

2025 Report on the

# Highways for Habitat Program

February 2025

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February 20, 2025

The Honorable Scott Dibble, Chair  
Senate Transportation Committee  
3107 Minnesota Senate Building  
Saint Paul, Minnesota 55155

The Honorable John Jasinski, Ranking Minority Member  
Senate Transportation Finance & Policy Committee  
2227 Minnesota Senate Building  
Saint Paul, Minnesota 55155

The Honorable Jon Koznick, Chair  
House Transportation Finance & Policy Committee  
2<sup>nd</sup> Floor Centennial Office Building  
Saint Paul, Minnesota 55155

The Honorable Erin Koegel, DFL Lead  
House Transportation Finance & Policy Committee  
5<sup>th</sup> Floor Centennial Office Building  
Saint Paul, Minnesota 55155

Re: 2025 Highways for Habitat Report

Dear Legislators,

This report fulfills the requirements laid out in [Sec. 160.2325 MN Statutes](#). The goal of the Highways for Habitat Program is to enhance Minnesota roadsides with vegetative buffers and pollinator and other wildlife habitat. This is the first year of this report. More information is available on [MnDOT's Integrated Roadside Vegetation Management](#) webpage.

If you have any questions about this report or the Highways for Habitat Program, please contact me or you may reach out to Tina Markeson at [tina.markeson@state.mn.us](mailto:tina.markeson@state.mn.us) or at (612) 257-3786.

Sincerely,



Nancy Daubenberger, P.E.  
Commissioner

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*The cost of preparing this report is less than \$5,000.*

# Legislative Request

This report is issued to comply with [Minn. Stat. 160.2325](#).

## 160.2325 Highways for Habitat Program

### Subdivision 1. Definitions

- (a) For purposes of this section, the following terms have the meanings given.
- (b) "Integrated roadside vegetation management" means an approach to right-of-way maintenance that combines a variety of techniques based on sound ecological principles, which establish and maintain safe, healthy, and functional roadsides. Integrated roadside vegetation management includes but is not limited to judicious use of herbicides, spot mowing, biological control, prescribed burning, mechanical tree and brush removal, erosion prevention and treatment, and prevention and treatment of other right-of-way disturbances.
- (c) "Program" means the highways for habitat program established in this section.

### Subd. 2. Program establishment

The commissioner must establish a highways for habitat program to enhance roadsides with pollinator and other wildlife habitat and vegetative buffers.

### Subd. 3. Management standards

- (a) The commissioner, in consultation with native habitat biologists and ecologists, must develop standards and best management practices for integrated roadside vegetation management under the program.
- (b) The standards and best management practices must, to the extent practicable, include:
  - (1) guidance on seed and vegetation selection based on the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines;
  - (2) requirements for roadside vegetation management protocols that avoid the use of pollinator lethal insecticides as defined under section 18H.02, subdivision 28a;
  - (3) practices that are designed to avoid habitat destruction and protect nesting birds, pollinators, and other wildlife, except as necessary to control noxious weeds as provided under section 160.23; and
  - (4) identification of appropriate right-of-way tracts for wildflower and native habitat establishment.

### Subd. 4. Legislative report

- (a) By January 15 of each odd-numbered year, the commissioner must submit a performance report on the program to the chairs and ranking minority members of the legislative committees having jurisdiction over transportation policy and finance. At a minimum, the report must include:
  - (1) information that details the department's progress on implementing the highways for habitat program;
  - (2) a fiscal review that identifies expenditures under the program; and
  - (3) an investment plan for each district of the department for the next biennium.
- (b) The performance report must be reviewed by the department's chief engineer.
- (c) This subdivision expires December 31, 2033.

# Highways for Habitat Program Basics

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The statute requires MnDOT to establish a Highways for Habitat Program to enhance roadsides with pollinator and other wildlife habitat and vegetative buffers. MnDOT must develop standards and best management practices for integrated roadside vegetation management, and these standards must include:

1. Guidance on seed and vegetation selection based on the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines;
2. Requirements for roadside vegetation management protocols that avoid the use of pollinator lethal insecticides as defined under [Minn. Stat. 18H.02, Subdivision 28a](#);
3. Practices that are designed to avoid habitat destruction and protect nesting birds, pollinators, and other wildlife, except as necessary to control noxious weeds as provided under [Minn. Stat. 160.23](#); and
4. Identification of appropriate right-of-way tracts for wildflower and native habitat establishment.

Documentation required by the statute include:

1. Information that details the department's progress on implementing the highways for habitat program;
2. A fiscal review that identifies expenditures under the program; and
3. An investment plan for each district of the department for the next biennium.

## Implementation

MnDOT manages approximately 175,000 acres of roadside vegetation across Minnesota. These roadsides and their vegetation are a critical part of transportation infrastructure. Properly designed and maintained roadsides improve safety by providing clear sight lines, traversable clear zones and proper storm water drainage. Roadside vegetation protects roads and bridges by allowing storm water to drain away quickly, while at the same time, holding the soil in place. It is also important for weed control, aesthetics, water quality, habitat and quality of life. Roadside vegetation is an asset that requires ongoing investment to ensure long-term functionality.

By employing the ecological principles of local adaptation and diversity, MnDOT strives for roadside vegetation that is highly functional and resilient to the frequent disturbances and weather extremes that are commonplace on roadsides. Local adaptation and diversity are primarily accomplished through the use of diverse native seed mixes. Mixtures of both introduced and native species are used in frequently mowed locations where entirely native vegetation does not provide the needed functions.

Once a roadside has been planted it is managed using Integrated Roadside Vegetation Management (IRVM). This IRVM approach combines maintenance techniques – such as prescribed fire, mowing and weed spraying – to optimize long-term performance of roadside vegetation.

The result of this approach is roadside vegetation that not only serves the infrastructure functions described above, but also provides additional benefits, including habitat for pollinators and other wildlife.

# Program Structure

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The Highways for Habitat Program is building on MnDOT's existing roadside vegetation management system. It focuses on improving vegetation establishment during construction projects, long-term management of roadside vegetation and the efficiency of MnDOT's herbicide use, as well as raising internal awareness of roadside vegetation along MnDOT-managed roads to gain purposeful decision-making.

## Vegetation Establishment

Roadside vegetation is planted during construction projects when the soil is disturbed and needs to be stabilized and revegetated. Planting and establishing vegetation during a construction project presents many complexities. These include degraded soils, an urgency to plant at less-than-ideal times of year and the need for inspectors to focus on other construction activities. The Highways for Habitat Program will address these issues using the techniques described below.

### Revise Standard Seed Mixes

MnDOT uses a standard set of seed mixes for revegetation during construction projects. These seed mixes were completely revised in 2023 to improve short-term establishment during construction, while continuing to provide the species diversity needed for long-term function. These revisions were reviewed by numerous stakeholders, including MnDOT staff, seeding contractors, seed vendors, the Department of Natural Resources and the Board of Water and Soil Resources. The new set of standard seed mixes was published in 2024 and will begin widespread use on construction projects in 2025.

### Use of Native Seed Mixes

Among several [sustainability goals](#) at MnDOT, is an effort to increase the use of native vegetation in roadside seeding and plantings. The [MnDOT Seeding Manual](#) contains standards for design and construction staff regarding the planting and establishment of roadside vegetation. This manual was updated in 2023 to clarify expectations pertaining to the use of native seed mixes. Guidance on landscape planting design has also been clarified to emphasize the use of native tree and shrub species. If native options suitable to the site conditions are not available, it also emphasizes the need to only use non-native species that do not pose a risk for invasiveness.

### Improve Topsoil Management

Roadsides often have poor quality soils that are further degraded by typical construction activities such as grading, stockpiling and compaction. Soil health has been historically under-prioritized in the overall system of project delivery, often resulting in low-quality topsoil that delays or impedes vegetation establishment. To address this problem, MnDOT is developing a process to better analyze topsoil prior to design, increase site-specific soil amendment and fertilizer requirements in contracts and improve topsoil quality during construction.

### Increase Vegetation Establishment Technical Support

The status of soil health, seeding, weed control and establishment must be identified early on, so the initial investment is protected. Additionally, information about newly planted roadsides needs to be shared with maintenance staff so they can appropriately plan for resources and management efforts.

To address this, MnDOT is pilot-testing the use of vegetation experts to provide more frequent monitoring and technical support for vegetation establishment during construction. These technical experts will advise construction inspectors to improve both the speed and quality of vegetation establishment. They will also meet

with maintenance staff to explain what has been planted and what maintenance is needed during the first year or two after construction.

This will be tested on several projects in south-central Minnesota during the 2025 and 2026 construction seasons. The effectiveness of this approach will be evaluated as MnDOT considers whether to implement it statewide and for the long-term.

### **Provide Tools for Monitoring and Evaluating Vegetation Establishment**

Additionally, there is a shortage of information on vegetation establishment specific to roadsides. Plants need to be identified as early as possible to allow for timely adaptive management, yet seedlings are notoriously difficult to identify for people without a technical background in botany or vegetation management. There are seedling identification guides available, but they are either focused on species that aren't common to MnDOT seed mixes or do not effectively communicate to a non-technical audience. To increase the accessibility of this information, MnDOT will be contracting for the development of a seedling identification and establishment field guide that focuses on species in MnDOT standard seed mixes and the weed species common to disturbed soils in Minnesota. This tool will empower more people with the information needed to monitor new plantings, address problems early and improve the overall establishment of roadside vegetation.

### **Map Roadside Plantings to Improve Asset Management**

In the rush to implement full construction programs over the years, most roadside plantings have not been inventoried and there is no central database of information on what seeds, shrubs and trees have been planted on MnDOT rights-of-way across the state. This lack of information is not optimal for managing that vegetation nor for learning and analyzing what works. MnDOT will contract to map roadside plantings from current and recent construction projects. This will build a geodatabase that can be added to over time and will allow improved management of these roadside assets.

### **Identification of Locations for Habitat and Buffer Restorations**

MnDOT met with the Minnesota Board of Water and Soil Resources (BWSR) to discuss partnering with them on mapping priority pollinator habitat areas in the state. MnDOT and BWSR will continue to collaborate on mapping resources that meet each agency's needs.

MnDOT is implementing a comprehensive review of habitats that are present on, or near roadside rights-of-way. After examining habitat datasets for the presence or absence of appropriate habitat, a scoring index will be created to help prioritize roadsides to create, restore or enhance pollinator habitat.

### **Enhancement of Select Roadsides to Increase Pollinator Habitat**

MnDOT has identified three locations where enhancement of previous native plantings will occur. These locations are at, or around rest areas near Afton (I-94), Albert Lea (I-35) and Baxter (MN371). The areas identified are currently being managed using IRVM techniques, however, the native plantings have failed to thrive.

## Long-term Maintenance

### Develop IRVM standards and Best Management Practices

MnDOT has a long history of using an Integrated Roadside Vegetation Management (IRVM) approach. MnDOT created the [Best Practices Handbook for Roadside Vegetation Management](#) in 2000 and updated it in 2008. MnDOT is participating in a Local Road Research Board (LRRB) project to create user-friendly guides for the 2008 handbook. These guides are expected to be ready in late 2025. This effort is funded by an LRRB grant, but MnDOT is exploring the use of this funding to further adapt the content to meet current needs.

### Mowing Practices

MnDOT is participating in the US Fish and Wildlife Service's Monarch Candidate Conservation Agreement with Assurances (CCAA). As part of this agreement, MnDOT defers full mow-outs of the right-of-way on interstates and other select highways from May 1 to October 1 in order to protect habitat for pollinators and other wildlife. The agreement does allow MnDOT to mow for safety and noxious weed control during the deferred mowing timeframe.

On highways that are not a part of the CCAA mowing regime, full mow-outs are discouraged unless filling a district maintenance need, such as native grass and wildflower establishment, noxious weed control, brush control or blowing snow control. Standard mowing practices are outlined in the [MnDOT Maintenance Manual Chapter 5](#).

### Limiting Use of Insecticides

Per MnDOT's [Pesticide Management Policy Procedures](#), insecticide use is limited to treating only high value, functional vegetation at high risk of infestation, to control insects which pose a threat to public health in high-use areas or to treat debris on the roadside which must be handled by maintenance staff. Applications of neonicotinoid insecticides are restricted. If a neonicotinoid insecticide is required, a "verification of need" from the Minnesota Department of Agriculture must be obtained prior to application in accordance with [Executive Order 19-28](#).

### Upgrade to Existing Herbicide Application Tools

Herbicides are an important tool in roadside vegetation management. The right herbicide, or herbicide mix applied at the proper time with the right application tool increases the efficacy and operational efficiency of the application. MnDOT uses both tank and injection systems to apply herbicides. Tank systems mix the water and one or more herbicides and apply straight from the tank. Injection systems mix the water and herbicide in the line, prior to application. This method allows the applicator to carry multiple herbicides and choose only the right one(s) for the target weed, thereby reducing the number of herbicides applied in a single location.

New herbicide application tools have options to record location and application data at the application site. This upgrade allows MnDOT to know exactly where an application occurred, at what rate, and with which herbicide. The automated recording of this information allows applicators to work more efficiently. Analysis of this data allows MnDOT to determine if different control strategies are needed to obtain control of the target weed. Mapping the location of herbicide applications means MnDOT also knows where the weeds exist. This data can then be used by construction and maintenance to limit the amount of weed spread during their respective activities.

# Fiscal Review

## Spend Plan for Appropriation

The statute appropriated \$1,000,000 to develop the Highways for Habitat program. The following table estimates how these funds are currently being spent. A fiscal review on past spending in accordance with [Subd 4 \(a\) \(2\)](#) will be provided in subsequent biennial reports.

| Project   | Management Standard Supported         | Cost       | Expected Expenditure Date |
|---|---------------------------------------|------------|---------------------------|
| Pilot Construction Vegetation Support Project                         | <a href="#">1</a> , <a href="#">4</a> | \$50,000   | June 2025                 |
| Inventory Vegetation Assets   | <a href="#">3</a> , <a href="#">4</a> | \$100,000  | May 2025                  |
| Two Injection Systems for Herbicide Application at \$100,000 each     | <a href="#">3</a>                     | \$200,000* | February 2025             |
| Licenses for Slingshot annual service (herbicide application mapping) | <a href="#">3</a>                     | \$3,000    | April 2025                |
| St. Croix TIC Enhancement   | <a href="#">4</a>                     | \$20,000   | May 2025                  |
| TH 371 Rest Area Enhancement  | <a href="#">4</a>                     | \$80,000   | May 2025                  |
| I-35 Albert Lea Median Enhancement                                    | <a href="#">4</a>                     | \$30,000   | May 2025                  |
| Staff Time for Prescribed Fire and Contract Administration            | <a href="#">3</a>                     | \$30,000*  | January 2025              |

Note: Asterisks (\*) indicate estimated costs.

## Future District Investment for Next Biennium

District spending on vegetation management is variable. In addition to natural changes in vegetation over time, such as noxious weed expansion and cyclical nature of vegetation management, the amount of new initial seeding depends on the type and number of construction projects in any given year.

Additional investment for the next biennium would include continued mapping of inventory vegetation assets (locations of initial seeding, as well as going back and observing the success of previous seed plantings), extended technical support for vegetation establishment on construction projects and creation of a Minnesota-specific seedling and seed mix identification guide. These additions would be implemented across all districts as needed, contingent upon the extension of funding into the next biennium.

## Conclusion

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MnDOT implemented the requirements of [Minn. Stat. 160.2325](#) and will continue to analyze data and make improvements to the program. Roadside vegetation is an important aspect of the transportation system and requires active management and sustained resources to ensure that it continues to function as designed.

The department will continue to advance the use of integrated vegetation management methods, as listed on the MnDOT website, [Roadside Vegetation Management](#). This program and methods will meet the many needs of Minnesota's roadsides. MnDOT will continue reporting biennially on this program updating the results of the Highways for Habitat funding provided and its effects across the projects implemented.