

Climate Focus Area

April 15, 2021



ON TO 2050 ENVIRONMENT GOAL

A region prepared for climate change

Intensify climate mitigation efforts
Plan for climate resilience



FY21 Climate Focus Area Work Plan

- 1. Climate multi-year implementation planning
- 2. Transportation mitigation strategies
- 3. Climate mitigation and adaptation technical assistance
- 4. Climate data inventory and refinement
- 5. GHG reporting and performance monitoring



	FY21	FY22	FY23
Transportation Mitigation	 Transportation M GHG Reporting a 	litigation Strategiesnd Performance MonitElectric Vehicle Inf	oring rastructure Strategy
Strengthen G+G Infrastructure	CCOM Transport	ation ResilienceRegional Transport	ation Vulnerability Assmt
Climate Technical Assist	Climate Mitigatio	n and Adaptation Tech	nnical Assistance
Regional Climate Coord	Climate Multi-yeClimate Data Inve	ar Implementation Pla entory and Refinemen • Regional GHG Invo	nning t entory

FY22 Climate Focus Area Work Plan

- 1. Regional climate planning and coordination
- 2. Transportation mitigation 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



GHG Reporting and Performance Monitoring



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

2015 Greenhouse Gas Inventory. Total Emissions = 119.13 MMTCO2e.





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)



Year | Month | Day type | Hour

Passenger vehicle emissions peak during AM and PM peak travel periods

Emissions by Source by Hour for June 2020 Conformity Run for July weekday in 2050



Trucks major sources of methane, NOx, and exhaust PM2.5, while passenger vehicles top sources of brake and tire PM2.5, VOC, and N2O

2050 July Weekday Percent Total Emissions by Source for June 2020 Conformity Run



CMAP

Where are we trying to go?

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





Transportation Mitigation – strategies to reduce GHG



Emissions Modeling Process

MOVES input files

Vehicle age distribution Source Type Population Fuel Type and Technologies Meteorology Data

I/M Programs Vehicle Type VMT

Average Speed Distribution Road Type Distribution

Ramp Fraction

Behavior Model

CMAP Travel





Past modeling

Figure 2: Gain in mode share at low and high levels of strategy implementation, 2015



Figure 4: 2050 vehicle hours of travel under congested conditions compared to 2015



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Scenarios

Trip Base Model + MOVES

- Transit RSPs
- Highway RSPs
- Increase transit use
- Driving cost
 - Price parking
 - Tolling/ congestion pricing
 - VMT or GHG tax
- Speed harmonization (safety+)
- Congestion reduction technologies
- Increase work from home

MOVES only

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

Future Analysis / Out of Scope

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



Draft Scenario Results

Scenario	VMT	GHG	PM 2.5	EDA	Transit	Truck	Passenger
				PM 2.5	Ridership	GHG	GHG
Highway RSP	-0.4%	0.3%	2.9%	2.4%	-2.4%	-0.1%	0.5%
Transit RSP	-1.1%	0.2%	4.1%	3.5%	0.3%	0.0%	0.1%
Price Parking High	-4.0%	0.3%	2.9%	2.4%	15.2%	-0.1%	0.5%
Price Parking Low	-1.2%	-0.6%	-0.9%	-0.9%	1.3%	0.0%	-1.1%
Price Parking Medium	-2.2%	-1.1%	-1.6%	-1.3%	7.2%	0.0%	-1.9%
Work From Home 20%	-5.3%	-3.6%	-4.9%	-4.8%	-4.7%	-0.2%	-6.2%
Work From Home 50%	-14.5%	-9.6%	-12.9%	-13.0%	-11.8%	-0.4%	-16.6%
Carbon Tax \$75	-2.2%	-1.3%	-1.7%	-1.0%	4.3%	0.0%	-2.3%

Next Steps

Continue to model travel behavior scenarios

Examine the impact of alternative fuels such as electric, LNG, and hydrogen

Set targets for transportation GHG

Develop policy recommendations to achieve targets



Discussion

1. What are others, your organizations, doing to reduce emissions and address the climate crisis?

2. Is there a need for a regional conversation and or coordination around Transportation Mitigation action?





Jason Navota jnavota@cmap.lllinois.gov

Martin Menninger mmenninger@cmap.illinois.gov





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