

March 22, 2021

The Honorable Jessica Palmer-Denig
Administrative Law Judge
Office of Administrative Hearings
P.O. Box 64620
600 North Robert Street
St. Paul, MN 55164-0620

RE: Final Response for Proposed Rules Adopting Vehicle Greenhouse Gas Emissions Standards—
Clean Cars Minnesota, *Minnesota Rules*, chapter 7023; Revisor's ID No. 04626, OAH Docket No.
71-9003-36416

Dear Judge Palmer-Denig:

Enclosed, please find the Minnesota Pollution Control Agency's (MPCA) Final Response to Public Comments (Response) for the proposed rule amendments referenced above. This document responds to all public comments received during the comment period and hearing.

The MPCA received more than 10,000 comments plus thousands of signatures during the Notice of Intent to Adopt comment period. The vast majority (more than 9,000) came in the last few hours of the comment period. For comments submitted between December 21, 2020 and March 15th, 2021 at 1:30 p.m., the Agency copied the name of each commenter into a table and identified topics within the comment that needed an agency response. This table of commenters and responses is included here in Appendix A. Given the thousands of comments submitted on the last day, including more than 25 lengthy technical comments, and the time constraints of the five-day rebuttal period, the Agency adjusted our process for responding to comments and prioritized responding to new information, as required by Minn. Stat. 14.15, subp 1. Agency staff have read all comments and petitions and have identified new information for responses. In addition, any commenters who requested notice of final adoption have been catalogued. PDF versions of all comments submitted via eComments, hearings, fax, or mail to OAH have also been submitted to the record and posted on the MPCA Clean Cars Rulemaking website.

If you have questions regarding the enclosed Response or the content of the proposed rule, please contact Amanda Jarrett Smith at amanda.smith@state.mn.us. If you have questions regarding the administrative procedures followed for this rulemaking, please contact me at katie.izzo@state.mn.us.

Sincerely,

Katie Izzo

Katie Izzo
MPCA Rule Coordinator
Agency Rules Unit
Resource Management & Assistance Division

Enclosures

MPCA Final Response to Comments Submitted during the Post-hearing Comment Period.

Table of Contents

MPCA Final Response to Comments Submitted during the Post-hearing Comment Period..... 1

I. Introduction 2

 A. Scope..... 2

 B. MPCA review of comments and organization of MPCA’s response to comments..... 2

II. Response to comments..... 2

 A. Greenhouse gas (GHG) reductions 2

 B. Electric vehicle (EV) availability..... 6

 C. Auto manufacturer costs and other impacts 11

 D. Auto dealer costs and other impacts 12

 E. Consumer costs and other impacts 19

 F. MPCA authority to adopt the proposed rule amendments..... 25

 G. Efficacy and feasibility of the proposed rule amendments 33

 H. Establishing an initial ZEV credit bank 36

 I. Rule language..... 39

 J. Procedure..... 41

 K. Air pollution, public health, and environmental justice 43

 L. Other analytical comments..... 49

 M. Other opposition to rule adoption..... 58

 N. Comments outside the scope of the proposed rules..... 60

I. Introduction

A. Scope

This document and attachments constitutes the Minnesota Pollution Control Agency's (MPCA or Agency) Final Response to Public Comments (Response) on proposed amendments to Minn. R. chs. 7023. The MPCA is proposing amendments to Minnesota Rules, chapter 7023, Adopting Vehicle Greenhouse Gas Emission Standards (Clean Cars Minnesota). The Agency's proposed rule revisions can be summarized as the adoption of vehicle emission standards, including the low-emission vehicle (LEV) standard and the zero-emission vehicle standard (ZEV), and the creation of a voluntary early action credit mechanism and provision of a one-time allotment of credits.

B. MPCA review of comments and organization of MPCA's response to comments

In this Response the MPCA responds to common themes and topic areas that were frequently identified in the comments. Where appropriate, the MPCA has grouped similar comments and provided responses and/or links to rulemaking materials that address the comments. This response also includes a spreadsheet of all comments received between Dec. 21, 2020 and March 15, 2021 at 1:30 PM along with which categories of comment response the MPCA identified for each commenter.

II. Response to comments

The MPCA received more than 10,000 comments between December 21 and March 15th, including 70 comments at the hearing on February 22-23. The agency carefully reviewed all comment letters submitted within this period and identified issues raised by commenters. This Response is organized by topic area and each agency response applies to multiple comments. The MPCA appreciates Minnesotans' and other stakeholders' participation in the comment period and the detailed considerations and perspectives shared through their comments. All comments were considered.

A. Greenhouse gas (GHG) reductions

The MPCA received comments related to the need to reduce greenhouse gas (GHG) emissions, a primary purpose of the proposed rules. Some commenters expressed support for GHG reductions, while other commenters noted that these rules and any action by Minnesota will result in small changes in global GHG emissions and projected climate change.

A.1. *Comments in support for action to reduce GHG emissions*

Commenters noted the need to act to address climate change and that Minnesota is not meeting its GHG reduction goals. Commenters shared a need to act on climate for future generations, as an act of stewardship of the earth, and as part of their religious faith. Many commenters cited transportation as a major source of Minnesota GHGs and indicated their desire to transition away from fossil fuels. Some commenters noted that climate change is already impacting Minnesota and included climate impacts they have seen in their lifetimes.

MPCA response: The MPCA appreciates the statements of support for the primary goal of this rulemaking: to reduce greenhouse gas emissions by limiting vehicle emissions.

A.2. *Comments disagreeing with the MPCA's stated need to reduce GHG emissions*

Commenters disagreed with the MPCA's stated need for the proposed rulemaking to reduce GHG emissions and address climate change. Some commenters stated that there is no need to reduce GHG emissions because climate change is not real or GHGs do not cause climate change.

MPCA response: The MPCA disagrees with any suggestion that climate change is not real or not human-caused. The basic science of climate change is widely accepted in the scientific community and any reasonable debate has been put to rest. In addition, the State Legislature in the Next Generation Energy Act (Minn. Stat. 216H.02, subd. 1) establishes that Minnesota has a responsibility to reduce GHG emissions and sets goals for those reductions.

A.3. Comments on opportunities for emission reductions from internal combustion engine vehicles

Commenters noted that internal combustion engine vehicles have gotten substantially cleaner and more fuel efficient in the past several decades, and liquid fuels have gotten cleaner as well. One commenter states, “Research anticipates the continuation of these gains and by 2025, ICEV [internal combustion engine vehicle] efficiency will improve by an additional 30 percent and by up to 78 percent in 2050” (The American Fuel & Manufacturers and American Petroleum Institute, pg. 4, internal citations omitted). Another commenter states, “The robust technical analysis conducted by the Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) in 2016, as well as more recent reports from ICCT show that many cost-effective technologies to reduce fuel use and emissions are currently underutilized. If standards are weakened, those improvements will remain underutilized in the vehicle fleet, and consumers will have to give up significant savings” (Consumer Reports, pg. 3, internal citations omitted).

MPCA response: The MPCA agrees that internal combustion engine vehicles have made great progress in improving efficiency and reducing emissions. The Agency also agrees that the technology already exists for continued improvements from internal combustion engine vehicles. These opportunities for improvement highlight the reasonableness of adopting the LEV standard.

A.4. Comments about the impact on global temperature

Commenters stated that the MPCA should not adopt the proposed rule because climate change is a large-scale global problem and, compared with global emissions, Minnesota’s contribution is relatively small. Commenters also suggested that the MPCA should not adopt the proposed rule because the GHG emission reductions it might achieve would not substantively reduce the average global temperature. Commenters stated that the MPCA should evaluate the impact on global temperature of the estimated GHG emission reductions achieved by the proposed rule. For instance, a comment from Center of the American Experiment states that “MPCA should publish estimated temperature impacts of all GHG regulations” (Center of the American Experiment, pg. 29). The comment goes on to state that the proposed rules “...will have no measurable impact of global temperatures” (Center of the American Experiment, pgs. 29-30). Similarly, a comment from the Institute for Energy Research asserts that the estimated reduction in GHG emissions resulting from this rule is small and insignificant relative to the global total of GHG emissions, specifically that MPCA’s projected annual GHG emissions by 2034 “...would bring global totals down by less than one-hundredth of one percent” (Institute for Energy Research, pg. 1).

MPCA response: The MPCA agrees that climate change is a complex global problem. The Agency disagrees, however, with the premise that the scale and complexity of the problem should mean that Minnesota should not act to address it. As we state in the Statement of Need and Reasonableness (SONAR), “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” (SONAR, pg. 14).

The direct impact on global temperature of any one single GHG regulation will inevitably be small; however, the MPCA’s statutory authority allows the Agency to act to reduce emissions of air pollutants. In addition, the NGEA sets emission reduction goals, not global temperature goals. It is therefore reasonable to assess the emission reductions associated with the proposed rule and unnecessary to assess the impact on global temperature.

Instead, as is described in the SONAR (pgs. 78-79), the MPCA used the federal social cost of carbon (fSCC) values 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 and is used by the federal government as well as local and state governments (including by Minnesota’s Public Utility Commission) to estimate the avoided climate change damages

from regulations that will reduce GHG emissions. It puts the effects of climate change into economic terms to help policymakers and other decision makers understand the economic impacts of decisions that would increase or decrease emissions. Because the social cost of carbon is an estimate of the economic damages that would result from emitting one additional ton of GHG into the atmosphere, it essentially addresses the same issue as avoided temperature impacts from reduced GHG emissions, but in dollars instead of units of temperature.

A.5. Comment on the timescale related to federal social cost of carbon estimates

A comment from Center of the American Experiment refers to MPCA's estimate that the proposed rule would lead to about \$500 million (in 2018 dollars) in avoided climate damages" over the first ten years of implementation (SONAR, pg. 79). The comment goes on to ask "What is the timescale the agency is assuming for the avoided damages? By 2100? Which year, specifically?" (Center of the American Experiment, pg. 30)

MPCA response: The MPCA explains in the SONAR (pgs. 78-79) how the Agency used the IWG's fSCC values to estimate the avoided climate damages resulting from the proposed rule. In producing its fSCC estimates, the IWG used three different integrated assessment models that relate emissions of GHG to climate damages. Each of these models considers a time horizon of 2300 in estimating the total climate damages (discounted to present value terms) in estimating the damages of a ton of GHG emitted today. Because of discounting, however, any climate damages beyond 2100 are very small when considered in present value dollars.

A.6. Comment on the appropriateness of using the federal social cost of carbon

A comment from the Institute for Energy Research criticizes the MPCA choosing to base our economic valuation of avoided climate damages from this proposed rule on the federal social cost of carbon (fSCC) developed by the Interagency Working Group (IWG). The comment states that the fSCC is "...a metric rife with contention" due to its choices of discount rates. The comment explains that Circular A-4 produced by the Office of Management and Budget (OMB) recommends using discount rates of 3% and 7% to evaluate regulatory actions but the fSCC values chosen by the MPCA in our analysis are based on a 3% discount rate. (Institute for Energy Research, pgs. 1-3)

MPCA response: The MPCA disagrees with the commenter's assertions about the use of the fSCC and finds that the commenter misrepresents the policy discussion surrounding its use. The commenter accurately quotes the IWG's 2010 technical support document for developing the fSCC values: "According to OMB's Circular A-4, it is appropriate to use the rate of return on capital when a regulation is expected to displace or alter the use of capital in the private sector. In this case, OMB recommends Agencies use a discount rate of 7 percent. When regulation is expected to primarily affect private consumption—for instance, via higher prices for goods and services—a lower discount rate of 3 percent is appropriate to reflect how private individuals trade-off current and future consumption."¹ However, the commenter failed to mention the next few sentences in the IWG's 2010 technical support document that explained why in the case of intergenerational climate damages, a consumption rate of discount (for which the OMB recommends using a 3% discount rate) is more appropriate: "The interagency group examined the economics literature and concluded that the consumption rate of interest is the correct concept to use in evaluating the benefits and costs of a marginal change in carbon emissions (see Lind 1990, Arrow et al 1996, and Arrow 2000). The consumption rate of interest also is appropriate when the impacts of a regulation are measured in consumption (-equivalent) units, as is done in the three integrated assessment models used for estimating the SCC."²

The IWG used three different discount rates in producing its fSCC estimates: 2.5%, 3% and 5%. The MPCA chose the central value (3%) for its estimate of the value of avoided damages from this rule. The MPCA's choice is reasonable

¹ Interagency working group on social cost of carbon, United States Government, "Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866," (https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf), pg. 19.

² Ibid.

especially in the broader context of Minnesota GHG policy, as the Minnesota's Public Utilities Commissions has similarly affirmed the central discount rate as the most reasonable value of climate damages on which to base Minnesota policy decisions in its recent docket to establish externality values for emissions of GHG from Minnesota power plants.

The commenter points out that the fSCC has been criticized for using discount rates that are too low, but what it fails to point out is that the fSCC has been criticized even more for using discount rates that are too high. Many economists think that for intergenerational impacts, the consumption rate of discount is too high, and when evaluating impacts of today's actions on future generations, it is most ethical to choose discount rates at or near zero.³ In fact, one of the initial recommendations to come from the Biden's recent launch of a re-evaluation of the fSCC, has been to recommend lower discount rates than those initially used by the IWG.

There is much uncertainty in valuing future climate damages and the choice of a discount rate is fraught with ethical and philosophical concerns. The MPCA has estimated that this rule could lead to avoided climate damages valuing approximately \$500 million over the first ten years of the rule (SONAR, pg. 59). The MPCA does not intend this to be a precise prediction of the value of avoided future climate damages: the actual value could be far higher or far lower. Rather, this value serves as an estimate; the MPCA conducted this reasonable analysis to give a sense of the magnitude of climate damages that this rule could help us avoid.

A.7. Comments on carbon leakage

A comment from Clean Fuels Development Coalition states that the MPCA overstates the reduced GHG emissions and the resulting climate benefits because it fails to account for carbon leakage. Leakage in this sense is the idea that when Minnesota adopts more stringent standards, manufacturers will compensate by shipping less fuel-efficient and more polluting vehicles to other states, thus reducing or entirely offsetting the reduced GHG emissions from cleaner vehicles in Minnesota. (Clean Fuels Development Coalition, pgs. 36-38)

MPCA response: The MPCA disagrees this claim for three reasons. One is that the comment is speculative and the MPCA could find no evidence that when a state has adopted tighter vehicle emissions standards that leakage of GHG emissions to other states has occurred. Secondly, whether a state would receive LEV-certified or federally certified vehicles would depend largely on the emissions standards applicable in that state, i.e. whether they have adopted the LEV and ZEV standards or not. The decisions of other states to adopt the LEV and ZEV standards is outside of the control of the MPCA and outside of the scope of this rulemaking. Finally, even if other states do not adopt LEV or ZEV standards, they are still subject to federal emissions standards. Manufacturers will need to comply with federal standards or more stringent standards in all states regardless of whether the MPCA adopts the proposed rule or not. The need to comply with standards outside of Minnesota greatly diminishes the possibility of leakage.

A.8. Comments about future greenhouse gas regulations

Commenters recommended that "all future greenhouse gas regulations promulgated by the MPCA should clearly and publicly describe the degree to which greenhouse gas emissions would be reduced (in tons) and the impact such regulations would have on global temperatures (in degrees C by 2100) before enacting rules" (Center for the American Experiment, pg. 29). Commenters also recommended that the MPCA use a specific model and inputs for the analysis and that the MPCA "should be required to account for the likely growth in greenhouse gas emission in developing countries..." (*Id.*).

MPCA response: The MPCA conducted an analysis of GHG emission reductions resulting from the proposed rule in our SONAR, a summary of which can be found at pages 77 to 79. The MPCA estimated that 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, including tailpipe emissions and upstream emissions (a well-to-wheel analysis). The MPCA appreciates the suggestions of the commenter, but we believe the analysis conducted for this rule complies with the requirements of the Administrative

³ see, e.g. <https://media.rff.org/documents/RFF-DP-12-42.pdf> and <https://rmi.org/getting-the-social-cost-of-carbon-right/>

Procedures Act and demonstrates that the proposed rule is both needed and reasonable. The MPCA is not proposing the regulatory change described by commenters in this rule, but notes that Minnesota Statutes § 14.09 allows any person to petition an agency “requesting the adoption, amendment, or repeal of any rule.”

B. Electric vehicle (EV) availability

The MPCA received comments related to EV availability in Minnesota. Some expressed the need for increasing the quantity and variety of EVs available in the state. Others stated that EV supply currently meets demand and that there is not a need for additional EVs in the state.

B.1. Comments supporting increased EV availability in Minnesota

Commenters wrote expressing support for increased EV availability in Minnesota. Many commenters relayed personal experiences of going out of state or special ordering EVs, or of being unable to purchase their preferred make and model. Many commenters expressed enthusiasm for new EV models, especially for SUVs. Commenters shared their positive experiences with owning EVs including cost savings and satisfactory performance. A few commenters raised the possibility of home solar charging or EVs as an opportunity for rural electric co-ops to sell more renewable electricity. Commenters also expressed support for the ZEV rule as a way to kick start EV adoption and infrastructure investments, especially in rural Minnesota.

“A more robust EV market will both bring in new dealers and provide a bigger used EV market. Maybe one of the dealers would even be a bit closer to me, for example in St. Cloud or Duluth. And, with these new rules, we'll have more EV choices, as auto manufacturers add us to the states with priority for new releases. That helps the market grow, too, benefiting both new and used car buyers.

As more EVs are sold, more infrastructure will be built. And as we build out the infrastructure to encourage EVs, we can better welcome visitors and support summer residents who are EV owners.”
(Chamblin comment)

MPCA response: The MPCA appreciates the statements of support for one of the goals of this rulemaking: improved access to EVs for Minnesotans. As addressed elsewhere in this Response, the MPCA supports complementary efforts to expand EV charging infrastructure across Minnesota, although those efforts are outside the scope of this rulemaking.

B.2. Comments related to upcoming new EV models

Commenters noted that there are many new EV models that will be offered for sale in the next few years, but have different opinions on how that should impact the decision to adopt the proposed rule. The Alliance for Automotive Innovation (Auto Innovators) stated, “We are committed to the goal of net zero carbon transportation and zero-emission vehicles are critical to this goal. With over 250 billion dollars committed through 2023, the auto industry is accelerating its path to electrification in the U.S. and actively working to triple the number of battery, plug-in hybrid and fuel cell electric vehicles offered by 2025. These efforts will bring more models in more sizes, price point, utility function and generally more options to make sure there is an electric vehicle, or EV, that fits every customer's needs. This is essential to growing customer adoption” (Rege testimony, hearing transcript February 22, 2021).

Some commenters have stated that the number of EV models coming available indicates that there is no need to adopt the ZEV standard. Other commenters have noted that the ZEV standard is needed so that Minnesota receives the new EV models when they are available. One commenter noted “And General Motors, Volvo, a whole group of companies, even Rolls-Royce have announced that in the next 10 to 15 years they are going to stop making gasoline powered cars. You know, some of those may end up happening on their schedule. Some may not. If you look at the list of EVs, I found it fascinating, there's a footnote on many of them that say not available in all states. And what that means is they are

sending the cars to the Clean Car states. So by not being a Clean Car state you are denying your dealers and your customers, consumers the opportunity to buy cars that just won't be there. They won't be on the lots" (Lee testimony, hearing transcript February 23, 2021).

MPCA response: The MPCA appreciates auto manufacturers ongoing efforts to reduce emissions from transportation and grow EV offerings. Making more models in different sizes, price points, and varieties, including SUVs and pickup trucks will be important for increasing EV adoption in Minnesota. As the MPCA discussed on page 49 of the SONAR, past practice by manufacturers has meant that many EV models are not available in states that do not have the ZEV standard, are available only in very small quantities, or are offered for sale long after they are offered for sale in ZEV states. The MPCA's concern is supported by the testimony of Lee who noted that many EVs are "not available in all states" as well as the testimony of Minnesotans who reported difficulty finding the EV models they wish to purchase. The MPCA continues to believe it is reasonable to adopt the ZEV standard to ensure that Minnesotans have access to the EV models they may wish to purchase and that Minnesota is on the front-end of receiving new makes and models, especially as auto manufacturers increase their offerings.

B.3. Comments on current EV availability in Minnesota

Commenters stated that if Minnesotans wanted to purchase EVs, more would be available at dealerships; that dealerships are meeting demand. One commenter stated, "Registration data show that Minnesotans already have access to all of the top-selling EVs in the nation" (Center of the American Experiment, pg. 16).

Other commenters stated that they had difficulty or were unable to find the EVs that they wanted either because they were not available in Minnesota, they were available only in low quantities or not at their local dealerships, or that new EV models came to other states before coming to Minnesota. One commenter, for instance, stated, "In 2020 when I bought my first EV I was not able to test drive much less purchase a Hyundai Kona EV because they are not available in Minnesota. I eventually settled on a Chevy Bolt but even those were in limited supply" (Henseler). Commenters particularly noted challenges of finding an EV to purchase outside of the Twin Cities. One commenter stated:

"I live 11 miles northeast of Bemidji and would like an EV for trips into town. Contrary to what my state rep says, many of us in the north country are excited about having an EV for one of our vehicles... I might be able to afford a used EV (I was looking at a Nissan Leaf), and the closest place to find one is in the Twin Cities. I called last week and learned that I'd have to buy it sight unseen, as they sell quickly. Then, when we were trying to figure out how to even get it here, learned that I'd have to have it brought in on a flat bed, which was going to add \$300 to the cost. That's because the infrastructure isn't built out for the earlier EVs with less range, even though an EV with less range works for me in this setting. All of this is a barrier to entry for some of us. A more robust EV market will both bring in new dealers and provide a bigger used EV market. Maybe one of the dealers would even be a bit closer to me, for example in St. Cloud or Duluth. And, with these new rules, we'll have more EV choices, as auto manufacturers add us to the states with priority for new releases. That helps the market grow, too, benefiting both new and used car buyers." (Chamblin)

One commenter, a dealer in a cold-weather state operating under the ZEV standard stated, "If you look at the list of EVs, I found it fascinating, there's a footnote on many of them that say not available in all states. And what that means is they are sending the cars to the Clean Car states. So by not being a Clean Car state you are denying your dealers and your customers, consumers the opportunity to buy cars that just won't be there. They won't be on the lots. " (Lee testimony, hearing transcript February 23, 2021).

Another commenter stated:

“Chevrolet began delivery of its first all electric U.S. model, the Chevy Bolt EV, in December of 2016. Again, guess who was left out? Minnesotans were, again, not allowed to buy this exciting new release from a big brand manufacturer. When did us excited Minnesotans finally get to take delivery of our Bolts? September of 2017, a full nine months later. Why? Because Minnesota wasn't a clean car state yet. By the way, Minnesotans weren't even allowed to travel to other states to buy these cars. They couldn't have them shipped here by the dealerships. Dealerships in states that were selling them were told they were not allowed to trade them to other dealerships, they couldn't sell them to the public or send them anywhere outside of their states. Minnesotans were literally banned from buying the Bolt EV for nine months.” (Troy testimony, hearing transcript February 22, 2021)

Commenters compared EV availability in Minnesota and ZEV states. One commenter stated for instance, “A July 2020 survey of dealership inventories by MN EV Buyer found only 19 plug-in models available within a 200-mile radius of the Minneapolis metropolitan area, as compared to 43 models available near dealerships in San Jose, California” (Fresh Energy, et. al., pg. 17, internal citations omitted). Comments from the Northeast States for Coordinated Air Use Management (NESCAUM), which is a nonprofit association of state air quality agencies in the Northeast (seven of whom have adopted the clean car standards) stated, “the availability of EVs is generally much better in the Section 177 states. Automobile manufacturers often roll out new product offerings in California and the Section 177 states first before making them available elsewhere, and, in some cases, certain EV models are only available for sale in ZEV states” (NESCAUM, pg. 2).

MPCA response: The MPCA acknowledges the commenters who have stated that Minnesota’s EV availability meets the demand and that Minnesotans have access to most EV models. These statements don’t, however, align with the real-life experiences described by commenters who have recounted their difficulties in finding EV models available for sale in Minnesota. Comments and analysis reflect that the level and variety of EVs available in Minnesota make it such that it takes much focused dedication for many consumers to locate and purchase an EV. Making more EVs and more EV models available lowers the bar for people who might consider purchasing an EV among a variety of vehicle options if presented the opportunity at a dealership. Increasing the availability of EVs to meet the type of consumer demand expressed in comments is one of the goals of this proposed rule and specifically the ZEV standard.

Comments submitted by one manufacturer, General Motors, indicated that its 37 EV-certified Chevrolet dealers had over 100 Bolt EVs available on lots as of February 2021. General Motors’ comments also indicated that its EV inventory and EV-certified dealers “will only grow” as more models become available in the coming months and years as the company heads toward an “all-electric future.” The MPCA appreciates the comments of General Motors as an example of an auto manufacturer that has taken concrete steps to increase availability of EVs. The MPCA hopes that other entities will also take steps to increase EV availability in the future.

B.4. Comments on consumer’s interest in purchasing an EV

Commenters cited surveys indicating level of consumer interest in purchasing EVs. One commenter, citing a survey conducted by the Minnesota Automobile Dealers Association (MADA) stated, “only 5% of Minnesota residents believe they are very likely to consider buying an electric vehicle” (Wald, pg. 1). Other commenters cite a survey conducted by the Union of Concerned Scientists and Consumer reports stating, “59 percent of prospective car buyers in Minnesota have some interest in electric cars, trucks and SUVs. Breaking this down, 30 percent would consider one within the next two years, and 3 percent say they are definitely planning on buying or leasing one in the next two years.” (Consumer Reports, pg. 10, internal citations omitted).

MPCA Response: Although commenters use these survey results to make opposing arguments about consumer interest in purchasing EVs, the surveys have similar conclusions. A small percentage of consumers already feel confident that they plan to purchase an EV as their next vehicle and a larger percentage of consumers would consider purchasing an EV in the next couple of years. The MPCA sees these survey results as indicating that there is a sizeable portion of Minnesota consumers who might purchase an EV if the circumstances and timing are right. Adopting the ZEV standard is one reasonable action to help more consumers to make the decision to purchase an EV by increasing their availability. The MPCA also notes that these surveys indicate interest in EVs at a level commensurate with the ZEV rule compliance scenarios of 6.2-7.4% EVs among new vehicle sales.

B.5. Comments on EV sales in ZEV states

Commenters noted that not all ZEV states have seen strong growth in EV sales and that growth in EV sales requires other supportive policies. The Auto Innovators state, “states like Maine, New York, and Vermont, whose ZEV programs have been in place over a decade, have experienced slow market growth for EVs” (Auto Innovators, pg. 34). On the other hand, NESCAUM notes, “With the expiration of the so-called ‘travel’ provision in the ZEV regulation for battery electric vehicles, which allowed automakers to focus their efforts in California, Section 177 states are starting to see an uptick in sales and are expecting further growth in sales in the coming years as the stringency of the ZEV mandate increases. In addition, complementary policies and programs such as purchase incentives, deployment of EV chargers, and consumer education also play a key role in increasing EV sales” (NESCAUM, pg. 2).

MPCA response: As the Agency discusses elsewhere in this Response, we understand that a portfolio of approaches is needed to support the growth of EV sales. It is disingenuous for commenters to point to low EV sales growth in section 177 states when manufacturers previously used the “travel” and “pooling” provisions of the rule to focus efforts in California and use over compliance in that market to meet compliance obligations in the other states. The Agency notes that now that the travel and pooling provisions of the ZEV regulation have ended, manufacturers need to comply at the state level. It is reasonable to believe, as NESCAUM highlights, that without the travel and pooling provisions, EV availability will grow in Minnesota, as it has in other section 177 states.

B.6. Comments identifying concerns with the use of cars.com as a data source

Commenters stated that using cars.com to identify vehicle availability undercounts vehicles offered for sale because cars.com is an advertising platform that not all dealers choose to use. MADA states:

“Cars.com is not an aggregator of statewide vehicle supply but rather a subscription-based, third-party advertising platform some dealers voluntarily use to list vehicles for sale; only a portion of statewide dealer inventory is displayed. Notably, MADA’s analysis showed that less than half of the new EVs for sale in Minnesota are listed on cars.com... The MPCA also tries to compare Minnesota’s available EV supply to that of cities in other ZEV states (SONAR, pg. 49), but that is hardly an apples-to-apples comparison. EV supply is going to vary significantly based on 1) the number of dealerships in a location, and 2) the brands available.” (MADA, pgs. 12-13)

The commenter goes on to describe that the Northeastern states the MPCA looked at have more nearby metropolitan areas and thus are not comparable to Minnesota cities.

MPCA response: The MPCA responded to this issue in our second initial response to comments, published to the record on March 15, 2021 (Exhibit M). The MPCA used cars.com on pages 48-50 of the SONAR as a publically-available source of information to provide a rough comparison of vehicle availability across jurisdictions, specifically similarly-sized communities in other Clean Car states. This rough comparison is not intended to be a comprehensive census of EVs for sale across the entire state. Additionally, to the extent that cars.com undercounts EVs available for sale in Minnesota, it is likely that it similarly undercounts EVs available for sale in other states, making it a useful in understanding the scale of EV availability in different locations.

The MPCA's SONAR findings regarding EV availability align with testimony from commenters who identified challenges in finding and purchasing EVs in the quantity and variety that they want. It is possible that some of these commenters also used publicly-available car search websites in their search for an EV, meaning that websites like cars.com offer a reasonable view into what many people searching to purchase a vehicle might learn about their availability. As one commenter stated, "While use of websites like Cars.com, Autotrader.com, and Cargurus.com do not cover all dealerships across the U.S., they provide an accurate representation of what most consumers will see when searching for vehicles across dealership" (Fresh Energy, et. al., pg. 17). Commenters testified about fruitless searches for EVs on lots in Minnesota and some testified that they instead had to procure their EVs from other states. An out-of-state dealer who does business in a cold-weather ZEV state testified that he was able to procure a larger volume of EVs because he did business in a ZEV state and that he had successfully integrated the sale of EVs into his business model as a car dealer in a cold-weather, rural state (Lee testimony, hearing transcript February 23, 2021).

B.7. Comments on the MPCA making available EV data projections

One commenter stated, "...in Auto Innovators' discussions on the subject, the MPCA was unable to provide information on expected reasonable growth in the Minnesota EV market without incentives and infrastructure in place" (Auto Innovators, pg. 26). The commenter also states, "While we understand the MPCA expects sales to increase above the reference case in response to more EVs being offered for sale in Minnesota and the expectation that automakers will increase sales (despite a lack of demand) to prepare for the standards, the MPCA never responded to Auto Innovators' questions about what reasonable rate of growth could be expected" (Auto Innovators, pg. 32).

MPCA response: The MPCA disagrees with the commenter's assertion. The MPCA's Technical Support Document (TSD, pgs. 9-13) includes a description of the Agency's methodology for identifying business-as-usual EV sales growth based on current conditions. On September 30, 2020, the MPCA provided to the Auto Innovators, by email, our projections of business-as-usual EV sales projections in Minnesota for model years 2025-2034. In this email, the MPCA provided our Reference (or business-as-usual) scenario projections of EV sales that are in Table 1 of the TSD (pg. 13) and Table 7 of the SONAR (pg. 75). Additionally, in the same email communication, the MPCA provided the projected EV sales over the same 10 model years in a potential economic slowdown resulting from the COVID-19 pandemic (TSD Table 53, pg. 88). The MPCA also presented our initial EV sales projections at a technical webinar on January 7, 2020.

B.8. Comments identifying concerns about the MPCA's EV sales projections

Commenters identified concerns with the MPCA's projections for EV sales under the ZEV standard in Minnesota. One commenter stated, "In 2024, the first year of the ZEV mandate, the MPCA estimates manufacturers will need to deliver 18,852 EVs to Minnesota to comply. Yet the analysis on page 51 of the technical document shows only 7,410 of those are expected to sell" (Backhaus testimony, hearing transcript February 23, 2021). Another commenter stated, "Today approximately 3,000 EVs are sold in Minnesota in a single year. Under the example provided by PCA about 17,000 vehicles will need to be sold in model year 2025, not seven, and this represents a more than 450 percent increase in EV sales compared to today" (Rege testimony, hearing transcript February 22, 2021).

MPCA response: The MPCA responded to these comments in our second initial response to comments, published to the record on March 15, 2021 (Exhibit M).

C. Auto manufacturer costs and other impacts

The MPCA received comments with concerns about costs for auto manufacturers.

C.1. Comments on MPCA's analysis of manufacturer costs

The comments of the Auto Innovators identified concerns with the MPCA's analysis of potential manufacturer costs. They stated that manufacturers may be able to shift higher technology costs to consumers for improved fuel economy, but not EV technologies. The Auto Innovators' comments also state,

"The MPCA's analysis of the impact on manufacturers is further flawed when it speculates that there are 'no costs associated with research and development of new vehicles,' there may only be 'marginal costs in staff time,' it is 'not anticipated' that more staff will be required, and advertising 'may' need to be increased. The SONAR is also speculative when the MPCA states that it is 'reasonable to assume that most or all' of any additional marketing costs incurred by manufacturers can merely be shifted from previous advertising expenditures. When the MPCA is attempting to directly regulate an industry as large as the automobile industry, it should have undertaken more responsible due diligence and provided more consideration to the impact created by changing the way the entire industry has operated for decades in Minnesota." (Auto Innovators, pg. 17, internal citations omitted)

MPCA response: Auto manufacturers are the only party that is directly regulated by the proposed rules (Auto Innovators, pg. 16). The MPCA agrees and met with representatives from the Auto Innovators multiple times during the rule development process and even significantly altered our initial ZEV credit bank mechanism by adding the one-time allotment of credits to address concerns raised by the manufacturers.

The Auto Innovators' comments fault the MPCA for making "unfounded assumptions about the impacts on manufacturers" in the SONAR and for ignoring "the direct evidence provided" by the manufacturers (Auto Innovators, pg. 16). However, the auto manufacturers have not provided the MPCA with specific evidence of direct, incremental costs they expect to incur as a result of adoption of the proposed rules. The MPCA specifically sought out cost information in our October 7, 2019, Request for Comments and did not receive any specific cost information from manufacturers in response, nor did it receive this information during a number of subsequent meetings. And even in the lengthy comments submitted by the Auto Innovators during the post-hearing comment period, where they assert that their "only goals are to ensure the data upon which the MPCA relies is accurate and reasoned," the manufacturers do not provide the "direct evidence" of these costs that they purport to have (Auto Innovators, pg. 18).

The MPCA did not have any information about specific, incremental changes to budgets to incorporate into our analysis (SONAR, pg 68). Because of that, the MPCA relied upon reasonable assumptions about the direct impact to automobile manufacturers in the SONAR. First, that manufacturers generally pass all costs onto consumers. Second, that research and development of new car models will not be affected by passage of this Minnesota rule. And third, that some manufacturer costs may need to shift (such as marketing or regulatory costs).

The Auto Innovators generally agreed with the MPCA's assumption that costs incurred by manufacturers are typically passed onto consumers, but stated that "this has not necessarily been the case with EV technologies" (Auto Innovators, pg. 16). The Auto Innovators cited the high cost of batteries, the existence of state and federal purchase incentives, and consumer demand to argue that some costs are absorbed by automakers (Auto Innovators, pg. 16). The comments also cite the only-recent profitability of Tesla to support its statement that "even the most popular EVs do not currently sell at a profitable level" (Auto Innovators, pg. 17).

The MPCA does not dispute manufacturer's general claims about the costs to develop EVs or manufacturers' statements about profitability. Nor does the MPCA claim to have comprehensively described auto manufacturers' business model in the SONAR. But these claims do not affect the reasonableness of the MPCA's analysis in this rulemaking. It is undisputed that auto manufacturers are investing in EVs. The Auto Innovators touted its members' planned investments in ZEVs of more than \$250 billion through 2023. But, as noted above, the Auto Innovators did not provide any evidence that

manufacturers would have to increase their investments in order to comply with this rule in Minnesota. In addition, the profitability (or not) of companies like Tesla or any manufacturer speak more to that company's corporate philosophy than it does to the incremental compliance costs that could be borne by auto manufacturers as a result of this rule.

The Auto Innovators then argue that the MPCA created an "unreasonable expectation for these regulations" when the Agency assumed that car manufacturers would pass costs onto consumers while also stating that the ZEV standard does not require consumers to purchase EVs (Auto Innovators, pg. 17). The MPCA responds to concerns about EVs on dealer lots elsewhere, but would like to address multiple points here.

First, as previously mentioned, auto manufacturers will be investing a quarter-trillion dollars on developing and releasing new EV models *before* the earliest the ZEV standard could go into effect in Minnesota. The MPCA does not know the details of these investments, but assumes that it will result in a number of new EV models that have been noted by other commenters. So while the ZEV standard does not require consumers to purchase EVs, it is reasonable to believe that manufacturers are developing and releasing EV models that consumers will want to purchase and that manufacturers see a future of profitability in selling EVs.

Second, the MPCA disputes the characterization that the Clean Cars rule is the only action that the state of Minnesota will take on EVs between the present and the time of implementation. As described on pages 44-47 of the SONAR, there are a number of efforts to bolster EV adoption already underway in Minnesota.

Third, with the initial ZEV credit bank mechanism, the MPCA has built into our rule a way for auto manufacturers to establish a bank with at least one full year's worth of credits, even if that manufacturer sells no EVs in the state between the time of adoption and the first effective model year. The MPCA thinks that the rule is reasonable and that manufacturers will be able to comply and has built flexibility into the rule to ensure that compliance is achievable.

Finally, the MPCA disputes the Auto Innovators' characterization of the SONAR's discussion of costs borne by manufacturers, which implies that the MPCA "speculates" that there are no costs associated with vehicle research and development (Auto Innovators, pg. 17). This quote selectively omits the first clause of the sentence on page 68 of the SONAR, which begins, "Since this proposed rule is already being implemented in other states...." In other words, the MPCA does not anticipate that auto manufacturers will devote incremental monies toward research and development of new cars solely because Minnesota adopts this rule. The comments of the Auto Innovators did not provide any evidence that their member manufacturers would incur specific, incremental costs toward research and development of EVs as a result of this rule.

D. Auto dealer costs and other impacts

The MPCA received comments about potential costs and other requirements for auto dealers under the proposed rules.

D.1. Comments that dealers would need to carry certain numbers of EVs

Commenters stated that the proposed rule would require dealers in Minnesota to carry a certain number of electric vehicles. One commenter, a dealer from a state already implementing the ZEV standard said, "I'm not required to do anything under the clean car ZEV standard. Manufacturers comply with the program by sending EVs into the state that would otherwise be sent elsewhere" (Lee testimony, hearing transcript February 23, 2021).

MPCA response: The ZEV standard is a regulation on manufacturers, not dealers, and it does not dictate that dealers must carry any particular number or variety of EVs. The ZEV standard is a statewide standard, meaning that manufacturers, in collaboration with dealers based on their standard relationship, can make their own decisions regarding the number and type of vehicles to deliver and to which dealerships based on local markets and interest. The standard does not dictate that a certain number of EVs should be delivered to certain areas in Minnesota. The MPCA explored this flexibility on pages 48-51 of the SONAR by looking at EV availability in different areas of states that are

implementing the ZEV standard. The analysis showed that different numbers of EVs are available in different parts of ZEV states. The SONAR states:

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 (SONAR pg. 49-50).

One commenter, providing a perspective from a dealership in a state implementing the ZEV standard highlighted that the requirements for the proposed rule fall on manufacturers and that he is "not required to do anything under the clean car ZEV standard" (Lee testimony, hearing transcript February 23, 2021). The MPCA understands that the dealer-manufacturer relationship means that manufacturers would need to work with dealers to deliver sufficient EVs to comply with the ZEV standard, just as manufacturers work with dealers to sell a wide variety of internal combustion engine vehicles of varying level of interest for different markets around the state.

Comments from NESCAUM, note that experience in the states that have adopted clean car standards has shown that the availability and price of SUVs and pickup trucks has not been affected since adoption and that EV sales depends on both the quality of the EV model and the engagement of dealers in selling EVs. The NESCAUM comments also note that some EV dealers have made EVs a more significant part of their business model and that states have worked closely with dealers on a variety of education and outreach efforts related to EVs. The MPCA hopes to engage dealers in these types of efforts if there is interest from the dealers in the future.

D.2. Comments on EVs losing money for dealers and manufacturers

Commenters stated that EVs are not profitable for auto dealers and manufacturers. One commenter, for instance said, "under the proposed ZEV standards, the rules would require car dealers to offer money-losing cars on their lots" (Center of the American Experiment, pg. 3).

MPCA response: The primary source of evidence for this comment was a report from McKinsey & Company from March 2019 that did, as the commenter pointed out, state that at that time EVs "often cost \$12,000 more to produce than comparable vehicles powered by internal-combustion engines (ICEs) in the small- to midsize-car segment and the small-utility-vehicle segment."⁴ However, the main point of the report was that due to the combination of rapidly-developing EV battery technology, increasing product availability, the regulatory landscape, and other factors, that EVs are rapidly becoming more and more profitable relative to ICEs. The report stated "While not as profitable as ICE vehicles today, our analysis shows that EVs have the potential to reach cost parity with and become equally—or even more—profitable as ICE vehicles by around 2025."⁵ This is an even more accelerated path to EV cost parity than the MPCA assumed in our analysis. The MPCA analysis assumed that BEVs would not reach cost parity with ICEs until model year 2028 and the PHEVs would not reach cost parity with ICE vehicles during the analysis time frame (TSD, pg. 14). Additionally, manufacturers plan to invest \$250 Billion in EVs in coming years. These investments and the wide range of EVs in development indicate that manufacturers see a profitable future for EVs as production scales up and technology prices decrease. Due to rapidly changing market and technology factors, by the time the ZEV standard goes into effect, EVs will be well on their way to being profitable choices for Minnesota consumers, dealers and manufacturers.

⁴ McKensey & Company, "Making electric vehicles profitable," (<https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/making-electric-vehicles-profitable>)

⁵ Ibid.

D.3. Comments on costs of complying for a small business or city under Minn. Stat. § 14.127

Commenters have argued that dealers will face compliance costs in excess of \$25,000 and should be able to avail themselves of the relief provided by Minn. Stat. § 14.127, subd. 3 and seek an exemption from the rule (MADA, pgs. 16-18).

MPCA Response: The MPCA conducted the required analysis on the costs of compliance for a small business or city under Minn. Stat. § 14.127, subds. 1 and 2 and found that the cost of complying with the proposed rule would not exceed this cost threshold (SONAR, pgs. 93-94).

Minnesota Statutes section 14.127 requires an agency to consider whether the “cost of *complying* with the proposed rule” exceeds \$25,000 for any small business or small city (SONAR, pg. 93). The MPCA determined that, under a plain language reading of this statute, the only compliance obligations (the “cost of complying with the proposed rule”) under the proposed rule would fall on the regulated party, which are auto manufacturers, not dealers, and no manufacturer would be eligible as a small business (SONAR, pgs. 93–94). A review of the proposed rule language finds that all compliance requirements are placed squarely on manufacturers, and manufacturers alone. On this point, the MPCA is in agreement with Auto Innovators (see Initial Comments of Auto Innovators, pg. 16 noting that “automakers are the only party directly regulated by the clean car rules”). The manufacturers, as the sole regulated group of this rule, did not allege a defect in the MPCA’s analysis of the effect of Minnesota Statutes section 14.127.

The provided for relief found in Minnesota Statutes section 14.127, subdivision 3—a temporary exemption from the regulation—further bolsters the plain language reading of the statute that this provision applies only to the regulated group. That is, a temporary exemption from compliance with emission standards in this proposed rule granted to a dealership would not have any effect because dealers do not have any compliance obligations from which they could be exempt.

Although dealers would not be directly regulated by this rule, the MPCA has identified dealers as an affected group and analyzed impacts to this group on pages 68 to 70 of the SONAR. The MPCA has also addressed concerns about costs raised by dealers elsewhere in this final Response.

D.4. Comments on financing methods used by dealerships to purchase vehicles from manufacturers

MADA’s comment included affidavits from auto dealerships around Minnesota describing the mechanisms by which they purchase vehicles from manufactures, including “floor plan credits” and “curtailment.” One dealer describes floor plan financing as follows:

“The purchase of new vehicles from the manufacturer is finance through a floor plan lender. When the dealership finances a new vehicle, the manufacturer gives the dealership a floor plan credit, which is based on the price of the vehicle. The floor plan credit is used to pay for a portion of the interest on the floor plan loan. Typically, the credit covers the interest on a vehicle for about 30 to 60 days. If a vehicle is not sold by the time the floor plan credit has been used up, the dealership has to start paying the interest on the floor plan loan. It then becomes very difficult to make a profit on that vehicle. Occasionally, I have to use some of the dealerships capital to purchase the vehicle from the floor plan lender. Doing so ties up important capital resources that could be used for other purchases.” (MADA comment attachment, pg. 4)

Another affidavit adds:

“The ideal time to sell the vehicle, from a profitability standpoint, is before the floor plan credit runs out. Even if the vehicle is technically sold at a loss, I can make up that loss if there is enough floor plan credit left. If a vehicle is not sold by the time the floor plan credit has been used up, the dealership risks ‘curtailment’ where it has to start paying back the principle on the loan. Curtailment becomes a risk after

a vehicle has been on my lot for about 200 to 250 days. Curtailment can put a dealer out of business.” (MADA comment attachment, pg. 13)

Another affidavit states:

“In theory, my dealership can choose what inventory to stock but in practice manufacturers can influence these choices. For example, sometimes in order to get a sufficient number of Yukons to satisfy customer demand, the manufacturer will encourage the dealership to accept several less desirable models. When manufacturers have to change their behavior in response to regulations, it directly affects which models are available to me and can limit my access to popular vehicles or vehicles my customers want.” (MADA comment attachment, pg. 12)

MPCA response: The MPCA appreciates MADA providing to the record additional context on dealership financial operations. The MPCA addressed impacts to dealers, including costs, on pages 68–70 of the SONAR.

The MPCA understands that the main concern of the dealers is that the ZEV standard, once effective, will require dealers to make significant investment to support the sale of EVs that will sit unsold on lots, tie up capital, eat away at profits, and take space away from vehicles “in higher demand” (Initial Comments of MADA *passim*).

Although dealers are not directly regulated by the proposed rule, and thus face no compliance obligations or costs and are not required by this rule to stock any specific vehicle, the MPCA recognizes that role that dealers play in the automotive industry and takes their concerns seriously. As the MPCA noted in the SONAR, there are “potential costs for dealers to develop the infrastructure and expertise to sell EVs” (SONAR, pg. 69). But these costs are likely to occur with or without the proposed rule; in fact, they are already occurring.

MADA attached affidavits from dealers in its initial comments. One dealer noted that the dealership needed to invest at least \$13,000 in training, advertising, and new equipment and tools per dealership in order to sell the new Ford Mustang Mach-E (Affidavit of Douglas Erickson, pg. 8).⁶ The dealer also noted that the dealership would have to purchase the new model of EV “from the manufacturer so that customers can try it” (*Id.*). The MPCA assumes that this is not an uncommon practice for new vehicle models, and that dealers will be able to manage their investment in EVs based on experiences in other ZEV states. That dealer also described past investments that were made in order to sell hybrids. The dealer did not assert that these investments that have already been made to sell EVs or plug-in hybrids was made in anticipation of the upcoming rule, but rather, that they were made in order for that dealer to sell a new model of car. Comments at the public hearing from a dealer located in a clean car state indicated that investments are almost always required for new models, EV or not (Lee testimony, hearing transcript February 23, 2021).

Similarly, MADA provided affidavits that describe the business relationship that dealers have with manufacturers, including how dealers finance vehicles for sale through “floor plan credits,” lenders, and “curtailment.” If *any* car sits on a dealer lot beyond 30 to 60 days, according to MADA, the dealer risks selling the vehicle at a loss and, if it sits on a lot between 200 and 250 days, the dealer risks going into “curtailment” where it would have to start paying back the principle on the loan taken out to secure the vehicle (Affidavit of Timothy Ciccarelli, pg. 4). According to the affiant, if a dealer had 25 vehicles in curtailment at the same time, the monthly payments “could sink a dealership” (*Id.*). The MPCA appreciates this insight into the business relationship between automobile dealers and manufacturers, but notes that this relationship and the attendant risks exist independent of the proposed rule.

The MPCA is aware of the potential impact that the coming EV market will have on auto dealers, to some degree, with or without the proposed rule. The Agency acknowledged as much in the SONAR, when we indicated that it is possible that some dealers could be eligible for no- or low-interest loans from the MPCA for small- and medium-sized businesses seeking to reduce pollution. And the MPCA acknowledges that the rule will require manufacturers to deliver for sale to

⁶ The Ford Mustang Mach-E won the North American Utility Vehicle of the Year in early 2021. Henry Payne, “Ford Dominates Car of the Year Awards with F-150 and Mustang Mach-E,” The Detroit News (Jan. 11, 2021).

dealers more EVs than the Agency estimated would be sold in a conservative “do-nothing, business-as-usual” approach in our analysis, which was described in our preliminary response and elsewhere in this final Response.

The MPCA continues to believe that this rule is both needed and reasonable in response to the comments on the potential impacts to dealers for at least three reasons.

One, dealers are already transitioning and retooling to sell existing and future EV models. General Motors’ initial comments noted that 37 of its Minnesota dealerships are EV-certified and that it expects its inventory and network of EV-certified dealers “will only grow as our new models . . . begin reaching the market later this year” (General Motors, pg. 2). The dealer whose affidavit was submitted by MADA summarized investments that dealer has already made in order to sell a new EV model.

Two, based on comments in this rulemaking, this transition to EVs appears poised to accelerate with new models and investments arriving soon. Auto manufacturers have very publicly committed “to the goal of net zero carbon transportation,” including making investments of “more than \$250 billion in ZEVs through 2023” and tripling the number of BEVs, PHEVs, and fuel cell-electric vehicle models by 2025 (Auto Innovators, pgs. 3-4). General Motors has committed to an “all-electric future” in recognition of “the role of the transportation sector” in contributing to climate change (GM, pg. 1). Comments from Tesla highlighted how rapidly the EV landscape has progressed since Colorado adopted the ZEV standard in 2019 when it argued that the MPCA used an “overly conservative reference scenario” in our projection of the future EV market (Tesla, pg. 14; the MPCA still considers our modeling to be reasonable and addresses Tesla’s comment elsewhere in this Response). Comments from MADA, however, do not align with the manufacturers stated direction towards electrification, instead suggesting that EVs will never be in high demand and will only “make it harder to stock those vehicles that are in higher demand” (MADA, pg. 18).

And three, there are compliance flexibilities and significant lead time built into the rule. The proposed rule’s initial ZEV credit bank, which is comprised of early action credits and an initial one-time allotment of credits, is intended to provide manufacturers with both regulatory certainty and flexibility once the standards are effective. Under the proposed rule, manufacturers will be able, if they choose, to build up their initial ZEV credit banks prior to the first effective model year by selling EVs in Minnesota. Then, once the standards become effective, any early action credits plus a one-time allotment of credits will be deposited into each manufacturer’s bank. As stated in the SONAR and elsewhere in this final response, this mechanism was developed in direct response to concerns of manufacturers, but it would also allow manufacturers to respond to concerns with their dealer partners regarding any un-sold EV inventory.

D.5. Comments about costs to dealers related to the LEV standard

The Minnesota Automobile Dealers Association (MADA) and other commenters identified concerns related to several categories of costs stemming from the LEV standard, including an inability to swap vehicles with dealers out of state to meet consumer demands and upfront cost differences that could occur between Minnesota and neighboring states. Commenters expressed concerns that a higher up-front cost of LEV-certified vehicles would lead residents of other states would cease to purchase vehicles in Minnesota and that Minnesota residents would seek to purchase vehicles in neighboring states.

Affidavits provided as part of MADA’s comments state that sales into other states amount to about 10-20% of sales for dealerships providing statements. Dealers describe having sales goals and bonuses from manufacturers based on regional sales in regions that include neighboring states. They also describe price-sensitive competition with dealerships in neighboring states. The affidavits state that maintaining stock of LEV-certified and federally-certified vehicles for sale into states with different regulatory requirements is not feasible.

Affidavits from dealers also described the importance of cross-border dealer trades. They state that since vehicles have so many different trim, color, and other options, dealers cannot stock all the vehicles purchasers want and therefore rely on dealer trades to acquire vehicles purchasers want. They describe using out-of-state dealer trades on about 10-30% of their vehicle sales and state that they typically only trade with dealerships within a few hundred miles due to transportation costs.

Fresh Energy, et. al. provided comments stating that dealers in other states “to date have not supplied any evidence of systemic problems [relating to trading cars between states or buying cars out of state] associated with LEV or ZEV adoption in other states” (Fresh Energy, et al., pg. 22).

MPCA response: The MPCA appreciates MADA providing to the record additional context on dealership operations. The Agency notes that between 2012 and 2021, the federal and California standards were the same and currently no difference is being enforced. The Agency acknowledges that out-of-state trades may become more difficult for dealers if some manufacturers choose, in the future, to diverge vehicle models between LEV states and Federal states. It is not clear from MADA’s comments how many of the out-of-state trades could be replaced with in-state trades. It is also not known how manufacturers will choose to comply with the LEV standard once the waiver is restored. Manufacturers complying using fleet-wide averages may choose to certify all of their vehicles to both the LEV and federal standards, thus eliminating the potential cross-border cost difference.

The MPCA listened to MADA’s concerns about sales to people from out of state and wrote into the rule a reasonable exception to allow dealers to carry federally certified vehicles to sell for registration out of state if manufacturers sell separate LEV- and federally certified vehicles in the future (proposed Minn. R. 7023.0250, subpt. 2(E)). The MPCA notes, too, that Minnesota residents will need to register vehicles in Minnesota that comply with the LEV standard. If, in the future, vehicles have different prices in LEV-states and federal-states, Minnesota residents will still need to purchase LEV-certified vehicles. MADA’s comments do not identify how many Minnesota residents currently purchase vehicles in other states and may in the future have more limited options to purchase vehicles across the border. It is unknown how many of these sales might be brought back to Minnesota.

In their affidavits, dealers identify concerns that such price differences would confuse potential vehicle purchasers. While this may be a hurdle, dealers already help potential purchasers understand any number of factors that play into vehicle cost including different financing options and different trim, color, and engine packages. Dealers who sell to out of state purchasers also help consumers understand cross-border tax and registration differences. The SONAR notes, “In addition, the MPCA would work with [the Division of Driver and Vehicle Services] 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” (SONAR, pg. 64). The proposed rule provides at least two years of lead time to work with dealers and others to aid in smooth implementation.

D.6. Comments about costs to dealers related to training, tools, and certifications to sell EVs

Commenters expressed concern about the costs to dealers of training, tools, and certifications that may be required by manufacturers to sell EVs. The Minnesota Automobile Dealers Association stated, “the latest and greatest models coming online which our dealers are excited to sell, those costs can be upwards of 150,000 to \$200,000” (Backhaus, hearing transcript February 23, 2021). The affidavits also discuss dealer’s decisions to sell upcoming EV models and the costs associated with selling those vehicles. One dealer states:

“I have decided to sell Mach E, the electric Ford Mustang, starting in 2021. My dealership has evaluated the costs required to accept the Mach E. We determined the cost associated with selling the Mach E would include the costs of sales and maintenance service force training, advertising, and new equipment and tools. The cost, at minimum, of these changes is about \$13,000 per location, in addition to the \$10,000 spent to get ready to sell past hybrids, and I have 2 locations. In addition to those costs, I am required to purchase a Mach E from the manufacturer so that customers can try it. Purchasing the Mach E would cost my dealership about \$59,000. I will be unlikely to sell the Mach Es in a profitable manner.” (MADA comment attachment, pg. 8).

Other dealers have offered different perspectives. One commenter, a dealer in a state already implementing the ZEV standard stated, “with every new model there are special tools we have to buy. It doesn't matter if it's an EV. Any car that comes to market often has unique tools. EVs are the same. So whether it's a Honda Accord, a Toyota Camry or a new Nissan LEAF, we need to buy special tools. And that's part of our business is maintaining the technology. There are far fewer tools required for an EV than a normal car” (Lee, hearing transcript February 23, 2021).

MPCA response: The MPCA acknowledges the potential costs to dealers to develop the infrastructure and expertise to sell EVs. The MADA comments highlight the variability of costs across manufacturers. The Lee testimony also highlights that there are parallel costs for tools and training for other new vehicle models. Commenters have not offered information on how different such costs might be across different models, be they EVs or other vehicle types.

The MPCA notes that the ZEV standards have been adopted by 14 other states and that no commenter has identified information on direct costs to dealers associated with complying with the ZEV standard in those states.

As noted on page 69 of the SONAR, costs to dealerships of selling EVs cannot be solely attributed to the adoption of the ZEV standard. Commenters representing both the automobile manufacturers and Minnesota dealers highlight the number of EV models currently anticipated for release in the upcoming years as well as manufacturers’ commitments to transitioning towards electric vehicles. The SONAR states, “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” (SONAR pg. 69).

D.7. Comments on dealer ability to sell EVs

Commenters indicate concerns that the ZEV rule will result in increasing supply of EVs, but that dealers will not be able to sell them and they will sit on dealership lots, thus costing dealers money. Affidavits from dealers included in MADA’s comments state that dealers have had trouble selling EVs and hybrid vehicles in the past. MADA also included in its comments an affidavit of a dealer who states, “At present, I take delivery for sale of Chevy Bolts sufficient to meet the demand of my customers. If customers wanted more Chevy Bolts, I would order them and make the sale” (MADA attachment pg. 36). Affidavits also include several dealer statements describing upcoming EV models that they have decided to carry.

Other commenters have offered different perspectives. One commenter, a dealer from Roseau, MN expressed enthusiasm for the possibility of Minnesota being a leader in EVs. He states, “There is an argument that dealers will be swamped with unwanted electric vehicles. I don’t agree. I can't wait until Ford rolls out an all-wheel drive Mustang Mach-E , 4x4 F150 pickup, Transit, and SUV Escape to take on Tesla, GM and any other EV competitors. My customers are asking for this option, too” (Blomquist, pg. 1). The commenter identifies challenges facing dealers in transitioning to selling more EVs, but states “...we should hit the accelerator and lead through these challenges instead of following” (Blomquist, pg. 2). One commenter, offering a perspective as a dealer in a cold-weather state already implementing ZEV (Maine), stated that he does not have a problem selling EVs: “I would not have access to the volume of electric vehicles if it weren't for the fact that Maine, which is where we operate, was a clean car state... Our biggest challenge has been getting as many as we need. As demand often outstrips supply. I look forward to the dozens of new models coming in the next few years. As there is tremendous interest... I've had no trouble selling EVs. The manufacturers have been very supportive with promotional materials, financing, leasing, advertising and training.” (Lee testimony, hearing transcript February 23, 2021).

The Northeast States for Coordinated Air Use Management (NESCAUM) offered comments reflecting experiences of dealers in other ZEV states. Their comments address whether EVs sit on dealer lots for long periods before being sold, stating

“As with any vehicle type, some makes and models will sell better than others. How long an EV sits on a dealer lot generally depends on the strength of the underlying product. Better EVs will sell faster than others. Another important factor is how engaged dealers are in selling EVs. Some dealers are proactive about specializing in EVs and making EV sales part of their business model, while others are ignoring EVs. As EV sales continue to increase, dealers who sit on the sidelines will lose out on business if they don’t keep up with their competitors.” (NESCAUM, pg. 3)

Fresh Energy also cites a study about dealer revenue in ZEV states and non-ZEV states that found no discernible negative impact on dealer revenue (Fresh Energy, et. al., pg. 23). They also note that in Virginia’s effort to adopt the LEV and ZEV standards, the Virginia Automobile Dealers Association supported the legislation, stating “We understand this is the future of our industry and we support this innovation” (Fresh Energy, et. al., pg. 22).

MPCA response: The MPCA acknowledges that selling EVs may be different for some dealers than selling internal combustion engine vehicles. However, the MPCA notes that auto manufacturers have made strong commitments to transitioning to EV technology. The proposed ZEV standard provides a backstop for Minnesota to ensure EVs are delivered for sale here and to put Minnesota at the front end of receiving these new models and technology rather than at the tail end. MADA’s affidavits mention past challenges selling EVs and hybrids, but new models coming on the market include SUVs and pickup trucks, which are vehicle types more popular with Minnesotans. In addition, awareness of EVs and EV charging infrastructure continues to grow. Therefore, past challenges may not offer a useful reflection of the future. In addition, on the affidavit mentioning the ability to get a Chevy Bolt if a customer wants one, the MPCA notes that the Chevy Bolt has been offered for sale since 2016 and is thus much more available than other models.

E. Consumer costs and other impacts

The MPCA received comments about consumer costs. Some commenters identified concerns about upfront costs of vehicles. Other commenters noted the lower cost of ownership of LEV-certified vehicles and EVs.

E.1. Comments about consumer costs

Commenters offered a wide range of opinions and perspectives about potential consumer costs associated with the proposed rule. Commenters shared information about saving money with EVs and the benefits of saving money on fueling more efficient vehicles. Other commenters identified concerns about higher costs for EVs. Commenters also noted specific cost concerns in rural Minnesota, but these comments were also split between negative and positive interpretations of the rule. For example, commenters cited lower median incomes in rural counties as a reason that upfront vehicle prices resulting from the proposed rule are too high, while other comments cited more driving as a reason rural drivers would save even more money under the proposed rule.

Commenters identified increases in upfront costs for EVs and LEV-certified vehicles as a burden on Minnesota consumers, particularly low-income and rural residents. A comment from Center of the American Experiment states that “MPCA and other stakeholders acknowledge that [LEV-certified vehicles] will be more expensive than non-LEV vehicles and will increase the cost of driving in Minnesota.” (Center of the American Experiment, pg. 3)

MPCA response: The MPCA analyzed potential impacts to consumers under the LEV and ZEV standards. While the LEV standard does not directly affect vehicle price, the MPCA agrees that that LEV-certified vehicles may have a higher up-

front purchase price than non-LEV vehicles as a result of costs that manufacturers may incur and thus pass on to consumers. However, overall, once ongoing fuel costs are taken into consideration, the full costs of vehicle ownership—including purchase costs as well as fuel, maintenance, insurance, and vehicle registration costs—will generally be cheaper under a LEV standard (SONAR pgs. 71-73). Only at a high discount rate of 7% does the MPCA analysis project a small net consumer cost over vehicle lifetimes under a LEV standard. Commenters have also addressed the MPCA's analysis of consumer costs and these comments are responded elsewhere in this Response.

The analysis also shows that there are clear consumer cost savings under the ZEV rule (SONAR pg. 73–75). The MPCA also notes again that the ZEV standard does not require any individual to purchase an EV if it does not meet their needs or budget.

E.2. Comments on methodology for evaluating consumer costs of the LEV standard

Commenters provided a range of input on the MPCA's methodology for evaluating consumer costs of the LEV standard.

One commenter noted that the MPCA “uses the cost of achieving the full 25 percent Obama reduction without subtracting the cost of reaching the 9 percent [Safer Affordable Fuel Efficient Vehicles Rule] SAFE improvement, which should not be attributed to this rule. The appropriate measure is the cost of achieving the 16 percent incremental difference” (Shulock, pg. 1). This commenter concluded that the MPCA's analysis over estimates consumer costs associated with the LEV standard, stating “When the cost estimate is corrected the regulation provides net benefits under both the 3 percent and 7 percent discount rates” (Shulock, pg. 1)

Another commenter cited a report from the Colorado Automobile Dealers Association (CADA), which found that adoption of the LEV standard in Colorado “...would increase the average sticker cost for vehicles by \$2,110 per car produced between model year (MY) 2021 and 2025, and increase the average sticker price by \$2,098 for MY 2025” (Center of the American Experiment, pgs. 18-20). This commenter concluded that the MPCA under-estimated the costs to consumers associated with the LEV standard.

MPCA response: The Shulock comment states that in estimating the technology cost difference between LEV- and federally certified vehicles, the MPCA did not correctly account for the fact that the final SAFE rule does increase stringency of tailpipe GHG emissions regulations year-over-year, although to a lesser extent than the LEV standard. Thus, basing the technology cost comparison on the EPA Final Determination analysis does not take into account the fact that under the federal standards there will be increased technology costs to meet the increased stringency of the SAFE rule.

The commenter is correct that the MPCA did not base the comparison of the technology costs and the estimated average vehicle cost difference between a LEV-certified and SAFE-certified vehicle based on the final SAFE rule, published in April 2020. Rather, by virtue of basing this analysis on the EPA Final Determination analysis, the MPCA was essentially comparing manufacturer technology costs and consumer purchase prices of LEV-certified vehicles to vehicles certified under the *proposed* SAFE rule, which was less stringent in regulating tailpipe GHG emissions than the *final* SAFE rule. The commenter is correct to point out that there will likely be increased technology costs to manufacturers to meet the increased stringency of the final SAFE rule, relative to the proposed SAFE rule, for which the MPCA did not account.

While the Agency did not adjust our analysis based on the final SAFE rule as suggested by the commenter, we did compare our overall estimates of purchase cost premiums of LEV-certified vehicles to similar estimates in the SAFE rule Final Regulatory Impact Analysis (FRIA). In this comparison, the MPCA found that our estimates of vehicle purchase price differentials between LEV-certified and SAFE-certified vehicles to be relatively consistent with the FRIA estimates, and thus deemed our estimates to be reasonable, albeit highly conservative.

The MPCA agrees with the commenter's conclusion that as a result of the Agency's methodology, our analysis likely overestimates the purchase cost premiums of LEV-certified vehicles relative to federally certified vehicles. In other words, the technology costs that the MPCA assumes are passed to consumers under the LEV standard would likely to be

lower when using commenter's suggested methodology. The Agency notes that this comment further supports the reasonableness of the rule.

Another commenter pointed to a study from CADA. The MPCA evaluated this CADA study, which serves as the basis for the commenter's concerns about vehicle purchase costs under a LEV standard.⁷ The Agency found the CADA study problematic because it was developed based on the cost analysis in the EPA's Preliminary Regulatory Impact Analysis (PRIA) for the proposed Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule. The MPCA evaluated whether to use the vehicle technology costs identified in the SAFE PRIA in our analysis of the cost impacts of LEV, but determined it was not a credible source of information. As explained on page 36 of the TSD, the analysis supporting the proposed SAFE rule has been widely criticized, including by the EPA's own Science Advisory Board, as well as by the National Association of Clean Air Agencies, and a consortium of 26 states and U.S. cities that includes Minnesota. As explained in the TSD, the MPCA instead used the EPA's analysis for the Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Final Determination) as the basis for our cost analysis of the LEV standard.⁸

However, the MPCA also took into consideration the Final Regulatory Impact Analysis (FRIA) for the Final SAFE rule, and found "the SAFE FRIA estimates a slightly smaller cost difference between the Clean Cars scenario and the Reference scenario than was estimated based on the January 2017 Final Determination cost estimates" (TSD pg. 42). What this means is that the Agency estimates that using the FRIA cost estimates would likely result in lower estimated up-front cost premium for a LEV-certified vehicle compared with a federally-certified vehicle. This conclusion aligns with the conclusions of the Shulock comment. The MPCA concludes that we relied on reasonable, if conservative estimates of technology costs associated with the LEV standard.

E.3 Comment on potential overestimation of ZEV costs

A comment from Tesla refers to earlier comments submitted by Fresh Energy et al. on June 18, 2020 ("June Fresh Energy comments"),⁹ during a time when the MPCA invited input from stakeholders about its regulatory analysis of the proposed rule. The June Fresh Energy comments suggested that the MPCA's method of analyzing the costs for the LEV and ZEV standards separately could lead to an overestimation of ZEV costs. Specifically, because manufacturers can average GHG emissions across the entire fleet means that adding ZEVs to the fleet reduces the fleet average GHG emissions, which allows manufacturers to increase average emissions from the internal combustion engine portion of the fleet. This, in turn, allows manufacturers to avoid the cost of the technology which would have been needed to bring the internal combustion engine fleet, on its own, into compliance and as a result of the MPCA separating the LEV and ZEV consumer costs analyses, "...the cost of the ZEV program is overstated." (Fresh Energy comments from June 18, 2020, pg. 3) The comment from Tesla "...encourages consideration of the potential resulting implications across the MPCA's analysis, so as not to overstate the costs to ZEV rule adoption." (Tesla, pg. 10)

MPCA response: The MPCA maintains that separating the LEV and ZEV consumer impacts analysis, including the costs to manufacturers to produce compliant vehicles is reasonable, although the commenter's suggestion that the method might over-estimate consumer costs. As explained on page 35 of the TSD, because the mechanisms for economic impacts on vehicle purchasers would be different for the LEV standard compared to the ZEV standard, it is reasonable to separate the two analyses. The MPCA acknowledges, as the Fresh Energy et al. comments from June 18, 2020 explain in detail, this may overestimate the compliance costs to manufacturers to comply with the proposed rule, and as a result overestimate the costs to consumers who purchase compliant vehicles. Again, the MPCA reasonably selected a conservative methodology to estimate potential impacts of the proposed rule.

⁷ Available at https://www.eenews.net/assets/2019/03/14/document_gw_10.pdf.

⁸ Available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100QQ91.pdf>.

⁹ Available at <https://www.pca.state.mn.us/sites/default/files/aq-rule4-10t.pdf> (document pg. 12)

E.4. Comments about availability of different vehicle types

Commenters raised concerns about reduced availability of vehicles they need for towing, farm work, or other specific uses. They stated that having more EVs at dealerships would reduce the space available for vehicles such as SUVs and pickup trucks. Other commenters noted that there is not evidence of this happening in other states with ZEV regulations. For example, NESCAUM states, “No, the Section 177 states have not heard any complaints from dealers or consumers about any decrease in the availability or increase in prices of SUVs and pickup trucks since adopting the regulations. While many Section 177 states heard this might happen when they were adopting California’s standards, these concerns did not come to fruition” (NESCAUM, pgs. 2-3).

MPCA response: While the MPCA has heard from many commenters stating concerns that adopting the ZEV standard in Minnesota would limit access to other popular vehicle types, such as SUVs and pickup trucks, the Agency notes that these statements are speculative and that we have not received any evidence that this is actually happening in any of the states that have adopted the ZEV standard. The MPCA further notes in our SONAR that truck and SUV sales account for a very high proportion of vehicle sales in many section 177 states and, “Light truck sales account for over 50% of sales in all of the other section 177 states” (SONAR, pg. 23). In addition, comments from General Motors (highlighting recent debuts of crossover and SUV EV models), Rivian (an electric SUV and truck manufacturer), and Tesla (noting that industry expects 29 new electric SUVs and trucks in the next five years), it is clear that more models of electric SUVs and trucks will hit the market in the coming months and years. The Agency therefore believes it is reasonable to assume that adopting the ZEV standard will not limit Minnesotans’ access to SUVs and pickup trucks.

E.5. Comments that prices of internal combustion engine vehicles will go up to compensate for costs associated with selling EVs

Commenters have suggested that prices of internal combustion engine vehicles in Minnesota will go up to compensate for costs associated with selling EVs. For instance, one commenter states, “By imposing California's ZEV mandate on Minnesota, the agency would force automakers to sustain losses by mandating cars that few Minnesotans want to buy. The cost of these losses would be recouped by raising prices on the [internal combustion engine vehicles] ICEVs that people actually wish to purchase” (Center of the American Experiment, pg. 6). Other commenters noted that there is not evidence of this happening in other states with ZEV regulations. For example, NESCAUM states, “No, the Section 177 states have not heard any complaints from dealers or consumers about any decrease in the availability or increase in prices of SUVs and pickup trucks since adopting the regulations. While many Section 177 states heard this might happen when they were adopting California’s standards, these concerns did not come to fruition” (NESCAUM, pgs. 2-3).

MPCA response: The MPCA notes that comments suggesting that prices for SUVs and pickup trucks will go up to compensate for costs associated with EV sales are speculative. No commenter shared data or other information demonstrating that this has happened in any of the states currently implementing the standard. The Agency therefore believes it is reasonable to assume that adopting the ZEV standard will not increase prices of SUVs, pickup trucks, or other internal combustion engine vehicles.

E.6. Comments on the impact of up-front cost increases on lower-income people

Commenters offered different perspectives on how up-front cost increases related to emissions reduction technology might impact lower-income people. A comment from Center of the American Experiment stated that increased vehicle purchase costs disproportionately harm low-income people. (Center of the American Experiment, pgs. 40-41). Other commenters, however, commented that when the full costs of vehicle ownership are taken into account, both the LEV and ZEV standards would benefit lower-income Minnesotans. Consumer Reports commented, for instance, that the proposed rule “...will help lower income Minnesotans because it will increase the availability of used and new vehicles with a lower total cost of ownership... Low-income households spend more money fueling cars than buying them...increased availability of cars meeting LEV standards will help lower income families by reducing fuel costs” (Consumer Reports, pgs. 5-6), Consumer Reports also identifies that the lower vehicle ownership costs of EVs generally

benefit low- and moderate-income Minnesotans: “These lower operating cost benefits accrue even more to moderate and lower-income families as more affordable ZEV vehicles become available on both the new and used vehicle markets” (Consumer Reports, pg. 11).

MPCA response: The MPCA’s analysis shows that while there may be up-front cost increases associated with the proposed rule, consumers would save money in fuel and maintenance costs over the lifetime of the vehicle. The Agency disagrees that higher up-front costs for new vehicles would disproportionately impact lower-income individuals. It is reasonable to conclude that lowering the cost of vehicle ownership is important for reducing transportation costs for Minnesotans of all income levels.

E.7. Comments on future battery costs

Commenters provided different opinions about the future of battery costs. A comment from Center of the American Experiment cites research from the MIT Energy Initiative that warns that it will take a long time, if ever, for EVs to reach cost parity with internal combustion engine vehicles due to rising costs for lithium-ion batteries (Center of the American Experiment, pgs. 6-7). Other commenters cited studies estimating significant future battery cost declines. For instance, one commenter stated, “analysts estimate that electric vehicles will reach cost parity with comparably sized gasoline-powered vehicles within several years, as battery costs fall over time and production scale increases” (Union of Concerned Scientists, pg. 6). The commenter provided a graph of a variety of academic and automaker cost estimates projecting battery prices that would result in up-front cost parity between internal combustion engine vehicles and EVs around the mid-2020s.

MPCA response: There are many studies that attempt to estimate future battery costs, as reflected by the comments the Agency received. The Center of the American Experiment chooses to emphasize one particular study from MIT which suggests battery prices may not go down as rapidly as other studies have suggested. A number of other studies indicate that EV technology costs, especially battery costs, are rapidly declining and will continue to do so. For example, in the MPCA’s projections of future costs of EV technology (TSD, pgs. 51-55) the Agency drew on a highly regarded study from the International Council on Clean Transportation (ICCT) that projects that “Electric vehicle initial cost parity is coming within 5-10 years” and that battery costs are expected to “...drop to approximately \$104/kWh in 2025.”¹⁰ The ICCT research is widely cited and a reasonable basis for the Agency’s analysis.

E.8. Comments about electricity prices

A comment from Center of the American Experiment states that electricity prices are rising and the MPCA should account for this trend in the consumer cost analysis. The commenter states that rising energy prices would greatly diminish the estimated fuel cost savings of EVs (Center of the American Experiment, pgs. 21-25).

MPCA response: On pages 55-58 of the TSD, the MPCA explained our analysis of the expected fuel costs savings under the ZEV standard. The commenter is correct that MPCA used constant electricity prices (the projected average residential electricity price for 2022) in our estimates of the costs to power EVs. The commenter relies on proposed rate increases for one Minnesota utility that are currently under review at the Public Utilities Commission. The MPCA does not believe the commenter’s proposed analytical approach is reasonable since it is based on an ongoing regulatory proceeding that uses proposed, not final rates, and that covers only a portion of Minnesota’s electricity consumers.

The MPCA’s approach is reasonable considering available projections of electricity prices. The U.S. Energy Information Administration (EIA) is generally considered the most credible authority on projecting energy prices, including the price of residential electricity. Currently, the EIA projects that the average residential price for electricity will be almost exactly

¹⁰ ICCT, “Update on electric vehicle costs in the United States through 2030,” (<https://theicct.org/publications/update-US-2030-electric-vehicle-cost>), pg. 11

flat over the ten-year time frame in the MPCA's analysis.¹¹ It projects an average price of 12.4 cents per kilowatt-hour in 2025 and virtually the same 12.5 cents per kilowatt-hour in 2034 (both values in 2020 cents). Moreover, the EIA projects that the price of residential electricity will actually decrease after 2034, reaching 11.9 cents per kilowatt-hour (again in 2020 cents) by 2050. Thus, as future electricity becomes even cheaper relative to gasoline, the fuel cost savings of the proposed rule will only increase.

E.9. Concerns about costs of Type III school buses

One commenter representing the Minnesota School Bus Operator's Association expressed concerns about impacts of the proposed rule on costs for purchasing Type III school buses. The commenter states,

"School districts and private bus operators currently have 5,319 Type III School Buses (cars, vans, SUVs) registered in the State of Minnesota, which represents about 35 percent of the total school bus fleet across Minnesota. These vehicles are classified as "Medium-duty passenger vehicles" under the proposed Clean Cars Minnesota, and would be subject to the Low-Emission Vehicle Standards if these rules are adopted. Based on our industry partners experience in states that have adopted similar standards, the Low-Emission Vehicle standards proposed would add approximately 52,500 to the cost of a new Type III vehicle." (Regan, Minnesota School Bus Operator's Association)

The commenter also expressed concerns that it might be difficult for school districts or operators to quickly obtain new Type III vehicles if states around Minnesota do not have similar vehicle emissions standards. The commenter stated that Type III vehicles are particularly important for transporting students with special needs.

MPCA response: The MPCA agrees that some Type III school buses are likely to fall into the category of "medium-duty passenger vehicle." However, it is not correct to assume that all Type III school buses are medium-duty passenger vehicles. Cars, vans, and SUVs, as described by the commenter, typically fall into the categories of "light-duty truck" and "passenger car." The definitions of the relevant vehicle types are as follows and are described on page 11 of the SONAR.

- Minnesota Statute 169.011 subd. 71 (h) defines "Type III vehicles" as "passenger vehicles and buses having a maximum manufacturer's rated seating capacity of ten or fewer people, including the driver, and a gross vehicle weight rating of 10,000 pounds or less." Type III vehicles, distinct from traditional yellow school buses, are a vehicle classification defined not by the vehicle itself but by its use (a vehicle used by a school to transport students). They are typically passenger vehicles.
- A "medium-duty passenger vehicle" is defined at California Code of Regulations, title 13, section 1900(b)(12) as "means any medium-duty vehicle with a gross vehicle weight rating of less than 10,000 pounds that is designed primarily for the transportation of persons. The medium-duty passenger vehicle definition does not include any vehicle which: (1) is an "incomplete truck" i.e., is a truck that does not have the primary load carrying device or container attached; or (2) has a seating capacity of more than 12 persons; or (3) is designed for more than 9 persons in seating rearward of the driver's seat; or (4) is equipped with an open cargo area of 72.0 inches in interior length or more. A covered box not readily accessible from the passenger compartment will be considered an open cargo area, for purposes of this definition."
- A "light-duty truck" is defined at Code of Regulations, title 13, section 1900(b)(11) as "...rated at 8,500 pounds gross vehicle weight or less..."
- A "passenger car" is defined at Code of Regulations, title 13, section 1900(b)(17) as "any motor vehicle designed primarily for transportation of persons having a design capacity of twelve persons or less."

¹¹ EIA Annual Energy Outlook 2021, Table 8. Electricity Supply, Disposition, Prices, and Emissions (<https://www.eia.gov/outlooks/aeo/data/browser/#/?id=8-AEO2021&cases=ref2021&sourcekey=0>)

If Type III school buses are cars, vans, and SUVs, it is likely they are actually light-duty trucks and passenger cars. It is thus likely that these vehicles would be impacted by the proposed rule with the same up-front cost increases and long-term cost savings described in the MPCA's cost analysis on pages 70-73 of the SONAR. The Agency's analysis estimates that an average Minnesota vehicle purchaser would experience between a \$186 cost and a \$107 benefit over the lifetime of the vehicle. It is reasonable to assume that most Type III school buses that are cars, vans, or SUVs would experience similar costs and benefits, and not an upfront cost increase of \$52,500 as described in the comment.

Based on the definition of Type III vehicles, some may indeed be medium-duty passenger vehicles (MDPV). Medium-duty passenger vehicles are a subset of medium duty vehicles that are 8,501-10,000 pounds. It is a unique vehicle classification created to include the largest SUVs that are used as personal transportation, rather than as work trucks. The subset medium-duty passenger vehicles are included in the LEV GHG standards.

The MPCA is unable to verify the commenter's estimated \$52,500 up-front cost increase associated with LEV-certified medium-duty passenger vehicles. If the Agency adopts the Clean Cars Minnesota rule, there will be considerable lead time—more than two years—to work with interested parties to ensure a smooth transition and address implementation concerns. Specifically, the MPCA will work with groups like the commenting organization on how the standards could affect specific vehicle models that their members may be interested in purchasing. Cost increases are a valid concern and thus the MPCA conducted rigorous analysis on the cost impact of the proposed rule. The Agency continues to believe that the proposed rules are needed and reasonable.

F. MPCA authority to adopt the proposed rule amendments

The MPCA received comments relating to the MPCA's authorities under federal and state law to adopt the proposed rule.

F.1. Comments about Clean Air Act and Energy Policy and Conservation Act preemption

Commenters raised concerns about the status of the EPA waiver under section 209(b) of the Clean Air Act (CAA) and whether the proposed rule is thus preempted, as well as concerns about whether the proposed rule is preempted by the Energy Policy and Conservation Act. Other commenters have argued that MPCA has appropriately addressed the waiver and that it is not preempted by the CAA or the Energy Policy and Conservation Act.

MPCA response: The MPCA explains the background of the CAA's waiver provision on page 35 of the SONAR. In summary, section 209(a) of the CAA prohibits states from adopting their own emission standards for motor vehicles, section 209(b) of the CAA allows California to adopt its own emission standards subject to a waiver from the U.S. EPA, and section 177 of the CAA allows other states to adopt these 209(b) standards. The SONAR also describes the current status of California's waiver from EPA on page 36 and explains how the proposed rule is drafted to address this issue.

As noted in the SONAR on page 36:

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 [part 7023.0150, subp. 4] 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. With this provision, the MPCA would adopt the LEV and ZEV standards while maintaining compliance with applicable CAA provisions. (Internal citation omitted).

This approach is reasonable because the MPCA is proposing to provide public notice in the State Register and manufacturers will have at least two years lead time (a CAA requirement) to prepare to comply with the standards. SONAR pages 52–54 explain in greater detail why this provision is reasonable.

Although the MPCA has addressed the EPA waiver issue at length already, a number of commenters have argued that the Agency is preempted under both the CAA and the Energy Policy and Conservation Act (EPCA). For example, the Auto Innovators argued that the MPCA “is attempting to supersede or eviscerate the federal preemption requirements of the Clean Air Act” (Auto Innovators, pg. 10). The Auto Innovators, like other commenters, argued that the MPCA will be preempted “unless and until California’s waiver is reinstated, and the assertion of federal preemption withdrawn” (*Id.*).

In particular, these comments claim that Section 177 of the CAA, which allows states to adopt California auto emission standards, precludes those states from the ability to “adopt and enforce” emission standards “identical to the California standards for which a waiver has been granted” before a waiver from EPA is in force. But this ignores legal precedent for adoption of standards prior to the waiver.

In a 1994 case before the Second Circuit, auto manufacturers challenged New York’s adoption of vehicle standards prior to the granting of a waiver.¹² In that case, and using a nearly identical rationale to the comments in this docket, auto manufacturers argued “that New York was precluded from taking any action [on adoption of the standards] until the EPA actually granted a waiver for the LEV plan”¹³ In that case, the Second Circuit looked to the plain language of Section 177, “coupled with common sense,” and found that “it is sensible for [New York] to adopt the standards prior to EPA’s having granted a waiver, so long as the [New York agency] makes no attempt to enforce the plan prior to the time when the waiver is actually obtained.”¹⁴ Courts have repeatedly affirmed this concept, as summarized by the comments of Fresh Energy et al. in footnote 43 of initial comments.

Commenters have also asserted that the federal EPCA preempts the adoption of the emission standards following the “SAFE Part 1” rule promulgated by EPA and the National Highway Traffic Safety Administration, which purported to withdraw EPA’s waiver and declared that state emission standards are preempted by EPCA. The MPCA does not agree that EPA had the authority to withdraw the waiver or that the emission standards are preempted by EPCA. As noted on page 36 of the SONAR, Minnesota has joined other states to challenge this action in federal court. Early in 2021, President Biden issued an executive order directing EPA to consider proposing for notice and comment the suspension, revision, or rescission of the SAFE rules. As a result of the review EPA and NHTSA have asked the D.C. Circuit to stay proceedings in the SAFE lawsuit in the interim, which was granted. The comments of Fresh Energy et al. summarize these developments on page 9 and 10 and note that the Biden administration is likely to restore or reissue the EPA waiver.

F.2. Comments about the legality of the initial ZEV credit bank mechanism as an enforcement mechanism

Commenters have also taken issue with the proposed initial ZEV credit bank mechanism, which includes an early action credit mechanism and a one-time allotment of credits, and have argued that it is preempted by the Clean Air Act.

MPCA response: Commenters argued that the effective date of the early action credit mechanism five days following adoption would somehow render the rule “a legal nullity” because it is an “enforcement mechanism” and thus preempted under federal law because of the EPA waiver issue (see, e.g., Initial Comments of Douglas Seaton, pg. 2). Commenters cite Section 209 of the Clean Air Act (CAA), which prohibits individual states from “adopt[ing] or attempt[ing] to enforce any standard relating to the control of emissions from new motor vehicles or new motor

¹² Motor Vehicle Manufacturers Ass’n v. New York State Dep’t of Env’tl. Conservation, 17 F.3d 521 (2d. Cir. 1994).

¹³ *Id.* at 533.

¹⁴ *Id.* at 533–534.

vehicles.” But “enforcement mechanism” is a term of art in CAA parlance. As described in the SONAR, an enforcement mechanism is a “regulatory device[] ‘intended to ensure that the ‘standards’ are effective’” (SONAR, pg. 36).

Under a plain language reading of the CAA, states cannot adopt emission *standards* of their own, but enforcement mechanisms, i.e., regulatory tools to support the standards, are not subject to the same restrictions. This is supported by longstanding legal precedent. As the D.C. Circuit noted in a 1979 case, “Congress was certainly capable of adding the phrase “accompanying enforcement procedures” wherever the word “standards” appeared if it desired the statutory findings to apply to both.”¹⁵ But Congress did not. And so the early action credit mechanism is not preempted.

Although the MPCA has made efforts to explain the specific meaning of “enforcement mechanism” in the SONAR, some commenters appear to misconstrue the phrase to suggest the Agency will take enforcement action against manufacturers related to the early action credit mechanism. This is incorrect. The early action credit mechanism is a voluntary regulatory tool that manufacturers can choose to take part in so that their actions in Minnesota prior to the first effective model year can be recognized when or if the EPA waiver is reinstated. It may be self-evident, but it bears stating: the MPCA cannot force a manufacturer to participate in this voluntary program. The mechanism exists solely to encourage delivery of EVs prior to the first effective model year by crediting manufacturers for voluntary actions taken in those years.

In a recent lawsuit brought by the Minnesota Association of Automobile Dealers (MADA) challenging this rule, the judge, in dismissing the case, addressed the early action credit mechanism:

The Early Action Credit Provision permits motor vehicle manufacturers to begin to accrue credits for zero-emission vehicles delivered for sale in Minnesota *before* Minnesota’s proposed emission rules go into effect. But this provision merely offers incentives to motor vehicle manufacturers that voluntarily take certain actions. The Early Action Credit Provision does not threaten or even authorize civil or criminal enforcement against any person or entity. MADA emphasizes that Defendants’ rulemaking documents have referred to the Early Action Credit Provision as an “enforcement mechanism.” But that terminology—which, according to Defendants, is a term of art that differentiates the credit system from an emissions “standard”—does not alter the *substance* of the Early Action Credit Provision, the language of which plainly does *not* threaten or authorize civil or criminal enforcement.¹⁶

F.3. Comments about the non-attainment plan requirement under section 177 of the CAA

Commenters have argued that Minnesota does not have the legal authority to adopt these rules because the state does not qualify under section 177’s non-attainment requirement (e.g., MADA, pgs. 4–5).

MPCA response: The MPCA covered this issue on page 35 of the SONAR. The MPCA described section 177’s requirement that states have “maintenance or non-attainment ‘plan provisions’ approved by EPA.” The MPCA then provided a citation to the non-attainment and maintenance plans approved by EPA in the state of Minnesota.

F.4. Comments about proportional credits required under section 177 of the CAA

Some commenters have argued that Minnesota must adopt proportional credits when establishing an initial bank of ZEV credits, rather than the one-time allotment of credits proposed in Minn. R. 7023.0300, subpt. 5 in order to ensure that the rule meets the identity and undue burden requirements of the CAA.

MPCA response: Section 177 of the CAA requires states adopting California standards to adopt “such *standards* are identical to the California standards for which a waiver has been granted for such model year.” As noted on pages 60 to 61 of the SONAR (and elsewhere in this Response), the establishment of the initial ZEV credit bank is an enforcement

¹⁵ Motor and Equipment Mfrs. Ass’n, Inc. v. E.P.A., 627 F.2d 1095, 1113 (D.C. Cir. 1979).

¹⁶ Minn. Auto Dealers Ass’n v. State of Minnesota, D. Minn. No. 21-cv-0053 9–10 (filed 2/17/21) (emphasis in original).

mechanism, not a standard. This means that the MPCA is not preempted from creating the enforcement mechanism and it also means that the MPCA has flexibility to design this portion of the rule (SONAR, pg. 13).

The Auto Innovators argued that Minnesota’s proposed one-time allotment of credits would violate the identity requirement of the CAA (Auto Innovators, pgs. 46-48). The Auto Innovators argued that, “the proportional credit element is an integral part of determining the *practical* stringency of the standard for automakers” (Auto Innovators, pg. 48, emphasis added). But the CAA requires that states adopt identical standards, not identical enforcement mechanisms, or provisions of the rule that could have an effect on the “practical stringency” of the standard. In other words, the section 177’s identity requirement does not require that states adopt proportional credits.

In addition to the plain language reading of the word “standard,” the rest of the text of section 177 is clearly focused on avoiding a situation wherein non-California states adopt standards that would result in manufacturers needing to build a “third vehicle” (in addition to a theoretical California-compliant and federally-compliant vehicles).¹⁷ The MPCA’s proposed initial ZEV credit bank would not force manufacturers to create a third vehicle.

Relatedly, the Auto Innovators argue at various places that the proposed ZEV standard would place an “undue burden” on manufacturers (Auto Innovators, pg 12). The undue burden concept prohibits states adopting California’s emission regulations from placing an undue burden on manufacturers who will already be required to produce vehicles in compliance with California’s standard.¹⁸ Congress created the requirements (identity and a two-year lead time) of section 177 to avoid placing this undue burden on manufacturers.¹⁹ Since the initial ZEV credit bank *rewards* auto manufacturers, including providing each manufacturer with one year of credits at the outset, the MPCA does not consider this to be an undue burden. Once the standards become effective in Minnesota, manufacturers would be subject to the same compliance requirements as they are in California.

The overarching point is that states have flexibility to adopt mechanisms to establish their initial ZEV credit banks. Comments from the Auto Innovators describe the initial ZEV credit banks of two other states—Colorado and Virginia—that have created two completely different initial ZEV credit bank mechanisms (Auto Innovators, pgs. 22–26). Colorado’s initial credit bank features early action credits and a capped proportional credit mechanism whose cap is tied to whether a manufacturer opts to receive early action credits. The MPCA notes that such a cap on proportional credits would also appear to make Colorado’s initial ZEV credit bank more “practically stringent” under Auto Innovator’s line of reasoning. Virginia’s bank includes no early action credit mechanism, but does include a proportional credit mechanism. To recap, Minnesota is proposing early action credits and a one-year allotment of credits. None of these three initial ZEV credit banks are the same, a point conceded by Auto Innovators in footnote 52—and they do not have to be in order to be compliant with the Clean Air Act.

In sum, the MPCA acknowledges that proportional credits are the preference of the Auto Innovators. But they are not required under the Clean Air Act. Other commenters support this conclusion. For instance, as Tesla notes in its initial comments, “Minnesota should not feel compelled [under section 177 of the Clean Air Act] to adopt any proportional credit proposal” (Tesla at 7).

F.5. Comments about the MPCA’s statutory authority under Minnesota law

Commenters have also raised concerns that the MPCA lacks statutory authority to adopt this rule under Minnesota law.

MPCA response: As described on pages 34 and 35 of the SONAR, the MPCA has clear statutory authority to adopt this proposed rule. The MPCA will address several specific comments on this issue below.

¹⁷ See 42 U.S.C. § 7507 (prohibiting states from taking action that could have the effect of creating a “third vehicle”).

¹⁸ See *American Auto. Mfrs. Ass’n v. Cahill*, 152 F.3d 196, 201 (2d. Cir. 1998).

¹⁹ See H.R. Rep. 95-294, at 310 (1977) (“This new State authority should not place an undue burden on vehicle manufacturers who will be required, in any event, to produce meeting the California standards for sale in California.”).

Commenters have asserted that the MPCA has “conceded” that the Agency has no authority to adopt this rule until a waiver is valid (MADA, pg. 2). The MPCA has not conceded this. The MPCA’s statutory authority to adopt vehicle emission standards is unaffected by the status of the EPA waiver, although the emission standards cannot become effective until a waiver is in effect. In a previous response to CAA and EPCA preemption, the MPCA summarized the instances where states have adopted (but not begun to enforce) emission standards *prior* to an effective waiver.

Commenters have argued that the MPCA’s cited statutory authority in Minn. Stat. § 116.07 is not specific enough to adopt the proposed rule. MADA argued on page 6 that “MPCA both misreads and over reads the alleged authority.” Commenters argued that language in Minn. Stat. § 116.07, subdivision 2(a) that reads, “The agency shall also adopt standards of air quality . . . recognizing that due to variable factors, no single standards of purity of air is applicable to all areas of the state,” means that the MPCA cannot adopt emission standards that apply statewide. The remainder of that subdivision lists a number of these “variable factors,” such as land use classifications and zoning, topography, and prevailing winds for the MPCA to consider when adopting standards of air “purity.” But these factors relate to ambient air quality standards,²⁰ not emission standards from motor vehicles, which are also authorized by this subdivision of 116.07. The proposed vehicle emission standards do not seek to apply a statewide standard of ambient air quality. And the vehicle emission standards must be implemented statewide to conform with the Clean Air Act.

One commenter stated: “The MPCA relies only on Minnesota Statutes § 116.07 for its authority to force auto dealers to sell certain vehicles and otherwise regulate what cars auto dealers may sell in Minnesota” (Seaton, pg. 3). The MPCA disagrees with this characterization of the MPCA’s authority to adopt these emission standards. As described above, the LEV and ZEV standards are *motor vehicle emission standards* and Minnesota Statutes § 116.07, subd. 2 gives the MPCA clear authority to adopt “maximum allowable standards of emission of air contaminants from motor vehicles.”

Others have reviewed the MPCA’s statutory authority and have concluded that the Agency does have the authority to adopt this rule. The comments of Fresh Energy et al., for example, noted on page 7 that “Minnesota’s legislative authority mirrors the broad grants of authority relied upon by regulatory agencies in Colorado, New York, Oregon, Pennsylvania, Rhode Island, and Vermont to successfully adopt the California clean car standards. Other entities have reviewed this provision and arrived at the same conclusion: in a joint committee hearing held in February 2020 on the Clean Cars Rulemaking, non-partisan Minnesota Senate committee staff explained that the statute gives MPCA “very broad authority that does give, in my opinion, [] the agency the ability to write these rules.”²¹

F.6. Comments about differences in language of the Clean Air Act and Minnesota law

Commenters also argued that the statutory grant of authority in the CAA is “starkly different” from the statutory grant of authority found in 116.07. The commenter cited the CAA’s grant to EPA to prescribe “standards applicable to the emission of any air pollutant from any class of new motor vehicles or new motor vehicle engines,” and characterizes this grant of authority as “a clear directive” (Seaton, pg. 4, citing 42 U.S.C. § 7521(a)).

MPCA response: The MPCA does not disagree with this characterization of EPA’s grant of authority. But the MPCA’s grant of authority, to “adopt standards of air quality, including maximum allowable standards of emission of air contaminants from motor vehicles,” is very similar to the grant of authority from Congress to EPA cited by the commenter. The Initial Comments of Fresh Energy et al. provide an analysis showing that, “Minnesota’s legislative authority mirrors the broad grants of authority relied upon by regulatory agencies in Colorado, New York, Oregon, Pennsylvania, Rhode Island, and Vermont to successfully adopt the California clean car standards” (Fresh Energy et al., pg. 7). Those comments also described the holding of a New York state court case that the New York agency could adopt

²⁰ The MPCA also notes that it has adopted statewide ambient air quality standards in Minn. R. 7009.0080.

²¹ Feb 19, 2020 hearing of the Committees on Environment and Natural Resources Finance; Environment and Natural Resources Policy and Legacy Finance, comments starting at approximately 22:36, available here:

http://mnsenate.granicus.com/player/clip/4656?view_id=1&redirect=true.

the California standards under a similar grant of authority as Minnesota (*Id.*). The MPCA thus disagrees with the commenter that the MPCA does not have statutory authority under Minnesota law.

F.7. Comments about compliance with Minnesota Statutes section 116.07, subd. 2(f)(1)(i)

Commenters argued that the rulemaking does not comply with Minnesota Statutes section 116.07, subd. 2(f)(1)(i), which requires the SONAR to assess differences between the proposed rule and “existing federal standards adopted under the Clean Air Act, United States Code, title 42, section 7412(b)(2).”

MPCA Response: The MPCA addressed the requirements in Minnesota Statutes section 116.07, subd. 2(f) on page 82 and 94 of the SONAR where it provided a discussion of compliance with the CAA due to the waiver issue and the need to prevent the backsliding of environmental protections. But the Auto Innovators and MADA specifically cite Minnesota Statutes 116.07, subd. 2(f)(1)(i), which covers existing standards promulgated under the Hazardous Air Pollutant section of the CAA, the Clean Water Act (CWA), and the Resource Conservation and Recovery Act (RCRA) (Auto Innovators, pg. 12). The clean cars standards relate to an entirely different section of the CAA: 42 United States Code, section 7507 (Section 177). Even though Minnesota Statute 116.07, subd. 2(f)(1)(i) is inapplicable to this rule, section 177 of the CAA already requires Minnesota to adopt identical standards to California. So even if it did apply, there would be no differences to assess.

Relatedly, MADA has argued that any future change to a future federal and/or California standard would “invalidate” the SONAR and would require a “redo” based on the new standards (MADA, pgs. 8–10). If the MPCA is understanding the argument correctly, MADA is arguing that new LEV and ZEV standards (MY 2026 and beyond) must go through a new rulemaking process with a new SONAR. The MPCA agrees, as it has said all along, that new standards must go through a new rulemaking. But MADA’s scenario would require MPCA to withdraw this rule and wait to compare the existing LEV and ZEV standards with entirely new (and unannounced) federal standards. The MPCA does not think this would be reasonable. It would be most reasonable to adopt the existing standards as-written now and address any future (MY 2026 and beyond) standards in a future rulemaking.

F.8. Comments on procedural due process

Commenters argue that the proposed rule would violate procedural due process whenever the California Code of Regulations that are incorporated by reference in the rule are changed because there would be no notice or opportunity to comment (Sen. Newman et al., pg. 5).

MPCA Response: The MPCA does not agree with commenters’ argument that the proposed rule will violate procedural due process. As the MPCA has stated throughout the rulemaking process, including elsewhere in this final Response, the proposed rule would only adopt the existing LEV and ZEV standards that are housed in the California Code of Regulations. New LEV and/or ZEV standards would be written in new sections of California Code and the MPCA would have to conduct a new, future rulemaking if it chooses to propose adoption of those standards. During that future rulemaking proceeding, the public would have an opportunity to comment on whether the MPCA met our legal obligations to adopt that rule.

Commenters also argued that Minn. Stat. § 14.07 (incorporation by reference) is “unconstitutional on its face” if that provision permits the use of material that can “mutate and thereby change Minnesota law,” and alternately suggests that this statute be interpreted to *not* incorporate reference of material that can change. The MPCA has responded to concerns about this section of Minnesota law in our response to the incorporation by reference concerns, but this statute allows agencies to incorporate “other publications and documents” that are subject to change.

Commenters also note that federal laws “can change after a Minnesota rule is adopted incorporating them by reference” and that such a rule “may survive a constitutional challenge if state law is required to be consistent with federal law” (Sen. Newman et al., pg. 5). The comment did not cite any sources for these statements, and while the MPCA continues to disagree with commenters’ premise regarding our statutory authority, we would note that under

section 209(b) of the Clean Air Act, California emission standards, upon receipt of a waiver from EPA, “shall be deemed to be at least as protective of health and welfare as such Federal standards . . .” and that any new motor vehicle produced in compliance with California’s standards “shall be treated as complian[t] with applicable Federal standards” (42 U.S.C. § 7543 (Sec. 209(b))). And because other states that adopt these federally-compliant California emission standards (again, subject to a waiver) must adopt the identical standards to be in compliance with section 177 of the Clean Air Act, even if commenters’ statement that only federal laws can change under Minn. Stat. 14.07 were correct, the proposed rules would comply.

Commenters argued that two cases, where a rule incorporated something other than a federal law, were distinguishable from the proposed rule because “the rules at issue in these cases permitted an applicant the opportunity to obtain a variance . . .” (Sen. Newman et al., pg. 5). Commenters cited a lack of a variance provision in the proposed rule as the distinguishing this rulemaking from the cited cases. Commenters are correct that there is no specific variance provision in the proposed rule. The MPCA is not aware of any manufacturer seeking a variance from emission standards in other clean car states and manufacturers did not raise this issue in their comments, either. Moreover, the absence of a specific variance provision in the proposed rule is not a deficiency in the rule. Minnesota Statutes § 14.055 provides for any person or entity to petition the agency for a variance from a rule and Minnesota Rules § 7000.7000 provides specific instructions for persons seeking a variance from the MPCA.

F.9. Comments on unlawful delegation of authority and the legislative process

Commenters argued that “PCA is abdicating its responsibility to set emissions standards and has thereby violated the legal principles regarding delegation of legislative authority” (Sen. Newman et al., pg. 6). Commenters have also questioned why this rule did not go through the Legislature.

MPCA response: The MPCA does not agree that this rule is an unlawful delegation of authority. The MPCA understands this argument to mean that the MPCA has delegated our rulemaking authority to California. But, as summarized in the SONAR pages 34 to 37 and detailed elsewhere in this final Response, under section 209(a) the federal Clean Air Act, states are prohibited from adopting their own, unique emission standards for motor vehicles. California is the only state that can adopt its own emission standards for motor vehicles, which are subject to a waiver from EPA under section 209(b) of the CAA. Once the California standards are effective, those standards are deemed to be at least as protective of health and welfare as the federal standards. Other states can adopt these more stringent emission standards under section 177 of the CAA. This is what Minnesota is proposing to do in this rule; use the authority granted to it by the Legislature to adopt “maximum allowable standards of emission of air contaminants from motor vehicles” (Minn. Stat. § 117.07, subd. 2). The MPCA is choosing to use our statutory authority to adopt the more stringent emission standards from California. Under federal law, these are the *only* choices afforded to non-California states. Further, these states must adopt identical standards as California in order to be compliant with federal law.

Commenters have also argued that this rule should have gone through the Minnesota Legislature. One group of commenters comprised of a number of legislators argued that the Legislature “has the sole authority to enact laws governing the people of Minnesota” and further argue that the proposed rule is “in clear violation of the Minnesota Constitution” (Sen. Newman et al., pg. 6). But another group of legislators who wrote a comment in support of the rule noted that the language in 116.07 “demonstrates in very specific terms the Legislature’s intent that MPCA is expected to adopt standards of the exact type now proposed by the agency” (Rep. Long et al., pg. 1). Further, the comments of Fresh Energy et al. note that the “Legislature *already* decided that” the MPCA could adopt emission standards for motor vehicles and in recognition of the MPCA’s technical expertise, “the legislature then gave MPCA authority to analyze and adopt those standards” (Fresh Energy et al., pg. 7, emphasis in original).

As the MPCA noted in the SONAR on page 35, administrative agencies like MPCA have “the right to promulgate such reasonable rules and regulations as may be necessary to accomplish the purposes for which the agency is created.”

Minnesota Statutes section 14.05, subd. 1 states that an agency may only adopt a rule “pursuant to authority delegated by law and in full compliance with its duties and obligations.”

Several commenters cited a 1976 case in support of their contention that the MPCA lacks the statutory authority to adopt these emission standards (MADA, pg. 7). In that case, *State, By Spannus v. Lloyd A. Fry Roofing Co.*, 246 N.W.2d 696, 699 (Minn. 1976), it was held that the MPCA lacked the statutory authority to issue an order to require a facility to conduct an emissions test on its stack. At the time, the MPCA lacked the statutory authority to issue orders that is now found in Minnesota Statutes § 116.07, subd. 9. That provision, which was added by the Legislature in 1980 and revised in 1983 to include air contamination, provides the MPCA with the authority to “adopt, issue, reissue, modify, deny, revoke, enter into or enforce reasonable orders”²²

Commenters argue that the *Fry* case demonstrates that the “MPCA interpretation [of its statutory authority to adopt clean cars standards] is a total contradiction of the statute” (MADA, pg. 7). But the *Fry* case is distinguishable from this rule. In *Fry*, the Agency issued an order when it lacked the statutory authority to issue orders related to air pollution. As described above, the Legislature subsequently granted MPCA the general statutory authority to issue orders. The Legislature did *not* specify which specific orders the MPCA must issue—it granted the agency broad authority to determine which orders to issue. This is analogous to the clean car standards. The Legislature has granted the MPCA straightforward, general authority to adopt emission standards for motor vehicles, much like the authority it now has to issue orders related to air pollution.

Commenters also cited a 1988 law establishing a motor vehicle emissions inspection program administered by MPCA for the proposition that the MPCA can only adopt the specific rules prescribed to it by the Legislature (Seaton, pg. 5). The 1988 example *is* one way in which a rule can be made. But it is not the only way and the MPCA, like any agency, can adopt rules for which it has the statutory authority to adopt.

F.10. Comments about the two-year lead time

Commenters argued that the MPCA could begin the two-year lead time in section 177 of the Clean Air Act time at the time of adoption and need not wait to begin start this clock until the waiver issue has been resolved (Fresh Energy et al., pg. 10–11).

MPCA response: The MPCA acknowledges the legal interpretation of commenters and the regulatory precedent and supportive caselaw on this issue. Under proposed Minnesota Rule § 7023.0150, subpart 4 the MPCA will provide notice designating the first effective model year in the State Register in accordance with the Clean Air Act’s requirements in United States Code, title 42, section 7543 (Section 209).

F.11. Comments about the Next Generation Energy Act

Commenters argue that the MPCA impermissibly relies upon the Next Generation Energy Act (NGEA) in Minn. Stat. § 216H.02, subd. 1 in the proposed rule. Commenters state that the NGEA does not contain requirements and does not grant rulemaking authority (Center of the American Experiment, pg. 42).

MPCA response: The MPCA does cite the GHG reduction goals in the NGEA in portions of our SONAR (see, e.g., SONAR, pg. 37). But we cite the NGEA to establish the context within which we are now proposing this rule—to address the problem of climate change. The MPCA does not rely upon the NGEA as the source of our statutory authority, which is discussed in the SONAR at pages 34 to 37 and throughout this final Response.

²² Minn. Stat. § 116.07, subd. 9; 564 H.F. No. 2023 (1980); 301 H.F. No. 1290 (1983).

F.12. Comment on the need for adopting standards when there are already standards in place

Commenters expressed concerns that the proposed rule and accompanying analysis did not demonstrate the need for the rule because there are already vehicle emission standards in place. In particular, the commenters stated that, “vehicle emissions standards have changed over time, and if Minnesota declines to adopt California emissions standards all that will happen is that the applicable standards will change once more” (Sen. Newman et al., pg. 7–8).

MPCA Response: The MPCA disagrees with the premise of this comment and continues to believe that we have demonstrated both the need for and reasonableness of the proposed rule in our SONAR and TSD.

The construction of the Minnesota Administrative Procedures Act (APA) demonstrates why commenters’ argument that an agency can only adopt a rule where no federal counterpart exists is incorrect. Minnesota Statutes § 14.131(7) requires an assessment of any difference between the proposed rule and existing federal regulations, which the MPCA addressed in the SONAR at page 82. A plain language reading of that provision, which requires an assessment of “any differences” between the proposed rule and the federal standard, means that a proposed rule could be either the same or different than federal standards, but if it is different, the agency must assess any differences. In addition, Minnesota Statutes § 14.07, subd. 4 allows agencies to incorporate federal laws and regulations into its rules. If agencies could adopt rules only where no federal standard existed, then these provisions of the APA would be rendered meaningless.

F.13. Comments about Minnesota-specific standards

Commenters suggested that Minnesota should have our own vehicle emission standards and not follow the federal standards or the California standards.

MPCA Response: The MPCA cannot adopt vehicle emission standards that are different than either the federal standards or the California standards under the Clean Air Act. Clean Air Act section 209 prohibits non-California states like Minnesota from adopting and enforcing their own unique emission standards. As discussed on page 35 of the SONAR and throughout this Response, under section 177 of the Clean Air Act, if a non-California state chooses to adopt more stringent vehicle emission standards, that state must adopt emission standards that are identical to California’s. Minnesota-specific vehicle emission standards would be prohibited under the Clean Air Act and thus the MPCA did not propose its own standards in this rule.

G. Efficacy and feasibility of the proposed rule amendments

The MPCA received comments on the efficacy of the proposed rule amendments and the feasibility of complying with their requirements.

G.1. Comments on the efficacy of the ZEV standard

Commenters expressed opinions on the efficacy of the ZEV standard. Commenters stated positions that the ZEV standard is a “flawed regulatory tool” that it only increases supply without increasing demand. The Auto Innovators stated the ZEV standard “requires automakers to increase EVs offered for sale in the state and it does nothing to generate consumer demand” (Rege testimony, hearing transcript February 22, 2021). Commenters expressed doubts about the ZEV standard’s ability to provide true GHG emissions benefits.

Other commenters stated that the ZEV standard is a useful tool. One stated “The ZEV program is the most effective tool to bring more EVs to Minnesota” (Union of Concerned Scientists, pg. 5). Another commenter quotes from a 2019 International Council on Clean Transportation briefing document, “Overview of global zero-emission vehicle mandate

programs”²³ stating, “ZEV mandates alongside stringent CO₂ standards and grid decarbonization provide for an effective policy to achieve game-changing greenhouse gas (GHG) reductions from transport” (Tesla, pg. 10).

MPCA response: The MPCA disagrees with the statement that the ZEV standard is a “flawed regulatory tool” simply because it does not directly address consumer demand. The MPCA addressed this issue directly in our SONAR: “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 . . .” (SONAR, pg. 44). The MPCA also detailed seven additional areas that it and other stakeholders in Minnesota can address to increase EV adoption in Minnesota, including several initiatives that directly address consumer demand, such as financial incentives or electric utility programs (SONAR, pgs. 44–47). Adoption of the ZEV standard does not preclude any of the other EV policies; indeed, adoption of the standard may spur adoption of other complimentary policies. The Agency addresses the complementary policies, programs, and investments to support EV adoption elsewhere in this Response.

As described elsewhere in this Response, a recent study released in March 2021 by the National Association of State Energy Officials and Cadmus looked at the evidence supporting “best practices” of EV policy design. Their review examined 13 different policy categories and found one of the top two most effective policies to be “Publicly stated vehicle adoption standards related to the total number or fraction of new PEV sales share. Examples include the Zero Emission Vehicle (ZEV) Standard and PEV sales targets.”²⁴ This NASEO and Cadmus study provides further evidence that the ZEV standard is an effective regulatory tool.

The ZEV standard directly addresses one aspect of growing EV adoption, the lack of EV availability in Minnesota. The standard does so by adoption of a reasonable standard that gives manufacturers significant notice and multiple years’ worth of early action credits and a one-time allotment of ZEV credits to ease any compliance burden. And while the ZEV standard does not directly address consumer demand in the way that financial incentives might, the MPCA believes that it may indirectly affect demand. The MPCA heard from testifiers and commenters who described the difficulty they had in finding an EV on dealer lots in Minnesota. Some gave up looking and purchased a different, non-electric vehicle. Others purchased an EV outside of Minnesota. The MPCA believes that adoption of the ZEV standard could indirectly affect consumer demand by reducing the most basic barrier to purchase of an EV: the trouble of finding one to buy.

G.2. Comment on the efficacy of the ZEV standard to reduce GHG emissions

The American Fuel & Petrochemical Manufacturers (AFPM) and American Petroleum Institute (API) noted “There is a substantial body of research that suggests the adoption of policies to promote ZEVs will not likely yield significant reductions in transportation sector GHG emissions, especially in the near term.” (AFPM and API, pg. 6)

MPCA response: On pages 39-40 of the SONAR, the MPCA describes how the LEV and ZEV standards work together: “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” (SONAR, pg. 40) and that the ZEV standard “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” (SONAR, pg. 44).

MPCA’s estimated a net GHG emissions benefit of 8.4 million tons reduced over the first ten years of implementation of the proposed rule. Of that figure, the vast majority is achieved from the implementation of a LEV standard, which

²³ International Council on Clean Transportation, “Overview of global zero-emission vehicle mandate programs,” (<https://theicct.org/sites/default/files/publications/Zero%20Emission%20Vehicle%20Mandate%20Briefing%20v2.pdf>).

²⁴ NASEO and Cadmus, “Supporting Material: Plug-in Electric Vehicle Policy Impact Rubric: Evidence-based policymaking for local and state government and utilities.”

https://naseo.org/data/sites/1/documents/publications/Supporting%20Material_PEV%20Policy%20Impact%20Rubric_FINAL.pdf

addresses emissions from the current ubiquitous sale of internal combustion engine vehicles in Minnesota. Comparatively, the ZEV standard addresses GHG emissions from vehicles with a different approach, by supporting the long-term growth of the EV market. The LEV standard accounts for the vast majority of the estimated GHG emissions benefits from the proposed rule because under the rule there would likely continue to be vastly more vehicles powered by internal combustion engines compared with the number of EVs. Therefore, the LEV standard achieves near- and medium-term benefits, while the ZEV standard supports the growth of EV adoption to help set Minnesota on a path to achieving its long-term GHG emission reduction goals in part through increased electrification. As thoroughly discussed, EVs are an important part of a portfolio approach to reducing GHG emissions and emissions of other air pollutants from transportation.

G.3. Comments on feasibility of the LEV GHG emissions standards

The Auto Innovators' comments identify concerns with the feasibility of complying with the LEV GHG standards. They note that consumer preferences for SUVs and other larger vehicles have made it increasingly difficult to comply with the standards. They also note that manufacturers have relied on the use of credits to help comply with increasingly stringent emissions standards and mention the agreements California signed with several manufacturers "to permit them to comply with standards less stringent than those required under the "on the books" California standards, in exchange for those manufacturers' agreement to support more stringent federal GHG standards than are required under current EPA regulations" (Auto Innovators, pg. 52).

MPCA response: While the commenter identifies that the standards are increasingly challenging to comply with, they also note that manufacturers do continue to comply with the standards. The MPCA notes that the standards were designed using a credit mechanism to provide flexibility for manufacturers. Manufacturers earned credits in the earlier years of the program and are now using some of those credits to assist in compliance as the standards continue to get more stringent. This is not evidence that the standards are not feasible, but rather evidence that they are working as designed.

The MPCA also notes that in identifying concerns about their ability to comply with the LEV standard, the commenter points to the assumptions and conclusions of the EPA and California's analysis of the proposed rule from the original rulemaking in 2012, rather than the more current EPA analysis for the Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Final Determination),²⁵ which the EPA published in 2017. The more current Final Determination affirmed that "The standards are feasible at reasonable cost, without need for extensive electrification" (Final Determination, pg. 3). The SONAR describes the Final Determination and associated analysis and conclusion that the standards are still reasonable and feasible:

"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." (SONAR, pg. 24)

²⁵ See <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100QQ91.pdf>

The conclusions of the Final Determination support the MPCA's position that the proposed rules are reasonable. As discussed elsewhere in this Response, evidence shows there are many opportunities for additional GHG emission reductions from internal combustion engine vehicles.

Finally, the commenter misconstrues the context of the voluntary framework agreements signed between California and five automakers (BMW Group of America, Ford, Honda, Volkswagen Group of America, and Volvo).²⁶ These voluntary agreements do not affect the LEV standard and are thus not within the scope of this rulemaking. The MPCA is proposing to adopt the LEV standards that exist in the California Code of Regulations.

G.4. Comments on a preference for unified federal emissions standards

Commenters stated a preference for unified federal emissions standards rather than a system of federal standards and California standards. The Auto Innovators stated, "a Federal approach to GHG standards is the most efficient and cost-effective method to further GHG reductions" (Auto Innovators, pg. 15).

MPCA response: The MPCA acknowledges commenters' preference for a unified federal system of emission standards. However, this preference does not make the proposed rule unreasonable. Congress deliberately established a regulatory system in the Clean Air Act that explicitly envisions the possibility of two sets of emissions standards across the country. This regulatory structure has been in place for many decades and the MPCA is proposing these rule amendments within that system.

H. Establishing an initial ZEV credit bank

The MPCA received comments related to the agency's proposed mechanism to establish an initial ZEV credit bank.

H.1. Comments on the scale of credits provided through MPCA's proposed initial credit bank mechanism

The MPCA received a wide range of comments related to the Agency's proposed initial ZEV credit bank mechanism. Some commenters felt that the Agency's proposal is too generous, will be too large, and will reduce the benefits of the ZEV standard. Other commenters stated that the mechanism was insufficient in supplying manufacturers with needed buffer against uncertainty.

Commenters supported the early-action credit mechanism proposed by the MPCA (Minn. R. 7023.0300, subpt. 4). Commenters stated that the one-time allotment of credits (Minn. R. 7023.0300, subpt. 5) is too generous and provides too many credits to manufacturers. They recommended eliminating the one-time allotment of credits that the agency proposes. Commenters said it is not based on deliveries of EVs or environmental benefit. Commenters also stated that it is not needed and that manufacturers would be able to comply without it, citing the experience of Quebec and the current market conditions, including new EV models coming to market soon (see, e.g. Tesla, pgs. 13-23). Commenters warn that too many credits could reduce manufacturer efforts to deliver increasing numbers of EVs to Minnesota.

Other commenters stated that the MPCA's proposal is insufficient to provide manufacturers with needed flexibilities. Some commenters specifically stated that the agency should provide credits proportional to the number of credits each manufacturer has banked in California. Some suggested capping the use of those credits in the first years of implementation in a way similar to what Colorado did in their adoption of the ZEV standard. Commenters stated a proportional bank of credits is necessary to be identical to California's standards as required under the Clean Air Act.

MPCA response: The MPCA analyzed a variety of credit bank scenarios, ranging from providing proportional credits to offering only an early-action credit mechanism, but decided to propose adoption of the early action-credit mechanism

²⁶ California and automaker voluntary agreements, <https://ww2.arb.ca.gov/news/framework-agreements-clean-cars>

and one-time allotment instead (SONAR, pgs. 58-62 and TSD, pgs. 96-110). The MPCA developed this initial ZEV credit bank proposal as a compromise that balances the need for compliance flexibility in the early years of implementation along with the goal of increasing EV adoption in Minnesota beyond business-as-usual EV sales growth. The Agency acknowledges concerns from commenters that the proposed mechanism may offer more credits than needed by manufacturers. The Agency, however, believes it is reasonable to listen to the concerns of the regulated parties and that the early action credit mechanism paired with the one-time allotment will on balance encourage more EV deliveries, and establish a reasonable expectation of compliance from the regulated automobile manufacturers. Although the MPCA believes this approach to be reasonable on its own, the Agency also notes that we have received both comments that suggest our proposal is too conservative and comments that suggest we are too generous in our proposed approach.

H.2. Comments on the early-action credit mechanism

Commenters supported the MPCA's proposed early-action credit mechanism to encourage EV sales growth earlier than required by the ZEV standard. The Auto Innovators stated:

“Early action credits are an important modern tool to encourage more EVs sooner under the ZEV program and will support Minnesota’s goal to obtain more EVs before it can implement the regulations. One of the main benefits for the State is that each early action credit earned is from actual EVs delivered for sale into Minnesota. These are real vehicles on the roads sooner than Minnesota can require them. Additionally, early action credits are a way for automakers to smoothly transition into the requirements – to begin the ramp-up from approximately 3,100 EVs sold in a year to the required (estimated) 17,000 EVs in MY 2025.”
(Auto Innovators, pg. 21)

MPCA response: The MPCA appreciates commenters’ support of the proposed early-action credit mechanism and agrees that it will function to encourage manufacturers to voluntarily increase EV deliveries to Minnesota before implementation of the ZEV standard.

H.3. Concerns about ZEV credit bank causing a delay in implementation

In reference to the one-time allotment of ZEV credits equivalent to one year worth of credits needed for compliance, one commenter stated “one-year delay in rule implementation reduces the compliance obligation on automakers” (Health Professionals for a Healthy Climate, pg. 2).

MPCA response: The MPCA disagrees with the characterization of the proposed the one-time credit allotment as a “one-year delay in rule implementation.” The Agency proposed the one-time credit allotment as a compromise to address manufacturers’ stated need for a cushion of credits to manage uncertainty in the early years of implementation of the ZEV standard. The intent of the one-time allotment is to provide a buffer against uncertainty, not delay implementation by a year. The SONAR states,

“Based on discussions with vehicle manufacturers, the MPCA learned they try to maintain about a year’s worth of credits 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.’ 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...”

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.” (SONAR, pgs. 61-62, internal references omitted)

The MPCA continues to believe that the one-time allotment is a reasonable mechanism for addressing manufacturers’ concerns about risk management in the early years of the proposed rule.

H.4. Comments recommending proportional credits with a cap

The Auto Innovators stated that the MPCA should provide ZEV credits with a cap on their use for the first years of implementation because in the future California’s ZEV regulations may be much more stringent and more banked credits will be needed for manufacturers to comply. Other commenters stated that proportional credits would flood the ZEV credit market and reduce the need for manufacturers to bring EVs to Minnesota, thus reducing the benefits of the proposed rule. Some commenters noted that providing a proportional credit bank could have the opposite effect of encouraging EV deliveries to Minnesota by instead encouraging manufacturers to deliver EVs to California prior to implementation of Minnesota’s rule so that they can earn double credits – one in California and eventually one in Minnesota.

MPCA response: The MPCA developed its rule proposal based on an analysis of existing federal and California emissions standards.

The Agency recognizes that California and the U.S. Environmental Protection Agency may address future model years’ standards in some manner in the coming years. As noted throughout this rulemaking process, if California adopts new vehicle emissions standards beyond model year 2025, the MPCA would need to analyze those new standards in the context of any future federal standards and determine whether to continue to follow California’s standards. If the Agency believes new California emissions standards are needed and reasonable for Minnesota, the MPCA would need to conduct another rulemaking process to adopt those standards.

As part of the current rulemaking, the MPCA analyzed a variety of initial ZEV credit bank mechanisms to support the goal of increasing EV deliveries above business-as-usual levels and to provide reasonable flexibilities for manufacturers in the initial years of implementation. However, since potential future standards have not yet been proposed, much less adopted, the MPCA did not rely upon speculative statements in our analysis of the existing ZEV standard and initial ZEV credit bank mechanisms. If the MPCA determines in the future that it believes California’s future standards are needed and reasonable for Minnesota, the Agency can review the state’s ZEV credit bank and determine if adjustments might be needed at that time. However, the Agency does not believe it is reasonable to adopt rule language now that is based on speculation about future emissions standards.

As discussed on page 59 of the SONAR, the MPCA agrees with commenters that providing a proportional bank of credits would drastically diminish the requirements of the proposed rule and associated benefits and would therefore not be reasonable.

I. Rule language

The MPCA received comments asking questions and suggesting changes to the proposed rule language.

I.1. Comments on consistency with California regulations

One commenter stated, “The MPCA’s proposal includes language that appears to be inconsistent with California regulations, and instead should be replaced with direct references to and/or incorporation of the entire portion of the California provisions. It should be made clear that automakers can comply using the methods determined by CARB. Auto Innovators believes that it is the intent of the MPCA’s proposed regulations to align with California’s regulations, via the reference to specific section of California rules. Yet, the MPCA’s proposed regulations seem to contradict this intent by noting Minnesota-specific requirements for to the Environmental Performance Labels (“EPL”) and fleet average standards” (Auto Innovators, pg. 53).

MPCA response: The MPCA’s rule language incorporates California Code of Regulations by reference to ensure identity with the California regulations. But the MPCA included contextualizing rule language in some instances to help orient readers of the Minnesota Rules. For example, the proposed Minn. R. 7023.0250, subpt. 4 about environmental performance labels signals to a reader of the rule that motor vehicles that fall under this standard will be required to comply with California labeling requirements under California Code of Regulations, title 13, section 1965. This section is also incorporated by reference in proposed Minn. R. 7023.0150, subpt. 2. Similarly, the proposed Minn. R. 7023.0250, subpt. 3(A) references California Code of Regulations, title 14, sections 1961.2 and 1961.2(c), which are also incorporated by reference.

The MPCA’s approach closely mirrors rule language adopted by Section 177 states, including Colorado (for instance 5 CCR 1001-24, Part B, III.A, III.B, and VII.A), Vermont (Subchapter XI, 5-1103 (a)(2); 5-1106(a)(3) and (8)), Connecticut (Sec. 22a-174-36c(f)(1) and (l)), and others. Importantly, the MPCA’s rule language does not differentiate implementation from the approach defined by California and implemented by the Section 177 states. In fact, California Code of Regulations, title 13, section 1965 itself incorporates the “deemed to comply” language identified by the Auto Innovators and California Code of Regulations, title 13, section 1961.2 contains the pooling provision referenced by Auto Innovators. There are thus no differences between the California approach and the proposed Minnesota approach for these provisions, which should address Auto Innovators’ concerns. Removal of proposed Minn. R. 7023.0250, subpts. 3 or 4 would have no effect on the operation of the rule itself, but the MPCA is concerned that removal of the subparts, and any other subparts that provide context to the rule, could affect the readability of the rule.

I.2. Comments on incorporation by reference

Commenters mentioned concerns about the impact of possible future standards and some expressed confusion over how the proposed incorporation by reference would work. Some commenters have expressed concerns that adopting the ZEV standard would require the state to eliminate gas- and diesel-fueled vehicles under future ZEV standards

MPCA response: Some commenters have expressed concern that the proposed rule would allow the MPCA to adopt future, yet-unwritten emission standards “automatically” because the MPCA has used incorporation by reference, as amended, in our proposed rule (Backhaus testimony; proposed Minn. R. 7023.0150, subpt. 2).

As the MPCA has stated throughout the rulemaking, it will not—and indeed cannot—automatically adopt future emission standards without undertaking a separate rulemaking process (SONAR pgs. 40–41; MPCA hearing presentation slide 43). It appears that this confusion stems from commenters’ understanding of incorporation by reference, how the rule is written, and how California modifies its rules when it adopts new standards. The MPCA hopes that the following description will help to clarify these concepts and address commenters’ concerns.

The MPCA is proposing to incorporate several provisions of California’s regulations using a common rulemaking tool called “incorporation by reference.” This means that instead of copying-and-pasting language from other sources, an agency can instead provide a reference to that source material, provided that the source material is “conveniently available to the public” (Minn. Stat. § 14.07, subd. 4). The proposed rule language uses “as amended” in order to ensure the rule is kept up-to-date with any minor housekeeping updates that could occur in the California code. As noted in the SONAR, “California has made minor housekeeping updates to its rules every few years” (SONAR pg. 41). Including “as amended” in the proposed rule serves only to capture these minor updates, if they occur at all, to the existing California code that is now proposed for adoption.

Any new, future emission standards adopted by California will be housed in entirely separate parts of its administrative code (SONAR pg. 41). The MPCA is not adopting these parts in this rulemaking because they, like the future standards themselves, do not yet exist. When new standards are finalized, the MPCA will have to consider whether to propose adoption of the new California standards via another rulemaking or whether to choose to follow the federal emission standards, which have not been created to date, either. The commenter is correct that decisions will have to be made once there are new standards to consider, but that time has not yet come.

Finally, the MPCA would like to address a related concern expressed by commenters that the proposed rule would require a future phase-out of internal combustion engine vehicles. First, as noted above, that is not what this rulemaking would achieve. The MPCA projects that the ZEV standard would result in EVs comprising approximately 6.2–7.4% of sales of *new* light-duty vehicles (SONAR pg. 43). Second, as noted above, since the proposed rule does not automatically adopt new California emission standards, the MPCA would have to take affirmative steps via the same public rulemaking process in order to adopt any future standards. And finally, the MPCA continues to see vehicle emission standards as one tool the state can use to address climate change and the transportation sector. Increasing biofuels and building out EV infrastructure remain an important component of the state’s response to climate change, even if those issues remain outside of the scope of this rulemaking.

In addition to comments regarding the operation of the incorporation by reference provision, commenters expressed concerns with the MPCA’s interpretation of the “publications and documents” in Minn. Stat. § 14.07, subd. 4. Comments from several legislators argue that the MPCA’s proposed incorporation by reference of California Code of Regulations in Minn. R. 7023.0150, subp. 2 is prohibited because “laws of other states” are not expressly listed in that statute (Sen. Newman et al. at 3). The MPCA acknowledges that “laws of other states” is not included in the list included in this subdivision, but also notes that a catch-all provision allowing “other publications and documents” to be incorporated by reference *is* in this law. The MPCA believes that another state’s administrative code, which is a published document, squarely falls within the definition of “other publications and documents.”

Those comments also suggest that a “better interpretation of “publications and documents” would be limited to those publications and documents that do not change” But Minn. Stat. § 14.07, subd. 4 expressly allows an agency to incorporate documents that are “subject to frequent change” (which the proposed rules are not) in the statement of incorporation. The MPCA followed the requirements of Minn. Stat. § 14.07 and received the Revisor’s preliminary approval of the draft rules, including that the California Code of Regulations is an publication or document, which is located in Exhibit C.

1.3. Comments recommending changes to the proposed rule amendments to consider biofuels and renewable energy

The Minnesota Bio-fuels Association submitted comments recommending adjustments to the proposed rule amendments to encourage adoption of vehicles powered by renewable fuels, especially biofuels such as ethanol. The commenter states,

“a properly crafted Minnesota LEV rule is needed to stimulate automakers to offer a broader range of vehicles powered with renewable biofuels such as ethanol. ZEV and near ZEV equivalents should be provided for the following vehicle options:

- i. E30+ plug in hybrid with 60 mi range – full ZEV credit
- ii. E30+ plug in hybrid with 150 mi range – 4 x ZEV Credits
- iii. Ultra clean solid oxide ethanol PHEV – full ZEV credit
- iv. Gasoline plug in hybrid with 60 mi range – half ZEV credit

Note, E30+ includes greater than 30% blend level ethanol, E85 including flexible fuel E85, and solid oxide fuel cell ethanol engine technologies. In addition, the program should require clean fuel offsets for renewable power that is diverted to transportation.” (Minnesota Bio-fuels Association, pgs. 9-10).

MPCA response: The commenter makes their recommendation as a change to the LEV rule, but since the recommendations are about ZEV credits, the MPCA believes the commenter means to recommend changes to the ZEV rule. Our response is based on that interpretation of the comments.

Clean Air Act Section 177 requires that states choosing to adopt the same standards as California must ensure the standards are “identical to the California standards for which a waiver has been granted for such model year.” The ZEV credit system is the mechanism by which the ZEV standard is met or not. The MPCA therefore cannot adjust the levels of credits provided for different vehicle types. The Agency proposes to adopt the standards, including ZEV credit methods, by reference to ensure identity with the California standards as required by the Clean Air Act.

The accounting of credits is distinguishable from the mechanism used to populate the initial ZEV credit bank. Although the MPCA has flexibility to establish this *initial* ZEV credit bank, which it proposes to do via early action credits and a one-time allotment, the MPCA will be using an identical method of counting the credits as California and the other clean car states for the initial ZEV credit bank and once the standard is effective.

Similarly, the proposed rule regulates vehicle manufacturers, not the power sector. The MPCA and others are working to achieve a cleaner grid in Minnesota, but that is outside of the scope of this rulemaking.

The MPCA also notes that the plug-in hybrid vehicle types the commenter referred to would receive credit under the ZEV program using the methodology identified in California Code of Regulations title 13, section 1962.2(c)(3).

J. Procedure

Commenters expressed opinions about the MPCA’s process for adopting the proposed rule.

J.1. Comments on engagement

Commenters expressed concern about MPCA’s rulemaking process, stating that there was insufficient public engagement and that not enough people knew it was happening or had an opportunity to weigh in. Some commenters suggest that the Agency did not properly consider their input or engaged with them insufficiently. Other commenters stated that the Agency has been transparent.

MPCA response: The MPCA heard from several commenters that there was insufficient public engagement in the rulemaking process. Throughout the course of this rulemaking, the MPCA has made efforts to communicate with and engage members of the public above and beyond the notifications required by the Minnesota Administrative Procedures Act.

In 2019-2020, the MPCA held seven in-person public meetings across the state, five technical webinars, and received over 1,000 written comments and over 1,400 survey responses (SONAR, pgs. 26-34).

During the initial comment period (Dec 21, 2020 – March 15, 2021), the agency shared information about the process and encouraged public comments via seven GovDelivery email bulletins and consistent posting on our social media channels. We held four virtual information sessions in January and February 2021 to help members of the public better understand the process and how to submit comments into the rule record. These sessions were recorded and also made available on our website. Additionally, our earned media strategy resulted in more than 30 news stories across print, radio, and TV from media outlets within Minnesota during the initial comment period.

During the initial comment period, the MPCA received over 10,000 comments, both written and oral. We believe the volume of comments and media coverage of this rulemaking to date indicates that our communication and outreach efforts have been successful; however, the MPCA is a learning organization and receptive to feedback on how we can improve our public engagement, especially as we navigate new methods and virtual technologies.

J.2. Comments related to future federal and California rulemakings

Commenters discussed the impact of the new federal administration and California's rulemaking process on the MPCA's proposed rule. Commenters suggested that the agency should pause or halt the rulemaking because both California and the new federal administration are expected to adopt new vehicle emissions standards in the coming years.

Other commenters stated that the MPCA should proceed with the rulemaking and not wait for federal or California rulemakings. Fresh Energy, et. al. for instance stated, "...federal action is not guaranteed, may not be timely, and can be undone by the next administration" and "...even if federal efforts to update its GHG emissions standards succeed, a major difference between federal standards and clean car standards will remain: the ZEV standard. Clean Cars Minnesota includes the ZEV standard, federal standards do not" (Fresh Energy, et. al., pgs. 4-5).

MPCA response: The MPCA continues to believe that adopting the proposed rule is both needed and reasonable. As noted by commenters, federal rulemaking is on an unknown timeline and will result in standards of an unknown stringency and timeframe. Adopting the LEV and ZEV standards now provide more certainty around what standards will be applicable in Minnesota and that those standards will help to reduce GHG emissions in the coming years. The proposed rule would serve as a backstop and would at the very least ensure the protections outlined in the SONAR. The Agency also notes that there has not ever been a federal ZEV standard. Adopting the ZEV standard in Minnesota will support the benefits outlined in the SONAR.

J.3. Comment stating the proposed rule continues after 2025

A commenter stated "Our understanding is that the PCA rejected cap proportional credits in favor of its proposed approach because it cannot assess regulations that do not exist beyond 2025. Respectfully, the PCA's rationale makes no sense. Indeed, California's regulations can continue indefinitely beyond 2025, granted, at the same level as the model year 2025 standards. And California has already clearly articulated intent to adopt regulations that will push EV sales to 100 percent by 2035.... Adopting the most expensive regulatory program with only a one-year view is simply bad public policy." (Rege testimony, hearing transcript February 22, 2021)

MPCA response: The MPCA responded to these comments in our second initial response to comments, published to the record on March 15, 2021 (Exhibit M).

J.4. Concerns about availability of data used to support the analysis presented in the SONAR

A commenter stated that the MPCA should make the data used to support the analysis more available to the public. (Orr-1)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

K. Air pollution, public health, and environmental justice

Commenters offered a variety of opinions and analytical comments related to the potential air pollution, public health, and environmental justice impacts of the proposed rule.

K.1. Comments supporting improving local air quality, especially to improve human health

Commenters stated they were supportive of improvements to air quality and human health through the Clean Cars rules. Commenters shared experiences with air pollution from transportation in their daily lives and expressed the need for reduced pollution in areas of concern for environmental justice and how people with lung conditions or other health issues are particularly sensitive to air pollution.

The MPCA also received comments that indicated the rules are not necessary because Minnesota already has clean air, particularly in rural areas. Some commenters also cited Minnesota's compliance with National Ambient Air Quality Standards as a reason the rules are unnecessary.

MPCA response: The MPCA appreciates the statements of support for the goals of this rulemaking, including improving air quality by reducing vehicle emissions. (SONAR pg. 18).

Overall, air quality in Minnesota has been improving over the past 20 years and Minnesotans expect the air to be clean, clear, and healthy for all to breathe. However, scientific research has found no evidence of safe thresholds below which health impacts should be assumed to be zero. Even moderate and low levels of air pollution can have meaningful impacts on people's health. Everyone's health can be affected by air pollution, but some sub-populations are more vulnerable than others, including lower-income Minnesotans, people of color, elderly people, children with asthma, and people with lower access to quality health care and health insurance. Improvements in air quality at any level can provide significant public health benefits.

K.2. Comments stating the MPCA's analysis of health benefits underestimates potential benefits of the proposed rule

Commenters stated that the MPCA's analysis of health benefits of the proposed rule underestimates the potential health benefits of rule implementation. Health Professionals for a Healthy Climate affirmed the reasonableness of the Agency's health benefits analysis but also enumerated the different ways in which this analysis underestimates the expected health benefits of the rule. Specifically, this commenter explained how the MPCA's analysis methods "...do not include many health endpoints associated with exposure to PM_{2.5} pollution" (Health Professionals for a Healthy Climate, pg. 3) and that these methods "... are based on PM_{2.5} exposure, and do not consider other air pollutants associated with adverse health effects" (Health Professionals for a Healthy Climate, pg. 5). The commenter provided detail on other health impacts of air pollution and other air pollutants that were not included in the MPCA's health analysis. Finally, this commenter pointed out that the MPCA's equity analysis flows directly from our health benefits analysis, so to the extent that MPCA underestimates health benefits, it is also underestimates the equity benefits of the rule, particularly "the benefits to BIPOC and lower income communities who reside in high traffic areas." (Health Professionals for a Healthy Climate, pg. 6)

MPCA response: As stated in the MPCA's TSD (pg. 74), the purpose of the Agency's health analysis "...is not to provide a comprehensive and precise accounting of the health benefits of these standards, but rather to acknowledge that there are meaningful health benefits of this rule and to approximate what those benefits might be." The MPCA acknowledges in the TSD (pg. 74) the exact same omissions that the commenter points out: both that the methods utilized by the Agency only consider the health impacts of PM_{2.5} pollution and not other health-impacting air pollutants, including ozone, and that the methods that the MPCA has used do not consider an exhaustive list of all the health problems associated with air pollution. Thus, the MPCA states (TSD, pg. 74) that "... this analysis is probably an underestimation of all of the possible health benefits of Clean Cars Minnesota." The MPCA also agrees with the commenter that the greater the health benefits, the greater the equity benefits, particularly to communities most affected by vehicle pollution. Thus,

if the MPCA is underestimating health benefits, then it is also underestimating the likely equity benefits of the proposed rule.

The MPCA thanks the commenter for providing further information about the likely health benefits of the rule and notes that this comment further supports the need and reasonableness of the rule.

K.3. Comments the exclusion of sulfur dioxide emissions

A commenter noted that MPCA did not analyze the rule's impacts on sulfur dioxide emissions from electricity generation, identifying electric utilities as the primary sources of sulfur dioxide emissions in Minnesota (Berry 44).

MPCA response: The MPCA focused our emissions analysis on the pollutants regulated by the proposed rule: carbon dioxide (CO₂), non-methane organic gases and nitrogen oxides (NMOG + NO_x), particulate matter (PM), and methane. The Agency therefore did not evaluate emissions of other pollutants such as sulfur dioxide because the pollutant is not regulated by the proposed rule. There are many additional pollutants emitted by power plants, including sulfur dioxide, and as noted in the SONAR (pg. 86) and by other commenters (see comment by Health Professionals for a Healthy Climate) there are also many additional pollutants emitted by burning liquid fuels in automobiles and in the production of liquid fuels. The Agency therefore reasonably limited our analysis of emissions to the pollutants regulated by the proposed rule.

K.4. Comments stating that air quality benefits of the rule would be small

Commenters stated that there would be little or no air quality, health, or equity benefits from the proposed rule. A comment from Center of the American Experiment stated that MPCA's analysis shows virtually no impact on traditional pollutants and thus the proposed rule is "unlikely to produce any measurable environmental or health benefits because emissions of criteria pollutants from American cars have fallen dramatically in the last four decades" (Center of the American Experiment, pgs. 30-31, 33-34). The commenter also states that the benefit of this rule will be low because "Minnesota's air is already clean" and "our air already meets the most stringent state and federal standards for air quality" (Center of the American Experiment, pgs. 31-33).

MPCA response: The MPCA agrees that Minnesota currently meets National Ambient Air Quality Standards (NAAQS). The commenter is correct in stating that NAAQS "...are required by law to be set with an adequate margin of safety which is designed to protect even vulnerable populations like children and the elderly." However, the determination of "an adequate margin of safety" is a policy decision made by the EPA administrator. The bulk of epidemiological research, including the research underlying EPA's Regulatory Impact Analysis for the NAAQS for Particulate Matter have found no evidence of a safe threshold for ambient PM_{2.5} concentration below which there are no health risks from exposure.²⁷ Thus, studies that estimate the health impacts of PM_{2.5} pollution assume that there are benefits of air quality improvements even places like Minnesota that currently meet the NAAQS.²⁸

The MPCA agrees with the commenter that vehicles in the U.S. have become much cleaner in the last four decades driven largely to vehicle emissions standards and that the impact of this rule on criteria pollutant concentrations in Minnesota's air would be relatively small. While reducing other air pollutants is a goal of the proposed rule, the primary goal of this rule is to reduce GHG emissions. That said, epidemiological studies have shown that even small reductions in PM_{2.5} concentrations in the air can have significant benefits on human health, especially when they occur in or near large population centers. MPCA used widely-used and accepted methods and models in our health benefits analysis (TSD, pgs. 73-77 and Exhibit O) to estimate the health benefits of small reductions in PM_{2.5} concentrations. These models

²⁷ See <https://www3.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf>

²⁸ see e.g., <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1539-6924.2011.01630.x> and MPCA and MDH's Life and Breath reports

show that even these small reductions will save lives and reduce other deleterious health outcomes that MPCA reports in the SONAR (pg. 81) and in Exhibit O.

K.5. Comment on the use of linear dose-response models for assessing the health impacts of fine particle pollution

A comment from Center of the American Experiment asserts that MPCA should use something besides linear dose-response models for assessing the health impacts of PM_{2.5} pollution. (Center of the American Experiment, pgs. 35, 39)

MPCA response: The values and models that MPCA used to estimate health benefits of reduced fine particle pollution, EPA's benefit per ton values and EPA's COBRA model (TSD, pgs. 73-77), utilize the most credible and widely-accepted dose-response functions to estimate the health response to PM_{2.5} pollution and the expected avoided health impacts from reductions in PM_{2.5} concentrations. While there is much cutting edge research right now into the best mathematical specification of dose-response (or "concentration-response") models to relate PM_{2.5} exposure to health, linear models with no safe threshold below which there are no health risks are still the most widely used models used by the MPCA (e.g., in the Life and Breath reports) and the EPA (e.g., in the Regulatory Impact Analyses for PM_{2.5} standards).

K.6. Comments on air quality during COVID-19 stay-at-home orders

A comment from Center of the American Experiment points out that air quality in Minnesota was worse during 2020 even though vehicle traffic was reduced due to stay-at-home orders in response to the COVID-19 pandemic. The comment claims that this contradicts MPCA's findings on improved air quality and health that would result from the proposed rule. (Center of the American Experiment, pgs. 35-37)

MPCA response: There are many factors that contribute to overall air quality; tailpipe emissions from vehicles are just one of them. It is not reasonable to look at air quality over a small time frame and attribute it to one single cause. What is reasonable and undisputable is that lowering tailpipe and upstream emissions of harmful pollutants will result in cleaner air for Minnesota and that there are health benefits from cleaner air. MPCA explained how it estimated reduced emissions of PM, NO_x and NMOG in the TSD on pages 27-30 and in Exhibit O, and it explained how it estimated health benefits associated with these reduced emissions on pages 73-77 of the TSD and in Exhibit O.

K.7. Comments on air modeling and monitoring

A comment from Center of the American Experiment states that MPCA's assertion that the proposed rule "will improve air quality most in environmental justice areas where Black, Indigenous, People of Color (BIPOC) live is based on modeling, not measurements." The commenter states further that "we believe the agency's modeling should be supplemented by air sampling in BIPOC communities to ascertain whether the models are accurately reflecting reality." (Center of the American Experiment, pg. 37)

MPCA response: The MPCA's equity analysis (TSD, pgs. 77-86) does rely predominantly on air quality models: EPA's MOVES model to calculate the emissions of light-duty vehicles in Minnesota and EPA's AERMOD regulatory air dispersion model to estimate average concentrations of PM_{2.5} pollution throughout the state that result from light-duty vehicle emissions. This analysis would not have been possible with direct air monitoring sample data. Air monitors can accurately measure the concentration of a pollutant in the air, but cannot determine how much of that pollutant came from vehicles or other sources. Moreover, air monitors do not cover the entire state. Plus, the Agency's analysis examines potential impacts of a proposed rule and it is not possible to monitor the impact of an action before it happens. Thus, the MPCA, EPA, and other air regulators reasonably rely on air quality models in much of our work to analyze the sources and severity of air pollution throughout Minnesota and across the country.

K.8. Comments on indoor air quality

A comment from Center of the American Experiment asserts that indoor air quality is more a problem than outdoor air quality. (Center of the American Experiment, pgs. 37-38)

MPCA response: Although this comment is outside of the scope of this rule, the MPCA does not disagree that indoor air quality is a serious problem affecting the health of Minnesotans. The MPCA is partnering with other agencies such as the Minnesota Department of Health to take measures to improve indoor air quality. However, this does not diminish the fact that ambient, outdoor air quality is also a serious problem affecting the health of Minnesotans and is the focus of this rule. As explained on page 82 of the SONAR, “MPCA and MDH’s ‘Life and Breath’ report found that [outdoor] 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.”

K.9. Comment on considering non-exhaust emissions

A comment from Clean Fuels Development Coalition criticizes the MPCA for only considering tailpipe particle emissions and ignoring emissions from wear and tear in our analysis of PM emissions. The commenter claims that wear and tear emissions “are greater for electric cars” and goes on to say “Once these non-exhaust emissions are accounted for, electric cars do not provide any significant tailpipe particulate emission reductions. (Clean Fuels Development Coalition, pgs. 43-44)

MPCA response: The proposed rule is a tailpipe emissions standard and the Agency thus reasonably focused our analysis on the emissions directly associated with the regulation. The commenter is correct that the MPCA did not consider non-tailpipe PM emissions from vehicles, such as emissions from tire and brake wear, in its analysis of PM emissions impacts of the proposed rule. Due to the small number of EVs compared with the number of internal combustion engine vehicles projected to make up future vehicle sales under the proposed rule, the majority of the estimated reduced PM emissions benefits resulting from the proposed rule are from the increased stringency of the LEV standard and are not from EVs. Therefore the potential emissions impact of wear and tear would be small. Due to the marginal nature of potential wear and tear emissions and the fact that they are not regulated under the proposed rule, the Agency determined it was reasonable to not attempt to estimate this small potential emissions impact. (See TSD pgs. 27-30)

K.10. Comment on criteria pollution reductions occurring outside of Minnesota

A comment from Clean Fuels Development Coalition states that the MPCA assumed that all reductions of criteria pollutants – PM, NO_x+NMOG – would occur in Minnesota and thus all of the health benefits will be in Minnesota. By not taking into account that some of the upstream emissions reductions from gasoline and electricity generation would occur outside of Minnesota, the commenter asserts that “The Agency therefore overstates the proposed rule’s asserted pollution benefits by incorporating emissions effects that will not accrue in Minnesota.” (Clean Fuels Development Coalition, pgs. 42-43)

MPCA response: The MPCA believes that the commenter misunderstood parts of MPCA’s analysis of upstream criteria pollutant reductions (see TSD pg. 18) and our analysis of the health benefits resulting from these reductions (see TSD, pgs. 73-77). The MPCA did not state that upstream emissions from electricity and gasoline production, including extraction, transportation, and refining, would occur strictly in Minnesota, nor that all these reductions would occur in Minnesota. The MPCA’s health benefits analysis explicitly stated that “we cannot determine specific geographic locations of gasoline production and electricity production upstream emissions.” (TSD pg 76). The MPCA thus clearly indicated that not all health benefits resulting from this rule would occur within Minnesota (see TSD Table 46 on pg. 76 and Exhibit O).

K.11. Comments on MPCA’s MNRISKS model

A comment from Center of the American Experiment states that severe limitations of air quality modeling underlying MNRISKS undermines MPCA health benefits estimates. The commenter states that “MPCA should make it clear that the premature death and hospitalization figures estimated by MNRISKS likely represent high-end risk scenarios and do not reflect actual values for hospitalizations, premature death, or lost GDP due to air emissions” (Center of the American Experiment, pgs. 38-39).

MPCA response: MNRISKS is not relevant to the MPCA’s analysis of the expected health benefits resulting from the proposed rule. MPCA did not use MNRISKS to estimate health benefits of rule, but rather EPA benefit per ton values and EPA’s COBRA model that directly relates emissions to expected health impacts. (TSD, pgs. 73-77)

K.12. Comments on California Air Resources Board GHG regulations and communities of color and lower-income in California

A comment from Center of the American Experiment points out accusations and a lawsuit against the California Air Resources Board (CARB) for GHG regulations disproportionately harming minority and low-income communities in California. (Center of the American Experiment, pgs. 39-40)

MPCA response: This comment is not relevant to the MPCA’s evaluation of the proposed rule and its potential impacts in Minnesota. The litigation cited by the commenter is about CARB’s GHG housing regulations, not about the LEV and ZEV standards. The MPCA’s analysis of the proposed rule is based on Minnesota-specific data.

K.13. Comments on the transcription error described in the MPCA’s Addendum to the SONAR (Exhibit O)

Commenters expressed concerns related to the transcription error described in the MPCA’s Addendum to the SONAR (Exhibit O). One commenter stated that the corrected particulate matter and associated health and equity benefits make the proposed rule “much less attractive” and that the transcription error undermines the MPCA’s analysis and should “call into question the methodology used to determine this data...[and] the very basis of the rulemaking” (Caruso, pg. 2). MADA stated, “Also disconcerting is the timing of this disclosure: the MPCA did not disclose the calculation error until the hearing (despite the fact that the CCMR has been on public notice for six months), meaning that interested parties have not had an adequate opportunity to review the MPCA analysis nor question the MPCA on this error. As such, the parties have been clearly prejudiced by this late submission, which cannot be dismissed as harmless error” (MADA, pg. 16).

MPCA response: The MPCA identified and confirmed a transcription error in our analysis of particulate matter (PM) and notified the administrative law judge at the public hearing on February 23, 2021. On March 3, 2021, the MPCA posted an addendum to our analysis, which was entered into the record as Exhibit O. This addendum provided an overview of the error along with detailed, line-by-line revisions to the agency’s analysis.

This transcription error does not impact the overall need for and reasonableness of the rule, nor does it affect the proposed rule itself. It affects the degree, but not the direction of a portion of the PM-related benefits we calculated. The Agency notified the public of the error, including describing the specifics of the error itself, during the February 23 public hearing. The agency also notified the public that it would be publishing the addendum to the record and sent out a Gov Delivery notice to subscribers the day the addendum was posted.

The MPCA regrets this error. Since notifying the public of its existence, the MPCA also undertook an internal review of our analysis which did not uncover any additional errors. In addition, commenters did not identify any additional errors of the type contained in Exhibit O, although commenters criticized the methodology or assumptions of the MPCA. As such, the MPCA remains confident that our analysis is rigorous and, importantly, demonstrates that the proposed rule is both needed and reasonable.

In response to comments regarding the transcription error, the MPCA disagrees that the error makes the rule “much less attractive” and that it undermines the underlying methodology (Caruso, pg. 2). Again, the transcription error affects the degree, but not the overall direction of the PM-related benefits calculated by the proposed rule. Although the primary goal of this rulemaking is to address GHG emissions from motor vehicles, benefits created by reductions to PM have also been quantified and will have a positive impact on Minnesotans. Further, the error is not related to the methodology used to calculate benefits.

The MPCA notified the administrative law judge and the public within three business days of identification of the error – as soon as it was able to confirm the error – and immediately began an internal review of the rest of the analysis. Although the harmless error provision in Minn. Stat. § 14.15, subd. 5 concerns procedural defects, the MPCA’s actions in response to the transcription error did not deprive any person with the opportunity to participate meaningfully in the rulemaking process and the agency cured the defect in short order. Interested persons had an opportunity to question the agency during the February 23 hearing and provide comments into the record following the hearing.

The MPCA appreciates comments on the transcription error described in Exhibit O. The Agency continues to believe that our rule has met all requirements of the Administrative Procedures Act and has demonstrated that our proposed rule is both needed and reasonable, despite the existence (and correction) of an error that affected the degree of benefits it calculated in one part of our analysis.

K.14. Comments on a typographical error in MPCA’s Exhibit O

A comment from Center of the American Experiment pointed out a typographical error in the estimated value of health benefits in MPCA’s Exhibit O. (Center of the American Experiment, pgs. 34-35).

MPCA response: The commenter is correct about this typographical error. Specifically, in a table on page 8 of the exhibit “161 million - \$289 billion” should be “161 million - \$289 million”. The MPCA regrets this error and hopes that it has not caused undue confusion.

K.15. Request for analysis comparing air quality in states with LEV and ZEV standards and states without

One commenter followed a previous comment with another request that the MPCA provide graphs, figures, and maps comparing air concentrations of particulate matter and carbon dioxide (CO₂) in states that have adopted the LEV and ZEV standards compared with those states that have not. (Carlson-2)

MPCA response: For the reasons identified in our initial response to comments dated February 22, 2021 (Exhibit M), the MPCA disagrees that the request for such graphs, figures, and maps is reasonable, feasible, or necessary to demonstrate the benefits of the proposed rule. The Agency notes again as well as elsewhere in this Response that CO₂ is a global pollutant, with the harms from the pollutant that occur from the global concentration of CO₂ and its effect on climate conditions for Minnesota. Unlike other air pollutants, the statewide or local concentration of CO₂ is of less relevance in addressing climate change. The commenter’s request therefore is not reasonable or logical. Meaning, reducing a ton of CO₂ emissions in Minnesota results in the same atmospheric CO₂ benefits as reducing a ton of CO₂ emissions anywhere else in the world.

In addition to the response provided in Exhibit M, the MPCA also notes that analysis that links direct emissions of pollutants to air concentrations requires very complex photochemical modeling. This level of analysis is not standard or reasonable for rulemaking purposes, especially when the primary pollutant being controlled by the proposed rule is CO₂. The Agency therefore does not believe it is reasonable to conduct this level of analysis for this rulemaking and that it is instead more reasonable to analyze direct emissions impacts, as the Agency does in our SONAR.

K.16. Comments connecting greenhouse gas emissions and local air quality

Commenters made statements that connected greenhouse gas emission reductions to local air quality. One commenter asked “was the hypothesis correct that reducing CO₂ emissions from cars improves air quality?” (Carlson-2). One commenter stated that asthma is not caused by carbon dioxide (DeWaay testimony, hearing transcript February 23, 2021). Commenters stated that the MPCA should not adopt the proposed rule because California has some of the worst air quality in the country.

MPCA response: The MPCA would like to clarify that carbon dioxide (CO₂) and greenhouse gases more broadly are not pollutants of local air quality concern. Instead they are global pollutants, meaning that emissions anywhere have the same impact everywhere globally. Global pollutants like greenhouse gases contrast with local and regional pollutants such as particulate matter, which typically impact human health and the environment closer to where they are emitted. The MPCA agrees that asthma is not caused by CO₂. The MPCA wants to clarify that the purpose, therefore, of reducing greenhouse gas emissions is to address climate change, whereas reducing emissions of particulate matter, nitrogen oxides, and non-methane organic gases are intended to address more local and regional air quality concerns.

The MPCA agrees that much of California suffers from worse air quality than Minnesota. The difference in air quality between California and Minnesota is due to many factors including quantity and variety of emissions of air pollutants, geography, and weather. The MPCA disagrees, however, with the premise that California's poor air quality means that its policies are bad or irrelevant to Minnesota. In order to be implemented, the proposed standards need to receive approval from the U.S. EPA in the form of a waiver under CAA section 209(b). To issue a waiver to California, the U.S. EPA has to determine that the standards proposed by California are at least as protective as the federal standards. The MPCA will therefore have assurance when the waiver is restored that the standards are at least as protective, meaning reduce emissions at least as much, as the federal standards. In addition, the MPCA did our own analysis of the potential emissions costs and benefits of the proposed rule and found a net emission reduction for particulate matter, nitrogen oxides, and non-methane organic gases.

L. Other analytical comments

The MPCA received comments related to the regulatory analysis presented in the SONAR and TSD. Some comments criticized parts of the MPCA's analysis, saying it over-estimated benefits of the proposed rule. Other comments supported the MPCA's analysis or stated that it was overly conservative and under-estimated benefits of the proposed rule.

L.1. Comments providing additional analysis of the potential impacts of the proposed rule

Joint comments from Fresh Energy, Minnesota Center for Environmental Advocacy (MCEA), Natural Resources Defense Council (NRDC), and Sierra Club include a summary of the Shulock Consulting analysis of the impacts of the proposed rule, including GHG emissions impacts, other pollutant – PM, NMOG+NO_x – reductions and associated health benefits, equity impacts, and consumer impacts (Bains, pgs. 11-19). The analysis "...determined that the SONAR and TSD..., in general, are technically sound and clearly demonstrate the need for and reasonableness of the proposed regulation." The commenter also noted: "...the MPCA analysis overstates the cost of the technology needed to meet the LEV standard, such that the rule is even more cost-effective than MPCA concludes." The full report of this analysis from Shulock Consulting was also attached (Attachment A) to these comments.

MPCA response: As the commenter notes, the Shulock Consulting analysis generally agrees with MPCA's analysis, including both the emissions impacts and the consumer impacts. The general alignment of the conclusions of both studies affirms the reasonableness of the Agency's methodology. As the commenter also notes, the one area where the MPCA's analysis differs from the commenter's is in the estimates of technology costs. The analysis presented by the commenter states that the MPCA overestimated the technology costs to auto manufacturers to comply with the LEV standard relative to the federal SAFE standard due to the critical error of failing to account for the costs to automakers of complying with the increased stringency of tailpipe GHG emissions regulations in the final SAFE rule relative to the proposed SAFE rule. As noted above in Section C, the MPCA agrees with the commenter's assessment of the simplification of cost impacts in our analysis. The Agency's methodology was conservative, but reasonable and still showed the LEV standard to essentially have no net costs or benefits to consumers. The MPCA notes that the conclusions of this analysis further support the reasonableness of the rule.

L.2. Comments on emissions impacts of EVs and internal combustion engine vehicles, especially considering fuel sources

Commenters shared a variety of information and perspectives on the environmental impacts of EVs. Commenters noted that the emissions associated with EVs are linked to the source of electricity used to charge them. Commenters indicated that EVs may be dirtier than internal combustion engine vehicles and some said that EVs are not as clean as many people think. Commenters discussed different sources of electricity and how those sources might impact well-to-wheel emissions related to EVs. Commenters stated that EVs are not a clean transportation option because of the source of electricity they draw from, namely coal. Some commenters also noted that there are environmental impacts from wind and solar electricity generation. John Beath Environmental, LLC noted that MPCA's in-state generation mix did not account for electricity imported from Canada and other regional states, which most often comes from coal, natural gas, and hydroelectric sources. They commented that MPCA's analysis did not consider how upstream emissions from gasoline production could vary depending on how the crude oil was sourced, noting that conventional sourcing has a lower GHG impact than sourcing from oil sands.

Commenters mentioned concerns about emissions and other environmental impacts from batteries used to power EVs. For instance, a comment from Center of the American Experiment states that the MPCA overestimated GHG emissions reductions because our estimated reduction "does not consider the emissions that occur from manufacturing battery electric vehicles or ICE [internal combustion engine] vehicles" (Center of the American Experiment, pg. 28). Specifically, the comment claims that because the MPCA did not take into account emissions associated with manufacturing lithium-ion batteries that it overestimated expected GHG reductions of the rule. Other commenters noted that MPCA did not consider in its analysis the impacts of cold weather on EV operation and charging and the loss of battery efficiency over an EV's life (John Beath Environmental, pg. 4).

Other commenters noted that the electric power grid is getting cleaner and that there are ways to source electricity from renewable energy, such as rooftop solar panels and purchasing renewable energy credits from utilities.

MPCA response: Studies widely agree that EVs are a cleaner option when compared to internal combustion engine vehicles (SONAR, pg. 20). It is accurate that the level of emission reduction achieved by an EV compared to an internal combustion engine vehicle depends on the source of the electricity used to power the EV. The MPCA analyzed upstream emissions from electricity as part of our emissions analysis and found that the proposed rule would result in substantial emissions reductions, even considering upstream emissions impacts (SONAR, pgs. 77-81). The analysis relied on emissions factors for electricity generation and gasoline production from a widely-used and publicly-available tool from Argonne National Laboratory called the Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool (TSD, pg. 23). It is correct that the MPCA did not consider the emissions differences between crude oil sourcing methods in its analysis, because as John Beath Environmental noted, "crude data supply by state is not publicly available" (John Beath Environmental, pg. 7).

As described in the TSD, the MPCA relied on two previously developed electric generation projections (related to the Minnesota Environmental Quality Board's Climate Strategies and Economic Opportunities and the Clean Power Plan) for our analysis. These two highly reviewed and vetted projections were the only long-term forecasts available to MPCA. The Agency chose to use conservative, but reasonable assumptions regarding the mix of electricity generation in Minnesota based on current electricity generation sources and known future closures of coal plants (TSD, pgs. 23-24) so as not to overestimate benefits. The Agency also analyzed a worst-case scenario in which 50% of the electricity used to fuel EVs is coal and 50% is natural gas (TSD pg. 31). This worst-case scenario represents an even worse case than any imported electricity into the state from the surrounding Midwest Reliability Organization (MRO) region, which in 2019

was 36% coal and 22% natural gas.²⁹ Even in this worst-case scenario including upstream emissions associated with EV charging shows a net emissions benefit from the proposed rule (TSD, pgs. 31-34).

The proposed rule is an emission standard that requires emission rate improvements and increased deliveries of EVs. As such, the MPCA did not assess emissions associated with vehicle manufacturing in our regulatory analysis for this rule. It is reasonable to assume that gasoline or diesel powered vehicles manufactured to meet the LEV standard would not have significantly different manufacturing emissions compared to vehicles manufactured to meet the federal SAFE standard. However, since battery electric vehicles and plug-in hybrid electric vehicles have different components, there is a potential difference in emissions from the manufacture of these vehicles. Page 20 of the SONAR includes information on emissions associated with EVs and internal combustion engine vehicles that shows that EVs produce fewer GHGs than internal combustion engine vehicles, even when accounting for the manufacturing of the vehicle and battery.

The core of the MPCA's analysis of emissions impacts of the proposed rules are the emissions regulated by the standards: tailpipe emissions. However, the Agency prepared an analysis of emissions that provided a parallel comparison for both internal combustion engine vehicles and EVs to ensure a reasonable evaluation of the impacts of the emissions standards. As many commenters have noted, EVs may not have tailpipe emissions, but they do directly result in increased demand for electricity. The upstream emissions of EVs are directly related to power sector fuel (e.g. coal and natural gas) and similarly the emissions associated with internal combustion engine vehicles are related to the fuel they burn. Therefore, to provide a parallel analysis, understanding that increasing adoption of EVs directly leads to increased electricity production, and reducing GHG emissions of internal combustion engine vehicles typically results in lower fuel use, the MPCA provided a standard and reasonable well-to-wheel vehicle emissions analysis.

Similarly, MPCA provided a parallel analysis between the two vehicle types when it chose not to consider the emissions impacts from cold weather and decreased efficiency over the life of an EV, since these factors are known to also have an impact on internal combustion engine vehicle performance. Similar to EVs, cold weather decreases internal combustion engine vehicle fuel efficiency, and therefore increases their GHG emissions. Internal combustion engine vehicle fuel efficiency also tends to decline as the vehicle ages.

L.3. Comments on MPCA's NMOG + NO_x emissions analysis

Fresh Energy, MCEA, NRDC Sierra Club noted in their comments that MPCA's analysis of NMOG + NO_x emissions benefits and subsequent health benefits is conservative because the agency only considered upstream benefits (from reduced gasoline production) and not tailpipe benefits. They noted that MPCA took this approach because the nature of the regulation's allowance for manufacturers to "average" tailpipe emissions across the fleet. Their critique of MPCA's approach was that "the structure of the NO_x + NMOG standard... greatly limits manufacturers' ability to use averaging for state-level compliance", and submitted declarations from technical experts who verified that manufacturers do not employ averaging for NMOG + NO_x tailpipe emissions. They recommended that MPCA include NMOG + NO_x tailpipe reduction estimates in our primary analysis or submit a sensitivity analysis of the additional tailpipe NMOG + NO_x and health benefits.

MPCA response: The MPCA's methodology for analyzing the emissions benefits of this rule were conservative, but reasonable. The MPCA agrees that our estimated NMOG + NO_x and health benefits may have been slightly higher with the inclusion of tailpipe reductions from internal combustion engine vehicles displaced by EVs. The MPCA appreciates these organization's efforts to quantify the additional benefits the Agency did not capture in our own analysis. We believe our analysis, which shows clear emissions benefits of all pollutants from the proposed rule, is reasonable and supports the rulemaking.

²⁹ US EPA eGRID Data Explorer, MRO region resource mix: <https://www.epa.gov/egrid/data-explorer>; accessed March 21, 2021.

L.4. Comments on the analysis of differences between NMOG and NO_x LEV and federal standards

The Alliance for Automotive Innovation commented, “The Clean Cars Rules do not make it clear whether there will be different averages for non-methane organic (NMOG) + nitrogen oxides (NO_x)—i.e., criteria emissions—and GHG emissions than those as set forth under the Clean Air Act. In fact, the NMOG + NO_x standards in the federal criteria emission standards, known as the Tier 3 emissions standards, are the same as the California LEV III NMOG + NO_x standards. As a result, Minnesotans already purchase vehicles that comply with the same level of stringency promulgated by both the California LEV III and EPA Tier 3 standards. Therefore, the State will not achieve any additional air quality benefits from adopting the California LEV III NMOG + NO_x standards.”

MPCA response: The MPCA agrees with commenter that adopting California’s LEV/ZEV standards in Minnesota will not create different NMOG + NO_x fleet-average standards from the Tier 3 (federal) and LEV III standards. The MPCA did not model different standards for this pollutant group and all estimated NMOG + NO_x emissions costs and benefits in the MPCA’s analysis are from upstream fuel impacts (reduced gasoline consumption and increased electricity generation).

As stated on page 79 of the SONAR, “Since LEV and SAFE fleet-average NMOG + NO_x tailpipe standards are equivalent, all NMOG + NO_x benefits occur upstream.” In this case, SAFE refers to the business-as-usual scenario in which the SAFE GHG standards are in place instead of the Clean Cars standards; the federal SAFE rule, which weakened federal GHG standards, did not alter the Tier 3 NMOG + NO_x standards.

L.5. Comment on California State Auditor report

One commenter referenced a February 23rd report from the California State Auditor that “has found that the California Air Resources Board (CARB) ‘has overstated the GHG emissions reductions its [low- and zero-emission vehicle] incentive programs have achieved.’ ‘One effect of this overstatement is to obscure the programs’ cost effectiveness in reducing GHG emissions,’ the report states” (Caruso, pg. 2).

MPCA response: A commenter also raised concerns about a California State Auditor's report about the California Air Resources Board's (CARB) accounting of benefits from its financial incentive programs.³⁰ But the results of this audit have no bearing on the MPCA and our analysis of the GHG emissions benefits of the LEV and ZEV standards. For one, the CARB audit addressed that agency's accounting of GHG emission benefits from its financial incentive programs for vehicles. The MPCA is not proposing financial incentives as part of this rulemaking. Further, upon initial review, the California auditor addressed the accounting of benefits of any one incentive due to the number of overlapping regulatory and incentive-based climate change programs in California, not the methodology for calculating the benefits themselves. The situation in California is not applicable to Minnesota and the MPCA conducted our own analysis to calculate the GHG emission benefits from this proposed rule.

L.6. Comments on the difference between fuels used in Minnesota and California

A commenter pointed out the difference between Minnesota and California motor vehicle fuels, specifically that “California has not adopted E15 as a legal fuel” while Minnesota “...is actively considering legislation to expand the use of E15...” (Auto Innovators, pg. 15). The commenter goes on to say that the MPCA should consider the differences between Minnesota fuel and California fuel in the MPCA’s SONAR, and also in its assessment of the overall impact on the NMOG + NO_x and the PM emissions standards” (Auto Innovators, pg. 15).

MPCA response: In our analysis of emissions benefits of the propose rule, the MPCA assumed that internal combustion engine vehicles and plug-in hybrid electric vehicles would run on a 10% ethanol-gasoline blend (E10) (TSD, pg. 23). While the MPCA does not dispute the commenter’s assertion that Minnesota will potentially expand the use of fuel containing

³⁰ See: <http://auditor.ca.gov/pdfs/reports/2020-114.pdf>

15% ethanol and 85% gasoline (E15), this assumption was reasonable because E10 is commonly available in the Midwestern U.S., including Minnesota, and potential gasoline regulation is outside the scope of this rule. Moreover, because the MPCA made the reasonable assumption that the gasoline blend would be "...the same in the Reference [business as usual] and Clean Cars scenarios since the proposed rule does not affect biofuels standards" (TSD, pg. 23), that the choice of ethanol-gasoline fuel mix would not have a large impact on the MPCA's estimates of emissions benefits of the proposed rule. The MPCA also notes that the difference between Minnesota's gasoline blend and California's gasoline blend is not relevant to the Agency's analysis. The Agency did a Minnesota-specific analysis of emissions impacts and thus conditions in California are not relevant to our analysis.

L.7. Comments on "rebound effects" that could affect Minnesotans' choices or behaviors under the proposed rule

Commenters identified a possible "rebound effect" in which there can be unintended consequences of a policy that serve to diminish or counteract the intended results of the policy. The "rebound effect" can take various forms in this context. For example, commenters stated that if driving becomes cheaper due to reduced ongoing fuel and maintenance costs, then Minnesotans might drive more, thus diminishing or negating the expected emissions benefits of the rule. Alternatively, if the cost of new cars increases, consumers may not recognize that overall costs of vehicle ownership are actually lower, and will instead hold onto their older less efficient vehicles longer or be more likely to buy used, more-polluting used cars. For example, the Clean Fuels Development Coalition comments states: "When driving costs less, drivers drive more. And by the same logic, studies show that when a state mandates more fuel-efficient cars, drivers drive more....It is important to the analysis because it undermines the asserted goal of reducing pollution. The more drivers drive, the more carbon and air pollution they cause." (Clean Fuels Development Coalition comments, pgs. 2 and 38-39). The Clean Fuels Development Coalition comments go on to state: "...if new cars cost more, drivers will buy them less often. This fleet-turnover effect has also been empirically demonstrated, but the Agency inexplicably assumes that buyers do not react to prices. (Clean Fuels Development Coalition comments, pgs. 2 and 39-40). A comment from Consumer Reports, however, stated that there is no rebound effect from vehicle emissions standards that would lead to consumers purchasing fewer vehicles, holding onto older vehicles longer, or opting to buy used vehicles instead. (Consumer Reports comments, pgs. 3-4)

MPCA response: The MPCA acknowledges the possibility of rebound effects in how the proposed rule could affect the choices and behaviors of Minnesotans. Nonetheless, the MPCA maintains it is reasonable to not assume that there necessarily will be rebound effects both in vehicle sales and in vehicle miles traveled (VMT) resulting from the proposed rule. On pages 8-9 of the TSD the MPCA explains why it is not projecting overall changes in light-duty vehicle sales in Minnesota resulting from the proposed rule. This assumption is based on information from a variety of sources, most notably from historical data from the U.S. Department of Energy that generally show that tightening vehicle emissions standards and increasing vehicle purchase prices do not seem to have a meaningful impact on vehicle sales. That is to say that it is reasonable to assume that the market for light-duty vehicle sales is inelastic to changes in price, fuel efficiency, emission levels, or any other factors that could be affected by the proposed rule. Consumer Reports stated 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. Greenhouse gas (GHG) vehicle standards are unlikely to affect the number of new cars sold in Minnesota" (Consumer Reports Comments, pg. 3).

The MPCA also believes it is reasonable to assume that total VMT will be unchanged by the proposed rule, that is that Minnesotans will not choose to drive more if the cost of driving becomes cheaper. The MPCA explains the assumptions underlying our estimate of VMT on pages 16-17 of the TSD. While the existence of the rebound effect is not controversial, the magnitude and impact of the effect in real-world situations is largely uncertain. MPCA could find no evidence of an association between the cost and behavior of driving in order to estimate a rebound effect of Minnesotans driving more (or less) after the rule goes into effect.

L.8. Comments on other economic benefits of the proposed rule, including to the electric power sector

Commenters noted other likely benefits of the proposed rule outside of the main classes of persons who would be affected by the proposed rule (auto manufacturers, auto dealers, and individuals and groups that purchase new vehicles). Commenters pointed out likely jobs creation and boost to Minnesota's overall economic activity. Commenters referred to two recent reports that MPCA referenced in the SONAR from Synapse Energy Economics (SONAR, pgs. 77, 81) and M.J. Bradley & Associates (SONAR, pgs. 77, 82). These reports identified jobs creation, increased gross state product, and decreased electricity costs for all consumers that tend to result from clean vehicle standards. Clean Energy Economy MN stated: "Advanced transportation is Minnesota's third-largest clean energy sector with 3,191 jobs, according to our 2020 Clean Jobs Midwest Report. In addition, a recent CEEM economic analysis from Analysis Group, found that stimulus funds targeted at transportation electrification could create as many as 85,000 jobs, and spur billions of dollars in economic activity. Enacting Clean Cars Minnesota policies will help build upon that economic activity and job creation" (Clean Energy Economy MN comments, pg. 1). Fresh Energy et. al. commented: "Under the system of rate regulation before the Minnesota Public Utilities Commission, that net revenue for investor-owned utilities is automatically returned to all electric utility customers in the form of reduced rates, resulting in reduced electric bills. The savings from increased EV adoption in Minnesota could result in up to \$57 million in electric bill reduction benefits to all electric ratepayers through 2030, regardless of whether they own an EV" (Fresh Energy et. al. comments, pg. 56). CURE commented that the rule could bring economic benefits to rural communities, especially to rural electric cooperatives: "Today, as electric co-ops take on the transition to an energy system based on clean energy, storage, and energy efficiency, they need smart, forward-thinking policies to help give them the stability they need to plan for the future" (CURE comments pgs. 1-2). Finally, the Ceres BICEP Network commented: "Minnesota needs to adopt the clean car standards in order to ensure that it will continue to enjoy these economic benefits, including the creation of nearly 13,000 jobs by 2030....The adoption of clean car standards will not only save Minnesota companies and consumers money, it will also provide Minnesota companies and investors with the policy certainty that enables long-term investments in the state and catalyzes the development of new technologies and associated local jobs" (Ceres BICEP Network comments, pgs. 1-2).

MPCA response: MPCA only briefly addressed potential economic impacts of the proposed rule, besides those related to the main classes of persons affected by the proposed rule. On pages 76-77 of the SONAR, the MPCA addressed potential economic impacts on other industries and the evidence from the Synapse Energy Economics and M.J. Bradley and Associates studies that the proposed rule could bring macroeconomic benefits to Minnesota, including jobs creation and a boost to the gross state product. On page 81 of the SONAR, the MPCA briefly addressed the evidence for potential power sector benefits of the rule that could drive down electricity rates for all Minnesotans. The MPCA acknowledges that the economic benefits of the proposed rule are likely to be broader than those quantified in our analysis.

L.9. Comments about Minnesotans' preference for larger vehicles and payback

Commenters noted that new car purchasers in Minnesota are more likely than purchasers in other section 177 states to prefer a larger vehicle over a smaller one. Commenters expressed concerns that, as a result, the rules may not have as significant a benefit as they would in other states, or any benefit at all. Center of the American Experiment noted, "39 percent of vehicles sold in Colorado in 2018 were cars", the rest being a mix of larger vehicles like SUVs, crossovers, pickups and minivans. They noted, "In contrast, cars represented just 21 percent of new vehicles sold in Minnesota." They cited the Colorado Automobile Dealers Association (CADA), who estimated cost increases on new vehicles nearly twice as large as the MPCA's and a net cost on consumers (in Colorado). Center of the American Experiment commented that even with MPCA's lower estimated cost increase, "MPCAs analysis did not show a clear savings from lower fuel costs". They conclude, "Due to consumer preferences in Minnesota, the regulations are likely to have even larger costs with smaller benefits than they would in Colorado. Therefore, LEV regulations would be a net loss for Minnesota's economy and consumers." (Center of the American Experiment, pg. 20)

MPCA response: The MPCA does not dispute that larger vehicles tend to make up a higher proportion of new vehicle sales in Minnesota than in other clean car states. However, as MPCA noted on page 23 of the SONAR, other clean car states have similar proportions as Minnesota. For example, in Maine and Vermont, 20 and 21 percent of new vehicles sold are cars, respectively.³¹ The MPCA disagrees that Minnesotans' preference for larger vehicles means the regulation will not provide substantial benefits. Indeed, the MPCA found in our emissions analysis that a higher proportion of larger vehicles sold each year leads to an even greater GHG emissions benefit, because "there is a greater reduction achieved for every LEV-certified light-duty truck sold than a LEV-certified passenger car" (TSD, pg. 31).

In regards to consumer costs and benefits, the MPCA was clear in our analysis that "adopting the LEV standard in Minnesota would be likely to result in a small consumer benefit to Minnesota vehicle purchasers" taking into account increased vehicle purchase price, increased taxes, insurance and maintenance costs, and fuel savings over the life of the vehicle (TSD, pg. 49).

The MPCA's consumer impacts of the LEV standard was based on the average Minnesota vehicle, based on the assumption of new light-duty vehicles sold in Minnesota will be 25% passenger cars and 75% light-duty trucks (SONAR, pg. 71 and TSD pg. 30). In this sense, one can think about the average new light-duty vehicle sold in Minnesota to be 25% passenger car and 75% light-duty truck. The MPCA analysis did not estimate the overall lifetime consumer cost or benefit separately for a passenger car versus a light-duty truck. However, due to the fact that there is a larger differential between LEV and federal standards in fuel efficiency for a light-duty truck compared to a passenger car (TSD, pgs. 30-31), there would be larger relative fuel savings for a LEV-certified light-duty truck. As the commenter points out, the CADA analysis found a larger consumer cost of LEV for larger vehicles. The MPCA has identified problems with the CADA analysis of LEV consumer costs elsewhere in this Response.

L.10. Comments on applicability of sources the MPCA used in the analysis

MADA commented on the use of related studies to inform the MPCA's analysis of the proposed rules. They raised concerns about three sources in particular, the M.J Bradley & Associates report "Plug-In Electric Vehicle Cost-Benefit Analysis: Minnesota," the Minnesota Department of Transportation's (MnDOT) "Pathways to Decarbonizing Transportation," and the MPCA's "Life and Breath Report." MADA's comments assert, "The conclusions of these reports are fundamentally limited as basis for the CCMR" and "the scenarios rely on exaggerated assumptions that can almost certainly not be achieved by the CCMR" (MADA pg. 11).

MPCA response: The MPCA did not use these sources for the Agency's regulatory analysis. These sources instead provide background to the need for and reasonableness of the proposed rule. The M.J. Bradley & Associates report does not advocate for particular mechanisms for achieving EV sales and use, but rather the benefits of doing so. The MnDOT report similarly identifies ways of achieving emissions reductions in transportation, including through cleaner, more efficient vehicles and increasing EV adoption. The MPCA does not suggest that the proposed rule would achieve the emission reductions identified in the MnDOT report, but rather uses the report to help identify actions that could be taken to reduce emissions. The MPCA believes it is reasonable to cite these sources on the benefits of more EVs and cleaner, more efficient internal combustion engine vehicles in Minnesota even if these reports to provide context to the proposed rule and our regulatory analysis.

With regard to the commenter's criticism of health impact modeling in "Life and Breath" and the M.J. Bradley & Associates reports, the MPCA believes it is reasonable to use established air pollution and health impact modeling to estimate benefits of emissions reductions. Although the reports identify additional sources of air pollution, the regulatory analysis in the SONAR has specifically analyzed the impacts of the proposed rules on emissions.

³¹ Auto Alliance, "Autos Drive Maine Forward," State Facts, Accessed March 20, 2021, <https://autoalliance.org/in-your-state/VT/>; "Autos Drive Maine Forward," State Facts, Accessed March 20, 2021, <https://autoalliance.org/in-your-state/ME/>

L.11. Comments on potential loss of state tax revenue

Commenters expressed concern about the potential impacts of reduced fuel tax revenues that could result from the proposed rule. For instance, one commenter stated that liquid transportation fuel taxes “...fund building, maintenance and repair of bridges, roads, highways, and other transportation initiatives, even including bicycle paths” (The American Fuel & Manufacturers (AFPM) and American Petroleum Institute (API), pg. 26). The commenters estimate that a typical Minnesota driver will pay “nearly \$200 of fuel taxes”, but “...an EV owner only pays a \$75 annual registration fee.” The commenters go on to state: “Minnesota should equalize treatment of vehicle owners so everyone is paying their fair share for road and bridge maintenance. MPCA should factor in losses to highway funds from reduced gasoline and diesel tax revenues.” (AFPM and API comments, pg. 26) Another commenter expressed concern about loss of motor vehicle sales tax revenue, fearing that “Minnesota will lose that revenue when vehicles are purchased in surrounding states.” The commenter asserts that “...the SONAR does not consider or address the loss of revenue to the State of Minnesota.” (Senator Scott Newman et al. comments, pg. 4).

MPCA response: The MPCA analyzed the expected impacts of both the LEV and ZEV standards on state tax revenues (SONAR, pgs. 65-66 and TSD, pgs. 70-73 of the TSD). The MPCA recognizes the likely loss of fuel tax revenue and estimated this reduced revenue to be approximately \$192 million over the first 10 years of the rule. However, all the other state revenue impacts that the MPCA expects to be affected by this rule are pushed in the other direction. The MPCA has estimated expected sales tax revenue increases from both the LEV and ZEV standards, registration tax revenue increased from both the LEV and ZEV standards, and additional state revenues from the \$75 annual registration fee premium for BEV owners pointed out by the commenter. In total, over the first 10 years of the rule, the MPCA estimates a very small net positive impact on state tax revenues, which on an annual basis, amounts to less than 0.04% of the states total tax revenue. This finding of general state revenue neutrality has also been found by the MnDOT in its modeling that 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.³² While the MPCA has not done an analysis comparing all the tax payments paid by the average EV owner and the average internal combustion engine vehicle owner to ensure parity that the commenter call for, the MPCA has concluded that this rule will not have a meaningful impact on state tax revenues, and all the , as the maintenance, repair, and infrastructure projects and initiatives that these revenues fund in Minnesota.

The MPCA does not expect the proposed rule to reduce sales tax revenue as a result of many vehicle buyers going out of state to buy their vehicles. As addressed elsewhere in this Response, under the proposed rule any vehicle registered in Minnesota will have to be LEV-certified, restricting the possibility of vehicle buyers buying non-LEV-certified vehicles outside the state. Additionally, as noted by some commenters, by increasing the availability of EVs in Minnesota, the proposed rule could serve to avoid vehicle purchasers traveling out of state to purchase their EV, which several commenters reported having done. Finally, due to the slighter higher purchase costs of LEV-certified vehicles and EVs, the state earns more sales tax (as well as annual registration taxes, which are based on vehicle values) from their purchases compared to non-LEV-certified internal combustion engine vehicles.

L.12. Comments on the AFLEET model

Commenters expressed concerns that the MPCA’s analysis and explanation of GHG emissions per vehicle mile “do not contain sufficient detail to connect assumptions made to results obtained” (John Beath Environmental, pg. 5). Commenters referenced Figure 6 on page 21 of the SONAR and requested the AFLEET workbook.

MPCA Response: The MPCA used the publicly-available Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET)³³ modeling tool to calculate upstream emissions rates from electricity and gasoline production

³² MnDOT, “Electric Vehicles – Financial Outlook,” (<http://www.dot.state.mn.us/sustainability/docs/ev-revenue-190419.pdf>)

³³ See https://greet.es.anl.gov/afleet_tool

(TSD at 22–24). This spreadsheet tool is available for download at the link provided by the MPCA in footnote 32 of the TSD. The TSD also provides a summary of assumptions the MPCA used in our analysis using the AFLEET model. The MPCA notes that commenters conducted their own thorough analysis of the MPCA's findings that the MPCA has responded to elsewhere in this final response.

L.13. Question about analysis of EV manufacturing emissions

A commenter asked if the MPCA included emissions resulting from the manufacturing of electric vehicles and internal combustion engine vehicles in the regulatory analysis. (Orr-2)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

L.14. Request for per-mile fuel savings estimate

A commenter requested "the estimated real-world per-mile fuel savings benefit (in gallons) for both passenger cars and light-duty trucks for model years 2025-2034 based on the differences between the LEV standards and the SAFE rule." (Orr-1)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

L.15. Request for MOVES data

A commenter requested "the exact figures used in EPA's MOVES model for LEV and ZEV vehicles in each model year." (Orr-1)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

L.16. Request for U.S. Energy Information Administration's 2019 Annual Energy Outlook

A commenter requested the data described on page 44 of the TSD: "Finally, we calculated dollar savings per vehicle using the calculated fuel savings and projected gasoline prices from the U.S. Energy Information Association's 2019 Annual Energy Outlook from the Reference case in its Table 12: Petroleum and Other Liquids Prices. These gasoline price projections are \$3.07/gallon (in 2018 dollars) in 2023 and grow at an average rate of 0.7% per year in subsequent years. The EIA, in fact, predicts that the price per gallon of gasoline will increase from now through 2050 under all scenarios (Figure 14)." (Orr-1)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

L.17. Request for clarification on different AEO projections

A commenter asked for clarification on the uses of different AEO projections, noting "tables, like Table 19, use AEO from 2016, while the paragraph above uses the 2019 AEO." The commenter also asks why the MPCA used 2019 AEO projections rather than 2020 AEO projections. (Orr-1)

MPCA response: The MPCA responded to these comments in our initial response to comments, published to the record on February 22, 2021 (Exhibit M).

L.18. Comments on MPCA's assumed average power requirement for EVs

John Beath Environmental, LLC commented that the EV power requirement MPCA used in its analysis, 29 kWh/100 miles, was "on the lowest end of the power range of today's available EV models" (John Beath Environmental, pg. 4). They note, "The higher this number, the more power required, and the higher the corresponding GHG impact" (John Beath Environmental, pg. 7). They reviewed the power requirement ratings for EVs currently on the markets and found

“Only four models listed have values at or lower than 29 kWh/100 miles, while twenty-five models have higher values, with the maximum at 44 kWh/100 miles” (John Beath Environmental, pg. 7). They suggest that as larger EVs enter the market in future years to satisfy customers’ preferences for larger vehicles, the average power requirement of EVs will increase over time, and so too will the vehicles’ GHG impacts (John Beath Environmental, pg. 7).

MPCA response: The commenter correctly identified the power requirement the MPCA used in our analysis, which, as noted in the TSD, was based on data from the U.S. Department of Energy Alternative Fuel Data Center. The power requirement the MPCA used was a reasonable value well within the acceptable range currently found in the EV market. It is a reasonable average to assume based on current EV models that range in size, weight, and battery range. The MPCA did not try to estimate how average EV power requirements will change over time because it is difficult to forecast how EV technology will progress, how the EV models offered for sale in the future will perform, or how consumers’ vehicle preferences will change over time.

M. Other opposition to rule adoption

Commenters offered additional points of opposition to the proposed rule.

M.1. Comments comparing Minnesota to California

Commenters stated that the MPCA should not adopt the proposed rule because Minnesota is not like California in terms of air quality, population size, temperature, and economy, among other differences.

MPCA response: The MPCA appreciates the many commenters who listed differences between California and Minnesota as reasons to oppose adoption of these clean car standards. The MPCA does not dispute that there are differences, some obvious, between the two states. But none of these differences have anything to do with adoption of the vehicle emission standards proposed in this rule. As stated in the SONAR (p. 35–36) and throughout the rulemaking process, the MPCA is proposing to adopt California emissions standards because the federal Clean Air Act gives other states two choices: the federal standard or the California standard. As the California Air Resources Board put it in its comments, “The federal Clean Air Act establishes minimum standards for healthy air, and gives states the first chance to develop the programs and policies necessary to meet those standards while considering their own needs. That includes the authority to choose California’s standards when they offer a better alternative than federal emission standards” In so choosing to propose adoption of the more protective emission standards, the MPCA considered the air quality, population, climate, and economy of one state—Minnesota.

M.2. Comments on economic impacts of COVID-19

Commenters stated that the MPCA should not adopt the proposed rule due to ongoing economic impacts of the COVID-19 pandemic, especially impacts on auto dealers. Other commenters provided evidence that EV sales have been resilient during the pandemic, both globally and nationally relative to the market for ICE vehicles (Fresh Energy et. al., pgs. 24-25)

MPCA response: The MPCA considered the impact that the ongoing COVID-19 pandemic, and the associated economic impacts, could have on the impacts of the rule. (TSD, pgs. 86-96) The MPCA evaluated how a long-term economic slowdown resulting from COVID-19 could impact emissions benefits of the proposed rule as well as costs and benefits to Minnesota consumers and health and equity impacts. The primary proximate impact of COVID-19 that the MPCA considered in this “Economic slowdown sensitivity analysis” was the depression of consumer demand for new vehicles (both ICE vehicles as well as EVs) in Minnesota.

While the MPCA did not have sufficient information to specifically project how COVID-19 and its aftermath would affect the market for new vehicles in Minnesota, the U.S. Energy Information Administration (EIA) has projected the potential impacts of low economic growth on new vehicle sales. The MPCA deemed that using EIA’s “Low economic growth” scenario was a reasonable proxy to reflect the potential impact of COVID-19 on Minnesota’s new vehicle market. The

MPCA used the EIA's low economic growth projections to adjust both Minnesota EV sales and overall light duty vehicle sales. This was a conservative assumption since the evidence provided by Fresh Energy et. al. as well as a study by the International Energy Agency³⁴ show that in 2020 the EV market was more resilient to the impacts of COVID-19 than the overall market for light duty vehicles, and using the EIA low economic growth projections generally reduced projected future EV sales by higher percentages than overall light duty vehicle sales.

M.3. Comments supporting relying on market forces

Commenters stated that the MPCA should not adopt the proposed rule and should instead allow market forces to determine the best vehicle technology.

MPCA response: The purpose of environmental regulation is to address market failures. A market failure is when the free market leads to a socially suboptimal outcome. Specifically in this context, the free market without the Clean Cars rule results in Minnesotans being worse off than with the rule in place, even if the rule does interfere with the free market for new vehicles in Minnesota. There are actually two different market failures that the Clean Cars rule seeks to address: the negative externality of air pollution that the free market does not take into account and the fact that the free market does not lead to the provision of consumer choices that Minnesotans want.

The issue of negative externalities is the major market failure that this rule seeks to address. As the MPCA shows in the SONAR, there are projected benefits of reduced greenhouse gas emissions that cause climate change (SONAR, pgs. 77-79) and reduced emissions of other pollutants that cause deleterious health impacts, including premature deaths, in Minnesota (SONAR, pgs. 79-81). The MPCA has projected the economic values of these reduced emissions over the first ten years of the rule to be \$500 million for reduced climate damages (SONAR, pg. 79) and \$161-\$615 million for avoided health impacts (SONAR Exhibit O, pgs. 6-8). These economic benefits of the rule, which conversely are economic costs under the free market without the rule, are benefits to the people of Minnesota. Without the rule, there is no incentive for producers (i.e., vehicle manufacturers) or consumers (i.e., Minnesota new vehicle purchasers) to take these costs into account in their production and consumption choices. Correcting for negative externalities, which the free market does not address, is the basis for nearly all environmental regulations.

The second, arguably less important, market failure addressed by this rule is that the free market does not always lead to the provision of all the choices that consumers want. In this context, numerous commenters have testified in both written and oral comments that the electric vehicles they sought to purchase were not available in Minnesota, leading them to settle for alternative less-preferred vehicles or to go through the efforts to buy their vehicles outside of Minnesota. Moreover, on page 50 of the SONAR, the MPCA cites a Consumer Reports study demonstrating there is consumer demand for EVs in Minnesota which the free market without a ZEV standard is not meeting. This is consistent with other states that have adopted the ZEV standard. In pages 47-50 of the SONAR, the MPCA shows that the availability and selection of EVs has increased significantly in states that have adopted a ZEV standard, relative to the current availability and selection of these vehicles in Minnesota.

M.4. Comments on the ZEV standard creating a market distortion

A comment from the Institute for Energy Research criticizes the ZEV standard as a government intrusion into the vehicle marketplace" and that it "...yields economic distortions that tend to benefit the wealthier segment of consumers for whom electric vehicles are a prudent choice." (Institute for Energy Research, pgs. 3-4).

MPCA response: The MPCA acknowledges that this rule is solely a supply-side policy and does nothing to address the demand for cleaner vehicles, which is covered elsewhere in this response document. This rule seeks to increase the

³⁴ See <https://www.iea.org/commentaries/how-global-electric-car-sales-defied-covid-19-in-2020>

supply of EVs in Minnesota. Whether a vehicle purchaser chooses to buy one or not is entirely up to them. The MPCA understands that EVs do not make sense for all Minnesota drivers, and the ZEV standard will not at all require any Minnesotan to purchase a vehicle that they do not want to buy. The MPCA projects that, at most, the ZEV standard will result in 7.4% of light duty vehicle sales in Minnesota will be EVs (TSD, pg. 51 and Table 25), which means that 93% of light duty vehicle sales will continue to be ICE vehicles. This rule seeks to make electric vehicles available for those that want them but makes no requirement on any individual that does not want one.

While this commenter claims that this rule is likely to disproportionately benefit wealthier Minnesotans, other commenters have stated the opposite. For example, as noted above in Section C, Consumer Reports commented that both the LEV standard and ZEV standard will help low-income households when the lower costs of vehicle ownership are taken into account.

N. Comments outside the scope of the proposed rules

The MPCA received a variety of comments related to EVs and reducing GHG emissions, but outside of the scope of this rulemaking.

N.1. Comments on benefits and limitations of EVs

The MPCA received comments both reflecting positive and negative ideas about how EVs might fit into their lives. Commenters wrote with concerns about EV performance, particularly in cold weather. Commenters also raised concerns about the availability of charging infrastructure across the state. Commenters shared a variety of ways that EVs are not right for their lifestyle or work, including the need to regularly drive long distances, large families, and towing capacity. One commenter stated that the MPCA should consider in our analysis “the significant increase in time required for EV drivers to fuel their vehicles” (American Fuel & Manufacturers and American Petroleum Institute, pg. 19).

Other commenters shared how EVs fit into their lives, including experiences charging at home, EV ranges being sufficient for their commute, and road trips.

MPCA response: The MPCA understands that EVs may not be right for all consumers and that current EVs have certain limitations. Concerns about limitations of EVs, however, are outside of the scope of this rulemaking. The Agency does note, though, that new EVs coming to market include SUVs and pickup trucks and many have longer ranges. In addition, EV performance varies by manufacturer and the ZEV standard is in effect in other cold weather states like Vermont and Maine. Additionally, the MPCA and other state agencies are working to expand charging infrastructure through other programs, but EV charging infrastructure is outside the scope of this rulemaking. These developments are anticipated to make EVs more functional for more people and more uses.

The MPCA did not consider in our analysis the proposed rule’s potential impact on consumers’ time spent refueling their vehicles for two reasons. First, studies show EV owners do most (more than 80%) of their charging at home,³⁵ which does not consume time, as they can leave their vehicle charging while they do other things. Second, the proposed rule does not require any individual to purchase an EV, and thus an individual’s decision to purchase an EV and how that individual chooses to charge their EV is not a direct result of this proposed rule.

That said, the Agency has been clear throughout the rulemaking process that the proposed rule does not force individuals to purchase EVs if they do not want them or if they do not fit their needs. The MPCA estimates that the ZEV standard would result in 6.2-7.4% of new vehicles delivered for sale being EVs (SONAR, pg. 43). This means that the Agency anticipates that over 90% of all new light-duty vehicles sold in Minnesota will be internal combustion engine vehicles under this proposed rule. The fact that EVs may not be right for every use at this point in time does not reduce the reasonableness of the proposed rule.

³⁵ U.S. Department of Energy, “Charging at Home: Electric Vehicles,” (<https://www.energy.gov/eere/electricvehicles/charging-home>)

N.2. Comments on the need for supportive policies and investments to increase EV adoption

Commenters noted a variety of supportive policies and investments Minnesota should undertake to increase EV adoption in the state. Commenters have stated that increasing EV availability will not increase EV adoption. Many of these commenters have offered suggestions on other policies, programs, or investments they believe would more likely result in EV adoption or would do more to increase EV adoption than the ZEV standard. Other commenters have stated that the ZEV standard is an important policy to support EV growth.

The Auto Innovators state, “Minnesota needs strong policy leadership and fast action to develop purchase incentives, significantly invest in electric charging and hydrogen fueling stations, educate and create awareness among citizens, and work with utilities and other stakeholders to make sure that customers can easily and cost-effectively “refuel” their EVs at home, work, and elsewhere” (Auto Innovators, pg. 33). The Auto Innovators state that Minnesota, “needs to commit a minimum of \$500 million to grow its EV market over the next five years” (Auto Innovators, pg. 39).

In a similar vein, MADA states that increased availability of EVs does not mean more sales. They cite a Union of Concerned Scientists and Consumer Reports survey that found, “that lower purchase price, longer vehicle range, and lower operating costs were the top changes that would make people more likely to purchase an EV (56%, 51%, and 39% respectively). The CCMR does nothing to address these top consumer considerations. Changes related to having more models to choose from, e.g., having options in crossovers/SUVs/pickups or having more used EV options, were less significant (22% and 12% respectively)” (MADA, pgs. 13-14).

Other commenters have stated that the ZEV standard is an important policy for advancing EV adoption, among other important actions. One commenter stated that comparing European EV markets to U.S. EV markets can be illuminating. He stated that in 2019 the GHG emissions standards in Europe became much more stringent and “The only way that auto manufacturers could meet the new standards was to actively bring EVs to the market. This changed things rapidly in Europe, and EV market share in Europe tripled from 3.3% to 10.2%. Manufacturers and dealers learned that the customer demand was there so they sold 1.4 million EVs and now the auto industry forecasts that EV market share in Europe will be 40% in 2025” (Kukkonen).

MPCA response: Throughout this rulemaking process, the MPCA has made it clear that it does not consider the ZEV standard as a stand-alone policy that will single-handedly increase EV adoption, but rather as one part of a portfolio of actions needed to support growth in EV adoption. The SONAR states,

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....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 (SONAR, pg. 44).

The SONAR then outlines other areas of actions taken to support EV growth both by the MPCA and our partners, including investing in EV charging infrastructure, providing a MnPASS incentive, purchasing EVs as part of the state fleet, utility charging and rate programs, and education and awareness initiatives (SONAR pgs. 45-47). The MPCA recognizes that while the agency and our partners have done much already to support the growth of EV adoption, more is needed. We continue to work with the State Legislature on EV-supportive policies, especially EV charging infrastructure.

A recent study released in March 2021 by the National Association of State Energy Officials and Cadmus looked at the evidence supporting “best practices” of EV policy design. Their review examined 13 different policy categories and found one of the top two most effective policies to be “Publicly stated vehicle adoption standards related to the total number

or fraction of new PEV sales share. Examples include the Zero Emission Vehicle (ZEV) Standard and PEV sales targets.”³⁶ This NASEO and Cadmus study provides further evidence that the ZEV standard can be a valuable part of a portfolio of actions to support EV adoption.

Comments focusing on the need for additional state action also belie the opportunity for actions from manufacturers and dealers to support the growth of EVs. Commenters testified that they experienced dealer employees who did not know about EVs, tried to direct them away from purchasing an EV, or did not have the EV charged and available for a test drive. A consumer already determined to purchase an EV may work through these barriers, but a consumer who might be interested in or open to exploring an EV is unlikely to pursue an EV as an option if such barriers are put in their way. Basic training and supportive sales practices could assist EV sales. Similarly, MADA testified that dealers did not advertise their EV offerings on a common vehicle sales platform, cars.com, but also testified that the dealer struggled to sell the vehicle and had to sell it at auction. It is reasonable to believe that investing in modern ways of making consumers aware of EV offerings might assist manufacturers and dealers with connecting EVs with interested buyers. In their comments, Consumer Reports also highlighted the opportunity for additional advertising, stating “Currently, without a ZEV program, automakers and dealers are not making the full range of vehicle choices available to consumers. Only 57 percent of Minnesotans reported seeing advertisements for electric vehicles, compared to a national average of 67 percent. And only 36 percent of Minnesota car shoppers said they saw a plug-in electric vehicle available to buy the last time they were at an auto dealership, compared to a national average of 43 percent” (Consumer reports, pg. 7). It is reasonable to believe that efforts in training, advertising, and access to vehicles by manufacturers and dealers could increase interest in EVs and purchasing of these vehicles.

The commenters identify other EV-supportive policies, programs, and investments that they think would be better or that they would prefer over the ZEV standard. However, another action being preferred or even better does not make the ZEV standard unreasonable. As the MPCA has stated throughout the rulemaking process, “The proposed rule compliments and does not preclude these other efforts” (SONAR, pg. 67). Increasing EV supply and availability is an important aspect of increasing EV adoption, but the other actions highlighted by commenters and the MPCA will also be important to support this transition.

N.3. Comments on biofuels

Commenters stated the value of biofuels in reducing GHG emissions and supporting rural economies. Commenters asked the MPCA and other state agencies to enact policies and investments that support the use of biofuels for environmental and economic benefits. Commenters stated that the MPCA should have done more to evaluate the potential impact of the proposed rule on Minnesota’s biofuels industry.

MPCA response: The MPCA agrees with commenters that biofuels are an important part of the portfolio of technologies needed to achieve Minnesota’s GHG reduction goals. The SONAR discusses the conclusions of the 2019 Pathways to Decarbonizing Transportation in Minnesota report, that reducing GHGs from transportation “will require a portfolio approach, including improved GHG emissions standards and fuel economy, electrification, biofuels, and methods of reducing vehicle miles traveled” (SONAR, pg. 38). The Agency states, “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. Adopting the proposed rule would not eliminate the opportunity to grow the use of biofuels. The Agency does estimate that the proposed rule would result in “a reduction in per-vehicle demand for liquid fuels into which ethanol and biodiesel are typically blended” (SONAR pg. 76). However, the demand for biofuels are affected by blending rates and many other factors beyond efficiency improvements in vehicles and trends towards the use of EVs. The SONAR notes, “This proposed rule does not affect existing blending requirements or other biofuels regulations and

³⁶ NASEO and Cadmus, “Supporting Material: Plug-in Electric Vehicle Policy Impact Rubric: Evidence-based policymaking for local and state government and utilities.”

https://naseo.org/data/sites/1/documents/publications/Supporting%20Material_PEV%20Policy%20Impact%20Rubric_FINAL.pdf

does not limit the state's ability to take additional action to grow demand for biofuels" (SONAR, pg. 76). The proposed rule compliments and does not preclude these other efforts" (SONAR, pg. 67). The MPCA recognizes the need for efforts to grow the use of biofuels; however, these policies, programs, and investments are outside the scope of this rulemaking.

N.4. Comments on grid reliability with increased electricity demand from EVs

Commenters noted concerns about negative effects of a ZEV rule on the reliability of Minnesota's electricity and natural gas supply, and the potential for a greater number of EVs to "increase stress on an electric grid that is increasingly fragile" (Center of the American Experiment, pg. 28).

MPCA response: This is outside the scope of the proposed rule. The Minnesota Public Utilities Commission (PUC) regulates electricity and natural gas utilities in Minnesota to ensure there is a sufficient, reliable supply of energy to meet demand, including demand related to EV charging. In December 2017, the PUC opened an Inquiry into Electric Vehicle Charging and Infrastructure (Docket No. E999/CI-17-879) "in order to facilitate EV integration in a manner consistent with the interests of the public and of ratepayer."³⁷ The PUC found:

- "Electrification is in the Public Interest: The Commission finds that electrification of Minnesota's transportation sector can further the public interest in:
 - Affordable, economic electric utility service by improving utility system utilization/efficiency and placing downward pressure on utility rates through increased utility revenues and better grid utilization;
 - Renewable energy use by increasing electricity demand during hours when renewable energy is most prevalent on the system and developing tariffs that correlate renewable energy resources to electric vehicle charging; and
 - Clean energy by reducing statewide greenhouse gas and other environmentally harmful emissions.
- Barriers to EV Adoption: The Commission finds that barriers to increased EV adoption in Minnesota include but are not limited to: (a) inadequate supply of and access to charging infrastructure, and (b) lack of consumer awareness of EV benefits and charging options.
- Optimizing EV Benefits: The Commission finds that how EVs are integrated with the electric system will be critical to ensuring that transportation electrification advances the public interest. This may include rate design that pairs charging with periods of low demand and high renewable energy generation, encourages advanced technology for enhanced load management, and provides direct benefits to EV owners through lower fuel costs of electricity.
- Utility Role Regarding EVs: The Commission finds that Minnesota's electric utilities have an important role in:
 - Facilitating the electrification of Minnesota's transportation sector through policies and investments that educate customers on the benefits of EVs and enhance the availability of charging infrastructure; and
 - Optimizing the cost-effective integration of EVs through appropriate rate designs, policies, and investments that improve system utilization/efficiency and benefit utility ratepayers, including non-EV owners."³⁸

The reliability of Minnesota's grid and integration of EVs is thus being addressed through the PUC.

N.5. Comments on the impact on heavy-duty vehicles, medium-duty vehicles, used vehicles, and emissions testing

Commenters mentioned concerns about the proposed rule affecting heavy-duty trucks and farm equipment. One commenter also stated that the MPCA did not appropriately analyze the impact of the proposed rule on medium-duty

³⁷ Minnesota Public Utilities Commission, Electric Vehicles webpage, <https://mn.gov/puc/energy/electric-vehicles/>.

³⁸ Minnesota Public Utilities Commission, Electric Vehicles webpage, <https://mn.gov/puc/energy/electric-vehicles/>.

vehicles. (Hausladen testimony, hearing transcript February 22, 2021; Zurn testimony, hearing transcript February 22, 2021). The MPCA also received comments about increased school bus costs under the rule. Commenters stated concerns about regulating used vehicles, having to get rid of a vehicle they already own or not being able to purchase or sell a used vehicle, as well as concerns about emissions testing.

MPCA response: The proposed Clean Cars Minnesota rule would adopt vehicle emissions standards for light- and medium-duty vehicles only and does not regulate heavy-duty vehicles like semi-trucks or school buses or off-road equipment such as farm equipment. 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.

The MPCA did not analyze the emissions or cost impacts of adopting emissions standards for medium-duty vehicles because currently the federal standards and the LEV standards are the same. It is therefore reasonable to assume that there would be no cost or emissions impacts of adopting the medium-duty vehicle standards. (SONAR, pgs. 11-14)

Although CARB has adopted emission standards or is considering emission standards for other vehicle types, this rule does not automatically incorporate those standards and will not incorporate them without a separate Minnesota rulemaking process. The MPCA has not proposed any additional vehicle rulemaking at this time and if the MPCA were to propose additional rules, analysis of the costs and public comment would be included in the rulemaking process.

The proposed rule regulated new vehicles only and does not require emissions testing. The rule does not require anyone to get rid of a vehicle they already own and does not regulate used vehicles.

N.6. Comments on emissions reporting requirements for electric utilities

A commenter noted that studies have indicated hydroelectric power generation sources can have a wide range of emissions from “almost negligible to greater than those from a natural gas power plant” (John Beath Environmental, pg. 10). They go on to recommend that Minnesota legislators should ensure that Canadian dams that supply energy to Minnesota should provide specific information about their GHG emissions.

MPCA response: Emissions reporting requirements for electric utilities are outside the scope of the proposed rule.

Appendix A

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Time Stamp or placement in mailed-comments PDF	Last Name	Support	Opposition	GHG Impacts	Health Impacts	Consumer costs	Dealer costs	Manufacturer costs	Legal authority	New Technical information	Out of Scope	EV availability and Charging	EV performance and infrastructure	Local Air Quality	EV infrastructure	EV Credit bank	Difficult to engage in process
1	MAILED - UNDATED	Larson		1										1				
2	MAILED - OAH FEB9	Scheierl	1		1								1					
3	MAILED - OAH FEB1	Rigge		1	1					1								
4	MAILED - OAH JAN13	Law	1		1													
5	MAILED - OAH JAN22	Schousboe	1		1	1	1						1					
6	12/21/20 10:57am	Bell	1		1								1					
7	12/22/20 08:46am	Phelps-Bowman		1			1	1		1				1				
8	12/22/20 11:34am	Hutchinson	1		1								1					
9	12/22/20 04:23pm	Schettl	1										1		1			
10	12/22/20 04:25pm	Margolis	1										1					
11	12/24/20 12:58pm	Korpi	1										1					
12	12/26/20 08:50am	Hoke	1										1					
13	12/29/20 10:32am	Johnson	1										1					
14	12/29/20 03:55pm	Knutson	1		1													
15	01/02/21 10:12am	Forsberg	1		1								1					
16	01/03/21 05:07pm	Anderson	1										1					
17	01/07/21 12:57pm	Quady	1		1								1					
18	01/07/21 08:47pm	Nerbonne	1		1								1					
19	01/12/21 09:33am	Anderson	1	1									1					
20	01/12/21 01:13pm	Burleson	1										1					
21	01/13/21 11:09am	Wiens	1		1								1					
22	01/13/21 09:31pm	Stillwell		1			1							1				
23	01/13/21 10:06pm	Keil		1			1	1		1								
24	01/13/21 11:52pm	Harris		1			1											
25	01/14/21 06:36am	Anderson		1			1											
26	01/14/21 01:44pm	Peterson		1			1											
27	01/14/21 07:39pm	Lee		1			1	1								1		
28	01/15/21 09:57am	Gramenz		1			1											
29	01/15/21 12:29pm	Chayka	1										1			1		
30	01/15/21 03:49pm	Weiss	1		1											1		
31	01/15/21 03:53pm	Jungst	1										1					
32	01/15/21 06:24pm	Holtan		1														
33	01/17/21 02:29pm	Henseler	1		1								1					
34	01/18/21 12:34pm	Sonsalla		1			1											
35	01/18/21 01:04pm	Wroolie		1			1			1				1				
36	01/19/21 05:04pm	Law		1						1								
37	01/19/21 05:16pm	Ahrens		1			1											
38	01/19/21 08:06pm	Anderson		1														
39	01/20/21 11:29am	Rahe		1			1	1		1								
40	01/20/21 06:49pm	Giesen	1										1					
41	01/21/20 07:09am	Ghiloni		1						1								
42	01/22/21 07:44am	Wagner		1			1			1				1				
43	01/24/21 02:06pm	Efta		1			1											
44	01/24/21 02:30pm	Langaas		1			1			1								
45	01/24/21 02:38pm	Nelson	1		1								1					
46	01/25/21 10:40am WITI	Grinnell	1		1								1					
47	01/25/21 11:02am	Vrabel	1		1								1					
48	01/25/21 11:13am	Janssen	1										1					
49	01/25/21 04:51pm	Stra		1														

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
51	01/26/21 12:57pm	Corens	1										1		1			
52	01/26/21 01:08pm	Corens	1		1													
53	01/27/21 09:47am	Gerads		1						1								
54	01/27/21 11:42am	Lilleodden		1						1								
55	01/27/21 11:46am	Lilleodden		1						1								
56	01/27/21 12:19pm	Van Keulen		1						1				1				
57	01/27/21 02:44pm	Kahnke		1						1								
58	01/27/21 03:18pm	Hoffman		1						1								
59	01/28/21 10:35am	Leary		1			1			1								
60	01/28/21 12:06pm	Gaffney		1						1								
61	01/28/21 12:29pm	Wilson		1														
62	01/28/21 12:57pm	Klasky		1														
63	01/28/21 06:56pm	Annis		1														
64	01/29/21 02:54am	Holman		1														
65	01/29/21 05:30pm	Christiansen	1										1		1			
66	01/29/21 07:01pm	Carlson	QUESTION	QUESTION														
67	01/30/21 07:46PM	Stevens		1										1				
68	01/30/21 09:35pm	Prushek		1			1							1				
69	02/01/21 12:36pm	Curran	1		1													
70	02/01/21 01:02pm	Hanson		1			1							1				
71	02/01/21 01:21pm	Langlie		1														
72	02/01/21 01:33pm	Walsh	1		1													
73	02/01/21 03:40pm	Krenn	1		1								1					
74	02/01/21 04:08pm	Desiderato	1										1					
75	02/01/21 07:32am	Anderson		1												1		
76	02/02/21 12:32pm	Adamski	1		1													
77	02/02/21 07:05pm	Pape	1		1													
78	02/02/21 08:11pm	Troutman	1		1								1		1			
79	02/02/21 09:20pm	Larson		1														
80	02/03/21 09:25am	Rusza		1														
81	02/03/21 12:50pm	George	1		1								1					
82	02/03/21 03:02pm	Gagne		1														
83	02/03/21 04:29pm	Severson	1										1					
84	02/04/21 10:42am WIT	Dexheimer Pharris	1		1								1					
85	02/04/21 12:04pm	Bachleda		1														
86	02/04/21 12:38pm	Cannon		1			1							1				
87	02/04/21 01:09pm	Miller		1														
88	02/04/21 03:45pm	Toscano		1			1											
89	02/04/21 04:14pm	Wallinga	1		1								1					
90	02/05/21 04:49am	Anderson		1														
91	02/05/21 10:10am	Wolf		1			1											
92	02/05/21 11:02am	Plafcan		1				1										
93	02/05/21 11:59am	Durst		1				1		1								
94	02/06/21 12:35pm	Weber	1		1								1					
95	02/06/21 01:14pm	Ferguson		1						1								
96	02/06/21 03:54pm	Travis	1		1								1					
97	02/06/21 04:41pm	Vorland	1		1								1					
98	02/07/21 10:09am	Reich	1		1								1					
99	02/07/21 03:53pm	Schafer	1		1	1												
100	02/07/21 05:15pm	McNamara	1		1								1					
101	02/07/21 10:22pm	Schmotter		1												1		
102	02/08/21 02:40pm	Orr	QUESTION	QUESTION														
103	02/08/21 04:55pm	Murphy	1		1								1					

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
104	02/08/21 06:26pm	Jones	1		1	1												
105	02/09/21 09:32am	Jackson		1			1											
106	02/09/21 02:30pm	Zastrow		1										1				
107	02/09/21 05:34pm	Wallinga	1		1	1							1					
108	02/10/21 10:14am	Pera	1		1													
109	02/10/21 11:20am	Staples		1			1											
110	02/10/21 12:23pm	Cl	1		1	1												
111	02/10/21 01:23pm	Ellis		1												1		
112	02/10/21 01:30pm	Erickson	1										1					
113	02/10/21 01:43pm	Lafontaine	1		1													
114	02/10/21 01:53pm	Arnosti	1		1	1							1					
115	02/10/21 02:16pm	Jacobs		1														
116	02/10/21 02:50pm	Fitterer		1			1											
117	02/10/21 03:30pm	Gorr		1			1			1								
118	02/10/21 03:47pm	Master		1											1			
119	02/10/21 04:03pm	Morgan	1										1					
120	02/10/21 04:26pm	Cotter		1			1								1			
121	02/10/21 04:27pm	Ba		1			1											
122	02/10/21 05:29pm	Fehrman		1														
123	02/10/21 05:34pm	Moore		1			1											
124	02/10/21 07:34pm	Wilson	1		1													
125	02/10/21 09:48pm	Klemz		1											1			
126	02/10/21 11:00pm	Klemz		1											1			
127	02/11/21 11:33am	Riggs	1		1								1			1		
128	02/11/21 02:32pm	Miller	1		1	1												
129	02/11/21 02:40pm	Jorissen	1		1								1					
130	02/11/21 04:26pm	Kel		1											1			
131	02/11/21 07:50pm	Brekke		1			1			1					1			
132	02/11/21 07:57pm	Williams	1		1													
133	02/12/21 08:38am	Hopkins		1						1								
134	02/12/21 09:16am	Plumley		1						1								
135	02/12/21 11:03am	Thomas	1		1													
136	02/12/21 12:49pm	Moran	1															
137	02/12/21 01:12pm	Lee	1										1					
138	02/12/21 03:23pm	Orr	QUESTION	QUESTION														
139	MAILED - OAH FEB18	St. Anthony Park C	1		1	1							1		1		add equity	
140	MAILED - OAH FEB18	Russelle	1		1	1							1		1			
141	02/12/21 07:46pm	Kirchoff		1			1			1								
142	02/13/21 12:06am	Kaemmerer	1		1								1					
143	02/13/21 03:31pm	Homans	1		1								1			1		
144	02/13/21 04:27pm	Bublitz	1		1								1					
145	02/15/21 06:02pm	MartinezSalgado	1		1	1							1					
146	02/15/21 06:31pm WITI	Shulock	1															
147	02/16/21 04:11pm	Rehnelt		1						1					1			
148	02/16/21 10:16pm	SkarJones	1		1								1					
149	02/17/21 09:59am WITI	Ziring	1		1	1							1					
150	02/17/21 11:24am	Loveridge		1			1			1								
151	02/17/21 12:00pm WITI	Murray	DUPLICATE															
152	02/17/21 06:41pm	Collinet	1		1	1												
153	02/18/21 09:53am	Ostenson	1										1					
154	02/18/21 12:45pm	Ras	1										1					
155	02/18/21 02:00pm WITI	Dennis	1		1	1							1					
156	02/18/21 03:31pm	Wager		1														

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
157	02/18/21 04:09pm WITI	Larkin	1		1								1					
158	02/18/21 05:44pm	Bullington	1			1							1		1			
159	02/19/21 08:31am WITI	Wager		1			1			1		1						
160	02/19/21 08:54am	Keller		1			1							1				
161	02/19/21 09:15am	Bergeron	1		1													
162	MAILED - OAH FEB19	Korthof-Stanton	1		1								1					
163	FAXED - OAH FEB19	unsigned	1		1	1						1	1		1			
164	MAILED - OAH FEB22	Thompson	1		1								1		1			
165	MAILED - OAH FEB19	Luck	1		1	1							1		1			
166	MAILED - OAH FEB26	Franciscans - grou	1		1	1							1					
167	MAILED - OAH FEB26	Wallenta	1		1								1					
168	FAXED - OAH FEB25	Ransom		1			1	1		1								
169	02/19/21 01:40pm	Baune		1						1								
170	02/19/21 03:16pm	Bjorlie	1		1													
171	02/19/21 05:04pm	Smith	1		1	1												
172	02/19/21 08:55pm	Dahlin		1			1			1								
173	02/20/21 12:32pm	Swanson	1		1								1					
174	02/20/21 05:56pm WITI	Schaber	1															
175	02/21/21 12:32pm	Guggenberger		1						1								
176	02/21/21 12:41pm	Fox		1			1					1						
177	02/21/21 02:01pm	Sanstead	1		1								1					
178	02/22/21 08:24am	Madsen		1						1								
179	02/22/21 12:49pm	Izzo																
180	02/22/21 12:55pm	Gleason	1										1					
181	02/22/21 03:10pm WITI	Seaton		1														
182	02/22/21 03:56pm	Wittrock	1										1					
183	02/22/21 05:24pm	Adams	1										1					
184	02/22/21 08:59pm	Ickes	1		1								1					
185	02/23/21 07:30am WITI	Benzkofer	1		1	1							1		1			
186	02/23/21 09:50am	Fay		1						1								
187	02/23/21 01:45pm	Sanstead	1		1								1		1			
188	02/23/21 02:32pm	Moe	1		1								1		1			
189	02/23/21 04:09pm	Huber	1		1								1		1	1		
190	02/23/21 05:15pm	Cavert	1		1	1							1					
191	02/23/21 06:01pm	Waits	1		1								1					
192	02/23/21 06:16pm WITI	Gosiewski	1		1	1							1		1			
193	02/24/21 06:37am	Tetta	1		1	1							1		1			
194	02/24/21 10:28am	Chamblin	1		1							1	1					
195	02/24/21 04:35pm WITI	Wald		1														
196	02/24/21 04:54pm	Marston	1		1								1					
197	02/25/21 09:56am	Horsager	1										1					
198	02/25/21 05:25pm	Brech		1			1											
199	02/26/21 01:59pm	Thomasson		1			1	1						1				
200	02/27/21 03:42pm	Goodney	1		1								1					
201	02/27/21 07:21pm	Loverud	1		1								1					
202	02/28/21 01:21pm	Tholen	1		1	1						1	1					
203	HEARING	Troy	1										1					
204	HEARING	Rogers	1		1								1					
205	HEARING	Kukkonen	1										1					
206	HEARING	Wald		1			1	1				1		1				
207	HEARING	Valois	1										1		1			
208	HEARING	Hausladen		1			1					1		1				
209	HEARING	Benson	1		1								1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
210	HEARING	Brooks	1		1								1					
211	HEARING	Doran-Norton	1		1								1					
212	HEARING	Henry	1		1								1					
213	HEARING	Schuler	1		1	1									1			
214	HEARING	Schettl	1										1					
215	HEARING	Rege		1														
216	HEARING	Lee	1										1					
217	HEARING	Schwantes	1			1									1			
218	HEARING	Middlecamp	1		1								1					
219	HEARING	Sterle	1		1	1							1		1			
220	HEARING	Shulock	1															
221	HEARING	Berninger	1		1	1							1		1		1	
222	HEARING	Riebe	1										1		1			
223	HEARING	Adam	1		1								1	1			1	
224	HEARING	Houdek	1		1	1							1		1		1	
225	HEARING	Wacker	1		1								1					
226	HEARING	Horowitz	1		1	1									1			
227	HEARING	Hollander	1		1	1							1		1			
228	HEARING	Hurd	1										1					
229	HEARING	Tsuchiya	1		1	1							1		1			
230	HEARING	Nordstrom	1			1							1		1			
231	HEARING	Pinkham	1										1					
232	HEARING	Erickson	1										1					
233	HEARING	Wittrock	1		1	1							1		1			
234	HEARING	Kennedy	1		1								1					
235	HEARING	Thoman	1		1	1							1		1			
236	HEARING	Zurn		1			1					1		1				
237	HEARING	Seaton		1						1								
238	HEARING	Mui	1		1	1							1					
239	HEARING	McAnerney	1		1								1					
240	HEARING	Jenson	1										1					
241	HEARING	Kurowski	1		1								1				1	
242	HEARING	Nevers	1										1				1	
243	HEARING	Samelson	1		1								1					
244	HEARING	Schweyen	1		1								1					
245	HEARING	Lee	1															
246	HEARING	Backhaus		1														
247	HEARING	Lee & Backhaus - / ALJ Q&A	ALJ Q&A															
248	HEARING	Schwantes	1		1								1		1			
249	HEARING	Schaefer	1		1								1					
250	HEARING	Borgendale	1		1	1							1		1			
251	HEARING	Huber	1										1		1			
252	HEARING	Gosiewski	1		1	1							1		1			
253	HEARING	Hatlestad	1										1					
254	HEARING	Koch		1			1	1		1				1				
255	HEARING	Nowak	1		1	1							1		1			
256	HEARING	Mercer-Taylor	1			1							1					
257	HEARING	Hulstrand	1		1								1					
258	HEARING	Blake	1		1								1					
259	HEARING	Draper	1		1								1					
260	HEARING	Knappmiller	1		1	1												
261	HEARING	Waits	1		1								1		1			
262	HEARING	Stephens	1										1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
263	HEARING	Jungst	1										1		1			
264	HEARING	Schaefer	1		1								1					
265	HEARING	Miller	1		1	1							1					
266	HEARING	Dorsey		1														
267	HEARING	Conners	1		1	1							1					
268	HEARING	Mercer-Taylor	1										1					
269	HEARING	Steffel	1		1	1							1					
270	HEARING	Faust	1		1								1					
271	HEARING	Steinkamp	1		1	1							1					
272	HEARING	DeWaay		1														
273	HEARING	Wildenborg	1		1								1		1			
274	HEARING	Bains	1		1								1		1			
275	HEARING	Gorman	1		1	1							1					
276	HEARING	Hollinshead	1										1					
277	HEARING	Bains (round 2)	1														1	
278	03/01/21 10:58am	Watkins	1		1	1							1					
279	03/01/21 12:07pm	Lexau	1		1								1			1		
280	03/01/21 06:41pm	Townsend	1															
281	03/01/21 08:57pm	Schultz	1		1													
282	03/02/21 11:17am	Bearfoot	1		1	1							1					
283	03/02/21 03:41pm	Watkins	1										1					
284	03/02/21 07:49pm	Pelton	1		1	1												
285	03/02/21 08:12pm	Overend	1		1	1												
286	03/02/21 08:48pm WITI	Overend	1															
287	03/02/21 09:33pm	Belvedere	1		1	1												
288	03/03/21 11:44am WITI	Kallestad	1		1	1							1		1			
289	03/03/21 12:41pm	Thornby	1		1	1							1					
290	03/03/21 12:59pm	Peterson		1			1	1				1		1				
291	03/03/21 01:04pm	Wallace	1		1													
292	03/04/21 08:50am WITI	Caskey		1						1				1				
293	03/04/21 10:56am WITI	Anderson	1		1	1							1		1			
294	03/04/21 10:58am	Anderson	1		1								1					
295	03/05/21 06:56am	Whalen		1			1							1				
296	03/06/21 11:50am	Saffert	1		1	1							1		1			
297	03/07/21 12:02pm	Wenzel	1			1							1		1			
298	03/07/21 12:50pm	Carlson	QUESTION	QUESTION														
299	03/07/21 05:43pm	Rene		1			1			1								
300	03/08/21 11:14am	Troumbly		1			1											
301	03/08/21 12:15pm WITI	Biales	1		1													
302	03/08/21 03:23pm	Johnson		1						1								
303	03/08/21 04:16pm	Olson		1			1			1								
304	03/08/21 06:07pm	Innes	1		1										1			
305	03/08/21 08:19pm	Luniewski		1			1	1								1		
306	03/09/21 01:24pm WITI	Dennis	1		1								1				1	
307	03/09/21 01:31pm WITI	Long	1		1	1							1		1			
308	03/09/21 01:38pm WITI	Koch		1			1			1		1		1				
309	03/09/21 03:06pm	Hirsch	1		1	1							1		1			
310	03/09/21 04:37pm	Zycher		1			1			1		1						
311	03/09/21 08:11pm WITI	Deutz		1			1	1		1								
312	MAILED - OAH MAR9	Stomberg		1			1	1		1								
313	MAILED - OAH MAR9	Failor		1			1	1										
314	MAILED OAH MAR8	Oak Grove Presb.	1		1	1							1		1			
315	MAILED OAH MAR8	Fargo Moorhead West Fargo C		1			1	1		1								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
316	MAILED OAH MAR5	Reedy	1		1								1		1			
317	MAILED OAH MAR4	Harless		1			1	1				1						
318	MAILED OAH MAR1	Ransom		1			1	1										
319	MAILED OAH MAR1	Sterle	1		1								1					
320	MAILED OAH MAR1	Holmstrom		1			1	1		1					1			
321	MAILED OAH MAR1	Miller		1			1			1		1						1
322	MAILED OAH MAR1	Hansen		1			1											1
323				1			1											
324	FAXED OAH MAR9	Ewing (Pipestone County Com		1			1	1		1								
325	03/10/21 10:03am WITI	Caruso		1														
326	03/10/21 10:13am	Verdoorn	1		1								1					
327	03/10/21 10:44am	Stuedemann		1														
328	03/10/21 11:40am WITI	McElroy		1						1				1				
329	03/10/21 03:13pm	Nelson		1			1	1		1				1				
330	03/10/21 04:18pm	Kassa		1						1								
331	03/10/21 04:23pm	Kassa		1														
332	03/10/21 04:37pm WITI	Granley	1		1	1							1		1			
333	03/10/21 05:52pm	Busch		1			1					1		1				
334	03/10/21 05:58pm	Reichert	1		1													
335	03/10/21 08:18pm	Nieters		1						1								
336	03/10/21 08:23pm	Crump	1		1								1		1			
337	03/10/21 08:31pm	Brown		1			1	1										
338	03/10/21 08:45pm	Berkenpas		1			1											
339	03/10/21 09:12pm WITI	Wheeler	1		1												1	
340	03/10/21 09:34pm	Daberkow		1						1		1						
341	03/10/21 10:09pm	Jones	1										1					
342	03/10/21 10:24pm	Hicks		1			1			1		1						
343	03/11/21 07:15am	Wilson		1						1								
344	03/11/21 07:26am	Swenson		1			1	1				1		1				
345	03/11/21 09:13am	Janssen		1			1											
346	03/11/21 11:07am	Luhman		1			1			1				1				
347	03/11/21 12:22pm	Thielen		1			1			1		1						
348	03/11/21 12:25pm	Anderson	1		1								1		1			
349	03/11/21 12:35pm	James		1						1								
350	03/11/21 12:38pm	James		1			1			1								
351	03/11/21 01:04pm	Walker	1		1										1			
352	03/11/21 02:13pm	Tikk	1		1	1							1		1			
353	03/11/21 03:06pm	Johnson	1		1								1					
354	03/11/21 03:42pm	Dugger	1		1								1					
355	03/11/21 09:23pm	Umphress		1						1								
356	03/11/21 09:24pm	Kelley	1										1			1		
357	03/11/21 10:50pm	Frentress		1			1							1				
358	03/12/21 07:34am	Borowicz		1														
359	03/12/21 07:57am	Bergemann		1						1								
360	MAILED - OAH MAR11	Case	1		1	1							1		1			
361	03/12/21 08:31am	Schindele		1						1								
362	03/12/21 09:14am	VanDerBill		1						1								
363	03/12/21 09:20am	Kahl		1						1		1						
364	03/12/21 09:23am	VanDerBill		1						1								
365	03/12/21 09:28am	OBrien	1		1	1									1			
366	03/12/21 09:55am	Davidson		1						1				1				
367	03/12/21 10:19am	Reed		1			1											
368	03/12/21 10:33am	Rumpza		1						1								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
369	03/12/21 10:40am WIT	Huether	1		1	1							1		1			
370	03/12/21 10:58am	Rogalsky	1										1					
371	03/12/21 11:06am	Swenson		1								1		1				
372	03/12/21 11:12am	Rainer		1			1					1		1				
373	03/12/21 12:30pm WIT	Schuler	1															
374	03/12/21 12:45pm WIT	Hausladen		1			1			1		1		1				
375	03/12/21 01:06pm	Bartlett		1						1								
376	03/12/21 01:11pm	Zimmerman		1			1	1	1									
377	03/12/21 01:53pm WIT	Barthel		1								1		1				
378	03/12/21 02:05pm WIT	Benson (group cor	1		1	1							1		1			
379	03/12/21 02:05pm - fro	Nerbonne (MniPL	1		1													
380	03/12/21 02:05pm - fro	Kuether (MniPL F	1		1													
381	03/12/21 02:05pm - fro	Amy-Dressler (Mr	1		1													
382	03/12/21 02:05pm - fro	Wlosinski (MniPL	1		1													
383	03/12/21 02:05pm - fro	Bray (MniPL Faith	1											1				
384	03/12/21 02:05pm - fro	Hart-Andersen (M	1															
385	03/12/21 02:05pm - fro	Spilker (MniPL Fai	1															
386	03/12/21 02:05pm - fro	Davis (MniPL Faith	1										1					
387	03/12/21 02:05pm - fro	Kriesel (MniPL Fai	1		1							1				1		
388	03/12/21 02:05pm - fro	Mullin (MniPL Fai	1		1										1			
389	03/12/21 02:05pm - fro	DeBruyckere (Mni	1		1													
390	03/12/21 02:05pm - fro	Olstad (MniPL Fai	1			1												
391	03/12/21 02:05pm - fro	Brown (MniPL Fai	1															
392	03/12/21 02:05pm - fro	Salinas (MniPL Fai	1															
393	03/12/21 02:05pm - fro	Pratt (MniPL Faith	1		1													
394	03/12/21 02:05pm - fro	Bardwell (MniPL F	1															
395	03/12/21 02:05pm - fro	Hunt (MniPL Faith	1		1													
396	03/12/21 02:05pm - fro	Stringer (MniPL Fa	1												1			
397	03/12/21 02:05pm - fro	Streed (MniPL Fai	1												1			
398	03/12/21 02:05pm - fro	Benson (MniPL)	1			1												
399	03/12/21 02:05pm - fro	Wood (MniPL)	1										1					
400	03/12/21 02:05pm - fro	Sadique (MniPL)	1											1				
401	03/12/21 02:05pm - fro	Law (MniPL)	1		1	1												
402	03/12/21 02:05pm - fro	Burger (MniPL)	1		1													
403	03/12/21 02:05pm - fro	Meier (MniPL)	1		1	1							1					
404	03/12/21 02:05pm - fro	Skwira (MniPL)	1															
405	03/12/21 02:05pm - fro	Eichten (MniPL)	1		1													
406	03/12/21 02:05pm - fro	Forster (MniPL)	1												1			
407	03/12/21 02:05pm - fro	Jennissen (MniPL)	1		1									1				
408	03/12/21 02:05pm - fro	Tuberty (MniPL)	1		1													
409	03/12/21 02:05pm - fro	Korkowski (MniPL	1		1								1					
410	03/12/21 02:05pm - fro	Mayers (MniPL)	1										1					
411	03/12/21 02:05pm - fro	Wieland (MniPL)	1										1					
412	03/12/21 02:05pm - fro	Eichten (MniPL)	1			1								1				
413	03/12/21 02:05pm - fro	L'Allier (MniPL)	1		1	1						1			1			
414	03/12/21 02:05pm - fro	Gerads (MniPL)	1		1													
415	03/12/21 02:05pm - fro	Grussing (MniPL)	1		1								1					
416	03/12/21 02:05pm - fro	Due (MniPL)	1		1													
417	03/12/21 02:05pm - fro	Dow (MniPL)	1		1											1		
418	03/12/21 02:05pm - fro	Albrecht (MniPL)	1		1								1					
419	03/12/21 02:05pm - fro	Wlosinski (MniPL)	1		1													
420	03/12/21 02:05pm - fro	Desiderato (MniPL	1		1													
421	03/12/21 02:05pm - fro	Clemens (MniPL)	1		1													

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
422	03/12/21 02:05pm - fro	Lentner (MniPL)	1															
423	03/12/21 02:05pm - fro	Christenson (MniPL)	1															
424	03/12/21 02:05pm - fro	Davis (MniPL)	1												1			
425	03/12/21 02:05pm - fro	Rossi (MniPL)	1		1													
426	03/12/21 02:05pm - fro	Somers (MniPL)	1		1												1	
427	03/12/21 02:05pm - fro	Wyn (MniPL)	1		1													
428	03/12/21 02:05pm - fro	Lick (MniPL)	1										1					
429	03/12/21 02:05pm - fro	Tamminen (MniPL)	1		1	1												
430	03/12/21 02:05pm - fro	Moore (MniPL)	1		1	1							1					
431	03/12/21 02:05pm - fro	Dybvig (MniPL)	1															
432	03/12/21 02:05pm - fro	Adair (MniPL)	1		1													
433	03/12/21 02:05pm - fro	Conlin (MniPL)	1		1	1												
434	03/12/21 02:05pm - fro	Krouse (MniPL)	1		1													
435	03/12/21 02:05pm - fro	Haberman (MniPL)	1		1											1		
436	03/12/21 02:05pm - fro	Wright (MniPL)	1										1					
437	03/12/21 02:05pm - fro	Eschenlauer (MniPL)	1		1													
438	03/12/21 02:05pm - fro	Gagne (MniPL)	1		1													
439	03/12/21 02:05pm - fro	Artner (MniPL)	1		1													
440	03/12/21 02:05pm - fro	Schnell (MniPL)	1		1													
441	03/12/21 02:05pm - fro	Dennison (MniPL)	1															
442	03/12/21 02:05pm - fro	Smith (MniPL)	1										1					
443	03/12/21 02:05pm - fro	Pharris (MniPL)	1		1													
444	03/12/21 02:05pm - fro	Grier (MniPL)	1		1	1							1		1			
445	03/12/21 02:05pm - fro	Bowman (MniPL)	1		1													
446	03/12/21 02:05pm - fro	Kuenning (MniPL)	1		1	1												
447	03/12/21 02:05pm - fro	Dunlop (MniPL)	1		1													
448	03/12/21 02:05pm - fro	Partridge (MniPL)	1														1	
449	03/12/21 02:05pm - fro	Nelson (MniPL)	1										1		1			
450	03/12/21 02:05pm - fro	Samelson (MniPL)	1															
451	03/12/21 02:05pm - fro	Verdoorn (MniPL)	1		1													
452	03/12/21 02:05pm - fro	Meyer (MniPL)	1		1	1												
453	03/12/21 02:05pm - fro	Newstrom (MniPL)	1										1					
454	03/12/21 02:05pm - fro	Golob (MniPL)	1										1					
455	03/12/21 02:05pm - fro	Pharris (MniPL)	1										1					
456	03/12/21 02:05pm - fro	Krueger (MniPL)	1									1						
457	03/12/21 02:05pm - fro	Tripp (MniPL)	1										1					
458	03/12/21 02:05pm - fro	Aadalen (MniPL)	1		1													
459	03/12/21 02:05pm - fro	Verdoorn (MniPL)	1															
460	03/12/21 02:05pm - fro	Chudgar (MniPL)	1															
461	03/12/21 02:05pm - fro	Close (MniPL)	1		1												1	
462	03/12/21 02:05pm - fro	Alban (MniPL)	1										1					
463	03/12/21 02:05pm - fro	Antonson (MniPL)	1															
464	03/12/21 02:05pm - fro	Edlund (MniPL)	1		1											1		
465	03/12/21 02:05pm - fro	Draper (MniPL)	1		1											1		
466	03/12/21 02:05pm - fro	Wadd (MniPL)	1														1	
467	03/12/21 02:05pm - fro	Delehanty (MniPL)	1		1													
468	03/12/21 02:05pm - fro	Miller (MniPL)	1		1													
469	03/12/21 02:05pm - fro	James (MniPL)	1		1													
470	03/12/21 02:05pm - fro	Nelson (MniPL)	1										1					
471	03/12/21 02:05pm - fro	Morgan (MniPL)	1		1											1		
472	03/12/21 02:05pm - fro	Freeman (MniPL)	1										1		1			
473	03/12/21 02:05pm - fro	Iman (MniPL)	1										1		1			
474	03/12/21 02:05pm - fro	Dunlap (MniPL)	1		1								1		1			

[illegible]

[illegible]

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
581	03/12/21 02:05pm - fro	Barsel (MniPL)	1		1													
582	03/12/21 02:05pm - fro	Kriz (MniPL)	1															
583	03/12/21 02:05pm - fro	Melody (MniPL)	1										1					
584	03/12/21 02:05pm - fro	Huettl (MniPL)	1												1			
585	03/12/21 02:05pm - fro	Shahid (MniPL)	1										1					
586	03/12/21 02:05pm - fro	Vice (MniPL)	1		1										1			
587	03/12/21 02:05pm - fro	Pratt (MniPL)	1		1													
588	03/12/21 02:05pm - fro	Slade (MniPL)	1										1					
589	03/12/21 02:05pm - fro	Garmer (MniPL)	1															
590	03/12/21 02:05pm - fro	Gotz (MniPL)	1		1													
591	03/12/21 02:05pm - fro	Ryks (MniPL)	1													1		
592	03/12/21 02:05pm - fro	Truhlar (MniPL)	1															
593	03/12/21 02:05pm - fro	Hegdahl (MniPL)	1		1													
594	03/12/21 02:05pm - fro	Pence (MniPL)	1		1													
595	03/12/21 02:05pm - fro	Helgen (MniPL)	1		1								1					
596	03/12/21 02:05pm - fro	Ruddy (MniPL)	1		1								1					
597	03/12/21 02:05pm - fro	Myrah (MniPL)	1															
598	03/12/21 02:05pm - fro	Christie (MniPL)	1										1					
599	03/12/21 02:05pm - fro	Christenson (MniPL)	1															
600	03/12/21 02:05pm - fro	Wedge (MniPL)	1		1	1							1		1			
601	03/12/21 02:05pm - fro	Yarger (MniPL)	1		1													
602	03/12/21 02:05pm - fro	Day (MniPL)	1		1								1					
603	03/12/21 02:05pm - fro	Voorhees (MniPL)	1		1								1					
604	03/12/21 02:05pm - fro	Wattrus (MniPL)	1												1			
605	03/12/21 02:05pm - fro	Doyle (MniPL)	1									1				1		
606	03/12/21 02:05pm - fro	Councilman (MniPL)	1		1													
607	03/12/21 02:05pm - fro	Fleming (MniPL)	1		1													
608	03/12/21 02:05pm - fro	Maung (MniPL)	1													1		
609	03/12/21 02:05pm - fro	Renner (MniPL)	1											1				
610	03/12/21 02:05pm - fro	Hutchison (MniPL)	1		1													
611	03/12/21 02:05pm - fro	Sandon (MniPL)	1		1								1					
612	03/12/21 02:05pm - fro	Jorgenson (MniPL)	1		1													
613	03/12/21 02:05pm - fro	Benson (MniPL)	1										1					
614	03/12/21 02:05pm - fro	Wangerin (MniPL)	1										1					
615	03/12/21 02:05pm - fro	Peterson (MniPL)	1															
616	03/12/21 02:19pm WIT	Reinhardt (group)	1		1	1										1		
617	03/12/21 02:19pm - fro	Shneider (MCEA)	1		1	1										1		
618	03/12/21 02:19pm - fro	Dorman (MCEA)	1		1	1										1		
619	03/12/21 02:19pm - fro	Nichols (MCEA)	1		1	1										1		
620	03/12/21 02:19pm - fro	Robinson (MCEA)	1		1	1										1		
621	03/12/21 02:19pm - fro	Demers (MCEA)	1		1	1										1		
622	03/12/21 02:19pm - fro	Chapp (MCEA)	1		1	1										1		
623	03/12/21 02:19pm - fro	Ioscheider (MCEA)	1		1	1										1		
624	03/12/21 02:19pm - fro	Blumenthal (MCEA)	1		1	1										1		
625	03/12/21 02:19pm - fro	Yttri (MCEA)	1		1	1										1		
626	03/12/21 02:19pm - fro	Drahos (MCEA)	1		1	1										1		
627	03/12/21 02:19pm - fro	Sisson (MCEA)	1		1	1										1		
628	03/12/21 02:19pm - fro	Rule (MCEA)	1		1	1										1		
629	03/12/21 02:19pm - fro	Leschak (MCEA)	1		1	1										1		
630	03/12/21 02:19pm - fro	Comeau (MCEA)	1		1	1										1		
631	03/12/21 02:19pm - fro	Foldes (MCEA)	1		1	1										1		
632	03/12/21 02:19pm - fro	Chesney (MCEA)	1		1	1										1		
633	03/12/21 02:19pm - fro	Nelson (MCEA)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
634	03/12/21 02:19pm - fro	Doucet (MCEA)	1		1	1									1			
635	03/12/21 02:19pm - fro	Engstrom (MCEA)	1		1	1									1			
636	03/12/21 02:19pm - fro	VandenDolder (M	1		1	1									1			
637	03/12/21 02:19pm - fro	Lindberg (MCEA)	1		1	1									1			
638	03/12/21 02:19pm - fro	Harder (MCEA)	1		1	1									1			
639	03/12/21 02:19pm - fro	Nelson (MCEA)	1		1	1									1			
640	03/12/21 02:19pm - fro	Snyder (MCEA)	1		1	1									1			
641	03/12/21 02:19pm - fro	Renshaw (MCEA)	1		1	1									1			
642	03/12/21 02:19pm - fro	VandeVusse (MCE	1		1	1									1			
643	03/12/21 02:19pm - fro	McKhann (MCEA)	1		1	1									1			
644	03/12/21 02:19pm - fro	Karas (MCEA)	1		1										1			
645	03/12/21 02:19pm - fro	Wunderlich (MCE	1		1	1									1			
646	03/12/21 02:19pm - fro	Jacobsen (MCEA)	1		1	1							1		1			
647	03/12/21 02:19pm - fro	Britt (MCEA)	1		1	1									1			
648	03/12/21 02:19pm - fro	Sims (MCEA)	1		1	1									1			
649	03/12/21 02:19pm - fro	Frechette (MCEA)	1		1	1									1			
650	03/12/21 02:19pm - fro	Erickson (MCEA)	1		1	1							1		1			
651	03/12/21 02:19pm - fro	Vlazny (MCEA)	1		1	1									1			
652	03/12/21 02:19pm - fro	Corliss (MCEA)	1		1	1									1			
653	03/12/21 02:19pm - fro	Schoemer (MCEA)	1		1	1									1			
654	03/12/21 02:19pm - fro	Little (MCEA)	1		1	1							1		1			
655	03/12/21 02:19pm - fro	Kohlstedt (MCEA)	1		1	1									1			
656	03/12/21 02:19pm - fro	Horan (MCEA)	1		1	1							1		1			
657	03/12/21 03:28pm	McGregor		1			1											
658	03/12/21 03:34pm WIT	Havey	1		1	1									1			
659	03/12/21 03:55pm	OLeary		1						1								
660	03/12/21 04:11pm WIT	Li (UCS)	1															
661	03/12/21 04:11pm - fro	Palmer (UCS)	1		1	1							1		1			
662	03/12/21 04:11pm - fro	Yeakle (UCS)	1		1	1							1		1			
663	03/12/21 04:11pm - fro	Moseman (UCS)	1		1	1							1		1			
664	03/12/21 04:11pm - fro	Christenson (UCS)	1		1	1							1		1			
665	03/12/21 04:11pm - fro	Miller (UCS)	1		1	1							1		1			
666	03/12/21 04:11pm - fro	Dawson (UCS)	1		1	1							1		1			
667	03/12/21 04:11pm - fro	Nayes (UCS)	1		1	1							1		1			
668	03/12/21 04:11pm - fro	Bateman (UCS)	1		1	1							1		1			
669	03/12/21 04:11pm - fro	Chmelik (UCS)	1		1	1							1		1			
670	03/12/21 04:11pm - fro	Arenz (UCS)	1		1	1							1		1			
671	03/12/21 04:11pm - fro	Crowley (UCS)	1		1	1							1		1			
672	03/12/21 04:11pm - fro	Wagner (UCS)	1		1	1							1		1			
673	03/12/21 04:11pm - fro	Bartlett (UCS)	1		1	1							1		1			
674	03/12/21 04:11pm - fro	McAdams (UCS)	1		1	1							1		1			
675	03/12/21 04:11pm - fro	Francis (UCS)	1		1	1							1		1			
676	03/12/21 04:11pm - fro	Severt (UCS)	1		1	1							1		1			
677	03/12/21 04:11pm - fro	Guth (UCS)	1		1	1							1		1			
678	03/12/21 04:11pm - fro	Johnson (UCS)	1		1	1							1		1			
679	03/12/21 04:11pm - fro	O'Brien	1		1	1							1		1			
680	03/12/21 04:11pm - fro	Halligan (UCS)	1		1	1							1		1			
681	03/12/21 04:11pm - fro	Ciegler (UCS)	1		1	1							1		1			
682	03/12/21 04:11pm - fro	Libson (UCS)	1		1	1							1		1			
683	03/12/21 04:11pm - fro	Fleming (UCS)	1		1	1							1		1			
684	03/12/21 04:11pm - fro	Thompson (UCS)	1		1	1							1		1			
685	03/12/21 04:11pm - fro	Larson (UCS)	1		1	1							1		1			
686	03/12/21 04:11pm - fro	Herman (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
687	03/12/21 04:11pm - fro	Bletsian (UCS)	1		1	1							1		1			
688	03/12/21 04:11pm - fro	Schlinger (UCS)	1		1	1							1		1			
689	03/12/21 04:11pm - fro	Zerbe (UCS)	1		1	1							1		1			
690	03/12/21 04:11pm - fro	Renshaw (UCS)	1		1	1							1		1			
691	03/12/21 04:11pm - fro	Cramer (UCS)	1		1	1							1		1			
692	03/12/21 04:11pm - fro	Schettl (UCS)	1		1	1							1		1			
693	03/12/21 04:11pm - fro	Smith (UCS)	1		1	1							1		1			
694	03/12/21 04:11pm - fro	Nelson (UCS)	1		1	1							1		1			
695	03/12/21 04:11pm - fro	Bardell (UCS)	1		1	1							1		1			
696	03/12/21 04:11pm - fro	Crawford (UCS)	1		1	1							1		1			
697	03/12/21 04:11pm - fro	Gorman (UCS)	1		1	1							1		1			
698	03/12/21 04:11pm - fro	Swanson (UCS)	1		1	1							1		1			
699	03/12/21 04:11pm - fro	Songalia (UCS)	1		1	1							1		1			
700	03/12/21 04:11pm - fro	Larkin (UCS)	1		1	1							1		1			
701	03/12/21 04:11pm - fro	Thielke (UCS)	1		1	1							1		1			
702	03/12/21 04:11pm - fro	Bentley (UCS)	1		1	1							1		1			
703	03/12/21 04:11pm - fro	Weir (UCS)	1		1	1							1		1			
704	03/12/21 04:11pm - fro	Shoop (UCS)	1		1	1							1		1			
705	03/12/21 04:11pm - fro	Patrick (UCS)	1		1	1							1		1			
706	03/12/21 04:11pm - fro	Graszer (UCS)	1		1	1							1		1			
707	03/12/21 04:11pm - fro	Gabbert (UCS)	1		1	1							1		1			
708	03/12/21 04:11pm - fro	Reuss (UCS)	1		1	1							1		1			
709	03/12/21 04:11pm - fro	Felling (UCS)	1		1	1							1		1			
710	03/12/21 04:11pm - fro	Pierson (UCS)	1		1	1							1		1			
711	03/12/21 04:11pm - fro	McDonald (UCS)	1		1	1							1		1			
712	03/12/21 04:11pm - fro	Roeske (UCS)	1		1	1							1		1			
713	03/12/21 04:11pm - fro	Fiene (UCS)	1		1	1							1		1			
714	03/12/21 04:11pm - fro	Smalley (UCS)	1		1	1							1		1			
715	03/12/21 04:11pm - fro	Rauenhorst (UCS)	1		1	1							1		1			
716	03/12/21 04:11pm - fro	Ricciardi (UCS)	1		1	1							1		1			
717	03/12/21 04:11pm - fro	Schultz (UCS)	1		1	1							1		1			
718	03/12/21 04:11pm - fro	Kallman (UCS)	1		1	1							1		1			
719	03/12/21 04:11pm - fro	Jessen (UCS)	1		1	1							1		1			
720	03/12/21 04:11pm - fro	Tiefenbruck (UCS)	1		1	1							1		1			
721	03/12/21 04:11pm - fro	Burns (UCS)	1		1	1							1		1			
722	03/12/21 04:11pm - fro	Andrews (UCS)	1		1	1							1		1			
723	03/12/21 04:11pm - fro	Stork (UCS)	1		1	1							1		1			
724	03/12/21 04:11pm - fro	Anderson (UCS)	1		1	1							1		1			
725	03/12/21 04:11pm - fro	Richardson (UCS)	1		1	1							1		1			
726	03/12/21 04:11pm - fro	Fitze (UCS)	1		1	1							1		1			
727	03/12/21 04:11pm - fro	Enger (UCS)	1		1	1							1		1			
728	03/12/21 04:11pm - fro	Norton (UCS)	1		1	1							1		1			
729	03/12/21 04:11pm - fro	Vrabel (UCS)	1		1	1							1		1			
730	03/12/21 04:11pm - fro	Therkilsen (UCS)	1		1	1							1		1			
731	03/12/21 04:11pm - fro	Roth (UCS)	1		1	1							1		1			
732	03/12/21 04:11pm - fro	Hirabayashi (UCS)	1		1	1							1		1			
733	03/12/21 04:11pm - fro	Ringquist (UCS)	1		1	1							1		1			
734	03/12/21 04:11pm - fro	Weisgram (UCS)	1		1	1							1		1			
735	03/12/21 04:11pm - fro	Heller (UCS)	1		1	1							1		1			
736	03/12/21 04:11pm - fro	Cutshall (UCS)	1		1	1							1		1			
737	03/12/21 04:11pm - fro	Ottman (UCS)	1		1	1							1		1			
738	03/12/21 04:11pm - fro	Vee (UCS)	1		1	1							1		1			
739	03/12/21 04:11pm - fro	Troyer (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
740	03/12/21 04:11pm - fro	Charrier (UCS)	1		1	1							1		1			
741	03/12/21 04:11pm - fro	Drake (UCS)	1		1	1							1		1			
742	03/12/21 04:11pm - fro	Poulson (UCS)	1		1	1							1		1			
743	03/12/21 04:11pm - fro	Gomez (UCS)	1		1	1							1		1			
744	03/12/21 04:11pm - fro	Peck (UCS)	1		1	1							1		1			
745	03/12/21 04:11pm - fro	Green (UCS)	1		1	1							1		1			
746	03/12/21 04:11pm - fro	Kuschke (UCS)	1		1	1							1		1			
747	03/12/21 04:11pm - fro	Skorpen (UCS)	1		1	1							1		1			
748	03/12/21 04:11pm - fro	Priebe (UCS)	1		1	1							1		1			
749	03/12/21 04:11pm - fro	Roverud (UCS)	1		1	1							1		1			
750	03/12/21 04:11pm - fro	Gibas (UCS)	1		1	1							1		1			
751	03/12/21 04:11pm - fro	Miller (UCS)	1		1	1							1		1			
752	03/12/21 04:11pm - fro	O'Meara (UCS)	1		1	1							1		1			
753	03/12/21 04:11pm - fro	Eide (UCS)	1		1	1							1		1			
754	03/12/21 04:11pm - fro	Brown (UCS)	1		1	1							1		1			
755	03/12/21 04:11pm - fro	Herron (UCS)	1		1	1							1		1			
756	03/12/21 04:11pm - fro	Schally (UCS)	1		1	1							1		1			
757	03/12/21 04:11pm - fro	Heffron (UCS)	1		1	1							1		1			
758	03/12/21 04:11pm - fro	Roth (UCS)	1		1	1							1		1			
759	03/12/21 04:11pm - fro	Favero (UCS)	1		1	1							1		1			
760	03/12/21 04:11pm - fro	Iliff (UCS)	1		1	1							1		1			
761	03/12/21 04:11pm - fro	Bretl (UCS)	1		1	1							1		1			
762	03/12/21 04:11pm - fro	Swanson (UCS)	1		1	1							1		1			
763	03/12/21 04:11pm - fro	Doss-Smith (UCS)	1		1	1							1		1			
764	03/12/21 04:11pm - fro	Poehler (UCS)	1		1	1							1		1			
765	03/12/21 04:11pm - fro	Bjorum (UCS)	1		1	1							1		1			
766	03/12/21 04:11pm - fro	Bell (UCS)	1		1	1							1		1			
767	03/12/21 04:11pm - fro	Kunz (UCS)	1		1	1							1		1			
768	03/12/21 04:11pm - fro	Willman (UCS)	1		1	1							1		1			
769	03/12/21 04:11pm - fro	Nolte (UCS)	1		1	1							1		1			
770	03/12/21 04:11pm - fro	Ubbelohde (UCS)	1		1	1							1		1			
771	03/12/21 04:11pm - fro	Keefe (UCS)	1		1	1							1		1			
772	03/12/21 04:11pm - fro	Hart (UCS)	1		1	1							1		1			
773	03/12/21 04:11pm - fro	Seabloom (UCS)	1		1	1							1		1			
774	03/12/21 04:11pm - fro	Brubaker (UCS)	1		1	1							1		1			
775	03/12/21 04:11pm - fro	Culver (UCS)	1		1	1							1		1			
776	03/12/21 04:11pm - fro	Baka (UCS)	1		1	1							1		1			
777	03/12/21 04:11pm - fro	MacKenzie (UCS)	1		1	1							1		1			
778	03/12/21 04:11pm - fro	Landstad (UCS)	1		1	1							1		1			
779	03/12/21 04:11pm - fro	Paulson (UCS)	1		1	1							1		1			
780	03/12/21 04:11pm - fro	Nelson (UCS)	1		1	1							1		1			
781	03/12/21 04:11pm - fro	Quest (UCS)	1		1	1							1		1			
782	03/12/21 04:11pm - fro	Kaseforth (UCS)	1		1	1							1		1			
783	03/12/21 04:11pm - fro	Kuschel (UCS)	1		1	1							1		1			
784	03/12/21 04:11pm - fro	Wambach (UCS)	1		1	1							1		1			
785	03/12/21 04:11pm - fro	Schoenwetter (UCS)	1		1	1							1		1			
786	03/12/21 04:11pm - fro	Kakuk (UCS)	1		1	1							1		1			
787	03/12/21 04:11pm - fro	Bartz (UCS)	1		1	1							1		1			
788	03/12/21 04:11pm - fro	Stauffer (UCS)	1		1	1							1		1			
789	03/12/21 04:11pm - fro	Anderson (UCS)	1		1	1							1		1			
790	03/12/21 04:11pm - fro	Lang (UCS)	1		1	1							1		1			
791	03/12/21 04:11pm - fro	Sines (UCS)	1		1	1							1		1			
792	03/12/21 04:11pm - fro	Fitzgerald (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
793	03/12/21 04:11pm - fro	Mullen (UCS)	1		1	1							1		1			
794	03/12/21 04:11pm - fro	Enblom (UCS)	1		1	1							1		1			
795	03/12/21 04:11pm - fro	Glorvigen (UCS)	1		1	1							1		1			
796	03/12/21 04:11pm - fro	Morris (UCS)	1		1	1							1		1			
797	03/12/21 04:11pm - fro	Kolstoe (UCS)	1		1	1							1		1			
798	03/12/21 04:11pm - fro	Saign (UCS)	1		1	1							1		1			
799	03/12/21 04:11pm - fro	Truhlar (UCS)	1		1	1							1		1			
800	03/12/21 04:11pm - fro	Fogel (UCS)	1		1	1							1		1			
801	03/12/21 04:11pm - fro	Fiene (UCS)	1		1	1							1		1			
802	03/12/21 04:11pm - fro	Bures (UCS)	1		1	1							1		1			
803	03/12/21 04:11pm - fro	Parkinson (UCS)	1		1	1							1		1			
804	03/12/21 04:11pm - fro	Leonard (UCS)	1		1	1							1		1			
805	03/12/21 04:11pm - fro	Imholte (UCS)	1		1	1							1		1			
806	03/12/21 04:11pm - fro	Powell (UCS)	1		1	1							1		1			
807	03/12/21 04:11pm - fro	Bartsias (UCS)	1		1	1							1		1			
808	03/12/21 04:11pm - fro	Nelson (UCS)	1		1	1							1		1			
809	03/12/21 04:11pm - fro	Hughes (UCS)	1		1	1							1		1			
810	03/12/21 04:11pm - fro	Wilson (UCS)	1		1	1							1		1			
811	03/12/21 04:11pm - fro	Bratvold (UCS)	1		1	1							1		1			
812	03/12/21 04:11pm - fro	Grace (UCS)	1		1	1							1		1			
813	03/12/21 04:11pm - fro	Macpherson (UCS)	1		1	1							1		1			
814	03/12/21 04:11pm - fro	Hochstetler (UCS)	1		1	1							1		1			
815	03/12/21 04:11pm - fro	O'Toole (UCS)	1		1	1							1		1			
816	03/12/21 04:11pm - fro	Rule (UCS)	1		1	1							1		1			
817	03/12/21 04:11pm - fro	Holcomb (UCS)	1		1	1							1		1			
818	03/12/21 04:11pm - fro	Potyondy (UCS)	1		1	1							1		1			
819	03/12/21 04:11pm - fro	Matheson (UCS)	1		1	1							1		1			
820	03/12/21 04:11pm - fro	Favorite (UCS)	1		1	1							1		1			
821	03/12/21 04:11pm - fro	Weber (UCS)	1		1	1							1		1			
822	03/12/21 04:11pm - fro	Smart (UCS)	1		1	1							1		1			
823	03/12/21 04:11pm - fro	Hundt (UCS)	1		1	1							1		1			
824	03/12/21 04:11pm - fro	Tessari (UCS)	1		1	1							1		1			
825	03/12/21 04:11pm - fro	Rials (UCS)	1		1	1							1		1			
826	03/12/21 04:11pm - fro	Hill (UCS)	1		1	1							1		1			
827	03/12/21 04:11pm - fro	Cardinal (UCS)	1		1	1							1		1			
828	03/12/21 04:11pm - fro	Butler (UCS)	1		1	1							1		1			
829	03/12/21 04:11pm - fro	Favorite (UCS)	1		1	1							1		1			
830	03/12/21 04:11pm - fro	Marsden (UCS)	1		1	1							1		1			
831	03/12/21 04:11pm - fro	Corkrean (UCS)	1		1	1							1		1			
832	03/12/21 04:11pm - fro	Jegen (UCS)	1		1	1							1		1			
833	03/12/21 04:11pm - fro	Benson (UCS)	1		1	1							1		1			
834	03/12/21 04:11pm - fro	Harkins (UCS)	1		1	1							1		1			
835	03/12/21 04:11pm - fro	Bechtel (UCS)	1		1	1							1		1			
836	03/12/21 04:11pm - fro	White (UCS)	1		1	1							1		1			
837	03/12/21 04:11pm - fro	Nicholson (UCS)	1		1	1							1		1			
838	03/12/21 04:11pm - fro	Elliott (UCS)	1		1	1							1		1			
839	03/12/21 04:11pm - fro	Hopkins (UCS)	1		1	1							1		1			
840	03/12/21 04:11pm - fro	Mooney (UCS)	1		1	1							1		1			
841	03/12/21 04:11pm - fro	Porter (UCS)	1		1	1							1		1			
842	03/12/21 04:11pm - fro	Zalusky (UCS)	1		1	1							1		1			
843	03/12/21 04:11pm - fro	Krysinski (UCS)	1		1	1							1		1			
844	03/12/21 04:11pm - fro	Garza (UCS)	1		1	1							1		1			
845	03/12/21 04:11pm - fro	Stewart (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
846	03/12/21 04:11pm - fro	Stringer (UCS)	1		1	1							1		1			
847	03/12/21 04:11pm - fro	Landherr (UCS)	1		1	1							1		1			
848	03/12/21 04:11pm - fro	Rampi (UCS)	1		1	1							1		1			
849	03/12/21 04:11pm - fro	Hansen (UCS)	1		1	1							1		1			
850	03/12/21 04:11pm - fro	Margolis (UCS)	1		1	1							1		1			
851	03/12/21 04:11pm - fro	Enos (UCS)	1		1	1							1		1			
852	03/12/21 04:11pm - fro	Floyd (UCS)	1		1	1							1		1			
853	03/12/21 04:11pm - fro	Hansen (UCS)	1		1	1							1		1			
854	03/12/21 04:11pm - fro	Muellner (UCS)	1		1	1							1		1			
855	03/12/21 04:11pm - fro	McCullough (UCS)	1		1	1							1		1			
856	03/12/21 04:11pm - fro	Crom (UCS)	1		1	1							1		1			
857	03/12/21 04:11pm - fro	Jewell (UCS)	1		1	1							1		1			
858	03/12/21 04:11pm - fro	Holmbeck (UCS)	1		1	1							1		1			
859	03/12/21 04:11pm - fro	Tostenson (UCS)	1		1	1							1		1			
860	03/12/21 04:11pm - fro	Hildebrandt (UCS)	1		1	1							1		1			
861	03/12/21 04:11pm - fro	Gotz (UCS)	1		1	1							1		1			
862	03/12/21 04:11pm - fro	Ashley (UCS)	1		1	1							1		1			
863	03/12/21 04:11pm - fro	Nguyen (UCS)	1		1	1							1		1			
864	03/12/21 04:11pm - fro	Rosenberg (UCS)	1		1	1							1		1			
865	03/12/21 04:11pm - fro	Bungarden (UCS)	1		1	1							1		1			
866	03/12/21 04:11pm - fro	Joyce (UCS)	1		1	1							1		1			
867	03/12/21 04:11pm - fro	Dennis (UCS)	1		1	1							1		1			
868	03/12/21 04:11pm - fro	Bussjaeger (UCS)	1		1	1							1		1			
869	03/12/21 04:11pm - fro	Melka (UCS)	1		1	1							1		1			
870	03/12/21 04:11pm - fro	Morgan (UCS)	1		1	1							1		1			
871	03/12/21 04:11pm - fro	Whebbe (UCS)	1		1	1							1		1			
872	03/12/21 04:11pm - fro	Chutich (UCS)	1		1	1							1		1			
873	03/12/21 04:11pm - fro	Thandet (UCS)	1		1	1							1		1			
874	03/12/21 04:11pm - fro	Mlynek (UCS)	1		1	1							1		1			
875	03/12/21 04:11pm - fro	Carrick (UCS)	1		1	1							1		1			
876	03/12/21 04:11pm - fro	Merryman (UCS)	1		1	1							1		1			
877	03/12/21 04:11pm - fro	Neihart (UCS)	1		1	1							1		1			
878	03/12/21 04:11pm - fro	Anderson (UCS)	1		1	1							1		1			
879	03/12/21 04:11pm - fro	O'Donnell (UCS)	1		1	1							1		1			
880	03/12/21 04:11pm - fro	Faulkner (UCS)	1		1	1							1		1			
881	03/12/21 04:11pm - fro	Marx (UCS)	1		1	1							1		1			
882	03/12/21 04:11pm - fro	Stephens (UCS)	1		1	1							1		1			
883	03/12/21 04:11pm - fro	Endean (UCS)	1		1	1							1		1			
884	03/12/21 04:11pm - fro	Krinke (UCS)	1		1	1							1		1			
885	03/12/21 04:11pm - fro	Lang (UCS)	1		1	1							1		1			
886	03/12/21 04:11pm - fro	Tran (UCS)	1		1	1							1		1			
887	03/12/21 04:11pm - fro	Rossi (UCS)	1		1	1							1		1			
888	03/12/21 04:11pm - fro	Regan (UCS)	1		1	1							1		1			
889	03/12/21 04:11pm - fro	Vizecky (UCS)	1		1	1							1		1			
890	03/12/21 04:11pm - fro	Engelhardt (UCS)	1		1	1							1		1			
891	03/12/21 04:11pm - fro	Lies (UCS)	1		1	1							1		1			
892	03/12/21 04:11pm - fro	Darland (UCS)	1		1	1							1		1			
893	03/12/21 04:11pm - fro	Roemer (UCS)	1		1	1							1		1			
894	03/12/21 04:11pm - fro	Metis (UCS)	1		1	1							1		1			
895	03/12/21 04:11pm - fro	Steichen (UCS)	1		1	1							1		1			
896	03/12/21 04:11pm - fro	Husby (UCS)	1		1	1							1		1			
897	03/12/21 04:11pm - fro	Henke (UCS)	1		1	1							1		1			
898	03/12/21 04:11pm - fro	Steinmetz (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
899	03/12/21 04:11pm - fro	Schoettler (UCS)	1		1	1							1		1			
900	03/12/21 04:11pm - fro	Chase (UCS)	1		1	1							1		1			
901	03/12/21 04:11pm - fro	Ishmael (UCS)	1		1	1							1		1			
902	03/12/21 04:11pm - fro	Nordland (UCS)	1		1	1							1		1			
903	03/12/21 04:11pm - fro	Klotz (UCS)	1		1	1							1		1			
904	03/12/21 04:11pm - fro	Rex (UCS)	1		1	1							1		1			
905	03/12/21 04:11pm - fro	Bunnell (UCS)	1		1	1							1		1			
906	03/12/21 04:11pm - fro	Nash (UCS)	1		1	1							1		1			
907	03/12/21 04:11pm - fro	Nash (UCS)	1		1	1							1		1			
908	03/12/21 04:11pm - fro	Del Rosario (UCS)	1		1	1							1		1			
909	03/12/21 04:11pm - fro	McCormick (UCS)	1		1	1							1		1			
910	03/12/21 04:11pm - fro	Falink (UCS)	1		1	1							1		1			
911	03/12/21 04:11pm - fro	M (UCS)	1		1	1							1		1			
912	03/12/21 04:11pm - fro	Bratvold (UCS)	1		1	1							1		1			
913	03/12/21 04:11pm - fro	Johnson (UCS)	1		1	1							1		1			
914	03/12/21 04:11pm - fro	Westphal (UCS)	1		1	1							1		1			
915	03/12/21 04:11pm - fro	Saxe (UCS)	1		1	1							1		1			
916	03/12/21 04:11pm - fro	Hauer (UCS)	1		1	1							1		1			
917	03/12/21 04:11pm - fro	Cathcart (UCS)	1		1	1							1		1			
918	03/12/21 04:11pm - fro	Ross (UCS)	1		1	1							1		1			
919	03/12/21 04:11pm - fro	Gubrud (UCS)	1		1	1							1		1			
920	03/12/21 04:11pm - fro	Creighton (UCS)	1		1	1							1		1			
921	03/12/21 04:11pm - fro	Erickson (UCS)	1		1	1							1		1			
922	03/12/21 04:11pm - fro	Swenson-Zakula (UCS)	1		1	1							1		1			
923	03/12/21 04:11pm - fro	Hoffman (UCS)	1		1	1							1		1			
924	03/12/21 04:11pm - fro	Nieman (UCS)	1		1	1							1		1			
925	03/12/21 04:11pm - fro	Hyk (UCS)	1		1	1							1		1			
926	03/12/21 04:11pm - fro	Espeland (UCS)	1		1	1							1		1			
927	03/12/21 04:11pm - fro	Clasemann (UCS)	1		1	1							1		1			
928	03/12/21 04:11pm - fro	Rathsack (UCS)	1		1	1							1		1			
929	03/12/21 04:11pm - fro	Kopnick (UCS)	1		1	1							1		1			
930	03/12/21 04:11pm - fro	Kelley (UCS)	1		1	1							1		1			
931	03/12/21 04:11pm - fro	Cohen (UCS)	1		1	1							1		1			
932	03/12/21 04:11pm - fro	Narcisse (UCS)	1		1	1							1		1			
933	03/12/21 04:11pm - fro	Kollman (UCS)	1		1	1							1		1			
934	03/12/21 04:11pm - fro	James (UCS)	1		1	1							1		1			
935	03/12/21 04:11pm - fro	Thorbjornsen (UCS)	1		1	1							1		1			
936	03/12/21 04:11pm - fro	Stevens (UCS)	1		1	1							1		1			
937	03/12/21 04:11pm - fro	Ament (UCS)	1		1	1							1		1			
938	03/12/21 04:11pm - fro	Shedd (UCS)	1		1	1							1		1			
939	03/12/21 04:11pm - fro	Morem (UCS)	1		1	1							1		1			
940	03/12/21 04:11pm - fro	Morem (UCS)	1		1	1							1		1			
941	03/12/21 04:11pm - fro	Horejsi (UCS)	1		1	1							1		1			
942	03/12/21 04:11pm - fro	Border (UCS)	1		1	1							1		1			
943	03/12/21 04:11pm - fro	Marie (UCS)	1		1	1							1		1			
944	03/12/21 04:11pm - fro	Wallace (UCS)	1		1	1							1		1			
945	03/12/21 04:11pm - fro	McCleary (UCS)	1		1	1							1		1			
946	03/12/21 04:11pm - fro	Thomborson (UCS)	1		1	1							1		1			
947	03/12/21 04:11pm - fro	Gutierrez (UCS)	1		1	1							1		1			
948	03/12/21 04:11pm - fro	Schilling (UCS)	1		1	1							1		1			
949	03/12/21 04:11pm - fro	Olson (UCS)	1		1	1							1		1			
950	03/12/21 04:11pm - fro	Steele (UCS)	1		1	1							1		1			
951	03/12/21 04:11pm - fro	Wenzel (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
952	03/12/21 04:11pm - fro	Madeco-Smith (UCS)	1		1	1							1		1			
953	03/12/21 04:11pm - fro	Bobst (UCS)	1		1	1							1		1			
954	03/12/21 04:11pm - fro	Smith (UCS)	1		1	1							1		1			
955	03/12/21 04:11pm - fro	Beckhusen (UCS)	1		1	1							1		1			
956	03/12/21 04:11pm - fro	Schulz (UCS)	1		1	1							1		1			
957	03/12/21 04:11pm - fro	Spaeth (UCS)	1		1	1							1		1			
958	03/12/21 04:11pm - fro	Allen (UCS)	1		1	1							1		1			
959	03/12/21 04:11pm - fro	O'Meara (UCS)	1		1	1							1		1			
960	03/12/21 04:11pm - fro	Moraski (UCS)	1		1	1							1		1			
961	03/12/21 04:11pm - fro	O'Donnell (UCS)	1		1	1							1		1			
962	03/12/21 04:11pm - fro	Venterea (UCS)	1		1	1							1		1			
963	03/12/21 04:11pm - fro	Viken (UCS)	1		1	1							1		1			
964	03/12/21 04:11pm - fro	Norton (UCS)	1		1	1							1		1			
965	03/12/21 04:11pm - fro	May (UCS)	1		1	1							1		1			
966	03/12/21 04:11pm - fro	Kriesel (UCS)	1		1	1							1		1			
967	03/12/21 04:11pm - fro	Rockne (UCS)	1		1	1							1		1			
968	03/12/21 04:11pm - fro	Busch (UCS)	1		1	1							1		1			
969	03/12/21 04:11pm - fro	Dalin (UCS)	1		1	1							1		1			
970	03/12/21 04:11pm - fro	George (UCS)	1		1	1							1		1			
971	03/12/21 04:11pm - fro	Paulson (UCS)	1		1	1							1		1			
972	03/12/21 04:11pm - fro	Reichert (UCS)	1		1	1							1		1			
973	03/12/21 04:11pm - fro	Hayman (UCS)	1		1	1							1		1			
974	03/12/21 04:11pm - fro	Blacklock (UCS)	1		1	1							1		1			
975	03/12/21 04:11pm - fro	Pauling (UCS)	1		1	1							1		1			
976	03/12/21 04:11pm - fro	Tempel (UCS)	1		1	1							1		1			
977	03/12/21 04:11pm - fro	Taylor (UCS)	1		1	1							1		1			
978	03/12/21 04:11pm - fro	Bjorum (UCS)	1		1	1							1		1			
979	03/12/21 04:11pm - fro	Kitzberger (UCS)	1		1	1							1		1			
980	03/12/21 04:11pm - fro	Vogel (UCS)	1		1	1							1		1			
981	03/12/21 04:11pm - fro	Kramer (UCS)	1		1	1							1		1			
982	03/12/21 04:11pm - fro	Corkrean (UCS)	1		1	1							1		1			
983	03/12/21 04:11pm - fro	Johnson (UCS)	1		1	1							1		1			
984	03/12/21 04:11pm - fro	McKenzie (UCS)	1		1	1							1		1			
985	03/12/21 04:11pm - fro	Herman (UCS)	1		1	1							1		1			
986	03/12/21 04:11pm - fro	Jarvis (UCS)	1		1	1							1		1			
987	03/12/21 04:11pm - fro	Brockway (UCS)	1		1	1							1		1			
988	03/12/21 04:11pm - fro	Endres (UCS)	1		1	1							1		1			
989	03/12/21 04:11pm - fro	Spear (UCS)	1		1	1							1		1			
990	03/12/21 04:11pm - fro	Favorite (UCS)	1		1	1							1		1			
991	03/12/21 04:11pm - fro	Mitchell (UCS)	1		1	1							1		1			
992	03/12/21 04:11pm - fro	O'Connor (UCS)	1		1	1							1		1			
993	03/12/21 04:11pm - fro	Baxter (UCS)	1		1	1							1		1			
994	03/12/21 04:11pm - fro	Friedenfels (UCS)	1		1	1							1		1			
995	03/12/21 04:11pm - fro	Peterson (UCS)	1		1	1							1		1			
996	03/12/21 04:11pm - fro	Templin (UCS)	1		1	1							1		1			
997	03/12/21 04:11pm - fro	Blyly-Strauss (UCS)	1		1	1							1		1			
998	03/12/21 04:11pm - fro	Baker (UCS)	1		1	1							1		1			
999	03/12/21 04:11pm - fro	Vizecky (UCS)	1		1	1							1		1			
1000	03/12/21 04:11pm - fro	Johnson (UCS)	1		1	1							1		1			
1001	03/12/21 04:11pm - fro	Cruit (UCS)	1		1	1							1		1			
1002	03/12/21 04:11pm - fro	Hart (UCS)	1		1	1							1		1			
1003	03/12/21 04:11pm - fro	Raisanen (UCS)	1		1	1							1		1			
1004	03/12/21 04:11pm - fro	And (UCS)	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1005	03/12/21 04:11pm - fro	Pamperin (UCS)	1		1	1							1		1			
1006	03/12/21 04:11pm - fro	Lanning (UCS)	1		1	1							1		1			
1007	03/12/21 04:11pm - fro	Densmore (UCS)	1		1	1							1		1			
1008	03/12/21 04:11pm - fro	Schmidt (UCS)	1		1	1							1		1			
1009	03/12/21 04:11pm - fro	Tucker (UCS)	1		1	1							1		1			
1010	03/12/21 04:11pm - fro	Kepler (UCS)	1		1	1							1		1			
1011	03/12/21 04:11pm - fro	Dunn (UCS)	1		1	1							1		1			
1012	03/12/21 04:11pm - fro	Galbraith (UCS)	1		1	1							1		1			
1013	03/12/21 04:11pm - fro	Thielman (UCS)	1		1	1							1		1			
1014	03/12/21 04:11pm - fro	Grina (UCS)	1		1	1							1		1			
1015	03/12/21 04:11pm - fro	Wright (UCS)	1		1	1							1		1			
1016	03/12/21 04:11pm - fro	Steinolfson (UCS)	1		1	1							1		1			
1017	03/12/21 04:11pm - fro	Carlson (UCS)	1		1	1							1		1			
1018	03/12/21 04:11pm - fro	Pelton (UCS)	1		1	1							1		1			
1019	03/12/21 04:11pm - fro	Walsh (UCS)	1		1	1							1		1			
1020	03/12/21 04:11pm - fro	Whitley (UCS)	1		1	1							1		1			
1021	03/12/21 04:11pm - fro	Hutchins (UCS)	1		1	1							1		1			
1022	03/12/21 04:11pm - fro	Miller (UCS)	1		1	1							1		1			
1023	03/12/21 04:11pm - fro	Haram (UCS)	1		1	1							1		1			
1024	03/12/21 04:11pm - fro	LaMaster (UCS)	1		1	1							1		1			
1025	03/12/21 04:11pm - fro	Nayes (UCS)	1		1	1							1		1			
1026	03/12/21 04:11pm - fro	Hemmila (UCS)	1		1	1							1		1			
1027	03/12/21 04:11pm - fro	Thander (UCS)	1		1	1							1		1			
1028	03/12/21 04:11pm - fro	Del Rosario (UCS)	1		1	1							1		1			
1029	03/12/21 04:11pm - fro	Hartjes (UCS)	1		1	1							1		1			
1030	03/12/21 04:11pm - fro	Miller (UCS)	1		1	1							1		1			
1031	03/12/21 04:17pm	Olson		1						1								
1032	03/12/21 04:37pm	Olson		1						1								
1033	03/12/21 04:52pm	Grudem		1						1								
1034	03/12/21 04:52pm	Johnson		1						1								
1035	03/12/21 04:54pm	Schreifels	1		1								1		1			
1036	03/12/21 05:01pm	Greskowiak		1			1	1										
1037	03/12/21 05:13pm	Price		1						1		1						
1038	03/12/21 05:39pm	12012038 7480		1			1								1			
1039	03/12/21 05:42pm	LaDuke		1						1								
1040	03/12/21 05:48pm	Larson		1						1					1			
1041	03/12/21 05:57pm	Stevens	1		1													
1042	03/12/21 06:02pm	Dens		1			1			1								
1043	03/12/21 06:50pm	Gardner		1						1								
1044	03/12/21 07:18pm	Joyce	1		1													
1045	03/12/21 07:29pm	Nelson		1						1		1						
1046	03/12/21 07:32pm	Clark		1			1			1								
1047	03/12/21 07:53pm WIT	Blomquist	1				1	1										
1048	03/12/21 08:38pm	Olson		1			1								1			
1049	03/12/21 09:00pm	Shoemaker		1						1								
1050	03/12/21 10:22pm	Schreifels	1		1													
1051	03/12/21 10:30pm	Kuster	1		1													
1052	03/12/21 11:39pm WIT	Sewpersaud	1															
1053	03/13/21 07:42am	Moulton		1						1								
1054	03/13/21 08:05am	Holford		1			1			1								
1055	03/13/21 08:27am	ex hippie		1						1								
1056	03/13/21 08:35am	Dunne		1						1								
1057	03/13/21 09:02am	Peterson		1						1								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1058	03/13/21 09:12am	Bodenner	1															
1059	03/13/21 09:19am	Sellman		1						1								
1060	03/13/21 09:39am	Knoll	1		1								1					
1061	03/13/21 12:05pm	Stephan		1						1								
1062	03/13/21 12:51pm	Swanstrom		1						1				1				
1063	03/13/21 01:18pm	Gausman		1			1			1								
1064	03/13/21 02:26pm	Nei		1			1			1				1				
1065	03/13/21 04:05pm	Hildebrand	1		1	1							1		1			
1066	03/13/21 04:08pm	Olson		1			1			1								
1067	03/13/21 04:50pm	Dudycha	1										1		1			
1068	03/13/21 04:53pm	Vawter	1		1	1							1		1			
1069	03/13/21 05:03pm	Fiala		1			1											
1070	03/13/21 05:35pm	Schendzielos		1				1						1		1		
1071	03/13/21 05:42pm	Yancy		1														
1072	03/13/21 06:08pm	Carlson		1			1					1				1		
1073	03/13/21 08:34pm	Sorenson	1		1								1		1			
1074	03/13/21 09:32pm	DeVries		1			1			1		1						
1075	03/13/21 10:44pm	Pearson	1		1	1							1		1			
1076	03/14/21 04:43am	Ahlers	1		1	1									1			
1077	03/14/21 07:52am	Ahola	1															
1078	03/14/21 09:10am	Kellander		1								1						
1079	03/14/21 09:13am	Foss		1						1								
1080	03/14/21 11:02am	Smith	1		1								1		1			
1081	03/14/21 11:31am	Iverson		1						1		1						
1082	03/14/21 11:37am	Popovich		1						1								
1083	03/14/21 11:55am	Holmberg		1						1				1				
1084	03/14/21 11:56am	Iverson		1						1								
1085	03/14/21 12:31pm	Van Valkenburg	1		1													
1086	03/14/21 12:39pm	Schleisman	1		1	1												
1087	03/14/21 02:23pm	Ewing		1														
1088	03/14/21 03:10pm	Hetteen		1						1				1				
1089	03/14/21 03:37pm	Olson		1			1			1								
1090	03/14/21 03:47pm	Seller		1						1								
1091	03/14/21 04:15pm	Schleisman	1		1								1					
1092	03/14/21 04:42pm	Martinson		1						1		1						
1093	03/14/21 04:57pm	Blakley		1			1											
1094	03/14/21 05:19pm	Fredrickson		1								1						
1095	03/14/21 06:17pm	Enga		1						1		1						
1096	03/14/21 06:44pm	Ferguson		1						1								
1097	03/14/21 07:53pm	Hennek		1			1			1								
1098	03/14/21 08:32pm WIT	Gruenhagen		1			1	1		1								
1099	03/14/21 08:33pm	Dudley		1						1								
1100	03/14/21 08:46pm	Gude	1		1	1							1		1			
1101	03/14/21 09:06pm	Baker		1										1				
1102	03/14/21 09:18pm	Gerard	1		1								1					
1103	03/14/21 09:35pm	Anderson		1						1				1				
1104	03/14/21 09:45pm	Willette	1			1							1					
1105	03/14/21 10:19pm	X		1										1				
1106	03/14/21 10:33pm	Kugler		1			1			1								
1107	03/14/21 10:41pm	Dornfeld	1		1	1							1		1			
1108	03/14/21 10:54pm	Schroeder		1			1											
1109	03/14/21 11:17pm	Miller	1															
1110	03/14/21 11:49pm	Krawczyk		1						1						1		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1111	03/15/21 01:03am WIT	Harkness	1		1								1					
1112	03/15/21 09:00am WIT	Kerrigan		1			1	1				1						
1113	03/15/21 09:10am	Louwagie		1								1						
1114	03/15/21 09:17am	A		1						1						1		1
1115	03/15/21 09:44am WIT	Rudnicki		1														
1116	03/15/21 10:05am WIT	Bains	1															
1117	03/15/21 10:19am WIT	Admin	1										1					
1118	03/15/21 10:27am WIT	Aguilar (NRDC)	1		1	1									1			
1119	03/15/21 10:27am - fro	Corkrean (NRDC)	1		1	1									1			
1120	03/15/21 10:27am - fro	Youlan (NRDC)	1		1	1									1			
1121	03/15/21 10:27am - fro	O'Meara (NRDC)	1		1	1									1			
1122	03/15/21 10:27am - fro	Tran (NRDC)	1		1	1									1			
1123	03/15/21 10:27am - fro	Jacobson (NRDC)	1		1	1									1			
1124	03/15/21 10:27am - fro	Hooley (NRDC)	1		1	1									1			
1125	03/15/21 10:27am - fro	Nelson (NRDC)	1		1	1									1			
1126	03/15/21 10:27am - fro	Bell (NRDC)	1		1	1									1			
1127	03/15/21 10:27am - fro	Johns (NRDC)	1		1	1									1			
1128	03/15/21 10:27am - fro	Besser (NRDC)	1		1	1									1			
1129	03/15/21 10:27am - fro	Johnson (NRDC)	1		1	1									1			
1130	03/15/21 10:27am - fro	Stewart (NRDC)	1		1	1									1			
1131	03/15/21 10:27am - fro	McConnell (NRDC)	1		1	1									1			
1132	03/15/21 10:27am - fro	Stiewe (NRDC)	1		1	1									1			
1133	03/15/21 10:27am - fro	Mullen (NRDC)	1		1	1									1			
1134	03/15/21 10:27am - fro	Kaye (NRDC)	1		1	1									1			
1135	03/15/21 10:27am - fro	Porter (NRDC)	1		1	1									1			
1136	03/15/21 10:27am - fro	Brubaker (NRDC)	1		1	1									1			
1137	03/15/21 10:27am - fro	Baka (NRDC)	1		1	1									1			
1138	03/15/21 10:27am - fro	Steinolfson (NRDC)	1		1	1									1			
1139	03/15/21 10:27am - fro	Lutz (NRDC)	1		1	1									1			
1140	03/15/21 10:27am - fro	Mullen (NRDC)	1		1	1									1			
1141	03/15/21 10:27am - fro	d. (NRDC)	1		1	1									1			
1142	03/15/21 10:27am - fro	O'Connor (NRDC)	1		1	1									1			
1143	03/15/21 10:27am - fro	Kakuk (NRDC)	1		1	1									1			
1144	03/15/21 10:27am - fro	farmer (NRDC)	1		1	1									1			
1145	03/15/21 10:27am - fro	Nelson (NRDC)	1		1	1									1			
1146	03/15/21 10:27am - fro	Harms (NRDC)	1		1	1									1			
1147	03/15/21 10:27am - fro	McCabe (NRDC)	1		1	1									1			
1148	03/15/21 10:27am - fro	Doss-Smith (NRDC)	1		1	1									1			
1149	03/15/21 10:27am - fro	Grace (NRDC)	1		1	1									1			
1150	03/15/21 10:27am - fro	Moraski (NRDC)	1		1	1									1			
1151	03/15/21 10:27am - fro	Templin (NRDC)	1		1	1									1			
1152	03/15/21 10:27am - fro	Beahen (NRDC)	1		1	1									1			
1153	03/15/21 10:27am - fro	Palmer (NRDC)	1		1	1									1			
1154	03/15/21 10:27am - fro	Rice (NRDC)	1		1	1									1			
1155	03/15/21 10:27am - fro	Herther (NRDC)	1		1	1									1			
1156	03/15/21 10:27am - fro	Mulvihill (NRDC)	1		1	1									1			
1157	03/15/21 10:27am - fro	Carlson (NRDC)	1		1	1									1			
1158	03/15/21 10:27am - fro	Hendrickson (NRD	1		1	1									1			
1159	03/15/21 10:27am - fro	Uphaus (NRDC)	1		1	1									1			
1160	03/15/21 10:27am - fro	Densmore (NRDC)	1		1	1									1			
1161	03/15/21 10:27am - fro	Hruby (NRDC)	1		1	1									1			
1162	03/15/21 10:27am - fro	Stockman (NRDC)	1		1	1									1			
1163	03/15/21 10:27am - fro	Trinidad Sprung (N	1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1164	03/15/21 10:27am - froi Vorpahl (NRDC)		1		1	1									1			
1165	03/15/21 10:27am - froi Salinas (NRDC)		1		1	1									1			
1166	03/15/21 10:27am - froi Wroblewski (NRDC)		1		1	1									1			
1167	03/15/21 10:27am - froi Eveland-Smith (NRDC)		1		1	1									1			
1168	03/15/21 10:27am - froi Boeckman (NRDC)		1		1	1									1			
1169	03/15/21 10:27am - froi Mickelson (NRDC)		1		1	1									1			
1170	03/15/21 10:27am - froi Thompson (NRDC)		1		1	1									1			
1171	03/15/21 10:27am - froi Hamm (NRDC)		1		1	1									1			
1172	03/15/21 10:27am - froi Gasteiro (NRDC)		1		1	1									1			
1173	03/15/21 10:27am - froi Krynski (NRDC)		1		1	1									1			
1174	03/15/21 10:27am - froi Bohnen (NRDC)		1		1	1									1			
1175	03/15/21 10:27am - froi Bogolub (NRDC)		1		1	1									1			
1176	03/15/21 10:27am - froi Clark (NRDC)		1		1	1									1			
1177	03/15/21 10:27am - froi Berg (NRDC)		1		1	1									1			
1178	03/15/21 10:27am - froi Benson (NRDC)		1		1	1									1			
1179	03/15/21 10:27am - froi Murphy (NRDC)		1		1	1									1			
1180	03/15/21 10:27am - froi Nelson (NRDC)		1		1	1									1			
1181	03/15/21 10:27am - froi Barber (NRDC)		1		1	1									1			
1182	03/15/21 10:27am - froi Pelka (NRDC)		1		1	1									1			
1183	03/15/21 10:27am - froi Erickson (NRDC)		1		1	1									1			
1184	03/15/21 10:27am - froi Ringquist (NRDC)		1		1	1									1			
1185	03/15/21 10:27am - froi Coffey (NRDC)		1		1	1									1			
1186	03/15/21 10:27am - froi Flanagan (NRDC)		1		1	1									1			
1187	03/15/21 10:27am - froi Long (NRDC)		1		1	1									1			
1188	03/15/21 10:27am - froi Williamson (NRDC)		1		1	1									1			
1189	03/15/21 10:27am - froi Limoges (NRDC)		1		1	1									1			
1190	03/15/21 10:27am - froi Lambert (NRDC)		1		1	1									1			
1191	03/15/21 10:27am - froi Lazarus (NRDC)		1		1	1									1			
1192	03/15/21 10:27am - froi Neuman-Scott (NRDC)		1		1	1									1			
1193	03/15/21 10:27am - froi Abraham (NRDC)		1		1	1									1			
1194	03/15/21 10:27am - froi Snoeren (NRDC)		1		1	1									1			
1195	03/15/21 10:27am - froi Bradley (NRDC)		1		1	1									1			
1196	03/15/21 10:27am - froi Fitzhugh (NRDC)		1		1	1									1			
1197	03/15/21 10:27am - froi Finley-Shea (NRDC)		1		1	1									1			
1198	03/15/21 10:27am - froi Day (NRDC)		1		1	1									1			
1199	03/15/21 10:27am - froi Tillmanns (NRDC)		1		1	1									1			
1200	03/15/21 10:27am - froi Charrier (NRDC)		1		1	1									1			
1201	03/15/21 10:27am - froi Joyce (NRDC)		1		1	1									1			
1202	03/15/21 10:27am - froi McKeen (NRDC)		1		1	1									1			
1203	03/15/21 10:27am - froi Rugg (NRDC)		1		1	1									1			
1204	03/15/21 10:27am - froi Linehan (NRDC)		1		1	1									1			
1205	03/15/21 10:27am - froi Kaseforth (NRDC)		1		1	1									1			
1206	03/15/21 10:27am - froi Gallion (NRDC)		1		1	1									1			
1207	03/15/21 10:27am - froi Mens (NRDC)		1		1	1									1			
1208	03/15/21 10:27am - froi Greenwood (NRDC)		1		1	1									1			
1209	03/15/21 10:27am - froi Axberg (NRDC)		1		1	1									1			
1210	03/15/21 10:27am - froi Poulson (NRDC)		1		1	1									1			
1211	03/15/21 10:27am - froi Roche (NRDC)		1		1	1									1			
1212	03/15/21 10:27am - froi Favorite (NRDC)		1		1	1									1			
1213	03/15/21 10:27am - froi McCleary (NRDC)		1		1	1									1			
1214	03/15/21 10:27am - froi Rand (NRDC)		1		1	1									1			
1215	03/15/21 10:27am - froi Rasmussen (NRDC)		1		1	1									1			
1216	03/15/21 10:27am - froi Klitz (NRDC)		1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1217	03/15/21 10:27am - froi Snider (NRDC)		1		1	1									1			
1218	03/15/21 10:27am - froi Clapper (NRDC)		1		1	1									1			
1219	03/15/21 10:27am - froi Pomeroy (NRDC)		1		1	1									1			
1220	03/15/21 10:27am - froi Rakow (NRDC)		1		1	1									1			
1221	03/15/21 10:27am - froi Thinesen (NRDC)		1		1	1									1			
1222	03/15/21 10:27am - froi Thinesen (NRDC)		1		1	1									1			
1223	03/15/21 10:27am - froi Karlgaard (NRDC)		1		1	1									1			
1224	03/15/21 10:27am - froi Nelson (NRDC)		1		1	1									1			
1225	03/15/21 10:27am - froi Swanson (NRDC)		1		1	1									1			
1226	03/15/21 10:27am - froi Bartz (NRDC)		1		1	1									1			
1227	03/15/21 10:27am - froi Ryan (NRDC)		1		1	1									1			
1228	03/15/21 10:27am - froi Rasmussen (NRDC)		1		1	1									1			
1229	03/15/21 10:27am - froi Little (NRDC)		1		1	1									1			
1230	03/15/21 10:27am - froi Freese (NRDC)		1		1	1									1			
1231	03/15/21 10:27am - froi Spear (NRDC)		1		1	1									1			
1232	03/15/21 10:27am - froi Maggi (NRDC)		1		1	1									1			
1233	03/15/21 10:27am - froi Mcgilligan (NRDC)		1		1	1									1			
1234	03/15/21 10:27am - froi Lyngen (NRDC)		1		1	1									1			
1235	03/15/21 10:27am - froi Chindvall (NRDC)		1		1	1									1			
1236	03/15/21 10:27am - froi Snyder (NRDC)		1		1	1									1			
1237	03/15/21 10:27am - froi Lang (NRDC)		1		1	1									1			
1238	03/15/21 10:27am - froi Garza (NRDC)		1		1	1									1			
1239	03/15/21 10:27am - froi Haemig (NRDC)		1		1	1									1			
1240	03/15/21 10:27am - froi Swanson (NRDC)		1		1	1									1			
1241	03/15/21 10:27am - froi Powell (NRDC)		1		1	1									1			
1242	03/15/21 10:27am - froi Schally (NRDC)		1		1	1									1			
1243	03/15/21 10:27am - froi Bruesch (NRDC)		1		1	1									1			
1244	03/15/21 10:27am - froi Jewell-Ceder (NRDC)		1		1	1									1			
1245	03/15/21 10:27am - froi Borgeson (NRDC)		1		1	1									1			
1246	03/15/21 10:27am - froi Chandler (NRDC)		1		1	1									1			
1247	03/15/21 10:27am - froi Hirman (NRDC)		1		1	1									1			
1248	03/15/21 10:27am - froi Keepper (NRDC)		1		1	1									1			
1249	03/15/21 10:27am - froi Kirkpatrick (NRDC)		1		1	1									1			
1250	03/15/21 10:27am - froi White (NRDC)		1		1	1									1			
1251	03/15/21 10:27am - froi Fredsall (NRDC)		1		1	1									1			
1252	03/15/21 10:27am - froi Bergerud (NRDC)		1		1	1									1			
1253	03/15/21 10:27am - froi Hoff (NRDC)		1		1	1									1			
1254	03/15/21 10:27am - froi Theisen (NRDC)		1		1	1									1			
1255	03/15/21 10:27am - froi Monahan (NRDC)		1		1	1									1			
1256	03/15/21 10:27am - froi Merryman (NRDC)		1		1	1									1			
1257	03/15/21 10:27am - froi Enblom (NRDC)		1		1	1									1			
1258	03/15/21 10:27am - froi Shedd (NRDC)		1		1	1									1			
1259	03/15/21 10:27am - froi Huberty (NRDC)		1		1	1									1			
1260	03/15/21 10:27am - froi Jordan (NRDC)		1		1	1									1			
1261	03/15/21 10:27am - froi LaQue (NRDC)		1		1	1									1			
1262	03/15/21 10:27am - froi Brown (NRDC)		1		1	1									1			
1263	03/15/21 10:27am - froi Avina (NRDC)		1		1	1									1			
1264	03/15/21 10:27am - froi Anderson (NRDC)		1		1	1									1			
1265	03/15/21 10:27am - froi Vrabel (NRDC)		1		1	1									1			
1266	03/15/21 10:27am - froi Kurtz (NRDC)		1		1	1									1			
1267	03/15/21 10:27am - froi Bateman (NRDC)		1		1	1									1			
1268	03/15/21 10:27am - froi Eide (NRDC)		1		1	1									1			
1269	03/15/21 10:27am - froi Mackenzie (NRDC)		1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1270	03/15/21 10:27am - froi Singer (NRDC)		1		1	1									1			
1271	03/15/21 10:27am - froi MERRILL (NRDC)		1		1	1									1			
1272	03/15/21 10:27am - froi Ferguson (NRDC)		1		1	1									1			
1273	03/15/21 10:27am - froi Naqwi (NRDC)		1		1	1									1			
1274	03/15/21 10:27am - froi Pauling (NRDC)		1		1	1									1			
1275	03/15/21 10:27am - froi Drache (NRDC)		1		1	1									1			
1276	03/15/21 10:27am - froi Ringnalda (NRDC)		1		1	1									1			
1277	03/15/21 10:27am - froi Camp (NRDC)		1		1	1									1			
1278	03/15/21 10:27am - froi Forster (NRDC)		1		1	1									1			
1279	03/15/21 10:27am - froi Harris (NRDC)		1		1	1									1			
1280	03/15/21 10:27am - froi Gobely (NRDC)		1		1	1									1			
1281	03/15/21 10:27am - froi butler (NRDC)		1		1	1									1			
1282	03/15/21 10:27am - froi Johnson (NRDC)		1		1	1									1			
1283	03/15/21 10:27am - froi Swanson (NRDC)		1		1	1									1			
1284	03/15/21 10:27am - froi Chaplin (NRDC)		1		1	1									1			
1285	03/15/21 10:27am - froi Javinsky (NRDC)		1		1	1									1			
1286	03/15/21 10:27am - froi Schulz (NRDC)		1		1	1									1			
1287	03/15/21 10:27am - froi Hagen (NRDC)		1		1	1									1			
1288	03/15/21 10:27am - froi Pixler (NRDC)		1		1	1									1			
1289	03/15/21 10:27am - froi Bransford (NRDC)		1		1	1									1			
1290	03/15/21 10:27am - froi Wetzler (NRDC)		1		1	1									1			
1291	03/15/21 10:27am - froi Keenan (NRDC)		1		1	1									1			
1292	03/15/21 10:27am - froi Sandon (NRDC)		1		1	1									1			
1293	03/15/21 10:27am - froi Abts (NRDC)		1		1	1									1			
1294	03/15/21 10:27am - froi Schub (NRDC)		1		1	1									1			
1295	03/15/21 10:27am - froi Nordland (NRDC)		1		1	1									1			
1296	03/15/21 10:27am - froi Pikala (NRDC)		1		1	1									1			
1297	03/15/21 10:27am - froi Pipitone (NRDC)		1		1	1									1			
1298	03/15/21 10:27am - froi Neihart (NRDC)		1		1	1									1			
1299	03/15/21 10:27am - froi Ragsdale (NRDC)		1		1	1									1			
1300	03/15/21 10:27am - froi Vlazny (NRDC)		1		1	1									1			
1301	03/15/21 10:27am - froi Westphal (NRDC)		1		1	1									1			
1302	03/15/21 10:27am - froi Nusbaum (NRDC)		1		1	1									1			
1303	03/15/21 10:27am - froi Heberger (NRDC)		1		1	1									1			
1304	03/15/21 10:27am - froi Chutich (NRDC)		1		1	1									1			
1305	03/15/21 10:27am - froi Servatius (NRDC)		1		1	1									1			
1306	03/15/21 10:27am - froi Wilmes (NRDC)		1		1	1									1			
1307	03/15/21 10:27am - froi Bell-Brugger (NRD		1		1	1									1			
1308	03/15/21 10:27am - froi Hon (NRDC)		1		1	1									1			
1309	03/15/21 10:27am - froi Albers (NRDC)		1		1	1									1			
1310	03/15/21 10:27am - froi Hughes (NRDC)		1		1	1									1			
1311	03/15/21 10:27am - froi West (NRDC)		1		1	1									1			
1312	03/15/21 10:27am - froi Phillips (NRDC)		1		1	1									1			
1313	03/15/21 10:27am - froi Partin (NRDC)		1		1	1									1			
1314	03/15/21 10:27am - froi Osaki Holm (NRDC		1		1	1									1			
1315	03/15/21 10:27am - froi Hundt (NRDC)		1		1	1									1			
1316	03/15/21 10:27am - froi Darland (NRDC)		1		1	1									1			
1317	03/15/21 10:27am - froi Martin (NRDC)		1		1	1									1			
1318	03/15/21 10:27am - froi Ries (NRDC)		1		1	1									1			
1319	03/15/21 10:27am - froi Nash (NRDC)		1		1	1									1			
1320	03/15/21 10:27am - froi Hance (NRDC)		1		1	1									1			
1321	03/15/21 10:27am - froi Johnson (NRDC)		1		1	1									1			
1322	03/15/21 10:27am - froi Sstonehouse (NRE		1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1323	03/15/21 10:27am - froi	Margolis (NRDC)	1		1	1									1			
1324	03/15/21 10:27am - froi	ODonnell (NRDC)	1		1	1									1			
1325	03/15/21 10:27am - froi	Chester (NRDC)	1		1	1									1			
1326	03/15/21 10:27am - froi	Rosenberg (NRDC)	1		1	1									1			
1327	03/15/21 10:27am - froi	Kriesel (NRDC)	1		1	1									1			
1328	03/15/21 10:27am - froi	Wright (NRDC)	1		1	1									1			
1329	03/15/21 10:27am - froi	Everling (NRDC)	1		1	1									1			
1330	03/15/21 10:27am - froi	Curtis (NRDC)	1		1	1									1			
1331	03/15/21 10:27am - froi	Andrews (NRDC)	1		1	1									1			
1332	03/15/21 10:27am - froi	Schrammen (NRDC)	1		1	1									1			
1333	03/15/21 10:27am - froi	Bentley (NRDC)	1		1	1									1			
1334	03/15/21 10:27am - froi	Hed Vincent (NRDC)	1		1	1									1			
1335	03/15/21 10:27am - froi	Stephens (NRDC)	1		1	1									1			
1336	03/15/21 10:27am - froi	Krauz (NRDC)	1		1	1									1			
1337	03/15/21 10:27am - froi	Sorock (NRDC)	1		1	1									1			
1338	03/15/21 10:27am - froi	Smart (NRDC)	1		1	1									1			
1339	03/15/21 10:27am - froi	Edsen (NRDC)	1		1	1									1			
1340	03/15/21 10:27am - froi	Lamb (NRDC)	1		1	1									1			
1341	03/15/21 10:27am - froi	Graham (NRDC)	1		1	1									1			
1342	03/15/21 10:27am - froi	Spinosa (NRDC)	1		1	1									1			
1343	03/15/21 10:27am - froi	Sims (NRDC)	1		1	1									1			
1344	03/15/21 10:27am - froi	Randall (NRDC)	1		1	1									1			
1345	03/15/21 10:27am - froi	Sandok (NRDC)	1		1	1									1			
1346	03/15/21 10:27am - froi	Rich (NRDC)	1		1	1									1			
1347	03/15/21 10:27am - froi	Kylander-Johnson	1		1	1									1			
1348	03/15/21 10:27am - froi	McCarthy (NRDC)	1		1	1									1			
1349	03/15/21 10:27am - froi	Bishop (NRDC)	1		1	1									1			
1350	03/15/21 10:27am - froi	Levin (NRDC)	1		1	1									1			
1351	03/15/21 10:27am - froi	Ross (NRDC)	1		1	1									1			
1352	03/15/21 10:27am - froi	Gavriish (NRDC)	1		1	1									1			
1353	03/15/21 10:27am - froi	Songalia (NRDC)	1		1	1									1			
1354	03/15/21 10:27am - froi	George (NRDC)	1		1	1									1			
1355	03/15/21 10:27am - froi	Lindberg (NRDC)	1		1	1									1			
1356	03/15/21 10:27am - froi	Schultz (NRDC)	1		1	1									1			
1357	03/15/21 10:27am - froi	Councilman (NRDC)	1		1	1									1			
1358	03/15/21 10:27am - froi	Hill (NRDC)	1		1	1									1			
1359	03/15/21 10:27am - froi	Smolen (NRDC)	1		1	1									1			
1360	03/15/21 10:27am - froi	Morem (NRDC)	1		1	1									1			
1361	03/15/21 10:27am - froi	Levin (NRDC)	1		1	1									1			
1362	03/15/21 10:27am - froi	Eidinger (NRDC)	1		1	1									1			
1363	03/15/21 10:27am - froi	Black (NRDC)	1		1	1									1			
1364	03/15/21 10:27am - froi	husby (NRDC)	1		1	1									1			
1365	03/15/21 10:27am - froi	Ferguson (NRDC)	1		1	1									1			
1366	03/15/21 10:27am - froi	Schlipp (NRDC)	1		1	1									1			
1367	03/15/21 10:27am - froi	Hoogendoorn (NRDC)	1		1	1									1			
1368	03/15/21 10:27am - froi	Larson (NRDC)	1		1	1									1			
1369	03/15/21 10:27am - froi	Schicker (NRDC)	1		1	1									1			
1370	03/15/21 10:27am - froi	Dykoski (NRDC)	1		1	1									1			
1371	03/15/21 10:27am - froi	Chase (NRDC)	1		1	1									1			
1372	03/15/21 10:27am - froi	Curtler III (NRDC)	1		1	1									1			
1373	03/15/21 10:27am - froi	Schilling (NRDC)	1		1	1									1			
1374	03/15/21 10:27am - froi	Pingel (NRDC)	1		1	1									1			
1375	03/15/21 10:27am - froi	Richardson (NRDC)	1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1376	03/15/21 10:27am - fro	Deeg (NRDC)	1		1	1									1			
1377	03/15/21 10:27am - fro	Midthun (NRDC)	1		1	1									1			
1378	03/15/21 10:27am - fro	m (NRDC)	1		1	1									1			
1379	03/15/21 10:27am - fro	Lewis (NRDC)	1		1	1									1			
1380	03/15/21 10:27am - fro	Stevens (NRDC)	1		1	1									1			
1381	03/15/21 10:27am - fro	Thompson (NRDC)	1		1	1									1			
1382	03/15/21 10:27am - fro	Becker (NRDC)	1		1	1									1			
1383	03/15/21 10:27am - fro	Roemer (NRDC)	1		1	1									1			
1384	03/15/21 10:27am - fro	Childs (NRDC)	1		1	1									1			
1385	03/15/21 10:27am - fro	Okie (NRDC)	1		1	1									1			
1386	03/15/21 10:27am - fro	Sufka (NRDC)	1		1	1									1			
1387	03/15/21 10:27am - fro	Francis (NRDC)	1		1	1									1			
1388	03/15/21 10:27am - fro	Norling (NRDC)	1		1	1									1			
1389	03/15/21 10:27am - fro	Ross (NRDC)	1		1	1									1			
1390	03/15/21 10:27am - fro	Hoffman (NRDC)	1		1	1									1			
1391	03/15/21 10:27am - fro	Creighton (NRDC)	1		1	1									1			
1392	03/15/21 10:27am - fro	Skrowaczewski (N	1		1	1									1			
1393	03/15/21 10:27am - fro	Hammer (NRDC)	1		1	1									1			
1394	03/15/21 10:27am - fro	van Oorschot-War	1		1	1									1			
1395	03/15/21 10:27am - fro	Quintero (NRDC)	1		1	1									1			
1396	03/15/21 10:27am - fro	Perry (NRDC)	1		1	1									1			
1397	03/15/21 10:27am - fro	Freed (NRDC)	1		1	1									1			
1398	03/15/21 10:27am - fro	metis (NRDC)	1		1	1									1			
1399	03/15/21 10:27am - fro	Krinke (NRDC)	1		1	1									1			
1400	03/15/21 10:27am - fro	Anderson (NRDC)	1		1	1									1			
1401	03/15/21 10:27am - fro	Schmidt (NRDC)	1		1	1									1			
1402	03/15/21 10:27am - fro	Daro (NRDC)	1		1	1									1			
1403	03/15/21 10:27am - fro	Johnson (NRDC)	1		1	1									1			
1404	03/15/21 10:27am - fro	EMME (NRDC)	1		1	1									1			
1405	03/15/21 10:27am - fro	Fitze (NRDC)	1		1	1									1			
1406	03/15/21 10:27am - fro	Jacobson (NRDC)	1		1	1									1			
1407	03/15/21 10:27am - fro	Jensen (NRDC)	1		1	1									1			
1408	03/15/21 10:27am - fro	Lelwica (NRDC)	1		1	1									1			
1409	03/15/21 10:27am - fro	Bartholomew (NR	1		1	1									1			
1410	03/15/21 10:27am - fro	Cardinal (NRDC)	1		1	1									1			
1411	03/15/21 10:27am - fro	Smegal (NRDC)	1		1	1									1			
1412	03/15/21 10:27am - fro	Morris (NRDC)	1		1	1									1			
1413	03/15/21 10:27am - fro	Stensvold (NRDC)	1		1	1									1			
1414	03/15/21 10:27am - fro	Boyer (NRDC)	1		1	1									1			
1415	03/15/21 10:27am - fro	baumann (NRDC)	1		1	1									1			
1416	03/15/21 10:27am - fro	karpel (NRDC)	1		1	1									1			
1417	03/15/21 10:27am - fro	Lilley (NRDC)	1		1	1									1			
1418	03/15/21 10:27am - fro	JONES (NRDC)	1		1	1									1			
1419	03/15/21 10:27am - fro	Sovil (NRDC)	1		1	1									1			
1420	03/15/21 10:27am - fro	Ryals (NRDC)	1		1	1									1			
1421	03/15/21 10:27am - fro	Balder (NRDC)	1		1	1									1			
1422	03/15/21 10:27am - fro	Underhill (NRDC)	1		1	1									1			
1423	03/15/21 10:27am - fro	Novotny (NRDC)	1		1	1									1			
1424	03/15/21 10:27am - fro	Halberg (NRDC)	1		1	1									1			
1425	03/15/21 10:27am - fro	Gardner (NRDC)	1		1	1									1			
1426	03/15/21 10:27am - fro	Robison (NRDC)	1		1	1									1			
1427	03/15/21 10:27am - fro	Hampton (NRDC)	1		1	1									1			
1428	03/15/21 10:27am - fro	Hickert (NRDC)	1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1429	03/15/21 10:27am - froi Olson (NRDC)		1		1	1									1			
1430	03/15/21 10:27am - froi Smith (NRDC)		1		1	1									1			
1431	03/15/21 10:27am - froi MANN (NRDC)		1		1	1									1			
1432	03/15/21 10:27am - froi Schannach (NRDC)		1		1	1									1			
1433	03/15/21 10:27am - froi Keefe (NRDC)		1		1	1									1			
1434	03/15/21 10:27am - froi Morem (NRDC)		1		1	1									1			
1435	03/15/21 10:27am - froi Moss (NRDC)		1		1	1									1			
1436	03/15/21 10:27am - froi Sramek (NRDC)		1		1	1									1			
1437	03/15/21 10:27am - froi Joedeman (NRDC)		1		1	1									1			
1438	03/15/21 10:27am - froi Peloquin (NRDC)		1		1	1									1			
1439	03/15/21 10:27am - froi Hallman (NRDC)		1		1	1									1			
1440	03/15/21 10:27am - froi Heller (NRDC)		1		1	1									1			
1441	03/15/21 10:27am - froi Willis-Jick (NRDC)		1		1	1									1			
1442	03/15/21 10:27am - froi Fischer (NRDC)		1		1	1									1			
1443	03/15/21 10:27am - froi Schoephoerster (NRDC)		1		1	1									1			
1444	03/15/21 10:27am - froi Holthouse (NRDC)		1		1	1									1			
1445	03/15/21 10:27am - froi Ramsey (NRDC)		1		1	1									1			
1446	03/15/21 10:27am - froi Wenzel (NRDC)		1		1	1									1			
1447	03/15/21 10:27am - froi Johannsen (NRDC)		1		1	1									1			
1448	03/15/21 10:27am - froi Buck (NRDC)		1		1	1									1			
1449	03/15/21 10:27am - froi Fisher-Merritt (NRDC)		1		1	1									1			
1450	03/15/21 10:27am - froi Sieck (NRDC)		1		1	1									1			
1451	03/15/21 10:27am - froi Bratvold (NRDC)		1		1	1									1			
1452	03/15/21 10:27am - froi Fastner (NRDC)		1		1	1									1			
1453	03/15/21 10:27am - froi Voth (NRDC)		1		1	1									1			
1454	03/15/21 10:27am - froi Hanson (NRDC)		1		1	1									1			
1455	03/15/21 10:27am - froi Huttenmaier (NRDC)		1		1	1									1			
1456	03/15/21 10:27am - froi Krauss (NRDC)		1		1	1									1			
1457	03/15/21 10:27am - froi thomborson (NRDC)		1		1	1									1			
1458	03/15/21 10:27am - froi Skjerven (NRDC)		1		1	1									1			
1459	03/15/21 10:27am - froi Hoffman (NRDC)		1		1	1									1			
1460	03/15/21 10:27am - froi Brinkley (NRDC)		1		1	1									1			
1461	03/15/21 10:27am - froi Halena (NRDC)		1		1	1									1			
1462	03/15/21 10:27am - froi Nelson (NRDC)		1		1	1									1			
1463	03/15/21 10:27am - froi Gordon (NRDC)		1		1	1									1			
1464	03/15/21 10:27am - froi Anderson (NRDC)		1		1	1									1			
1465	03/15/21 10:27am - froi Johnson (NRDC)		1		1	1									1			
1466	03/15/21 10:27am - froi Meyer (NRDC)		1		1	1									1			
1467	03/15/21 10:27am - froi Wellman (NRDC)		1		1	1									1			
1468	03/15/21 10:27am - froi Paul (NRDC)		1		1	1									1			
1469	03/15/21 10:27am - froi Hansen (NRDC)		1		1	1									1			
1470	03/15/21 10:27am - froi Klinefelter (NRDC)		1		1	1									1			
1471	03/15/21 10:27am - froi Frisk (NRDC)		1		1	1									1			
1472	03/15/21 10:27am - froi McEachern (NRDC)		1		1	1									1			
1473	03/15/21 10:27am - froi Bothun (NRDC)		1		1	1									1			
1474	03/15/21 10:27am - froi Dryke (NRDC)		1		1	1									1			
1475	03/15/21 10:27am - froi Torkelson (NRDC)		1		1	1									1			
1476	03/15/21 10:27am - froi Warren (NRDC)		1		1	1									1			
1477	03/15/21 10:27am - froi Clauss (NRDC)		1		1	1									1			
1478	03/15/21 10:27am - froi Marie (NRDC)		1		1	1									1			
1479	03/15/21 10:27am - froi Woller (NRDC)		1		1	1									1			
1480	03/15/21 10:27am - froi Raedel (NRDC)		1		1	1									1			
1481	03/15/21 10:27am - froi Taurug (NRDC)		1		1	1									1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1482	03/15/21 10:27am - froi	Fuller (NRDC)	1		1	1									1			
1483	03/15/21 10:27am - froi	Menti (NRDC)	1		1	1									1			
1484	03/15/21 10:27am - froi	Kramer (NRDC)	1		1	1									1			
1485	03/15/21 10:27am - froi	Clapp (NRDC)	1		1	1									1			
1486	03/15/21 10:27am - froi	Mlynek (NRDC)	1		1	1									1			
1487	03/15/21 10:27am - froi	NELSON (NRDC)	1		1	1									1			
1488	03/15/21 10:27am - froi	Roeske (NRDC)	1		1	1									1			
1489	03/15/21 10:27am - froi	Bell (NRDC)	1		1	1									1			
1490	03/15/21 10:27am - froi	Roback (NRDC)	1		1	1									1			
1491	03/15/21 10:27am - froi	Hodnett (NRDC)	1		1	1									1			
1492	03/15/21 10:27am - froi	Cragun (NRDC)	1		1	1									1			
1493	03/15/21 10:27am - froi	Enenstein (NRDC)	1		1	1									1			
1494	03/15/21 10:27am - froi	Cohen (NRDC)	1		1	1									1			
1495	03/15/21 10:27am - froi	Vrabel (NRDC)	1		1	1									1			
1496	03/15/21 10:27am - froi	herman (NRDC)	1		1	1									1			
1497	03/15/21 10:27am - froi	Carey (NRDC)	1		1	1									1			
1498	03/15/21 10:27am - froi	Johnson (NRDC)	1		1	1									1			
1499	03/15/21 10:27am - froi	Ludtke (NRDC)	1		1	1									1			
1500	03/15/21 10:27am - froi	kathryn Jarvinen (NRDC)	1		1	1									1			
1501	03/15/21 10:27am - froi	Bletsian (NRDC)	1		1	1									1			
1502	03/15/21 10:27am - froi	Farnsworth (NRDC)	1		1	1									1			
1503	03/15/21 10:27am - froi	hadfield (NRDC)	1		1	1									1			
1504	03/15/21 10:27am - froi	Geringer (NRDC)	1		1	1									1			
1505	03/15/21 10:27am - froi	Ludwig (NRDC)	1		1	1									1			
1506	03/15/21 10:27am - froi	knightly (NRDC)	1		1	1									1			
1507	03/15/21 10:27am - froi	Swanson (NRDC)	1		1	1									1			
1508	03/15/21 10:27am - froi	Markwardt (NRDC)	1		1	1									1			
1509	03/15/21 10:27am - froi	Jacobsen (NRDC)	1		1	1									1			
1510	03/15/21 10:27am - froi	Stromgren (NRDC)	1		1	1									1			
1511	03/15/21 10:27am - froi	Fleming (NRDC)	1		1	1									1			
1512	03/15/21 10:27am - froi	Glorvigen (NRDC)	1		1	1									1			
1513	03/15/21 10:27am - froi	Fosspotter (NRDC)	1		1	1									1			
1514	03/15/21 10:27am - froi	Goodman (NRDC)	1		1	1									1			
1515	03/15/21 10:27am - froi	Blyly-Strauss (NRDC)	1		1	1									1			
1516	03/15/21 10:27am - froi	Ross (NRDC)	1		1	1									1			
1517	03/15/21 10:27am - froi	Klotz (NRDC)	1		1	1									1			
1518	03/15/21 10:27am - froi	GIBSON (NRDC)	1		1	1									1			
1519	03/15/21 10:27am - froi	Johnson (NRDC)	1		1	1									1			
1520	03/15/21 10:27am - froi	Hiniker (NRDC)	1		1	1									1			
1521	03/15/21 10:27am - froi	Borgmann (NRDC)	1		1	1									1			
1522	03/15/21 10:27am - froi	Olson (NRDC)	1		1	1									1			
1523	03/15/21 10:27am - froi	Jennings (NRDC)	1		1	1									1			
1524	03/15/21 10:27am - froi	Hauenstein (NRDC)	1		1	1									1			
1525	03/15/21 10:27am - froi	Woodruff (NRDC)	1		1	1									1			
1526	03/15/21 10:27am - froi	Whebbe (NRDC)	1		1	1									1			
1527	03/15/21 10:27am - froi	Kingstrom (NRDC)	1		1	1									1			
1528	03/15/21 10:27am - froi	Hagen (NRDC)	1		1	1									1			
1529	03/15/21 10:27am - froi	Crocker (NRDC)	1		1	1									1			
1530	03/15/21 10:27am - froi	Reed (NRDC)	1		1	1									1			
1531	03/15/21 10:32am	Carroll	1															
1532	03/15/21 10:42am	WITF Izzo																
1533	03/15/21 10:51am	Meyer		1			1											
1534	03/15/21 10:56am	WITF Lundstrom	1		1	1							1					

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1535	03/15/21 10:57am WITI	Kelley	1		1	1						1		1		1		
1536	03/15/21 11:15am WITI	Brehler (CARB)	1															
1537	03/15/21 11:38am	Litzau		1						1				1				
1538	03/15/21 11:45am	Kingston	1															
1539	03/15/21 11:51am	Hay		1						1								
1540	03/15/21 11:54am WITI	Hunter (ALA)	1		1	1									1			
1541	03/15/21 12:04pm	Ramey		1						1								
1542	03/15/21 12:08pm	Miersch	1		1								1					
1543	03/15/21 12:10pm	Larson		1			1			1								
1544	03/15/21 12:19pm WITI	Stafford (CEEM)	1		1							1	1					
1545	03/15/21 12:22pm	Sammon		1						1								
1546	03/15/21 12:23pm	Kahler		1						1								
1547	03/15/21 12:30pm WITI	Deering (Conserva	1		1								1					
1548	03/15/21 12:30pm - fro	Schettl (Conservat	1		1								1					
1549	03/15/21 12:30pm - fro	McNellis (Conserv	1		1								1					
1550	03/15/21 12:30pm - fro	Welsberg (Conser	1		1	1							1					
1551	03/15/21 12:30pm - fro	Beegle (Conservat	1		1								1					
1552	03/15/21 12:30pm - fro	Monahan (Conser	1		1								1					
1553	03/15/21 12:30pm - fro	Munderloh (Conse	1		1								1					
1554	03/15/21 12:30pm - fro	Bardell (Conservat	1		1								1					
1555	03/15/21 12:30pm - fro	Delaney (Conserva	1															
1556	03/15/21 12:30pm - fro	Nelson (Conservat	1		1	1							1					
1557	03/15/21 12:30pm - fro	Yates (Conservati	1		1													
1558	03/15/21 12:30pm - fro	Brueske (Conserva	1		1								1					
1559	03/15/21 12:30pm - fro	Gibson (Conservat	1		1								1					
1560	03/15/21 12:30pm - fro	McRae (Conservat	1		1								1					
1561	03/15/21 12:30pm - fro	Duval (Conservati	1		1								1					
1562	03/15/21 12:30pm - fro	Dale-Hargraves (C	1		1								1					
1563	03/15/21 12:30pm - fro	Spensley (Conserv	1		1								1					
1564	03/15/21 12:30pm - fro	Woodrich (Conser	1		1								1					
1565	03/15/21 12:30pm - fro	Campbell (Conser	1		1								1					
1566	03/15/21 12:30pm - fro	Lewis (Conservati	1		1								1					
1567	03/15/21 12:30pm - fro	Dolbow (Conserva	1		1								1					
1568	03/15/21 12:30pm - fro	Vukelich (Conserv	1		1													
1569	03/15/21 12:35pm	Resch	1		1													
1570	03/15/21 12:44pm	Anderson		1			1			1								
1571	03/15/21 12:54pm	Hillard		1			1	1		1								
1572	03/15/21 12:55pm	Tomte		1						1						1		
1573	03/15/21 12:57pm	Davis		1			1	1				1						
1574	03/15/21 12:57pm	Landes		1								1						
1575	03/15/21 01:00pm	Johnson		1				1										
1576	03/15/21 01:09pm	Frazeur		1			1			1								
1577	03/15/21 01:14pm	Foster		1						1		1						
1578	FAXED - OAH MAR13	O'Brien	1		1	1							1		1			
1579	FAXED - OAH MAR13	O'Brien	1		1	1							1		1			
1580	MAILED - OAH MAR15	Beyer (Greater Mankato Grow		1			1	1		1								
1581	MAILED - OAH MAR15	Muscatell		1			1	1		1								
1582	MAILED - OAH MAR15	Harvieux		1			1	1		1								
1583	MAILED - OAH MAR15	Roers	1		1	1							1		1			
1584	MAILED - OAH MAR15	Ullmer		1										1				
1585	FAXED - OAH MAR15	Gross (MPMA)		1			1			1		1						
1586	FAXED - OAH MAR15	Johnson (MN Rural Counties)		1			1			1		1		1				
1587	FAXED - OAH MAR15	Larson	1		1	1							1		1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1588	FAXED - OAH MAR15	Anderson (MAWG)		1						1		1						
1589	FAXED - OAH MAR 15	Benn	1		1	1							1					
1590	MAILED - OAH MAR15	Cornett (Nature C	1		1	1									1			
1591			1345	237	1161	925	109	35	2	127	0	49	645	62	935	27	9	3