



Aggregate Resources

2025 Evaluation Report

Program Evaluation Division
Office of the Legislative Auditor
State of Minnesota

Program Evaluation Division

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Members of the Legislative Audit Commission:

Over recent decades, policymakers have convened several task forces and committees that have made similar recommendations regarding the state's aggregate resources. We reviewed the recommendations made by the most recent task force in 2018 and concluded that little has been done to implement most of those recommendations. If the Legislature is interested in planning for the use of aggregate resources, it should consider implementing the task force's 2018 legislative recommendations and consider providing greater support and direction to local governments to implement recommendations directed towards those governments.

This limited-scope evaluation was conducted by Laura Schwartz, with assistance from Jodi Munson Rodríguez and Caitlin Zanoni-Wells. The Department of Natural Resources provided valuable assistance with this evaluation.

Sincerely,



Judy Randall
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Aggregate Resources

Little has been done in the past six years to implement most legislative task force recommendations from 2018.

Report Summary

Since the 1980s, policymakers have convened a number of task forces and committees to address issues related to aggregate resources. Most recently, in 2018, a legislative Aggregate Resources Task Force released a report with several recommendations for the Legislature, DNR, and local governments.

Aggregates Mapping

We reviewed Minnesota law and DNR data to determine whether the Legislature had implemented recommendations related to the Aggregate Resource Mapping Program.

- The task force recommended that the Legislature fund the Aggregate Resource Mapping Program at \$950,000 per year for ten years to enable DNR to complete maps throughout Minnesota. However, the Legislature has appropriated less than 20 percent of the recommended funding in the past eight fiscal years. (p. 14)
- The task force funding recommendation would have paid for the completion of six maps per year. With lower levels of funding, DNR completed only four maps between 2018 and 2024. Over the course of its roughly 40-year history, the Aggregate Resource Mapping Program has completed mapping for 23 counties and partially mapped 2. (pp. 14-15)

Local Government Planning, Zoning, and Permitting

We surveyed the planning and zoning administrator in each Minnesota county to learn about the extent to which counties have implemented the task force's recommendations for local government planning, zoning, and permitting.

- The task force recommended that local governments "review and update their comprehensive plans to evaluate the impact of zoning on current and future accessibility to aggregate resources." According to our survey, just over one-half of the

Background

Aggregates are bulk materials, including sand, gravel, and crushed stone, that are used in both private and public construction. Because aggregates are heavy and used in large volume, they are expensive to transport. It is, therefore, preferred to source aggregates near where they will be used. Aggregates have been mined in every county in Minnesota, but availability of aggregate resources is declining for a variety of reasons.

Statutes contain few requirements related to aggregate planning and protection, and most requirements that exist are directed to local governments. For example, certain local governments must develop land use plans that include information about aggregates.

Statutes do require the Department of Natural Resources (DNR) to identify potentially valuable aggregate resources and provide that information to local governments so that the governments can consider aggregate resource protection in their land use decisions. DNR performs this duty through its Aggregate Resource Mapping Program.

77 administrators who reported that their counties have comprehensive plans said those plans have provisions related to aggregate resource protection. (pp. 19-20)

- The task force recommended that, where aggregate information is available, local governments “assess the current and future impacts of all land use designations and easements that restrict access to aggregate resources.” While 76 county administrators reported that their counties have zoning ordinances, only 4 said those ordinances prohibit development on lands identified as containing aggregate resources. (pp. 20-21)
- The task force recommended “further study of statutory and regulatory changes to the process by which conditional use and interim use permits related to aggregate resources are issued and reviewed.” Such studies have not occurred, although the majority of survey respondents indicated their county requires conditional use permits (49) or interim use permits (21) for new aggregate mining operations. (pp. 21-22)

Aggregate Mine Reclamation

- The task force recommended that the state, local governments, and mining companies promote reclamation (preparing a former mining site for its next use) efforts. About three-quarters of the county administrators that responded to our survey reported that their counties require new aggregate mining operations to submit a reclamation plan. (pp. 23-24)
- The task force recommended that DNR’s reclamation handbook—published in 1992—be updated. The Legislature did not implement the task force’s funding recommendations, and DNR has not updated the handbook. (p. 24)

Conclusion ► If the Legislature is interested in planning for the use and protection of aggregate resources, it should consider implementing the legislative task force’s recommendations from 2018 and providing greater support and direction to local governments to implement recommendations directed towards those governments. (p. 27)

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Introduction

Aggregates are natural resources, including sand, gravel, and crushed stone, that are used in public and private construction. Over the last several decades, state leaders have raised concerns about the supply and distribution of these natural resources across Minnesota. In 2018, a legislative Aggregate Resources Task Force released a report with various recommendations related to aggregate resource planning, protection, and regulation.

In May 2023, the Legislative Audit Commission directed the Office of the Legislative Auditor to evaluate aggregate mining operations. We scoped this evaluation narrowly to address the following question:

- **To what extent have the 2018 recommendations of the legislative Aggregate Resources Task Force been implemented?**

We used a number of methods to conduct this limited-scope evaluation. We reviewed records from the task force, as well as reports from earlier state task forces, committees, and studies on the subject. We reviewed state law and data on tax revenues and aggregate resources. In addition, we communicated with staff from the Department of Natural Resources and stakeholder groups. Finally, we surveyed county planning and zoning administrators to learn about the extent to which counties are planning for the protection of aggregate resources.

In this limited-scope evaluation, we focused our research tasks narrowly. For example, because the recommendations of the task force did not relate to state or federal permitting, we did not examine those issues. In addition, due to resource and data limitations, we did not evaluate every aspect of each of the task force's recommendations. For instance, some of the task force's recommendations pertained to city and town governments, but we did not survey planning and zoning administrators from cities or towns.



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Chapter 1: Background

Aggregates are bulk materials, including sand, gravel, and crushed stone, that are used in construction. Aggregates may be composed of a variety of materials, including limestone and granite.

Both the public and private sectors rely on the availability of aggregates. These resources are used to build public roads, bridges, and other public infrastructure, as well as private residential and commercial projects. They are ingredients in both asphalt and concrete, and are also used raw, such as for railroad ballast or fill materials.



Aggregates are bulk materials, including sand, gravel, and crushed stone, that are used in construction.

The quality of the aggregate material determines its end use. For example, the standards for aggregates used in the base course—or bottom layer—of a road, are lower than for those used to create concrete. The Minnesota Department of Transportation (MnDOT) sets standards for the quality of aggregates used in asphalt and concrete to build and maintain public roads in the state.

Resource Availability

Given the prevalence of aggregates in both public and private infrastructure, aggregate availability is important to the state's growth and economy. For example, MnDOT reported that the state had about 143,100 miles of public roads, including 11,700 miles of state-maintained roads, and about 44,500 miles of county-maintained roads in 2024.¹ According to MnDOT, a single mile of asphalt in a rural area typically requires 20,700 cubic yards of aggregate material, and a single mile of gravel county road requires about 6,300 cubic yards of aggregates.²

Aggregate availability is declining due to resource depletion, development, natural scarcity, and other factors.

Availability of aggregate resources is declining for a variety of reasons. One reason is that aggregate resources are finite; as they are depleted, they cannot be replenished. According to a study by the Minnesota Geological Survey, the seven-county Twin Cities metropolitan area contained an estimated 5.7 billion tons of aggregates in about 1840.³ But, by the year 2000, resource levels

Aggregate availability is important to the state's economy.

¹ Miles reported are “centerline” miles—miles of single roadways, regardless of the number of lanes.

² The amount of aggregates necessary for each mile of roadway is dependent upon several factors; the figures presented are for typical two-lane roads.

³ D.L. Southwick, M. Jouseau, G.N. Meyer, J.H. Mossler, and T.E. Wahl, “Aggregate Resources Inventory of the Seven-County Metropolitan Area, Minnesota,” *Minnesota Geological Survey Information Circular* 46 (St. Paul: Metropolitan Council and University of Minnesota, May 9, 2000): 8.

had declined by 70 percent, to about 1.7 billion tons. That study estimated that, barring fundamental changes to land use policies and other practices, aggregates would effectively run out in the metropolitan area as soon as 2029.

Exhibit 1.1 estimates the quantity of aggregates produced (sold or used) in Minnesota between 1971 and 2022, according to the U.S. Geological Survey.⁴ These data show that in 2022, Minnesota produced 53.8 million metric tons of sand and gravel, valued at \$351 million; as well as 8.3 million metric tons of crushed stone, valued at \$100 million.

Availability of aggregates is also declining due to urbanization and land use decisions that limit mining. High-quality aggregate deposits become inaccessible when they are not identified or extracted before development has occurred on top of them. For example, according to a Department of Natural Resources (DNR) official, access to high-quality aggregates in the Twin Cities metropolitan area were lost in the 1950s when the Southdale Center, a shopping mall in the city of Edina, was built on top of them.

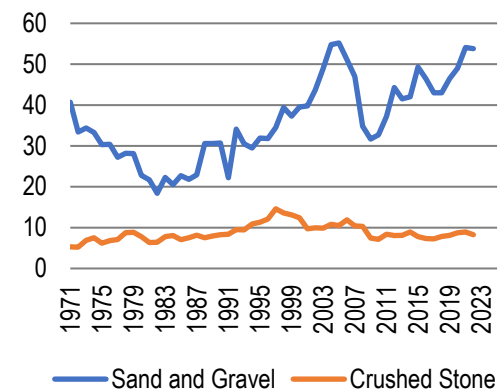
Decisions about where to locate certain public infrastructure, such as local roads, are within the purview of local government authorities. These local authorities may also choose to establish land use controls, such as zoning ordinances, that restrict the use of private property. These decisions can limit the ability to access aggregates.

Landowners may also take actions that limit access to aggregates, which may be outside of local or state control. Notably, local or state officials may not have control over whether landowners enroll their lands in federal conservation easement programs. Such conservation easements may block access to aggregate resources. According to a DNR official, farmers may seek tax reductions through easements on less agriculturally productive farmland, which may be the same land that contains aggregate resources. Because lands that contain sand and gravel are not suitable for agriculture, they may not have been plowed over, and thus may contain native prairie habitat that is attractive for conservation.

Exhibit 1.1

Aggregate Production in Minnesota, 1971-2022

Quantity Produced
(in Millions of Metric Tons)



Source: Office of the Legislative Auditor, using data from the U.S. Geological Survey.

⁴ The U.S. Geological Survey collects data on sand and gravel and/or crushed stone mined by producers that voluntarily complete a survey; it estimates data for nonrespondents using data on mine worker hours. U.S. Geological Survey, *USGS Aggregates Time Series Data by State, Type, and End Use, 1971-2022*, <https://www.usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use>, accessed September 27, 2024.

Although aggregates have been mined in every county in Minnesota, these resources are in low supply in some areas of the state due to natural scarcity. For example, a DNR official told us the “Anoka Sand Plain” in the northern metro area is naturally scarce in aggregates.

Transporting aggregates over long distances can greatly increase the cost of a public project, as well as create negative impacts on the environment and public roadways.

Because aggregates are heavy and used in large volume, they are expensive to transport. MnDOT estimates that the cost to transport aggregates by road can cost as much as \$.72 per ton mile.⁵ Aggregates are used in many public infrastructure projects—including roads and bridges—so the cost of transporting these resources are often paid by taxpayers. Fuel emissions from transporting these heavy loads have a negative impact on air quality. Transporting aggregates also increases the wear and tear on roadways, which may increase the need for road maintenance. Because of the financial and environmental costs associated with transporting heavy aggregates, it is preferred to source aggregate resources near where they will be used.

The cost of transporting aggregates is often borne by taxpayers.

Oversight

In Minnesota, there is no central agency that oversees aggregate mining. Rather, planning and regulatory activities are decentralized across numerous agencies and levels of government.

Planning

State law contains few requirements related to aggregate planning and protection, and most requirements that do exist are directed to local governments.

State law requires only certain local governments to conduct planning activities to protect aggregate resources.

Twin Cities Metropolitan Area Local Governments. Minnesota’s Metropolitan Land Planning Act of 1976 generally requires counties, cities, and towns in the seven-county Twin Cities metropolitan area to develop comprehensive land use plans and update those plans at least once every ten years.⁶ The Metropolitan Council is responsible for reviewing the plans.⁷ In 2001, the Legislature amended statutes to require local

⁵ Transportation costs are affected by numerous factors, including the capacity of the truck and amount of traffic. This estimate is based on a small capacity truck completing a short trip with stops.

⁶ *Laws of Minnesota* 1976, chapter 127, sec. 8, codified as *Minnesota Statutes* 2024, 473.864. The metropolitan area counties are: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

⁷ *Minnesota Statutes* 2024, 473.175, subd. 1.

governments in the metropolitan area to include “goals, intentions, and priorities concerning aggregate” in their comprehensive plans, using aggregate mapping data published by the Minnesota Geological Survey the previous year.⁸ Beyond this requirement, statutes do not specify how local governments in the metropolitan area should plan for the protection of aggregate resources.

Outstate Local Governments. Unlike metropolitan area local governments, state law does not require local governments in outstate Minnesota to prepare comprehensive land use plans. But, for local governments in outstate Minnesota that choose to prepare such plans, state law specifies certain subjects that they must consider; those subjects do not include aggregate resources.⁹

The primary state law that governs aggregate resource planning and protection in outstate Minnesota is the Aggregate Planning and Protection Act of 1984. The stated purpose of the law is “to protect aggregate resources; to promote orderly and environmentally sound development; to spread the burden of development; and to introduce aggregate resource protection into local comprehensive planning and land use controls.”¹⁰

The act required DNR to identify potentially valuable aggregate resources outside of the Twin Cities metropolitan area.¹¹ The act also required DNR to provide the aggregate resources data to local government planners and engineers, and for county planners to provide it to relevant landowners.

In addition, the act required local governments that received aggregate resources data from DNR to “consider the protection of identified and important aggregate resources in their land use decisions.”¹² But, the act did not require those local governments to incorporate the data into their comprehensive land use plans or other land use controls, if they had them. We discuss DNR’s efforts to identify aggregate resources through its Aggregate Resource Mapping Program and local governments’ planning efforts more in Chapter 2.



Purposes of the Aggregate Planning and Protection Act

- Protect aggregate resources
- Promote orderly and environmentally sound development
- Spread the burden of development
- Introduce aggregate resource protection into local comprehensive planning and land use controls

⁸ *Laws of Minnesota* 2001, First Special Session, chapter 8, art. 3, sec. 73, codified as *Minnesota Statutes* 2024, 473.859, subd. 1(d); and Southwick, et al., “Aggregate Resources Inventory of the Seven-County Metropolitan Area, Minnesota.”

⁹ *Minnesota Statutes* 2024, 394.23 and 394.231.

¹⁰ *Laws of Minnesota* 1984, chapter 605, codified as *Minnesota Statutes* 2024, 84.94.

¹¹ The act presumably excluded mapping of the metropolitan area because the Minnesota Geological Survey had completed the first aggregate maps of that area the year before. Metropolitan Council, *Aggregate Resources in the Twin Cities Metropolitan Area* (St. Paul, May 1983).

¹² *Laws of Minnesota* 1984, chapter 605, sec. 1, codified as *Minnesota Statutes* 2024, 84.94, subd. 4.

Aggregate Resources Planning Requirements

Type of Local Government	Statutory Requirement
Metropolitan Area Local Governments	Required to prepare comprehensive plans and include “goals, intentions, and priorities concerning aggregate” in those plans
Outstate Local Governments with Aggregate Resources Data	Land use plans are not required; but, are required to “consider the protection of identified and important aggregate resources in their land use decisions”
Outstate Local Governments without Aggregate Resources Data	No aggregate planning requirements

Zoning and Permitting

Similar to planning, state law does not assign authority over aggregate mine permitting to a single agency. Rather, various state or federal agencies may hold regulatory authority over various aspects of an aggregate mining operation. For example, the Minnesota Environmental Quality Board establishes parameters that dictate when an environmental review is required. The Minnesota Pollution Control Agency may need to issue permits related to industrial wastewater, stormwater, construction stormwater, air emissions, or hazardous materials. DNR may need to issue water appropriation permits, public waters work permits, or burning permits. And, the U.S. Army Corps of Engineers may need to issue permits for construction activity occurring in the nation’s waters.

Through their zoning authority, local governments may choose to permit aggregate mining operations in certain areas.

In addition to the state and federal agencies listed above, local governments—including counties, towns, and cities—have authority under state law to permit aggregate mining operations, if they choose to do so. State law authorizes local governments to adopt land use controls, such as zoning ordinances.¹³ Zoning ordinances may establish zoning districts and regulate land use in those districts. State law also allows local governments to issue permits for specific uses (such as aggregate mining) if certain conditions are met. Through these permits, local governments may impose conditions or restrictions that address potential mining operation issues, such as hours of operation, noise, traffic, or dust.

Because individual local governments have authority to establish their own zoning requirements, requirements may vary across jurisdictions within a county and from county-to-county. For example, some counties have not adopted zoning ordinances, but individual cities or towns within them have done so. In such cases, the cities or towns with zoning ordinances may (or may not) require aggregate mining operations to obtain permits from them. On the other hand, counties that have adopted zoning ordinances may require aggregate mining operations in unincorporated portions of the county to obtain permits from the county, while operations in incorporated areas of the county must follow the requirements of those cities or towns.

¹³ Minnesota Statutes 2024, 394.21, subd. 1; and 462.357, subd. 1.

Aggregate Production Tax

In 1961, the Legislature passed the state's first aggregate production tax, which was called a "gravel tax" at the time.¹⁴ That law allowed just one county (Clay) to impose a tax on gravel extraction. Over the following decades, the Legislature amended the tax law several times, both to flesh out its requirements and to allow several more counties—and eventually all counties—to impose the tax.

Minnesota's aggregate production tax law does not impose a uniform tax across all counties; rather, it allows individual counties to choose whether to impose the tax in their counties.

In addition to allowing county boards to choose whether to impose the tax, state law also allows select towns in Otter Tail and St. Louis counties to impose the tax if their counties choose not to do so.¹⁵

State law does, however, establish a uniform rate for the tax—21.5 cents per cubic yard or 15 cents per ton, in most cases.¹⁶ It also establishes whether the exporting or importing county receives the proceeds of the tax, which depends in part on the mode of transportation—including waterway, railway, or public road—used to move the aggregates.

State law also establishes how the tax proceeds must be distributed.¹⁷ Up to 5 percent may be retained by the county auditor annually for administrative purposes. Of the remainder:

- 42.5 percent is directed to the county for road, highway, and bridge construction, reconstruction, and maintenance.
- 42.5 percent is directed to the city or organized town where the mine is located (or county, if located in an unorganized town) for road, highway, and bridge construction, reconstruction, and maintenance.
- 15 percent is directed to a special reserve fund for the restoration of abandoned pits, quarries, or deposits in the county, or for other unmet reclamation, conservation, or environmental needs, if there are no such sites in the county.

¹⁴ *Laws of Minnesota* 1961, chapter 605.

¹⁵ *Minnesota Statutes* 2024, 298.75, subds. 2, 9, and 11.

¹⁶ *Ibid.*, subd. 2.

¹⁷ *Minnesota Statutes* 2024, 298.75, subd. 7.

History

Since the 1980s, policymakers have convened a number of task forces and committees to address issues related to aggregate resources. Although some of the issues that these entities examined have varied over time, others have remained consistent—notably, planning for the long-term use of aggregate resources and mapping the location of aggregate resources across the state.

Policymakers have made **similar recommendations** related to aggregate planning and protection over several decades.

Legislative Advisory Committee. The Aggregate Planning and Protection Act of 1984 established an advisory committee on aggregate resources in the metropolitan area to, among other things:

- Identify whether available information on aggregate resources was adequate to allow for “reasoned decisions” on whether to include protection of aggregate resources in local comprehensive plans and land use controls.
- Recommend a procedure for identifying the degree of protection desirable for the long-term availability of aggregate resources.
- Recommend a method for long-term aggregate resource protection.¹⁸

In its 1985 report, the committee concluded that aggregate preservation was not needed at the time, but recommended that the Legislature review the possible need for preservation periodically, such as every ten years.¹⁹

Governor’s Task Force on Sand and Gravel Pit Reclamation. In 1987, Governor Perpich directed the DNR commissioner to convene a task force to review issues related to sand and gravel pit reclamation. Task force recommendations published in 1989 led DNR to develop a handbook on reclaiming sand and gravel pits, which it published in 1992.²⁰

Mineral Coordinating Committee. In 1987, the Legislature established the Mineral Coordinating Committee to “plan for diversified mineral development.”²¹ The Legislature charged the committee with preparing a ten-year plan to increase knowledge of the state’s mineral potential, stimulate the development of mineral resources, and promote basic minerals research. It also required the committee to submit funding

¹⁸ *Laws of Minnesota* 1984, chapter 605, sec. 2, codified as *Minnesota Statutes* 2024, 84.94.

¹⁹ Aggregate Resources Advisory Committee, *Protecting Aggregate Resources in the Twin Cities Metropolitan Area: Report of the Aggregate Resources Advisory Committee to the Minnesota Legislature* (St. Paul, 1985).

²⁰ Minnesota Department of Natural Resources, *A Review of Regulations Regarding the Reclamation of Sand and Gravel Pits in Minnesota: Report by the Task Force on Sand and Gravel Pit Reclamation to the Governor* (St. Paul, January 1989); and *A Handbook for Reclaiming Sand and Gravel Pits in Minnesota* (St. Paul, July 1992).

²¹ *Laws of Minnesota* 1987, chapter 386, art. 7, sec. 2, codified as *Minnesota Statutes* 2024, 93.0015.



Current Membership of the Mineral Coordinating Committee

- The commissioners of DNR, the Minnesota Pollution Control Agency, and the Department of Iron Range Resources and Rehabilitation
- The director of the Minnesota Geological Survey
- The director of the Natural Resources Research Institute
- The dean of the University of Minnesota Institute of Technology
- Four individuals appointed by the governor, one of each whom must represent labor, and the iron ore and taconite, nonferrous metallic minerals, and industrial minerals industries in the state.

Minnesota Statutes 2024, 93.0015

priorities for specific minerals programs to the Legislature every two years. The 1987 Legislature appropriated \$1 million to accelerate DNR's geological mapping of the state, among other priorities as suggested by the committee. (The Legislature, for the most part, stopped funding projects sponsored by the committee in 2011, which we discuss more in Chapter 2.)

Governor's Task Force on Mining and Minerals. In 1993, Governor Carlson established a Governor's Task Force on Mining and Minerals. In 1998, the task force released a report, which stated that little had been accomplished with regard to aggregate resource planning or protection since the passage of the Aggregate Planning and Protection Act of 1984.²² The report recommended creating a legislative task force that would, among other things, examine issues related to aggregate planning, protection, and resource inventories.

First Legislative Aggregate Resources Task Force. Just a few months after the Governor's task force released its 1998 report, the Legislature adopted its recommendation to convene another task force. The Legislature required the new task force to "examine current and projected issues concerning the need for and use of the state's aggregate resources."²³ The Legislature also required the new task force to seek input from stakeholders on a range of issues, including resource inventory, resource depletion, and competing land uses and land use planning. The task force heard from a range of stakeholders, including representatives from local governments; the aggregate industry; conservation organizations; the departments of Natural Resources, Transportation, and Revenue; and the Minnesota Geological Survey. In its 2000 report, the task force recommended that statutes require local governments to address issues related to aggregate resources in their comprehensive planning.²⁴ It also recommended expediting mapping of the state's aggregate resources, so that mapping of all counties be completed by the end of Fiscal Year 2006.

Second Legislative Aggregate Resources Task Force. In 2016, 16 years after the previous task force released its report, the Legislature convened a second task force.²⁵ It charged the new task force with studying and providing recommendations on the progress and needs of the state's aggregate mapping and the use of state funds to preserve aggregate reserves, among other things. Like the previous task force, this task force heard from a number of stakeholders, including representatives from local governments; the aggregate industry; and the departments of Natural Resources and Transportation. In 2018, the task force released its recommendations, which we include in Appendix A of this report.

²² Governor's Task Force on Mining and Minerals, *February 1998 Recommendations* (St. Paul, 1998).

²³ *Laws of Minnesota* 1998, chapter 401, sec. 50.

²⁴ Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, February 1, 2000).

²⁵ *Laws of Minnesota* 2016, chapter 189, art. 3, sec. 50.

Several of those recommendations were similar to recommendations made by previous task forces related to planning, protection, and mapping of aggregate resources. The extent to which those recommendations have been implemented are the focus of this report; we examine them more closely in Chapter 2.

The timeline in Exhibit 1.2 contextualizes the various task forces and committees with other key policy actions related to aggregate resources. As the timeline shows, the Legislature established the Minnesota Geological and Natural History Survey of the State in 1872 with one of its goals being to create “a complete account of the mineral kingdom” of the state.²⁶ In 1983, the Metropolitan Council published the first inventory (map) of aggregate resources in the seven-county metropolitan area.²⁷ The following year, the Legislature passed the Aggregate Planning and Protection Act, which required DNR to begin identifying aggregate resources in outstate Minnesota.²⁸ In 2000, the Minnesota Geological Survey and the Metropolitan Council published updated maps of aggregate resources in the seven-county metropolitan area.²⁹

Exhibit 1.2

Timeline of Aggregate Regulation, Planning, Protection, and Mapping in Minnesota

1872

Minnesota Geological Survey Established. The Legislature established the Minnesota Geological Survey within the University of Minnesota, with a charge to complete a survey of the “mineral kingdom” of the state.

1961

Tax Established. The Legislature passed a “gravel tax,” which, at the time, allowed just one county to impose a tax on gravel extraction.

1983

First Metropolitan Area Map Completed. The Metropolitan Council published the first inventory (map) of aggregate resources in the Twin Cities metropolitan area, along with a projection of long-term aggregate demand and supply.

1984

Aggregate Planning and Protection Act and the Advisory Committee Established. The Legislature passed the act.

1987

Mineral Coordinating Committee Established. The Legislature established a policy on mineral diversification “to provide for the diversification of the state’s mineral economy through long-term support of mineral exploration, evaluation, environmental research, development, production, and commercialization.”

(Continued on the next page.)

²⁶ *Laws of Minnesota* 1872, chapter 30, sec. 2. Today, the Minnesota Geological Survey is a research institution within the University of Minnesota. According to its website, the institution “serves the people of Minnesota by providing systematic geoscience information to support stewardship of water, land, and mineral resources,” <http://cse.umn.edu/mgs/about-us>, accessed April 22, 2024.

²⁷ Metropolitan Council, *Aggregate Resources in the Twin Cities Metropolitan Area* (St. Paul, May 1983).

²⁸ *Laws of Minnesota* 1984, chapter 605, sec. 1, codified as *Minnesota Statutes* 2024, 84.94.

²⁹ Southwick, et al., “Aggregate Resources Inventory of the Seven-County Metropolitan Area, Minnesota.”

Exhibit 1.2 (continued)

Timeline of Aggregate Regulation, Planning, Protection, and Mapping in Minnesota

1987	Governor's Task Force on Sand and Gravel Pit Reclamation Established. Governor Perpich convened a task force to review issues related to reclamation of sand and gravel pits. The task force released its report in 1989.
1997	Governor's Task Force on Mining and Minerals Established. Governor Carlson created the task force in 1993. The task force met in 1997, and it issued a report recommending the establishment of a separate task force to examine a number of specific aggregate issues.
1998	First Legislative Aggregate Resources Task Force Created. The Legislature established a task force. In its 2000 report, the task force recommended that DNR expedite its Aggregate Resource Mapping Program, among other things.
2000	Updated Metropolitan Area Map Completed. The Minnesota Geological Survey, the Metropolitan Council, and DNR published an updated inventory (map) of aggregate resources in the Twin Cities metropolitan area.
2001	Tax Expanded. The Legislature expanded the aggregate material removal and production tax (formerly called the gravel tax) allowing any county board to impose it.
2011	Mineral Coordinating Committee Funding Discontinued. The Legislature largely discontinued funding for projects sponsored by the committee, effectively initiating a hiatus of DNR's Aggregate Resource Mapping Program.
2016	Second Legislative Aggregate Resources Task Force Created. The Legislature established a second legislative task force to investigate various aggregate issues. The task force published its recommendations in 2018.

Source: Office of the Legislative Auditor.

Chapter 2: Progress on Task Force Recommendations

The Aggregate Resources Task Force issued a number of recommendations in 2018, as we discussed in Chapter 1. In this chapter, we summarize those recommendations and discuss, to the extent possible, what progress has been made on them.

Little progress has been made on most of the legislative Aggregate Resources Task Force’s 2018 recommendations.

Most of the task force’s recommendations have not been implemented.¹ In the following sections, we group the task force’s seven recommendations by subject matter (mapping, local governments, and production tax) and present our findings. At the end of the chapter, we provide our own conclusion. To review the task force’s recommendations in full, see either Appendix A of this report or the task force’s report: [Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* \(St. Paul, January 15, 2018\).](#)²

Mapping Program

The task force made several recommendations related to the Department of Natural Resources’ (DNR’s) Aggregate Resource Mapping Program. As we discussed in Chapter 1, the Aggregate Planning and Protection Act of 1984 requires DNR to identify aggregate resources in outstate Minnesota.³

DNR creates county aggregate maps by gathering and analyzing existing data and by conducting field work, such as observing the geology of an area, drilling, and talking with landowners and mine operators. This work is conducted by DNR geologists and cartographers. The finished products include PDF maps as well as digital geospatial maps and datasets, which contain a wide range of information, including the location of aggregate deposits, test results from drilled samples, the locations of existing pits, and physical features, among other things. DNR makes the maps and data publicly available for free on its website.⁴

¹ Due to resource or data constraints, we did not evaluate every aspect of each of the task force’s recommendations.

² See <https://www.lcc.mn.gov/inactive/artf/meetings/2017%20ARTF%20Final%20Report.pdf>.

³ *Laws of Minnesota* 1984, chapter 605, sec. 1, codified as *Minnesota Statutes* 2024, 84.94, subd. 3.

⁴ See https://www.dnr.state.mn.us/lands_minerals/aggregate_maps/index.html.

Funding

The task force recommended that the Legislature fully fund DNR's Aggregate Resource Mapping Program so that mapping of the entire state could be completed within ten years.⁵ When the task force released its recommendations in 2018, DNR had completed mapping of 19 of Minnesota's 80 outstate counties. The task force recommended funding the program at \$950,000 per year for ten years, which would enable DNR to map about six counties per year. The task force recommended working with the Legislature to identify a funding mechanism, such as the General Fund or Legislative-Citizen Commission on Minnesota Resources.



Task Force Recommendation

The Legislature should fund DNR's Aggregate Resource Mapping Program to complete mapping in all counties across the state.

The Legislature has appropriated less than 20 percent of the funding recommended by the task force for DNR's Aggregate Resource Mapping Program.

Since the task force released its recommendations in 2018, the Legislature has appropriated funding to DNR's Aggregate Resource Mapping Program only intermittently and at levels lower than those recommended by the task force, as Exhibit 2.1 shows.

Exhibit 2.1

Aggregate Resource Mapping Program Dedicated Funding, Fiscal Years 2018-2025

Fiscal Year	Funding Source	Amount Appropriated	Amount Recommended
2018	–	\$ 0	\$ 950,000
2019	–	0	950,000
2020	Environment and Natural Resources Trust Fund	700,000	950,000
2021	–	0	950,000
2022	–	0	950,000
2023	Environment and Natural Resources Trust Fund	500,000	950,000
2024	–	0	950,000
2025	–	0	950,000
Total		\$1,200,000	\$7,600,000

Source: Office of the Legislative Auditor.

The Legislature appropriated funding to the program only for fiscal years 2020 and 2023 through the Environment and Natural Resources Trust Fund.⁶ Additionally, a DNR official told us for each of fiscal years 2023 and 2024, DNR chose to direct about \$50,000 of its base General Fund appropriation from its Land and Minerals Division, which houses the Aggregate Resource Mapping Program, to the program. The official said DNR was able to direct funding to the mapping program due to an increase in base funding for the division and savings from staff retirements.

⁵ See Task Force Recommendation 1 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 5.

⁶ *Laws of Minnesota* 2019, First Special Session, chapter 4, art. 2, sec. 2, subd. 3(h) and *Laws of Minnesota* 2022, chapter 94, sec. 2, subd. 10(a).

With little dedicated funding, progress in mapping the state’s aggregate resources has been slow.

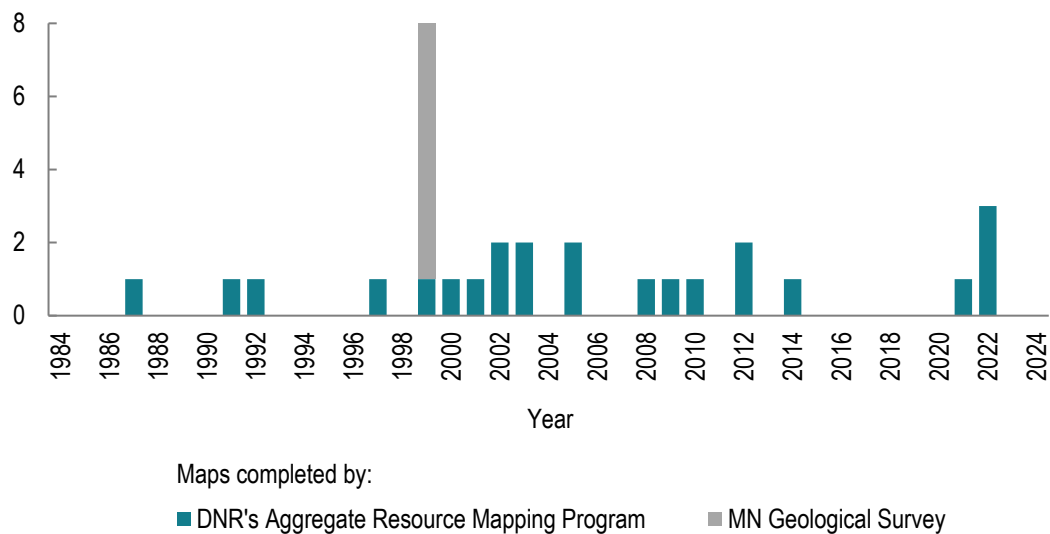
As we discussed in Chapter 1, Minnesota has been working to map the aggregate resources of the state for many years—as far back as 1872, when the Legislature established the Minnesota Geological Survey to map the “mineral kingdom” of the state.⁷ But over the course of its roughly 40-year history, DNR’s Aggregate Resource Mapping Program has completed mapping of only 23 counties and has partially mapped 2 others.

As Exhibit 2.2 shows, between 1984 and 1999, the program completed mapping for only five counties. In 2000, the first Aggregate Resources Task Force recommended making a special appropriation to the program so that mapping of the state could be expedited and completed no later than the end of Fiscal Year 2006. But, by 2006, the program had mapped only eight more counties. Twelve years later, in 2018, the program had completed mapping for six additional counties, and the next Aggregate Resources Task Force released its recommendations.

Exhibit 2.2

DNR’s Aggregate Resource Mapping Program completed mapping for 23 counties between 1984 and 2023.

Number of County Maps Completed Each Year



Notes: The Minnesota Geological Survey completed updated mapping of the seven Twin Cities metropolitan area counties in 1999 and, with the Metropolitan Council and DNR, published that data in 2000. The grey bar indicates those seven metropolitan area counties. DNR staff completed the majority of the work for county maps indicated by teal bars, although the department contracted out work for two counties. As of mid-2024, DNR had also mapped portions of St. Louis and Yellow Medicine counties, which are not reflected in the exhibit.

Source: Office of the Legislative Auditor.

⁷ *Laws of Minnesota 1872*, chapter 30.

The program has been slow to complete mapping, at least in part, because it has received only intermittent funding. Through 2009, the program primarily received funding through legislative appropriations recommended by the Mineral Coordinating Committee (MCC). Exhibit 2.3 lists the counties mapped with MCC-recommended funding through that year.⁸ A DNR official told us that when the Legislature stopped funding MCC-recommended projects, the aggregate mapping program took roughly a seven-year hiatus.

A DNR official told us that inconsistent funding for staffing has been the biggest challenge to the program. The department reported that the task force’s recommended funding level of \$950,000 would have supported 6.5 full-time-equivalent staff for the program, as well as travel for field work, drilling, and aggregate quality testing. A department official told us that in Fiscal Year 2023, the program employed 2.25 full-time-equivalent staff, which included two geologists and one cartographer.

The Mineral Coordinating Committee recommended funding to map 12 outstate counties, completed from 1991 through 2009.

Year	County
1991	Wright
1992	Isanti
1999	Blue Earth
2000	Nicollet
2001	Chisago
2002	Benton and Dodge
2003	Renville
2005	Itasca
2006	Meeker
2008	Mille Lacs
2009	Carlton

Source: Office of the Legislative Auditor.

Prioritization

The task force also recommended that—with an increase in funding—DNR investigate the possibility of adopting a regional mapping approach, if such an approach could lead to financial and time efficiencies.⁹ A DNR official told us that the program has not adopted a regional approach because it did not receive the recommended increase in funding to investigate or implement such an approach.



Task Force Recommendation

DNR should investigate whether a regional mapping approach could create financial and time efficiencies.

The task force’s recommendation, however, was not actually consistent with state law. The Aggregate Planning and Protection Act requires the program to prioritize its efforts on “areas of the state where urbanization or other factors are or may be resulting in a loss of aggregate resources to development.”¹⁰

⁸ The Mineral Coordinating Committee also sponsored mapping by the Minnesota Geological Survey of the seven-county metropolitan area in 1999. After 2011, the Mineral Coordinating Committee sponsored one more project, in 2014.

⁹ See Task Force Recommendation 1 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 5.

¹⁰ *Minnesota Statutes* 2024, 84.94, subd. 3(a).

DNR's Aggregate Resource Mapping Program prioritizes mapping counties based on the order in which they request to be mapped, which is not consistent with state law.

Since the early 2000s, DNR has generally required counties interested in having their aggregate resources mapped to pass a board resolution formally requesting a map. The program prioritizes the counties on its waitlist based on the date of their county resolution.

According to program data, 47 outstate counties have received or requested mapping data; 33 have not. The counties that requested mapping and have received their maps waited an average of 16 years for them. As of 2024, the counties that are still waiting have waited an average of seven years. Of those counties that are waiting for mapping to start, Becker County has been waiting the longest, at 21 years. See Appendix B for the status of each county's map.

**Becker County
has been waiting
21 years
for its aggregate
resources to be mapped.**

A DNR official told us that, given the length of the waiting list, the program has not proactively reached out to counties to inform them about the program or its process for putting counties on the waiting list. The official said it is difficult to tell interested counties that the program does not know how long counties may have to wait for their maps. While this is understandable, it could mean that some counties are unaware of the program or its waiting list process.

Outreach and Education



Task Force Recommendation

The task force also recommended that DNR use its mapping information “to provide technical assistance as needed to local units of government in making sound land use decisions that preserve the availability of aggregate resources.”¹¹

DNR should use its mapping data to provide technical assistance to local governments so they can make sound land use decisions that preserve aggregate resources.

DNR has provided technical assistance to local governments and education to organization representatives upon request.

We asked DNR about how the department has used data from the Aggregate Resource Mapping Program to provide technical assistance to local governments. A DNR official said that program staff provide technical assistance three to four times per year. That assistance typically consists of responding to requests to present or speak to counties or organizations that represent counties. For example, in 2023, at one county's

¹¹ See Task Force Recommendation 3 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 7.

request, program staff met with the county to discuss how the county should manage its aggregate resources while waiting for its map. In 2024, at the request of another county, program staff met with a group of septic contractors to discuss the county's shortage of septic sand sources.

A DNR official told us that the mapping information is intended to provide local government planners with an unbiased source of information. For example, consider a case in which a local government must decide whether development may occur on top of a local aggregate deposit. Without an impartial map that identifies the location of important local aggregate resources, local decisionmakers may be forced to make a decision based only on the information presented by the vested sides of the issue. But, if decisionmakers had access to a DNR-produced aggregate map of their area, then they might be able to see, for example, that the local aggregate deposit in question likely did not contain high-value resources, and that another deposit could better serve the local area. Or,



Without the mapping, there's no way to engage in a process to protect [aggregate] resources.

— County Planning and Zoning Administrator



There is a direct connection with having aggregate resources mapped and made available benefitting clean water, through affordable septic maintenance and replacement and proper planning and protection of sensitive resources. We've experienced some pushback from state agency staff at our narrative that having mapped aggregate resources would be beneficial to our water resources. It would be great if somebody could educate all of the state agencies about aggregate resources and remove the stigma that they are automatically damaging to the environment.

— County Planning and Zoning Administrator

decisionmakers might have an easier time denying the development if they could use DNR's impartial maps to show local residents that the aggregate deposit in question was the only local source of the resource.

The same official told us that DNR's aggregate maps serve as an important tool in conservation planning. If, for example, local government officials and landowners were better aware of the location of important local aggregate resources, then they could make more informed decisions about which areas to protect through conservation measures, such as easements, and which to preserve for aggregate mining through other types of land use controls.

Local Governments

The task force made four recommendations to local governments, encouraging them to consider the protection of aggregate resources in their planning, zoning, and permitting activities, as well as emphasizing mine reclamation. We surveyed the planning and zoning administrator in each Minnesota county to learn about the extent to which counties have implemented the task force's recommendations.¹² In this section, we discuss the activities that county staff reported that their counties have implemented.

¹² We received responses from staff at 83 of Minnesota's 87 counties, for a response rate of 95 percent.

Planning

The task force recommended that local governments “review and update their comprehensive plans to evaluate the impact of zoning on current and future accessibility to aggregate resources.”¹³ In its report, the task force also explained the reasoning for its recommendation, saying:

Comprehensive planning is essential to preserving access to aggregate resources. A comprehensive understanding of where aggregate is located benefits counties and municipalities in the zoning and planning process by promoting orderly and environmentally sound development.¹⁴

As we discussed in Chapter 1, state law does not require all local governments to develop comprehensive plans. It requires only local governments in the Twin Cities metropolitan area to do so, and it requires them only to include “goals, intentions, and priorities concerning aggregate” in those plans.¹⁵ State law also requires outstate local governments that have received aggregate mapping data from DNR to “consider the protection of identified and important aggregate resources in their land use decisions.”¹⁶ But, it does not require local governments to include such considerations into their planning documents, if they have them.

In our survey, we asked county planning and zoning administrators if their counties had comprehensive plans. We then asked whether those plans contained goals or policies related to the protection of aggregate resources.

According to our survey, just over one-half of counties that have comprehensive plans have provisions in those plans related to aggregate resource protection.

All 6 Twin Cities metropolitan area administrators who responded to our survey stated that their counties had comprehensive plans, and 71 of 77 outstate respondents (92 percent) told us their counties had plans.¹⁷ Among respondents, 23 reported that their comprehensive plans went into effect in 2018 (the year the task force released its report) or later.

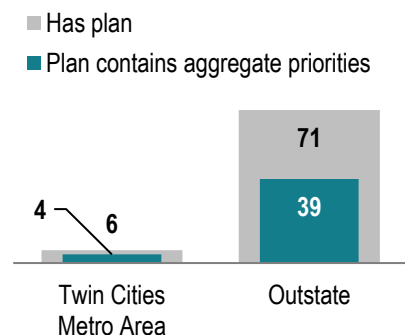


Task Force Recommendation

Local governments should evaluate how their comprehensive plans affect access to aggregate resources.

Exhibit 2.3

Most counties report having comprehensive plans; about one-half of plans include aggregate priorities.



¹³ See Recommendation 4 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

¹⁴ Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

¹⁵ *Minnesota Statutes* 2024, 473.859, subd. 2(d).

¹⁶ *Minnesota Statutes* 2024, 84.94, subd. 4.

¹⁷ We did not independently verify counties' survey responses.

While most respondents reported that their counties have comprehensive plans, only about one-half (43 counties) said those plans contained goals or policies related to the protection of aggregate resources.¹⁸ Administrators from only four of the six metropolitan area counties that responded to our survey indicated that their plans contained such goals or policies, despite statutory requirements for their inclusion.

Some of the counties that reported having goals or policies related to aggregate resources have been mapped by DNR's Aggregate Resource Mapping Program, while others have not. Morrison County, for example, has neither been mapped nor requested mapping. Nevertheless, its comprehensive plan contains provisions pertaining to aggregates, as the box at right shows. Conversely, four counties that have been mapped reported that their comprehensive plans do not contain goals or policies related to aggregate protection.



Morrison County

Goal: Value the gravel and mineral resources of Morrison County and encourage their management, use, and protection in a responsible manner.

Objectives:

1. Preserve, to the extent possible, areas of gravel or mineral deposits as land is converted to other uses.
2. Identify areas where uses of land other than gravel or mineral extraction may be of higher value and work with landowners to help them make informed decisions regarding the use of these lands.

— Morrison County,
*Morrison County Land Use
Control Ordinance, December 2016*

Zoning

The task force recommended that, where aggregate information is available, local governments “assess the current and future impacts of all land use designations and easements that restrict access to aggregate resources.”¹⁹ In its report, the task force provided some additional context about the recommendation, saying: “Counties should also be aware of how restricting access to aggregate may affect future aggregate availability at a county and regional level.”²⁰



Task Force Recommendation

Local governments should evaluate how their land use designations and easements affect access to aggregate resources.

¹⁸ Three counties reported that they were not sure if their comprehensive plans contained goals or policies related to the protection of aggregate resources.

¹⁹ See Recommendation 5 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

²⁰ Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

While 76 county administrators reported that their counties have zoning ordinances, only 4 reported that those ordinances prohibit development on lands identified as containing aggregate resources.

In our survey, 76 county administrators (92 percent of respondents) reported that their counties have a zoning ordinance. However, only four respondents said their county's ordinances prohibit development on land identified as containing aggregate resources before those resources are mined. Absent such a prohibition, a county planning and zoning administrator likely would not have the authority to deny development on top of a valuable local aggregate deposit.



I believe the state should be involved in helping restrict development activities in areas identified as having large deposits of the natural resource (aggregate materials). At the local level, too many ["Not in My Back Yard" attitudes] provide challenges for department staffs.

— County Planning and Zoning Administrator

The State should provide more funding to the MN DNR Aggregate Resource Mapping Program. There is a huge backlog of counties that want their potential aggregate resources mapped, but the [program] doesn't have adequate funding. Having this done for each county is the first step to zone for appropriate aggregate use.

— County Planning and Zoning Administrator

Permitting

The task force recommended “further study of statutory and regulatory changes to the process by which conditional use and interim use permits related to aggregate resources are issued and reviewed.”²¹



Task Force Recommendation

Possible changes to conditional use and interim use permits related to aggregates should be studied.

Under state law, local governments may issue either conditional use or interim use permits that allow for uses (such as aggregate mining) that are only permitted by the city in a zoning district if the applicant meets additional standards. Both conditional use and interim use permits may impose restrictions that address potential issues associated with mining, such as hours of operation, noise, traffic, or dust. However, there are some differences between the two types of permits. For example, conditional use permits stay with the land, even when the land is sold, provided that the new owner can adhere to the conditions of the permit.

Interim use permits have a specified end, which may be a specific date or event, such as a change in ownership.

The task force did not direct this recommendation to a particular entity, or further elaborate on it in its report. But, in the task force meetings, stakeholders discussed some specific permitting concerns, such as the need to reapply for a permit after an arbitrary number of years or if any of the operation's owners changed. In our survey, we asked counties questions about the permits they require.

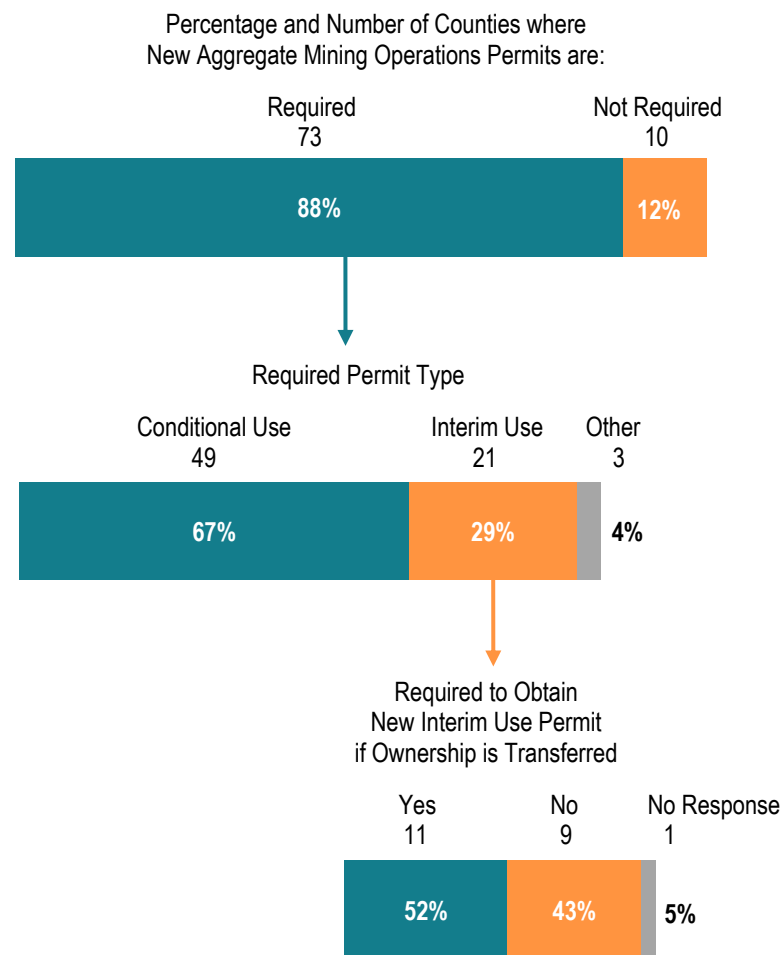
²¹ See Recommendation 6 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

No further studies have been conducted on conditional use or interim use permits related to aggregate resources in Minnesota, although the majority of county administrators reported that their counties require such permits for new aggregate mining operations.

As shown in Exhibit 2.4, the majority of respondents (49) indicated that their counties require conditional use permits; a significant minority (21) required interim use permits. Respondents reported a wide range in the typical length of their interim use permits, with the most commonly reported timeframe being ten years.

Exhibit 2.4

Counties have different requirements for aggregate mining operations.



Source: Office of the Legislative Auditor, analysis of county administrator survey response data.

We also asked respondents about aggregate mining operations that existed in their counties before their counties adopted land use or zoning ordinances. Nearly 80 percent (58) of administrators that responded to the question said their counties had such operations.²² Of those counties, about two-thirds (39) said those pre-existing operations did not need to meet the same standards as new operations.

Reclamation

Reclamation is the process of preparing a former mining site for its next use. Reclamation might involve activities such as regrading a site to remove steep slopes or revegetating it. Sites that are not reclaimed may suffer from issues like illegal dumping, public safety concerns, or unauthorized activities.

The task force recommended that the state, local governments, and mining companies “emphasize mine planning and reclamation during the permitting process of new aggregate mines and promote reclamation efforts for existing mines that are no longer productive.”²³



Task Force Recommendations

- Permit issuers should emphasize planning and reclamation during the permitting process.
- DNR should update its reclamation handbook.

In its report, the task force provided additional context about its recommendation:

During the July 24 field trip, members experienced the benefits of mine reclamation on the environment and surrounding communities. In Empire Township, a pit went through the reclamation process where the end use resulted in a school being built on the reclaimed mine. There are other examples of private companies purchasing old state pits, many abandoned in the 1980’s, and reclaiming them, which adds value to a once unusable piece of land. Across the state, old aggregate mines are being reclaimed for...neighborhood development, farmland, or another use. While there is no state or federal reclamation requirement, the Aggregate Resources Task Force strongly encourages reclaiming land at the end of a mine lifecycle and leaving the site in better condition than when the mine first opened.²⁴

²² Another 11 percent (8 counties) said they were not sure.

²³ See Recommendation 7 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8.

²⁴ Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 8-9.

About three-quarters of county administrators that responded to our survey said they require aggregate mining operations to submit a reclamation plan to ensure reclamation of a site when mining is completed.

Of the 83 county administrators that responded to our survey, 64 (77 percent) reported that their counties require new aggregate mining operations to submit a reclamation plan.²⁵

Of the 64 respondents that said their counties require a reclamation plan, 42 said their counties also require a financial guarantee to ensure reclamation of a site when mining is completed.²⁶ Several respondents said that whether or not their county requires a financial guarantee depends on the size of the operation or the discretion of the county board. Counties reported that they variously require or accept the guarantees in the form of performance bonds (98 percent), letters of credit (67 percent), cash (38 percent), and/or other forms. The amount of the guarantee that counties reported requiring also varied greatly. Several counties provided per-acre rates, with most ranging from \$1,000 to \$5,000. Others said the size of the guarantee was up to the discretion of the county board or depended on the specifics of the project.

DNR has not updated its reclamation handbook, which is more than 30 years old.

In 1992, DNR published a handbook with guidance for landowners, county officials, and mine operators about how to develop sand and gravel mining and reclamation plans.²⁷ The Mineral Coordinating Committee provided funding to produce the report.



Task Force Recommendation

DNR's reclamation handbook should be updated.

The task force recommended that DNR's reclamation handbook be updated using a portion of the increased funding recommended by the committee.²⁸ In a proposal to the task force, DNR said it would update its reclamation handbook with "new advances and technical information related to permitting and reclaiming gravel pits." However, as we discussed earlier, the Legislature did not fund DNR's Aggregate Resource Mapping Program at the proposed levels, and DNR has not updated the handbook.



It would be good if the state updated the reclamation guidance that was provided in the 1990s... [I]t's hard to plan for a reclamation...without guidance.

— County Planning and Zoning Administrator

In their open-ended responses to our survey, some county administrators called for an update to DNR's reclamation handbook.

²⁵ An additional four county administrators (5 percent) said they were not sure.

²⁶ An additional seven county administrators said they were not sure.

²⁷ Minnesota Department of Natural Resources, *A Handbook for Reclaiming Sand and Gravel Pits in Minnesota* (St. Paul, July 1992).

²⁸ See Recommendation 1 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 5.

Production Tax

The task force recommended that the Office of the Legislative Auditor (OLA) “conduct a program audit of the aggregate tax system within the counties, including an examination of the best management practices in use by the counties to determine how well the current aggregate tax program, administered at the county level, is working.”²⁹ The Legislative Audit Commission has not directed OLA to conduct an audit of the tax, and we have not done so. However, below, we present some basic information about the tax program.



Task Force Recommendation

OLA should conduct an audit of the aggregate tax system.

As we discussed in Chapter 1, state law allows counties to choose whether to impose a production tax on aggregates mined in the county.³⁰ It also allows specific towns in Otter Tail and St. Louis counties to impose the tax if their counties choose not to do so.³¹

Forty-one counties and four townships collected the aggregate production tax between 1994 and 2023.

The Department of Revenue has compiled data on the counties and townships that have collected the aggregate production tax and the amounts that they collected each year since 1994. Between 1994 and 2023, 41 counties collected the tax. Additionally, four townships have collected the tax: Scambler Township in Otter Tail County; and Grand Lake, Midway, and Solway townships in St. Louis County.³² Solway, however, is the only township that has collected the tax since 2014.

Dakota County has collected by far the most aggregate tax revenue of any county in Minnesota. In 2023, it collected \$1.2 million, more than twice as much as the next county, Stearns, which collected about \$542,000. Exhibit 2.5 shows the five counties that collected the most aggregate tax revenue over the past five years.

²⁹ See Recommendation 2 in Appendix A. Aggregate Resources Task Force, *Final Report to the Minnesota Legislature* (St. Paul, January 15, 2018), 6.

³⁰ *Minnesota Statutes* 2024, 298.75.

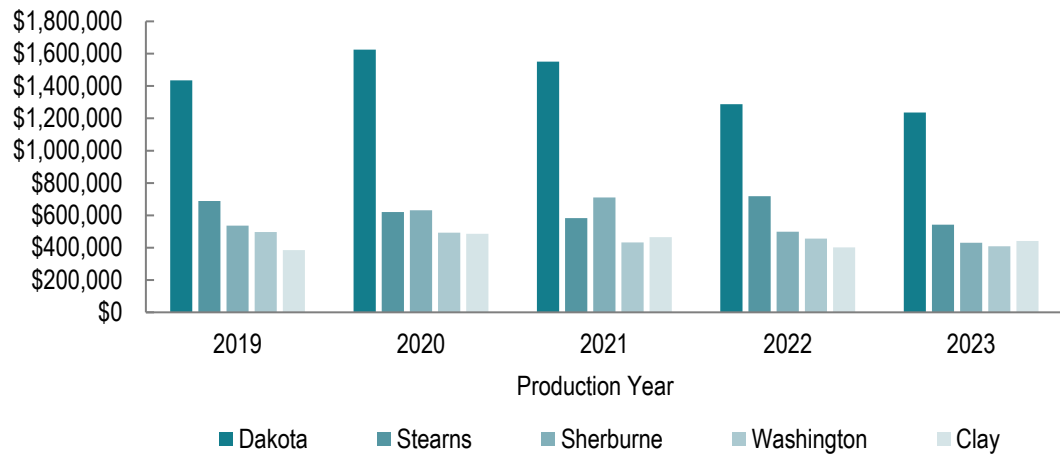
³¹ *Ibid.*, subds. 9 and 11.

³² Some counties and townships collected the tax in only certain years between 1994 and 2023.

Exhibit 2.5

In 2019 through 2023, Clay, Dakota, Sherburne, Stearns, and Washington counties collected the highest amount of aggregate production tax revenue, among Minnesota counties.

Tax Revenue Collected (in Dollars)



Note: Data are adjusted for inflation to 2023 dollars.

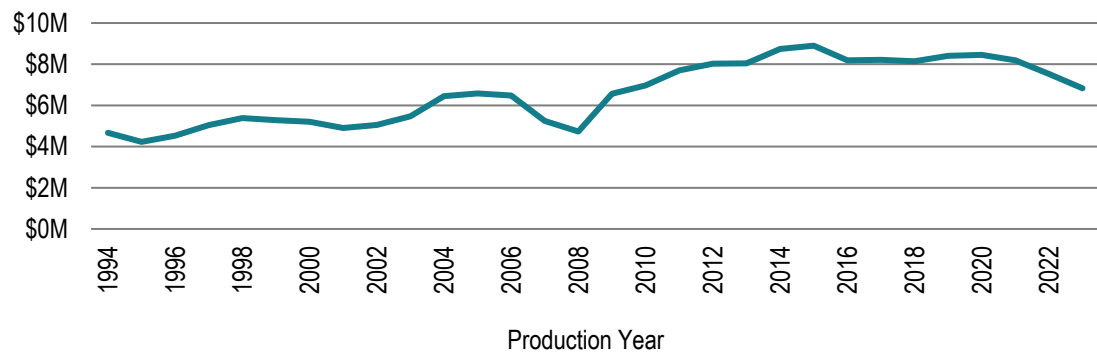
Source: Office of the Legislative Auditor, using 2023 Aggregate Materials Tax Collection History data from the Department of Revenue.

Over time, the total tax revenue collected by all counties and townships has increased, as Exhibit 2.6 shows. During the 30-year period from 1994 to 2023, revenues increased from about \$4.7 million to about \$6.8 million, adjusted for inflation.

Exhibit 2.6

The total amount of aggregate production tax that Minnesota counties have collected has risen over time.

Total Revenue (in Millions of Dollars)



Note: Data are adjusted for inflation to 2023 dollars.

Source: Office of the Legislative Auditor, using 2023 Aggregate Materials Tax Collection History data from the Department of Revenue.

Conclusion

As we noted in Chapter 1, access to aggregate resources is important to state and local economies. Because these resources are both finite and diminishing, various stakeholders have expressed interest in protecting and planning for the use of aggregates. However, no singular agency in Minnesota is tasked with overseeing aggregate mining, so regulatory power is dispersed, making protection and planning activities complicated.

Over recent decades, policymakers have shown interest in aggregate resources, convening several task forces and committees that have made a number of similar recommendations. We reviewed the recommendations made by the most recent task force and concluded that little has been done to implement most of those recommendations since 2018.

While there is clearly an interest in studying issues related to aggregate resources, it is unclear whether there is interest in acting to protect or plan for the use of these resources. If the Legislature is interested in planning for the use and protection of aggregate resources, it should consider implementing the recommendations made by the 2018 task force. It should also consider providing greater support and direction to local governments to implement recommendations directed towards them.



OLA

Appendix A: List of the Legislative Aggregate Resources Task Force 2018 Recommendations

This appendix contains the seven recommendations made in 2018 by the legislative Aggregate Resources Task Force. For more context about these recommendations, see the task force's full report: [Aggregate Resources Task Force, Final Report to the Minnesota Legislature \(St. Paul, January 15, 2018\)](#).

Recommendation 1

The Aggregate Resources Task Force [r]ecommends the Legislature fund the Department of Natural Resources Aggregate Mapping Program to complete aggregate mapping in counties across the state. Members recommend funding the mapping program with \$950,000 per year for ten years. The Minnesota Department of Natural Resources shall work with the Legislature to find an appropriate funding mechanism, such as a general fund appropriation or LCCMR.

Members recommend the Minnesota Department of Natural Resources and the Minnesota Department of Transportation investigate the possibility of working on a regional mapping approach if regional mapping can lead to financial and time efficiencies. If a regional mapping approach is to be implemented, waitlisted counties must be completed prior to moving to a regional mapping approach.

The Department of Natural Resources reclamation handbook should also be updated using funding for the Aggregate Mapping Program.

Recommendation 2

The Aggregate Resources Task Force recommends that the Office of the Legislative Auditor conduct a program audit of the aggregate tax system within the counties, including an examination of the best management practices in use by the counties to determine how well the current aggregate tax program, administered at the county level, is working. This program audit must include a review of how the tax revenue is being used and distributed in jurisdictions receiving proceeds from the aggregate tax pursuant to Minnesota Statute[s], section 298.75.

Recommendation 3

The Aggregate Resources Task Force recommends that the Legislature fund the Department of Natural Resources Aggregate Mapping Program proposal to better understand the location of aggregate reserves across the state. Mapping information should be used by the Department of Natural Resources to provide technical assistance as needed to local units of government in making sound land use decisions that preserve the availability of aggregate resources.

Recommendation 4

The Aggregate Resources Task Force recommends and encourages counties, townships, and municipalities to review and update their comprehensive plans to evaluate the impact of zoning on current and future accessibility to aggregate resources.

Recommendation 5

The Aggregate Resources Task Force recommends, where aggregate information is available, that the state, counties, townships, and municipalities assess the current and future impacts of all land use designations and easements that restrict access to aggregate resources.

Recommendation 6

The [Aggregate Resources] Task Force recommends further study of statutory and regulatory changes to the process by which conditional use and interim use permits related to aggregate resources are issued and reviewed.

Recommendation 7

The Aggregate Resources Task Force recommends that the state, counties, municipalities, and companies emphasize mine planning and reclamation during the permitting process of new aggregate mines and promote reclamation efforts for existing mines that are no longer productive.

Appendix B: Status of the Aggregate Resource Mapping Program

This appendix shows the status of the Department of Natural Resources' (DNR's) Aggregate Resource Mapping Program, by county, for 47 of Minnesota's 80 outstate counties. The 33 remaining outstate counties not shown in this appendix have not requested mapping. The seven Twin Cities metropolitan area counties were mapped by the Minnesota Geological Survey.

DNR has completed aggregate mapping for 23 outstate counties.

County	Year Map Requested	Years Waited to Complete Mapping	Year Map Completed	Map Status
Aitkin	2002	12	2014	Completed
Benton	–	–	2002	Completed
Blue Earth	–	–	1999	Completed
Carlton	–	–	2009	Completed ^a
Chisago	–	–	2001	Completed
Clay	–	–	1997	Completed ^b
Dodge	–	–	2002	Completed
Isanti	–	–	1992	Completed
Itasca	–	–	2005	Completed
Kanabec	–	–	2012	Completed
Kandiyohi	2002	19	2021	Completed
Le Sueur	–	–	2003	Completed
Meeker	–	–	2005	Completed
Mille Lacs	–	–	2008	Completed
Nicollet	–	–	2000	Completed
Olmsted	–	–	2010	Completed
Redwood	2005	17	2022	Completed
Renville	–	–	2003	Completed
Sherburne	–	–	1987	Completed
Sibley	2007	15	2022	Completed
Stearns	2001	11	2012	Completed
Swift	2003	19	2022	Completed
Wright	–	–	1991	Completed

(Continued on the next page.)

Twenty-four outstate counties that had requested mapping of their aggregate resources were waiting for their maps at the end of 2024.

County	Year Map Requested	Years Waited to Complete Mapping	Map Status
Becker	2003	21	Requested
Beltrami	2004	20	Requested
Brown	2022	2	Requested
Cass	2012	12	Requested
Chippewa	2017	7	Requested
Cook	2023	1	Requested
Cottonwood	2019	5	Requested
Douglas	2011	13	Requested
Hubbard	2014	10	Requested
Jackson	2024	0	Requested
Koochiching	2020	4	Requested
Lake	2021	3	Requested
Lyon	2010	14	Requested
Martin	2020	4	Requested
Murray	2020	4	Requested
Nobles	2020	4	Requested
Pine	2020	4	Requested
Rock	2019	5	Requested
St. Louis	2004	20	In Progress ^a
Todd	2014	10	Requested
Wabasha	2022	2	Requested
Wadena	2014	10	Requested
Watonwan	2022	2	Requested
Yellow Medicine	2003	21	In Progress

^a While mapping Carlton County, DNR also mapped the entirety of the Fond du Lac reservation, part of which is in Carlton County and part of which is in St. Louis County.

^b DNR mapped only the eastern portion of Clay County.

Source: Office of the Legislative Auditor, using data provided by DNR.



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Forthcoming OLA Evaluations

Community Benefit Expenditures at Nonprofit Hospitals
Department of Employment and Economic Development
Grants Management
Department of Natural Resources Land Acquisition
Guardianship of Adults
Minnesota Department of Health: Human Resources
Complaint Management

Recent OLA Evaluations

Agriculture

Pesticide Regulation, March 2020
Agricultural Utilization Research Institute (AURI),
May 2016

Criminal Justice and Public Safety

Driver Examination Stations, March 2021
Safety in State Correctional Facilities, February 2020
Guardian ad Litem Program, March 2018
Mental Health Services in County Jails, March 2016

Economic Development

Minnesota Investment Fund, February 2018
Minnesota Research Tax Credit, February 2017
Iron Range Resources and Rehabilitation Board (IRRRB),
March 2016

Education (Preschool, K-12, and Postsecondary)

Minnesota Department of Education's Role in Addressing
the Achievement Gap, March 2022
Collaborative Urban and Greater Minnesota Educators
of Color (CUGMEC) Grant Program, March 2021
Compensatory Education Revenue, March 2020
Debt Service Equalization for School Facilities,
March 2019
Early Childhood Programs, April 2018
Perpich Center for Arts Education, January 2017
Standardized Student Testing, March 2017
Minnesota State High School League, April 2017
Minnesota Teacher Licensure, March 2016

Environment and Natural Resources

Aggregate Resources, January 2025
Petroleum Remediation Program, February 2022
Public Facilities Authority: Wastewater Infrastructure
Programs, January 2019
Clean Water Fund Outcomes, March 2017
Department of Natural Resources: Deer Population
Management, May 2016

Financial Institutions, Insurance, and Regulated Industries

Department of Commerce's Civil Insurance Complaint
Investigations, February 2022

Government Operations

Grant Award Processes, April 2024
Oversight of State-Funded Grants to Nonprofit
Organizations, February 2023
Sustainable Building Guidelines, February 2023
Office of Minnesota Information Technology Services
(MNIT), February 2019

Health

Emergency Ambulance Services, February 2022
Office of Health Facility Complaints, March 2018
Minnesota Department of Health Oversight of HMO
Complaint Resolution, February 2016

Human Services

Department of Human Services Licensing Division:
Support to Counties, February 2024
Child Protection Removals and Reunifications, June 2022
DHS Oversight of Personal Care Assistance, March 2020
Home- and Community-Based Services: Financial
Oversight, February 2017

Jobs, Training, and Labor

Worker Misclassification, March 2024
Unemployment Insurance Program: Efforts to Prevent
and Detect the Use of Stolen Identities, March 2022

Miscellaneous

Minnesota Housing Finance Agency: Down Payment
Assistance, March 2024
RentHelpMN, April 2023
State Programs That Support Minnesotans on the Basis
of Racial, Ethnic, or American Indian Identity,
February 2023
Board of Cosmetology Licensing, May 2021
Minnesota Department of Human Rights: Complaint
Resolution Process, February 2020
Public Utilities Commission's Public Participation
Processes, July 2020
Economic Development and Housing Challenge Program,
February 2019
Minnesota State Arts Board Grant Administration,
February 2019
Board of Animal Health's Oversight of Deer and
Elk Farms, April 2018
Voter Registration, March 2018

Transportation

Metro Mobility, April 2024
Southwest Light Rail Transit Construction: Metropolitan
Council Decision Making, March 2023
Southwest Light Rail Transit Construction: Metropolitan
Council Oversight of Contractors, June 2023
MnDOT Workforce and Contracting Goals, May 2021
MnDOT Measures of Financial Effectiveness,
March 2019
MnDOT Highway Project Selection, March 2016

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