

## **2008 Project Abstract**

For the Period Ending June 30, 2011

### **PROJECT TITLE: Conservation Easement Stewardship and Enforcement Program Plan - DNR**

**PROJECT MANAGER:** Kathy Lewis

**PROJECT CONSULTANT:** Susan Damon

**AFFILIATION:** Minnesota Dept. of Natural Resources

**MAILING ADDRESS:** 500 Lafayette Road

**CITY/STATE/ZIP:** St. Paul, Minnesota 55155

**PHONE:** 651-259-5404 (K. Lewis); 651-259-5961 (S. Damon)

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**WEBSITE:** [www.dnr.mn.gov](http://www.dnr.mn.gov)

**FUNDING SOURCE:** Environment and Natural Resources Trust Fund

**LEGAL CITATION:** ML 2008, Chap. 367, Sec. 2, Subd. 5(h)

**APPROPRIATION AMOUNT: \$520,000**

### **Overall Project Outcome and Results**

The DNR needed comprehensive information about its conservation easements in a centralized database and an agency-wide plan to monitor and enforce the easements.

Project objectives were to: (1) conduct a comprehensive inventory of DNR's easements, classify conservation easements by type and capture relevant data about each easement in DNR's land records system; (2) develop a conservation easement stewardship plan that integrates an easement monitoring computer application developed through DNR's Land Records Management Project; and (3) recommend solutions to long-term conservation easement stewardship funding.

The inventory consisted of a review of all deed and easement records maintained by DNR's Lands and Minerals Division, capture of relevant easement data and reconciliation of the data with records maintained by DNR's conservation easement administrators. The stewardship plan was developed after test monitoring a sample of existing conservation easements and obtaining extensive input from a working group comprised of representatives of DNR divisions that administer conservation easements.

The inventory identified 13 DNR conservation easement types and a total of 974 conservation easements covering 355,623 acres. The stewardship plan outlines monitoring methods and monitoring frequency for each conservation easement type, estimates stewardship costs and identifies options for funding. Project results are detailed in the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011.

Under a work program amendment, project staff converted scans of 600 conservation easements into a format for use in the new conservation easement monitoring application, developed GIS tools that identified subdivisions and ownership of 557 trout stream easements and created shapefiles for 170 conservation easements from legal descriptions. The Aug. 15, 2011 Final Report Supplement contains examples of these work products.

The database, forms, tools and plans developed in this project provide the foundation for the DNR to implement an agency-wide conservation easement stewardship program.

## **Project Results Use and Dissemination**

Project results are currently being used by the DNR in several ways:

- Conservation easement data entered into the DNR's existing land records system in the project are being used to respond to inquiries from DNR staff and the public about DNR's conservation easements.
- A conservation easement Geographic Information Systems (GIS) layer developed by project staff and Division of Lands and Minerals GIS staff is available to all DNR ArcGIS users.
- The DNR is beginning the process of implementing the conservation easement stewardship plan developed in the project.
- Staff in divisions that administer conservation easements are currently using the baseline property report and monitoring forms developed in the project.
- The DNR's land records system contractor, International Land Systems, Inc. (ILS), is using the baseline property report and monitoring forms developed in the project and input about application design provided through the project to build the conservation easement administration application in the DNR's new land records system.
- Staff in divisions that administer conservation easements and project staff for the Conservation Easement Stewardship and Enforcement Program, Phase II will use shapefiles prepared under the Jan. 31, 2011 Work Program Amendment to create maps for baseline property reports and conservation easement monitoring.
- The Division of Fish and Wildlife is in the process of merging its existing GIS layer, which contains trout stream easement shapefiles, with the geoprocessing tools developed in the project to identify subdivisions and current landowners. This will enable Fisheries staff statewide to access the subdivision and landowner data using ArcGIS.
- All data entered into DNR's existing land records system in the project, as well as trout stream subdivision and landowner data and the Access database of easement terms created under the Work Program Amendment, will be migrated to and used in the new land records system currently being built by ILS.

Project results have been disseminated both within the DNR and to members of the public:

- Presentations about the project have been made to regional managers in all four DNR regions and to DNR senior managers.
- The Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011 has been distributed to all DNR divisions that administer conservation easements and made available to the general public on the DNR's website at the following link:

[http://files.dnr.state.mn.us/lands\\_minerals/conservation\\_easement\\_stewardship\\_final\\_report.pdf](http://files.dnr.state.mn.us/lands_minerals/conservation_easement_stewardship_final_report.pdf)

- The conservation easement GIS layer has been made available to the general public through the DNR Data Deli.
- The Commissioner of Natural Resources provided copies of the Final Report dated Feb. 28, 2011 to the chairs and ranking minority members of the house and senate natural resources committee.
- Copies of the Final Report dated Feb. 28, 2011 were provided to staff of the Lessard-Sams Outdoor Heritage Council, and the project was discussed at a June 21, 2011 L-SOHC issues seminar.
- Project staff have contacted the Association of Minnesota Counties to determine the best way to disseminate information about the conservation easement GIS layer and other project results to the counties.

## **Environment and Natural Resources Trust Fund 2008 Work Program Final Report**

**Date of Report:** August 15, 2011

**Final Report**

**Date of Work Program Approval:** June 17, 2008

**Project Completion Date:** June 30, 2011

### **I. PROJECT TITLE: Conservation Easement Stewardship and Enforcement Program Plan - DNR**

**Project Manager:** Kathy Lewis

**Project Consultant:** Susan Damon

**Affiliation:** Minnesota Dept. of Natural Resources

**Mailing Address:** 500 Lafayette Road

**City / State / Zip:** St. Paul, Minnesota 55155

**Telephone Number:** 651-259-5404 (K. Lewis); 651-259-5961 (S. Damon)

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**Web Page address:** [www.dnr.mn.gov](http://www.dnr.mn.gov)

**Location:** Statewide

<b>Total Trust Fund Project Budget:</b>	<b>Trust Fund Appropriation:</b>	<b>\$520,000</b>
	<b>Minus Amount Spent:</b>	<b><u>\$504,613</u></b>
	<b>Equal Balance:</b>	<b>\$ 15,387</b>

**Legal Citation:** ML 2008, Chap. 367, Sec. 2, Subd. 5(h).

**Appropriation Language:** Conservation Easement Stewardship and Enforcement Program Plan

\$520,000 is from the trust fund to the commissioner of natural resources to inventory and digitize the department's conservation easements and prepare a plan for monitoring, stewardship, and enforcement. This effort must be done in cooperation with the Board of Water and Soil Resources. This appropriation is available until June 30, 2011, at which time the project must be completed and final products delivered, unless an earlier date is specified in the work program.

### **II. and III. FINAL PROJECT SUMMARY**

The DNR needed comprehensive information about its conservation easements in a centralized database and an agency-wide plan to monitor and enforce the easements.

Project objectives were to: (1) conduct a comprehensive inventory of DNR's easements, classify conservation easements by type and capture relevant data about each easement in

DNR's land records system; (2) develop a conservation easement stewardship plan that integrates an easement monitoring computer application developed through DNR's Land Records Management Project; and (3) recommend solutions to long-term conservation easement stewardship funding.

The inventory consisted of a review of all deed and easement records maintained by DNR's Lands and Minerals Division, capture of relevant easement data and reconciliation of the data with records maintained by DNR's conservation easement administrators. The stewardship plan was developed after test monitoring a sample of existing conservation easements and obtaining extensive input from a working group comprised of representatives of DNR divisions that administer conservation easements.

The inventory identified 13 DNR conservation easement types and a total of 974 conservation easements covering 355,623 acres. The stewardship plan outlines monitoring methods and monitoring frequency for each conservation easement type, estimates stewardship costs and identifies options for funding. Project results are detailed in the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011.

Under a work program amendment, project staff converted scans of 600 conservation easements into a format for use in the new conservation easement monitoring application, developed GIS tools that identified subdivisions and ownership of 557 trout stream easements and created shapefiles for 170 conservation easements from legal descriptions. The Aug. 15, 2011 Final Report Supplement contains examples of these work products.

The database, forms, tools and plans developed in this project provide the foundation for the DNR to implement an agency-wide conservation easement stewardship program.

#### **IV. OUTLINE OF PROJECT RESULTS:**

##### **Result 1: Easement Inventory**

The first step is to determine the level of effort needed to inventory the historical documents. While DNR easements have been computerized over the last decade, an assessment of what data can be provided in a searchable digital format versus a scanned image is needed to facilitate developing a process for tracking the monitoring and enforcement of conservation easements. Recent DNR computerized easements show location, easement type, grantor, DNR document number, county document number, administrator, program/project, and acreage, but are missing the source of funding. The minimum data fields to be collected for this phase of the project are the current collected information plus federal aid and funds where possible and the scanned paper document(s). Additional information, needed for results 2 and 3 may be obtained from the scanned documents through clipping information and converting it to their own fields. This could include information that will be part of the monitoring and enforcement phase integrated into the Land Records Management Project, such as agreed upon duties and eased rights. See result 2 for additional data requirements, which will also be defined by Land Records

Management Project's "Administer Conservation Easements." If work of this result uncovers more easements than this funding can inventory and computerize, DNR will prioritize the known easements by funding source, length, and eased rights to keep this result within budget.

**Summary Budget Information for Result 1: Trust Fund Appropriation: \$ 273,000<sup>1</sup>**  
**Amount Spent: \$ 272,550**  
**Balance: \$ 450**

<b>Deliverable</b>	<b>Completion Date</b>	<b>Budget</b>	<b>Status</b>
<b>1. Analyze/input a sample of easements</b>	<b>December 2008</b>	<b>\$ 10,000</b>	<b>Done</b>
<b>2. Develop a data coding schema</b>	<b>January 2009</b>	<b>\$ 5,000</b>	<b>Done</b>
<b>3. Input data for easements</b>	<b>July 2010</b>	<b>\$203,000<sup>2</sup></b>	<b>Done</b>
<b>4. Validate sample of data</b>	<b>Sept. 2010</b>	<b>\$ 25,000</b>	<b>Done</b>
<b>5. Revise data</b>	<b>Nov. 2010</b>	<b>\$ 25,000</b>	<b>Done</b>
<b>6. Migrate data to Land Records</b>	<b>June 2011</b>	<b>\$ 5,000</b>	<b>Done</b>

#### **Final Report Summary:**

Project staff reviewed all deed and easement records maintained by the DNR's Lands and Minerals Division (approximately 17,000 documents), identified and classified each conservation easement as one of 13 conservation easements types per the coding schema finalized during this project. Project staff entered additional relevant data into DNR's land records system about each easement, including DNR region, county, DNR and county document numbers, grantor, project name, administrator, acquisition date, location and acreage. The final easement inventory identified a total of 974 DNR conservation easements covering 355,623 acres. During the inventory process, project staff also captured data on DNR-owned or managed land that is subject to deed restrictions or to conservation easements held by other entities.

Project staff collaborated with the Division of Lands and Minerals Geographic Information Systems (GIS) staff to create a GIS layer, which shows the location of DNR's conservation easements according to the Public Land Survey (i.e., township/range/section and quarter-quarter section (40 acres) or government lot). This GIS conservation easement layer is available to the general public on the DNR Data Deli.

The Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011 describes each of DNR's 13 conservation easement types,

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<sup>1</sup> This is the revised budget amount following the shift of Result 1 and Result 3 funds to Result 2 per the Work Program Amendment approved on Jan. 31, 2011. The Result 1 Budget in the original Work Program was \$300,000. This was revised to \$298,000 following a Work Program Amendment approved on May 19, 2009 that shifted \$2,000 of the Result 1 Budget to Result 2 for travel.

<sup>2</sup> This is the revised budget amount per the Jan. 31, 2011 Work Program Amendment.

contains the final inventory results statewide and by region, county and easement type, describes the inventory process and provides information about uses of the conservation easement dataset created in the project. See section V. DISSEMINATION below for a link to the report.

Project staff added all conservation easement data captured in the project to DNR's existing land records system, and, accordingly, completed all of this project's work associated with Deliverable 6. Migration of all state land records data to DNR's new land records system will be completed when the conversion from the existing system to the new system occurs. The conversion is currently scheduled for October 2011. DNR's information technology staff and International Land Systems, Inc., the contractor hired to build DNR's new land records system, will perform the data migration.

## **Result 2: Develop Monitoring Plan**

Step two is to use the inventory to develop an easement-monitoring plan by type of easement. This part of the project is tightly integrated with the Land Records Management Project in order to use available technologies such as work flow management, electronic document management, electronic field data capture, and forms driven data collection. Additional data/forms may be defined such as staff contacts, frequency of inspections, baseline description / property report, eased rights, agreed upon duties, monitoring forms, incident reports, amendments, and action plans. Initially we will draw a sample of the inventoried easements and determine the best ways to monitor them and test monitor the easements in the sample. This will require, in part, warm season field activity to be able to access and assess some easements.

One of the critical outputs of this task is to obtain enough sampled data to make a reasonable estimate of the variety of easements to be managed as well as the rate of violation. Many easements have not been visited in years and one objective of developing the monitoring plan is to determine the accrued liability of easement violations that need to be addressed. The next task is to classify each easement for monitoring purposes, based on the experience gained from the sample monitoring. For example easements may be classified by inspection frequency, type of inspection (visit photo, drive by, fly over), etc. These classifications need to be tied to annual costs. Then, finally, the individual monitoring steps and costs are aggregated to cost out the annual monitoring costs. That is, a periodic cost for monitoring each easement or class of easement will be estimated. The protocol developed for stewardship and monitoring will be consistent with the standards adopted by the conservation easement standards report required by M.L. 2007, Article 1, Section 4, Subdivision 2.

**Summary Budget Information for Result 2: Trust Fund Budget: \$202,000<sup>3</sup>**  
**Amount Spent: \$201,440**  
**Balance: \$ 560**

<b>Deliverable</b>	<b>Completion Date</b>	<b>Budget</b>	<b>Status</b>
<b>1. Sample monitor easements</b>	<b>June 2010</b>	<b>\$61,000</b>	<b>Done</b>
<b>2. Classify all easements for monitoring</b>	<b>September 2010</b>	<b>\$21,000</b>	<b>Done</b>
<b>3. Cost out monitoring plan</b>	<b>October 2010</b>	<b>\$20,000</b>	<b>Done</b>
<b>4. Document monitoring plan</b>	<b>November 2010</b>	<b>\$10,000</b>	<b>Done</b>
<b>5. Develop Application</b>	<b>June 2011</b>	<b>\$ 60,000</b>	<b>In process</b>
<b>6. Work Program Amendment</b>	<b>June 2011</b>	<b>\$ 30,000</b>	<b>Done</b>

### **Final Report Summary:**

Project staff collaborated with staff of DNR divisions that administer conservation easements to test monitor several conservation easements of different types, to develop templates for baseline property reports and conservation easement monitoring forms and to develop an agency-wide stewardship plan as well as individual stewardship (monitoring) plans by easement administrator or type. The stewardship plan addresses DNR's conservation easement stewardship goals, baseline property reports, easement monitoring, landowner relations, record keeping, staffing and enforcement. Monitoring plans by easement administrator or type identify the primary monitor by job class/location, any additional staffing needs, monitoring method(s) that will be used and frequency of routine monitoring. The stewardship plan contains annualized cost estimates by easement type to implement the plan and identifies existing funding sources. It also contains estimated costs to complete baseline property reports for existing conservation easements.

The complete stewardship plan is documented in the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011. The Appendix to the report contains baseline property report and monitoring form templates developed through this project. See section V. DISSEMINATION below for a link to the report.

As outlined in the July 15, 2009 Status Report and subsequent status reports, the computer application for conservation easement administration (Deliverable 5 of Result 2), is to be built into DNR's new land records system by the DNR Land Records Management Project's contractor, International Land Systems, Inc. (ILS). The \$60,000 budgeted for application development in this project was contributed toward the technical services contract with ILS. (See July 15, 2001 Status Report & Appendix A to July 15, 2010 Status Report.) The computer application for conservation easement administration and monitoring is currently in development and design review with completion expected in October 2011.

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<sup>3</sup> This is the revised budget amount following the shift of Result 1 and Result 3 funds to Result 2 per the Jan. 31, 2011 Work Program Amendment. The Result 2 Budget in the original Work Program was \$170,000. This was revised to \$172,000 following a May 19, 2009 Work Program Amendment that shifted \$2,000 of the Result 1 Budget to the Result 2 Budget for travel.

### Jan. 31, 2011 Work Program Amendment Results Summary

On January 31, 2011, LCCMR approved a January 27, 2011 Work Program Amendment request. The Work Program Amendment authorized the DNR to shift \$30,000 in project funds from Results 1 and 3 to Result 2 to perform additional digitization of the DNR's conservation easements beyond that contemplated by the original Work Program. The Jan. 31, 2011 Work Program Amendment had three components:

1. Convert the digital format of at least half of the scanned 977 existing conservation easements from PDF to Word using optical character recognition software and prepare "monitorable" easement terms for migration to the conservation easement administration application being developed by ILS.
2. Overlay county parcel data shapefiles on approximately 175 trout stream easement shapefiles to determine and show ownership boundaries of conservation easements that have been subdivided; create a table of corresponding current ownership data for migration to the new land records system and use with the conservation easement administration application.
3. Create shapefiles from legal descriptions for at least 20-25 conservation easements that have not been mapped electronically.

The DNR hired two temporary project analysts, one with ArcGIS expertise and one with survey and AutoCAD expertise, to fulfill the project goals set forth in the Work Program Amendment. As discussed below, the results of all three components of the Work Program Amendment far exceeded stated goals.

*Digital Format Conversion:* Project staff used Omnipage optical character recognition software to scan conservation easements that were in PDF format and create an output in Word format. A Microsoft Access application was created to record the terms for each easement in the scan set. A set of headers was developed to enable classification of each easement term by type (e.g., Surface Alteration, Structures and Improvements, Waste or Hazardous Materials). The headers will facilitate future reporting about types of conservation easement violations. A field was also included in the Access application to allow DNR staff to specify whether the easement term will be monitored by field staff. Terms were copied, pasted into the Access application, proofread for accuracy and classified by header type. A total of 600 easements with 5772 total terms were processed. This represents all conservation easements in the DNR Central and Southern Regions that have been "finalized" (i.e., final title opinion completed, DNR document number assigned, all data entry completed in land records system, copy of document filed with DNR's land records in Division of Lands and Minerals, document scanned). Having the Access application as a repository allows excellent flexibility to create a dataset in whatever format International Land Systems, Inc. may require to populate the new land records system. It also allows prototyping of conservation monitoring forms for use by field staff prior to implementation of DNR's new land records system.



*Subdivisions and Ownership of Trout Stream Easements:* Project staff were able to use geoprocessing tools available in ArcGIS (Python script) to systematically define underlying fee interest ownership by comparing existing trout stream shapefiles to county parcel data. Automating this activity allowed project staff to capture ownership information for 557 trout stream easements statewide. Results show that the 557 trout stream easements cover portions or all of 1581 separate land parcels owned by 1148 persons. Where parcel information was not available to DNR on a countywide basis, staff researched county websites to obtain the information and captured this information into the process. Parcel information for the remaining trout stream easements could not be identified during the process either because the counties in which the easements are located do not yet have parcel data or because the information was missing from the county dataset or otherwise unclear.

*Shapefiles from Legal Descriptions:* Project staff used AutoCAD design and engineering software to draw shapefiles from the legal descriptions of conservation easements. Each shapefile was divided into “forty-level” sections to enable the shapefiles to be tied to forty-level tabular data in DNR’s land records system. Shapefiles were completed for 170 conservation easements. Project staff reviewed the AutoCAD shapefiles for compatibility with GIS and converted the shapefiles into a single GIS shape layer for future use in GIS.

The Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report Supplement dated Aug. 15, 2011 contains examples of work produced under the Jan. 31, 2011 Work Program Amendment.

### **Result 3: Design Long-Term Solution**

The last task is to design the long-term solution to the easement stewardship (administration and monitoring). A final project report will outline how to ensure an ongoing source of financial support for easement stewardship. This requires consultation between the DNR, the Attorney General’s Office, the Legislative Auditor, the Department of Finance, BWSR and the State Board of Investment. The final product will list the legal requirements governing easement stewardship, any statutory changes, fiscal requirements, and solutions to ongoing financial support in the administration and monitoring of easements.

<b>Summary Budget Information for Result 3:</b>	<b>Trust Fund Budget:</b>	<b>\$ 45,000<sup>4</sup></b>
	<b>Amount Spent:</b>	<b>\$ 30,623</b>
	<b>Balance:</b>	<b>\$ 14,377</b>

<b>Deliverable</b>	<b>Completion Date</b>	<b>Budget</b>	<b>Status</b>
<b>1. Long-term monitoring solution</b>	<b>February 2011</b>	<b>\$45,000</b>	<b>Done</b>

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<sup>4</sup> This is the revised budget amount following the shift of Result 1 and Result 3 funds to Result 2 per the Jan. 31, 2011 Work Program Amendment. The Result 3 Budget in the original Work Program was \$50,000.

## **Final Report Summary:**

In collaboration with representatives of DNR divisions that administer conservation easements and representatives of DNR's senior management team, project staff developed recommendations for staffing increases and options for stewardship funding to ensure that the DNR's long-term conservation easement stewardship obligations can be met. It was recommended that at least 4.5 additional FTE's be assigned or hired to be dedicated to conservation easement stewardship. Options for funding of stewardship for both existing conservation easements and new conservation easement acquisitions were provided along with explanations of the advantages and disadvantages of each option. One of the funding options provided for both existing and new conservation easements was creation of an interest-bearing special revenue account to be used for conservation easement stewardship funding.

Part III of the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011 outlines existing legal requirements for conservation easement stewardship in Minnesota and details the project's recommendations for staffing increases and the options for conservation easement stewardship funding. See section V. DISSEMINATION below for a link to the report.

Following completion of the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011, the Commissioner of Natural Resources sent copies of the report to the chairs and ranking minority members of the house and senate natural resources committees along with a letter announcing the DNR's intention to develop a proposal for legislation that would create an interest-bearing special revenue account dedicated to administration, monitoring and enforcement of DNR conservation easements. The Commissioner's letter further stated that upon passage of such legislation, the DNR would seek to build a fund corpus that would generate sufficient annual interest to cover the cost of implementing the DNR's conservation easement stewardship plan and would seek stewardship funding to add to the account at the time any new conservation easement is acquired.

There is a \$14,377 balance for this Result due to less staff time being needed than was initially anticipated.

## **V. TOTAL PROJECT REQUEST BUDGET:**

<b>Staff or Contract Services:</b>	<b>\$520,000</b>
<b>Equipment:</b>	<b>\$ 0</b>
<b>Development:</b>	<b>\$ 0</b>
<b>Restoration:</b>	<b>\$ 0</b>

**Acquisition, including Easements:**

**\$ 0**

**TOTAL BUDGET:**

**\$520,000**

**VI. OTHER FUNDS AND PARTNERS**

**A. Project Partners**

BWSR

**B. Other Nonstate Funds being Leveraged during the Project Period**

None

**C. Past Spending**

M.L. 2007, Article 1, Section 4, Subdivision 2, Conservation Easement Standards  
Report \$15,000

**D. Time**

Funds must be available through June of 2011.

**V. DISSEMINATION:** Products and findings of the original Work Program are reported in the Conservation Easement Stewardship and Enforcement Program Plan – DNR Final Report dated Feb. 28, 2011, which is on the DNR's website at the following link:

[http://files.dnr.state.mn.us/lands\\_minerals/conservation\\_easement\\_stewardship\\_final\\_report.pdf](http://files.dnr.state.mn.us/lands_minerals/conservation_easement_stewardship_final_report.pdf)

The Geographic Information Systems (GIS) conservation easement layer developed in the project is available to the general public through the DNR Data Deli.

**VI. REPORTING REQUIREMENTS:** Periodic work program reports will be submitted no later than December 15, 2008, July 15, 2009, December 15, 2009, July 15, 2010, and December 15, 2010. A final work program report and associated products will be submitted between January 2011 and March 2011 as requested by the LCCMR.

Attachment A: Budget Detail for 2008 Projects - Summary and a Budget page for each partner (if applicable)																											
Project Title: Conservation Easement Stewardship and Enforcement Program Plan DNR																											
Project Manager Name: Kathy Lewis																											
Trust Fund Appropriation: \$ 520,000																											
1) See list of non-eligible expenses, do not include any of these items in your budget sheet																											
2) Remove any budget item lines not applicable																											
2008 Trust Fund Budget	<u>Revised</u> <u>Result 1</u> <u>Budget:</u> 01/31/11	Amount Spent (12/15/08)	Amount Spent (07/15/09)	Amount Spent (12/15/09)	Amount Spent (7/15/10)	Amount Spent (12/15/10)	Amount Spent (6/30/11)	Balance (6/30/11)	<u>Revised</u> <u>Result 2</u> <u>Budget:</u> 01/31/11	Amount Spent (12/15/08)	Amount Spent (7/15/09)	Amount Spent (12/15/09)	Amount Spent (7/15/10)	Amount Spent (12/15/10)	Amount Spent (6/30/11)	Balance (6/30/11)	<u>Revised</u> <u>Result 3</u> <u>Budget:</u> 1/31/11	Amount Spent (12/15/08)	Amount Spent (7/15/09)	Amount Spent (12/15/09)	Amount Spent (7/15/10)	Amount Spent (12/15/10)	Amount Spent (6/30/11)	Balance (6/30/11)	REVISED TOTAL BUDGET (1/31/11)	TOTAL BALANCE (6/30/11)	
	Easement Inventory								Develop Monitoring Plan								Design Long-Term Solution										
BUDGET ITEM																											
PERSONNEL: wages and benefits	272,000	10,981	80,521	53,357	73,412	46,231	7,498	0	140,000	7,000	28,500	19,000	19,500	15,000	51,000	0	45,000	314	1,500	100	3,500	5,000	20,209	14,377	457,000	14,377	
CONTRACT SERVICES	0	0	0	0	0	0	0	0	60,000	0	0	0	60,000	0	0	0	0	0	0	0	0	0	0	0	60,000	0	
IN-STATE TRAVEL: Transportation and travel expenses	1,000	0	0	500	0	50	0	450	2,000	0	0	736	0	455	249	560	0	0	0	0	0	0	0	0	3,000	1,010	
COLUMN TOTAL	\$273,000	\$10,981	\$80,521	\$53,857	\$73,412	\$46,281	\$7,498	\$450	\$202,000	\$7,000	\$28,500	\$19,736	\$79,500	\$15,455	\$51,249	\$560	\$45,000	\$314	\$1,500	\$100	\$3,500	\$5,000	\$20,209	\$14,377	\$520,000	\$15,387	

**CONSERVATION EASEMENT STEWARDSHIP AND ENFORCEMENT PROGRAM PLAN—DNR**  
**FINAL REPORT SUPPLEMENT**  
**August 15, 2011**



## BACKGROUND

The Minnesota Legislature funded this project in 2008 through an appropriation from the Environment and Natural Resources Trust Fund, Minn. Laws 2008, ch. 367, sec. 2, subd. 5(h). The appropriation language provides:

### **(h) Conservation Easement Stewardship and Enforcement Program Plan**

\$520,000 is from the trust fund to the commissioner of natural resources to inventory and digitize the department's conservation easements and prepare a plan for monitoring, stewardship and enforcement. This effort must be done in cooperation with the Board of Water and Soil Resources. This appropriation is available until June 30, 2011, at which time the project must be completed and final products delivered, unless an earlier date is specified in the work program.

The LCCMR approved the original Work Program for the project on June 17, 2008. The original Work Program had three results:

1. Easement Inventory
2. Develop Monitoring (or Stewardship) Plan
3. Design Long-Term Solution

Outcomes of the original Work Program are reported in the Conservation Easement Stewardship and Enforcement Program Plan—DNR Final Report dated Feb. 28, 2011.

On Jan. 31, 2011, LCCMR approved a Work Program Amendment that shifted \$30,000 in project funds from Results 1 and 3 to Result 2 to enable the DNR to undertake digitization of DNR's conservation easements beyond what was contemplated by the original Work Program. The Work Program Amendment had three components :

1. Convert the digital format of at least half of the scanned 977 existing conservation easements from PDF to Word using optical character recognition software; proofread and make necessary corrections following conversion; select and prepare "monitorable" easement terms for migration to the conservation easement administration application under development by International Land Systems.
2. Overlay county parcel data shapefiles on shapefiles of approximately 175 existing trout stream easements to determine and show ownership boundaries of conservation easements that have been subdivided; create a table of corresponding ownership data for migration to the new land records system and use with the conservation easement administration application.
3. Create shapefiles from legal descriptions for at least 20-25 conservation easements that have not been mapped electronically.

This Supplement to the August 15, 2011 Final Report illustrates and provides examples of work completed under the Jan. 31, 2011 Work Program Amendment.



## Work Program Amendment Component 1: Digital Format Conversion

The first component of the Jan. 31, 2011 Work Program Amendment was to convert the terms of existing conservation easements from a scanned image (PDF) format to a Word format using optical character recognition (OCR) software, to create an Access database in which existing easements are organized by DNR document number and to capture each of the monitorable terms in a separate field on a database data entry screen by copying and pasting from the Word document. After the terms were entered into the separate fields, project staff corrected any OCR conversion errors, assigned a header that describes the type of easement term and checked a box to indicate whether the easement term is one that should be monitored. Conversion was completed for 600 existing conservation easements.

The purpose of this work was to prepare data from existing conservation easements for migration to DNR's new land records system. The data will be used to populate baseline property reports, monitoring forms and other fields within the conservation easement administration application in DNR's new land records system. This will enable the application to be used for stewardship of existing easements as well as for any new conservation easements that are drafted using the new land records system.

Illustration 1.a. shows the process flow that staff used for the digital format conversion.

Illustration 1.b. shows the data entry screen into which the easement terms were pasted after being copied from Word.

Illustration 1.c. shows a report created in Access to facilitate proof-reading and error correction by project staff.

Illustration 1.d. shows a portion the Access table created through the project, which contains existing easement terms and reserved rights.

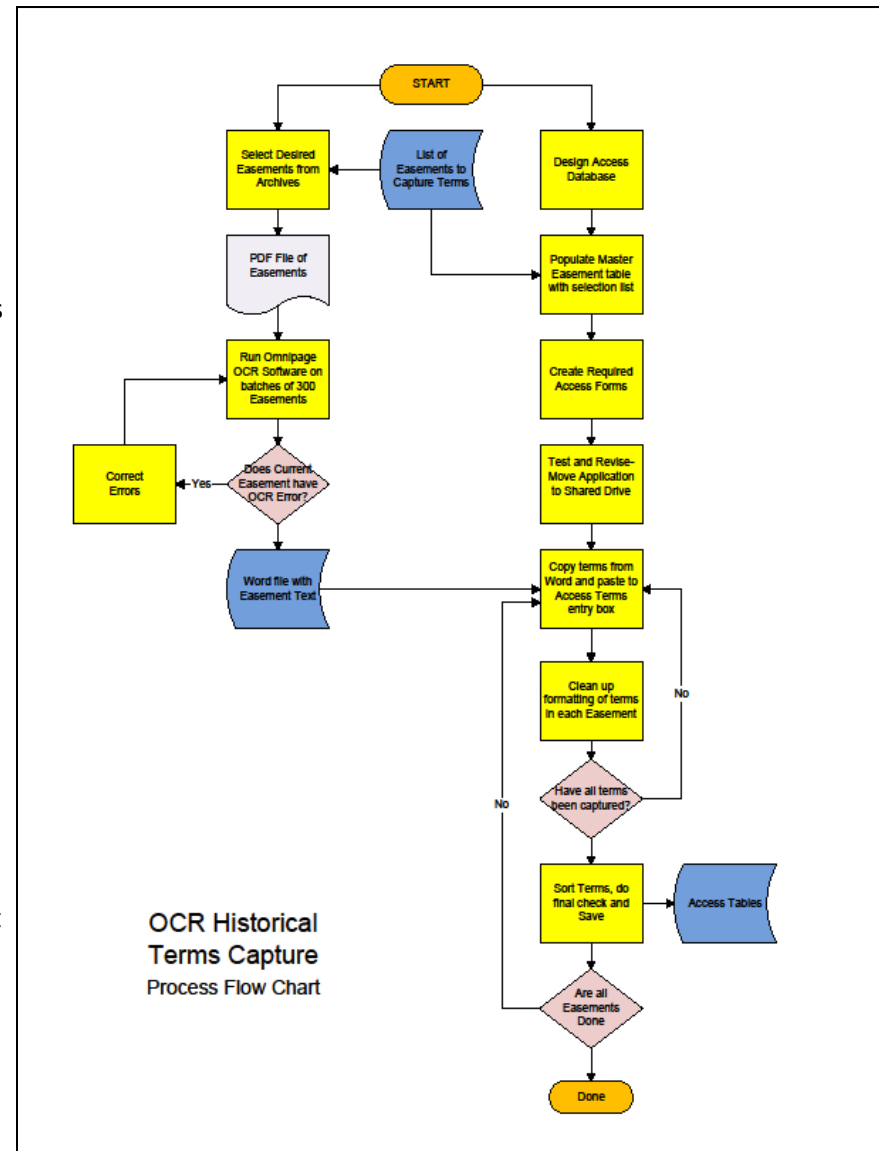


Illustration 1.a. Process flow used for digital format conversion

## Work Program Amendment Component 1: Digital Format Conversion

Historical Terms Capture

Home Create External Data Database Tools Acrobat

Views: Clipboard Font Rich Text Records Sort & Filter Find

All Tables

HeadingLUT

EasementList

EasementListWithHalv...

EasementListWithHalv...

EasementListWithHalv...

TroutStreamSurfaceAits

Switchboard

EasementList

HeadingLUT

Easements

Easements: Table

EasementList

EasementListWithHalv...

EasementListWithHalv...

Easements with Halvers...

Easements with No Terms

EasementList Query

Find duplicates for Eas...

TroutStreamSurfaceAits

Easements Query

Easements

Switchboard

EasementList

Easements with No Terms

Easements with No Ter...

TermsConditions

TermsConditions: Table

EasementList

EasementListWithHalv...

EasementListWithHalv...

Easements with No Terms

EasementList Query

TroutStreamSurfaceAits

TermsConditions

Switchboard

Form View

Record: 1 of 5

No Filter

0059

Num Lock

Illustration 1.b.  
Access database data entry screen

Historical Terms Capture

Print Preview Acrobat

Print Size Portrait Landscape Margins Columns Page Setup Zoom One Page Two Pages More Pages Refresh All Excel SharePoint List PDF or XPS Text File Close Print Preview Close Preview

Switchboard Easements TermsConditions EasementList

DNRDocNo

Term Nbr	Header	Term Description	Monitor Term
1	AMA0000059	1. Permit fish stocking and the development of fish habitat in the above described area, including tree planting, fencing, erosion control, installation of instream structures, posting of signs and other improvements as deemed necessary.	3855
2	Structures	A. Shall not place or erect any structure or building in the easement area without prior written approval of the Grantee.	138
3	Surface Alteration	B. Agree to cooperate in the maintenance and enhancement of fish management in the above described area by doing no excavating, tree cutting, or burning, without prior written approval of the Grantee. Grantor may deposit field stone at a site approved by the Grantee.	3178
4	Tillage	C. Agree that existing tillage be set back 45 feet from the shoreline of the lake and no new tillage be initiated within the easement corridor.	3179
5	Reserved Rights	The right to use the land, including the right of angling in said lake, the right to cross said lake and the right to use the water in said lake for domestic purposes, including watering cattle and other stock, consistent with the rights and privileges granted in this easement.	3180

Term Nbr	Header	Term Description	Monitor Term
1	AMA0000061	1. Permit the development of fish habitat in the above described area, including tree planting, fencing, erosion control, installation of instream structures, posting of signs and other improvements as are deemed necessary.	139
2	Public Access	2. Permit angling by the public in the above described area.	3728
3	Structures	A. Shall not place or erect any structure or building in the easement area without prior written approval of the Grantee.	3729
4	Surface Alteration	B. Agrees to cooperate in the maintenance and enhancement of fishing in the above described area by doing no excavating, filling, dumping, tree cutting, burning or changing of the stream course, without prior written approval of the Grantee. A change in the stream course also requires a special permit issued by the Division of Waters of the Department of Natural Resources.	3730
5	Reserved Rights	The right to use the land in the above-described tract, including the right of angling in said stream, the right to cross said stream and	3731

Page: 1 of 5

No Filter

Num Lock

Illustration 1.c.  
Access report



## Work Program Amendment Component 1: Digital Format Conversion

EasementID	ID	HeaderID	TermMemo	MonitorTerr	TermNmbr	Gon
26	413	153	1. Permit fish stocking and the development of fish habitat in the above described	✓	1	
26	414	22	2. Permit angling by the public in the above described area.	✓	2	
26	481	15	A. Shall not place or erect any structure or building in the easement area without	✓	3	
26	270	23	B. Agree to cooperate in the maintenance and enhancement of fishing in the abov	✓	4	
26	3856	19	C. Agree that existing tillage be set back 45 feet from the centerline of the stream	✓	5	
26	3857	21	The right to use the land in the above described tract, including the right of anglin	✓	6	
27	3866	6			1	
27	109	6 a	2. (a) Any activity or use on the Property other than those allowed along the Pede	✓	1	
27	110	7 a	2. (b) The division or subdivision of the Property except for the platting required f	✓	2	
27	111	182 a	2. (c) The construction, erection, maintenance, placement or replacement of any b	✓	3	
27	112	132 a	2. (d) The dumping or storage of ashes, trash, garbage, sawdust and wastes of any	✓	4	
27	113	130 a	2. (e) Dredging, mining, drilling, excavation or filling except as required for the gr	✓	5	
27	114	131 a	2. (f) Disturbances of the Property's surface topography, including but not limited	✓	6	
27	115	134 a	2. (g) Pruning, cutting down or other destruction or removal of timber or, vegetati	✓	7	
27	116	135 a	2. (h) The use of toxic chemicals, including, without limitation, pesticides and heri	✓	8	
27	117	182 a	2. (i) Public utilities installations such as electric generating plants, electric power	✓	9	
27	122	131 a	2. (j) Creation of new water impoundments or water courses or the diversion of ex	✓	10	
27	127	6 a	2. (k) Hunting or trapping of any kind or nature.	✓	11	
27	128	127 a	2. (l) The use of any off-road motorized vehicles or non-motorized vehicles includ	✓	12	
27	129	182 a	2. (m) Placing any trailers or mobile homes on the Property.	✓	13	
27	130	131 a	2. (n) The draining, filling, dredging or diking of the wetland areas on the Property	✓	14	
28	136	153	1. Permit fish stocking and the development of fish habitat in the above-described	✓	1	
28	3716	22	2. Permit angling by the public in the above-described area.	✓	2	
28	3717	188	1. Release the Grantee, its successors and assigns, from all claims for any and all d.	✓	3	
28	3718	15	2. Shall not place or erect any structure or building in the easement area without v	✓	4	
28	3719	23	3. Agree to cooperate in the maintenance and enhancement of fishing in the abov	✓	5	
28	3720	19	4. Agree that existing tillage be set back in accordance with the Winona County Sh	✓	6	
28	3721	21	The right to use the land in Tracts I and II, including the right of angling in said stre	✓	7	
29	137	153	1. Permit fish stocking and the development of fish habitat in the above-described	✓	1	
29	3722	22	2. Permit angling by the public in the above-described area.	✓	2	
29	3723	188	1. Release the Grantee, its successors and assigns, from all claims for any and all d.	✓	3	
29	3724	15	2. Shall not place or erect any structure or building in the easement area without v	✓	4	
29	3725	23	3. Agree to cooperate in the maintenance and enhancement of fishing in the abov	✓	5	
29	3726	19	4. Agree that existing tillage be set back in accordance with the Winona County Sh	✓	6	
29	3727	21	The right to use the land in Tracts 1 and 2, including the right of angling in said stre	✓	7	
30	138	15	A. Shall not place or erect any structure or building in the easement area without	✓	2	
30	3178	23	B. Agree to cooperate in the maintenance and enhancement of fish management	✓	3	
30	3179	19	C. Agree that existing tillage be set back 45 feet from the shoreline of the lake anc	✓	4	
30	3180	21	The right to use the land, including the right of angling in said lake, the right to cro	✓	5	
30	3855	153	1. Permit fish stocking and the development of fish habitat in the above describec	✓	1	
31	139	153	1. Permit the development of fish habitat in the above described area, including t	✓	1	

Illustration 1.d.  
Portion of Access table with final work product

## Work Program Amendment Component 2: Subdivisions and Ownership of Trout Stream Easements

The objective of the second component of the Jan 31, 2011 Work Program Amendment was to identify subdivisions of fee title interests in land subject to existing trout stream easements and to identify current fee owners. Land owned by one person at the time the DNR acquired a trout stream easement on it may now be divided into multiple underlying property parcels and have multiple owners.

Project staff were able to use geoprocessing tools available in ArcGIS (Python script) to systematically define underlying fee interest ownership by comparing existing trout stream shapefiles (contained in a GIS layer developed by the DNR's Fisheries section) to county parcel data. Automating this activity allowed project staff to capture ownership information for 557 trout stream easements statewide. These 557 trout stream easements cover portions or all of 1581 separate land parcels owned by 1148 persons.

Illustration 2.a. on the right-hand side of this page contains GIS screenshots of Hay Creek, a designated trout stream in Goodhue County. The photograph on the top shows the boundaries and original ownership of four trout stream easements acquired by the DNR in 1977. The photograph on the bottom is a screenshot of the same stream segment and easements after processing in ArcGIS with the script developed in the project. This shows current county parcel boundaries and identifies subdivisions and fee ownership of the property underlying the easements.

Illustration 2.b. on the following page shows the process model developed by project staff to complete component 2 of the Jan. 31, 2011 Work Program Amendment.

Hay Creek - Goodhue Co. with Original Grantors



Hay Creek - Goodhue Co. with Current Landowners

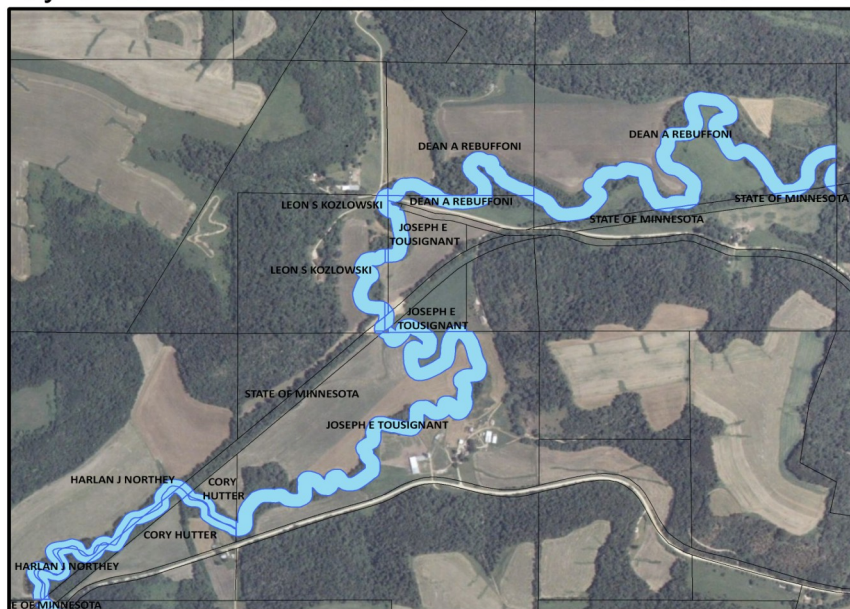


Illustration 2.a.

## Work Program Amendment Component 2: Subdivisions and Ownership of Trout Stream Easements

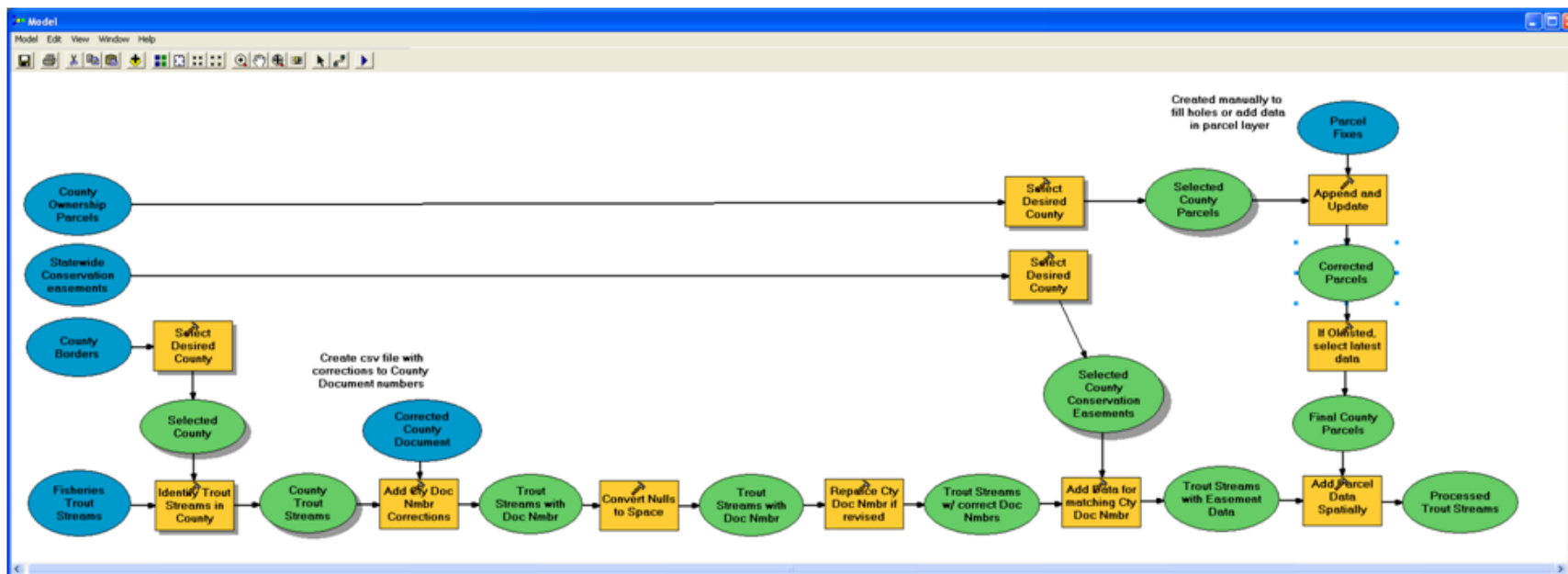


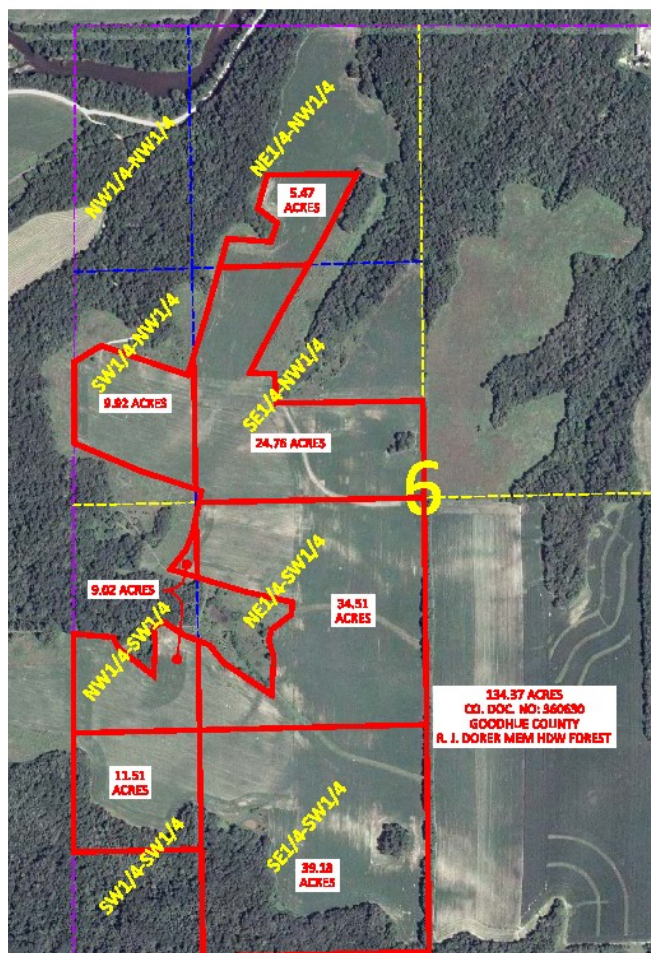
Illustration 2.b.  
Process model for identification of trout stream easement subdivisions and current owners



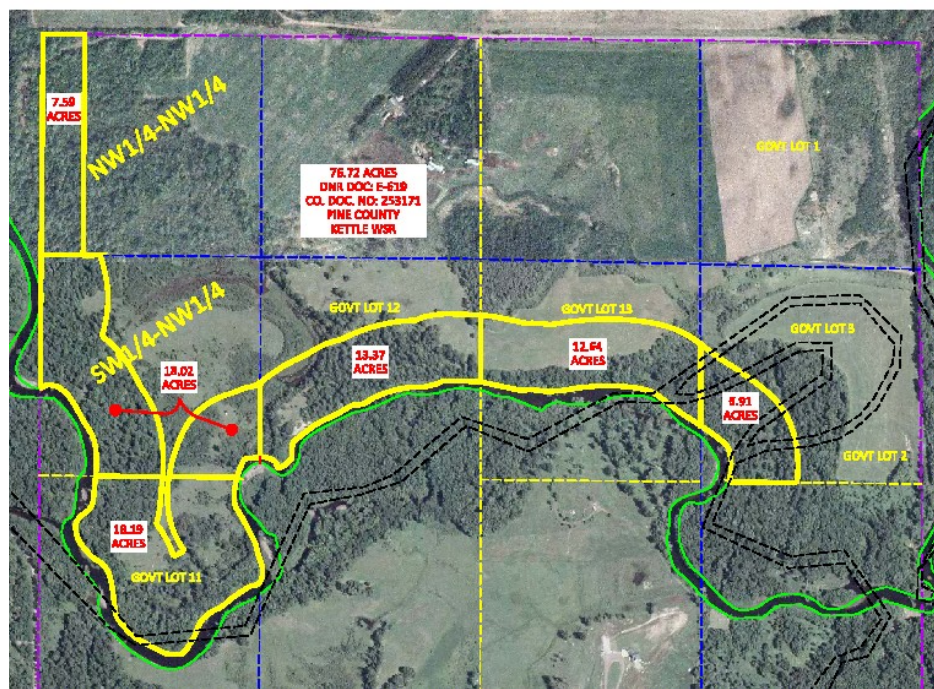
## Work Program Amendment Component 3: Shapefiles from Legal Descriptions

Project staff created shapefiles for 170 conservation easements from their legal descriptions, using AutoCAD design and engineering software. Each shapefile was divided into “forty-level” sections, which will enable the shapefiles to be tied to forty-level tabular data in DNR’s land records system.

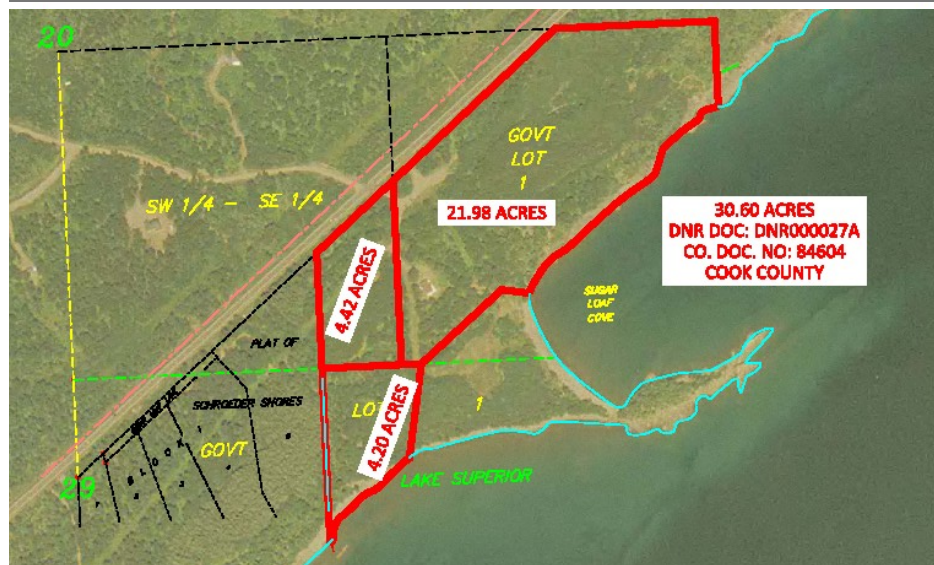
Illustrations 3.a., 3.b. and 3.c. show three of the shapefiles created in the project overlaid on FSA aerial photographs.



Illustr. 3.a. Forestry Div. Conservation Easement, Goodhue Co.



Illustr. 3.b. Wild and Scenic River Easement, Pine Co.



Illustr. 3.c. SNA Program-Administered Miscellaneous Conservation Easement, Cook Co.