



Aggregate Resource Mapping Program

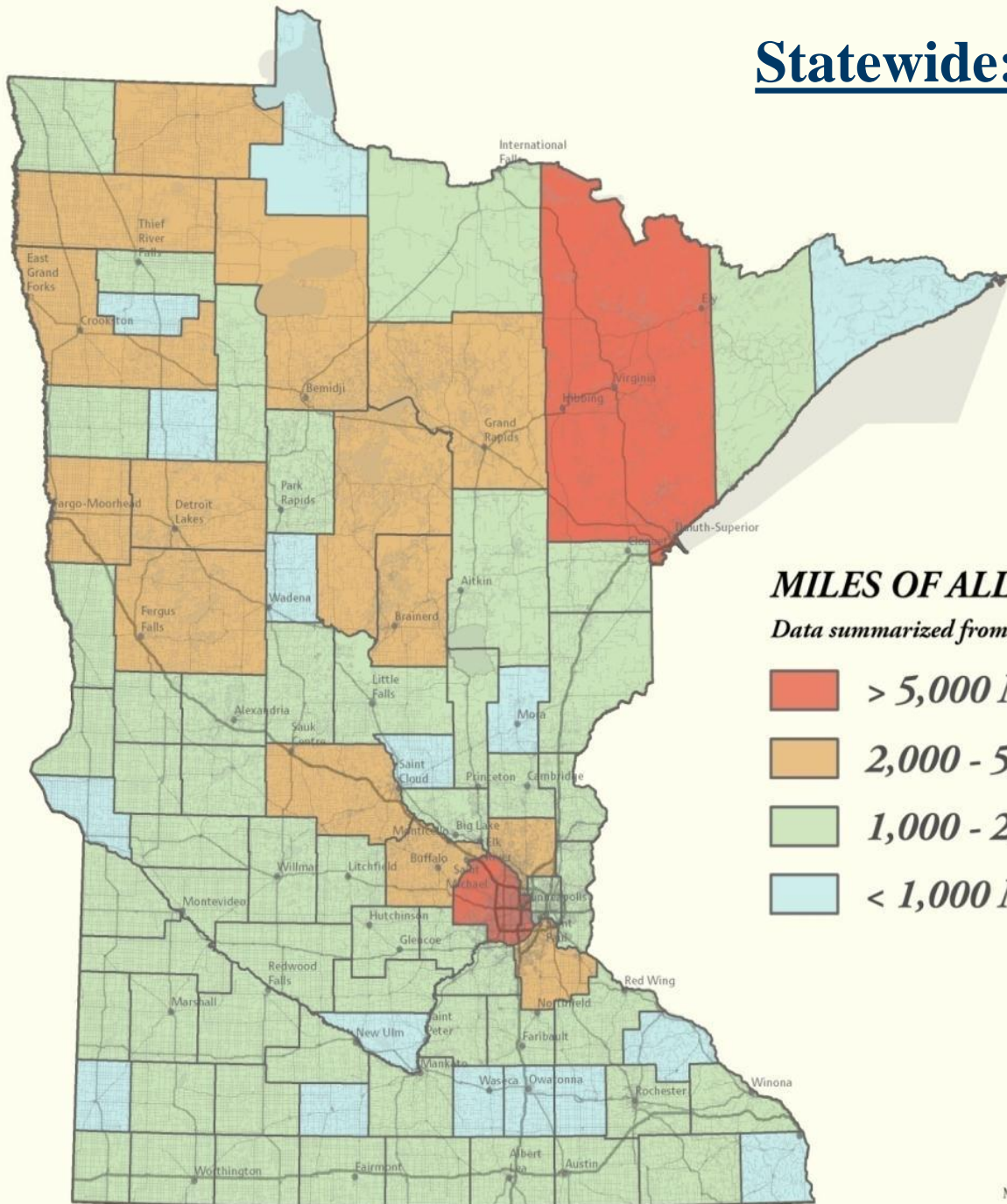
Heather Arends – Mineral Potential Section Manager

Minnesotans Rely on Aggregate

- Each American uses about 10 tons of aggregates every year.
- 50% of all aggregates consumed in MN are on publicly-funded projects.



Statewide: 141,700 Miles



MILES OF ALL ROADS IN MINNESOTA BY COUNTY



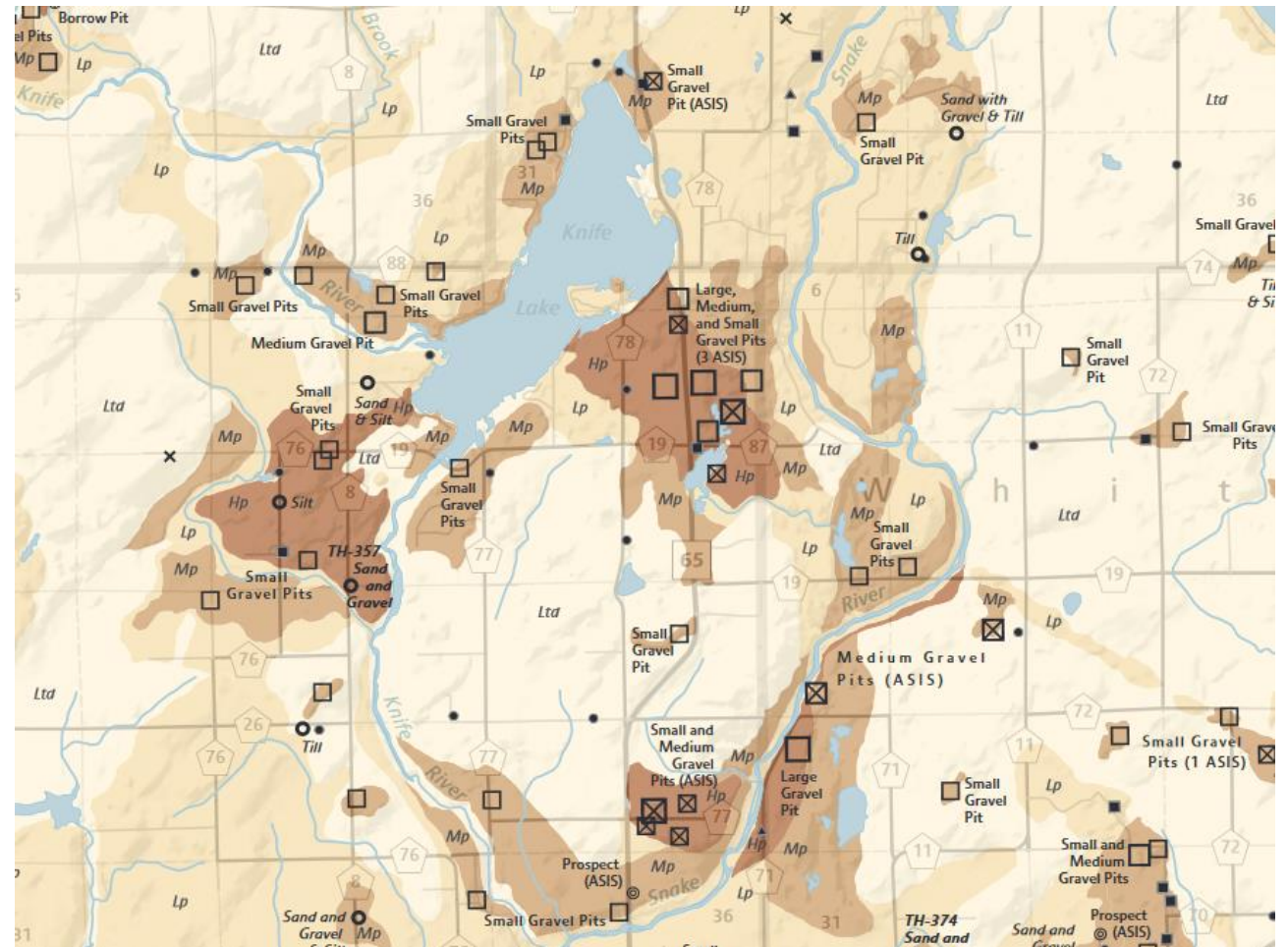
Establishment of the Aggregate Mapping Program

- The program was legislated in 1984 (Minn. Statute § 84.94).

“DNR....shall conduct a program of identification and classification of aggregate resources of potentially valuable publicly or privately owned aggregate lands located outside of urban or developed areas where aggregate mining is restricted, without consideration of their present land use. The program shall give priority to identification and classification in areas of the state where urbanization of other factors are or may be resulting in a loss of aggregate resource to development.”

Information that is provide to LGUs

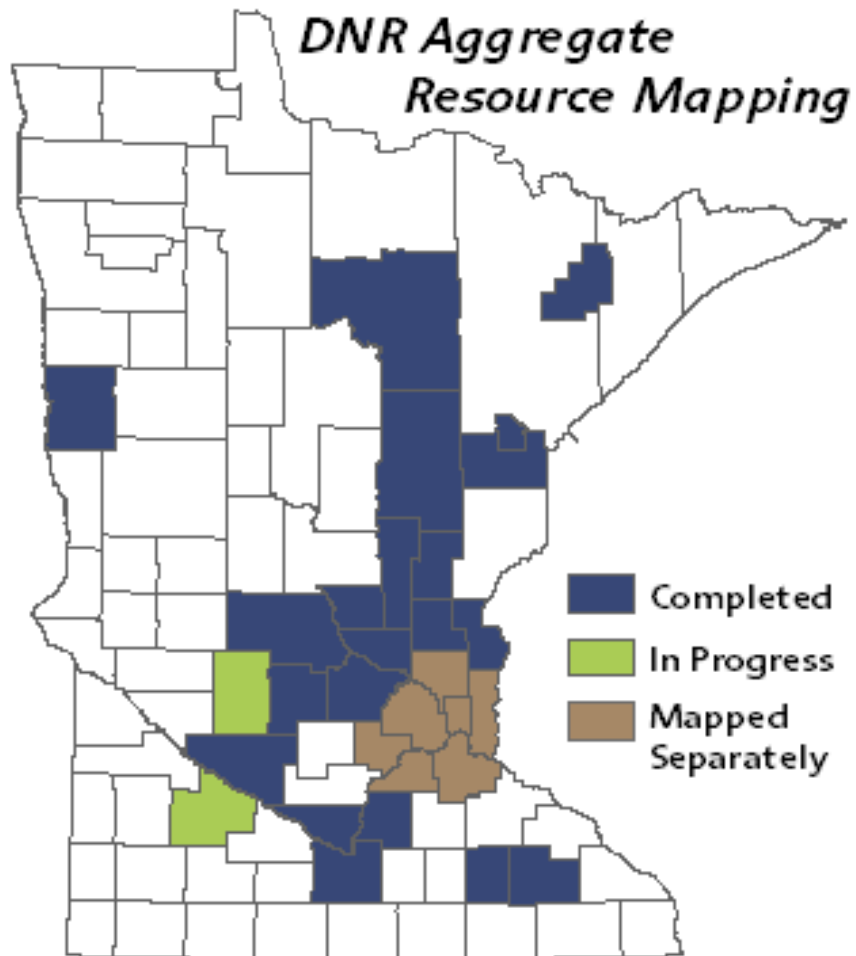
- An assessment of aggregate potential
 - High, Moderate, Low, Limited
- A complete survey of all gravel pits
- Drilling and observational data
- Technical assistance
- All data is publicly available



Technical Assistance

- Local governments have purview of administering “reclamation” of non-metallic mineral resources (aggregate, dimension stone, silica sand, etc..).
- Reclamation in state statute refers to operation, permitting, blasting, etc..
- Minn. Stat. § 394.25.
- DNR serves local governments, public, and industry on many topics related to aggregate mining.
- Value of the DNR – Aggregate Resource Mapping Program is that we serve our stakeholders: the technical expertise and platform to address regional and statewide issues as well as addressing the importance of accessing sand and gravel.

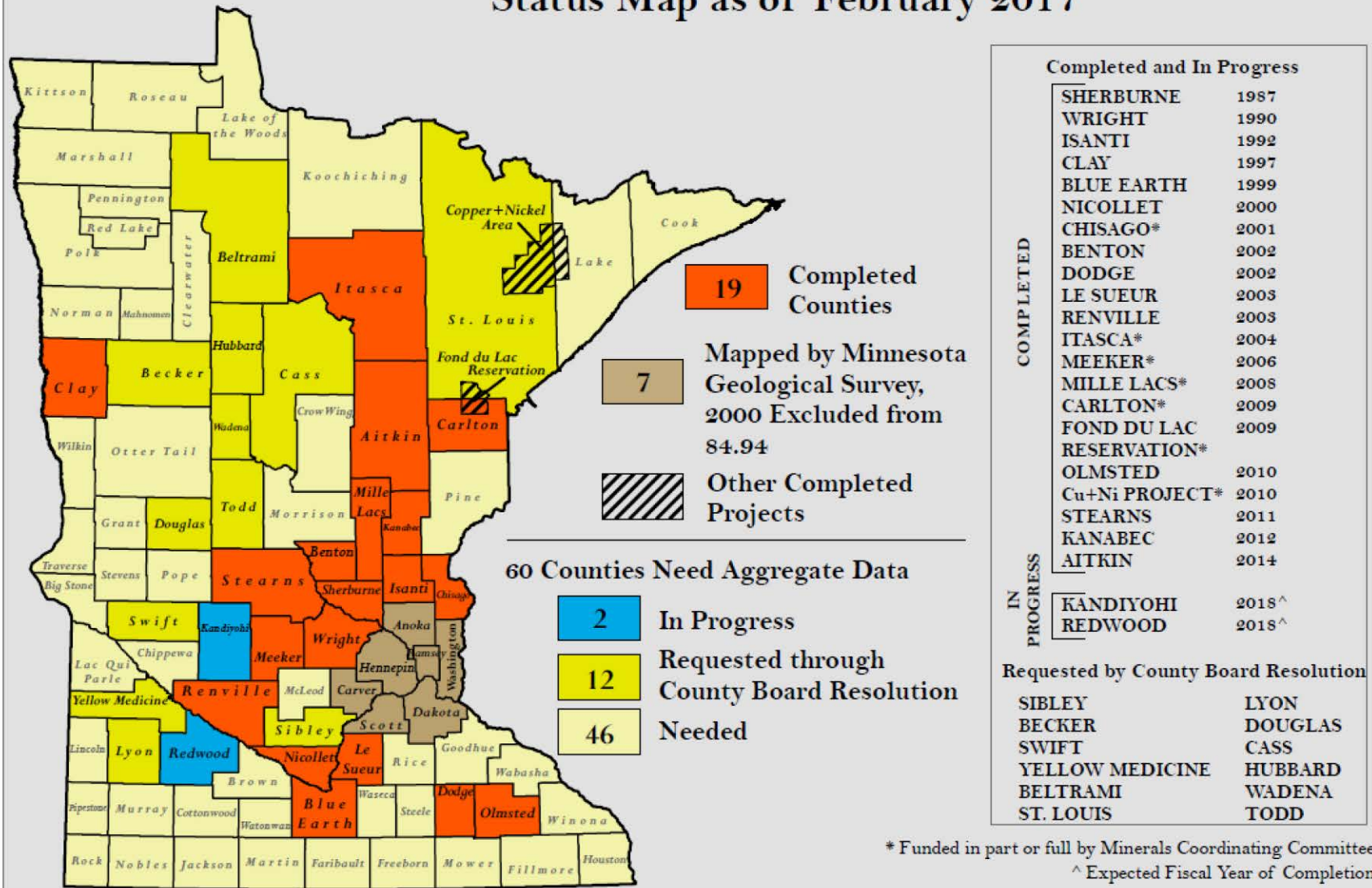
Status of Aggregate Mapping



- Completed 20 projects that mapped near regional population centers of Mankato, Rochester, and St. Cloud.
- To get mapped, we ask that counties pass a county board resolution requesting for the work to be completed.

Minnesota DNR Aggregate Resource Mapping Program

Status Map as of February 2017



* Funded in part or full by Minerals Coordinating Committee
^ Expected Fiscal Year of Completion

Map Updated February, 2017

Minnesota Department of Natural Resources, Division of Lands and Minerals, Director Jess Richards

SAND AND GRAVEL

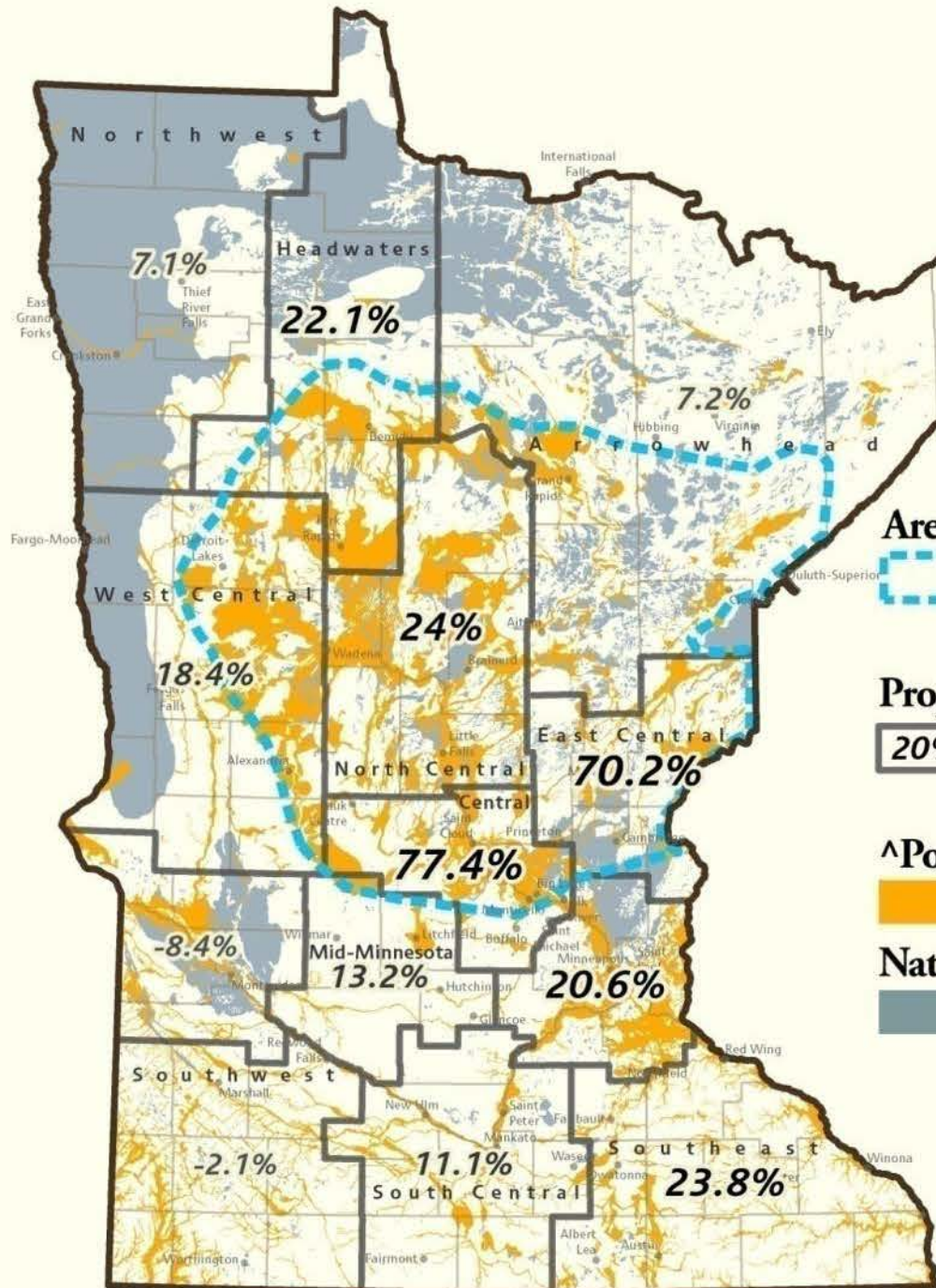
RESOURCES THAT BUILD TRANSPORTATION AND INFRASTRUCTURE




Source: American Society of Civil Engineers, <http://www.infrastructurereportcard.org/a/documents/Minnesota.pdf>

7/25/2017


Optional Tagline Goes Here | mn.gov/websiteurl



Area of Interest

 *General outline of area that has high potential for good quality sand and gravel resources and high projected population growth.*

Projected Percent Population Change (2005-2035)

 *Regional Development Corridor Boundaries*
Labels Display Percent Change in Population (2005-35)

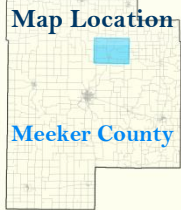
^Potential Sand and Gravel Resource Distribution

 *Potential Sand and Gravel Bearing Landforms*

Natural Scarcity of Sand and Gravel Resources

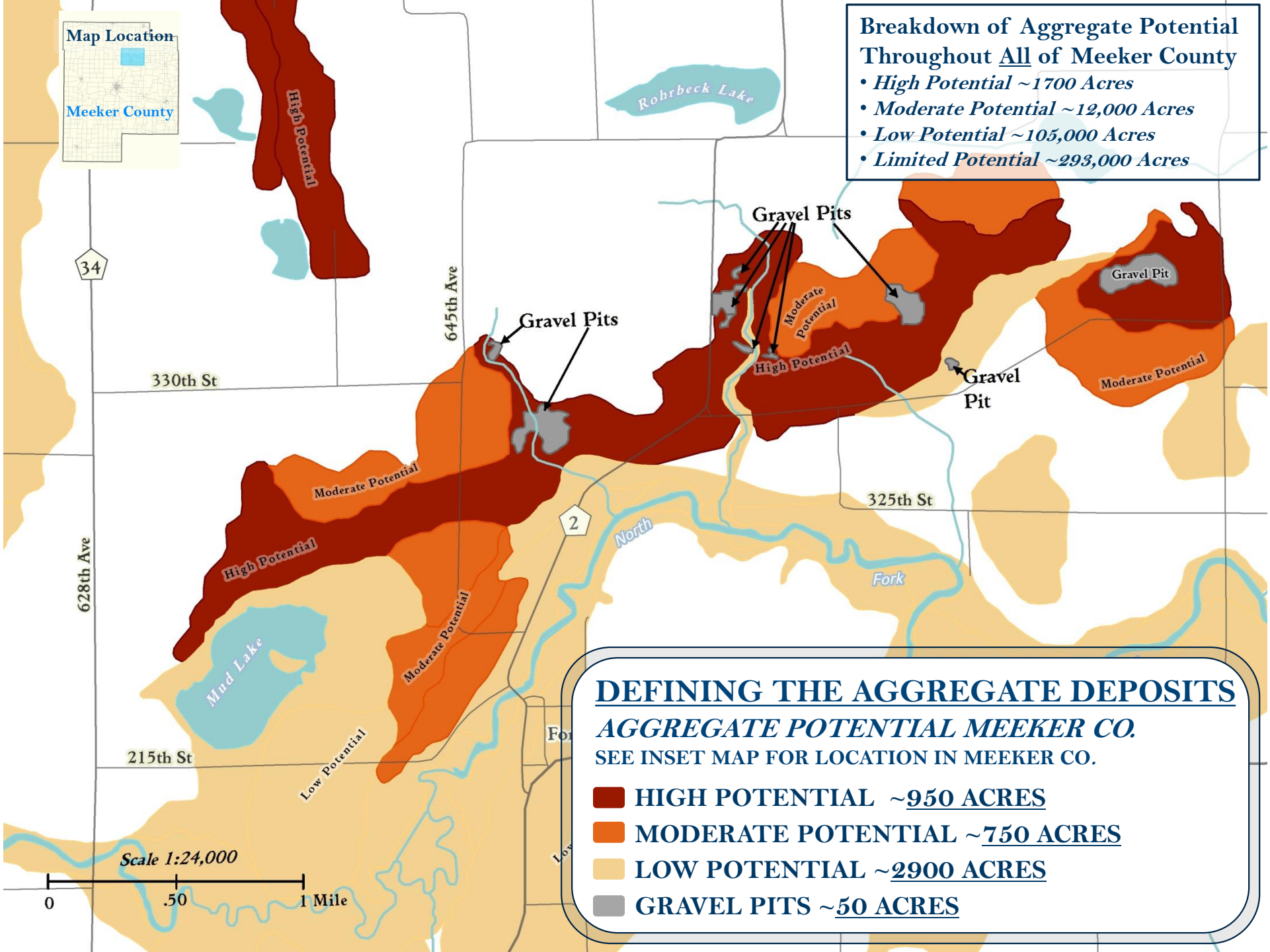
 *Glacial Lake Sediment Bearing Landforms*

^Very general distribution of sand and gravel bearing landforms. Landforms include terraces, outwash, ice contacts, and alluvium extracted from the GIS layer titled, "Geomorphology of Minnesota," published in 1997.



Breakdown of Aggregate Potential Throughout All of Meeker County

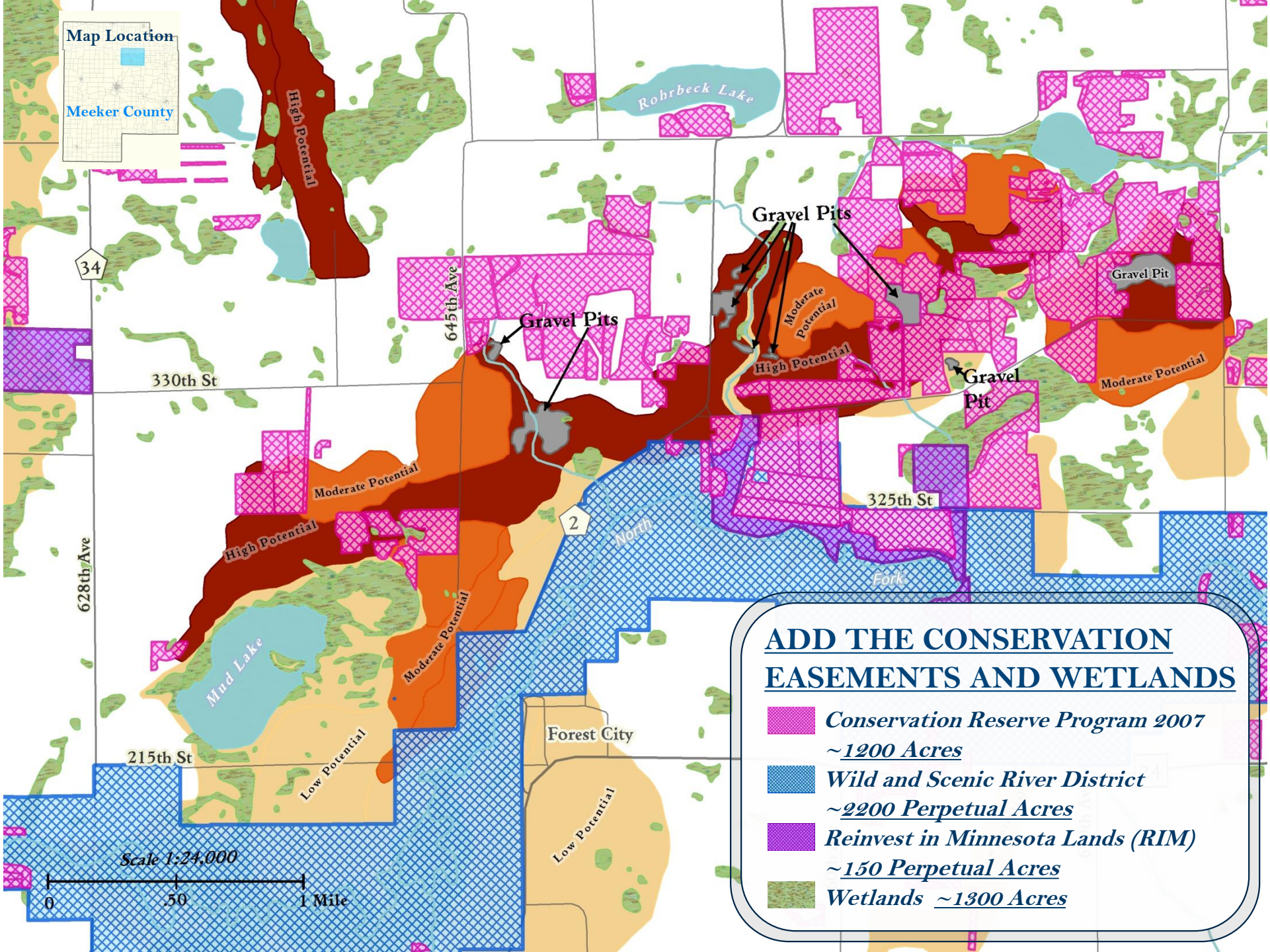
- *High Potential* ~1700 Acres
- *Moderate Potential* ~12,000 Acres
- *Low Potential* ~105,000 Acres
- *Limited Potential* ~293,000 Acres



DEFINING THE AGGREGATE DEPOSITS
AGGREGATE POTENTIAL MEEKER CO.
 SEE INSET MAP FOR LOCATION IN MEEKER CO.

- HIGH POTENTIAL ~950 ACRES**
- MODERATE POTENTIAL ~750 ACRES**
- LOW POTENTIAL ~2900 ACRES**
- GRAVEL PITS ~50 ACRES**

Scale 1:24,000
 0 .50 1 Mile



Map Location

Meeker County

34

330th St

628th Ave

645th Ave

Gravel Pits

Gravel Pits

Gravel Pit

Gravel Pit

325th St

2

North

Fork

215th St

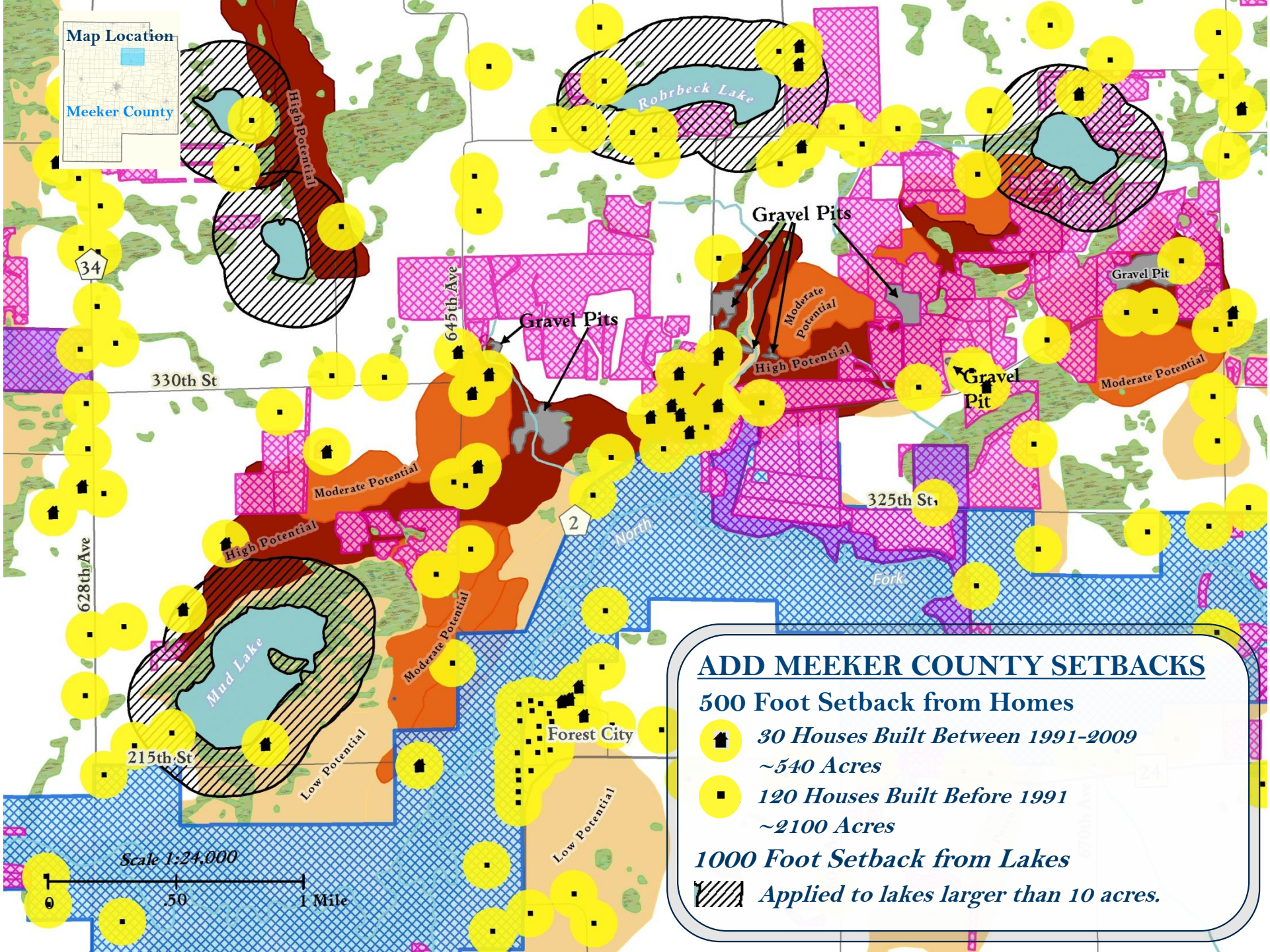
Forest City

Scale 1:24,000

0 .50 1 Mile

ADD THE CONSERVATION EASEMENTS AND WETLANDS

-  *Conservation Reserve Program 2007*
~1200 Acres
-  *Wild and Scenic River District*
~2200 Perpetual Acres
-  *Reinvest in Minnesota Lands (RIM)*
~150 Perpetual Acres
-  *Wetlands* *~1300 Acres*



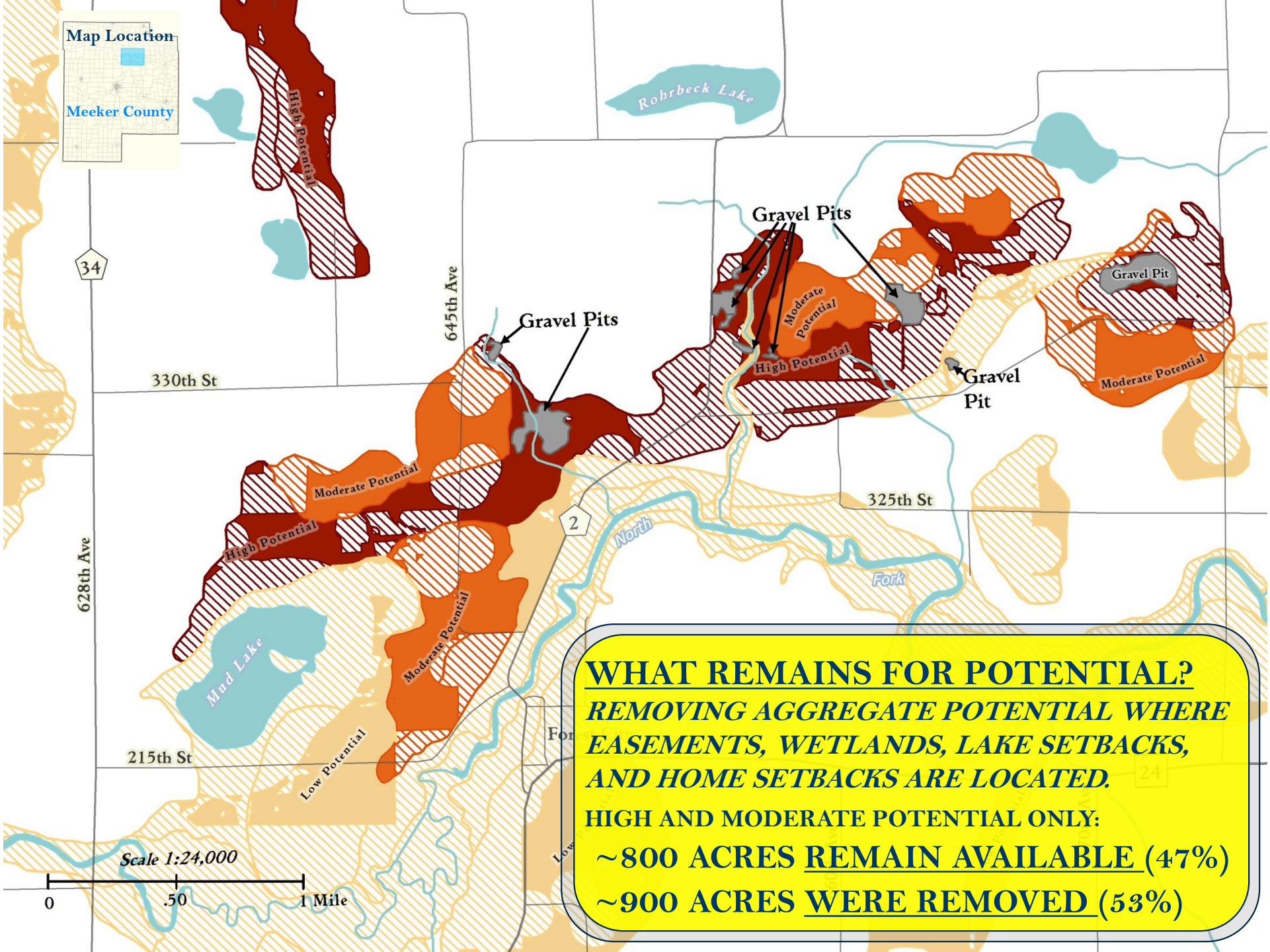
ADD MEEKER COUNTY SETBACKS

500 Foot Setback from Homes


-  *30 Houses Built Between 1991-2009*
~540 Acres
-  *120 Houses Built Before 1991*
~2100 Acres

1000 Foot Setback from Lakes

 *Applied to lakes larger than 10 acres.*



WHAT REMAINS FOR POTENTIAL?
REMOVING AGGREGATE POTENTIAL WHERE EASEMENTS, WETLANDS, LAKE SETBACKS, AND HOME SETBACKS ARE LOCATED.
HIGH AND MODERATE POTENTIAL ONLY:
 ~800 ACRES REMAIN AVAILABLE (47%)
 ~900 ACRES WERE REMOVED (53%)

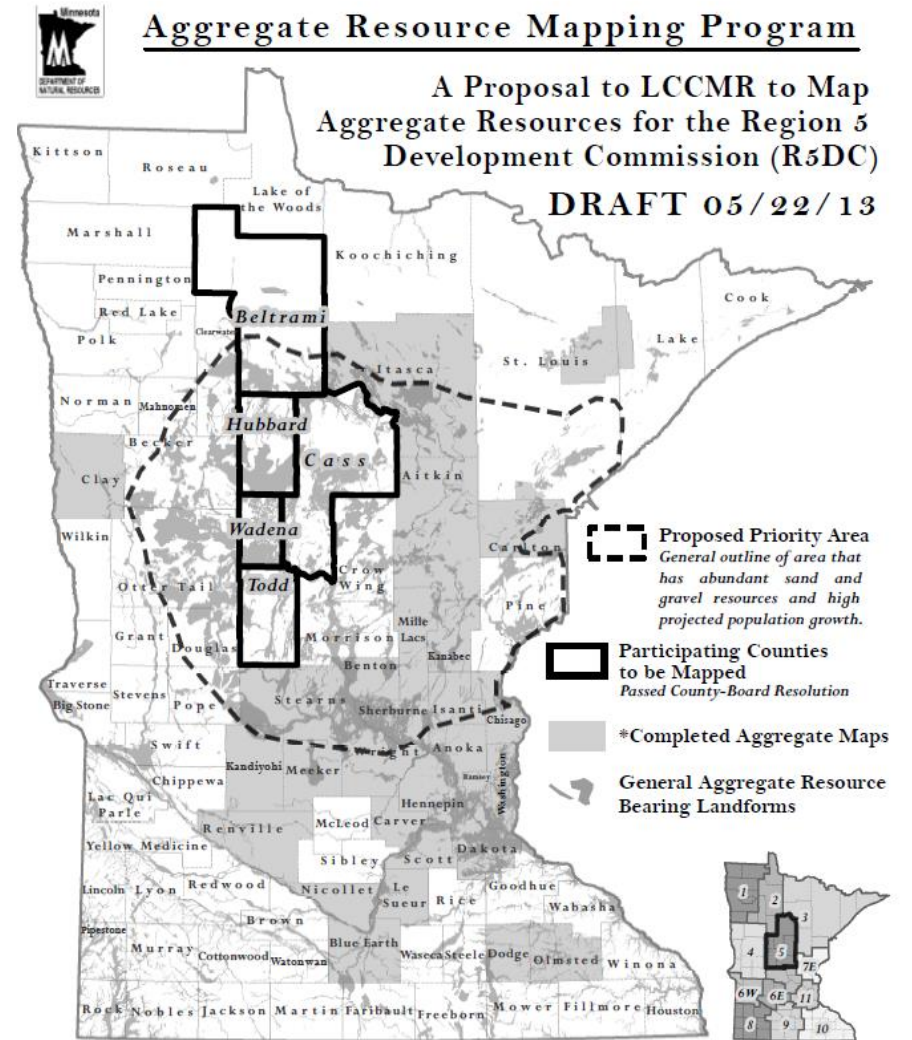


By knowing the location of aggregate as well as having the conversation about the importance of aggregates, local and state government can do a better job preserving and conserving these vital resources.

Funding Proposals

Recent funding proposals LCCMR:

- 2012 – DNR Proposal
- 2013 – Region 5 Development Commission Proposal
- 2016 – Legislative Proposal



Have received funding through the Minnesota Minerals Coordinating Committee (MCC). Funding paid for all or a portion of the following projects:

- 2011 Portion of Lake and St. Louis Counties
 - 2009 Carlton and Fond du Lac Reservation
 - 2008 Mille Lacs County
 - 2006 Meeker County
 - 2005 Itasca County
 - 2003 Renville County
- 2002 Dodge and Benton Counties
 - 2001 Chisago County
 - 2000 Nicollet
 - 1999 Twin Cities Seven County
 - 1999 Blue Earth County

- Partnered with MNDOT to receive funding, in-kind services for drilling, and materials testing.
- Currently, we are working with stakeholders on how to fund mapping for the *rest of the state within 10 years.*

What we know and don't know...

- The narrative on aggregates within the state comes from data that is 20 years old – Minnesota's Aggregate Resources – Road to the 21st Century (1998).
- This information came from the Ad Hoc Committee of the 2000 Aggregate Resource Task Force.
- Some of the narratives of 2000:
 - Twin Cities will run out of aggregates in 2020.
 - Consumption, number of producers, supply.
- We don't know what the current supply/demand issues are.

Heather Arends

Division of Lands and Minerals

651-259-5376

heather.arends@state.mn.us