DEPARTMENT OF TRANSPORTATION

Minnesota Greenhouse Gas Reduction Legislation Target Setting

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Purpose

- Share and ask for feedback on the approaches and regional scenarios
  - 2 approaches
  - 3 regional scenarios
- Regional priorities activity
- Document your questions and input
- Share next steps and process

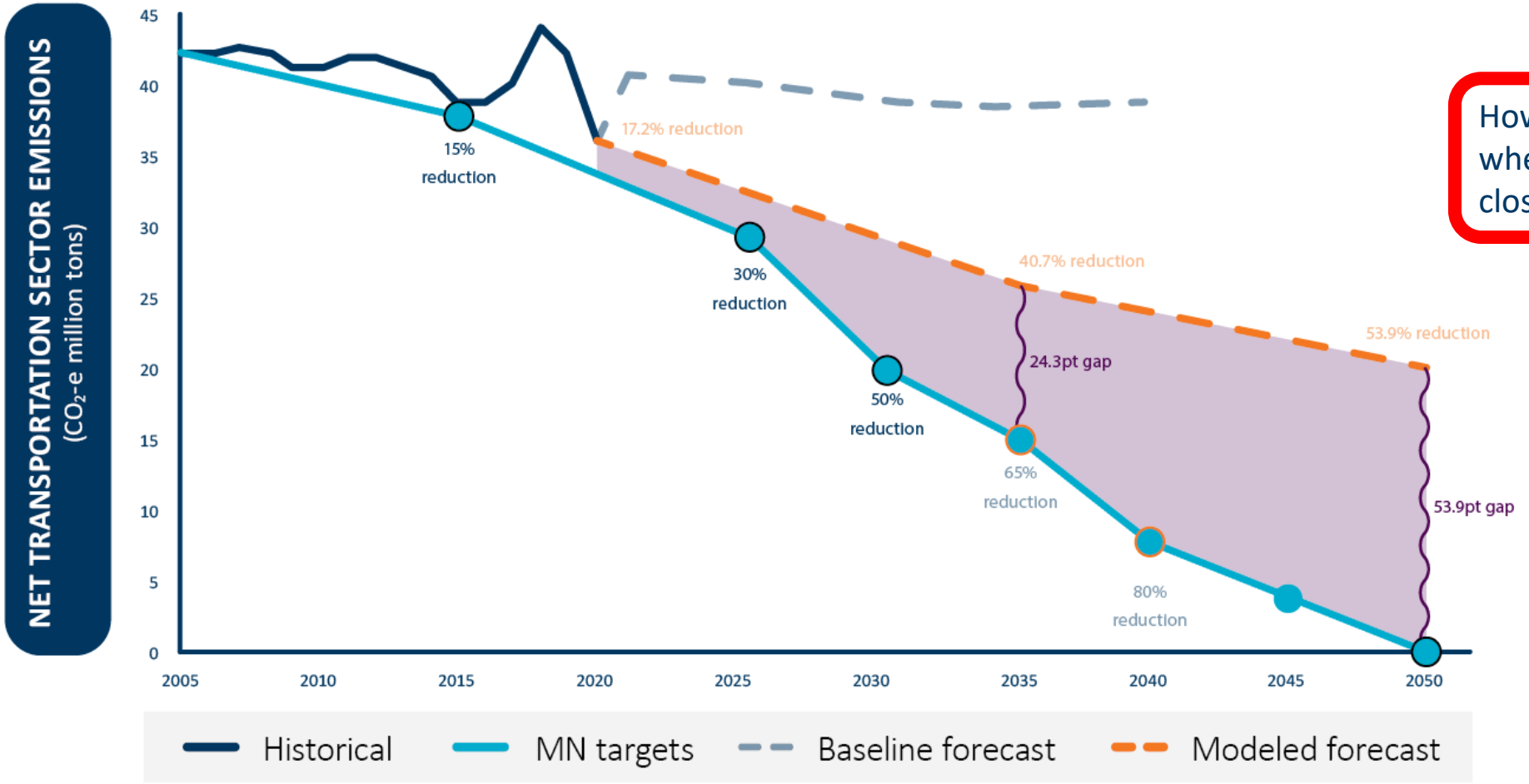
Legislative Background

- Set targets that bridge the gap
- Develop a transportation greenhouse gas emissions impact assessment procedure
- Establish a Technical Advisory Committee (TAC) for the Transportation Impact Assessment

Legislative Background | Target setting requirements

- Provide an allocation to the metropolitan area, as defined in statute as the seven-county metropolitan twin cities area.
- Account for differences in feasibility and extent of emission reductions across forms of land use and across regions of the state
- May include performance targets based on DOT districts, geographic regions, per capita calculations, transportation mode, or any combination.
- Targets must be allocated on a 5-year or more frequent basis.

Target Setting | How do we close the gap?



How, where and when do we close the gap?

NOTE: The 'zero' at the right hand side represents a net value of zero GHG emissions from the transportation sector above those that existed in 2005 (43,557,058 tons), and net of any mitigation efforts that get counted as 'offsets' to GHG emissions.

How do we close the gap? | Approaches

Assign emissions targets for each target year

Per capita

- Based on the number of people in a region

Regional priorities + per capita

- Based on regional priorities (e.g., transit, alt fuels, safety, access, health) combined with the number of people in a region

Where do we close the gap? | Regional scenarios

Scenario 1

Metropolitan Council's 7-county metro area
(statute defined)

Greater Minnesota
(everywhere outside the metro area)

Scenario 2

Metropolitan Council's 7-county metro area
(statute defined)

Greater Minnesota Metropolitan Planning Organizations
(7 urbanized areas)

Greater Minnesota rural areas
(everywhere outside the metro area and 7 MPO urbanized areas)

Scenario 3

Metropolitan Council's 7-county metro area
(statute defined)

Greater Minnesota Metropolitan Planning Organizations
(7 urbanized areas)

Greater Minnesota Area Transportation Partnerships
(8)

How do we close the gap? | Approaches

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Regional priorities + per capita

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Per Capita | Regional scenario 3 (2035)

Minnesota – Population: 6,093,579

Target: 15,245,000 CO_2e

Forecasted emissions: 23,665,000 CO_2e

Per capita gap: 1.38 CO_2e

Gap: 8,420,000 CO_2e

Region	% of Population (forecasted)	Gap responsible for
Met Council	55.2%	4,642,000
APO	5.3%	446,000
MIC	4.1%	345,000
MAPO	2.0%	168,000
LAPC	0.3%	25,000
ROCOG	4.2%	354,000
GFEGF MPO	0.5%	40,000
Metro COG	1.2%	101,000

Region	% of Population (forecasted)	Gap responsible for
ATP1	1.7%	143,000
ATP2	2.3%	194,000
ATP3	7.8%	657,000
ATP4	3.5%	295,000
ATP - Metro	1.0%	84,000
ATP6	4.7%	396,000
ATP7	3.4%	286,000
ATP8	2.9%	244,000

Per Capita | Regional scenario 3 (2050)

Minnesota – Population: 6,416,283

Target: 0 CO_2e

Forecasted emissions: 16,017,000 CO_2e

Per capita gap: 2.5 CO_2e

Gap: 16,017,000 CO_2e

Region	% of Population (forecasted)	Gap responsible for
Met Council	56.9%	9,106,000
APO	5.8%	930,000
MIC	3.8%	605,000
MAPO	2.0%	320,000
LAPC	0.3%	45,000
ROCOG	4.3%	690,000
GFEGF MPO	0.4%	65,000
Metro COG	1.3%	210,000

Region	% of Population (forecasted)	Gap responsible for
ATP1	1.5%	240,000
ATP2	2.2%	352,000
ATP3	7.4%	1,185,000
ATP4	3.3%	525,000
ATP - Metro	1.0%	160,000
ATP6	4.4%	704,000
ATP7	3.0%	480,000
ATP8	2.5%	400,000

How do we close the gap? | Approaches

Assign emissions targets for each target year

Per capita

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Regional priorities + per capita

- Based on regional priorities (e.g., transit, alt fuels, safety, access, health) combined with the number of people in a region

Regional priorities | Geographies

- Statewide
  - Values only available at a statewide level (e.g., one value)
- MPO
  - Values available for the eight MPO's urbanized areas and Greater Minnesota (e.g., nine values total)
- County
  - Values available for each of the 87 Minnesota counties

Regional priorities | Values

- Values
  - Continuous
  - 0% to 100%
- Type of values
  - Number
  - Percentage

Regional priorities | Levers

- **Transportation Options**
  - Expand miles of transit service
  - Shift short trips to active transportation
  - Increase density of walkable intersections in community
  - Reduce lane miles of freeways and arterials
- **Land use**
  - Reduce parking spaces
  - Charge fee for parking
  - Increase options for mixed-use living
  - Flexible options for increased HH size
  - Increase options for multifamily housing
  - Expand urban area
  - Plan for connected rural growth

- **Fuels**
  - Reduce carbon-based transit fuels
  - Increase zero-emission or electric vehicle adoption:
    - Transit
    - Car service
    - Heavy truck
    - Commercial
  - Increase charging availability at-home
  - Reduce the number of older HH and commercial vehicles
  - Increase electric vehicle sales for HH use

- **Other strategies**
  - Increase prices of fuel and power
  - Implement vehicle ownership taxes
  - Increase pay-as-you-drive (PAYD) insurance
  - Implement vehicle use taxes
  - Charge per mile of vehicle travel (congestion charges)
  - Deploy traffic operations strategies
  - Increase Travel Demand Management (TDM) strategies (e.g., commuter programs, telecommuting)
  - Reduce fuel carbon intensity

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  - ~~Implement vehicle ownership taxes~~
  - ~~Increase pay-as-you-drive (PAYD) insurance~~
  - ~~Implement vehicle use taxes~~
  - ~~Charge per mile of vehicle travel (congestion charges)~~
  - Deploy traffic operations strategies
  - Increase Travel Demand Management (TDM) strategies (e.g., commuter programs, telecommuting)
  - ~~Reduce fuel carbon intensity~~

Levers crossed out are only able to be impacted by statewide decision-making.

Regional priorities | Levers

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    - Heavy truck
    - Commercial service
  - Increase charging availability at-home
  - Increase electric vehicle sales for HH use
- **Other strategies**
  - Deploy traffic operations strategies
  - Increase Travel Demand Management (TDM) strategies (e.g., commuter programs, telecommuting)

Levers are able to be impacted by local and regional decision-making.

Regional priorities | Questions

When you look at these levers…

- Which do you feel are the easiest to increase and advance?
- Which do you feel is the hardest to advance?
- Which do you feel will reduce the most greenhouse gas emissions?
- Which are the highest priority for your region?

Regional priorities | Levers and influence

Increase charging availability at-home

Increase Travel Demand Management (TDM) strategies (e.g., commuter programs, telecommuting)

Reduce lane miles of freeways and arterials

Increase density of walkable intersections in community

Deploy traffic operations strategies

Shift short trips to active transportation

Reduce parking spaces

Flexible options for increased HH size

Expand urban area

Reduce carbon-based transit fuels

Expand miles of transit service

Charge fee for parking

Increase zero-emission or electric vehicle adoption for transit vehicles

Increase options for mixed-use living

Increase options for multifamily housing

Plan for connected, rural growth

Increase zero-emission or electric vehicle adoption for commercial service

Increase zero-emission or electric vehicle adoption for heavy truck vehicles

Increase zero-emission or electric vehicle adoption for Car service (e.g., Uber, Lyft, Taxis)

Increase electric vehicle sales for HH use

Low emissions reduction

Significant emissions reduction

Legend: Fuels | Connected Growth | Transportation Options | Other Levers

Regional priorities | Levers and influence

Increase charging availability at-home

Increase Travel Demand Management (TDM) strategies (e.g., commuter programs, telecommuting)

Reduce lane miles of freeways and arterials

Increase density of walkable intersections in community

Deploy traffic operations strategies

Shift short trips to active transportation

Reduce parking spaces

Flexible options for increased HH size

Expand urban area

Reduce carbon-based transit fuels

Expand miles of transit service

Charge fee for parking

Increase zero-emission or electric vehicle adoption for Transit

Increase options for mixed-use living

Increase options for multifamily housing

Plan for connected, rural growth

Increase zero-emission or electric vehicle adoption for Commercial

Increase zero-emission or electric vehicle adoption for Heavy truck

Increase zero-emission or electric vehicle adoption for Car service (e.g., Uber, Lyft, Taxis)

Increase electric vehicle sales for HH use

Low emissions reduction

Significant emissions reduction

Combining levers produces exponentially lower GHG numbers than any one lever on its own

Legend: Fuels | Connected Growth | Transportation Options | Other Levers

Regional priorities | Levers and influence

What are the priority levers for the 7-county geographic area regardless of who implements them?

Select the top 5 levers in menti based on your understanding of your Policy Board priorities, Technical Committee priorities, City and County priorities, and public priorities.

menti.com: **9358 0685**

Regional priorities | Regional scenario 3 (2035)

Minnesota – Population: 6,093,579

Target: 15,245,000 CO_2e

Forecasted emissions: 23,665,000 CO_2e

Per capita gap: 1.38 CO_2e

Gap: 8,420,000 CO_2e
6,000,000 CO_2e
2,420,000 CO_2e

Region	% of Population (forecasted)	Emissions from regional priorities	Remaining emissions per capita	Total emissions	% of total gap of emissions
Met Council	55.2%	3,000,000	1,335,000	4,335,000	51.5%
APO	5.3%				
MIC	4.1%				
MAPO	2.0%				
LAPC	0.3%				
ROCOG	4.2%				
GFEGF MPO	0.5%				
Metro COG	1.2%				

Region	% of Population (forecasted)	Emissions from regional priorities	Remaining emissions per capita	Total emissions	% of total gap of emissions
ATP1	1.7%				
ATP2	2.3%				
[illegible]	7.[illegible]				
AT[illegible]	[illegible]				
TP - [illegible]etro	1.0%				
ATP6	4.7%				
ATP7	3.4%				
ATP8	2.9%				

EXAMPLE

Closing the gap

- Requires us to **rethink project prioritization** in order to reduce emissions
- Must consider how we encourage and implement **greater accountability** for emissions reduction
- Emissions reduction **enhances the work** we are already doing

Closing the gap | Next steps

- Reporting the results of the modeling and comparing the approaches
- Gather input on the approaches from MPOs and ATPs
- Commissioner of Transportation sets the targets
- Working together to implement emissions-reducing policies and projects

Questions/Thoughts

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GHG Reduction Legislation
dot.state.mn.us/sustainability/ghg-legislation.html