

**2005 Project Abstract (Submitted 03/19/08)**

For the Period Ending December 31, 2007

**TITLE:** Soil Survey

**PROJECT MANAGER:** Greg Larson

**ORGANIZATION:** Board of Water and Soil Resources

**ADDRESS:** 520 Lafayette Road North

**WEB SITE ADDRESS:** [www.bwsr.state.mn.us](http://www.bwsr.state.mn.us)

**FUND:** Trust fund

**LEGAL CITATION:** ML 2005, First Special Session, Chap. 1, Art. 2, Sec.11, Subd. 8(b).

**APPROPRIATION AMOUNT:** \$ 500,000

Overall Project Outcome and Results

This appropriation continued the ongoing study of the state's soils by accelerating the completion of soil mapping and digitization of soils data.

To accelerate the completion of soil mapping, and the eventual digitization of soils data, mapping projects were initiated in Pine and Crow Wing Counties. During the project period, the NRCS established survey offices and hired the lead soil scientists and most of the assistant soil scientists for these counties. To characterize the landscape, geology and soil patterns, soil surveys begin with extensive field investigations and exploratory borings. To those ends, about 15 percent of the overall project has been addressed in Crow Wing County and about 10 percent has been addressed in Pine County.

Existing soil surveys for two counties, Beltrami and Aitkin, were fully digitized to USDA SSURGO (Soil Survey Geographic Database) Standards by staff employed with Trust Fund funding. These staff also contributed to USDA Natural Resource Conservation Service efforts to digitize additional published soil surveys in Minnesota. Additional soils data from a total of 28 counties were digitized during the funding period. These 28 counties brought the total number of counties digitized to 75 at the end of calendar year 2007. (An additional 6 project areas were done by the NRCS with 2007 funding, for a total of 81 survey areas having digital coverage).

It was during the 2005 funding period that NRCS fully implemented a WEB-delivered soil survey. Digital SSURGO soil surveys are the basis for the WEB Soil Survey. Consequently, the acceleration of digitization efforts means that the WEB Soil Survey is available in 81 soil survey areas. Built to complement the WEB Soil Survey, NRDSS (Natural Resource Decision Support System) was developed. This product allows users to perform multiple queries of soils data and download it in formats not currently available with the USDA WEB Soil Survey.

Project Results Use and Dissemination

Digital data through the WEB Soil Survey <http://soils.usda.gov/survey> is available for 81 project areas. Soils data from counties not yet mapped and digitized is available to the public on a request basis.

**Date of Report: March 19, 2008**

**Project Completion Date: December 31, 2007**

**LCMR Final Work Program Report (for 2005 Funding)**

**I. PROJECT TITLE: Soil Survey**

**Project Manager:** Greg Larson  
**Affiliation:** Board of Water and Soil Resources  
**Mailing Address:** 520 Lafayette Road North  
Saint Paul, MN 55155  
**Telephone Number:** (651) 297-7029  
**E-mail Address:** greg.larson@bwsr.state.mn.us  
**Fax Number:** (651) 297-5615  
**Web Page Address:** www.bwsr.state.mn.us

**.Total Biennial Project Budget: LCMR Appropriation: \$500,000**

**Balance: \$ 0**

**Legal Citation: ML 2005, First Special Session, Chap. 1, Art. 2, Sec. 11, Subd. 8(b).**

**Appropriation Language:** \$250,000 the first year and \$250,000 the second year are from the trust fund to the board of water and soil resources to accelerate digitizing of completed soil surveys for web based user application and for agreements with Pine and Crow Wing counties to begin soil surveys. The new soil surveys must be done on a cost-share basis with local and federal funds. This appropriation is available until June 30, 2008, 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:**

Existing soil surveys for two counties, Beltrami and Aitkin, were digitized to USDA SSURGO (Soil Survey Geographic Database) Standards by staff employed with LCMR funding. These staff also contributed to USDA Natural Resource Conservation Service efforts to digitize additional published soil surveys in Minnesota. During the 2005 funding period, 28 counties were digitized. These 28 counties brought the total number of counties digitized to 75 at the end of calendar year 2007. (An additional 6 project areas were done by the NRCS with 2007 funding, for a total of 81 survey areas having digital coverage.) It was during the 2005 funding period that NRCS fully implemented a WEB-delivered soil survey. Digital SSURGO soil surveys are the basis for the WEB Soil Survey. Consequently, the acceleration of digitization efforts means that the WEB Soil Survey is available in 81 soil survey areas. Built to complement the WEB Soil Survey, NRDSS (Natural Resource Decision Support System) was developed. This product

allows users to perform multiple queries of soils data and download it in formats not currently available with the USDA WEB Soil Survey. To accelerate the completion of soil mapping, and the eventual digitization of soils data, mapping projects were initiated in Pine and Crow Wing Counties. During the project period, the NRCS established survey offices and hired the lead soil scientists and most of the assistant soil scientists for these counties. To characterize the landscape, geology and soil patterns, soil surveys begin with extensive field investigations and exploratory borings. To those ends, about 15 percent of the overall project has been addressed in Crow Wing County and about 10 percent has been addressed in Pine County.

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

**Result 1:** Begin the Update of the Crow Wing County Soil Survey.

**Final Status:** To accelerate the completion of soil mapping, and the eventual digitization of soils data, a soil mapping project was initiated in Crow Wing County. During the project period, the NRCS established a soil survey office in Baxter and hired a project leader and one assistant soil scientist. To characterize the landscape, geology and soil patterns, soil surveys begin with extensive field investigations and exploratory borings. About 15 percent of the total project was addressed during this time period.

**Final Budget Information for Result 1:**

**LCMR Budget: 150,000**

**Balance: 0**

**Result 2:** Begin the Initial Soil Survey of Pine County.

**Final Status:** To accelerate the completion of soil mapping, and the eventual digitization of soils data, a soil mapping project was initiated in Pine County. During the project period, the NRCS established a survey office in Sandstone and hired the project leader and two assistant soil scientists. To characterize the landscape, geology and soil patterns, soil surveys begin with extensive field investigations and exploratory borings. About 10 percent of the total project was addressed during this time period. In late 2006, the Pine County Board of Commissioners voted to end their contributions to the soil survey. This action resulted in a cessation of soil mapping activities and the NRCS removed their staff. Consequently, the accomplishments of the NRCS are lower than would be expected.

**Final Budget Information for Result 1:**

**LCMR Budget: \$150,000**

**Balance: 0**

**Result 3:** Accelerate Internet Delivery of Soil Survey Data.

**Final Status:**

Existing soil surveys for two counties, Beltrami and Aitkin, were digitized to USDA SSURGO (Soil Survey Geographic Database) Standards by staff employed with LCMR

funding. These staff also contributed to USDA Natural Resource Conservation Service efforts to digitize additional published soil surveys in Minnesota. During the 2005 funding period, 28 counties were digitized. These 28 counties brought the total number of counties digitized to 75 at the end of calendar year 2007. (An additional 6 project areas were done by the NRCS with 2007 funding, for a total of 81 survey areas having digital coverage.) It was during the 2005 funding period that NRCS fully implemented a WEB-delivered soil survey. Digital SSURGO soil surveys are the basis for the WEB Soil Survey. Consequently, the acceleration of digitization efforts means that the WEB Soil Survey is available in 81 soil survey areas. Built to complement the WEB Soil Survey, NRDSS (Natural Resource Decision Support System) was developed. This product allows users to perform multiple queries of soils data and download it in formats not currently available with the USDA WEB Soil Survey.

**Final Budget Information for Result 3:**

**LCMR Budget: \$200,000**

**Balance: \$0**

**V. Total LCMR Project Budget:**

All Results: Personnel: \$489,500

All Results: Office equipment and computers: \$6,500

All Results: Other: \$4,000

**Total LCMR Project Budget: \$500,000** (see attachment A)

**Explanation of Capital Expenditures Greater Than \$3,500:** A server used for the ongoing soil survey projects was upgraded. The cost was shared with the University of Minnesota.

**VI. PAST, PRESENT AND FUTURE SPENDING**

**A. Past Spending:** The University-led research phase of “Updating Outmoded Soil Surveys”, focusing on four SE Minnesota Counties, ended June 30, 2003. Of the \$236,000 of LCMR funding for that project, none supported web delivery per se, although all four counties in the SE project area will ultimately have digital WEB-delivered soil surveys. Crow Wing County provided about \$5,000 to the NRCS for soil investigations.

**B. Current Spending:** As indicated in Results 1 and 2, significant non-state contributions were part of results one and two. Crow Wing and Pine Counties provided \$33,000 and \$80,000, respectively. The NRCS provided \$467,000 and \$450,000, respectively, to Crow Wing and Pine Counties. For result three, various in-kind contributions were provided by the Board of Water and Soil Resources and the Natural Resources Conservation Service.

**C. Required Match:** As indicated in the appropriation, Results one and two required contributions from counties and the USDA NRCS. Contributions: Crow Wing County: \$33,000 county funds and \$467,000 NRCS. Pine County: \$80,000 county funds and \$450,000 NRCS.

**VII. PROJECT PARTNERS:** The project utilized a team with members from federal, state and local government agencies and private sector consultants. For the Crow Wing and Pine County soil surveys, Keith Pohl and Mary Kay Anderson, respectively, were the local project managers. Greg Larson, Professor Jay Bell, UM, and Joe McCloskey, NRCS were lead members of the project team. Except where noted on the budget detail, none of the project partners or team members received LCMR funds.

**VIII. DISSEMINATION.** Digital data through the WEB Soil Survey <http://soils.usda.gov/survey> is available for 81 project areas. Soils data from counties not yet mapped and digitized is available to the public on a request basis.

**IX. LOCATION:** This project specifically addressed Aitkin, Beltrami, Crow Wing and Pine Counties and complemented USDA NRCS efforts in 26 additional counties.

**X .REPORTING REQUIREMENTS:** Periodic work program progress reports were submitted January 6, 2006; June 30, 2006 and January 2, 2007. This document, the final work program report, and abstract was submitted March 19, 2008.

**IX. RESEARCH PROJECTS:** Not applicable.

Attachment A: Budget Detail for 2005 Projects March 19, 2008 (FINAL)

Proposal Title: Soil Survey

Project Manager Name: Greg Larson

LCMR Requested Dollars: \$ 500,000 .

County contributions: \$113,000

NRCS contributions: \$917,000

2005 LCMR Proposal Budget	<u>Result 1 Budget:</u> <u>LCMR</u>	<u>Amount Spent</u> <u>(01/11/08)</u>	<u>Balance</u> <u>(01/11/08)</u>	<u>Result 1 Budget:</u> <u>LCMR</u>	<u>Amount Spent</u> <u>(01/11/08)</u>	<u>Balance</u> <u>(01/11/08)</u>	<u>Result 3 Budget:</u> <u>LCMR</u>	<u>Amount Spent</u> <u>(01/11/08)</u>	<u>Balance</u> <u>(01/11/08)</u>	
	<i>Begin Crow Wing County</i>			<i>Begin Pine County</i>			<i>Accelerate Digital Soils Data</i>			
BUDGET ITEM										TOTAL FOR BUDGET ITEM
A GIS professional (Salary, inc. fringe est at 30%= ~\$90,000)										
Student interns (2 or more = ~\$37,500)										
Saint Mary's University (\$65,000)										
Contracts (Through UM for the above GIS professional, student interns and Saint Mary's)							189,500	189,500	0	189,500
Other contracts (Contract with each County for NRCS costs)	150,000	150,000	0	150,000	150,000	0				300,000
Space rental: NOT ALLOWED	X			X			X			X
Office equipment & computers ( <i>maintain, repair and upgrade existing hardware</i> )							6,500	6,500	0	6,500
Printing (plotter paper and cartridges)							2,000	2,000	0	2,000
Travel expenses in Minnesota							2,000	2,000	0	2,000
COLUMN TOTAL	150,000	150,000	0	150,000	150,000	0	200,000	200,000	0	500,000

## **Legislative-Citizen Commission on Minnesota Resources**

### **2005 Project Abstract**

**For the period ending June 30, 2008**

**PROJECT TITLE:** The Open Space Planning and Protection Project

**PROJECT MANAGER:** Chris Lord, District Manager,

**AFFILIATION:** Anoka Conservation District

**MAILING ADDRESS:** 16015 Central Ave. NE #103,

**CITY / STATE / ZIP :** Ham Lake, MN 55304

**PHONE:** (763) 434-2030 ext. 13

**FAX:** (763) 434-2094

**E-MAIL:** [chris.lord@anokaswcd.org](mailto:chris.lord@anokaswcd.org)

**WEB LINK:** [www.anokanaturalresources.com/acd/tech\\_assist/res\\_plan.htm](http://www.anokanaturalresources.com/acd/tech_assist/res_plan.htm)

**LEGAL CITATION:** ML 2005, First Special Session, Chapter 1, Article 2, Section 11, Subdivision 8(d).

Subd. 16. Carryforward

18.30 (2) Laws 2005, First Special Session chapter

18.31 1, article 2, section 11, subdivision 8,

18.32 paragraph (d), open space planning and

18.33 protection;

### **APPROPRIATION AMOUNT:**

(d) Open Space Planning and Protection 250,000

\$125,000 the first year and \$125,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with Anoka Conservation District to protect open space by identifying high priority natural resource corridors through planning, conservation easements, and land dedication as part of development processes.

### **TOTAL BIENNIAL LCMR PROJECT BUDGET:**

LCMR Appropriation:	\$ 250,000
Minus Amount Spent:	\$ 181,095
Equal Balance:	\$ 68,905

### **Overall Project Outcome and Result**

The premise of the *Open Space Planning and Protection Project* was to bring concepts related to open space planning into the local comprehensive planning process in hopes that they would be incorporated into comprehensive plan updates. Since it is not possible to mandate local government adoption of open space protection strategies, giving those concepts a place at the table and prominence in local planning discussions is the next best alternative. Ultimately, the success of the effort lay with the local decisions makers and in the end mixed results were achieved. Results 1 and 2, the *creation of local open space protection plans* and *local adoption of tools to provide the means of implementation*, have been achieved to the extent participating communities consented to do so. Due to factors beyond the control of project managers (primarily, an

unanticipated lack of new development in the project area) the goals for land protection in number of acres (i.e., Result 3) have not been met. However, 34 acres of land has been permanently protected (described in section IV, under Result 3). Moreover, participating communities have been given a blueprint for natural resource protection going forward, including both 1) the identification and prioritization of natural resources for protection and 2) the planning and land use regulation approaches that can be used to protect land as part of the development process. In addition, the necessary long term shift in how communities view development and planning for the future has begun to occur—while difficult to quantify, this is a very important point. These techniques were demonstrated through an actual protection project in one community (East Bethel) and through a mock platting process in another (Burns Township/City of Nowthen; see Result 4).

### **Project Results Use and Dissemination**

Each of the participating communities received extensive individualized planning documents that included NRA/I maps and analysis, infrastructure planning, demographics, model open space protection ordinances, easement documents, etc. Full copies of the reports are available on the Anoka Conservation District's website ([www.anokanaturalresources.com/acd/tech\\_assist/res\\_plan.htm](http://www.anokanaturalresources.com/acd/tech_assist/res_plan.htm)). While a lack of development and resistance from key community leaders inhibited the overall accomplishment of project goals, the information and expertise amassed as a result of this project have and will continue to inform efforts throughout the county. A low impact development workshop in Andover and the donation of 200 acres of conservation easement in the City of Anoka both benefited from this project. Many articles have appeared on this and related topics in community newsletters throughout the planning process and periodic articles will be sent to local and regional newspapers.



**Date of Report: June 30, 2008**  
**LCCMR 2005 Work Program Final Report**

**I. PROJECT TITLE: The Open Space Planning and Protection Project**

Project Manager Affiliation: Chris Lord: District Manager, Anoka Conservation District  
Mailing Address: 16015 Central Ave. NE #103,  
City / State / Zip : Ham Lake, MN 55304  
Telephone Number: (763) 434-2030 extension 13  
E-mail Address: chris.lord@anokaswcd.org  
FAX Number: (763) 434-2094  
Web Page address: <http://www.anokaswcd.org>

**Total Biennial LCMR Project Budget:**

LCMR Appropriation:	\$ 250,000
Minus Amount Spent:	\$ 181,095
Equal Balance:	\$ 68,905

**Attachment A: Budget**

**Legal Citation: ML 2005, First Special Session, Chapter 1, Article 2, Section 11, Subdivision 8(d).**

**Appropriation Language:**

(d) Open Space Planning and Protection 250,000  
\$125,000 the first year and \$125,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with Anoka Conservation District to protect open space by identifying high priority natural resource corridors through planning, conservation easements, and land dedication as part of development processes.

**Subd. 16. Carryforward**

18.30 (2) Laws 2005, First Special Session chapter  
18.31 1, article 2, section 11, subdivision 8,  
18.32 paragraph (d), open space planning and  
18.33 protection;

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

The premise of the *Open Space Planning and Protection Project* was to bring concepts related to open space planning into the local comprehensive planning process in hopes that they would be incorporated into comprehensive plan updates. Since it is not possible to mandate local government adoption of open space protection strategies, giving those concepts a place at the table and prominence in local planning discussions is the next best alternative. Ultimately, the success of the effort lay with the local decisions makers and in the end mixed results were achieved. Results 1 and 2, the *creation of local open space protection plans* and *local adoption of tools to provide the means of implementation*, have been achieved to the extent participating communities consented to do so. Due to factors beyond the control of project managers (primarily, an

unanticipated lack of new development in the project area) the goals for land protection in number of acres (i.e., Result 3) have not been met. However, 34 acres of land has been permanently protected (described in section IV, under Result 3). Moreover, participating communities have been given a blueprint for natural resource protection going forward, including both 1) the identification and prioritization of natural resources for protection and 2) the planning and land use regulation approaches that can be used to protect land as part of the development process. In addition, the necessary long term shift in how communities view development and planning for the future has begun to occur—while difficult to quantify, this is a very important point. These techniques were demonstrated through an actual protection project in one community (East Bethel) and through a mock platting process in another (Burns Township/City of Nowthen; see Result 4).

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

##### **Result 1: Locally Adopted County-Wide Open Space Plan**

LCMR Budget (Result 1)	\$70,761
<u>Minus Amount Spent</u>	<u>\$69,409</u>
Balance	\$ 1,352

Over the course of the Open Space Planning and Protection Project, various planning activities were engaged in each community towards meeting the objectives for Result 1 as described in the original workplan. While the original workplan outlined a single process to be utilized in each community, the varying needs of the participating communities—in terms of the level and type of planning assistance needed—led to widely different processes. The process and final outcomes for each community are summarized below. In all cases, open space planning discussion had to be balanced with, and integrated into planning for commercial and residential development, transportation and other utilities and services.

As part of this project, CommunityViz advanced imaging software was utilized but found to be less effective than anticipated. While the software provide a three dimensional simulation of various development scenarios for a community, computer processing limitations restricted the scope of the simulations to small geographic areas within a community. Furthermore, the simulations were not sufficiently detailed to enable many members of the task forces to truly visualize the implication of their decisions on development. The software was very helpful, however, when estimating infrastructure needs based upon various build out scenarios.

Members of several communities also participated in a tour that highlighted various residential development approaches. Response to the tour was very positive as they visited three developments in Burns Township and two in Elk River. Of the five developments toured, four were ostensibly examples of conservation design developments with the fifth involving traditional large lot development that was intended to maintain rural character but resulted in many long, narrow five acre lots that with wetland in the back of the houses. It was agreed that this development failed to provide the desired rural feel despite conforming to the large lot model. Three recent developments included smaller lots with commonly held protected open space and the final development in Burns was done several decades ago in a way that created the

same amount of open space but without providing any protections for it while having the desired rural character.

### **East Bethel**

As compared to the other participating communities, East Bethel had from the outset the best institutional structure and commitment to effective planning for the future. At the time the Open Space Planning and Protection Project was being initiated, East Bethel had a planner on staff, had begun exploring the possibility of development of a municipal sanitary sewer system, and begun planning for a new town center to be the focus of community life and economic activity in the City. Shortly afterwards, the city also began working on a complete redevelopment of its zoning codes and comprehensive plan. As such, East Bethel was well positioned to conduct effective planning and to take advantage of the opportunities being offered through the Open Space Planning and Protection Project.

Over the course of the project, Anoka Conservation District (ACD) provided assistance to East Bethel in a number of areas. First, ACD provided extensive mapping and analysis of areas including soil use limitations. These maps and associated data were critical for identifying preferred development trends and implications for open space protection and the municipal sanitary sewer system that East Bethel will be building in conjunction with the Metropolitan Council. They also contributed to long-term land use planning conducted by the City as part of its comprehensive planning process. Second, ACD conducted a natural resources inventory and analysis (abbreviated as "NRI/A"), an iterative process that ultimately provided the basis for both temporary and long-term ordinances protecting natural resources. These ordinances are discussed further under Result 2. Third, ACD conducted a wetlands function-value analysis, a process that uses information regarding the hydrological characteristics and plant communities of wetlands to evaluate their sensitivity to human impacts and to changes in hydrology brought on by development and storm water management. This work was a key input into the City's local water plan, storm water management planning, and, ultimately, a new wetland protection ordinance. Again, the ordinance is discussed further under Result 2.

A summary report from ACD to the City of East Bethel, including sample maps and other documents, has been included as *Appendix: East Bethel* to this document.

### **Burns Township/The City of Nowthen**

Planning efforts for Burns Township, known as the City of Nowthen as of July 1, 2008, were divided between a natural resources inventory and analysis (NRI/A), and comprehensive planning, with the bulk of time being spent on the latter. The devotion of extensive time to comprehensive planning was necessary because the Township/City lacked the in-house capacity for meaningful planning, and hadn't dedicated significant resources to planning efforts in almost 20 years.

The NRI/A was an iterative process that occurred throughout duration of the project. Although both Township officials and members of the citizen planning taskforce who assembled to participate in the planning process reviewed and commented several times on the findings of the NRI/A, a formal report was never issued due to resistance from key Township officials. Some key findings, maps, and tables, along with recommendations to guide any future selection of specific parcels for protection efforts, are included with a summary report from ACD to the Township, which has been included as *Appendix: Burns Township* to this document.

As previously stated, comprehensive planning efforts consumed a substantial amount of project resources directed to Burns Township. ACD holds that a sound comprehensive planning effort is the basis for any future land protection efforts. While this outlook on planning was unfortunately not shared by Township decision-makers during the time of the project, the incorporation of the Township into the City of Nowthen has resulted in a change in leadership. There are very good signs that the community will be moving forward with new planning efforts that included a much-needed re-examination of the assumptions that have guided both growth and policy decisions in the community in recent years. It is hoped that both the NRI/A conducted by ACD and the mock-platting process (Result 4) will provide direction on future land protection efforts as the City moves forward.

#### **Ham Lake**

Planning work in Ham Lake included a more in-depth and extensive NRI/A as compared to other communities participating in the Open Space Planning and Protection Project. The NRI/A provided the basis for a formal report on Ham Lake natural resources issued by the Anoka Conservation District. A full copy of the report has been included with this document as the Appendix: *Ham Lake*. The report includes extensive mapping and description of natural resources and provides recommendations on techniques and policy options for achieving land protection. Additional discussion of the policy recommendations contained in the report and how they relate to ongoing planning efforts by the City are included under Result 2 below.

#### **Linwood Township**

As a municipality with limited tax base, Linwood Township shared with Burns Township a lack of resources, particularly in terms of in-house planning staff, available to dedicate to comprehensive planning efforts. Unlike Burns Township, however, Linwood had recently engaged in an extensive planning process, which concluded in 2002. However, update of the Linwood Comprehensive Plan to meet requirements established by Minnesota Statute still required a significant investment of time.

As with the other communities, work with Linwood Township included an NRI/A. As in the other communities, this was an iterative process. Periodically throughout the course of the project, Linwood Township officials and members of the citizen planning committee assembled for the project reviewed, commented on, and adjusted maps of the natural resources present in the township. Particular issues of importance for Linwood Township in evaluating natural resources for the purpose of targeting limited conservation efforts are the large amount of public lands in the township and identifying upland areas (as opposed to wetlands) for protection. A formal report made by ACD to Linwood Township to summarize activities related to the Open Space Planning and Protection Project includes a section which outlines the findings of the NRI/A. This section of the report also includes policy recommendations for prioritizing and acting on natural resources for protection. The report is included with this document as Appendix: *Linwood Township*.

Beyond natural resources considerations, ACD also assisted Linwood Township in exploring commercial development options, community waste water treatment systems, development of senior housing, and the possibility of municipal incorporation as part of a more comprehensive planning exercise. In particular, the issue of community waste water treatment systems is an important one for the township. Due to extensive wetlands

and a high-ground water table in Linwood Township, both of which restrict developable area, community waste water systems are key to achieving land protection through the development process using conservation design and/or low-impact development approaches to platting. Conservation design and low-impact development, two closely related approaches, were key concepts advanced by ACD as part of the Open Space Planning and Protection Project. More on this topic is discussed under Result 2.

## **Result 2: Identify and Incorporate Implementation Tools into Institutional Framework**

LCMR Budget (Result 2)	\$54,461
<u>Minus Amount Spent</u>	<u>\$51,341</u>
Balance	\$ 3,120

Results for each community are summarized below:

### **East Bethel**

As described under Result 1, ACD completed an NRI/A for the City of East Bethel. This NRI/A informed two important ordinances for the City: 1) a temporary development moratorium affecting parcels identified (by the NRI/A) as containing important and/or high quality natural resources, and 2) a permanent ordinance identifying Sensitive Natural Environment Areas (SNEAs) and providing special land use regulation for these areas which allow preservation through the development process.

The temporary development moratorium, enacted through ordinance, halted all development for the period of one year. The purpose of the moratorium was to allow the City of East Bethel to conduct further analysis of the natural resources present within the City and to develop ordinances which provided for the protection of these resources during and through the development process. The moratorium ordinance itself referenced a map, produced by Anoka Conservation District, which identified the specific parcels to which the moratorium applied. The moratorium map was produced based on data gathered by ACD regarding the location of land-cover associations which not only have high value from an ecological perspective, but also are of high value for housing development (and thus subject to greater than average development pressure). The moratorium map was included in the final summary report issued by ACD to the City of East Bethel, included with this report as Appendix: *East Bethel*.

Beyond the moratorium ordinance and map, ACD also assisted East Bethel with the further evaluation of natural resources (the NRI/A) and the development of ordinances for the protection of these natural resources from and through the development process. The summary report included with this document as Appendix: *East Bethel* contains a number of maps, along with several documents and a print-out of a PowerPoint presentation to the East Bethel City Council. These items demonstrate some of the materials produced by ACD in assisting East Bethel with development of protective ordinances. Not included is an actual ordinance drafted by ACD, which used a conservation development approach to define not only the general areas eligible for special land-use regulation, but also the specific development restrictions and allowances, including specific features for which protection is required. Due to opposition from the East Bethel City Council, the ordinance was never adopted. However, the less restrictive SNEA ordinance (noted above), developed by East Bethel with assistance from ACD, was ultimately adopted and is based on the NRI/A conducted by ACD.

In addition to the NRI/A and related ordinances, ACD also assisted the City of East Bethel with a wetlands function-values analysis. As previously described (under Result 1). The function-values analysis became a key piece of the East Bethel local water management plan (required under state law) and also became a central part of a new wetlands development set-back ordinance. This ordinance, developed in consultation with Anoka Conservation District, defines buffer areas for various wetlands within the City of East Bethel. Construction and vegetation removal are restricted within the buffer zone, helping to maintain the hydrological and ecological characteristics of wetlands, in turn helping to support their surface water treatment capabilities. Maps developed during this process are included in the summary report which constitutes Appendix: *East Bethel* to this document.

#### **Burns Township/City of Nowthen**

As described elsewhere, there was significant resistance in Burns Township to discussion, let alone enactment, of ordinances providing for the protection of natural resources from and through the development process. However, working through other community officials (i.e., those not involved with the Open Space Planning and Protection Project as described to this point), some progress on the topic was made. This progress was briefly mentioned under Result 1, and is described more fully under Result 4.

#### **Ham Lake**

As described under Result 1, the report issued by ACD to Ham Lake and included as Appendix: *Ham Lake* to this document contains significant discussion of policy options and approaches to development that can be utilized to protect natural resources. In addition, these findings and their implications for the City as it pursues an ongoing comprehensive planning process were presented and discussed before both City Council work groups and larger citizen gatherings on multiple occasions.

Prior to the commencement of the Open Space Planning and Protection Project, the City of Ham Lake had previously been involved in litigation over the issue of alternative development regulations. Reacting to a proposed development adjacent to the Carlos Avery Wildlife Management Area (WMA), the Minnesota Center for Environmental Advocacy (MCEA), an environmental advocacy group, had threatened a lawsuit. In response, the developer, Tollefson Companies, worked with MCEA to craft an alternative development proposal which reduced impacts on both the Carlos Avery WMA and the high-quality oak forest being slated for development. However, despite the win-win compromise development plan, the City, citing conflict with existing development ordinances, would not allow the alternative proposal to move forward. The reverberations of this decision, which led to significant acrimony and financial loss, continue today. As a result, despite significant interest among both members of the City Council and as expressed in citizen commentary, the City as a whole has been unwilling to date to commit to more than a cursory consideration of alternative development regulations.

However, the issue has continued to be raised by various parties as the City moves through a comprehensive planning process, and hope remains that the Open Space Planning and Protection Project has set the stage for long-term change in Ham Lake.

### **Linwood Township**

Both Township officials and citizen representatives to the planning taskforce assembled by ACD for the Open Space Planning and Protection Project have displayed a distinct aversion to the notion of alternative development regulations. Ironically, Linwood is the one community which has the most to gain in terms of resource protection, and already includes areas which, from a design standpoint, mimic what might be seen should the community adopt alternative development standards.

During the course of the Open Space Planning and Protection Project, both Township officials and citizen taskforce members have reviewed model statutes, development simulations, and other materials demonstrating alternative approaches to development and how they might be applied in Linwood Township. However, despite this, opposition to even giving such alternative approaches serious consideration through public hearing, much less to actually adopting new ordinances that would allow such approaches, has remained strong.

Simply put, despite the best efforts of ACD, the community has not been willing to adopt the model for conservation through development that ACD has advocated through the Open Space Planning and Protection Project. Ultimately, ACD knew that such an outcome was possible. To be successful in the long-term, any land protection efforts must have strong local support. While the Open Space Planning and Protection Project got ACD in the door, it was in the hands of the community to get behind the ideas being presented.

### **Result 3: Establishing the Open Space Network**

LCMR Budget	\$ 99,778
<u>Minus Amount Spent</u>	<u>\$ 51,109</u>
Balance	\$ 48,669

During the course of the Open Space Planning and Protection Project (from conception to funding approval to execution), the conditions underlying a key assumption regarding development changed dramatically, leading to difficulty in meeting Result 3 as outlined in the original work program<sup>1</sup>.

When the Open Space Planning and Protection Project was first conceived of and planned, development was occurring rapidly in all of Anoka County, particularly the northern tier of communities that eventually chose to participate in the project. During the early to middle years (roughly 2002 – 2004) of the current decade, ACD was receiving in the neighborhood of 30 plat applications for review in just the few communities for which ACD performs plat reviews. By 2006, the number had dropped to three. In 2007, when the Open Space Planning and Protection Project was underway and working in earnest on Result 3, ACD only received one new plat for review. Unfortunately, the approach to land protection being attempted through this project relies on working through the development process to achieve and pay for land protection; when development dries up, so do opportunities for land protection. The lack of development may also have fed the apathy that prevented many communities from engaging in discussions of alternative development scenarios.

<sup>1</sup> This situation was described in brief in the work program amendment which created Result 4, filed in autumn 2007.

Despite these difficulties, ACD was able to use the funding provided to help protect approximately 34 acres of high-quality natural communities adjacent to the Sandhill Crane Natural Area in the City of East Bethel. This protection occurred as part of a development proposal for the remaining acreage of the parcel on which the natural communities are found—precisely the mechanism which has been advocated through the Open Space Planning and Protection Project. The attached map (labeled *Gombold Easement*) shows the location of the land protected.

Bill Gombold has long hunted and camped on his land just south of Deer Lake and the Sandhill Crane Natural Area in East Bethel. However, for personal reasons, Bill was recently put in the unfortunate position of needing to sell his property. Given the high demand for prime wooded upland with lakeshore frontage, Bill knew that he could easily sell the land to any number of housing developers. But, like many landowners, Bill viewed his property as more than just a commodity to be bought and sold, and the idea of seeing the oak forests that dominate the property—and the important habitat they provide—give way to yet another subdivision was more than Bill could bear. So Bill knew he had to explore other options.

Working with ACD, the Minnesota Land Trust, and the City of East Bethel, Bill was able to find a solution to his problem. Rather than sell property to a developer, Bill chose to develop a portion of the property himself, and place the rest under a conservation easement. The City of East Bethel benefited because it gained a 34-acre forest preserve complete with trail access, an invaluable asset for future citizens. The cost to the City in this case was only the waiving (it normally would have been passed on to the developer) of the cost to pave the road fronting the property, amounting to only a fraction of what the City would have had to pay to acquire the property in question. Bill has benefited too, because he was able to realize the profit from the sale of lots that he needed, and simultaneously see the oak forest he cherished protected in perpetuity.

Through the Open Space Planning and Protection Project, ACD helped the City of East Bethel to not only place greater emphasis on the importance of natural areas, but to identify and prioritize for protection the natural areas within their community. ACD also introduced East Bethel to the concepts behind using the development process to protect land. So, when Bill Gombold was ready to move forward, the City of East Bethel was more receptive than they might have been to the possibility but for the Open Space Planning and Protection Project.

Despite the willingness of the parties, though, obstacles remained. While the City was open to the idea of using conservation easements to protect land as part of the development process, it had never actually been involved with this type of easement and wasn't unsure of its practicality. Moreover, the use of conservation easements do add some costs to any development process: a special property appraisal is needed, someone (typically an attorney) must draft the easement document, and most easement holders require a stewardship fee to pay for the costs of monitoring the easement in perpetuity and any necessary enforcement action in the future. Taken together, these concerns and additional costs might have been enough to derail the deal. By providing the land protection funds available through the Open Space Planning and Protection Project, ACD was able to help ensure that Bill Gombold's oak forest will be enjoyed for generations to come.



#### Result 4: Communities Moving Forward

LCMR Budget	\$ 25,000
Minus Amount Spent	\$ 9,237
Balance	\$ 15,763

As explained in more detail under Result 3, the collapse of the housing market and the resultant lack of new development proposals during the Open Space Planning and Protection Project made implementing the alternative development strategies promoted by the project almost impossible. However, as the end of the project period approached, ACD saw that significant headway had been made in not only helping communities to identify and prioritize for protecting their natural resources, but also in introducing communities to the concepts of conservation development and low-impact development, and using these concepts in conjunction with conservation easements to protect natural resources as part of the development process (rather than in spite of it). Unfortunately, ACD also foresaw that by the time development begins to pick-up in earnest again in the participating communities, the lessons learned through the Open Space Planning and Protection Project would likely be only a fading memory. Thus, as a way to demonstrate the application of the concepts learned and thereby give communities a better chance of being able to move forward with these concepts when the opportunity arose, ACD proposed a mock platting process.

Ultimately, Burns Township proved to be the best community for moving forward with the mock platting process. As was explained during previous updates under Results 1 and 2, there was strong resistance from some key individuals in the community to the development concepts being presented by ACD. Ultimately, this resistance proved to be an effective road block to progress. However, at the same time, other individuals in the community were embracing the ideas being presented, and the possibilities those ideas represented for their community.

Starting in early 2008, ACD began working with members of the Burns Township Planning and Zoning Commission—who had been largely bypassed by the Town Board during previous efforts—on a mock plat process. The idea of the project was to first examine more in-depth the concepts behind conservation development/low-impact development, and then apply these concepts to a specific land area within the community to help envision what opportunities were present for alternative development. The general idea was that people have had a difficult time envisioning what alternative approaches to development could do for their community, and that this approach might help to overcome that difficulty.

Immediately following a Planning and Zoning Commission meeting in early 2008, ACD brought in an expert on low-impact development, Fred Rozulmalski of Barr Engineering, to speak with members of the commission. Town Board members and the general public were also invited to attend. Mr. Rozulmalski presented on a study conducted by Barr Engineering in conjunction with the Minnesota Pollution Control Agency and the City of Hanover in Wright County. Much like the mock platting process of which his presentation was a part, the study examined the differing results if a traditional/standard approach to development or a low-impact development approach were applied to a large area of land bordering the Crow River in Hanover. Mr. Rozulmalski helped to further educate those present on the idea of conservation design/low-impact development. He

was also able to provide an effective counterweight to negative comments made by the same individuals who have acted as roadblocks to progress throughout the Open Space Planning and Protection Project.

The next step was to create mock plats for a specific land area within Burns Township. Working with existing data sets, ACD created a series of three mock plats: one which was based on existing standard zoning, and two using alternative zoning standards (lot size based on 75% open space with a three lot bonus, and lot size based on 40% open space with a one lot bonus). The mock plats were then presented to the individuals leading the effort at the Township, and will serve as a guide for future development. Presented with the mock plats were model ordinances that provide the language for codifying these alternative approaches to development. Maps showing the three mock plat scenarios created during the mock plat process are submitted with this document as Appendix: *Result 4*.

As a final note, recent happenings in the community give some reason for optimism that the community may adopt alternative approaches to development sooner rather than later. Burns Township recently incorporated as the City of Nowthen. As part of this process, a new city council and mayor were elected. Two members of the Planning Taskforce who were receptive to the concepts proposed by the Anoka Conservation District throughout the Open Space Planning and Protection Project are now serving as city council members. In addition, the only former town board member who vocally supported the changes advocated for by the Open Space Planning and Protection Project is now serving as the first Mayor of the City of Nowthen. Finally, the strongest opponent to the concepts promoted by the Open Space Planning and Protection Project is no longer serving on the board.

## **V. TOTAL LCMR PROJECT BUDGET**

Total Budget: \$181,095 of \$250,000 was utilized (all amounts rounded to the nearest dollar)

All Results: Personnel \$149,986 of \$159,500 was utilized  
ACD hired and dedicated one Natural Resource Planner hired full time for two and one half years (2.5 FTE). Through the amendment process, funds were transferred to personnel costs from other categories to allow ACD to continue important planning and tool identification work with communities. The additional planning work helped to set the stage in these communities for this and future planning and protection efforts.

All Results: Land Protection: \$25,664 of \$75,000 was utilized (\$25,000 of the original \$100,000 was diverted to result four)  
34 acres of high quality natural communities in the Sandhill Crane Natural Area in the City of East Bethel is being protected by conservation easement. Funds were used to help offset to the costs of establishing the easement including surveys, alternative sketch plans, easement documents, city engineering fees, management escrows and legal fees. The goal was to establish easements in one or two projects per participating city during the development process but a lack of development made this impossible. We anticipated 100 to 300 acres under easement or ownership with interest held by cities and the ACD for \$100,000 which would have been a cost of \$333 to \$1000 per acre. The East Bethel easement cost approximately \$755 per acre. The easement will be held by the MN Land Trust. The State of Minnesota does not hold an interest in the

land, so for the purposes of this grant, these are not classified as acquisition funds even though they resulted in land protection.

**All Results: Other Contracts and Professional Services:** Overall \$864 of \$10,700 was utilized

\$864 of \$2,000 was used to conduct an open space development tour. \$0 of \$1200 was used to contract with outside firms to facilitate public hearings in favor of using program staff to do the facilitation. \$0 of \$2500 was utilized for a policy consultant on ordinance development and easement documents because it was determined to be ineligible since the staff person who conducted the work was an attorney. \$0 of \$5,000 was utilized for engineering consultation for the development of mock plats in favor of utilizing in-house resources.

**All Results: Computer:** \$4581 of \$4,800 was utilized

The project involved the use of a software package called Community Viz. This application utilizes geospatial data from geographic information systems to create three dimensional images of actual landscapes. It is capable of projecting "build-out" scenarios at various development densities including estimates of infrastructure costs such as roads, sewer, schools, etc. It allows the user to do a virtual fly-through tour of their community the way it will look under those varying scenarios. We believed this tool to be essential to convey to local officials and residents the impacts of their planning and zoning decisions and to show them how interconnected protected open spaces will fit into and benefit their community. Although the software is usually used on a smaller scale such as a neighborhood or a few square miles, our smallest scale was expected to be an entire township (36 square miles) and so a higher end processing computer was purchased. Even with the added processing capacity, the needs of the software proved too great for the computer. The computer was used throughout the project and solely for the project for mobile presentations and intensive GIS analysis.

**TOTAL LCMR PROJECT BUDGET: \$250,000**

**Explanation of Capital Expenditures Greater Than \$3,500:** As mentioned earlier, a laptop computer and software was purchased in the amount of \$4581 to enable to use of CommunityViz software and processor intensive GIS analysis and that enabled mobile presentations and GIS queries.

It is ACD's intention to continue this type of planning assistance beyond the scope of this project provided we are successful at obtaining additional funding. Presuming we are successful, this equipment will continue to be used for the same purposes as stated in this application for the useful life of the equipment. In the event that we are unable to continue providing this service, we agree to pay back the Trust Fund an amount equal to either the cash value received or a residual value approved by the LCMR Director if it is not sold. With an estimated useful life of five years and an initial value of \$4581, the estimated value as of June 30, 2008 was \$1,832.

## **VI. PAST, PRESENT, AND FUTURE SPENDING:**

A. Project Partners: LCMR funds will be used to benefit several cities through ACD.

A. Other Funds Spent during the Project Period: Participating municipalities have agreed to contribute a total \$36,000 toward the project for expenses not enumerated herein.

Over the first two years of the project, ACD contributed approximately \$14,690 (.1 FTE) of the District Manager's time toward this project as well as office space and associated costs. Over the final year of the project, ACD contributed salary and benefits for six months of the full-time Natural Resources Planner, and 15% of the District Manager's time over the full year. The total value of these contributions by ACD in the third year of the project was approximately \$42,500. In addition, ACD made additional contributions of staff time as necessary during the final year of the grant and beyond to facilitate and complete land protection projects.

B. Required Match (if applicable): Not applicable

C. Past Spending: Bridge funding to cover the period between January 2005 and July 2005 was provided by the ACD for the Natural Resource Planner position to maintain continuity in the program (\$29,774). Through a separate grant, Anoka County provided funds to purchase the Community Viz software package and provide employee training to use the software (\$11,831). In addition, monies were spent on landcover inventory and planning as follows: MN DNR \$70,417, Met Council \$17,500, and Anoka Conservation District \$17,500.

This project also complements greenways planning by Anoka County Parks and open space protection efforts made possible through the Metro Wildlife Corridors initiative while taking efforts initiated under Metro Greenways to a level not possible through the Metro Greenways program.

#### **VII. PROJECT PARTNERS:**

Participating communities included the Burns Township, the City of East Bethel, the City of Ham Lake, and Linwood Township. Natural resource plans in participating communities will be coordinated with work being done in neighboring communities of Andover and Oak Grove.

#### **VIII. DISSEMINATION:**

Project results and products, including planning practices and implementation methods will be presented to other communities in Anoka County and to regional open space and civic groups including the Regional Greenways Collaborative. Information and services will also be available on the Anoka Conservation District's website ([www.anokaswcd.org](http://www.anokaswcd.org)). Articles will appear in community newsletters throughout the planning process and periodic articles will be sent to local and regional newspapers.

#### **IX. LOCATION:**

The project took place in the northern Anoka County communities of Burns Township (now the City of Nowthen), East Bethel, Ham Lake, and Linwood Township.

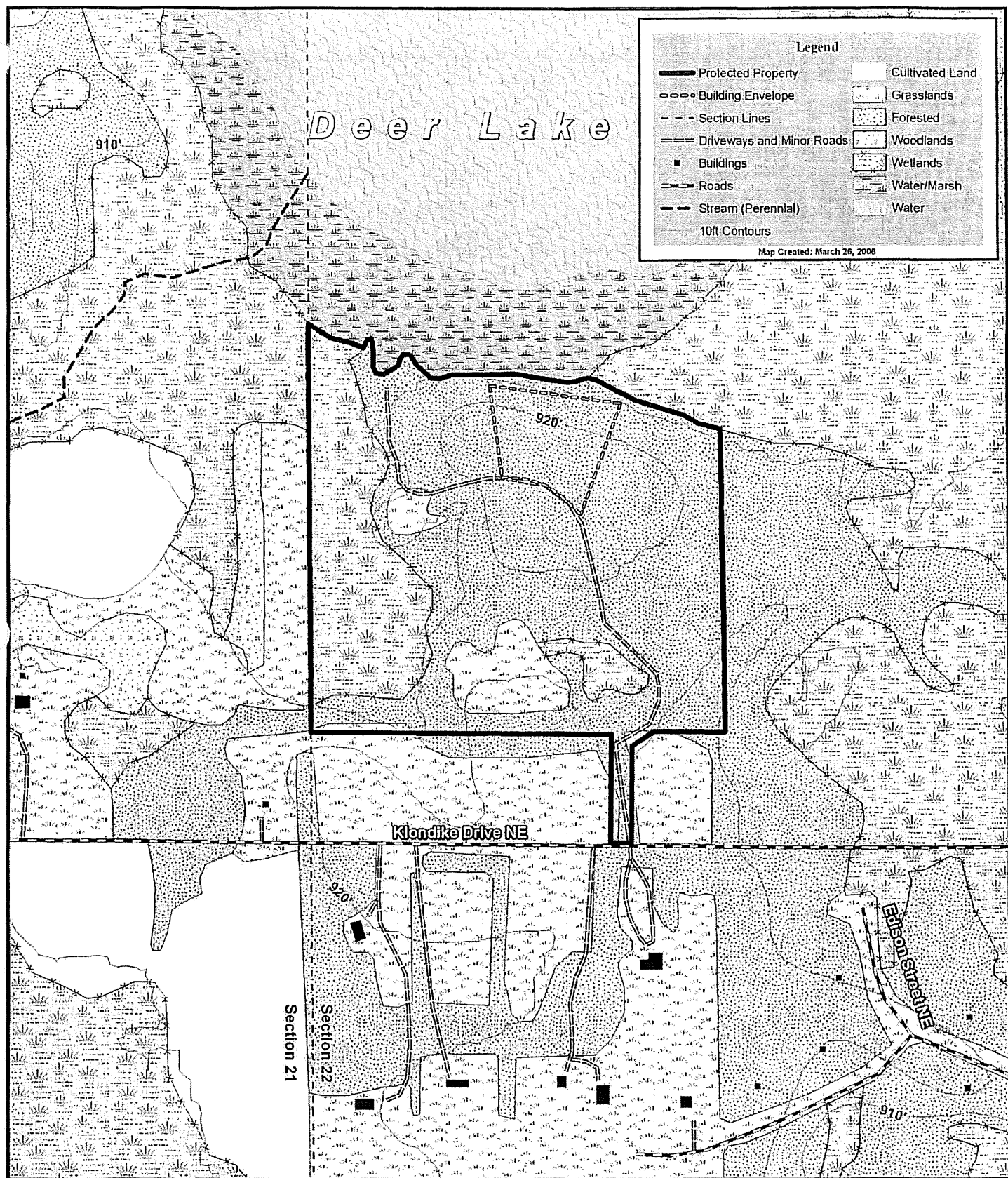
#### **X. REPORTING REQUIREMENTS:**

Periodic work program progress reports will be submitted not later than December 31, 2005, June 30, 2006, December 31, 2006, June 30, 2007, and December 31, 2007. A final work program report and associated products will be submitted by August 30, 2008.

#### **XI. RESEARCH PROJECTS:**

Not Applicable

# Gombold Easement



## Map Resource Information

Protected Property, Building Envelope, Section Lines, Buildings, Roads, Driveways & Minor Roads, 10-Foot Contours, Cultivated Land, Grasslands, Forests, Woodlands, Wetlands, Water/Marsh, & Water created by Community GIS Services Inc.

Users of this map agree and acknowledge that Community GIS Services Inc. and the Minnesota Land Trust cannot be held liable for accuracy of GIS material provided. GIS materials should not be relied upon to establish legal title, boundary lines, or locations of improvements.

## Site: Deer Lake - Tract: Gombold

Anoka County - Twp. 33 N Rng. 23 W Sec. 22



Scale:  
1" = 400'



Attachment A: Budget Detail for 2005 Projects - Summary and a Budget page for each partner (if applicable)

Proposal Title: Open Space Planning and Protection # (B-D)

Project Manager Name: Chris Lord

LCMR Requested Dollars: \$ 250,000.

- 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

2005 LCMR Proposal Budget	Result 1 Budget:	Amount Spent 6/30/2008	Balance 6/30/2008	Result 2 Budget:	Amount Spent 6/30/2008	Balance 6/30/2008	Result 3 Budget:	Amount Spent 6/30/2008	Balance 6/30/2008	Result 4 Budget:	Amount Spent	Balance	
BUDGET ITEM													TOTAL FOR BUDGET ITEM
PERSONNEL: Staff Expenses, wages, salaries, benefits													
Natural Resource Planner - 1 FTE for 2.5 years - to coordinate and implement all aspects of the grant including Wages, 7.65% FICA, 5.53% PERA, Health Insurance, LTD Insurance	\$ 63,961.00	\$ 63,963.63	\$ (2.63)	\$ 50,761.00	\$ 51,340.60	\$ (579.60)	\$ 24,778.00	\$ 25,444.64	\$ (666.64)	\$ 20,000.00	\$ 9,236.94	\$ 10,763.06	\$ 159,500.00
Contracts													
Professional/technical (with whom?, for what?)													
University of MN Extension - facilitation of 16 public hearings on planning	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
University of MN Extension - facilitation of 16 public hearings on ordinance changes	\$ -	\$ -	\$ -	\$ 1,200.00	\$ -	\$ 1,200.00	\$ -	\$ -	\$ -				\$ 1,200.00
Other contracts list out: personnel, equipment, etc.													
Policy Consultant - ordinance development, easement language, homeowner's association bylaws, etc (eg. MN Land Trust)	\$ -	\$ -	\$ -	\$ 2,500.00	\$ -	\$ 2,500.00							\$ 2,500.00
Engineering Consultant - plat development, misc. engineering fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ -	\$ 5,000.00	\$ 5,000.00
Other direct operating costs													
Open Space Tour Registration - \$50 per person, one tour for each of four cities with 10 participants from each city	\$ 2,000.00	\$ 864.41	\$ 1,135.59										\$ 2,000.00
Office Equipment and Computer unique to project													
Dell notebook computer with docking station: 755 Pentium M 2GHz processor, 2MB L2 Cache, 1GB DDR SDRAM, 60 GB hard drive, 7200 RPM, 128 MB DDR Video card, a DVD writer, a docking station, monitor, keyboard, mouse, carrying case, extra battery and standard warranties.	\$ 4,800.00	\$ 4,580.72	\$ 219.28										\$ 4,800.00
Land Protection Costs This category includes expenses such as surveying, development sketch plan development, appraisals, management plans & escrows, title searches, legal fees, etc. all associated with the protection of open space. It is estimated that 5-10 sites will be completed with the \$100,000 available for approximately 100-300 acres of protection. Interest in the land will be with participating cities and ACD, not the State of MN.							\$ 75,000.00	\$ 25,664.05	\$ 49,335.95				\$ 75,000.00
COLUMN TOTAL	\$ 70,761.00	\$ 69,408.76	\$ 1,352.24	\$ 54,461.00	\$ 51,340.60	\$ 3,120.40	\$ 99,778.00	\$ 51,108.69	\$ 48,669.31	\$ 25,000.00	\$ 9,236.94	\$ 15,763.06	\$ 250,000.00