

## Planning Proposal

# Laurentian GIS Collaborative

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Submitted By: \_\_\_\_\_

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Andy Hubley



Arrowhead Regional Development Commission

Regional Planning Division

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## Background

*“The challenge we face is bringing consistency and parity to all fifty states.”* (FGDC, Fifty States Strategy, Proposed Strategy, 3.1).

In 2006, the State of Minnesota was a successful recipient of a National Spatial Data Infrastructure CAP grant under the Fifty States initiative. The Arrowhead Regional Development Commission (ARDC) proposes to extend the State of Minnesota GIS strategic framework to encompass the counties and communities of the seven-county Arrowhead Region of Minnesota.

The challenge of GIS *consistency* and *parity* exists throughout the political hierarchy of the United States, but nowhere is it more challenging than within rural communities. While state, federal, county, academic, and business entities continue to build GIS systems and data sets, local communities without affordable GIS capabilities or technical support are left behind. We strongly believe that through the collaborative incentives provided by a regional consortium housed at ARDC, four main goals of the NSDI can be achieved:

- Metadata consistency with NSDI standards.
- Regional GIS architecture consistent with State of Minnesota strategic direction.
- Effective utilization of GIS technologies at the municipal and township level throughout the Arrowhead Region.
- Longer-term capacity building to support GIS at the local level through regional collaboration.

As highlighted in the State of Minnesota Fifty States Initiative: *“Building on decades of informal collaboration, Minnesota’s GIS community now needs to collaborate on a strategy that will bring the benefits of GIS to the entire state.”* The Arrowhead Regional Development Commission proposes to bring the power of GIS in a collaborative environment to the communities of Northeastern Minnesota.

Since April 2005, the Arrowhead Regional Development Commission (ARDC) and Iron Range Resources (IRR) have been working together to help identify ways that GIS can be effectively implemented at the municipal level for small communities on the Mesabi Iron Range (see

map on following page). The purposes of such municipal GIS implementation would include not only an efficiency upgrade to municipal data handling, but also an opportunity for Iron Range Communities to take advantages of the numerous GIS resources in the area and at the state and national level, without incurring a serious financial burden as is typical with such implementations. Benefits of GIS implementation include community and economic development, and future land use planning to accommodate growth and future industrial activities.

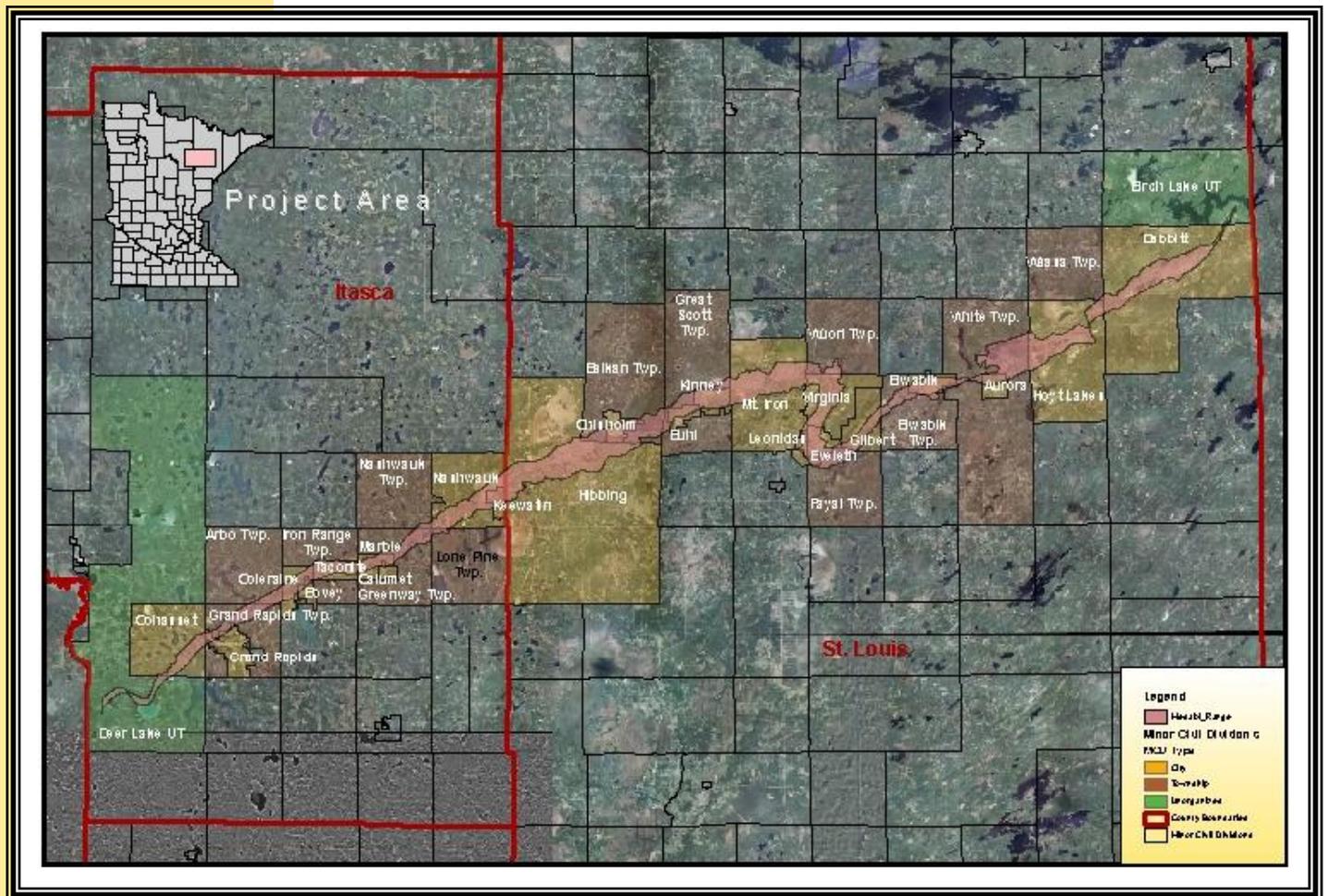
ARDC feels that this initiative is particularly important for the Iron Range at this time. There are multiple industrial projects being proposed on or near the Mesabi Range at this time, including the development of a large energy plant, a new iron processing facility, and new non-ferrous mines. When these projects come online, the small communities they are near will be seeing significant pressure on their infrastructure and planning/zoning systems. Having GIS capability will greatly increase the community's capacity to properly address those pressures. In order to maximize the benefits of GIS for the communities, it is critical that the GIS data created and/or stored for those communities fit into the local, regional, state, and national data frameworks so that it is compatible with data developed by other entities.

The approach that ARDC and IRR believe will be particularly effective is to provide the potential users of GIS (communities and other agencies, entities in the region) with GIS resources such as software, hardware, internet mapping resources, data portals and other items they will need to utilize GIS. One component of this process will involve specialized, hands-on training and technical assistance which will further enable the communities to take the necessary steps to effectively implement GIS and use it for their needs as well as the planning needs of the region and the many potential project partners. Additionally, with proper funding, a collaborative process such as this could provide seed grants or other monetary assistance to communities as they work to begin or enhance data creation and maintenance, especially for projects that contribute to regional initiatives. All of this work will be done with the guidance of the NSGIC and FGDC data frameworks and standards to ensure the data utilized and created during this project will be part of the statewide and national GIS data system.

# Arrowhead Regional Development Commission

## Regional Planning Division

It is envisioned that the process of creating the infrastructure for the collaborative will take considerable resources and expense up-front, however long-term maintenance of the collaborative and its future initiatives may be wholly or at least substantially funded through user/subscriber fees as well as other regional, state, or federal grants.



## Project Team

ARDC is a regional planning agency located in Duluth, Minnesota. ARDC is responsible for providing local government assistance, regional inter-governmental coordination, and a forum for regional discussion to the counties, cities, and towns of the seven-county Arrowhead Region. ARDC's Regional Planning Division offers communities planning services on both a project-by-project and an ongoing basis.

### Division Director: Andy Hubley, AICP

Andy Hubley is the Director of the Regional Planning Division at ARDC. He has eight years of planning experience in Northeast Minnesota. Hubley's breadth of planning experience includes land use, transportation, housing, recreation, strategic, and comprehensive planning. Most recently, Hubley has led visioning and comprehensive planning projects in Two Harbors and Biwabik, and is currently leading comprehensive planning projects in the Town of Silver Creek, the Town of Rice Lake, and the Town of Kabetogama. Hubley is leading ARDC's staffing of the North Shore Management Board, and is currently working with the Board on the implementation of the North Shore Management Plan Update. Hubley is certified by the American Institute of Certified Planners.

### GIS Specialist: Kara Kent

Kara Kent is a recent graduate of the University of Wisconsin-Superior and is ARDC's GIS Specialist. She has a background in GIS, biology, and computer science. She has significant skills in data development, maintenance, and disbursement. ARDC's GIS staff are members of the Governor's Council on GIS, and have been responsible for providing metadata training and assessments to the region. ARDC is the organizing body for the Northeast Minnesota GIS Council.

### GIS Consultant: Community GIS

Led by Tony Kroska, this non-profit group will be providing the programming and data development for the project. They also will be providing GIS guidance to ARDC and the pilot communities. Community GIS has many years of experience with large GIS based projects.

## Past Planning Experience

In the past, ARDC has completed several efforts involving collaborative GIS initiatives. These projects include:

### Project 1: FGDC Metadata Assessment

In 2005, ARDC assisted the State of Minnesota in developing a Request for Proposals directed towards the Regional Development Organizations in the state for the purpose of offering grant funds to assist select organizations in developing standardized data documentation records which adhere to state standards. For organizations who did not receive a grant, ARDC provided the training in metadata best practices and helped implement metadata strategies with their constituents. ARDC then evaluated the metadata products developed by the grant recipients and confirmed compliancy and quality of work. ARDC worked directly with recipients to locate errors and meet deadlines. Assistance was then given to the State of Minnesota to present the results at the MN GIS/LIS Consortium Conference in October of 2005.

Date: 2006

Location: Northeast Minnesota

References:

Name: David Arbeit, Director

Organization: State of Minnesota Land Management Information Center

Telephone Number: 651.296.1211

### Project 2: Mn/DOT District One GIS Basemap Update

In 2006 and early 2007, ARDC has worked with the eight counties in northeast Minnesota (reflecting Mn/DOT District 1) to update the functional class of all roads in the region. ARDC assembled data from multiple sources and determined each road's status with the assistance of the County Engineers. ARDC also added any roads that were not shown in anyone's data. The resulting data set is the most comprehensive roads file the region has ever had. ARDC is now working to develop an annual update process for the basemap.

Date: 2006

Location: Northeast Minnesota

References:

Name: Walter Leu, State-Aid Engineer

Organization: Mn/DOT District 1

Telephone Number: (218) 723-4960 ext. 3004

## The Planning Process

As a public entity, ARDC is a professional planning partner to communities in the Arrowhead Region. We view our role as facilitators and advisors to communities that are seeking to improve their quality of life. ARDC suggests a four-part process to accomplish the goal of creating a collaborative GIS system for the Iron Range.

It is important to note that ARDC will ask several local and state officials to be active in this process by participating on a steering committee. Nothing of note will be decided regarding the process without committee review and approval.

It is envisioned that the process of creating the infrastructure for the collaborative that is described below will take considerable resources and expense. Long-term maintenance of the collaborative and its future initiatives, however, may be wholly or at least substantially funded through user/subscriber fees as well as other regional, state, or federal grants.

### Step 1: Project Development (Fall 2007)

ARDC has already developed detailed background for this project as part of the first phase, which is documented at [www.arrowheadplanning.org/ironrangegis](http://www.arrowheadplanning.org/ironrangegis). ARDC will use the information developed in that process to seek out individuals to serve on the project's steering committee. Likely members will include city engineers, city administrators, county GIS specialists, state agency GIS specialists, and GIS software representatives.

At the first Steering Committee meeting of the process (MEETING 1), ARDC will develop a presentation about the background of the project and will describe the proposed process. ARDC will take comments on the work plan and its schedule and make changes if necessary.

After the project is discussed, ARDC will review with the committee the goals and action steps for the project. ARDC will use input from the committee to develop a more detailed outline of the proposed process.

Finally, the six pilot communities will be reviewed. ARDC will profile each one and take input regarding the community and its current level of GIS use.

Step 2: Data Framework Development and Sharing Determinations (Winter 2007-2008)

At the next several meetings (MEETINGS 2, 3, 4, 5), ARDC will organize and lead an exercise that will enable attendees to help develop the project's data framework. This framework will be used to ensure that data used and generated by the project is consistent with the project's goals as well as with state and national standards (FGDC, NSDI, others). The framework will also set expectations for data sharing between participants. This will include a strong effort to convince holders of proprietary GIS files of public facilities (most often private consulting engineers) to participate in the data sharing agreement.

After data standards and sharing agreements are complete, ARDC and the steering committee will begin working with the physical structure of the Collaborative's sharing systems. It will be determined what data servers, web portals, and other technical items are needed for ARDC as the data steward. ARDC will then work to complete the recommended actions.

Step 3: Pilot Projects (Spring and Summer 2008)

In this phase, ARDC will bring the GIS Collaborative to six pilot communities that will be chosen early in the process. ARDC will assess each City's current GIS usage and the condition of the data that they use and have developed in the past. It is likely that the pilot communities will be at very different levels of GIS usage, including some that will be not be using it at all. Based on the assessment, ARDC will then develop an action plan for each community. The steps in the action plan will fit each community's unique needs. Likely actions could include software and hardware purchases, data assessments, and training of personnel. Training may range from basic software tutorials to data development steps. Finally, ARDC will work with the communities to complete the steps in their action plans. ARDC will have multiple meetings with each pilot community during this step of the process.

The steering committee will be meeting regularly (MEETINGS 7, 8, 9, 10, 11, 12) in order to offer input on the process and each community's action plan.

Step 4: Data Maintenance and Development Planning (Fall 2008 to 2009)

The final step in this phase of this project will be to set standard data maintenance and development standards for the participating communities. The steering committee will meet (MEETINGS 13 and 14) to determine how the data that exists at the central steward will be maintained. The guidelines that are developed will be consistent with state and national standards. The guidelines will give participating entities a process to follow whenever they update/improve any data that is part of the regional data set.

The steering committee (MEETINGS 15 and 16) will also review the regional data set that exists at the end of the process and determine what data does not exist that would be valuable. These items will be listed, prioritized, and published in the project's final report. Future phases of the project will contain actions that seek to secure the needed data.

## Deliverables

ARDC will make available the through this process:

- ❑ A web page at [www.arrowheadplanning.org/laurentiangis](http://www.arrowheadplanning.org/laurentiangis) that provides all background information, steering committee meeting announcements and summaries, project contact information, and any documents developed
- ❑ A final report about the project that describes the project's process and results
- ❑ A data framework for the Iron Range GIS Collaborative
- ❑ A regional data set for the Iron Range GIS Collaborative
- ❑ GIS Action Plans for six pilot communities
- ❑ Data set maintenance guidelines
- ❑ A prioritized list of needed GIS data layers