

# **Appendix 1: Air Quality Conformity**

**This document serves as an appendix to:**

**MORPC 2024-2027 TIP (Transportation Improvement Program)**

**and**

**LCATS 2024-2027 TIP (Transportation Improvement Program)**

**and**

**CORPO 2024-2027 TIP (Transportation Improvement Program)**

**This is also the air quality conformity for the:**

**MORPC 2024-2050 Metropolitan Transportation Plan**

**And**

**LCATS 2050 Metropolitan Transportation Plan**

May 2024

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# Section I: Introduction

The Clean Air Act Amendments of 1990 expanded transportation's role in contributing to national clean air goals. The 1990 amendments expand the requirements of "transportation conformity" as:

*Conformity to the (air quality implementation) plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not (i) cause or contribute to any new violations of any standards in any area, (ii) increase the frequency or severity of any existing violation of any standard in any areas, or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.*

The CAAA defines nonattainment areas as geographic regions of the country that do not meet the National Ambient Air Quality Standards (NAAQS). In Ohio, the Ohio Environmental Protection Agency (Ohio EPA) is the lead agency for coordinating development of the State Implementation Plan (SIP). The SIP includes actions done on a statewide basis as well as actions done within each specific nonattainment area of the state to achieve the air quality standards.

Redesignation requests to attainment are SIP revisions that document that the NAAQS have been met and provide a maintenance plan to ensure meeting the standards for the next ten years. The first item of documentation contained in a redesignation request is three consecutive years of air quality monitoring data that meet the NAAQS. Second, an inventory of point source, area source and mobile source emissions is developed. The total of the three sources is certified as the attainment emission levels that will allow the air quality standards to be met. Next, emission projections for each source are made to the end of the maintenance period. It must be documented that the total emissions will not exceed the attainment emissions level. Any difference between the total future emissions and the total attainment level emissions is considered a safety margin.

Specifically for on road mobile emissions, budgets are established in the SIP. These budgets are the future projections plus any of the safety margins that the local area may choose to allocate.

One of the requirements is that plans, programs and projects do not delay the timely implementation of transportation control measures (TCMs) in the applicable SIP. Transportation conformity is the process of analyzing the projects included in the Transportation Plan to ensure they do not lead to violations in the air quality standards or delay obtaining the standard. The documentation of this process is called the conformity determination. This appendix is the transportation conformity documentation for the four-county Columbus ozone non-attainment area.

# Section II: Background

## 1-Hour Ozone Standard

Under the CAAA Franklin, Delaware and Licking counties were designated a marginal nonattainment area for ozone. This designation was based on 1988 air quality data that violated the NAAQS for ozone. At ground level, ozone is formed by the reaction of volatile organic compounds (VOCs) and nitrogen oxides (NOx). The CAAA requires that VOC and NOx emissions be reduced to lower the amount of ground-level ozone. Since 1988 the nonattainment area has had no violations of the 1-hour standards. However, the area must comply with the nonattainment area requirements in the CAAA.

In January 1994, the Ohio EPA working with the Ohio Department of Transportation (ODOT), the Mid-Ohio Regional Planning Commission (MORPC), and the Licking County Area Transportation Study (LCATS) submitted a redesignation request to the United States Environmental Protection Agency (U.S. EPA) for the three-county nonattainment area. On April 11, 1994, the Ohio EPA provided additional information to U.S. EPA. On February 1, 1996, a direct final rule was published in the Federal Register approving the redesignation request. The approval was effective April 1, 1996.

## 8-Hour Ozone Standard

On April 15, 2004, U.S. EPA issued final designations with regard to the 8-hour ozone standard and final rules on conformity requirements for these areas. It resulted in expanding the Central Ohio non-attainment area to expand to six counties: Franklin, Delaware, Licking, Knox, Fairfield and Madison.

Ohio EPA submitted an ozone redesignation package to U.S. EPA in March 2009. In September 15, 2009 Federal Register, U.S. EPA approved the redesignation to attainment effective September 15, 2009. Ohio submitted the SIP revision requests to U.S. EPA on October 30, 2012, and December 12, 2012, respectively. On March 19, 2013, the 1997 Ozone standard SIP (MOVES based) motor vehicle emission budgets (MVEB) for the region are established.

The U.S. EPA promulgated a new 8- hour ozone standard in 2008 and on July 20, 2012, the 6-county region was redesignated marginal non-attainment. On December 21, 2016, U.S. EPA approved of redesignating the Columbus area to attainment of the 2008 ozone NAAQS (National Ambient Air Quality Standard). The maintenance plan submitted by Ohio EPA was also approved with new mobile source budgets as shown in in Table 1, which were used for conformity determination for the six county area.

**Table 1: On Road Mobile Source Budgets for the Columbus 6 county 2008 8-Hour Ozone Maintenance Area (VOC, NOx)**

[Tons per summer day]

| Year | 2020  | 2030  |
|------|-------|-------|
| VOC  | 50.66 | 44.31 |
| NOx  | 90.54 | 85.13 |

Source: Federal Register Vol. 81, No. 245, December 21, 2016

Effected on August 3, 2018, US EPA designated the Columbus region as a 2015 Ozone Standard marginal nonattainment area. The area, however, only includes four counties: Franklin, Delaware, Licking, and Fairfield. Madison and Knox Counties are now considered attainment. In 2019 The Ohio EPA submitted a redesignation request to U.S. EPA. The redesignation to attainment with approved MVEB via Federal Register notices on July 3, 2019 and August 21, 2019. Table 1a provides the MVEB for the 4 county 2016 ozone standard maintenance area.

**Table 1a: On Road Mobile Source Budgets for the Columbus four county 2015 8-Hour Ozone Maintenance Area (VOC, NOx)**

[Tons per summer day]

| Year | 2023  | 2030  |
|------|-------|-------|
| VOC  | 28.67 | 22.03 |
| NOx  | 29.28 | 20.98 |

Conformity determination will be based on comparisons to both set of MVEB shown in Table 1 and Table 1a.

**PM2.5 Standards**

April 14, 2005, U.S. EPA issued final designations with regard to the 1997 PM2.5 standard. Franklin, Delaware, Licking, Fairfield counties and Franklin Township in Coshocton County were designated as a non-attainment area for the annual PM2.5 standard. On November 7, 2013 U.S. EPA approved re-designation of the Columbus area to attainment of the 1997 annual PM 2.5 standard of 15 µg/m3 (15 micrograms per cubic meter) for fine particulate matter, FR 66845, Vol. 78, No. 216.

A new annual PM 2.5 standard was promulgated by U.S. EPA in 2012 which strengthened the annual fine particle standard to 12 micrograms per cubic meter (µg/m3). On December 18, 2014, the EPA issued final area designations for the 2012 annual national air quality standard for fine particulate matter (PM2.5) which showed counties in Central Ohio are in attainment of the standard.

On August 24, 2016, FR 58010, Vol 81 (effective on October 24, 2016) EPA finalized the rules that revokes the 1997 primary annual PM2.5 NAAQS in areas that are designated as attainment or maintenance for that NAAQS. As a result of the revocation and being an area meeting the current PM2.5 NAAQS, as an area that has already been redesignated to attainment for the 1997 annual PM2.5 NAAQS, transportation conformity for PM2.5 no longer applies central Ohio.

**NOx Waiver**

The CAAA allows the U.S. EPA administrator to issue a waiver of the NOx requirements if the administrator determines that additional reductions of NOx would not contribute to attainment of the air quality standards. A final rule approving a NOx waiver was published in the July 13, 1995, Federal Register. The NOx waiver removed the build/no-build test and the less than 1990 test that apply to NOx. However, an area that is redesignated to attainment must still meet the approved NOx budget for the conformity analysis. Thus, the NOx waiver is no longer applicable to the Columbus area.

## Transportation Conformity Procedures

On November 24, 1993, U.S. EPA published regulations, 40 CFR 51 Subpart T, which define the specific process necessary to demonstrate conformity of transportation plans, TIPs and projects. Three updates to the conformity have also been finalized and incorporated into the Ohio Administrative Code (OAC). With the implementation regulations for the 8-hour ozone standard and the PM 2.5 standard, new procedures were established to demonstrate conformity for each of these pollutants. The conformity regulations identified three tests to be performed at various milestone or horizon years to show conformity. These are a budget test, a build/no build test and a no greater than 2002 baseline test. The test that must be satisfied depends upon the status of an area's SIP submittals. As an ozone area with approved on road mobile budgets, the budget test will be used.

This appendix documents the conformity determination process for the ozone maintenance area.

## Multiple Metropolitan Planning Organizations

The six-county ozone area consist of two metropolitan planning organizations (MPOs), MORPC and LCATS with area outside of the two MPO's in Fairfield, Madison, and Knox Counties that are part of the Central Ohio Rural Planning Organization (CORPO) Rural Transportation Planning Organization area. The MORPC transportation planning area consists of Franklin County, Delaware County, New Albany, Pataskala and Etna Township in Licking County, Violet and Bloom Townships in Fairfield County and Jerome Township in Union County. The LCATS transportation planning area covers the remainder of Licking County. The CORPO transportation planning area consists of Fairfield, Knox, Madison, Marrison, Morrow, Pickaway and Union counties.

Each MPO and CORPO develops a transportation plan for its respective transportation study area. The conformity procedures require that the entire non-attainment area be considered as a whole. This requires that the transportation plans and any projects in the non-MPO area be considered together to make a conformity determination. This appendix documents the process used to combine the entire area to make a single conformity determination. This document serves as an appendix to the MORPC 2024-2050 Metropolitan Transportatin Plan, the LCATS 2050 Transportation Plan and the MORPC, LCATS and CORPO 2024-2027 Transportation Improvement Programs.

## Latest Planning Assumptions

The Transportation Plans' conformity analysis readily meets this requirement. A 10/11/2000 U.S. DOT/U.S. EPA memorandum further emphasized the use of latest planning assumptions highlighting the following areas: 1) Model Validation; 2) Land Use, Population and Employment Projections; and 3) Travel and Congestion. The following addresses these issues.

### 1) Model Validation

For the travel demand model in the maintenance area, model validation is a joint process between MORPC, LCATS and the ODOT Office of Technical Services. In December 2004, a new complete validated model was accepted and installed for use at MORPC. The new model covers all of the MORPC and LCATS area including portions of Pickaway, Madison and Union Counties along with additional portions of Fairfield County outside of the MORPC MPO area. Further, ODOT working with MORPC completed another model update in 2019 and

MORPC continuously updates the highway and transit network information and maintains accurate networks for future year analysis.

- 2) **Future Networks**  
The Transportation Plan horizon year for MORPC and LCATS is 2050. Based on Interagency consultation for the ozone conformity analysis, the years 2030, 2040 and 2050 are being used. The Transportation Plans list the projects included and Section III lists the projects included for each analysis year.
- 3) **Land Use, Population and Employment Projections**  
MORPC continually monitors land use, population and employment information. MORPC performs complete land use inventories every five years. The complete documentation of the process and future forecasts is provided in *Future Land use Scenario Methodology* appendix to the Transportation Plan. MORPC coordinates with LCATS for updates to the variables for their area.
- 4) **Travel and Congestion**  
Based on the validated model, highway and transit changes since then, the most up-to-date land use, population and employment projections, 24-hour ADT volumes are produced. MOVES4 software is used to create the emission factors. ODOT in conjunction with MORPC and inter-agency consultation ensures the emission factors used in this process are based on the most up-to-date assumptions.

### **Urban Transportation Modeling Process**

The MORPC model covers Franklin County, Delaware County, Licking County and portions of Fairfield, Pickaway, Madison and Union counties. The model employs activity-based modeling procedures. Output from the urban model is link-by-link directional 24-hour traffic volumes for the existing or future regional transportation network. These 24-hour traffic volumes provide the basis for performing the air quality analysis. ODOT, MORPC and LCATS jointly hold the models and provide extensive technical support for each other. The non-modeled areas in the Fairfield, Madison, Knox and Coshocton counties utilize Highway Performance Monitoring System (HPMS) data.

### **Air Quality Modeling Process**

The Transportation Plan conformity demonstration for Ohio's urbanized nonattainment and maintenance areas utilize the capabilities of the urban transportation models to perform milestone year and Transportation Plan horizon year analyses required under the conformity regulations. The modeling process identifies the growth in vehicle miles of travel and changes in the travel patterns resulting from the projects proposed in the non-attainment or maintenance area transportation plans and programs.

Motor Vehicle Emissions Simulator (MOVES4) is the U.S. EPA official software for estimating emissions. Using MOVES4, emission factor files were generated for the analysis. Programs and corresponding MOVES4 parameters were developed in consultation with Ohio EPA.

Table 2 summarizes the settings used in the MOVES4 run specification file and the MOVES4 County-Data Manager. Further details in specific inputs that are not using default values are provided below.

**Table 2 – MOVES4 Inputs**

| <b>RunSpec Parameter Settings</b>  |   |
|------------------------------------|---|
| MOVES Version                      | MOVES4  |
| Scale                              | County Scale: Franklin County, OH   |
| MOVES4 Modeling Technique          | Emission Factor Method<br>Rates per Profile (grams/vehicle)<br>Rates per Distance (grams/mile)<br>Rates per Vehicle (grams/vehicle)   |
| Time Span                          | Time Aggregation: Hour<br>1 Month representing average July temperatures<br>All hours of day selected<br>16 speed bins<br>Weekdays only   |
| Geographic Bounds                  | Franklin, Delaware, Licking, Fairfield, Madison & Knox Counties.  |
| Vehicles/Equipment                 | All source types, gasoline and diesel   |
| Road Type                          | All road types including off-network  |
| Pollutants and Processes           | Total Gaseous Hydrocarbons, Non-Methane Hydrocarbons, Volatile Organic Compounds, NO <sub>x</sub> , NO, NO <sub>2</sub> , 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  |
| <b>County Data Manager Sources</b> |   |
| Source Type Population             | Combination of local and default data<br>Local data (2010) ODOT from motor vehicle registration<br>Default data used for source types 41, 51, 54, 61, and 62<br>Future year growth rate based on MPO model Household growth rate. |
| Vehicle Type VMT                   | Combination of local and default data<br>HPMSVTypeYear VMT = daily VMT from travel demand model<br>monthVMTFraction = local<br>dayVMTFraction=default<br>hourVMTFraction=local  |
| I/M Program                        | None  |
| Fuel Formulation                   | Default   |



|                            |  |
|----------------------------|--|
| Fuel Supply                | Default<br>Future runs modified for reformulated gas, RVP, etc. for summer analyses  |
| Metereology Data           | Local data obtained from NOAA National Climatic Data Center. Data 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 assumed constant   |
| Road Type Distribution     | Use ODOT county summary VMT categorized by federal functional classes  |
| Age Distribution           | Combination of local and default data.<br>Local data (2010) ODOT from motor vehicle registration<br>Default data used for source types 41, 51, 54, 61, and 62<br>The same age distribution used for all analysis years |
| Average Speed Distribution | Default  |
| Alternative Fuel Type      | Default  |

Temperature and Relative Humidity

Temperatures used for the Ozone analysis are representative of the month of July in 2002 based on NOAA data from the National Climate Data Center website. Data for Port Columbus International Airport was used because it was the most complete compared to other airports in the non-attainment area. To get the correct format for MOVES4, the data was entered into a spreadsheet provided by U.S. EPA which was designed to convert Mobile6 data to MOVES4. An average July hourly temperature and relative humidity distribution profile can be seen in Table 3.

**Table 3 – July Temperature and Relative Humidity Data for Ozone Analysis**

| Hour | Temperature | Relative Humidity |
|------|-------------|-------------------|
| 1    | 72.0        | 78.0              |
| 2    | 70.8        | 80.0              |
| 3    | 69.8        | 82.0              |
| 4    | 69.1        | 84.0              |
| 5    | 68.6        | 86.0              |
| 6    | 68.0        | 85.0              |
| 7    | 67.5        | 81.0              |
| 8    | 67.9        | 75.0              |
| 9    | 70.5        | 69.0              |
| 10   | 74.7        | 63.0              |
| 11   | 78.9        | 59.0              |
| 12   | 82.6        | 54.0              |
| 13   | 85.8        | 52.0              |
| 14   | 87.5        | 51.0              |
| 15   | 88.1        | 50.0              |
| 16   | 88.3        | 48.0              |
| 17   | 87.9        | 50.0              |
| 18   | 86.7        | 51.0              |
| 19   | 84.6        | 54.0              |
| 20   | 81.9        | 60.0              |
| 21   | 79.2        | 64.0              |
| 22   | 76.9        | 69.0              |
| 23   | 75.2        | 73.0              |
| 24   | 73.6        | 76.0              |

Ramp Fraction

Ramp fractions were derived using the base year travel demand model VHT fractions. Ramp fractions can be seen in Table 4. Base year fractions were assumed to apply to future years.

**Table 4 – Ramp Fractions**

| RoadTypeID | Road Description        | Ramp Fraction |
|------------|-------------------------|---------------|
| 2          | Rural Restricted Access | 0.02          |
| 4          | Urban Restricted Access | 0.13          |

Source Type Population

Source type population is based on a combination of local and MOVES4 default data. Local data was provided by ODOT based on 2010 motor vehicle registration. Default data is used for source

types 41, 51, 54, 61, and 62. Future year growth rate is based on MPO model growth in cars which is an independent variable to the travel demand model. Table 5 shows source type population for the analyzed counties in 2008.

**Table 5 – Source Type Population for year 2008**

| Source Type | sourceTypeName               | Franklin | Delaware | Licking | Fairfield | Madison & Knox |
|-------------|------------------------------|----------|----------|---------|-----------|----------------|
| 11          | MotorCycle                   | 55,222   | 6,868    | 8,999   | 2,444     | 3,565          |
| 21          | Passenger Car                | 878,901  | 97,120   | 128,334 | 35,905    | 43,829         |
| 31          | Passenger Truck              | 383,900  | 44,774   | 58,759  | 16,550    | 31,914         |
| 32          | Light Commercial Truck       | 11,553   | 1,348    | 1,768   | 498       | 1,280          |
| 41          | Intercity Bus                | 294      | 66       | 83      | 23        | 66             |
| 42          | Transit Bus                  | 79       | 18       | 22      | 6         | 35             |
| 43          | School Bus                   | 1,582    | 357      | 446     | 126       | 405            |
| 51          | Refuse truck                 | 228      | 39       | 49      | 13        | 37             |
| 52          | Single Unit Short-haul Truck | 205      | 35       | 44      | 12        | 1,553          |
| 53          | Single Unit Long-haul Truck  | 264      | 44       | 57      | 15        | 198            |
| 54          | Motor Home                   | 1,102    | 184      | 235     | 65        | 181            |
| 61          | Comb Short-haul Truck        | 3,144    | 653      | 905     | 154       | 780            |
| 62          | Comb Long-haul Truck         | 3,616    | 750      | 1,040   | 178       | 897            |

### Vehicle Age Distribution

Vehicle age distribution information was derived using Ohio Bureau of Motor Vehicle registration data for year 2010. The data was given to Ohio EPA who supplied a VIN decoder that allowed ODOT to create correctly formatted MOVES4 inputs. MOVES4 default data is used for source types 41, 51, 54, 61, and 62. The registration data for most populous four counties were obtained in the non-attainment area and combined to create a regional vehicle age distribution file. This data is applied to all six counties in the region. The same age distribution will be used for all analysis years.

## Vehicle Type VMT and VMT Fractions

The first component of the VMT inputs is the Yearly HPMS VMT, but the travel demand model was used instead of ODOT's HMPS data since it was felt that the model would better predict future year VMT. ODOT's CMS post-processor was run for each year to generate congestion reports, which includes total daily VMT. The vehicle type percentages of the total VMT were based on ODOT's weigh-in-motion (WIM) data. Since there are not enough WIM stations for lower class facilities in the non-attainment area, a statewide average of all ODOT WIM data collectors was used. Daily VMT was then converted to yearly. The same method was used to generate all other analysis years.

## Output Emission Factors

Table 6 shows the first record in a MOVES4 sample output (rate per distance) emission file for year 2008. For any given month, day of week, hour of the day, pollutant, and process; the rate per distance varies by road type, and speed bin. Rates per distance emissions are applied to link and intrazonal VMT.

**Table 6 – Sample Emission File (Rate per Distance)**

|          |                  |             |               |              |             |                 |
|----------|------------------|-------------|---------------|--------------|-------------|-----------------|
| Heading: | MOVESScenarioID  | MOVESRunID  | yearID        | monthID      | dayID       | hourID          |
| Record:  | OhioCustomDomain | 6           | 2008          | 7            | 5           | 1               |
| Heading: | linkID           | pollutantID | processID     | sourceTypeID | SCC         | fuelTypeID      |
| Record:  | 390490201        | 3           | 0             | 1            |             | 0               |
| Heading: | modelYearID      | roadTypeID  | avgSpeedBinID | temperature  | relHumidity | ratePerDistance |
| Record:  | 0                | 2           | 1             | 48.9333      | 73          | 12.9489         |

Table 7 shows the first record in a MOVES4 sample output (rate per vehicle) emission file for year 2008. The rate per vehicle varies for any combinations of month, day of week, hour of the day, pollutant, and process. Rates per vehicle emissions are applied to the vehicle source type population.

**Table 7 – Sample Emission File (Rate per Vehicle)**

|          |                  |            |             |             |                |
|----------|------------------|------------|-------------|-------------|----------------|
| Heading: | MOVESScenarioID  | MOVESRunID | yearID      | monthID     | dayID          |
| Record:  | OhioCustomDomain | 6          | 2008        | 7           | 5              |
| Heading: | hourID           | zoneID     | pollutantID | processID   | sourceTypeID   |
| Record:  | 1                | 39049      | 3           | 0           | 2              |
| Heading: | SCC              | fuelTypeID | modelYearID | temperature | ratePerVehicle |
| Record:  |                  | 0          | 0           | 48.9333     | 0.054967       |

## Analysis Years

The analysis years for transportation conformity must include the Transportation Plan horizon year, any milestone years, and any interim years (to be less than ten years between analysis years). The Transportation Plan horizon year for MORPC and LCATS is 2050. The analysis years were determined, through the interagency consultation process. Thus, the years 2030, 2040 and 2050 are used for the ozone conformity analysis, since the future budget years established are 2023, 2020 and 2030.

## Air Quality Consultation Process

The 1990 Clean Air Act amendments required identification of the consultation procedures that Ohio's air quality and transportation agencies will follow in the conformity process. To fulfill this requirement, the Ohio EPA has adopted Ohio Administrative Code 3745-101-04 to define the interagency consultation procedures used on air quality issues. These rules define a "straw man" process, whereby the lead agencies in the conformity process assume responsibility for preparing and distributing draft documents, with supporting information, and ensuring that each affected party involved in the conformity process is included in the consultation process. In addition, a Memorandum of Understanding (MOU) between MORPC, LCATS, ODOT and Ohio EPA has been signed to clarify OAC 3745-101-04 for the Columbus maintenance area. As a result of SAFETEA-LU Ohio EPA led the process to update MOU. This process concluded with signatures from all parties obtained in February/March 2008. These were reaffirmed with updated signatures in 2014.

The Columbus ozone area Transportation Plan's conformity process employed the consultation procedures embodied in the rules. The procedures used in the current air quality analysis are comparable to the previous TIP and Transportation Plan conformity determinations. As necessary air quality consultation reports on conformity process for the Transportation Plan are prepared and distributed to MORPC's TAC and Transportation Policy committees, LCATS Policy Committee, ODOT, Ohio EPA, FHWA, FTA, and U.S. EPA. In addition, MORPC has had various telephone conversations and e-mail correspondence with Ohio EPA, ODOT and FHWA. Ohio EPA has also discussed various issues of transportation conformity with U.S. EPA. Documentation is provided in attachments to this appendix.

# Section III: Quantitative Analysis

## Projects Included in the Air Quality Analysis

Every location-specific project listed in the Metropolitan Transportation Plans are included in the Transportation Plan networks and listed in the following project listing. MORPC meets with the local agencies to identify potential MTP projects. We also compile projects based on the local agencies' Capital Improvement Plans and any local thoroughfare and/or comprehensive plans. Thus, both federally funded and non-federally funded projects are included. Our model network includes all the projects that can be coded on the regional network. These listings include intersection improvements and other minor network changes which are potentially exempt projects as defined the conformity regulations (40 CFR in sections 93.126 and 93.127). There are no TCM's in the SIP for the Columbus area. Thus, the projects included in the transportation plans are consistent with those stated in the SIP. The following tables (Tables 8-10) identify the projects that are included in the analysis for the years 2030, 2040 and 2050 respectively.

**Table 8: Additional Projects identified for year 2030**

| Plan Project ID | Project Description (2030)   |
|-----------------|--|
| 23              | Tuttle Crossing Blvd. extension from Avery Rd. to Wilcox Rd., New Roadway 2 lane(s) each direction with complete street facilities                     |
| 58              | I-70 (East Freeway) at Brice Rd., Interchange modification   |
| 60              | I-70 (East Freeway) at SR 256 and at Taylor Rd./SR 204, Interchange modification   |
| 80              | I-270 (South Outerbelt) at US 33 (Southeast Freeway), Reconfigure slip, loop and/or directional interchange ramps                                      |
| 81              | US 33 (Southeast Freeway) from Gender Rd. (SR 674) to Hill Rd./Diley Rd., Convert 4 lane roadway to 4 lane freeway                                     |
| 82              | US 33 (Southeast Freeway) from Hamilton Rd. (SR 317) to Gender Rd. (SR 674), Convert 4 lane roadway to 4 lane freeway                                  |
| 83              | US 33 (Southeast Freeway) at Bixby Rd., New interchange  |
| 88              | Home Rd. extension from Green Meadows Dr. to Lewis Center Rd. (east of railroad), New Roadway 2 lane(s) each direction with complete street facilities |
| 92              | Broad St. (SR 16) from McNaughten Rd. to Taylor Rd., Widen road from 4 lanes to 6 lanes total both directions with complete street facilities          |
| 135             | I-70 (East Freeway) at I-270 (East Outerbelt), Reconfigure slip, loop and/or directional interchange ramps   |

|     |  |
|-----|--|
| 189 | I-70/I-71 (South Innerbelt) at I-71S/SR 315 (west interchange), Reconfigure slip, loop and/or directional interchange ramps                                      |
| 193 | Eiterman Rd. relocation from Cosgray Rd. to Eiterman Rd., New Roadway 2 lane(s) each direction with complete street facilities                                   |
| 212 | Dublin-Granville Rd. (SR 161) at Karl Rd., Add/Modify turn lanes and add complete street facilities  |
| 270 | I-70/I-71 (South Innerbelt) from I-71S/SR 315 (west interchange) to I-70E/I-71N (east interchange), Widen freeway from 6 lanes to 10 lanes total both directions |
| 271 | I-70 (East Freeway) from I-71 (East Innerbelt) to Kelton Ave., Widen freeway from 8 lanes to 10 lanes total both directions                                      |
| 324 | Sunbury Pkwy. (west section) from US 36/SR 37 to Four Winds Dr. extension (future), New Roadway 2 lane(s) each direction with complete street facilities         |
| 347 | US 33 (College Ave.) at Petzinger Rd., New interchange   |
| 377 | US 33 at Pickerington Rd., New interchange   |
| 384 | I-71 at Sunbury Parkway, New interchange   |
| 404 | I-70 at Etna Pkwy, New interchange   |
| 414 | US 33 (Columbus-Lancaster Rd) from Hill Rd/Diley Rd to US-33/Carroll Interchange, Convert 4 lane roadway to 4 lane freeway                                       |
| 430 | Eiterman Rd from Bobcat Way to Shier Rings Rd, Add turn lanes and complete street facilities to 2 lane roadway   |
| 435 | Perimeter Dr. from Holt Rd./Perimeter Loop Dr. to Emerald Pkwy, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities         |
| 457 | Market St. extension from Reynoldsburg-New Albany Rd./High St. to 3rd St. extension, New Roadway 1 lane(s) each direction with complete street facilities        |
| 464 | SR-161 from I-270 to US-62, Widen freeway from 4 lanes to 6 lanes total both directions  |
| 469 | Beech Rd/Clark State Rd. at Morse Rd., Construct roundabout with complete street facilities  |
| 692 | SR 605 at Walnut St., Construct roundabout with complete street facilities   |
| 751 | Merrick Pkwy from Troy Rd. to Current Eastern Terminus, New Roadway 1 lane(s) each direction with complete street facilities                                     |
| 765 | Lewis Center Rd. at Worthington Rd./Rome Corners Rd., Construct roundabout with complete street facilities   |
| 766 | Sunbury Rd. at Agler Rd./Cassady Ave., Add/Modify turn lanes and add complete street facilities  |
| 787 | I-70 from I-270 to Brice Rd., Widen freeway from 6 lanes to 8 lanes total both directions  |
| 788 | I-70 from Brice Rd. to SR 256, Widen freeway from 6 lanes to 8 lanes total both directions   |
| 789 | I-270 at Easton Way, Modify ramp termni intersection(s)  |
| 852 | SR 204 at Milnor Rd., Construct roundabout with complete street facilities   |

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| 960  | Livingston Ave. from I-70 to Brice Rd., Modify 4 lane roadway to 2 lanes with addition of complete street facilities                      |
| 1119 | Dublin-Granville Rd. at Linworth Rd., Add/Modify turn lanes and add complete street facilities  |
| 1120 | Dublin-Granville Rd. at Olentangy River Rd., Add/Modify turn lanes and add complete street facilities                                     |
| 1182 | Alum Creek Dr. from SR 317 to Groveport Rd., Widen road from 4 lanes to 6 lanes total both directions with complete street facilities     |
| 1192 | John Shields Pkwy from Village Pkwy to Dublin Center Dr., New Roadway 1 lane(s) each direction with complete street facilities            |
| 1206 | Wilson Rd. South from Rider Rd. to Cheshire Rd., New Roadway 2 lane(s) each direction with complete street facilities                     |
| 1351 | Cassady Ave from CSX Railroad to 7th Ave., Add turn lanes and complete street facilities to 2 lane roadway                                |
| 1358 | E. Broad St at Hamilton Rd, Add/Modify turn lanes and add complete street facilities  |
| 1374 | Bale Kenyon Rd from E. Powell Rd to Orange Rd, Add turn lanes and complete street facilities to 2 lane roadway                            |
| 1380 | E. Broad St from I-270 to Outerbelt St, Widen road from 5 lanes to 6 lanes total both directions with complete street facilities          |
| 1409 | SR-315 at Jewett Rd., Add/Modify turn lanes and add complete street facilities  |
| 1414 | Cleveland Ave. at Hudson St., Add/Modify turn lanes and add complete street facilities  |
| 1425 | Cooke Rd. from I-71 to Cleveland Ave., Add turn lanes and complete street facilities to 2 lane roadway                                    |
| 1426 | Ferris Rd. from Karl Rd. to Westerville Rd., Add turn lanes and complete street facilities to 2 lane roadway                              |
| 1490 | Hamilton Rd. from SR-161 to Central College Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 1644 | US-23 at Williams Rd., Add/Modify turn lanes and add complete street facilities   |
| 1718 | SR-605 at Fancher Rd., Add/Modify turn lanes and add complete street facilities   |
| 1725 | E Wilson Bridge Rd. at N High St./US-23, Add/Modify turn lanes and add complete street facilities   |
| 1726 | Dublin Granville Rd./SR-161 at Busch Blvd., Add/Modify turn lanes and add complete street facilities                                      |
| 1728 | SR-161 at Sharon Woods Blvd/Tamarack Blvd., Add/Modify turn lanes and add complete street facilities                                      |
| 1729 | Riverside Dr./US-33 at Hayden Rd., Add/Modify turn lanes and add complete street facilities   |
| 1748 | Hilliard-Rome Rd. at Renner Rd., Add/Modify turn lanes and add complete street facilities   |
| 1758 | E Broad St. at Rosehill Rd., Add/Modify turn lanes and add complete street facilities   |
| 1808 | Rathmell Rd. from US-23 to Alum Creek Dr., Add turn lanes and complete street facilities to 2 lane roadway                                |



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| 1809 | Sancus Blvd. from Worthington Woods Blvd. to Syracuse Ln., Add turn lanes and complete street facilities to 2 lane roadway                         |
| 1838 | Eichhorn St. Extension from current terminus to 3500 ' west, New Roadway 1 lane(s) each direction with complete street facilities                  |
| 1841 | Green Chapel Rd. from US-62 to Clover Valley Rd., Add turn lanes and complete street facilities to 2 lane roadway                                  |
| 1842 | Green Chapel Rd. from Clover Valley Rd. to Mink St., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities      |
| 1843 | Mink St. from SR-161 eastbound ramps to Green Chapel Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 1844 | Harrison Rd. extension from Clover Valley Rd. to Mink St., New Roadway 1 lane(s) each direction with complete street facilities                    |
| 1845 | Clover Valley Rd. from Jug St. to Green Chapel Rd., Add turn lanes and complete street facilities to 2 lane roadway                                |
| 1846 | Beech Rd. from Innovation Corridor Way to Jug St., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities        |
| 1851 | Frank Rd at Hardy Parkway St. and Brown Rd, Add/Modify turn lanes and add complete street facilities   |
| 1855 | Trabue Rd from Lake Shore Dr to Riverside Dr, Add turn lanes and complete street facilities to 4 lane roadway                                      |
| 1878 | SR-605 at Fancher Rd, Add/Modify turn lanes and add complete street facilities   |
| 1905 | Merrick Parkway from Troy Rd to CSX RR, Add/Modify turn lanes and add complete street facilities   |
| 1912 | Taylor Station at Claycraft Rd, Add/Modify turn lanes and add complete street facilities   |
| 1923 | Hayden Run Rd at Britton Parkway, Modify existing roundabout and add complete streets facilities   |
| 1927 | N Cassady Ave from I-670 to Agler Rd, Add turn lanes and complete street facilities to 2 lane roadway  |
| 2022 | I-71 at Big Darby Creek, Widen freeway from 0 lanes to 0 lanes total both directions   |
| 2027 | SR-315 at Hyatts Rd, Add/Modify turn lanes and add complete street facilities  |
| 2028 | SR 204 at Tollgate Rd, Add/Modify turn lanes and add complete street facilities  |
| 2030 | Summit St at 3rd and 8th Ave, Add/Modify turn lanes and add complete street facilities   |
| 2031 | SR-665 at Lambert Rd, Add/Modify turn lanes and add complete street facilities   |
| 2032 | SR-161 at Beech Rd, Modify ramp termni intersection(s)   |
| 2041 | Hyland Croy Rd from Brand Rd to Park Mill Dr, Add turn lanes and complete street facilities to 2 lane roadway                                      |
| 2046 | Big Walnut Rd from South Old 3C Rd to Tussic St, Add turn lanes and complete street facilities to 2 lane roadway                                   |

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| 2047 | Cheshire Rd from Piatt Rd to South Old State, Add turn lanes and complete street facilities to 2 lane roadway                                      |
| 2049 | Cheshire Rd at Golf Course Rd, Construct roundabout with complete street facilities  |
| 2050 | Cheshire Rd from Winterbourne Dr to Piatt Rd, New railroad grade seperated bridge  |
| 2051 | Fancher Rd at Harlem Rd, Construct roundabout with complete street facilities  |
| 2052 | Home Rd from Liberty Rd to SR-315, Add turn lanes and complete street facilities to 2 lane roadway   |
| 2053 | Hyatts Rd from Steitz Rd to Sawmill Pkwy, Add turn lanes and complete street facilities to 2 lane roadway  |
| 2056 | S County Line Rd at Fancher Rd, Construct roundabout with complete street facilities   |
| 2057 | S County Line Rd at Center Village, Construct roundabout with complete street facilities   |
| 2058 | S Old State Rd at Hollenback Rd, Construct roundabout with complete street facilities  |
| 2059 | SR 3 at Lewis Center Rd, Add/Modify turn lanes and add complete street facilities  |
| 2060 | Sunbury Rd at Big Walnut Rd, Construct roundabout with complete street facilities  |
| 2061 | Merrick Pkwy from US 23 west to Proposed CSX RR Crossing, New Roadway 1 lane(s) each direction with complete street facilities                     |
| 2062 | 1st Ave from Grandview Ave to Ashland Ave, Add turn lanes and complete street facilities to 2 lane roadway   |
| 2065 | Basil-Western Rd from Kings Crossing/Hill Rd to Amanda-Northern Rd, Add turn lanes and complete street facilities to 2 lane roadway                |
| 2066 | Central College Rd from Lee Rd to Sandimark Pl, Add turn lanes and complete street facilities to 2 lane roadway                                    |
| 2068 | Polaris Pkwy from Gemini Pl to 1004' south of S Old State Rd, Add turn lanes and complete street facilities to 4 lane roadway                      |
| 2069 | Avery Rd from Hayden Run Rd to Tuttle Crossing Extension, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 2070 | Cleveland Ave at E Dunedin Rd, Add/Modify turn lanes and add complete street facilities  |
| 2071 | SR-161 at Olentangy River, Add/Modify turn lanes and add complete street facilities  |
| 2074 | Rohr Rd from Bixby Rd to West of Shook Rd, Add turn lanes and complete street facilities to 2 lane roadway   |
| 2147 | I-270 at I-71 (North Outerbelt), Interchange modification  |
| 2190 | E 5th Ave at Cassady Ave, Add/Modify turn lanes and add complete street facilities   |
| 2193 | Westland Mall Redevelopment Blvd from Georgesville Rd to W Broad St, New Roadway 1 lane(s) each direction with complete street facilities          |
| 2194 | Richardson Rd from London/Lancaster Rd and Hayes Rd, Add turn lanes and complete street facilities to 2 lane roadway                               |
| 2195 | London-Lancaster Rd from Rickenbacker Pkwy extension to Richardson Rd, Add turn lanes and complete street facilities to 2 lane roadway             |

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| 2196  | Hayes Rd from Rickenbacker Parkway extension and Richardson Rd, Add turn lanes and complete street facilities to 2 lane roadway    |
| 2197  | SR-37 from S Morning St to Sunbury Corp Limits, Add turn lanes and complete street facilities to 2 lane roadway                    |
| 2199  | Lockbourne Rd from I-270 to Rohr Rd, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities      |
| 2200  | Rathmell Rd from Parsons to Reese Rd, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities     |
| 2201  | Rathmell Rd from Reese Rd to Alum Creek Dr, Add turn lanes and complete street facilities to 2 lane roadway                        |
| 2203  | US-62 from Smiths Mill Rd to the MPO boundary, Add turn lanes and complete street facilities to 2 lane roadway                     |
| LCATS | Mt Vernon Rd. from Channel St. to Riverview; Add/Modify turn lanes and complete street facilities to 2 lane roadway                |
| LCATS | SR-16 at York Rd, Construct roundabout with complete streets facilities  |
| LCATS | Thornwood Dr. from Beaver Run Rd to Lees Rd; Add/Modify turn lanes and complete street facilities to 2 lane roadway                |
| LCATS | Canyon Rd. Extension from Refugee Rd. to US40; New Roadway 1 lane(s) each direction with complete street facilities                |
| LCATS | Canyon Rd. from Beaver Run Rd. to Refugee Rd; Add/Modify turn lanes and complete street facilities to 2 lane roadway               |
| LCATS | I-70 from SR-158 to SR-79, Widen freeway from 4 lanes to 6 lanes total both directions   |
| LCATS | SR-161 from Beech Rd to Columbus Rd, Widen freeway from 4 lanes to 6 lanes total both directions                                   |
| LCATS | SR-161 from Columbus Rd to Thornwood Crossing, Widen freeway from 4 lanes to 6 lanes total both directions                         |
| LCATS | High St at Newark St, Add/Modify turn lanes and add complete street facilities   |
| LCATS | Licking Valley at Main St, Construct roundabout with complete streets facilities   |
| LCATS | Canal Rd. from Cumberland Rd to Hebron city line; Add/Modify turn lanes and complete street facilities to 2 lane roadway           |
| LCATS | SR-79 (Walnut Rd) from Park Ave. to Buckeye lake city line; Add/Modify turn lanes and complete street facilities to 2 lane roadway |

**Table 9: Additional Projects identified for year 2040**

| Plan Project ID | Project Description (2040)   |
|-----------------|--|
| 1               | Lockbourne Rd. from SR 104 (Frank-Refugee Freeway) to Livingston Ave. (US 33), Add turn lanes and complete street facilities to 2 lane roadway           |
| 3               | Williams Rd. from Alum Creek Dr. to Hamilton Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 12              | Sunbury Rd. from Agler Rd. to Morse Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 17              | Veterans Pkwy. from US 23 at US 42 to US 36/SR 37, New Roadway 2 lane(s) each direction with complete street facilities                                  |
| 18              | Galloway Rd.-Hilliard Rome Rd. connector from Broad St. (US 40) to Feder Rd., New Roadway 2 lane(s) each direction with complete street facilities       |
| 33              | Gender Rd. from US 33 (Southeast Freeway) to Brice Rd., Add turn lanes and complete street facilities to 2 lane roadway                                  |
| 48              | Sunbury Rd. from Morse Rd. to SR 161, Add turn lanes and complete street facilities to 2 lane roadway  |
| 55              | Sunbury Rd. from Leonard Ave. to Agler Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 56              | Broad St. (SR 16) from Etna Pkwy. to SR 310 (east leg), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities         |
| 62              | Williams Rd. from Heer Park to Alum Creek Dr., Add turn lanes and complete street facilities to 2 lane roadway   |
| 64              | I-70 (East Freeway) from SR 256 (Baltimore-Reynoldsburg Rd.) to SR 158, Widen freeway from 4 lanes to 6 lanes total both directions                      |
| 95              | Valleyside Dr. from US 36 (William St.) to SR 37 (Central Ave.) at Lexington Blvd., New Roadway 1 lane(s) each direction with complete street facilities |
| 111             | SR 310 (Hazelton-Etna Rd.) from US 40 (National Rd.) to Mill Street Rd., Add turn lanes and complete street facilities to 2 lane roadway                 |
| 122             | Johnstown Rd. from Goshen La. to Stygler Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 155             | Bixby Rd. from US 33 (Southeast Freeway) to Winchester Pk., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities     |
| 157             | Mink St. from National Rd. (US 40) to Broad St. (SR 16), Add turn lanes and complete street facilities to 2 lane roadway                                 |
| 158             | Mink St. from Broad St. (SR 16) to Morse Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                   |

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| 162 | Glenn Rd. from Curve Rd. to US 36/SR 37, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities  |
| 173 | Waggoner Rd. from Broad St. (SR 16) to Havens Corners Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 176 | SR 317 (London-Groveport Rd.) from Alum Creek Dr. to Main St. (Groveport Rd.), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities          |
| 180 | Georgesville Rd. from Hall Rd. to Clime Rd. (south leg), Add turn lanes and complete street facilities to 4 lane roadway   |
| 183 | Stygler Rd. from Johnstown Rd. to US 62, Add turn lanes and complete street facilities to 2 lane roadway   |
| 199 | Livingston Ave. (US 33) at Alum Creek Dr., Add/Modify turn lanes and add complete street facilities  |
| 208 | High St. (US 23) at Obetz Rd., Add/Modify turn lanes and add complete street facilities  |
| 209 | Morse Rd. at Westerville Rd. (SR 3), Add/Modify turn lanes and add complete street facilities  |
| 218 | Ebright-Bixby interchange connector from Ebright Rd. (north of rail line) to Bixby-Sims connector (future), New Roadway 2 lane(s) each direction with complete street facilities |
| 220 | Big Walnut Rd. at Old 3C Hwy., Add/Modify turn lanes and add complete street facilities  |
| 221 | Big Walnut Rd. at Tussic Street Rd., Add/Modify turn lanes and add complete street facilities  |
| 239 | Winchester Pike at Ebright Rd./Shannon Rd., Add/Modify turn lanes and add complete street facilities   |
| 248 | Avery-Muirfield Dr. at Perimeter Dr. & Perimeter Loop Dr., Construct roundabout with complete street facilities  |
| 254 | William St. (US 36) at Channing St., Add/Modify turn lanes and add complete street facilities  |
| 255 | William St. (US 36/US 42) at Lake St. (US 42), Add/Modify turn lanes and add complete street facilities  |
| 256 | William St. (US 36) at Curtis St., Add/Modify turn lanes and add complete street facilities  |
| 258 | Central Ave. (SR 37) at Locust Curve Dr., Add/Modify turn lanes and add complete street facilities   |
| 260 | US 23 (Columbus Pk.) at Cheshire Rd., Add/Modify turn lanes and add complete street facilities   |
| 268 | Walnut St. at Bevelhymer Rd., Add/Modify turn lanes and add complete street facilities   |
| 323 | Four Winds Dr. (south extension) from 3B's & K Rd. (north of Cheshire Rd.) to US 36/SR 37, New Roadway 2 lane(s) each direction with complete street facilities                  |
| 343 | Shanahan Rd. from US 23 (Columbus Pk.) to Piatt Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 380 | SR 161 from US-62 to Beech Road, Widen freeway from 4 lanes to 6 lanes total both directions   |
| 381 | I-270 at Broad Street (west outerbelt), Interchange modification   |
| 383 | I-71 at TR 109 (Big Walnut Road), New interchange  |

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| 399 | I-70 from I-670 to Broad St (US 40), Widen freeway from 4 lanes to 6 lanes total both directions   |
| 400 | I-70 at Livingston Ave., Interchange modification  |
| 401 | I-70 from Livingston Ave to US 33, Widen freeway from 6 lanes to 8 lanes total both directions   |
| 416 | US 33 at Hamilton Rd./Williams Rd., Interchange modification   |
| 417 | US 33 at SR 104 (Frank-Refugee Freeway), Interchange modification  |
| 418 | US 33 from SR 104 to I-270, Widen freeway from 4 lanes to 6 lanes total both directions  |
| 419 | US 33/SR 161 from Dublin-Plain City Rd (SR 161/Post Rd) to Avery-Muirfield Dr, Widen freeway from 4 lanes to 6 lanes total both directions         |
| 429 | Cosgray Rd. from Fishel Drive South to SR 161 (Post Rd.), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 455 | Walnut St. extension from US 62 (Johnstown Rd.) to Beech Rd., New Roadway 1 lane(s) each direction with complete street facilities                 |
| 474 | Dublin-Granville Rd. (SR-161) from Sawmill Rd. to Aeros Dr., Add turn lanes and complete street facilities to 2 lane roadway                       |
| 486 | Kinnear Rd. extension from Olentangy River Rd. to Cannon Dr., New Roadway 1 lane(s) each direction with complete street facilities                 |
| 542 | US 62/SR 3 (Harrisburg Pk.) from Eakin Rd./Hopkins Ave. to Brown Rd., Add turn lanes and complete street facilities to 2 lane roadway              |
| 564 | Wilcox Rd. at Hayden Run Rd., Construct roundabout with complete street facilities   |
| 633 | Big Walnut Rd. from Africa Rd. to Worthington Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities        |
| 682 | Rickenbacker Pkwy Extension from Ashville Pike to Pontious Rd., New Roadway 2 lane(s) each direction with complete street facilities               |
| 694 | Africa Rd. from County Line Rd. to Westar Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities            |
| 722 | SR 674 Realignment from Gender Rd. to Winchester Southern Rd., New Roadway 2 lane(s) each direction with complete street facilities                |
| 723 | Refugee Rd. at Pickerington Rd., Construct roundabout with complete street facilities  |
| 746 | Jeg's Blvd. extension from US 42 to Sawmill Pkwy., New Roadway 1 lane(s) each direction with complete street facilities                            |
| 767 | Mound St. at Central Ave./Harrisburg Pk., Add/Modify turn lanes and add complete street facilities   |
| 772 | Main St. from I-270 to McNaughten Rd., Add turn lanes and complete street facilities to 4 lane roadway   |
| 775 | Livingston Ave. from Front St. to High St., Convert from 2 one-way lanes to 2 lanes total both directions with complete street facilities          |

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| 782  | Refugee Rd. from Mink Rd. to SR 310, Add turn lanes and complete street facilities to 2 lane roadway  |
| 783  | Etna Pkwy from US 40 to SR 16, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities   |
| 792  | Groveport Rd. from Swisher Rd. to SR 317, Add turn lanes and complete street facilities to 2 lane roadway   |
| 808  | Cleveland Ave. from County Line Rd. to Polaris Pkwy., Widen road from 4 lanes to 6 lanes total both directions with complete street facilities                                  |
| 810  | County Line Rd. from Cleveland Ave. to Africa Rd., Widen road from 4 lanes to 6 lanes total both directions with complete street facilities                                     |
| 819  | Tech Center Dr. extension from Science Blvd. to Taylor Station Rd., New Roadway 1 lane(s) each direction with complete street facilities  |
| 838  | I-70 at Hamilton Rd., Modify ramp termni intersection(s)  |
| 850  | Richardson - Ebright Connector from Richardson Rd. to Corbett Rd., New Roadway 1 lane(s) each direction with complete street facilities   |
| 854  | SR 204 at Taylor rd., Add/Modify turn lanes and add complete street facilities  |
| 872  | US 23 from City of Columbus municipal boundary to City of Delaware municipal boundary, Widen road from 4 lanes to 6 lanes total both directions with complete street facilities |
| 877  | Depot St. extension (north) from Case Ave. to Adventure Park Dr., New Roadway 1 lane(s) each direction with complete street facilities  |
| 878  | Sharp St. extension (west) from N. Liberty St. to Depot St. (proposed), New Roadway 1 lane(s) each direction with complete street facilities                                    |
| 879  | Sharp St. extension (east) from existing Sharp St. end to Grace Dr., New Roadway 1 lane(s) each direction with complete street facilities                                       |
| 925  | Village Center Pkwy extension from Existing Village Center Pkwy to SR 161, New Roadway 1 lane(s) each direction with complete street facilities                                 |
| 936  | Dempsey Rd. from I-270 to Sunbury Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 941  | SR-315 at John Herrick Dr./12th Ave., Interchange modification  |
| 945  | Phillipi Rd. at Railroad crossing, New railroad grade seperated bridge  |
| 947  | Northwest Blvd. at Chambers Rd., Add/Modify turn lanes and add complete street facilities   |
| 956  | Grandview Ave. extension from Mckinley Ave. to Broad St., New Roadway 2 lane(s) each direction with complete street facilities  |
| 948  | Grandview Ave. at Fifth Ave., Add/Modify turn lanes and add complete street facilities  |
| 963  | Northwest Blvd. from 3rd Ave to North Star Rd, Modify 4 lane roadway to 2 lanes with addition of complete street facilities   |
| 1107 | Sullivant Ave. at Hague Ave., Add/Modify turn lanes and add complete street facilities  |

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| 1116 | Science Blvd. extension from Tech Center Dr. to Taylor Rd., New Roadway 1 lane(s) each direction with complete street facilities                                  |
| 1183 | Blaney Rd. (CR-15) Extension/Realignment from Home Rd. to US 42, New Roadway 2 lane(s) each direction with complete street facilities                             |
| 1190 | Long Rd. from Columbus St. to Diley Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1196 | Shier Rings Rd from Shamrock Ct to Metro Pl N, New Roadway 1 lane(s) each direction with complete street facilities   |
| 1198 | Research Pkwy from SR161/Post Rd to Shier Rings Rd and Eiterman Rd, New Roadway 2 lane(s) each direction with complete street facilities                          |
| 1199 | Advancement Avenue from Eiterman Rd to Darree Fields, New Roadway 1 lane(s) each direction with complete street facilities  |
| 1202 | Dublin-Granville Rd. (SR-161) from Aeros Dr to Hutchinson St, Add turn lanes and complete street facilities to 2 lane roadway                                     |
| 1203 | Dublin-Granville Rd. (SR-161) from Strathaven Dr. to Olentangy River Rd., Add turn lanes and complete street facilities to 2 lane roadway                         |
| 1223 | Demorest Rd. from Southwest Blvd. to Big Run South Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 1228 | Grove City - Broadway Connector from Grove City Rd. to Broadway (US 62), New Roadway 1 lane(s) each direction with complete street facilities                     |
| 1233 | Demorest Connector from Demorest Rd. at Rensch Rd. to Demorst Dr. at US-62, New Roadway 1 lane(s) each direction with complete street facilities                  |
| 1243 | Hoover Connector from Hoover Rd. to London-Groveport Connector (proposed), New Roadway 1 lane(s) each direction with complete street facilities                   |
| 1248 | Holton - Buckeye Connector from Holton Rd. to Buckeye Pkwy., New Roadway 1 lane(s) each direction with complete street facilities                                 |
| 1353 | Demorest Rd. from Southwest Blvd. to Grove City Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1361 | Liberty St at Seldom Seen Rd, Add/Modify turn lanes and add complete street facilities  |
| 1362 | Broadway at Demorest, Add/Modify turn lanes and add complete street facilities  |
| 1364 | SR-161 at Cleveland Ave, Add/Modify turn lanes and add complete street facilities   |
| 1372 | US 23 at Hyatts Rd, Add/Modify turn lanes and add complete street facilities  |
| 1395 | Holt Rd. Extension from Grove City Rd. to Rensch Rd., New Roadway 1 lane(s) each direction with complete street facilities  |
| 1397 | South Connector from Harrisburg Pike/US-62 to Bill Lotz Way/Haughn Rd. Extension (proposed), New Roadway 1 lane(s) each direction with complete street facilities |
| 1400 | North Meadows to Haughn Connector (overpass) from Hoover Rd. to Haughn Connector, New Roadway 1 lane(s) each direction with complete street facilities            |



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| 1406 | US-36 at CR-605, Add/Modify turn lanes and add complete street facilities  |
| 1410 | Livingston Ave. at SR-317, Add/Modify turn lanes and add complete street facilities  |
| 1416 | E Mound St. at S 3rd St., Add/Modify turn lanes and add complete street facilities   |
| 1421 | I-270 (East Outerbelt) at E Broad St, Modify ramp termni intersection(s)   |
| 1424 | Cleveland Ave. at Innis Rd., Add/Modify turn lanes and add complete street facilities  |
| 1481 | Souder Ave. extension from Dublin Rd. to Twin Rivers Dr., New Roadway 1 lane(s) each direction with complete street facilities                 |
| 1494 | Old State Rd. from Lazelle Rd. to Polaris Pkwy, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities       |
| 1496 | Polaris Pkwy (SR-750) from Powell Rd. to Capella Dr., Widen road from 4 lanes to 6 lanes total both directions with complete street facilities |
| 1498 | Brice Rd. at Shannon Rd., Add/Modify turn lanes and add complete street facilities   |
| 1501 | Dublin-Granville Rd. (SR-161) at Sawmill Rd., Add/Modify turn lanes and add complete street facilities   |
| 1502 | Refugee Rd. at Hines Rd., Add/Modify turn lanes and add complete street facilities   |
| 1504 | Roberts Rd. at Spindler Rd. & Frazell Rd., Add/Modify turn lanes and add complete street facilities  |
| 1649 | Groveport Rd. at Williams Rd., Add/Modify turn lanes and add complete street facilities  |
| 1717 | US-42 at SR-257/Klondike Rd., Add/Modify turn lanes and add complete street facilities   |
| 1724 | Polaris Pkwy/SR 750 at S Old State Rd., Add/Modify turn lanes and add complete street facilities   |
| 1735 | Cleveland Ave. at Morse Rd., Add/Modify turn lanes and add complete street facilities  |
| 1738 | Westerville Rd./SR-3 at Ferris Rd./Walnut Creek Dr., Add/Modify turn lanes and add complete street facilities                                  |
| 1740 | Sunbury Rd. at Innis Rd./McCutcheon Rd., Add/Modify turn lanes and add complete street facilities  |
| 1742 | Westerville Rd. at Oakland Park Ave., Add/Modify turn lanes and add complete street facilities   |
| 1747 | Hilliard-Rome Rd. at Westchester Woods Blvd., Add/Modify turn lanes and add complete street facilities   |
| 1752 | N High St. at E 5th Ave., Add/Modify turn lanes and add complete street facilities   |
| 1753 | 5th Ave. at Summit St./US-23, Add/Modify turn lanes and add complete street facilities   |
| 1761 | Sullivant Ave. at S Central Ave., Add/Modify turn lanes and add complete street facilities   |
| 1765 | Livingston Ave. at Nelson Rd., Add/Modify turn lanes and add complete street facilities  |
| 1766 | Livingston Ave. at Noe Bixby Rd./Woodcrest Rd., Add/Modify turn lanes and add complete street facilities                                       |
| 1767 | Brice Rd. at Livingston Ave., Add/Modify turn lanes and add complete street facilities   |
| 1777 | Georgesville Rd. at Clime Rd., Add/Modify turn lanes and add complete street facilities  |
| 1779 | Stringtown Rd. at Marlane Dr., Add/Modify turn lanes and add complete street facilities  |

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| 1784 | Scioto Darby Creek Rd. from Leap Rd. to Dublin Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 1787 | SR-310 (Hazelton-Etna Rd.) from I-70 (East Freeway) to Blacklick Eastern Rd. (SR-204), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 1788 | Winchester Pike from Hamilton Rd. to Gender Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                                       |
| 1789 | Twin Rivers Dr. from Goodale Blvd. to Dublin Rd. (US-33), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                              |
| 1790 | Souder Ave. from Broad St. to Dublin Rd. (US-33), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                                      |
| 1791 | US-33 (Southeast Freeway) from I-270 to Fairfield County Line, Widen freeway from 4 lanes to 6 lanes total both directions  |
| 1792 | US-42 from SR-736 to Industrial Pkwy (CR-1), Add turn lanes and complete street facilities to 2 lane roadway  |
| 1794 | US-42 from Bell Rd/Wells Rd. (CR-19) to Watkins Rd. (CR-104), Add turn lanes and complete street facilities to 2 lane roadway   |
| 1795 | US-42 from Watkins Rd. (CR-104) to Section Line Rd. (CR-5), Add turn lanes and complete street facilities to 2 lane roadway   |
| 1796 | US-42 from Section Line Rd. (CR-5) to US-23, Add turn lanes and complete street facilities to 2 lane roadway  |
| 1800 | Linworth Rd. from Wilson Bridge Rd. to Hard Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1803 | Groveport Rd. from Parsons Ave. to SR-104, Add turn lanes and complete street facilities to 2 lane roadway  |
| 1806 | McCutcheon Rd. from Stelzer Rd. to Sunbury Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 1807 | McNaughten Rd. from Livingston Ave. to Main St., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1808 | Rathmell Rd. from US-23 to Alum Creek Dr., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1811 | Sullivant Ave. from Georgesville Rd. to Norton Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 1812 | Ulry Rd. from Dublin-Granville Rd. to Warner Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 1814 | Wilson Rd. from Trabue Rd. to Roberts Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1815 | Roberts Rd. from Wilson Rd. to Dublin Rd., Add turn lanes and complete street facilities to 2 lane roadway  |

|       |  |
|-------|--|
| 1816  | Allen Rd. from US-33 to Stemen Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 1818  | Etna Pkwy extension from US-40 to Blacklick-Eastern Rd. (SR-204), New Roadway 1 lane(s) each direction with complete street facilities     |
| 1820  | Delaware NE Bypass (Eastern Leg) from Byxbe Pkwy (Proposed) to US-36, New Roadway 2 lane(s) each direction with complete street facilities |
| 1847  | Beech Rd. from Jug St. to US-62, Add turn lanes and complete street facilities to 2 lane roadway   |
| 1848  | Miller Rd. from Beech Rd. to Clover Valley Rd., Add turn lanes and complete street facilities to 2 lane roadway                            |
| 1860  | Frank Rd from Harrisburg Pike to Harmon Ave, Add turn lanes and complete street facilities to 4 lane roadway                               |
| 1862  | Havens Corner Rd from Hamilton Rd to Waggoner Rd, Add turn lanes and complete street facilities to 2 lane roadway                          |
| 1871  | New Road over I-270 from Tuller Rd to Emerald Pkwy, New grade seperated bridge   |
| 1882  | SR-161 from Cleveland Ave to I-71, Add turn lanes and complete street facilities to 4 lane roadway   |
| 1894  | 1st Ave from Grandview Ave to Virginia Ave, Add turn lanes and complete street facilities to 2 lane roadway                                |
| 1914  | Helmbright Dr at Taylor Rd, Add/Modify turn lanes and add complete street facilities   |
| 1939  | S High St at Greenlawn, Add/Modify turn lanes and add complete street facilities   |
| 2133  | Berlin Station Rd from Braumiller Rd to Curve Rd, Add turn lanes and complete street facilities to 2 lane roadway                          |
| 2145  | US-23 from SR-229 to Coover Rd, Convert 4 lane roadway to 6 lane freeway   |
| 2165  | SR-37 from Sandusky St to Troy Rd, Add turn lanes and complete street facilities to 2 lane roadway   |
| 2166  | US-36 from Liberty St to Pennick Ave, Add turn lanes and complete street facilities to 2 lane roadway                                      |
| 2172  | Troy Rd from SR-192 to Pennsylvania Ave, Add turn lanes and complete street facilities to 2 lane roadway                                   |
| 2174  | US-23 at E Central Ave (SR-37), Interchange modification   |
| 2187  | US-23 from SR-317 to Pickaway County Line, Convert 4 lane roadway to 4 lane freeway  |
| 2188  | US-23 at SR-229, New interchange   |
| LCATS | SR-13 at US-62, Construct roundabout with complete streets facilities  |
| LCATS | SR-13 at US-40, Construct roundabout with complete streets facilities  |
| LCATS | US-62 from FRA-LIC county line to Johnstown, Add/Modify turn lanes and complete street facilities to 2 lane roadway                        |
| LCATS | W Main St from Coffman Rd to Thornwood Dr, Add turn lanes and complete street facilities to 2 lane roadway                                 |

**Table 10: Additional Projects identified for year 2050**

| Plan Project ID | Project Description (2050)  |
|-----------------|---|
| 19              | Hall Rd. from Galloway Rd. to Georgesville Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 30              | Broad St. (SR 16) from Taylor Rd. to Etna Pkwy., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                               |
| 39              | Trabue Rd./Renner Rd. from Hilliard-Rome Rd. to Conrail overpass, Add turn lanes and complete street facilities to 2 lane roadway                                       |
| 42              | Avery Rd. from Britton-Cosgray connector to Tuttle Crossing Blvd. extension, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities   |
| 50              | Sinclair Rd. from Freeway Dr. South to SR 161 (Dublin-Granville Rd.), Add turn lanes and complete street facilities to 2 lane roadway                                   |
| 59              | Courtright Rd. from Refugee Rd. to Livingston Ave., Add turn lanes and complete street facilities to 2 lane roadway   |
| 63              | Groveport Rd. from Watkins Rd. to Williams Rd., Add turn lanes and complete street facilities to 2 lane roadway   |
| 97              | Home Rd. from Section Line Rd. to Olentangy River Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                         |
| 102             | SR 665 (London-Groveport Rd.) from US 62 (Harrisburg Pk.) to Gateway West Dr., Add turn lanes and complete street facilities to 2 lane roadway                          |
| 130             | Avery Rd. from Hayden Run Rd. (south of) to Britton-Cosgray connector, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities         |
| 148             | Rings-Tuttle Crossing connector from Rings Rd. (at Rings Rd. relocation) to Tuttle Crossing Blvd., New Roadway 1 lane(s) each direction with complete street facilities |
| 151             | Hill Rd. relocation from Busey Rd. at Hill Rd. (s. leg) to Hill Rd. north of Busey Rd., New Roadway 1 lane(s) each direction with complete street facilities            |
| 152             | Hill Rd. from Hill Rd. relocation (n. of Busey Rd.) to Columbus St. (SR 256), Add turn lanes and complete street facilities to 2 lane roadway                           |
| 153             | Busey Rd. from Bowen Rd. to Allen Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 175             | Bixby-Sims connector from Bixby Rd. (west of US 33) to Sims Rd. (at Winchester Blvd. extension), New Roadway 2 lane(s) each direction with complete street facilities   |
| 177             | Groveport Rd. from Williams Rd. to Alum Creek Dr., Add turn lanes and complete street facilities to 2 lane roadway  |

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| 197 | Cleveland Ave. at Oakland Park Ave., Add/Modify turn lanes and add complete street facilities   |
| 223 | Hills Miller Rd. at Troy Rd., Add/Modify turn lanes and add complete street facilities  |
| 224 | Cheshire Rd. at Africa Rd., Add/Modify turn lanes and add complete street facilities  |
| 225 | Cheshire Rd. at Galena Rd./Rome Corners Rd., Add/Modify turn lanes and add complete street facilities   |
| 250 | Columbus St. (Wright Rd.) from Diley Rd. to Hill Rd. (SR 256), Add turn lanes and complete street facilities to 2 lane roadway                        |
| 261 | Glenn Pkwy. from Berlin Station Rd. to Glenn Rd. (south of US 36/SR 37), New Roadway 2 lane(s) each direction with complete street facilities         |
| 348 | Cheshire Rd. from Domigan Rd. to US 36/SR 37 (Cherry St.), Add turn lanes and complete street facilities to 2 lane roadway                            |
| 354 | McCorkle Blvd. extension from Broadway Ave. to Old County Line Rd., New Roadway 1 lane(s) each direction with complete street facilities              |
| 395 | I-70 at I-270 (West Outerbelt), Reconfigure slip, loop and/or directional interchange ramps   |
| 402 | I-70 from US 33 to Hamilton Rd, Widen freeway from 6 lanes to 8 lanes total both directions   |
| 403 | I-70 from Hamilton Rd to I-270, Widen freeway from 6 lanes to 8 lanes total both directions   |
| 413 | SR 104 at Alum Creek Dr, Interchange modification   |
| 423 | High St (Canal Winchester) at US 33, New Roadway 1 lane(s) each direction with complete street facilities   |
| 424 | Avery-Muirfield Dr. from US 33 to Post Rd, Widen road from 4 lanes to 6 lanes total both directions with complete street facilities                   |
| 427 | Cosgray Rd. from Tuttle Crossing Blvd. (proposed) to Shier Rings Rd., Add turn lanes and complete street facilities to 2 lane roadway                 |
| 428 | Cosgray Rd. from Shier Rings Rd. to Fishel Drive South, Add turn lanes and complete street facilities to 2 lane roadway                               |
| 430 | Eiterman Rd. from Bobcat Way to Shier Rings Rd., Add turn lanes and complete street facilities to 2 lane roadway                                      |
| 433 | Hyland-Croy Rd. from Post Rd. to Brock Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                  |
| 440 | Shier Rings Rd. from Eiterman Rd. to Avery Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities              |
| 442 | Tuttle Crossing Blvd. extension from Cosgray Rd. to Avery Rd., New Roadway 2 lane(s) each direction with complete street facilities                   |
| 454 | Hamilton Rd. from Central College Rd. to Harlem Rd., New Roadway 2 lane(s) each direction with complete street facilities                             |
| 468 | Kitzmiller Rd. at Smith's Mill Rd., Construct roundabout with complete street facilities  |
| 484 | Champion Ave./Governors Pl. from Broad St. to Long St., Convert from 2 one-way lanes to 2 lanes total both directions with complete street facilities |

|     |   |
|-----|---|
| 485 | Ohio Ave. from Broad St. to Long St., Convert from 2 one-way lanes to 2 lanes total both directions with complete street facilities                             |
| 539 | Johnstown Rd. from Stygler Rd. to Olde Ridenour Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 540 | Johnstown Rd. from Olde Ridenour Rd. to James Rd., Add turn lanes and complete street facilities to 2 lane roadway  |
| 607 | Delaware Northeast Bypass/Byxbe Pkwy from Bowtown Rd to US-36, New Roadway 2 lane(s) each direction with complete street facilities                             |
| 669 | SR-665 from SR-104 to Scioto St., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                                      |
| 743 | Pollock Rd. from Pollock/US 23 intersection to US 23 to the south, Add/Modify turn lanes and add complete street facilities                                     |
| 785 | US 23 at SR 665/SR 317, New interchange   |
| 791 | Groveport Rd. at Richardson Rd./Groveport Park entrance, Add/Modify turn lanes and add complete street facilities   |
| 811 | Altair Pkwy extension from Altair Pkwy (existing) to State St. (at Hoff Rd.), New Roadway 1 lane(s) each direction with complete street facilities              |
| 812 | Westar Blvd. extension from Westar Blvd. (existing) to County Line Rd. (at Thompson Ave.), New Roadway 1 lane(s) each direction with complete street facilities |
| 825 | Hill Rd. at Basil-Western Rd., Construct roundabout with complete street facilities   |
| 836 | I-70 - US 33 Connector (SE) from I-70 (East Freeway) to US 33 (SE), New Roadway 2 lane(s) each direction with complete street facilities                        |
| 841 | SR 317/Hamilton Rd. at Venture Place/Homer Ohio Ln., Add/Modify turn lanes and add complete street facilities   |
| 875 | West Case St. (proposed) from Big Bear Ave. to Traditions Way, New Roadway 1 lane(s) each direction with complete street facilities                             |
| 876 | Village Pointe Dr. extension from Case Ave. to West Case St. (Proposed), New Roadway 1 lane(s) each direction with complete street facilities                   |
| 880 | Hall St. extension from Scioto St. to Sharp St. (proposed), New Roadway 1 lane(s) each direction with complete street facilities                                |
| 881 | Depot St. extension (south) from Powell City Hall to Liberty St., New Roadway 1 lane(s) each direction with complete street facilities                          |
| 921 | John Shields Pkwy. from Riverside Dr. to Shawan Falls Dr. (proposed), New Roadway 1 lane(s) each direction with complete street facilities                      |
| 922 | Shawan Falls Dr. extension from Existing Shawan Falls Dr. to John Shields Pkwy (proposed), New Roadway 1 lane(s) each direction with complete street facilities |
| 923 | Post Rd. realignment and extension from Kilgour Pl. to Shawan Falls Dr., New Roadway 1 lane(s) each direction with complete street facilities                   |

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|------|---|
| 937  | Schrock Rd. at Cooper Rd., Add/Modify turn lanes and add complete street facilities   |
| 944  | I-71 at Hudson St., Modify ramp termni intersection(s)  |
| 946  | Cleveland Ave. at Weber Rd., Add/Modify turn lanes and add complete street facilities   |
| 949  | Grandview Ave. at Third Ave., Add/Modify turn lanes and add complete street facilities  |
| 951  | Fifth Ave. from US 33 to High St., Modify 4 lane roadway to 2 lanes with addition of complete street facilities   |
| 957  | Hague Ave. extension from Briggs Rd. to Alkire Rd. (via Riverbend Rd.), New Roadway 1 lane(s) each direction with complete street facilities                                |
| 962  | Cassady - Stelzer Connector from Cassady Ave. to Stelzer Rd., New Roadway 1 lane(s) each direction with complete street facilities  |
| 1114 | Jetway Blvd. extension from Jetway Blvd. end to Agler Rd., New Roadway 1 lane(s) each direction with complete street facilities   |
| 1184 | Ravenhill Pkwy extension from Existing western terminus to Mitchell-Dewitt Rd., New Roadway 1 lane(s) each direction with complete street facilities                        |
| 1188 | Watkins-California Rd. realignment from Watkins-California Rd. to US 42, New Roadway 1 lane(s) each direction with complete street facilities                               |
| 1194 | Blaney Rd. (CR-15) Extension/Realignment from US 42 to Crottinger Rd., New Roadway 2 lane(s) each direction with complete street facilities                                 |
| 1214 | US-42 - US-23 Connector from US-42 to US-23, New Roadway 1 lane(s) each direction with complete street facilities   |
| 1221 | South Section Line Rd at Hyatts Rd Intersection, Add/Modify turn lanes and add complete street facilities   |
| 1225 | London Groveport Rd (SR 665) from Hoover Rd to Rickenbacker International Airport, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 1235 | SR-665/South Connector from London Groveport Rd. to South Connector to Gateway West, New Roadway 1 lane(s) each direction with complete street facilities                   |
| 1238 | Seeds - Hoover Connector from Seeds Rd. to Hoover Rd., New Roadway 1 lane(s) each direction with complete street facilities   |
| 1239 | London-Groveport Connector from London Groveport Rd. to Seeds - Hoover Connector (Proposed), New Roadway 1 lane(s) each direction with complete street facilities           |
| 1245 | London-Groveport - Borrer Connector from London Groveport Rd. to Borrer Rd., New Roadway 1 lane(s) each direction with complete street facilities                           |
| 1247 | Hawthorne Pkwy Extension from Hawthorne Pkwy. to Jackson Pike (SR 104), New Roadway 1 lane(s) each direction with complete street facilities                                |
| 1253 | US-36 Bypass from US-36 East of Sunbury to US-36 West of Sunbury, New Roadway 1 lane(s) each direction with complete street facilities                                      |
| 1366 | Forest Dr at Smith's Mill Rd, Add/Modify turn lanes and add complete street facilities  |
| 1368 | Olentangy St at Beech Ridge, Add/Modify turn lanes and add complete street facilities   |

|      |   |
|------|---|
| 1392 | SR-161 from Cosgray Rd. to Franklin County Line, Widen road from 2 lanes to 4 lanes total both directions with complete street facilities   |
| 1394 | Meadow Grove Dr. extension from Holton Rd. to Tournament Way, New Roadway 1 lane(s) each direction with complete street facilities  |
| 1396 | Holt Rd. Extension (phase 2) from Rensch Rd. to Harrisburg Pike/US-62, New Roadway 1 lane(s) each direction with complete street facilities   |
| 1399 | Bill Lotz Way/Haughn Rd. Extension from Gateway West Dr. to Haughn Connector, New Roadway 1 lane(s) each direction with complete street facilities  |
| 1404 | US-36 at Wilson Rd., Add/Modify turn lanes and add complete street facilities   |
| 1408 | US-23 at SR-750, Add/Modify turn lanes and add complete street facilities   |
| 1412 | Broad St. at Reynoldsburg-New Albany Rd., Add/Modify turn lanes and add complete street facilities  |
| 1418 | Westerville Rd. at Albert Ave., Add/Modify turn lanes and add complete street facilities  |
| 1472 | Agler Rd. Extension from Sunbury Rd to Cleveland Ave., New Roadway 2 lane(s) each direction with complete street facilities   |
| 1478 | West Campus Rd. extension from Hamilton Rd. extension (future) to New Albany Rd. West, New Roadway 1 lane(s) each direction with complete street facilities   |
| 1479 | West Campus Rd. extension from Lee Rd. to Hamilton Rd. extension (future), New Roadway 1 lane(s) each direction with complete street facilities   |
| 1488 | Trabue Rd./Renner Rd. from Alton Darby to Hilliard-Rome Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities   |
| 1647 | SR-104 from SR-665 to Pickaway County Line (continue to SR-762), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities   |
| 1650 | SR 204/Blacklick Eastern Rd. from Summerfield Way to Violet Twp Line (east), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities                               |
| 1714 | SR-315 at I-670, Reconfigure slip, loop and/or directional interchange ramps  |
| 1715 | Pickerington Rd. realignment from South of Pickerington Church of Nazarene to Existing Pickerington Rd. northeast of Ault Rd., New Roadway 2 lane(s) each direction with complete street facilities |
| 1732 | Morse Rd. at Karl Rd., Add/Modify turn lanes and add complete street facilities   |
| 1733 | Morse Rd. at Tamarack Blvd., Add/Modify turn lanes and add complete street facilities   |
| 1734 | Morse Rd. at Northtowne Blvd/Walford St., Add/Modify turn lanes and add complete street facilities  |
| 1739 | Cleveland Ave. at Huy Rd., Add/Modify turn lanes and add complete street facilities   |
| 1741 | McCutcheon Rd. at Stelzer Rd., Add/Modify turn lanes and add complete street facilities   |
| 1754 | E 11th Ave. at Cleveland Ave/SR-3, Add/Modify turn lanes and add complete street facilities   |
| 1783 | US-33 from Post Rd./SR-161 to US-42, Widen freeway from 4 lanes to 6 lanes total both directions  |



|      |   |
|------|---|
| 1785 | Pontious Rd. from Rickenbacker Pkwy (proposed) to Rohr Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities      |
| 1786 | Broad St. from Hamilton Rd. to I-270 (East Outerbelt), Widen road from 4 lanes to 6 lanes total both directions with complete street facilities           |
| 1793 | US-42 from Industrial Pkwy (CR-1) to Bell Rd./Wells Rd. (CR-19), Widen road from 2 lanes to 4 lanes total both directions with complete street facilities |
| 1821 | Lewis Center Rd. from Home Rd. extension to S. Old State Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities    |
| 1822 | Lewis Center Rd. from S. Old State Rd. to Africa Rd., Widen road from 2 lanes to 4 lanes total both directions with complete street facilities            |
| 1837 | Greengate Blvd. Extension from Diley Rd. to Hill Rd., New Roadway 1 lane(s) each direction with complete street facilities                                |
| 1873 | New Road over US-33 from SR-161 to Avery-Muirfield Dr, New grade seperated bridge   |
| 1929 | Ganton Parkway from Existing Terminus to Reynoldsburg-New Albany Rd, New Roadway 1 lane(s) each direction with complete street facilities                 |
| 2184 | I-71 from Gemini Pl to US-36, Widen freeway from 6 lanes to 8 lanes total both directions   |

## Conformity Analysis for Ozone

The conformity analysis consists of comparing the pollutant burden in the non-attainment area resulting from the projects listed in the MORPC and LCATS Transportation Plans to the approved emission budgets.

Figure 1: Columbus / Newark six county 2008 8-Hour ozone Maintenance Area

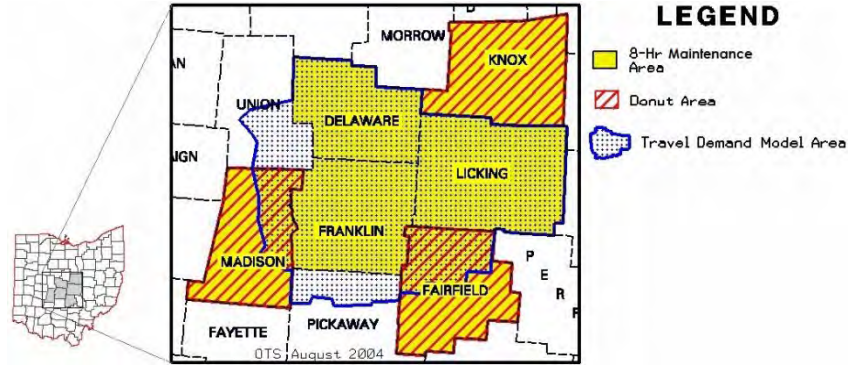
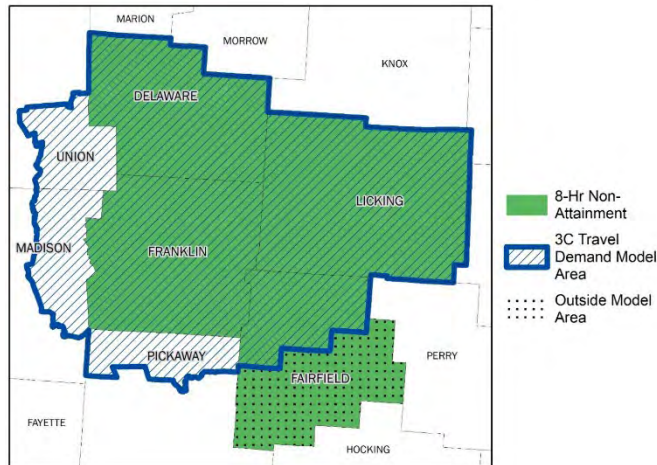


Figure 1a: Columbus / Newark four county 2015 8-Hour Non-Attainment Area



The ozone area has established budgets for VOC and NO<sub>x</sub> for the six county area with regard to the 2008 ozone standard and for the 4 county area with regard to the 2015 ozone standard. Thus, the conformity test requirements is the budget test with the budgets being the values shown previously in Table 1 for the six county area and in Table1a for the four county area.

The Regional model is used in evaluating emissions for the Franklin, Delaware and Licking counties. Modeled portions of Fairfield, and Madison Counties are also evaluated by using Regional model. The VOC and NO<sub>x</sub> emissions modeled are summarized in the following Tables.

Emission estimates summary of results is presented in the next sections.

**Areas within The Regional Travel Demand Model**

**Table 11: Emission Estimations for On-Road Mobile Sources - Franklin County**

| <b>Franklin County</b> | 2030       | 2040       | 2050       |
|------------------------|------------|------------|------------|
| VMT (miles/day)        | 38,920,566 | 41,878,565 | 44,949,520 |
| VOC (tons/day)         | 9.699      | 6.822      | 6.284      |
| NOx (tons/day)         | 7.846      | 3.459      | 3.191      |

**Table 12: Emission Estimations for On-Road Mobile Sources - Delaware County**

| <b>Delaware County</b> | 2030      | 2040      | 2050       |
|------------------------|-----------|-----------|------------|
| VMT (miles/day)        | 7,551,093 | 9,096,503 | 10,629,425 |
| VOC (tons/day)         | 1.779     | 1.437     | 1.444      |
| NOx (tons/day)         | 1.380     | 0.685     | 0.693      |

**Table 13: Emission Estimations for On-Road Mobile Sources - Licking County**

| <b>Licking County</b> | 2030      | 2040      | 2050      |
|-----------------------|-----------|-----------|-----------|
| VMT (miles/day)       | 6,673,066 | 7,401,880 | 8,105,787 |
| VOC (tons/day)        | 1.576     | 1.143     | 1.072     |
| NOx (tons/day)        | 1.248     | 0.566     | 0.534     |

**Areas partially within The Regional Travel Demand Model**

Counties that are partially within regional travel demand model are Fairfield County, and Madison County. Tables 14a, and 14b, summarize emissions estimates for Fairfield County, for the areas within and outside travel demand model area, respectively. Results presented in Table 14a is for the area covered by the travel demand model. Table 14b is for the area not covered by the travel demand model, obtained by using HPMS data. Table 14c presents the emissions for the entire Fairfield County, which is simply sum of emissions from Tables 14a, and 14b.

**Table 14a: Emission Estimations for Fairfield County within the Travel Demand Model Area**

| <b>Fairfield County</b> | 2030      | 2040      | 2050      |
|-------------------------|-----------|-----------|-----------|
| VMT (miles/day)         | 2,623,277 | 2,965,427 | 3,299,062 |
| VOC (tons/day)          | 0.648     | 0.482     | 0.455     |
| NOx (tons/day)          | 0.504     | 0.233     | 0.221     |

**Table 14b: Emission Estimations for Fairfield County outside of the Travel Demand Model Area-using HPMS data**

| <b>Fairfield County</b> | 2030      | 2040      | 2050      |
|-------------------------|-----------|-----------|-----------|
| VMT (miles/day)         | 2,561,688 | 2,947,200 | 3,336,187 |
| VOC (tons/day)          | 0.467     | 0.350     | 0.332     |
| NOx (tons/day)          | 0.446     | 0.203     | 0.192     |

**Table 14c: Emission Estimations for Fairfield County**

| <b>Fairfield County</b> | 2030      | 2040      | 2050      |
|-------------------------|-----------|-----------|-----------|
| VMT (miles/day)         | 5,184,965 | 5,912,627 | 6,635,249 |
| VOC (tons/day)          | 1.115     | 0.832     | 0.787     |
| NOx (tons/day)          | 0.950     | 0.436     | 0.413     |

Tables 15a, and 15b, summarize emissions estimates for Madison County, for the areas within and outside travel demand area, respectively. Results presented in Table 15a is for the area covered by the travel demand model. Table 15b is for the area not covered by the travel demand model, obtained based on HPMS VMT. Table 15c presents the emissions for the entire Madison county, which is simply sum of emissions from Tables 15a, and 15b.

**Table 15a: Emission Estimations for Madison County within the Travel Demand Model Area**

| <b>Madison County</b> | 2030      | 2040      | 2050      |
|-----------------------|-----------|-----------|-----------|
| VMT (miles/day)       | 1,423,418 | 1,575,542 | 1,717,899 |
| VOC (tons/day)        | 0.288     | 0.209     | 0.195     |
| NOx (tons/day)        | 0.232     | 0.106     | 0.101     |

**Table 15b: Emission Estimations for Madison County outside of the Travel Demand Model Area - using HPMS data**

| <b>Madison County</b> | 2030      | 2040      | 2050      |
|-----------------------|-----------|-----------|-----------|
| VMT (miles/day)       | 2,888,182 | 3,232,507 | 3,569,851 |
| VOC (tons/day)        | 0.438     | 0.326     | 0.312     |
| NOx (tons/day)        | 0.393     | 0.181     | 0.175     |

**Table 15c: Emission Estimations for Madison County**

| <b>Madison County</b> | 2030      | 2040      | 2050      |
|-----------------------|-----------|-----------|-----------|
| VMT (miles/day)       | 4,311,600 | 4,808,049 | 5,287,750 |
| VOC (tons/day)        | 0.726     | 0.535     | 0.507     |
| NOx (tons/day)        | 0.625     | 0.287     | 0.276     |

**Area outside Regional Travel Demand Model**

Table 16, summarizes emissions estimates for Knox County, and the results presented in this Table used methodology based on HPMS data.

**Table 16: Emission Estimations for Knox County – using only HPMS**

| <b>Knox County</b> | 2030      | 2040      | 2050      |
|--------------------|-----------|-----------|-----------|
| VMT (miles/day)    | 1,282,084 | 1,315,826 | 1,350,851 |
| VOC (tons/day)     | 0.303     | 0.221     | 0.206     |
| NOx (tons/day)     | 0.209     | 0.095     | 0.089     |

## Emissions Summary for the Columbus/Central Ohio Area

Tables 17 and 18, summarize VOC and NOx emissions estimates respectively for the analysis years. The summary presented in the following tables is from the aforementioned in Tables 11 through 16.

Table 17: VOC Emission Inventory Summary (tons/day)

|                  | 2030          | 2040          | 2050          |
|------------------|---------------|---------------|---------------|
| <b>VOC</b>       |               |               |               |
| <b>Franklin</b>  | 9.699         | 6.822         | 6.284         |
| <b>Delaware</b>  | 1.779         | 1.437         | 1.444         |
| <b>Licking</b>   | 1.576         | 1.143         | 1.072         |
| <b>Fairfield</b> | 1.115         | 0.832         | 0.787         |
| <b>Madison</b>   | 0.726         | 0.535         | 0.507         |
| <b>Knox</b>      | 0.303         | 0.221         | 0.206         |
| <b>Total</b>     | <b>15.197</b> | <b>10.991</b> | <b>10.300</b> |

Table 18: NOx Emission Inventory Summary (tons/day)

|                  | 2030          | 2040         | 2050         |
|------------------|---------------|--------------|--------------|
| <b>NOx</b>       |               |              |              |
| <b>Franklin</b>  | 7.846         | 3.459        | 3.191        |
| <b>Delaware</b>  | 1.380         | 0.685        | 0.693        |
| <b>Licking</b>   | 1.248         | 0.566        | 0.534        |
| <b>Fairfield</b> | 0.950         | 0.436        | 0.413        |
| <b>Madison</b>   | 0.625         | 0.287        | 0.276        |
| <b>Knox</b>      | 0.209         | 0.095        | 0.089        |
| <b>Total</b>     | <b>12.259</b> | <b>5.528</b> | <b>5.195</b> |

### Conformity Determination for Ozone

Table 19 and 19a illustrates that the emissions for VOC and NO<sub>x</sub> are less than their corresponding six county and 4 county budgets. Thus, the MORPC and LCATS Transportation Plans are in conformity with the requirements of the CAAA and the SIP.

**Table 19: Air Quality Analysis for the Columbus 6 County 2008 8-hour Ozone Maintenance Area**

|             | <b>VOC<br/>(tons/day)</b> | <b>Budget<br/>(tons/day)</b> | <b>NOx<br/>(tons/day)</b> | <b>Budget<br/>(tons/day)</b> |
|-------------|---------------------------|------------------------------|---------------------------|------------------------------|
| <b>2030</b> | 15.197                    | 44.31                        | 12.259                    | 85.13                        |
| <b>2040</b> | 10.991                    | 44.31                        | 5.528                     | 85.13                        |
| <b>2050</b> | 10.300                    | 44.31                        | 5.195                     | 85.13                        |

**Table 19a: Air Quality Analysis for the Columbus 4 County 2015 8-hour Ozone Non-Attainment Area**

|             | <b>VOC<br/>(tons/day)</b> | <b>Budget<br/>(tons/day)</b> | <b>NOx<br/>(tons/day)</b> | <b>Budget<br/>(tons/day)</b> |
|-------------|---------------------------|------------------------------|---------------------------|------------------------------|
| <b>2030</b> | 14.168                    | 22.03                        | 11.424                    | 20.98                        |
| <b>2040</b> | 10.234                    | 22.03                        | 5.146                     | 20.98                        |
| <b>2050</b> | 9.587                     | 22.03                        | 4.831                     | 20.98                        |

# Attachment A-Technical Air Quality Information

## Appendix A – Model Script, Figures illustrating Data

### Ozone Analysis Reports Data

#### CUBE VOYAGER PROGRAM SCRIPT FOR COMPUTING VOC & NOx EMISSIONS

```
[CMS (AQ), Produce Viper Network Output]
;<<Process Template>>;
;Input Network File: {cm3neti,filename,"Input Network File Name",x,..\..\Networks\2020\AQ_asgn_2020.net","Network File (*.net)|*.net"}
;Output Network File: {cm3neto,filename,"Output Network File Name",x,..\..\Ozone\output\AQ_2020out.net","Network File (*.net)|*.net"}
;Output CSV Summary File: {cm3sumo,filename,"Output CSV Summary File",x,..\..\Ozone\output\fra20.csv","Report File (*.csv;*.txt)|*.csv;*.txt"}
;Output TXT Report File: {cm3rpto,filename,"Output TXT Report File",x,..\..\Ozone\output\fra20.rpt","Report File (*.rpt;*.txt)|*.rpt;*.txt"}
;Output CSV Hourly File: {cm3hro,filename,"Output CSV Hourly File (Needed for benefits calc but very big)",x,"NONE","Report File (*.csv;*.txt)|*.csv;*.txt"}
;Note: {cm3junkname,note,"Optional Air Quality Files, Leave Blank When Not Doing Air Quality Calculations"}
;AQ Run Type: {cm3aqtype,combolist,"AQ Run Type","MOVES","NONE","MOBILE"}
;AQ Comment Line: {cm3aqcom,editbox,"Optional AQ Report Comment",T,"Ozone Analysis with MOVES - MORPC"}
;Input Network Emissions Factors: {cm3efffile,filename,"Input Network (per distance)Emissions Factors",x,..\..\Ozone\factors\2020MORPC_ozone_3source_rpd.csv","Emissions File (*.fac;*.csv)|*.fac;*.csv"}
;Input Vehicle (MOV) or Intrazonal (MOB) Emissions Factors: {cm3iefffile,filename,"Input Vehicle (MOV) or Intrazonal (MOB) Emissions Factors",x,..\..\Ozone\factors\2020MORPC_ozone_3source_rpv.csv","Emissions File (*.crd; *.csv)|*.crd; *.csv"}
;Input area file: {cm3afile,filename,"Input Area File",x,..\..\TripTables\TAZ_areain.txt","Text File (*.txt; *.prn)|*.txt; *.prn"}
;Input Intrazonal Trips File: {cm3ifile,filename,"Input Intrazonal Trips (Matrix must be OMS format else use text)",x,..\..\TripTables\2020\FRA2020.txt","Matrix or Text File (*.txt; *.prn; *.mat; *.trp)|*.txt; *.prn; *.mat; *.trp"}
;Intrazonal File Type: {cm3iztype,combolist,"Intrazonal File Type","TEXT","NONE","OMSTABLE"}
;Input vehicle file: {cm3vfile,filename,"Input Vehicle File (Moves Only)",x,..\..\Ozone\factors\Source_Type_Pop_2020_MORPC_on-Model.csv","Text File (*.csv)|*.csv"}
;Space: {cm3space,note,"Parameters"}
;Truck PCE: {cm3tpce,editbox,"Truck PCE",N,"2.0"}
;Capacity Field: {cm3capf,comboedit,"Capacity Field","CAP24","CAP1","CAP2","CAP3","CAP4"}
;Hourly/Model Capacity Factor: {cm3kfact,editbox,"Hourly/Model(usually daily) Capacity Factor",N,"0.10"}
;AQ Season Factor: {cm3aqfact,comboedit,"AQ Season Factor (Ozone Only)","1.08","1.00"}
;Set Priority Code from ADMCLASS?:{cm3pri,combolist,"Set Priority Code from ADMCLASS? (CMSCOST can use)","NO","SW","OMS"}
;Run Mode: {cm3rmode,combolist,"Run Mode (usually use Normal for AQ)","NORMAL","4PERIOD_OMS","4PERIOD_SW","4PERIOD_MARKETSEGMENTS_SW"}
;Note: {cm3junkname2,note,"Normal Mode Inputs (if you specify another mode the fields are predetermined)"}
;Volume Field: {cm3vol1f,comboedit,"Volume Field","VOL24_TOT","V_1","LOADEDVOL","WINTERVOL","SUMMERSVOL"}
;Truck Volume Field: {cm3trkf,comboedit,"Truck Volume Field (leave to NONE for AQ unless EFs generated by source)","NONE","VOL24_TRK","VOL24_TRKHV","V2_1"}
;<<End Parameters>>;
*if exist tempcms.txt DEL tempcms.txt
```



```
*if exist summary.rpt DEL summary.rpt
*if exist hourly.rpt DEL hourly.rpt
*if exist cmstext.rpt DEL cmstext.rpt
COPY FILE=county.dat
ADA 1 4
ALL 2 3
ASD 3 4
ATB 4 4
ATH 5 4
AUG 6 4
BEL 7 3
BRO 8 4
BUT 9 2
CAR10 4
CHP11 4
CLA12 3
CLE13 2
CLI14 4
COL15 4
COS16 4
CRA17 4
CUY18 1
DAR19 4
DEF20 4
DEL21 2
ERI22 3
FAI23 4
FAY24 4
FRA25 1
FUL26 4
GAL27 4
GEA28 2
GRE29 2
GUE30 4
HAM31 1
HAN32 4
HAR33 4
HAS34 4
HEN35 4
HIG36 4
HOC37 4
HOL38 4
HUR39 4
JAC40 4
JEF41 3
KNO42 4
LAK43 2
LAW44 3
```

LIC45 3  
 LOG46 4  
 LOR47 2  
 LUC48 2  
 MAD49 4  
 MAH50 2  
 MAR51 4  
 MED52 2  
 MEG53 4  
 MER54 4  
 MIA55 2  
 MOE56 4  
 MOT57 2  
 MRG58 4  
 MRW59 4  
 MUS60 4  
 NOB61 4  
 OTT62 4  
 PAU63 4  
 PER64 4  
 PIC65 4  
 PIK66 4  
 POR67 2  
 PRE68 4  
 PUT69 4  
 RIC70 3  
 ROS71 4  
 SAN72 4  
 SCI73 4  
 SEN74 4  
 SHE75 4  
 STA76 2  
 SUM77 2  
 TRU78 2  
 TUS79 4  
 UNI80 4  
 VAN81 4  
 VIN82 4  
 WAR83 2  
 WAS84 3  
 WAY85 4  
 WIL86 4  
 WOO87 2  
 WYA88 4  
 ENDCOPY

COPY FILE=dailya.dat

|      |    |    |    |    |    |    |    |    |   |   |    |    |    |    |    |
|------|----|----|----|----|----|----|----|----|---|---|----|----|----|----|----|
| HOUR | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15   | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |   |   |    |    |    |    |    |

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41 MORPC 2024-2050 Metropolitan Transportation Plan  
 LCATS 2050 Metropolitan Transportation Plan  
 MORPC 2024-2027 Transportation Improvement Program  
 LCATS 2024-2027 Transportation Improvement Program  
 CORPO 2024-2027 Transportation Improvement Program

|            |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
|------------|------|--------|-------|--------|-------|--------|-------|--------|-------|------|-------|------|-------|------|-------|------|--|
| PCTADT     |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
| URB FWY    |      | 0.9    | 0.6   | 0.5    | 0.6   | 0.9    | 2.2   | 5.2    | 7.3   | 6.4  | 5.2   | 4.9  | 5.1   | 5.3  | 5.5   | 6.1  |  |
| 7.2        | 8.0  | 7.9    | 5.8   | 4.2    | 3.4   | 2.9    | 2.2   | 1.5    |       |      |       |      |       |      |       |      |  |
| URB ART    |      | 0.7    | 0.4   | 0.3    | 0.3   | 0.6    | 1.5   | 3.5    | 5.7   | 5.5  | 5.1   | 5.3  | 6.2   | 6.5  | 6.4   | 6.8  |  |
| 7.6        | 8.2  | 8.1    | 6.2   | 4.8    | 4.0   | 3.0    | 1.9   | 1.3    |       |      |       |      |       |      |       |      |  |
| RUR FWY    |      | 1.4    | 1.1   | 0.9    | 1.0   | 1.3    | 2.2   | 3.7    | 5.2   | 5.4  | 5.4   | 5.6  | 5.6   | 5.7  | 6.0   | 6.5  |  |
| 7.1        | 7.5  | 7.0    | 5.6   | 4.5    | 3.8   | 3.2    | 2.5   | 2.0    |       |      |       |      |       |      |       |      |  |
| RUR ART    |      | 0.8    | 0.5   | 0.4    | 0.5   | 1.0    | 2.4   | 4.8    | 6.2   | 5.5  | 5.3   | 5.5  | 5.8   | 6.0  | 6.0   | 6.7  |  |
| 7.6        | 8.1  | 7.7    | 5.6   | 4.2    | 3.5   | 2.8    | 1.9   | 1.3    |       |      |       |      |       |      |       |      |  |
| PCTADT TRK |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
| URB FWY    |      | 2.1    | 1.9   | 1.8    | 2.0   | 2.4    | 3.0   | 3.9    | 4.6   | 5.3  | 6.0   | 6.3  | 6.4   | 6.4  | 6.4   | 6.3  |  |
| 5.8        | 5.2  | 4.6    | 4.1   | 3.7    | 3.4   | 3.1    | 2.8   | 2.4    |       |      |       |      |       |      |       |      |  |
| URB ART    |      | 1.1    | 0.9   | 1.0    | 1.2   | 1.6    | 2.3   | 3.9    | 5.9   | 6.9  | 6.7   | 7.1  | 7.6   | 7.4  | 7.2   | 7.4  |  |
| 7.2        | 6.0  | 5.0    | 3.7   | 2.8    | 2.3   | 1.9    | 1.5   | 1.3    |       |      |       |      |       |      |       |      |  |
| RUR FWY    |      | 2.6    | 2.2   | 2.1    | 2.3   | 2.6    | 3.1   | 3.5    | 4.0   | 4.5  | 5.1   | 5.6  | 5.8   | 5.8  | 5.8   | 5.8  |  |
| 5.6        | 5.3  | 4.9    | 4.6   | 4.3    | 4.0   | 3.8    | 3.5   | 3.1    |       |      |       |      |       |      |       |      |  |
| RUR ART    |      | 1.5    | 1.3   | 1.4    | 1.6   | 2.2    | 3.0   | 4.2    | 5.3   | 6.1  | 6.7   | 7.0  | 7.1   | 7.0  | 6.9   | 6.8  |  |
| 6.3        | 5.5  | 4.6    | 3.8   | 3.1    | 2.6   | 2.3    | 2.1   | 1.7    |       |      |       |      |       |      |       |      |  |
| PCTDIR     |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
| URB FWY    |      | 38     | 40    | 40     | 46    | 56     | 64    | 70     | 70    | 68   | 62    | 58   | 52    | 52   | 52    | 50   |  |
| 46         | 38   | 38     | 46    | 52     | 46    | 42     | 42    | 40     |       |      |       |      |       |      |       |      |  |
| URB ART    |      | 44     | 46    | 44     | 48    | 54     | 62    | 66     | 68    | 64   | 56    | 54   | 52    | 50   | 50    | 50   |  |
| 46         | 40   | 38     | 46    | 52     | 48    | 46     | 46    | 46     |       |      |       |      |       |      |       |      |  |
| RUR FWY    |      | 44     | 46    | 48     | 54    | 60     | 68    | 68     | 64    | 58   | 54    | 52   | 50    | 50   | 52    | 52   |  |
| 48         | 42   | 40     | 44    | 48     | 48    | 44     | 46    | 44     |       |      |       |      |       |      |       |      |  |
| RUR ART    |      | 40     | 42    | 44     | 48    | 58     | 66    | 72     | 68    | 60   | 56    | 54   | 50    | 50   | 50    | 50   |  |
| 46         | 40   | 38     | 46    | 50     | 46    | 44     | 44    | 44     |       |      |       |      |       |      |       |      |  |
| LOS E VC   |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
|            |      | 0      | 0.625 | 1.25   | 1.875 | 2.5    | 3.125 | 3.75   | 4.375 | 5    | 5.625 | 6.25 | 6.875 | 7.5  | 8.125 | 8.75 |  |
| 9.375      | 10   | 10.625 | 11.25 | 11.875 | 12.5  | 13.125 | 13.75 | 14.375 |       |      |       |      |       |      |       |      |  |
| SPEEDVC    |      |        |       |        |       |        |       |        |       |      |       |      |       |      |       |      |  |
| curve1     |      | 75     | 75    | 75     | 75    | 75     | 75    | 74.9   | 74.8  | 74.6 | 74.2  | 73.5 | 72.3  | 70.5 | 67.8  | 64.2 |  |
| 59.5       | 54   | 47.7   | 41.2  | 34.9   | 28.9  | 23.7   | 19.2  | 15.5   |       |      |       |      |       |      |       |      |  |
| curve2     |      | 70     | 70    | 70     | 70    | 70     | 70    | 70     | 69.9  | 69.8 | 69.6  | 69.2 | 68.4  | 67.1 | 65.1  | 62.2 |  |
| 58.2       | 53   | 47     | 40.5  | 33.9   | 27.7  | 22.2   | 17.6  | 13.8   |       |      |       |      |       |      |       |      |  |
| curve3     |      | 65     | 65    | 65     | 65    | 65     | 65    | 65     | 65    | 65   | 64.9  | 64.8 | 64.4  | 63.8 | 62.6  | 60.5 |  |
| 57         | 52   | 45.4   | 37.8  | 29.9   | 22.7  | 16.7   | 12.1  | 8.6    |       |      |       |      |       |      |       |      |  |
| curve4     |      | 60     | 60    | 60     | 60    | 60     | 60    | 60     | 60    | 60   | 59.9  | 59.8 | 59.6  | 59.1 | 58.2  | 56.7 |  |
| 54.3       | 50.8 | 46.1   | 40.3  | 33.8   | 27.3  | 21.3   | 16.2  | 12.2   |       |      |       |      |       |      |       |      |  |
| curve5     |      | 55     | 55    | 55     | 55    | 55     | 55    | 55     | 55    | 55   | 55    | 55   | 54.9  | 54.7 | 54.3  | 53.6 |  |
| 52.3       | 50   | 46.5   | 41.5  | 35.3   | 28.5  | 21.9   | 16.1  | 11.5   |       |      |       |      |       |      |       |      |  |
| curve6     |      | 60     | 60    | 60     | 60    | 60     | 60    | 60     | 60    | 59.9 | 59.8  | 59.7 | 59.4  | 59.1 | 58.5  | 57.7 |  |
| 56.5       | 55   | 53.1   | 50.7  | 47.9   | 44.7  | 41.1   | 37.3  | 33.4   |       |      |       |      |       |      |       |      |  |
| curve7     |      | 55     | 55    | 55     | 55    | 55     | 55    | 55     | 55    | 54.9 | 54.9  | 54.7 | 54.5  | 54.2 | 53.8  | 53.1 |  |
| 52.2       | 50.9 | 49.3   | 47.3  | 44.9   | 42.1  | 39     | 35.7  | 32.2   |       |      |       |      |       |      |       |      |  |
| curve8     |      | 50     | 50    | 50     | 50    | 50     | 50    | 50     | 50    | 49.9 | 49.9  | 49.8 | 49.6  | 49.4 | 49    | 48.5 |  |
| 47.7       | 46.7 | 45.4   | 43.8  | 41.8   | 39.5  | 36.8   | 33.9  | 30.9   |       |      |       |      |       |      |       |      |  |

|         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| curve9  | 45   | 45   | 45   | 45   | 45   | 45   | 45   | 45   | 45   | 45   | 44.9 | 44.8 | 44.7 | 44.4 | 44.1 | 43.6 |
| 43      | 42.1 | 40.9 | 39.4 | 37.6 | 35.5 | 33.1 | 30.5 | 27.8 |      |      |      |      |      |      |      |      |
| curve10 | 50   | 50   | 50   | 50   | 50   | 49.9 | 49.8 | 49.7 | 49.4 | 49   | 48.4 | 47.5 | 46.5 | 45.1 | 43.5 | 41.7 |
| 39.6    | 37.3 | 34.9 | 32.4 | 29.8 | 27.3 | 24.9 | 22.6 | 20.4 |      |      |      |      |      |      |      |      |
| curve11 | 50   | 50   | 50   | 50   | 50   | 50   | 49.9 | 49.7 | 49.4 | 48.9 | 48   | 46.7 | 44.9 | 42.5 | 39.6 | 36.2 |
| 32.6    | 28.7 | 25   | 21.4 | 18.2 | 15.3 | 12.9 | 10.8 | 9    |      |      |      |      |      |      |      |      |
| curve12 | 50   | 50   | 50   | 50   | 50   | 50   | 49.9 | 49.8 | 49.6 | 49.1 | 48.2 | 46.8 | 44.5 | 41.4 | 37.5 | 32.9 |
| 28      | 23.1 | 18.7 | 14.9 | 11.8 | 9.2  | 7.2  | 5.7  | 4.5  |      |      |      |      |      |      |      |      |
| curve13 | 40   | 40   | 40   | 40   | 40   | 40   | 40   | 39.9 | 39.8 | 39.5 | 39.2 | 38.6 | 37.8 | 36.7 | 35.3 | 33.5 |
| 31.4    | 29   | 26.4 | 23.7 | 21.1 | 18.5 | 16.1 | 13.9 | 12   |      |      |      |      |      |      |      |      |
| curve14 | 40   | 40   | 40   | 40   | 40   | 40   | 39.9 | 39.8 | 39.6 | 39.1 | 38.5 | 37.5 | 36.1 | 34.3 | 32.1 | 29.4 |
| 26.5    | 23.5 | 20.5 | 17.7 | 15.1 | 12.8 | 10.7 | 9    | 7.6  |      |      |      |      |      |      |      |      |
| curve15 | 40   | 40   | 40   | 40   | 40   | 40   | 39.9 | 39.7 | 39.4 | 38.8 | 37.9 | 36.5 | 34.7 | 32.3 | 29.5 | 26.4 |
| 23.2    | 20   | 17   | 14.3 | 11.9 | 9.9  | 8.2  | 6.8  | 5.6  |      |      |      |      |      |      |      |      |
| curve16 | 35   | 35   | 35   | 35   | 35   | 35   | 34.9 | 34.8 | 34.5 | 34   | 33.2 | 32.1 | 30.5 | 28.5 | 26.1 | 23.5 |
| 20.6    | 17.9 | 15.2 | 12.8 | 10.7 | 8.9  | 7.4  | 6.1  | 5.1  |      |      |      |      |      |      |      |      |
| curve17 | 35   | 35   | 35   | 35   | 35   | 35   | 34.9 | 34.7 | 34.4 | 33.9 | 33.1 | 32   | 30.3 | 28.3 | 25.8 | 23.1 |
| 20.3    | 17.5 | 14.9 | 12.5 | 10.4 | 8.6  | 7.2  | 5.9  | 4.9  |      |      |      |      |      |      |      |      |
| curve18 | 35   | 35   | 35   | 35   | 35   | 35   | 34.9 | 34.6 | 34.2 | 33.5 | 32.4 | 30.9 | 28.8 | 26.3 | 23.4 | 20.4 |
| 17.4    | 14.6 | 12.1 | 9.9  | 8.1  | 6.6  | 5.4  | 4.4  | 3.6  |      |      |      |      |      |      |      |      |
| curve19 | 30   | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.8 | 29.5 | 29   | 28.2 | 27.1 | 25.6 | 23.7 | 21.5 | 19.1 |
| 16.6    | 14.2 | 12   | 10   | 8.3  | 6.8  | 5.6  | 4.6  | 3.8  |      |      |      |      |      |      |      |      |
| curve20 | 30   | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.7 | 29.4 | 28.9 | 28.1 | 26.9 | 25.3 | 23.4 | 21.1 | 18.6 |
| 16.1    | 13.6 | 11.4 | 9.5  | 7.8  | 6.4  | 5.3  | 4.3  | 3.6  |      |      |      |      |      |      |      |      |
| curve21 | 30   | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.7 | 29.3 | 28.7 | 27.7 | 26.2 | 24.4 | 22.1 | 19.6 | 17   |
| 14.4    | 12   | 9.9  | 8.1  | 6.6  | 5.4  | 4.4  | 3.6  | 2.9  |      |      |      |      |      |      |      |      |

VC RATIO TO LOS CONVERSION (VALUE SHOWN IS LOWER LIMIT FOR THAT LOS) (URBAN ROADS USE SPEED BREAKS BELOW FOR LOS DETERMINATION) (ALL USE THE BASE VC'S TO DETERMINE EXCEEDANCE)

|     | BASE | RUR2 | FWY  |
|-----|------|------|------|
| A   | 0.00 | 0.00 | 0.00 |
| B   | 0.30 | 0.00 | 0.25 |
| C   | 0.50 | 0.10 | 0.40 |
| D   | 0.70 | 0.30 | 0.60 |
| E   | 0.90 | 0.50 | 0.80 |
| F   | 1.00 | 1.00 | 1.00 |
| F+  | 1.10 | 1.10 | 1.10 |
| F++ | 1.30 | 1.30 | 1.30 |

SPEED VC RATIO BREAKS FOR URBAN STREETS (HIGHEST SPEED FOR GIVEN LOS & FF SPEED)

| FFS | B   | C   | D   | E   | F   |
|-----|-----|-----|-----|-----|-----|
| >47 | 42. | 34. | 27. | 21. | 16. |
| >37 | 35. | 28. | 22. | 17. | 13. |
| >32 | 30. | 24. | 18. | 14. | 10. |
| <33 | 25. | 19. | 13. | 9.  | 7.  |

LEVEL OF SERVICE THRESHOLD BY AREA  
NUM LOS DEFINITION

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LCATS 2050 Metropolitan Transportation Plan  
MORPC 2024-2027 Transportation Improvement Program  
LCATS 2024-2027 Transportation Improvement Program  
CORPO 2024-2027 Transportation Improvement Program

```

1 F CINCINNATI,CLEVELAND,COLUMBUS CENTRAL MPO COUNTIES (CUY,FRA,HAM)
2 E OTHER TMA MPOS (AKRON,CANTON,DAYTON,TOLEDO,YOUNGSTOWN + NON-CENTRAL COUNTIES FROM 1)
3 E OTHER MPOS & PARTS OF AREAS 1 & 2 OUTSIDE URBANIZED AREA
4 E RURAL NON MPO COUNTIES

```

```

PEAK SPREADING MODEL INFO (SET MAX ITERATIONS TO 0 TO DISABLE PEAK SPREADING)
MAX VC RATIO FWY: 1.30
MAX VC RATIO ART: 1.30
MAX ITERATIONS : 1000

```

```
TRUCK PCE: {cm3tpce}
```

```
AQ SEASON FACTOR: {cm3aqfact}
ENDCOPY
```

```

rrmode='{cm3rrmode}'
if(rrmode='NORMAL')
COPY FILE=dailyb.dat

```

```

MODEL CLASS PARAMETERS (MAX 4 CLASSES, HOURS 0-23 W/ NO OVERLAP IN CLASS, ALLOCATE ENTIRE CLASS AS TRUCK(1) OR NOT(0))
CLS TRK      0      1      0      0      0      0      0      0      0      0      0      0      0      0      0
0
CLS BEG      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
0
CLS END      23     23     0      0      0      0      0      0      0      0      0      0      0      0      0
0
CLS NUM      1      3      0      0      0      0      0      0      0      0      0      0      0      0      0
0

```

```

ENDCOPY
volff='li.1.{cm3volff}'
trkfff='{cm3trkff}'
if (trkfff == 'NONE')
trkff='_zero'
else
trkff='li.1.{cm3trkff}'
endif
volls='_zero'
vol2s='_zero'
vol3s='_zero'
vol4s='_zero'
vol5s='_zero'
vol6s='_zero'
vol7s='_zero'
vol8s='_zero'
vol9s='_zero'
voll10s='_zero'
voll11s='_zero'
voll12s='_zero'

```

```

voll3s='_zero'
voll4s='_zero'
voll5s='_zero'
voll6s='_zero'
elseif(rrmode='4PERIOD_OMS')
COPY FILE=dailyb.dat

```

| MODEL CLASS | PARAMETERS | (MAX 4 | CLASSES, | HOURS | 0-23 | W/ | NO | OVERLAP | IN | CLASS, | ALLOCATE | ENTIRE | CLASS | AS | TRUCK(1) | OR | NOT(0)) |
|-------------|------------|--------|----------|-------|------|----|----|---------|----|--------|----------|--------|-------|----|----------|----|---------|
| CLS TRK     | 0          | 0      | 0        | 0     | 1    | 1  | 1  | 1       | 1  | 1      | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS BEG     | 18         | 6      | 9        | 14    | 18   | 6  | 9  | 14      | 14 | 14     | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS END     | 5          | 8      | 13       | 17    | 5    | 8  | 13 | 17      | 17 | 17     | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS NUM     | 1          | 1      | 1        | 1     | 3    | 3  | 3  | 3       | 3  | 3      | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |

```

ENDCOPY
volff='_zero'
trkff='_zero'
voll1s='li.1.volnt_aut'
voll2s='li.1.volam_aut'
voll3s='li.1.volmd_aut'
voll4s='li.1.volpm_aut'
voll5s='li.1.volnt_trk'
voll6s='li.1.volam_trk'
voll7s='li.1.volmd_trk'
voll8s='li.1.volpm_trk'
voll9s='_zero'
voll10s='_zero'
voll11s='_zero'
voll12s='_zero'
voll13s='_zero'
voll14s='_zero'
voll15s='_zero'
voll16s='_zero'
elseif(rrmode='4PERIOD_SW')
COPY FILE=dailyb.dat

```

| MODEL CLASS | PARAMETERS | (MAX 4 | CLASSES, | HOURS | 0-23 | W/ | NO | OVERLAP | IN | CLASS, | ALLOCATE | ENTIRE | CLASS | AS | TRUCK(1) | OR | NOT(0)) |
|-------------|------------|--------|----------|-------|------|----|----|---------|----|--------|----------|--------|-------|----|----------|----|---------|
| CLS TRK     | 0          | 0      | 0        | 0     | 1    | 1  | 1  | 1       | 1  | 1      | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS BEG     | 19         | 7      | 10       | 16    | 19   | 7  | 10 | 16      | 16 | 16     | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS END     | 6          | 9      | 15       | 18    | 6    | 9  | 15 | 18      | 18 | 18     | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |
| CLS NUM     | 1          | 1      | 1        | 1     | 3    | 3  | 3  | 3       | 3  | 3      | 0        | 0      | 0     | 0  | 0        | 0  | 0       |
| 0           |            |        |          |       |      |    |    |         |    |        |          |        |       |    |          |    |         |

```

volff='_zero'
trkff='_zero'
voll1s='li.1.evol_aut'
vol2s='li.1.amvol_aut'
vol3s='li.1.mdvol_aut'
vol4s='li.1.pmvol_aut'
vol5s='li.1.evol_trk'
vol6s='li.1.amvol_trk'
vol7s='li.1.mdvol_trk'
vol8s='li.1.pmvol_trk'
vol9s='_zero'
voll10s='_zero'
voll11s='_zero'
voll12s='_zero'
voll13s='_zero'
voll14s='_zero'
voll15s='_zero'
voll16s='_zero'
elseif(rrmode='4PERIOD_MARKETSEGMENTS_SW')
COPY FILE=dailyb.dat

```

```

MODEL CLASS PARAMETERS (MAX 4 CLASSES, HOURS 0-23 W/ NO OVERLAP IN CLASS, ALLOCATE ENTIRE CLASS AS TRUCK(1) OR NOT(0))
CLS TRK      0      0      0      0      1      1      1      1      0      0      0      0      0      0      0
0
CLS BEG      19      7      10     16     19      7      10     16     19      7      10     16     19      7      10
16
CLS END      6       9      15     18      6       9      15     18      6       9      15     18      6       9      15
18
CLS NUM      1       1       1       1       3       3       3       3       2       2       2       2       4       4       4
4
ENDCOPY

```

```

volff='_zero'
trkff='_zero'
voll1s='li.1.evol_autwk'
vol2s='li.1.amvol_autwk'
vol3s='li.1.mdvol_autwk'
vol4s='li.1.pmvol_autwk'
vol5s='li.1.evol_trkhv'
vol6s='li.1.amvol_trkhv'
vol7s='li.1.mdvol_trkhv'
vol8s='li.1.pmvol_trkhv'
vol9s='li.1.evol_autnw'
voll10s='li.1.amvol_autnw'
voll11s='li.1.mdvol_autnw'
voll12s='li.1.pmvol_autnw'
voll13s='li.1.evol_trklt'
voll14s='li.1.amvol_trklt'
voll15s='li.1.mdvol_trklt'

```

```

    voll6s='li.1.pmvol_trklt'
endif

*if exist daily.dat del daily.dat
*copy dailya.dat+dailyb.dat daily.dat
*del dailya.dat
*del dailyb.dat
RUN PGM=NETWORK
  NETI={cm3neti.q}
  LINKO=templnk.txt, format = TXT, include = a(6),b(6),junk1(1),junk1(4),junks(1),moffpspd(4),
    ctoll(4),junkb(1),lanes(1),twidth(2),junkb(1),terrain(1),junk1(1),junkb(1),
    cap(6),vol(6),loneway(1),boffpspd(4),ttoll(4),junkb(1),blanes(1),areatype(1),admclass(1),
    junkb(1),bterrain(1),junk1(1),junkb(1),bcap(6),bvol(6),medturn(1),pcttrk(2),junk1(2),
    funclass(2),lnkgrp(2),mpostspd(2),jurisdc(1),county(3),rtenumb(5),junk1(7),nhs(1),
    fedfunc(2),trkvol(5),junkp(1),junk1(30),junk1(30),junk1(30),junk1(21),mdist(6),
    vol1(6),vol2(6),vol3(6),vol4(6),vol5(6),vol6(6),vol7(6),vol8(6),vol9(6),vol10(6),vol11(6),
    vol12(6),vol13(6),vol14(6),vol15(6),vol16(6),vol17(6),vol18(6),vol19(6),vol20(6),vol21(6),
    vol22(6),vol23(6),vol24(6),vol25(6),vol26(6),vol27(6),vol28(6),vol29(6),vol30(6)
  NODEO=tempnod.txt, format = TXT, include = junkn(1),n(6),x(11),y(11)
  PHASE=NODEMERGE
    junkn='N'
  ENDPHASE
  PHASE=LINKMERGE
    _zero=0
    junk1=0
    junks='S'
    junkp='P'
    fffff='{cm3pri}'
  /*;commented out 04/02/2012

if(fffff=='SW')
  if(li.1.admclass==1 && li.1.district <13 && li.1.district>0)
    junkp='P' ;state system
  elseif(li.1.district<13 && li.1.district>0)
    junkp='G' ;non-state
  else
    junkp='U' ;out of state
  endif
elseif(fffff='OMS')
  if(li.1.admclass<6)
    junkp='P'
  else
    junkp='G'
  endif
endif
/*;commented out 04/02/2012

jurisdc=' '
nhs=0

```



```

fedfunc=li.1.fedfunc1

junkb=' '
ctoll=0; =cartoll*10
ttoll=0; =trktoll*10
mdist = LI.1.DIST*1000
moffpspd=li.1.offpspd*100
mpeakspd=li.1.peakspd*100
cap=li.1.{cm3capf}*{cm3kfact}
loneway='1' ; el_oneway change
bcap=0
bvol=0
boffpspd=0
bpeakspd=0
blanes=0
bterrain=0
mpostspd=round(li.1.postspd)
vol=@volff@
trkvol=@trkff@
vol1=@vol1s@
vol2=@vol2s@
vol3=@vol3s@
vol4=@vol4s@
vol5=@vol5s@
vol6=@vol6s@
vol7=@vol7s@
vol8=@vol8s@
vol9=@vol9s@
vol10=@vol10s@
vol11=@vol11s@
vol12=@vol12s@
vol13=@vol13s@
vol14=@vol14s@
vol15=@vol15s@
vol16=@vol16s@
ENDPHASE
ENDRUN
aqmode='{cm3aqtype}'
if(aqmode=='MOBILE')
*copy {cm3effile.q} tempef.txt
*N:\AQ\MOVES\utils\postcms10.exe templnk.txt tempcms.txt N tempef.txt {cm3rmode}
*del tempef.txt
else
*N:\AQ\MOVES\utils\postcms10.exe templnk.txt tempcms.txt N NONE {cm3rmode}
endif
if(aqmode=='MOVES')
*copy {cm3effile.q} tempef.txt
if(rrmode='NORMAL' && trkfff == 'NONE')

```

```

*N:\AQ\MOVES\utils\movesnet.exe hourly.rpt tempfef.txt cmstext.rpt {cm3aqfact}
else
*N:\AQ\MOVES\utils\movesnet.exe hourly.rpt tempfef.txt cmstext.rpt {cm3aqfact} 1 {cm3tpce} 3
endif
endif

RUN PGM=NETWORK
NETI[1]={cm3neti.q}
LINKI[2]=tempcms.txt var=a,1-6,b,8-13,
          cVMT,97-111,cTRKVMT,113-128,cVOLPERLANE,130-137,cCONINDEX,139-146,
          cVCRATIO,148-155,cPEAKHOUR,157-160,cVHT,162-169,cCONGDELAY,171-178,
          cPHYSDelay,180-187,cSPDLIMDELAY,189-196,cDELAYRATIO,198-205,
          cDIR1HRSEXCEED,229-232,cDIR2HRSEXCEED,234-237,cPKVMT,253-267,cEXCEEDVMT,269-283,
          cEXCEEDPKVMT,285-299,cLOS,317,1,,1,
          select=(substr(record,1,1)!='A')
NODEI[2]=tempnod.txt var=n,2-7, x,8-18, y,19-29
NETO={cm3neto.q}
MERGE RECORD=F
ENDRUN

iiztype='{cm3iztype}'
if(iiztype=='TEXT')
*copy {cm3ifile.q} tempif.txt
elseif(iiztype=='OMSTABLE')

RUN PGM=MATRIX
FILEO PRINTO[1] = tempif.txt
FILEI MATI[1] = {cm3ifile.q}
MW[1]=mi.1.1.5+mi.1.1.10+mi.1.1.15
jloop
if(j=i)
print list=i(4.0),mw[1][j](6.0),printo=1
endif
endjloop
ENDRUN

endif

if(iiztype!='NONE')
*copy {cm3afile.q} tempaf.txt

if(aqmode=='MOBILE')
*copy {cm3ieffile.q} tempief.txt
*N:\AQ\MOVES\utils\intracal2.exe tempif.txt summary.rpt tempaf.txt tempief.txt
*del tempief.txt

elseif(aqmode=='MOVES')
*N:\AQ\MOVES\utils\movesintra.exe tempif.txt tempfef.txt tempaf.txt cmstext.rpt {cm3aqfact}

```

```

*del tempief.txt
endif

*del tempaf.txt
*DEL tempif.txt
endif

if(aqmode=='MOVES')
*copy {cm3ieffile.q} tempief.txt
*copy {cm3vfile.q} tempveh.txt
*N:\AQ\MOVES\utils\movesveh.exe tempveh.txt tempief.txt cmstext.rpt {cm3aqfact}
*del tempveh.txt
*del tempief.txt
endif

if(aqmode=='MOVES')
*echo MOVES BASED EMISSIONS REPORT > tempcom.txt
elseif(aqmode=='MOBILE')
*echo MOBILE BASED EMISSIONS REPORT >> tempcom.txt
else
*echo NO EMISSIONS ANALYSIS CONDUCTED >> tempcom.txt
endif
*echo {cm3aqcom} >> tempcom.txt
*echo Loaded Network:           {cm3neti} >> tempcom.txt
*echo Network Emission Factors: {cm3effile} >> tempcom.txt
if(aqmode=='MOVES')
*echo Vehicle Emission Factors: {cm3ieffile} >> tempcom.txt
*echo Vehicle Population       :   {cm3vfile} >> tempcom.txt
else
*echo Intrazonal Emission Factors: {cm3ieffile} >> tempcom.txt
endif
*echo Intrazonal Trips   :           {cm3ifile} >> tempcom.txt
*echo Area File (sq mi):   {cm3afile} >> tempcom.txt
*echo Volume Field Used:  {cm3volf} >> tempcom.txt
*echo Truck Volume Field Used: {cm3trkf} >> tempcom.txt
*echo Capacity Field Used:  {cm3capf} >> tempcom.txt
*echo ----- >> tempcom.txt
*copy /B tempcom.txt+cmstext.rpt {cm3rpto.q}
*if exist {cm3sumo.q} del {cm3sumo.q}
*rename summary.rpt {cm3sumo.q}
*del tempcom.txt
*del cmstext.rpt
*DEL tempnod.txt
*DEL templnk.txt
*DEL tempcms.txt
hhro=rightstr('{cm3hro}',4)
if(hhro=='NONE')
*del hourly.rpt

```

```
else
*if exist {cm3hro.q} del {cm3hro.q}
*rename hourly.rpt {cm3hro.q}
endif
```

## Appendix – MORPC Travel Demand Model Emissions Run Report for 2030

### Ozone Analysis

#### MOVES BASED EMISSIONS REPORT

Ozone Analysis with MOVES - MORPC

Loaded Network: ..\..\3C Model Results\2030\MOR30J24ASN\_BASE.NET  
 Network Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2030\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2030\_ozone\_3source\_rpv.csv  
 Vehicle Population : ..\..\Ozone\_upd\factors\Source\_Type\_Pop\_2030\_MORPC\_on-Model.csv  
 Intrazonal Trips : ..\..\3C Model Results\2030\DEL2030.txt  
 Area File (sq mi): ..\..\3C Model Results\3C\_TAZ\_areain.txt  
 Volume Field Used: VOL24\_TOT  
 Truck Volume Field Used: NONE  
 Capacity Field Used: CAPHRAM

#### ----- CMS/AQ REPORT

POSTCMS10, UPDATED DEC 2009, GTG  
 DATE:04/25/2024 TIME:15:43:49

#### PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR     | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15       | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY  | 0.9 | 0.6 | 0.5 | 0.6 | 1   | 2.5 | 5.4 | 7.3 | 6.2 | 5   | 4.8 | 5   | 5.2 | 5.5 | 6.2 |
| 7.3      | 8   | 8   | 5.8 | 4.1 | 3.4 | 2.9 | 2.2 | 1.6 |     |     |     |     |     |     |     |
| URB ART  | 0.6 | 0.4 | 0.3 | 0.4 | 0.7 | 2   | 4   | 6.3 | 5.7 | 5   | 5.1 | 5.8 | 6.2 | 6.2 | 6.8 |
| 7.7      | 8.3 | 8.2 | 6.1 | 4.5 | 3.6 | 2.8 | 1.9 | 1.2 |     |     |     |     |     |     |     |
| RUR FWY  | 1.2 | 1   | 0.9 | 1   | 1.4 | 2.6 | 4.4 | 5.4 | 5.1 | 5.2 | 5.5 | 5.7 | 5.9 | 6.2 | 6.7 |
| 7.3      | 7.4 | 7   | 5.4 | 4.3 | 3.5 | 2.9 | 2.3 | 1.7 |     |     |     |     |     |     |     |
| RUR ART  | 0.8 | 0.6 | 0.5 | 0.7 | 1.2 | 2.7 | 5.2 | 6.4 | 5.6 | 5.2 | 5.2 | 5.5 | 5.7 | 5.9 | 6.4 |
| 7.5      | 8.1 | 7.9 | 5.6 | 4.1 | 3.3 | 2.7 | 1.9 | 1.3 |     |     |     |     |     |     |     |
| PCTADT T |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY  | 1.8 | 1.6 | 1.6 | 1.8 | 2.2 | 3.1 | 4.2 | 4.9 | 5.6 | 6.2 | 6.5 | 6.6 | 6.5 | 6.5 | 6.4 |
| 6        | 5.3 | 4.6 | 4.2 | 3.6 | 3.2 | 2.9 | 2.5 | 2.2 |     |     |     |     |     |     |     |
| URB ART  | 0.9 | 0.8 | 0.9 | 1.1 | 1.6 | 2.6 | 4.6 | 6.3 | 7.1 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |
| 7        | 5.8 | 4.7 | 3.4 | 2.7 | 2.2 | 1.8 | 1.5 | 1.2 |     |     |     |     |     |     |     |
| RUR FWY  | 2.1 | 1.9 | 1.8 | 2   | 2.4 | 3.2 | 4.1 | 4.5 | 4.9 | 5.5 | 5.8 | 6   | 6.1 | 6.1 | 6   |
| 5.8      | 5.5 | 5.1 | 4.6 | 4.2 | 3.7 | 3.3 | 3   | 2.5 |     |     |     |     |     |     |     |
| RUR ART  | 1.5 | 1.4 | 1.4 | 1.7 | 2.3 | 3.1 | 4.6 | 5.4 | 6.2 | 6.6 | 6.8 | 6.9 | 6.8 | 6.8 | 6.6 |
| 6.2      | 5.5 | 4.6 | 3.7 | 3.1 | 2.6 | 2.4 | 2.1 | 1.8 |     |     |     |     |     |     |     |
| PCTDIR   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY  | 38  | 40  | 40  | 46  | 56  | 64  | 70  | 70  | 68  | 62  | 58  | 52  | 52  | 52  | 50  |
| 46       | 38  | 38  | 46  | 52  | 46  | 42  | 42  | 40  |     |     |     |     |     |     |     |
| URB ART  | 44  | 46  | 44  | 48  | 54  | 62  | 66  | 68  | 64  | 56  | 54  | 52  | 50  | 50  | 50  |
| 46       | 40  | 38  | 46  | 52  | 48  | 46  | 46  | 46  |     |     |     |     |     |     |     |

May 2024

Air Quality Conformity Appendix

52 MORPC 2024-2050 Metropolitan Transportation Plan

LCATS 2050 Metropolitan Transportation Plan

MORPC 2024-2027 Transportation Improvement Program

LCATS 2024-2027 Transportation Improvement Program

CORPO 2024-2027 Transportation Improvement Program

|          |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
|----------|------|--------|-------|--------|------|--------|-------|--------|------|-------|------|-------|------|-------|------|
| RUR FWY  | 44   | 46     | 48    | 54     | 60   | 68     | 68    | 64     | 58   | 54    | 52   | 50    | 50   | 52    | 52   |
| 48       | 42   | 40     | 44    | 48     | 48   | 44     | 46    | 44     |      |       |      |       |      |       |      |
| RUR ART  | 40   | 42     | 44    | 48     | 58   | 66     | 72    | 68     | 60   | 56    | 54   | 50    | 50   | 50    | 50   |
| 46       | 40   | 38     | 46    | 50     | 46   | 44     | 44    |        |      |       |      |       |      |       |      |
| LOS E VC | 0    | 0.625  | 1.25  | 1.875  | 2.5  | 3.125  | 3.75  | 4.375  | 5    | 5.625 | 6.25 | 6.875 | 7.5  | 8.125 | 8.75 |
| 9.375    | 10   | 10.625 | 11.25 | 11.875 | 12.5 | 13.125 | 13.75 | 14.375 |      |       |      |       |      |       |      |
| SPEEDVC  |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
| curve1   | 75   | 75     | 75    | 75     | 75   | 75     | 74.9  | 74.8   | 74.6 | 74.2  | 73.5 | 72.3  | 70.5 | 67.8  | 64.2 |
| 59.5     | 54   | 47.7   | 41.2  | 34.9   | 28.9 | 23.7   | 19.2  | 15.5   |      |       |      |       |      |       |      |
| curve2   | 70   | 70     | 70    | 70     | 70   | 70     | 70    | 69.9   | 69.8 | 69.6  | 69.2 | 68.4  | 67.1 | 65.1  | 62.2 |
| 58.2     | 53   | 47     | 40.5  | 33.9   | 27.7 | 22.2   | 17.6  | 13.8   |      |       |      |       |      |       |      |
| curve3   | 65   | 65     | 65    | 65     | 65   | 65     | 65    | 65     | 65   | 64.9  | 64.8 | 64.4  | 63.8 | 62.6  | 60.5 |
| 57       | 52   | 45.4   | 37.8  | 29.9   | 22.7 | 16.7   | 12.1  | 8.6    |      |       |      |       |      |       |      |
| curve4   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 60   | 59.9  | 59.8 | 59.6  | 59.1 | 58.2  | 56.7 |
| 54.3     | 50.8 | 46.1   | 40.3  | 33.8   | 27.3 | 21.3   | 16.2  | 12.2   |      |       |      |       |      |       |      |
| curve5   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 55   | 55    | 55   | 54.9  | 54.7 | 54.3  | 53.6 |
| 52.3     | 50   | 46.5   | 41.5  | 35.3   | 28.5 | 21.9   | 16.1  | 11.5   |      |       |      |       |      |       |      |
| curve6   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 59.9 | 59.8  | 59.7 | 59.4  | 59.1 | 58.5  | 57.7 |
| 56.5     | 55   | 53.1   | 50.7  | 47.9   | 44.7 | 41.1   | 37.3  | 33.4   |      |       |      |       |      |       |      |
| curve7   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 54.9 | 54.9  | 54.7 | 54.5  | 54.2 | 53.8  | 53.1 |
| 52.2     | 50.9 | 49.3   | 47.3  | 44.9   | 42.1 | 39     | 35.7  | 32.2   |      |       |      |       |      |       |      |
| curve8   | 50   | 50     | 50    | 50     | 50   | 50     | 50    | 50     | 49.9 | 49.9  | 49.8 | 49.6  | 49.4 | 49    | 48.5 |
| 47.7     | 46.7 | 45.4   | 43.8  | 41.8   | 39.5 | 36.8   | 33.9  | 30.9   |      |       |      |       |      |       |      |
| curve9   | 45   | 45     | 45    | 45     | 45   | 45     | 45    | 45     | 45   | 44.9  | 44.8 | 44.7  | 44.4 | 44.1  | 43.6 |
| 43       | 42.1 | 40.9   | 39.4  | 37.6   | 35.5 | 33.1   | 30.5  | 27.8   |      |       |      |       |      |       |      |
| curve10  | 50   | 50     | 50    | 50     | 50   | 49.9   | 49.8  | 49.7   | 49.4 | 49    | 48.4 | 47.5  | 46.5 | 45.1  | 43.5 |
| 39.6     | 37.3 | 34.9   | 32.4  | 29.8   | 27.3 | 24.9   | 22.6  | 20.4   |      |       |      |       |      |       |      |
| curve11  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.7   | 49.4 | 48.9  | 48   | 46.7  | 44.9 | 42.5  | 39.6 |
| 32.6     | 28.7 | 25     | 21.4  | 18.2   | 15.3 | 12.9   | 10.8  | 9      |      |       |      |       |      |       |      |
| curve12  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.8   | 49.6 | 49.1  | 48.2 | 46.8  | 44.5 | 41.4  | 37.5 |
| 28       | 23.1 | 18.7   | 14.9  | 11.8   | 9.2  | 7.2    | 5.7   | 4.5    |      |       |      |       |      |       |      |
| curve13  | 40   | 40     | 40    | 40     | 40   | 40     | 40    | 39.9   | 39.8 | 39.5  | 39.2 | 38.6  | 37.8 | 36.7  | 35.3 |
| 31.4     | 29   | 26.4   | 23.7  | 21.1   | 18.5 | 16.1   | 13.9  | 12     |      |       |      |       |      |       |      |
| curve14  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.8   | 39.6 | 39.1  | 38.5 | 37.5  | 36.1 | 34.3  | 32.1 |
| 26.5     | 23.5 | 20.5   | 17.7  | 15.1   | 12.8 | 10.7   | 9     | 7.6    |      |       |      |       |      |       |      |
| curve15  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.7   | 39.4 | 38.8  | 37.9 | 36.5  | 34.7 | 32.3  | 29.5 |
| 23.2     | 20   | 17     | 14.3  | 11.9   | 9.9  | 8.2    | 6.8   | 5.6    |      |       |      |       |      |       |      |
| curve16  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.8   | 34.5 | 34    | 33.2 | 32.1  | 30.5 | 28.5  | 26.1 |
| 20.6     | 17.9 | 15.2   | 12.8  | 10.7   | 8.9  | 7.4    | 6.1   | 5.1    |      |       |      |       |      |       |      |
| curve17  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.7   | 34.4 | 33.9  | 33.1 | 32    | 30.3 | 28.3  | 25.8 |
| 20.3     | 17.5 | 14.9   | 12.5  | 10.4   | 8.6  | 7.2    | 5.9   | 4.9    |      |       |      |       |      |       |      |
| curve18  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.6   | 34.2 | 33.5  | 32.4 | 30.9  | 28.8 | 26.3  | 23.4 |
| 17.4     | 14.6 | 12.1   | 9.9   | 8.1    | 6.6  | 5.4    | 4.4   | 3.6    |      |       |      |       |      |       |      |
| curve19  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.8   | 29.5 | 29    | 28.2 | 27.1  | 25.6 | 23.7  | 21.5 |
| 16.6     | 14.2 | 12     | 10    | 8.3    | 6.8  | 5.6    | 4.6   | 3.8    |      |       |      |       |      |       |      |
| curve20  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.7   | 29.4 | 28.9  | 28.1 | 26.9  | 25.3 | 23.4  | 21.1 |
| 16.1     | 13.6 | 11.4   | 9.5   | 7.8    | 6.4  | 5.3    | 4.3   | 3.6    |      |       |      |       |      |       |      |

|         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| curve21 | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.7 | 29.3 | 28.7 | 27.7 | 26.2 | 24.4 | 22.1 | 19.6 | 17   |
| 14.4    | 12   | 9.9  | 8.1  | 6.6  | 5.4  | 4.4  | 3.6  | 2.9  |      |      |      |      |      |      |      |
| curve22 | 55   | 54.9 | 54.4 | 53.2 | 51.1 | 47.9 | 44.0 | 39.5 | 34.9 | 30.4 | 26.2 | 22.4 | 19.2 | 16.4 | 14.0 |
| 12.0    | 10.4 | 9.0  | 7.8  | 6.8  | 6.0  | 5.3  | 4.7  | 4.1  |      |      |      |      |      |      |      |

VC RATIO TO LOS CONVERSION (VALUE SHOWN IS LOWER LIMIT FOR THAT LOS) (URBAN ROADS USE SPEED BREAKS BELOW FOR LOS DETERMINATION) (ALL USE THE BASE VC'S TO DETERMINE EXCEEDANCE)

|     | BASE | RUR2 | FWY  |
|-----|------|------|------|
| A   | 0.00 | 0.00 | 0.00 |
| B   | 0.30 | 0.00 | 0.25 |
| C   | 0.50 | 0.10 | 0.40 |
| D   | 0.70 | 0.30 | 0.60 |
| E   | 0.90 | 0.50 | 0.80 |
| F   | 1.00 | 1.00 | 1.00 |
| F+  | 1.10 | 1.10 | 1.10 |
| F++ | 1.30 | 1.30 | 1.30 |

SPEED VC RATIO BREAKS FOR URBAN STREETS (HIGHEST SPEED FOR GIVEN LOS & FF SPEED)

| FFS | B   | C   | D   | E   | F   |
|-----|-----|-----|-----|-----|-----|
| >47 | 42. | 34. | 27. | 21. | 16. |
| >37 | 35. | 28. | 22. | 17. | 13. |
| >32 | 30. | 24. | 18. | 14. | 10. |
| <33 | 25. | 19. | 13. | 9.  | 7.  |

LEVEL OF SERVICE THRESHOLD BY AREA

NUM LOS DEFINITION

- 1 F CINCINNATI, CLEVELAND, COLUMBUS CENTRAL MPO COUNTIES (CUY, FRA, HAM)
- 2 E OTHER TMA MPOS (AKRON, CANTON, DAYTON, TOLEDO, YOUNGSTOWN + NON-CENTRAL COUNTIES FROM 1)
- 3 E OTHER MPOS & PARTS OF AREAS 1 & 2 OUTSIDE URBANIZED AREA
- 4 E RURAL NON MPO COUNTIES

PEAK SPREADING MODEL INFO (SET MAX ITERATIONS TO 0 TO DISABLE PEAK SPREADING)

MAX VC RATIO FWY: 1.30  
 MAX VC RATIO ART: 1.30  
 MAX ITERATIONS : 1000

TRUCK PCE: 2.0

AQ SEASON FACTOR: 1.08

MODEL CLASS PARAMETERS (MAX 4 CLASSES, HOURS 0-23 W/ NO OVERLAP IN CLASS, ALLOCATE ENTIRE CLASS AS TRUCK(1) OR NOT(0))

| CLS TRK | 0  | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---------|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS BEG | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS END | 23 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |

CLS NUM 1 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
 0

MOVES NETWORK LINK EMISSIONS OUTPUT

| COUNTY | MONTH   | VMT       | HC | NOX    | SO2    | PM2.5  |
|--------|---------|-----------|----|--------|--------|--------|
| ADA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ALL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ASD    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ATB    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ATH    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| AUG    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BEL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BRO    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BUT    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CHP    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLI    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| COL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| COS    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CRA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CUY    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DEF    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DEL    | JANUARY | 6953438.  | 0. | 0.0000 | 0.0000 | 0.0000 |
| ERI    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| FAI    | JANUARY | 2402163.  | 0. | 0.0000 | 0.0000 | 0.0000 |
| FAY    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| FRA    | JANUARY | 35926856. | 0. | 0.0000 | 0.0000 | 0.0000 |
| FUL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GAL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GEA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GRE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GUE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAM    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAN    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAS    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HEN    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HIG    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HOC    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HOL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HUR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| JAC    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| JEF    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| KNO    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| LAK    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |



|     |         |           |        |        |        |        |
|-----|---------|-----------|--------|--------|--------|--------|
| LAW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JANUARY | 6140676.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JANUARY | 1313125.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAH | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JANUARY | 84191.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JANUARY | 934992.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JANUARY | 2129598.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JANUARY | 169631.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | JANUARY | 56035128. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | APRIL   | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| ALL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BRO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | APRIL | 6953438.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ERI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | APRIL | 2402163.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | APRIL | 35926856. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FUL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | APRIL | 6140676.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | APRIL | 1313125.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| MAH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | APRIL | 84191.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | APRIL | 934992.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | APRIL | 2129598.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | APRIL | 169631.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | APRIL | 56035128. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ALL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| BRO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | JULY | 7509713.  | 0.4877 | 1.0824 | 0.0000 | 0.0000 |
| ERI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | JULY | 2594336.  | 0.1772 | 0.3924 | 0.0000 | 0.0000 |
| FAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | JULY | 38801008. | 2.6619 | 6.1774 | 0.0000 | 0.0000 |
| FUL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JULY | 6631931.  | 0.4318 | 0.9775 | 0.0000 | 0.0000 |
| LOG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JULY | 1418175.  | 0.0790 | 0.1823 | 0.0000 | 0.0000 |
| MAH | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| MOE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JULY | 90927.    | 0.0043 | 0.0097 | 0.0000 | 0.0000 |
| NOB | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JULY | 1009791.  | 0.0507 | 0.1062 | 0.0000 | 0.0000 |
| PIK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JULY | 2299966.  | 0.1344 | 0.2932 | 0.0000 | 0.0000 |
| VAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JULY | 183202.   | 0.0151 | 0.0395 | 0.0000 | 0.0000 |
| TOT | JULY | 60517940. | 4.0408 | 9.2593 | 0.0000 | 0.0000 |

| MOVES INTRAZONAL EMISSIONS OUTPUT    |          |         |        |        |        |  |
|--------------------------------------|----------|---------|--------|--------|--------|--|
| MONTH                                | VMT      | HC      | NOX    | SO2    | PM2.5  |  |
| JANUARY                              | 38315.   | 0.0000  | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                                | 38315.   | 0.0000  | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                                 | 41380.   | 0.0043  | 0.0113 | 0.0000 | 0.0000 |  |
| MOVES VEHICLE BASED EMISSIONS OUTPUT |          |         |        |        |        |  |
| MONTH                                | VEHICLES | HC      | NOX    | SO2    | PM2.5  |  |
| JANUARY                              | 2529559. | 0.0000  | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                                | 2529559. | 0.0000  | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                                 | 2731924. | 10.6665 | 2.4528 | 0.0000 | 0.0000 |  |

## Appendix – MORPC Travel Demand Model Emission Run Report for 2040

### Ozone Analysis

#### MOVES BASED EMISSIONS REPORT

Ozone Analysis with MOVES - MORPC

Loaded Network: ..\..\3C Model Results\2040\MOR40J24ASN\_BASE.NET  
 Network Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2040\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2040\_ozone\_3source\_rpv.csv  
 Vehicle Population : ..\..\Ozone\_upd\factors\Source\_Type\_Pop\_2040\_MORPC\_on-Model.csv  
 Intrazonal Trips : ..\..\3C Model Results\2040\DEL2040.txt  
 Area File (sq mi): ..\..\3C Model Results\3C\_TAZ\_areain.txt  
 Volume Field Used: VOL24\_TOT  
 Truck Volume Field Used: NONE  
 Capacity Field Used: CAPHRAM

#### ----- CMS/AQ REPORT

POSTCMS10, UPDATED DEC 2009, GTG

DATE:04/25/2024 TIME:15:59:59

#### PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15       | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| PCTADT   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 0.9 | 0.6 | 0.5 | 0.6 | 1   | 2.5 | 5.4 | 7.3 | 6.2 | 5   | 4.8 | 5   | 5.2 | 5.5 | 6.2 |    |
| 7.3      | 8   | 5.8 | 4.1 | 3.4 | 2.9 | 2.2 | 1.6 |     |     |     |     |     |     |     |     |    |
| URB ART  | 0.6 | 0.4 | 0.3 | 0.4 | 0.7 | 2   | 4   | 6.3 | 5.7 | 5   | 5.1 | 5.8 | 6.2 | 6.2 | 6.8 |    |
| 7.7      | 8.3 | 8.2 | 6.1 | 4.5 | 3.6 | 2.8 | 1.9 | 1.2 |     |     |     |     |     |     |     |    |
| RUR FWY  | 1.2 | 1   | 0.9 | 1   | 1.4 | 2.6 | 4.4 | 5.4 | 5.1 | 5.2 | 5.5 | 5.7 | 5.9 | 6.2 | 6.7 |    |
| 7.3      | 7.4 | 7   | 5.4 | 4.3 | 3.5 | 2.9 | 2.3 | 1.7 |     |     |     |     |     |     |     |    |
| RUR ART  | 0.8 | 0.6 | 0.5 | 0.7 | 1.2 | 2.7 | 5.2 | 6.4 | 5.6 | 5.2 | 5.2 | 5.5 | 5.7 | 5.9 | 6.4 |    |
| 7.5      | 8.1 | 7.9 | 5.6 | 4.1 | 3.3 | 2.7 | 1.9 | 1.3 |     |     |     |     |     |     |     |    |
| PCTADT T |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 1.8 | 1.6 | 1.6 | 1.8 | 2.2 | 3.1 | 4.2 | 4.9 | 5.6 | 6.2 | 6.5 | 6.6 | 6.5 | 6.5 | 6.4 |    |
| 6        | 5.3 | 4.6 | 4.2 | 3.6 | 3.2 | 2.9 | 2.5 | 2.2 |     |     |     |     |     |     |     |    |
| URB ART  | 0.9 | 0.8 | 0.9 | 1.1 | 1.6 | 2.6 | 4.6 | 6.3 | 7.1 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |    |
| 7        | 5.8 | 4.7 | 3.4 | 2.7 | 2.2 | 1.8 | 1.5 | 1.2 |     |     |     |     |     |     |     |    |
| RUR FWY  | 2.1 | 1.9 | 1.8 | 2   | 2.4 | 3.2 | 4.1 | 4.5 | 4.9 | 5.5 | 5.8 | 6   | 6.1 | 6.1 | 6   |    |
| 5.8      | 5.5 | 5.1 | 4.6 | 4.2 | 3.7 | 3.3 | 3   | 2.5 |     |     |     |     |     |     |     |    |
| RUR ART  | 1.5 | 1.4 | 1.4 | 1.7 | 2.3 | 3.1 | 4.6 | 5.4 | 6.2 | 6.6 | 6.8 | 6.9 | 6.8 | 6.8 | 6.6 |    |
| 6.2      | 5.5 | 4.6 | 3.7 | 3.1 | 2.6 | 2.4 | 2.1 | 1.8 |     |     |     |     |     |     |     |    |
| PCTDIR   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 38  | 40  | 40  | 46  | 56  | 64  | 70  | 70  | 68  | 62  | 58  | 52  | 52  | 52  | 50  |    |
| 46       | 38  | 38  | 46  | 52  | 46  | 42  | 42  | 40  |     |     |     |     |     |     |     |    |
| URB ART  | 44  | 46  | 44  | 48  | 54  | 62  | 66  | 68  | 64  | 56  | 54  | 52  | 50  | 50  | 50  |    |
| 46       | 40  | 38  | 46  | 52  | 48  | 46  | 46  | 46  |     |     |     |     |     |     |     |    |

May 2024

Air Quality Conformity Appendix

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MORPC 2024-2050 Metropolitan Transportation Plan  
 LCATS 2050 Metropolitan Transportation Plan  
 MORPC 2024-2027 Transportation Improvement Program  
 LCATS 2024-2027 Transportation Improvement Program  
 CORPO 2024-2027 Transportation Improvement Program

|          |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
|----------|------|--------|-------|--------|------|--------|-------|--------|------|-------|------|-------|------|-------|------|
| RUR FWY  | 44   | 46     | 48    | 54     | 60   | 68     | 68    | 64     | 58   | 54    | 52   | 50    | 50   | 52    | 52   |
| 48       | 42   | 40     | 44    | 48     | 48   | 44     | 46    | 44     |      |       |      |       |      |       |      |
| RUR ART  | 40   | 42     | 44    | 48     | 58   | 66     | 72    | 68     | 60   | 56    | 54   | 50    | 50   | 50    | 50   |
| 46       | 40   | 38     | 46    | 50     | 46   | 44     | 44    | 44     |      |       |      |       |      |       |      |
| LOS E VC | 0    | 0.625  | 1.25  | 1.875  | 2.5  | 3.125  | 3.75  | 4.375  | 5    | 5.625 | 6.25 | 6.875 | 7.5  | 8.125 | 8.75 |
| 9.375    | 10   | 10.625 | 11.25 | 11.875 | 12.5 | 13.125 | 13.75 | 14.375 |      |       |      |       |      |       |      |
| SPEEDVC  |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
| curve1   | 75   | 75     | 75    | 75     | 75   | 75     | 74.9  | 74.8   | 74.6 | 74.2  | 73.5 | 72.3  | 70.5 | 67.8  | 64.2 |
| 59.5     | 54   | 47.7   | 41.2  | 34.9   | 28.9 | 23.7   | 19.2  | 15.5   |      |       |      |       |      |       |      |
| curve2   | 70   | 70     | 70    | 70     | 70   | 70     | 70    | 69.9   | 69.8 | 69.6  | 69.2 | 68.4  | 67.1 | 65.1  | 62.2 |
| 58.2     | 53   | 47     | 40.5  | 33.9   | 27.7 | 22.2   | 17.6  | 13.8   |      |       |      |       |      |       |      |
| curve3   | 65   | 65     | 65    | 65     | 65   | 65     | 65    | 65     | 65   | 64.9  | 64.8 | 64.4  | 63.8 | 62.6  | 60.5 |
| 57       | 52   | 45.4   | 37.8  | 29.9   | 22.7 | 16.7   | 12.1  | 8.6    |      |       |      |       |      |       |      |
| curve4   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 60   | 59.9  | 59.8 | 59.6  | 59.1 | 58.2  | 56.7 |
| 54.3     | 50.8 | 46.1   | 40.3  | 33.8   | 27.3 | 21.3   | 16.2  | 12.2   |      |       |      |       |      |       |      |
| curve5   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 55   | 55    | 55   | 54.9  | 54.7 | 54.3  | 53.6 |
| 52.3     | 50   | 46.5   | 41.5  | 35.3   | 28.5 | 21.9   | 16.1  | 11.5   |      |       |      |       |      |       |      |
| curve6   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 59.9 | 59.8  | 59.7 | 59.4  | 59.1 | 58.5  | 57.7 |
| 56.5     | 55   | 53.1   | 50.7  | 47.9   | 44.7 | 41.1   | 37.3  | 33.4   |      |       |      |       |      |       |      |
| curve7   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 54.9 | 54.9  | 54.7 | 54.5  | 54.2 | 53.8  | 53.1 |
| 52.2     | 50.9 | 49.3   | 47.3  | 44.9   | 42.1 | 39     | 35.7  | 32.2   |      |       |      |       |      |       |      |
| curve8   | 50   | 50     | 50    | 50     | 50   | 50     | 50    | 50     | 49.9 | 49.9  | 49.8 | 49.6  | 49.4 | 49    | 48.5 |
| 47.7     | 46.7 | 45.4   | 43.8  | 41.8   | 39.5 | 36.8   | 33.9  | 30.9   |      |       |      |       |      |       |      |
| curve9   | 45   | 45     | 45    | 45     | 45   | 45     | 45    | 45     | 45   | 44.9  | 44.8 | 44.7  | 44.4 | 44.1  | 43.6 |
| 43       | 42.1 | 40.9   | 39.4  | 37.6   | 35.5 | 33.1   | 30.5  | 27.8   |      |       |      |       |      |       |      |
| curve10  | 50   | 50     | 50    | 50     | 50   | 49.9   | 49.8  | 49.7   | 49.4 | 49    | 48.4 | 47.5  | 46.5 | 45.1  | 43.5 |
| 39.6     | 37.3 | 34.9   | 32.4  | 29.8   | 27.3 | 24.9   | 22.6  | 20.4   |      |       |      |       |      |       |      |
| curve11  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.7   | 49.4 | 48.9  | 48   | 46.7  | 44.9 | 42.5  | 39.6 |
| 32.6     | 28.7 | 25     | 21.4  | 18.2   | 15.3 | 12.9   | 10.8  | 9      |      |       |      |       |      |       |      |
| curve12  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.8   | 49.6 | 49.1  | 48.2 | 46.8  | 44.5 | 41.4  | 37.5 |
| 28       | 23.1 | 18.7   | 14.9  | 11.8   | 9.2  | 7.2    | 5.7   | 4.5    |      |       |      |       |      |       |      |
| curve13  | 40   | 40     | 40    | 40     | 40   | 40     | 40    | 39.9   | 39.8 | 39.5  | 39.2 | 38.6  | 37.8 | 36.7  | 35.3 |
| 31.4     | 29   | 26.4   | 23.7  | 21.1   | 18.5 | 16.1   | 13.9  | 12     |      |       |      |       |      |       |      |
| curve14  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.8   | 39.6 | 39.1  | 38.5 | 37.5  | 36.1 | 34.3  | 32.1 |
| 26.5     | 23.5 | 20.5   | 17.7  | 15.1   | 12.8 | 10.7   | 9     | 7.6    |      |       |      |       |      |       |      |
| curve15  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.7   | 39.4 | 38.8  | 37.9 | 36.5  | 34.7 | 32.3  | 29.5 |
| 23.2     | 20   | 17     | 14.3  | 11.9   | 9.9  | 8.2    | 6.8   | 5.6    |      |       |      |       |      |       |      |
| curve16  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.8   | 34.5 | 34    | 33.2 | 32.1  | 30.5 | 28.5  | 26.1 |
| 20.6     | 17.9 | 15.2   | 12.8  | 10.7   | 8.9  | 7.4    | 6.1   | 5.1    |      |       |      |       |      |       |      |
| curve17  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.7   | 34.4 | 33.9  | 33.1 | 32    | 30.3 | 28.3  | 25.8 |
| 20.3     | 17.5 | 14.9   | 12.5  | 10.4   | 8.6  | 7.2    | 5.9   | 4.9    |      |       |      |       |      |       |      |
| curve18  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.6   | 34.2 | 33.5  | 32.4 | 30.9  | 28.8 | 26.3  | 23.4 |
| 17.4     | 14.6 | 12.1   | 9.9   | 8.1    | 6.6  | 5.4    | 4.4   | 3.6    |      |       |      |       |      |       |      |
| curve19  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.8   | 29.5 | 29    | 28.2 | 27.1  | 25.6 | 23.7  | 21.5 |
| 16.6     | 14.2 | 12     | 10    | 8.3    | 6.8  | 5.6    | 4.6   | 3.8    |      |       |      |       |      |       |      |
| curve20  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.7   | 29.4 | 28.9  | 28.1 | 26.9  | 25.3 | 23.4  | 21.1 |
| 16.1     | 13.6 | 11.4   | 9.5   | 7.8    | 6.4  | 5.3    | 4.3   | 3.6    |      |       |      |       |      |       |      |

|         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| curve21 | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.7 | 29.3 | 28.7 | 27.7 | 26.2 | 24.4 | 22.1 | 19.6 | 17   |
| 14.4    | 12   | 9.9  | 8.1  | 6.6  | 5.4  | 4.4  | 3.6  | 2.9  |      |      |      |      |      |      |      |
| curve22 | 55   | 54.9 | 54.4 | 53.2 | 51.1 | 47.9 | 44.0 | 39.5 | 34.9 | 30.4 | 26.2 | 22.4 | 19.2 | 16.4 | 14.0 |
| 12.0    | 10.4 | 9.0  | 7.8  | 6.8  | 6.0  | 5.3  | 4.7  | 4.1  |      |      |      |      |      |      |      |

VC RATIO TO LOS CONVERSION (VALUE SHOWN IS LOWER LIMIT FOR THAT LOS) (URBAN ROADS USE SPEED BREAKS BELOW FOR LOS DETERMINATION) (ALL USE THE BASE VC'S TO DETERMINE EXCEEDANCE)

|     | BASE | RUR2 | FWY  |
|-----|------|------|------|
| A   | 0.00 | 0.00 | 0.00 |
| B   | 0.30 | 0.00 | 0.25 |
| C   | 0.50 | 0.10 | 0.40 |
| D   | 0.70 | 0.30 | 0.60 |
| E   | 0.90 | 0.50 | 0.80 |
| F   | 1.00 | 1.00 | 1.00 |
| F+  | 1.10 | 1.10 | 1.10 |
| F++ | 1.30 | 1.30 | 1.30 |

SPEED VC RATIO BREAKS FOR URBAN STREETS (HIGHEST SPEED FOR GIVEN LOS & FF SPEED)

| FFS | B   | C   | D   | E   | F   |
|-----|-----|-----|-----|-----|-----|
| >47 | 42. | 34. | 27. | 21. | 16. |
| >37 | 35. | 28. | 22. | 17. | 13. |
| >32 | 30. | 24. | 18. | 14. | 10. |
| <33 | 25. | 19. | 13. | 9.  | 7.  |

LEVEL OF SERVICE THRESHOLD BY AREA

NUM LOS DEFINITION

- 1 F CINCINNATI, CLEVELAND, COLUMBUS CENTRAL MPO COUNTIES (CUY, FRA, HAM)
- 2 E OTHER TMA MPOS (AKRON, CANTON, DAYTON, TOLEDO, YOUNGSTOWN + NON-CENTRAL COUNTIES FROM 1)
- 3 E OTHER MPOS & PARTS OF AREAS 1 & 2 OUTSIDE URBANIZED AREA
- 4 E RURAL NON MPO COUNTIES

PEAK SPREADING MODEL INFO (SET MAX ITERATIONS TO 0 TO DISABLE PEAK SPREADING)

MAX VC RATIO FWY: 1.30  
 MAX VC RATIO ART: 1.30  
 MAX ITERATIONS : 1000

TRUCK PCE: 2.0

AQ SEASON FACTOR: 1.08

MODEL CLASS PARAMETERS (MAX 4 CLASSES, HOURS 0-23 W/ NO OVERLAP IN CLASS, ALLOCATE ENTIRE CLASS AS TRUCK(1) OR NOT(0))

| CLS TRK | 0  | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---------|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS BEG | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS END | 23 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |



CLS NUM 1 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0

MOVES NETWORK LINK EMISSIONS OUTPUT

| COUNTY | MONTH   | VMT       | HC     | NOX    | SO2    | PM2.5  |
|--------|---------|-----------|--------|--------|--------|--------|
| ADA    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| ALL    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| ASD    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| ATB    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| ATH    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| AUG    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| BEL    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| BRO    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| BUT    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CAR    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CHP    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CLA    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CLE    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CLI    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| COL    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| COS    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CRA    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| CUY    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| DAR    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| DEF    | JANUARY |           | 0.     | 0.0000 | 0.0000 | 0.0000 |
| DEL    | JANUARY | 8372655.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ERI    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI    | JANUARY | 2714973.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAY    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA    | JANUARY | 38660644. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FUL    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK    | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |         |           |        |        |        |        |
|-----|---------|-----------|--------|--------|--------|--------|
| LAW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JANUARY | 6809526.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JANUARY | 1453405.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAH | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JANUARY | 92139.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JANUARY | 1076413.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JANUARY | 2485705.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JANUARY | 186626.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | JANUARY | 61835540. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | APRIL   | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| ALL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BRO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | APRIL | 8372655.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ERI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | APRIL | 2714973.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | APRIL | 38660644. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FUL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | APRIL | 6809526.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | APRIL | 1453405.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| MAH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | APRIL | 92139.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | APRIL | 1076413.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | APRIL | 2485705.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | APRIL | 186626.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | APRIL | 61835540. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ALL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| BRO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | JULY | 9042468.  | 0.4065 | 0.4650 | 0.0000 | 0.0000 |
| ERI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | JULY | 2932171.  | 0.1361 | 0.1574 | 0.0000 | 0.0000 |
| FAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | JULY | 41753496. | 1.9326 | 2.3567 | 0.0000 | 0.0000 |
| FUL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JULY | 7354288.  | 0.3233 | 0.3837 | 0.0000 | 0.0000 |
| LOG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JULY | 1569677.  | 0.0592 | 0.0723 | 0.0000 | 0.0000 |
| MAH | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| MOE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JULY | 99510.    | 0.0032 | 0.0038 | 0.0000 | 0.0000 |
| NOB | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JULY | 1162526.  | 0.0404 | 0.0448 | 0.0000 | 0.0000 |
| PIK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JULY | 2684561.  | 0.1090 | 0.1235 | 0.0000 | 0.0000 |
| VAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JULY | 201556.   | 0.0109 | 0.0153 | 0.0000 | 0.0000 |
| TOT | JULY | 66782384. | 3.0199 | 3.6219 | 0.0000 | 0.0000 |

| MOVES INTRAZONAL EMISSIONS OUTPUT    |          |        |        |        |        |  |
|--------------------------------------|----------|--------|--------|--------|--------|--|
| MONTH                                | VMT      | HC     | NOX    | SO2    | PM2.5  |  |
| JANUARY                              | 50033.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                                | 50033.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                                 | 54035.   | 0.0037 | 0.0051 | 0.0000 | 0.0000 |  |
| MOVES VEHICLE BASED EMISSIONS OUTPUT |          |        |        |        |        |  |
| MONTH                                | VEHICLES | HC     | NOX    | SO2    | PM2.5  |  |
| JANUARY                              | 2718164. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                                | 2718164. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                                 | 2935617. | 7.6304 | 1.6763 | 0.0000 | 0.0000 |  |

## Appendix – MORPC Travel Demand Model Emission Run Report for 2050

### Ozone Analysis

#### MOVES BASED EMISSIONS REPORT

Ozone Analysis with MOVES - MORPC

Loaded Network: ..\..\3C Model Results\2050\MOR50J24ASN\_BASE.NET  
 Network Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2050\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: ..\..\Ozone\_upd\factors\MORPC\_2050\_ozone\_3source\_rpv.csv  
 Vehicle Population : ..\..\Ozone\_upd\factors\Source\_Type\_Pop\_2050\_MORPC\_on-Model.csv  
 Intrazonal Trips : ..\..\3C Model Results\2050\DEL2050.txt  
 Area File (sq mi): ..\..\3C Model Results\3C\_TAZ\_areain.txt  
 Volume Field Used: VOL24\_TOT  
 Truck Volume Field Used: NONE  
 Capacity Field Used: CAPHRAM

#### ----- CMS/AQ REPORT

POSTCMS10, UPDATED DEC 2009, GTG  
 DATE:04/25/2024 TIME:16:10:14

#### PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15       | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| PCTADT   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 0.9 | 0.6 | 0.5 | 0.6 | 1   | 2.5 | 5.4 | 7.3 | 6.2 | 5   | 4.8 | 5   | 5.2 | 5.5 | 6.2 |    |
| 7.3      | 8   | 8   | 5.8 | 4.1 | 3.4 | 2.9 | 2.2 | 1.6 |     |     |     |     |     |     |     |    |
| URB ART  | 0.6 | 0.4 | 0.3 | 0.4 | 0.7 | 2   | 4   | 6.3 | 5.7 | 5   | 5.1 | 5.8 | 6.2 | 6.2 | 6.8 |    |
| 7.7      | 8.3 | 8.2 | 6.1 | 4.5 | 3.6 | 2.8 | 1.9 | 1.2 |     |     |     |     |     |     |     |    |
| RUR FWY  | 1.2 | 1   | 0.9 | 1   | 1.4 | 2.6 | 4.4 | 5.4 | 5.1 | 5.2 | 5.5 | 5.7 | 5.9 | 6.2 | 6.7 |    |
| 7.3      | 7.4 | 7   | 5.4 | 4.3 | 3.5 | 2.9 | 2.3 | 1.7 |     |     |     |     |     |     |     |    |
| RUR ART  | 0.8 | 0.6 | 0.5 | 0.7 | 1.2 | 2.7 | 5.2 | 6.4 | 5.6 | 5.2 | 5.2 | 5.5 | 5.7 | 5.9 | 6.4 |    |
| 7.5      | 8.1 | 7.9 | 5.6 | 4.1 | 3.3 | 2.7 | 1.9 | 1.3 |     |     |     |     |     |     |     |    |
| PCTADT T |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 1.8 | 1.6 | 1.6 | 1.8 | 2.2 | 3.1 | 4.2 | 4.9 | 5.6 | 6.2 | 6.5 | 6.6 | 6.5 | 6.5 | 6.4 |    |
| 6        | 5.3 | 4.6 | 4.2 | 3.6 | 3.2 | 2.9 | 2.5 | 2.2 |     |     |     |     |     |     |     |    |
| URB ART  | 0.9 | 0.8 | 0.9 | 1.1 | 1.6 | 2.6 | 4.6 | 6.3 | 7.1 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |    |
| 7        | 5.8 | 4.7 | 3.4 | 2.7 | 2.2 | 1.8 | 1.5 | 1.2 |     |     |     |     |     |     |     |    |
| RUR FWY  | 2.1 | 1.9 | 1.8 | 2   | 2.4 | 3.2 | 4.1 | 4.5 | 4.9 | 5.5 | 5.8 | 6   | 6.1 | 6.1 | 6   |    |
| 5.8      | 5.5 | 5.1 | 4.6 | 4.2 | 3.7 | 3.3 | 3   | 2.5 |     |     |     |     |     |     |     |    |
| RUR ART  | 1.5 | 1.4 | 1.4 | 1.7 | 2.3 | 3.1 | 4.6 | 5.4 | 6.2 | 6.6 | 6.8 | 6.9 | 6.8 | 6.8 | 6.6 |    |
| 6.2      | 5.5 | 4.6 | 3.7 | 3.1 | 2.6 | 2.4 | 2.1 | 1.8 |     |     |     |     |     |     |     |    |
| PCTDIR   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| URB FWY  | 38  | 40  | 40  | 46  | 56  | 64  | 70  | 70  | 68  | 62  | 58  | 52  | 52  | 52  | 50  |    |
| 46       | 38  | 38  | 46  | 52  | 46  | 42  | 42  | 40  |     |     |     |     |     |     |     |    |
| URB ART  | 44  | 46  | 44  | 48  | 54  | 62  | 66  | 68  | 64  | 56  | 54  | 52  | 50  | 50  | 50  |    |
| 46       | 40  | 38  | 46  | 52  | 48  | 46  | 46  | 46  |     |     |     |     |     |     |     |    |

May 2024

Air Quality Conformity Appendix

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MORPC 2024-2050 Metropolitan Transportation Plan  
 LCATS 2050 Metropolitan Transportation Plan  
 MORPC 2024-2027 Transportation Improvement Program  
 LCATS 2024-2027 Transportation Improvement Program  
 CORPO 2024-2027 Transportation Improvement Program

|          |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
|----------|------|--------|-------|--------|------|--------|-------|--------|------|-------|------|-------|------|-------|------|
| RUR FWY  | 44   | 46     | 48    | 54     | 60   | 68     | 68    | 64     | 58   | 54    | 52   | 50    | 50   | 52    | 52   |
| 48       | 42   | 40     | 44    | 48     | 48   | 44     | 46    | 44     |      |       |      |       |      |       |      |
| RUR ART  | 40   | 42     | 44    | 48     | 58   | 66     | 72    | 68     | 60   | 56    | 54   | 50    | 50   | 50    | 50   |
| 46       | 40   | 38     | 46    | 50     | 46   | 44     | 44    |        |      |       |      |       |      |       |      |
| LOS E VC | 0    | 0.625  | 1.25  | 1.875  | 2.5  | 3.125  | 3.75  | 4.375  | 5    | 5.625 | 6.25 | 6.875 | 7.5  | 8.125 | 8.75 |
| 9.375    | 10   | 10.625 | 11.25 | 11.875 | 12.5 | 13.125 | 13.75 | 14.375 |      |       |      |       |      |       |      |
| SPEEDVC  |      |        |       |        |      |        |       |        |      |       |      |       |      |       |      |
| curve1   | 75   | 75     | 75    | 75     | 75   | 75     | 74.9  | 74.8   | 74.6 | 74.2  | 73.5 | 72.3  | 70.5 | 67.8  | 64.2 |
| 59.5     | 54   | 47.7   | 41.2  | 34.9   | 28.9 | 23.7   | 19.2  | 15.5   |      |       |      |       |      |       |      |
| curve2   | 70   | 70     | 70    | 70     | 70   | 70     | 70    | 69.9   | 69.8 | 69.6  | 69.2 | 68.4  | 67.1 | 65.1  | 62.2 |
| 58.2     | 53   | 47     | 40.5  | 33.9   | 27.7 | 22.2   | 17.6  | 13.8   |      |       |      |       |      |       |      |
| curve3   | 65   | 65     | 65    | 65     | 65   | 65     | 65    | 65     | 65   | 64.9  | 64.8 | 64.4  | 63.8 | 62.6  | 60.5 |
| 57       | 52   | 45.4   | 37.8  | 29.9   | 22.7 | 16.7   | 12.1  | 8.6    |      |       |      |       |      |       |      |
| curve4   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 60   | 59.9  | 59.8 | 59.6  | 59.1 | 58.2  | 56.7 |
| 54.3     | 50.8 | 46.1   | 40.3  | 33.8   | 27.3 | 21.3   | 16.2  | 12.2   |      |       |      |       |      |       |      |
| curve5   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 55   | 55    | 55   | 54.9  | 54.7 | 54.3  | 53.6 |
| 52.3     | 50   | 46.5   | 41.5  | 35.3   | 28.5 | 21.9   | 16.1  | 11.5   |      |       |      |       |      |       |      |
| curve6   | 60   | 60     | 60    | 60     | 60   | 60     | 60    | 60     | 59.9 | 59.8  | 59.7 | 59.4  | 59.1 | 58.5  | 57.7 |
| 56.5     | 55   | 53.1   | 50.7  | 47.9   | 44.7 | 41.1   | 37.3  | 33.4   |      |       |      |       |      |       |      |
| curve7   | 55   | 55     | 55    | 55     | 55   | 55     | 55    | 55     | 54.9 | 54.9  | 54.7 | 54.5  | 54.2 | 53.8  | 53.1 |
| 52.2     | 50.9 | 49.3   | 47.3  | 44.9   | 42.1 | 39     | 35.7  | 32.2   |      |       |      |       |      |       |      |
| curve8   | 50   | 50     | 50    | 50     | 50   | 50     | 50    | 50     | 49.9 | 49.9  | 49.8 | 49.6  | 49.4 | 49    | 48.5 |
| 47.7     | 46.7 | 45.4   | 43.8  | 41.8   | 39.5 | 36.8   | 33.9  | 30.9   |      |       |      |       |      |       |      |
| curve9   | 45   | 45     | 45    | 45     | 45   | 45     | 45    | 45     | 45   | 44.9  | 44.8 | 44.7  | 44.4 | 44.1  | 43.6 |
| 43       | 42.1 | 40.9   | 39.4  | 37.6   | 35.5 | 33.1   | 30.5  | 27.8   |      |       |      |       |      |       |      |
| curve10  | 50   | 50     | 50    | 50     | 50   | 49.9   | 49.8  | 49.7   | 49.4 | 49    | 48.4 | 47.5  | 46.5 | 45.1  | 43.5 |
| 39.6     | 37.3 | 34.9   | 32.4  | 29.8   | 27.3 | 24.9   | 22.6  | 20.4   |      |       |      |       |      |       |      |
| curve11  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.7   | 49.4 | 48.9  | 48   | 46.7  | 44.9 | 42.5  | 39.6 |
| 32.6     | 28.7 | 25     | 21.4  | 18.2   | 15.3 | 12.9   | 10.8  | 9      |      |       |      |       |      |       |      |
| curve12  | 50   | 50     | 50    | 50     | 50   | 50     | 49.9  | 49.8   | 49.6 | 49.1  | 48.2 | 46.8  | 44.5 | 41.4  | 37.5 |
| 28       | 23.1 | 18.7   | 14.9  | 11.8   | 9.2  | 7.2    | 5.7   | 4.5    |      |       |      |       |      |       |      |
| curve13  | 40   | 40     | 40    | 40     | 40   | 40     | 40    | 39.9   | 39.8 | 39.5  | 39.2 | 38.6  | 37.8 | 36.7  | 35.3 |
| 31.4     | 29   | 26.4   | 23.7  | 21.1   | 18.5 | 16.1   | 13.9  | 12     |      |       |      |       |      |       |      |
| curve14  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.8   | 39.6 | 39.1  | 38.5 | 37.5  | 36.1 | 34.3  | 32.1 |
| 26.5     | 23.5 | 20.5   | 17.7  | 15.1   | 12.8 | 10.7   | 9     | 7.6    |      |       |      |       |      |       |      |
| curve15  | 40   | 40     | 40    | 40     | 40   | 40     | 39.9  | 39.7   | 39.4 | 38.8  | 37.9 | 36.5  | 34.7 | 32.3  | 29.5 |
| 23.2     | 20   | 17     | 14.3  | 11.9   | 9.9  | 8.2    | 6.8   | 5.6    |      |       |      |       |      |       |      |
| curve16  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.8   | 34.5 | 34    | 33.2 | 32.1  | 30.5 | 28.5  | 26.1 |
| 20.6     | 17.9 | 15.2   | 12.8  | 10.7   | 8.9  | 7.4    | 6.1   | 5.1    |      |       |      |       |      |       |      |
| curve17  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.7   | 34.4 | 33.9  | 33.1 | 32    | 30.3 | 28.3  | 25.8 |
| 20.3     | 17.5 | 14.9   | 12.5  | 10.4   | 8.6  | 7.2    | 5.9   | 4.9    |      |       |      |       |      |       |      |
| curve18  | 35   | 35     | 35    | 35     | 35   | 35     | 34.9  | 34.6   | 34.2 | 33.5  | 32.4 | 30.9  | 28.8 | 26.3  | 23.4 |
| 17.4     | 14.6 | 12.1   | 9.9   | 8.1    | 6.6  | 5.4    | 4.4   | 3.6    |      |       |      |       |      |       |      |
| curve19  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.8   | 29.5 | 29    | 28.2 | 27.1  | 25.6 | 23.7  | 21.5 |
| 16.6     | 14.2 | 12     | 10    | 8.3    | 6.8  | 5.6    | 4.6   | 3.8    |      |       |      |       |      |       |      |
| curve20  | 30   | 30     | 30    | 30     | 30   | 30     | 29.9  | 29.7   | 29.4 | 28.9  | 28.1 | 26.9  | 25.3 | 23.4  | 21.1 |
| 16.1     | 13.6 | 11.4   | 9.5   | 7.8    | 6.4  | 5.3    | 4.3   | 3.6    |      |       |      |       |      |       |      |



|         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| curve21 | 30   | 30   | 30   | 30   | 30   | 29.9 | 29.7 | 29.3 | 28.7 | 27.7 | 26.2 | 24.4 | 22.1 | 19.6 | 17   |
| 14.4    | 12   | 9.9  | 8.1  | 6.6  | 5.4  | 4.4  | 3.6  | 2.9  |      |      |      |      |      |      |      |
| curve22 | 55   | 54.9 | 54.4 | 53.2 | 51.1 | 47.9 | 44.0 | 39.5 | 34.9 | 30.4 | 26.2 | 22.4 | 19.2 | 16.4 | 14.0 |
| 12.0    | 10.4 | 9.0  | 7.8  | 6.8  | 6.0  | 5.3  | 4.7  | 4.1  |      |      |      |      |      |      |      |

VC RATIO TO LOS CONVERSION (VALUE SHOWN IS LOWER LIMIT FOR THAT LOS) (URBAN ROADS USE SPEED BREAKS BELOW FOR LOS DETERMINATION) (ALL USE THE BASE VC'S TO DETERMINE EXCEEDANCE)

|     | BASE | RUR2 | FWY  |
|-----|------|------|------|
| A   | 0.00 | 0.00 | 0.00 |
| B   | 0.30 | 0.00 | 0.25 |
| C   | 0.50 | 0.10 | 0.40 |
| D   | 0.70 | 0.30 | 0.60 |
| E   | 0.90 | 0.50 | 0.80 |
| F   | 1.00 | 1.00 | 1.00 |
| F+  | 1.10 | 1.10 | 1.10 |
| F++ | 1.30 | 1.30 | 1.30 |

SPEED VC RATIO BREAKS FOR URBAN STREETS (HIGHEST SPEED FOR GIVEN LOS & FF SPEED)

| FFS | B   | C   | D   | E   | F   |
|-----|-----|-----|-----|-----|-----|
| >47 | 42. | 34. | 27. | 21. | 16. |
| >37 | 35. | 28. | 22. | 17. | 13. |
| >32 | 30. | 24. | 18. | 14. | 10. |
| <33 | 25. | 19. | 13. | 9.  | 7.  |

LEVEL OF SERVICE THRESHOLD BY AREA

NUM LOS DEFINITION

- 1 F CINCINNATI, CLEVELAND, COLUMBUS CENTRAL MPO COUNTIES (CUY, FRA, HAM)
- 2 E OTHER TMA MPOS (AKRON, CANTON, DAYTON, TOLEDO, YOUNGSTOWN + NON-CENTRAL COUNTIES FROM 1)
- 3 E OTHER MPOS & PARTS OF AREAS 1 & 2 OUTSIDE URBANIZED AREA
- 4 E RURAL NON MPO COUNTIES

PEAK SPREADING MODEL INFO (SET MAX ITERATIONS TO 0 TO DISABLE PEAK SPREADING)

MAX VC RATIO FWY: 1.30  
 MAX VC RATIO ART: 1.30  
 MAX ITERATIONS : 1000

TRUCK PCE: 2.0

AQ SEASON FACTOR: 1.08

MODEL CLASS PARAMETERS (MAX 4 CLASSES, HOURS 0-23 W/ NO OVERLAP IN CLASS, ALLOCATE ENTIRE CLASS AS TRUCK(1) OR NOT(0))

| CLS TRK | 0  | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---------|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS BEG | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| CLS END | 23 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0       |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |

CLS NUM 1 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
 0

MOVES NETWORK LINK EMISSIONS OUTPUT

| COUNTY | MONTH   | VMT       | HC | NOX    | SO2    | PM2.5  |
|--------|---------|-----------|----|--------|--------|--------|
| ADA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ALL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ASD    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ATB    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| ATH    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| AUG    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BEL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BRO    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| BUT    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CHP    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CLI    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| COL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| COS    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CRA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| CUY    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DEF    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| DEL    | JANUARY | 9780332.  | 0. | 0.0000 | 0.0000 | 0.0000 |
| ERI    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| FAI    | JANUARY | 3019907.  | 0. | 0.0000 | 0.0000 | 0.0000 |
| FAY    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| FRA    | JANUARY | 41499052. | 0. | 0.0000 | 0.0000 | 0.0000 |
| FUL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GAL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GEA    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GRE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| GUE    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAM    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAN    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HAS    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HEN    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HIG    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HOC    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HOL    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| HUR    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| JAC    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| JEF    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| KNO    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |
| LAK    | JANUARY |           | 0. | 0.0000 | 0.0000 | 0.0000 |

|     |         |           |        |        |        |        |
|-----|---------|-----------|--------|--------|--------|--------|
| LAW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JANUARY | 7455324.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JANUARY | 1584653.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAH | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JANUARY | 99792.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JANUARY | 1199685.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JANUARY | 2829993.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JANUARY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JANUARY | 203369.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | JANUARY | 67654704. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | APRIL   | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| ALL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BRO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | APRIL | 9780332.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ERI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | APRIL | 3019907.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | APRIL | 41499052. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FUL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | APRIL | 7455324.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | APRIL | 1584653.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |       |           |        |        |        |        |
|-----|-------|-----------|--------|--------|--------|--------|
| MAH | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | APRIL | 99792.    | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NOB | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | APRIL | 1199685.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIK | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | APRIL | 2829993.  | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VAN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | APRIL | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | APRIL | 203369.   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOT | APRIL | 67654704. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ADA | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ALL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ASD | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATB | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ATH | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| AUG | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BEL | JULY  | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| BRO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| BUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CHP | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CLI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| COS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CRA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| CUY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| DEL | JULY | 10562759. | 0.4273 | 0.4418 | 0.0000 | 0.0000 |
| ERI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FAI | JULY | 3261499.  | 0.1344 | 0.1399 | 0.0000 | 0.0000 |
| FAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FRA | JULY | 44818976. | 1.8622 | 2.0416 | 0.0000 | 0.0000 |
| FUL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GAL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GEA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| GUE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HOL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HUR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JAC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| JEF | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| KNO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LAW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LIC | JULY | 8051750.  | 0.3172 | 0.3400 | 0.0000 | 0.0000 |
| LOG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LOR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LUC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAD | JULY | 1711425.  | 0.0578 | 0.0645 | 0.0000 | 0.0000 |
| MAH | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MED | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MEG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MIA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

|     |      |           |        |        |        |        |
|-----|------|-----------|--------|--------|--------|--------|
| MOE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MOT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRG | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MRW | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| MUS | JULY | 107775.   | 0.0031 | 0.0035 | 0.0000 | 0.0000 |
| NOB | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| OTT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PAU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PER | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PIC | JULY | 1295660.  | 0.0437 | 0.0455 | 0.0000 | 0.0000 |
| PIK | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| POR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PRE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PUT | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| RIC | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ROS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SCI | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SEN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SHE | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| SUM | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TRU | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TUS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| UNI | JULY | 3056393.  | 0.1098 | 0.1149 | 0.0000 | 0.0000 |
| VAN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| VIN | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAR | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAS | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WAY | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WIL | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WOO | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| WYA | JULY | 0.        | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| XXX | JULY | 219638.   | 0.0106 | 0.0132 | 0.0000 | 0.0000 |
| TOT | JULY | 73067080. | 2.9648 | 3.2041 | 0.0000 | 0.0000 |

| MOVES INTRAZONAL EMISSIONS OUTPUT |        |        |        |        |        |  |
|-----------------------------------|--------|--------|--------|--------|--------|--|
| MONTH                             | VMT    | HC     | NOX    | SO2    | PM2.5  |  |
| JANUARY                           | 61727. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                             | 61727. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                              | 66666. | 0.0040 | 0.0049 | 0.0000 | 0.0000 |  |

| MOVES VEHICLE BASED EMISSIONS OUTPUT |          |        |        |        |        |  |
|--------------------------------------|----------|--------|--------|--------|--------|--|
| MONTH                                | VEHICLES | HC     | NOX    | SO2    | PM2.5  |  |
| JANUARY                              | 2999576. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| APRIL                                | 2999576. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |  |
| JULY                                 | 3239542. | 7.0297 | 1.7898 | 0.0000 | 0.0000 |  |

**Appendix – MORPC HPMS VMT and Emissions (Outside of Travel Demand Model Area)**

**2030**

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_VMT\_2030.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_source\_type\_pop\_2030.csv

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 DATE:03/05/2024 TIME:10:45:30

PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15      | 16  | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY |     | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |     |
| URB ART |     | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |     |
| RUR FWY |     | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |     |
| RUR ART |     | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC | NOX    | CO2    | PM2.5 |
|---------|----------|----|--------|--------|-------|
| JANUARY | 2371933. |    | 0.0000 | 0.0000 | 0.00  |
| APRIL   | 2371933. |    | 0.0000 | 0.0000 | 0.00  |
| JULY    | 2561688. |    | 0.1539 | 0.3738 | 0.00  |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC | NOX    | CO2    | PM2.5 |
|---------|----------|----|--------|--------|-------|
| JANUARY | 74218.   |    | 0.0000 | 0.0000 | 0.00  |
| APRIL   | 74218.   |    | 0.0000 | 0.0000 | 0.00  |
| JULY    | 80155.   |    | 0.3130 | 0.0720 | 0.00  |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_VMT\_2030.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_source\_type\_pop\_2030.csv

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 DATE:03/05/2024 TIME:10:49:43



PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15      | 16  | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY |     | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |     |
| URB ART |     | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |     |
| RUR FWY |     | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |     |
| RUR ART |     | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC | NOX    | CO2    | PM2.5       |
|---------|----------|----|--------|--------|-------------|
| JANUARY | 1187115. |    | 0.0000 | 0.0000 | 0.00 0.0000 |
| APRIL   | 1187115. |    | 0.0000 | 0.0000 | 0.00 0.0000 |
| JULY    | 1282084. |    | 0.0677 | 0.1552 | 0.00 0.0000 |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC | NOX    | CO2    | PM2.5       |
|---------|----------|----|--------|--------|-------------|
| JANUARY | 55771.   |    | 0.0000 | 0.0000 | 0.00 0.0000 |
| APRIL   | 55771.   |    | 0.0000 | 0.0000 | 0.00 0.0000 |
| JULY    | 60233.   |    | 0.2352 | 0.0541 | 0.00 0.0000 |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_VMT\_2030.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2030\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_source\_type\_pop\_2030.csv

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 DATE:03/05/2024 TIME:10:52:25

PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15      | 16  | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY |     | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |     |
| URB ART |     | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |     |
| RUR FWY |     | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |     |

May 2024

Air Quality Conformity Appendix

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MORPC 2024-2050 Metropolitan Transportation Plan  
 LCATS 2050 Metropolitan Transportation Plan  
 MORPC 2024-2027 Transportation Improvement Program  
 LCATS 2024-2027 Transportation Improvement Program  
 CORPO 2024-2027 Transportation Improvement Program

|         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 2674242. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 2674242. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 2888182. | 0.1463 | 0.3262 | 0.00 | 0.0000 |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 69155.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 69155.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 74687.   | 0.2916 | 0.0671 | 0.00 | 0.0000 |

## 2040

### MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_VMT\_2040.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_source\_type\_pop\_2040.csv

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 DATE:03/05/2024 TIME:10:47:14

### PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR    | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15      | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 2728889. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 2728889. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 2947200. | 0.1179 | 0.1515 | 0.00 | 0.0000 |

MOVES VEHICLE BASED EMISSIONS OUTPUT

|                                 |    |  |
|---------------------------------|----|--|
| May 2024                        | 81 | MORPC 2024-2050 Metropolitan Transportation Plan   |
| Air Quality Conformity Appendix |    | LCATS 2050 Metropolitan Transportation Plan        |
|                                 |    | MORPC 2024-2027 Transportation Improvement Program |
|                                 |    | LCATS 2024-2027 Transportation Improvement Program |
|                                 |    | CORPO 2024-2027 Transportation Improvement Program |

| MONTH   | VEHICLES | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 82731.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 82731.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 89349.   | 0.2322 | 0.0510 | 0.00 | 0.0000 |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_VMT\_2040.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_source\_type\_pop\_2040.csv

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 DATE:03/06/2024 TIME:10:09:37

PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR    | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15      | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 1218357. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 1218357. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 1315826. | 0.0468 | 0.0566 | 0.00 | 0.0000 |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 61991.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 61991.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 66950.   | 0.1740 | 0.0382 | 0.00 | 0.0000 |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_VMT\_2040.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2040\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_source\_type\_pop\_2040.csv

DATE:03/05/2024 TIME:10:53:32

PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR    | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15      | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 2993062. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 2993062. | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 3232507. | 0.1105 | 0.1337 | 0.00 | 0.0000 |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC     | NOX    | CO2  | PM2.5  |
|---------|----------|--------|--------|------|--------|
| JANUARY | 76874.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| APRIL   | 76874.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| JULY    | 83024.   | 0.2158 | 0.0474 | 0.00 | 0.0000 |

**2050**

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_VMT\_2050.csv  
Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpd.csv  
Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpv.csv  
Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\FAI\_Off-Model\_source\_type\_pop\_2050.csv

DATE:03/05/2024 TIME:10:48:15

PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR    | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15      | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |

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MORPC 2024-2050 Metropolitan Transportation Plan  
LCATS 2050 Metropolitan Transportation Plan  
MORPC 2024-2027 Transportation Improvement Program  
LCATS 2024-2027 Transportation Improvement Program  
CORPO 2024-2027 Transportation Improvement Program

|         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

| MOVES   | HPMS     | EMISSIONS | OUTPUT |      |        |  |  |
|---------|----------|-----------|--------|------|--------|--|--|
| MONTH   | VMT      | HC        | NOX    | CO2  | PM2.5  |  |  |
| JANUARY | 3089062. | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| APRIL   | 3089062. | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| JULY    | 3336187. | 0.1184    | 0.1373 | 0.00 | 0.0000 |  |  |

| MOVES   | VEHICLE BASED | EMISSIONS | OUTPUT |      |        |  |  |
|---------|---------------|-----------|--------|------|--------|--|--|
| MONTH   | VEHICLES      | HC        | NOX    | CO2  | PM2.5  |  |  |
| JANUARY | 91100.        | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| APRIL   | 91100.        | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| JULY    | 98388.        | 0.2135    | 0.0544 | 0.00 | 0.0000 |  |  |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_VMT\_2050.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\KNO\_Off-Model\_source\_type\_pop\_2050.csv

DATE:03/05/2024 TIME:10:51:22

PARAMETER FILE DUMP (DAILY.DAT FILE)

| HOUR    | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15      | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |
| PCTADT  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |

AQ SEASON FACTOR: 1.08000004

| MOVES   | HPMS     | EMISSIONS | OUTPUT |      |        |  |  |
|---------|----------|-----------|--------|------|--------|--|--|
| MONTH   | VMT      | HC        | NOX    | CO2  | PM2.5  |  |  |
| JANUARY | 1250788. | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| APRIL   | 1250788. | 0.0000    | 0.0000 | 0.00 | 0.0000 |  |  |
| JULY    | 1350851. | 0.0428    | 0.0470 | 0.00 | 0.0000 |  |  |

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| MOVES VEHICLE BASED EMISSIONS OUTPUT |          |        |        |      |        |  |
|--------------------------------------|----------|--------|--------|------|--------|--|
| MONTH                                | VEHICLES | HC     | NOX    | CO2  | PM2.5  |  |
| JANUARY                              | 69575.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| APRIL                                | 69575.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| JULY                                 | 75141.   | 0.1631 | 0.0415 | 0.00 | 0.0000 |  |

MOVES BASED HPMS EMISSIONS REPORT

You should enter a comment to add to the AQ report indicating reason and analyst

Input VMT File: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_VMT\_2050.csv  
 Network Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpd.csv  
 Vehicle Emission Factors: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MORPC\_2050\_ozone\_3source\_rpv.csv  
 Vehicle Population: I:\ut\mpo\model\col\aq\2024\ozone\off-model\MAD\_Off-Model\_source\_type\_pop\_2050.csv

-----  
 DATE:03/05/2024 TIME:10:54:20

PARAMETER FILE DUMP (DAILY.DAT FILE)

| 15      | 16  | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| PCTADT  |     | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |     |    |
| URB FWY | 0.9 | 0.6 | 0.5 | 0.6 | 0.9 | 2.2 | 5.2 | 7.3 | 6.4 | 5.2 | 4.9 | 5.1 | 5.3 | 5.5 | 6.1 |    |
| 7.2     | 8.0 | 7.9 | 5.8 | 4.2 | 3.4 | 2.9 | 2.2 | 1.5 |     |     |     |     |     |     |     |    |
| URB ART | 0.7 | 0.4 | 0.3 | 0.3 | 0.6 | 1.5 | 3.5 | 5.7 | 5.5 | 5.1 | 5.3 | 6.2 | 6.5 | 6.4 | 6.8 |    |
| 7.6     | 8.2 | 8.1 | 6.2 | 4.8 | 4.0 | 3.0 | 1.9 | 1.3 |     |     |     |     |     |     |     |    |
| RUR FWY | 1.4 | 1.1 | 0.9 | 1.0 | 1.3 | 2.2 | 3.7 | 5.2 | 5.4 | 5.4 | 5.6 | 5.6 | 5.7 | 6.0 | 6.5 |    |
| 7.1     | 7.5 | 7.0 | 5.6 | 4.5 | 3.8 | 3.2 | 2.5 | 2.0 |     |     |     |     |     |     |     |    |
| RUR ART | 0.8 | 0.5 | 0.4 | 0.5 | 1.0 | 2.4 | 4.8 | 6.2 | 5.5 | 5.3 | 5.5 | 5.8 | 6.0 | 6.0 | 6.7 |    |
| 7.6     | 8.1 | 7.7 | 5.6 | 4.2 | 3.5 | 2.8 | 1.9 | 1.3 |     |     |     |     |     |     |     |    |

AQ SEASON FACTOR: 1.08000004

MOVES HPMS EMISSIONS OUTPUT

| MONTH   | VMT      | HC     | NOX    | CO2  | PM2.5  |  |
|---------|----------|--------|--------|------|--------|--|
| JANUARY | 3305417. | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| APRIL   | 3305417. | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| JULY    | 3569851. | 0.1099 | 0.1231 | 0.00 | 0.0000 |  |

MOVES VEHICLE BASED EMISSIONS OUTPUT

| MONTH   | VEHICLES | HC     | NOX    | CO2  | PM2.5  |  |
|---------|----------|--------|--------|------|--------|--|
| JANUARY | 86275.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| APRIL   | 86275.   | 0.0000 | 0.0000 | 0.00 | 0.0000 |  |
| JULY    | 93177.   | 0.2022 | 0.0515 | 0.00 | 0.0000 |  |

# Attachment B-Consultation Correspondence

**From:** Nick Gill

**Sent:** Tuesday, March 19, 2024 3:31 PM

**To:** ANTHONY.HILL@dot.ohio.gov; paul.braun@epa.ohio.gov; Kane, Mark (FTA) <Mark.Kane@dot.gov>; Matt Hill <mhill@lcounty.com>; Maietta.Anthony@epamail.epa.gov; Nathaniel.Brugler@dot.ohio.gov; Whisler, Jordan <Jordan.Whisler@dot.ohio.gov>; Johnson, Jocelyn (FTA <jocelyn.johnson@dot.gov>; Johns, Andy (FHWA <Andy.Johns@dot.gov>; Johnson, Daniel (FHWA <Daniel.j.johnson@dot.gov>; Randy.Lane@dot.ohio.gov

**Cc:** Maietta, Anthony <maietta.anthony@epa.gov>; Nino.Brunello@dot.ohio.gov; Zhuojun.Jiang@dot.ohio.gov; Maria Schaper <mschaper@morpc.org>; Thomas Graham <tgraham@morpc.org>; Elliott Lewis <elewis@morpc.org>; Shelby Oldroyd <soldroyd@morpc.org>; Raj Roy <rroy@morpc.org>

**Subject:** RE: Air Quality Conformity Interagency Consultation for MORPC and LCATS upcoming 2024-2050 Metropolitan Transportation Plans

All,

This is follow up to my February 12<sup>th</sup> email.

MORPC and LCATS have completed the drafts of their respective transportation plans. Attached is the draft AQ conformity determination documentation. We are also both within our respective public comment periods.

The full draft plan for MORPC is available at [www.morpc.org/mtp](http://www.morpc.org/mtp) click the button for 2024-2050 MTP

The full draft plan for LCATS is available at [https://lickingcounty.gov/depts/planning/lcats/2024\\_metropolitan\\_transportation\\_plan.htm](https://lickingcounty.gov/depts/planning/lcats/2024_metropolitan_transportation_plan.htm)

Please let me know if you have any feedback on the AQ conformity determination document. We will be incorporating public comment and finalizing our plans in April, making any necessary adjustments to the AQ conformity documentation and presenting to our boards in May adoption.

Thanks

Nick



**From:** Nick Gill

**Sent:** Monday, February 12, 2024 11:01 AM

**To:** [ANTHONY.HILL@dot.ohio.gov](mailto:ANTHONY.HILL@dot.ohio.gov); [paul.braun@epa.ohio.gov](mailto:paul.braun@epa.ohio.gov); Kane, Mark (FTA) <[Mark.Kane@dot.gov](mailto:Mark.Kane@dot.gov)>; Matt Hill <[mhill@lcounty.com](mailto:mhill@lcounty.com)>; [Maietta.Anthony@epamail.epa.gov](mailto:Maietta.Anthony@epamail.epa.gov); [Nathaniel.Brugler@dot.ohio.gov](mailto:Nathaniel.Brugler@dot.ohio.gov); Whisler, Jordan <[Jordan.Whisler@dot.ohio.gov](mailto:Jordan.Whisler@dot.ohio.gov)>; Johnson, Jocelyn (FTA) <[jocelyn.johnson@dot.gov](mailto:jocelyn.johnson@dot.gov)>; Johns, Andy (FHWA) <[Andy.Johns@dot.gov](mailto:Andy.Johns@dot.gov)>; Johnson, Daniel (FHWA) <[Daniel.j.johnson@dot.gov](mailto:Daniel.j.johnson@dot.gov)>; [Randy.Lane@dot.ohio.gov](mailto:Randy.Lane@dot.ohio.gov)

**Cc:** Maietta, Anthony <[maietta.anthony@epa.gov](mailto:maietta.anthony@epa.gov)>; [Nino.Brunello@dot.ohio.gov](mailto:Nino.Brunello@dot.ohio.gov); [Zhuojun.Jiang@dot.ohio.gov](mailto:Zhuojun.Jiang@dot.ohio.gov); Maria Schaper <[mschaper@morpc.org](mailto:mschaper@morpc.org)>; Thomas Graham <[tgraham@morpc.org](mailto:tgraham@morpc.org)>; Elliott Lewis <[elewis@morpc.org](mailto:elewis@morpc.org)>; Shelby Oldroyd <[soldroyd@morpc.org](mailto:soldroyd@morpc.org)>; Raj Roy <[rroy@morpc.org](mailto:rroy@morpc.org)>

**Subject:** Air Quality Conformity Interagency Consultation for MORPC and LCATS upcoming 2024-2050 Metropolitan Transportation Plans

All,

This email is for the purpose of conducting the interagency consultation for the new Metropolitan Transportation Plan/Long Range Transportation Plan MORPC and LCATS are currently developing.

MORPC and LCATS have each been working on the comprehensive update of the respective Plans. The current Plans were adopted by each agency in 2020 with a few amendments (and associated AQ conformity updates) since that time. Both agencies are on schedule to adopt new Plans during their May meetings.

During the course of developing the new Plans, new forecasts of population and employment growth to the year 2050 have been developed that reflect the continued trend of growth in central Ohio and latest assumptions of land use plans and announcements of growth and developments by our local communities through out the region. County level forecasts were released in February 2023 ([go here to see the release and links to county level trends and projections](#)). This fall the detailed traffic analysis zone (TAZ) level data was made available at our Mid Ohio Open Data [web page here](#).

In addition both agencies have been identifying, updating and selecting projects to include in the new Plans. Finally, complete draft documents are in development. Our schedules are to complete

draft documents by late February/early March. LCATS has open houses scheduled for March 1<sup>st</sup> while MORPC has an open house scheduled for March 19<sup>th</sup>.

Specifically with regard to the AQ conformity determination documentation, MORPC will complete a draft of this by the end of February and it will be available for MORPC's and LCATS's respective comment periods on their Plans. Key items with regard to AQ conformity are:

- Latest planning assumptions regarding future forecasts as described above
- There has been no updates to the budgets in the SIP, so those remain as in previous conformity determinations.
  - 6 county area 2030 budgets for 2008 8-hour maintenance area
  - 4 county area 2030 budget for 2015 8-hour maintenance area. Previously there was a 2023 budget and analysis. However, since this is now 2024, the past year analysis is no longer relevant.
  - No conformity requirements for PM 2.5
- Analysis years will be 2030, 2040, 2050
- With the release of MOVES4, we will be utilizing MOVES4 for emissions factors. We have already started coordinating with ODOT on getting these and ODOT is incorporating some updated parameters in developing of the emissions factors.

We will email the group again when we complete the draft AQ conformity determination document.

To summarize, we are utilizing a new emissions analysis to develop the AQ conformity for MORPC and LCATS Transportation Plan updates. A draft will be completed by the end of February and we will email that to the group when completed. MORPC and LCATS will be conducting their respective comment periods on the draft Plans in the March time frame. Any modifications to the draft Plan will be completed in April and include an updated AQ conformity determination documentation. The final Plan documents, once approved the MORPC and LCATS in May, will be provided to ODOT for the official conformity determination by US DOT.

Thank you in advance for your attention and please contact me with any questions or clarifications you may need.

Nick

**Nicholas T. Gill**

Transportation Director | Mid-Ohio Regional Planning Commission  
T: 614.233.4151 | [ngill@morpc.org](mailto:ngill@morpc.org)

111 Liberty Street, Suite 100 | Columbus, OH 43215



- MORPC and LCATS to provide lists of nonexempt fiscally constrained MTP/TIP projects and identification of the respective projects' conformity analysis year network. Any projects that are outside of the respective MPO boundaries will also be identified.
  
- Conformity analysis schedule
  - AQ conformity runs – **January 2020**
  - Draft Document – **Early February 2020**
  - Public Involvement effort w/AQ conformity results – **Late-February to April 10**
  - MTP/TIP Conformity Determination Board approval - **May**

2015 Ozone Standard Analysis: 2023 – 2015 Ozone Standard SIP budget year  
 2030 – 2015 Ozone Standard SIP budget year  
 2040 - Interim analysis year  
 2050 - MTP(s) horizon year  
 Geography - DEL, FAI, FRA, LIC Counties, OH

| Ozone Tons/Day |                |                   |                |                   |                   |                   |
|----------------|----------------|-------------------|----------------|-------------------|-------------------|-------------------|
|                | 2023<br>Budget | 2023<br>Emissions | 2030<br>Budget | 2030<br>Emissions | 2040<br>Emissions | 2050<br>Emissions |
| VOC            | 28.67          |                   | 22.03          |                   |                   |                   |
| NOx            | 29.28          |                   | 20.98          |                   |                   |                   |

2008 Ozone Standard Analysis: 2020 – 2008 Ozone Standard SIP budget year  
 2030 – 2008 Ozone Standard SIP budget year  
 2040 - Interim analysis year  
 2050 - MTP(s) horizon year  
 Geography - DEL, FAI, FRA, KNO, LIC, MAD Counties, OH

| Ozone Tons/Day |                |                   |                |                   |                   |                   |
|----------------|----------------|-------------------|----------------|-------------------|-------------------|-------------------|
|                | 2020<br>Budget | 2020<br>Emissions | 2030<br>Budget | 2030<br>Emissions | 2040<br>Emissions | 2050<br>Emissions |
| VOC            | 50.66          |                   | 44.31          |                   |                   |                   |
| NOx            | 90.54          |                   | 85.13          |                   |                   |                   |