AGGREGATE RESOURCES

Sand & Gravel and Crushed Stone Potential

YELLOW MEDICINE COUNTY, MN

Produced by the Aggregate Resource Mapping Program
Minnesota Department of Natural Resources Division of Lands and Minerals
Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources

DEPARTMENT OF NATURAL RESOURCES

St, Paul, Minnesota - July, 2025
Mapped by Matthew Cameron and Lindsay Savage

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

PURPOSE

The purpose of this project is to identify and classify potential construction aggregate resources–such as sand, gravel, and crushed stone—in Yellow Medicine County, Minnesota. This map was produced in accordance with the Minnesota Statute Section 84.94, which directs the Department of Natural Resources (DNR), in cooperation with the Minnesota Geological Survey (MGS) and Minnesota Department of Transportation (MnDOT), to provide information to local governments to help plan for and protect future aggregate supplies.

This map and its associated data are intended to support local planning and zoning decisions related to aggregate resources. By identifying these natural deposits, the project aims to inform responsible development, encourage the protection of valuable resources, and promote orderly, environmentally sound development of these resources. Construction aggregates are essential for building and maintaining infrastructure, and having access to affordable, locally sourced materials is critical to both public and privately funded projects.

Aggregate materials are high-bulk, low-value commodities, meaning transportation costs account for a considerable amount of the delivered price. Lower construction costs for both public and private projects can be achieved by accessing local aggregate supplies. In addition to transportation costs, land use conflicts can affect the availability, usability, and supply of aggregate. Cities expanding into adjacent rural areas, aggregate resource deposits being covered by new developments, zoning restrictions, and land use designations that exclude aggregate mining are becoming more common across the state. Specifications for the construction of roads and bridges require higher quality aggregate, which may be available only in limited and specific areas. As demand continues to rise near economic centers, permitted sources continue to be depleted. This leads to longer hauling distances, reduced availability, and ultimately, higher costs for both consumers and taxpayers.

This map represents a regional, reconnaissance-level assessment of aggregate potential. It is intended to provide a broad overview rather than detailed, site-level guidance. Before any resource development can take place, site-specific evaluations are required—particularly to determine aggregate quality and to conduct any necessary environmental reviews. Important considerations such as land ownership, zoning, protected waters and wetlands, permitting requirements, and other local site characteristics are not included in the geological data presented here and must be assessed separately.

METHODOLOGY:

Data Gathering: To obtain a basic understanding of the regional geology, literature reviews and data searches were conducted. The information collected included, but was not limited to, aerial photographs, topographic maps, digital elevation models (Figure 1), shaded relief maps, subsurface data, gravel pit and quarry data, existing surficial and bedrock geology maps, published papers and reports, and land use data. Several background datasets—such as roads, railroads, Public Land Survey (PLS), township, range, and section boundaries were also used to support the mapping process.

SAND AND GRAVEL POTENTIAL

Sand and gravel potential is an assessment of the relative probability that a sand and gravel deposit exists within a given mapping unit. The assessment is based primarily on geologic evidence, physical parameters such as areal extent, and interpretation at the reconnaissance scale. It does not evaluate economic feasibility, site-specific level of evaluation, or other operational considerations. A designation of "Sand and Gravel Potential" on the map does not imply that economically viable deposits are present throughout the entire unit. Rather, it indicates that geologic processes likely created conditions favorable for the deposition of sand and gravel within that unit.

Geologic characteristics such as deposit thickness and overburden depth remain constant; however, factors influencing economic viability—such as land ownership, zoning, protected waters and wetlands, environmental regulations, permitting, proximity to markets, royalties, and site access—vary significantly over time and across locations. These considerations are beyond the scope of this reconnaissance-level study and must be evaluated on a case-by-case basis during site-specific investigations.

RESULTS

Aggregate resources are limited and unevenly distributed across the county, consisting of numerous small deposits along with two significantly larger deposits—one near Canby and the other near Granite Falls. As the resources near Canby approach depletion, the Minnesota River Valley remains a significant source of aggregate material.

The bedrock in this region is among the highest quality in the state and holds regional significance as a source of construction aggregate. These materials meet stringent performance standards required for high-quality asphalt and concrete mix designs. Bedrock aggregate resources are most abundant in the eastern to northeastern portion of Yellow Medicine County, with most outcrops located within the Minnesota River Valley. The most significant sand and gravel deposits in Yellow Medicine County are primarily associated with outwash and ice contact features found throughout the region. These deposits were formed by a glacier called the Des Moines Lobe that covered the region during the last glaciation, more than 14,000 years ago.

As the Des Moines Lobe advanced southeast through Yellow Medicine County, it followed the present-day paths of the Minnesota River Valley (Figure 1). A shear zone developed at the base of the Coteau, forcing part of the glacier to flow southwestward up the slope (Arends, 2024). The features associated with this region are complex and include stagnation landforms near the top of the Coteau, as well as ice contact deposits, collapsed channels, and incised valleys along the slope. Upon glacial retreat, outwash features formed at the base of the slope, creating some of the largest aggregate-bearing deposits in the county.

Ice contact features are scattered throughout Yellow Medicine County and exhibit a wide range of aggregate potential. These features—such as eskers, kames, ice-walled lake plains, and collapsed ice-marginal deposits—were formed in direct contact with melting glacial ice and are often complex in both structure and composition. Aggregate potential can vary within and across these landforms, as the texture and thickness of a deposit are related to local depositional conditions.

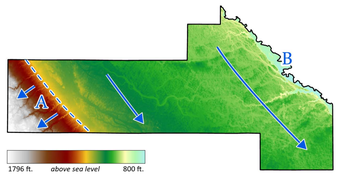
Glacial lakes also developed at the base of the Coteau, where topographic highs acted as natural dams. A large network of outwash channels—generally trending eastward—is prevalent throughout the county. These channels and associated lake deposits likely formed from high volumes of meltwater during the retreat of the Des Moines Lobe.

Glacial Lake Benson occupied parts of northeastern Yellow Medicine County around 14,400 years ago (Rittenour et al., 2015). This shallow, island-dotted lake had a limited and localized impact on the modern landscape within the county, leaving behind smoothed topography and thin and discontinuous lake deposits.

The Minnesota River Valley was shaped more dramatically by Glacial River Warren, which carved a deep channel through the landscape approximately 11,500 years ago (Patterson, 1994). This outflow event occurred as massive volumes of water drained from Glacial Lake Agassiz, a large proglacial lake to the northwest. The resulting erosion exposed bedrock in parts of the valley and deposited terrace and outwash sediments within and adjacent to the modern river valley. Three smaller bedrock outcrops occur outside the river valley—one southwest of Posen, another southwest of Echo, and a third west of Omro. These outcrops primarily consist of gneiss, granite, granitic gneiss, and schist with quality varying based on mineralogical composition.

Figure 1: Digital Elevation Model

The digital elevation model (DEM) of Yellow Medicine County displays the general slope from the high-elevation Coteau Des Prairies (A) in the west to the lower-elevation Minnesota River Valley (B) in the east. The general flow direction of the Des Moines Lobe is toward the southeast. A shear zone developed at the base of the Coteau. This marks the approximate threshold where ice flow began ascending the upland surface. The blue arrows represent general ice flow and the dotted blue line represents the approximate shear zone placement.



CRUSHED STONE POTENTIAL

SIGNIFICANT CRUSHED STONE POTENTIAL: Includes high and moderate potential map units. The following bedrock lithologic types are interpreted to have significant potential for crushed stone: granite and granitic gneiss. These bedrock types generally have physical characteristics suitable for producing Class A aggregates, inferred to be thick (greater than 100 feet), and covered by less than 25 feet of overburden. Most of the quarries located within the county are active or inactive dimension-stone or crushed-stone quarries. Dimension-stone quarries are located within rock types that are also suitable for crushed stone aggregate and, for the purpose of this project, are considered as identified crushed-stone resources.

NONSIGNIFICANT CRUSHED STONE POTENTIAL: Includes low and limited potential map units. Nonsignificant is a term used in this assessment to define mapped areas that contain any of the following conditions: lower quality bedrock units, high quality bedrock units with thick overburden (>25 feet), or areas where higher potential may exist but cannot be verified due to a lack of substantiating data which facilitate a lower probability rating. Lower quality bedrock units include gneiss and schist. These rock types do not have physical characteristics suitable for producing Class A aggregates. No quarries exist within these rock types.

Depth to Bedrock and Overburden: For the purpose of aggregate resource mapping, depth to bedrock is defined as the depth to competent—unweathered and solid—bedrock. Weathered bedrock and associated kaolin clay are considered part of the overburden and are excluded from the mapped aggregate thickness.

High Crushed-Stone Potential: Includes granite and/or granitic gneiss, exposed at the land surface or buried by less than 10 feet of overburden.

Moderate Crushed-Stone Potential: Includes granite and/or granitic gneiss buried beneath 10 to 25 feet of overburden.

Low Crushed-Stone Potential: Includes granite and/or granitic gneiss buried by 25 to 50 feet of overburden or gneiss and/or schist buried by 0 to 15 feet of overburden. Low potential also includes areas with little supporting data to substantiate a higher potential classification.

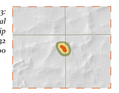
Limited Crushed-Stone Potential: Includes all rock types with >50 feet of overburden or lower quality bedrock with varying thickness of overburden (10 to >50 feet).

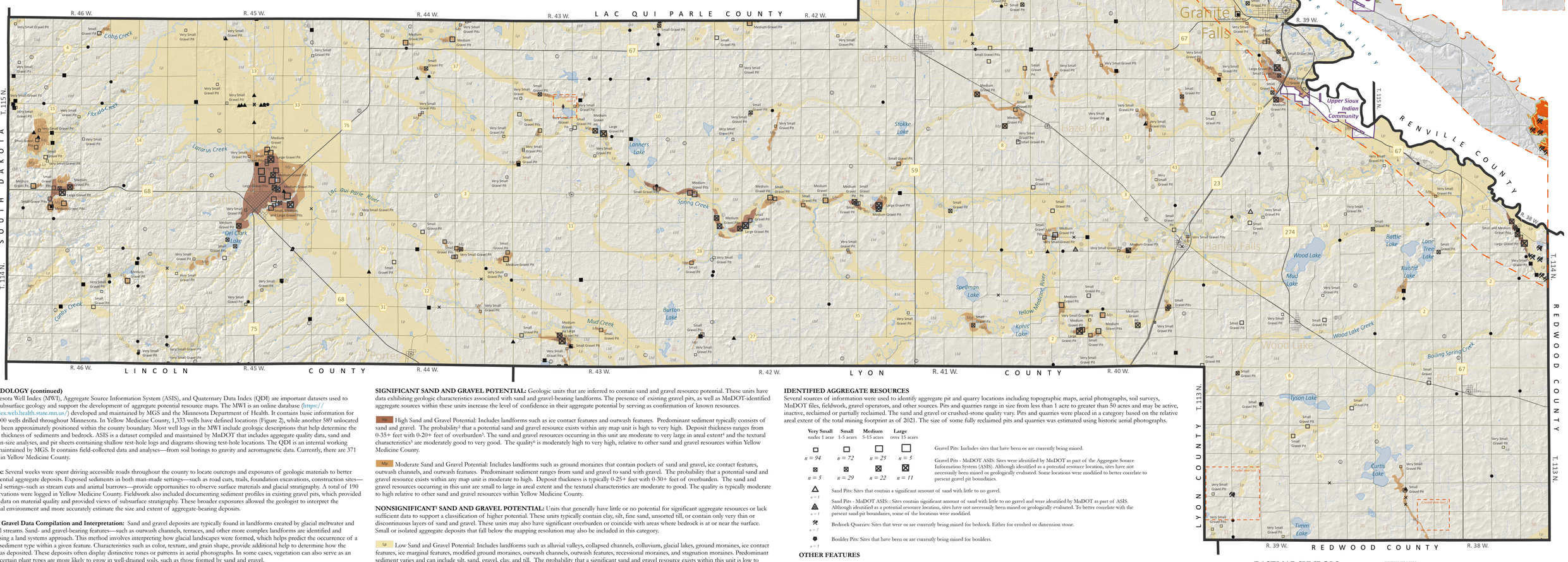
Crushed stone potential thematic insets
Near-surface bedrock deposits are mapped at 1:100,000 scale. Areas of resource potential are shown on the Minnesota River Valley breakout map below, along with three outlying locations depicted individually at varying scales, right.

Crushed stone inset 1:
Outlying crushed stone potential
Omro Township
T115 R43 S17
1:24,000

Crushed stone inset 2:
Outlying crushed stone potential
Posen Township
T113 R39 S29
1:200,000

Crushed stone inset 3:
Outlying crushed stone potential
Echo Township
T113 R38 S32
1:48000





METHODOLOGY (continued)

The Minnesota Well Index (MWI), Aggregate Source Information System (ASIS), and Quaternary Data Index (QDI) are important datasets used to interpret subsurface geology and support the development of aggregate potential resource maps. The MWI is an online database (https://mnwellindex.web.health.state.mn.us/) developed and maintained by MGS and the Minnesota Department of Health. It contains basic information for over 500,000 wells drilled throughout Minnesota. In Yellow Medicine County, 1,333 wells have defined locations (Figure 2), while another 589 unlocated wells have been approximately positioned within the county boundary. Most well logs in the MWI include geologic descriptions that help determine the depth and thickness of sediments and bedrock. ASIS is a dataset compiled and maintained by MnDOT that includes aggregate quality data, sand and gravel grain-size analyses, and pit sheets containing shallow test-hole logs and diagrams showing test-hole locations. The QDI is an internal working database maintained by MGS. It contains field-collected data and analyses—from soil borings to gravity and aeromagnetic data. Currently, there are 371 QDI sites in Yellow Medicine County.

Fieldwork: Several weeks were spent driving accessible roads throughout the county to locate outcrops and exposures of geologic materials to better define potential aggregate deposits. Exposed sediments in both man-made settings—such as road cuts, trails, foundation excavations, construction sites—and natural settings–such as stream cuts and animal burrows—provide opportunities to observe surface materials and glacial stratigraphy. A total of 190 field observations were logged in Yellow Medicine County. Fieldwork also included documenting sediment profiles in existing gravel pits, which provided additional data on material quality and provided views of subsurface stratigraphy. These broader exposures allowed the geologist to interpret the depositional environment and more accurately estimate the size and extent of aggregate-bearing deposits.

Sand and Gravel Data Compilation and Interpretation: Sand and gravel deposits are typically found in landforms created by glacial meltwater and non-glacial streams. Sand- and gravel-bearing features—such as outwash channels, terraces, and other more complex landforms are identified and mapped using a land systems approach. This method involves interpreting how glacial landscapes were formed, which helps predict the occurrence of a particular sediment type within a given feature. Characteristics such as color, texture, and grain shape, provide additional help to determine how the material was deposited. These deposits often display distinctive tones or patterns in aerial photographs. In some cases, vegetation can also serve as an indicator–certain plant types are more likely to grow in well-drained soils, such as those formed by sand and gravel.

Using geographic information systems, potential aggregate resources were delineated by layering and analyzing a variety of datasets. These included topographic maps (USGS 1:24,000), high resolution elevation data (LiDAR), shaded relief maps, aerial photographs, subsurface data, field observations, and the location and distribution of existing pits. Additional resources such as soil surveys, MWI, ASIS, and QDI were also incorporated to support interpretation. Aggregate resource information was mapped at a scale of 1:24,000 and compiled at a scale of 1:50,000.

Table 1: Classification of Sand and Gravel Potential

Characteristics	SIGNIFICANT RESOURCES		NONSIGNIFICANT RESOURCES	
	High Potential	Moderate Potential	Low Potential	Limited Potential
Surficial Geology Landforms	Ice contact feature; and outwash feature	Ground moraine; ice contact feature; outwash channel; and outwash feature	Alluvial valley; collapsed channel; colluvium; glacial lake; ground moraine; ice contact feature; ice marginal feature; modified ground moraine; outwash channel; outwash feature; recessional moraine; and stagnation moraine	Bedrock; collapsed channel; ground moraine; modified ground moraine; modified recessional moraine; outwash channel; recessional moraine; and stagnation moraine
Predominant Sediment Description	Sand and gravel	Sand and gravel to sand with gravel	Silt, sand, gravel, clay, and till	Till, clay, silt, sand, organics, and bedrock
Probability [2]	High to very high	Moderate to high	Low to moderately high	Very low to moderately low
Sand and Gravel Thickness (ft)	0-35+	0-25+	0-15+	0-10+
Overburden[3] Thickness (ft)	0-20+	0-30+	0-50+	0-50+
Sand and Gravel Deposit Size (areal extent[4])	Moderate to very large (10-30+ acres)	Small to very large (3-30+ acres)	Very small to moderate (<3-15 acres)	Very small to small (<3-5 acres)
Sand and Gravel Textural Characteristics[5]	Good to very good	Moderate to good	Poor to moderate	Very poor to moderately poor
Sand and Gravel Quality[6]	Moderately high to very high	Moderate to high	Very low to moderate	Very low to moderately low

SIGNIFICANT SAND AND GRAVEL POTENTIAL:

Geologic units that are inferred to contain sand and gravel resource potential. These units have data exhibiting geologic characteristics associated with sand and gravel-bearing landforms. The presence of existing gravel pits, as well as MnDOT-identified aggregate sources within these units increase the level of confidence in their aggregate potential by serving as confirmation of known resources.

Hsg High Sand and Gravel Potential: Includes landforms such as ice contact features and outwash features. Predominant sediment typically consists of sand and gravel. The probability[2] that a potential sand and gravel resource exists within any map unit is high to very high. Deposit thickness ranges from 0-35+ feet with 0-20+ feet of overburden[3]. The sand and gravel resources occurring in this unit are moderate to very large in areal extent[4] and the textural characteristics[5] are moderately good to very good. The quality[6] is moderately high to very high, relative to other sand and gravel resources within Yellow Medicine County.

Msg Moderate Sand and Gravel Potential: Includes landforms such as ground moraines that contain pockets of sand and gravel, ice contact features, outwash channels, and outwash features. Predominant sediment ranges from sand and gravel to sand with gravel. The probability that a potential sand and gravel resource exists within any map unit is moderate to high. Deposit thickness is typically 0-25+ feet with 0-30+ feet of overburden. The sand and gravel resources occurring in this unit are small to large in areal extent and the textural characteristics are moderate to good. The quality is typically moderate to high relative to other sand and gravel resources within Yellow Medicine County.

NONSIGNIFICANT[1] SAND AND GRAVEL POTENTIAL:

Units that generally have little or no potential for significant aggregate resources or lack sufficient data to support a classification of higher potential. These units typically contain clay, silt, fine sand, unsorted till, or contain only very thin or discontinuous layers of sand and gravel. These units may also have significant overburden or coincide with areas where bedrock is at or near the surface. Small or isolated aggregate deposits that fall below the mapping resolution may also be included in this category.

Lp Low Sand and Gravel Potential: Includes landforms such as alluvial valleys, collapsed channels, colluvium, glacial lakes, ground moraines, ice contact features, ice marginal features, modified ground moraines, outwash channels, outwash features, recessional moraines, and stagnation moraines. Predominant sediment varies and can include silt, sand, gravel, clay, and till. The probability that a significant sand and gravel resource exists within this unit is low to moderately high. The thickness of the deposits is typically 0-15+ feet with overburden thickness ranging from 0-50+ feet. The sand and gravel resources occurring in this unit are very small to small in areal extent and textural characteristics are very poor to moderately poor. The quality ranges from very low to moderately low relative to other sand and gravel resources within Yellow Medicine County. A limited potential rating includes the circumstance where characteristics are unknown; there was insufficient data to give a higher ranking; limited access to an area for further investigation; and/or no obvious landform-sediment association.

Ltd Limited Sand and Gravel Potential: Includes landforms such as bedrock, collapsed channels, ground moraines, modified ground moraines, modified recessional moraines, outwash channels, recessional moraines, and stagnation moraines. The deposits of this unit contain all or one of the following: till, clay, silt, sand, organics, and bedrock. The probability that a significant sand and gravel resource exists within this unit is very low to moderately low. The thickness of the deposits is typically 0-10+ feet with overburden thickness ranging from 0-50+ feet. The sand and gravel resources occurring in this unit are very small to small in areal extent and textural characteristics are very poor to moderately poor. The quality ranges from very low to moderately low relative to other sand and gravel resources within Yellow Medicine County. A limited potential rating includes the circumstance where characteristics are unknown; there was insufficient data to give a higher ranking; limited access to an area for further investigation; and/or no obvious landform-sediment association.

—— Footnotes on sand and gravel potential classification, Table 1

[1]**Nonsignificant:** Aggregate resources that do not meet the criteria for high or moderate aggregate potential according to the characteristics listed in Table 1. This is a relative classification that changes from one mapping region to another.
[2]**Probability:** The degree of certainty that aggregate exists within a map unit largely defined by the amount of available information. Many gravel pits verify the certainty for many map units classified as high potential.
[3]**Overburden:** The material that lies above the sand and gravel that must be removed to access a deposit.
[4]**Areal Extent:** The size, horizontal extent, or distribution of a unit (e.g., area in acres). This attribute describes the size of a deposit found within a given polygon.
[5]**Textural Characteristics:** Particle size distribution, defined as the percentage of gravel or sand vs. silt or clay (e.g., sieve analysis).
[6]**Quality:** The physical characteristics of the material, such as soundness (e.g., magnesium sulfate test), durability (L. A. Rattler test), and percent of deleterious rock types such as iron oxide, disintegrating rock, or unsound chert. Field observations supplement historic data.

IDENTIFIED AGGREGATE RESOURCES

Several sources of information were used to identify aggregate pit and quarry locations including topographic maps, aerial photographs, soil surveys, MnDOT files, fieldwork, gravel operators, and other sources. Pits and quarries range in size from less than 1 acre to greater than 50 acres and may be active, inactive, reclaimed or partially reclaimed. The sand and gravel or crushed-stone quality vary. Pits and quarries were placed in a category based on the relative areal extent of the total mining footprint as of 2021. The size of some fully reclaimed pits and quarries was estimated using historic aerial photographs.

Very Small (under 1 acre)	Small (1-5 acres)	Medium (5-15 acres)	Large (over 15 acres)	
n = 94	n = 72	n = 25	n = 5	Gravel Pits: Includes sites that have been or are currently being mined.
n = 5	n = 29	n = 22	n = 11	Gravel Pits - MnDOT ASIS: Sites were identified by MnDOT as part of the Aggregate Source Information System (ASIS). Although identified as a potential resource location, sites have not necessarily been mined or geologically evaluated. Some locations were modified to better correlate to present gravel pit boundaries.
n = 3				Sand Pits: Sites that contain a significant amount of sand with little to no gravel.
n = 1				Sand Pits - MnDOT ASIS: : Sites contain significant amount of sand with little to no gravel and were identified by MnDOT as part of ASIS. Although identified as a potential resource location, sites have not necessarily been mined or geologically evaluated. To better correlate with the present sand pit boundaries, some of the locations were modified.
n = 7				Bedrock Quarries: Sites that were or are currently being mined for bedrock. Either for crushed or dimension stone.
n = 1				Boulder Pits: Sites that have been or are currently being mined for boulders.

OTHER FEATURES

n = 43 — Borrow Pits: Contains other unconsolidated sediment like clay, silt, and clay with boulders and do not contain significant amounts of sand and/or gravel. Inchade sites that have been or are currently being mined.

n = 84 — Prospects: Indicates a site that has been prospected and/or leased by MnDOT. A prospected classification does not necessarily imply that the source is actually producing aggregate. In fact, it may only indicate an aggregate deposit that was at one time leased by MnDOT and whose aggregate quality has been tested, but from which no material has ever been excavated.

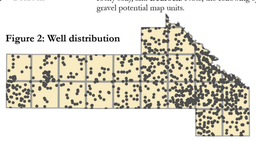
FIELD OBSERVATIONS

Sand and Gravel
Sand
Till
Silt/Clay
Bedrock

A total of 190 field observations were logged throughout the course of the project. Pits and quarries were also inventoried and include a total of 263 gravel pits, 84 prospects, 2 sand pits, 6 dimension stone quarries, 1 crushed stone quarry, 1 boulder pit, and 45 borrow pits. Surficial geologic sediment, glacial stratigraphy, and bedrock were observed in road cuts; stream exposures; excavations, such as judicial ditches, construction projects, and (cable, pipe, tiling); and animal holes. Field observations taken within pits and quarries may not be not shown separately on the map.

Field observations are symbolized by primary material type observed, and separated into five categories: **Sand and Gravel** (includes silty sand with gravel, sand with gravel, silty sand and gravel, sand and gravel, gravel and sand, cobbles, and boulders); **Sand** (includes fine sand, sand, and sand minor gravel); **Till** (includes till and sandy till); **Silt/Clay** (includes clay, silt, topsoil, and rocky soil); and **Bedrock**. Note, the following symbols may appear in different shades due to the over-layering of sand and gravel potential map units.

Figure 2: Well distribution



The distribution of the 1,333 wells (as of 07/22) located within Yellow Medicine County that were referenced to create this map. There are an additional 589 unlocated wells also referenced for this map though not shown here. Unlocated wells have not been field verified by the MGS for location accuracy.

BASEMAP SYMBOLS

Transportation Features
- MN State Highways (12)
- County Highways and Roads (51)
- Township and other Roads
- Municipal Roads
- Railroad Tracks

Physical Features
- Lakes
- Rivers & Streams
- Ditches

County Seat and Cities
- County Seat
- Cities

Bounding Features
- PLS Townships
- County
- PLS Sections

Printed Map Scale 1:100,000

Aggregate Potential maps are based on a 1:50,000 scale MN DNR resource assessment

0 0.5 1 2 3 4 5 Miles
0 0.5 1 2 3 4 5 6 7 8 Kilometers

REFERENCES:

Anderson, H.E., 2003, Aggregate Resources, Sand and Gravel Resources, Renville County, Minnesota. Report 363, Plate A. Minnesota Department of Natural Resources, Division of Lands and Minerals, Scale 1:100,000 with digital data. https://files.dnr.state.mn.us/lands_minerals/sr_plateA.pdf

Arends, H.E., 2024, Glacial history of the Late Wisconsinan Des Moines Lobe in Minnesota: Geomorphic, lithologic, and stratigraphic evidence for two advances. Master's thesis, University of Minnesota, 94 p.

Crotty, C., and Borchardt, N., 2022, Aggregate Resources, Sand and Gravel Resources, Redwood County, Minnesota. Report 369, Plate A. Minnesota Department of Natural Resources, Division of Lands and Minerals, Scale 1:100,000 with digital data. https://files.dnr.state.mn.us/lands_minerals/aggregate/redwood_sandandgravel.pdf

Minnesota Geological Survey, 2024, C-70, Geologic Atlas of Yellow Medicine County, Minnesota, University of Minnesota. https://hdl.handle.net/11299/57196

Nelson, S.L., Oberhelman, M.W., and Olson, D.J., 1990, Inventory of Industrial Mineral Pits and Quarries in Minnesota: Minnesota Department of Natural Resources, Division of Lands and Minerals Report 282, vol 2.

Patterson, C.J., 1994, Regional hydrogeologic assessment: Quaternary geology southwestern Minnesota. Minnesota Geological Survey. Retrieved from the University of Minnesota Digital Conservancy, https://hdl.handle.net/11299/122058

Patterson, C.J., 1999, Quaternary geology–upper Minnesota River basin, Minnesota, Part A. Minnesota Geological Survey. Retrieved from the University of Minnesota Digital Conservancy, https://hdl.handle.net/11299/59765

Rittenour, T.M., Cottes, J.F.P., and Arends, H.E., 2015, Application of single-grain OSL dating to ice-proximal deposits, glacial Lake Benson, west-central Minnesota, USA. Quaternary Geochronology, v. 30, p. 306–313. https://doi.org/10.1016/j.quageo.2015.02.025

Plate A, DNR Report 412
Aggregate Resource Potential in Yellow Medicine County, MN
Sand & Gravel and Crushed Stone Potential

Products of this project include print maps, GIS data, web services, and metadata: dnr.state.mn.us/lands_minerals/appropate_maps