Minnesota Department of Natural Resourcesf
Division of Lands and Mineralsf
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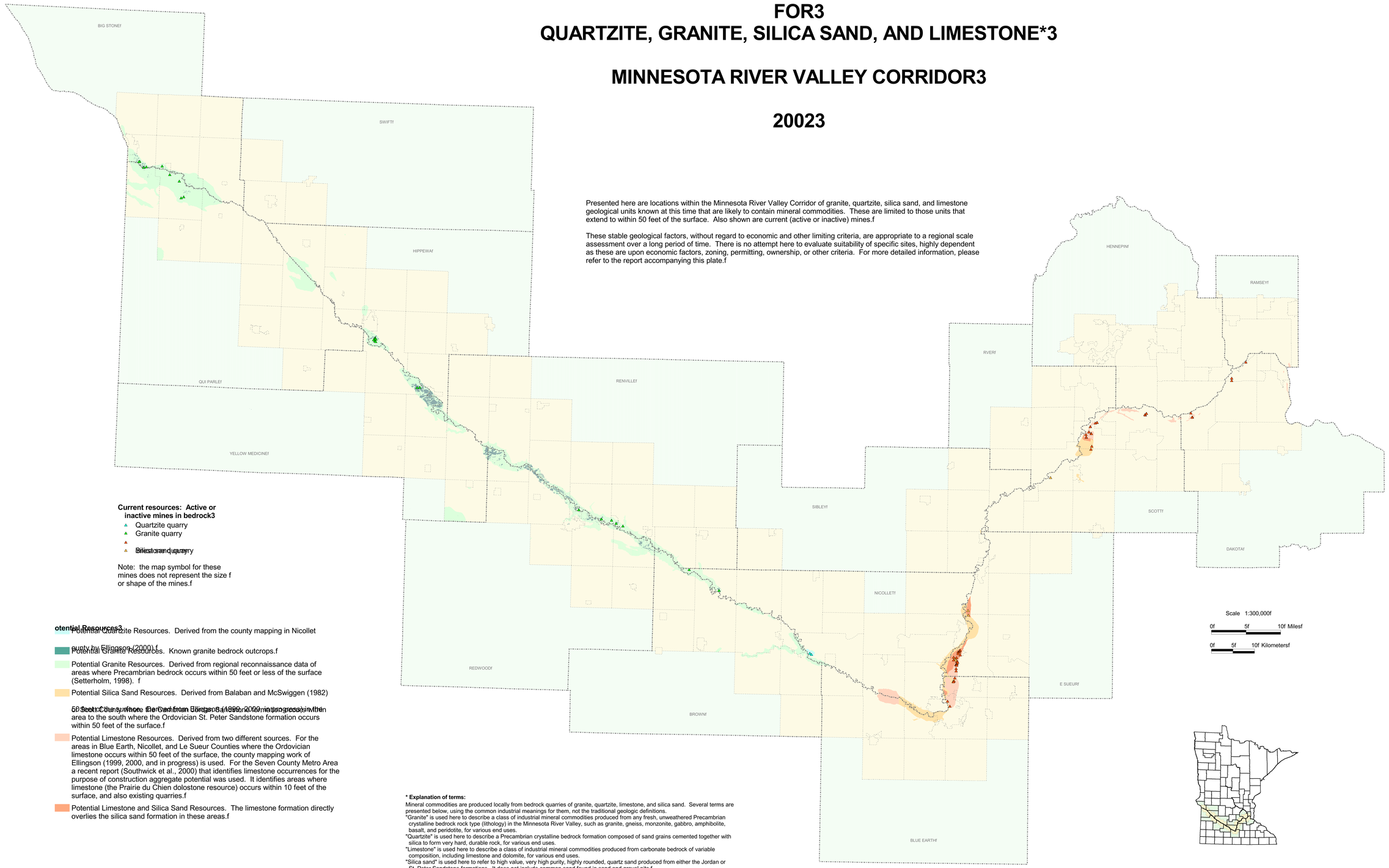
CURRENT RESOURCES AND POTENTIAL3 FOR3 QUARTZITE, GRANITE, SILICA SAND, AND LIMESTONE*3

MINNESOTA RIVER VALLEY CORRIDOR3

20023

Presented here are locations within the Minnesota River Valley Corridor of granite, quartzite, silica sand, and limestone geological units known at this time that are likely to contain mineral commodities. These are limited to those units that extend to within 50 feet of the surface. Also shown are current (active or inactive) mines.f

These stable geological factors, without regard to economic and other limiting criteria, are appropriate to a regional scale assessment over a long period of time. There is no attempt here to evaluate suitability of specific sites, highly dependent as these are upon economic factors, zoning, permitting, ownership, or other criteria. For more detailed information, please refer to the report accompanying this plate.f



Current resources: Active or inactive mines in bedrock3

- Quartzite quarry
- Granite quarry
- Silica sand quarry
- Limestone quarry

Note: the map symbol for these mines does not represent the size f or shape of the mines.f

Scale 1:300,000f

0f 5f 10f Milesf

0f 5f 10f Kilometersf

otential Resources3

- Potential Quartzite Resources. Derived from the county mapping in Nicollet County by Ellingson (2000) f
- Potential Granite Resources. Known granite bedrock outcrops.f
- Potential Granite Resources. Derived from regional reconnaissance data of areas where Precambrian bedrock occurs within 50 feet or less of the surface (Setterholm, 1998). f
- Potential Silica Sand Resources. Derived from Balaban and McSwiggen (1982) 50 feet of the surface. For Carver, Dakota, Ellingson (1999, 2000, in progress) with area to the south where the Ordovician St. Peter Sandstone formation occurs within 50 feet of the surface.f
- Potential Limestone Resources. Derived from two different sources. For the areas in Blue Earth, Nicollet, and Le Sueur Counties where the Ordovician limestone occurs within 50 feet of the surface, the county mapping work of Ellingson (1999, 2000, and in progress) is used. For the Seven County Metro Area a recent report (Southwick et al., 2000) that identifies limestone occurrences for the purpose of construction aggregate potential was used. It identifies areas where limestone (the Prairie du Chien dolostone resource) occurs within 10 feet of the surface, and also existing quarries.f
- Potential Limestone and Silica Sand Resources. The limestone formation directly overlies the silica sand formation in these areas.f

*** Explanation of terms:**

Mineral commodities are produced locally from bedrock quarries of granite, quartzite, limestone, and silica sand. Several terms are presented below, using the common industrial meanings for them, not the traditional geologic definitions.

"Granite" is used here to describe a class of industrial mineral commodities produced from any fresh, unweathered Precambrian crystalline bedrock rock type (lithology) in the Minnesota River Valley, such as granite, gneiss, monzonite, gabbro, amphibolite, basalt, and peridotite, for various end uses.

"Quartzite" is used here to describe a Precambrian crystalline bedrock formation composed of sand grains cemented together with silica to form very hard, durable rock, for various end uses.

"Limestone" is used here to describe a class of industrial mineral commodities produced from carbonate bedrock of variable composition, including limestone and dolomite, for various end uses.

"Silica sand" is used here to refer to high value, very high purity, highly rounded, quartz sand produced from either the Jordan or St. Peter Sandstone formations. It does not include common sand found in sand and gravel pits.f

Ellingson, J.B., 1999, Aggregate Resources and Surficial Geology of Blue Earth County, Minnesota; Minnesota Department of Natural Resources, Division of Lands and Minerals, Report 335. [4 map plates plus a CDROM containing digital data]
Ellingson, J.B., 2000, Aggregate Resources and Surficial Geology of Nicollet County, Minnesota; Minnesota Department of Natural Resources, Division of Lands and Minerals, Report 343. [4 map plates plus a CDROM f containing digital data]f
Ellingson, J.B., in progress, Aggregate Resources and Surficial Geology of Le Sueur County, Minnesota; f Minnesota Department of Natural Resources, Division of Lands and Minerals. f
Southwick, D.L., Jousseau, M., Meyer, G.N., Mossler, J.H., and Wahl, T.E., 2000, Aggregate Resources Inventory f of the Seven-County Metropolitan Area; Minnesota Geological Survey Information Circular 46, 91 p. [report, f 4 map plates, and data available for download. Go to www.dnr.state.mn.us/minerals/metroagg.html for more information.]f
Balaban, N.H. and McSwiggen, P.L., eds., 1982, Geologic Atlas of Scott County, Minnesota; Minnesota f Geological Survey, Scale 1:100,000 and smaller.f

Granite Precambrian bedrock references:
Oreskovich, J.A., 1998, Bedrock Geology of the Minnesota River Valley in Renville, Redwood, Brown, and Nicollet Counties, Minnesota, digital data developed by J.A. Oreskovich from the work of J.A. Grant; University of Minnesota - Duluth, Natural Resources Research Institute (NRRI).
Setterholm, D.R., 1998, Bedrock Topography and Depth to Bedrock for the Minnesota River Valley Corridor Database Development and Mapping Project; Minnesota Geological Survey. [Arc/INFO coverages]

Pits reference:
Gran, S., 1997, Mine Pits in the Minnesota River Valley Corridor; Minnesota Geological Survey, based on 1991 aerial f photography. [Arcview shapefiles]f

Base map data sources:
Minor Civil Divisions (cities and townships) from the 1990 TIGER line files.f