



clean
cars
mn



Pathways to decarbonizing transportation and adopting clean car standards

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TAB Technical Advisory Committee

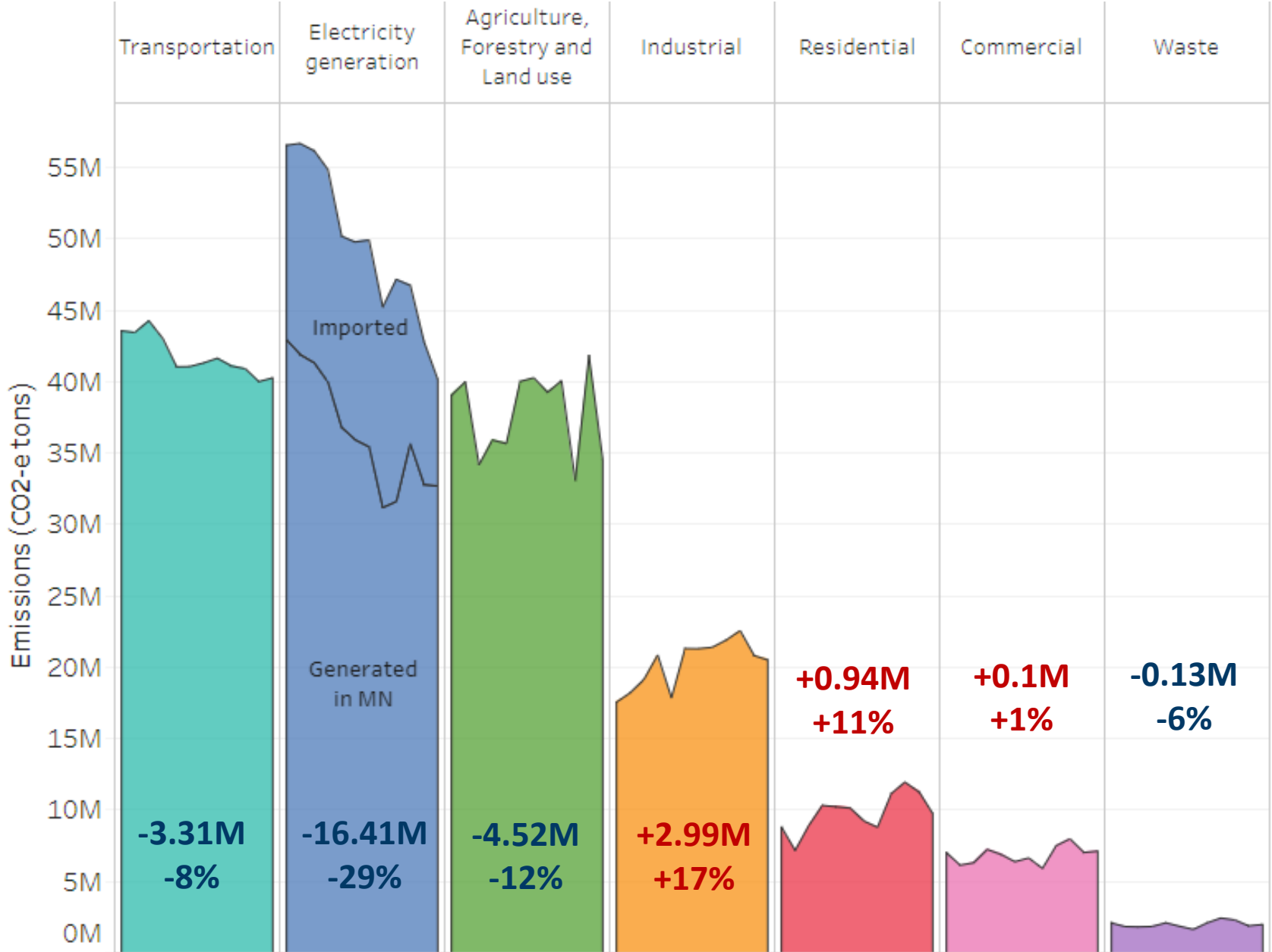
February 5, 2020



Pathways to Decarbonizing Transportation in Minnesota

February 2020

Emission changes by sector, 2005-2016



Pathways to Decarbonizing Transportation

Technical Stakeholder Engagement



Work with technical experts from the public, private, and nonprofits sectors to inform modeling assumptions and strategies that should be considered.

April – June 2019

Modeling



Model different pathways for decarbonizing transportation.

April – May 2019

Public Engagement

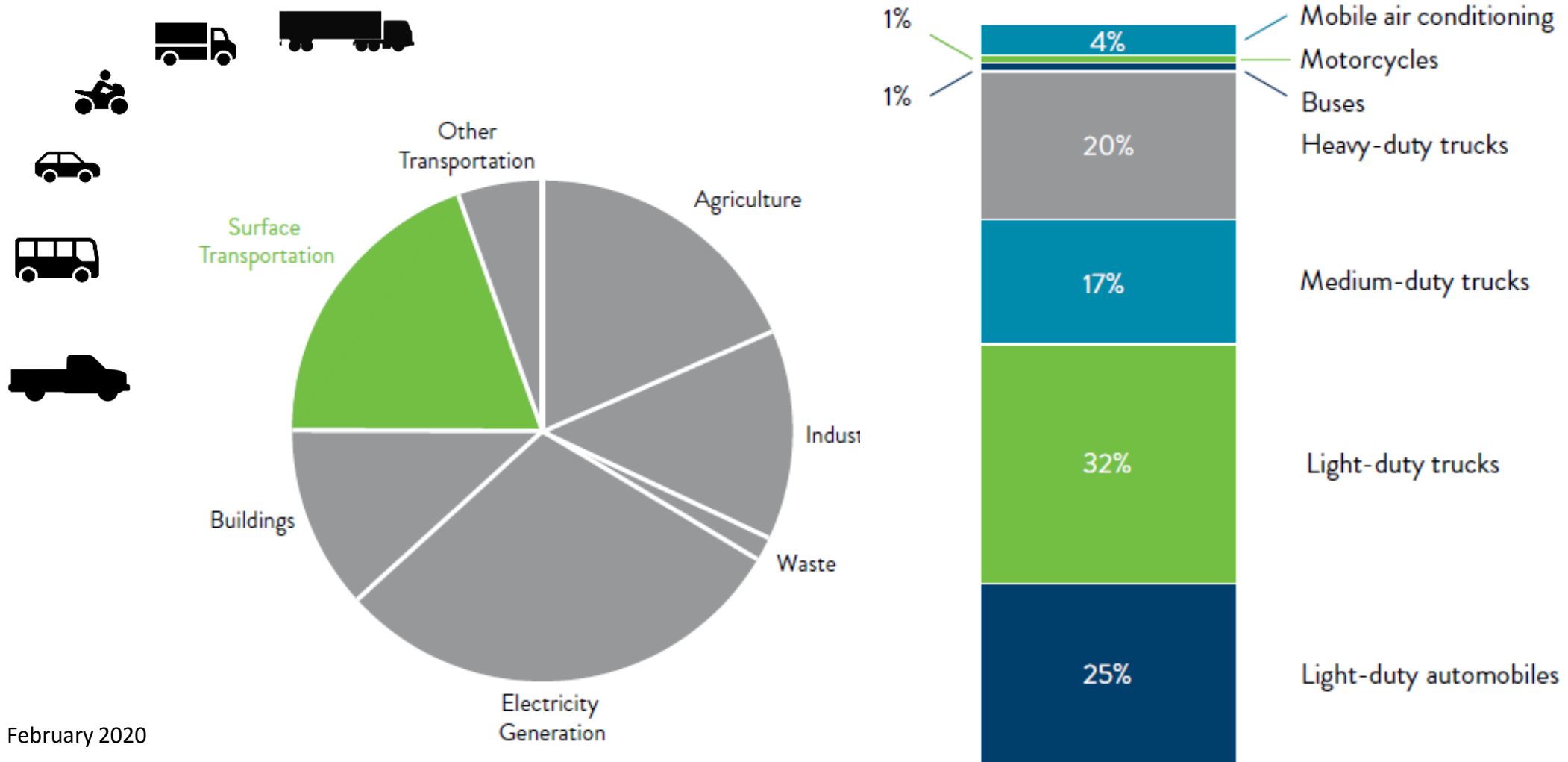


Meet with the public at locations around the state to hear their feedback and thoughts on strategies.

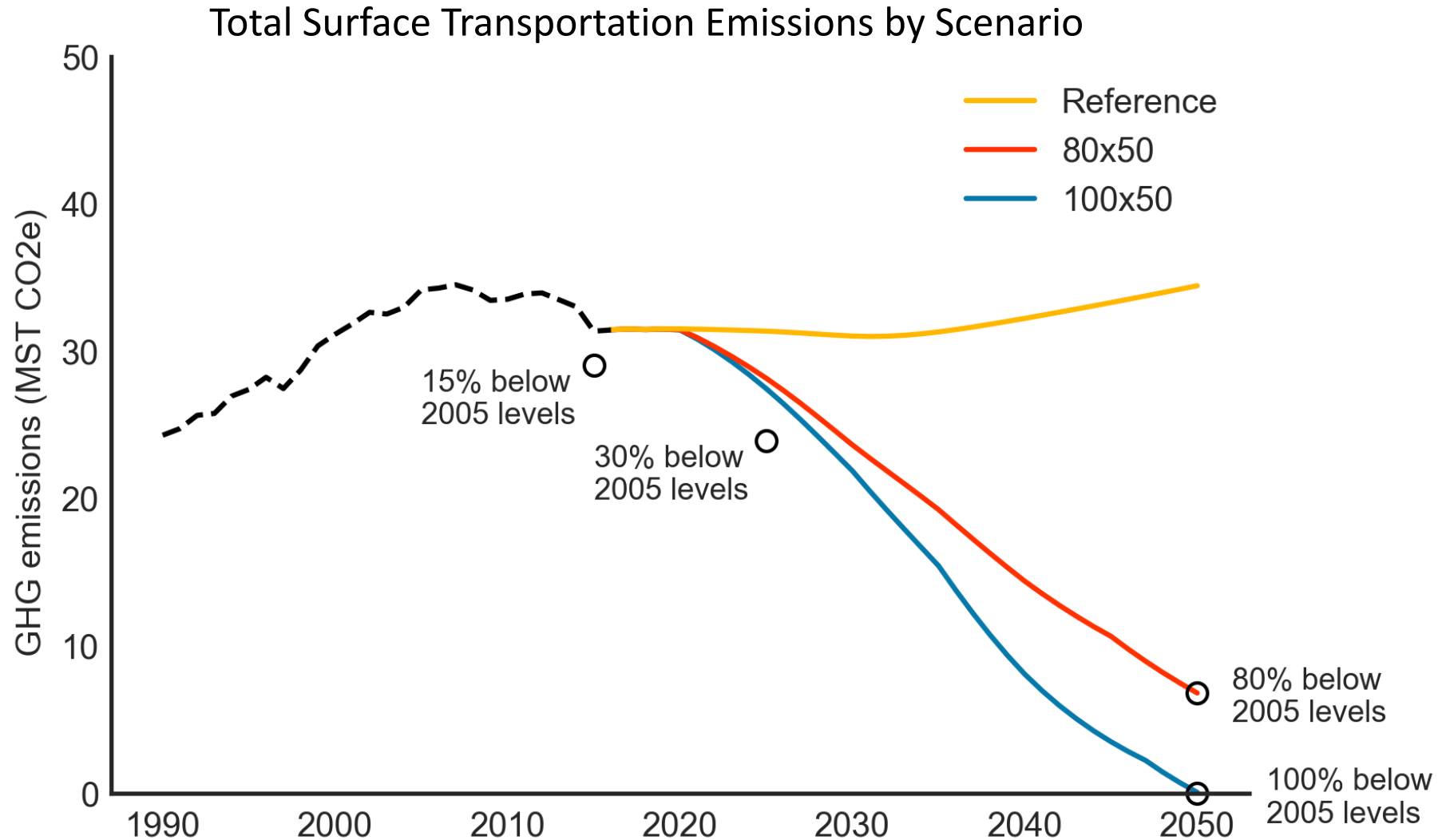
May – June 2019

Surface Transportation

Minnesota Emissions Profile



Emissions Reduction Scenarios



Actions to reduce emissions in transportation

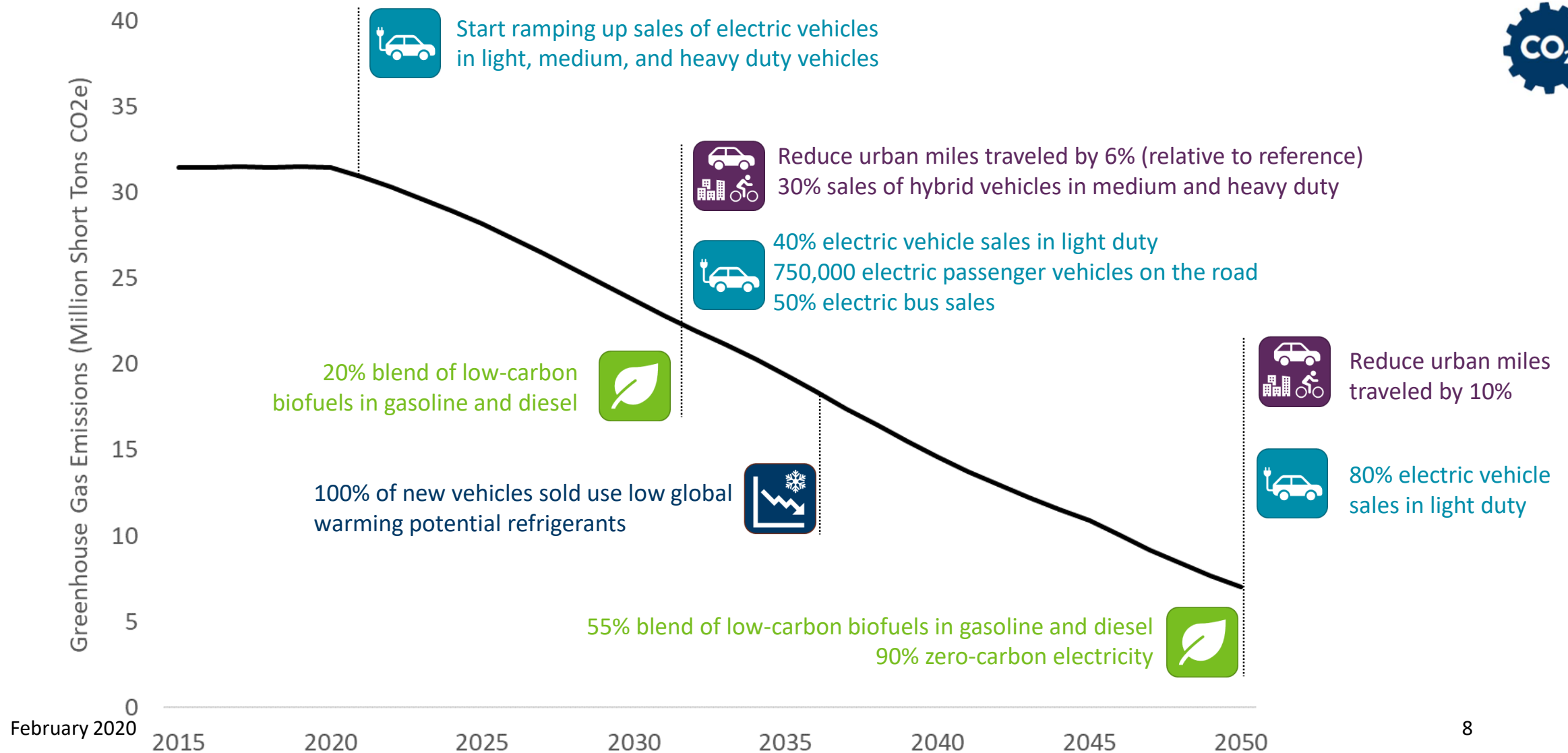


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Model strategy	Example tactics to reduce transportation carbon pollution
Improve fuel economy	<ul style="list-style-type: none">• Federal or state vehicle efficiency standards
Reduce driving and VMT	<ul style="list-style-type: none">• Smart, dense city design• Neighborhoods built for biking, walking, and rolling• Carpooling incentives• Improved public transit
Increase electric vehicle sales	<ul style="list-style-type: none">• Consumer rebates• State vehicle targets• Public and workplace charging stations
Reduce the carbon intensity of biofuels	<ul style="list-style-type: none">• Regenerative agricultural and soil practices• Process efficiency• Low-carbon fuel standard
Increase lower-carbon electricity generation	<ul style="list-style-type: none">• Clean electricity standards• Utility greenhouse gas reduction goals• Retire coal plants

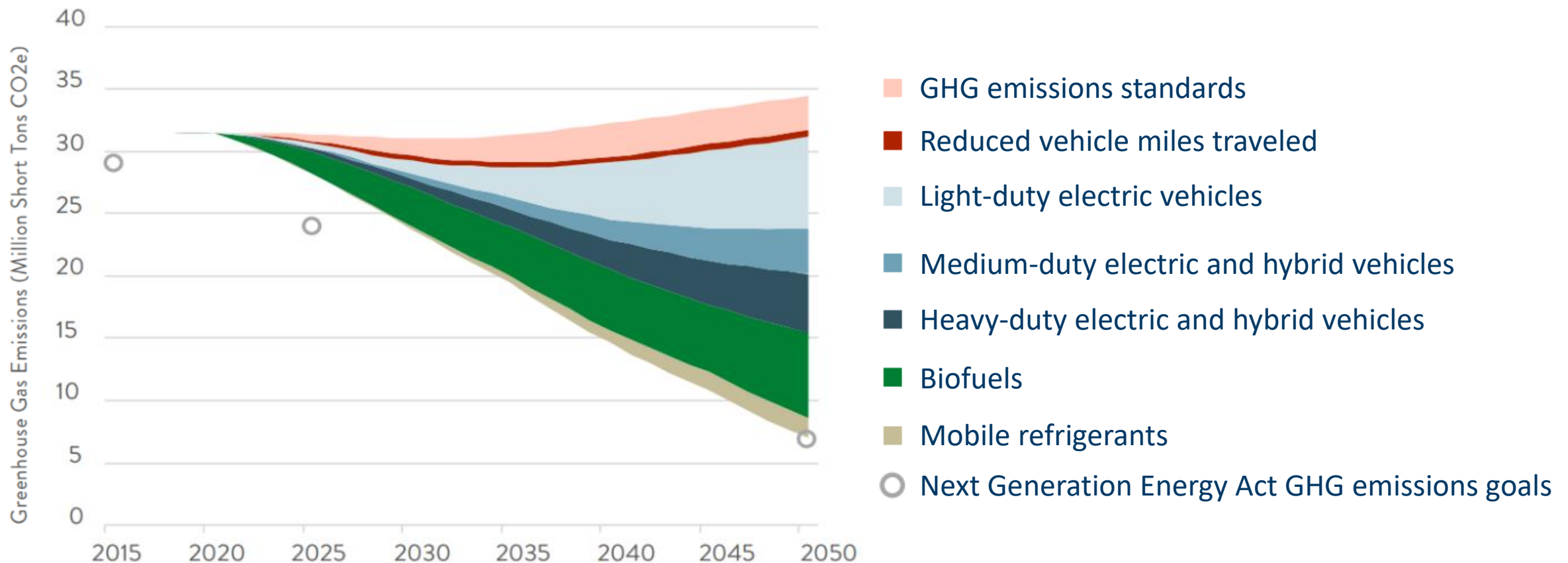


Minnesota Greenhouse Gas Emissions Reduction Measures in Transportation, 80x50 Scenario



Pathways to transportation decarbonization

80% emission reduction by 2050 scenario

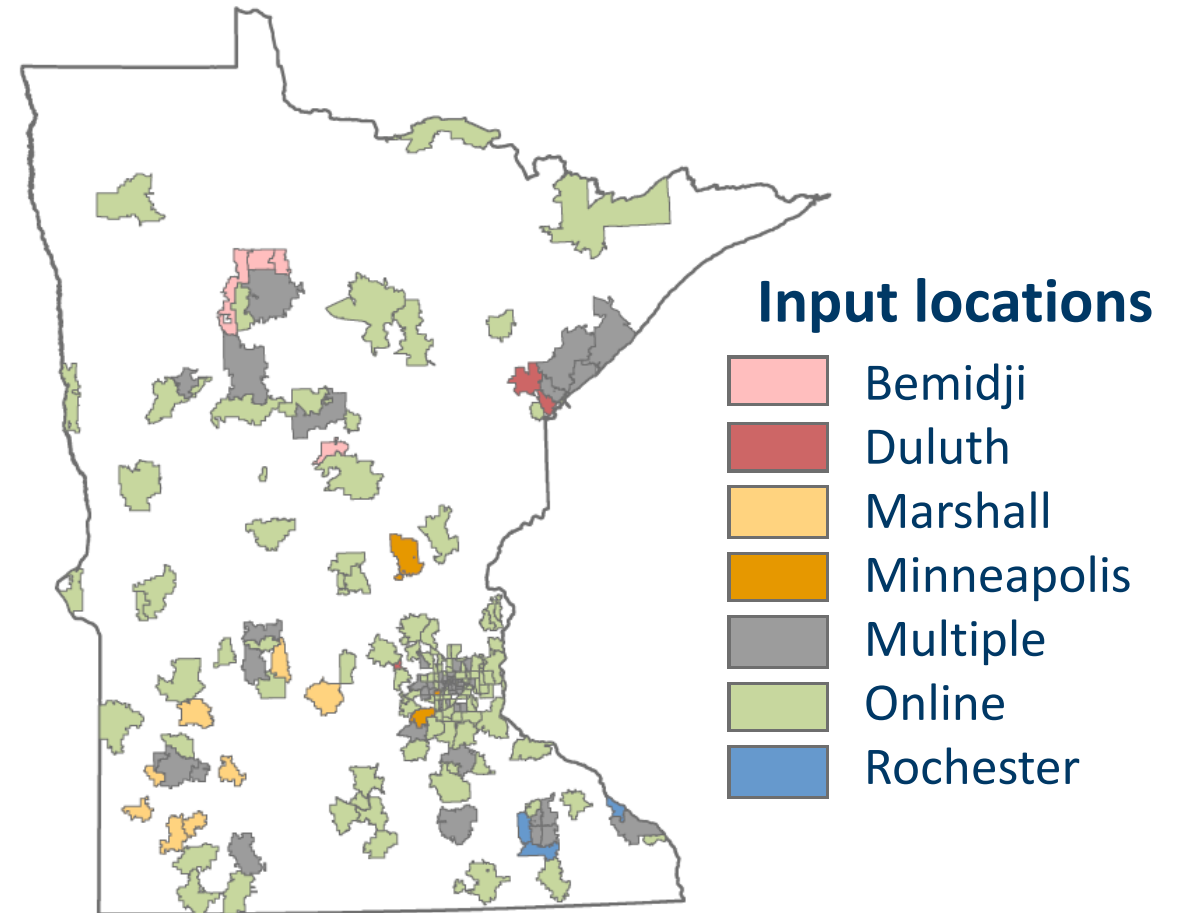


Minnesotans calling for action

Clean transportation future

Very strong support for:

- Require car makers to offer more fuel efficient vehicles in MN
- Fund EV and biofuel infrastructure
- Fund EV incentives
- Require multimodal options in community design



10 public meetings and online survey

1,500 comments and meeting attendees

Find Integrated Solutions

- Sustainable Transportation Advisory Council (STAC)
- Regional Collaboration on EV Corridors

Fund EV Infrastructure

- Clean Transportation Funding Pilot Program

Provide More Transportation Options on Projects

- Analyze GHG emissions on transportation projects

Provide EV Incentives

- MnPass Incentive



I-94 near Albertville

Promote Biofuels to Reduce GHG Emissions and Support Rural Minnesota

- Strengthen petroleum replacement goals
- Expand biofuel infrastructure
- Higher biodiesel blends and renewable diesel
- Reduce the carbon impact of biofuels

Build an EV Market and Provide More EV Options


- Adopt the Clean Car Standards

BUSINESS

Gov. Walz creates Minnesota biofuels council to help ethanol industry

Continuing turmoil has prices at a multiyear low.

By Mike Hughlett Star Tribune | SEPTEMBER 16, 2019 — 8:50PM



JEFF WHEELER - STAR TRIBUNE

Gov. Tim Walz has created a Governor's Biofuel Council to help find ways to boost the ethanol industry.

As Minnesota ethanol producers are being hammered in a weak market, Gov. Tim Walz Monday announced the creation of a biofuels council to help the industry out of its funk.

Walz signed an executive order creating the 15-member Governor's Biofuels Council, which will be made up of representatives from the agriculture, biofuels and transportation industries, as well as from environmental and conservation groups.

The U.S. ethanol industry is being battered by a combination of adverse federal regulatory action — waivers on ethanol use by small oil refineries — and the U.S. trade war with China. Those crimps on demand have come after the industry built out its production capacity over the past few years. Ethanol prices are at multiyear lows.

Ethanol producers, some spilling red ink, have cut back production or idled



Clean Cars Minnesota

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What is Clean Cars Minnesota?

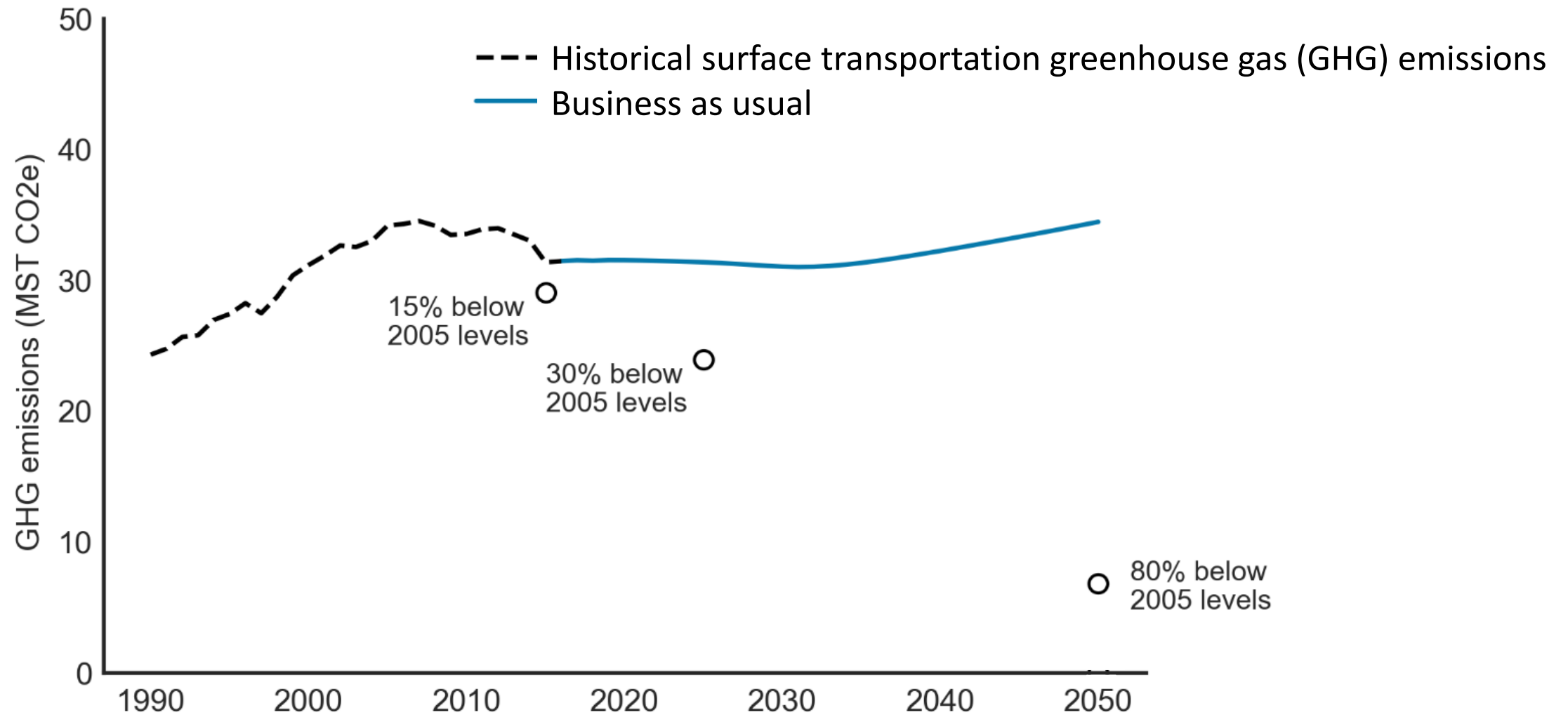
Two standards for passenger vehicles:

- Low-Emission Vehicle (LEV) standard
- Zero-Emission Vehicle (ZEV) standard

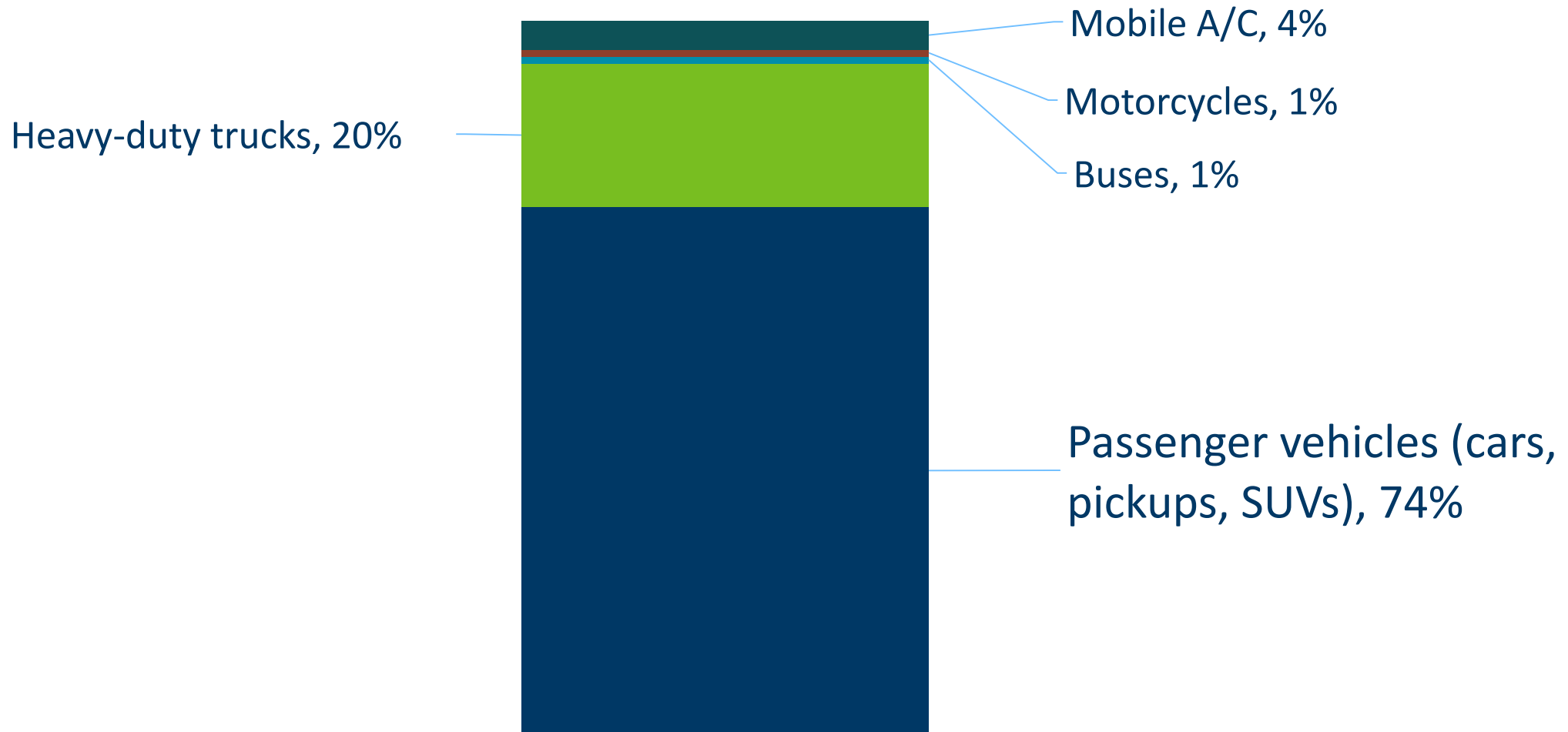
To address two major challenges: climate change and air pollution.



Challenge #1: Climate change



GHG emissions from surface transportation



Challenge #2: Air pollution from vehicles affects human health

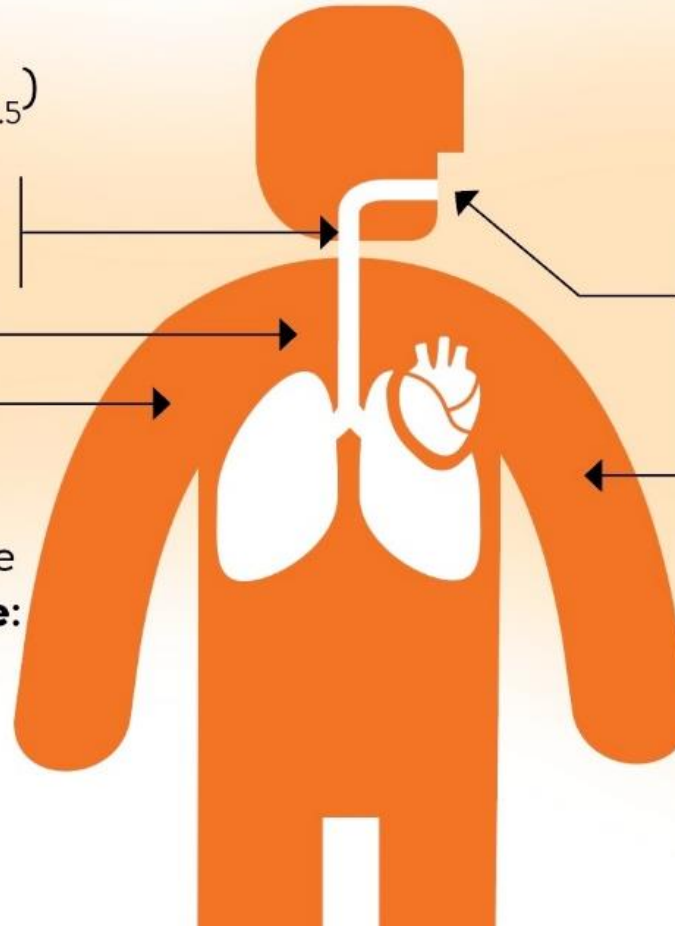
Fine particles and ground-level ozone (often called smog) are widespread pollutants linked to health effects.

Fine particles (PM_{2.5}) pollution can cause:

- Shortness of breath
- Wheezing, coughing
- Chest pain
- Fatigue

Fine particles can make these conditions **worse**:

- Cardiovascular and heart disease
- Asthma and COPD



Ground-level ozone pollution can cause:

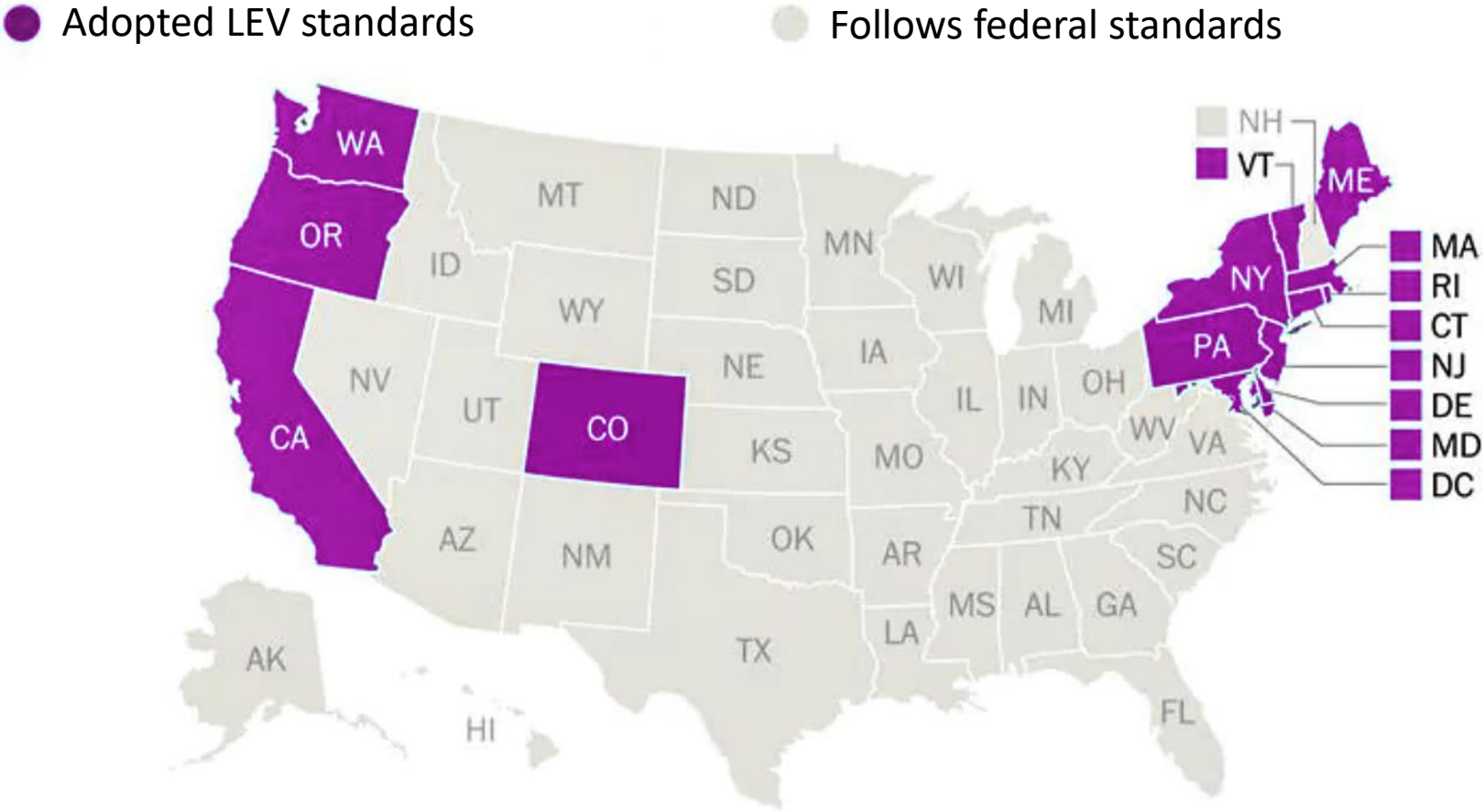
- Difficulty breathing deeply
- Shortness of breath
- Sore throat
- Wheezing, coughing
- Fatigue

Ozone can make these conditions **worse**:

- Asthma and COPD
- Emphysema

Why these standards?

Clean Air Act allows states to do more than the federal government requires, **but all states must adopt the same alternative standards.**



Low-Emission Vehicle (LEV) standard

The LEV standard is a tailpipe emissions standard for auto manufacturers.

- Applies to GHGs and other harmful air pollutants.
- Tailored to the size of the vehicle.
- Does not apply to heavy-duty trucks or off-road equipment.
- Does not put requirements on individuals
- Does not require emissions testing

Why we should adopt the LEV standard now

Current federal standard is the same as the LEV standard, and we want to ensure Minnesotans continue to have access to the cleanest cars available.

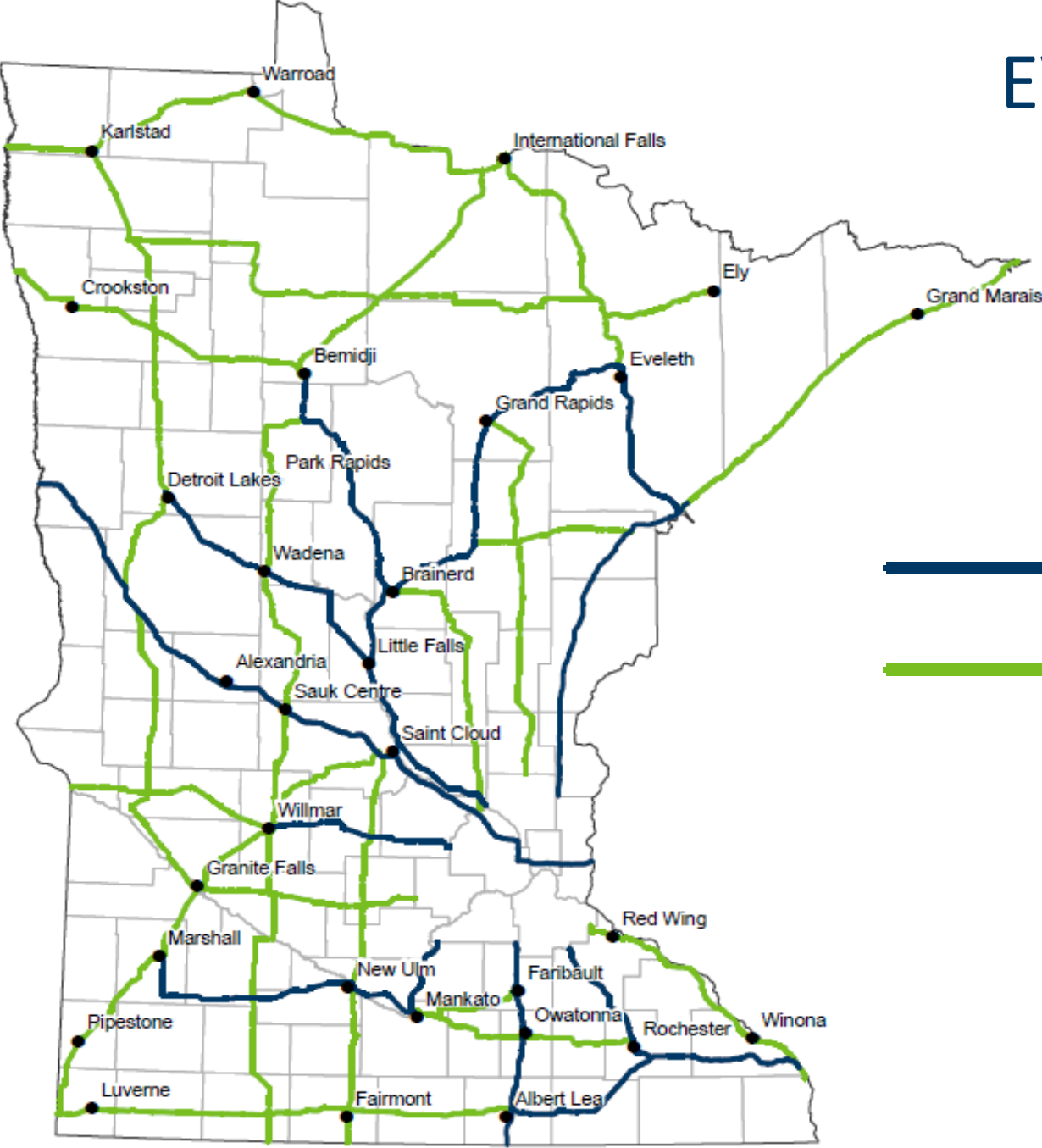


Zero-Emission Vehicle (ZEV) standard

The ZEV standard requires manufacturers to deliver more vehicles with ultra-low or zero tailpipe emissions for sale in Minnesota.

- More electric vehicle (EV) and plug-in hybrid models available here.
- Does not require anyone to purchase an EV.
- Already adopted by 11 states.

EV fast-charging infrastructure across Minnesota



Existing/funded corridor

Proposed corridor

When would the standards start?

Clean Air Act requires two model years between adoption and implementation.

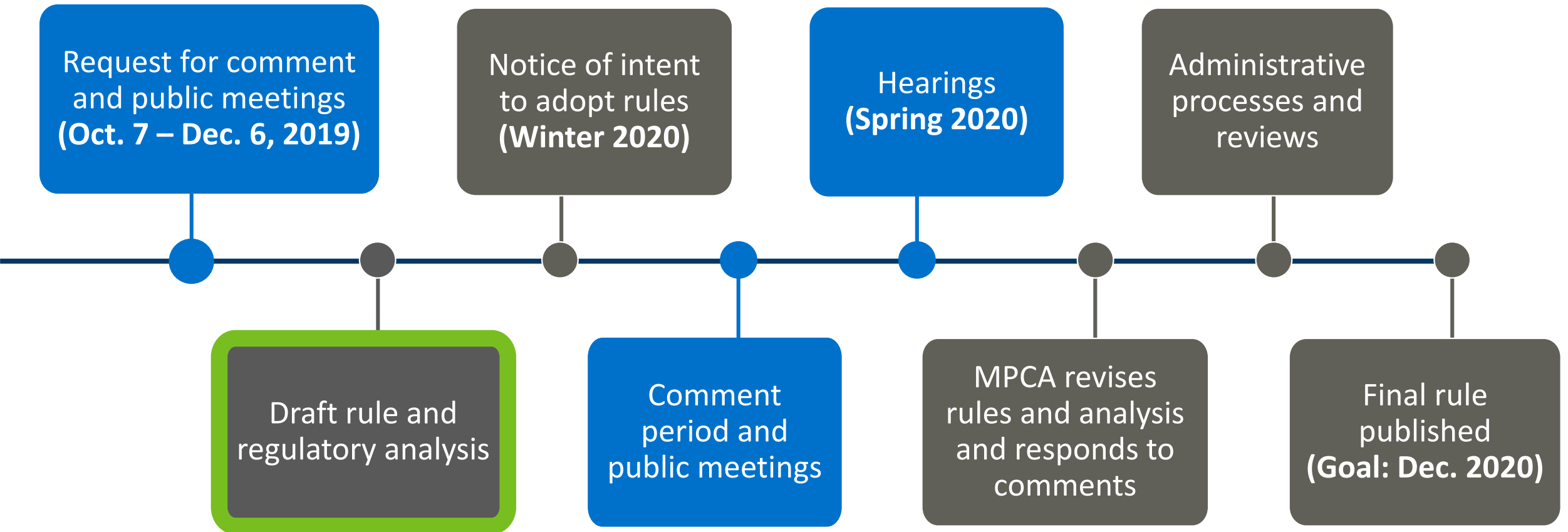


Rulemaking process



- Proposing under MPCA's statutory authority to regulate air pollution (Minn. Stat. 116.07)
- Process involves:
 - Opportunities for public input
 - Analysis of need and reasonableness
- Administrative Law Judge must approve the rule before the agency can adopt it.

Timeline



What we've heard so far

Cleaner air -
especially in
polluted
neighborhoods

It

Addressing
climate
change
I agree! yes!

More
EV
choices/
Availability

Out state
charging
stations. Need
more for non-
Tesla models

Variety of concerns
about effects on
dealers

Equity!

Preference for a
non-regulatory
solution

Clean Cars Minnesota is part of the solution

We need action across many areas and by many groups.



Benefits for Minnesotans



1. Minnesotans will continue to have access to cleaner cars, trucks, and SUVs in the future.
2. More choices for consumers.
3. Reduce air pollution.
4. Important step towards achieving our GHG reduction goals

What questions and input do you have?

Web: mn.gov/cleancars

Email: cleancarsmn.pca@state.mn.us

Pathways report: <http://www.dot.state.mn.us/sustainability/pathways.html>



Thank you

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