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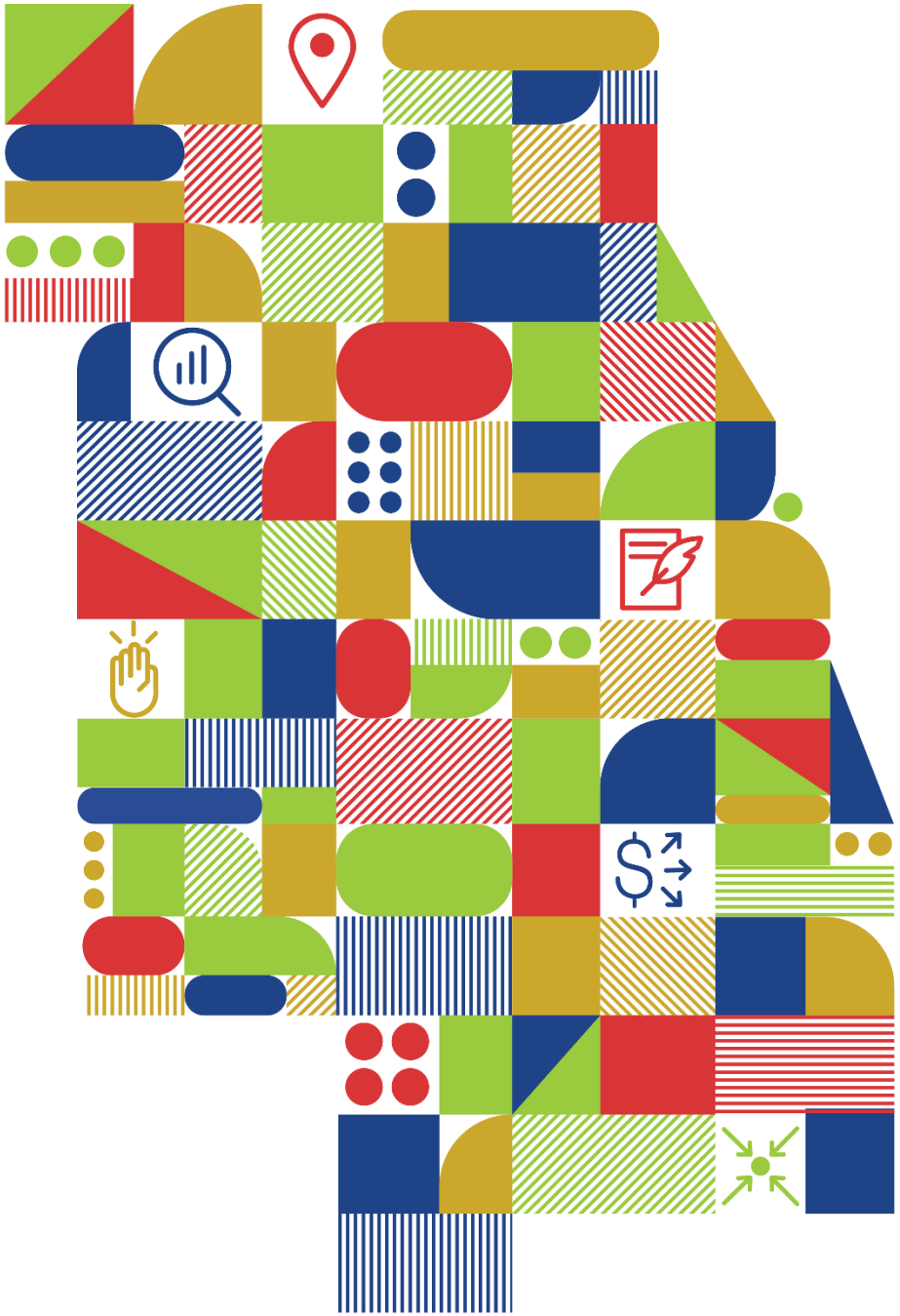
Transportation GHG Reduction Strategies



September 24, 2021

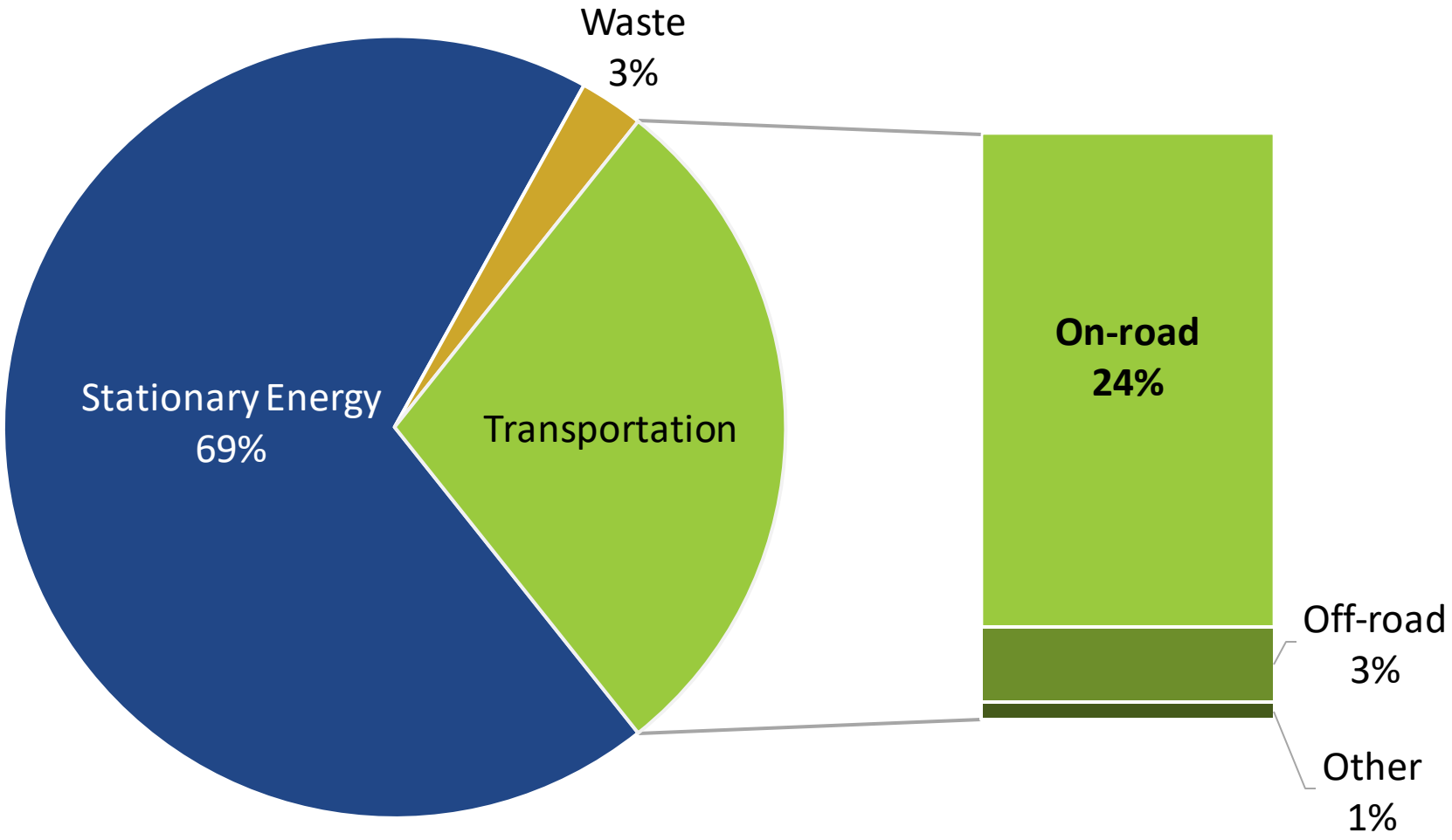
Martin Menninger

FFY22 Climate Focus Area Work Plan

1. Regional climate planning and coordination
2. Transportation GHG reduction strategies
3. Local climate action and capacity building
4. Climate data and information
5. GHG reporting and performance monitoring
6. Electric vehicle infrastructure strategy
7. Regional greenhouse gas inventory
8. Regional transportation vulnerability assessment

On-road emissions are nearly one-quarter of all emissions

2015 Greenhouse Gas Inventory. Total Emissions = 119.13 MMTCO2e.



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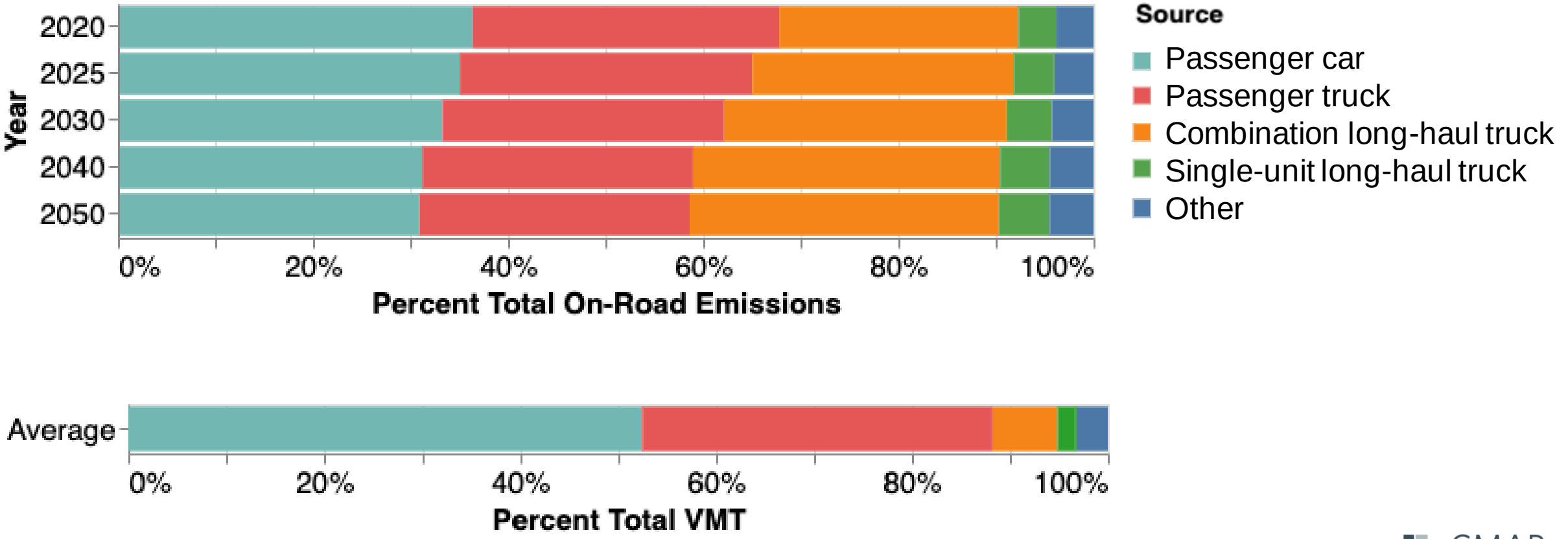
Majority of emissions from Passenger Cars, Passenger Trucks, and Combination Long-haul Trucks

Percent Total Emissions by Year by Source Type for Spring 2020 Conformity Run

Majority of VMT is from Passenger Cars and Trucks (bottom)



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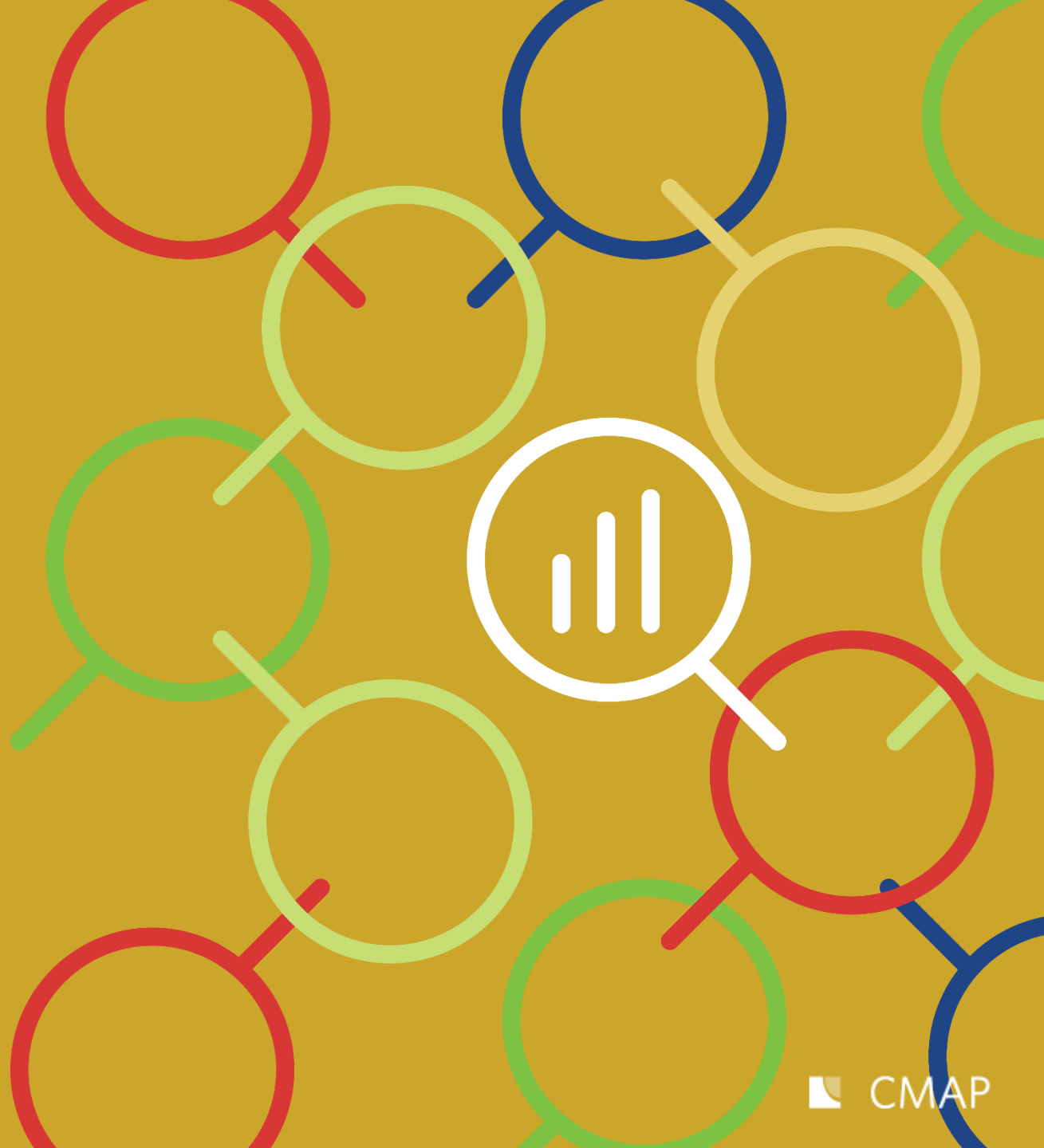
Transportation Mitigation – strategies to reduce GHG



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Scenarios

Travel Behavior and Infrastructure

Improve system efficiency

- Highway RSPs
- Congestion reduction technologies

Reduce demand

- Increase work from home
- Driving cost
  - Price parking
  - Tolling/ congestion pricing
  - VMT or GHG tax

Mode shift

- Transit RSPs
- Increase transit use
- Increase active transportation

Vehicle Fuel and Technology

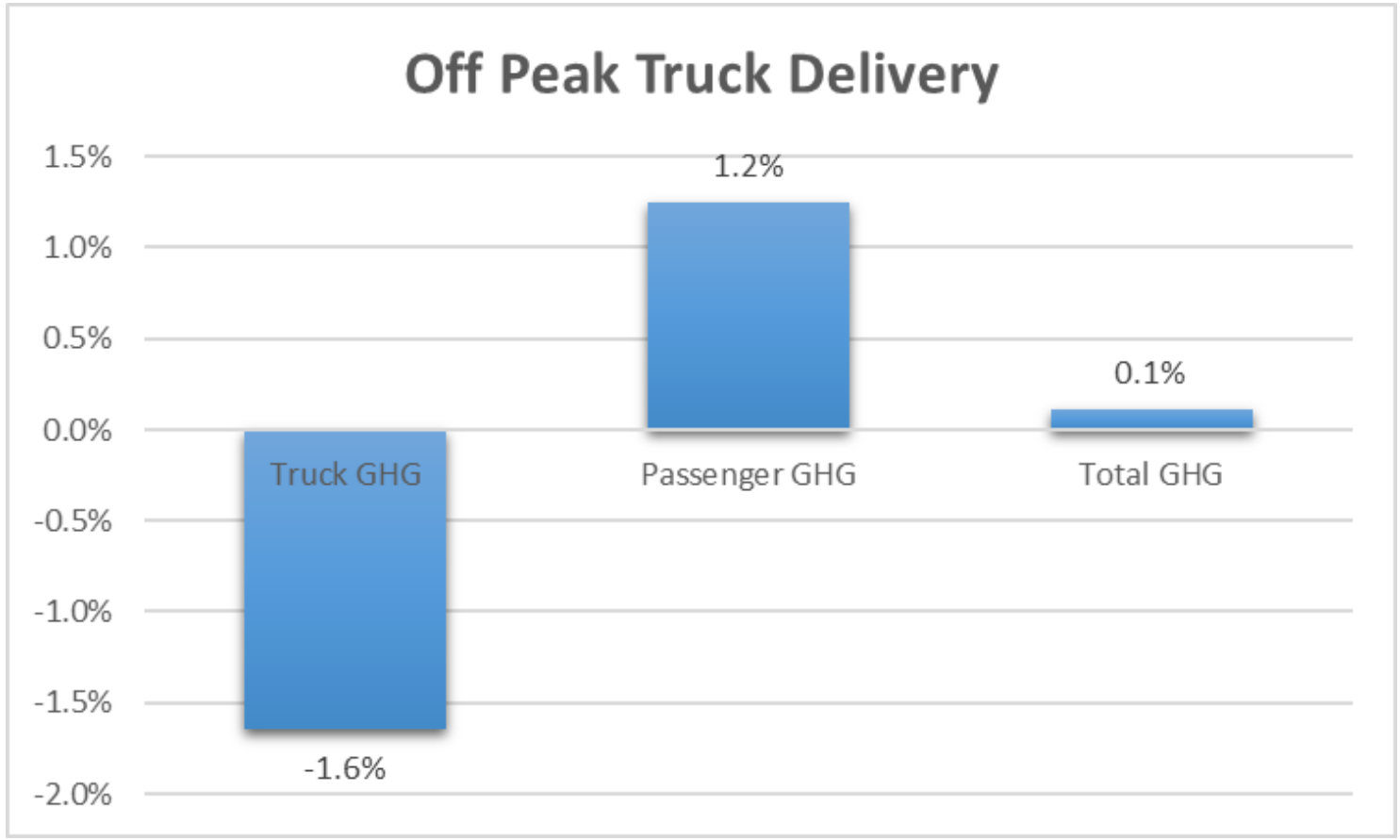
- More efficient vehicles (CAFE standards, smaller cars)
- Electrify cars
- Electrify freight
- Electrify transit
- Other alternative fuels

Future Analysis / Out of Scope

- Land use
- Air / Marine
- Electricity source
- Manufacturing / materials

Findings

Induced demand limits the GHG benefits of many scenarios



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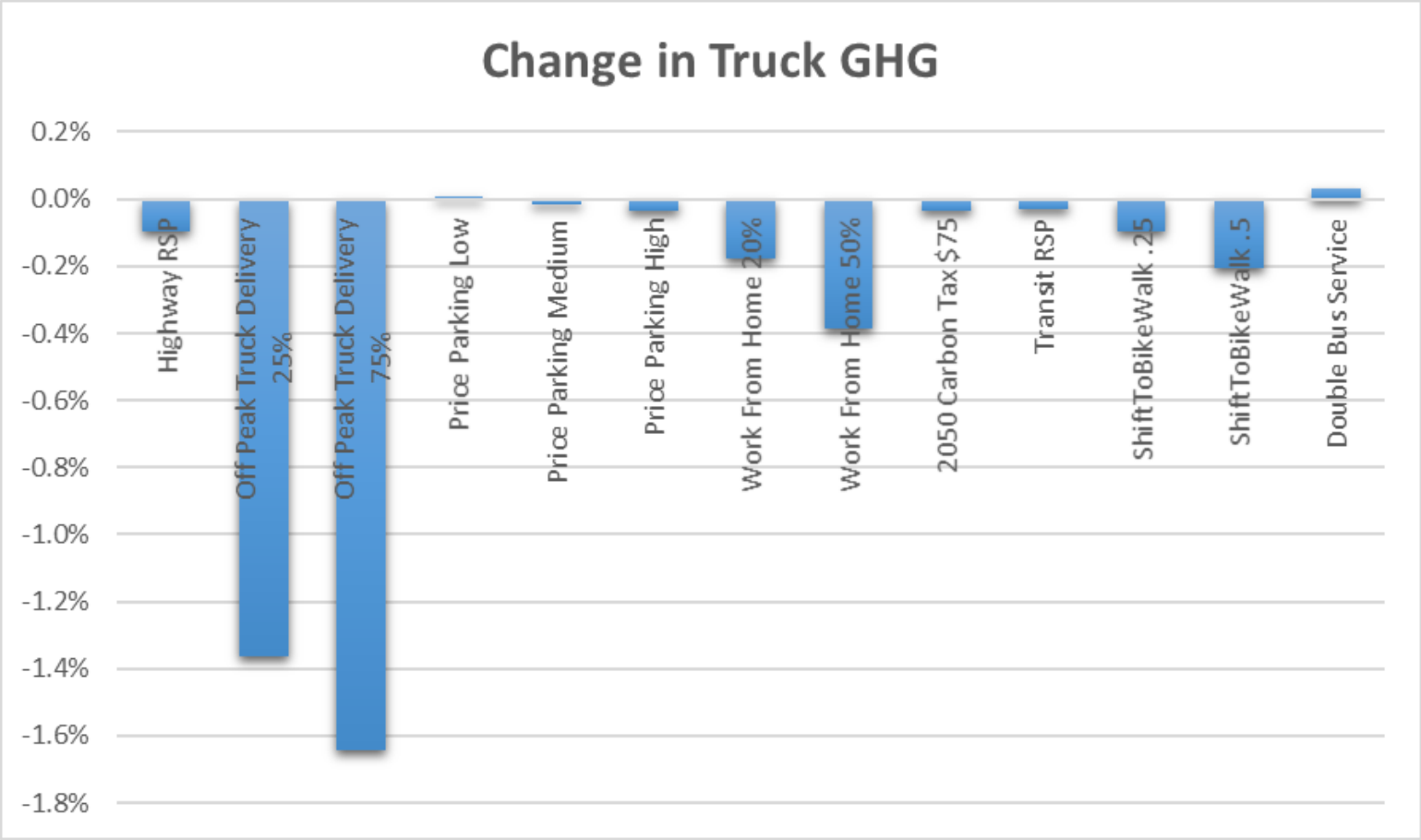
Findings

Freight emissions not currently responsive to many policy behavior levers in model

- Freight accounts for 30-40% of transportation emission



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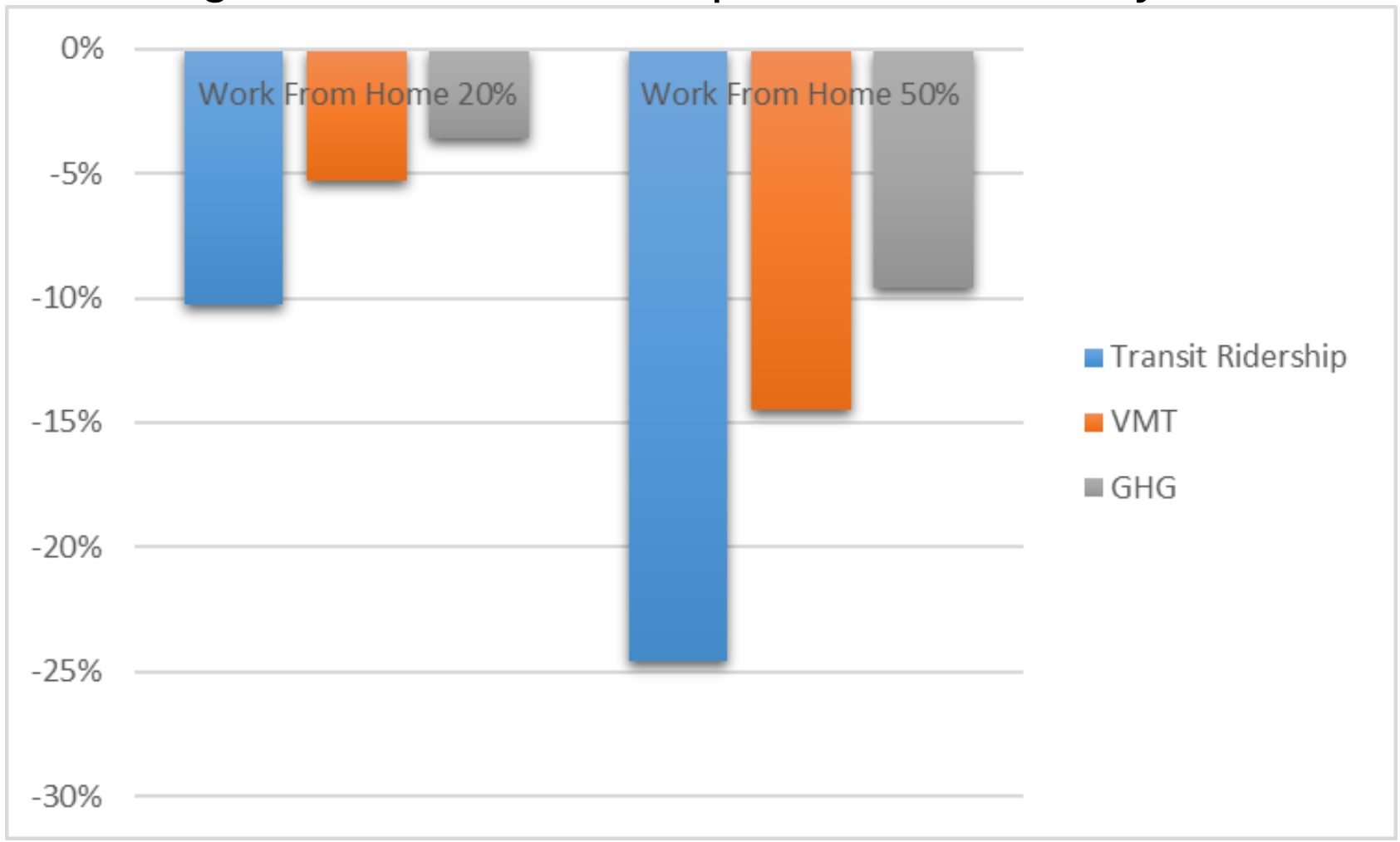
Findings

Working from home could impact GHG, but only at extreme levels



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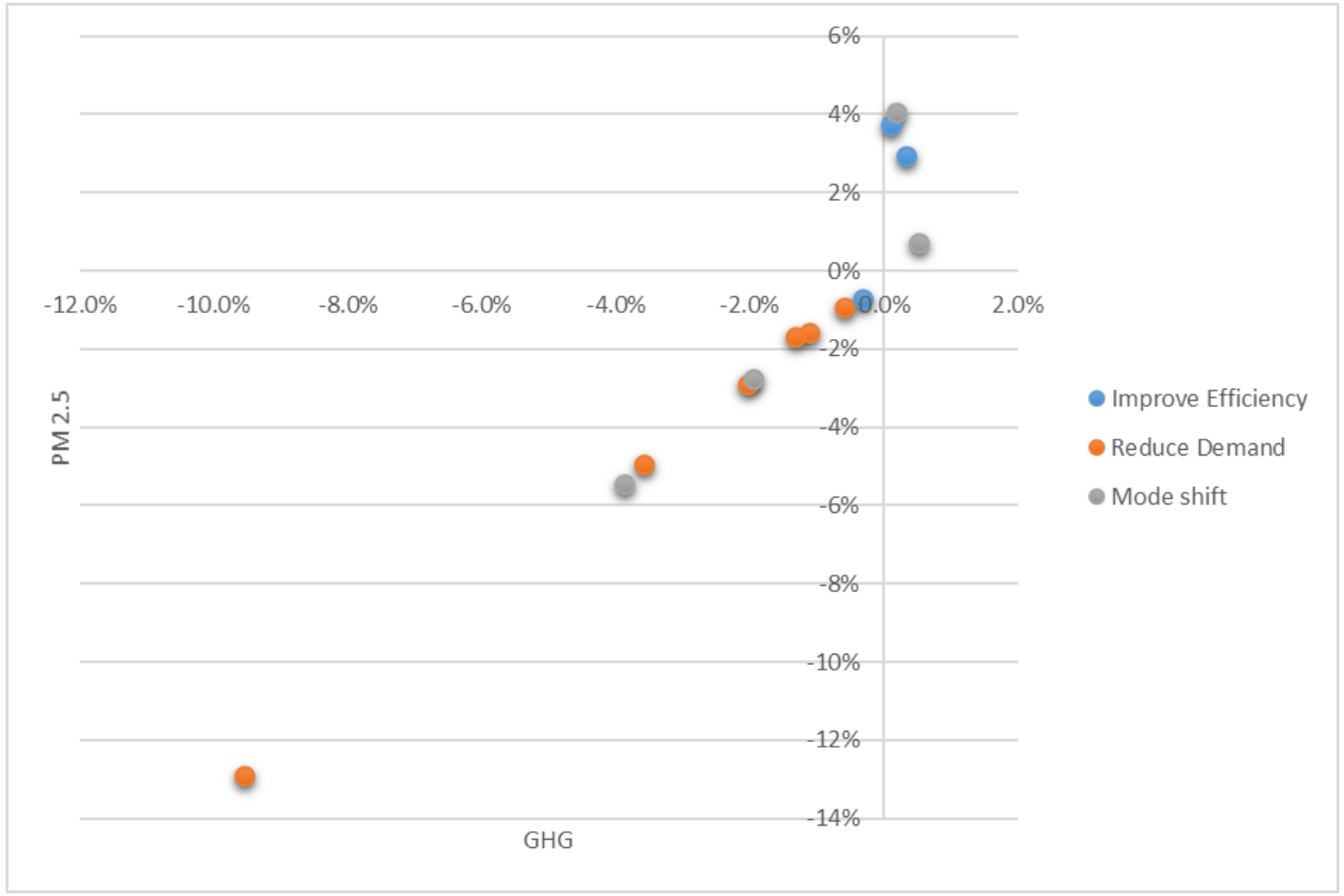
Findings

Many strategies to reduce GHG also reduce other pollutants such as PM 2.5



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Modeling next steps

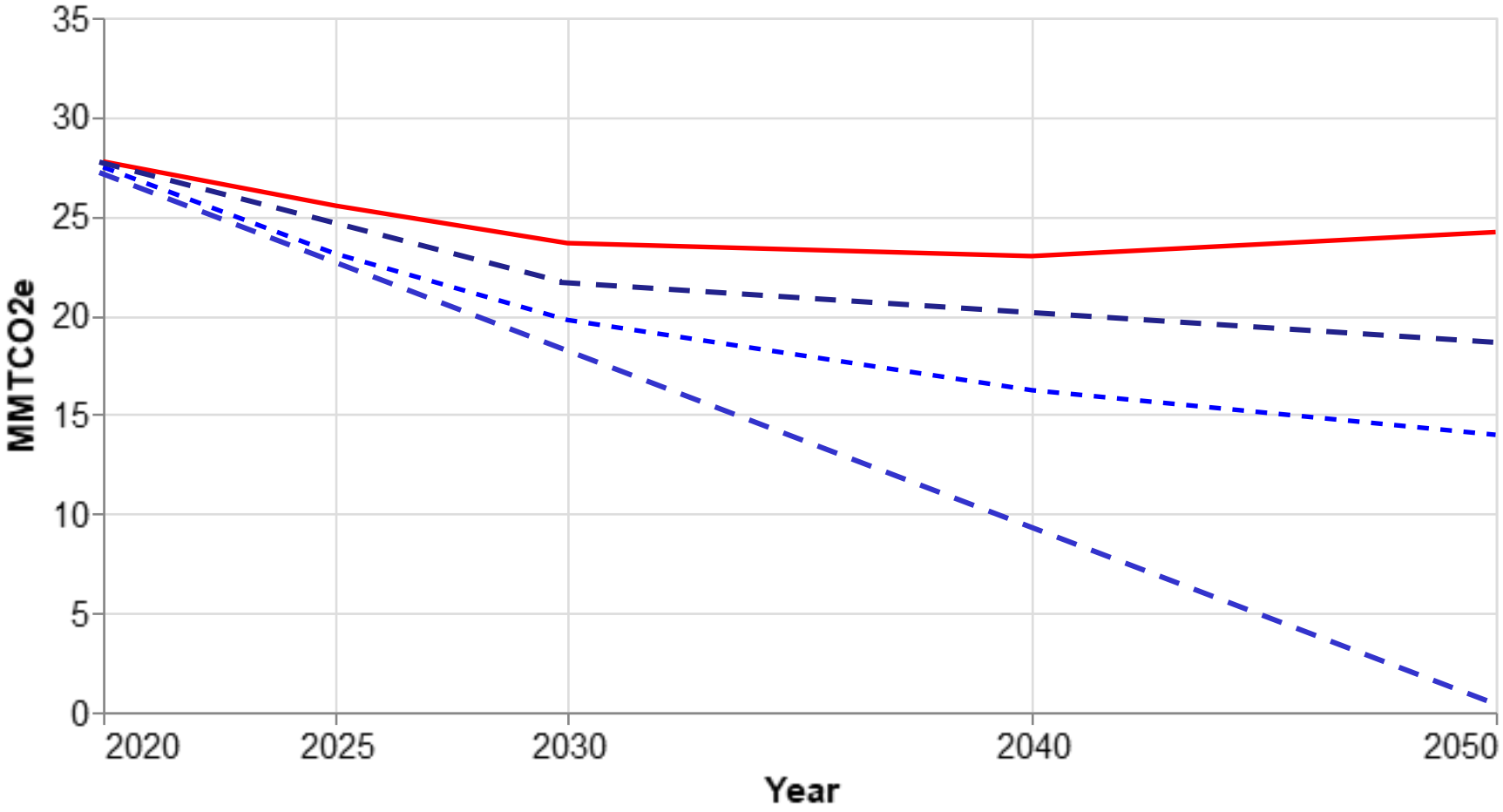
Not a comprehensive list of strategies, but representative of different categories and policy priorities

While each strategy has a small overall impact, can complement each other

Our modeling tools are getting better, but still work to do

Where are we trying to go?

Emissions by Year for Spring 2020 Conformity Run and Draft Reduction Target



Spring 2020 Run
24.2 MMTCO2e in 2050

Potential Targets

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Next steps

Work toward targets for transportation GHG

Research additional freight GHG reduction strategies

Develop policy recommendations to achieve targets

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Scenario Results

		Scenario	GHG	VMT	PM 2.5	EDA PM 2.5	Transit Ridership	Truck GHG	Passenger GHG
Improve Efficiency	1	Highway RSP	0%	0%	3%	2%	-2%	0%	1%
	2	Off Peak Truck Delivery 25%	0%	0%	-1%	0%	0%	-1%	0%
	3	Off Peak Truck Delivery 75%	0%	2%	4%	3%	-1%	-2%	1%
Reduce Demand	4	Price Parking Low	-1%	-1%	-1%	-1%	1%	0%	-1%
	5	Price Parking Medium	-1%	-2%	-2%	-1%	7%	0%	-2%
	6	Price Parking High	-2%	-4%	-3%	-2%	15%	0%	-4%
	7	Work From Home 20%	-4%	-5%	-5%	-5%	-10%	0%	-6%
	8	Work From Home 50%	-10%	-15%	-13%	-13%	-25%	0%	-17%
	9	2050 Carbon Tax $75	-1%	-2%	-2%	-1%	4%	0%	-2%
Mode shift	10	Transit RSP	0%	-1%	4%	3%	0%	0%	0%
	11	ShiftToBikeWalk .25	-2%	-3%	-3%	-3%	0%	0%	-3%
	12	ShiftToBikeWalk .5	-4%	-6%	-5%	-6%	-1%	0%	-7%
	13	Double Bus Service	1%	0%	1%	1%	12%	0%	0%