

SF5142 - 0 - Autonomous Ditch Mowers Pilot

Chief Author: **John Jasinski**  
 Committee: **Transportation**  
 Date Completed: **4/3/2024 8:13:51 AM**  
 Agency: **Transportation Dept**

State Fiscal Impact	Yes	No
Expenditures	X	
Fee/Departmental Earnings		X
Tax Revenue		X
Information Technology		X
Local Fiscal Impact		X

This table shows direct impact to state government only. Local government impact, if any, is discussed in the narrative. Reductions shown in the parentheses.

State Cost (Savings)	Biennium			Biennium		
	Dollars in Thousands	FY2023	FY2024	FY2025	FY2026	FY2027
Trunk Highway	-	-	979	654	-	-
<b>Total</b>	-	-	<b>979</b>	<b>654</b>	-	-
<b>Biennial Total</b>			<b>979</b>			<b>654</b>

Full Time Equivalent Positions (FTE)	Biennium			Biennium	
	FY2023	FY2024	FY2025	FY2026	FY2027
Trunk Highway	-	-	2.2	2.2	2.2
<b>Total</b>	-	-	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>

**LBO Analyst's Comment**

I have reviewed this fiscal note for reasonableness of content and consistency with the LBO's Uniform Standards and Procedures.

**LBO Signature:** Laura Cecko     **Date:** 4/3/2024 8:13:51 AM  
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**State Cost (Savings) Calculation Details**

This table shows direct impact to state government only. Local government impact, if any, is discussed in the narrative. Reductions are shown in parentheses.

\*Transfers In/Out and Absorbed Costs are only displayed when reported.

<b>State Cost (Savings) = 1-2</b>		Biennium			Biennium	
Dollars in Thousands		FY2023	FY2024	FY2025	FY2026	FY2027
Trunk Highway	-	-	-	979	654	-
<b>Total</b>		-	-	<b>979</b>	<b>654</b>	-
<b>Biennial Total</b>				<b>979</b>	<b>654</b>	
<b>1 - Expenditures, Absorbed Costs*, Transfers Out*</b>						
Trunk Highway	-	-	-	979	654	-
<b>Total</b>		-	-	<b>979</b>	<b>654</b>	-
<b>Biennial Total</b>				<b>979</b>	<b>654</b>	
<b>2 - Revenues, Transfers In*</b>						
Trunk Highway	-	-	-	-	-	-
<b>Total</b>		-	-	-	-	-
<b>Biennial Total</b>				-	-	

**Bill Description**

This bill requires MnDOT to conduct an autonomous mowing pilot project along I-35 between the Iowa border and the Burnsville interchange to study the use of robotics for ditch mowing and maintenance activities in the trunk highway right-of-way.

MnDOT must submit a report to legislative leadership with jurisdiction over transportation finance and policy.

**Assumptions**

MnDOT anticipates testing to happen in a controlled, closed-course environment and not to address normal maintenance needs. Advancing to highway testing may not be possible in the first two years of the project due to necessary equipment and technology upgrades.

MnDOT assumes in FY25 a consultant will be required to assist in managing the overall pilot project, evaluation, and report compilation. MnDOT assume a consultant performing this work would cost \$200,000.

The cost of autonomous mowing equipment for industrial uses (flat and uniform grass) is estimated at \$100,000. This equipment, however, may not be designed for ditch-mowing terrain, durability or hazards. MnDOT projects an additional \$900,000 to private vendors for GPS and mapping services, possible subscription services, and significant additional mechanical and technology development. MnDOT intends to split these costs for research and development between Fiscal Years 2025 and 2026.

MnDOT estimates \$25,000 for gas or electric and consumables, all encumbered in Fiscal Year 2025.

The bill requires two employees to manage technology. The hourly rate for this position would be at \$27.95 per hour, plus an additional 50% for overhead and fringe benefits.

The bill also requires 416 hours of a project manager to develop the statement of work for the consultant contract, manage the contract, manage and develop the project, and meet reporting requirements. The hourly rate for this position would be \$47.20 per hour, plus an additional 50% for overhead and fringe benefits.

If MnDOT implements the pilot on a highway, three additional maintenance staff (\$125.78 per hour total) and three trucks would be required 100% of the time for temporary traffic control. These costs could vary based on the maintenance activity and would be absorbed.

**Expenditure and/or Revenue Formula**

<b>Expense</b>	<b>FY25</b>	<b>FY26</b>
Consultant	\$200,000	
Initial Equipment	\$100,000	
Equipment Add-Ons and R and D	\$450,000	\$450,000
Gas or Electric and Consumables	\$25,000	
2.0 Maintenance FTEs (2 FTEs x \$27.95/hr x 2,080 hrs x 150%)	\$174,408	\$174,408
CAV PM (\$47.20/hr x 416 hrs x 150%)	\$29,452.80	\$29,452.80
Total	\$978,861 (rounded \$979,000)	\$653,861 (rounded \$654,000)
FTE Total	2.2	2.2

**Long-Term Fiscal Considerations**

Since this is a pilot, there would be no long-term fiscal impacts.

**Local Fiscal Impact**

None

**References/Sources**

MnDOT Office of Maintenance

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