City of RED WING

TO: Red Wing Advisory Planning Commission Members
Red Wing Sustainability Commission

FROM: Brian C. Peterson AICP, Planning Director; 1-26-12

Meeting Date: February 2, 2012
Joint Workshop Session Re: Silica Sand Mining Study

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**Agenda Item**

Item #4 – Silica Sand Study Discussion

We have invited the Sustainability Commission to join the Planning Commission Workshop for a Silica Sand Study Discussion from 7:30 to 8:45 PM in the Council Chambers of Red Wing City Hall on Thursday February 2, 2012.

**Attachments**

- Draft "Red Wing Non-Metallic Mining Study Schedule (1-17-12)
- Copy of Red Wing Sustainability Commission Vision Statement and Mission Goals
- Excerpts from the City of Red Wing Comprehensive Plan adopted in 2007, pages 4-2, 4-3, and 4-19
- Map excerpts from the Open Space Preservation Plan adopted in 2008, Red Wing Publicly and Privately Owned Preserved Open Space
- Map and other Excerpts from Tony Runkel Presentation to the Goodhue County Silica Sand Study Committee

**Discussion Outline**

1. Review the attached outline and discuss the schedule and study steps. The City moratorium ends on October 29, 2012 and so it would be good to have policy recommendations completed by August or September so that any regulatory changes can be made in October of 2012.
2. Review the Sustainability Commission Vision and Goals Statement and Comprehensive Plan Elements that provide guidance. It is important to begin with the City's vision, goals and policy statements that apply and then move to more of the specifics of the issue.

3. Tony Runkel made a presentation to the Goodhue County Silica Sand Study Committee and provides some good information about where the resource can be found in the Red Wing area.
4. Review Zoning Map indicating where Mining Operations could be permitted in Red Wing
5. Discuss how the two commissions can work together and what work they want to do independently. Make revisions to the outline and schedule.
6. Other discussion.

Please feel free to review meeting notes and materials developed by Goodhue County in the course of working with their study committee by linking to:

http://www.co.goodhue.mn.us/countygovernment/committees/MiningCommittee/Miningcomm.aspx

# Red Wing Non-Metallic Mining Study Schedule (1-17-12)

| | |
|---|---|
| Feb 2012 | Review of Existing Land Use Controls (Meet Jointly with Sustainability Commission) |
| | Evaluation of the potential land use impact to be protected (Open Space Plan; Comprehensive Plan – Green Infrastructure) |
| March 2012 | Review of City, County, Township regulatory approaches; establish Best Management Practices (Meet Jointly with Sustainability Commission) |
| April – June | Goodhue County Report |
| | Development of Red Wing Policy Report with options for regulatory framework |
| | Conduct Public Information Meeting on Policy Report (Joint Public Hearing by Planning Commission and Sustainability Commission) |
| | City Council Direction |
| July – August | Draft Ordinance Revisions |
| September | PH on Ordinance Revisions |
| Oct. | Adopt Revisions |

City of RED WING®

## Red Wing Sustainability Commission

## Vision Statement

A sustainable community meets the needs of the present without compromising the ability of future generations to meet their needs.
Based on the 1987 United Nations Report –*Our Common Future*

## A Sustainable Community

* Balances environment, economy and social good

- Recognizes a healthy sustainable environment is the basis for economic and community development

## Red Wing Sustainability Mission Goals

1. Ensure a healthy and safe environment.
2. Strive to enhance and preserve the community's natural resources.
3. Direct wise energy use by thoughtful consumption practices and energy production.
4. Reduce pollution of the environment and promote alternative practices.

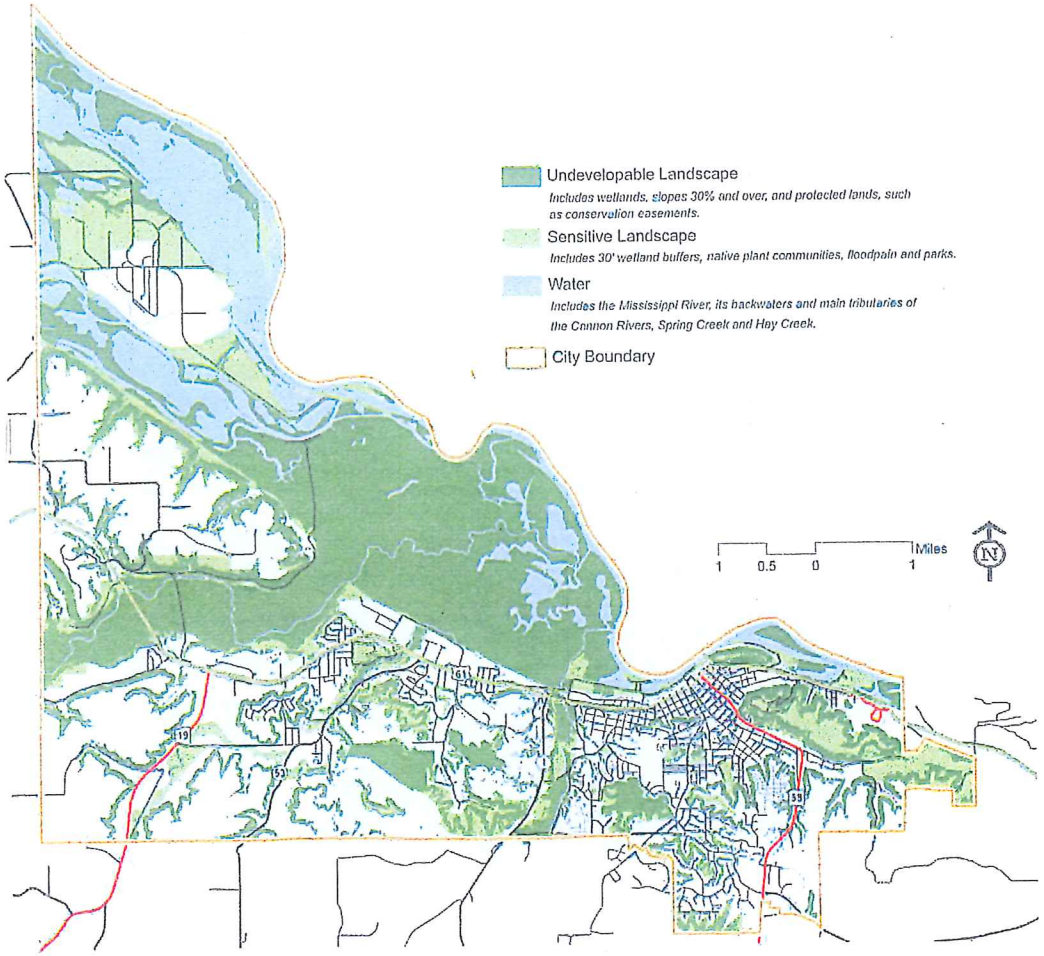



*Figure 4-1. Sensitive Landscapes*
*Defining the City's sensitive landscapes provided a starting point to identify the green infrastructure already present and areas to conserve in the future that contribute a broader green network.*

## Green Infrastructure

Society's recognition of green infrastructure's importance continually evolves. Until the establishment of Central Park in New York City 150 years ago, there was little appreciation for the impact of parkland on our social and emotional well-being. Until the environmental movement of the last century, our primary interest in surface water was transportation and waste disposal.

Preserving a network of green infrastructure figures prominently in this comprehensive plan because Red Wing cannot realize their vision or claim their identity without its strong presence. Success in regard to green infrastructure means the community must strengthen existing methods and find new approaches to protecting, managing and enjoying open spaces and public waters. This plan envisions Red Wing's green infrastructure as a linked system that maintains ecological integrity, provides public access and preserves scenic character and important views. Figure 4-1 illustrates the natural systems and sensitive landscapes in Red Wing. Preservation of these lands will contribute to the overall health and livability of the city.

## Green Network of Corridors & Patches

As illustrated in Figure 4-2, a green network is identified, taking advantage of existing natural systems, open

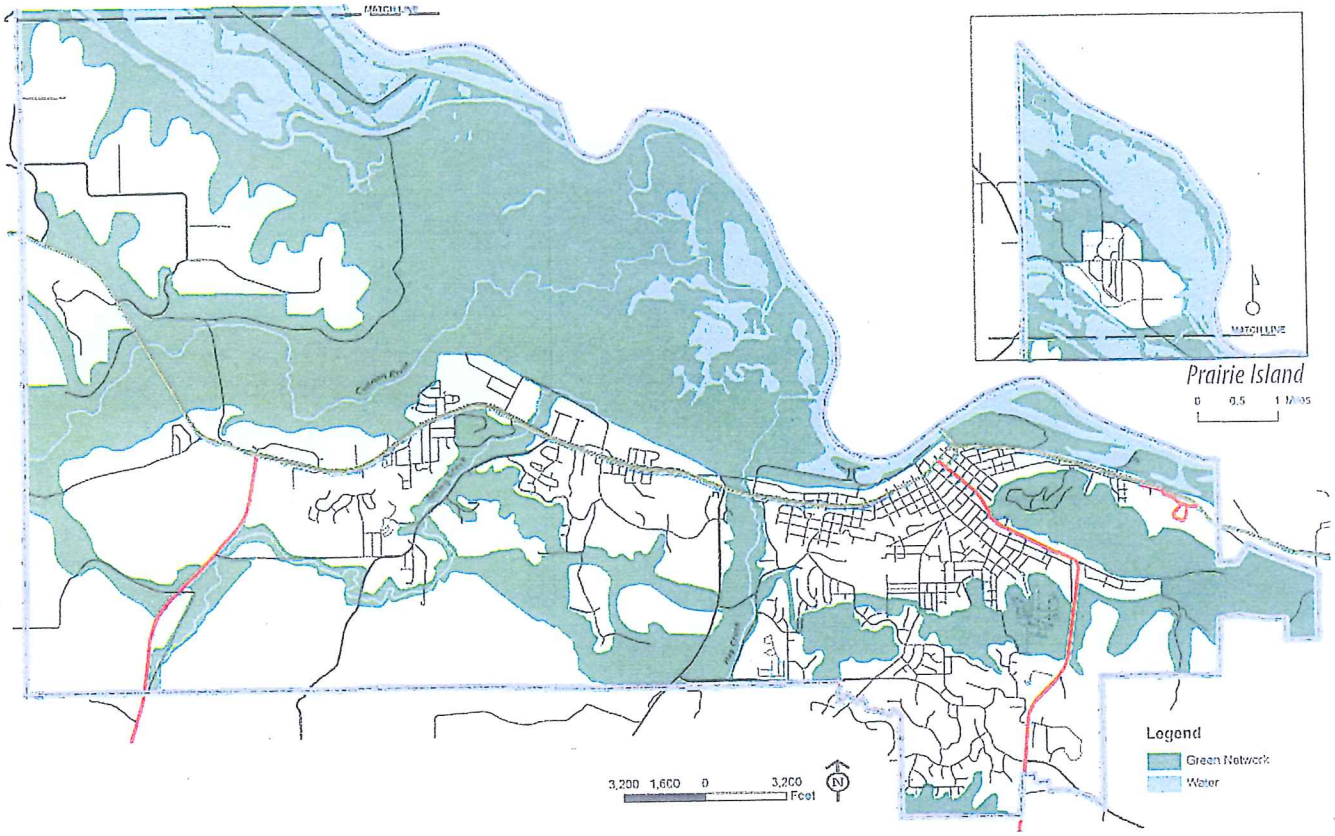
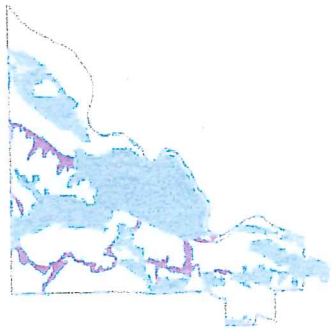



*Figure 4-2. The Green Network*
*The resulting system of green infrastructure identified for Red Wing consists of wetlands, floodways, native plant communities, parks, steep slopes and legally protected lands under conservation easements or land trusts. Greenways linking the various patches of green infrastructure work to enhance the ecologically function of the system.*



*The green network in Red Wing can be defined by a series of patches (turquoise) and corridors (purple) functioning together to enhance the overall ecology of the city.*

## Community System Policies

### Green Infrastructure

1. Work in public/private partnerships to accomplish green infrastructure policies

#### *Green Network & Natural Resource Preservation*

2. Preserve a community-wide network of contiguous public open space identified as the green network in Figure 4-2.
3. Prevent new development from encroaching into the green network.
4. Conduct on-going habitat restoration and management within the green network.
5. Identify key streets that may be developed or redeveloped as parkways that contribute to the establishment of the green network.
6. Protect bluffs (topographic and vegetative change) from the toe of slope to top of bluff.
7. Prevent new development from occurring on the steep slopes and avoid leaving open cuts on the bluff sides.

#### *Water Quality*

8. Maximize water quality of municipal sewage effluent reaching public waters.
9. Implement practices to conserve, to the fullest extent possible, water derived from underground aquifers.
10. Implement stormwater management practices that work to treat stormwater runoff as close to the source as possible in order to limit runoff reaching tributaries and the Mississippi River.

#### *Parkland*

11. Locate new parks in areas connected to the green network.
12. Focus efforts for new parks in downtown, upper harbor, historic neighborhoods, new neighborhoods and recreational areas.
13. Support development of trails or greenways that connect parks to each other as a system.
14. Encourage needed infrastructure features, such as stormwater ponds and infiltration beds, to be designed as natural open space amenities for the surrounding neighborhoods.

#### *Archaeology*

15. Continue to improve internal mapping of archaeological sites and villages and direct infrastructure and development away from these locations.

***Policy Terms:***

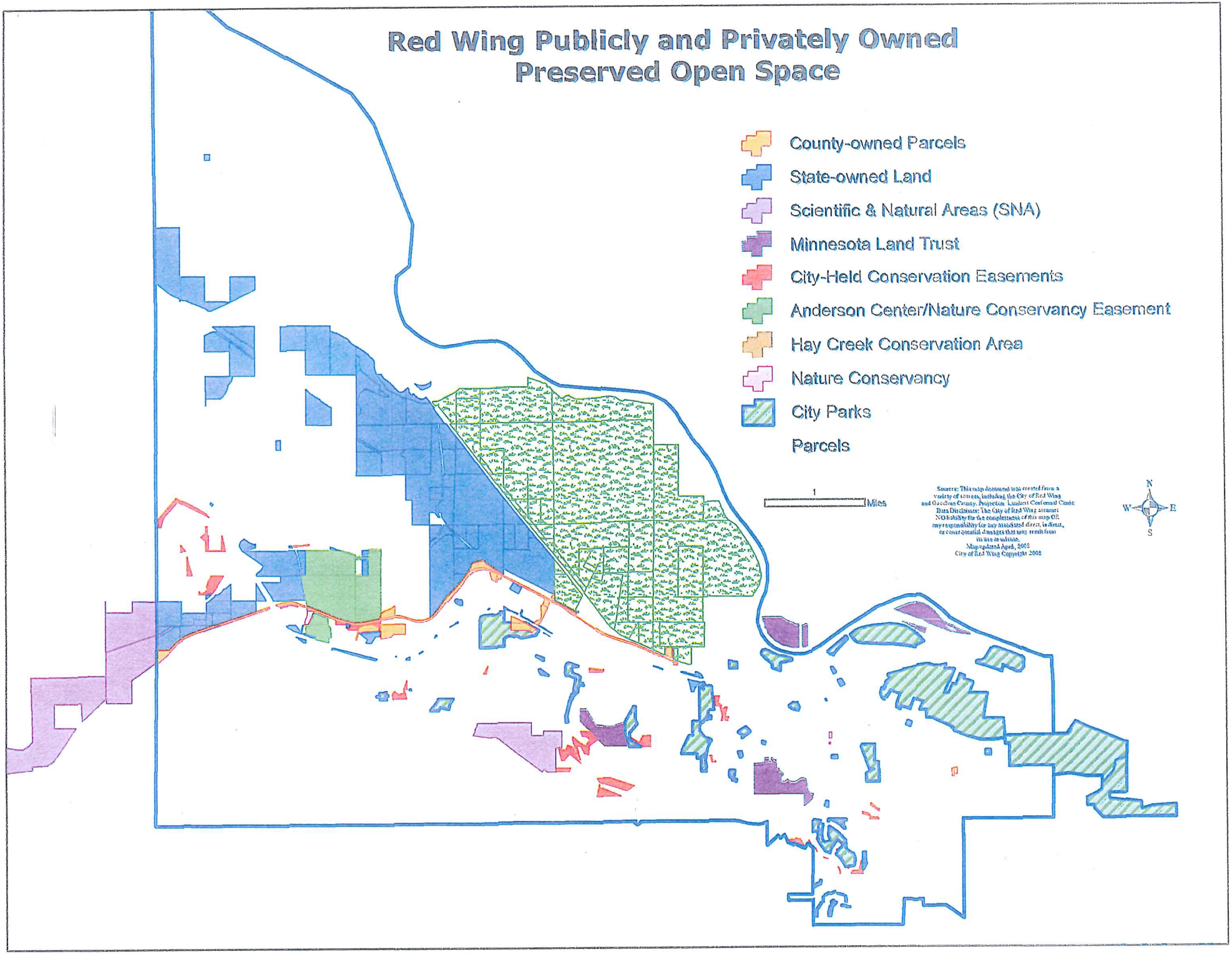
**Encourage** = *The city will prefer to see these actions taken and will provide guidance to implement them. However, such actions may not be required or financed by the city.*

**Support** = *These are desirable actions the city prefers to see happen and will provide guidance, and may help facilitate implementation by providing technical or financial assistance.*

**Require** = *These actions are most desirable by the city and will be supported by guidance, technical direction and/or financial assistance. Such actions are likely to also involve changes to other city ordinances and policies to further support their implementation.*

**Prevent** = *The city will prohibit such actions to occur through changes in city ordinances and similar policies.*

# Red Wing Publicly and Privately Owned Preserved Open Space



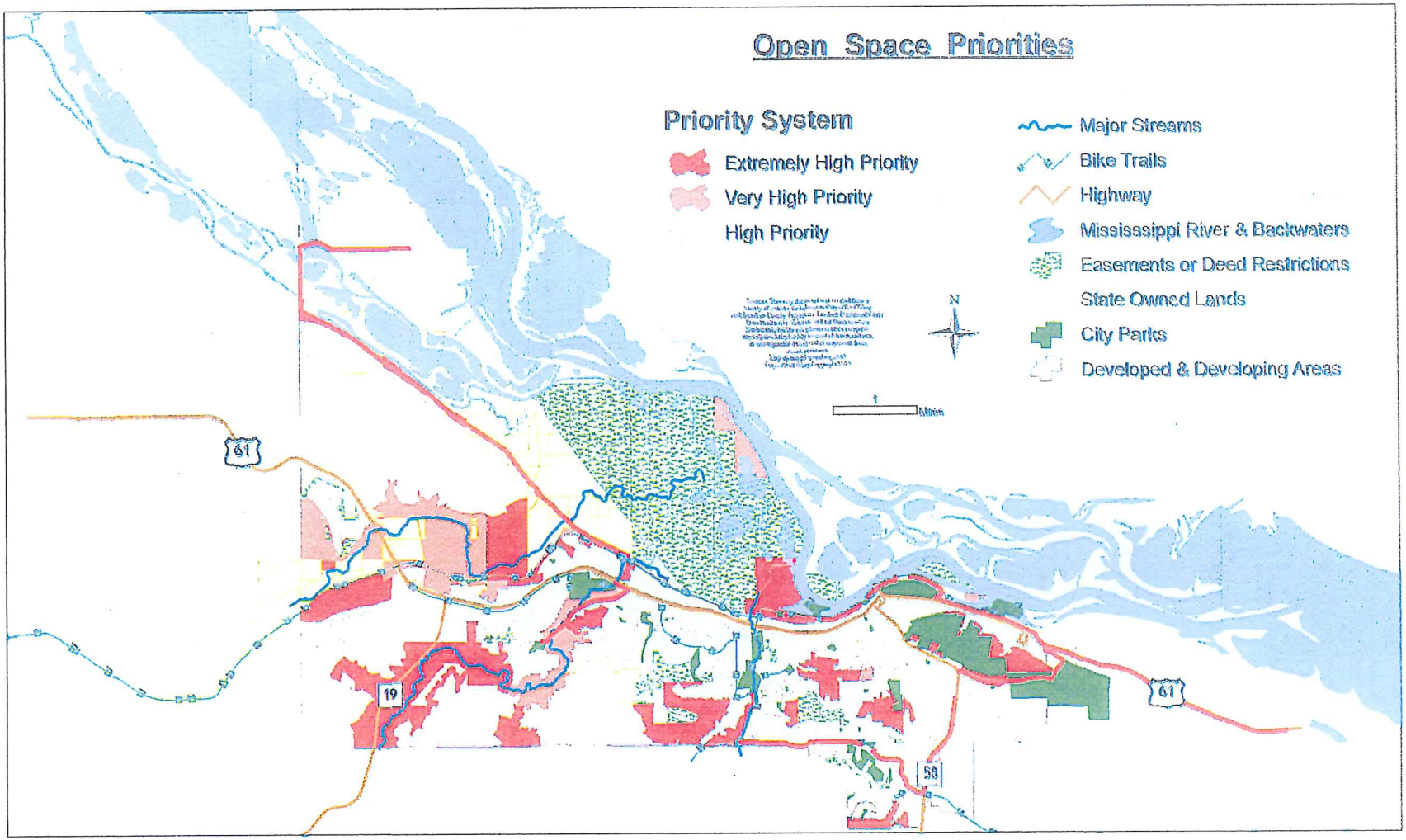
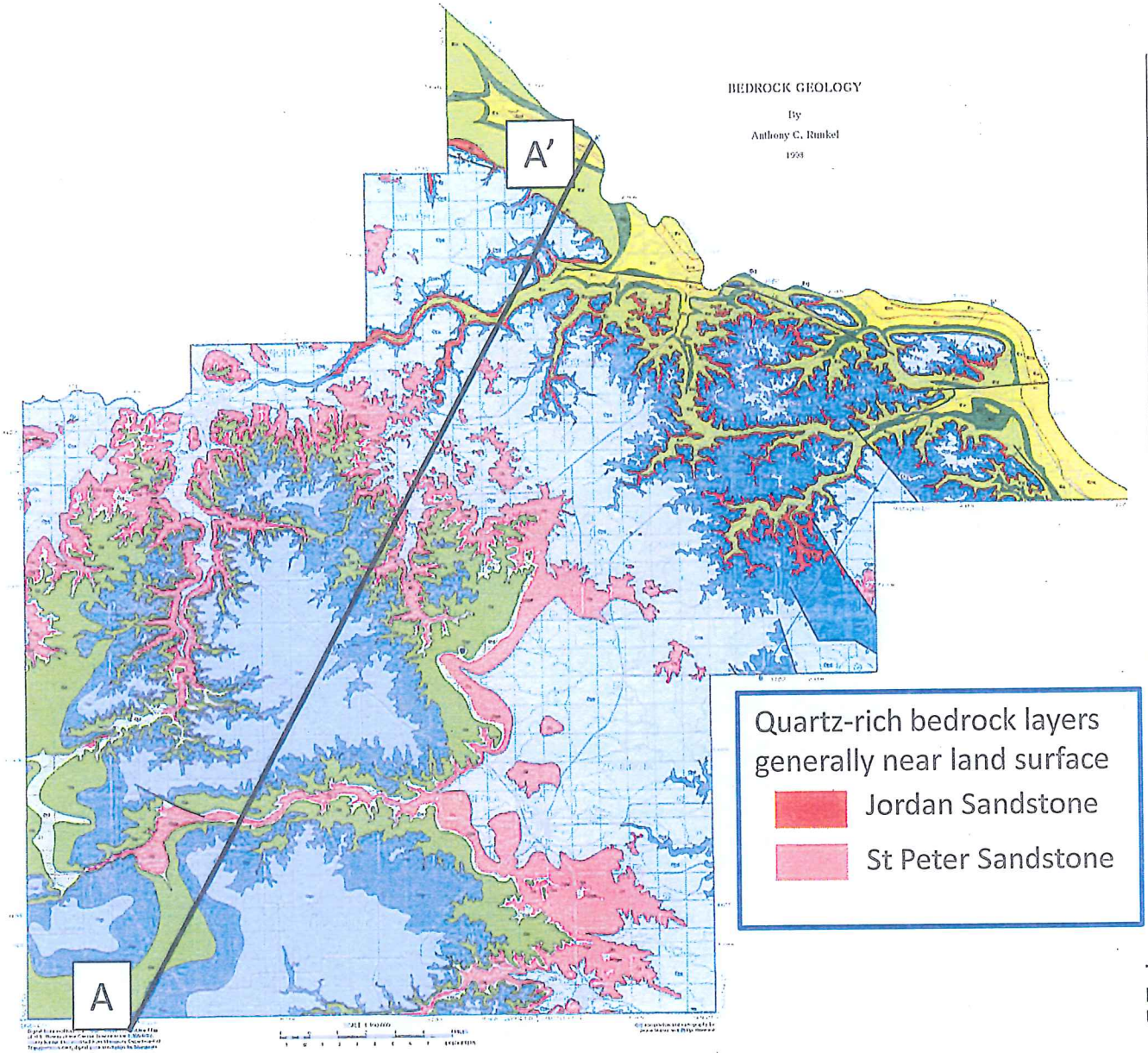

Open Space Priorities
Priority System
Extremely High Priority
Very High Priority
High Priority
Major Streams
Bike Trails
Highway
Mississippi River & Backwaters
Easements or Deed Restrictions
State Owned Lands
City Parks
Developed & Developing Areas
N
61
19
58
61

*Figure 3.1*




Quartz-rich bedrock layers generally near land surface

- Jordan Sandstone
- St Peter Sandstone

STRATIGRAPHIC COLUMN

| System or Series | Group, Formation, Member | Map Symbol | Thickness in feet | Lithology | Hydrostratigraphic Character: Component | Hydrostratigraphic Character: Permeability | Natural Gamma Log |
|---|---|---|---|---|---|---|---|
| MIDDLE ORDOVICIAN | Galena Group: Prosser Limestone | Opr | 70 | | | | |
| | Galena Group: Cummingsville Formation | Ocu | 70-75 | | | | |
| | Decorah Shale | Od | 60-65 | | | | |
| | Platteville Fm | Op | 10-15 | | | | |
| | Glenwood Fm | Pg | 5-15 | | | | |
| | St. Peter Sandstone | Os | 100-115 | | | | |
| LOWER ORDOVICIAN | Prairie du Chien Group: Shakopee Formation: Willow River Member | Ops | 160-180 | | | | |
| | Prairie du Chien Group: Shakopee Formation: New Richmond | | | | | | |
| | Prairie du Chien Group: Oneota Dolomite: Hagar City Member | Opd | 105-200 | | | | |
| | Prairie du Chien Group: Oneota Dolomite: Coon Valley Member | | | | | | |
| | Jordan Sandstone | Cj | 100-180 | | | | |
| | St. Lawrence Formation | Csl | 40-50 | | | | |
| R CAMBRIAN | Franconia Formation: Reno Member | Cfr | 165-175 | | | | |
| | Franconia Formation: Tomah Mbr | | | | | | |
| | Franconia Formation: Birkmose Member | | | | | | |
| | Ironton and Galesville Sandstones | Cig | 50-65 | | | | |
| | Eau Claire Formation | Ce | 0-140 | | | | |

EXPOSED IN OUTCROP AND CROSS SECTIONS

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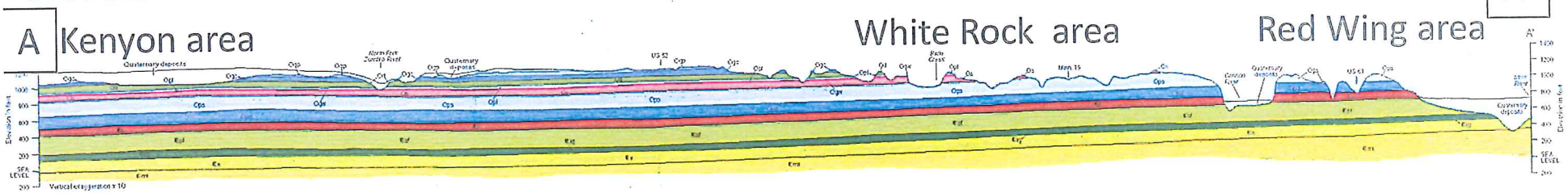
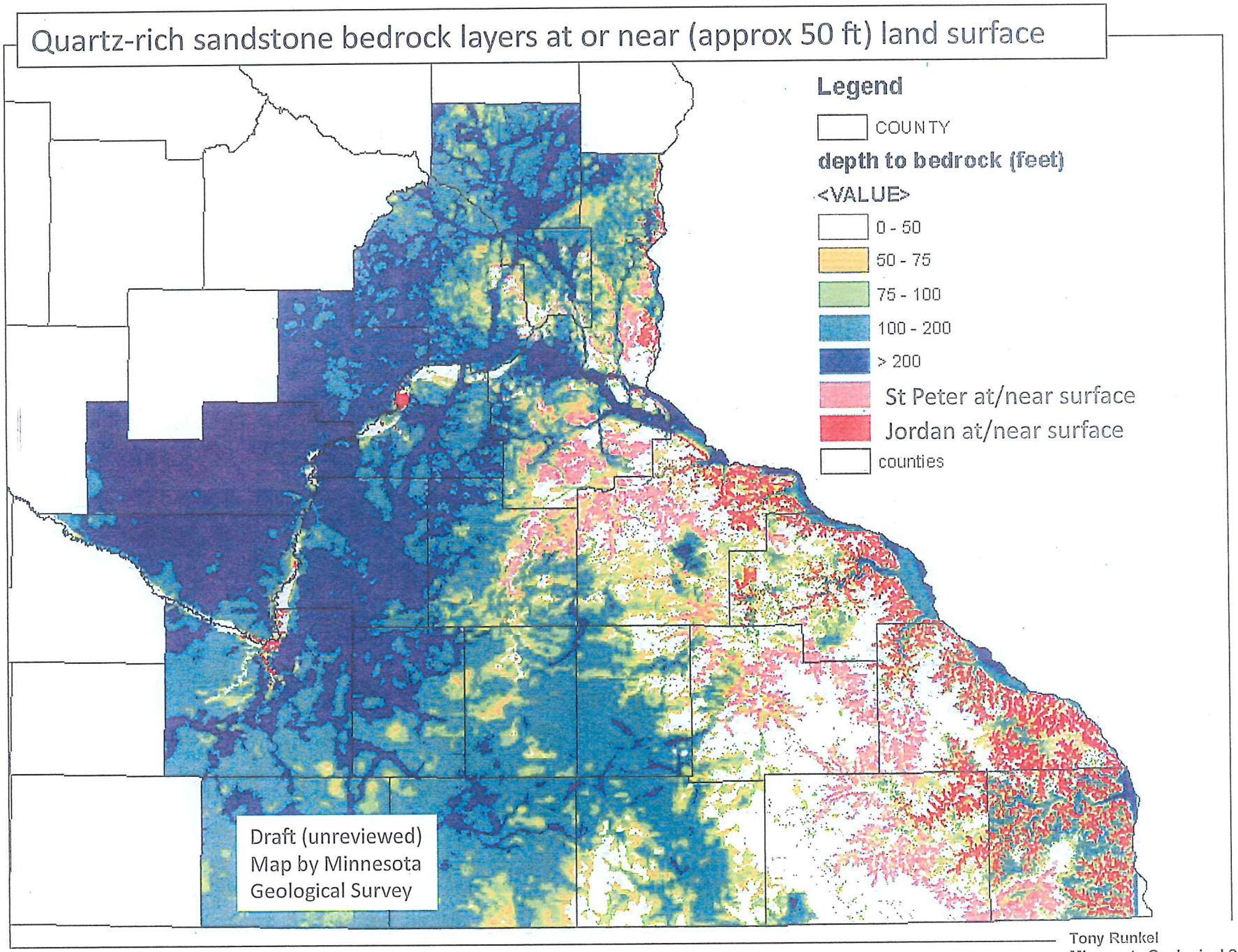
Minnesota Geological Survey
University of Minnesota



# Quartz-rich sandstone bedrock layers at or near (approx 50 ft) land surface

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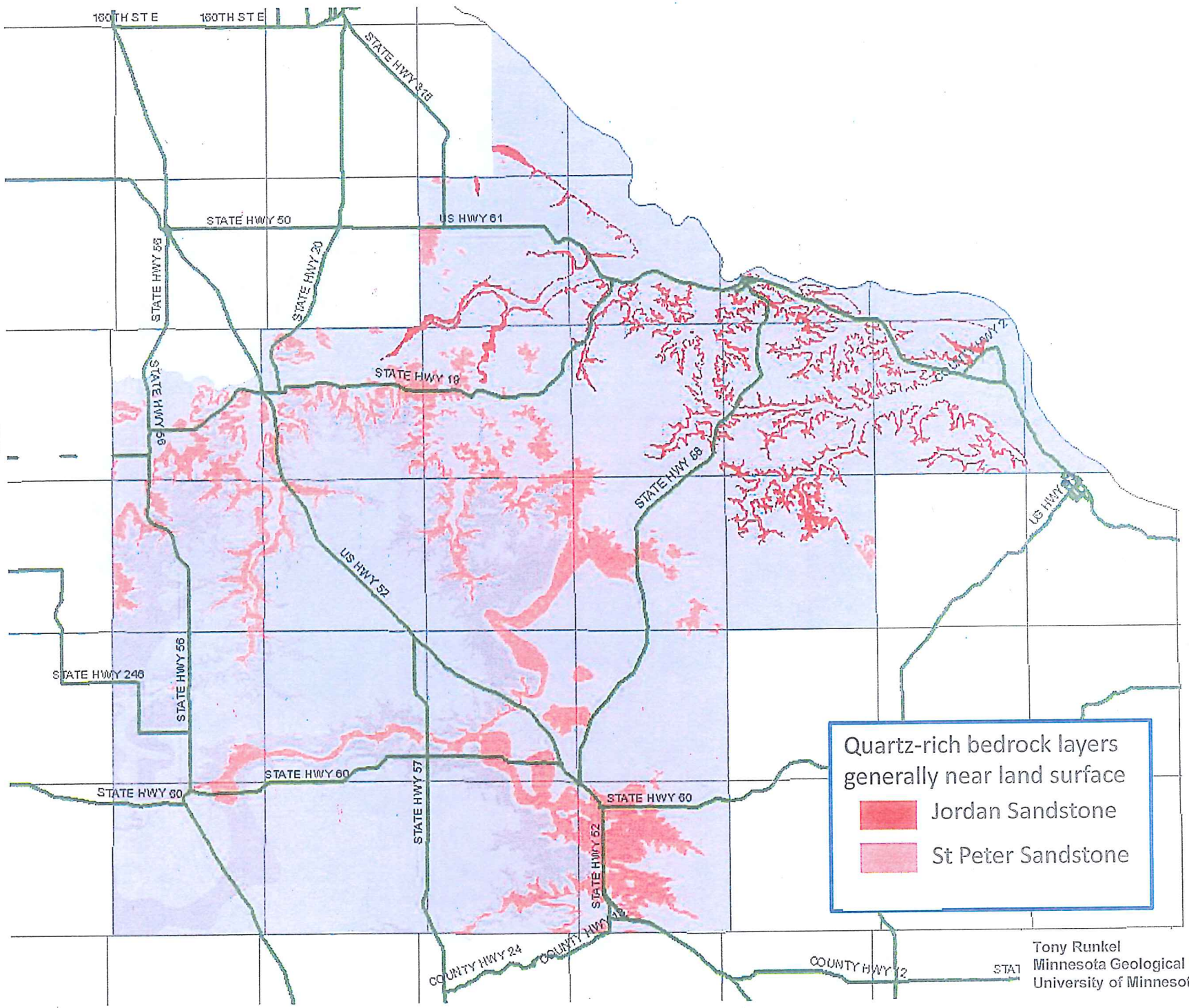
160TH ST E
160TH ST E
STATE HWY 30
STATE HWY 50
US HWY 61
STATE HWY 63
STATE HWY 20
STATE HWY 19
STATE HWY 58
STATE HWY 61
US HWY 52
STATE HWY 56
STATE HWY 248
STATE HWY 60
STATE HWY 60
STATE HWY 57
STATE HWY 60
STATE HWY 52
COUNTY HWY 24
COUNTY HWY 12
Quartz-rich bedrock layers generally near land surface
Jordan Sandstone
St Peter Sandstone
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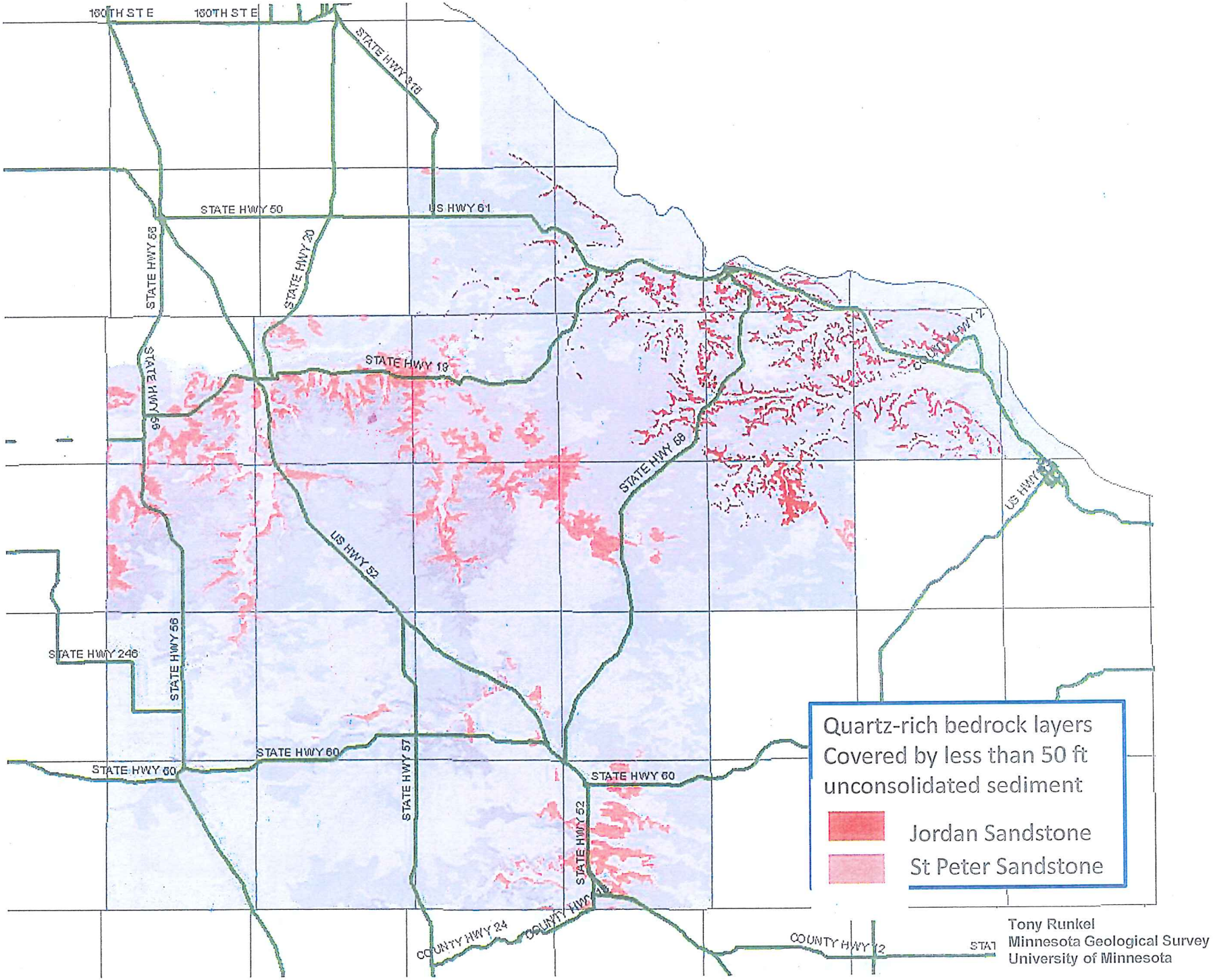
180TH ST E
180TH ST E
STATE HWY 50
US HWY 61
STATE HWY 20
STATE HWY 19
STATE HWY 58
US HWY 52
STATE HWY 246
STATE HWY 60
STATE HWY 60
STATE HWY 57
STATE HWY 60
COUNTY HWY 24
COUNTY HWY 12
Quartz-rich bedrock layers
Covered by less than 50 ft
unconsolidated sediment
Jordan Sandstone
St Peter Sandstone
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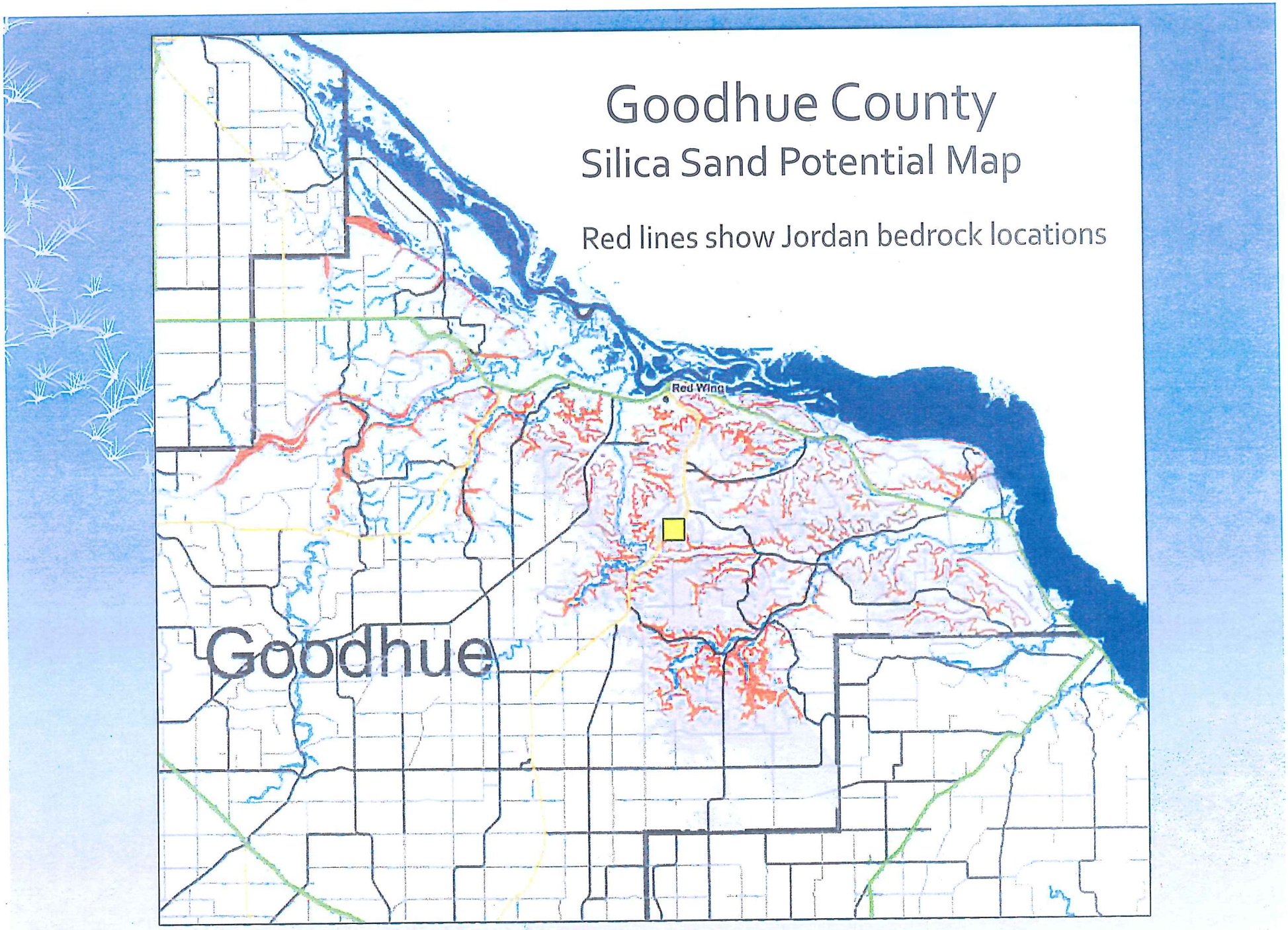
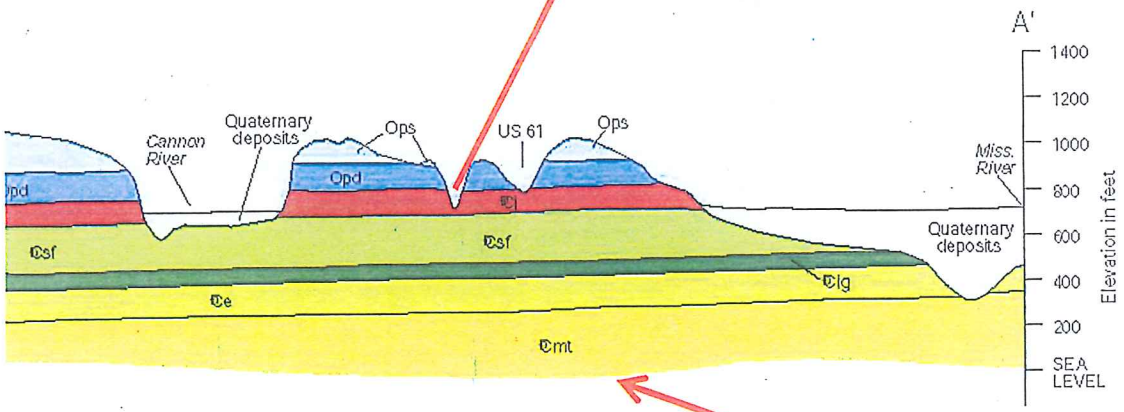



DNR Ecological and Water Resources based on Geologic Atlas Mapping by Minnesota Geological Survey in 1998

# Example: Jordan Sandstone

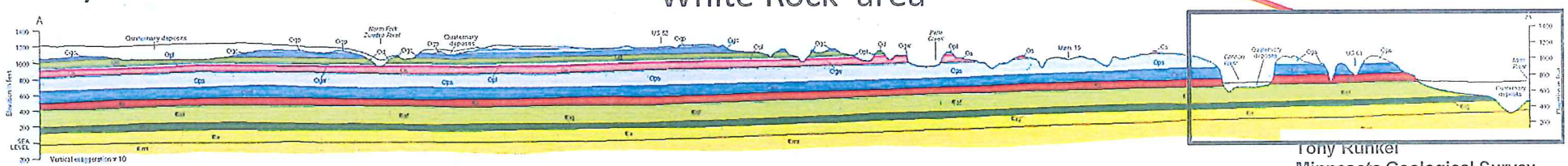
~500ft




## Kenyon area

## White Rock area

## Red Wing area



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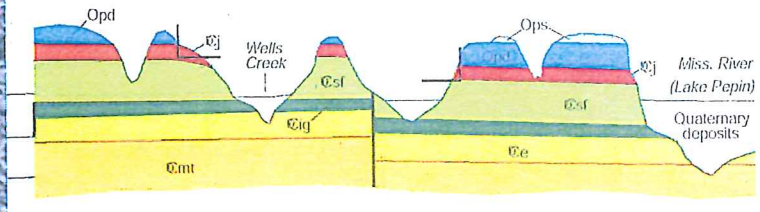


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