

# 2050 Metropolitan Transportation Plan (MTP)

## Performance Measures – Emissions (I.a, I.b)

**Goal -- Protect the human and natural environment and minimize climate change**

**Objective – Reduce transportation sector emissions**

**Objective – Achieve net zero carbon emissions**

The three tables in this document show the daily pollutant emissions from the transportation sector for the Triangle Region, CAMPO and DCHC MPO. The tables feature the different pollutants by the base year (year 2016), Existing + Committed (E+C), and adopted 2050 MTP scenarios. The E+C is essentially a no-build scenario. It is the population and employment in the year 2050 on the current transportation network of roadways and transit service, including any current projects that will be operating by 2026. The MOVES3 emissions model uses vehicle-miles-traveled (VMT) and speed data from the Triangle Regional Model (i.e., transportation model) to produce this data.

Although the VMT will increase nearly 80% over this time period, i.e., 2016 to 2050, most of the pollutants are forecasted to decrease. This reduction comes because tailpipe emissions standards continue to decrease and the efficiency of the motor vehicle fleet, i.e., average miles per gallon, is expected to increase.

Unfortunately, carbon dioxide emissions from the transportation sector will continue to increase despite a reduction in the per capita consumption of gasoline and wider use of electric vehicles.

<b>Emissions - Triangle Region</b>		<b>Year ==&gt;</b>	<b>2016</b>	<b>2050</b>	<b>2050</b>	<b>% change</b>
<b>Pollutant</b>	<b>Scenario ==&gt;</b>	<b>Unit of Measure</b>	<b>Existing</b>	<b>Existing + Committed</b>	<b>Adopted</b>	<b>2016 to 2050 Adopted</b>
Carbon Monoxide (CO)		1,000 kilograms	321	166	170	-47%
Nitrous Oxides (NOx)		1,000 kilograms	26	8	8	-70%
Volatile Organic Compounds (VOC)		1,000 kilograms	19	11	12	-39%
Particulate Matter (PM2.5)		kilograms	561	297	304	-46%
Carbon Dioxide (CO2)		1 million kilograms	27	33	34	22%
Daily Energy Consumption per capita		gallon of gasoline	1.6	1.1	1.1	-29%

<b>Emissions - CAMPO</b>		Year ==>	2016	2050	2050	% change
Pollutant	Scenario ==> Unit of Measure	Existing	Existing + Committed	Adopted	2016 to 2050 Adopted	
Carbon Monoxide (CO)	1,000 kilograms	195	106	111		-43%
Nitrous Oxides (NOx)	1,000 kilograms	16	5	5		-67%
Volatile Organic Compounds (VOC)	1,000 kilograms	12	7	8		-35%
Particulate Matter (PM2.5)	kilograms	340	190	198		-42%
Carbon Dioxide (CO2)	1 million kilograms	17	21	22		31%
Daily Energy Consumption per capita	gallon of gasoline	1.4	1.0	1.1		-27%

<b>Emissions - DCHC MPO</b>		Year ==>	2016	2050	2050	% change
Pollutant	Scenario ==> Unit of Measure	Existing	Existing + Committed	Adopted	2016 to 2050 Adopted	
Carbon Monoxide (CO)	1,000 kilograms	83	37	38		-54%
Nitrous Oxides (NOx)	1,000 kilograms	7	2	2		-74%
Volatile Organic Compounds (VOC)	1,000 kilograms	5	3	3		-48%
Particulate Matter (PM2.5)	kilograms	145	67	68		-53%
Carbon Dioxide (CO2)	1 million kilograms	7	7	7		6%
Daily Energy Consumption per capita	gallon of gasoline	1.7	1.1	1.2		-30%