

November 2024 Environmental Quality Board meeting

Wednesday, November 20 from 1 – 4:00 p.m.

Join in person or online

- In person: [520 Lafayette Road, St. Paul, MN 55155](#), lower level conference rooms
 - Online: For the meeting link and more information, visit the [board meeting webpage](#)
-

Participating in board meetings

Attending in person

The Environmental Quality Board (EQB) will convene its meeting in person at the Minnesota Pollution Control Agency St. Paul office building. All visitors must sign in at the front desk.

Transportation options:

- Bicycle: Visit the [Saint Paul Bike Map](#) webpage for route information. Outdoor bicycle parking is available to the left of the front doors near the loading dock.
- Transit: Use [Metro Transit's Trip Planner](#) to determine the best routes and times.
- Car: You may park in a Visitor Parking space in the parking lot just outside the front door, or park in one of the visitor lots. The visitor lots are the Blue Lot (Olive St. and University Ave.) and the Jupiter Lot (on Grove St. across from the Ramsey County Law Enforcement Center); please see the [parking map](#). Parking in these lots is free of charge. You must register your vehicle at the front desk upon arrival.

Attending virtually

Members of the public may join the meeting virtually using the Teams link at the board meeting webpage link above. Please review the [Guide to Teams Participation](#) for additional information.

Accessibility

Please contact Environmental Quality Board (EQB) staff at least one week prior to the event at info.EQB@state.mn.us to arrange an accommodation. Meeting materials can be provided in different forms, such as large print, braille, or on a recording.

Public engagement opportunities at EQB meetings

EQB encourages public input and appreciates the opportunity to build shared understanding with members of the public. The opportunities for public engagement for this meeting are below.

Oral public comment

In this meeting, the board will accept oral public comment at multiple points in the agenda.

Procedure and guidelines for giving oral public comment:

- If you wish to speak:
 - Virtual: when prompted, use the “raise hand” feature in Teams, located at the top of your screen.
 - In person: sign up at the welcome table before the meeting starts.
- Your remarks will be limited to two (2) minutes. When necessary, the chairperson may limit commenters’ time for remarks to ensure there is equal opportunity for the public to comment.
- When the chairperson calls on you to speak:
 - Introduce yourself before beginning your comment.
 - Please keep your remarks to those facts which are relevant and specific, as determined by the chairperson, to the agenda item at hand.
 - Please be respectful of board members, staff, and other meeting participants. Avoid questioning motives. The chair, vice-chair, or other presiding officer will not tolerate personal attacks.
 - Please note that the chair will use their discretion for directing public comment to ensure the board’s ability to effectively conduct business.

Written public comment

You may submit written comment to EQB by emailing your letter to info.EQB@state.mn.us or mailing to: Environmental Quality Board, 520 Lafayette Road, Saint Paul, MN 55155. Comments must be received by EQB staff **by noon the day before the meeting**.

Staff will compile letters, make them available to members and the public online, and attach them to the public record. Any written comments received after this deadline will be included in the next meeting packet.

All comments will be made available to the public. Please only submit information that you wish to make available publicly. EQB does not edit or delete submissions that include personal information. We reserve the right to not publish any comments we deem offensive, intimidating, belligerent, harassing, bullying, or that contain any other inappropriate or aggressive behavior.

Agenda

Note that all listed times are estimates and are advisory only.

1. Welcome and roll call (1:00 pm)

Nancy Daubenberger – Chair, EQB; Commissioner, Department of Transportation

2. Approval of consent agenda (1:10 pm)

- Meeting minutes from the October 16, 2024, Environmental Quality Board meeting on packet page 5
- Preliminary agenda for the November 20, 2024, Environmental Quality Board meeting

3. Executive Director's report (1:15 pm)

Catherine Neuschler – Executive Director, EQB

4. Mandatory Category Report – Submittal authorization (1:20 pm)

Type of item: Decision

Summary: EQB staff have previously presented the draft 2024 Mandatory Category Report to ERIS (September) and the Board (October). Staff will provide a brief update on revisions to the report made in response to the Board's feedback. A final draft report is on page 12 of this packet. The report is due to the Legislature December 1, 2024.

Public comment: The ERIS and the Board took public comment on this report in September and October. No additional oral public comment will be taken during this agenda item.

Outcome: The Board authorizes the Executive Director to fulfill the legislative mandate by sending the 2024 Mandatory Category Legislative Assessment Report to the governor and the chairs of the house of representatives and senate committees having jurisdiction over environment and natural resources.

Presenter: Kayla Walsh – Environmental Review Program Administrator, EQB

5. Annual Pollinator Report – Acceptance (1:45 pm)

Type of item: Decision

Summary: The Board will hear a presentation about the 2024 Minnesota State Agency Pollinator Report along with updated pollinator scorecards to track progress. The Board will consider a resolution to accept the 2024 Minnesota State Agency Pollinator Report, fulfilling the requirements of EO 19-28, and updated scorecards. The report is on page 97 of the packet.

Public comment: The board welcomes oral public comment on the draft 2024 Minnesota State Agency Pollinator Report. Please see guidance and procedures on packet page 2.

Outcome: The Board accepts the 2024 Minnesota State Agency Pollinator Report and supports cross-agency collaboration to lead the implementation of the Minnesota Pollinator Action Framework.

Presenter: Rebeca Gutierrez-Moreno, PhD – State Pollinator Coordinator, Environmental Quality Board; Jamison Scholer, M.S. – Research Scientist, MDA; Erin Loeffler – Ecological Science Conservationist, Board of Water and Soil Resources

6. Public comment (2:35 pm)

The board welcomes any additional oral public comment. Please see guidance and procedures on packet page 2.

7. Closing and adjournment

October 2024 Environmental Quality Board meeting

Wednesday, October 16, 2024 | 1:00-4:00 p.m. | 520 Lafayette Road, St. Paul, MN 55155, lower level conference rooms and online via Teams.

Minutes

1. Welcome and roll call

Chair Nancy Daubenberger called to order the regular meeting of the Environmental Quality Board.

Members present: Grace Arnold, Peter Bakken, Joseph Bauerkemper, Ed Brands, Nancy Daubenberger, Tamar Gronvall, Rylee Hince, Todd Holman, Daniel Katzenberger, Katrina Kessler, Nicholas Martin, Paul Nelson, Sarah Strommen

Members excused: Brooke Cunningham, Thom Petersen, Angie Smith, Matt Varilek, Charles Zelle

Proxies present: Peder Kjeseth (for Petersen), Myra Kunas (for Cunningham), Susan Vento (for Zelle)

EQB staff present: Catherine Neuschler, Stephanie Aho, Rebeca Gutierrez-Moreno, Colleen Hetzel, Hazel Houle, Jesse Krzenski, Sarah Lerohl, Priscilla Villa-Watt, Kayla Walsh

Approval of consent agenda

- Meeting minutes from August 21, 2024, Environmental Quality Board meeting
- Proposed agenda for October 16, 2024, Environmental Quality Board meeting

Motion: Board Member Arnold moved the consent agenda; Board Member Kessler seconded. Motion carries with a unanimous vote.

2. Executive Director's report

Catherine Neuschler – Executive Director, EQB

- Environmental Congress 9/23-26 – Thanks to Priscilla Villa-Watt for leading EQB's effort and Hazel Houle for logistical support, all EQB staff for assisting where needed, Board members for their attendance, various agency staff who presented and took notes, and to the Minnesota Management and Budget staff who facilitated. EQB staff will report to the Board on the Congress at an upcoming Board meeting.
- Legislative session is gearing up.

3. Update on the regulatory framework for agriculturally-related genetically engineered organisms in Minnesota

Presenters:

Rebeca Gutierrez-Moreno – State Pollinator Coordinator, EQB
 Mark Abrahamson – Division Director and State Plant Regulatory Official, MDA
 Michael Merriman – Seed and Biotechnology Unit Supervisor, MDA
 Janice Strachan – Branch Chief of the Plant Evaluation Branch, USDA-APHIS.

Type of item: Informational

Summary: Minnesota has laws and regulations applicable to the release of certain genetically engineered organisms (GEOs) within the state. Minn. Stat. 116C.91 through 116C.97 gives EQB regulatory authority over such releases, and EQB has related rules (Minn. R., chapter 4420, and Minn. R. 4410.8000) to implement these authorities.

The statutes and rules direct EQB to work cooperatively to reduce duplication amongst the various state and federal regulatory and review programs regarding GEOs, as long as public health and the environment are protected. They allow EQB to provide for alternative oversight; to authorize other state agencies with permit programs to oversee regulation of GEOs; or to defer to existing federal programs.

Most GEOs that are developed and released are agriculturally-related organisms. In 1991, the Minnesota Legislature gave the Minnesota Department of Agriculture (MDA) the authority to permit ag-related GEOs; MDA's authorities are listed in Minn. Stat., chapter 18F. Subsequently, MDA promulgated related rules (Minn. R., chapter 1558). Once the rules were promulgated, MDA requested that the Board determine that MDA's process represented a "significant environmental permit" and authorize MDA to administer the regulatory program for the release of ag-related GEOs. On October 31, 1995, the Board approved that finding and its approval was published in the EQB Monitor. MDA has continued to oversee ag-related GEOs.

Over the years, MDA has worked with the federal Coordinated Framework for the Regulation of Biotechnology (Coordinated Framework), which includes the United States Department of Agriculture (USDA), the Environmental Protection Agency (EPA), and the United States Food and Drug Administration (FDA).

In 2023, the Minnesota Legislature updated Minn. Stat. 18F to remove redundancies and allow MDA to rely on the federal Coordinated Framework for permitting and exempting ag-related GEOs. MDA is therefore requesting that the Board approve the federal program as adequate to protect human health and the environment from ag-related GEOs, allowing for an exemption from EQB's authorities as specified in Minn. Stat. 116C.97.

Discussion:

- Interesting intersection between state and federal law – the state of Minnesota has gone further than federal law in cases where there are specific resources in Minnesota that need to be protected beyond what is proposed by the general nationwide framework.

- When an issue is seen from a state perspective that may not have been considered from a federal perspective, USDA listens to those concerns and works them into the permit conditions.
- The federal regulations that were in place before were for the 1980s and the new regulations went into effect in 2020. The federal government might revise pieces, but a large regulation change is not expected anytime in the near future.

Public comment:

- Renee Keezer, pesticide coordinator for White Earth band of the Minnesota Chippewa Tribe, Region 5 Executive Council representative for the Tribal Pesticide Program Council and alternate representative for the regional Tribal Operations Committee: There has not been any coordination or consultation with the tribes on this Board item. This impacts Tribes, so Tribes should be consulted, per Minnesota State Statute 10.65.
- Margaret Watkins: Does EQB have to adopt this resolution? How did this come about without any discussion with Tribes?

Outcome: The Board did not bring forward the draft resolution. The Board requested that EQB staff and MDA conduct Tribal coordination and that when this item returns to the Board the conversation include information on that Tribal coordination.

4. Gas and oil production recommendations

Presenters:

Jesse Krzenski – Environmental Review Program Administrator, EQB

Mike Liljegren – Assistant Director Mine Permitting and Coordination, DNR

Type of item: Informational

Summary: In 2024, the Minnesota Legislature directed the state agencies to develop a regulatory framework for the exploration and production of nonpetroleum gas and to make rules, as needed. The Department of Natural Resources (DNR) provided information on the legislation that created the Gas and Oil Resources Technical Advisory Committee (GTAC) and tasked the group with writing recommendations to allow for temporary permitting of oil and gas projects in Minnesota, prior to the completion of any rulemaking to establish a permanent regulatory framework.

The presentation provided an overview of the group's work to date and next steps, which are anticipated to include a release of draft recommendations with an opportunity for public input. EQB staff provided information on their preliminary recommendations for environmental review of oil and gas projects as part of the temporary regulatory framework. The Board had an opportunity to ask questions and make suggestions about those environmental review recommendations.

Discussion:

- Currently only focused on gas (and not oil) because of the helium discovered in northern Minnesota and the potential for hydrogen.

Outcome: The Board was informed of the progress of the GTAC and EQB specific recommendations regarding oil and gas projects in the temporary framework, which is to recommend that any such project undergo an EAW.

5. Draft Mandatory Category Report discussion

Presenter: Kayla Walsh – Environmental Review Program Administrator, EQB

Type of item: Informational

Summary: EQB staff walked through the draft 2024 Mandatory Category Report. Staff shared the report goals, writing process, and next steps. Mandatory categories are categories of project types that require environmental review. The purpose of the Mandatory Category Report is to conduct a review of all mandatory categories and discuss any recommended changes.

The Environmental Review Implementation Subcommittee (ERIS) discussed the report at their September meeting. Based on that discussion, EQB has updated the executive summary of the report and provided an additional memo (in the October board packet only) with all public comments listed for board members to view. There were also slight phrasing changes made to the draft report in the solid waste and air pollution categories. These changes do not substantially impact the recommendations.

The report is due to the Legislature December 1, 2024.

Discussion:

- Though it wasn't required to pursue public engagement, the draft report still doesn't adequately engage with the public's input – there are a lot of contributions there, a lot of missed opportunities.
- Water diversions mandatory category: the draft report states that there was no public comment on this category, however there were many comments related to this category.
- Metallic mineral mining and processing mandatory category: the draft report states that public comments were outside of the scope of this category, but it looks like the comments are not outside of the scope and should be considered.
- Why haven't the health impact assessments (HIA) been integral to environmental review from the beginning?
- What's the next steps if we were to choose to go forward with with HIA, what's the evaluation that's needed? Can be discussed at a future EQB meeting.

Public Comment:

There are three public comments included in the Board packet.

- Joy Anderson, attorney with Minnesota Center for Environmental Advocacy: Important to take action on the recommendations; EQB should have at least a recommendation for rule making which would lead to more development of the ideas in the report so that action can be taken on various recommendations. A lot of public comments were not considered in the recommendations, but they should be.

- Kris Wegerson, family practice physician and member of Minnesota Academy of Family Physicians: We were told in 2015 that changes need to be made to rule 4410 before HIA can be included in EIS, but the change has not yet been made. We have been advocating for HIA inclusion for a long time and we have an active petition. Our petition was never voted on but referred to the Environmental Review Advisory Panel (ERAP). We ask that HIA be included for all projects requiring an EIS.
- Lucas Sjostrom, Executive Director; Minnesota Milk Producers Association: Happy to serve as a resource as he's a former member of ERAP. Noted that comments from the public were against feedlots and other mandatory categories development projects. Modern facilities are larger and size should not determine project viability and impact on environment. Invites EQB and staff to visit farms with feedlots to gain perspective. Also submitted written comment that can be referenced for more information.

Outcome: Staff will review the specific items raised regarding public engagement on specific mandatory categories (water diversion and metallic mining) and the language around health impacts and make any necessary changes prior to the board vote on this item in November. Staff will also be working on a more complete list of potential environmental review projects to bring forward in the future.

6. Public Comment

- Renee Keezer: The helium production is on MCT trust lands in the 1854 treaty and territory, so Tribes should be involved at the very beginning of the process of this regulatory framework. White Earth just had a quarterly meeting with the Minnesota DNR last week and this topic was not discussed. Would like more accountability, and coordination and cooperation with the Tribes.
- Krishna Woerheide, environmental director of Grand Portage Band, representative of EPA Region 5 Tribal Operations Committee: What else is in the helium deposit? Invoked Minnesota Statute 10.65 and ask that the EQB and other agencies in GTAC conduct consultation with tribes before proceeding with any recommended rule making.
- Akilah Sanders-Reed, Minnesota Center for Environmental Advocacy: Since the the charge is to come up with recommendations for policy changes to facilitate both gas and oil exploration wondered if oil is being considered. Asked if there's a of list the environmental groups that GTAC has contacted for outreach.

Responses to public comments

- In addition to helium in the deposit, there's also a high percentage of CO₂, some methane and nitrogen.
- This item will come back to the board in early 2025 with EQB's plan for the second part of the process, the expedited rule making and EQB will be offering tribal coordination and consultation.
- EQB staff will be doing outreach to make sure the rules cover everything necessary (gas and oil).
- DNR plans to do targeted outreach on the temporary framework recommendations over the next few months.

7. Closing and adjournment

Board Member Strommen motioned to adjourn. Board Member Kessler seconded. All in favor; meeting adjourned.

DRAFT



RESOLUTION OF THE MINNESOTA ENVIRONMENTAL QUALITY BOARD

Authorization to submit the 2024 Mandatory Category Report

Minnesota Statute Chapter 116D.04, Subd. 5b directs that *“By December 1, 2018, and every three years thereafter, the Environmental Quality Board, Pollution Control Agency, Department of Natural Resources, and Department of Transportation, after consultation with political subdivisions, shall submit...a list of mandatory environmental assessment worksheet and mandatory environmental impact statement categories for which the agency or a political subdivision is designated as the responsible government unit, and for each worksheet or statement category, a document including:*

- 1. intended historical purposes of the category;*
- 2. whether projects that fall within the category are also subject to local, state, or federal permits; and*
- 3. an analysis of and recommendations for whether the mandatory category should be modified, eliminated, or unchanged based on its intended outcomes and relationship to existing permits or other federal, state, or local laws or ordinances.”*

The 2024 Mandatory Categories Legislative Assessment Report was developed and reviewed by the co-authoring agencies. Drafts of the report were reviewed by the Environmental Review Implementation Subcommittee in September 2024 and by the full Environmental Quality Board in October 2024; and the draft report was subsequently revised and refined for presentation to the board in November 2024.

The board resolves that the EQB Executive Director shall fulfill the legislative mandate by sending the 2024 Mandatory Category Legislative Assessment Report to the governor and the chairs of the house of representatives and senate committees having jurisdiction over environment and natural resources.

The board approved and adopted this resolution on November 20, 2024.

Nancy Daubenberger, Chair
Minnesota Environmental Quality Board

Date: _____

Attachments: 2024 Mandatory Category Report



MANDATORY ENVIRONMENTAL REVIEW CATEGORIES

Legislative assessment report

12/01/2024

This is a report prepared by the Environmental Quality Board, Pollution Control Agency, Department of Natural Resources, and Department of Transportation.

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Upon request, this material will be made available in an alternative format such as large print, Braille, or audio recording.

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Legislative charge

This report fulfills the directive of Minnesota Statutes, section 116D.04, subdivision 5b:

By December 1, 2018, and every three years thereafter, the Environmental Quality Board, Pollution Control Agency, Department of Natural Resources, and Department of Transportation, after consultation with political subdivisions, shall submit to the governor and the chairs of the house of representatives and senate committees having jurisdiction over environment and natural resources a list of mandatory environmental assessment worksheet and mandatory environmental impact statement categories for which the agency or a political subdivision is designated as the responsible government unit, and for each worksheet or statement category, a document including:

- (1) intended historical purposes of the category;*
- (2) whether projects that fall within the category are also subject to local, state, or federal permits; and*
- (3) an analysis of and recommendations for whether the mandatory category should be modified, eliminated, or unchanged based on its intended outcomes and relationship to existing permits or other federal, state, or local laws or ordinances.*

Abbreviations

AUAR	Alternative Urban Areawide Review
BWSR	Board of Water and Soil Resources
CWA	Clean Water Act
DEED	Department of Employment and Economic Development
DOT	Minnesota Department of Transportation
DNR	Minnesota Department of Natural Resources
DPS	Minnesota Department of Public Safety
EAW	Environmental Assessment Worksheet
EIS	Environmental Impact Statement
ER	Environmental Review
EQB	Environmental Quality Board
FAA	Federal Aviation Administration
GEO	Genetically Engineered Organism
HAP	Hazardous Air Pollutants
LGU	Local Government Unit
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MEPA	Minnesota Environmental Policy Act
MPCA	Minnesota Pollution Control Agency
NPDES	National Pollutant Discharge Elimination System
PUC	Public Utilities Commission
RGU	Responsible Governmental Unit
SHPO	State Historic Preservation Office
SONAR	Statement of Need and Reasonableness
USDA	United States Department of Agriculture
WWTF	Wastewater Treatment Facility

Executive summary

The Environmental Quality Board (EQB) is responsible for monitoring the effectiveness of the state's Environmental Review Program, taking measures to improve its effectiveness, and providing assistance to all parties involved. The triennial Mandatory Category Report is part of ensuring the state's environmental review process results in the evaluation of the right projects, of the right sizes, at the right times. Mandatory categories (listed in Minn. R. 4410.4300 and 4410.4400) define project types that require environmental review when they reach certain thresholds. This report fulfills the legislative directive (Minn. Stat. 116D.04, subd. 5b) to regularly analyze each mandatory category and propose recommendations for whether it should be modified, eliminated, or remain unchanged. The report also includes some evaluation of broader changes that impact how the mandatory categories are applied to determine which projects must complete environmental review.

This report begins with an overview of the environmental review program, and then includes a methodology section describing how the mandatory category analysis was conducted. It then contains a section on each mandatory category that briefly describes the history of the category, lays out the potential permits that may be needed, and then provides a discussion section. The discussion section describes the experience of those responsible for conducting reviews for that category, public feedback received, and potential steps that could improve the category's effectiveness.¹

For some categories, the discussion section describes opportunities for improved guidance from EQB that would support implementation of the mandatory category; these updates can be made by EQB without recommending changes. Recommendations are made when there is a need to change the environmental review rule language, including updates to existing mandatory categories, threshold changes, or definitions (in Minn. R. 4410.0200) and clarifying rule language. Housekeeping and definition updates provide clarity and should not change current interpretation of the categories; they are recommended under sixteen categories in the body of the report. Recommendations for potential threshold adjustments affect only five categories including:

- fuel conversion facilities,
- air pollution,
- solid waste,
- resorts, campgrounds, and RV parks in shorelands, and
- animal feedlots.

¹ Effectiveness is defined using criteria developed in 2023 through EQB's continuous improvement process development; see Appendix A.

In most cases, the report recommends “no change,” which means that no issues in the way the category functions have been identified at this time. Recommendations are made based on the latest available data.

The mandatory categories are key to fulfilling the intent of the environmental review program. Minnesota is a national leader in state-level environmental review and the Minnesota environmental review program has provided benefits for over fifty years. Throughout that time, environmental review programming has proven its longevity, resiliency, and effectiveness at identifying significant environmental effects and making information available to the public and decisionmakers. This report highlights opportunities for gaining further efficiencies in implementing the mandatory categories.

Next steps

Evaluation of the environmental review program and its mandatory categories, and making any needed changes, is a continuing process. The implementation of any of the mandatory category recommendations will require further conversations to properly consider technical expertise, user experience and potential unintended consequences of any changes. Recommendations included in this report add to existing recommendations to continually strengthen the program’s effectiveness. The EQB will consider all recommendations (from both this report and the continuous improvement process) in their future work planning, guided by the EQB’s 2024 strategic plan. Work planning will establish the changes to be evaluated and implemented, along with resources and timelines for doing so. In the future EQB will explore the efficacy of using the continuous improvement process to also evaluate any needed changes to the mandatory categories and may consider asking for changes to the legislative requirement for this report.

Attachments

Appendix A: *Continuous improvement for environmental review*

This appendix describes EQB’s continuous improvement process and lists programmatic changes that were identified during public engagement for the continuous improvement process.

Appendix B: *Summary of public engagement for Mandatory Category Report, 2024*

This appendix is the memo which was presented to the board in May 2024; it identifies early theming of the feedback EQB received during public engagement for this report.

Program overview

Minnesota Statutes, chapter 116D, the Minnesota Environmental Policy Act (MEPA), establishes a formal process for analyzing public and private projects that have the potential to significantly impact the environment. MEPA gives the Environmental Quality Board (EQB), created by Minnesota Statutes, section 116C.03, the authority to implement that law's objectives and requirements through the promulgation of rules for environmental review, which EQB established in Minnesota Rules, chapter 4410 (Minn. R. 4410).

The objectives of environmental review are to provide usable information to the public and decision-makers, delegate responsibility for reviews to the appropriate governmental unit, reduce delay and uncertainty in the review process, and eliminate duplication. The rules outline the environmental review process and procedures and require certain categories of projects to undergo environmental review. These categories are referred to as mandatory Environmental Assessment Worksheet (EAW) categories (Minn. R. 4410.4300) and mandatory Environmental Impact Statement (EIS) categories (Minn. R. 4410.4400). Projects must complete environmental review (ER) if they are of a type listed in the mandatory category rules and meet or exceed the thresholds set out. The requirements for environmental review are based on the nature, size, and location of the proposed project.

The Minnesota Legislature first required a Mandatory Category Legislative Assessment Report in 2013 (Laws of Minnesota for 2012, Chapter 150, Article 2, Section 3); subsequently, they moved to require the report on a recurring basis (currently three years). The Mandatory Categories Legislative Assessment Report was completed in 2013, 2018, 2021 and now in 2024. Each report evaluated the mandatory EAW and EIS categories.

The ER process does not approve or deny a project. While an individual permit usually focuses on compliance with regulations to protect from one type of impact (such as air emissions or water discharges), environmental review provides a holistic view of many potential environmental effects in a single document. ER provides usable information to the public, regulatory authorities, and other decision-makers, and requires a public comment period. ER supports connection with stakeholders to identify regulatory and community concerns and address them early in the project design process. Additional benefits of environmental review include:

- Support of information-gathering and consideration of project improvements
- Consideration of cumulative potential effects
- Consideration of phased and connected actions

In 2023 EQB established an ongoing environmental review [continuous improvement process](#) (CI process) to support in monitoring the effectiveness of the program and its rules. The goal of the continuous improvement process is to identify and prioritize environmental review program changes in a strategic, transparent, and efficient manner. As part of this process, EQB asked for ideas for program improvements; EQB received thirty-two comments related to creating, revising, or eliminating mandatory categories. These comments were held for consideration in this report. Conversely, many ideas provided during the public engagement for this report related to larger programmatic changes and will be considered separately; see Appendix A for more details. In the future EQB will explore the efficacy of using the continuous improvement process to also evaluate the mandatory categories.

Environmental review roles and responsibilities

The Environmental Review program involves the Environmental Quality Board, local/state governments, the project proposer, and Minnesota residents. Each plays a unique role throughout the process.

Environmental Quality Board (EQB)

EQB's role is focused on program consistency and helping governmental units and interested persons to understand and implement environmental review rules. EQB also monitors program performance and effectiveness. EQB staff compile and publish environmental review-related notices in the weekly *EQB Monitor*. The environmental review rules delegate the authority to complete environmental review to responsible governmental units.

Responsible Governmental Unit (RGU)

An RGU – such as a county, city, or state agency – conducts environmental review by overseeing the preparation and analysis of environmental review documents for individual projects. RGUs apply the environmental review rules to individual projects. They are assigned responsibility for verifying the accuracy of environmental review documents and complying with environmental review processes. The RGU can be a state agency or a local unit of government (county, city, township, etc.) or a special purpose governmental unit (watershed district, solid waste district, etc.). The RGU is the governmental unit determined to have the greatest expertise or authority to approve or deny a project.

Table 1: Environmental Review Roles and Responsibilities

Roles	Responsibilities
Environmental Quality Board	Oversight of the rules Technical assistance Create and maintain guidance documents Data collection and analysis; measure program effectiveness Continuous improvement Publish weekly EQB Monitor Receive and process petitions for environmental review
Responsible Governmental Unit (RGU)	Implement rules Prepare environmental review documents Issue notices Make decisions on petitions and environmental review documents
Project proposer	Provide project details to the RGU
Public	Provide local knowledge and public comment on review documents Submit petitions to EQB

Report methodology

Minnesota Statute, section 116D.04, subdivision 5b charges EQB and the co-authoring agencies (DOT, DNR, and MPCA) to analyze and make recommendations for each mandatory category as well as identify the category's intended historical purpose and any potential applicable permits. This report was developed through information-gathering, analyses, and collaborative drafting. The following section describes the information sources considered.

Review past reports

Mandatory category reports were published in 2013, 2018, and 2021. In 2019, EQB completed rulemaking that implemented multiple recommendations from the 2013 and 2018 reports. EQB staff reviewed the past reports and their recommendations, with a focus on identifying recommendations that remain relevant.

Review SONARs

Statements of Need and Reasonableness (SONARs) are prepared to accompany changes to the mandatory categories rules that have occurred since 1974 including significant rulemaking efforts completed in 1982, 1988, 2005 and 2019. SONARs provide the basis for examining a mandatory category's intended historical purpose and relevant SONARs are hyperlinked in each mandatory category discussion. No rulemaking has occurred since the 2021 Mandatory Category Report.

Review past EQB data

This report lists the number of review documents completed in each category since the previous mandatory category report. In those three years (2021-2023), a total of 198 mandatory Environmental Assessment Worksheets (EAWs), two mandatory Environmental Impact Statements (EISs), two supplemental EISs, and 19 Alternative Urban Areawide Reviews were completed. There were an additional 24 EAWs and 1 EIS completed that were initiated based on RGU discretion (termed discretionary EAWs/EISs). The count of discretionary reviews can also include EAWs that resulted from petitions. These counts do not include reviews directed by rules other than Minn. R. 4410.

Review state agency RGU input

The Department of Transportation, Department of Natural Resources, Department of Agriculture, Department of Commerce, Department of Health, and the Minnesota Pollution Control Agency reviewed those categories for which they are the designated RGU. The EQB led the analyses for mandatory EAW and EIS categories where EQB is the designated RGU and where a local government unit is the designated RGU. State agency RGUs identified likely permits for mandatory categories where they are the RGU.

Public and LGU engagement

As part of the category analysis, EQB asked for input by way of an online engagement platform (Engagement HQ), an online survey, email, and two listening sessions. Appendix B provides a summary of the demographics and topics covered through this engagement process. Overall, EQB received high interest in this report with over 700 comments received.

Both members of the public and local government units (LGUs) provided feedback. LGUs complete about 80% of environmental reviews. About one third of survey respondents self-identified as LGUs. EQB also emailed LGUs who completed a review in the last three years for frequently used categories (over 100 projects) seeking feedback on how the mandatory category process functioned in their experience. EQB used LGU feedback from that process to inform the report.

As noted above, ideas received during the CI process that pertained directly to mandatory categories helped inform this report. The [full CI report](#), including a list of these comments, can be found on EQB's website.

Taking public input on this report was a new process; it felt important because of EQB's recent work on the environmental review continuous improvement process and conversations around engagement during development of EQB's strategic plan goals and values. This report, following its legislative directive, is focused on when environmental review is required. EQB received many comments and concerns about *how* environmental review gets done that are valid and important ideas about how to improve the program outside the scope of the report. What comments showed was a need for deeper evaluation into several topic areas, gathering data and information about past and current practices, perspectives from RGUs and project proposers that regularly deal with the category, and perspectives from all partners and stakeholders. This in-depth evaluation to resolve complex issues and differences of opinion could not reasonably take place during the time period for authoring the report. Therefore, the report identifies areas where more targeted research and inclusive conversations are necessary.

Review 2021-2024 legislative directives

Some mandatory category recommendations for modification result from recent legislative changes. The 2024 legislature made updates to the following areas, with which EQB's rules will need to align.

Gas and Oil Production

DNR is directed to include EQB in a Minnesota Gas and Oil Resources Technical Advisory Committee to make recommendations to the Commissioner about a regulatory framework for the production of gas and oil in Minnesota. EQB was also directed to, as needed, adopt or amend rules to establish mandatory categories for the environmental review of gas and oil production. This will likely include and address helium gas exploration and extraction. If rulemaking for environmental review is needed, EQB is directed to use an expedited rulemaking process and the rules must be proposed by May 2026.

Minnesota Energy Infrastructure Permitting Act

Laws of Minnesota 2024, Chapter 126 (SF 4942) made multiple changes to the state's process for permitting and environmental review of large energy projects such as power generating facilities, energy storage systems, and transmission lines. EQB was directed to make conforming changes to the environmental review rules (Minn. R. 4410) using the expedited rulemaking process. Proposed rule changes will need to be public noticed by November 2025.

Report drafting

Issues identified in this report reflect a cross-section of perspectives and experiences from RGUs, the public, and interested or affected parties. EQB and co-authoring agencies sorted through information from sources listed above to formulate the discussion and recommendations sections of the report for each mandatory category. The implementation of any recommendations will require further conversation, scoping, prioritizing, and work planning. Recommendations identify issues and propose changes, but the report does not prioritize those actions or commit the EQB to fulfilling those recommendations.

Mandatory category analysis

Minnesota's environmental review program successfully provides transparency and efficiency in gathering information on a wide variety of project types. Environmental review is beneficial for all parties because it can help identify potential issues in one process and document. This information-gathering creates an opportunity to anticipate and manage potential problems before the project is built and informs subsequent environmental permits.

This section of the report is organized by project types as they appear in the mandatory category rules (Minn R. 4410.4300 and 4410.4400). Each category begins with relevant rule language and lists:

- Potential RGU(s) for each category
- Hyperlinks to SONARs (past rulemaking documents that include the historical purpose)
- Number of environmental review projects completed for each category in the last three years
- Discussion section
- Recommendation(s)

This report is required to include information on “whether projects that fall within the category are also subject to local, state, or federal permits.” The report provides an extensive list of potential permits for each mandatory category, but permits are always project specific and projects may have highly individualized permitting needs. Project proposers should always discuss their individual requirements with permitting authorities.

The discussion section of each category constitutes the main evaluation of the potential need for supporting structures or changes to the category. The discussion section includes the RGU’s experience implementing the category as well as the EQB’s experience and knowledge on common issues that may impact program effectiveness. It also reflects the public perspectives heard during the public engagement process.

The discussion generally aims to provide information on actions that might be needed to provide consistency and efficiency when applying the rules. It includes a variety of actionable strategies that vary in the time and resources needed for implementation. For some categories, the discussion section describes opportunities for actions that would support implementation – such as new or improved guidance or best practices. These guidance updates and supporting tools can be made by EQB and do not rise to the level of a recommendation for change.

Recommendations for change are made when there is a need for a change to the environmental review rule language, including updates to existing mandatory categories, threshold changes, definitions (in Minn. R. 4410.0200), or clarification of terms. In some cases, the report recommends “no change.” EQB will consider these opportunities and recommendations (along with those gathered from the CI process) in future work planning. Carrying out any of the recommendations will require additional work and will likely need to be phased to ensure adequate evaluation of needs, scoping, and engagement with practitioners.

Nuclear fuels and nuclear waste

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 2	EQB, MDH	1982 SONAR page 112 and 2019 SONAR page 23.	None

Permits

Fissionable materials: Minnesota Department of Health pursuant to Minn. Stat. 144.12. In addition, Minn. Stat. 116C.72 requires legislative authorization of any radioactive waste management facility.

Processing facilities: Minnesota Pollution Control Agency pursuant to Minn. Stat. 115.03 and Minn. Stat. 116.07. Environmental review documents prepared pursuant to these proposed rules would be subject to cooperative state/federal procedures. The U.S. Nuclear Regulatory Commission has jurisdiction over nuclear materials.

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 2	EQB, MDH, DNR, MPCA, Commerce, PUC	1982 SONAR page 112	1 (2022)* 1 (2023)

**The project listed here was a supplemental EIS conducted through the Public Utilities Commission rule process and is not counted in the EQB's total of projects conducted in the last three years.*

Permits

Fissionable materials: Minnesota Department of Health pursuant to Minn. Stat. 144.12. In addition, Minn. Stat. 116C.72 requires legislative authorization of any radioactive waste management facility.

Processing facilities: Minnesota Pollution Control Agency pursuant to Minn. Stat. 115.03 and Minn. Stat. 116.07. Environmental review documents prepared pursuant to these proposed rules would be subject to cooperative state/federal procedures. The U.S. Nuclear Regulatory Commission has jurisdiction over nuclear materials.

Independent spent-fuel storage installation: Operating License and Subsequent License Renewal from the Nuclear Regulatory Commission. Minnesota Public Utilities Commission (PUC) Certificate of Need. Building permits from local government cities or townships.

Discussion

Background

This category includes projects that construct or expand various kinds of nuclear waste storage and disposal facilities as well as nuclear waste processing facilities. It was proposed, according to the 1982 SONAR, "because of the potential for significant adverse environmental and human health effects." Due to the nature of planning and operating these types of facilities and their disposal needs, these projects happen infrequently. Some housekeeping changes were made to the EAW mandatory category in the 2019 rulemaking. Item C, referring to independent spent-fuel storage installations, was added at that time. The 2023 EIS was for the proposed additional dry cask storage of spent nuclear fuel at one nuclear plant. There was a supplemental EIS in 2022 for another nuclear plant requesting a change in spent fuel storage technology.

RGU Experience

RGUs have shared that it seems unclear when the DNR is the RGU versus MPCA for this mandatory EIS category's subpart A, particularly for uranium mills.

Public perspective

There were no comments directly related to this mandatory category.

Opportunities for improved guidance

Minn. R. 4410.4400, Subp. 2 A is worded in a way that can create confusion as to who serves as the RGU. EQB interprets this subpart to mean that any project with a uranium mill requires the DNR to be the RGU for that project (not the MPCA) and that construction/expansion/fuel fabrication facilities, and reprocessing plants (without uranium mills) require MPCA to be the RGU. This can be clarified in EQB guidance.

Rule change considerations

Laws of Minnesota 2024, Chapter 126, Article 9 amends Minn. Stat. 116C.83, subd.6 (b) – which requires an EIS for independent spent-fuel storage installations – to make the PUC the RGU for these projects instead of the Department of Commerce, effective August 1, 2024. EQB was directed to enact rulemaking in Minn. R. 4410 to align with those changes and will therefore update the RGU for this EIS category accordingly.

Recommendation

EQB updates the EIS category to make the PUC the RGU for independent spent-fuel storage installations, as directed by the 2024 Legislature.

Electric-generating facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 3	MPCA, PUC, LGU	1982 SONAR page 115 , 2003 SONAR , and 2019 SONAR page 23	2 (2021) 1 (2022) 1* (2023)

**One electric generating facility EAW was ordered by the PUC due to an expansion.*

Permits

As of the date of this report, permitting is addressed through Minn. Stat. chapters 216B, 216E, and 216F as well as Minn. R. chapters 7849, 7850, and 7854. Amendments to existing regulations and the addition of Minn. Stat. 216I made in Laws of Minnesota 2024, Chapter 126, Article 7 will affect future permitting.

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 3	PUC	1982 SONAR page 115 , 2003 SONAR , and 2019 SONAR page 23	none

Permits

As of the date of this report, permitting is addressed through Minn. Stat. chapters 216B, 216E, and 216F as well as Minn. R. chapters 7849, 7850, and 7854. Amendments to existing regulations and the addition of Minn. Stat. 216I made in Laws of Minnesota 2024, Chapter 126, Article 7 will affect future permitting.

Discussion

Background

This category includes the construction and expansion of various kinds of electric-generating facilities. This category is unique in that the EQB's environmental review rule (Minn. R. 4410) points to procedures under Minn. R. chapters 7849, 7850 and 7854, administered by the PUC. Over time, the relationship between the state's environmental review process (established under MEPA and administered by EQB) and the PUC's separate statutes and rules (related to power plant siting and energy projects) has evolved.

Most recently, the 2024 Legislature passed the Minnesota Energy Infrastructure Permitting Act, which revises many of the permitting and environmental review requirements related to this category. The act repealed multiple rules and statutes that are referenced within this category, including much of Minn. R. 7850, all of Minn. R. 7854, all of Minn. Stat. chapter 216E, and all of Minn. Stat., chapter 216F. The act also directs PUC to amend and adopt rules in permitting and environmental review related to large energy infrastructure facilities — for instance, the new legislation calls out that solar energy generating systems would have an option to conduct local review through the PUC if they are less than 80 megawatts (MW). EQB will need to update the Minn. R. 4410 to align with these changes.

The PUC's Environmental Impact Statement portion of environmental review is tied to Minn. Stat., chapter 116D, but certain projects have the option of doing an Environmental Assessment through procedures currently outlined in Minn. Stat. 216E.03 (and to be enacted in 2025 in Statute 216I). For instance, the PUC conducted environmental assessments for one solar project in 2021, four solar projects in 2022, and one solar project in 2023. For wind projects, environmental review is a part of the site permit application as prescribed in chapter 216F with an

analysis of environmental impacts according to requirements in Minn. R. 7854.0500, Subp 7; PUC used this process for three wind projects in 2021 and two wind projects in 2022. These solar and wind projects are not reflected in EQB's counts in the tables above.

It is expected that more storage systems will be proposed in the future to accommodate increased availability and usability of renewable energy. The legislature has recently clarified that the PUC's environmental review and permitting process applies to energy storage systems with a capacity of 10 megawatts or greater (Minn. Stat. 216I.02, subd. 6). This category is not reflected in EQB's mandatory category rules.

RGU experience

The 2021 Mandatory Category Report lists the following "identified issue" that remains unresolved: "PUC is [the] RGU for Wind Energy Conversion System operation at 5 MW or more (not 25). A clarity/grammar change would make this rule consistent with PUC statute 216F." This was proposed by the Department of Commerce, but subsequent updates are now dependent on alignment with the new Minnesota Energy Infrastructure Permitting Act that will incorporate PUC as the RGU for wind energy conversion systems over 5MW into Minn. Stat. 216I. In the past three years, EQB received one petition for a project that falls in this category; it resulted in an EAW.

Public perspective

Some commenters shared concerns that wind turbine projects were not being adequately reviewed because wind projects do not have a mandatory EIS category. Others asked for solar electric-generating facilities to be expressly called out in the PUC's siting and permitting program, due to potential land use changes and related impacts. Some respondents commented on their concerns for energy storage systems, such as a battery storage facility. These types of facilities are not likely to meet the threshold for square footage to require a mandatory EAW under Minn. R. 4410 but are likely to trigger the new category for energy storage systems over 10 MW with the PUC (Minn. Stat. 216I.02, subd. 6). Currently, under Minn. Stat. 216E.04, subd. 2 (9) "energy storage systems" are applicable projects for environmental review. This statute will be repealed when Minn. Stat. 216I takes effect.

Opportunities for improved guidance

EQB staff and PUC staff could collaborate on designing a guidance that reflects the most recent legislatively directed changes to this category and documents a shared understanding of this category's history and applicability. EQB also heard questions on whether "construction" in this category applies only to new facilities or also to modifying existing facilities. There does not appear to be any reference in the SONARs that says "construction" is explicitly applicable to new facilities. Minn. Stat. 216E currently, and in the future Minn. Stat. 216I, clarify that the definition of construction does not exclude expansions or modifications. An update to EQB guidance can specify whether existing facilities undergoing expansion or modification apply.

Rule change considerations

Newly created Minn. Stat. 216I restructures existing PUC law including sections on when energy storage, wind, and solar projects require review. EQB must make conforming changes in 4410 rule updates to align with the changes made in the 2024 Minnesota Energy Infrastructure Permitting Act.

Recommendation

EQB must make conforming changes to this category to align with the changes made in the 2024 Minnesota Energy Infrastructure Permitting Act.

Petroleum refineries

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 4	MPCA	1982 SONAR page 116	None

Permits

City: Conditional Use Permit; Permit for Discharge of Industrial Wastewater; Plan Review and Approval; Building Permit.

County: Conditional Use Permit, Building Permit

State: Air Emissions Permit (MPCA); NPDES Wastewater Discharge (MPCA); NPDES General Construction Stormwater Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank MPCA); Highway Crossing Permit (MnDOT); Utility Permit to work in the State Right-of-way (MnDOT); Fire Marshall (MnDOT); Plan Review for Above Ground Storage Tanks (MnDOT).

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 4	MPCA	1982 SONAR page 116	None

Permits

City: Conditional Use Permit; Permit for Discharge of Industrial Wastewater; Plan Review and Approval; Building Permit.

County: Conditional Use Permit, Building Permit

State: Air Emissions Permit (MPCA); NPDES Wastewater Discharge (MPCA); NPDES General Construction Stormwater Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank MPCA); Highway Crossing Permit (MnDOT); Utility Permit to work in the State Right-of-way (MnDOT); Fire Marshall (MnDOT); Plan Review for Above Ground Storage Tanks (MnDOT).

Discussion

Background

The 1982 rulemaking established this category with the SONAR stating, “This category area is proposed because of the potential for environmental impacts relating to air pollution, transportation, energy use, toxic discharge, spills, water pollution, and odors resulting from these facilities.”

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria, and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Fuel conversion facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 5	MPCA	1982 SONAR page 117 , and 2019 SONAR page 50	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 5	MPCA	1982 SONAR page 117 , 2005 SONAR page 41 and 2019 SONAR page 50	None

Permits

City: Building Permit; Utilities Permit; Industrial Stormwater Agreement; Conditional Use Permit.

County: Conditional Use Permit; Utilities Permit; On-site Septic Permit; Building Permit; Driveway Permit; Incinerator Permit; Permit to dispose at the County Landfill; Ditch Use Authorization; Watershed Districts; Watershed District Permit.

State: NPDES General Construction Stormwater Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Air Emissions Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Feedlot Permit (MPCA); Industrial By-Products Permit (MPCA); Solid Waste Permit (MPCA); Aboveground Storage Tank Permit (MPCA); Wastewater Treatment Permit (MPCA); Water Appropriation Permit (DNR); Work in Public Waters Permit (DNR); Work in Public Lands Permit (DNR); Natural Heritage and Nongame Database Review (DNR); Agricultural Liming License (MDA); Construction Easements (MN Historical Society); Minnesota State Historical Concurrences on Findings of Cultural Preservation Office Resource Impacts; Mississippi National River and Recreation Area Critical Area Site Plan Approval; Highway Crossing Permit (MnDOT); Utility Permit to work in the State Right-of-way (MnDOT); Dewatering Well Construction Permit (MDH); Monitoring Well Construction Permit (MDH); Plumbing and Engineering Plumbing Plan Review (MDH); Special Well Construction Area Approval (MDH); Fire Marshal Plan Approval; Above Ground Flammable and Combustible Liquids Review (MN DPS).

Federal: Army Corps of Engineers Section 404 Wetland Permit. U.S. Fish and Wildlife permitting.

Discussion

Background

This category encompasses conversion of coal, peat, or biomass sources to fuels. As detailed in the 1982 SONAR when this category was developed, it was enacted largely based upon information from the 1980s for peat or coal gasification. This category was updated in 2005 to differentiate thresholds for projects either in or outside of the Twin Cities metropolitan area. Changes in 2019 were meant to provide clarifying language for both the EAW and the EIS.

RGU experience

MPCA provides guidance that anaerobic digestion facilities convert biomass to fuel and are therefore considered in this mandatory category. Minnesota is seeing an increased interest in building anaerobic digesters that handle manure, food waste, and other inputs; one fuel conversion EAW has been completed since 2011. No mandatory EAWs or EISs for this category have been completed in the previous three years. One discretionary review took place in addition to the mandatory reviews listed in the chart above.

Public perspective

During the public engagement period for this report, EQB heard interest in anaerobic digesters from individuals and environmental organizations, advocating for EQB to address anaerobic digestion due to concerns over air, soil, water, and public health impacts.

Rule change considerations

EQB may consider adding rule language to explicitly add anaerobic digestion to this category under Subp. 5 A. Defining anaerobic digestion and updating the rule to explicitly include this technology would provide clarity to project proposers and the public. If pursued, EQB may consider changing the threshold to measure the fuel conversion facility's outputs instead of inputs. This would include clarity on how to calculate a project's outputs to consistently apply them to this category's threshold. Having a threshold based on an output aligns with the way

other categories' thresholds are measured. If updated, careful considerations should be made to align with exemptions in Minn. Stat. 116D and Minn. R. 4410.4600, so terms and intentions are aligned.

Opportunities for improved guidance

EQB can also update their guidance documents to clarify that anaerobic digesters are fuel conversion facilities.

Recommendation

Clarify in Minn. R. 4410.4300, Subp. 5 that this category applies to anaerobic digestion facilities. If rulemaking is pursued, also evaluate if changes to all thresholds in this category should be measured based on projects' outputs rather than material inputs as it is currently written.

Transmission lines

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 6	PUC, EQB	1982 SONAR page 118 and 2019 SONAR page 25	1 (2021)* 4 (2022)* 1 (2023)*

**The projects listed here conducted environmental assessments through the Public Utilities Commission process and are not counted in the EQB's total of projects conducted in the last three years.*

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 6	PUC, EQB	1982 SONAR page 118 and 2019 SONAR page 51	1 (2021)*

**The projects listed here conducted review through the Public Utilities Commission process and are not counted in the EQB's total of projects conducted in the last three years.*

Permits

As of the date of this report, route permitting and certificate of need processes are addressed through Minn. Stat., chapter 216E and Minn. R. chapters 7849 and 7850 for projects greater than or equal to 100 kilovolts (kV) and greater than 1,500 feet in length. Changes made in Laws of Minnesota 2024, Chapter 126, Article 7 will affect future permitting and environmental review.

Discussion

Background

The 1982 SONAR says, “This category area is proposed because of the potential for significant adverse environmental impacts associated with construction, operation, and maintenance of a linear facility, as well as significant social and economic impacts associated with the location of a linear facility.” For certain facilities, the Legislature has prescribed how environmental review must be conducted according to either the EQB’s or the Public Utilities Commission’s process. Some transmission line projects have the option of following environmental review procedures currently outlined in Minnesota Statute 216E.04 Subd. 2.

RGU experience

No projects were completed for this category in the previous three years using Minn. R. 4410. Subsequent updates to this category are dependent on alignment with the new Minnesota Energy Infrastructure Permitting Act that will incorporate new definitions, environmental review procedures, and thresholds into Minn. Stat. 216I.

Public perspective

There were no comments directly related to this mandatory category.

Opportunities for improved guidance

Over time, the relationship between the state’s environmental review process (established under MEPA and administered by EQB) and the environmental assessment and review process (established in statutes administered by PUC) has evolved. Both agencies could benefit from having a well-documented history on such changes and an up-to-date factsheet on how project proposers, RGUs, and the public can navigate between each set of rules. EQB and PUC staff may consider a collaboration on designing a guidance that reflects the most recent legislatively directed changes to this category and documents a shared understanding of this category’s history and applicability.

Rule change considerations

The 2024 Legislature passed the Minnesota Energy Infrastructure Permitting Act, which revises many of the permitting and review requirements related to this category. The act repealed some rules and statutes that are referenced within this category, including much of Minn. R. 7850 and Minn. Stat. 216E. EQB will need to update references in this category to align with these changes. The act also directs PUC to amend and adopt rules in permitting and environmental review related to large energy infrastructure facilities such as transmission lines.

Recommendation

EQB must make conforming changes to Minn. R. 4410 for this category, as directed by the 2024 Legislature.

Pipelines

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 7	EQB, Municipality	1982 SONAR page 119 and 1988 SONAR page 37	1 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 24	PUC	1988 SONAR page 68	1 (2021)* 1 (2022)* 1 (2023)*

**The projects listed here conducted environmental review through the Public Utilities Commission's "partial exemption" process per [Minn. Rules 7852.0600](#) and are not counted in the EQB's total of projects conducted in the last three years.*

Permits

Permitting is addressed through [Minn. Stat.](#), [Minn. R. 7852](#), and [Minn. R. 7853](#).

Discussion

Background

This is a longstanding category. According to the 1982 SONAR, "This category area is proposed because of the potential for significant adverse environmental effects during construction as well as during the use of the facility if a leak should develop." This category is unique due to connections between EQB's rules and those administered by the PUC. For certain facilities, the Legislature has prescribed how environmental review must be conducted according to either EQB's Rules or the Public Utilities Commission's environmental review process.

RGU experience

In the last three years, EQB received four petitions for projects that fit this category; one resulted in an EIS for a carbon dioxide pipeline. The PUC clarified that current rules defining hazardous liquids or gas apply to carbon and helium types of pipelines, setting legal precedent where no further refinements are required to specifically call out carbon or helium in Minn. R. 4410. In 2024, the Legislature passed a bill that mandates an EIS be completed using Minn. R. 4410 for carbon dioxide pipelines (Laws of Minnesota 2024, Chapter 126, Article 9, Sec. 17) and designates the PUC as the RGU.

Public perspective

During the engagement period for this report, commenters shared concerns that having pipeline environmental review take place using PUC rules was confusing, inefficient, and less protective. Commenters also expressed concerns over the transportation of both helium and carbon gas through pipelines, saying that these projects are often controversial and risk leaks and land disturbances.

Opportunities for improved guidance

For clarity in application of this category, EQB could update guidance to reflect that this category applies to helium and carbon dioxide pipelines. As with other certain categories, the relationship between PUC's environmental review process and EQB's environmental review process has continuously evolved. Both agencies could benefit from having a well-documented history on such changes and an up-to-date factsheet on how project proposers, RGUs, and the public can navigate between each set of rules and statutes. EQB and PUC staff may consider a collaboration on designing guidance that reflects the most recent legislatively directed changes to this category.

Rule change considerations

The EQB considers rule updates to this mandatory category subpart, conforming to changes to the Laws of Minnesota 2024, Chapter 126, Article 9, Sec. 17.

Recommendation

EQB must make conforming changes to rule references in this category, as directed by the 2024 Legislature to clarify that carbon dioxide pipelines (as defined in Minn. Stat. 216G.025, subd. 1) require EISs.

Transfer facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 8	MPCA	1982 SONAR page 120 and 2019 SONAR page 28	None

Permits

City: Building Permit; Conditional Use Permit;

County: Conditional Use Permits; Septic System Permit; Watershed Districts; Watershed Permits;

State: NPDES General Construction Stormwater Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Access Permit (MnDOT); Minnesota Natural Heritage Database Search (DNR); Cultural Resources Review (MN SHPO);

Federal: Army Corps of Engineers Section 404 Wetland Permit.

Discussion

Background

This category was first enacted to address facilities for coal and hazardous waste. The 2019 SONAR documents the addition of silica sands projects to this category.

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Underground storage

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 9	DNR	1982 SONAR page 121	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 7	DNR	1982 SONAR page 122	None

Permits

State: Minn. Stat. 103I.681; Minn. R. 6115.0130; Minn. Stat., chapter 216B; Minn. R., chapter 7851.

Discussion

Background

Underground storage relates to projects that store any liquid or gas below ground. This is a longstanding category. There have been no updates since the 1982 rulemaking. The 1982 SONAR says that this category was proposed, in part because an underground storage facility, “has the potential for groundwater contamination and serious human health impacts.”

RGU experience

No projects were completed for this category in the previous three years.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Storage facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 10	MPCA, PUC, MDA	1982 SONAR page 123 , 1988 SONAR page 38 , and 2019 SONAR page 31	None

Permits

City: Building Permit; Conditional Use Permit.

County: Conditional Use Permits; Septic System Permit; Watershed Districts; Watershed Permits.

State: NPDES General Construction Stormwater permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Access Permit (MnDOT); Minnesota Natural Heritage Database Search (DNR); Cultural Resources Review (MN SHPO).

Federal: Army Corps of Engineers Section 404 Wetland Permit.

Discussion

Background

This category encompasses many types of storage including that of coal, hazardous waste, liquified natural gas, and more. This is a longstanding category. According to the 1982 SONAR, “Concerns documenting the need for this category include fugitive dust emissions, leaching, transportation related issues, and water pollution issues.” The 1988 SONAR describes the addition of anhydrous ammonia to the category and the 2019 rulemaking added several items with new thresholds to the category.

RGU experience

No projects were completed for this category in the previous three years.

Public perspective

There were no comments directly related to this mandatory category.

Rule change considerations

Certain items require housekeeping updates. For example, subpart E says, “the PUC is the RGU, except as provided in item G”; however, the PUC is also the RGU for item G, making this reference unnecessary.

Recommendation

Consider housekeeping fixes to item E, removing inaccurate references.

Metallic mineral mining and processing

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 11	DNR	1982 SONAR page 124	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 8	DNR	1982 SONAR page 124	None

Permits

Local: Commercial septic tank permit; Building permit; Permit for construction in shoreland area; Zoning variances.

State: Permit to mine; Water appropriation permit; Public water work permit; Dam safety permit; Burning permit; Listed species takings permit; Part 70 operating permit; Title V air permit modification; NPDES General Construction Stormwater general permit; NPDES Industrial Stormwater permit; Section 401 Water Quality Certification; Waste tire storage permit; Storage tank permit; Solid waste permit; Hazardous waste generator and storage; Demolition debris disposal facility permit; Radioactive material registration; Noncommunity nontransient public water system; Government loan/grant; High Voltage Transmission Line routing permit.

Federal: 404 permit; Permit for tower construction next to existing radar.

Discussion

Background

This category includes mines, stockpiling, and mining tailing basins. This category is longstanding. Since the 1982 rulemaking no updates have been made. Projects are relatively infrequent but are often controversial. EQB has reviewed the category multiple times since program inception and has chosen to keep thresholds where they were initially established.

RGU experience

DNR has reviewed the existing thresholds and has not identified any rule changes that would improve the implementation of this category at this time. No mandatory reviews were conducted for this category in the last three years.

Public perspective

EQB received over 140 comments relating to mining. Leasing of mineral interests was requested to be included within this mandatory category. As a note, per a 2013 Court of Appeals decision a lease sale does not constitute a project, so EQB can clarify this in guidance. EQB also received comments raising concerns that an EIS completed decades ago could still be considered valid under MEPA. While the comments were specific to projects that may have fallen within this category, the concept has programmatic considerations and therefore is out of scope of this report. However, this idea is highlighted conceptually as “expirations” in Appendix A. EQB also received comments requesting adding thresholds applicable to project expansions.

Recommendation

No change.

Nonmetallic mineral mining

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 12	DNR, LGU	1982 SONAR page 127 and 2007 SONAR page 42	4 (2021) 8 (2022) 1 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 9	DNR, LGU	1982 SONAR page 127 and 2007 SONAR page 52	None

Permits

Local: Comprehensive plan amend if the community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Interim Use Permit; Local mining permit; Site plan approval; Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or mitigation plan; Road access permit on local road; Building permits for structures.

State: Water appropriation permit; Permit to mine (Reclamation permit); Land lease; NPDES/SDS permit; Clean Water Act 401 certification; Driveway permit (DOT) if state highway.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category applies to sand and gravel mines. This is a longstanding category. The 1982 SONAR says, “This category area is proposed because of the potential for significant effects on ground and surface water quality and quantity, air quality, land use, and the local and state economy.” The 2007 changes include provisions for shorelands.

RGU experience

In the past three years, EQB received nine petitions for nonmetallic mining projects. Seven of these petitions resulted in an EAW. In the last three years, five discretionary reviews were completed in addition to the mandatory

reviews listed above. All mandatory EAWs in the last three years were under subpart B, which includes extraction or mining of sand, gravel, stone, or other nonmetallic minerals other than peat. All EAWs were completed by local government units.

Public perspective

EQB received comments identifying cases where an EIS may have been completed decades ago, yet the current science and regulatory environment may have since changed. While the comments were specific to this category, the concept would imply programmatic considerations. This idea is discussed under the heading “expirations” in Appendix A. EQB also received some comments supportive of adding thresholds applicable to project expansions.

Rule change considerations

EQB suggests future evaluation to determine if there is a need for different thresholds for expansions in both the EAW and EIS category by either percent increase in permitted capacity, acreage, or tons processed or disposed of.

Opportunities for improved guidance

Both the EAW and EIS thresholds ask the RGU to interpret effects during the project’s “existence” which is not fully defined by existing rules, SONARs, or guidance. EQB could update guidance by adding an interpretation of the phrase “during its existence” to allow for a consistent interpretation of the thresholds in all items of this category.

Recommendation

No change.

Paper and pulp processing mills

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 13	MPCA	1982 SONAR page 129	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 10	MPCA	1982 SONAR page 129	None

Permits

City: Building Permit; Utility Permit; Capacity Allocation Agreement Wastewater Treatment Plant

County: Conditional Use Permit; Building Permit

State: Air Emissions Permit; NPDES Discharge Permit; NPDES General Construction Stormwater Permit; NPDES Industrial Stormwater Permit; Above Ground Tank Permit; Water Appropriation Permit; Highway Crossing Permit; Utility Permit

Discussion

Background

This is a longstanding category. There have been no updates since it was enacted. The 1982 SONAR says, “This category area is proposed because of the potential for significant effects on water quality, air quality, solid waste generation, and transportation impacts. These potential impacts are regulated by several different agencies. Environmental review would facilitate multi-agency coordination.”

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria, and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Industrial, commercial, and institutional facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 14	LGU	1982 SONAR page 130 , 1986 SONAR page 9 , and 1988 SONAR page 39	6 (2021) 13 (2022) 2 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 11	LGU	1982 SONAR page 131 and 1986 SONAR page 14	None

Permits

Local: Comprehensive plan amend if the community has a plan; Zoning permits; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Building permits for structures.

State: Driveway permit (MnDOT) if state highway.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category includes a wide variety of developments categorized as industrial, commercial, or institutional. Examples include retail spaces, hospitals, or office buildings. This is a longstanding category. According to the 1982 SONAR, “This category area is proposed because of the potential for significant impacts on water quality, air quality, solid waste generation, hazardous waste generation, transportation, land use, demographic and economic impacts on local economies.” Later rulemaking sought to clarify when this category would be used if projects fall into multiple mandatory categories.

RGU experience

All reviews in this category were conducted by local government units. The majority fell under item A and item B. In the last three years, EQB received one petition for an industrial, commercial, institutional project; it did not result in an EAW. Three additional discretionary reviews took place, in addition to the mandatory reviews listed in the chart above.

Public perspective

EQB heard it can be confusing as to what constitutes a “new use” in this category. For example, EQB was asked if converting an existing commercial building into an industrial building is a new use. Relating to the threshold, EQB heard one commenter suggest lowering square footage thresholds especially for projects in the metro area.

Opportunities for guidance

EQB can improve guidance on what constitutes a “new use” and therefore applies to this category.

Recommendation

No change.

Air pollution

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 15	MPCA	1982 SONAR page 134 , 1988 SONAR page 41 , 2005 SONAR page 34 , 2010 SONAR	1 (2022) 1 (2023)

Permits

City: Building Permit; Conditional Use Permit; Sanitary Sewer Hook-up; Wastewater Discharge Permit; Zoning Certificate; Utility Permit.

County: Watershed District Permit; Conditional Use Permit.

State: Air Emissions Permit (MPCA); NPDES General Construction Stormwater Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); NPDES Wastewater Discharge Permit (MPCA); Above Ground Tanks Permit (MPCA); Very Small Quantity Hazardous Generator License (MPCA); Beneficial Use Approval for ash land application (MPCA); Concurrence on Findings of Cultural Resources Impacts (MN SHPO); Water Appropriation Permit (DNR); Minnesota Natural Heritage Database Search (DNR); Fire Marshall Plan Review; Highway Crossing Permit (MnDOT).

Federal: Threatened and Endangered Species Review (US FWS); Hazardous Waste Generators Identification Number (EPA).

Discussion

Background

This category encompasses any project that emits air pollution at levels defined by the category. This is a longstanding category. According to the 1982 SONAR, “This category area is proposed because of public concern relating to air quality and its impact on human health and the environment, especially via implications relating to acid rain.” Initially, this category applied to parking facilities and stationary sources. Over time, changes were made to remove parking facilities partly because those projects, if large enough, would generally be reviewed through other categories. The State of Minnesota has further prioritized greenhouse gas emissions reductions and mitigation measures for climate change since this category was last updated.

RGU experience

Since 2021, one facility has exceeded the 250 ton per year threshold in item A of this subpart. It is likely that smaller facilities may still have the potential for significant environmental effects. A 100 tons per year threshold would be consistent with the major source threshold used in air emissions permitting under the Clean Air Act.

Public perspective

One comment said air permitting programs make this category unnecessary, but environmental review fulfills a different purpose and is meant to inform permitting. Most related comments asked EQB to consider adding a mandatory EIS category for greenhouse gas (GHG) emissions. Comments say this should be based on the assumed project's life, or a life cycle assessment of the project.

Rule change considerations

MPCA recommends adding a category for [Hazardous Air Pollutants \(HAPs\)](#) with a threshold of 10 tons per year (TPY) per single HAP, and 25 TPY for a combination of HAPs. HAPs are known to cause cancer and other serious health impacts. This recommendation aligns with the definition of a "major source" of HAPs in the Clean Air Act. The Clean Air Act requires EPA to regulate such pollutants, also referred to as air toxics. There are 188 known HAPs on EPA's list.

MPCA also recommends lowering the existing threshold of subpart A from 250 tons per year because only one project has triggered this subpart since the threshold was increased in 2011. Lowering the threshold would require further discussions by an interagency team of experts.

MPCA also recommends considering a mandatory EIS category for large emitters of Greenhouse Gases (GHGs). Creating a GHG emissions subpart aligns with the Climate Action Framework, where Minnesota has set goals to reduce its GHG emissions by 50% by 2030 and to achieve net-zero emissions by 2050. If a mandatory EIS category were created, any new projects that emit substantial amounts of GHGs would then be subject to the information-gathering and planning required by an EIS. Establishing a mandatory GHG EIS category would require further discussions by an interagency team of experts.

Recommendation

Consider creating a mandatory EIS category for air pollution, as it relates to criteria pollutants, air toxics, and greenhouse gas emissions; consider changing the EAW threshold in item A from 250 tons per year to a lower amount; consider adding an item to establish separate thresholds for hazardous air pollutants.

Hazardous waste

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 16	MPCA	1982 SONAR page 135 , 1988 SONAR page 41 and 2019 SONAR page 35	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 12	MPCA	1982 SONAR page 135 , 1988 SONAR page 59 , and 2019 SONAR page 53	None

Permits

City: Building Permit; Conditional Use Permit; Zoning; Fire Department Review.

County: Conditional Use Permit; Septic System Permit; Watershed Districts; Watershed Permits.

State: NPDES General Construction Stormwater permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Air Emissions Permit (MPCA); Access Permit (MnDOT); Minnesota Natural Heritage Database Search (DNR); Work within Waters of the State Permit (DNR); Cultural Resources Review (MN SHPO).

Federal: Army Corps of Engineers Section 404 Wetland Permit.

Discussion

Background

This category includes hazardous waste facilities, including storage and treatment. This is a longstanding category. According to the 1982 SONAR, “This category area is proposed because of the potential for ground and surface water contamination and the resultant human health and environmental impacts that may result from the disposal, processing, and storage of hazardous wastes. Additional concerns include potential air quality, noise and odor impacts, safety questions relating to handling, and transportation and land use issues.” Later changes clarified how the category applied to sensitive areas and clarified terms.

RGU experience

There were no projects completed under this category in the previous three years. The project type, criteria, and threshold are still relevant.

Public perspective

During the engagement process, only a few comments related to updating the hazardous waste terms or thresholds. One comment noted that current regulations do not call out lithium batteries. The primary issue with lithium batteries is that their compaction or improper storage can lead to fires. However, this category references the “hazardous waste” definition used in Minn. R., Chapter 7045 and lithium batteries are included in this definition.

Recommendation

No change.

Solid waste

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 17	MPCA	1982 SONAR page 137 , 1988 SONAR page 43 and 2019 SONAR page 36	none

Permits

City: License to Operate Waste Transfer Facility; Building Permit; Utility Permit; Conditional Use Permit; Zoning Amendment; Watershed Districts; Watershed Permit; Compost Facilities.

County: Conditional Use Permit; Operating License; Septic Permit; Very Small Quantity Generator Hazardous Waste License.

State: Solid Waste Management Facility Permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); NPDES General Construction Stormwater Permit (MPCA); Metropolitan Area Policy Plan Review (MPCA); Solid Waste Permit (MPCA); Very small Quantity Generators Hazardous Waste License (MPCA).

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 13	MPCA	1982 SONAR page 137 and 2019 SONAR page 53	1*

**The project listed here is a supplemental EIS performed under Minn. R. 4410.3000.*

Permits

City: Building Permit; Conditional Use Permit; Zoning; Fire Department Review.

County: Conditional Use Permit; Septic System Permit; Watershed Districts; Watershed Permits.

State: NPDES General Construction Stormwater permit (MPCA); NPDES Industrial Stormwater Permit (MPCA); Above Ground Storage Tank Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Air Emissions Permit (MPCA); Access Permit (MnDOT); Minnesota Natural Heritage Database Search (DNR); Work within Waters of the State Permit (DNR); Cultural Resources Review (MN SHPO).

Federal: Army Corps of Engineers Section 404 Wetland Permit.

Discussion

Background

This category includes multiple project types including landfills, transfer stations, and solid waste energy recovery and incineration facilities. This is a longstanding category. The 1982 SONAR says, “This category area is proposed because of the potential for significant impacts relating to ground and surface water contamination...Additional environmental concerns relate to methane gas generation, fugitive dust, emissions, odor and noise problems, transportation issues, aesthetic impacts, toxic air emissions and land use issues.”

RGU experience

Three discretionary reviews took place since 2021, in addition to the mandatory reviews listed in the chart above. The MPCA notes that the term “permitted capacity” is used in this category, but that term is not defined in the solid waste rules nor in the environmental review rules.

Public perspective

There were few comments related to this category. One commenter did suggest a mandatory category for commercial composting, but mixed municipal solid waste compost facilities are already included in item E.

Rule change considerations

To provide consistency, “permitted capacity” could be replaced with the term “design capacity,” which means “the total volume of compacted solid waste, topsoil, intermittent, intermediate, and final cover specified in the facility permit, as calculated from final contour and cross-sectional plan sheets that define the areal and vertical extent of the fill area.” Alternatively, permitted capacity could mean “permitted capacity as defined in the existing permit.”

Resource recovery facilities and recycling facilities could be explicitly included in this category, added to Subp. 17 item E. In keeping with the solid waste program rules, it may also be prudent to include construction and demolition land disposal facilities and transfer stations in this category. Such wastes are found to be more environmentally impactful than once thought. This could be accomplished simply by changing references from “mixed municipal solid wastes” to “solid waste” as defined in Minn. Stat. 115A.03. Landfills are unique in the mandatory categories in that they are almost always expanding. Landfills effectively are continuous phased actions so long as expansions are substantially certain to be undertaken sequentially over a limited period of time. In general, further discussions by an interagency team of experts are needed for this category.

Recommendation

Consider updating terminology to include all waste types, like ‘construction and demolition’ waste and better align with the MPCA solid waste program’s existing definitions for terms like ‘design capacity.’

Wastewater systems

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 18	MPCA	1982 SONAR page 140 , 1986 SONAR page 12 , 1988 SONAR page 46 , 1995 SONAR page 12 , 1997 SONAR page 17 , 2005 SONAR page 36 , and 2019 SONAR page 37	2 (2021) 2 (2022) 0 (2023)

Permits

City: Conditional Use Permit; Street and Utility Plan Approval; Wastewater Treatment Facility Permits; Building Permit.

County: Highway Access/Entrance Permit; Watershed District Project Approval; Watershed Permit; Application for Minnesota Wetland conservation Act Exemption; Building Permit; Certificate of Wetland Conservation Act Exemption; Utility Permit; Right-Of-Way Permit.

State: Sewer Extension Permit (MPCA); NPDES General Construction Stormwater Permit (MPCA); Section 401 Water Quality Certificate (MPCA); Water Appropriation Permit (DNR); Minnesota Natural Heritage Database Review (DNR); Utility Crossing License (DNR); Work Within Public Waters Permit (DNR); Utility Permit on Trunk Highway Right-Of-Way (MnDOT); Watermain Plan Approval (MDH); Water Extension Permit (MDH); Metropolitan Council Connection Permit; Concurrence on Findings of Cultural Resources Impacts (MN SHPO); WWTF Plans and Specifications Approval (MPCA); SDS Permit for land application of treated Wastewater (MPCA); Sanitary Sewer Extension Permit (MPCA); NPDES/SDS Surface Water Discharge Permit (MPCA); NPDES Industrial Stormwater discharge Permit (MPCA); Air Quality Permit for backup generators (MPCA); Non-degradation to All Waters Review (MPCA); Water Appropriation Permit (DNR); License to Cross Public Lands and Waters (DNR); Natural Heritage and Nongame Database Review (DNR); Outfall Permits (DNR); Well Abandonment Permit (MDH); Public Facilities Authority Funding Application; Board of Water and Soil Resources Wetland Conservation Act Permits.

Federal: Section 10 Permit for activities affecting navigable waters in the U.S (USACE); Section 404 Permit (USACE); Wastewater Infrastructure Funding Program (USACE); Outfall Permits (USACE).

Discussion

Background

This category includes sewage collection systems and wastewater treatment facilities. This is a longstanding category and multiple changes have been made to this category over time. According to the 1982 SONAR, this category was first proposed because of “problems associated with treatment facilities including ground and surface water pollution due to effluent discharges and sludge and ash disposal, and air pollution from sludge incineration.”

RGU experience

One discretionary review took place, in addition to the mandatory reviews listed in the chart above. The RGU for this category notes several areas for potential clarifications. For example, during previous rulemaking, the words “per day” were inadvertently omitted in the adopted rule language for Item B regarding expansion, modification, or replacement of a municipal sewage collection system. The correct language using “per day” was described in the SONAR. The recommendation to add in the words “per day” was also made in the 2021 Mandatory Category Report.

Public perspective

EQB received no comments specifically relating to this mandatory category.

Rule change considerations

According to notes in the SONAR, this category is intended to read, “...with the capacity of 20,000,000 gallons per day or greater, the PCA is the RGU.” Therefore, EQB should consider correcting Item B to include “per day.” Additionally, items C and D refer to municipal or *domestic* WWTF when WWTF is defined as municipal or *industrial* in Minn. R. 4410.0200; these terms should be reviewed for consistency and clarity.

For clarity, EQB should also consider adding definitions for the following terms: “design average daily flow,” “average wet weather design flow capacity,” and “design flow capacity.” MPCA also recommends specifying the

movement of a discharge outfall is considered a “new wastewater treatment facility.” EQB could also consider modifying the definition for “sewage collection system” to include a lift station. Lastly, during housekeeping, the following sentence should be moved to the beginning of the subpart so that it may clearly apply to the entire category and not be housed under item F: “This category does not apply to industrial process wastewater treatment facilities that discharge to a publicly owned treatment works or to a tailings basin reviewed according to subpart 11, item B.”

Recommendation

Consider housekeeping updates and defining terms for clarity.

Residential development

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 19	LGU	1982 SONAR page 141 and 1988 SONAR page 47	6 (2021) 11 (2022) 7 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 14	LGU	1982 SONAR page 141 and 1988 SONAR page 63	None

Permits

Local: Comprehensive plan amendment if the community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit or Planned Unit Development Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Driveway permit (MnDOT) if state highway; Public Waters Permit (DNR).

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category includes any residential development, and it is a longstanding category. The 1982 SONAR says, “This category area is proposed because of the potential for significant impacts on land use, demographic and economic impacts on local economies, transportation facilities, wildlife habitat and water quality.”

RGU experience

A relatively large number of projects performed an EAW for this category in the last three years. Three additional discretionary reviews took place, in addition to the mandatory reviews listed in the chart above. The 2021 Mandatory Category report suggested simplifying the formula for calculating this threshold. EQB has received questions on how to interpret the phrases, “permanent” and “potentially permanent.” The 2021 Mandatory Category Report also notes that creating definitions for “private septic systems” and “incorporated” versus “unincorporated” would help in applying this category. In the last three years, EQB received ten petitions for residential development projects. Four of these petitions resulted in an EAW.

Public perspective

Some commenters say this category is overly complex and difficult to enact due to the calculations required. Comments on this category represent differing perspectives on the threshold, ranging from raising the threshold to performing more EISs due to large developments’ potential climate impacts. For more context, one commenter explained the threshold could be increased for the metro region, because those sites are already completing a comprehensive plan every ten years. Many commenters agreed that if no comprehensive plans were in place, then a threshold would be more useful. Many numerical thresholds were offered to EQB, but further conversations would need to take place before formulating any new thresholds that align with program goals for user-friendliness, consistency, and up to date science-based evaluation.

Rule change considerations

EQB can simplify how the formula is presented in rule, so that it is easier to use. EQB should consider definitions in Minn. R. 4410.0200 for the terms “permanent” and “potentially permanent”, “private septic systems”, and “incorporated” versus “unincorporated.”

Recommendation

Consider simplification of computations in rule; consider defining terms in Minn. R. 4410.0200 to clarify when projects meet the threshold.

Residential development in shoreland outside of the seven-county Twin Cities metropolitan area

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 19a	LGU	2007 SONAR page 43	3 (2021) 4 (2022) 2 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 14a	LGU	2007 SONAR page 52	None

Permits

Local: Comprehensive plan amendment if the community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit or Planned Unit Development Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Driveway permit (MnDOT) if state highway; Public Waters Permit (DNR).

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category refers specifically to residential development that takes place within shoreland, but outside of the seven-county metro area. This category was added in 2007.

RGU experience

The 2021 Mandatory Category Report says, “Clarification in the shoreline development section could help determine when or if a subdivision might require an EAW.” Also, it suggests that EQB “Clarify the difference between ‘permanent’ and ‘potentially permanent.’” EQB also receives technical assistance questions about the application of “common open space,” indicating that its definition could be improved. EQB received one petition for residential development in shorelands, which did not result in an EAW.

Public perspective

There were no comments specific to residential development in shorelands.

Rule change considerations

EQB can consider defining “permanent,” “potentially permanent,” and “common open space” to help project proposers and RGUs understand if projects meet or exceed the thresholds in this category.

Recommendation

Consider defining terms in Minn. R. 4410.0200, such as clarifying the difference between “permanent” and “potentially permanent” and refining the definition of “common open space” to help clarify when projects meet the threshold.

Campgrounds and RV parks

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 20	LGU	1982 SONAR page 144	2 (2023)

Permits

Local: Comprehensive plan amendment if the community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit or Planned Unit Development Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Driveway permit (MnDOT) if state highway; Water appropriation permit.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category originated as part of the “Recreational Development” category which was proposed because campgrounds and RV parks tended to be near natural areas. The 1982 SONAR says, “This category area is proposed because recreational developments are typically proposed adjacent to areas with significant natural resources. Such development may significantly increase human activity in sensitive areas.”

RGU experience

The project type, criteria and threshold are still relevant.

Public perspective

Commenters shared feedback on campgrounds, but almost all of them pertained to campgrounds in shorelands (Minn. R. 4410.4300, Subp. 20a).

Recommendation

No change.

Resorts, Campgrounds, and RV parks in shorelands

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 20a	LGU	1982 SONAR page 144 , 2007 SONAR page 49 , 2009 SONAR page 28	1 (2021)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 26	LGU	2007 SONAR page 55	None

Permits

Local: Comprehensive plan amendment if the community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit or Planned Unit Development Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Driveway permit (MnDOT) if state highway; Water appropriation permit.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category pertains to resorts or other recreational developments accessible by vehicle, that are located wholly or partially in shoreland. Shoreland ordinances are established and enforced by the county. The 1982 SONAR shows this category was first referred to as “Recreational development” and specifically notes, “This category area is proposed because recreational developments are typically proposed adjacent to areas with significant natural resources. Such development may significantly increase human activity in sensitive areas.” The category was later changed to refer to “shoreland” which is consistent with other changes made throughout the mandatory categories.

RGU experience

One discretionary review took place in addition to the mandatory reviews listed in the chart above. EQB has received questions on the interpretation of “common open space” so evaluation of this definition may be appropriate. The 2021 Mandatory Category Report also suggested a definition for “common open space.” EQB has also received feedback during technical assistance calls that the calculation for this category can be confusing to interpret. In the last three years, EQB received five petitions for projects in this category; two of these petitions resulted in an EAW.

Public perspective

EQB heard concerns that the threshold requirements assume all lakes have the same ability to accommodate the same number of dwelling sites, without considering lake classification (like deep or shallow) or lake carrying capacity. Some comments suggest that the threshold is too high, and others said that the threshold was too low. Other comments said that there should be a mandatory EIS required for RV campgrounds and resort development of RV campgrounds on shallow lake areas or wetland areas, and that there should be consideration of phosphorous sensitivity of the lake, overall lake health trends, wildlife impacts, etc. In further evaluating if there is a need for an EIS category, EQB could consider if these types of concerns may also be covered by other mandatory categories.

Rule change considerations

EQB could consider evaluating a threshold proportional to lake size or carrying capacity, improving calculations for readability in rule, and revising the definition for “common open space” to promote consistent interpretation of this category’s thresholds.

Recommendation

EQB could consider simplifying this category’s calculation for better readability in rule, revising the definition for “common open space” in Minn. R. 4410.0200, and beginning further conversations to evaluate the effectiveness of measuring the threshold using a marker of lake carrying capacity.

Airport projects

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 21	DOT, LGU, Metropolitan Airports Commission	1982 SONAR page 145 and 1997 SONAR page 19	None

Permits

Local: Site plan approval; Grading/drainage/erosion control plan; Wetlands mitigation plan; Conditional use permits; Zoning permit; Possible subdivision/platting review; Building permit for structures.

State: NPDES Construction Stormwater General Permit (stormwater pollution prevention during construction).

Federal: FAA 7460 Notification (height, safety and operational hazards related to airspace).

Discussion

Background

This category generally relates to the construction or extension/upgrade of airport runways. According to the 1982 SONAR, "This category area is proposed because of the potential for significant impacts related to local and regional land use, local economic and demographic issues, transportation, noise, air quality, and energy." No projects were completed for this category in the previous three years.

RGU experience

There were no issues identified and no changes recommended.

Public perspective

There were no issues identified and no changes recommended.

Recommendation

No change.

Airport runway projects

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 15	DOT, LGU	1997 SONAR page 19	None

Permits

Local: Site plan approval; Grading/drainage/erosion control plan; Wetlands mitigation plan; Conditional use permits; Zoning permit; Possible subdivision/platting review; Building permit for structures.

State: NPDES Construction Stormwater General Permit (stormwater pollution prevention during construction).

Federal: FAA 7460 Notification (height, safety and operational hazards related to airspace).

Discussion

Background

This category generally relates to the construction or extension/upgrade of airport runways. No projects were completed for this category in the past three years.

RGU experience

There were no issues identified and no changes recommended.

Public perspective

There were no issues identified and no changes recommended.

Recommendation

No change.

Highway projects

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 22	DOT, LGU	1982 SONAR page 146 and 2019 SONAR page 39	2 (2021) 2 (2022) 3 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 16	DOT, LGU	1982 SONAR page 147	None

Permits

Local: Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or wetlands mitigation plan; Shoreland permit; Floodplain permit/approval; Subdivision/platting approval; Conditional use permits; Building permit for structures; Easement Vacation; Watershed District permit (wetland mitigation, stormwater pollutant restrictions, infiltration requirements, or volume control reductions).

State: NPDES Construction (stormwater pollution prevention during construction); 401 Certification (MPCA authority to review 404 permit applications (per CWA)).

Federal: USACE Section 10 (work on structures other than bridges or causeways that affect the course, condition, or capacity of navigable waters of the United States); USACE 404 (regulates the discharge of dredged and fill material into waters of the United States, including wetlands).

Discussion

Background

According to the 1982 SONAR, “This category area is proposed because of the potential for significant impacts related to local and regional land use, local economic and demographic issues, transportation, noise, air quality, energy, water quality, erosion, drainage, water resources, habitat destruction, and construction impacts.” In the last three years, EQB received one petition for a highway project; it did not result in an EAW. Two additional discretionary reviews took place, in addition to the mandatory reviews listed in the chart above. Seven projects completed mandatory review; MnDOT performed three of those EAWs and local governments performed four. Those reviews met thresholds under items A or B.

RGU experience

There were no issues identified and no changes recommended.

Public perspective

Only a few public engagement comments pertained to this category. One comment asked EQB to clarify exemptions from review of highway projects, particularly the exemptions for “highway safety improvement projects,” and to define “modernization” of existing roadways or bridges. Of note, a “highway safety improvement project” is defined in Minn. R. 4410.0200.

Recommendation

No change.

Barge fleeting

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 23	DOT, Port Authority	1982 SONAR page 149	None

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 17	DOT, Port Authority	1982 SONAR page 149	None

Permits

Local: Site Plan Approval; Possible subdivision/platting review; Grading permit; Building permit for structures; Conditional use permits (operator facilities).

State: DNR, MPCA and MnDOT (review or permitting of sheet pile at edge of slip).

Federal: USACE Section 404 permit, FAA Temporary Airspace Permit (for construction cranes); FAA Permanent Airspace Permit (with mapping revisions for cranes and building locations in area).

International: Boundary Waters Treaty of 1909 (guarantees international navigable waters be free and open).

Discussion

Background

This category covers the construction or expansion of barge fleeting facilities – those facilities where barges are temporarily held while waiting for other actions (loading/unloading, towing, repairs, etc.). The 1982 SONAR describes that “Primary problems associated with the environmental impacts center on the effects of dredging and [soil] disposal on water quality and habitat disruption for wildlife populations.” There were no projects completed for this category in the previous three years. The project type, criteria, and threshold are still relevant.

RGU experience

There were no issues identified and no changes recommended.

Public perspective

There were no comments directly relating to this category.

Recommendation

No change.

Water appropriation and impoundments

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 24	DNR	1982 SONAR page 150 and 1988 SONAR page 53	1 (2021) 1 (2022)

Permits

Local: Grade and fill permit; Building permit; Conditional use permit; Land use permit.

State: Water appropriation permit; Public water work permit; Utility crossing license; Permit to appropriate from infested waters; Listed species takings permit; Construction stormwater general permit; Tank registration; Air emissions permit.

Federal: 404 permit.

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 18	DNR	1982 SONAR page 150	None

Permits

State: Dam safety permit; Public water work permit

Discussion

Background

This category applies to dams and large water appropriations from surface or groundwater. This is a longstanding category. According to the 1982 SONAR, “This category area is proposed because of the potential for significant impacts related to ground water quantity and quality, dam safety, habitat alteration, flooding, and land use issues.” Statewide, water appropriation needs are growing to support community and commercial expansions.

RGU experience

Two discretionary reviews took place, in addition to the mandatory reviews listed in the chart above. The 2021 Mandatory Category report identified issues that are still relevant: “Large water users that modify existing permits or use multiple wells might not surpass the threshold. Cumulative totals of water usage by a single entity/owner/user are not considered in the threshold since the category is limited to ‘new appropriations.’” The 2021 report also mentions that, “‘Continuous parcel’ warrants definition since it has been interpreted historically to indicate a parcel that contains no breaks/subdivisions (such as multiple parcels divided by a road). Considering parcels are routinely smaller than 540 acres, this threshold is rarely surpassed though there are many large irrigation facilities.”

Public perspective

During the engagement process over eighty comments were received relating to water appropriations, most as part of a form letter. In general, commenters highlighted water appropriations as a concern due to increased water use over time in combination with the additional pressures of climate change. Commenters suggested the development of a mandatory EIS category that would apply to large water users. Some comments suggested considering a lower EAW threshold for water appropriations due to environmental impacts resulting from commercial users that propose to transport appropriated water offsite for consumptive uses.

Opportunities for rule change

EQB suggests continued conversations to ensure that the thresholds of this category are serving their intended purpose.

Recommendation

No change.

Marinas

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 25	LGU	1982 SONAR page 151	1 (2022)

Permits

Local: Comprehensive plan amend if community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Work in public waters (DNR).

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 19	LGU	1982 SONAR page 151	None

Permits

Local: Grading Comprehensive plan amend if community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Work in public waters (DNR).

Discussion

Background

This category includes the construction or expansion of a marina or harbor. This is a longstanding category. The 1982 SONAR says, "This category area is proposed because of the potential for significant impacts related to water quality, air quality, noise, wildlife habitat, aesthetics, and the use of public resources."

RGU experience

EQB has fielded questions asking how to calculate areas for ‘maneuvering’ and for ‘an increase in water surface area’. One project was completed in the previous three years.

Public perspective

There were no comments directly related to this mandatory category.

Opportunities for guidance

EQB can evaluate existing guidance resources and opportunities to ensure consistent application of terminology for terms like ‘maneuvering’ and ‘increase in water surface area.’

Recommendation

No change.

Stream diversion

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 26	DNR, LGU	1982 SONAR page 152 , 1997 SONAR page 20 , and 2019 SONAR page 41	1 (2021) 3 (2022) 2 (2023)

Permits

Local: Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Land alteration permit; Conditional use permit.

State: Work in public waters (DNR).

Federal: Section 404 Clean Water Act.

Discussion

Background

This category applies broadly to projects that impact the flow of streams; it is applicable to a variety of projects such as culverts, banks stabilizations, restoration activities and other projects. The 1982 SONAR says, “This category

area is proposed because the alteration of watercourses affects flooding in downstream and adjacent areas, wildlife habitat, fisheries resources, water quality, and area land use.” EQB rulemaking in 1997 amended subpart 26 to add the word “realignment.” The SONAR says, “Realignment often means straightening, which has a serious effect on water flows and stream habitat.” 2019 rulemaking aligned exemptions in 4410.4600 to also reflect the addition of the word “realignment.”

RGU experience

Of the six environmental reviews that took place, four were completed by LGUs. The 2021 Mandatory Category Report says there needs to be definitions for “diversion,” “realignment,” and “channelization.” This recommendation still stands, and the need was affirmed by some LGU feedback.

Public perspective

Some commenters said stream restorations should be exempt. EQB also heard that sometimes projects are proposed that result in fewer improvements to streams to avoid an EAW.

Rule change considerations

EQB can work with technical experts to develop definitions in Minn. R. 4410.0200 for the terms “diversion,” “realignment,” and “channelization” to eliminate uncertainty and provide consistency in application of this category.

Recommendation

Consider adding definitions for terms like “diversion” and “realignment” to Minn. R. 4410.0200.

Public waters, public waters wetlands, and wetlands

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 27	DNR, LGU	1982 SONAR page 153 , 2005 SONAR page 39 , and 2019 SONAR page 42	16 (2021) 12 (2022) 11 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 20	DNR, LGU	1982 SONAR page 153 and 2019 SONAR page 55	1 (2023)

Permits

Local: Grading/drainage/erosion control plan; Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Conditional use permit.

State: Work in public waters (DNR).

Federal: Section 404 Clean Water Act.

Discussion

Background

This category relates to certain types of changes within waters and was first called “Wetlands and Protected Waters.” This is a longstanding category. Forty-two projects were completed in the past three years. The 1982 SONAR says, “This category area is proposed because of the potential for significant impacts related to flood control, erosion control, water quality, wildlife habitat, recreation, and aesthetics.” Changes made in 2005 aligned terminology with amended State water laws. Changes in 2019 renamed the title of the category and updated the definition of “wetland.”

RGU experience

Thirty reviews in this category were conducted by local government units. In the last three years, EQB received one petition for a public waters/wetlands project; it did not result in an EAW. In the last three years, EQB received five petitions for ditch improvement projects, none of which resulted in an EAW. Two discretionary reviews took place, in addition to the mandatory reviews listed in the chart above. The 2021 Mandatory Category Report identified the following suggestion which remains relevant: “Overlay districts should be examined and investigated for historical purpose and effectiveness in current context.”

Public perspective

EQB received a wide array of comments with some saying this category is unnecessary and others looking to include more projects under review in this category. Broadly, respondents highlighted the importance of documenting cumulative impacts to water quality. Comments asked EQB to consider revising thresholds so EAWs may be required when there are cumulative impacts to five or more wetland basins or wetland impacts of a certain acreage. Respondents mentioned that requiring an EIS for a dam removal — which may exceed a threshold in this

category because it results in the elimination of a public water — is onerous and may result in a less ecologically sound option being selected in the name of avoiding an EIS.

Recommendation

No change.

Forestry

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 28	DNR	1982 SONAR page 154 and 1997 SONAR page 21	None

Permits

Local/State/Federal: Timber sale.

Discussion

Background

This category includes clearcutting and harvesting of timber. According to the 1982 SONAR, this category started as “Agriculture and Forestry” and was enacted due to the “potential for significant impacts relating to water quality, soil erosion, and land use.” According to the 1997 SONAR, this subpart was proposed to apply only to forestry activities.

RGU experience

There were no projects completed in this category in the past three years.

Public perspective

Item A of this subpart specifically mentions timber harvesting on public lands. Commenters shared concerns for deforestation activities not covered by this category because they are on private lands - because of their potential to contaminate groundwater with herbicides, pesticides, fungicides, and fertilizers and due to widespread loss of fire-adapted forest and habitat. Commenters shared concerns over losing fire-adapted forest and emitting greenhouse gases from deforestation.

Recommendation

No change.

Genetically engineered wild rice

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 28	EQB	2007 SONAR page 56	None

Permits

State: The EQB issues a release permit unless the Board has authorized an agency with a significant environmental permit. The EQB determined that the MDA had a significant environmental permit for agriculturally-related GEOs. The MDA has the authority to regulate genetically engineered wild rice per Minn. Stat., chapter 18F.

Federal: The USDA has jurisdiction over agriculturally- related GEOs. USDA works within the Coordinated Framework for the regulation of Biotechnology (EPA, USDA-APHIS, FDA). The MDA cooperated with the USDA in regulation of agriculturally related GEOs.

Discussion

Background

This category is for the release of genetically engineered wild rice. The 2007 SONAR says, “This new subpart establishes a mandatory category for preparation of an EIS for any project proposed in Minnesota that would involve the release and a permit for a release of genetically engineered wild rice. The 2007 session of the Minnesota Legislature enacted a law making this specific requirement.”

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria, and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Animal feedlots

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 29	MPCA, County	1982 SONAR page 156 , 1988 SONAR page 55 , 2005 SONAR page 42	2 (2021) 1 (2022) 1 (2023)

Permit

Local: Conditional Use Permit; Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or wetlands mitigation plan; Zoning; Building permits for structures; Discharge to Surface Waters.

State: NPDES/SDS Feedlot Permit (MPCA); NPDES Construction Stormwater Permit (MPCA); Water Appropriations Permit (DNR); Board of Animal Health (DNR); Notification to Compost Dairy Cattle (DNR); Fire Marshall (DNR); Plan Review (DNR).

Federal: NPDES administered by State.

Discussion

Background

This category includes animal feedlot facilities. It is a longstanding category. The 1982 SONAR says, “This category is proposed because of the potential for significant environmental impacts relating to ground and surface water quality, odors, and local land use issues.” Thresholds were adjusted in 2005.

RGU experience

The MPCA almost always serves as the RGU for animal feedlot projects that meet or exceed the mandatory category thresholds. In 2000 MPCA created an alternative feedlot form, which EQB approved for use. MPCA is proposing changes to State Disposal System (SDS) and National Pollution Discharge Elimination System (NPDES) general feedlot permits. Proposed changes specifically address manure application to fields. MPCA is currently developing updates to their alternative EAW form for animal feedlots to coincide with the requirements of the revised feedlot permits, as well as to reflect changes to the overall EAW form, such as addressing climate resilience and greenhouse gas emissions. EQB will need to approve any updates to the alternative form. EQB will need to analyze the changing regulatory landscape and engage with experts before taking any meaningful steps toward updating this category. In the last three years, EQB received two petitions for feedlot projects, neither of which resulted in an EAW because the projects were exempt from review.

Public perspective

This category received many comments during the engagement period of this report. Overall, interest surrounded the potential for nitrate pollution resulting from feedlots and their related activities (like manure land application), especially in sensitive areas. Commenters pointed out that manure structures may not be in sensitive areas, but manure may be land applied to sensitive areas. The rule does not directly address land application of manure although it is a part of the project's operation; the threshold only relates to construction or expansion of a facility. EQB heard requests that the current EAW threshold in this category be lowered, rooted in a desire to avoid agriculture-related pollution of waterways. One organization stated the need for an EIS for large feedlots.

Rule change considerations

The SONAR seems to imply that the exemption for feedlot connected actions was only meant to apply to multi-site hog operations. Thus, it seems appropriate for EQB to further research and evaluate this topic. Furthermore, EQB could consider evaluating the current EAW threshold and adding an EIS threshold.

The EAW threshold is 1,000 animal units and 500 animal units in sensitive locations; those sensitive locations are specifically listed in rule. One example of a sensitive location is an area within a drinking water supply management area. However, this term is specific to state programming and does not recognize Tribal or federal equivalents. Therefore, a solution like the one proposed in the 2021 Mandatory Category Report remains relevant; it says, "consider adding the following language to the list of sensitive locations in order to capture projects impacting Tribal Nations: '...delineated under chapter 4720, or federally delineated under similar criteria'". However, there is no similar federal criteria and further review is needed.

If rulemaking should occur, the following housekeeping changes could be considered at that time:

- a. This category should use the term "floodplain" instead of "flood plain" as the former is defined in Minn. Stat. 103F.105.
- b. Delete reference to Minnesota River Project Riverbend area as it no longer exists.
- c. Define exemptions for connected actions to include only hogs or all categories.

Recommendation

Consider evaluating possible threshold changes, adding an EIS threshold, evaluating exemptions from connected actions, and housekeeping updates.

Natural areas

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 30	DNR, LGU	1982 SONAR page 157 and 2019 SONAR page 44	none

Permits

Local: Comprehensive plan amendment if community has a plan; Zoning; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Master plan per Minn. Stat. 86A.09.

Federal: National Park or forest management plans.

Discussion

Background

This category includes projects resulting in permanent physical encroachment on certain lands. This is a longstanding category. According to the 1982 SONAR, "This category is proposed because natural areas are publicly owned properties that have been set aside to preserve significant natural resources for future generations. These are sensitive areas of unique quality which may be significantly impacted by inappropriate development. Environmental review is necessary for these activities to allow public involvement in decisions affecting publicly owned resources."

RGU experience

No projects have been completed for this category in the previous three years. The project type, criteria, and threshold are still relevant.

Public perspective

Commenters suggested protecting natural areas such as the Superior National Forest or the Boundary Waters Canoe Area Wilderness, but none suggested direct changes to the category.

Recommendation

No change.

Historical places

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 31	LGU, the permitting state agency	1982 SONAR page 157 , 1997 SONAR page 21 , and 2005 SONAR page 39	2 (2021) 3 (2022) 4 (2023)

Permits

Local: Demolition permit (building permit); Zoning.

State: Environmental Site Assessments (if state funding is provided).

Discussion

Background

This category includes the destruction (in whole or part) or the moving of a historic property. This is a longstanding category. According to the 1982 SONAR, “This category area is proposed because there is very little government authority to protect sites listed on the National Register of Historic Places. The requirement for environmental review prior to the destruction of such facilities is needed to provide the public an opportunity to take part in decisions that may significantly affect the preservation of our national [heritage]. Historical resources are protectible natural resources under the Minnesota Environmental Right Act at Minn. Stat., ch. 116B.”

RGU experience

Nine of the ten reviews in this category (listed in the chart above) were completed by a local governmental unit. One discretionary review took place, in addition to the ten mandatory reviews listed in the chart above. In the last three years, EQB received two petitions for a historical project; one resulted in an EAW. Research confirms that construction and demolition waste going to landfills is environmentally impactful, yet this category does not seem to fully encompass such effects. An alternative EAW form could be designed to better meet the unique needs of this project type.

Public perspective

One comment shared the EAW form for these projects can be difficult to complete, since the form does not directly pertain to building demolition. Some commenters believed modifications or removal of historic places is already handled responsibly and would result in no environmental impact.

Rule considerations

Further evaluation is necessary to determine the long-term relevancy of this category before EQB can offer constructive rulemaking recommendations.

Recommendation

No change.

Mixed residential and industrial-commercial projects

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 32	LGU	1988 SONAR page 55	5 (2021) 6 (2022) 2 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 21	LGU	1988 SONAR page 66	None

Permits

Local: Comprehensive plan amendment if the community has a plan; Zoning; Subdivision/platting approval; Conditional Use Permit or Planned Unit Development Permit; Site plan approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Building permits for structures.

State: Driveway permit (MnDOT) if state highway.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category includes projects that have mixed residential and industrial-commercial projects. The 1982 SONAR explains the purpose of this category: “This new subpart is included to close a loophole in the existing rules. Currently, a project consisting of a mix of residential and commercial uses (e.g., a condominium complex with retail

shops and office space) only requires an EAW if either the residential component or the commercial component exceeds its respective threshold. This means that projects which nearly equal thresholds for two categories are not reviewed, despite the fact that they may have the potential for significant environmental effects.”

RGU experience

The 2021 Mandatory Category Report for this category says, “EQB staff support issues identified from LGUs that the criteria and threshold for these categories be modified, to provide greater clarity in determining if ER is required for a proposed project.” At that time EQB recommended considering a possible change in thresholds, and that recommendation still stands. In the last three years, EQB received two petitions for projects under this category; one resulted in an EAW.

Public perspective

There were no comments directly related to this mandatory category.

Rule change considerations

EQB can consider housekeeping rule changes to better illustrate how to calculate this threshold. This will provide clarity in interpreting the thresholds for RGUs and project proposers.

Recommendation

EQB should consider making housekeeping changes to this category that uses a calculation that improves readability of the subpart.

Communications towers

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 33	LGU	1988 SONAR page 56 and 1997 SONAR page 22	None

Permits

Local: Conditional Use Permit; Zoning permit; Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or wetlands mitigation plan; Site plan approval; Building permits for structures; Road access permit local road.

State: Driveway permit (MnDOT) if state highway.

Discussion

Background

This category includes construction of a communications tower. The 1997 SONAR says, “The current category for communication towers is based on well-documented hazards to birds posed by towers over 500 feet tall.” It was later noted in the 1997 SONAR that tower location can be as much a factor in bird mortality as tower height. Therefore, changes were made to account for low-flying birds in the vicinity of wetlands or along river bluffs.

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Sports or entertainment facilities

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 34	LGU	1988 SONAR page 57	1 (2023)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 22	LGU	1988 SONAR page 66	None

Permits

Local: Comprehensive plan amendment if community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Building permits for structures.

State: NPDES; Highway improvements.

Federal: Highway improvements.

Discussion

Background

This category includes facilities such as stadiums, horse racing tracks, entertainment venues, or amphitheaters. The 1988 SONAR says, “This new category is proposed in order to have a more appropriate threshold measure for facilities of this type... Presently, these facilities are covered by the general industrial commercial-institutional category, which has a threshold based on gross floor space. The problem with this relative to sports or entertainment facilities is that the nature of the use of the floor space is entirely different from that in industrial, retail, office, or typical industrial commercial uses.”

RGU experience

One EAW was completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category.

Recommendation

No change.

Release of genetically engineered organisms

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 35	EQB, Permitting State Agency	1991 SONAR page 23	None

Permits

State: The EQB has statutory authority related to permitting GEOs and serves as the coordinating organization within Minnesota for GEO-related state and federal regulatory activities. Additionally, the EQB can approve a different agency to oversee the regulation of certain GEOs. The board approved the MDA’s oversight of agriculturally related GEOs in 1995. MDA works closely with the federal GEO coordinated framework for the regulation of agriculturally related GEOs.

Federal: The Coordinated Framework for Regulation of Biotechnology (EPA, USDA-APHIS, FDA)

Discussion

Background

This category includes the release of a genetically engineered organism. According to the 1991 SONAR, “This new mandatory EAW category is proposed to carry out the statutory mandate of Minn. Stat. 116C.94 that the board adopt rules to require an EAW for the proposed release of genetically engineered organisms. The requirement for an EAW for the release of a genetically engineered organism is needed because a number of potentially serious environmental impacts could result from such activities, if not properly conducted.”

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

There were no comments directly related to this mandatory category. EQB is actively reviewing the overall federal and state regulatory structure related to GEOs and may have recommendations for changes in the future.

Recommendation

No change.

Land use conversion, including golf-courses

EAW overview

Rule Language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 36	LGU	1988 SONAR page 54 and 1997 SONAR page 22	3 (2021) 3 (2022) 2 (2023)

Permits

Local: Comprehensive plan amendment if community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Land use amendment; Site plan approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures; Grading/drainage/erosion control plan.

State: Water appropriation permit; Driveway permit if state highway.

Federal: CWA 404 permit.

Discussion

Background

Most often, golf courses were the project types triggering this review. Originally part of a subpart titled “agriculture and forestry,” this mandatory category became its own subpart as explained in the 1988 SONAR.

RGU experience

This category is regularly used with nine EAWs completed in the last three years. The project type, criteria and threshold are still relevant.

Public perspective

Some comments shared concerns of habitat loss and biodiversity loss, but none specifically mentioned changes to this category.

Recommendation

No change.

Land conversions in shoreland

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 36a	LGU	2007 SONAR page 55 and 2019 SONAR page 45	1 (2022)

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 27	LGU	2007 SONAR page 55	None

Permits

Local: Comprehensive plan amendment if community has a plan; Rezoning if the community has zoning; Subdivision/platting approval; Conditional Use Permit; Site plan approval; Grading/drainage/erosion control plan;

Shoreland permit; Floodplain permit/approval; Wetland Conservation Act approval and/or wetlands mitigation plan; Road access permit on local road; Building permits for structures.

State: Water appropriation permit; Driveway permit (MnDOT) if state highway; Permit to mine (Reclamation permit); Clean Water Act 401 certification.

Federal: Clean Water Act 404 permit (wetlands).

Discussion

Background

This category was added to address concerns in shoreland areas. According to the 2007 SONAR, “This subpart proposes two thresholds, one for sensitive and the other for nonsensitive shorelands, of 40 and 80 acres, respectively, of permanent conversion of naturally vegetated land, including forests.” Rulemaking in 2019 clarified the category with the term “permanent conversion.”

RGU experience

No projects were completed for this category in the previous three years. The 2021 Mandatory Category Report said, “Clarification in the shoreline development section could help determine when or if a subdivision might require an EAW.” This recommendation remains relevant.

Public perspective

Public comment shared concerns over how this category applies to restoring specific types of nonsensitive shoreland on channelized or altered watercourses.

Opportunity for guidance update

Shoreline can be measured from flood stage or from a high-water line, so EQB can work with DNR to provide more guidance on how the RGU and project proposer can measure.

Recommendation

Consider housekeeping change for consistency of terms and clarifications for when an EIS is required.

Recreational trails

EAW overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4300. Subp. 37	DNR, Governmental unit sponsoring the project, LGU	2004 SONAR and 2019 SONAR page 46	1 (2021) 1 (2022) 1 (2023)

Permits

Local: Permission to cross land; Land alteration permit; Site permit application; Roadway utility permit; Wetland Conservation Act approval and/or wetlands mitigation plan; Approval for bridges lease amendment; Land use zoning approval; Subdivision/platting approval; Conditional Use Permit; Grading/drainage/erosion control plan; Road access permit on local road.

State: Construction stormwater general permit; 401 certification Section 4(f) evaluation; 401 certification; State trail plan amendment; State funding; Special use permit for highway crossings; Lease agreement State grant; Public water work permit; WCA mitigation plan; SNA permit to cross & trail maintenance agreement; Driveway permit (MnDOT) if state highway.

Federal: Federal grant; Clean Water Act 404 permit; Clean Water Act 401 certification.

Discussion

Background

This category includes trails and vehicle recreation areas; it was initiated by a legislative directive. Trails are subject to in-depth planning processes, which are described in the 2004 SONAR. Trails are divided into two main groups—motorized use and non-motorized use.

RGU experience

RGUs experience these projects to be frequently controversial. In the last three years, EQB received two petitions for trail projects. Neither resulted in an EAW. One discretionary review took place, in addition to the mandatory reviews listed in the chart above. The 2021 Mandatory Category Report said that this category, “Warrants further examination and investigation of discrepancy between paved and unpaved trails threshold, as well as how category applies to trails in Twin Cities Metropolitan Area.”

Public perspective

EQB received a wide range of feedback, but most comments asked for stricter review of trails. Comments asked broadly for re-evaluation of trails on public lands, an EIS threshold for new trail systems, ensured evaluation of connected and phased actions, and for EQB to consider wildlife movements across trail corridors.

Opportunity for guidance

EQB can work with RGUs to provide updated guidance on this category so that there is a better shared understanding of terms within the current context of recreational development. Any re-evaluations of thresholds or definitions should be considered after guidance is considered and updated as needed.

Recommendation

No change.

Water diversions

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 23	DNR	1988 SONAR page 67	None

Permits

State: Water appropriation permit; Minn. Stat. 103G.265; Minn. Stat. 103G.801

Discussion

Background

This category applies to water diverted to areas outside the state. The 1988 SONAR says, “This new category is proposed at the suggestion of the DNR and is in recognition of the awareness that has developed in recent years that the state may be faced in the future with the question of whether and under what circumstances it should permit the diversion of water to other parts of the country.” Minn. Stat. 103G.271 subd. 4.b. prohibits the bulk transfer or sale of water greater than 50 miles from the source or up to 100 miles for public, private, and rural water suppliers. This statutory change occurred within the past 5 years.

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

Some comments cited this category with concerns over diversion from Lake Superior, but the suggested needs or changes were determined to be far broader than the intent of the category. Such comments are likely also relevant to the “Water Appropriations” EAW category. No projects were completed for this category in the previous three years.

Recommendation

No change.

Incinerating wastes containing PCBs

EIS overview

Rule language	Responsible Government Unit	Intended historical purpose	2021-2023 projects
4410.4400. Subp. 25	MPCA	1995 SONAR page 17	None

Permits

Local: Comprehensive plan amendment if the community has a plan; Rezoning if the community has zoning; Land Use plan; Conditional Use Permit; Site plan approval; Grading/drainage/erosion control plan; Wetland Conservation Act approval and/or wetlands mitigation plan; Building permits for structures.

State: Air permit; Hazardous Waste (RCRA) treatment or storage permit, NPDES General Construction Stormwater Permit; NPDES Industrial Stormwater Permit, Wastewater permit

Federal: Title V Air permit

Discussion

Background

PCBs stands for polychlorinated biphenyls. According to the 1995 SONAR adding this subpart was, “necessary to bring the rule into conformance with Minn. Stat., section 116.38, subd. 2...The primary environmental concern with the burning of PCBs is the emission of hazardous combustion products and their fate in the environment, including human health impacts.”

RGU experience

No projects were completed for this category in the previous three years. The project type, criteria and threshold are still relevant.

Public perspective

One respondent said this mandatory category could be expanded to include incineration of flame-resistant materials containing any chemical in the PFAS (per- and polyfluoroalkyl substances) family of chemicals. EQB will closely follow the evolving regulatory framework for PFAS and address any gaps for including PFAS in environmental review in the future.

Recommendation

No change.

Additional considerations

Some of the feedback received impacted multiple mandatory categories or the overall implementation of Minn. Rules 4410.4300 and 4410.4400. The following items discuss potential broader changes to how the mandatory categories are implemented.

Three-year look-back - Minnesota Rule 4410.4300, Subp. 1 is often referred to as the “three-year look-back” rule. The [1988 SONAR](#) (page 37) explains that language was added to clarify that multiple stages of a single project must be considered in total when comparing the project to mandatory category thresholds: “This amendment is intended to emphasize to persons who are about to screen a project against the mandatory EAW categories that it is the whole of the project which is potentially subject to review.” The 1995 SONAR for a rulemaking that revised this language says, “It is recognized that because of the policy of not counting anything already approved or built, a potential loophole exists through which review can be circumvented. By segmenting larger projects into smaller pieces and staging them over time without revealing the true size of the whole upfront, proposers can avoid EAW thresholds even though the whole project, if considered together, would exceed the thresholds.”

In 1997 the rule was further amended to state existing stages or components of a project would be required to be included as part of the project unless they were constructed more than three years previously, “The three-year period was chosen because it represents the amount of time historically considered by the EQB staff to typically represent ‘a limited period of time’ as used in the definition of ‘phased actions’ at part 4410.0200, subpart 60. Therefore, the proposed revision would count only those existing project stages that would have met the test of being part of a phased action with the current proposal if the current proposal had been acknowledged when the earlier stage was under review.”

Some RGUs, including DNR and MPCA have asked for clarifications to this subpart to ensure it accomplishes its intended purposes and is easily interpretable for all categories. This may include defining terms like “cumulative total” or clarifying if an RGU should consider decommissioning components of an existing project. Further evaluation is needed.

Housekeeping update – EQB notes several additional opportunities for housekeeping updates throughout Minn. R. 4410. One such example includes that Minnesota Rule 4410.4400 references subparts “2 to 25,” but this is incorrect since there are 28 subparts. This should be updated to read, “An EIS must be prepared for projects that meet or exceed the threshold of any of subparts 2 to ~~25~~ 28.” Another example is that EQB should rename all mentions of an “ordinary high-water mark” within the mandatory categories to an “ordinary high-water level” as the latter is defined in rule.

Adding new categories – EQB heard from RGUs and members of the public that adding certain project types to mandatory categories could provide a level of certainty for project proposers. Evaluation of new category ideas is needed; the co-authors have no recommendations at this time.

Appendix A

Continuous improvement for environmental review

Some input EQB received during public engagement for the mandatory category report suggested broadly scoped programmatic changes. Some of these suggestions are better evaluated through the EQB’s [continuous improvement process](#).

Continuous improvement process steps

In June 2023 the Board approved a continuous improvement process that involves performing the following steps on a regular basis:

1. EQB staff solicit ideas for program improvements.
2. EQB staff review the scope of the improvements.
3. EQB staff evaluate and score improvements using a program effectiveness prioritization matrix.
4. EQB staff plan for implementation of improvements.
5. ERIS completes review of implementation planning.
6. Board completes review and directs staff to implement selected projects.

The prioritization matrix referenced in step three identifies nine characteristics of an effective program: scientific integrity, environmental protection, measurability, inclusivity, user-friendliness, accessibility, consistency, quality assurance, and accountability.

Topics of programmatic interest

The mandatory category report documents recommendations for specific individual mandatory category rule subparts, while the continuous improvement process was designed to help EQB consider broad program initiatives. The following items reflect themes EQB heard as feedback during preparation of this report. Due to their

programmatic nature, they are out of scope for the recommendations of this report. These topics were considered in the 2023 continuous improvement process and remain open recommendations that should be evaluated for future inclusion in EQB's work. Each would require substantial interagency collaboration to further scope, define, and prioritize.

- **Tribal cultural resources** – The ER program is meant to consider historic and cultural properties. For example, the EAW form asks for information on historic structures, archaeological sites, and/or traditional cultural properties near the site. It is important that project proposers and RGUs are able to assess if the proposed project activities will impact Tribal cultural resources, then work to ensure that any projects impacting those resources receive adequate consideration within environmental review. This methodology would need to be co-developed with Tribes that share geography with Minnesota, following procedures outlined in EQB's Tribal Coordination and Consultation Policy. Further conversations can help EQB determine how best to address Tribal cultural resources; beginning this work is on EQB's workplan for state fiscal year 2025.
- **EAW and EIS expirations** – EQB rules generally require a project to undergo a new review only if there has been a "substantial change" to the project since the environmental review was initially completed. The measure of "substantial change" was first added in 1988 rulemaking as explained in the [1988 SONAR](#) (page 11). Language further clarifying "substantial change" was added in a 2006 rulemaking in response to similar concerns as were expressed to EQB during the preparation of this report. The [2006 SONAR](#) (page 12) explains: "It has been pointed out to the EQB staff that if a project is not built for a long time and there is no time limit on the 'shelf-life' of the EAW, there could be substantial changes in the circumstances in which the project would be built that could affect the potential for environmental impacts of the project that were not addressed in the EAW...The EQB considered addressing the issue by adding a time limit on the 'shelf-life' of an EAW." However, a specific expiration timeline applicable to all projects was found to be unreasonable; instead, the clarifying language around "substantial change" was added. Further interagency discussion on this topic is needed to determine if things have changed since this idea of expirations was last considered.
- **Cumulative impacts** - Environmental review rules use and define both "cumulative impacts" and "cumulative potential effects." The consideration of "cumulative impacts" in permitting, particularly air permitting, is an ongoing topic of interest and development. Over the long-term, EQB should consider changes to the definitions in 4410.0200 be consistent with the state's needs for information and data to support environmental decision-making.
- **Considering health impacts** – Health impacts assessments (HIAs) are intended to help investigate the potential health impacts of a policy, program, or project – both positive and negative – to inform decisionmakers. HIAs are one tool to help elevate health in environmental reviews; further conversations (amongst state agencies, environmental groups, the public, or any interested party) can help EQB and RGUs determine if health is being adequately considered in the environmental review process and if not, what is the appropriate scope and tool to do so. The EQB convened the Environmental Review Advisory Panel (2017-2018) specifically to consider this. The Panel did not agree on any recommendations but discussed multiple possible options. The Board's FY20-21 workplan,

adopted in September 2019, had a biennial focus of supporting “coordinated, effective, and meaningful action on climate mitigation and adaptation in Minnesota.” The newly formed Environmental Review Implementation Subcommittee (ERIS) was charged with developing outputs for two key projects: consistently integrate climate analysis into the environmental review program and to evaluate and consider options to understand and address potential health impacts through environmental review. Integrating climate change into the EAW was taken on by the board first.

Appendix B

Summary of public engagement for Mandatory Category Report, 2024

Memo

Date: May 3, 2024

To: Environmental Quality Board Members

From: Environmental Review Program Administrator, Kayla Walsh

RE: Analysis of feedback on mandatory categories

This memo provides a summary of feedback received during the process of engagement on the mandatory categories for Environmental Assessment Worksheets (Minn. R. 4410.4300) and Environmental Impact Statements (Minn. R. 4410.4400). EQB staff extended our outreach efforts for the 2024 Mandatory Category Report. In addition to public feedback, EQB asked all technical representatives to provide feedback directly to EQB. Technical expertise and professional judgement will be used by EQB and co-authoring agencies to determine final recommendations in the report.

EQB intends for the 2024 mandatory categories report to be a thorough review of all mandatory categories, focused on the following key goals:

- Reviewing the intended purpose or history of each mandatory category
- Identifying new project types that may need to be the subject of a mandatory category
- Providing a discussion that lays the groundwork for potential future updates to the categories and their thresholds

The report will provide a “state of the state” on the mandatory categories and their use, followed by potential recommendations for changes, or identification of areas where further evaluation is needed. The recommendations will center on those changes that will continue to move towards an effective ER Program through better alignment with our effectiveness criteria.

EQB staff recognize and appreciate the thoughtful involvement of the public and environmental review practitioners in the process to date and we look forward to future discussion. EQB staff have read and summarized all comments. Feedback was extensive, and in some cases went beyond the anticipated scope of the final mandatory categories report. Ideas will be documented and further discussed under the appropriate mandatory category section of the report or, as appropriate, in other EQB work products.

Methodology

In addition to Board meetings, Tech Rep meetings and any meetings requested by Tribes or stakeholders, the following mediums were used to collect feedback:

- Engagement HQ
- Online survey
- Emails
- Roundtable (virtual listening session)

Participants were asked to submit one set of information; however, there is no way to cross-check submittals to ensure the same person did not submit ideas through more than one medium.

Engagement HQ

Engagement HQ is a web-based platform that allows users to post their ideas in response to a question. The question EQB posed is: *“What kind of projects should go through environmental review and why? If suggesting a new category, include an explanation. Consider what types of projects have environmental impacts that would benefit from having environmental review. What specific health, equity, or environment concerns do you have related to these types of projects?”*

Engagement HQ was open from January 30, 2024, until the end of the day February 28, 2024. EQB staff promoted this link for the following groups to share with their networks: board members, technical representatives, cities, counties, members of the EQB monitor gov-delivery listserv, known advocacy organizations, tribal representatives, and more.

Engagement HQ tracked 1,800 total visits to the page. There were 35 engaged participants who contributed 39 ideas and 9 comments on others’ ideas. There was a total of 80 upvotes, or agreements with others’ ideas. This means there were 128 contributions, overall. Table 1 identifies common themes EQB heard from Engagement HQ.

Table 1. Topics and themes identified in feedback on engagement HQ

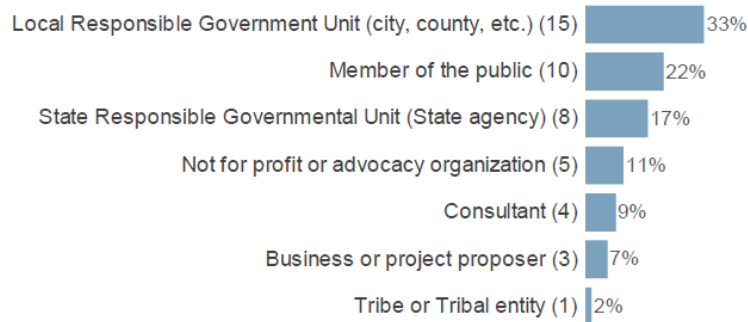
Topic	Number of posts	Number of total upvotes of all posts
Greenhouse gas emissions	22 posts, most mention measuring using life cycle impacts and choosing a threshold for an EIS	61
RV Campground	7 posts, specifically pertaining to RV campground thresholds near lakes and shorelands. This may be in relation to a recent petition on one specific proposed project.	6
Drainage	4 posts, especially mentioning agricultural drainage projects such as new ditches, drain tiling on croplands, and considering the cumulative impacts of such projects.	4
Alternative reviews	1 post gave detailed information recommending withdrawal of EQB approval for the Public Utilities Commission’s alternative review process for pipelines.	5

Other notable topics included suggesting an EAW be required for pre-mining activities such as mineral leasing and exploratory drilling; requiring an EIS for all mining expansions; suggesting the addition of an EIS threshold for water appropriations; including a Health Impacts Assessment as a part of all EISs; and establishing an expiration timeline for reviews.

Online survey

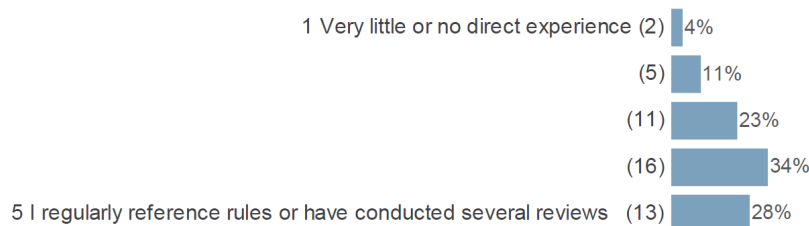
Overall, 51 respondents completed the online questionnaire. About 33% of respondents said they identified as a local government unit and 17% said they were a state responsible governmental unit.

Which group do you most identify with for the purpose of this survey?



Respondents were well-informed, with over 85% identifying a moderate to high level of experience in environmental review.

On a scale of 1 to 5 please rate your level of experience with Minnesota's Environmental Review Program (1 Very little or no direct experience /)



Thirty-six respondents answered the question: "Are reviews generally being conducted by the right entity at the right level of government?" Responses show that 64% said "yes" and 36% said "no."

In a follow up question, EQB asked "If not, list which project types should be reviewed by a different entity and why." In response to this, we heard that "many times, Tribes are not consulted." We also heard that many projects at the local level require expertise beyond the responsible governmental units' capabilities. This results in higher costs, necessitating the hiring of consultants. Put succinctly by one commenter, "Local RGUs, like cities and counties, often do not have the expertise needed to conduct environmental reviews, and they often favor the local development proposed." Another commenter shared concerns over potential conflicts of interest, saying "The RGU should not be the same as the permit approver." This was also discussed during a subsequent listening session where similar sentiments arose, but EQB also heard that some local units of government appreciate having RGU discretion and that all local governments operate differently.

When asked if any existing mandatory categories need changes, 87% (thirty-four) of survey respondents said "yes." Through the survey, EQB received an additional 91 substantive comments on mandatory categories. A summary of popular topics is listed in Table 2, below.

Table 2. Topics and themes identified in feedback via the survey

Topic	Number of comments
Campgrounds	4 ideas ranging from making mandatory EAWs or EISs for all projects on lakeshores to raising the thresholds to result in fewer EAWs
Drainage	3 ideas pertaining to requiring EAWs for agricultural drainage such as drain tiling, and properly assessing cumulative impacts to water from drainage projects
Feedlots	3 ideas asking for review of manure application in sensitive areas
Forestry	4 ideas ranging from saying this category is not useful to saying it should have no exemptions, and it should involve an EIS to address cumulative effects from all actions that require deforestation
Industrial	4 ideas ranging from needing clarity of terms to increasing the threshold because many impacts are already addressed in comprehensive planning
Land Use	4 ideas ranging from exempting land use to lowering its threshold for conversion of forest or native vegetation to better know the anticipated habitat and biodiversity loss
Mining	3 ideas including requiring an EIS for any mine expansion
Public Waters	8 ideas such as making dam removals easier and reducing certain thresholds
Residential	17 ideas saying the threshold should be raised or the category exempt, or that the rules are overly complex and difficult to comprehend
Streams	18 ideas mostly asking for clarification, an accelerated review process, or exemption for trout stream restoration
Trails	5 ideas asking for clarification of terms, cumulative impacts of trail systems, or requiring an EAW for trail additions over one mile
Water Appropriations	3 ideas mostly asking for lower thresholds

Comments range widely from urging deletion of entire categories to lowering thresholds of those same categories (resulting in more reviews). For example, some respondents suggest eliminating Minn. R. 4410.4300 Subp. 27 (Public Waters), while other suggest lowering the threshold. Some respondents asked for expedited reviews for stream restorations. Some also said the residential subpart is overly complex. As with other modes of feedback, all comments will be considered in the recommendations brought forward in the report.

Emails during the survey period

Some participants opted to directly email EQB staff their comments, instead of taking the survey. Staff received 122 separate emails amassing a total of 470 comments. Comments were on behalf of individual members of the public and some environmental organizations. One form letter resulted in high numbers of comments related to the topics of mining, water appropriations, and health impacts statements. Table three shows some common themes EQB read in the emails.

Table 3. Topics and themes identified in feedback via emails

Topic	Number of comments
Enforcement	4
Expirations	73
Feedlots	4
Greenhouse Gas Emissions	3
Health Impacts Assessments	84
Mining	144
Water Appropriations	76

The following are examples of quotes from the feedback, to serve only as examples. Feedback is considered in the recommendations made in the report.

Enforcement: *“Enforcement should have the most stringent criteria and the most significant funding. Rules mean nothing if they are not enforced.”*

Expirations: *“All EISs should have an expiration date specified in EQB rules so that analysis of expansions, phases, or changes in a project 15 years or even 50 years later aren’t allowed to rely on outdated facts and outdated scientific knowledge.”*

Feedlots: *“The mandatory category requiring EAWs for animal feedlots should be revised in two ways. First, Subp. 29(B) should be revised to add vulnerable groundwater areas, as identified for the Minnesota Department of Agriculture’s Groundwater Protection Rule, to the list of “sensitive locations” where animal feedlots with more than 500 animal units must undergo an EAW. These areas, which have coarse textured soils, shallow bedrock, or karst geology, have already been identified as areas where nitrate can move easily through soil and into groundwater, contaminating drinking water sources... Second, the rule should be revised to remove the following sentence, “The provisions of part 4410.1000, subpart 4, regarding connected actions do not apply to animal feedlots.” No other EAW section includes this exception, and there is no reason animal feedlots—which are a significant source of water pollution in Minnesota—should be allowed not to consider connected actions when determining whether an EAW is required.*

Greenhouse Gas Emissions: *“A new mandatory EIS category should be added to require an EIS for any project that emits a significant amount of GHG emissions, based on a lifecycle analysis. As part of the Climate Action Framework, Minnesota has set goals to reduce its GHG emissions by 50% by 2030 and to achieve net-zero emissions by 2050....In a rulemaking, EQB could determine whether an EIS should be triggered based on an absolute threshold, if different types of projects should have different triggering thresholds, or whether a project could avoid an EIS if it demonstrates it will reduce its emissions over time.”*

Health Impact Assessments: *“Any action that requires an EIS under EQB rules should also require a Health Impact Assessment done by a qualified independent contractor selected by the Minnesota Department of Health and paid for by the project proposer. Health Impact Assessment is a community-based process to analyze cumulative health effects, including direct and indirect effects on physical, nutritional, cultural, and social factors that contribute to harmful and unjust environmental health impacts.”*

Mining: *“EQB rules should require an EAW for mineral leasing, so that the state of Minnesota doesn’t relinquish rights to control drilling and use of surface lands for 50 years without some level of environmental review and public notice.”*

“EQB rules should make it less likely that mining facilities will spread and create additional environmental harm without new environmental review. Rules should require an EIS for expansions of mining, mine waste disposal, and processing based on the percent increase over the original permit as well as changes in acres or tons.”

Water Appropriations: *“EQB rules should protect the quality and quantity of Minnesota surface water and groundwater, by requiring an EIS when large amounts of water are appropriated for industry or agriculture or when waters are diverted from the Lake Superior Basin at levels exceeding the limits in the Great Lakes Compact.”*

Listening session

EQB hosted two virtual roundtables in the month of April. Each meeting lasted one hour. Participants totaled 56 attendees, although some attendees were members of EQB or did not participate. The purpose of these two sessions was to provide an additional medium for feedback; commenters could verbalize new ideas or expound on ideas they’ve already submitted. Using a mentimeter survey in real-time, about half of participants identified as “new” commenters across both sessions.

Themes identified in the roundtables aligned with what EQB heard through written feedback. Several commenters explained their concerns over conflicts of interest in having RGUs do environmental review on a project they may have a vested interest in. Commenters also discussed the benefits and drawbacks of having local government units conducting reviews.

Of note, one commentor did submit a letter with 106 signatories making specific recommendations for anaerobic digesters, saying that “Anaerobic manure digesters present significant environmental risks to our rural communities’ air, soil, water, and public health.... Given these concerns, it is essential to lower the environmental review threshold of anaerobic manure digesters from 25,000 dry tons of input/year to 10,000 dry tons of input or more per year within the MN EQB’s 2024 Mandatory Categories for thorough environmental review.”

The topic of cumulative impacts was also important to commenters. They expressed concerns over connected and phased actions not properly being addressed and asked for a stronger assessment of cumulative impacts. It was again noted that there should be an EIS for water appropriations, pipelines that carry helium or carbon dioxide, and feedlots. Mining, greenhouse gas emissions, and instituting health impacts assessments were all themes of conversation that aligned with previous feedback. EQB also heard from commenters who were concerned over fragmented review of off-road vehicle trails. Meetings were not recorded, but EQB staff took notes. Comments from the roundtable listening session will be addressed in the report.

Summary

EQB has performed more outreach for the 2024 Mandatory Category Report than for prior reports. Overall, EQB is very pleased to see interest in environmental review programming from both the public and practitioners. Commenters made it clear that Minnesota is a beautiful place to live, work and play and that we can all rally around protecting and improving our land, air, and water. EQB staff have much gratitude for the engagement received on this report thus far.

From all written sources (EHQ, the survey, emails) EQB received 680 substantive written comments. Additionally, about 25 separate comments on mandatory categories were documented by notetakers during listening sessions. Popular topics include, but are not limited to: cumulative impacts, expirations for EAWs and EISs, greenhouse gas emissions, water appropriations, health impacts assessments, mining, and feedlots.

For each mandatory category in the report, EQB plans to include a discussion section that summarizes what we've heard and what potential changes warrant further evaluation. It is important to the success and long-term usefulness of this report that concerns about each category are properly summarized and addressed. That way, in future years, we can fully track the progress made toward finding appropriate solutions and greater effectiveness of the environmental review program.

RESOLUTION OF THE MINNESOTA ENVIRONMENTAL QUALITY BOARD

Acceptance of the 2024 Minnesota State Agency Pollinator Report

Pollinators are essential for healthy ecosystems and the sustainability of our food production systems. However, they face multiple threats, including the loss and fragmentation of their habitat, diseases, parasites, pesticides, and climate change.

In Minnesota, Executive Order 19-28 directs state agencies to restore healthy, diverse pollinator populations, and instructs the Environmental Quality Board (Board) to convene the interagency pollinator protection team (IPPT) to take action and report on progress to the Board in a report by December 1 of each year.

In 2019, the interagency team developed scorecards to track progress toward our pollinator protection goals, and in 2021 decided to update them every three years. This year's pollinator report includes updated scorecards that incorporate some of the actions from the Pollinator Action Framework (Framework) published in the 2023 report. Both documents will serve as accountability tools, using the Framework to guide the work and the scorecards to reflect our progress.

Additionally, the 2024 Minnesota State Agency Pollinator Report includes a description of the work the interagency team conducted to prioritize the implementation of the Framework. The interagency team will present the full results of this effort as recommendations to their respective agency leadership to consider as they prioritize their pollinator-related work.

The board resolves to accept the 2024 Minnesota State Agency Pollinator Report, prepared by the interagency pollinator protection team.

The board further resolves to support cross-agency collaboration to lead the implementation of the Minnesota Pollinator Action Framework.

The board approved and adopted this resolution on November 20, 2024.

Nancy Daubenberger, Chair
Minnesota Environmental Quality Board

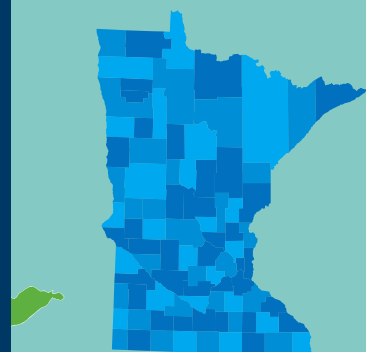
Date: _____

Attachments: 2024 Minnesota State Agency Pollinator Report

2024 Minnesota State Agency Pollinator Annual Report



Photo by Heather Holm



2024 Interagency Pollinator Protection Team

Rebeca Gutierrez-Moreno, Ph.D.	State Pollinator Coordinator	Minnesota Environmental Quality Board
Christina Locke, Ph.D.	Pollinator Conservation Coordinator	Minnesota Department of Natural Resources
Jamison Scholer, M.S.	Research Scientist	Minnesota Department of Agriculture
Angela Kolonich, Ph.D.	Science Education Specialist	Minnesota Department of Education
Tina Markeson	Roadside Vegetation Management Unit Supervisor	Minnesota Department of Transportation
Christopher E. Smith, CWB	Wildlife Ecologist	Minnesota Department of Transportation
Laura Marti	Hydrogeologist	Minnesota Pollution Control Agency
Michelle Gage, CEM	Sustainability Coordinator	Minnesota Department of Corrections
Erik Runquist, Ph.D.	Conservation Research Scientist	Minnesota Zoo
Chris Guevin	Facilities Management Division Director	Minnesota Department of Administration
Erin Loeffler	Ecological Science Conservationist	Board of Water and Soil Resources

Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording.

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Charge

In Minnesota, Executive Order (EO) 19-28 directs the Environmental Quality Board (EQB) to lead and convene an interagency pollinator protection team (the interagency team). This interagency team is comprised of designees from the Departments of Administration (ADMIN), Agriculture (MDA), Corrections (DOC), Education (MDE), Health (MDH), Natural Resources (DNR), Transportation (MnDOT), the Board of Water and Soil Resources (BWSR), the Minnesota Pollution Control Agency (MPCA), and the Minnesota Zoological Garden (MNZOO).

The interagency team is tasked to provide operational support, ensure interagency coordination, develop cross-agency policies and programs, and report on progress toward statewide pollinator protection goals to the EQB with an annual report.

Introduction

Minnesota is home to a wide diversity of insect pollinators, including bees, butterflies, moths, flies, and beetles. These animals are key components of our natural ecosystems, facilitating the reproduction of many flowering plants, and help form the foundation of food chains, feeding wildlife such as birds and fish. Additionally, pollinators are needed to grow many fruits, herbs, and vegetables, including several Minnesota-grown food crops.

Unfortunately, pollinators continue to face multiple threats, such as the loss and fragmentation of their habitats, exposure to pesticides, diseases and parasites, and climate change. These factors can interact with each other and amplify negative effects on pollinators. For instance, climate change might lead to extensive drought, which lowers the quality and availability of pollen and nectar, resulting in weakened immunity of pollinators and increased susceptibility to diseases, parasites, and pesticides.

The interagency team continues to work toward the three pollinator protection goals, outlined in EO 19-28: 1) Lands throughout Minnesota support healthy, diverse, and abundant pollinator populations; 2) Minnesotans use pesticides judiciously and only when necessary, to reduce harm to pollinators while retaining economic strength; and 3) Minnesotans understand, value, and actively support pollinators. State agencies work individually and collaboratively to support policy and programs that will help us achieve these goals.

Pollinator protection is complex, because each pollinator species has its own specific life cycle and needs. In addition, there are the social aspects of conservation – the different values and needs of people and communities. For example, encouraging the conversion of turfgrass lawn to a landscape with pollinator-friendly plants may be welcomed by some communities, but rejected by others who have a different concept of what an aesthetically pleasing green space is supposed to look like. There are no simple solutions to these types of disagreements, but the interagency team is committed to collaborating across sectors, thinking creatively, and collectively moving toward our desired outcome of restoring healthy, diverse pollinator populations that sustain and enhance Minnesota's environment, economy, and way of life.

New findings from pollinator-related research

By Dr. Erik Runquist

Conservation is informed by evidence-based science. Several recent studies provide insights into the status of key Minnesota pollinators, stressors affecting pollinators, and a potential solution to help mitigate harm. In this section, we provide a summary of recent pollinator research findings.

Minnesota Statewide Bee Survey

The first comprehensive list of Minnesota's bees is now published!¹ The Minnesota Biological Survey and the University of Minnesota (UMN) collaborated to combine data from museum specimens and intensive 2014-2023 surveys to document more than 500 (and counting) species of bees. Additional data from participatory science projects have helped document the presence, abundance, seasonality, and nesting habits of a wide range of bees across Minnesota.²

Rusty patched bumble bee

The US Endangered rusty patched bumble bee (Minnesota's State Bee!) has disappeared from most of its historic range, but it is still hanging on (at lower levels) in some unexpected places, like the Twin Cities metro area.³ We now have the first study of genetic diversity and divergence within and across all known rusty patched bumble bee populations.⁴ The recent declines are reflected in the genetic data, showing low genetic diversity, high inbreeding, and low colony abundance in most populations, including those in the Twin Cities. Populations with lower genetic diversity are less able to overcome stressors, especially if they are isolated. Increasing the extent of, and connections between, quality habitat would be beneficial.

Pesticides in Prairies

The off-target movement of pesticides into pollinator habitats has been suggested as one of the drivers of the disappearance of many Minnesota prairie pollinators. Two recent studies document the presence of agricultural pesticides in native prairie remnants.^{5,6} Between 2014 and 2020, eight insecticides, three herbicides, and ten fungicides were detected in grass and soil across five prairie preserves designated as Critical Habitat for endangered Poweshiek skipperling and Dakota skipper butterflies.⁵ Broad-spectrum insecticides (especially chlorpyrifos, bifenthrin, and lambda-cyhalothrin) frequently applied against the invasive and economically damaging soybean aphid were present in nearly all late summer samples. The interiors of prairies were just as likely to have detectable pesticides compared to prairie-agriculture edges. Pesticide detections occurred far within prairies, sometimes surpassing levels that could kill half of European honey bees exposed, a species considered more resilient to pesticide exposure than many native solitary bees.⁶ The biological consequences of exposures to pesticides at the concentrations found in these studies need further experimental testing.

Pollinators and Solar Farms

Large-scale solar energy projects are increasingly being developed to produce renewable energy to mitigate climate change. Land used for these projects may also provide opportunities to create habitat for pollinators and other wildlife. Researchers tested eight native seed mixes created at three Minnesota solar farms.⁷ The seed mixes performed similarly well, with the coverage of native wildflowers and grasses increasing and invasive weeds decreasing through time, including under the panel arrays. In a separate study, researchers found that native plantings within solar farms can result in increases in the diversity and abundance of insects, especially native bees. Solar-pollinator habitats may also provide pollinator benefits to adjacent agricultural operations.⁸

References cited in this section are included in [Appendix I](#)

Survey efforts to document rusty patched bumble bee nests by DNR staff

Photo by EQB



2024 State agency highlights

Environmental Quality Board

- **Interagency work.** Convened the interagency team monthly to plan the implementation of the pollinator action framework, the development of the pollinator annual report, and update the progress scorecards.
- **Outreach events.** Organized the celebration of Pollinator Day at the State Fair in collaboration with the DNR and the MPCA. Participated in the Minneapolis Monarch Festival. Overall, reached over 1,500 people.

Board of Water and Soil Resources

- **Lawns to Legumes (L2L) Program.** Since the launch of the program in 2019, there have been 8,200 installed; 10,000 beneficial pollinator trees and shrubs planted; 2,000 new gardeners with completed projects; and more than 160 metric tons of carbon sequestered per year. Ten grants were also awarded in 2024 to local organizations to build Pollinator Pathways – corridors of native plants connecting isolated pollinator habitat areas.
- **Habitat Enhancement Landscape Program.** This program, focused on restoring and enhancing diverse native habitat across the state, continues to gain momentum in supporting pollinators and other wildlife species. In 2024, 15 new grants – including 107 projects over 2,000 acres – were awarded to enhance and restore conservation lands and natural areas. There was high demand for project funding with 38 applications requesting enhancement of over 4,000 acres.
- **Habitat Friendly Utilities and Solar Programs.** These programs build collaboration with utility companies and conservation partners to increase landscape resiliency (along with co-benefits such as plant diversity, pollinator habitat, carbon sequestration, soil health, and water management) in solar projects and along utility corridors. Nearly 70 projects meet the Minnesota Habitat Friendly Solar standard, covering over 7,000 acres.
- **Reinvest in Minnesota Program.** Includes over 6,000 easements covering more than 250,000 acres that provide valuable pollinator habitat. The program currently focuses on permanent wetland restoration, adjacent native grassland wildlife habitat complexes and permanent riparian buffers.

Department of Natural Resources

- **Native seed packets.** Distributed 20,000 native seed packets at state parks and outreach events.
- **Outreach events.** Interacted with thousands of attendees at the State Fair, Minneapolis Monarch Festival, and other pollinator themed events.
- **Project to support regal fritillary butterflies.** Hand harvested seed from early season prairie plants and started a project to plant prairie violets to support regal fritillary butterflies.

- **Native plant nursery.** Increased production of native plants at Minneopa State Park, with over 4,000 plugs planted this year and roughly \$8,000 worth of seed harvested to supplement the plantings.
- **Minnesota Biological Survey (MBS).** Staff monitored a rusty patched bumble bee nest that was discovered by a private landowner in southeastern Minnesota. MBS continued rusty patched bumble bee nest searching on public lands, though to date has only found nests of other bumble bee species. Conducted one of the first efforts to estimate the population size of a solitary bee (*Colletes andrewsi*) using mark-release-recapture by marking individual bees using paint pens. This was a highly successful project with a high recapture rate and suggests that populations of this specialist bee are generally very small, fewer than 100 individuals.



EQB set up a booth next to the pollinator-themed exhibition in the Eco Experience building at the 2024 Minnesota State Fair.

The monarch was mounted from the ceiling and hung above state fair visitors where they could pull on a rope to make the large-scale wings flap for all to see.

Department of Agriculture

- **Minnesota Water Quality Certification Program.** The program added 118,285 acres of farmland certified by the MDA between Sep. 2023 – Aug. 2024. Certified acreage implements management practices that increase on-site water infiltration and reduce runoff and erosion issues. Practices like this help keep pesticides on the application site and reduce impacts to adjacent habitat and surface water.

- **Funding integrated pest management (IPM) research.** Distributed \$378,059 to fund IPM research projects across the state.
- **Education and outreach.** Participated in 64 outreach and recertification events, highlighting IPM and pollinator concerns; distributed over 8,900 pesticide best management practice documents between Sep. 2023 – Aug. 2024.
- **Outreach on treated seeds.** Introduced a new outreach document on treated seeds focused on addressing pollinator exposure concerns tailored for seed retailers, including big box stores.
- **Comments on federal pesticide regulatory updates.** Submitted comments to the Environmental Protection Agency on three topics: endangered species insecticide strategy, herbicide strategy, and treated seed regulation. The comments emphasized the need for clear proposed regulations, enforceability, and protections for pollinators and vulnerable species from pesticides and treated seeds.

Department of Transportation

- **Habitat creation.** Updated seeding manual and agency seeding standards with an emphasis on native seed use.
- **Habitat management.** Continued using integrated vegetation management, including biological control (insects) and prescribed fire. Expanded number of trained prescribed fire staff statewide.
- **Rusty patched bumble bee monitoring.** Piloted new rusty-patched bumble bee monitoring protocols developed by U.S. Geological Survey and U.S. Fish and Wildlife Service.
- **Nationwide bumble bee conservation benefits agreement (CBA).** Participated in the development of the nationwide bumble bee CBA.
- **Monarch butterfly Candidate Conservation Agreement with Assurances (CCAA).** Continued participation in the nationwide monarch butterfly CCAA.

Minnesota Zoological Garden

- **Pollinator Conservation Initiative.** Produced 1000+ individuals of the Poweshiek skipperling (“The Most Minnesotan Butterfly”), and then released hundreds of them back into the only known remaining US populations in Michigan. Nearly extinct in the wild in 2022, wild populations of this globally Critically Endangered butterfly now appear to be rising thanks to these efforts. The MNZOO is a central member of the Poweshiek Skipperling International Partnership (www.savingskippers.org).
- **Dakota skipper rearing program.** Continued the world’s only managed propagation and reintroduction effort for Dakota skippers. Several hundred more Zoo-reared skippers were released at Glacial Lakes State Park (thanks to funding from the Legislative-Citizen Commission on Minnesota Resources) in 2024 to continue reintroduction efforts.
- **Bumble bee surveys.** MNZOO scientists continue to monitor rusty-patched bumble bees and populations of other bumble bees on Zoo grounds and collaborate with other researchers studying rusty-patched genetics.
- **Pollinator habitat research.** MNZOO scientists are conducting habitat quality inventories and continuing prairie pesticides occurrence research with the long-term goal of identifying prairies that may be suitable candidates for future Minnesota reintroductions of Poweshiek skipperling and Dakota skipper.

- **Outreach events.** MNZOO staff hosted tables at the Minneapolis Monarch Festival and a Science Spotlight at the Bell Museum, talked about pollinators to hundreds of kids at summer MNZOO camps, and has distributed thousands of native wildflower seed packets to zoo guests.



Neighbors gathered to participate in a Lawns to Legumes program community planting event.

Photo by Sarah Linnes-Robinson

Prioritizing the implementation of the Pollinator Action Framework

In 2022, the interagency team began to develop a Pollinator Action Framework (“Framework”) to guide the strategic alignment of resources for action around our three pollinator protection goals and the desired outcome. The Framework includes actions state agencies can **lead** by taking administrative action, actions the state legislature can **enact** by writing laws and allocating funds, and actions the state can **encourage** individuals, communities, and organizations to participate in. The Framework was finalized in the 2023 Minnesota State Agency Pollinator Report. In 2024, the interagency team began the process of identifying ongoing and potential new projects that fit under the action items, with the goal of providing a guide for the implementation of the framework.

Participants in this exercise include members of the interagency team serving as representatives of their agency. For each action in the Framework that has an agency “lead” or “encourage” role, participants identified ongoing

projects/programs, or ideas for potential new projects/programs, that would fit under that action and advance the framework goal. They identified their agency as taking a lead or supporting role in the project and gave each project an impact score and an effort score.

Impact was defined as the positive effect a project would be expected to have in advancing the Framework action toward its goal. A higher score means a greater likelihood positive effect. Impact was scored based on the following components:

1. Magnitude: Score 1 if the project has a statewide reach, 0 if it does not have a statewide reach.
2. Rare/specialist: 1= specific focus on rare/specialist species or habitats, 0= does not have specific focus.
3. Efficacy: 1= has proven results (i.e. successful pilot program), 0= no proven results.
4. Scalability: 1= can be expanded beyond a single project, 0= difficult or impossible to scale up.

Effort was defined as the amount of time, work, resources, or complexity required to implement the project under consideration. A higher score means more effort would be needed to undertake the work. Effort was scored based on the following components:

1. Readiness: Score 1 if there is no existing program, 0 if there is already an existing program.
2. Capacity (resources): 1= current staff/resource level not adequate, 0= current staff/resource level adequate.
3. Legislative action: 1= requires, 0= does not require.
4. Lead/encourage: 1= state agency is the lead, 0= external partner is the lead.

The result of the scoring effort was a list of projects with impact and effort values between 0 and 4. Projects could then be plotted on a graph with axes for effort and impact (see example in Figure 1), allowing for comparison and eventual prioritization. The interagency team will discuss the full results of this analysis with agency leadership to continue prioritizing and implementing this work.

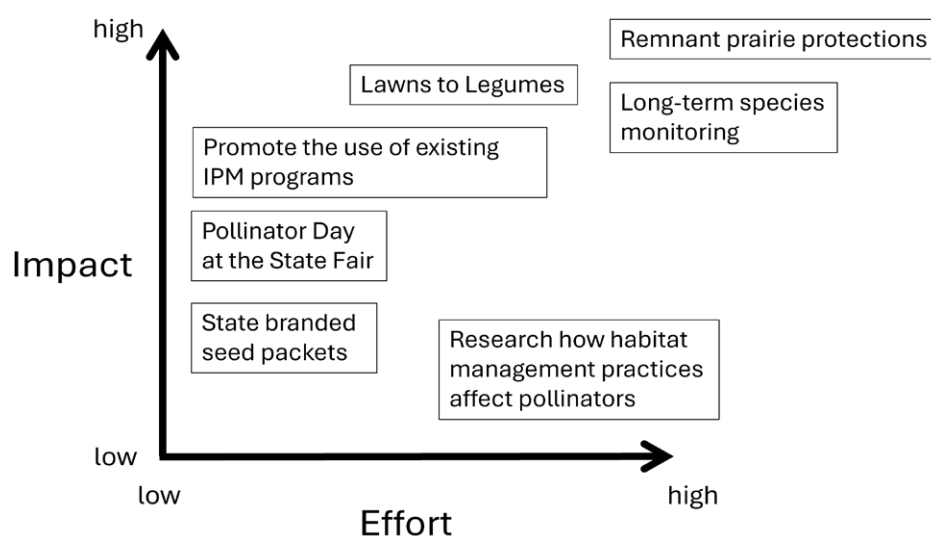


Figure 1. Example projects plotted based on effort and impact, from the perspective of staff of the lead state agencies involved.

Scorecards

In 2019, the interagency team developed scorecards to help Minnesotans understand progress toward the pollinator protection goals and the desired outcome. For each goal, the scorecards included indicators for progress, and identified measures, which allowed us to determine (where data was available) the status and trends for each indicator. These scorecards were updated on a yearly basis.

In 2021, the interagency team decided to update the scorecards every three years, allowing more time for change to be reflected in the status and trends for each indicator. After the development of the Framework, the interagency team worked to connect the scorecards to the actions in the Framework, this way both documents serve as accountability tools, using the Framework to guide our work and the scorecards to reflect on progress toward our pollinator protection goals.

The 2024 scorecards are a result of a thorough evaluation of the previous measures used in our past scorecards, actions from the framework that could be used as measures to inform the status and trends, plus extensive research into new reliable sources of information that would allow us to paint a more accurate picture of the status and the trends of our progress toward the pollinator protection goals in Minnesota.

The scorecards include the following components:




- **Indicator:** key component of a pollinator protection goal/the desired outcome used to communicate progress made.
- **Measure:** data used to quantitatively evaluate progress made toward the indicator.
- **Status:** describes the state or condition of an indicator at a determined time.
- **Trend:** describes the general direction of the progress made toward a particular indicator.

Below are the scorecard's keys to status and trend.

Key for Status

Good	Meets goals and expectations
Fair	Nearly meets goals and expectations
Poor	Behind goals and expectations
?	Not enough data or data too variable

Key for Trends

	Getting better
	About the same
	Getting worse
?	Not enough data or data too variable

For more details about the sources of information and data used to update the scorecards, please visit:
www.egb.state.mn.us/pollinators/pollinator-reports

In the following sections we include the updated scorecards for each of the state’s pollinator protection goals and the desired outcome.

Monarchs gather around a nearby stream to drink water after a long journey to the state of Michoacán, Mexico.

Photo by Monarch Joint Ventures



GOAL 1

Lands in Minnesota support healthy, diverse, and abundant pollinator populations

KEY OUTCOME

More food sources, nesting, and overwintering sites for pollinators

INDICATOR	MEASUREMENT (ACRES)	STATUS	TREND
Habitat restoration on public lands	Wildlife Management Area restoration	FAIR	↔
Habitat restoration on private lands	Lawns to Legumes Program, Minnesota Conservation Reserve Enhancement Program, New Easement Enhancement Program	FAIR	↗
Habitat enhancement (improved quality of already existing habitat)	Habitat Enhancement Landscape Program	FAIR	↔
Land protection	Acres of public land	FAIR	↔

Summary

Minnesota remains committed to work for lands that provide food, nesting and overwintering habitat for pollinators. The data shows a stable trend for restoration work in public lands, as well as habitat enhancement of existing pollinator habitat and habitat protection. For instance, during the last five years, DNR's land portfolio has changed by less than one tenth of a percent; on average, the DNR acquires 9,000 acres per year and sells 508 acres per year statewide.




The increased interest and participation in programs such as Lawns to Legumes are creating a movement to support pollinators by installing pollinator-friendly gardens and transitioning away from landscapes that offer little to no benefit to wildlife. Continued investments in this program are key to not only increasing the amount of pollinator habitat, but also the connectivity between these areas.

GOAL 2

Minnesotans use pesticides judiciously and only when necessary

KEY OUTCOME

Reduced impacts to pollinators from pesticides through integrated pest management (IPM)

INDICATOR	MEASURE	STATUS	TREND
IPM development	Grant data from: Legislative-Citizen Commission on Minnesota Resources; Minnesota Invasive Terrestrial Plants and Pests Center; Agricultural Growth, Research, and Innovation Program; Specialty Crop Block Grant, Crop Research Grant, and the National Institute of Food and Agriculture	OKAY	
IPM promotion	MDA pesticide and IPM distribution, UMN Extension events where pollinator/IPM information presented	OKAY	
IPM adoption	Metropolitan Mosquito Control District data, Minnesota Water Quality Certification Program (number of IPM, soil health, and wildlife endorsements)	?	

Summary

Minnesota remains committed to the judicious use of pesticides, which is a tenet of IPM. IPM is a science-based approach to pest management that seeks to prevent the build-up of pest populations beyond an economically harmful level by applying a variety of tools from pest monitoring to a combination of management techniques that prioritizes the use of options with the least possible hazard to people, property, and the environment.

The data shows a stable trend for IPM development. Minnesota continues to invest in the development of IPM for crop systems and their pests. Since 2021, the number of grants awarded for IPM development increased in comparison to the previous five years, and has remained relatively steady through 2023, the last year reported.

Minnesota IPM promotion has continued an upward trend since 2021. More pesticide best practice guidance is reaching Minnesotans year after year, pesticide recertification trainings have incorporated more pollinator specific information into mandatory trainings, and the UMN Extension Service and MDA staff have increased the amount of outreach focused on highlighting pesticide use and pollinator exposure concerns.



Data on the adoption of IPM in Minnesota is variable and difficult to quantify uniformly for all industries, user groups, and regions. However, the reliable data available reflect an upward trend; for example, the Minnesota Water Quality Certification Program has endorsed over 190 farms covering over 90,000 acres for IPM, soil health, and wildlife practices, which means those farms excel at incorporating land management practices that provide habitat and reduce risk to pollinators and wildlife from pesticides.

GOAL 3

Minnesotans understand, value, and actively support pollinators

KEY OUTCOME

More action through community commitments

INDICATOR	MEASURE	STATUS	TREND
Community commitments	Lawns to Legumes program grantees, number of Pollinator Pledges by The Xerces Society for Invertebrate Conservation	FAIR	
Informed communities	Organized outreach events, Outreach events participation, Lawns to Legumes program website visits	FAIR	

Summary




Minnesotans continue to show interest in helping pollinators. From attending pollinator-related events like the Minneapolis Monarch Festival, which celebrates the migration of the monarch butterfly each year, to applying to the Lawns to Legumes program to transform their yard to pollinator-friendly habitat, we see a steady increase in public participation to protect pollinators.

State agencies have also increased their participation in events where there are opportunities to share pollinator protection information and materials like native seed packets, buttons, pins, and pamphlets. For the past two years we have celebrated Pollinator Day at the State Fair as an interagency effort and with the collaboration of multiple organizations bringing their expertise and enthusiasm to the public. We have reached thousands of people with information about how to help pollinators from wherever they are by participating in community science programs, or planting pollinator-friendly plants, or learning about the judicious use of pesticides in their land.

There is still room to grow, to build more strategic relationships, increase our engagement with communities who are not part of community commitments, to improve our communication to reach more audiences and make materials more accessible.

DESIRED OUTCOME

Healthy, diverse pollinator populations that sustain and enhance Minnesota's environment, economy, and way of life

GROUP	INDICATOR	MEASURE	STATUS	TREND
Imperiled pollinators	Rusty patched bumble bee	Survey data	POOR	?
	Monarch butterfly	Numbers from Mexico's overwintering cites	POOR	
	Dakota skipper	Survey data	POOR	
Common pollinators	Brown belted bumble bee	USFWS	GOOD	?
	Bumble bee communities	USFWS	?	?
Managed pollinators	European honey bee honey production	Honey yields (NASS)	FAIR	

Summary

Recent survey efforts conducted by the Minnesota Biological Survey (MBS) and the UMN have yielded important data about bee diversity in Minnesota (For details, visit [MBS website](#).) Now we know our state is home to over 500 species of bees! However, the knowledge gap about most wild pollinators and their needs is still very large.

Unfortunately, this scorecard shows several species remaining in poor status, and the eastern population of the monarch butterfly continues to trend downward over time. During the 2023-2024 season, it covered only 2.2 acres of land in overwintering sites in Mexico's fir forests, 59% lower than the acreage covered the previous winter.

Reintroduction efforts of the Dakota skipper have not been as successful as hoped in southwestern Minnesota, and it is too soon to fully assess the new reintroduction effort at Glacial Lakes State Park. Nevertheless, we are far from having the once thriving populations of this species in Minnesota's prairies.

Data from the United States Department of Agriculture for honey yield per colony is used as a proxy for honey bee health. Honey yield has slowly but steadily declined over the last 30 years. In 2022, the most recent year for which data are available, the yield was 51 lb., or about 15% lower than the most recent 10-year average. Despite these declines in Minnesota honey yield, honey bee colony numbers remain near all-time highs globally.

Call to action

Pollinators need our help. This report provides important information for decision makers and members of the public to take action to protect Minnesota's pollinators. The scorecards illustrate the need to invest more in protections and data generation to better understand the impact of our actions and the status of pollinator populations.

We can all play a role in helping pollinators, from participating in community science programs, spreading the message with our peers, and planting more pollinator-friendly plants, to participating in programs and supporting legislation that benefit pollinators and wildlife.

Let's do it!



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- Minnesota Invasive Terrestrial Plants and Pests Center
- Metropolitan Mosquito Control District
- University of Minnesota Bee Lab
- University of Minnesota Department of Entomology
- University of Minnesota Extension Service
- United States Fish and Wildlife Service
- United States Department of Agriculture
- The Xerces Society for Invertebrate Conservation

Appendix I. References

- 1: Minnesota Biological Survey. Minnesota Statewide Survey 2014-2023. <https://files.dnr.state.mn.us/eco/mcbs/mn-statewide-bee-report.pdf>
- 2: Satyshur CD, Evans EC, Forsberg BM, Evans TA, and Blair R. 2023. Determining Minnesota bee species' distributions and phenologies with the help of participatory science. *PeerJ* 11:e16146 <https://doi.org/10.7717/peerj.16146>
- 3: Boone M, Portman Z, Lane I, and Rao S. 2023. Occupancy of *Bombus affinis* (Hymenoptera: Apidae) in Minnesota is highest in developed areas when standardized surveys are employed. *Environmental Entomology* 52(5): 918–938. <https://doi.org/10.1093/ee/nvad088>
- 4: Mola J, Pearse I, Evans E, Hepner M, Jean R, Kochanski J, Nordmeyer C, Runquist E, Smith T, Strange J, Watson J, and Koch J. 2024 Range-wide genetic analysis of an endangered bumble bee (*Bombus affinis*, Hymenoptera: Apidae) reveals population structure, isolation by distance, and low colony abundance *Journal of Insect Science* 24(2): 19; ieae041. <https://doi.org/10.1093/jisesa/ieae041>
- 5: Runquist E, Nordmeyer C, and Stapleton S. 2024. Widespread annual occurrence of pesticides within designated Critical Habitats for Endangered prairie butterflies. *Journal of Insect Conservation* 28, 539–552. <https://doi.org/10.1007/s10841-024-00572-5>.
- 6: Goebel K, Davros N, Andersen D, and Rice P. 2022. Tallgrass prairie wildlife exposure to spray drift from commonly used soybean insecticides in Midwestern USA. *Science of the Total Environment* 818, 151745. <https://doi.org/10.1016/j.scitotenv.2021.151745>.
- 7: McCall J, Beatty B, Janski J, Doubleday K, Martin J, Hartmann H, Walston L, and Macknick J. 2024. Little prairie under the panel: testing native pollinator habitat seed mix establishment at three utility-scale solar sites in Minnesota. *Environmental Research Communications* 6, 075012. <https://doi.org/10.1088/2515-7620/ad5b3c>.
- 8: Walston L, Hartmann H, Fox L, Macknick J, McCall J, Janski J, and Jenkins L. 2024. If you build it, will they come? Insect community responses to habitat establishment at solar energy facilities in Minnesota, USA. *Environmental Research Letters* 19, 01453. <https://iopscience.iop.org/article/10.1088/1748-9326/ad0f72>