\$8,196	\$8,981	\$0	\$8,981	\$17,177	\$17,177
<b>Travel expenses in Minnesota</b> mileage, lodging, fleet, meals	\$1,000	\$0	\$1,000				\$1,000	\$1,000
<b>Other</b>								
Object based image analysis software license 1 yr	\$6,400	\$0	\$6,400				\$6,400	\$6,400
High resolution satellite and leaf-off aerial imagery	\$12,500	\$0	\$12,500				\$12,500	\$12,500
<b>COLUMN TOTAL</b>	<b>\$88,788</b>	<b>\$0</b>	<b>\$88,788</b>	<b>\$111,212</b>	<b>\$0</b>	<b>\$111,212</b>	<b>\$200,000</b>	<b>\$200,000</b>

