



**Maryland**  
Department of  
the Environment

# The Transportation and Climate Initiative

Mitigation Work Group

January 21, 2020

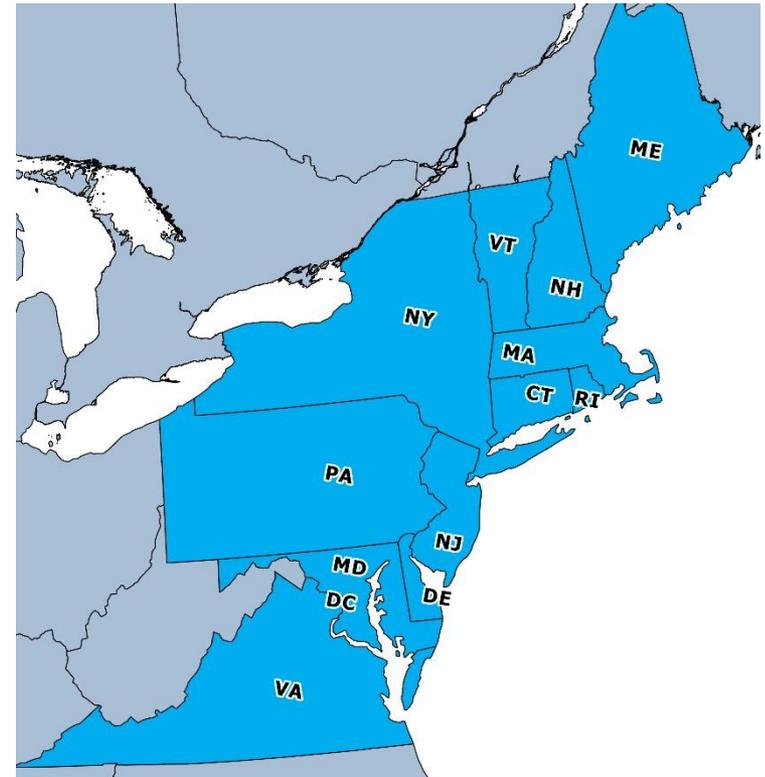


# TCI

- Collaboration among 13 jurisdictions.
- Developing potential regional clean transportation policy
- Modeled on successful Regional Greenhouse Gas Initiative (RGGI)
  - “Cap-and-Invest”



**TRANSPORTATION &  
CLIMATE INITIATIVE**  
Of the Northeast and Mid-Atlantic States





# What is “Cap and Invest”?

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1. Require pollution sources to turn in **allowances** for CO<sub>2</sub> emissions.
2. Only issue a limited number of allowances.
3. Let sources trade allowances.
4. Invest proceeds from allowance auctions into energy programs.

“Cap and Trade”

“Cap and Invest”

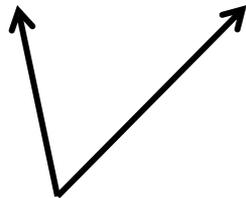


# How would a CO2 Cap work in TCI?

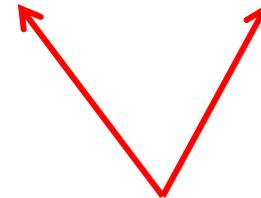




# How would a CO2 Cap work in TCI?



Fuel wholesalers would comply with a regulation by holding enough allowances to cover the CO<sub>2</sub> from combustion of fuel sold (sometimes distributors, too).

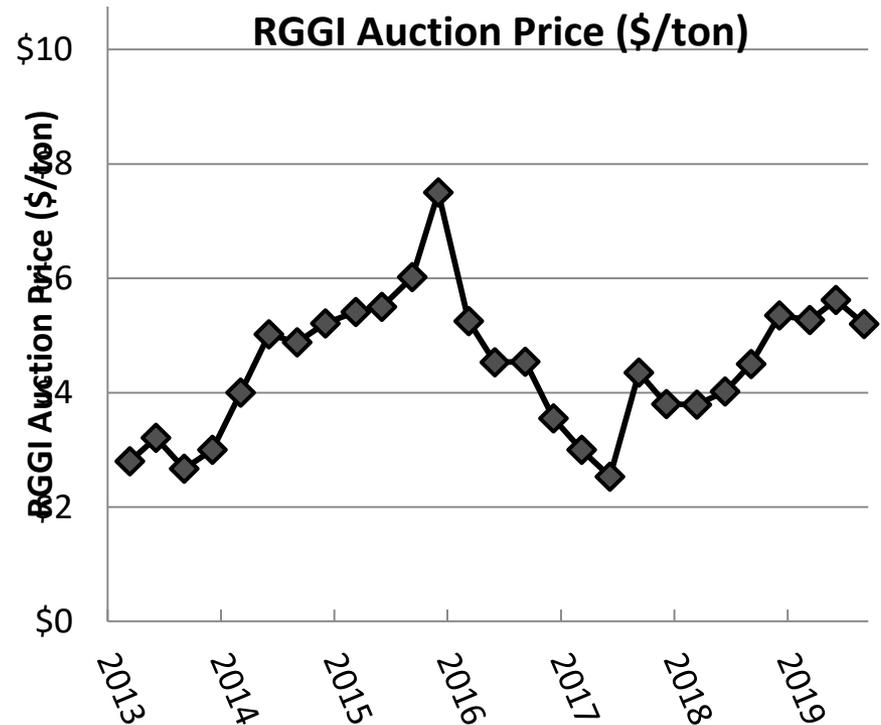


Gas stations and consumers would not have any regulatory obligation.



# How would the cap raise funds for investment?

- States would make allowances available to fuel companies through auctions.
- Proceeds from these auctions would come back to the states, to invest in clean transportation.



Example: RGGI auction price history.



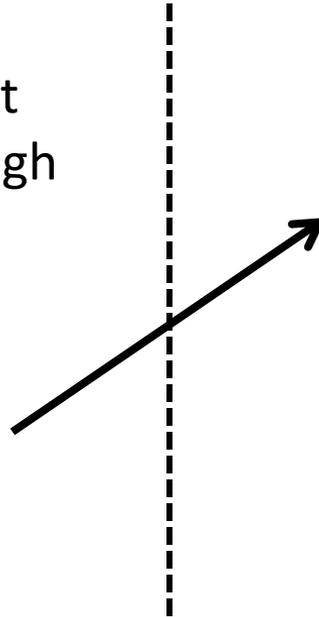
# How might Cap and Invest Achieve our Clean Transportation Needs?

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## CAP

- Reduces CO2 emissions that cause climate change through declining pollution cap
- Creates proceeds for state investments

## Investments



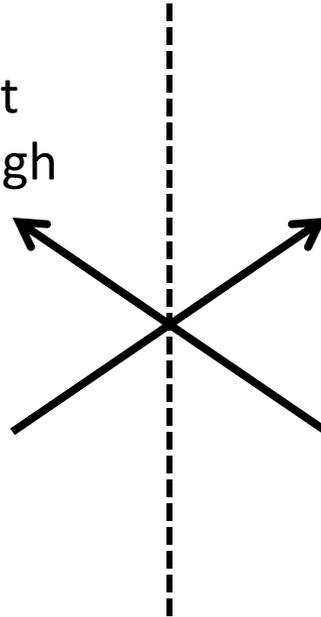


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## Investments

- Expand and improve clean transportation options in communities
- Reduce CO2 emissions that cause climate change through clean transportation projects



# How might Cap and Invest Achieve our Clean Transportation Needs?

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## Investments

- Expand and improve clean transportation options in communities
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Together: Better climate, stronger economy, healthy air and communities



## Current Status

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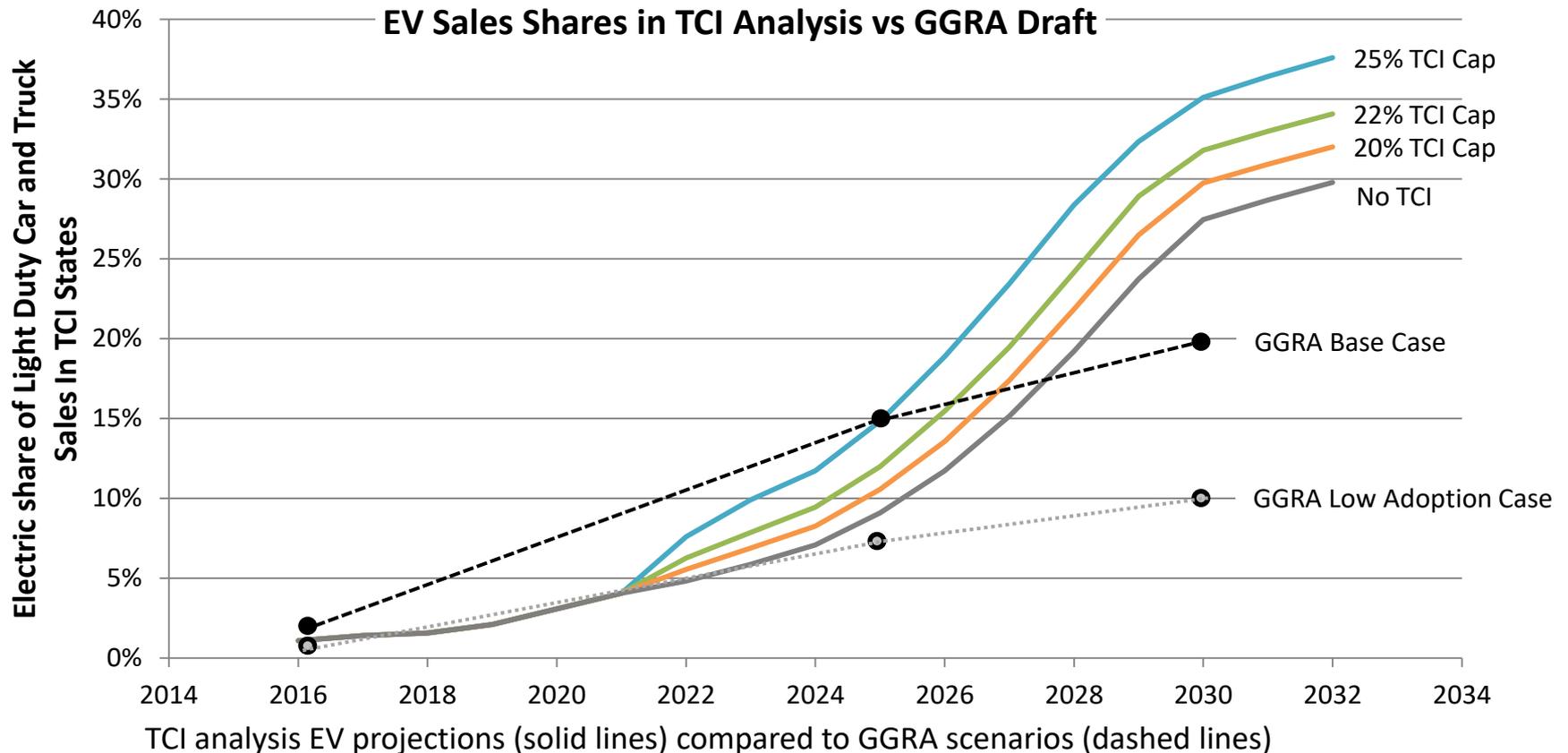
- Released draft Memorandum of Understanding for comment (due Feb 28)
- Evaluated benefits from several program options

[transportationandclimate.org](http://transportationandclimate.org)



# TCI and the GGRA Draft Plan

- The draft plan points to TCI as a potential program to enable transportation measures (esp. EVs)
- TCI has provided sophisticated analysis on EVs, which we can incorporate into the final plan

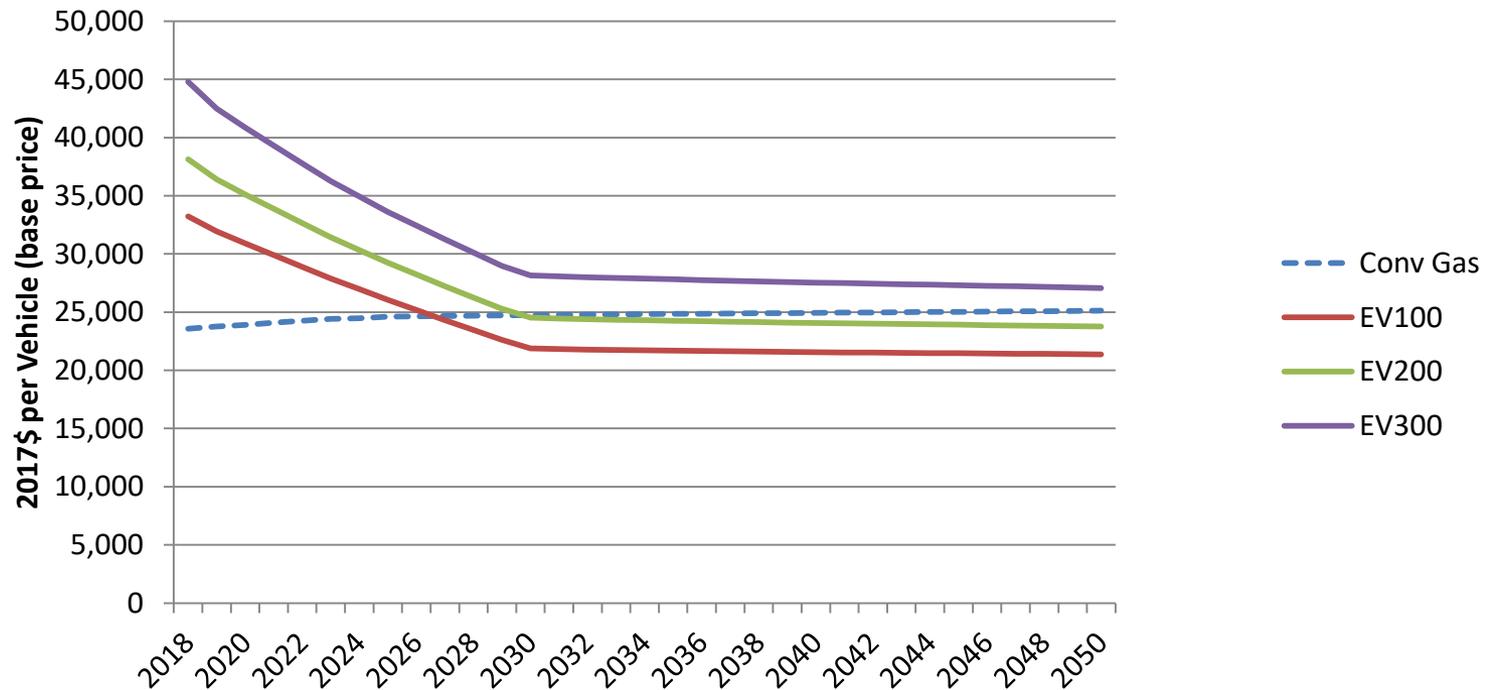




# Other Assumption Updates

- We can also incorporate the TCI analysis EV cost projections into the final GGRA plan.

Mid-Size Car Purchase Price by Fuel Type



TCI analysis EV costs (solid lines) versus convention gasoline (dashed).  
Base price, not average purchase price.



# Excerpts from Regional Analysis

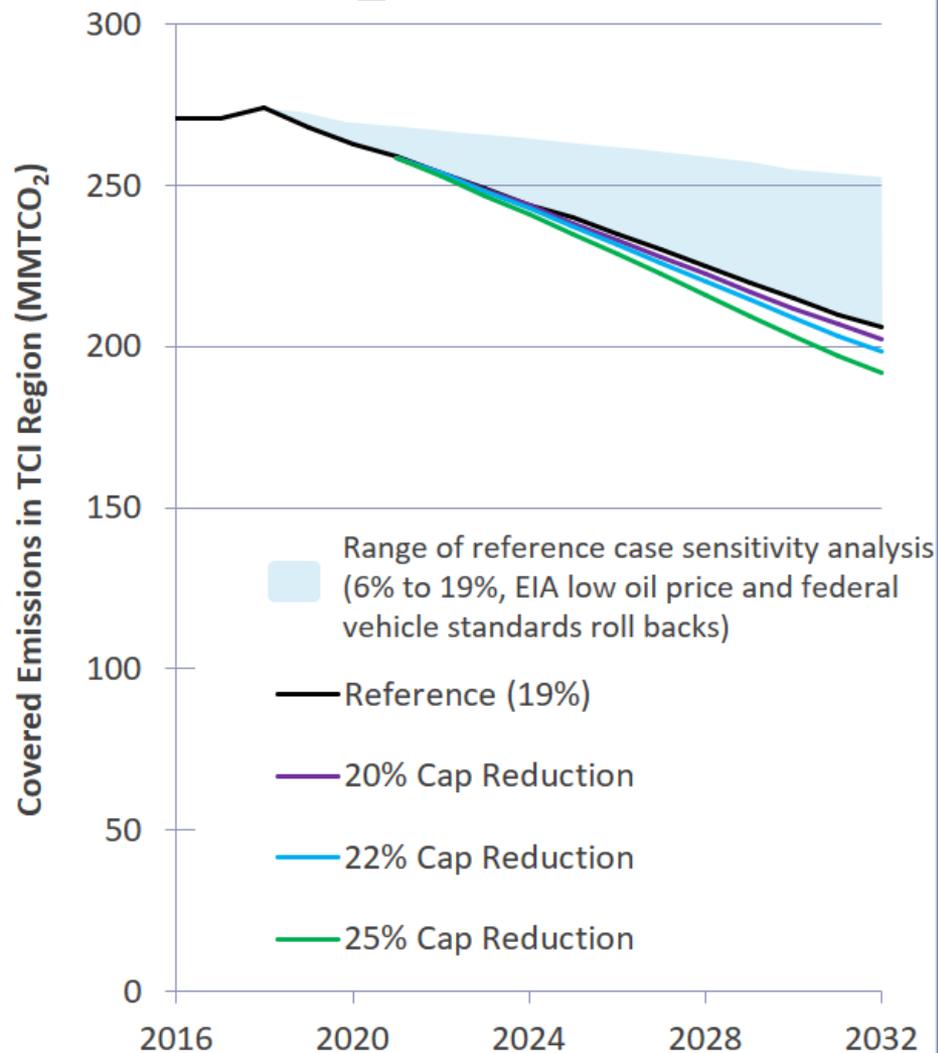
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Full results and webinar recording at:

[TransportationAndClimate.org](https://TransportationAndClimate.org)

# Emissions Cap Scenarios Results: Projected Transportation CO<sub>2</sub> Emissions

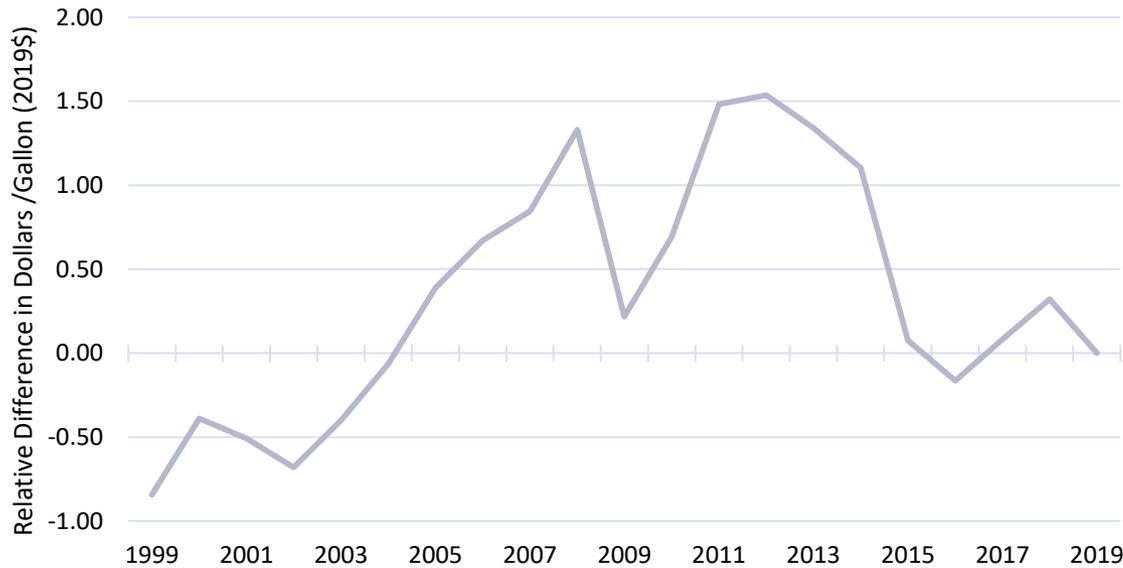
- A declining emissions cap could lock in decreases in carbon dioxide emissions that are expected through 2032 and drive additional reductions.
- In policy cases, emissions decline by roughly the levels prescribed by each cap from 2022 to 2032
  - Emissions decline slightly less in the later years, because of allowance banking



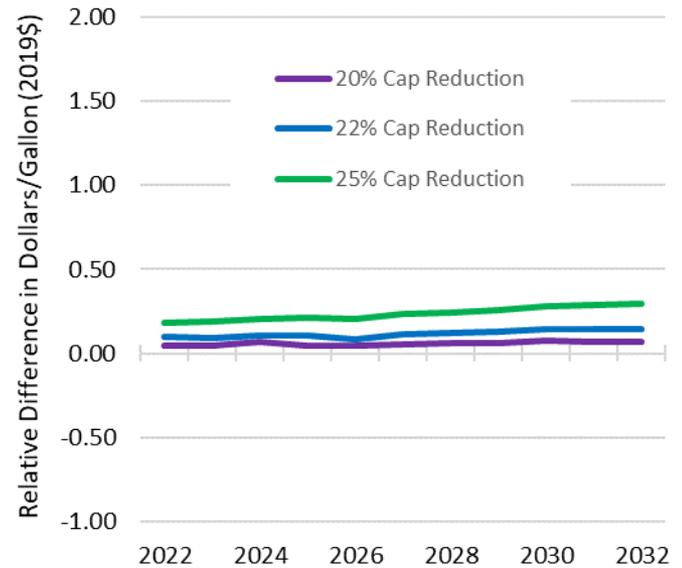
# Modeled Gasoline Prices in Policy Scenarios

## *Compared with historical variations*

Historical Variation in Gasoline Prices Relative to 2019 Price



Projected Change in Gasoline Prices Relative to Reference Case\*



\*If fuel companies decide to pass on allowance costs it could mean an incremental price increase in 2022 of \$0.05, \$0.09 or \$0.17 / gallon in the 20%, 22% and 25% Cap Reduction Scenarios, respectively. This is not a prediction of gasoline prices in the future. Several factors affect future gas prices, including policy and market forces.

# Clean Transportation Investments to Reduce Pollution in Modeled TCI Scenarios

- **Electric Transit Buses:**  
Up to 44,000 transit buses by 2032.
- **Bus service and transit Improvements:**  
Up to \$1.1 billion annually
- **Electric school buses:**  
Up to 42,000 by 2032.
- **Electric Trucks:**  
Up to 84,000 by 2032.
- **Bike Lanes & Sidewalks:**  
Up to \$5.6 billion region-wide through 2032

(Regional totals)



# Preliminary Public Health Benefits



- Fewer asthma symptoms
- Fewer premature deaths
- Fewer traffic-related injuries
- Total estimated public health benefits in 2032:  
**\$3.2 billion to \$10.5 billion**

# Avoided Climate Impacts



\$249 million – \$892 million in avoided climate impacts in 2032

# Conclusions from Macroeconomic Modeling

- Program has a positive impact on the economy.
- GDP, income, and jobs are projected to be greater than business as usual in 2032 and substantially net positive over the 2022-2040 timeframe.
- Significant progress towards achieving climate goals by reducing GHG and other pollution from transportation at modest cost and net benefit to the economy

Economic Indicators in 2032	20% Cap Reduction	22% Cap Reduction	25% Cap Reduction
Increase in GDP growth, from Reference Case	\$0.7B (0.01%)	\$1.4B (0.03%)	\$2.9B (0.05%)
Increase in DPI growth, from Reference Case	\$0.5B (0.01%)	\$0.9B (0.02%)	\$1.9B (0.04%)
Increase in Jobs, from Reference Case	1,900 (0.004%)	3,982 (0.001%)	8,900 (0.02%)

# Emissions Cap Scenarios Results: CO<sub>2</sub> Allowance Prices & Program Proceeds

- Initial annual proceeds range from \$1.4 billion at start in the 20% case up to \$5.6 billion in the 25% case.
- Allowance prices reflect the combined effect of the cap and the investments
- More stringent caps result in greater proceeds for investments.

