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December 21, 2020

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Re: Minnesota Pollution Control Agency's Proposed Rules Adopting Vehicle Greenhouse Gas Emissions Standards (Clean Cars Minnesota), Minnesota Rules chapter 7023; Revisor's ID 04626

Dear Librarian:

The Minnesota Pollution Control Agency (MPCA) intends to adopt rules governing vehicle greenhouse gas emissions standards (known as the Clean Cars Minnesota rule). We have published a Notice of Intent to Adopt Rules With a Hearing and the proposed rules in the December 21, 2020, edition of the *State Register*.

The MPCA has prepared a Statement of Need and Reasonableness. As required by Minnesota Statutes sections 14.131 and 14.23, the MPCA is sending the Library an electronic copy of the Statement of Need and Reasonableness at the same time we are mailing our Notice of Intent.

If you have questions, please contact me at katie.izzo@state.mn.us or 651-757-2595.

Yours very truly,

A handwritten signature in black ink that reads 'Katie Izzo'.

Katie Izzo
MPCA Rule Coordinator

Enclosure: Statement of Need and Reasonableness



STATEMENT OF NEED AND REASONABLENESS

Proposed Revisions to Minnesota Rules, chapter 7023,
Adopting Vehicle Greenhouse Gas Emissions Standards
(Clean Cars Minnesota)
Revisor ID No. 04626

Environmental Analysis and Outcomes Division

December 2020

General information:

- 1) Availability: The *State Register* notice, this Statement of Need and Reasonableness (SONAR) and its appendices and the proposed rule will be available during the public comment period on the Agency's Public Notices website: <https://www.pca.state.mn.us/public-notice>
- 2) Agency contact for information, documents, or alternative formats: Upon request, this SONAR can be made available in an alternative format, such as large print, braille, or audio. To make a request, contact Katie Izzo, Rulemaking Coordinator, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155-4194; telephone 651-757-2595; 1-800-657-3864; email Katie.izzo@state.mn.us; or use your preferred telecommunications relay service.
- 3) How to read a sample Minnesota Statutes citation: Minn. Stat. § 116.07, subd. 2(f)(2)(ii)(A) is read as Minnesota Statutes, section 116.07, subdivision 2, paragraph (f), clause (2), item (ii), subitem (A). Minn. Stat. § 116.07 is found in Minnesota Statutes, chapter 116.
- 4) How to read a sample Minnesota Rules citation: Minn. R. 7150.0205, subp. 3(B)(3)(b)(i) is read as Minnesota Rules, part 7150.0205, subpart 3, item B, subitem (3), unit (b), subunit (i). Minn. R. 7150.0205 is found in Minnesota Rules, chapter 7150.

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Acronyms and abbreviations

§ – Section
APA – Administrative Procedure Act
BEV – Battery electric vehicle
CAA – Clean Air Act
EPA/U.S. EPA – United States Environmental Protection Agency
EV – Electric vehicle
fSCC – federal social cost of carbon
FTE – Full time equivalent
GHG – Greenhouse gases
ICE – Internal combustion engine
LEV – Low emission vehicles
MADA – Minnesota Automobile Dealers Association
MDH – Minnesota Department of Health
Minn. R. – Minnesota Rules
Minn. Stat. – Minnesota Statutes
MMB – Minnesota Management and Budget
MnDOT – Minnesota Department of Transportation
MPCA or Agency – Minnesota Pollution Control Agency
MY – Model year
NGEA – Next Generation Energy Act
NHTSA – National Highway Traffic Safety Administration
NMOG – Non-methane organic gases
NO_x – Nitrogen oxides
PHEV – Plug-in hybrid electric vehicles
PM – Particulate matter
OAH – Office of Administrative Hearings
PUC – Public Utilities Commission
RFC – Request for comment
SONAR – Statement of Need and Reasonableness
TZEV – Transitional zero emission vehicles
ZEV – Zero emission vehicles

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1. Introduction and overview of SONAR

A. Introduction

In this rulemaking, the Clean Cars Minnesota Rule, the Minnesota Pollution Control Agency (MPCA) is proposing amendments to Minnesota Rules (Minn. R.) governing greenhouse gas (GHG) and other air pollution emissions from passenger cars, light-duty trucks, and medium-duty vehicles. Specifically, these amendments would adopt California's Low Emission Vehicle (LEV) III and Zero Emission Vehicle (ZEV) standards and establish an early action credit mechanism. The LEV standard has been adopted by 14 states and the District of Columbia, and the ZEV standard has been adopted by 11 states. The rule is proposed under the authorities granted to states under Section 177 of the Clean Air Act (CAA). The MPCA has the authority in Chapter 116.07 of Minnesota Statutes (Minn. Stat.) to regulate sources of air pollution.

The proposed amendments are needed because the global climate is changing and Minnesota is already seeing the effects. Minnesota's temperatures are increasing – especially in winter – and larger, more frequent extreme precipitation events are occurring. Research indicates that the years and decades ahead will see even warmer winters and even larger rainfalls due to climate change. Climate change is driven by GHG emissions from human activity.¹ The 2007 bipartisan Next Generation Energy Act (NGEA) set goals for Minnesota to achieve significant GHG emission reductions over the next decades to do our part to address this complex global challenge. The NGEA states Minnesota should reduce its GHG emissions 15% by 2015, 30% by 2025, and 80% by 2050, as compared to 2005 levels. Minnesota did not meet our 2015 goal and we are not on track to meet our 2025 or 2050 goals. To achieve these goals, we must achieve additional emission reductions from major sources in Minnesota.

Transportation is now the largest emitter of GHGs in Minnesota. To reduce our overall emissions, Minnesota must target emission reductions in this sector. In 2019, the Minnesota Department of Transportation (MnDOT), in collaboration with the MPCA and other state agencies, engaged with members of the public in meetings and conducted modeling to explore opportunities for reducing GHG emissions from transportation. That study, "Pathways to Decarbonizing Transportation in Minnesota,"² (Pathways report) showed that action will be needed across many areas of transportation: reducing emissions from gasoline and diesel vehicles, transitioning to electricity and biofuels as vehicle energy sources, and reducing vehicle miles traveled. The Pathways report listed adopting the LEV and ZEV standards as a recommended next step in addressing GHG emissions from vehicles.

The LEV and ZEV standards are intended to reduce emissions from vehicles with internal combustion engines (ICE) and accelerate the adoption of electric vehicles (EVs). To date, Minnesota has relied on the federal emissions standards for reducing GHGs and other air pollutants. However, on April 30, 2020, the Environmental Protection Agency (EPA) finalized its Safer Affordable Fuel-Efficient (SAFE) Vehicles rule, which weakens the federal GHG standards for passenger cars and light-duty trucks. Adopting the LEV standard would protect future emissions benefits that Minnesota has been counting on to help us achieve our GHG and other air pollutant emission reduction goals, despite the changes to federal standards. EVs produce less GHG and other air pollutant emissions than ICE vehicles, even when factoring in the emissions caused by generating electricity to power them. The Pathways report showed that more needs to be done to increase adoption of EVs. The ZEV standard would help boost adoption of

¹ Intergovernmental Panel on Climate Change, *Summary for Policymakers*, 4 (2018), available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

² *Pathways to Decarbonizing Transportation in Minnesota*, Pathways to Decarbonizing Transportation in Minnesota (2019). Retrieved from <https://www.dot.state.mn.us/sustainability/docs/pathways-report-2019.pdf>.

this technology, especially now, when the technology is still developing and set the state on a path towards the levels of EV adoption that will eventually be needed to meet our GHG emission reduction goals.

The MPCA analyzed the costs and benefits of adopting these standards over the first 10 years of implementation (to model year [MY] 2034). Through this analysis, we estimate the proposed rule is likely to reduce GHG emissions from both vehicle tailpipes and upstream electricity and fuel production by approximately 8.4 million tons over the first 10 years the LEV and ZEV standards are implemented. Annual GHG reductions would increase over time as more LEV-certified ICE vehicles and EVs make up Minnesota's fleet. By 2034, MPCA estimates that these standards would reduce GHG emissions from tailpipes fuel production by 1.4 million tons annually (including increased emissions from electricity generation), compared to a future in which the proposed rule is not adopted.³ The MPCA estimates the proposed rule would reduce tailpipe emissions by 1.2 million tons annually by 2034 and provide approximately a 3.5% reduction from 2005 surface transportation GHG emissions levels in Minnesota and a 2.7% reduction in overall GHG emissions from transportation using a 2005 baseline. The analysis estimates that, in monetary terms, the total GHG reductions achieved by the proposed rule would lead to about \$500 million (in 2018 dollars) in avoided climate damages.

Additionally, the MPCA estimates that the proposed rule would reduce other pollutants that directly affect the health of Minnesotans. We estimate the proposed rule would annually reduce 635 tons of particulate matter (PM) and 998 tons of nitrogen oxides (NO_x) and non-methane organic gases (NMOG) in 2034. We estimate the proposed rule would reduce 3,232 tons of PM and 6,059 tons of NMOG + NO_x over the first 10 year of implementation.

Since EVs are generally cheaper to own and operate over the life of the vehicles due in large part to fuel and maintenance savings and the increased purchase cost of LEV-certified vehicles may be mostly or entirely offset by fuel savings over the life of the vehicles, the proposed rule may also produce consumer savings in addition to health and climate benefits. Depending on the choice of discount rate,⁴ the analysis estimates that the proposed rule would result in between \$23 million total average annual net consumer costs to \$48 million total average annual net consumer savings per model year over vehicles' lifetimes for the 10 year time frame spanning model year 2025 to 2034.⁵ Over the ten years, these would translate to between an estimated \$236 million net consumer costs to \$476 million in net consumer benefits over vehicles' lifetimes for the first 10 model years of implementation of the proposed rule. The MPCA also analyzed the potential impacts on consumer and environmental benefits from a possible long-term economic slowdown resulting from the COVID-19 pandemic. Our analysis indicates such an economic slowdown is unlikely to have a significant impact of these estimates of consumer benefits.

B. SONAR contents and purpose

The Minnesota Administrative Procedure Act (APA) requires an agency to prepare, review, and make available a SONAR when a new rule or amendment is proposed. The SONAR demonstrates the need for

³ This estimate includes tailpipe emissions, power sector emissions related to electricity generation for EVs, and upstream emissions from the extraction, processing, and transportation of fuels.

⁴ A "discount rate" is used to convert costs or benefits that will happen in the future into present value terms, which are how much the future costs or savings are worth to the consumer presently. A full explanation of discount rates can be found in section 6(A)(ii) of this SONAR.

⁵ The range reflects the use of either a 7% or 3% discount rate.

and the reasonableness of the proposed rule amendments.⁶ Minn. Stat. § 14.131 of the APA lays out the specific requirements of a SONAR. There are also several additional statutory requirements associated with proposed administrative rules.⁷ These additional statutory requirements are also fulfilled in this document.

Minn. Stat. § 14.131 requires the agency to include an analysis of eight factors “to the extent the agency, through reasonable effort, can ascertain this information” in the SONAR. These factors are:

- A. a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
- B. the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
- C. a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule;
- D. a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons they were rejected in favor of the proposed rule;
- E. the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals;
- F. the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals;
- G. an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference; and
- H. an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.⁸

The MPCA conducted an analysis of the proposed rule under these factors in Section 7.

In addition, Minnesota law also requires analysis of other statutory provisions in the SONAR. Analysis of these factors is found in Section 9.

This SONAR is organized into the following sections:

1. **Introduction and overview of SONAR:** Provides an introduction to the need and reasonableness of the proposed rule, an explanation of the SONAR’s purpose and contents, and the scope of the proposed amendments.
2. **Statement of general need:** Explains why action is necessary to reduce GHG and other air pollutant emissions from transportation and combat climate change, establishing the need for this rule.
3. **Background:** Provides background on GHG emissions, EVs, experiences from other states that have adopted the LEV and ZEV standards, and the national context.
4. **Public and stakeholder participation:** Describes what the MPCA has done so far to gather input from the public and stakeholders. Includes summary of input received.
5. **Statutory authority:** Identifies the statutory authority of the MPCA to adopt this rule.

⁶ MINN. STAT. § 14.131 (2019).

⁷ Minn. Stat. § 14.127 (2019).

⁸ Minn. Stat. § 14.131 (2019).

6. **Reasonableness of the amendments:** Summarizes the rule concepts and the evidence justifying the reasonableness of the rule.
7. **Regulatory analysis:** Provides a regulatory analysis of the SONAR factors in Minn. Stat. § 14.131.
8. **Environmental justice policy:** Explains the MPCA's efforts to address and analyze environmental justice as part of this rulemaking.
9. **MPCA-specific statutorily required analysis:** Analyzes other statutory requirements beyond those outlined in the APA, specific to the MPCA.
10. **Notice plan:** Outlines the plan to provide notice about this rulemaking to the public and interested stakeholders.
11. **Authors, witnesses, and SONAR exhibits:** Documents the authors of the SONAR, staff who will be available to testify at hearing, and exhibits of supporting information.
12. **Conclusion.**

C. Scope of the proposed amendments

As part of the Clean Cars Minnesota rulemaking, the MPCA is proposing the adoption of two vehicle emissions standards: the LEV standard and the ZEV standard. Section 209 of the CAA allows California to adopt vehicle emissions standards that are more stringent than the federal vehicle emission standards. Section 177 of the CAA grants other states the right to adopt these California standards as long as they are identical to California's.

California developed both the LEV and ZEV standards under its section 209 authorities to address two key mechanisms for reducing emissions from vehicles: first, reducing emissions from ICE passenger cars, light-duty trucks, and medium-duty vehicles; and second, increasing the proportion of vehicles that produce no emissions from the tailpipe. In addition to California, 13 other states and the District of Columbia (collectively referred to as "section 177 states") have exercised their authority under section 177 of the CAA to adopt California's emissions standards. Of the section 177 states, most have adopted both standards together, although Delaware, Pennsylvania, and the District of Columbia have adopted LEV without ZEV. The MPCA is proposing to adopt both the LEV and ZEV standards because they work together to advance clean vehicle technology and reduce emissions. The proposed Clean Cars Minnesota rule incorporates the California regulations by reference, as amended, to ensure the standards are identical to California's and therefore are compliant with the CAA.

Both the LEV standard and the federal standard are tailpipe emissions standards for GHGs and other air pollutants. A tailpipe emissions standard requires vehicles to emit less than a maximum amount of a given pollutant per mile and is usually written as grams per mile. California certifies vehicles as meeting the LEV standards while the federal government certifies vehicles to meet the federal standards.

Until April 30, 2020, the LEV standard, developed by California and adopted by section 177 states, was identical to the federal standard. However, in April 2020 the federal government finalized the SAFE rule, which weakens the GHG emissions standard. The federal standards and LEV standard have been the same since they were adopted in 2012, and Minnesota has been expecting those planned emissions reductions. The SAFE rule will eliminate the emissions and economic benefits that the standards adopted in 2012 would have brought to the state. One of the purposes of the proposed Clean Cars Minnesota rule is to maintain the GHG emissions standard in Minnesota in light of this federal action, so that Minnesota will still receive the anticipated emissions and economic benefits of those standards. The LEV and federal standards are the same for NO_x and NMOG and the federal government is not currently proposing to reduce the stringency of those standards. The LEV PM standard is currently the same as the federal standards, but begins to become more stringent after MY 2025 until MY 2028. The federal and LEV standards for medium-duty vehicles are also currently the same.

The proposed LEV emissions standards apply to the following vehicle types:

- Passenger car: vehicles designed mostly to transport 12 people or fewer.
- Light-duty truck: vehicles with a gross vehicle weight of under 8,500 pounds.
- Medium-duty vehicle: vehicles with a gross vehicle weight of between 8,501 and 14,000 pounds.
- Medium-duty passenger vehicle: medium-duty vehicles with a gross vehicle weight of less than 10,000 pounds and designed mostly to transport people.

Passenger cars and light-duty trucks are sometimes grouped together as “light-duty vehicles.” The proposed rule requires automobile manufacturers deliver for sale in Minnesota only passenger cars, light-duty trucks, medium-duty vehicles, and medium-duty passenger vehicles that are certified by California as meeting the LEV standard. Manufacturers also need to meet average emission requirements for the entire fleet of vehicles they deliver for sale in Minnesota. There are separate fleet-wide emission standards for passenger cars, light-duty trucks, medium-duty vehicles, and medium-duty passenger vehicles.

The proposed standards for NMOG + NO_x⁹ and GHGs provide flexibility for manufacturers by using a vehicle footprint-based calculation for determining the manufacturer’s fleet-wide average. Under this system, the fleet-wide average requirement for a manufacturer who sells a higher percentage of larger trucks or cars would be less stringent than if they sold a higher percentage of smaller trucks or cars. A vehicle manufacturer whose fleet produces less emissions than their fleet-wide average requirement for a model year earns credits, while a manufacturer whose fleet produces more emissions than their fleet-wide average requirement has a deficit it must fill with credits either from its bank or by purchasing credits from other manufacturers.

The LEV standards provide compliance flexibilities including banking and trading of credits across model years and trading of credits between manufacturers. Additionally, manufacturers have the option of demonstrating compliance with the LEV standard based on deliveries for sale in each state individually or by averaging across California and all the section 177 states together.

The PM standard operates differently than the GHG and NMOG + NO_x standards. The PM standard requires manufacturers to annually phase in increasing percentages of lower-emitting vehicles into the fleet of vehicles they deliver for sale into the state.

The LEV standard applies to emissions of GHGs and other air pollutants and gets more stringent every year up to MY 2025 and, for the PM standards, MY 2028. Adopting the LEV standard would mean that new vehicles that are sold in Minnesota produce less tailpipe emissions than the new vehicles that would be sold without the standard. In short, the LEV standard reduces transportation emissions by reducing tailpipe emissions from new vehicles.

The ZEV standard requires a certain percentage of the passenger cars and light-duty trucks that each automobile manufacturer delivers for sale in Minnesota annually to be vehicles with zero tailpipe emissions, including battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs),¹⁰ and hydrogen-fueled vehicles. These vehicles are collectively considered “zero emission vehicles” (ZEVs). BEVs and PHEVs are often collectively referred to as “electric vehicles” (EVs). The ZEV standard does not require individual Minnesotans to purchase an EV. The intention of the standard is to reduce emissions by replacing the purchase of higher-emitting vehicles with the purchase of EVs. The proposed rule would

⁹ The NMOG + NO_x standard is the sum of NO_x and NMOG emissions.

¹⁰ PHEVs are called “transitional zero emission vehicles” or “TZEVs” in the regulatory language, although TZEVE is not a commonly used term. For the purposes of this SONAR, the terms TZEVE and PHEV are synonymous; however, PHEV will be used for consistency.

accomplish that by encouraging manufacturers to bring more EVs to Minnesota to improve options for Minnesotans who want to purchase an EV, and for Minnesotans who might consider purchasing an EV if more were available.

The ZEV standard is based on a credit system. Manufacturers are given ZEV credit percentage quotas, and the quotas increase every year – which requires manufacturers to earn more credits – until MY 2025, after which the quota remains constant. Unlike the LEV standard, which allows manufacturers to demonstrate compliance across California and all section 177 states combined, for the ZEV standard, all credits to meet the requirement must come from vehicles delivered for sale in Minnesota.¹¹

Manufacturers earn different numbers of credits for delivering different types of qualifying vehicles for sale to Minnesota, based on vehicle technology and maximum range per charge. For instance, long-range BEVs receive the most credits (up to 4 per vehicle) while PHEVs with short electric ranges receive the least. Regular (non-plug-in) hybrids and highly efficient ICE vehicles do not receive any ZEV credits. Large volume manufacturers¹² must meet a portion of their credit requirements with credits from the delivery for sale of BEVs, while intermediate volume manufacturers¹³ can meet their requirements from any mix of BEV or transitional zero emission vehicles (TZEV) credits. Small volume manufacturers¹⁴ have no regulatory obligations under the ZEV standard. Manufacturers can bank credits to meet requirements in future years and are able to buy and sell them from other manufacturers. The ZEV standard requires manufacturers to deliver more EVs for sale in Minnesota. EVs are critical to long-term emissions reductions from transportation and therefore growing the number of EVs in Minnesota is integral to achieving the NGEA goals.

The MPCA believes establishing an initial ZEV credit bank to be used beginning in the first effective model year is an important component of implementing the ZEV standard and providing flexibility for manufacturers in the early years of implementation. California has been implementing iterations of the ZEV standard since the 1990s and does not provide a mechanism for establishing an initial bank of ZEV credits. Establishing an initial bank is outside of the standards set by California and is, therefore, an implementation and enforcement choice left to states adopting the standards. Precedent in other states has established that states adopting ZEV for the first time have the ability to establish their own mechanism for developing an initial credit bank. As described in greater detail in section 5, the CAA requires that other states adopt identical standards as California; however, neither the establishment of an early action credit system nor the deposit of initial ZEV credits is a standard subject to the CAA identity requirement.

Establishing an initial ZEV credit bank is the primary element of the proposed rule that has flexibility in terms of language and content to be adopted. The MPCA is proposing to establish an initial ZEV credit bank by allowing manufacturers to accrue early-action credits starting in MY 2022 until the beginning of

¹¹ *California Code of Regulations § 1962.2(d)(5)(E)(1) provides one exception to the need to earn credits for vehicles delivered for sale in Minnesota. It allows credits earned by delivering hydrogen fuel cell vehicles for sale in California to also be earned proportionally in section 177 states. The MPCA estimates that these fuel cell credits would equal approximately 1,500, or about 3% of the credits needed for the first effective model year of the proposed rule.*

¹² *California Code of Regulations Title 13 § 1900 (b)(10), “Large volume manufacturer” means “any 2000 and subsequent model year manufacturer that is not a small volume manufacturer, or an independent low volume manufacturer, or an intermediate volume manufacturer.”*

¹³ *California Code of Regulations Title 13 § 1900 (b)(9), “Intermediate volume manufacturer” means “...any 2018 and subsequent model year manufacturer with California sales between 4,501 and 20,000 new light- and medium-duty vehicles based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification...”*

¹⁴ *California Code of Regulations Title 13 § 1900 (b)(22), “Small volume manufacturer” means “with respect to the 2001 and subsequent model-years, a manufacturer with California sales less than 4,500 new passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification as a small volume manufacturer...”*

the first effective model year. The MPCA is also proposing to provide a one-time allotment of ZEV credits equivalent to the credit requirements for the first effective model year of the rule. Additional mechanisms for establishing an initial ZEV credit bank were considered, but this approach would provide the best balance between incentivizing increased and early EV delivery to Minnesota and providing compliance flexibility for manufacturers. An analysis of other early credit bank options is available in section 4 of the Technical Support Document (Appendix 1).

2. Statement of general need

The Minnesota APA requires the MPCA to explain the facts establishing need for the proposed rulemaking. This SONAR identifies three needs that require action: climate change, air pollution, and maintaining stringent vehicle emissions standards.

A. Climate change

Action to reduce GHG emissions is necessary across Minnesota's entire economy and in jurisdictions around the world in order to minimize damage from a changing climate. Addressing climate change will require economy-wide efforts from both the public and private sectors, as well as from individuals. The need for broad efforts does not alleviate the need for incremental actions; in fact, it requires them. While no single action can turn the tide of climate change, the accumulation of many actions will be required to address this complex challenge. Each action spurs progress and further action. In this case, we must act to reduce GHG emissions from passenger cars, light-duty trucks, and medium-duty vehicles because transportation is the largest source of GHG emissions in Minnesota, and these vehicle types are the largest source of GHG emissions within that sector.

Climate change is a global issue, and Minnesota both contributes to global GHG emissions and will experience significant negative effects if they are not reduced. As Governor Walz has stated, "Climate change threatens the very things that make Minnesota a great place to live—from our wonderful lakes to farmable land and clean air."¹⁵

Minnesota's climate is already changing; the 10 warmest and wettest years on record have all occurred in the past 20 years.¹⁶ These changes mean more flooding in Minnesota communities, farmers with fields too wet to plant or harvest, and shorter ice fishing and maple syrup seasons. The cumulative impact of climate change is having real effects on Minnesotans and our economy by forcing early and costly repairs to infrastructure, increasing home and crop insurance rates, contributing to upheaval in our native ecosystems, and causing more trips to the hospital for heat-related illness.¹⁷

According to the 2018 Intergovernmental Panel on Climate Change report,¹⁸ significant GHG reductions are necessary by 2030 in order to avoid the worst human and ecosystem effects from climate change. If we do not act quickly, projections for ecosystem and human effects are dire. However, actions to reduce GHG emissions now will ensure a safer future for people and the planet. GHG reductions are needed in every sector and at every scale of government; through this rulemaking, Minnesota has the ability to act

¹⁵ Gov. Tim Walz, *Press Release: Governor Walz Establishes Climate Change Subcabinet (December 2, 2019)*, available at <https://mn.gov/governor/news/?id=1055-412110>.

¹⁶ *Climate Change Factsheet, Climate Change Factsheet (n.d.)*. Retrieved from https://files.dnr.state.mn.us/natural_resources/climate/change/climatechange-factsheet.pdf.

¹⁷ *Effects of climate change in Minnesota. (2019, April 9)*. Retrieved from <https://www.pca.state.mn.us/air/effects-climate-change-minnesota>.

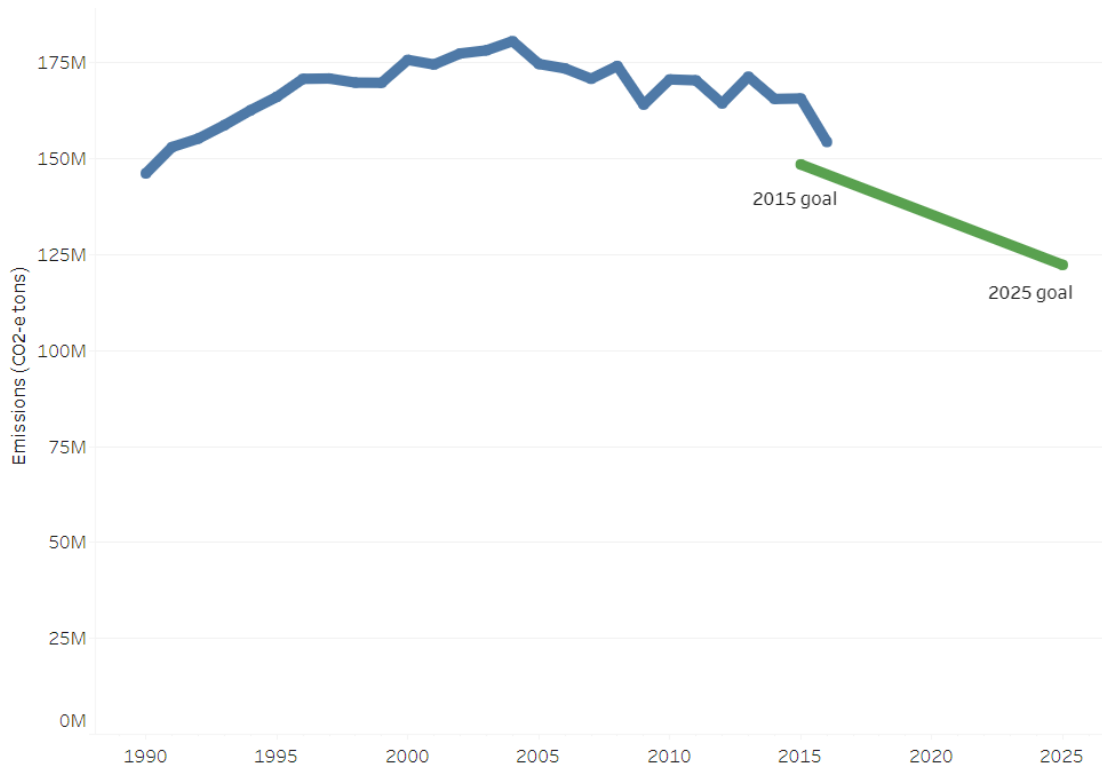
¹⁸ *Summary for Policymakers. (n.d.)*. Retrieved from <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>.

quickly to reduce emissions from transportation, the largest source of GHG emissions in the state.

In addition, the NGEA, Minn. Stat. § 216H.02, subd. 1, establishes a statewide goal “to reduce statewide greenhouse gas emissions across all sectors producing those emissions to a level at least 15 percent below 2005 levels by 2015, to a level at least 30 percent below 2005 levels by 2025, and to a level at least 80 percent below 2005 levels by 2050.”

The MPCA develops a biennial inventory of GHG emissions in the state. The most recent inventory and report released in 2019, “Greenhouse gas emissions in Minnesota: 1990-2016,”¹⁹ showed that Minnesota did not meet its 2015 goal and is not on track to achieve the 2025 or 2050 goals (see Figure 1).

Figure 1: Progress toward NGEA GHG reduction goals²⁰

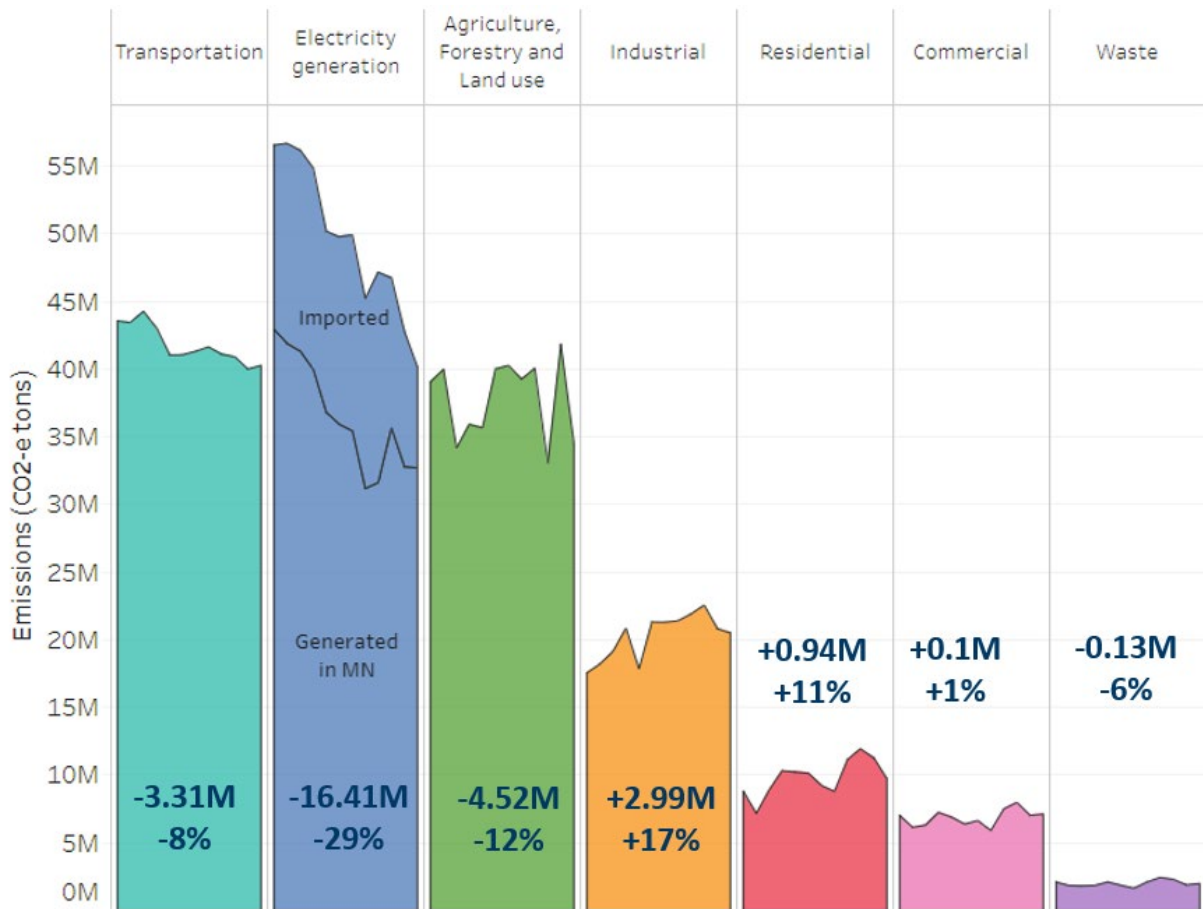


Using the most recent data (2016), this report showed that as of 2016, Minnesota has seen about a 30% reduction in emissions from the electricity generation sector, but has not seen similar action in other sectors, including the transportation sector. Transportation is now the largest emitter of GHGs in Minnesota (see Figure 2).

¹⁹ MPCA GHG emissions inventory, 2019. <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>.

²⁰ MPCA GHG emissions inventory, 2019. <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>

Figure 2: GHG emissions changes by sector, 2005-2016²¹



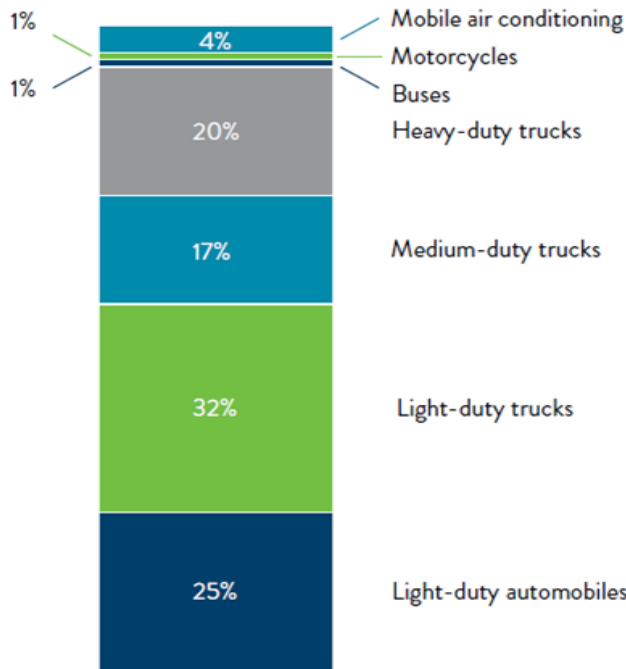
To date, the transportation sector has only seen about an 8% GHG emission reduction since 2005, and transportation accounts for about a quarter of overall GHG emissions in Minnesota. According to MPCA’s 2019 report, emissions decreases in this sector have largely been driven by federal standards for GHG emissions and fuel economy. However, the federal government recently finalized rules to weaken those standards (see section 2(C)). In addition, Minnesota is seeing current trends of increasing vehicle miles traveled²² and Minnesotans choosing to purchase larger vehicles, which can result in increasing emissions. These trends have worked to counteract some of the benefits and reduce the impact of the federal standards.

Surface transportation includes on-road vehicles such as cars, trucks, buses, and motorcycles, and accounts for most of the transportation sector’s GHG emissions. Within the surface transportation category, light-duty and medium-duty vehicles account for 74% of the subsector’s emissions (see Figure 3).

²¹ MPCA GHG emissions inventory, 2019. <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>

²² MnDOT, “Vehicle miles of travel trends in Minnesota, 1992-2018,” https://www.dot.state.mn.us/traffic/data/reports/vmt/VMT_Trend_Report_2018.pdf

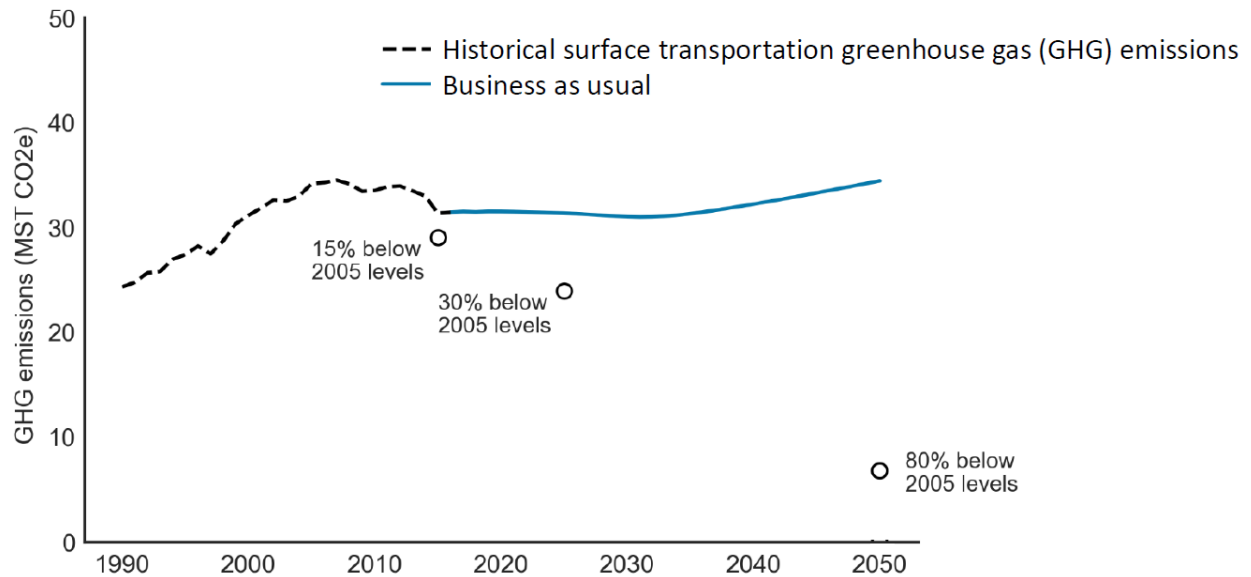
Figure 3: GHG emissions from surface transportation, 2016²³



As part of the 2019 Pathways project in collaboration with MPCA and other state agencies, MnDOT explored modeling that investigated what would happen to GHG emissions from surface transportation if Minnesota maintained the status quo and only implemented existing policies without any changes. The modeling found that if Minnesota takes no additional actions, emissions from this sector will increase over time, making it impossible to achieve the NGEA goals (see Figure 4).

²³ MPCA GHG emissions inventory, 2019. <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>

Figure 4: GHG emissions from surface transportation²⁴



This study shows that new action is needed to initiate transformation of Minnesota’s transportation sector to achieve emission reductions. The proposed rule is an integral step to get the state on track to achieve its statutory goals and address Minnesota’s contribution to the global climate crisis. Again, while no single policy will get Minnesota on track to achieving its GHG emission reduction goals, incremental steps are needed to bend the curve. Incremental actions are critical in most complex efforts. As a simple example of the need for incremental efforts to achieve a larger goal, consider driving safety: people use seatbelts in vehicles to stay safe, but that action alone is not enough to be safe in a vehicle. People also use turn signals, observe the speed limit, purchase vehicles with air bags, and many more things. The seatbelt alone does not keep people safe, but rather the accumulation of these actions. Put another way, while the proposed rule will not stop climate change, there is still a critical need to address these emissions through the adoption of the LEV and ZEV standards as part of a set of many actions to address climate change.

B. Air pollution, public health, and environmental justice

The proposed rule would reduce tailpipe emissions of not just GHGs, but also other harmful air pollutants, including PM and the pollutants that form ground-level ozone. In Minnesota, on-road vehicles produce about 35% of overall emissions of NO_x, 20% of non-biogenic volatile organic compounds (VOCs),²⁵ and about 5% of emissions of fine particles.²⁶ NO_x and VOCs contribute to the formation of ground-level ozone and fine particles. Fine particles, or particles less than 2.5 microns in diameter (PM_{2.5}) are a subset of PM and are both directly released from pollution sources and formed through chemical reactions between pollutants in the air. These are all pollutants that have negative health effects, as shown in Figure 5.

²⁴ Pathways to Decarbonizing Transportation in Minnesota, Pathways to Decarbonizing Transportation in Minnesota (2019). Retrieved from <https://www.dot.state.mn.us/sustainability/docs/pathways-report-2019.pdf>

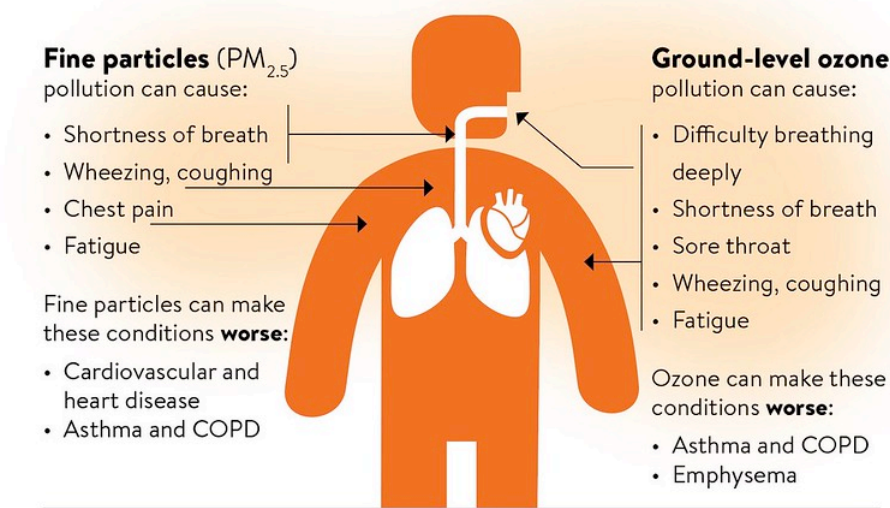
²⁵ NMOG is a group of VOCs that excludes methane.

²⁶ MPCA emissions inventory, Sources of air pollution that most impact health, <https://www.pca.state.mn.us/air/sources-air-pollution-most-impact-health>. (Accessed 7/27/2020)

Figure 5: Effects of air pollution on human health

Air pollution and your health

Fine particles and ground-level ozone (often called smog) are widespread pollutants linked to health effects.



In June 2019, the MPCA and the Minnesota Department of Health (MDH) released the “Life and breath” report that showed PM_{2.5} and ground-level ozone contributed to roughly 2,000-4,000 deaths in Minnesota in 2013 (most recent data) as well as hundreds of increased hospital visits.²⁷ Reducing emissions of these pollutants is critical for protecting the health of Minnesotans.

Reducing air pollution from vehicles is especially necessary for addressing environmental justice. The MPCA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. MPCA research shows that communities of color and under-resourced communities are disproportionately exposed to pollution from vehicles because those communities are disproportionately located near busy roadways.²⁸ Reducing emissions from vehicles is necessary to reduce exposures to these vulnerable and already overburdened communities and to address environmental justice.

C. Avoiding backsliding

To date, the MPCA has relied on EPA’s federal emissions standards for vehicles. Historically these standards required increasingly stringent emissions reductions from transportation and have supported the need to reduce emissions of GHGs and other air pollutants. However, on April 30, 2020, EPA finalized the SAFE rule, which rolls back the emissions standards that were finalized in 2012 and sets new, less stringent GHG emissions standards for MY 2021-2026.²⁹ The emissions standards are an

²⁷ “Life and breath: How air pollution affects health in Minnesota,” David Bael and Kathy Raleigh.

<https://www.pca.state.mn.us/air/life-and-breath-report>

²⁸ Traffic, Air Pollution, Minority and Socio-Economic Status: Addressing Inequities in Exposure and Risk. Gregory C. Pratt, et al.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4454972/>

²⁹ See U.S. Dep’t of Transportation & Env’t Prot. Agency, Notice of Final Rule: The Safer Affordable (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 FR 24174 (April 30, 2020). In addition to changing standards through the 2025 model year, EPA and NHTSA propose to establish new emissions standards for MY 2026 with their SAFE rule.

important part of the portfolio of actions needed to reduce GHG emissions. The SAFE rule reduces the level of environmental protection, harms Minnesota's ability to address GHG emissions and climate change, and conflicts with the MPCA's mission to protect and improve the environment. Action is needed now to avoid backsliding on emissions standards in Minnesota and losing critical environmental protections. See section 3(C) of this SONAR for details of the rollback of the federal GHG emissions standards.

The federal government's action eliminates previously expected critical environmental protections. Immediate action is needed to reduce the emissions of harmful air pollution from light-duty and medium-duty vehicles, address the disproportionate exposures from harmful air pollution, and reduce Minnesota's GHG emissions to help address Minnesota's contribution to global climate change. The proposed rule is a necessary step toward achieving substantive emission reductions in Minnesota's transportation sector.

3. Background

In January 2019, the MPCA released its 2019 biennial report on GHG emissions in Minnesota, as required by Minn. Stat. § 216H.³⁰ This report showed that Minnesota did not meet the 2015 NGEA emission target, that the transportation sector was the largest emission sector in the state, and that the transportation sector had achieved only an 8% emission reduction from 2005 to 2015.³¹ Further examination of the transportation sector GHG emissions shows that light-duty and medium-duty vehicles, vehicles directly impacted by the proposed rule, account for approximately 74% of the sector's total emissions.

On September 25, 2019, the MPCA was directed by Governor Walz to begin the process of establishing a Clean Cars Minnesota Rule. Governor Walz then signed Executive Order 19-37 on December 2, 2019, establishing the Climate Change Subcabinet and the Governor's Advisory Council on Climate Change to promote coordinated climate change mitigation and resilience strategies in the State of Minnesota. This commitment to implementing policy to address climate change highlights the urgency to take action and prioritizes the health and wellbeing of Minnesotans. This section provides background on some of the key concepts related to this rulemaking, including EVs, context from other states who have adopted the LEV and ZEV standards, and the national context. See section 5 for a detailed explanation of the MPCA's statutory authorities for this rulemaking and the related CAA requirements.

A. Electric vehicles

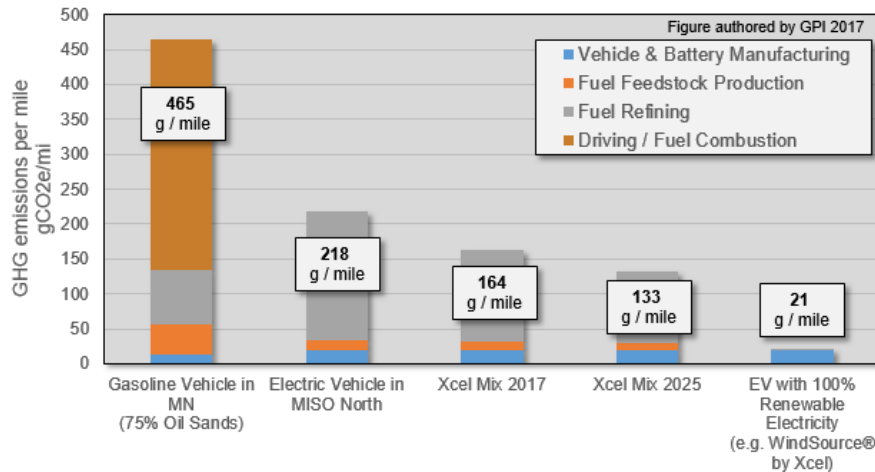
The 2019 Pathways report found that reducing GHG emissions from the transportation sector will require a portfolio approach, including improved GHG emissions standards, improvements in federal fuel economy standards, electrification, biofuels, and methods of reducing vehicle miles traveled. Many studies have shown that EVs are a necessary part of reducing GHG emissions from transportation. The emissions benefits of EVs vary with the source of electricity (renewable energy such as wind and solar, natural gas, coal, etc.) they use for charging, but studies have consistently shown overall they produce fewer emissions than gasoline- or diesel-powered ICE vehicles, even when taking into account the manufacturing of the vehicle and battery. See Figure 6 for one example.

³⁰ Minn. Pollution Control Agency & Minn. Dep't of Commerce, *Greenhouse gas emissions in Minnesota: 1990–2016 (January 2019)*.

³¹ *Id.* at 2.

Figure 6: Comparison of GHG emissions from gasoline vehicles and EVs in Minnesota³²

This graph shows emissions associated with gasoline vehicles and EVs, including from manufacturing the vehicle, producing the fuel, and driving the vehicle. The graph also shows that the emissions associated with EVs vary depending on the source of the electricity. The Midcontinent Independent System Operator (MISO) North reflects the mix of fuels (coal, natural gas, wind, etc.) used in the regional electricity system of which Minnesota is a part. The graph also provides an example of a Minnesota utility, Xcel Energy, in both 2017 and estimated for 2025 to show that as utilities transition to cleaner electricity sources, EV emissions go down too.



EVs rely on power from electricity, which is getting cleaner every year. In 2018, renewable energy, such as wind and solar, accounted for approximately 22 percent of electricity generation in Minnesota.³³ Most of Minnesota’s coal power plants have either shut down or are scheduled to shut down over the next decade. These shutdowns mean that EVs will continue to get cleaner over time as they rely increasingly on renewable energy and other cleaner and less carbon-intensive fuels.

In addition, EVs are more efficient than ICE vehicles. The Regulatory Assistance Project says EVs “can convert 60 percent of the energy they draw from the grid into miles traveled, compared with internal combustion engine (ICE) vehicles, which convert only about 20 percent of primary energy to the same purpose. Because of this efficiency, EVs can be significantly less costly and less polluting to operate.”³⁴

A regional study, “A roadmap to decarbonization in the Midcontinent: Transportation electrification,”³⁵ put together by the Midcontinent Transportation Electrification Collaborative also found that not only are EVs critical to reducing GHG emissions from transportation, but they can also help support the reduction of GHGs in the electricity generation sector. That report found that EVs have the opportunity to put downward pressure on electricity rates for all electricity consumers by more efficiently using existing electric capacity when other demands for electricity are lower, i.e. by charging overnight.

In addition, EVs are cheaper to operate, as they require limited maintenance and electricity is a less expensive fuel than gasoline or diesel. See section 7 for details on cost savings from owning and operating EVs.

EVs also have zero tailpipe emissions. Reducing tailpipe emissions is particularly important for reducing

³² The Transportation Sector Road Map, <http://roadmap.betterenergy.org/transportation/>

³³ U.S. Energy Information Administration, Minnesota State Profile and Energy Estimates. Retrieved February 4, 2020. <https://www.eia.gov/state/?sid=MN>

³⁴ Regulatory Assistance Project. (January 2019). Beneficial Electrification of Transportation. Retrieved January 17, 2020, from <https://www.raponline.org/wp-content/uploads/2019/01/rap-farnsworth-shipleigh-sliker-lazar-beneficial-electrification-transportation-2019-january-final.pdf> (page 8)

³⁵ The Transportation Sector Road Map, <http://roadmap.betterenergy.org/transportation/>

exposures to air pollutants. Vehicles are a primary source of exposure to air pollution, especially since roadways pass close to where people live, work, and play. Reducing tailpipe emissions reduces exposure to vehicle-related air pollution.

B. The LEV and ZEV standards in other states

California has been regulating vehicle emissions since the 1960s, before the federal CAA. For this reason, Congress carved out an exception in CAA section 209(b) to allow California to receive a waiver from EPA to allow the state to set its own, more stringent vehicle emissions standards. California has been developing and adopting increasingly stringent LEV standards since the 1990s. California adopted the first iteration, LEV I, in 1990 and it covered model years 1994-2003. The LEV standards have been periodically updated over time: LEV II covered model years 2004-2015 and LEV III covers 2015-2025.³⁶ In 2012, California and the federal government harmonized their standards so that the LEV standards and the federal standards would be equivalent. California adopted the first iteration of the ZEV standard in 1990.³⁷

Including California, the LEV standard has been adopted by 14 states and the District of Columbia and the ZEV standard has been adopted by 12 states. The states that have adopted the California’s standards (collectively referred to as “section 177 states”) are listed in Table 1.³⁸ New Mexico³⁹ and Nevada⁴⁰ are also both currently pursuing adoption of the LEV and ZEV standards.

Table 1: List of states that have adopted LEV and/or ZEV standards under section 177 of the Clean Air Act

State	LEV	ZEV	Year adopted
Colorado	X	X	2018/2019
Connecticut	X	X	2004
Delaware	X		2010
Maine	X	X	2005
Maryland	X	X	2007
Massachusetts	X	X	2005
New Jersey	X	X	2004
New York	X	X	2005
Oregon	X	X	2006
Pennsylvania	X		2006
Rhode Island	X	X	2005
Vermont	X	X	2005
Washington	X	X	2005/2020
District of Columbia	X		2008

³⁶ California Air Resources Board, “Low-emission vehicle program” (accessed 1/28/2020), <https://ww2.arb.ca.gov/our-work/programs/low-emission-vehicle-program/about>.

³⁷ California Air Resources Board, “Zero-emission vehicle program” (accessed 1/28/2020), <https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program/about>.

³⁸ Maryland Department of the Environment, “States adopting California’s Clean Cars Standards” (accessed 1/28/2020), <https://mde.maryland.gov/programs/Air/MobileSources/Pages/states.aspx>.

³⁹ Office of the Governor, “Gov. Lujan Grisham commits New Mexico to bold clean car standards at Climate Week event,” press release, <https://www.governor.state.nm.us/2019/09/24/gov-lujan-grisham-commits-new-mexico-to-bold-clean-car-standards-at-climate-week-event/> (September 24, 2019).

⁴⁰ Nevada Division of Environmental Protection, “Clean Cars Nevada,” <https://ndep.nv.gov/air/clean-cars-nevada> (accessed 7/13/2020)

The MPCA has reviewed the rule language of each of these states and has contacted many of them to learn from their experiences adopting and implementing the LEV and ZEV standards. Their input and experiences have been valuable in the development of this rule and understanding its potential implications for Minnesota. This subsection describes some of the findings from the experiences of section 177 states.

First, vehicle manufacturers currently have a surplus of ZEV credits banked for all states. These banks indicate that manufacturers have so far been over-complying with the requirements of the ZEV standard.

In the MPCA's initial outreach on the rule proposal during the Request for Comments (RFC) period, we heard concerns that pointed out differences between Minnesota and California and reasons adopting standards developed by California might not be suitable for Minnesota. It has been helpful in this process to learn from states that do have more similarities to Minnesota. For instance, some individuals and organizations who responded to the MPCA's RFC mentioned Minnesota's cold climate as a potential challenge for compliance with the proposed rule, especially the ZEV standard, since EV battery charges are negatively affected by cold temperatures. Other states with similarly cold temperatures have adopted the ZEV standard, including Colorado, Maine, New York, Vermont, and the Canadian province of Québec. None of these areas reported their cold climate causing implementation problems.

Commenters also noted that Minnesotans tend to purchase larger vehicles, such as pickup trucks and sports utility vehicles (SUVs) rather than smaller cars, especially considering the snowy winters we face here. These commenters expressed concerns that adopting the LEV and ZEV standards would affect Minnesotans' ability to purchase these larger vehicles. According to the Auto Alliance state vehicle data dashboard,⁴¹ 78.83% of vehicle sales in Minnesota in 2018 were light trucks (including pickups, SUVs, crossover utility vehicles, and vans), making the state thirteenth in the country for highest light-truck sales percentage. Some of the section 177 states are ranked close to Minnesota: light trucks account for over 75% of vehicle sales in Maine (ranked 8), Vermont (ranked 10), and Colorado (ranked 15). Light truck sales account for over 50% of sales in all of the other section 177 states. This data would indicate people are still able to purchase larger vehicles in states implementing the LEV and ZEV standards. During his presentation at the MPCA's technical meeting, the representative from Connecticut noted that the standards have not negatively affected the availability of ICE vehicles, including pickup trucks and SUVs, saying, "The LEV and ZEV programs have no noticeable effect on [ICE] vehicle and model availability in the state.... Pickups, SUVs, all are available."⁴²

C. National context

In 2012, the EPA and National Highway Traffic Safety Administration (NHTSA) issued joint GHG emissions and corporate average fuel economy (CAFE) standards for model year (MY) 2017-2025 light-duty vehicles in conjunction with California. This agreement established a national set of standards for GHG emissions from vehicles, aligning the federal standards with California's Advanced Low Emission Vehicle Program. This agreement meant the federal standards were the same as the LEV standards until the federal government adopted the SAFE rule in April 2020.

Starting in 2017, the federal government began taking action to roll back the federal GHG standards and make them less protective of human health and the environment. The MPCA, along with MnDOT and

⁴¹ Auto Alliance, *See what your state drives*, <https://autoalliance.org/economy/consumer-choice/light-trucks/>

⁴² Presentation by Paul Kritzler, Connecticut Department of Energy and Environmental Protection, *Implementing Low-Emission and Zero-Emission Vehicle Standards*, MPCA technical meeting (December 5, 2019) (agenda and slides available at <https://www.pca.state.mn.us/sites/default/files/aa-rule4-10k.pdf>).

MDH, have been participating in this process, submitting comments expressing concerns about the federal actions. Our concerns have related to the quality and validity of the analyses used to support the rulemaking, the potential impact on GHG emissions and human health, and the legality of the federal actions. We have also been working with the Minnesota Attorney General's Office to join a coalition of other states in defending the standards as they were finalized in 2012. All comments submitted by the MPCA can be found on our website.⁴³ This section provides more background on these actions.

When EPA and NHTSA adopted the MY 2017-2025 standards in 2012, EPA committed to conducting a mid-term review of the 2022-2025 standards by April 2018, to ensure the standards were achievable and determine if they should be more or less stringent. In 2016, EPA, NHTSA, and the California Air Resources Board released a Draft Technical Assessment Report (TAR), which found automakers continued to meet current model year standards, the MY 2022-2025 standards were technically achievable, and the standards would save drivers money. In November of 2016, EPA released its Proposed Determination to maintain the standards. Throughout the Mid-term Evaluation, the public was given an opportunity to provide comment. After this significant analysis and public engagement, on January 12, 2017, EPA completed its mid-term review and issued a final determination to maintain the emissions standards as set in 2012.⁴⁴

The standards were intended to help drive the United States automobile industry toward technological advancements that would allow the U.S. to remain the global leader in vehicle technology. This is partly why the 2012 rulemaking establishing the MY 2017-2025 light-duty GHG standards was endorsed by automobile manufacturers.⁴⁵ Since 2012, on average, the industry has met or exceeded those standards.

On March 22, 2017, EPA published in the Federal Register a notice of intention to reconsider the final determination of the Mid-term Evaluation (82 FR 14671). The MPCA, along with MnDOT, expressed concerns about this reconsideration in a letter dated April 6, 2017. EPA requested comment on its reconsideration of the Mid-term Evaluation in the Federal Register on August 21, 2017 (82 FR 39551). Minnesota responded expressing support for the existing standards in a comment letter on October 2, 2017.

EPA then issued a new final determination of the Mid-Term Evaluation, which was published in the Federal Register on April 13, 2018 (83 FR 16087). In this new determination, EPA concluded the existing standards were no longer the "maximum feasible" and that EPA and NHTSA must now conduct a rulemaking to develop new standards, rolling back the initial requirements. While the original final determination was supported by thousands of pages of technical analysis and documentation that had been shared with the public and commented on over a period of many months, this new determination included no new analysis or support for changing direction on the standards. Minnesota again expressed its concerns with the new direction of EPA on regulating GHG emissions from vehicles in a letter dated April 12, 2018.

On August 24, 2018, EPA and NHTSA published in the Federal Register a draft rule called the Safer Affordable Fuel Efficient Vehicles (SAFE) rule (83 FR 42817). The 2018 proposal would have frozen the GHG emissions standards at MY 2020 levels through MY 2026. The MPCA, MnDOT, and MDH commented on the proposed rule, expressing concerns with the potential reduced stringency of the

⁴³ MPCA, *Responding to federal actions*, <https://www.pca.state.mn.us/air/responding-federal-actions>

⁴⁴ EPA, *Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas (GHG) Emissions Standards for Model Years 2022-2025*, https://19january2017snapshot.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ahq_.html

⁴⁵ EPA, *2011 commitment letters for 2017-2025 light-duty national program*, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/2011-commitment-letters-2017-2025-light-duty-national>

emissions standards. Among other issues, our agencies raised concerns that the analysis conducted to support the SAFE rule did not demonstrate why the conclusions of the January 2017 Final Determination were incorrect and relied on modeling and data that were not provided to the public for review or comment. The analysis supporting the proposed SAFE rule was widely criticized, including by the EPA's own Science Advisory Board,⁴⁶ as well as by the National Association of Clean Air Agencies,⁴⁷ and a consortium of 26 states and U.S. cities that includes Minnesota.⁴⁸

The SAFE rule also purports to revoke the CAA waiver that allows California to set its own GHG emissions standards. In a joint Federal Register notice with NHTSA, EPA finalized this portion of the rule on September 27, 2019 (84 FR 51310). In this final rule, NHTSA argues that states are pre-empted by the Energy Policy and Conservation Act and prohibited from adopting standards that are "related to" fuel economy. NHTSA goes on to argue that GHG emissions standards are "related to" fuel economy and therefore states are prohibited from adopting GHG emissions standards. The State of Minnesota—including the MPCA—and a number of other state and local governments disagree with these findings. Based on NHTSA's determination of preemption, EPA purported to revoke California's waiver for both the LEV GHG emissions standards and for the ZEV standards. Litigation continues for these issues and others. See section 5 on statutory authority for more details.

On July 25, 2019, California, Ford, Honda, Volkswagen, and BMW announced that despite the then-anticipated revocation of California's waiver, they had agreed on a voluntary framework to reduce emissions more than would be required under the SAFE rule, while providing some flexibilities for manufacturers.⁴⁹ On August 17, 2020, those entities plus Volvo announced they had signed framework agreements.⁵⁰

On April 30, 2020, EPA and NHTSA published in the Federal Register (85 FR 24174) the second part of the final SAFE rule, which includes the final GHG emissions standards.⁵¹ The final SAFE rule and its related analysis are substantially different from the 2018 proposal. First, the final rule calls for a 1.5% annual reduction in GHG emissions from MY 2021 to MY 2026. Second, the final rule includes a new analysis that is based on significantly different methods and data than were used to support the 2018 proposed rule. Reviews of the quality of the final analysis and its data and methods are still ongoing; however, initial reviews indicate the analysis brings cost estimates much more into line with past analyses, including those conducted for the 2012 rulemaking and the January 2017 Final Determination, than the analysis conducted for the proposal.⁵²

EPA and NHTSA finalized the rule and analysis without providing an interim opportunity, such as a Notice of Data Availability, for the public to comment on the drastically different data, methods, and standards. Minnesota has joined a coalition of other states in initiating litigation against the final rule.

⁴⁶ See: https://www.eenews.net/assets/2020/01/02/document_gw_06.pdf

⁴⁷ See: 4cleanair.org/sites/default/files/Documents/NACAA_COMMENTS-EPA_NHTSA_LDV_NPRM-102618.pdf

⁴⁸ See: <https://oag.ca.gov/system/files/attachments/press-docs/states-and-cities-detailed-comments.pdf>

⁴⁹ Office of Governor Gavin Newsom, press release, "California and major automakers reach groundbreaking framework agreement on clean emissions standards," <https://www.gov.ca.gov/2019/07/25/california-and-major-automakers-reach-groundbreaking-framework-agreement-on-clean-emission-standards/> (accessed 8/12/2020).

⁵⁰ California Air Resources Board, "Framework Agreements on Clean Cars," <https://ww2.arb.ca.gov/news/framework-agreements-clean-cars> (accessed 8/18/2020)

⁵¹ EPA, *The Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026*, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule>.

⁵² The MPCA hosted a webinar on June 8, 2020, featuring an initial examination of the changes in analysis methods, data, and conclusions between the analysis conducted for the proposed rule and that of the final rule. See Chet France, "Overview of the SAFE Final Rule" presentation, <https://www.pca.state.mn.us/sites/default/files/faq-rule4-10s.pdf>.

4. Public participation and stakeholder involvement

The MPCA conducted a variety of outreach activities while developing these proposed rule amendments. This was done in part to comply with the requirements of Minnesota's rulemaking process, but also to notify, engage, and inform potentially interested parties about this rulemaking and solicit their input on the MPCA's proposed concepts for amending the rules. This section describes the MPCA's public outreach efforts and the steps it took to develop and solicit input on the proposed rule amendments.

During the RFC period for Clean Cars Minnesota, the MPCA heard from more than 2,000 Minnesotans in a variety of ways. The agency held six public meetings around the state, hosted and recorded a webinar, collected written comments on the Office of Administrative Hearings' (OAH's) eComments site, and created an online survey. The MPCA also convened five technical stakeholder meetings that were recorded and open to the public. The public and stakeholders will have additional opportunities for input during the Notice of Hearing on the proposed rule amendments comment period, rule hearings, and post-hearing comment period. See section 10 of this SONAR for details of the MPCA's notice plan.

A. Webpages and survey

The MPCA maintains the following webpages that are publically accessible and relevant to this rulemaking:

- The MPCA developed a suite of Clean Cars Minnesota webpages (<https://www.pca.state.mn.us/air/clean-cars-mn>) on September 25, 2019, in order to provide the public with background and other information relevant to this rulemaking. Once the RFC was published on October 7, 2019, the MPCA updated the webpages to include rulemaking documents, including a supplement to the RFC that provided more detail on rule concepts; a target schedule for rule adoption; and information on opportunities to provide input, including dates and locations for public meetings around the state. The Clean Cars Minnesota Rule webpage has been updated routinely to inform the public about public and technical meetings and other developments related to this rulemaking. The webpage also included a survey and an offer for MPCA staff to meet with stakeholders and/or attend meetings hosted by stakeholders. The MPCA posted recordings of all technical meetings and a webinar version of the public meetings on the website. After the RFC period, we added a PDF of all of the comments received, a summary of the comments, and an interactive data tool showing the results of our survey. The MPCA will continue to update the rule webpage to include information about the proposed rule amendments and rulemaking documents, including the proposed rule language, a final version of this SONAR, and other supporting documents. This will ensure that potentially interested parties can continue to participate in the rulemaking process after the MPCA publishes its Notice of Hearing on the proposed rule amendments in the *State Register*.
- The MPCA also developed a web survey that aligned with the questions on posters used at the public meetings so that people who could not participate in the meetings could provide the same type of input. The survey asked people, "What's most important to you as we consider the Clean Cars Minnesota rule?" The survey allowed people to choose their top issues from a list of eight, or to select "other" and write in an issue. Participants received three tallies and could distribute them across up to three issues or could put multiple tallies on one or two that were particularly important to them. The results of the survey are posted on the MPCA's webpages (see above) in an interactive data tool.

- Public Notices at <https://www.pca.state.mn.us/public-notice>. The MPCA’s public notice webpage hosts all of the MPCA’s public notices. The MPCA posted its notice of RFC for this rulemaking on the public notice webpage on October 7, 2019, the same day the notice was published in the *State Register*. The RFC specifically requested comment on the MPCAs proposed concepts to amend the rules and announced the public and technical meetings held in October-December 2019. Public notices remain posted for the entire term of the comment period. As discussed in section 10, Notice plan, the MPCA will continue to post official public notices for this rulemaking on the public notice webpage.
- Minnesota Rulemaking at <https://www.pca.state.mn.us/regulations/minnesota-rulemaking>. The MPCA’s rulemaking webpage provides the public with centralized information about current rulemaking projects and the rulemaking process. It also explains how the public can receive notice of rule changes. The MPCA’s “Public Rulemaking Docket,” updated monthly, is located on this webpage and includes information about current rulemaking projects such as the rule webpage, contact person, and timeline.

B. GovDelivery and other email announcements

The MPCA uses a self-subscription service called “GovDelivery” to provide notice electronically (via email) to interested and affected persons of various updates and public notices issued on a wide range of topics, including administrative rulemakings. Any person may visit the GovDelivery subscription page at <http://public.govdelivery.com/accounts/MNPCA/subscriber/new> to subscribe and choose the notifications they want to receive. Request for US Mail service is also available.

The MPCA lists rule projects on the Public Rulemaking Docket (see above). Once a rule project becomes active (i.e., it is no longer listed as a future project), a GovDelivery self-subscription list for that specific rulemaking is established. GovDelivery alerts individuals who have signed up to receive notice for all rulemakings to notify them of new rule projects.

In order to encourage local government officials from around Minnesota to sign up for the MPCA’s GovDelivery lists to keep up to date with MPCA rulemakings and other activities, the Agency purchases the League of Minnesota Cities’ email address list on a yearly basis. The Agency then reaches out to new government officials from all over Minnesota who may not be familiar with the electronic GovDelivery system used by the MPCA to send rule notices, public notices and other information (e.g., the “New Rulemaking” list is for notifications about new rulemaking projects with links to sign up for those topic lists). Examples of the government officials are Cities and County Chairs, Zoning and Planning Commissioners, and Solid Waste Officers. An electronic message is sent inviting individuals to subscribe to topics that interest them. The MPCA sent an electronic message to the government officials on March 9, 2018.

On September 26, 2019, the MPCA sent a GovDelivery notice to 3,613 subscribers of the lists for “Air Quality Regulatory and Technical News” (also called Air Mail) and “New Rulemaking Announcements.” This notice encouraged interested parties to visit the GovDelivery subscription page and sign up for the Clean Cars Minnesota Rule list to receive information about this rulemaking. Subscribers were added to a rule-specific list that the MPCA used to disseminate rule-related information to interested and affected parties. The MPCA also promoted the GovDelivery list for this rulemaking and encouraged interested persons to subscribe by posting a related announcement on the Clean Cars Minnesota Rule webpage.

On October 6, 2019, when the RFC was published in the *State Register*, the MPCA sent a GovDelivery notice to all persons subscribed to the Clean Cars Minnesota email list, as well as subscribers of the Air

Mail list, the Environmental justice list, and the Volkswagen settlement list (total of 6,934 subscribers). The MPCA also included an article about Clean Cars in its Air Mail Newsletter (2,242 subscribers), which was sent out on November 6, 2019.

On October 1, 2019, the MPCA provided specific notice of the new rulemaking to the 11 federally recognized tribes in Minnesota. The MPCA maintains a list of the federally recognized tribes and edits the list quarterly. Notification sent to the designated tribal contact persons for air quality contained links to the press release and website. The tribal contacts have also been included on all emails about technical meetings as well.

On October 2, 2019, the MPCA alerted its Environmental Justice Advisory Group (EJAG) about the Clean Cars Minnesota proposal. Members of EJAG who have identified themselves as interested in issues related to environmental justice transportation have also been included on all emails about technical meetings.

There are 958 people subscribed to the GovDelivery list specific to this rulemaking as of July 10, 2020.

The MPCA will continue to send GovDelivery notice of public notices and other relevant information for this rulemaking as discussed in section 10, Notice plan.

C. Meetings

i. Public meetings

Along with the RFC, on October 6, 2019, the MPCA sent a GovDelivery notice to 6,934 subscribers to announce a series of public meetings. The MPCA held public meetings around Minnesota to inform the public about the Clean Cars Minnesota rulemaking, answer questions, and take input. The MPCA provided a 20-minute presentation then had 1.5 hours of time for the public to ask questions and provide input. The MPCA took detailed notes on these conversations. The public also had the opportunity to provide input through two interactive posters that asked about priorities and concerns. The MPCA also developed a web survey that aligned with the questions on the posters so that people who could not participate in the meetings could also provide the same input (see section 4A). Over 300 attendees participated in these meetings.

Public meetings were held from 5:00 p.m. – 7:00 p.m. in the following locations:

- October 29: Fergus Falls
- October 30: Burnsville
- November 6: Marshall
- November 12: Virginia
- November 14: Minneapolis
- November 19: Mankato

On November 4, 2019, from 12:00 p.m. – 1:00 p.m. The MPCA also offered a webinar version of the meeting. The presentation was the same as that provided at the in-person meetings and participants had the opportunity to ask questions and provide input. The webinar was recorded and posted on the MPCA's Clean Cars Minnesota website so that people who were not able to participate in person were able to watch the recording.

ii. Technical meetings

The MPCA also held five technical meetings: two during the RFC comment period, a third about two weeks later, a fourth about two weeks after that, and a fifth in the summer of 2020. The technical

meetings focused on key technical issues related to the rulemaking. The meetings were held in St. Paul and offered as webinars. The webinars were recorded and posted on the Clean Cars Minnesota website. The MPCA announced these meetings on our Clean Cars Minnesota website. We also advertised them with emails to the Clean Cars Minnesota GovDelivery list. We also amplified the GovDelivery notices by emailing a list of interested parties ranging from environmental groups to Minnesota Auto Dealers Association (MADA), the Alliance of Automobile Manufacturers, and the Center of the American Experiment.

The topics of the technical meetings were:

- November 15, 2019, 1:00 p.m. – 3:00 p.m.: Introduction to the Clean Cars Minnesota rulemaking and process. Presentation by national experts from Northeast States for Coordinated Air Use Management on the details of how the LEV and ZEV standards work. Presentation on proposed methods for regulatory analysis.
- December 5, 2019, 2:00 p.m. – 4:00 p.m.: Reminders about rulemaking process and timelines. Stakeholders were offered an opportunity to provide presentations on data relevant to Clean Cars analysis and six chose to present at this meeting: Health Professionals for a Healthy Climate, MN350, Center of the American Experiment, Fresh Energy, Minnesota EV Owners Group, and Tesla.
- December 17, 2019, 10:00 a.m. – 11:00 a.m.: Webinar on mechanisms for establishing an initial ZEV credit bank. This topic was specifically requested by stakeholders. Presentations by Colorado and Quebec offered two different ways other locations have established these banks.
- January 7, 2020, 11:00 a.m. – 12:00 p.m.: Webinar on the MPCA’s proposal for a program to establish an initial ZEV credit bank. Presentation providing background on ZEV credit banks and analysis supporting the proposal. Announcing an informal comment period to gather input.
- June 8, 2020, 10:30 a.m. – 12:00 p.m.: Webinar to update stakeholders on the MPCA’s timeline and progress, providing background on the final SAFE rule and its regulatory analysis, and providing additional detail on the data and methods the MPCA was planning on using in our regulatory analysis. The MPCA’s presentation also included information on how we planned to address the final SAFE rule in our analysis and the potential economic downturn resulting from the current COVID-19 pandemic. Announced an informal comment period to gather input on the regulatory analysis data and methods.

iii. Stakeholder meetings

The MPCA sought input on this rulemaking from organizations associated with the automotive industry and environmental activism. These included Fresh Energy, MADA, and the Alliance for Automotive Innovation, as well as various representatives of other groups. A list of some of the meetings and meeting attendees where the proposed rule amendments were discussed is provided in Table 2: Stakeholder meetings held prior to publishing Notice of Intent to Adopt. This list is not exhaustive and does not include the many emails, phone conversations, and informal discussions that took place between MPCA staff and individual stakeholders throughout the process of developing the rule amendments

MPCA staff met with interested parties, as listed below, to discuss the proposed concepts and solicit input on the anticipated effects of the proposed rule. In its communications, MPCA staff offered to meet with any interested party to discuss their issues in a format that best met their needs. Some stakeholders opted not to meet with MPCA staff. MPCA staff also attended meetings hosted by interested parties, as listed below.

Table 2: Stakeholder meetings held prior to publishing Notice of Intent to Adopt

Date	Organization
10/10/2019	Minnesota Tribal Environmental Council
10/14/2019	Minnesota Chamber of Commerce
10/22/2019	Minneapolis Environment Town Hall (general public), hosted by local legislators
11/5/2019	Metropolitan Planning Organization Directors
11/13/2019	Sustainable Growth Coalition
11/15/2019	Alliance of Automobile Manufacturers
11/19/2019	West Central Initiative
11/20/2019	Tesla
11/25/2019	Minnesota Automobile Dealers Association
11/26/2019	EV Owners Circle
12/4/2019	Minnesota Corn Growers Association
12/11/2019	Como Community Council Environment Committee, St. Paul
12/12/2019	Technical Advisory Committee, Planning Committee, Metropolitan Council
1/7/2020	Tesla
1/8/2020	Fresh Energy, Minnesota Center for Environmental Advocacy, and Natural Resources Defense Council
1/9/2020	Minnesota Automobile Dealers Association
1/9/2020	Alliance for Automotive Innovation ⁵³
1/16/2020	EV Owners Circle
1/22/2020	Alliance for Automotive Innovation
2/5/2020	Technical Advisory Committee, Metropolitan Council
2/6/2020	Alliance for Automotive Innovation
2/14/2020	Fresh Energy, Minnesota Center for Environmental Advocacy, and Natural Resources Defense Council
2/14/2020	Alliance for Automotive Innovation
2/19/2020	Alliance for Automotive Innovation
3/2/2020	Tesla
3/5/2020	Rivian
3/11/2020	Fresh Energy, Sierra Club, Conservation Minnesota, and the Energy Foundation
3/19/2020	EV Owners Circle
5/12/2020	Tesla
5/19/2020	Alliance for Automotive Innovation
5/26/2020	Natural Resources Defense Council and Fresh Energy
6/2/2020	Natural Resources Defense Council and Fresh Energy
6/4/2020	White Bear Area Chamber of Commerce
6/24/2020	Natural Resources Defense Council
6/30/2020	Tesla
6/30/2020	Rivian

⁵³ In January 2020 the Alliance of Automobile Manufacturers merged with the Association of Global Automakers to form the Alliance for Automotive Innovation.

Date	Organization
7/2/2020	Health Professionals for a Healthy Climate and Fresh Energy
8/7/2020	Minnesota Farmers Union, Minnesota Farm Bureau, Minnesota Corn Growers Association, Minnesota Soybean Growers Association
8/31/2020	Minnesota Corn Growers Association and Minnesota Farmers Union
9/14/2020	Alliance for Automotive Innovation
9/29/2020	Alliance for Automotive Innovation
10/21/2020	Hermantown Area Chamber of Commerce
10/22/2020	Tesla
10/26/2020	Minnesota Street Rod Association

D. Media

The MPCA also let the public know about the Clean Cars Minnesota rulemaking through outreach to a variety of media outlets.

On October 7, 2019, the MPCA published a statewide press release announcing the RFC and a series of seven public meetings to solicit public comments on the Agency’s intent to adopt clean car standards. This press release is available on the MPCA website: [MPCA to hold six community discussions on new clean car standards](#). The MPCA also sent five tailored press releases to local media outlets in Mankato, Marshall, Fergus Falls, Burnsville, and the Iron Range to publicize the upcoming meetings in those specific communities.

Throughout the RFC period, MPCA staff either initiated contact or responded to media inquiries from the following outlets:

Television	Radio	Newspaper	Online publications
<ul style="list-style-type: none"> • KBJR-TV Duluth • WDIO-TV Duluth • Lakeland public TV • KEYC-TV Mankato • KSTP-TV Saint Paul 	<ul style="list-style-type: none"> • KDLM: Detroit Lakes-area radio • KMHL: Marshall-area radio • KMRS/KKOK: Morris-area radio • KTOE: Mankato-area radio • Leighton Broadcasting • Minnesota Public Radio 	<ul style="list-style-type: none"> • Brainerd Dispatch • City Pages • Fargo Forum/Forum News Service • Grand Forks Herald • Mankato Free Press • Marshall Independent • North News • Pioneer Press • Post-Bulletin • Star Tribune 	<ul style="list-style-type: none"> • Energy & Environment News • Energy News Network • Midwest Energy News

MPCA staff and agency leadership participated in interviews with a variety of news outlets to promote this opportunity for Minnesotans to submit comments about the proposed rule. Media coverage during the RFC included:

- [State officials to hold public meetings to discuss clean car standards](#) (10/27/19, MPR and 10/28/19, Post-Bulletin)
- [MPCA chief visits Baxter to talk proposed clean cars rule](#) (10/29/19, Brainerd Dispatch)
- [MPCA Commissioner holding listening sessions on clean car rule](#) (10/30/19, KDLM radio)

- [MPCA takes Clean Cars program testimony](#) (11/9/19, Marshall Independent)
- [Minnesota Pollution Control Agency works toward adopting cleaner car standards](#) (11/19/19, KEYC-TV)
- [Electric car advocates turn out to support Minnesota clean car proposal](#) (11/20/19, Energy News Network)
- [Minnesota gears up for tougher emission standards for vehicles](#) (11/22/19, Pioneer Press)
- [Better write fast: Comment period for Clean Cars Minnesota ends Friday](#) (12/3/19, Detroit Lakes Tribune) [Your Green Life: Minnesota lawmakers aim to get on track with emission reduction goals](#) (12/5/19, KBJR-TV)

E. Pre-proposal comments received

The MPCA received comments from interested parties during the comment period for the RFC published in the *State Register* on October 6, 2019. A summary of the stakeholders who submitted comments is provided below. The MPCA also posted a PDF of all written comments on our website along with a summary of comment topic areas.⁵⁴ The MPCA considered all comments received that were within the scope of this rulemaking.

- 1854 Treaty Authority
- Alliance of Auto Manufacturers
- American Fuel and Petrochemical Manufacturers
- American Lung Association
- Center of the American Experiment
- Ceres BICEP (Business for Innovative Climate and Energy Policy) Network
- City of Minneapolis
- City of Saint Paul
- Clean Energy Economy MN
- Consumer Reports
- CURE
- Global Automakers
- Greenlots
- Health Professionals for a Healthy Climate
- Housing First Minnesota
- Joint letter from Coltura, Consumer Federation of America, E2 (Environmental Entrepreneurs), Environmental Law and Policy Center, Green for All, GreenLatinos, Interfaith Power & Light, League of Conservation Voters, Natural Resources Defense Council, Safe Climate Campaign, Sierra Club, and Union of Concerned Scientists.
- Metropolitan Council
- Minnesota Automobile Dealers Association
- Minnesota Bio-Fuels Association
- Minnesota Center for Environmental Advocacy/Fresh Energy
- Minnesota Chamber of Commerce

⁵⁴ MPCA, *What we heard*, <https://www.pca.state.mn.us/air/what-we-heard>.

- Minnesota Corn Growers Association
- Minnesota Department of Health
- Minnesota Public Utilities Commission
- Minnesota Sustainable Growth Coalition/ Environmental Initiative
- MN350
- Natural Resources Defense Council
- Northern Star Cooperative Services
- Poet LLC
- Sierra Club
- Solar Connection
- Tesla
- Union of Concerned Scientists
- Xcel Energy

Topics covered in comments submitted to the MPCA during the RFC period included:

- General support for action to reduce GHG emissions and address climate change.
- Support for improved air quality and concerns about health effects from vehicle air pollution.
- Support for more EV availability in Minnesota.
- A range of issues related to costs, both concerns about the cost of regulation and comments on cost savings from EVs.
- A variety of legal questions about the proposed rule and positions against government regulation.

On January 7, 2020, the MPCA also had a webinar and provided information on a draft proposal for the early action credit system proposed in this rule. The webinar shared analysis examining the potential impact on the ZEV credit market from the proposal. The MPCA asked that people review the proposal and offer additional comments. We acknowledged that they could comment through the formal Notice period as well, but wanted to provide an early opportunity to provide input. To encourage participation by groups that are particularly interested in the proposed rule, we scheduled meetings with Fresh Energy, Minnesota Center for Environmental Advocacy, the Alliance of Automotive Innovators, MADA and Tesla, and also presented at the EV Owners Circle.

The MPCA considered the input we received from these groups and others in developing this rule proposal. Some of the issues covered in comments submitted on this proposal included:

- Support for the proposed early action credit system because it would encourage manufacturers to bring more EVs to Minnesota sooner, resulting in to reductions to GHG emissions sooner.
- Support for not double-counting California's credits.
- Concerns about the proposal not resulting in enough credits for manufacturers to sufficiently manage risks around their ability to quickly ramp up EV sales in the first years of implementation.
- Stating the belief that the proposal is not allowed because it is not identical to California's ZEV credit bank.

On June 8, 2020, the MPCA held a webinar and provided information on our proposed data and methodology for the regulatory analysis portion of this SONAR. This presentation also included information on how we planned to address the final SAFE rule in our regulatory analysis and potential

methods for exploring the possible impacts on the rule of a potential long-term economic slowdown resulting from the current COVID-19 pandemic. We then offered another informal comment period for stakeholders and the public to make recommendations on our methods and data sources.

The MPCA considered the input we received from these comments in developing this rule proposal and associated regulatory analysis. Some of the issues covered in comments submitted on our analysis included:

- Comments both that EV sales are likely to rebound from the economic downturn more slowly than overall vehicle sales and, alternatively, that EV sales are likely to rebound more quickly than overall vehicle sales.
- Concerns about how an economic downturn might make complying with the proposed rule more challenging.
- Comments that some of the MPCA’s methods might result in lower estimations of benefits of the proposed rule.
- Detailed comments on data sources, methods, and models used in the analysis.

5. Statutory authority

This section describes the MPCA’s authorities to adopt the LEV and ZEV standards under Minnesota state law and the CAA.

A. The MPCA has the express statutory authority to adopt emission standards for motor vehicles for the prevention, abatement, or control of GHGs and other air contaminants

The legislature granted the MPCA authority in Minn. Stat. § 116.07 to “adopt standards of air quality, including maximum allowable standards of emission of air contaminants from motor vehicles.”⁵⁵ Additional language in Minn. Stat. § 116.07 grants the MPCA the authority to adopt rules and standards “for the prevention, abatement, or control of air pollution... Without limitation, rules or standards may relate to the sources or emissions of air contamination or air pollution... or to any other matter relevant to the prevention, abatement, or control of air pollution.”⁵⁶

GHGs are “air contaminants” under Minnesota law. Air contaminant is defined as “the presence in the outdoor atmosphere of any... vapor, gas or other gaseous fluid... differing in composition from or exceeding in concentration the natural components of the atmosphere.”⁵⁷ GHGs are also considered air pollution under Minnesota law and are defined as such in Minnesota Rule 7005.0100, subpart 14a.⁵⁸ Air pollution is defined as “the presence in the outdoor atmosphere of any air contaminant... in such quantity, of such nature and duration, and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life

⁵⁵ MINN. STAT. § 116.07, subd. 2 (2019). All sources of statutory authority were adopted and effective before January 1, 1996 and have not been revised by the Legislature since then, and so Minnesota Statutes § 14.125 does not apply.

⁵⁶ MINN. STAT. § 116.07, subd. 4 (a) (2019).

⁵⁷ MINN. STAT. § 116.06, subd. 2 (2019).

⁵⁸ MINN. R. 7005.0100, subpt. 14a. The MPCA considers GHGs a “regulated air pollutant” in its stationary source permitting rules, which were first adopted in 2011. 35 Minn. Reg. 1097–98 (January 24, 2011). The U.S. Supreme Court has also determined that GHGs are air pollutants under the federal CAA, which contains language that is similar to the language found in Minnesota law. *Massachusetts v. EPA*, 549 U.S. 497, 529 (2007).

or property.”⁵⁹

Administrative agencies have “the right to promulgate such reasonable rules and regulations as may be necessary to accomplish the purposes for which the agency is created.”⁶⁰ In addition, Minnesota law states that an agency may only adopt a rule “pursuant to authority delegated by law and in full compliance with its duties and obligations.”⁶¹ As noted above, the authority to enact emission standards and rules for motor vehicles to address air pollution emanates from the MPCA’s “Powers and Duties” in Minn. Stat. § 116.07. Because the MPCA has the statutory authority to establish emission standards for air contaminants and air pollutants like GHGs, and because motor vehicles emit GHGs, the MPCA has the statutory authority under Minnesota law to adopt this rule.

B. Section 177 of the federal CAA explicitly allows states to adopt motor vehicle emission standards for which a waiver has been granted under section 209(b)

The MPCA has the statutory authority to adopt vehicle emission standards for GHGs under Minnesota law, but it must do so consistent with the federal CAA.

The CAA creates a regulatory structure for state adoption of vehicle emission standards. Although section 209(a) of the CAA prohibits states from adopting their own emission standards for motor vehicles, section 209(b) contains one exception. That exception allows one state—California—to adopt its own, more stringent standards for motor vehicle emissions with a waiver by EPA. According to the CAA, “compliance with such State standards shall be treated as compliance with applicable Federal standards for the purposes of this subchapter.”⁶²

Section 177 then allows other states to choose to adopt these 209(b) standards. This section of the CAA conditions state adoption of a 209(b) emission standard on that state having maintenance or nonattainment “plan provisions” approved by EPA.⁶³ Minnesota has nonattainment and maintenance plans approved by EPA, therefore the state meets this provision of section 177.⁶⁴

C. Section 177 requires that states adopt standards identical to those adopted by California

Section 177 allows states to adopt the 209(b) standards only if “such standards are identical to the California standards for which a waiver has been granted for such model year.” The standards—LEV and ZEV—that the MPCA here proposes to adopt are identical to the California standards. Manufacturers would be required to meet the same certification and fleet emission standards in Minnesota as they do in California and the other section 177 states under LEV. Likewise, manufacturers would be subject to the same ZEV targets in Minnesota as they are subject to in California and the other section 177 states.

The language in section 177 is clear that states are required to adopt identical *standards* as California. Courts have made a distinction between standards, which are “regulatory measures intended to lower

⁵⁹ Minn. Stat. § 116.06, subd. 4 (2019).

⁶⁰ *Vicker v. Starkey*, 122 N.W. 2d 169, 173 (Minn. 1963).

⁶¹ MINN. STAT. § 14.05, subd. 1 (2019).

⁶² 42 U.S.C. § 7543 (2019) (“Clean Air Act Section 209(b)”).

⁶³ 42 U.S.C. § 7507 (2019) (“Clean Air Act Section 177”).

⁶⁴ See 40 C.F.R. § 52.1237 (containing Minnesota’s State Implementation Plan); U.S. E.P.A., *Status of Minnesota Designated Areas*, https://www3.epa.gov/airquality/urbanair/sipstatus/reports/mn_areabypoll.html (last visited January 22, 2020) (displaying a table of non-attainment and maintenance areas in Minnesota).

the level of auto emissions,” and enforcement mechanisms, which are regulatory devices “intended to ensure that the ‘standards’ are effective.”⁶⁵ There is thus no requirement that states’ enforcement mechanisms with regard to LEV and ZEV are identical to California’s enforcement mechanisms. The proposed early action credit mechanism and one-time credit allotment are not emission standards, but rather enforcement mechanisms intended to ensure that the ZEV standard is effective in Minnesota.⁶⁶

D. The current status of California’s 209(b) waiver and the LEV and ZEV standards

California was granted a waiver under 209(b) for its LEV and ZEV standards in 2013⁶⁷ and 13 other states and the District of Columbia have since adopted one or both of these standards.

In 2019, the EPA published the first part of its SAFE Rule, which purports to withdraw California’s 2013 waiver for the LEV and ZEV standards regulating GHG emissions from motor vehicles.⁶⁸ Minnesota and other states have challenged this rule, and it is currently being litigated. The next sub-section will describe the legal basis for why the MPCA is proposing to adopt these standards in light of the EPA’s recent SAFE rule and related litigation.

E. The MPCA will publish in the *State Register* the effective date of the Minnesota Clean Cars rule along with notice that California has a valid waiver for the standards Minnesota seeks to adopt

The Clean Cars Minnesota proposed rule language is clear that the GHG emission standards adopted by the rule would be effective only to the extent California’s waiver under CAA section 209(b) is valid. In addition, the proposed rule has been drafted such that the LEV and ZEV standards would not go into effect until after the MPCA publishes notice in the *State Register* indicating the effective date of the rule.⁶⁹ With this provision, the MPCA would adopt the LEV and ZEV standards while maintaining compliance with applicable CAA provisions.⁷⁰ This process would ensure the MPCA would adopt the LEV and ZEV standards in conformance with the Minnesota APA and the federal CAA.

F. Conclusion

The MPCA has the statutory authority in Minn. Stat. § 116.07 to adopt the LEV and ZEV emission standards. Minnesota law grants the MPCA the authority to adopt air pollution rules and standards, including the express authority to adopt standards relating to vehicle emissions. Because GHG emissions meet the definition of air contaminant and air pollution under Minnesota law, the MPCA has the statutory authority to adopt the LEV and ZEV standards.

This section also demonstrates how this rule meets federal regulations for motor vehicle emissions. The

⁶⁵ *American Auto. Mfrs. Ass’n v. Cahill*, 152 F.3d 196, 200 (2d Cir. 1998).

⁶⁶ Courts have held that ZEV is an emission standard, even though it is not a traditional emission standard, reasoning that “a requirement that a particular percentage of vehicle sales be EVs has no purpose other than to effect a general reduction in emissions.” *American Auto. Mfrs. Ass’n v. Cahill*, 152 F.3d 196, 200 (2d Cir. 1998).

⁶⁷ *U.S. Env’t Prot. Agency., California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California’s Advanced Clean Car Program*, 78 Fed. Reg. 2,112 (January 9, 2013).

⁶⁸ *U.S. Env’t Prot. Agency., The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program*, 84 Fed. Reg. 51,310 (Sep. 27, 2019).

⁶⁹ The MPCA will still publish a notice of adoption to the *State Register* once the rulemaking process is complete since the early action credit mechanism will go into effect.

⁷⁰ Further discussion in the SONAR will describe how the proposed rule has been drafted in a manner to address the requirements of §177 of the CAA.

federal CAA establishes a regulatory structure within which California can adopt and enforce more stringent vehicle emission standards that have received a waiver under section 209(b) of the Act. California is the only state that can receive such a waiver from EPA. Once a waiver has been granted, section 177 of the CAA allows other states, like Minnesota, to adopt and enforce the more stringent emission standards. In addition, section 177 requires states to adopt standards that are identical to the standards adopted by California, but enforcement mechanisms like early action credit programs can vary from state to state. In 2013, the EPA granted a waiver for the LEV and ZEV standards now under consideration by the MPCA in this rulemaking. In 2019, the EPA purported to revoke this waiver and Minnesota is participating in the related, ongoing litigation. The proposed Clean Cars Minnesota rule has been drafted to ensure that upon adoption, the LEV and ZEV standards would not go into effect until MPCA provides the public with adequate notice of the effective date of its rule upon determination that the waiver is valid.

6. Reasonableness of the amendments

This section describes the reasonableness of the proposed rule. The section describes the reasonableness of the rule as a whole and then discusses the reasonableness of each proposed rule part. Minn. Stat. § 14 requires the MPCA to explain the facts establishing the need for and reasonableness of the rule as proposed. Section 2 of this document describes the need for action to reduce GHG emissions and other air pollutants from transportation that this proposed rule is meant to address, and this section addresses the reasonableness of the proposed amendments.

A. General reasonableness of the proposed rule amendments as a whole

As discussed in section 2 of this SONAR, Minnesota's climate is changing and we need to take action to reduce Minnesota's GHG emissions that contribute to this global challenge. Minnesota is not on track to meet our NGEA goals and the transportation sector is now the largest emitter of GHGs in the state. To achieve our NGEA goals and reduce GHG emissions, action will need to happen across all sectors of Minnesota's economy. Because transportation is now the largest emitter, it is reasonable to focus on transportation as the next major area for action on GHG emissions in the state.

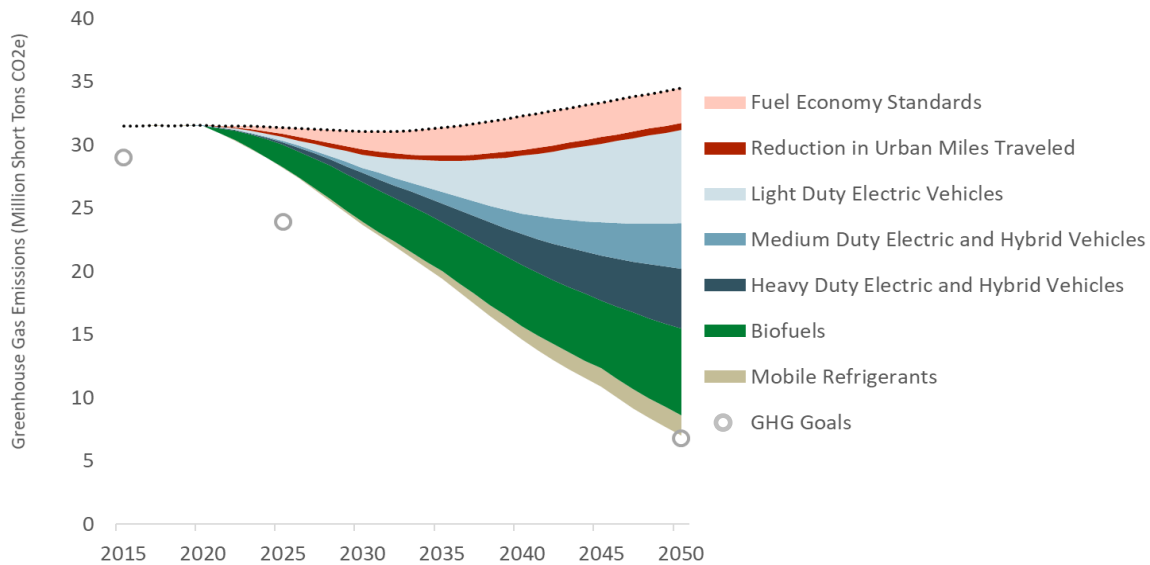
Surface transportation, which includes on-road vehicles such as cars, trucks, buses, and motorcycles, accounts for most of the transportation sector's GHG emissions. Within the surface transportation category, light-duty and medium-duty vehicles account for 74% of the subsector's emissions (see Figure 3). To substantively reduce transportation GHG emissions, Minnesota must address emissions from light- and medium-duty vehicles. It is therefore reasonable to adopt the proposed rule, which would reduce emissions from these categories of vehicles.

Section 5 of this SONAR outlines the MPCA's statutory authority to regulate air pollution from vehicles. The MPCA has so far relied on federal vehicle emissions standards to achieve reductions from this sector. However, the federal government recently acted to reduce the environmental protectiveness of these standards. It is reasonable for the MPCA to adopt the California standards to prevent this regulatory backsliding. The actions Minnesota has taken to date to reduce GHG emissions have been insufficient to get the state on track to achieve our NGEA goals, reduce GHG emissions, and help address climate change. It is reasonable for the MPCA to use our air pollution regulatory authorities to help the state achieve these goals.

The 2019 Pathways project mentioned previously included modeling pathways to reducing GHG emissions in the transportation sector and public engagement around solutions to transportation emissions challenges. The project found that reducing GHG emissions from this largest sector and

ensuring it supports efforts to meet the NGEA goals will require a portfolio approach, including improved GHG emissions standards and fuel economy, electrification, biofuels, and methods of reducing vehicle miles traveled (see Figure 7).

Figure 7: Emissions reductions by measure to achieve the Next Generation Energy Act 80% GHG emission reduction goal by 2050⁷¹



As part of the Pathways project, MnDOT held public meetings, hosted and recorded a public webinar, opened an online survey, and solicited written comments. Across these methods, they received 1,452 responses. Some of the input received through the process focused on issues such as transit and having more bikeable and walkable communities, that are outside statutory rulemaking authorities of the MPCA. The MPCA is issuing grants through funds from the national settlement with Volkswagen over emissions violations to address some of the comments, such as support for electric buses and other heavy-duty vehicles and increasing the number of EV charging stations. Some of the key themes identified in the report, though, support adoption of the proposed rule, including:

- There is a climate crisis and swift action across many sectors is needed.
- Minnesotans want more transportation options, including more EV options at dealerships and more used EVs.

The Pathways report made recommendations for action that are being pursued across many of these portfolio areas, including establishing a Governor’s Council on Biofuels, a Sustainable Transportation Advisory Council, and a Clean Transportation Funding Pilot Program. One of the recommendations in the Pathways report was for the MPCA to adopt the LEV and ZEV standards. The LEV and the ZEV standards are built to address two of the key wedges of Figure 7. The first is the pink wedge labeled “fuel economy standards.” Even though this wedge is labeled “fuel economy standards,” it also reflects potential emissions reductions from either the current federal standards or the LEV standards. The reason is that the federal government develops vehicle emissions standards and fuel economy standards together so they both result in approximately the same level of GHG emission reductions. Since the LEV standards are the same as the federal standards as they stood prior to spring 2020, this pink wedge reflects the emissions reductions that might result from adopting the LEV standard. Adopting LEV and avoiding the

⁷¹ Pathways to Decarbonizing Transportation in Minnesota, Pathways to Decarbonizing Transportation in Minnesota (2019). Retrieved from <https://www.dot.state.mn.us/sustainability/docs/pathways-report-2019.pdf>

federal rollback of the GHG emissions standards would ensure these reductions are realized.

The second wedge in Figure 7 that relates to this proposed rulemaking is the light blue wedge labeled “light duty electric vehicles.” While the light blue wedge does not show specifically the emissions reductions related to the ZEV standard, it does show the need for quickly ramping up adoption of light-duty EVs and the long-term need for increasing numbers of EVs. The ZEV standard is intended to help jump start this process and provide foundational support for future widespread adoption of EVs. It is reasonable to adopt standards that work together to address emissions both from ICE vehicles and from increasing adoption of EVs.

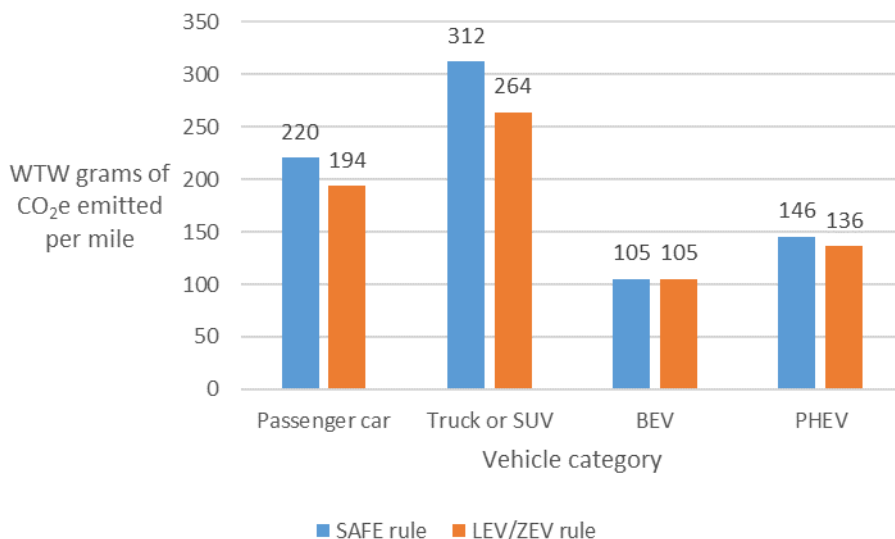
As the Pathways report found, a portfolio approach will be needed to reduce GHG emissions to levels needed to protect our climate. Of this portfolio of options, the MPCA’s legal authorities (see section 5 for detailed analysis of MPCA’s statutory authorities) allow us to use regulatory standards to target emission reductions. Other governmental units and organizations have other authorities and expertise and may take additional actions to reduce GHG emissions within their authority. The provisions of this rulemaking do not impede or negatively interact with any of those potential actions. In fact, this proposed rule would work in concert with actions taken by others. It is reasonable for the MPCA to use our regulatory authorities to reduce air pollution emissions from transportation.

The MPCA is proposing to adopt both the LEV standard and the ZEV standard because they address two different parts of the portfolio of actions needed to reduce GHG emissions from transportation. The LEV standard reduces emissions from light-duty and medium-duty vehicles broadly, while the ZEV standard increases the number of vehicles with zero tailpipe emissions. Together, the standards work in concert to advance important state goals.

The LEV standard’s fleet-wide and fuel-neutral scope results in near- and medium-term emissions benefits across the entire light- and medium-duty fleets, while the ZEV standard would increase the number of vehicles with zero tailpipe emissions.⁷² On a vehicle-to-vehicle comparison, emissions from EVs are lower than the emissions from an average LEV-certified vehicle (see Figure 8). The ZEV standard affects fewer vehicles than the LEV standard. Over the first 10 years of implementation of the proposed Clean Cars Minnesota rule, the MPCA’s analysis anticipates a total of nearly 2.4 million LEV-certified vehicles would be purchased, of which only 7%, or approximately 170,000, would be EVs.

⁷² *In a one-to-one comparison, an average LEV-certified vehicle will have higher GHG emissions than an EV, even when accounting for emissions from the electricity used to charge the EV. However, the LEV standard drives the overall emissions reductions from the proposed rule. Due to the fleet averaging allowed under the proposed LEV standard, the emissions benefits of the EVs required by the ZEV standard are captured in the emissions reductions required by the LEV standard.*

Figure 8: Average well-to-wheel GHG emissions rate (g/mi), 2025-2034



The MPCA’s analysis demonstrates that LEV drives near- and mid-term emissions reductions, but the analysis and discussion throughout also demonstrate that adopting a ZEV standard, along with an early-action credit mechanism and a one-time credit allotment, can help to develop a market and establish the groundwork necessary for future advances in the transportation sector. To achieve the GHG emission reduction goals set by the NGEA, most ICE vehicles may eventually need to be displaced by EVs and where liquid fuels are needed, petroleum may be displaced by biofuels. While the ZEV standard does not require this level of EV adoption, adoption now will make it more likely that the state can meet its GHG emission reduction goals in the future. These two standards therefore work together to support a reduction in emissions from transportation. It is reasonable to adopt both of these standards together to both require cleaner ICE vehicles and to increase the number of EVs. Both of these standards will lead to a clean future transportation system.

The LEV standard has been adopted by 14 states, as well as the District of Columbia and the ZEV standard has been adopted by 12 states. It is reasonable for the MPCA to adopt standards that have been adopted and successfully implemented by other states. The MPCA can ask questions of other state agencies who have been implementing the LEV and ZEV standards for years and can learn from their experiences. Adopting standards that are used in other places also simplifies compliance for vehicle manufacturers, as they can use similar reporting and compliance tools across multiple jurisdictions. It is therefore reasonable to adopt standards that are being used in other states.

i. Reasonableness of using incorporation by reference

In this rulemaking, the MPCA is proposing to use incorporation by reference to adopt California’s LEV and ZEV standards. An incorporation by reference is a method of including other publications or documents as part of a rule. Incorporating material by reference makes these publications or documents enforceable parts of Minnesota’s rules while sparing the MPCA the time and expense of having to reproduce the text as part of the rule. The MPCA believes incorporation by reference is the most effective way to meet the identity requirements of section 177 of the CAA by ensuring that minor changes California may make to its standards are incorporated into state rules. It is therefore reasonable to use incorporation by reference as a tool to ensure identity, reduce the potential for errors, and save costs.

Minn. Stat. § 14.07, subd. 4, allows agencies to incorporate “publications and documents which are

determined by the revisor of statutes, to be conveniently available to the public.” California’s rules are readily accessible online and can be requested as hardcopies, making them “conveniently available to the public.” Since California’s rules are readily available online and thus convenient to the public, it is reasonable to adopt California’s rules by reference.

The MPCA is proposing to adopt the LEV and ZEV standards “as amended.” Incorporation “as amended” means that any future amendments to the incorporated California regulations automatically become part of Minnesota rules. Using “as amended” improves administrative efficiency by reducing the need for rulemakings to maintain consistency with the California rules. Historically, California has made minor housekeeping updates to its rules every few years. However, when California has conducted a major update to the rules, such as making them more stringent for future model years, California has done so in new rule parts. Because California uses new rule parts, these major updates would not be adopted automatically into Minnesota’s rules. The decision to incorporate these rule updates or revert back to the backstop federal standards would still need to be considered on a case-by-case basis through Minnesota state rulemaking. The use of “as amended” as it pertains to California rules and structure is therefore reasonable to ensure the standards remain up-to-date and to reduce administrative costs for minor updates, while ensuring Minnesota retains its ability and duty to consider significant changes if and when they occur.

ii. Reasonableness of adopting the LEV standard

It is reasonable to adopt the LEV standard for several reasons.

First, the LEV standard addresses emissions from all passenger cars, light-duty trucks, and medium-duty vehicles, regardless of fuel type. It is reasonable to adopt a fuel-agnostic standard like LEV because ICE vehicles fueled by liquid fuels (gasoline and diesel) are likely to continue to be a part of the vehicle mix in Minnesota and across the country for the foreseeable future. EV technology is still progressing, and many Minnesotans might not be ready to adopt the technology either because they do not want to or because available vehicles do not meet their personal or work needs. To reduce GHG and other air pollutant emissions from transportation in the near-term, it is therefore necessary to reduce emissions from gasoline and diesel vehicles. It is therefore reasonable to adopt a standard that requires reducing emissions from ICE vehicles.

Second, the LEV standard provides flexibility by requiring manufacturers to meet fleet-wide standards; different standards apply to vehicles of different sizes within a manufacturer’s fleet. Larger vehicles, such as SUVs and pickup trucks are not expected to meet the same standards as small cars. This built-in flexibility allows manufacturers to produce the vehicle types that their consumers want, while still providing the cleanest, most efficient vehicles of those types. This flexibility is important to maintain consumer choice and ensure Minnesotans can purchase the vehicles they want while achieving emissions reductions across all light-duty vehicle types.

MADA submitted comments during the RFC period that stated, “[California’s] top selling vehicle is the Honda Accord; [Minnesota’s] is a Chevy Silverado.”⁷³ Since the Honda Accord is a sedan and the Chevy Silverado is a pickup truck, this statement describes the different vehicle needs and preferences of Minnesota and California residents. But it is also the case that in 2019, the Ford F-Series—another line of pickup trucks—was the top-selling vehicle in several states that have adopted the LEV standard including Colorado, Delaware, Maine, Oregon, Pennsylvania, and Vermont.⁷⁴ California is the outlier, not the average; in fact, it is the only section 177 state in which the top-selling vehicle is neither a pickup truck nor an SUV. The fact that pickup trucks and SUVs are the most popular vehicles in every other

⁷³ Comment by MADA made during the RFC period, at page 1 (December 6, 2019)

⁷⁴ Edmunds, “Most popular cars in America,” <https://www.edmunds.com/most-popular-cars/> (accessed 8/12/2020)

section 177 state indicates that the flexibilities built into the rule have allowed manufacturers to continue to produce and sell the larger vehicles that many people prefer. Therefore, it is reasonable to adopt standards that provide sufficient flexibility so that Minnesotans can purchase the types of vehicles they need and want, while still reducing emissions overall.

Third, as discussed above, the LEV standards are the same as the federal GHG and other air pollutant standards in existence prior to spring of 2020. Vehicle manufacturers have been planning to meet these standards since they were adopted in 2012. The mid-term evaluation of the standards finalized in January 2017 demonstrated that manufacturers were achieving the standards and that the technology exists to achieve the standards through 2025 and at less cost than initially forecast.⁷⁵

Minnesota has long-relied on the federal standards to achieve vehicle emissions reductions. However, in 2018 the federal government published the proposed SAFE rule which proposed to roll back the GHG emissions standards for light-duty vehicles and freeze them at 2020 levels.⁷⁶ As outlined in section 3(C), MPCA, MnDOT, and MDH, as well as a coalition of states and cities, of which Minnesota is one, expressed concerns about the environmental impact of the 2018 proposal as well as the quality of the analysis underpinning it. On April 30, 2020, the federal government published the final SAFE rule based on a regulatory analysis that is substantially different from the analysis conducted for the 2018 proposed rule.⁷⁷ The final rule, effective June 29, 2020, requires annual GHG emissions reductions of 1.5% from model year 2021 through model year 2026, compared with the standards finalized in 2012, which would have required annual emission reductions of 5% through model year 2025. Since EPA and NHTSA's regulatory analysis is substantially different from the analysis conducted for the 2018 proposal and the agencies did not provide interim opportunity for the public to review and comment on the data and methods, there is still substantial uncertainty and concern surrounding the quality of the analysis conducted. However, initial examination indicates that the analysis is more in line with past analyses, including that conducted for the midterm review supporting the January 2017 Final Determination. EPA and NHTSA's regulatory analysis estimates the final SAFE rule will result in a national increase in CO₂ emissions of 867 million metric tons, a net cost to society of \$22 billion, including 444 to 1,000 additional air pollution-related deaths, and a net cost to consumers of \$678 over the lifetime of an average vehicle sold under the final rule.⁷⁸ Given these projected negative environmental outcomes from the federal action, and because automakers have been planning to meet the more stringent emissions standards for nearly a decade, it is thus reasonable to require vehicle manufacturers meet the standards embodied in LEV.

The federal government is only rolling back the GHG emissions standards, not the emissions standards for other air pollutants. However, it is also reasonable to adopt the non-GHG LEV standards as well. First, starting in MY 2025, the LEV standards for PM become more stringent than the federal standards. PM is a pollutant of concern for Minnesota because of its harmful health effects even at low levels. As

⁷⁵ U.S. Environmental Protection Agency, *Final Determination on the Appropriateness of the Model Year 2022–2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (January 2017)*.

⁷⁶ U.S. Environmental Protection Agency & U.S. Department of Transportation, *Notice of Proposed Rulemaking: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (August 2018)*.

⁷⁷ U.S. Environmental Protection Agency & U.S. Department of Transportation, *Notice of Final Rule: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (April 2020)*. <https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf>

⁷⁸ National Highway Traffic Safety Administration and U.S. Environmental Protection Agency, *Final Regulatory Impact Analysis (FRIA): The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks*, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_safe_fria_web_version_200701.pdf (pages 1635 and 1704, 3% discount rates)

discussed in section 2(B), in Minnesota vehicles are a primary source of emissions that affect human health, including PM. In 2013, air pollution contributed to the death of between 2,000 and 4,000 Minnesotans, most of which are attributable to PM_{2.5} pollution.⁷⁹ It is reasonable to adopt LEV to achieve greater emission reductions of PM to protect the health of Minnesotans.

In addition, the LEV standards require a more rigorous certification process and more comprehensive warranty coverage of emission control components. LEV-certified vehicles have emission control parts that are more durable and have a longer life expectancy. These certifications are important because emission controls often deteriorate as a vehicle ages. The more rigorous requirements mean emissions from LEV-certified vehicles are likely to stay lower longer than vehicles that are not LEV-certified, locking in longer-term benefits for Minnesota's air quality. It is therefore reasonable to adopt LEV and require the long-term durability of those emissions controls.

Finally, the LEV standards are the only fleet-wide vehicle emission standards that the MPCA could consider adopting. Section 5 discussed in greater detail the regulatory structure of the CAA regarding other states' adoption of California standards following the grant of a waiver of those standards by EPA. The MPCA is therefore limited to adopting the LEV standards to address tailpipe emissions from vehicles. There are no other options the MPCA could consider to ensure emission reductions from these vehicles now that the federal government changed the standards by adopting their SAFE Rule.

iii. Reasonableness of adopting the ZEV standard

The ZEV standard addresses emissions from passenger cars and light-duty trucks by requiring increasing percentages of BEVs and PHEVs that must be delivered for sale in Minnesota. EVs have zero tailpipe emissions and are overall lower-emitting than gasoline- or diesel-powered ICE vehicles (see section 3A for details on EVs). As discussed above, they are an important part of a portfolio approach to reducing GHG emissions and emissions of other air pollutants from transportation. EVs produce fewer emissions per mile (see Figure 8) than ICE vehicles. Therefore, replacing the purchase of an ICE vehicle with the purchase of an EV is one way to reduce air pollution emissions from transportation. Encouraging the adoption of EVs instead of gasoline or diesel-powered ICE vehicles is an important part of reducing air pollution emissions from transportation, and the ZEV standard is intended to help support the growth of the EV market. To reduce emissions from transportation it is therefore reasonable to encourage the adoption of EVs over ICE vehicles.

Many vehicle manufacturers have been making announcements about new EV models that they will be offering in the coming years, and there is a wide range of projections for EV sales into the future. The market is driving a shift towards EVs. One of the purposes of this rule is to help speed the uptake of this cleaner technology and to encourage manufacturers to bring those models here to Minnesota when they are first available. The ZEV standard would serve as a floor or a backstop for EV adoption in Minnesota. To comply with the ZEV standard, the MPCA estimates that EVs would need to make up approximately 6.2-7.4% of manufacturers' light-duty vehicle sales in Minnesota during the 10 year time frame spanning model year 2025 to 2034. This is higher than current EV sales, but a small fraction of overall light-duty vehicles.⁸⁰ It is reasonable to require manufacturers to increase EV deliveries over time without requiring a massive, sudden shift in the light-duty vehicle market to EVs. As a comparison, in a conservative "business-as-usual" projection of EV sales in Minnesota without a ZEV standard, based on a linear extrapolation of recent Minnesota EV sales, EVs would comprise 2.9-5.8% of light-duty vehicle

⁷⁹ "Life and breath: How air pollution affects health in Minnesota," David Bael and Kathy Raleigh.

<https://www.pca.state.mn.us/air/life-and-breath-report>. *PM_{2.5} is a subset of PM.*

⁸⁰ These percentages do not reflect the potential use of early action credits or the one-time credit allotment that would give manufacturers additional compliance flexibility.

sales during this time frame.

In addition, it serves as a starting point, laying the groundwork for the future growth of EV adoption and thus additional future emissions reductions beyond the basic requirements of the rule. By requiring manufacturers to increase the proportion of EVs that they deliver for sale in the short term, the proposed ZEV standard would lay the groundwork for even more EV adoption in later years. We must take initial steps now to advance EV technology and establish it in Minnesota's market in order to achieve the substantial levels of transportation electrification needed to achieve the NGEA goals. It is reasonable to adopt the proposed ZEV standard to lay the foundation for long-term EV adoption that is needed to achieve Minnesota's long-term GHG emission reduction goals. It is reasonable for the MPCA to use our regulatory authority to establish a floor for EV adoption in order to support the growth of a technology that will be needed to achieve GHG emissions reductions from transportation into the future.

a) An "all of the above approach" to electric vehicle policy

The ZEV standard is one tool in the toolbox available to advance EV adoption and thus reduce transportation emissions. It is a tool used in many other states, but that has not yet been used in Minnesota. It is reasonable for the MPCA to use this tool under its authorities to reduce GHG emissions by increasing EVs in the state.

Studies have indicated a variety of activities can increase EV adoption, but have not conclusively determined which policies and activities are most effective in achieving EV adoption increases.⁸¹ An "all of the above" approach is likely to produce the fastest and most robust results. States working to reduce GHG emissions from transportation have implemented a variety of these approaches in a variety of different orders. The ZEV standard is one lever states can pull that works with other actions to support increased adoption of EVs to reduce air pollution emissions from the transportation sector.

One of the key roles the MPCA can play in accelerating EV adoption in Minnesota is to use our regulatory authority to adopt the ZEV standard. The ZEV standard is intended to support other current and future efforts to reduce air pollution emissions from transportation through EV adoption. The current and future EV adoption work by the MPCA and our partners can be layered on top of the ZEV standard and would be mutually supportive. It is reasonable for the MPCA to use its regulatory authority to adopt the ZEV standard to encourage the replacement of ICE vehicles with EVs that have zero tailpipe emissions.

Using the MPCA's regulatory authority to adopt the ZEV standard is an important and reasonable part of a portfolio approach to increasing EV adoption to achieve emission reductions, and the MPCA has also been working with our partners for many years to address other parts of that portfolio. The MPCA has been collaborating with other levels of government and a variety of organizations across Minnesota to increase EV adoption. Each agency and organization has its own area of expertise and authority that it can use to increase EV adoption. The MPCA and our partners have been working to address many of the activities recommended by experts and in comments received in response to our RFC to lay the groundwork for more EVs to come to Minnesota. It is reasonable for the MPCA to use its regulatory authority to encourage manufacturers to bring more EVs to the state to use the infrastructure and take advantage of the other programs that the MPCA and others have developed. Actions taken by the MPCA

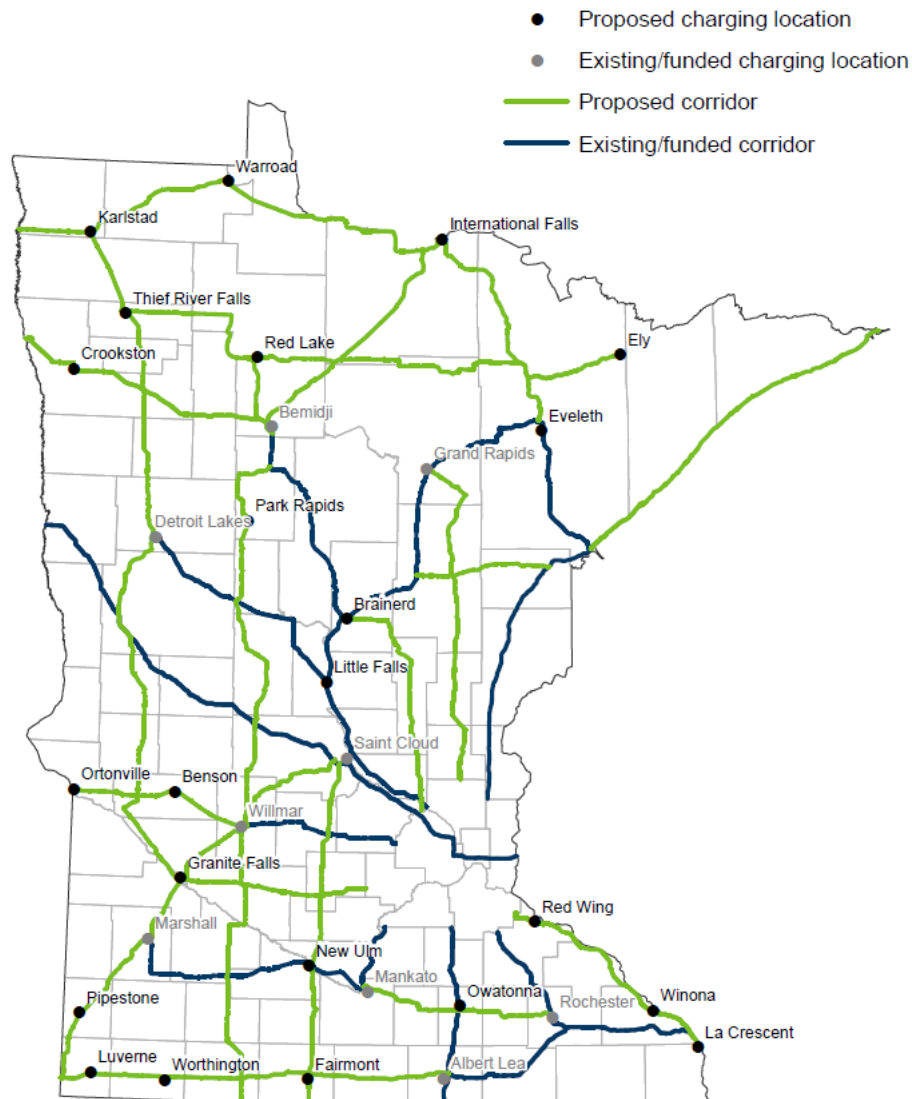
⁸¹ See, e.g., *The Regulatory Assistance Project, Getting From Here to There: Regulatory Considerations for Transportation Electrification 3 (May 2017)* (noting that there is "no "one way" to address[] the question of how to electrify transportation..."). <https://www.raponline.org/wp-content/uploads/2017/06/RAP-regulatory-considerations-transportation-electrification-2017-may.pdf>

and others in Minnesota to lay this groundwork include:

1. **EV charging infrastructure:** Public and private investment in EV charging infrastructure has been increasing in recent years. For instance, public-private partnerships installed fast charging stations along Interstate 94 between the Twin Cities and Moorhead, as well as along Interstate 35 between the Twin Cities and Duluth. The national settlement with the Volkswagen company for violating emission control requirements gave Minnesota \$47 million to be used over 10 years to reduce vehicle pollution. Up to 15% of those funds can be used on EV charging stations. The MPCA has dedicated the full 15% of these funds to EV charging. So far, \$1.4 million has been awarded to build out 1,110 miles of EV fast chargers along highway corridors. These stations will be installed by the end of September 2020. \$158,625 has been awarded for the installation of 25 dual-port Level 2 charging stations which will be installed by Spring of 2021. For the second phase of funding, the MPCA is dedicating an additional \$3.525 million to EV charging stations, including up to 90% of funds for a minimum of 38 new fast charging stations along highway corridors, expanding the network of EV charging corridors by approximately 2,500 miles, and 10% of the funds for a minimum of for 54 dual-port Level 2 charging stations (Figure 9). Most of these stations will be installed in the early 2020s.⁸² These new stations will serve both to provide needed charging for increasing numbers of EVs on Minnesota’s roadways and also to ease Minnesotans’ “range anxiety” that they will not be able to travel where they wish to go with an EV, thus supporting the increased adoption of EVs required by the ZEV standard.

⁸² Minnesota’s Volkswagen settlement beneficiary mitigation plan, phase 2, <https://www.pca.state.mn.us/air/minnesotas-plan>

Figure 9: Map of corridors either built or proposed in the MPCA’s VW settlement investment plan



2. **EV fleet charging grants:** In 2019, the MPCA offered \$170,000 in grants for EV charging stations at businesses who wanted to electrify their fleet vehicles. EV fleets can both reduce vehicle emissions and cost of maintenance for businesses, and can also be a point of entry to EV technology for employees. Using EV fleet vehicles may encourage employees to purchase an EV for their next personal vehicle. These grants can both help fleet owners purchase more EVs in their fleets and also boost broader demand for EVs, both of which will support the increased EV deliveries required by the ZEV standard.
3. **Heavy-duty electrification:** The MPCA dedicated 15% of its first phase of VW settlement funds (\$1.5 million) to replacing heavy-duty diesel vehicles and equipment with all new electric alternatives. The MPCA’s plan for the second phase of funding dedicates 20% of the funds (\$4.7 million) to replacing diesel school buses with new electric school buses and 30% of the funds (\$7 million) to replacing other heavy-duty diesel vehicles and equipment with new electric alternatives. The intent of these funds is to boost EV adoption in the heavy-duty sectors and to raise the profile of electric as an alternative to diesel or other fossil fuels. Raising the profile of

electricity as an alternative fuel broadly supports increased demand for EVs and the increased EV deliveries required under the ZEV standard.

4. **Enterprise EV purchasing:** Minnesota's state government has committed to reducing fuel use from its vehicle fleet by 30%. Electrification of the fleet has been identified as a critical part of achieving that goal. The state government is leading by example by adopting EV technology. Encouraging manufacturers to bring more EVs for sale in Minnesota will support the state's goals to increase EV purchasing for its own fleet.
5. **Incentives:** In fall of 2019, MnDOT began offering an EV incentive through the MnPASS program. MnPASS is an express lane program that allows transit buses, motorcycles, and vehicles with two or more occupants to use these lanes for free during peak travel times. Solo motorists are allowed to pay a fee to use these lanes. This pilot program will give Minnesotans who purchase or lease a new or used BEV or PHEV a one-time credit (\$250 for a BEV and \$125 for a PHEV) for use in MnPASS lanes. This program is an outgrowth of the input received during the Pathways project and offers a financial incentive to encourage EV purchasing, thus supporting the increased EV deliveries required by the ZEV standard.
6. **Utility programs:** Utilities play a critical role in ensuring EV adoption benefits the grid and all electricity users. The Public Utilities Commission (PUC) opened a docket to discuss EV programs and potential effects for Minnesota. The MPCA and MnDOT have been participating in the PUC process by commenting in support of utility EV programs that work to advance EV adoption in a way that benefits the air quality and climate. The PUC directed utilities to develop EV pilot programs and rates that encourage charging EVs in hours when electricity demand is otherwise low. The PUC process and development of utility programs is ongoing and will support the ZEV standard by making EV adoption easier for Minnesotans, raising the profile of EVs, and helping to ensure EV adoption is done in a way that benefits all ratepayers and the environment.
7. **Education:** The MPCA participates with Drive Electric Minnesota, which, along with other partners around the state, works to educate Minnesotans about the benefits of EVs. Many groups around the state are working on educating consumers as well as supporting local governments and businesses in converting their vehicle fleets. For instance, the Twin Cities Clean Cities Coalition and Midwest Electric Vehicle Opportunities: Learning, Events, Experience (EVOLVE) project puts on ride and drive events around the state to help familiarize people with EVs. The American Lung Association of Minnesota has also been actively working to educate both light-duty EV customers as well as planning ride and drive events for heavy-duty and medium-duty EVs. Education efforts will help support demand for EVs, which will support the purchasing of EVs under the ZEV standard.

The MPCA is acting across many fronts to support EV adoption to reduce vehicle pollution. The actions by the MPCA and our partners outlined above lay the groundwork for increased EV adoption and further ensure the reasonableness of a regulatory mechanism to increase EV adoption in Minnesota. The ZEV standard would help encourage manufacturers to bring those vehicles to Minnesota and offer them for sale. These voluntary efforts are establishing the necessary infrastructure and helping to build demand for EVs as an alternative to ICE vehicles. It is reasonable for the Agency to use its regulatory authority to supplement these existing voluntary efforts by encouraging manufacturers to bring more EVs to our state to use and support these investments.

b) Supporting the market and delivering consumer choice

EVs are gaining in popularity and the number of models available across the country is increasing. However, the technology is still catching on and the EV market is still in early stages. The ZEV standard is intended to support consumer choice and help ensure Minnesotans have more and better options for

these cleaner vehicles. The proposed rule would not require any individual Minnesotan to purchase an EV. Rather, it is designed to encourage manufacturers to offer more inventory and variety of EVs for sale in Minnesota so individuals who wish to purchase one, or might be interested in exploring EV options, can do so. Since manufacturers would need to deliver more EVs for sale in Minnesota, they would be encouraged to bring more models and larger quantities to the state to create an improved purchasing experience and to offer the variety of models desired by Minnesotans. Adopting the ZEV standard would increase the likelihood that Minnesotans have access to the EV models they wish to purchase by encouraging manufacturers to support their sale in the Minnesota market. The ZEV standard is set up to provide a spark to the EV market in the early years of EV availability and public interest. It is both commonplace and reasonable to use regulation to encourage transition to a new technology that reduces emissions and provides benefits to Minnesotans in the early adoption years of the technology.

There are more EV models available in other states than can be easily acquired in Minnesota. During both the public input process for the Pathways report and the MPCA's RFC comment period for this rulemaking, we heard from many Minnesotans who said they could not purchase the EVs that they wanted because they are not available for sale in the state. Minnesotans described a variety of challenges, including dealers who actively discouraged them from purchasing an EV they wanted to buy and dealers who only had one EV on their lot, sometimes without the necessary charge to take it for a test drive. Several manufacturers will only sell their EV models in states that have adopted the ZEV standard so they can focus their inventory and efforts in areas that require these deliveries. The Subaru PHEV Crosstrek, the BEV Kia Niro, and the Hyundai Kona EV were frequently cited examples of models that Minnesotans wished to purchase, but that the dealers could not even order from the manufacturer to sell here.

The MPCA has heard similar input from the business community and local governments. For instance, the Minnesota Sustainable Growth Coalition, a partnership of local businesses, submitted comments stating, "When asked what would help electrify their fleets, Coalition members state that lack of availability of all model types in Minnesota is the primary challenge mentioned as they work towards fleet electrification. Access to EVs is vital for our members to reach their business goals of keeping companies and the region competitive and our communities healthy."⁸³

These anecdotes from Minnesotans are also reflected in research on EV model availability by PluginConnect⁸⁴ and the Sierra Club.⁸⁵ PluginConnect's research shows that as of the end of 2019, 27 models of EVs were available in Minnesota compared to 41 models in other parts of the U.S. These numbers are up from the beginning of 2019 when PluginConnect's research indicated that of 43 models of EVs available in other parts of the U.S., only 19 were available in Minnesota. In addition, Sierra Club's research shows that in states that have the ZEV standard, dealerships had significantly more inventory of EVs than in states without the ZEV standard, and that "dealerships in ZEV states were more likely to provide information on charging, battery range, and federal and state rebates and incentive for consumer."

To understand Minnesota EV availability, the MPCA also used an EV availability data tool developed by Northeast States for Coordinated Air Use Management that pulls current data on vehicle availability at dealerships from Cars.com. The MPCA used the tool to explore current availability of EVs near five Minnesota cities. The tool searches for all known BEV and PHEV models within fifty miles of any given ZIP code. The tool counts EVs at dealerships as well as the total vehicles of all varieties available from

⁸³ *Comments of the Minnesota Sustainable Growth Coalition during the RFC, page 1 (December 5, 2019).*

⁸⁴ PluginConnect, MN PEV models, <https://www.pluginconnect.com/mnpevmodels.html>

⁸⁵ Sierra Club. (n.d.). Rev Up Report. Retrieved from <https://www.sierraclub.org/sites/www.sierraclub.org/files/press-room/2153/Rev-Up-Report-2019-3-web.pdf>.

the manufacturers. Due to the mapping function, these results may double count some EVs at dealerships between two metropolitan areas and include vehicles at dealerships in neighboring states.

Table 3 summarizes EV availability in six representative Minnesota cities on July 9, 2020. As shown, EVs make up less than 1% of cars on the lot in the Twin Cities Metro and less than 0.3% of vehicles on the lot in Greater Minnesota. Significant portions of the state, particularly the southwest and northern Minnesota, have no EVs available for test drive within 50 miles.

Table 3: EV availability in six Minnesota cities as of July 9, 2020 (new vehicles within 50 miles)

	Twin Cities	Duluth	Bemidji	Rochester	Marshall	Fargo/Moorhead
Population	3.6 million	279,000	15,000	220,000	13,500	245,000
Total EVs available	171	0	0	11	0	3
Total vehicles available from manufacturers with at least one EV model	19311	349	94	1910	317	1323
Average % EVs Available	0.89%	0.00%	0.00%	0.58%	0.00%	0.23%

In comparison, dealers in states with ZEV standards are carrying higher numbers of EVs, even in small, rural towns in cold-weather states. Table 4 shows EV availability within 50 miles of towns in ZEV states that have populations of similar sizes to the towns listed in Table 3.

Table 4: EV availability in six ZEV-state cities of comparable size to Minnesota cities in Table 3 as of July 9, 2020 (new vehicles within 50 miles)

	Boston, MA	New London, CT	Bennington, VT	Burlington, VT	Geneva, NY	Binghamton, NY
Population	4.8 million	267,000	15,000	221,000	13,261	240,000
Total EVs available	555	162	67	46	219	74
Total vehicles available from manufacturers with at least one ZEV model	32673	12043	6799	1539	9992	2995
Average % EVs Available	1.70%	1.35%	0.99%	2.99%	2.19%	2.47%

While the numbers in Table 4 are still not large, they do indicate a pattern that dealers in states with the ZEV standard are carrying a higher percentage of EVs on their lots. Vehicle availability is constantly shifting, but these numbers indicate Minnesota trails in access to EV models. According to comments submitted by the Association of Global Automakers, “Estimates from IHS Market suggest that by 2025, over 130 electrified models will be available.” Many of these are planned to be SUVs, crossovers, and pickup trucks, which are the types of vehicles Minnesotans are increasingly choosing to purchase. If past practice holds, Minnesotans would be unlikely to have access to these vehicles when they are released and for an unknown amount of time after. Adopting the ZEV standard would encourage manufacturers to bring those new models to Minnesota to offer them for sale here in order to earn the credits required under the rule. It is reasonable to adopt the ZEV standard to encourage manufacturers to bring more and better options of EVs for sale in Minnesota to increase the numbers of EVs, which have zero tailpipe emissions and thus reduce emissions from transportation.

Table 4 also shows that manufacturers are able to develop plans to comply with the ZEV rule that consider the size of the local market and local interest in purchasing EVs. The MPCA has heard concerns that dealers in rural parts of Minnesota will be forced to carry EVs that their local markets do not want and that carrying EVs will reduce space on dealer lots that could otherwise be used to carry SUVs and

pickup trucks that the local markets prefer. The numbers of EVs being carried in smaller towns in states with the ZEV standard as shown in Table 4 suggest that manufacturers and dealers are able to strike a balance to comply with the ZEV standard: dealers' lots are not being flooded with EVs, while at the same time EVs are more accessible around the state.

In addition, while this proposed rule only focuses on new vehicles, it is reasonable to assume that increasing the supply of new EVs in the market may also eventually lead to more used EVs available in Minnesota, which would bring access to EV technology to a wider population and result in additional emissions benefits in the future.

Research indicates there is demand for additional EV sales. Consumer Reports' comments cited a recent study on consumer demand for EVs in Minnesota.⁸⁶ The survey research indicated 30% of prospective Minnesota car buyers would consider an EV for their next vehicle. The MPCA estimates that under the Clean Cars compliance scenario, approximately 6.0 - 7.5% of total light duty vehicle sales will need to be EVs. Table 5 estimates sales numbers for each year. These estimates do not account for the potential use by manufacturers of early action credits or one-time allotment credits, which are intended to provide compliance flexibility. The ZEV standard is meant to encourage manufacturers to ensure those people have the opportunity to experience and potentially make a choice to purchase an EV for their next vehicle. It is therefore reasonable to adopt ZEV to improve Minnesotans' choices for vehicles that will produce less air pollution.

Table 5: Estimated Minnesota light-duty vehicle and EV sales under Clean Cars compliance scenario

Model year	Light-duty vehicle sales	BEVs	PHEVs	Total EVs	Percent of total LDVs that are EVs
2025	253,385	11,714	7,139	18,852	7.44%
2026	251,104	11,804	6,777	18,581	7.40%
2027	247,840	11,865	6,401	18,266	7.37%
2028	243,379	11,893	6,012	17,904	7.36%
2029	237,538	11,879	5,607	17,486	7.36%
2030	230,649	11,811	5,187	16,998	7.37%
2031	224,883	11,682	4,752	16,434	7.31%
2032	222,634	11,489	4,309	15,798	7.10%
2033	226,641	11,269	3,874	15,143	6.68%
2034	237,067	11,106	3,475	14,581	6.15%

The MPCA used the Minnesota ZEV Compliance Calculator to project the number of BEVs and PHEVs in each MY 2025-2034 that would be required to comply with the standard. These estimates do not include the potential use by manufacturers of early action credits or one-time allotment credits, which are intended to provide compliance flexibility. Because the ZEV standard plateaus in MY 2025, projections of BEVs and PHEVs required for compliance in subsequent model years are based on projected fluctuations in Minnesota light-duty vehicle sales. These compliance projections are used throughout this document in our estimation of emissions and consumer impacts of the ZEV standard.

⁸⁶ Consumer Reports and Union of Concerned Scientists. (n.d.). Electric Vehicle Survey Findings and Methodology: Minnesota. Retrieved from <https://advocacy.consumerreports.org/wp-content/uploads/2019/09/Electric-Vehicle-Survey-Minnesota-1.pdf>

c) Options outside of the scope of the proposed rule

Some commenters, including the Minnesota Automobile Dealers Association, Alliance of Automobile Manufacturers, and Association of Global Automakers, stated that Minnesota should implement a purchase incentive to encourage EV adoption instead of adopting the ZEV standard. While research indicates a purchase incentive is likely to bolster EV adoption, to date the Minnesota Legislature has not provided the authority, direction, or funding to any executive branch agency to offer such an incentive. In light of the limited scope of authorities to reduce GHG emissions from vehicles allowed by federal law, and the existing efforts by Minnesota's executive branch to encourage EV adoption, it is reasonable for the MPCA to take actions to boost EV adoption and reduce air pollution emissions that are within its regulatory authority.

These commenters also recommend many actions the state could take to advance EV adoption, especially purchase incentives. As discussed above, Minnesota is working to advance EV adoption on many fronts.

The MPCA recognizes that the proposed ZEV standard would require additional actions be taken to increase EV adoption beyond current levels. There are many strategies organizations can do to help increase demand for EVs and achieve the compliance obligations of the proposed rule. Beyond offering more models in Minnesota and having more inventory on dealer lots, potential actions manufacturers and dealers could take might include educating dealership staff to help them better support the sale of EVs and advertising EVs more. Consumer Reports' study indicated that ads for EVs were less than 1% of overall automobile advertising nationwide and Minnesotans see fewer ads for EVs than people living in other parts of the country.

d) A focus on flexibility

The ZEV standard is designed to be flexible and allow manufacturers a variety of ways to comply based on their business decisions. An inflexible program might cause difficulties for certain manufacturers to comply based on their technical expertise or annual fluctuations in the new vehicle sales market. It is reasonable to have a flexible program that focuses on outcomes.

The ZEV standard functions as a credit system that allows flexibility for motor vehicle manufacturers. Manufacturers can choose to comply with the standards by developing EVs and delivering them for sale in Minnesota. If they do not choose to develop and deliver EVs themselves or do not deliver enough to comply with the requirements of the rule, they can instead purchase credits from other manufacturers. Manufacturers have been complying with the ZEV standard in other states for over a decade and have developed a variety of compliance strategies including developing a range of BEVs and PHEVs to relying solely on credit purchasing. This variety of strategies indicates the rule provides reasonable flexibilities to fit in a variety of business models. Manufacturers who over-comply with the standards can bank their credits for use in future years when they might not be able to deliver enough vehicles to comply, or they can sell their credits to other manufacturers who have not delivered enough EVs. The purpose of the ZEV standard is ultimately to reduce vehicle pollution. It is reasonable to provide manufacturers these flexibilities because they do not reduce the overall emissions benefits of the rule.

Adopting the ZEV standard would incentivize manufacturers to ensure that Minnesotans who wish to purchase an EV would have more options to choose from to meet their preferences and needs. It would also encourage dealers and manufacturers to promote the sale of cleaner vehicles and help connect Minnesotans who want an EV with the model and specifications of their choice. This proposed rule does not require any individual consumer to purchase an EV, but rather it increases the likelihood that a desired option is available to them. It is therefore reasonable to adopt the ZEV standard to boost EV adoption and achieve air pollution emissions reductions.

B. Specific Reasonableness

This section addresses each section of the proposed rule and explains each provision and why it is reasonable.

7023.0150 SCOPE AND INCORPORATION BY REFERENCE

Subpart 1 Scope, Subp. 2 Incorporation by reference, Subp. 3 Term substitutions. Section 209 of the CAA allows California to obtain a waiver to develop and enforce vehicle emissions standards that are more stringent than the federal standards. Section 177 of the CAA allows states to adopt the same standards as California as long as they are identical to California's. Subpart 2 incorporates California's rules by reference in order to ensure identity. See the "Statutory Authority" section for a detailed explanation of Minnesota's authority to adopt these standards under Section 177 of the CAA. See section 6(A)(i) for detailed explanation of the reasonableness of incorporating this rule by reference.

Subp. 3 clarifies that the California rules adopted by reference refer to Minnesota data, vehicles, and reporting. It is reasonable to clarify for regulated parties and other readers that compliance is based on Minnesota data, vehicles, and reporting.

Subp. 4 Effective date. As described above, with consideration to the federal action that purports to withdraw California's waiver, an approach has been built into the rule such that the GHG LEV and ZEV standards will not become effective as a typical rule, where the effective date of the rule would be five working days after publication of the notice of adoption to the *State Register*.⁸⁷ Instead, the effective date of this proposed rule has been drafted to take into account the unique circumstances of this rulemaking while also providing for adequate notice once the rule can take effect.⁸⁸

The GHG LEV and ZEV standards would not go into effect until the waiver issue between California and the EPA is resolved. The MPCA has made this clear throughout the rulemaking process to date.⁸⁹ Because the date of resolution is unknown at this time, the effective date for the GHG LEV and ZEV standards has been drafted in a manner to become effective only after California's CAA waiver is restored, or EPA has indicated an intention to restore California's CAA waiver. And even then, the rule would become effective only after the MPCA publishes a notice to the *State Register* that would inform the regulated parties and the public that the waiver has been restored. The proposed rule would become effective on the date indicated in that notice document.

While unusual, this provision is reasonable for the following reasons.

First, the MPCA consulted with staff at the Revisor's Office and with the Interagency Rules Committee (IRC) to get feedback on addressing this issue. Revisor staff and the IRC recommended the MPCA establish an effective date mechanism, like the one proposed, to address the unknown waiver restoration date.

Second, regulated parties would have additional time before compliance with the LEV and ZEV standards is required. This is because section 177 of the CAA requires states wishing to adopt the same standards as California to "adopt such standards at least two years before commencement of such model year." The MPCA has decided to draft the rule in this manner to provide regulated parties

⁸⁷ *Minn. Stat. § 14.18 (2019)*.

⁸⁸ *As noted throughout, the early action credit mechanism would go into effect five working days after publication of the final rule to the State Register.*

⁸⁹ *See, e.g., 44 Minn. Reg. 465 (MPCA Request for Comments) (October 7, 2019) ("Any final rule in Minnesota would need to be made contingent on restoration of the state's ability to adopt these measures, including the existence of operative waiver authority under Sections 209(b) and 177 of the Clean Air Act.")*.

additional time before this two-model year clock begins.⁹⁰

For example, if the California waiver is restored in April 2021, the MPCA notice would be published in the *State Register* later in 2021. Under the proposed rule, the MPCA would designate an effective date for the LEV and ZEV standards in this notice. Because section 177 requires the standards be adopted “at least two years before commencement of such model year,” the effective date would begin the two-model year clock for implementation. Since a new model year begins on January 2nd of a year, the model year definition is the calendar year plus one. In the example presented, if the MPCA designated that the effective date was January 1, 2022, in its notice, the first model year that manufacturers would have to comply would be MY 2025.

This determination of model year compliance may benefit from additional explanation. Two years after January 1, 2022 is January 1, 2024. The two-model year waiting period captures MY 2023 and 2024, as MY 2023 vehicles could be sold starting as early as January 2, 2022, and MY 2024 vehicles could be sold as early as January 2, 2023. Therefore, MY 2025 would be the first effective model year, because MY 2025 vehicles could be sold starting on January 2, 2024.

Because of the complex interaction between the federal CAA and the definition of model year, and because of the MPCA’s decision regarding the effective date, this proposed rule was drafted to take into consideration these unusual circumstances—which are beyond the control of the MPCA. However, the proposed effective date language is reasonable because it provides additional advance notice to regulated parties before the LEV and ZEV standards are implemented and enforced while taking an approach consistent with previous Section 177 states regarding CAA compliance.

The proposed effective date rule language excludes the early action credit mechanism found in 7023.0300, subpart 4, because this mechanism would go into effect before the LEV and ZEV standards. The early action credit mechanism would go into effect five working days after the MPCA publishes a Notice of Adoption in the *State Register* following completion of the rulemaking process.⁹¹

This means that there would be two notices published by the MPCA with regard to the effective date of this rule. First, the Notice of Adoption would be published upon completion of the rulemaking process and the early action credit mechanism would go into effect five working days after publication of that notice. The MPCA anticipates that the Notice of Adoption would be published in early 2021, pending completion of the rulemaking process. Second, the Effective Date notice described in 7023.0150, subp. 4, would be published once the waiver issue is resolved. There is no known timeline for this, but this notice would not affect the LEV and ZEV standards themselves.

The MPCA is authorized to implement an early action credit mechanism before the LEV and ZEV standards because, as discussed elsewhere, courts have made a distinction between standards, which are “regulatory measures intended to lower the level of auto emissions,” and enforcement mechanisms, which are regulatory devices “intended to ensure that the ‘standards’ are effective.”⁹² Because the early action credit system is a voluntary flexibility offered to manufacturers, not a requirement of the rule, it does not require two years between adoption and implementation. The intent is to offer an early incentive to manufacturers to deliver EVs to Minnesota sooner than required by the rule and, once the standards become effective, the early action credit mechanism will help to support manufacturers’

⁹⁰ See, e.g. *Motor Vehicle Mfrs. Ass’n of the U.S., Inc. v. New York Dep’t of Env’tl. Conservation*, 17 F.3d 521, 533–34 (2d Cir. 1994) (finding that the “plain language of §177” leads to the conclusion that “it is sensible... to adopt the standards prior to the EPA’s having granted a waiver, so long as... no attempt to enforce the plan prior to the time when the waiver is actually obtained” is made).

⁹¹ MINN. STAT. § 14.18, subd. 1 (2019).

⁹² *American Auto. Mfrs. Ass’n v. Cahill*, 152 F.3d 196, 200 (2d Cir. 1998).

achievement of the ZEV standard. It is thus reasonable to exclude part 7023.0300, subp. 4 from this effective date. Additional discussion of the reasonableness of the early action credit system is found below.

7023.0200 DEFINITIONS

Subp. 1 identifies which definitions prevail in rule parts 7023.0150 to 7023.0300. This subpart clarifies that the definitions used in other parts of Minnesota's air quality rules and the definitions in California's rules incorporated by reference in part 7023.0150, subp. 2 are used in rule parts 7023.0150 to 7023.0300 unless a term is defined in 7023.0200. It is reasonable to clarify which definitions are applicable to these rule parts.

Section 177 of the CAA requires states that choose to adopt the same vehicle emissions standards as California to do so identically. Although MPCA is proposing to adopt definitions by reference as part of the incorporation by reference in part 7023.0150, subp. 2, we are writing out some of the definitions in order to clarify the rule for the reader. California does periodic minor rulemakings to update its rule language. To ensure identity after these updates, MPCA is adopting most of California's rules by reference. For the following definitions not adopted by reference, MPCA would need to ensure our rule language continues to match the language used by California. The MPCA does periodic housekeeping rulemakings and would check California's rules for any updates and include identical updates in housekeeping rulemakings. Therefore, the following definitions are identical to those in California's rules. These definitions are reasonable because California's rules are accepted as alternative federal standards by the CAA and the CAA only allows states to adopt California's standards as alternative federal standards:

- Subp. 3 CARB
- Subp. 5 Light-duty truck
- Subp. 6 Medium-duty passenger vehicle
- Subp. 7 Medium-duty vehicle
- Subp. 9 Model year
- Subp. 12 Passenger car
- Subp. 13 Transitional zero-emission vehicle or TZEV
- Subp. 15 Zero emission vehicle or ZEV

Section 177 states have some flexibility in developing enforcement and implementation strategies that work for them. As discussed in section 5, the language in section 177 is clear that states are required to adopt identical standards as California. Courts have made a distinction between standards, which are "regulatory measures intended to lower the level of auto emissions," and enforcement mechanisms, which are regulatory devices "intended to ensure that the 'standards' are effective."⁹³ There is no requirement that states' enforcement mechanisms with regard to LEV and ZEV are identical to California's enforcement mechanisms.⁹⁴ It is reasonable, therefore, for Minnesota and other states who adopt the California standards to adopt enforcement mechanisms that are specific to their state's needs and context.

To improve ease of implementation for both the MPCA and vehicle manufacturers, when appropriate,

⁹³ *American Auto. Mfrs. Ass'n v. Cahill*, 152 F.3d 196, 200 (2d Cir. 1998).

⁹⁴ *Courts have held that ZEV is an emission standard, even though it is not a traditional emission standard, reasoning that "a requirement that a particular percentage of vehicle sales be ZEVs has no purpose other than to effect a general reduction in emissions."* *American Auto. Mfrs. Ass'n v. Cahill*, 152 F.3d 196, 200 (2d Cir. 1998).

the MPCA uses definitions and requirements also used by other section 177 states. Since this standard regulates the manufacturers, which sell vehicles across each of the section 177 states, it is reasonable to use the definitions already in use in those states. Therefore, the following definitions are identical to those used in other section 177 states. States have this enforcement flexibility, so not all states use exactly the same definitions. MPCA reviewed all other states' definitions and determined these to be the clearest. It is reasonable to provide definitions for these terms because they help define which type of vehicles and entities are subject to, or exempt from, this rule. These definitions include:

- Subp. 8 Military tactical vehicle
- Subp. 10 Motor vehicle manufacturer
- Subp. 11 New motor vehicle
- Subp. 14 Used motor vehicle

Subp. 2 Authorized emergency vehicle. The MPCA relies on a definition of emergency vehicle used in an existing part of Minnesota state law, located at Minn. Stat. 169.011. It is reasonable to use a definition already in use in Minnesota to avoid confusion for owners of emergency vehicles.

Subp. 4 First effective model year. As noted above, section 209 of the CAA allows California to adopt more stringent vehicle emissions standards if California is granted a waiver from the federal standards under this section of the CAA. Once California adopts these standards, under section 177 of the CAA, other states are able to adopt the California standards and can enforce the standards once a waiver is in place. The proposed rule may be adopted, but cannot be enforced until the waiver is restored by the EPA.

The proposed rule commits the MPCA to publically announcing when the waiver has been restored and therefore when the rule would go into effect. As noted elsewhere, this approach ensures that vehicle manufacturers are alerted to the new standards and have the required time to adapt. It is reasonable for the MPCA to announce the effective date to ensure regulated parties know when they will have compliance requirements under this proposed rule.

Section 177 requires states wishing to adopt the same standards as California to “adopt such standards at least two years before commencement of such model year.” Therefore, the effective date must be at least two full model years after the date of adoption. The MPCA’s publication of the effective date in the *State Register* would help clarify the date for the public and the manufacturers and will provide even more notice than is required under the CAA. It is therefore reasonable to state that the MPCA’s determination of the effective date will comply with the requirements of section 177 of the CAA.

7023.0250. LOW EMISSION VEHICLE (LEV) STANDARDS

Subp. 1 Requirement and Subp. 2 Exceptions. This part of the rule identifies the scope of the rule: what types of vehicles are affected and what actions are prohibited. To improve ease of implementation for both the MPCA and vehicle manufacturers, it is reasonable to specifically identify applicability and exemptions to improve ease of implementation.

Subp. 1 identifies which vehicle types are included in the proposed rule. This list of vehicle types is the same as what has been adopted by other section 177 states. The rule applies different standards to different vehicle types based on size, so including all of them is important to the integrity of the rule. It is important to adopt the standards for all of these vehicle classes to avoid unintended consequences such as encouraging the sale of types of vehicles that are not covered by the rule. In addition, all of these vehicle types are important contributors to GHG emissions in Minnesota. Figure 3 in section 2(A) shows GHG emissions from surface transportation. These categories of vehicles combined make up 74% of the GHG emissions from surface transportation in Minnesota. It is reasonable to encompass the same

vehicle groups as addressed by other section 177 states and to address the vehicle types that produce the most GHG emissions from transportation.

Subp. 1 requires all new motor vehicles of the varieties identified that are produced and then delivered for sale in Minnesota to comply with the emissions standards incorporated by reference at 7023.0150, subp. 2. This requirement would work in tandem with the requirements of Minn. Stat. 168A.085, subd. 1, which requires vehicles registered in Minnesota to comply with “applicable federal emissions standards in force at the time of manufacture as provided by the CAA, United States Code, title 42, sections 7401 through 7642, and regulations adopted pursuant thereto.” Since the CAA allows states to choose to either rely on the federal standards or the more stringent alternative federal standards under CAA section 177, beginning in the first model year, only new vehicles certified under the LEV standards would be allowed by the Department of Public Safety and the Division of Driver and Vehicle Services (DVS) to be registered in Minnesota.

During the RFC period, dealers identified concerns that Minnesotans would go to neighboring states to purchase new vehicles to get around the rule, potentially damaging the business of dealers in Minnesota and preventing Minnesota from achieving the emission reduction goals of the rule. The proposed rule, when considered in context with DVS statutory requirements, is reasonable as it would prevent or reduce the potential influx of non-compliant vehicles into Minnesota. It would defeat the purpose of the rule to reduce vehicle emissions if the rule allowed Minnesotans to cross the border to purchase non-compliant vehicles.

In the MPCA’s discussions with the section 177 states, those states reported having only a very small number of instances where people attempted to register non-LEV certified vehicles in their states. A representative from the Connecticut Department of Energy and Environmental Protection presented at one of MPCA’s technical meetings to share Connecticut’s experiences with the rule. He stated in his presentation that Connecticut had less than five violations in the first few years and essentially none in more recent years. Other states made similar comments, including Maryland, which—like Minnesota—is surrounded by states that have not adopted the LEV standard.

Subp. 2 identifies a list of exceptions to the rule. Exceptions are enforcement mechanisms and not standards and thus can be developed by individual states. Accordingly, this is the same list that many other section 177 states use. Using the same list of exceptions as other states is reasonable to ease implementation for the MPCA and vehicle manufacturers. These exceptions provide reasonable flexibility for manufacturers, dealers, vehicle purchasers, and the state. Based on the experiences of other states and the numbers of vehicles these exceptions would apply to, the MPCA does not expect the exceptions to substantially impact the purpose of the rule or emissions benefits from the rule. These exceptions cover situations that are likely to be uncommon in practice, and represent a reasonable way in which to address specific concerns. These exceptions are reasonable because of the following:

A. The rule being adopted addresses the delivery of new vehicles for sale in Minnesota. It is outside of the scope of this rule to regulate used vehicles or their sale. It is reasonable to clarify for readers and regulated parties that used vehicles are outside of the scope of the proposed rule.

B. It is reasonable to provide this exemption because inter-dealer sales do not affect the intent of this rule, since vehicles that are sold to the final purchaser would still need to comply with the LEV standards.

C, D, and F. It is reasonable to provide these exemptions because these vehicles would not be driven in Minnesota enough to substantively affect our air quality or GHG emissions and it is not the intent of the MPCA to regulate these industries.

E. This exemption would allow dealers to sell non-LEV certified vehicles to people who live in neighboring states. During the RFC period, dealers identified a concern that any potential up-front price difference between LEV and non-LEV vehicles might reduce the number of residents of neighboring states who go to Minnesota dealers to purchase a new vehicle. Dealers near the state border have indicated that sales to people in neighboring states can be a substantial part of their sales. If at some point in the future there is a difference in cost between LEV and non-LEV certified vehicles, this exception is reasonable to allow dealers to stock non-LEV vehicles for sale to neighboring states, thus alleviating these concerns.

G and H. It is reasonable to provide an exemption to ensure that operators of these types of critical safety-oriented fleets would be able purchase whatever vehicle they need in order to accomplish their duties.

I – K. It is reasonable to provide exceptions to avoid unduly burdening Minnesotans who receive a vehicle due to circumstances that are outside of their control.

L. It is reasonable to provide an exception to avoid unduly burdening people moving to Minnesota who are not currently bound by Minnesota law and may not yet know they are moving here or be familiar with the laws of Minnesota.

Subp. 3 Fleet average emissions, Subp. 4 Environmental performance labels, Subp. 5 Warranty requirements, and Subp. 6 Recall requirements. These subparts refer to the applicable California rules adopted by reference in 7023.0150, subp. 2 in order to ensure identicality. It is reasonable to write out these rule parts rather than only relying on the incorporation by reference in 7023.0150, subp. 2 to help clarify that Minnesota-specific data and actions within Minnesota must be used to comply with Minnesota's rules. It is reasonable to require Minnesota-specific data and actions be used to demonstrate compliance with this rule in Minnesota.

Subp. 7 Reporting requirements and Subp. 8 Record availability and retention; reporting noncompliance. Section 177 states have some flexibility in developing enforcement strategies that work for them. To improve ease of implementation for both the MPCA and vehicle manufacturers, when appropriate, the MPCA uses requirements also used by other section 177 states. The dates and requirements listed in this subpart are the same as those used by other section 177 states. It is reasonable to align reporting requirements and dates with those used in other states to provide both ease and consistency in implementation for both manufacturers and the MPCA.

7023.0300 ZERO EMISSION VEHICLES (ZEV) STANDARD

Subp. 1 Requirement. This subpart refers to the applicable California rules adopted by reference in 7023.0150, subp. 2 in order to ensure identicality. It is reasonable to write out this requirement rather than only relying on the incorporation by reference in 7023.0150 subp. 2 to help clarify that Minnesota-specific data must be used to comply within Minnesota.

Subp. 2 Credit bank; reporting requirements and Subp. 3 Requirement to make up ZEV deficit. These subparts clarify how vehicle manufacturers would demonstrate compliance with Subp. 1. These subparts refer to the applicable California rules adopted by reference in 7023.0150, subp. 2 in order to ensure identicality. It is reasonable to write out this requirement rather than only relying on the incorporation by reference in 7023.0150 subp. 2 to help clarify that Minnesota-specific data must be used to comply within Minnesota. Additionally, section 177 states have some flexibility in developing enforcement strategies that work for them. To improve ease of implementation for both the MPCA and vehicle manufacturers, when appropriate, the MPCA uses requirements also used by California and other section 177 states. The dates and requirements listed in this subpart are the same as those used by

California and other section 177 states. It is reasonable to align reporting requirements and dates with those used in other states to provide both ease and consistency in implementation for both manufacturers and the MPCA.

Subp. 2 subparagraph A provides instructions for motor vehicle manufacturers to set up accounts to track ZEV credits in Minnesota. All section 177 states and motor vehicle manufacturers use a central credit tracking system managed by California. Using the central system eases implementation and enforcement both for states and manufacturers. The subparagraph gives manufacturers over a year to establish an account and requires them to establish it two months before their first reporting date. The lengthy time frame and two-month buffer before the first reporting date are reasonable to give manufacturers and the MPCA plenty of time to troubleshoot any system issues before implementation begins.

Subp. 4 Early-action credits. Establishing an initial ZEV credit bank to be deposited beginning in the first effective model year provides flexibility for manufacturers. California has been implementing iterations of the ZEV standard since the 1990s and therefore does not provide a mechanism for establishing an initial bank of ZEV credits. Establishing an initial bank is outside of the standards set by California and therefore an enforcement choice left to the states. Precedent in other states has established that states adopting ZEV for the first time have the ability to establish their own mechanism for developing an initial credit bank. It is therefore reasonable for the MPCA to propose a mechanism for establishing an initial credit bank. The MPCA proposes to establish an initial credit bank through two mechanisms: an early action credit system discussed here and a one-time allotment of credits (subp. 5 of this part) discussed below. See Appendix 1 for the MPCA's analysis of the effect of the proposed mechanism for establishing an initial ZEV credit bank on credit levels and compliance requirements, as well as an analysis of additional potential mechanisms considered by the MPCA.

The proposed early-action credit system offers credits to vehicle manufacturers for delivering EVs for sale in Minnesota starting in MY 2022 and continuing until the first effective model year. Early-action credits are awarded using the formula in the ZEV standard.

The goals of the early action credit program are twofold. The first is to increase EV adoption sooner and thus reduce vehicle emissions sooner by encouraging motor vehicle manufacturers to bring more EVs to Minnesota and offer them for sale sooner. The CAA requires states adopting California's standards to provide two years between adoption and implementation. The early action credit program provides an incentive for manufacturers to voluntarily bring more EVs here sooner.

Since the ZEV standard is designed to allow motor vehicle manufacturers flexibility in how they choose to comply, the second goal is to ensure a reasonable level of flexibility exists even in the first implementation year. If there were not an existing credit bank for the first year of compliance, manufacturers who rely on purchasing credits may not be able to comply with the rule.

The MPCA needs to balance these two goals. Developing an initial ZEV credit bank that contains too many credits could result in a standard that does not require anything of manufacturers, which would undermine the increases in EV deliveries that the MPCA intends to achieve with this rulemaking. However, during the RFC period, the MPCA also heard concerns from manufacturers and dealers that the ZEV standard would require them to ramp up sales too quickly. Developing an initial ZEV credit bank helps address these compliance concerns.

The MPCA evaluated several ways to establish an initial ZEV credit bank. To begin, we estimated the approximate total number of credits needed for all the vehicle manufacturers to comply across the Minnesota market in MY 2025, or the earliest model year that could potentially be the first effective model year. We found manufacturers would be likely to need approximately 55,000 credits in MY 2025

(see Appendix 1 for details on the analysis, including methods, data sources, assumptions, and detailed conclusions). The MPCA used this estimate to compare potential mechanisms for establishing an initial ZEV credit bank in order to determine the potential impact of the mechanism on credit availability compared with compliance requirements for the first effective model year and beyond.

The Alliance of Automobile Manufacturers stated in their comments that the MPCA should “establish an initial ZEV credit bank that is proportional to California’s ZEV credit bank in 2024” and point out that this is the mechanism that other states have used.⁹⁵ This would mean depositing in Minnesota’s ZEV credit bank a number of ZEV credits based on the proportion of California vehicle sales compared to Minnesota vehicle sales. MPCA explored this option and has determined it is not a reasonable solution to address the two goals outlined above and the overall purpose of the rulemaking, to reduce emissions from vehicles.

The MPCA’s analysis found that using the proportional credit system suggested by the vehicle manufacturers would probably result in over 200,000 credits in the initial credit bank by the first effective model year when the rule goes into effect. This number of credits is equivalent to providing a base of ZEV credits that could cover all the ZEV credit compliance requirements for at least four years of implementation, and possibly more, not taking into account any additional credits that would be earned from new EV sales starting in the first effective model year. The analysis also showed that this number of initial credits, even in a business-as-usual, linear EV sales growth scenario would result in a credit surplus for at least the first 10 years of the program and thus not require the vehicle manufacturers to increase EV deliveries beyond the worst-case EV sales projection. It is reasonable to believe that number of credits would substantially reduce the incentive for manufacturers to bring EVs to Minnesota soon, which would not address the first goal outlined above: to increase EV adoption sooner rather than later.

In addition, MPCA notes that while other section 177 states have used a proportional bank of credits, most other states adopted the ZEV standard over a decade ago when there were both far fewer EVs available to sell and when California’s ZEV credit bank was much smaller. The use of a proportional bank would also mean that manufacturers would receive double credits for vehicles sold previously in California, essentially double-counting past action for no added environmental benefit. Since the purpose of the proposed rulemaking is to reduce vehicle emissions, especially in Minnesota, it is not reasonable to double count existing credits. Establishing an initial ZEV credit bank using a proportional number of California credits is not a reasonable solution.

Allowing manufacturers to earn early action credits without a cap in the number of credits they can accrue strikes the right balance of the two stated goals. First, it encourages manufacturers to bring EVs and offer them for sale here in Minnesota as soon as possible and, in turn, achieve emissions reductions sooner. Investing early in the necessary infrastructure and training at dealerships and building public awareness sooner would also help establish the necessary conditions once implementation of the ZEV standard begins in the first effective model year. Second, by offering early action credits that accumulate at the same levels as offered by the rule once it is enforced, MPCA is offering flexibility without reducing the number of EV deliveries intended by the proposed rule.

The Canadian Province of Québec adopted a similar early action mechanism to the one being proposed

⁹⁵ *Comments of the Alliance of Automobile Manufacturers during the RFC, page 4 (December 6, 2019). In January 2020, the Alliance of Automobile Manufacturers merged with the Association of Global Automakers to form the Alliance for Automotive Innovation.*

in this rule in 2016.⁹⁶ In discussions with staff at Québec’s Ministry of Environment and Fight Against Climate Change and review of the agency’s “Zero emission vehicle (ZEV) standard report on the results of the first compliance period,”⁹⁷ the MPCA learned that this mechanism resulted in over one compliance year worth of ZEV credits. They indicated the manufacturers have been able to comply with the ZEV standard in the first year of implementation (2018) with this amount of credits in the bank and that EV sales have continued to grow even with that number of credits in the bank.

The MPCA analyzed the potential number of credits manufacturers might earn through an early action credit system. To understand a floor of potential credits that might be earned, we estimated the number of credits that would accumulate if EV sales growth continued in a straight line from current sales growth, which would not reflect any boost in sales incentivized by the adoption of the ZEV standard and early action credit mechanism, and is thus a conservative estimate of sales. The MPCA’s analysis used model year 2025 as the first effective model year, since this is the earliest potential implementation date. This analysis indicates that even if EV sales continue along a business-as-usual trajectory for the early action years, manufacturers are likely to earn approximately 58,000 credits over three years of early action credits, or slightly more than the number of credits projected to be needed for the first effective model year for the ZEV standard. This estimate of credits considers only early action credits and does not take into account the credits that manufacturers would earn during the first effective model year of the ZEV standard based on EV sales during that year (See Appendix 1 for the detailed analysis). The intent of the early action credit system is to encourage a boost in EV sales in these early action years, so it is reasonable to assume that a linear projection of EV sales during those years is a conservative estimate of sales. It is therefore reasonable to believe that manufacturers would accrue more than this number of credits in the early action years.

The MPCA proposes to allow manufacturers to accrue early action credits until the first effective model year of the ZEV standard in Minnesota. Since it is uncertain when California’s waiver will be deemed to be valid, manufacturers may accrue credits over more years, thus providing greater flexibility in the first effective model year and beyond.

To ease implementation both for the MPCA and the manufacturers, Subp. 4 requires reporting in a similar manner to what is required once implementation begins. California’s ZEV Credit System is not available for tracking early action credits, though, so MPCA would need to track credits in its own system for that period. Subparagraph (A) requires manufacturers to establish an account with the MPCA prior to reporting for a model year. This subparagraph also leaves it open for manufacturers to choose not to participate in the first year, but participate in later years. It is reasonable to provide manufacturers this flexibility, especially in case they introduce an EV model, but do not have one to offer yet.

Some commenters have raised concerns that the early action credit proposal does not meet the identity requirements of section 177 of the CAA. The MPCA disagrees with this interpretation. Since the early action credit mechanism is *not* an emission standard under section 177 of the CAA, it is not required to be identical to rule language in California or other 177 states. As the name suggests, the early action credit mechanism takes into account manufacturer achievements *before* the ZEV standard becomes effective. The main goal of the early action credit mechanism is to encourage manufacturers to take action in Minnesota prior to the effective date by awarding early action credits. These credits would be calculated according to the same ZEV formula as is applied in California and other section 177

⁹⁶ Quebec also offered two years of “look-back” credits in its early action credit mechanism. The MPCA considered a similar provision, but concluded that it would not meet its goal of reducing emissions or bringing EVs to the state.

⁹⁷ Québec Ministry of Environment and Fight Against Climate Change, “Zero emission vehicle (ZEV) standard report on the results of the first compliance period,” <http://www.environnement.gouv.qc.ca/changementsclimatiques/vze/bilan-norme-vze-periode-1-en.pdf> (page 5)

states. Once the ZEV standard is effective in Minnesota, the early action credits accrued by manufacturers to that point would be deposited into each manufacturer's credit bank in Minnesota using the California ZEV Credit System.

For these reasons, it is reasonable to establish initial bank of credits through an early action credit mechanism in order to balance goals to incentivize manufacturers to spur EV adoption in Minnesota while providing a more gradual and flexible compliance mechanism. This proposal supports goals to increase EV adoption in Minnesota and reduce emissions, while ensuring compliance is not overly burdensome for regulated entities.

Subp. 5 One-time credit allotment. As stated previously, establishing an initial ZEV credit bank to be used beginning in the first effective model year provides flexibility for manufacturers. The MPCA proposes to establish an initial credit bank with credits generated by two mechanisms: an early action credit system discussed in subp. 4 and a one-time allotment of credits discussed here. See Appendix 1 for the MPCA's analysis of the effect of the proposed mechanism for establishing an initial ZEV credit bank on credit levels and compliance requirements, as well as an analysis of additional potential mechanisms considered by the MPCA.

The proposed one-time credit allotment would provide each vehicle manufacturer with compliance obligations under the ZEV standard a one-time deposit of ZEV credits equivalent to the credit requirements for the first effective model year. This one-time allotment would be deposited at the same time as the early action credits earned by each manufacturer. The credit amount would be determined using the calculation method used every year to determine compliance requirements (a three-year average)⁹⁸ so that the manufacturers would be able to know and plan for how many credits they will receive well in advance of the deposit date. It is reasonable to use this calculation so that manufacturers know what to expect and will know the allotment amount in advance, allowing them to plan ahead for their compliance requirements.

The purpose of the proposed one-time credit allotment is to provide manufacturers with reasonable compliance flexibility and a risk-management tool. Based on discussions with vehicle manufacturers, the MPCA learned they try to maintain about a year's worth of credits⁹⁹ or between six months and two years' worth of credits in their banks to manage risks of future sales declines. This range aligns with the findings of the California Air Resources Board in their Advanced Clean Cars Midterm Review, which states, "This range is consistent with feedback from manufacturers who typically expressed targets of one to two years [of compliance buffer credits] depending on their tolerance for risk."¹⁰⁰ The intent of this one-time credit allotment is to address this preference raised by manufacturers while not diminishing the efficacy of the ZEV standard once implemented.

This one-time credit allotment proposal is less than the initial credits proposed by the manufacturers, who have requested the MPCA provide each manufacturer a proportional bank of credits to what they have in California's bank. As discussed above, the MPCA estimates that a deposit of proportional credits would be equivalent to about five years' worth of compliance, far more than the one to two years of buffer the manufacturers maintain in their banks. Because of the difference between the one to two years of buffer credits and a potential for four years of buffer credits, is reasonable to assume that manufacturers would draw down that credit balance of a proportional credit bank instead of delivering

⁹⁸ California Code of Regulations, Title 13, § 1962.2(b)(1)(A) and (B)

⁹⁹ Alliance for Automotive Innovation presentation to MPCA in response to MPCA's proposed early action credit mechanism, February 6, 2020, slide 26.

¹⁰⁰ California Air Resources Board, Advanced Clean Cars Midterm Review, Appendix A, page A-9, https://ww2.arb.ca.gov/sites/default/files/2020-01/appendix_a_minimum_zev_regulation_compliance_scenarios_formatted_ac.pdf

EVs for sale in Minnesota in the first years of the ZEV standard. Providing proportional credits in this way would not be reasonable because it would undermine the purpose of the rulemaking.

Providing one year worth of credits is reasonable because it provides the buffer that the manufacturers say that they need to manage risk. However, since it is only one year worth of credits, it is reasonable to assume that the manufacturers will want to maintain that level of credits in their bank and will therefore continue to increase the EVs they deliver for sale in Minnesota to avoid unnecessarily using up their one-year buffer of banked credits. It is also therefore reasonable to assume that providing a one-time allotment equal to one year of credits would not substantively reduce the number of EVs delivered for sale in Minnesota. In addition, the proposed LEV rule ensures a minimum level of GHG emissions reductions, no matter how many EVs are delivered for sale; it is reasonable to provide manufacturers with a bank of credits that helps them manage risk without reducing the emissions benefits of the proposed rule.

The early action credit mechanism and the one-time credit allotment work in tandem to advance complimentary goals to ensure the success of the ZEV program in Minnesota. The early action credit mechanism encourages the adoption of EVs by recognizing the achievements of manufacturers before the ZEV standard goes into effect while the one-time credit allotment provides flexibility and certainty for manufacturers. A number of different iterations of both of these mechanisms were considered, but the proposed early action credit mechanism and the one-time credit allotment strike a reasonable balance between addressing concerns of the manufacturers and addressing the underlying goals of this rulemaking.

7. Regulatory analysis

This part addresses the requirements of Minn. Stat. § 14.131 (a), which require state agencies to address a number of questions in the SONAR. In some cases, the response will depend on a specific amendment being proposed and specific detail will be provided. However, for most of the questions, the MPCA's response can be general and will apply across all of the components of this rulemaking, regardless of the specific amendment being proposed.

A. Description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule

The purpose of this rulemaking is to adopt the LEV standards intended to reduce emissions from ICE vehicles and the ZEV standards to accelerate the adoption of EVs and help Minnesota reduce GHG and other air pollutant emissions. Affected parties are automobile manufacturers and dealers, individuals and groups that purchase new vehicles, related industries, and all Minnesotans. Some groups are affected directly and some indirectly. The following are categories of affected groups. See section 7(E) for an analysis of the costs and benefits of the proposed rule.

i. Automobile manufacturers

Automobile manufacturers would bear costs associated with this proposed rule. However, as has been assumed in past state and federal regulatory analyses of vehicle emission standards,¹⁰¹ it is reasonable to expect that most of these costs would be passed on to consumers who purchase vehicles, and who would also benefit from cost savings over the lifetime of the vehicle.

¹⁰¹For example, *Regulatory Analysis for Proposed Colorado Air Quality Control Commission Regulation Number 20, 5 CCR 1001-24, November 9, 2018*

Manufacturers are the only group directly regulated by this proposed rule. Manufacturers would need to ensure the vehicles being delivered for sale in Minnesota comply with the LEV standard. They would also need to ensure they are meeting the ZEV credit requirements. They would have some reporting requirements, as well.

ii. Automobile dealers

Automobile dealers may have some costs associated with this proposed rule. However, it is reasonable to expect that most of these costs would be passed on to consumers who purchase vehicles, and who would also benefit from cost savings over the lifetime of the vehicle. This assumption is in line with past analyses conducted by other states and the federal government.

Dealers are not directly regulated by this proposed rule, but they are the interface between the manufacturers and consumers and therefore may experience costs and changes to business. They may experience changes in requirements from manufacturers to ensure only LEV-certified vehicles are offered for sale to Minnesotans. They may also experience limitations on trading vehicles with dealers in other states if those dealers do not carry LEV-certified vehicles. In addition, they may need to invest in infrastructure, tools, and training to support increased EV sales.

iii. Individuals and groups that purchase new vehicles

Individuals and groups that purchase new vehicles would be likely to experience costs associated with increases in up-front costs of vehicles, but would also experience long-term savings from reduced fuel costs. People who purchase new vehicles and plan to register and title them in Minnesota would need to ensure their new vehicle is LEV-certified. Since in most cases dealers are the group that receives new vehicles from manufacturers and typically register and title new vehicles for the purchaser, dealers would help individuals ensure they are not purchasing a non-compliant vehicle.

New vehicle purchasers who choose to buy a new EV would benefit from the adoption of the ZEV standard because the rule encourages manufacturers to provide greater availability of EV models to Minnesotans. Since the ZEV standard would not limit new vehicle options for Minnesota consumers nor require anyone in Minnesota to buy an EV, the ZEV standard would not have any impact on vehicle purchasers who do not choose to purchase a new EV.

The proposed rule would have the same effect on all new vehicle purchasers, whether they are individuals or own vehicle fleets, such as local governments, businesses, and non-profit organizations.

iv. Related industries

Some industries related to vehicles may be indirectly affected by adoption of the proposed rule.

Organizations that manufacture, install, operate, and maintain EV infrastructure may experience increased demand for their products and services, and thus a benefit from the proposed rule.

Mechanics and others who work on vehicles may experience costs from the proposed rule. EVs tend to have less need for maintenance, which may affect demand for services from mechanics.

Companies that build components for vehicles that help cut GHG emissions may experience benefits from the proposed rule from increased demand for their products.

Electric utilities may see increased demand for electricity and thus a benefit from the proposed rule. They already incorporate EV adoption into their Integrated Resource Plans, but may need to adjust the scale of EV adoption in their planning. As EVs become more common, they may also see more interest in programs for time of use rates and EV charging in homes and businesses.

The petroleum industry may experience a cost associated with the proposed rule due to a reduction in

per-vehicle demand for gasoline and diesel fuels.

The proposed rule does not regulate biofuels or alter any existing biofuels blending requirements or other regulations. However, the biofuels industry may also experience a cost associated with the proposed rule due to a reduction in per-vehicle demand for liquid fuels into which biofuels such as ethanol and biodiesel are blended.

v. All Minnesotans

All Minnesotans would benefit from reduced emissions of GHGs and other pollutants. Vehicle tailpipe emissions from Minnesota's fleet are expected to decrease, and decreased fuel use would result in an added benefit of reduced upstream emissions from liquid fuel extraction, transportation, and production.

To the extent that ZEV may increase electricity demand in Minnesota, there could be downward pressure on electricity rates that would benefit all Minnesotans, regardless of whether they own an EV or not.¹⁰²

B. The probable costs to the Agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues

i. What are the costs to the MPCA of implementation and enforcement?

Other states who have adopted this rule have reported ease of implementation. The MPCA anticipates needing to hire one to two additional full time equivalent (FTE) employee(s) to conduct initial outreach to dealers, manufacturers, and the public; process data; track updates to the California regulations; manage compliance; and work with our compliance and enforcement unit and other state agencies when necessary. The MPCA budgets \$121,000 annually per FTE and therefore anticipate a staffing cost of \$121,000-\$242,000 annually.

ii. What are the costs to the other agencies of implementation and enforcement?

Another agency that may have some effects is the Department of Public Safety and the Division of Driver and Vehicle Services (DVS). In order to ensure new motor vehicles registered in Minnesota comply with the LEV standards, the MPCA would need to work with DVS on a mechanism to check emissions certifications during the registration process. DVS already has a statutory requirement that vehicles comply with CAA requirements to be registered and titled in Minnesota, and since this rule is simply an alternative federal standard, no statutory change would be needed, as LEV standards would trigger this requirement.¹⁰³ Most states add a check box to their registration forms. The MPCA is working with DVS to develop this mechanism for Minnesota. Initial discussions with DVS indicate they do not believe new staffing will be needed to integrate these new standards into their existing work. They also stated that they add new registration requirements almost every year, so adding a mechanism to check LEV compliance should not be more effort than other annual updates.

In addition, the MPCA would work with DVS on developing communication and education plans to ensure that dealers and Deputy Registrar Offices around the state know about the new rules and processes. DVS has systems in place to update these groups on changes, since there are typically annual changes to the registration system. The two agencies would also need to develop an implementation

¹⁰² This downward pressure on rates would be particularly likely to occur if electric utilities established programs that encouraged EV charging at times when electricity costs are lowest.

¹⁰³ Minn. Stat. § 168A.085, subd. 1 (2019).

plan for enforcement. In discussing this rule proposal with other section 177 states, those states have indicated they have run into very few compliance issues (less than five a year), especially after the first year or two. The MPCA does not anticipate significant compliance and enforcement burdens for either agency. Based on these conversations with DVS and the fact that DVS implements new registration requirements almost every year, the MPCA does not currently anticipate new costs to DVS beyond those typically required for their annual updates.

iii. What is the anticipated effect on State revenue?

Both the LEV and ZEV standards could have an impact on state tax revenues. The MPCA has analyzed the potential impact to state tax revenues (see Appendix 1 for the details of this analysis including data sources, methods, and assumptions). To the extent that the proposed rule would result in lower gasoline spending by Minnesota vehicle owners, the state would generate less revenue from its fuel tax; however, to the extent that LEV-certified vehicles and EVs have a higher up-front cost, this revenue would be made back through the motor vehicle sales tax and increased registration taxes over vehicle lifetimes. The annual state registration fee premiums for BEVs is another source of revenue for the state. The MPCA estimates that the loss in state revenues from fuel taxes would be fully offset by the gain in state revenues from sales taxes, registration taxes, and registration fee premiums. The MPCA's analysis indicates that the proposed rule may result in an average net gain of approximately \$9.2 million per year in state transportation revenue over the first 10 years of implementation. Minnesota's total tax revenue dedicated to transportation was about \$2.32 billion in 2019, and its total revenue from all taxes was \$23.5 billion in 2019. The estimated \$9.2 million increase in annual state revenue per year resulting from this rule represents less than 0.04% of the total tax revenue for Minnesota in 2019.

While the LEV standard is a GHG emissions standard, not a fuel economy standard, the primary method for reducing GHG emissions from vehicles is to improve fuel economy. Therefore, the LEV standard is likely to result in reduced per-mile fuel use and purchasing in Minnesota. Minnesota currently has a flat gas tax of \$0.285 per gallon: \$0.25 plus a \$0.035 debt service surcharge that is intended to partially cover the debt obligations for capital projects on the state's highway system. Based on the requirements of LEV and the requirements of the final SAFE rule, on average the owner of a LEV-certified vehicle would purchase approximately 50 gallons of gas per year less than the owner of a vehicle that meets future federal regulation under the SAFE rule. Based on the estimated number of new vehicle sales that would be impacted by the LEV standard over the MY 2025-2034 time frame, the MPCA estimates that the LEV standard would result in a reduction of approximately 700 million gallons of gasoline purchased by Minnesotans over these 10 years compared with if Minnesotans had instead been driving SAFE-certified vehicles. Assuming no changes to the \$0.285 per gallon fuel tax, this translates to an estimated total reduction in fuel tax revenue for the LEV standard over this time frame of approximately \$200 million.¹⁰⁴

EV owners experience fuel savings relative to owners of ICE vehicles. However, the LEV standard is an overall fleet average that includes EVs. Therefore, the fuel savings from EVs resulting from the ZEV standard are captured in the average fuel savings estimated to result from the LEV standard.

Currently BEV owners pay an annual premium of \$75 to register their vehicles in Minnesota. This compensates for a portion of the reduced state tax revenues from lower gasoline consumption. If BEV owners continue to pay a \$75 per year registration fee premium, over the 10-year time frame, this would result in an estimated \$18.5 million in increased state revenue for the ZEV compliance scenario

¹⁰⁴ It should be noted that while this is a loss in state revenue, it is not an overall cost as the loss of revenue to the state is exactly offset by the avoided costs to Minnesotan consumers, so that the money that does not go to the state remains in Minnesotans' pockets.

relative to the linear sales growth reference case.

Another portion of the reduced state revenue from gasoline taxes would be made up by increased sales tax revenues due to the generally higher purchase price of BEVs and PHEVs relative to ICE vehicles. The current Minnesota state motor vehicle sales tax rate is 6.5%. Based on the projected vehicle costs for BEVs and PHEVs relative to ICE vehicles in model years 2025-2034, the ZEV standard is estimated to result in about \$10 million in added sales tax revenue in Minnesota relative to the linear sales growth reference scenario over this 10-year time frame.

Furthermore, the higher purchase costs of LEV-certified vehicles would also lead to increased sales tax revenue for the state. The MPCA estimates that the average LEV-certified vehicle would cost the purchaser around \$47 in increased sales tax relative to a SAFE-certified vehicle (see Appendix 1 for details). Based on light-duty vehicle sales projections in Minnesota for model years 2025-2034, the MPCA estimates that the LEV standard would result in \$112 million in increased sales tax revenues over this time frame, offsetting a majority of the estimated \$200 million in lost fuel tax revenue resulting from the proposed rule.

Finally, as a result of the higher average purchase costs of both LEV-certified vehicles relative to non-LEV-certified vehicles and of EVs relative to ICE vehicles, both the LEV and ZEV standards will produce more vehicle registration tax revenue for the state. Based on light-duty sales projections in Minnesota for model years 2025-2034 along with estimated price premiums of LEV-certified vehicles over this time frame, the MPCA estimates that the LEV standard will result in \$135 million in increased vehicle registration tax revenues over this time frame. Based on projections of increased sales of BEVs and PHEVs along with estimated price differences between BEVs and PHEVs and ICE vehicles for model years 2025-2034, the MPCA estimates that that ZEV standard will result in \$9.5 million in increased vehicle registration tax revenues over this time frame.

These reductions in fuel tax revenue along with increases in sales tax revenue, vehicle registration tax revenue, and EV registration fee premiums sum to a potential average net increase of approximately \$9.2 million per year in state transportation revenues over the first 10 years of implementation. Although there is a high level of uncertainty and potentially incomplete information available to the MPCA in formulating these estimates, MnDOT modeling has also found that the combination of continuing current BEV registration premiums into the future and increased sales tax revenues and vehicle registration tax revenues from EVs will most probably continue to result in state revenue gains, even as EVs comprise a higher proportion of Minnesota's light-duty vehicle fleet than we project will result from the ZEV standard.¹⁰⁵

C. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule

The purpose of the proposed rule is to reduce GHG and other pollutant emissions from the transportation sector, specifically from passenger cars, light-duty trucks, and medium-duty vehicles. Addressing the negative impact of climate change will require many actions across both the public and private sector, and emissions standards and EVs are important tools to make progress toward these goals.

Emissions standards like LEV are an important tool for reducing air pollution emissions from vehicles.

¹⁰⁵ Minnesota Department of Transportation. *Electric Vehicles – Financial Outlook*. (2019) <http://www.dot.state.mn.us/sustainability/docs/ev-revenue-190419.pdf>. In this modeling exercise, MnDOT assumes that by 2030, EVs would comprise of more than 60% of Minnesota new light-duty vehicle sales and would consist of 20% of Minnesota's light-duty vehicle fleet.

Under the CAA, states that wish to adopt vehicle emissions standards that are more stringent than the federal standards have only one way of doing so. Under section 177 of the CAA, states that wish to adopt more stringent vehicle emission standards are only allowed to adopt the identical standards as California. Since section 177 requires that states adopt identical standards, Minnesota does not have the option to develop Minnesota-specific standards. In order to have more stringent vehicle emissions standards, Minnesota must adopt California's standards. Therefore there is no less-costly option than adopting the LEV standard.

Additionally, the MPCA is already participating in a variety of actions to increase EV adoption through non-regulatory means. The ZEV standard compliments these other actions and supports those investments by encouraging manufacturers to bring more EVs to the state. The Pathways report showed that current actions are not enough to achieve GHG emissions reductions from transportation and achieve substantial EV adoption growth. The ZEV standard does not force anyone to purchase an EV, and the MPCA's analysis (see section 7(E) and Appendix 1 for the full analysis) indicates there would be a net benefit for consumers in the adoption of this proposed rule. Since the proposed rule produces a net benefit and does not require Minnesotans to purchase an EV, the ZEV standard is not overly costly or intrusive.

Some commenters have recommended the state of Minnesota implement EV purchase incentives. To date, the Minnesota Legislature has not provided the authority, direction, or funding to any executive branch agency to offer such an incentive. The ZEV standard does not require the distribution of taxpayer funds and is therefore less costly to the state than a purchase incentive.

Reducing vehicle miles traveled is another important aspect to reducing vehicle pollution and has many additional public health benefits. Options for increasing public transit, multimodal transportation infrastructure, and other programs to reduce vehicle miles traveled are outside of the authorities of the MPCA. In addition, the Pathways report found that while reducing miles traveled has important co-benefits, it is one of the more difficult solutions for quickly reducing emissions because it requires substantial behavior changes.

Section 6 discusses the reasonableness of this rulemaking, including other options the MPCA explored before deciding to propose this rule.

D. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the Agency and the reasons they were rejected in favor of the proposed rule

Section 6 discusses the reasonableness of this rulemaking, including other options the MPCA explored before deciding to propose this rule. Section 7(C) also describes alternatives that the MPCA considered. Many actions by many stakeholders will be needed across Minnesota's economy to achieve GHG emission reductions and get on track to achieve our NGEA emission reduction goals. The proposed rule compliments and does not preclude these other efforts.

Section 177 of the CAA grants states the ability to adopt the same standards as California. Section 209 of the CAA prohibits states from developing their own vehicle emissions standards, separate from a California standard. Therefore, to have more stringent vehicle emissions standards, Minnesota has no alternative but to adopt California's standards. The MPCA has limited authority to otherwise reduce emissions from the transportation sector and, therefore, adopting the standards in this rule is the only appropriate mechanism available to the MPCA to reduce emissions.

E. The probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals

Part 6(A) identifies five categories of parties affected by this rule:

- i. Automobile manufacturers
- ii. Automobile dealers
- iii. Individuals and groups that purchase new vehicles
- iv. Related industries
- v. All Minnesotans

This part of the SONAR addresses the probable costs and benefits of this proposed rule for each of these categories of people. MPCA has conducted an analysis of the costs and benefits of this proposed rule. See Appendix 1 for the methods, assumptions, data sources, and detailed conclusions of this analysis.

Overall, the MPCA's analysis of the costs and benefits of this proposed rule has found a net benefit for adopting both the LEV and the ZEV standards.

i. Automobile manufacturers

Manufacturers are the only group directly regulated by this proposed rule. LEV-certified vehicles and EVs both cost more to manufacture than non-LEV ICE vehicles. However, it is assumed that vehicle technology and compliance costs borne by the manufacturers (and the new vehicle dealers discussed below) would be passed along to new vehicle purchasers in the form of higher purchase prices for LEV-certified vehicles and for EVs (see analysis in part 7(E)(iii)). Vehicle purchasers are also the group that would accrue any benefits from fuel savings from these vehicles. This assumption is consistent with analyses conducted by other states and the federal government when considering vehicle emissions standards.¹⁰⁶

Since this proposed rule is already being implemented in other states, there are no costs associated with research and development of new vehicles to comply with the requirements of the rule. There may be some marginal costs in staff time for increased tracking and reporting of vehicles delivered for sale in Minnesota. However, since this tracking and reporting is the same done for the other section 177 states, the MPCA does not anticipate that the manufacturers would need to hire new staff to manage this additional data. Manufacturers may need to increase marketing and advertising to sell more EVs to comply with the ZEV requirements; however, it is reasonable to assume that most or all of these funds would be shifted from money manufacturers are already investing in marketing and advertising other products in their lines.

The MPCA asked for estimates of costs to businesses for complying with the proposed rule during the RFC. The Alliance of Automobile Manufacturers and the Association of Global Automakers both commented on the RFC and neither stated specific costs they were concerned about bearing. The MPCA therefore anticipates minimal costs for manufacturers to comply with the proposed rule and that any costs borne by the manufacturers would be passed on to consumers.

ii. Automobile dealers

Dealers are not directly regulated by the proposed rule, but may incur costs as the interface between

¹⁰⁶ See for example, *Regulatory Analysis for Proposed Colorado Air Quality Control Commission Regulation Number 20, 5 CCR 1001-24, November 9, 2018*

manufacturers and consumers.

Potential costs to dealers may include marketing and advertising efforts to encourage EV purchasing. Training of both sales and service staff at dealerships is an ongoing process with any new model year introduction, but that training would need to reflect slightly different product characteristics and service needs, as well as a need to increase understanding about EVs, charging, and how to communicate with shoppers about them. As was the case for the vehicle technology and compliance costs borne by vehicle manufacturers, it is assumed that the costs borne by new vehicle dealers would be passed along to new vehicle purchasers.

Dealers offering EVs for sale for the first time may need to invest in infrastructure, training, and tools. The Minnesota Automobile Dealers Association (MADA) submitted comments during our RFC period stating, “Some manufacturers require dealers to make investments in infrastructure and personnel, costing upwards of \$25,000-50,000, to be authorized to sell EVs.”¹⁰⁷ In conversations with MADA, the MPCA requested more detail about these costs, including which manufacturers they apply to and a more specific list of what the costs cover. Specifics on these costs to dealers were not included in written comments received during the RFC or in subsequent discussions. In the absence of more detailed information, it seems that some dealers might be eligible for no- and low-interest loans from the MPCA for small- and medium-sized businesses looking to reduce pollution.

The MPCA acknowledges the potential costs for dealers to develop the infrastructure and expertise to sell EVs. These costs, however, would not be the result solely of this proposed rule. Manufacturers are announcing many new EV models to be released in the coming years and making statements such as the comment by the Auto Alliance that EVs are “an important component of the automaker mission.”¹⁰⁸ Similarly, MADA participates in Drive Electric Minnesota policy committee, which works “to advocate for policies and administration actions to jump start Minnesota’s EV market.”¹⁰⁹ These plans and statements indicate that the market is beginning to increase EV adoption even without the proposed ZEV standard and therefore the costs for dealerships associated with selling EVs are likely even without this proposed rule. The proposed rule provides a floor for EV deliveries in Minnesota and is intended to help accelerate adoption, but would not be the sole driver of increased EV adoption over the coming years. While the intent of this rule is to increase EV adoption in Minnesota more quickly, it is not possible to determine the cost for dealers specific to the adoption of this rule over the costs caused by market forces.

Dealers have also expressed concerns about lost sales resulting from LEV. A LEV-certified vehicle, on average, will be likely to have a higher purchase price than an otherwise-comparable federally-certified vehicle compliant with the final SAFE rule. The dealers have expressed concerns that these potential upfront cost increases could cause diminished sales from Minnesota dealers to people living in surrounding states or that increased upfront costs would cause Minnesotans to purchase fewer new vehicles. The exemption 7023.0250, subp. 2(E) allows dealers to sell non-LEV certified vehicles to purchasers who would register the vehicle out of state. This allows dealers near the state’s borders to address the needs of their out-of-state customers. In addition, because of Minn. Stat. 168A.085, subd. 1, Minnesotans would only be able to register vehicles in Minnesota that comply with LEV. Dealers in surrounding states would be able to carry compliant vehicles if they wish to sell to Minnesotans, but this provision may reduce the number of Minnesotans purchasing vehicles out of state. In addition, as noted below and in Appendix 1, studies have not shown a clear relationship between the upfront cost of

¹⁰⁷ Comment by MADA made during the RFC period, at page 4 (December 6, 2019)

¹⁰⁸ Comment by the Auto Alliance made during the RFC period, at page 1 (December 6, 2019)

¹⁰⁹ Drive Electric Minnesota, 2020 Minnesota Legislative Preview: Electric Vehicles, <https://www.driveelectricmn.org/2020-minnesota-legislative-preview-electric-vehicles/>

vehicles and sales, as vehicle purchases are influenced by many factors, including upfront cost, fuel economy, vehicle function and options, and the strength of the economy as a whole.

Dealers have also expressed concerns that it may be more difficult to trade vehicles with dealers in surrounding states. The MPCA is not able to determine the level of impact; it is unclear how many dealers surrounding Minnesota might stock LEV-certified vehicles, how many trades with out of state dealers could be replaced with trades in state, the costs associated with trading over longer distances, etc.¹¹⁰

The MPCA anticipates costs to dealers associated with the proposed rule would be passed on to consumers.

iii. Individuals and groups who purchase new vehicles

The category of new vehicle purchasers includes a wide range of groups. Individuals purchase new vehicles as do a wide variety of organizations, including businesses large and small; non-profit organizations; and levels of government large and small, state, local, and federal. All of these groups would experience essentially the same costs and benefits. The MPCA assumes in this analysis that all the costs to vehicle manufacturers and dealers that might result from this rule would be passed on to consumers. Consumers are also the group that accrues the benefits associated with operating LEV-certified vehicles and EVs.

The MPCA analyzed the costs and benefits of adopting the LEV and ZEV standards for the first 10 model years of implementation.¹¹¹ EVs are generally cheaper to own and operate over the life of the vehicles due in large part to fuel and maintenance saving and the increased purchase cost of LEV certified vehicles may be mostly or entirely offset by fuel savings over the life of the vehicles. Depending on the choice of discount rate, the analysis estimates that the proposed rule would result in between \$23 million average annual net consumer costs to \$48 million of average net consumer savings per model year over vehicles' lifetimes by model year 2034. The MPCA also estimates that over the first 10 model years of implementation, consumers would accrue between a total cost of \$236 million over vehicles' lifetimes to a total benefit of \$476 million.

The MPCA also analyzed the potential effects of a long-term economic downturn that could result from the current COVID-19 pandemic. Although the soonest these standards could take effect would be model year 2025, it is possible that the pandemic may have far-reaching and long-lasting economic repercussions that could affect the market for new vehicle sales, both ZEVs and ICE vehicles. It could also lead to future reduced fuel prices. The MPCA estimated that under most reasonable assumptions about future economic slowdowns, the consumer savings resulting from these standards are affected only slightly. Details of this analysis can be found in Appendix 1.

The MPCA analyzed the economic effects of the LEV and ZEV standards separately. Both standards would have economic impact on new vehicle purchasers. The mechanisms for these effects would be different for the LEV standard compared to the ZEV standard. Hence, this analysis first evaluates the likely costs and benefits of a LEV standard for purchasers and then considers the likely additional costs

¹¹⁰ In Colorado's LEV rulemaking, the state was also unable to determine what these costs might be. See *Regulatory Analysis for Proposed Colorado Air Quality Control Commission Regulation Number 20, 5 CCR 1001-24, November 9, 2018, page 27.*

¹¹¹ There are many variables that may impact when the proposed rules would go into effect if they are adopted. These variables include rulemaking timeline and the resolution of the litigation over California's waiver under section 209 of the CAA. This analysis assumes the earliest date by which the proposed rules could be in effect. Section 177 of the CAA provides that states must adopt the new standards at least two years prior to their implementation. Therefore, if MPCA adopts the proposed rules in early 2021, they would not be applicable for MY 2022, which begins on January 1, 2021, nor for MY 2023 or model year 2024, but will be applicable to MY 2025, which begins January 1, 2024.

and benefits of a ZEV standard.

In other words, the reference scenario for the LEV standard analysis is a future Minnesota without the LEV standard and with the anticipated federal standards instead, while the reference scenario for the ZEV standard analysis is a future Minnesota with a LEV standard already in place.

The MPCA's full analysis methods, assumptions, data sources, and conclusions can be found in Appendix 1.

Economic impact on new vehicle purchasers from the LEV standard

The MPCA analyzed the economic impact of adopting the LEV standard compared with a reference scenario that reflects the requirements of the final federal SAFE rule. Our analysis indicates that Minnesota consumers who purchase new vehicles would spend more up-front in the purchase of their vehicles, but would generally recoup this up-front cost from fuel cost savings over the lifetimes of their vehicles.

The analysis of consumer costs and benefits from adoption of the LEV standard was conducted based, in part, on analysis underlying the EPA's January 2017 Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation and the proposed SAFE rule as published in August 2018. This data was the best available when the MPCA was developing our analysis. On April 30, 2020, EPA and NHTSA published in the Federal Register their final SAFE rule and related regulatory analysis. The MPCA supplemented the consumer costs data from the EPA's January 2017 Final Determination with a fuel savings analysis that does compare the LEV standard to the final SAFE rule. Additionally, the MPCA compared our existing analysis against data provided in the final SAFE rule Final Regulatory Impact Analysis and found the conclusions to be very close to the conclusions of our existing analysis. In fact, the comparison indicated that the conclusions of our existing analysis featured here were more conservative than the conclusions drawn from the final SAFE rule regulatory analysis. Since the conclusions were similar and ours were conservative compared to the alternative methods, the MPCA determined it was not necessary to re-run our entire analysis to update it based on the final SAFE rule regulatory analysis. To learn more about the MPCA's analysis in versus the final SAFE rule regulatory analysis, see Appendix 1.

The LEV standard requires a GHG emissions reduction of approximately 5% annually from new vehicles from MY 2020 through MY 2025, plateauing in MY 2025. The final SAFE rule requires only 1.5% annual reductions in GHG emissions from MY 2021 through MY 2026. Once the LEV standard has reached its maximum stringency in model year 2025, the average up-front purchase price of a new LEV-certified vehicle may be \$900 to \$1,200 more than a SAFE-certified vehicle, depending on the vehicle size and type.¹¹² An average new LEV-certified vehicle in Minnesota is estimated to be approximately \$1,139 more than a new SAFE-certified vehicle, since more light-duty trucks are sold in Minnesota than passenger cars.¹¹³ Increased vehicle purchase prices also result in increased sales tax, which, based on

¹¹² Vehicle purchase prices of LEV-certified vehicles relative to SAFE-certified vehicles are based primarily on the analysis underlying the EPA's January 2017 Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation. Accessible at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100QQ91.pdf>. The MPCA also took into account the analysis in the SAFE rule Final Regulatory Impact Analysis, published in April 2020 and available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_safe_fria_web_version_200330.pdf.

¹¹³ The LEV standard allows manufacturers flexibility in applying technologies to meet emissions standards. Costs for these technologies vary based on vehicle size and type. Estimates of increased vehicle costs used in this analysis are averaged across average Minnesota vehicle sales, considering 75% of projected new vehicle sales are light-duty trucks and 25% are passenger cars.

the estimated increase in vehicle purchase prices, equate to an average of around \$50 per vehicle. These studies also indicate increases in annual costs for maintenance and insurance, averaging around \$22 per year.¹¹⁴ Finally, annual registration taxes are based on vehicle values, so, on average, higher priced LEV-certified vehicles will incur slightly higher registration tax costs. Over vehicle lifetimes, these estimated increased registration taxes total between \$67-\$74, depending on the choice of discount rate.

For our analysis, the MPCA held constant the number of vehicles sold annually for both the LEV scenario and the reference scenario. The MPCA considered how adopting the LEV standard might affect vehicle sales; however, studies have not shown a clear relationship between upfront costs of vehicles and vehicle sales or driving patterns. There are many factors that influence vehicle purchasing decisions, including upfront cost, fuel efficiency, vehicle options and functionality, and overall economic factors. EPA's Technical Assessment Report states, "It is difficult, if not impossible, to separate the effects of the Standards on vehicle sales and other characteristics from the impacts of macroeconomic forces on the auto market".¹¹⁵ Similarly, Consumer Reports submitted a comment that new (and used) car sales are mostly influenced by macroeconomic factors, such as the state and nation's gross domestic product, employment rates, inflation, and oil and gasoline prices, and not by governmental regulation.¹¹⁶

The LEV standard is a GHG emissions standard and requires more stringent GHG emissions reductions than the federal SAFE rule, thus requiring manufacturers to deliver cleaner vehicles for sale in Minnesota. The primary way manufacturers reduce GHG emissions to comply with these standards is to improve the fuel economy of their vehicles. Therefore, the proposed rule is likely to benefit new vehicle purchasers through savings from improved fuel economy.

Since vehicle purchase and sales tax costs are borne by the consumer at the time of purchase, but other costs (insurance, maintenance, registration taxes, and fuel) are borne over time, it is necessary to consider how Minnesotans discount future costs and benefits relative to the present. A "discount rate" is used to convert costs or benefits that will happen in the future into present value terms, which are how much the future costs or savings are worth to the consumer presently. For example, a 3% discount rate means the average consumer would value a \$100 cost or saving that will happen a year from now at \$97.08, \$94.26 two years in the future, and \$74.41 ten years in the future. Using a higher the discount rate represents a scenario where future costs or savings are less valued by the consumer in the present. Using a lower discount rate, in turn, represents a scenario where future costs or savings are more valued by the consumer in the present. When future costs and benefits are monetary, as is the case in this analysis, the discount rate is very similar to an interest rate in that it is parallel to how much interest the consumer could earn from deferring a cost into the future. The MPCA often assumes a 3% annual discount rate, which is close to current high-yield interest rates. Some federal guidance on cost-benefit analyses recommends using both 3% and 7% discount rates.¹¹⁷ The choice of a discount rate is fraught with complexity and involves judgements about how people value the future relative to the present. To bookend the analysis and provide a reasonable range of LEV economic impact, the MPCA analyzed the net costs and benefits of this proposed rule using both a 3% discount rate and a 7% discount rate.

For model year 2025, the MPCA's analysis estimates an average Minnesotan who purchases a new LEV-certified vehicle would save nearly \$200 in fuel costs annually compared to a SAFE-certified vehicle.

¹¹⁴ *Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation*, EPA-420-R-16-020 (November 2016). Accessible at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100Q3DO.pdf>.

¹¹⁵ *Draft Technical Assessment Report: Mid-Term Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025* (July, 2016) at 6-1.

¹¹⁶ *Consumer Reports comment during the RFC*, at pages 3-4 (December 6, 2019)

¹¹⁷ *Office of Management and Budget's Circular A-4*, https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/

Assuming a 3 percent discount rate, this annual savings translates to over \$1,700 of fuel cost savings over the life of the vehicle.

From the combination of increased vehicle technology costs; the increased taxes, insurance, and maintenance costs; and fuel savings, the MPCA estimated the overall per-vehicle net effect to Minnesota vehicle purchasers of a LEV-certified vehicle relative to the purchase of a SAFE-certified vehicle. At a 3% discount rate, we estimate the Minnesota purchaser of a MY 2025 LEV-certified vehicle would save an average \$186 over the life of their vehicle relative to an otherwise comparable SAFE-certified vehicle. At a 7% discount rate, we estimate that the vehicle purchaser would pay \$107 more for the LEV-certified vehicle over the lifetime of the vehicle (see Table 6). In subsequent model years, these estimates change slightly. For MY 2026 the cost savings of a LEV-certified vehicle goes down, in part because the SAFE rule does entail increased stringency, which will probably lead manufacturers to make fuel efficiency improvements in MY 2026 vehicles, leading to slightly less relative fuel savings over the lifetime of a LEV-certified vehicle. After MY 2026, when both the LEV and SAFE standards have plateaued, the consumer savings for a LEV-certified vehicle gradually increases with each model year due to projected gradual increases in gasoline prices. In every model year over the first 10 years of implementation of the LEV standard, however, we estimate a small net consumer savings using a 3% discount rate and a small net consumer cost using a 7% discount rate. Regardless of the choice of a discount rate or model year, these amounts are small relative to the overall costs of buying and owning a new vehicle, so the LEV standard essentially has a net neutral economic impact on Minnesota new vehicle purchasers.

Table 6: LEV per-vehicle for model year 2025 net cost (2018 dollars)

This table shows that at a 3% discount rate the average vehicle purchaser would save a net \$186 over the lifetime of the MY 2025 LEV-certified vehicle. At a 7% discount rate, the average vehicle purchaser would experience a \$107 net cost over the lifetime of the vehicle.

Discounting scenario	Vehicle technology cost	Taxes, insurance and maintenance	Fuel savings	Net cost
3%	\$1,139	\$389	\$1,713	-\$186
7%	\$1,139	\$353	\$1,384	\$107

Based on the MPCA’s projections of Minnesota annual vehicle sales, across the Minnesota economy, and assuming a 3% discount rate, the MPCA estimates the LEV standard would result in an annual average of approximately \$16 million of net consumer benefits over the lifetime of vehicles sold in a given model year over the first 10 model years of implementation. This equates to a total consumer benefit of approximately \$161 million over vehicles’ lifetimes for all vehicles sold in the first 10 model years of implementation. At a 7% discount rate, the MPCA estimates an annual average of approximately \$47 million of net consumer costs per model year over vehicles’ lifetimes over the 10-year time frame and a total consumer cost of approximately \$475 million for the first 10 model years of implementation. These values are small relative to the total costs of purchase and ownership of new vehicles in Minnesota every year, so the MPCA expects the LEV standard to have a close to net neutral effect on Minnesotans’ pocketbooks.

Economic impact on new vehicle purchasers from the ZEV standard

The MPCA analyzed the economic impact of adopting the ZEV standard in addition to the LEV standard, and compared a ZEV standard adoption scenario with a reference scenario where the LEV standard is already in place. Since the MPCA is proposing to adopt these two standards together, it is reasonable to compare the costs and benefits of purchasing and operating an EV to a LEV-certified vehicle, since that would be the alternative purchasing option for a Minnesotan. The ZEV standard requires vehicle

manufacturers to earn 2.5% more ZEV credits annually, from MY 2020 through MY 2025, plateauing after MY 2025.

The new vehicle purchasers who would be affected by this proposed rule are those who choose to purchase a BEV or PHEV. Currently, EVs have higher up-front costs compared with comparable ICE vehicles. These higher up-front costs also translate to higher sales tax and insurance costs. Studies indicate that BEVs will achieve cost parity with ICE vehicles, but that PHEVs are likely to always carry an up-front cost premium.¹¹⁸ EVs also require less maintenance, and thus have lower maintenance costs. In addition, EVs are more energy efficient and operate on electricity, which makes them less expensive to operate per mile.

Again, because some costs are paid at the time of vehicle purchase and others are realized over the lifetime of the vehicle, the MPCA used both a 3% and a 7% discount rate to convert future costs and savings into present value terms. An explanation of discounting is provided in the discussion of economic impact from the LEV standard.

The MPCA analyzed the per-vehicle net costs and benefits of a BEV and PHEV relative to an ICE vehicle certified to LEV standards. Even in the early years of the ZEV standard when up-front BEV costs are higher than ICE vehicles, fuel and maintenance cost savings more than offset increased vehicle purchase costs. As the up-front costs of EVs come down through the 2020s, the savings for vehicle purchasers increase. By MY 2034, the average savings over the life of an EV relative to an ICE vehicle is around \$12,400 over the lifetime of the vehicle, assuming a 3% discount rate. At a 7% discount rate, the average savings of a MY 2034 EV relative to an ICE vehicle is around \$11,000.

To understand the costs and benefits of the ZEV standard beyond a business-as-usual scenario of EV adoption, the MPCA analyzed the number of BEVs and PHEVs likely to be required for manufacturers to comply with the ZEV standard. Since the ZEV standard provides manufacturers with flexibilities in how to comply, the MPCA must estimate the number and type of EVs that manufacturers deliver for sale in order to comply with the rule. The ZEV standard requires manufacturers to have ZEV credits for a certain percentage of their sales annually. BEVs and PHEVs earn credits based on the number of miles they can drive on a full battery. In addition, since requirements are based on a percentage of vehicle sales, when overall vehicle sales go up, EV deliveries must increase also, and when overall sales go down, EV requirements also go down.

The MPCA is proposing two mechanisms for establishing an initial ZEV credit bank. The first would provide early-action credits to manufacturers at the same rate as they would earn under the standard. Because the early-action credit mechanism provides credits equivalent to what they would earn once the standard is implemented, the total number of vehicles required by the rule is the same with or without the early action credits. Additionally, the early-action credit mechanism is voluntary, so the MPCA cannot predict how many manufacturers might participate. The MPCA is also proposing to provide a one-time allocation of one year's worth of ZEV credits to each vehicle manufacturer with compliance obligations under this rule. Since manufacturers strive to maintain approximately one year of credits in their bank as a risk management tool, the MPCA does not anticipate this one-time allocation would substantively affect the number of EVs delivered for sale in Minnesota. For these reasons, the MPCA did not adjust our EV sales projections for this analysis based on these mechanisms.

The MPCA compared the ZEV standard compliance scenario to a scenario of EV sales that grow by the

¹¹⁸ Nic Lutsey and Michael Nicholas, *Update on Electric Vehicle Costs in the United States Through 2030*, The International Council on Clean Transportation (April 2, 2019). Accessible at: https://theicct.org/sites/default/files/publications/EV_cost_2020_2030_20190401.pdf.

same average increments they have grown since 2015. Table 7 shows the number of BEVs and PHEVs that the MPCA estimates would be needed annually to comply with the ZEV standard.

Table 7: Minnesota light-duty vehicle sales projections, EV linear sales growth reference scenario, and additional EVs needed for compliance with the ZEV standard

This table estimates total sales of BEVs and PHEVs necessary to meet ZEV requirements above linear projections for sales growth. ZEV requirements plateau in MY 2025, so the gap between linear growth and ZEV compliance shrinks after 2025.

Model year	Projected light-duty vehicle sales	Reference scenario linear EV sales growth projections				Additional EVs beyond the reference scenario needed to comply with ZEV standard		
		BEVs	PHEVs	Total	% of total light-duty vehicle sales	BEVs	PHEVs	Total
2025	253,385	5,611	1,799	7,410	2.9%	6,102	5,340	11,442
2026	251,104	6,166	1,945	8,111	3.2%	5,638	4,832	10,470
2027	247,840	6,721	2,091	8,811	3.6%	5,144	4,311	9,455
2028	243,379	7,276	2,236	9,512	3.9%	4,617	3,775	8,392
2029	237,538	7,830	2,382	10,213	4.3%	4,049	3,225	7,274
2030	230,649	8,385	2,528	10,913	4.7%	3,426	2,659	6,085
2031	224,883	8,940	2,674	11,614	5.2%	2,742	2,079	4,821
2032	222,634	9,495	2,820	12,314	5.5%	1,994	1,489	3,483
2033	226,641	10,050	2,965	13,015	5.7%	1,220	909	2,128
2034	237,067	10,604	3,111	13,716	5.8%	501	364	865

Based on the additional BEVs and PHEVs needed to comply with the ZEV standard and assuming a 3% discount rate, the MPCA estimates the ZEV standard would result in an average of \$32 million of vehicle lifetime benefits for each model year from 2025 to 2034 and a total consumer benefit of \$315 million over vehicle lifetimes for the first ten 10 model years. At a 7% discount rate, the total consumer benefit for the 10 model years from 2025 to 2034 are estimated to be \$239 million, or an average of about \$24 million in consumer savings per model year.

Projections of EV growth vary significantly and the ZEV standard would provide a backstop, requiring a minimum growth of EV sales in the state. To understand the costs and benefits of that backstop, the MPCA also analyzed the full benefits of all EVs that would be required under the proposed ZEV standard. We estimated the total benefit of all BEV and PHEV sales required by the ZEV standard through 2034, and again assuming a 3% discount rate, would reach \$184 million per model year over vehicles' lifetimes by model year 2034 and a total benefit of \$1.22 billion over vehicles' lifetimes for the 10 model years. With a 7% discount rate, the per-model year benefit over vehicles' lifetimes would reach \$163 million by model year 2034 and a total benefit of \$1.00 billion over vehicles' lifetimes for the 10 model years.

iv. Related industries

Section 7(A)(iv) identified categories of related industries that may be affected by the proposed rule. The MPCA has qualitatively considered these potential effects.

Organizations that manufacture, install, operate, and maintain EV infrastructure may experience increased demand for their services in order to charge increasing numbers of EVs, which could result in

economic benefits for these industries.

Mechanics and others who work on vehicles may experience impacts. EVs tend to require less maintenance, which may reduce demand for services from mechanics and negatively affect that industry. Mechanics may also need to obtain training and appropriate tools to be able to work on EVs, which may be a cost to that industry. However, even with the ZEV standard in place, there would still be millions of ICE vehicles on the road for many years to come. The MPCA acknowledges the need for ongoing future work to support mechanics through this transition. EV adoption is increasing with or without the proposed ZEV standard. The rule is intended to provide a floor of EV deliveries and accelerate adoption, but this transition is happening, albeit more slowly, even without this proposed rule. The costs to mechanics the transition to EVs are therefore not solely due to this proposed rule from the costs associated with this overall market shift.

Companies that produce components used to help vehicles comply with emissions standards and improve fuel economy may see increased demand for their products. The BlueGreen Alliance states that there are 16 manufacturers and assemblers that produce “hybrid electric drive system components, propulsion systems for full battery-electric vehicles, thermal management systems for electronic and power systems in advanced vehicles,” and states that these companies employ over 3,000 Minnesotans.¹¹⁹ As with costs to other related industries, the benefits of increased demand for these components in the future cannot be solely attributed to this proposed rule. In addition, the MPCA cannot parse the potential benefit to this industry of increased demand for these parts that might be the result of the proposed rule from the overall benefits resulting from broader market trends towards cleaner vehicles.

Electric utilities may see increased demand for electricity, which could increase their revenues. We estimate that the total estimated additional revenue resulting from increased electricity consumption for the utility sector to be about \$152 million over the first 10 years of the ZEV standard.

At the same time, the petroleum industry may see reduced revenue from a reduction in per-vehicle demand for gasoline and diesel. The proposed rule may lead to reduced gasoline consumption. We estimate a total reduction in gasoline consumption in Minnesota from the proposed rule to be about 700 million gallons over the first 10 years of implementation. The reduced gasoline sales would mean about a \$2.1 billion reduction in revenue for the petroleum industry.

While biofuels and the biofuels industry are not regulated by this rulemaking, the biofuels industry could experience reduced revenue from a reduction in per-vehicle demand for liquid fuels into which ethanol and biodiesel are typically blended. The MPCA does not have sufficient data about the revenue the biofuels industry and its sub-sectors make from gallons of blended gasoline and diesel liquid fuels sold in Minnesota to make any quantitative estimate of the potential impact on that industry. There are also many other factors that affect biofuel demand in Minnesota including blending requirements and efforts to support the biofuels industry such as the Governor’s Council on Biofuels.¹²⁰ This proposed rule does not affect existing blending requirements or other biofuels regulations and does not limit the state’s ability to take additional action to grow demand for biofuels.

It is important to note that these are high-level estimated changes in revenues for the electricity and petroleum sectors; lacking detailed information on these industries, we cannot estimate changes in

¹¹⁹ BlueGreen Alliance written testimony to a joint meeting of the Minnesota State Senate Committees on Environment and Natural Resources Finance and Environment and Natural Resources Policy and Legacy Finance, February 19, 2020, page 2. <https://www.bluegreenalliance.org/wp-content/uploads/2020/02/021920-KL-testimony-on-clean-cars-vFINAL.pdf>

¹²⁰ Governor’s Council on Biofuels, <https://www.mda.state.mn.us/environment-sustainability/governors-council-biofuels> (accessed 7/13/2020).

profits for these sectors.

There may also be macroeconomic impacts to Minnesota's economy as a whole. Studies in other states have shown that adopting LEV and ZEV standards is likely to result in small overall increases in the states' gross domestic product (GDP) and the states' total employment. Most recently, Synapse Energy Economics, Inc. studied the likely macroeconomic effects of the adoption of LEV and ZEV standards in Colorado.¹²¹ The analysis accounted for the effects associated with increased up-front costs of lower-emitting vehicles, reduced gasoline expenditure, and increased spending on electricity, and found that the rule would result in average annual increases of approximately \$72 million in Colorado's GDP and an increase of 1,700 jobs in the state. Based on the composition of Minnesota's economy and general similarities to Colorado's economy, we would expect similar macroeconomic effects of LEV and ZEV standards in Minnesota. Moreover, another recent study for Minnesota, but not specifically analyzing the impact of a ZEV standard, found overall net social and economic benefits from increased adoption of EVs in Minnesota.¹²²

v. All Minnesotans

The proposed rule would affect all people who breathe Minnesota's air, as well as all people who are affected by climate change. The MPCA analyzed the effects of the proposed rule on emissions related to the transportation sector. The details of our analysis including methods, assumptions, data sources, and detailed conclusions can be found in Appendix 1.

The MPCA's analysis of emissions effects examines GHG emissions, as well as PM, NO_x, and NMOG. In this analysis, the MPCA compared the emissions impacts of adopting the proposed standards (Clean Cars Minnesota scenario) to emissions from implementation of the final SAFE rule (Reference scenario). The analysis used the same assumptions of vehicle sales as the economic analysis discussed in section 7(E)(iii).

GHG emissions

As discussed in 7(E)(iii), the LEV standard requires a GHG emissions reduction of approximately 5% annually from MY 2020 through MY 2025, plateauing in MY 2025, compared to the final SAFE rule, which makes the federal GHG emissions requirements for 2021 to 2026 model year LDVs less stringent. See 7(E)(iii) for estimates of BEV and PHEV sales needed to comply with the ZEV standard. Since the LEV standard includes a fleet average requirement, the emissions benefits of the EVs required under the ZEV standard are captured in the emissions benefits calculations for the LEV standard. The analysis also examines the emissions from the electricity generation needed to fuel EVs.

The MPCA estimates the proposed rule would result in a total emissions benefit of 8.4 million tons of GHGs reduced over the first 10 model years of implementation of the proposed rule, measured in carbon dioxide equivalents (CO₂e) and including both the tailpipe emissions from vehicles and the upstream emissions from the power sector and extracting, processing, and transporting fuel (called well-to-wheel emissions). Our analysis estimates the proposed rule would reduce tailpipe GHG emissions by 7.1 million tons over the first 10 model years of implementation. Emissions benefits of the proposed rule accumulate over time, since each year old vehicles with higher emissions are replaced by lower-emitting LEV-certified ICE vehicles, BEVs, or PHEVs. Each year's emissions benefit, therefore, is greater than the previous year's. The MPCA's analysis estimates that by 2034 annual well-to-wheel emissions benefits would be 1.4 million tons of GHGs. The MPCA estimates GHG emissions benefits will continue to grow

¹²¹ Synapse Energy Economics, Inc., *Macroeconomic Analysis of Clean Vehicle Scenarios for Colorado* (July 12, 2018).

¹²² M.J. Bradley & Associates, *Plug-In Electric Vehicle Cost-Benefit Analysis: Minnesota* (July 2018).

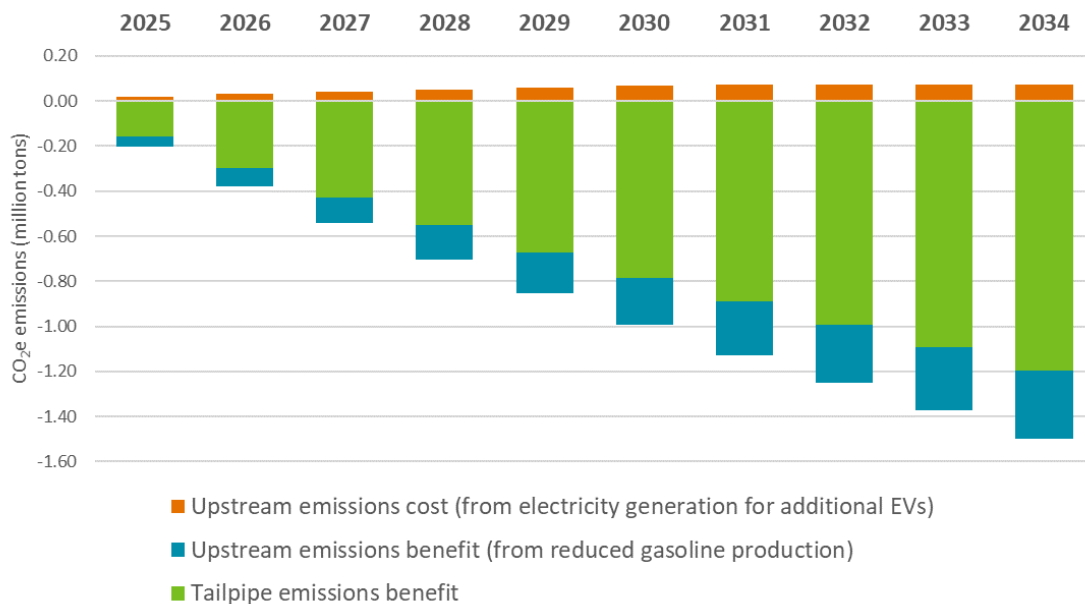
beyond 2034 until sometime in the 2040s.

To compare to sectors as identified in the MPCA’s GHG emissions inventory and to compare emission reductions to the NGEA goals, we must look just at tailpipe emissions.¹²³ The MPCA’s analysis estimates the proposed rule would result in a reduction of 1.2 million tons of tailpipe emissions in the year 2034, which equates to a 2.7% reduction from 2005 transportation GHG emission levels, and a 3.5% reduction from 2005 levels of surface transportation emissions. Reducing GHG emissions by 1.2 million tons is the approximate equivalent of removing 259,252 cars from the road for a year.¹²⁴

As discussed in 7(E)(iii), GHG emissions standards generally result in improvements in fuel economy. As a result of increased fuel economy of ICE vehicles and more EVs sold in Minnesota, the MPCA estimates that the proposed rule would result in a net reduction of 1.3 million tons of GHG emissions over the 10 years to 2034 from a reduction in upstream liquid fuel extraction, transportation, and production and considering increases in power sector fuel extraction, transportation, and production (Figure 10).

Figure 10: GHG emissions costs and benefits from the proposed rules over time

CO₂e emissions benefits from the proposed rules accumulate over time, since each year old vehicles are replaced by lower-emitting, more fuel-efficient LEV-certified ICE vehicles, BEVs, or PHEVs. Even with an estimated increase in GHG emissions from electricity generation for additional EVs required by the rules, emissions benefits from tailpipes and a reduction in gasoline production vastly exceed emissions costs. The net cumulative well-to-wheel CO₂e emissions benefit of the rules is estimated to be 8.4 million tons reduced over the first 10 years of implementation.



The MPCA then analyzed the economic value to the expected reduction of GHG emissions from the proposed rule. The MPCA uses the federal social cost of carbon (fSCC) produced by the Interagency Working Group (IWG). The fSCC is the most credible estimate of the global damages from the emissions of one ton of carbon in any given year. The fSCC values are comprised of four different damage cost values for GHG emissions in each year through 2050. Based on a 3% discount rate, the middle discount

¹²³ MPCA’s GHG inventory captures categorizes emissions where they are produced. So emissions from the power sector are attributed to the power sector, no matter the end use of the electricity.

¹²⁴ EPA, “Greenhouse gas equivalencies calculator,” <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator> (accessed 8/24/2020)

rate used by the IWG, the damage value for a ton of CO₂ emitted in 2020 is \$42 (in 2007 dollars, which is equivalent to \$51 in 2019 dollars).¹²⁵ Using the 3% discount rate fSCC values, MPCA estimates the total reduction of GHG emissions resulting from the proposed rule over the first ten years of implementation would equate with an economic benefit of approximately \$500 million.

Emissions of other pollutants

The proposed rule would also affect emissions of other pollutants caused by transportation. NMOG and NO_x, along with direct PM emissions, contribute to the formation of fine particle pollution in Minnesota's air, which contributes to numerous respiratory and cardiovascular health effects, including premature death. NMOG and NO_x also contribute to the formation of ground-level ozone, a lung irritant that exacerbates asthma and can contribute to hospitalizations, emergency room visits, and even premature death.

The SAFE rule does not roll back the passenger car and light-duty truck emissions standards for non-GHG pollutants. Therefore, the analysis assumes the same emissions rates for the Clean Cars Minnesota scenario and the Reference scenario for these pollutants. However, the LEV standards become more stringent for PM starting in model year 2025 and growing increasingly stringent through model year 2028, at which point they plateau. The MPCA's analysis also estimates the upstream emissions from the power sector and extracting, processing, and transporting fuel.

As with GHGs, emissions benefits of other pollutants from the proposed rule grow over time, since each year old vehicles with higher emissions are replaced by either lower-emitting and more fuel efficient LEV-certified ICE vehicles, BEVs, or PHEVs. The MPCA's analysis indicates that the proposed rule would result in an annual emission reduction of 998 tons of NMOG + NO_x and 637 tons of PM in 2034 (Figures 11 and 12). These emissions reductions equate to 6,059 tons of NMOG + NO_x and 3,245 tons of PM reduced over the first 10 years of implementation. Of these estimates, 3,032 tons of PM reductions would occur from the tailpipe of the vehicles. The rest is from reductions in upstream emissions. Since LEV and SAFE fleet-average NMOG + NO_x tailpipe standards are equivalent, all NMOG + NO_x benefits occur upstream.

¹²⁵ "Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866" Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. (August 2016). https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf.

Figure 11: NMOG + NO_x emissions costs and benefits from the proposed rules over time

NMOG + NO_x emissions benefits from the proposed rules accumulate over time, since each year old vehicles are replaced by more fuel-efficient LEV-certified ICE vehicles, BEVs, or PHEVs. Even with an estimated increase in NMOG + NO_x emissions from electricity generation for additional EVs required by the rules, emissions benefits from a reduction in gasoline production vastly exceed emissions costs. The net cumulative well-to-wheel NMOG + NO_x emissions benefit of the rules is estimated to be 6,059 tons reduced over the first 10 years of implementation.

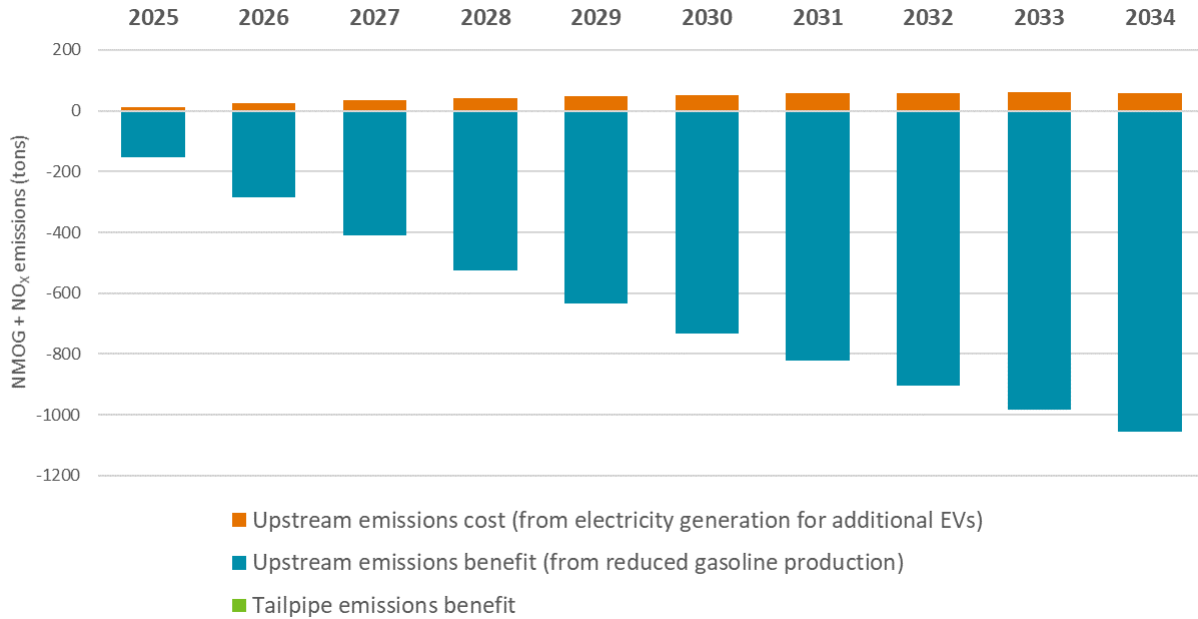
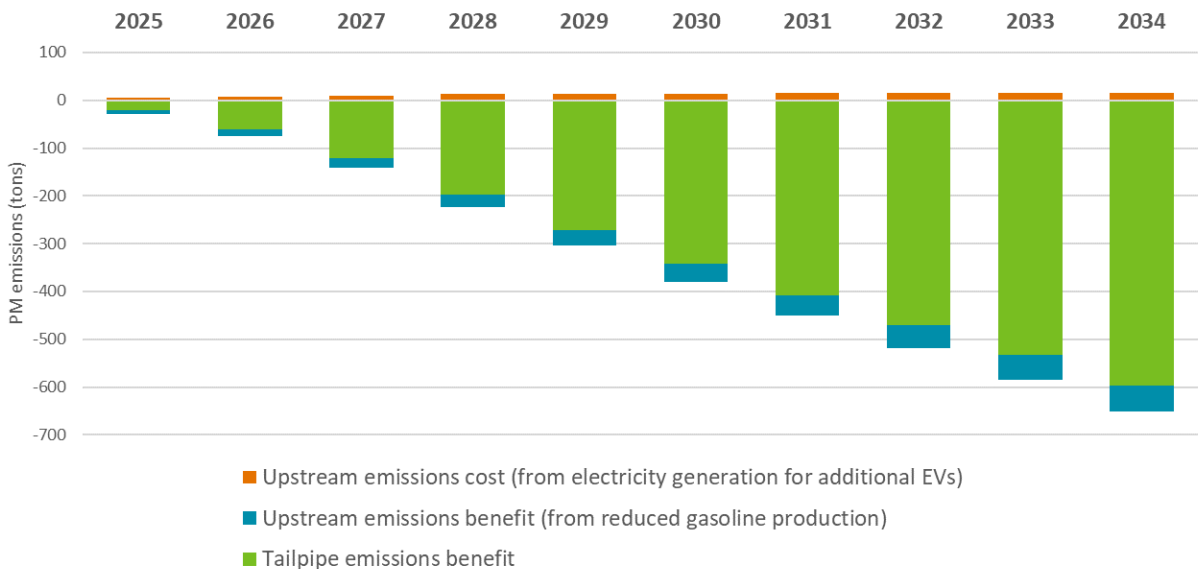


Figure 12: PM emissions costs and benefits from the proposed rules over time

PM emissions benefits from the proposed rules accumulate over time, since each year old vehicles with higher emissions are replaced by either lower-emitting LEV-certified ICE vehicles, BEVs, or PHEVs. Even with an estimated increase in PM emissions from electricity generation for additional EVs required by the rules, emissions benefits from tailpipe emissions and a reduction in gasoline production vastly exceed those emissions costs. The net cumulative well-to-wheel PM emissions benefit of the rules is estimated to be 3,245 tons reduced over the first 10 years of implementation.



As discussed in section 2 of this SONAR, the “Life and breath” report produced by the MPCA and MDH found that air pollution is a significant cause of health problems for Minnesotans, including hospitalizations and premature deaths.¹²⁶ The report found that air pollution contributes to the deaths of between 2,000 and 4,000 Minnesotans annually, as well as approximately 500 hospital stays and 800 emergency room visits. Minnesota’s transportation sector is the single largest emitter in the state of the pollutants that cause these health impacts, including PM, NO_x, and NMOG. Reductions of emissions of these pollutants from Minnesota’s roadways would contribute to improved air quality and public health outcomes in Minnesota.

Health benefits analysis

Unlike reductions in GHG emissions, which provide global benefits, lower emissions of NMOG, NO_x, and PM result in reductions of harmful health impacts regionally and locally to the sources of those emissions. The MPCA has modeled the expected health benefits resulting from the reduced tailpipe and upstream emissions of these non-GHG pollutants. The majority of these health benefits will occur in Minnesota and virtually all of them will occur within the continental U.S. Over the first 10 years of implementation of these standards, the MPCA has estimated that these emissions reductions could prevent between 62-348 premature deaths from the respiratory and cardiovascular health impacts of air pollution. Additionally, numerous less severe health outcomes caused by air pollution, including emergency room visits, hospital admissions, non-fatal heart attacks, acute bronchitis, respiratory symptoms, asthma exacerbation, and work-loss days, could also be avoided as a result of these standards. The economic value of all these avoided health impacts is estimated to be between \$560 million to \$3.2 billion. See Appendix 1 for details of MPCA’s health benefits analysis.

Power sector benefits

Studies have indicated that increased EV adoption may lead to lower electricity rates for all electricity users, not just EV owners. The rate reductions would result from making more efficient use of electricity capacity by charging EVs during times of low demand, in particular at night. A recent report from Synapse Energy Economics (Synapse) analyzed increased EV penetration in Minnesota and concluded that “new EV load [in Minnesota] means greater electricity sales, which should push down average rates as long as the marginal costs of serving additional load are lower than the average costs.”¹²⁷ In nearly all Minnesota scenarios considered by Synapse, higher EV adoption led to lower electricity rates.

F. The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals

The alternative of not conducting this rulemaking would result in business as usual from Minnesota’s transportation sector. Simply put, the cost of not adopting the LEV and ZEV standards in Minnesota, would be foregoing all of the net benefits that the proposed rule is expected to result in and that are described in detail in section 7(E).

As was demonstrated in the recently released report, Pathways to Decarbonizing Transportation,

¹²⁶ “Life and breath: How air pollution affects health in Minnesota,” David Bael and Kathy Raleigh.

<https://www.pca.state.mn.us/air/life-and-breath-report>

¹²⁷ Pat Knight et. al., *Making Electric Vehicles Work for Utility Consumers*, Synapse Energy Economics Inc. (November 25, 2019).

business as usual will result in increases in GHG emissions from transportation and will prevent Minnesota from achieving its Next Generation Energy Act goals. Minnesota would also not have a mechanism to ensure federal regulatory actions do not erode the expected emission reductions from motor vehicles.

In addition, MPCA and MDH's recent "Life and breath" report found that air pollution contributes to the deaths of between 2,000 and 4,000 Minnesotans annually, as well as approximately 500 hospital stays and 800 emergency room visits. Transportation is the largest emitter of air pollutants that contribute to these negative health outcomes. Not adopting the LEV and ZEV standards would result in business-as-usual for air pollution emissions from transportation and avoid potential public health benefits from reduced pollution exposures.

Section 7(E) presents our findings on the costs and benefits to Minnesotans of adopting the proposed rule. We found the benefits to Minnesotans exceed the costs, in terms of direct economic benefits to Minnesota vehicle purchasers. Additionally, there are likely benefits to all Minnesotans if increased electricity demand and consumption exerts downward pressure on electricity rates. Furthermore, all Minnesotans would benefit from positive macroeconomic effects on Minnesota's economy in the forms of increases in state GDP and employment. MPCA did not quantify potential macroeconomic effects, however analyses in other states¹²⁸ and previous analysis of increased EV adoption in Minnesota¹²⁹ provide evidence of these potential benefits of adopting the proposed rule.

G. An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference

Minn. Stat. § 14.131, requires the MPCA consider the proposed amendments in relation to the corresponding federal requirements. In addition to this requirement to benchmark with the federal program, there is a requirement in Minn. Stat. § 116.07, subd. 2, (f), that requires the MPCA to benchmark with the federal program and also with other states bordering Minnesota and with other states within U.S. EPA Region 5. The assessment is discussed in section 9(F).

The proposed LEV and ZEV standards are fully compliant with all existing federal regulations and the CAA. In fact, because of the way the CAA is written, once a waiver is granted for more stringent vehicle emission standards, "such State standards shall be treated as compliance with applicable Federal Standards..."¹³⁰ This means that, once the applicable CAA waiver is in force and the effective date of the rule has been noticed, the standards to be implemented would be akin to federal standards.

That said, one of the needs identified in section 2 is preventing backsliding on environmental protections. In April 2020, the EPA finalized the SAFE rule to weaken the federal standards, preventing Minnesota from realizing the emissions benefits of the previous federal standards, which we had relied on to support statewide emissions reductions goals. Adopting the LEV standard is intended to prevent this rollback of environmental standards in Minnesota. The reasonableness of preventing backsliding is outlined in section 6.

H. An assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule

¹²⁸ Synapse Energy Economics, Inc., *Macroeconomic Analysis of Clean Vehicle Scenarios for Colorado* (July 12, 2018).

¹²⁹ M.J. Bradley & Associates, *Plug-In Electric Vehicle Cost-Benefit Analysis: Minnesota* (July 2018).

¹³⁰ CAA, Sec. 209(b)(3)

Minn. Stat. § 14.131 defines “cumulative effect” as “the impact that results from incremental impact of the proposed rule in addition to the other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor but collectively significant rules adopted over a period of time.”

By incorporating regulations by reference, the rule is minimizing the cumulative effect of complying with new air pollution control programs by using regulatory programs already in place. Once the standards are effective, the proposed rule amendments would align Minnesota’s state air quality rules with the rules that are already in effect. Incorporating the requirements by reference ensures that the state rules do not overlap or add new requirements that could be considered cumulative with the existing requirements.

Minnesota is joining a program in use by 14 states and the District of Columbia for the LEV standard and 12 states for the ZEV standard. The burden to comply with this proposed rule rests on the automobile manufacturers. Incorporating the regulations by reference would extend the applicability of existing federal air pollution control rules. By adopting this proposed rule, Minnesota is extending the geography of the applicability of the rule, but is not creating new standards that require manufacturers to develop technologies. Manufacturers would have additional reporting, but we have taken care to ensure it differs in no way from what is already required under existing reporting programs. For the proposed ZEV component, reporting does not differ from what is required in other states.

I. The SONAR must also describe the Agency’s efforts to provide additional notification under section 14.14, subdivision 1a, to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made

A description of the MPCA’s efforts to provide this additional notification is provided in section 10.

J. The Agency must send a copy of the SONAR to the Legislative Reference Library when the notice of hearing is mailed under section 14.14, subdivision 1a

As identified in the Notice Plan (section 10) the MPCA will satisfy this requirement and provide appropriate documentation in its submittal of the rulemaking record to the OAH.

8. Environmental justice policy

In Minnesota, Black, Indigenous, and People of Color as well as lower-income individuals are exposed to higher levels of air pollution as a result of an ongoing history of structural racism and inequitable policies. Policies such as racial covenants, red lining,¹³¹ and the destruction of Black communities to build Interstates 94¹³² and 35,¹³³ as well as zoning and permitting decisions that concentrate pollution sources in communities of color and under-resourced communities continue to harm these

¹³¹ For one example of these racially motivated policies, see the Mapping Prejudice project at <https://www.mappingprejudice.org/index.html>.

¹³² MNOPEDIA, “Neighborhood Resistance to I-94, 1953-1965,” <https://www.mnopedia.org/event/neighborhood-resistance-i-94-1953-1965>. Also MnDOT, *Rethinking I-94, “I-94 Documentary, Part One – Interstate 94: A History and Its Impact,”* <https://www.dot.state.mn.us/i-94minneapolis-stpaul/background.html> (accessed 7/23/2020)

¹³³ A Public History of 35W, <https://35w.heritage.dash.umn.edu/> (accessed 7/23/2020)

communities.¹³⁴ These inequities are particularly evident in the distribution of air pollution from vehicles.¹³⁵ These racially motivated policies that privileged white residents have had lasting effects on communities of color and lead to disparities in air pollution. These communities continue to be placed at greater risk of negative health impacts from traffic's pollution, noise,¹³⁶ and physical hazards, such as traffic accidents.¹³⁷

The MPCA is dedicated to implementing a framework to advance environmental justice and ensure equitable benefits of pollution controls and reductions in Minnesota. In addition to being a core goal of the MPCA, a 1994 Executive Order issued by President Clinton directed all federal agencies to include achieving environmental justice as part of their mission. This order builds on Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, or national origin. All entities that receive federal funding are required to comply with the Civil Rights Act. Therefore, as a recipient of federal funding, the MPCA must implement this environmental justice directive. The MPCA developed a policy for environmental justice that closely mirrors the U.S. EPA's policy. The MPCA's policy, last revised in 2012, states:

"The Minnesota Pollution Control Agency will, within its authority, strive for the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies.

Meaningful involvement means that:

- *People have an opportunity to participate in decisions about activities that may affect their environment and/or health.*
- *The public's contribution can influence the regulatory agency's decision.*
- *Their concerns will be considered in the decision making process.*
- *The decision-makers seek out and facilitate the involvement of those potentially affected.*

The above concept is embraced as the understanding of environmental justice by the MPCA."

As explained in the Environmental Justice Framework, when undertaking rulemaking, the MPCA considers how the effects of a proposed rule are distributed across Minnesota and works to actively engage all Minnesotans in rule development. This review of the impact and meaningful involvement are provided in this section of the SONAR. These analyses are not required under the Administrative Procedures Act (Minn. Stat. § 14), but are included in all SONARs prepared by the MPCA.

¹³⁴ Institute on Metropolitan Opportunity, University of Minnesota, "Redlining in the Twin Cities in 1934: 1960s and Today," <https://umn.maps.arcgis.com/apps/MapSeries/index.html?appid=8b6ba2620ac5407ea7ecfb4359132ee4> (accessed on 7/27/2020)

¹³⁵ Gregory C. Pratt, et al., "Traffic, Air Pollution, Minority and Socio-Economic Status: Addressing Inequities in Exposure and Risk," <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4454972/>

¹³⁶ Tsegaye Habte Nega, et. al., "Traffic Noise and Inequality in the Twin Cities, Minnesota," <https://www.tandfonline.com/doi/full/10.1080/10807039.2012.691409>

¹³⁷ MDH, Traffic in Minnesota, <https://data.web.health.state.mn.us/traffic> (accessed 7/23/2020)

A. Disproportionate environmental impacts

The MPCA's Environmental Justice Framework calls for an analysis of how a proposed rule may affect communities of color and under-resourced communities as one step towards dismantling the deeply rooted structural racial and economic inequities that cause these communities to be disproportionately burdened with pollution. The following analysis estimates the air pollution benefits for these communities that the MPCA anticipates would result from the adoption of the Clean Cars Minnesota rule. See Appendix 1 for detailed discussion of the methods and data sources behind this equity analysis.

i. Inequitable air pollution exposure

Historically, racially motivated policies caused Black, Indigenous, and People of Color communities and under-resourced communities in Minnesota to be segregated from white communities and disproportionately located in high traffic areas near busy roadways.¹³⁸ This results in exposure to a disproportionate amount of concentrated exhaust and emissions containing pollutants linked to respiratory health issues, including asthma. Housing segregation, the result of discriminatory housing and lending policies, underpins many of the environmental disparities we see today. A history of redlining, racial covenants, and inequitable highway routing has put the homes in these communities near busier roads. These structural inequalities built into Minnesota's public systems continue to harm Black, Indigenous, and People of Color communities. Implementation of LEV and ZEV standards would help reduce emissions from passenger cars, light-duty trucks, and medium-duty vehicles, and, in turn, improve the quality of air Minnesotans breathe every day, especially in the high-traffic areas into which racially motivated policies have directed Black, Indigenous, and People of Color.

It has been widely documented that under-resourced populations and Black, Indigenous, and People of Color communities generally bear disproportionate burdens of air pollution relative to the rest of the state and country.¹³⁹ This was a finding of MPCA's and MDH's "Life and breath" report¹⁴⁰ as well as numerous peer-reviewed studies.¹⁴¹ There has been particular research in Minnesota showing that inequities in the health burden of air pollution is particularly apparent for transportation emissions. Low-income Minnesotans and Minnesotan communities of color are more likely to live near heavy-traffic roadways and are thus breathing more vehicle pollution than the population of Minnesota as a whole.

¹³⁸ See *Mapping Prejudice* project at <https://www.mappingprejudice.org/index.html>.

See also: Myron Orfield, et. al., "Why are the Twin Cities so segregated?"

<https://www.law.umn.edu/sites/law.umn.edu/files/why-are-the-twin-cities-so-segregated-2-26-15.pdf>

MNOPEDIA, "Neighborhood Resistance to I-94, 1953-1965," <https://www.mnopedia.org/event/neighborhood-resistance-i-94-1953-1965>. Also MnDOT, *Rethinking I-94*, "I-94 Documentary, Part One – Interstate 94: A History and Its Impact,"

<https://www.dot.state.mn.us/i-94minneapolis-stpaul/background.html> (accessed 7/23/2020)

A Public History of 35W, <https://35w.heritage.dash.umn.edu/> (accessed 7/23/2020)

¹³⁹ MPCA, *Disproportionate impacts in Minnesota*, <https://www.pca.state.mn.us/air/disproportionate-impacts-minnesota> (accessed 7/24/2020)

¹⁴⁰ "Life and breath: How air pollution affects health in Minnesota," David Bael and Kathy Raleigh.

<https://www.pca.state.mn.us/air/life-and-breath-report>

¹⁴¹ See, for example: Clark, et. al. "National Patterns in Environmental Injustice and Inequality: Outdoor NO₂ Air Pollution in the United States," <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0094431>

See also, Rachel Morello-Frosch and Russ Lopez, "The riskscape and the color line: examining the role of segregation in environmental health disparities," <https://pubmed.ncbi.nlm.nih.gov/16828737/>

See also, Tessum, et. al., "Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure," <https://www.pnas.org/content/116/13/6001>

A 2015 study by MPCA researchers¹⁴² on inequities in exposure and health risk to pollution from traffic found that lower-income communities and communities of color in Minnesota are exposed to higher levels of air pollution from on-road sources. The study also found that compounding this inequity is the fact that the people most impacted by traffic also tend to own fewer vehicles and produce smaller pollution footprints by driving less and being more likely to carpool, use public transit, and get around using other car-free modes.

A recent report by the Union of Concerned Scientists also examined who is most affected by emissions from on-road vehicles in Minnesota and found that “PM_{2.5} pollution¹⁴³ burden from cars, trucks, and buses is inequitably distributed among racial and ethnic groups in the state. People of color experience an undeniable ‘pollution disadvantage.’”¹⁴⁴

ii. Areas of concern for environmental justice

As a screening tool for prioritizing areas with the potential for disproportionate environmental impacts, the MPCA uses U.S. Census Tracts as a geographic unit to identify areas of concern for environmental justice.¹⁴⁵ These areas include:

- Tribal lands
- Census Tracts with at least 50% of the population identifying as Black, Indigenous, and people of color
- Census Tracts with greater than 40% of household incomes below 185% of the Federal poverty level

iii. Equity analysis

This equity analysis identifies where elevated traffic emissions of PM_{2.5} in Minnesota are occurring today and the areas that would benefit most from cleaner vehicles in the future. While there are hundreds of pollutants emitted by vehicles,¹⁴⁶ this analysis focuses primarily on the emissions of PM_{2.5}. The analysis focuses on PM_{2.5} because of its well-understood and documented health effects, and because the proposed rule specifically targets PM_{2.5} emission reductions as part of the PM LEV standards. Details of the MPCA’s methodology is available in Appendix 1.

The MPCA estimated air pollution concentrations from light-duty vehicle traffic volumes on roadways across Minnesota and found that light-duty vehicle traffic contributes between 0.1 µg/m³ of PM_{2.5} in remote rural areas and up to roughly 4 µg/m³ near the busiest roadways in the Twin Cities Metropolitan Area (Figure 13). At the high end, 4 µg/m³ represents about one third of the federal air quality standard for PM_{2.5}, which is currently set at a level of 12 µg/m³.

¹⁴² Gregory C. Pratt, et al., “Traffic, Air Pollution, Minority and Socio-Economic Status: Addressing Inequities in Exposure and Risk,” <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4454972/>

¹⁴³ PM_{2.5}, also commonly referred to as “fine particles” or “fine particulate matter,” are airborne particles with diameters less than 2.5 micrometers. Because of their small size, these particles have the ability to penetrate deep into the respiratory system and into the bloodstream. This is why PM_{2.5} generally has far more severe and widespread health impacts than larger particles.

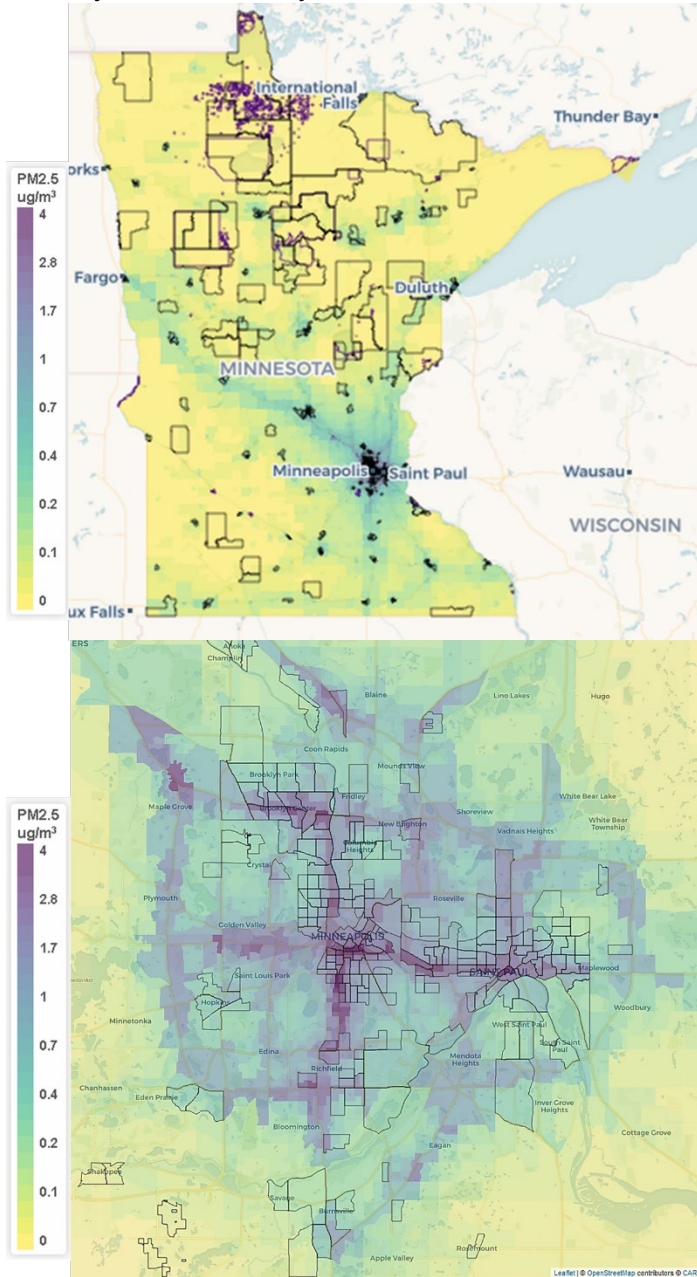
¹⁴⁴ “Who Breathes the Dirtiest Air from Vehicles in Minnesota,” Maria Cecilia Pinto de Moura, Union of Concerned Scientists (February 3, 2020) <https://blog.ucsusa.org/cecilia-moura/who-breathes-dirtiest-air-from-vehicles-minnesota>.

¹⁴⁵ More about MPCA’s environmental justice framework, including maps of all areas of concern for environmental justice in Minnesota, can be found at www.pca.state.mn.us/EJ.

¹⁴⁶ EPA, “Expanding and updating the master list of compounds emitted by mobile sources – phase III: final report,” February 2006, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P1004LIZ.PDF?Dockey=P1004LIZ.PDF>.

Figure 13: Modeled PM_{2.5} pollution concentrations from light-duty vehicle traffic

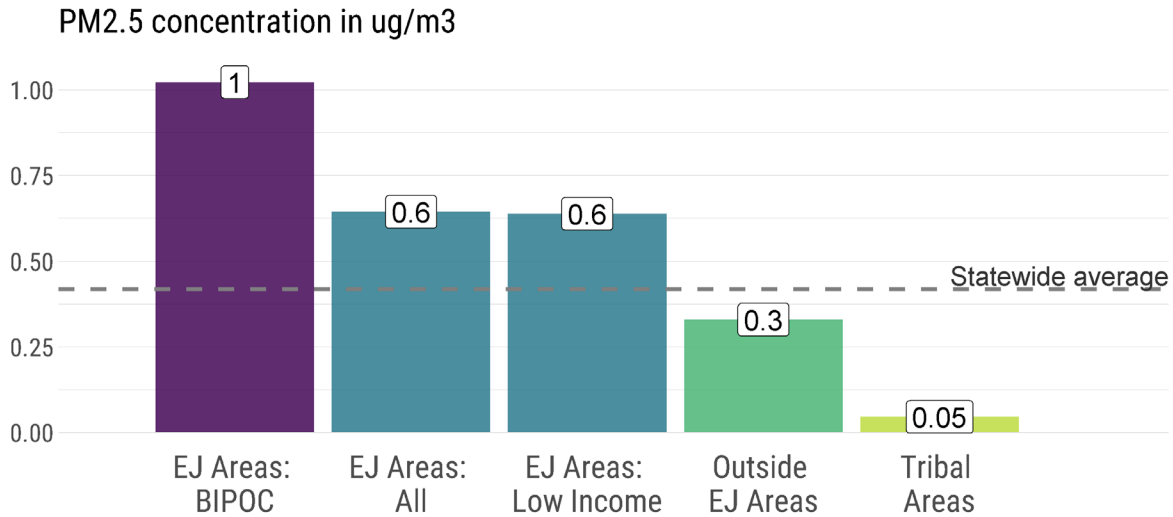
Modeling results show light-duty vehicle traffic contributes to between 0.1 µg/m³ of PM_{2.5} in remote rural areas and up to roughly 4 µg/m³ near the busiest roadways in the Twin Cities Metro Area. The amount of traffic pollution (yellow to blue shading) is overlaid with MPCA's areas of concern for environmental justice (outlined shapes in grey) and Tribal boundaries (outlined shapes in purple), showing the alignment between vehicle pollution and areas of concern for environmental justice.



When looking at where the highest light-duty vehicle traffic emissions occur, we find higher modeled concentrations of air pollution in Census Tracts identified as areas of concern for environmental justice, and especially in those Census Tracts with higher proportions of residents identifying as Black, Indigenous, and People of Color, as can be seen in Figure 14.

Figure 14: Higher light-duty vehicle traffic pollution in areas of concern for environmental justice

This figure shows the average modeled PM_{2.5} concentrations from light-duty vehicle traffic for areas of concern for environmental justice. The concentrations are higher for areas of concern for environmental justice in general, and even more so for areas with higher proportions of Black, Indigenous, and people of color.



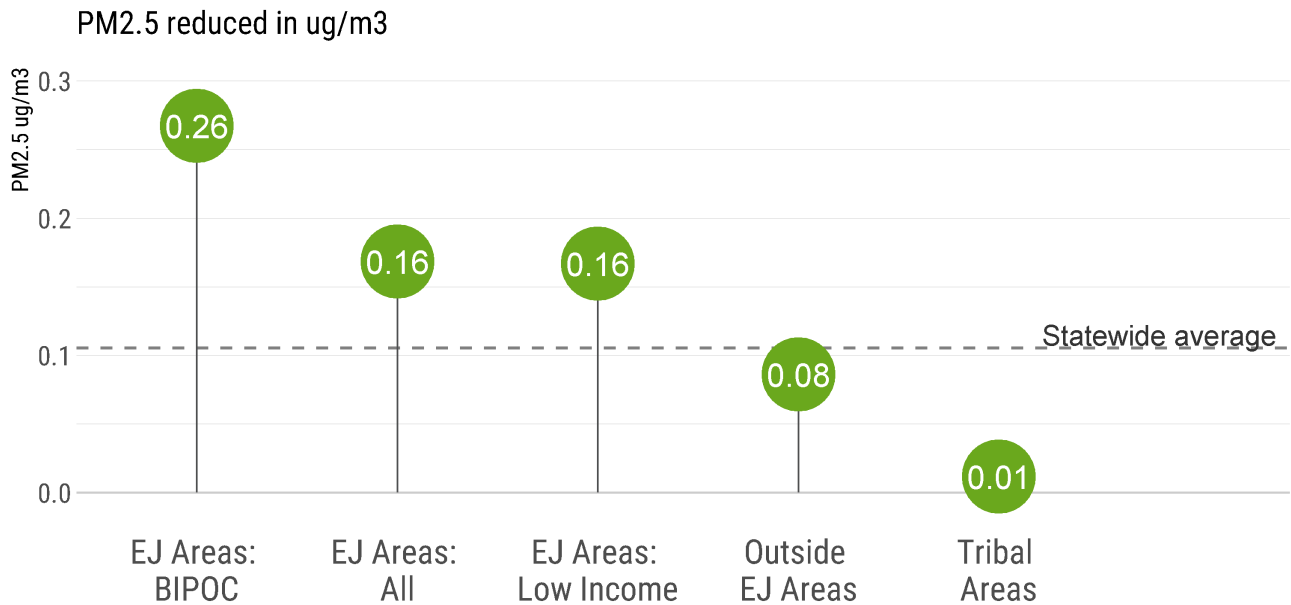
Ref: MNDOT 2014 traffic data; EPA's AERMOD model

While emission benefits from the proposed rule are expected in the first year of implementation, the rule's benefits will continue to grow as the share of new cars increases in the fleet. By 2034, MPCA's analysis estimates the proposed rule would result in an annual reduction of 530 tons of PM_{2.5} emissions compared to the reference (business as usual) scenario (see Section E for emissions benefits estimates). Based on current light-duty vehicle traffic, this reduction is equivalent to 25% of the total PM_{2.5} emitted in one year from light-duty vehicles. Depending on an area's light-duty vehicle traffic density, the improvement in air pollution from cleaner vehicles will result in a range of pollution benefits. In remote low-traffic areas with less light-duty vehicle traffic-related air pollution, the decrease in PM_{2.5} may be less than 0.01 µg/m³, while reductions in areas with higher traffic density are expected to approach 1.0 µg/m³.

By distributing the emission benefits from Clean Cars Minnesota in proportion to current light-duty vehicle traffic patterns we find the areas of concern for environmental justice would see the greatest reductions in PM_{2.5} pollution, especially in areas with higher proportions of residents who are Black, Indigenous, and People of Color (Figure 15). Tribal lands are mostly in rural parts of the state where roads have low volumes of traffic. Since those areas have lower levels of light-duty vehicle traffic and therefore lower levels of traffic-related PM_{2.5}, they may experience lower than average air quality benefits.

Figure 15: Greater pollution benefits for areas of concern for environmental justice, PM_{2.5} reduced in 2034

The chart below shows the average annual PM_{2.5} air concentration reductions in units of µg/m³ that are estimated to result from the proposed rule in year 2034. The air quality benefits are higher for areas of concern for environmental justice in general, and even more so for areas with higher proportions of Black, Indigenous and people of color. Areas of the state, including Tribal lands, with lower light-duty vehicle traffic volumes and therefore lower light-duty vehicle traffic-related PM_{2.5} concentrations are anticipated to experience smaller reductions in PM_{2.5} from vehicles.



Ref: MNDOT 2014 traffic data; EPA's AERMOD model

Certain land uses, such as hospitals, schools, nursing homes, and daycares concentrate people who are more vulnerable to the harmful effects of air pollution due to age or health conditions. Important services like hospitals and daycares are often sited near major roads and transport hubs to make them more accessible. These siting decisions can mean that people who use these services, who are often more vulnerable to the effects of air pollution, may be exposed to higher levels of light-duty vehicle traffic-related air pollution. For this reason, reductions to light-duty vehicle emissions will benefit some people who are most vulnerable to air pollution. In this analysis, the MPCA examined the potential effects of the proposed rule on air quality for these types of sensitive land uses and how those benefits are distributed for different parts of the state.

Sensitive land uses are areas or places used by individuals that are more vulnerable to health risks from exposure to poor air quality. For example, individuals older than 65 years of age are more susceptible to air pollution-related illnesses such as stroke, asthma, heart disease, lung cancer, and other respiratory diseases. Similarly, individuals with pre-existing medical conditions, such as people admitted to hospitals and other healthcare facilities, are more prone to developing air pollution-related illnesses. We evaluated four institution types that provide public services to populations more vulnerable to air pollution: licensed hospitals, daycares, elementary schools, and nursing homes.

Through our analysis, the MPCA found that sensitive land uses that serve areas of concern for environmental justice are more often near high-traffic roadways (Table 8) and therefore more often exposed to higher levels of PM_{2.5} from light-duty vehicle traffic (Table 9).

Table 8: Sensitive land uses for areas of concern for environmental justice more often near high traffic roads

The table below shows the percent of each of the services that are located near high light-duty vehicle traffic. The

percentages increase for services near areas of concern for environmental justice in general, and even more so for areas with higher proportions of Black, Indigenous, and people of color.

Land Use	Statewide Count	Outside EJ Areas	EJ Areas: Low Income	EJ Areas: BIPOC	Tribal Areas
Licensed Hospitals	134	57%	65%	90%	20%
Elem. Schools	1,302	27%	44%	58%	20%
Daycares	1,815	47%	51%	66%	20%
Nursing Homes	374	43%	45%	58%	13%

Table 9: Light-duty vehicle traffic PM_{2.5} is higher for sensitive land uses near areas of concern for environmental justice

The table below shows the average modeled PM_{2.5} concentrations in units of µg/m³ from light-duty vehicle traffic for each of the sensitive land uses. The concentrations are higher for services near areas of concern for environmental justice in general, and more so for services near areas having higher proportions of Black, Indigenous, and people of color.

Land Use	Outside EJ Areas	EJ Areas: Low Income	EJ Areas: BIPOC	Tribal Areas
Licensed Hospitals	0.5	0.7	1.1	0.1
Elem. Schools	0.3	0.6	1	0.02
Daycares	0.3	0.7	1	0.1
Nursing Homes	0.4	0.7	1.2	0.04

The MPCA’s analysis also estimates that sensitive land uses in areas of concern for environmental justice would likely see greater than average PM_{2.5} exposure benefits as a result of the Clean Cars Minnesota rule (Table 10).

Table 10: Estimated PM_{2.5} reduction benefits of Clean Cars Minnesota for sensitive land uses in 2034

The table below shows the average modeled PM_{2.5} air concentration reduction in µg/m³. The air quality benefits are higher for the services near areas of concern for environmental justice in general, and more so for areas having higher proportions of Black, Indigenous, and people of color.

Land Use	Outside EJ Areas	EJ Areas: Low Income	EJ Areas: BIPOC	Tribal Areas
Licensed Hospitals	0.13	0.18	0.28	0.03
Elem. Schools	0.08	0.15	0.25	0.01
Daycares	0.08	0.18	0.25	0.03
Nursing Homes	0.1	0.18	0.3	0.01

In conclusion, the equity analysis indicated that communities that are disproportionately burdened with air pollution are anticipated to benefit most from this proposed rule, although their air pollution exposure will remain higher than the statewide average. The Clean Cars Minnesota rule would help begin to close the gap in air pollution exposure from vehicles and other sources between communities of concern for environmental justice and the rest of the state, but is only one step among many that will be needed to achieve equitable air quality.

B. Meaningful involvement

In order to meet the directive to strive for “meaningful involvement,” the MPCA works to seek out and facilitate the involvement of those potentially affected by the proposed rule, particularly those populations that have historically not been as engaged in the public process.

As described in Section 4, there have been many opportunities for stakeholder and community involvement throughout the development of the proposed rule. Part of the MPCA’s outreach focused on trying to hear from underrepresented voices. We reached out to the MPCA’s Environmental Justice Advisory Group (EJAG) – an advisory group composed of 16 members representing various community groups, non-profit organizations, and environmental organizations – to share information on the rulemaking, offered to answer questions and take input, and to ask that they share information about commenting and public meetings in their communities. The EJAG is a valuable resource both for providing input and offering suggestions, as well as helping MPCA connect with communities of which the members are a part. We also held one of our public meetings in Minneapolis at a space in North Minneapolis, accessible by public transit, and which is an area of concern for environmental justice.

The MPCA has a policy to coordinate and consult with tribal governments and offer opportunities for early input on actions taken by the MPCA. MPCA staff briefed local tribal representatives at their quarterly Minnesota Tribal Environmental Council meeting on this proposed rule and sought input from them. We provided them with information on the proposal and provided periodic email updates on the rulemaking’s progress and next steps. Some tribal representatives participated in our technical meetings, as well.

9. MPCA-specific statutorily required analysis

The law also requires state agencies to analyze several other factors as part of their rulemaking process. This section addresses the other statutory requirements beyond those outlined in the APA, specific to the MPCA.

A. Performance-based rules

Minnesota Stat. § 14.002 requires state agencies, whenever feasible, to develop rules that are not overly prescriptive and inflexible, and rules that emphasize achievement of the MPCA's regulatory objectives while allowing maximum flexibility to regulated parties and to the MPCA in meeting those objectives.

In every rulemaking the MPCA considers how it might meet the statutory directive to support performance-based regulatory systems and has often included performance-based concepts in the state rules. However, in this case, the MPCA is limited in how it can apply performance-based concepts while still ensuring that Minnesota's standards are identical to the California standards and therefore meet the requirements of the CAA. The most effective way to ensure compliance with the CAA, from the perspective of regulated parties as well as from the MPCA's perspective as the regulatory agency, is to incorporate the California standards by reference. Adopting the same standards as are required by California benefits the regulated community by establishing a clear and consistent air quality program that directly corresponds to the program as it is being implemented elsewhere in the country.

The LEV and ZEV standards themselves are designed to provide flexibility for manufacturers. For example, the ZEV standard gives manufacturers flexibility to develop and sell eligible vehicles, so each manufacturer can develop its own compliance strategy. Credits can be banked for future use so manufacturers can give themselves a buffer for future years where they might experience a dip in sales. Credits can also be bought and sold, so manufacturers can choose to not develop any EVs and instead comply by purchasing credits from other manufacturers.

In addition, the MPCA is proposing a voluntary, flexible early action credit system to allow manufacturers to choose to earn credits before the requirements of the rule begin. One of the goals of this program is to ensure manufacturers have flexibility in the first years of implementation, as intended by the rule. By offering early action credits that accumulate at the same levels as offered by the rule once it is enforced, MPCA is offering flexibility without reducing the emission reduction outcomes intended by the proposed rule.

The LEV standard also provides flexibility by allowing manufacturers to comply through a fleet averaging calculation that allows the manufacturer to achieve greater reductions from some vehicle models than others and choose what technology is right for which application. There are separate fleet-wide emission standards for passenger cars, light-duty trucks, and medium-duty vehicles. The rule provides flexibility for manufacturers by using a vehicle footprint-based calculation for determining the manufacturer's fleet-wide average. Under this system, the fleet-wide average requirement for a manufacturer who sells a higher percentage of larger trucks or cars would be less stringent than if they sold a higher percentage of smaller trucks or cars. This flexibility allows manufacturers to sell the types of vehicles that meets the needs of their customers while achieving overall emissions reductions. The LEV standards provide additional flexibilities including banking and trading of credits across model years and trading of credits between manufacturers. Additionally, manufacturers have the option of demonstrating compliance with the GHG standards across California and all the section 177 states rather than demonstrating compliance on a state-by-state basis.

B. Consideration of economic factors

In exercising its powers, the MPCA is required by identical provisions in Minn. Stat. § 116.07, subd. 6, and Minn. Stat. § 115.43, subd. 1 to give due consideration to:

...the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result there from, and shall take or provide for such action as may be reasonable, feasible, and practical under the circumstances...

The MPCA has met the requirements of this statute by the discussions provided in section 7(E) regarding the possible economic effect of the proposed rule.

C. Consult with Minnesota Management and Budget on local government impact

As required by Minn. Stat. § 14.131, the MPCA will consult with Minnesota Management and Budget (MMB). The MPCA will send MMB copies of the documents that are sent to the Governor's office for review and approval on the same day they are sent to the Governor's office. This will occur before publishing the Notice of Hearing on the proposed rule amendments. The documents will include: the Governor's Office Proposed Rule and SONAR Form, the proposed rule, and the SONAR. The MPCA will submit a copy of the cover correspondence and any response received from MMB to the OAH at the hearing or with the documents it submits for Administrative Law Judge review.

D. Impact on local government ordinances and rules

Minn. Stat. § 14.128, subd. 1, requires an agency to make a determination of whether a proposed rule would require a local government to adopt or amend any ordinances or other regulation in order to comply with the rule.

The state air quality standards are not implemented at the local level and therefore, no changes to local ordinances or regulations would be required in response to the proposed amendments. The MPCA does not anticipate that the adoption of these requirements into state rules would result in the need to adopt or amend an ordinance to comply with the requirements incorporated by reference.

E. Costs of complying for small business or city

As required by Minn. Stat. § 14.127, subds. 1 and 2), the MPCA has considered whether the costs of complying with the proposed rule in the first year after the rule takes effect would exceed \$25,000 for any small business or small city. The MPCA has determined that the cost of complying with the proposed rule in the first year after the rule takes effect would not exceed this cost threshold, for the reasons described below.

Due to the unique circumstances affecting the effective date of this rule, it is reasonable to assume that the "first year after the rule takes effect" would be the first year that manufacturers would be required to comply with the standards, or the year following the effective date of the rule, as discussed above. Regardless of the year selected, however, the MPCA believes that no manufacturer would be eligible for small business status under the statute and, even if one was, that compliance costs would not exceed \$25,000 for any one business.

Compliance obligations under this proposed rule are placed on vehicle manufacturers, not vehicle

buyers such as small businesses or cities. Further, since MPCA is proposing to adopt existing standards and is structuring the rule so that reporting requirements are similar to most other section 177 states, the MPCA does not anticipate that there are any manufacturers, regardless of size,¹⁴⁷ that would have any new, substantive costs beyond any that they are already managing. Comments from the manufacturers in this docket did not cite any specific potential costs of compliance related to this proposed rule, which supports the MPCA's assessment of compliance costs.

The proposed rule does not impose compliance obligations on dealers. However, the MPCA has heard concerns from dealers about potential costs that manufacturers may impose on them in order to accommodate the sale of more EVs. Though some dealers may see additional costs in order to accept more EVs, those are not compliance costs for the purpose of this rulemaking since the proposed rule places no regulatory compliance obligation on dealers. Additionally, while the proposed rule is intended to make more EVs available in Minnesota sooner than would otherwise be expected, automobile manufacturers have made clear their intent to increase EV availability. Therefore, not all costs associated with increasing EV sales can be attributed to this proposed rule. See section 7(E) of this SONAR for discussion of those potential costs.

Under the proposed rule, small businesses and cities are no different than any other consumer and do not face compliance costs. Once the rule is effective, these entities would need to purchase LEV-certified vehicles for any new vehicle purchase, but this is no different for any other consumer who chooses to purchase a new vehicle. Similarly, the costs and benefits outlined in section 7 of this SONAR would apply to any small businesses and cities as well as to the general public.

F. Differences with federal and other state standards

Minn. Stat. § 116.07, subd. 2, requires that for proposed rules adopting air quality, solid waste, hazardous waste, or water quality standards, the SONAR must include an assessment of any differences between the proposed rule and existing federal standards adopted under the CAA, title 42, section 7412(b)(2); Clean Water Act, United States Code, title 33, sections 1312(a) and 1313(c)(4); and the Resource Conservation and Recovery Act, United States Code, title 42, section 6921(b)(1); similar standards in states bordering Minnesota; and similar standards in states within the US Environmental Protection Agency (EPA) Region 5; and a specific analysis of the need and reasonableness of each difference.

See section 7(G) of this SONAR for discussion of differences between the proposed rule and federal regulations.

Minnesota has taken a leadership role in addressing climate change and would be the first state in the region to adopt these standards; no state bordering Minnesota has adopted them. MPCA's 2019 GHG inventory and MnDOT's 2019 Pathways report show that we are not on track to reach our NGEA GHG emission reduction goals and transportation is the largest emitter of GHG emissions in the state. No states bordering Minnesota have similar GHG emission reduction targets. While some states in Region 5 have GHG reduction targets, they have not taken substantive steps towards achieving those targets. It is reasonable for MPCA to adopt rules to address our state-specific goals.

10. Notice plan

The APA (Minn. Stat. § 14) and the OAH rules (Minn. R. ch. 1400) govern how state agencies must adopt

¹⁴⁷ California defines small volume manufacturers based on their vehicle sales in California and those manufacturers have less-stringent LEV requirements and no ZEV requirements. MPCA is not proposing here to require any eligible small manufacturer to comply with different LEV/ZEV requirements in Minnesota.

administrative rules. This includes providing required notifications to the general public and affected stakeholders, various state agencies, the legislature, and the Office of the Governor. Minn. Stat. § 14.131 also requires that the SONAR describe how the MPCA provided additional notification of the rulemaking to potentially affected parties, if applicable.

Specifically, Minn. Stat. § 14.131 states that the SONAR:

“describe the agency's efforts to provide additional notification under section 14.14, subd. 1a, to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made.”

This section addresses how the MPCA will provide the required notifications and additional notification. It also identifies how the MPCA will comply with providing notice as required by Minn. Stat. § 115.44, subd. 7.

A. Required Notice

i. Request for comments

For this rulemaking, the first notice, required by Minn. Stat. § 14.101, is the Request for Comments (RFC). The MPCA published the RFC on Planned New Rules Governing Passenger Vehicle Greenhouse Gas Emissions, Minn. R. ch. 7023 in the *State Register* on October 7, 2019. On the same day, MPCA staff also sent an electronic bulletin to the GovDelivery subscriber lists for Clean Cars Minnesota, AirMail Air Quality Regulatory and Technical News, MPCA Environmental Justice Issues, and New Rulemaking Announcements (6,934 recipients in total), in order to notify interested stakeholders of the public comment period. The MPCA also issued a notification to the Clean Cars Minnesota subscriber list at least four days ahead of each of the six public meetings scheduled to share information on this rulemaking.

In addition, the MPCA:

- Posted the RFC, the same day it was published in the *State Register*, on the MPCA's Public Notice webpage at <https://www.pca.state.mn.us/public-notices>.
- Posted information about the planned new rules, the same day the RFC was published in the *State Register*, on the MPCA's Clean Car Minnesota rule-specific webpage at <https://www.pca.state.mn.us/air/clean-cars-mn-rulemaking>.

ii. Remaining required notifications

The remaining required notifications are listed below with a description of how the MPCA will comply with each.

- 1) **Minn. Stat. § 14.14, subd. 1a.** On the day the proposed rule is published in the *State Register*, the MPCA will send an electronic notice, using GovDelivery, with a hyperlink to electronic copies of the Notice of Hearing on the proposed rule amendments, SONAR, and proposed rule to all parties who have registered with the MPCA for the purpose of receiving notice of rule proceedings. Any parties within this group that have requested non-electronic notice will receive copies of the Notice and the proposed rule in hard copy via US Mail. Both the electronic and US Mail notice will be sent at least 33 days before the end of the public comment period.
- 2) **Minn. Stat. § 14.116.** The MPCA intends to send a cover letter with a hyperlink to electronic copies of the Notice of Hearing on the proposed rule amendments, SONAR and the proposed rule amendments to the chairs and ranking minority party members of the legislative policy and budget committees with jurisdiction over the subject matter of the proposed rule. The timing of

this notice will occur at least 33 days before the end of the comment period as it will be delivered via US Mail.

- 3) **Minn. Stat. § 14.131.** The MPCA will send a copy of the SONAR to the Legislative Reference Library in accordance with Minn. Stat. § 14.131 when the Notice required under Minn. Stat. § 14.14, subd. 1a, is sent. This Notice will be sent at least 33 days before the end of the comment period.

In addition, a copy of the Notice, proposed rule amendments and SONAR will be posted on the MPCA's Public Notice webpage at <https://www.pca.state.mn.us/public-notices>.

The following notices are required under certain circumstances; however, they do not apply to this rulemaking and will not be sent:

- 1) **Minn. Stat. § 14.111.** If the rule has an impact on agricultural land, Minn. Stat. § 14.111 requires an agency to provide a copy of the proposed rule changes to the Commissioner of Agriculture no later than 30 days before publication of the proposed rule in the *State Register*. This rule is not expected to affect agricultural land or farming operations. The Commissioner of Agriculture will not be notified of potential rule changes.
- 2) **Minn. Stat. § 14.116.** In addition to requiring notice to affected/interested legislators, this statute also states that if the mailing of the notice is within two years of the effective date of the law granting the Agency authority to adopt the proposed rule, the Agency must make reasonable efforts to send a copy of the notice and SONAR to all sitting House and Senate legislators who were chief authors of the bill granting the rulemaking. This requirement does not apply because the MPCA is using its general rulemaking authority for this proposed rule, and no bill was authored within the past two years granting special authority for this rulemaking.
- 3) **Minn. Stat. § 116.07, subd. 7i.** This statute requires notification of specific legislators of the adoption of rules applying to feedlots and fees. The proposed rule do not relate to feedlots or fees so this requirement does not apply.

B. Additional notice

Minn. Stat. § 14.14 requires that in addition to its required notices,

“each agency shall make reasonable efforts to notify persons or classes of persons who may be significantly affected by the rule being proposed by giving notice of its intention in newsletters, newspapers, or other publications, or through other means of communication.”

The MPCA considered these statutory requirements governing additional notification and, as detailed in this section, intends to comply with them fully. In addition, as described in section 4, Public participation and stakeholder involvement, the MPCA has made reasonable efforts thus far to notify and involve the public and stakeholders in the rule process, including holding various meetings and publishing the RFC.

The MPCA intends to request that the OAH review and approve the Additional Notice Plan, pursuant to Minn. R. ch. 1400.2060. The MPCA's plan to notify additional parties is as follows:

- 1) Publish its Notice of Hearing on the proposed rule amendments on the MPCA's Public Notice webpage at <https://www.pca.state.mn.us/public-notices>.
- 2) Provide an extended comment period. The MPCA will schedule the hearing for this rulemaking at least 45 days after the Notice of Hearing is published. Extending the pre-hearing comment

period beyond the 30-day minimum provides additional opportunity for potentially interested parties to review the proposed rule and submit comments.

- 3) Hold public meetings during the pre-hearing comment period to provide stakeholders with information on the proposed rule and how to submit comments.
- 4) Provide specific notice to tribal authorities. The MPCA intends to send an electronic notice with a hyperlink to electronic copies of the Notice of Hearing on the proposed rule amendments, SONAR, and proposed rule amendments to the 11 federally recognized tribes in Minnesota. The list of air and water tribal contacts is maintained by the MPCA and edited quarterly. This Notice will be sent on or near the day the proposed rule is published in the *State Register*, at least 33 days before the end of the comment period.
- 5) Provide specific notice to associations, environmental groups, and other entities. The MPCA will send an electronic notice with a hyperlink to electronic copies of the Notice of Hearing on the proposed rule amendments, SONAR, and proposed rule to the following entities on or near the day the proposed rule amendments are published in the *State Register* (Note: some members of these entities may already subscribe to receive GovDelivery notices):
 - Alliance for Automotive Innovation (formerly Alliance of Automobile Manufacturers and Association of Global Automakers)
 - Alliance of Automotive Service Providers, Minnesota
 - American Lung Association of Minnesota
 - Association of Metropolitan Municipalities
 - Association of Minnesota Counties
 - Center of the American Experiment
 - Clean Water Legacy
 - Coalition of Greater Minnesota Cities
 - Fresh Energy
 - Isaak Walton League (Minnesota Division)
 - League of Minnesota Cities
 - Metropolitan Council
 - Minnesota Association of Townships
 - Minnesota Association of Small Cities
 - Minnesota Automobile Dealers Association
 - Minnesota Chamber of Commerce
 - Minnesota City/County Management Association
 - Minnesota Center for Environmental Advocacy
 - Minnesota Environmental Partnership
 - Minnesota Environmental Science and Economic Review Board
 - Minnesota Petroleum Marketers Association
 - Minnesota Service Station and Convenience Store Association
 - MN350
- 6) Provide notice in electronic newsletter. The MPCA uses electronic newsletters to provide updates and information about rulemakings, as explained in section 4. The MPCA will provide

notice to Air Mail Newsletter subscribers with a hyperlink to the webpage where electronic copies of the Notice, SONAR, and proposed rule amendments can be viewed.

- 7) Post relevant rulemaking updates and associated documents including the Notice of Hearing, SONAR, and proposed rule on the Clean Cars Minnesota rule webpage at <https://www.pca.state.mn.us/air/clean-cars-mn-rulemaking>.

Pursuant to Minn. Stat. § 14.14, subd. 1a, the MPCA believes that following this Additional Notice Plan and its regular means of public notice, including publication in the *State Register* and posting on the MPCA's Public Notice and rule webpages, will provide adequate notice of this rulemaking to parties interested in or regulated by the proposed rule.

11. Authors, witnesses, SONAR exhibits, and conclusion

A. Authors

At the hearing, the Agency anticipates having the listed authors testify as witnesses in support of the need for and reasonableness of the proposed rule.

- Amanda Jarrett Smith, Climate and Energy Policy Planner
- David Bael, Economic Policy Analyst
- Hannah Scout Field, Data Specialist

B. Witnesses and other staff

- Joseph Dammel, MPCA. Joseph is a staff attorney to the Agency and will introduce the required jurisdictional documents into the record.
- Katie Izzo, MPCA. Katie is the project rule coordinator and will testify on any Minnesota Administrative Procedure Act process questions.

C. SONAR exhibits

- Appendix 1: Technical Support Document

12. Conclusion

In this SONAR, the Agency has established the need for and the reasonableness of each of the proposed amendments to Minn. R. Chs. 7023.0150-7023.0300. The Agency has provided the necessary notifications and in this SONAR documented its compliance with all applicable administrative rulemaking requirements of Minnesota statute and rules.

Based on the forgoing, the proposed amendments are both needed and reasonable.

Laura Bishop

This document has been electronically signed.

Laura Bishop, Commissioner
Minnesota Pollution Control Agency

December 14, 2020

Date