

Appendix B – Air Quality

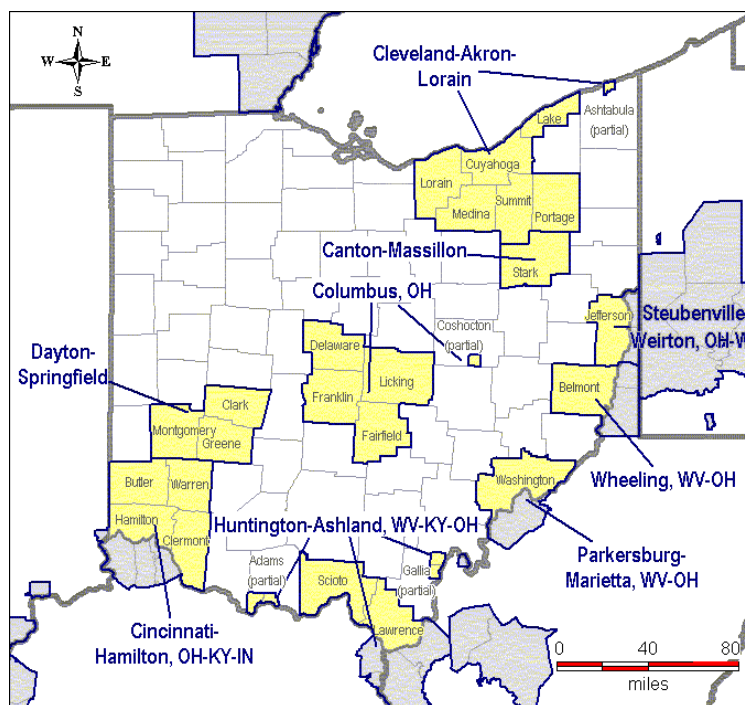
Transportation Air Quality Analysis and Technical Documentation For the Canton/Massillon Metropolitan Statistical Area State Implementation Plan Inventory Mobile Emission Estimates For the U.S. EPA 2006 Daily PM_{2.5} & 1997 8-Hour Ozone National Ambient Air Quality Standard

INTRODUCTION

This memorandum documents the air quality analysis and underlying planning assumptions performed for the 2006 Daily PM_{2.5} on-road mobile source emission inventories for the Canton/Massillon Metropolitan Statistical Area State Implementation Plan (SIP). The Ohio Department of Transportation (ODOT), Division of Transportation System Development-Modeling and Forecasting Section and the Stark County Area Transportation Study (SCATS) completed this analysis in coordination with the Ohio Environmental Protection Agency (OEPA).

The SCATS Region is comprised of Stark County, Ohio. The Canton/Massillon Metropolitan Statistical Area (MSA) was classified as nonattainment for PM_{2.5} in the Federal Register on December 18th, 2014. Although the MSA area also includes Carroll County, OEPA and USEPA concurred that only Stark County is designated as the nonattainment area within the MSA as Carroll County is rural in nature with a population of less than 30,000. SCATS is the MPO (Metropolitan Planning Organization) for this county. The SCATS MPO boundary and urban planning model cover the entire nonattainment area. This area is shown on the following map as prepared by the USEPA.

Figure 1 – Location of Massillon/Canton MSA



Map as shown at: <http://www.epa.gov/pmdesignations/states/Ohio.htm>

SCATS submitted the necessary Travel Demand Model networks along with all land use and socio-economic demographics to ODOT Modeling and Forecasting. ODOT performed the MOVES runs to generate travel-demand-model-based emission factors as well as the complete air quality analyses for the metropolitan area.

Stark County is a US EPA designated 1997 Ozone Standard “Orphan” area and has been determined in conformity based on a qualitative conformity determination consistent with US EPA’s November 29, 2018 guidance resulting from the South Coast II Court Decision.

ON-ROAD MOBILE EMISSION CONFORMITY TEST RESULTS

Table 1 below presents a summary of the pollutant emissions including Fine Particulate Matter (PM_{2.5}) and Nitrogen Oxides (NO_x) modeled for the SCATS Region. The Model Years for the demonstration includes the Budget Year 2015, Budget Year 2025, Interim Years 2030 and 2040, and Maintenance Year 2050.

Table 1
SCATS REGION ON-ROAD MOBILE EMISSION CONFORMITY TEST RESULTS

PM_{2.5}	<u>2015</u> Budget	<u>2025</u> Budget	<u>2025</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>
Direct PM _{2.5} (Tons/Year)	204.33	101.50	40.00	36.79	33.91	34.24
NO _x Precursors (Tons/Year)	7,782.84	4673.83	1080.73	805.52	624.11	615.76

The SCATS model shows on-road PM_{2.5} emissions and NO_x precursor emissions at less than the allowed budget in every year of the Plan. The model shows PM_{2.5} emissions of 40 tons in 2025, 37 tons in 2030, 34 tons in 2040, and 34 tons in 2050. The model shows NO_x Precursor emissions of 1080 tons in 2025, 806 tons in 2030, 624 tons in 2040, and 616 tons in 2050.

LATEST PLANNING ASSUMPTIONS

The annual PM_{2.5} inventory runs meet the latest planning-assumption requirements. This report presents the latest population and land use data available that calibrated the modeling process used to calculate the vehicle emissions for the mobile-emissions budgets, as well as, the input values for U.S. EPA’s most recent emissions software, MOVES, for this air-quality determination.

This determination utilizes the U.S. EPA’s most recent emissions software, MOVES, for all mobile-source-emission analyses, and the annual emissions estimates are based on a single-season approach. Since travel demand models produce average daily conditions, the daily emissions estimates are multiplied by 365 days to produce annual emissions estimates expressed in tons per year.

TRAVEL DEMAND MODELING - ANALYSIS YEARS

A Travel Demand Model (TDM) is the traditional forecasting tool used to examine potential changes in future travel patterns for a specific study area, in this case the Canton/Massillon Metropolitan Statistical Area. The SCATS MPO, with the assistance of ODOT Modeling & Forecasting, maintains a validated region-wide TDM that employs a four-step modeling process consisting of trip generation, trip distribution, mode choice, and route assignment performed with the Cube Voyager software package. The model outputs generated from the TDM are link-by-link directional traffic volumes for four time

periods, morning, mid-day, evening, and night-time. The outputs are used for simulating Base Year and Horizon Year travel patterns generated by the LRTP transportation network.

The current SCATS TDM Validation Year is 2010. The model uses comparable Average Daily Traffic count data and updated socio-economic variables for each of the analysis years. The socio-economic variables were calculated by projecting land use commitments for 2025, 2030, 2040, and 2050 variables based on a straight-line interpolation between the 2020 set of variables and the 2050 variables. These networks represent all planned federal-aid projects as well as any regionally significant projects found in the SCATS TIP and LRTP expected to be open for traffic by the end of each respective analysis year.

The interagency consultation process, established the following model years for the analysis that reflected the most recent correspondence from the U.S. EPA:

- Budget Year 2015 – Budget Year
- Analysis Year 2025 – Budget Year
- Analysis Year 2030 – Interim Year
- Analysis Year 2040 – Interim Year
- Analysis Year 2050 – Maintenance Year

SOCIO-ECONOMIC DEMOGRAPHICS

Identifying projected growth centers and understanding urban and rural population changes are essential to determining future transportation needs in a given study area. Critical elements include an understanding of the past and anticipated future shifts in the region's economy, population, land use patterns, and other environmental factors over time. In turn, these factors are useful for predicting future transportation patterns and justifying transportation improvements over the next twenty-plus years.

Travel forecasting procedures require the user to delineate the TDM study area into geographic areas called Traffic Analysis Zones (TAZs). Typically, TAZs are based on factors such as land use, area types (urban, suburban or rural), or political government units such as cities, villages, or townships. TAZs represent centers of travel generators or attractors based on a set of demographic variables. The SCATS MPO collects and reviews the TDM independent variables that characterize current and future estimates of the metropolitan area's social and economic activity that may influence land-use development patterns. In all, there are 696 TAZs in the SCATS model. Figure 2 displays the SCATS MPO geography covered by the travel demand model including the Traffic Analysis Zone structure. The computer-based TDM for the SCATS highway network employs the following land use variables:

- [AREA_TYPE] ≡ Area Type
- [AVG_PARK] ≡ Average parking cost
- [ENROLL] ≡ School enrollment classified by Private [ENROLL_PRIV], Public [ENROLL_PUB] and Post-secondary [ENROLL_UNIV] schools
- [HOTEL_RM] ≡ Hotel Rooms
- [MED_HHINC] ≡ Median household income
- [POP] ≡ Population
- [POP_18] ≡ Population 18 years or less
- [POP_GRP] ≡ Population residing in Group Quarters
- [TOTEMP] ≡ Total Employment grouped by the North American Industrial Classification System (NAICS)
- [TOT_HH] ≡ Occupied housing

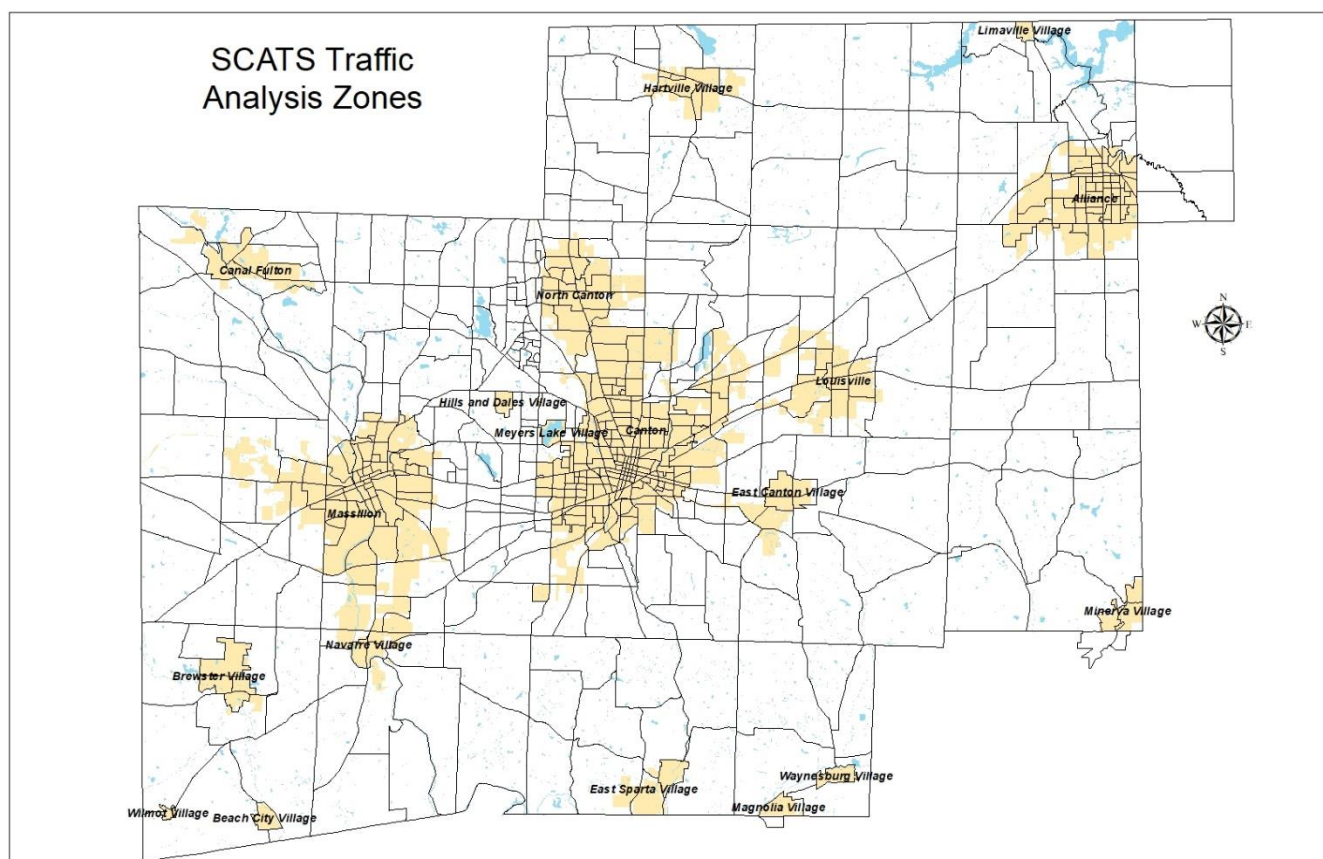
- [TOT_VEH] ≡ Vehicles available per household
- [WORKERS] ≡ Workers per household

Table 2 is a set of demographic variables developed for the most recent Long-Range Transportation Plan for the SCATS area compiled in May, 2021.

Table 2
SCATS REGION
REPRESENTATIVE SOCIO-ECONOMIC DEMOGRAPHIC
VARIABLES 2020-2050

	2020	2030	2040	2050
Population	380,084	372,842	365,601	364,501
Workers	190,293	181,946	173,600	173,172
Vehicles	273,025	271,561	270,097	268,633
Households	156,897	158,797	160,697	162,597
Employees	154,089	168,034	181,978	195,923

Figure 2
SCATS GEOGRAPHIC AREA
COVERED BY TRAVEL DEMAND MODEL
AND TRAFFIC ANALYSIS ZONE STRUCTURE



EMISSION-FACTOR GENERATION

The MOVES model generated the emission factors for the budget year, 2025. The model also generated emission factors for three future-year scenarios 2030, 2040, and 2050.

Table 3 summarizes the settings used in the MOVES run specification file and the MOVES County-Data Manager. The subsequent tables provide the specific inputs that are not using the MOVES default values.

Table 3
MOVES INPUTS

RunSpec Parameter Settings	
MOVES Version	MOVES3
Scale	Custom Domain
MOVES Modeling Technique	Emission Factor Method Rates per Distance Rates per Vehicle
Time Span	Time Aggregation: Hour 1 Month representing average annual temperatures All hours of day selected 16 speed bins Weekdays only
Geographic Bounds	Stark County
Vehicles/Equipment	All source types, gasoline and diesel
Road Type	All road types including off-network
Pollutants and Processes	NO _x , All PM _{2.5} categories, SO ₂ , Total Energy Consumption
Strategies	None
General Output	Units = grams, joules and miles
Output Emissions	Time = hour, Location = custom area, on-road emission rates by road type and source use type
Advance Performance	None

Table 3 (continued)
MOVES INPUTS

County Data Manager Sources	
Source Type Population	Combination of local and default data Local data from motor vehicle registration Default data used for source types 51, 52, 53, 61, and 62 Future year growth rate based on MPO model Household growth rate
Vehicle Type VMT	Combination of local and default data HPMSVTypeYear VMT = daily VMT from travel demand model monthVMTFraction = default dayVMTFraction=default hourVMTFraction=local
I/M Program	None
Fuel Formulation	Default
Fuel Supply	Default
Metereology Data	Local data obtained from NOAA National Climatic Data Center. Data will consist of monthly high and low temperatures and daily relative humidity for 2002.
Ramp Fraction	Using the base year travel demand model for VHT fractions. Future fractions will be assumed constant
Road Type Distribution	Use ODOT county summary VMT categorized by federal functional classes
Age Distribution	Combination of local and default data. Local data from motor vehicle registration Default data used for source types 41, 42, 43, 51, 52, 53, 61, and 62 The same age distribution will be used for all analysis years
Average Speed Distribution	Default
Alternative Fuel Type	Default

TEMPERATURE AND RELATIVE HUMIDITY

The single season approach for temperature and relative humidity uses weather data collected by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). Temperature data for the MOVES emission factors came from the Akron Canton Airport and are shown in Table 4. Data entered into a spreadsheet, provided by U.S. EPA, converted the Mobile6 data to get the correct data for the MOVES model. Annual PM_{2.5} emissions data were established using the single season methodology. The standard emissions modeling routines establish daily pollutant burdens. Annual direct PM_{2.5}, NO_x precursor, and SO₂ emissions for the PM_{2.5} conformity tests were established by multiplying the daily model results by 365.

Table 4 – Temperature and Relative Humidity Data

Hour	Average Temperature	Average Relative Humidity
1	60.8	82
2	57.2	93
3	57.2	93
4	60.8	82
5	60.8	87
6	62.6	82
7	62.6	82
8	64.4	77
9	66.2	72
10	66.2	72
11	68.0	68
12	69.8	64
13	69.8	64
14	71.6	60
15	69.8	60
16	69.8	60
17	69.8	64
18	66.2	68
19	66.2	63
20	66.2	68
21	66.2	68
22	64.4	72
23	64.4	72
24	60.8	82

RAMP FRACTION

The Base-Year Travel Demand Model used the Vehicles Hour of Travel (VHT) fractions to derive the Ramp Fractions shown in Table 5. The future-year networks also used the base-year fractions.

Table 5
RAMP FRACTIONS

roadTypeID	roadDesc	rampFraction
2	Rural Restricted Access	0.05
4	Urban Restricted Access	0.13

SOURCE-TYPE POPULATION

A combination of local and MOVES default data is the Source-Type Population for vehicle classifications. The MOVES default values provided the data for Source-Type Population 51, 52, 53, 61, and 62 while local data from Ohio motor vehicle registrations accounted for all other Source-Type

Population needed to run the MOVES model. Table 6 shows the Source-Type Population identifications, the corresponding Source-Type Name, and the number of vehicles analyzed for Stark County.

Table 6
SOURCE-TYPE POPULATION FOR YEAR 2005

sourceTypeID	sourceTypeName	sourceTypePopulation
11	MotorCycle	24,199
21	Passenger Car	282,913
31	Passenger Truck	129,129
32	Light Commercial Truck	2,916
41	Intercity Bus	129
42	Transit Bus	19
43	School Bus	744
51	Refuse truck	86
52	Single Unit Short-haul Truck	182
53	Single Unit Long-haul Truck	138
54	Motor Home	418
61	Combination Short-haul Truck	1,063
62	Combination Long-haul Truck	1,223

VEHICLE-AGE DISTRIBUTION

A grouping of data from Ohio sources along with the MOVES model defaults make up the Vehicle-Age Distribution. MOVES default values included Vehicle-Type ID 41, 42, 51, 52, 53, 61, and 62. Local data from Ohio motor vehicle registrations accounted for all other Vehicle-Type ID. Table 7 shows the Vehicle-Age Distribution for Stark County.

Table 7
VEHICLE-AGE DISTRIBUTION FOR STARK COUNTY, OH

Year	Source Type	Age	Fraction	Year	Source Type	Age	Fraction
2005	11	0	0.0015	2005	21	0	0.0060
2005	11	1	0.0214	2005	21	1	0.0238
2005	11	2	0.0508	2005	21	2	0.0362
2005	11	3	0.0633	2005	21	3	0.0440
2005	11	4	0.0790	2005	21	4	0.0471
2005	11	5	0.0733	2005	21	5	0.0510
2005	11	6	0.0719	2005	21	6	0.0491
2005	11	7	0.0794	2005	21	7	0.0530
2005	11	8	0.0576	2005	21	8	0.0562
2005	11	9	0.0530	2005	21	9	0.0545
2005	11	10	0.0446	2005	21	10	0.0624
2005	11	11	0.0365	2005	21	11	0.0613
2005	11	12	0.0260	2005	21	12	0.0562
2005	11	13	0.0217	2005	21	13	0.0543
2005	11	14	0.0203	2005	21	14	0.0487
2005	11	15	0.0210	2005	21	15	0.0500
2005	11	16	0.0167	2005	21	16	0.0398
2005	11	17	0.0114	2005	21	17	0.0337
2005	11	18	0.0087	2005	21	18	0.0282
2005	11	19	0.0077	2005	21	19	0.0215
2005	11	20	0.0073	2005	21	20	0.0178
2005	11	21	0.0088	2005	21	21	0.0150
2005	11	22	0.0091	2005	21	22	0.0111
2005	11	23	0.0103	2005	21	23	0.0082
2005	11	24	0.0177	2005	21	24	0.0069
2005	11	25	0.0159	2005	21	25	0.0057
2005	11	26	0.0135	2005	21	26	0.0045
2005	11	27	0.0162	2005	21	27	0.0026
2005	11	28	0.0241	2005	21	28	0.0017
2005	11	29	0.0186	2005	21	29	0.0017
2005	11	30	0.0927	2005	21	30	0.0478

ROAD-TYPE DISTRIBUTION

The ODOT Division of Highways produced a summary of Vehicle Miles Traveled (VMT), categorized by federal functional class, for Stark County. This summary was used as the basis for the Road-Type-Distribution Fractions. Table 8 illustrates Road-Type Distribution.

Table 8
**ROAD-TYPE DISTRIBUTION FOR STARK COUNTY
NON-ATTAINMENT AREA**

Source Type	Road Type	Road Description	Road-Type VMT Fraction	Source Type	Road Type	Road Description	Road-Type VMT Fraction
11	1	Off-Network	0	43	4	Urban Restricted Access	0.19
11	2	Rural Restricted Access	0.01	43	5	Urban Unrestricted Access	0.62
11	3	Rural Unrestricted Access	0.18	51	1	Off-Network	0
11	4	Urban Restricted Access	0.19	51	2	Rural Restricted Access	0.01
11	5	Urban Unrestricted Access	0.62	51	3	Rural Unrestricted Access	0.18
21	1	Off-Network	0	51	4	Urban Restricted Access	0.19
21	2	Rural Restricted Access	0.01	51	5	Urban Unrestricted Access	0.62
21	3	Rural Unrestricted Access	0.18	52	1	Off-Network	0
21	4	Urban Restricted Access	0.19	52	2	Rural Restricted Access	0.01
21	5	Urban Unrestricted Access	0.62	52	3	Rural Unrestricted Access	0.18
31	1	Off-Network	0	52	4	Urban Restricted Access	0.19
31	2	Rural Restricted Access	0.01	52	5	Urban Unrestricted Access	0.62
31	3	Rural Unrestricted Access	0.18	53	1	Off-Network	0
31	4	Urban Restricted Access	0.19	53	2	Rural Restricted Access	0.01
31	5	Urban Unrestricted Access	0.62	53	3	Rural Unrestricted Access	0.18
32	1	Off-Network	0	53	4	Urban Restricted Access	0.19
32	2	Rural Restricted Access	0.01	53	5	Urban Unrestricted Access	0.62
32	3	Rural Unrestricted Access	0.18	54	1	Off-Network	0
32	4	Urban Restricted Access	0.19	54	2	Rural Restricted Access	0.01
32	5	Urban Unrestricted Access	0.62	54	3	Rural Unrestricted Access	0.18
41	1	Off-Network	0	54	4	Urban Restricted Access	0.19
41	2	Rural Restricted Access	0.01	54	5	Urban Unrestricted Access	0.62
41	3	Rural Unrestricted Access	0.18	61	1	Off-Network	0
41	4	Urban Restricted Access	0.19	61	2	Rural Restricted Access	0.01
41	5	Urban Unrestricted Access	0.62	61	3	Rural Unrestricted Access	0.18
42	1	Off-Network	0	61	4	Urban Restricted Access	0.19
42	2	Rural Restricted Access	0.01	61	5	Urban Unrestricted Access	0.62
42	3	Rural Unrestricted Access	0.18	62	1	Off-Network	0
42	4	Urban Restricted Access	0.19	62	2	Rural Restricted Access	0.01
42	5	Urban Unrestricted Access	0.62	62	3	Rural Unrestricted Access	0.18
43	1	Off-Network	0	62	4	Urban Restricted Access	0.19
43	2	Rural Restricted Access	0.01	62	5	Urban Unrestricted Access	0.62
43	3	Rural Unrestricted Access	0.18				

POST PROCESSING

Several custom programs created by ODOT were used to compute the total emissions. The process uses data on daily and directional traffic distributions as well as more up-to-date volume/delay functions from the 2010 Highway Capacity Manual (HCM). This process, described below and illustrated in Figure 4, also uses rewritten code able to handle the newer model network formats and MOVES-generated emission factors.

The first step in the process involves running `postcms.exe` to calculate hourly link volumes based on the percentage of the daily volume (travel demand model output) determined by a link's facility and area type. The analysis does not use the link speeds from the travel demand model. Using a link's volume-to-capacity ratio and link group code, a post-process to the model based on HCM methods estimates the link speeds.

The second step (`mmoves.exe`) uses a combination of the MOVES emission factors and the hourly link volumes that are output of the `postcms.exe` program. The hourly volumes are multiplied by the MOVES emission factor for the corresponding hour of day, speed bin, and road type to calculate emissions for every network link for each hour. The total link on-road vehicle emissions for the area are the sum of all individual link-hour emissions.

The third step, (`vehcalm.exe`), calculates vehicle-based emissions for each source type for each hour of the day. A combination of local and default data is the source for the vehicle source type. The final vehicle emissions are the sum of all individual hourly emissions for all vehicle types.

Since the intrazonal trips are not loaded onto the network, the fourth step in the process requires a separate method to account for those trips that use local roads to travel within a zone. The `intracalm.exe` program uses intrazonal trips to estimate VMT using the area in square miles and intrazonal trips of each zone. The computer program assumes that the zone is circular and uses the radius of the circle as the average trip length for these intrazonal trips. By combining MOVES-generated emissions with estimated intrazonal VMT, the intrazonal emissions are then calculated. The emission rates are the same as those used to calculate link-based emissions.

The final step is to summarize link, vehicle, and intrazonal emissions for each pollutant, and analyzed year, and to multiply annual average daily emissions by 365 to produce an annual estimate.

INTERAGENCY CONSULTATION DOCUMENTATION

Overview:

The Canton MPO (Stark County, Ohio) is initiating a new transportation conformity determination for its existing 2050 Transportation Plan and new 2024 – 2027 Transportation Improvement Program (TIP).

Stark County is a US EPA designated 1997 Ozone Standard “Orphan” area and a 2006 PM_{2.5} Standard Maintenance area.

SCATS proposes advancing a new 2024 – 2027 TIP conformity determination based on budget-year comparisons.

Interagency consultation topics:

1. Latest planning assumptions -

- a. Latest planning assumptions – SCATS maintains current travel demand model socio-economic variables and highway/transit networks used to develop the SCATS Transportation Plan.

2. Latest emission modeling -

- a. SCATS and ODOT will use MOVES 3.1

3. SIP TCM Status -

- a. The Ohio SIP does not include any TCM

4. Conformity process schedule -

- a. Public involvement effort - SCATS will solicit online comments with an interactive online map showing projects from TIP years 2024-2028. SCATS will seek additional online comments after a draft TIP is completed. SCATS will hold public meetings between March 10 and April 10, 2023.
- b. Draft completed - January, 2023.
- c. Board approval date - April 24th, 2023.

5. Conformity data/information included in TIP and MTP? -

- a. YES

6. All projects in the MTP are in the TIP and do not need a new conformity determination?

- a. A new conformity determination is needed because three new TIP projects were not specifically addressed in the last MTP, and one project was advanced more quickly than previously planned.

7. Conformity Tests:

Ozone	
Attainment status:	1997 8-Hour Ozone Standard Maintenance “Orphan” Area
Geography:	Stark County, Ohio
Conformity status:	Qualitative Conformity Determination consistent with US EPA’s November 29, 2018 guidance resulting from the South Coast II Court Decision.
Conformity Tests:	NA
SIP Commitments:	NA
Analysis Years:	NA

PM _{2.5}	
Attainment status:	1997 PM _{2.5} (Annual) Standard and 2006 PM _{2.5} (Daily) Standard Maintenance area 78 FR 6245, effective 10/22/2013
Geography:	Stark County, Ohio
Conformity status:	The table below reflects the PM _{2.5} SIP budget tests that will be conducted for the SCATS 2024 – 2027 TIP.
Conformity Tests:	PM _{2.5} SIP Budget tests
SIP Commitments:	
Analysis Years:	2025, 2030, 2040, 2050

PM _{2.5}	<u>2015</u> <u>Budget</u>	<u>2025</u> <u>Budget</u>	<u>2025</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>
Direct PM _{2.5} (Tons/Year)	204.33	101.50				
NOx Precursors (Tons/Year)	7,782.84	4673.83				

The interagency consultation process was accomplished through a series of electronic mail messages (email). The relevant emails have been reproduced below in chronological order.

From: Dan K. Slicker
Sent: Wednesday, November 30, 2022 9:37 AM
To: Jordan.Whisler@dot.ohio.gov; Jeff G. Dotson (jgdotson@starkcountyohio.gov)
<jgdotson@starkcountyohio.gov>
Subject: Interagency Consultation

Jordan,

SCATS is ready to start the Interagency Consultation Process for the FY 2024-2027 TIP. See the attached document for a starting point. We need to know what budget years and analysis years will be required.



201 3rd. St. NE, STE. 201, Canton OH 44702-1211

Dan Slicker, P.E.
**Senior Transportation
Engineer**
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From: ANTHONY.HILL@dot.ohio.gov <ANTHONY.HILL@dot.ohio.gov>
Sent: Monday, December 19, 2022 2:11 PM
To: emay@mpo.noaca.org; tking@eriecounty.oh.gov; rsharma@belomar.org; lagresta@clarkcountyohio.gov; ksympson@eastgatecog.org; tmazur@lacrpc.com; mhill@lcounty.com; ngill@morpc.org; aramirez@mvrpc.org; rkoehler@oki.org; Jeff G. Dotson <JGDotson@starkcountyohio.gov>; gedeon@tmacog.org; tracy.brown@movrc.org; Lance Dasher <dasher@tmacog.org>; Prater, Amy <APrater@akronohio.gov>; mikepap@bhjmpc.org
Cc: Jordan.Whisler@dot.ohio.gov; Nathaniel.Brugler@dot.ohio.gov
Subject: FW: IAC Materials for MPOs with more than just 97 Ozone

Hello Ohio Air Quality Interagency Consultation Partners,

As Metropolitan Planning Organizations (MPO) covering air quality regions either in maintenance and or nonattainment status for one or more of the National Ambient Air Quality Standards (NAAQS), a regional air quality conformity determination is required for your forthcoming 2024-2027 Transportation Improvement Program (TIP). In order to ensure all interested parties are in agreement to the perimeters through which a conformity determination will be made, over the next few months interagency consultation (IAC) will need to occur.

The requirements for IAC are outlined within the code of federal regulations under [40 CFR 93.105](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-93/subpart-B/section-93.105).

There is a need for concurrence on the following:

- Confirm AQ geographies
- Confirm Region's AQ NAAQS pollutants and status
- Confirm State Implementation Plan (SIP) status
- Determine need for new conformity analysis

- Determine appropriate conformity tests based on SIP status
- Establish conformity analysis years
- Establish approach for developing analysis year's network's emissions results
- Confirm use of latest emissions model
- Confirm status of any SIP mobile source TCMs
- Confirm use of latest planning assumptions
- Confirm public involvement (with conformity results) opportunity and schedule, based upon the MPO's public involvement plan
- Establish schedule for submission of TIP and conformity documentation
- Confirm desired date for US DOT conformity determination

In an effort to efficiently facilitate IAC for all the effected regions within Ohio, the Ohio Department of Transportation (ODOT) proposes two distinct approaches:

1. For the seven Ohio MPOs located within US EPA designated 1997 Ozone Standard "Orphan" Areas, ODOT proposes taking the lead in coordination of IAC (similar to what was done for the 2021-2024 STIP). It will prepare a draft IAC analysis summary and facilitate IAC via email among all impacted parties. These seven MPOs include:

MPO	AQ Region	1997 8-Hr Ozone	2008 8-Hr Ozone	2015 8-Hr Ozone	2006 PM2.5 24-Hr	2012 PM 2.5 24-Hr
Bel-O-Mar	Wheeling-Bridgeport	Orphan Area	-	-	-	-
CCSTCC	Dayton-Springfield	Orphan Area	-	-	-	-
MVRPC	Dayton-Springfield	Orphan Area	-	-	-	-
Eastgate	Youngstown-Warren	Orphan Area	-	-	-	-
LACRPC	Lima	Orphan Area	-	-	-	-
TMACOG	Toledo	Orphan Area	-	-	-	-
WWW	Parkersburg-Marietta	Orphan Area	-	-	-	-

2. For the eight Ohio MPOs located within areas designated as maintenance or nonattainment for standards other than just the 1997 Ozone NAAQS, ODOT proposes these agencies individually (per air quality region) take the lead in coordination of IAC utilizing the attached materials. These include a standard analysis summary template (see attached Sample Conformity Summary Template) containing all required components and a draft email to allow for email facilitation (see attached Sample Email for IAC facilitation). These eight MPOs include:

MPO	AQ Region	1997 8-Hr Ozone	2008 8-Hr Ozone	2015 8-Hr Ozone	2006 PM2.5 24-Hr	2012 PM 2.5 24-Hr
-----	-----------	-----------------	-----------------	-----------------	------------------	-------------------

AMATS		-	Mainten ance	Nonattainm ent	Maintenan ce	-
NOACA	Cleveland- Akron	-	Mainten ance	Nonattainm ent	Maintenan ce	Maintena nce
ERPC		-	Mainten ance	Nonattainm ent	Maintenan ce	Maintena nce
BHJ	Steubenvil le- Weirton	Orph an Area	-	-	Maintenan ce*	-
LCATS		-	Mainten ance	Maintenanc e	-	-
MORPC	Columbus- Newark	-	Mainten ance	Maintenanc e	-	-
OKI	Cincinnati -Hamilton	-	Mainten ance	Nonattainm ent	-	-
SCATS	Canton- Massillon	Orph an Area	-	-	Maintenan ce	-

Please don't hesitate to send any questions or concerns you may have.

Thank you and have a good day,

Anthony Hill

Transportation Planner

ODOT Office of Statewide Planning & Research

1980 W. Broad Street, Columbus, Ohio 43223

(p) 614.752.2965

transportation.ohio.gov



From: Dan K. Slicker <dkslicker@starkcountyohio.gov>

Sent: Wednesday, January 11, 2023 10:56 AM

To: Brunello, Antonino <Nino.Brunello@dot.ohio.gov>

Subject: TIP AQ Conformity

Nino,

Do you know what the budget years will be for the upcoming TIP AQ Conformity? I'm trying to figure out what networks I need to create.



201 3rd. St. NE, STE. 201, Canton OH 44702-1211

Dan Slicker, P.E.

Senior Transportation
Engineer

Appendix B - PM_{2.5} TIP Conformity Determination for Stark County, Ohio

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t:330-451-7346
f:330-451-7990
e:dkslicker@starkcountyohio.gov
www.rpc.starkcountyohio.gov
f in

From: Nino.Brunello@dot.ohio.gov <Nino.Brunello@dot.ohio.gov>
Sent: Wednesday, January 11, 2023 11:22 AM
To: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Subject: RE: TIP AQ Conformity

Hi Dan,

Since there is a budget defined for 2025, we will need a 2025 network, and then no more than 10 years gap from that until the LRP year. So I think the group will probably agree to do the same as last time: 2025, 2030, 2040, and 2050.

Now that the TIP includes 2025, I'm not sure if we will need 2023 or 2024 (for comparison the 2015 budget). I will talk to Jordan Whisler about that when he gets back to the office next week.

Nino Brunello, P.E.

Transportation Engineer

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1980 W. Broad Street, Mail Stop 3280, Columbus, Ohio 43223

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transportation.ohio.gov

From: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Sent: Friday, January 13, 2023 10:14 AM
To: Jeff Dotson <jgdotson@starkcountyohio.gov>; Hill, Anthony <ANTHONY.HILL@dot.ohio.gov>; Whisler, Jordan <Jordan.Whisler@dot.ohio.gov>; Brugler, Nathaniel <Nathaniel.Brugler@dot.ohio.gov>
Subject: RE: IAC Materials for MPOs with more than just 97 Ozone

Anthony,

Here is SCATS's conformity summary. I think we've addressed all of the concerns you outlined below.

Dan Slicker
Senior Transportation Engineer
t:330-451-7346
f:330-451-7990

From: ANTHONY.HILL@dot.ohio.gov <ANTHONY.HILL@dot.ohio.gov>
Sent: Friday, January 13, 2023 10:57 AM
To: Dan K. Slicker <dkslicker@starkcountyohio.gov>; Jeff G. Dotson <JGDotson@starkcountyohio.gov>; Jordan.Whisler@dot.ohio.gov; Nathaniel.Brugler@dot.ohio.gov
Subject: RE: IAC Materials for MPOs with more than just 97 Ozone

Dan,

The only thing that I noticed was that the current document has the incorrect latest emissions model. The latest emissions modeling is now MOVES 3.1 as MOVES 2014a is out of date now.

Have a good day,

Anthony Hill

Transportation Planner

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From: Dan K. Slicker <dkslicker@starkcountyohio.gov>

Sent: Thursday, February 9, 2023 2:33 PM

To: Johns, Andy (FHWA) <Andy.Johns@dot.gov>; paul.braun@epa.ohio.gov; Kane, Mark (FTA)

<Mark.Kane@dot.gov>; maietta.anthony@epa.gov; Jordan.Whisler@dot.ohio.gov;

ANTHONY.HILL@dot.ohio.gov; Nathaniel.Vogt@dot.ohio.gov; nino.brunello@dot.ohio.gov

Cc: Jeff G. Dotson <JGDotson@starkcountyohio.gov>

Subject: Interagency Consultation

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello,

SCATS is initiating its interagency consultation for the FY 2024-2027 TIP. Please see the attached document and give us any comments you may have.

Thank you,



201 3rd. St. NE, STE. 201, Canton OH 44702-1211

Dan Slicker, P.E.

**Senior Transportation
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From: Johns, Andy (FHWA) <Andy.Johns@dot.gov>

Sent: Friday, February 10, 2023 1:50 PM

To: Dan K. Slicker <dkslicker@starkcountyohio.gov>; paul.braun@epa.ohio.gov; Kane, Mark (FTA)

Appendix B - PM_{2.5} TIP Conformity Determination for Stark County, Ohio

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<Mark.Kane@dot.gov>; maietta.anthony@epa.gov; Jordan.Whisler@dot.ohio.gov;
ANTHONY.HILL@dot.ohio.gov; Nathaniel.Vogt@dot.ohio.gov; nino.brunello@dot.ohio.gov
Cc: Jeff G. Dotson <JGDotson@starkcountyohio.gov>
Subject: RE: Interagency Consultation

Good day to all.

Comment: Based on the information provided within Topic 6, is SCATS amending its MTP and making any needed conformity determination on the MTP concurrent with the 2024-2027 TIP update?

Thank you for the clarification.

Andy Johns, AICP
Senior Transportation Planner
Federal Highway Administration
Ohio Division Office
614.280.6850

From: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Sent: Friday, February 10, 2023 2:27 PM
To: Johns, Andy (FHWA) <Andy.Johns@dot.gov>; paul.braun@epa.ohio.gov; Kane, Mark (FTA) <Mark.Kane@dot.gov>; maietta.anthony@epa.gov; Jordan.Whisler@dot.ohio.gov; ANTHONY.HILL@dot.ohio.gov; Nathaniel.Vogt@dot.ohio.gov; nino.brunello@dot.ohio.gov
Cc: Jeff G. Dotson <JGDotson@starkcountyohio.gov>
Subject: RE: Interagency Consultation

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Andy,

The three projects that were not specifically named in our MTP are a roundabout and two intersection upgrades, which were covered in the MTP by a line item called various safety projects. The other project is a roundabout that we were guessing would be built after 2030, but now is scheduled for 2027. All of these projects should not adversely affect the air quality emissions because they will improve traffic flow without increasing the overall traffic.

Therefore, we are not amending the MTP, if it is not required.

Dan Slicker
Senior Transportation
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t:330-451-7346
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From: Johns, Andy (FHWA) <Andy.Johns@dot.gov>
Sent: Monday, February 13, 2023 7:34 AM
To: Dan K. Slicker <dkslicker@starkcountyohio.gov>; paul.braun@epa.ohio.gov; Kane, Mark (FTA) <Mark.Kane@dot.gov>; maietta.anthony@epa.gov; Jordan.Whisler@dot.ohio.gov; ANTHONY.HILL@dot.ohio.gov; Nathaniel.Vogt@dot.ohio.gov; nino.brunello@dot.ohio.gov

Cc: Jeff G. Dotson <JGDotson@starkcountyohio.gov>

Subject: RE: Interagency Consultation

Dan:

Based on the information provided, it does not appear you would need to amend the MTP.

FHWA OH concurs with the conformity strategy provided in the documentation.

Thank you.

Andy Johns

From: Dan K. Slicker <dkslicker@starkcountyohio.gov>

Sent: Monday, February 27, 2023 9:42 AM

To: Brunello, Antonino <Nino.Brunello@dot.ohio.gov>

Subject: AQ Networks

Nino,

I've attached the networks for AQ analysis. I might have jury duty next week, so I wanted to get some results this week even though the interagency consultation is not yet complete.

Thanks,



201 3rd. St. NE, STE. 201, Canton OH 44702-1211

Dan Slicker, P.E.

**Senior Transportation
Engineer**

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From: Nino.Brunello@dot.ohio.gov <Nino.Brunello@dot.ohio.gov>

Sent: Monday, February 27, 2023 10:04 AM

To: Dan K. Slicker <dkslicker@starkcountyohio.gov>

Subject: RE: AQ Networks

I can get you PM numbers today, but I'll need to start creating MOVES runs for ozone (which I can work on today). I will also need updated trip tables from you for the assigned networks you sent.

Nino Brunello, P.E.

Transportation Engineer

ODOT Office of Statewide Planning & Research

1980 W. Broad Street, Mail Stop 3280, Columbus, Ohio 43223

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Appendix B - PM_{2.5} TIP Conformity Determination for Stark County, Ohio

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From: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Sent: Monday, February 27, 2023 10:19 AM
To: Brunello, Antonino <Nino.Brunello@dot.ohio.gov>
Subject: RE: AQ Networks

Here are the trip tables.

Dan Slicker
Senior Transportation
Engineer
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From: Nino.Brunello@dot.ohio.gov <Nino.Brunello@dot.ohio.gov>
Sent: Monday, February 27, 2023 1:07 PM
To: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Subject: RE: AQ Networks

These line up well with the analysis that we did last time for PM. The ozone emission rates may not since it's the first time using the new version of MOVES with those pollutants. I hope to have 2025 ozone ready by the end of the day.

Nino Brunello, P.E.
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From: Nino.Brunello@dot.ohio.gov <Nino.Brunello@dot.ohio.gov>
Sent: Monday, February 27, 2023 1:38 PM
To: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Subject: RE: AQ Networks

I don't know what I was thinking. Ozone is qualitative, right?

Nino Brunello, P.E.
Transportation Engineer
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From: Dan K. Slicker
Sent: Monday, February 27, 2023 2:01 PM
To: Nino.Brunello@dot.ohio.gov
Subject: RE: AQ Networks

Yes, it is. I thought maybe you knew something that I didn't.
Appendix B - PM_{2.5} TIP Conformity Determination for Stark County, Ohio

Thanks for doing the PM numbers so quickly.

Dan Slicker
Senior Transportation
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t:330-451-7346
f:330-451-7990

From: Dan K. Slicker <dkslicker@starkcountyohio.gov>
Sent: Tuesday, February 28, 2023 10:04 AM
To: Johns, Andy (FHWA) <andy.johns@dot.gov>; paul.braun@epa.ohio.gov; Kane, Mark (FTA) <mark.kane@dot.gov>; maietta.anthony@epa.gov; Jordan.Whisler@dot.ohio.gov; ANTHONY.HILL@dot.ohio.gov; Nathaniel.Vogt@dot.ohio.gov; nino.brunello@dot.ohio.gov
Cc: Jeff G. Dotson <JGDotson@starkcountyohio.gov>
Subject: Re: Interagency Consultation

Friendly reminder: our draft TIPs are due next week, so could we get any comments on the conformity strategy this week?

Thanks,

Dan Slicker