



west virginia department of environmental protection

**Maintenance Plan Revision
for the
Wheeling, West Virginia
1997 8-hour Ozone NAAQS,
Comprising Marshall and Ohio Counties**

**DRAFT
August 23, 2019**

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

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I. Request

The State of West Virginia is requesting that the United States Environmental Protection Agency (EPA) approve the *Maintenance Plan Revision for the 1997 8-hour Ozone NAAQS for the Wheeling Area Comprising Marshall and Ohio Counties*, as a revision to the State Implementation Plan (SIP) meeting the requirements of Clean Air Act (CAA) Section 175(A)(b).

II. Background

The Federal Clean Air Act, 42 U.S.C.A. 7401 et seq. as amended by the Clean Air Act Amendments of 1990, P.L. 101-549, November 15, 1990 (CAA or the Act) requires all areas of the nation to attain and maintain compliance with the federal ambient air quality standards. These federal standards are designed to protect the public health and welfare from airborne pollutants and are referred to as the National Ambient Air Quality Standards (NAAQS). Pursuant to CAA Section 107(d)(1)(A), pollutant standards are established by the EPA and areas are designated as nonattainment (not meeting the standard), attainment (meeting the standard), or Unclassifiable (cannot be classified based on available information). States are required to comply with these NAAQS. When a nonattainment area becomes attainment, states must demonstrate and seek the EPA's approval to redesignate the area.

Pursuant to CAA Section 107(d)(3)(E), as amended, the EPA Administrator may not promulgate a redesignation of a nonattainment area (or portion thereof) to attainment unless states meet five (5) requirements. With regards to the redesignation or designation of West Virginia's ozone areas to attainment, and as discussed in the following narratives, West Virginia has met all five (5) of the following requirements:

1. the Administrator determines that the area has attained the applicable NAAQS;
2. the Administrator has fully approved the applicable implementation plan for the area under CAA Section 110(k);
3. the Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollution control regulations and other permanent and enforceable reductions;
4. the Administrator has fully approved a maintenance plan for the area as meeting the requirements of Section 175A; and
5. the state containing such area has met all requirements applicable to the areas under Section 110, Part D.

On July 18, 1997 (62 FR 38856) the EPA established a new 8-hour ozone NAAQS (1997 ozone NAAQS). This standard was the result of a review of the available scientific evidence linking exposures to ambient ozone to adverse health and welfare effects at levels allowed by the older 1-hour standard. The 1-hour standard was replaced by an 8-hour standard at a level of 0.080 parts per million (ppm) with a form based on the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration measured at each monitor within an area.

Pursuant to the Clean Air Act Amendments of 1990 (CAAA), the EPA in the April 30, 2004 Federal Register (69 FR 23858), designated eleven (11) West Virginia counties as Subpart 1 or “basic” nonattainment areas with respect to the 1997 8-hour ozone NAAQS. The effective date of designation for Cabell, Wayne, Kanawha, Putnam, Wood, Marshall, Ohio, Brooke and Hancock counties was June 15, 2004. Berkeley and Jefferson Counties voluntarily entered into an Early Action Compact. Under this compact, the effective date of designation for Berkeley and Jefferson counties was initially deferred until September 30, 2005 (later deferred to December 31, 2006) with a final designation of attainment effective April 15, 2008. These designations were based on air quality data collected during 2001 - 2003 at state-operated and EPA-approved monitoring stations located in the Huntington-Ashland, WV-KY, Charleston, WV, Parkersburg-Marietta, WV-OH, Wheeling, WV-OH, Steubenville-Weirton, OH-WV, and Berkeley & Jefferson Counties, WV. Subpart 1 (basic) nonattainment areas were required to attain the standard within five (5) years of designation or by June 15, 2009.

The EPA published two (2) separate rules to set forth the planning and control requirements which apply to nonattainment areas for this standard. Phase 1, published on April 30, 2004 (69 FR 23951), addressed: classifications for the 8-hour NAAQS; revocation of the 1-hour NAAQS; how anti-backsliding principles will ensure continued progress toward attainment of the 8-hour ozone NAAQS; attainment dates; and the timing of emissions reductions needed for attainment. On November 29, 2005, the EPA published Phase 2 (70 FR 71612) addressing: reasonably available control technology and measures (RACT and RACM), reasonable further progress (RFP), modeling and attainment demonstrations, and new source review (NSR).

In July 2006, the State of West Virginia submitted a redesignation request and associated maintenance plan affirming completion of all five (5) of the required elements detailed above for the Wheeling area. The Wheeling, WV-OH ozone maintenance area consists of Marshall and Ohio counties (40CFR, §81.349 Table for “West Virginia—1997 8-Hour Ozone NAAQS (Primary and Secondary)”) and Belmont county in Ohio (40CFR, §81.336 Table for “Ohio—1997 8-Hour Ozone NAAQS (Primary and Secondary)”). The EPA approved West Virginia’s redesignation request and maintenance plan for this area, effective June 14, 2007 (72 FR 27247). The EPA revised the ozone NAAQS in 2008.

The 2008 8-hour ozone NAAQS was promulgated by the EPA on March 12, 2008 (80 FR 12264) and became effective on May 27, 2008 (73 FR 16436). This final rule reduced the ozone standard from 0.080 ppm to 0.075 ppm. In a December 14, 2009 letter from the WVDEP to the EPA, West Virginia provided certified ambient air quality design value data with all site monitoring attainment and recommended all counties be designated as attainment/unclassifiable.

In May 21, 2012 (77 FR 30088), the EPA designated all West Virginia Counties as attainment/unclassifiable with the 2008 ozone NAAQS. On March 6, 2015, the EPA established a final SIP rule for implementing the 2008 ozone NAAQS. In addition to the final rule addressing a range of nonattainment area State Implementation Plans (SIP) requirements for the 2008 NAAQS, the rule also addressed the revocation of the 1997 ozone NAAQS and anti-backsliding requirements that apply when the 1997 ozone NAAQS was revoked. This action revoked listed states’ obligation for further complying with 1997 ozone NAAQS requirements and the need to conduct quantifiable regional air quality emission analyses under the Transportation Conformity requirements in 40CFR, §93.122.

On October 26, 2015 (80 FR 65292), the EPA strengthened the 8-hour ozone standard by promulgating the 2015 NAAQS. This standard reduced the ground level ozone from 0.075 ppm to 0.070 ppm based on extensive scientific evidence regarding the effects of ozone on public health and welfare.

In a September 29, 2016 letter to the EPA, the WVDEP recommended all West Virginia Counties be designated attainment/unclassifiable with the 2015 Ozone NAAQS based on certified ambient air monitoring design value data for 2013-2015. On June 4, 2018 (83 FR 25776), the EPA designated all areas in West Virginia as attainment/unclassifiable stating all West Virginia Counties meet the 2015 8-Hour Ozone NAAQS.

Environmental groups filed a petition for judicial review of EPA's regulation, challenging certain aspects of EPA's decision to revoke the 1997 NAAQS. On February 16, 2018, the D.C. Circuit Court issued a decision in *South Coast Air Quality Management District v. EPA (South Coast II)* that, among other things, granted the petition on this point. The Court held that "orphan maintenance areas" are required to submit second maintenance plans under Clean Air Act (CAA) Section 175A(b). These areas, therefore, must submit a second maintenance SIP revision to ensure maintenance through the full 20-year period following the effective date of redesignation. For Wheeling, the end of the 20-year maintenance period would be at least 2027 (2007 plus 20 years).

The Court decision affects the following five (5) areas in West Virginia: Charleston, Huntington, Vienna, Weirton, and Wheeling. As defined by the EPA, these sites are considered orphan maintenance areas. It is worth noting that all five (5) of these areas have continued to maintain attainment for the 1997 8-hour Ozone NAAQS following the approval of the 1997 8-hour Ozone Maintenance Plan by the EPA. Furthermore, these areas have demonstrated attainment under the more stringent 2008 and 2015 8-hour Ozone NAAQS. Ambient air quality monitoring data for these areas indicates ozone concentrations in these areas are continuing a downward trend.

On November 20, 2018, the EPA issued a guidance document titled *Resource Document For 1997 Ozone NAAQS Areas: Supporting Information for States Developing Maintenance Plans*. The document provides technical information that may be helpful for a state wishing to develop and submit a revision of its SIP to ensure maintenance of the 1997 ozone NAAQS. The document also includes information addressing ambient air quality monitoring data, air quality modeling, and emissions inventory data. Additionally, it also provides information that may be useful for states wishing to pursue a Limited Maintenance Plan (LMP) option. A copy of this guidance is provided in **Appendix A**.

III. Limited Maintenance Plan

Section 107(d)(3)(e) of the CAA stipulates that for an area to be redesignated to attainment, the EPA must approve a maintenance plan that meets the requirements of Section 175A. Section 175A of the CAA defines the general framework of a maintenance plan. The maintenance plan must constitute a SIP revision and provide for maintenance of the relevant NAAQS in the affected areas. Section 175A further states that the plan must include the following:

- 1. A SIP revision providing for the maintenance of the NAAQS in the area.*
- 2. The initial maintenance plan must provide for maintenance of the NAAQS in the area for 10 years after redesignation.*
- 3. Eight (8) years after redesignation, the state must submit a second SIP revision for maintaining the NAAQS through the end of the second 10-year period beyond redesignation.*
- 4. Additional measures as necessary to ensure maintenance of the NAAQS in the area during this period.*
- 5. A contingency plan assuring that the state will promptly correct any violation of the standard which occurs after the redesignation of the area to attainment.*
- 6. The contingency plan shall include a requirement that the state will continue to implement all measures with respect to the control of the pollutant for the area that were contained in the SIP prior to the redesignation.*

In the November 20, 2018 guidance document, the EPA referenced three (3) past guidance documents describing “Limited Maintenance Plans,” (LMPs) where the EPA has interpreted Section 175A to indicate that an area can provide for maintenance of the NAAQS if it meets certain air quality-related criteria. Specifically, the key criteria outlined in these documents are that the current air quality levels for ambient monitoring sites in the area should be substantially below the NAAQS (e.g., below 85% of the level of the standard), and that air quality levels have not been highly variable during preceding years.

Although these documents cite specific NAAQS pollutants, states have also developed, and the EPA has approved, LMPs for other NAAQS pollutants when those NAAQS were under active

implementation planning. Accordingly, the EPA has taken the position that in appropriate cases, states can apply the principles outlined in these existing guidance documents in developing LMPs for certain 1997 ozone NAAQS maintenance areas, and 1997 ozone NAAQS nonattainment areas that are eligible for redesignation to attainment.

The three (3) documents listed in the EPA's guidance are as follows:

- *Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas. November 16, 1994.* This document addressed the LMP option available for the 1979 1-hour ozone NAAQS.
- *Limited Maintenance Plan Option for Nonclassifiable Carbon Monoxide Nonattainment Areas. October 6, 1995.* This document addressed the LMP option available for the 1971 carbon monoxide NAAQS.
- *Limited Maintenance Plan Option for Moderate PM10 Nonattainment Areas. August 9, 2001.* This document addressed the LMP option for the 1987 PM10 NAAQS.

Of the three (3) LMPs offered by the EPA, the qualifying criteria cited in the August 9, 2001 guidance document is the most stringent with regard to justification a state can present in their selection of LMP provisions. West Virginia meets the specified qualifications outlined in the August 9, 2001 document and has elected to use elements of this guidance as a basis for the development of our LMP for the second 8-hour 1997 Ozone Maintenance Plan. A copy of the August 9, 2001 LMP document is contained in **Appendix B**.

Each limited maintenance plan submission will be evaluated by the EPA on a case-by-case basis, taking into consideration the weight of evidence of the information presented in the SIP submission. Qualification for this LMP is discussed in the following section.

1. LMP Requirements

To qualify for the LMP option, an area should meet the following applicability criteria:

- The area should be attaining the 8-hour ozone NAAQS at all monitors in the area, at or below 85% of the NAAQS.
- The area should have a low risk of future exceedances as shown by a stable or improving air quality trend.

For the purposes of demonstrating a stable or improving air quality trend, West Virginia opted to take a more conservative approach and use a weighted design value of the most recent five (5) design values. As stated in 40CFR, §50.15, the ozone design value for a monitoring site is the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration. For our weighted design value, the five (5) most recent design values available cover the 2012-2018 ambient air monitoring data. This includes 3-year design values for 2012-2014, 2013-2015, 2014-2016, 2015-2017, and 2016-2018. Data from 2014, 2015, and 2016 is included in three (3) out of five (5) design values. Therefore, the 2012-2018 average design value is commonly referred to as a 5-year weighted average design value since data from 2014, 2015, and 2016 is given more weight. With overall ambient ozone concentrations levels trending downward, using a weighted average design value, which amplifies typically older and higher values, provides the most conservative approach at demonstrating area ozone levels are equal to or less than 85% of the 8-hour NAAQS.

An important criterion is related to mobile source emissions. West Virginia will demonstrate that the area should expect only limited growth in on-road motor vehicle nitrogen oxides (NO_x) and volatile organic compound (VOC) emissions and has passed a motor vehicle regional air emissions analysis test.

The EPA's guidance describes that states may satisfy the Section 175A requirements applied to the 1997 ozone NAAQS to "provide for maintenance of the NAAQS" with an LMP according to the following criteria:

Current air quality levels significantly below the level of the standard: As indicated in prior documentation, the EPA believes that an ambient air quality design value at or below 85% of the NAAQS (i.e., an ozone design value of 0.071 ppm as compared to a level of 0.084 ppm, which is considered to be in compliance with the 1997 ozone standard to three (3) digits) could be considered significantly below the standard and may be a good indicator that air quality is not likely to deteriorate to a level that would violate the NAAQS over the next 10 year period.

Stable or improving air quality trend: Several kinds of analyses can be performed to assess whether an area has had relatively stable or consistently improving air quality levels over the long term, such that the probability of the area violating the standard in the future would be considered low. One basic approach would be to take the most recent design value for the area and add the maximum design value increase (over

one or more consecutive years) that has been observed in the area over the past several years. A sum that does not exceed the level of the 1997 ozone standard may be a good indicator of expected continued attainment. This type of metric should be considered on a case-by-case basis.

When the LMP option is selected, it is expected that the state will recalculate the average design value annually to ensure that the qualifying criteria continue to be met.

2. LMP Qualification

Based on the LMP requirements established by the EPA in their August 9, 2001 documentation, WVDEP has concluded that the Wheeling area qualifies for an LMP based on our analysis of air quality data. Support for this position is provided in the following discussion where several deciding factors are evaluated.

The 1997 8-hour ozone NAAQS is 0.080 ppm. The EPA has made the determination that a design value of 0.084 ppm would meet the NAAQS, following standard rounding procedure. Therefore, the LMP qualifying threshold value of 85% of the NAAQS equates to 0.071 ppm.

The WVDEP evaluated the most recent five (5) years of ambient ozone air quality 3-year design values. Certified area design values, as provided to the EPA and included in EPA’s Air Quality System (AQS), were used in this evaluation. Design values for 2012-2014, 2013-2015, 2014-2016, 2015-2017, and 2016-2018 were used in this evaluation. Based on these values, the 5-year weighted average design value for the Wheeling area was calculated to be 0.067 ppm, which is below the 0.071 ppm threshold level and 79% of the NAAQS. This evaluation demonstrates that 8-hour ozone air quality levels are significantly below the level of the standard. *Table 1* below summarizes these values. The table also includes a projected 2023 design value provided by the EPA. A more comprehensive discussion regarding this projection can be found in Section 3 *EPA 2023 Projections*.

Table 1. Wheeling area 8-Hour design values in part per million (ppm).

Site	2012-14	2013-15	2014-16	2015-17	2016-18	5-Year Weighted	Projected 2023
Wheeling	0.067	0.066	0.068	0.067	0.066	0.064	0.067

The EPA redesignated the area from nonattainment to attainment for the 1997 8-hour ozone NAAQS on June 14, 2007. *Figure 1* shows the historical 3-year ozone design values

beginning with year 2006. The values are shown compared to the 1997, 2008, and 2015 NAAQSs. The EPA’s projected 2023 design value is also included to illustrate predicted future data trends. As the chart depicts, ozone levels for the area have been relatively stable and on a downward trend over this period. Values have also continuously remained below the NAAQS. Ozone levels in the area are expected to continue to decrease, as supported by the EPA’s 2023 design value projection.

Emissions in general have been decreasing in West Virginia following the redesignation of the 1997 standard. These decreases are primarily due to more stringent air pollution regulations, the shutdown or conversion of coal-fired equipment, and attrition of older facilities and processes.

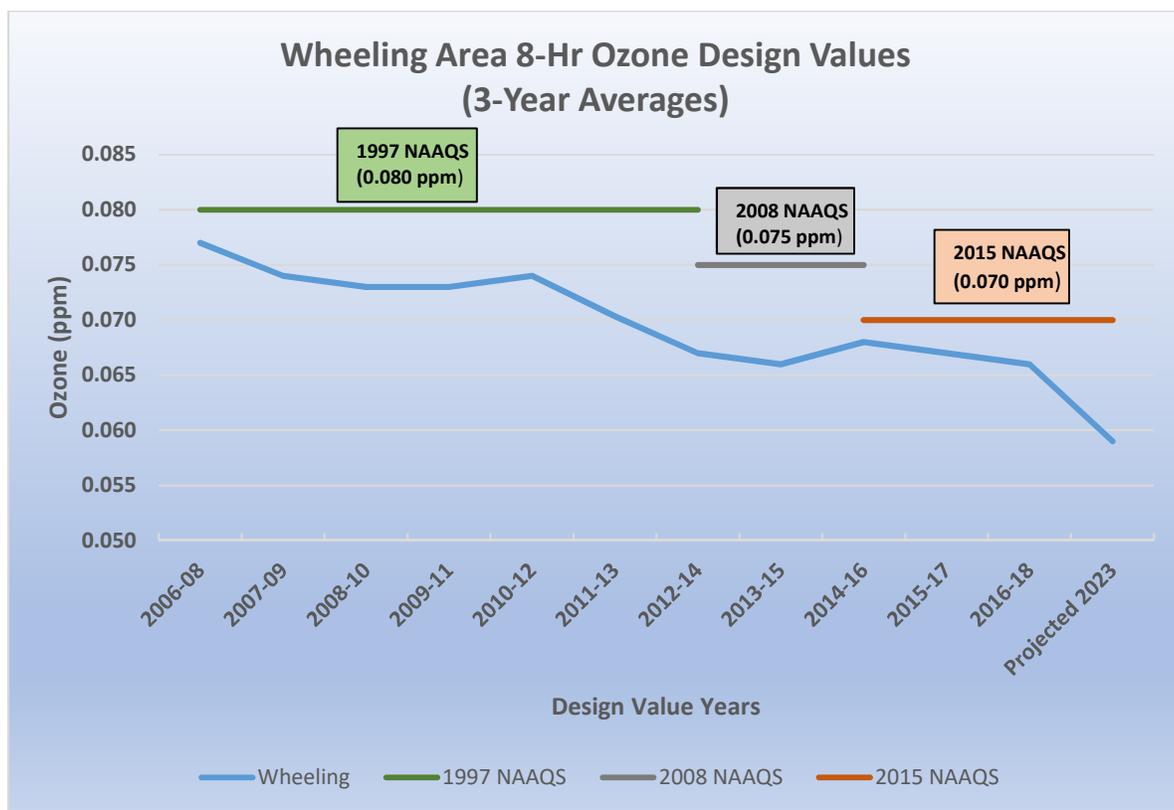


Figure 1. Historical 3-Year ozone design values for the Wheeling area.

West Virginia’s certified design value data, both as a 5-year weighted average presented in Table 1 and as illustrated over time in Figure 1, verifies that ozone levels in the Wheeling area are significantly below the 1997 8-hour NAAQS. Additionally, this data also demonstrates that ozone levels for the area are stable or decreasing. Therefore, West Virginia has met the requirement to qualify for the LMP option.

3. EPA 2023 Projections

In June 2018, the EPA issued their “*Air Quality Modeling Technical Support Document for the Updated 2023 Projected Ozone Design Values*”. This technical support document (TSD) describes the air quality modeling the EPA performed to projected ozone design values at individual monitoring sites to 2023.

For the 2023 projections, the EPA used a 2011-based air quality modeling platform, which includes emissions, meteorology, and other inputs for 2011 as the base year and emissions for 2023 as the future analytic year base case. Specifically, the modeling platform included a variety of data that contained information pertaining to the modeling domain and simulation period. These include gridded, hourly emissions estimates and meteorological data, and boundary concentrations. Separate emissions inventories were prepared for the 2011 base year and the 2023 base case. All other inputs (i.e. meteorological fields, initial concentrations, and boundary concentrations) were specified for the 2011 base year model application and remained unchanged for the future-year model simulations. The 2011 modeling platform and projected 2023 emissions were used to drive the 2011 base year and 2023 future case air quality model simulations.

IV. Attainment Year Emissions Inventory

In the resource document, EPA provides emissions inventory data for 2014. These data represent annual and summer season NO_x and VOC emissions. EPA includes annual emissions in units of tons per year (tpy), ozone season emissions in units of tons per ozone season (tpOS), and daily summertime emissions in units of tons per day (tpd). These data are from the EPA 2014 modeling platform and are based on the most recently available National Emissions Inventory (2014 NEI version 2). The 2014 emissions inventory information is from the EPA 2014 version 7.0 modeling platform. The inventory documentation for this platform can be found here: <https://www.epa.gov/air-emissions-modeling/2014-version-70-platform>.

Table 3 provides the 2014 anthropogenic NO_x emissions inventory for the jurisdictions located within the Wheeling, WV maintenance area. Emissions from each jurisdiction are broken down by emissions sector. *Table 4* provides the 2014 anthropogenic VOC emissions inventory for the jurisdictions located within the maintenance area. The VOC emissions from each jurisdiction are broken down by emissions sector. The fire emissions sector includes emissions from

agricultural burning, prescribed fires, wildfires, and other types of fires. The nonpoint emissions sector includes emissions from equipment, operations, and activities that are numerous and in total have significant emissions. Examples include emissions from commercial and consumer products, portable fuel containers, home heating, repair and refinishing operations, and crematories. The non-road emissions sector includes emissions from engines that are not primarily used to propel transportation equipment, such as generators, forklifts, and marine pleasure craft. The on-road emissions sector includes emissions from engines used primarily to propel equipment on highways and other roads, including passenger vehicles, motorcycles, and heavy-duty diesel trucks. The point source sector includes large industrial operations that are relatively few in number but have large emissions, such as kraft mills, electrical generating units, and pharmaceutical factories.

The annual and summertime, daily emissions were excerpted from: https://www.epa.gov/sites/production/files/2018-11/ozone_1997_naags_emiss_inv_data_nov_19_2018_0.xlsx (“2014 2028 area emiss by sector” tab) posted at <https://www.epa.gov/ground-level-ozone-pollution/1997-ozone-national-ambient-air-quality-standards-naags-nonattainment>.

Table 3: 2014 Attainment Year Anthropogenic NO_x Emissions Inventory, Wheeling, WV Maintenance Area

Jurisdiction	Emissions Sector	2014 Annual NO _x Emissions (tpy)	2014 Summertime Daily NO _x Emissions (tpd)
Marshall Co, WV	Fire	15	0.0
	Nonpoint	1,194	3.2
	Nonroad	159	0.5
	Onroad	1,499	4.1
	Point	3	0.0
	Total	2,869	7.9
Ohio Co, WV	Fire	19	0.0
	Nonpoint	774	2.1
	Nonroad	91	0.3
	Onroad	387	1.0
	Point	8,917	24.4
	Total	10,189	27.9
Belmont Co, OH	Fire	0	0.0
	Nonpoint	299	0.6
	Nonroad	122	0.4
	Onroad	1,239	3.4
	Point	80	0.2
	Total	1,741	4.6
Wheeling Area, WV-OH Total		14,798	40.4

Table 4: 2014 Attainment Year VOC Anthropogenic Emissions Inventory, Wheeling, WV Maintenance Area

<i>Jurisdiction</i>	<i>Emissions Sector</i>	<i>2014 Annual VOC Emissions (tpy)</i>	<i>2014 Summertime Daily NOx Emissions (tpd)</i>
Marshall Co, WV	Fire	461	0.5
	Nonpoint	6,722	19.1
	Nonroad	103	0.4
	Onroad	236	0.6
	Point	347	1.0
	Total	7,870	21.6
Ohio Co, WV	Fire	2	0.0
	Nonpoint	6,618	1.8
	Nonroad	276	1.0
	Onroad	664	1.7
	Point	41	0.1
	Total	7,600	4.7
Belmont Co, OH	Fire	222	0.0
	Nonpoint	2,210	6.2
	Nonroad	311	1.3
	Onroad	752	2.0
	Point	60	0.2
	Total	3,556	9.7
Wheeling Area, WV-OH Total		19,026	35.9

V. Maintenance Plan

In July 2006, West Virginia submitted the initial Maintenance Plan for the Wheeling, West Virginia 1997 8-hour Ozone Area, comprising Marshall and Ohio counties. The Plan was successfully employed resulting in the decrease in ozone levels for the area, as indicated by the historical ambient air quality ozone design value. This Limited Maintenance Plan will serve as the required second 10-year maintenance plan and will ensure continued compliance with 1997 8-hour ozone NAAQS.

In accordance with the CAA, areas seeking to be redesignated to attainment under the LMP policy must have an attainment plan that has been approved by the EPA, pursuant to Section 107(d)(3)(E). The plan must include all control measures that were relied on by the state to demonstrate attainment of the NAAQS. The state must also ensure that the CAA requirements

for ozone pursuant to Section 110, Part D of the Act have been satisfied. To comply with the statute, the LMP should clearly indicate that all controls that were relied on to demonstrate attainment will remain in place. If a state wishes to roll back or eliminate controls, the area can no longer qualify for the LMP and the area will become subject to full maintenance plan requirements within 18 months of the determination that the LMP is no longer in effect. West Virginia is, at this time, not seeking to remove any control measures and will continue to implement all control measures in the ozone applicable SIP for the Wheeling area.

Section 175A of the CAA defines the general framework of a maintenance plan. The maintenance plan must constitute a SIP revision and provide for maintenance of the relevant NAAQS in the affected areas for at least 10 years after redesignation. Section 175A further states that the plan must contain such additional measures, if any, as may be necessary to ensure such maintenance. The start date for the initial 10-year Maintenance Plan began when the EPA approved the redesignation request in 2007. Since a maintenance plan must ensure attainment for a minimum of 10 years, 2017 was the earliest year a plan could end. A second and final 10-year Maintenance Plan would be submitted to the EPA for their review and approval eight (8) years after redesignation and two (2) years prior to the expiration of the initial plan. The second plan would have been due to the EPA in 2015. However, with the EPA's revocation of the 1997 8-hour ozone NAAQS in 2012, a second maintenance plan was not required. With the D.C. Court's *South Coast Air Quality Management District v. EPA* decision, a second maintenance plan is now required and is being included as part of this request.

1. Maintenance Tracking Measures

West Virginia proposes to fully update its point, nonpoint, and mobile source emission inventories at 3-year intervals as required by the Consolidated Emissions Reporting Rule (CERR). These inventories ensure that projected area emission growth is sufficiently accurate and ongoing attainment with the NAAQS is maintained. The WVDEP will review annual point source NO_x and VOC emissions per 45CSR30, "*Requirements for Operating Permits*" (the Title V operating program) and by annually updating West Virginia's point source emission inventories. The nonpoint source inventory will be updated at least triennially using the same or similar techniques and methodologies as developed by the EPA. However, West Virginia may substitute the EPA nonpoint source categories default values with West Virginia specific values. The mobile source inventory will be updated at least triennially using the current approved Motor Vehicle Emission Simulator (MOVES) model. Like the nonpoint inventory, West Virginia may substitute actual West Virginia mobile data

for the EPA's default values. Mobile emissions data may also be obtained in consultation with the area's Metropolitan Planning Organization (MPO) and using appropriate data and methodology similar used for Transportation Conformity purposes.

Pursuant to Section 110, Part D of the CAA, WV has operated under the rules of Clean Air Interstate Rule (CAIR) following the approval of our 2006 maintenance plan. When CAIR was replaced by the Cross-State Air Pollution Rule (CSAPR), WV began implementation of the revised regulation. In June 2019, the federal CSAPR rules were adopted by the WVDEP and codified in 45CSR43. These control measures were one of the mechanisms relied on to demonstrate attainment and will remain in place to ensure that the CAA requirements continue to be fulfilled.

2. Monitoring Network

West Virginia will continue to conduct ambient ozone air quality monitoring in the area throughout the term of this Maintenance Plan to verify continued attainment with the 1997 8-hour ozone NAAQS and to protect any applicable Prevention of Significant Deterioration (PSD) increments. Air quality measurements will be performed in accordance with appropriate regulations and guidance documents along with EPA quality assurance requirements. Monitoring procedures will be determined in accordance with 40CFR, Part 58. Quality-assured ozone data will be submitted to the EPA through the AQS and ultimately certified by the WVDEP.

Pursuant to Section 103 of the CAA, WVDEP operates and maintains a network of ambient ozone air quality monitoring stations throughout the State. The stations serve to assess air quality levels based on population exposure, industry emissions, determine compliance with the National Ambient Air Quality Standards (NAAQS), background levels and other special purposes. Provision for the continued operation of the air monitoring network is provided for through federal grant funding.

3. Permanent and Enforceable Improvements

West Virginia has adopted permanent and federally enforceable control measures in order to regulate emission growth. These area control measures have been approved by the EPA. These include the permitting regulations Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants (45CSR13) and PSD (45CSR14)

permitting requirements will remain in effect through the maintenance plan period. Air permits issued will incorporate applicable PSD (45CSR14), New Source Performance Standards (45CSR16), and National Emission Standards for Hazardous Air Pollutants (45CSR34) requirements. In appropriate cases, Consent Orders and their specific requirements also may be used as a control measure.

Major emission sources proposing to construct new facilities or make a major modification to existing facilities within the area are required to obtain an NSR PSD permit through State Regulation 45CSR14. An engineering evaluation and analysis of information pertaining to the source is performed prior to issuance of any permit. The PSD program requires a modeling demonstration to be performed in order to ensure ongoing NAAQS compliance and applicable PSD increments are not exceeded.

Permanent and enforceable control measures implemented through air permits and Consent Orders are designed to maintain ambient air quality ozone levels.

VI. Contingency Measures

Section 175A of the CAA states that a maintenance plan must include contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment. A contingency plan is considered an enforceable part of the SIP. States must ensure that the contingency measures are adopted as soon as possible once they are triggered by a specific event. The contingency plan identifies the measures to be adopted and provides a schedule and procedures for adoption and implementation of the measures if they are required. Normally, the implementation of contingency measures is triggered by a violation of the NAAQS, but the state may establish other triggers to prevent a violation of the NAAQS.

A limited maintenance plan also requires contingency measures to correct NAAQS violations. West Virginia proposes to retain the existing Contingency Plan that follows, which was previously approved by the EPA for the initial Wheeling area Maintenance Plan.

If the design value for the 1997 8-hour ozone NAAQS is above 0.084 ppm at any of the ambient air quality ozone monitors in the area, West Virginia will accordingly select and adopt one or more of the following measures to assure continued attainment:

1. Extend the applicability of 45CSR21 (VOC/RACT rule) to include source categories previously excluded (e.g., wastewater treatment facilities).
2. Revise permitting requirements establishing more stringent emissions control measures and/or emissions offsets.
3. Implement NO_x RACT requirements if necessary.
4. Develop regulations to establish plant-wide emission caps (potentially with emissions trading provisions).
5. Implement Stage II Vapor Recovery regulations.
6. Establish a Public Awareness/Ozone Action Days Program, a two-pronged program focusing on increasing the public's understanding of air quality issues in the region and increasing support for actions to improve the air quality, resulting in reduced emissions on days when the ozone levels are likely to be high.
7. Initiate one or more of the following voluntary local control measures:
 - i. Bicycle and Pedestrian Measures - A series of measures designed to promote bicycling and walking including both promotional activities and enhancing the environment for these activities.
 - ii. Reduce Engine Idling - Voluntary program to restrict heavy duty diesel engine idling times for both trucks and school buses.
 - iii. Voluntary Partnership with Ground Freight Industry - A voluntary program using incentives to encourage the ground freight industry to reduce emissions.
 - iv. Increase Compliance with Open Burning Restrictions - Increase public awareness of the existing open burning restrictions and work with communities to increase compliance.
 - v. School Bus Engine Retrofit Program - Have existing school bus engines retrofitted to lower emissions.

One or more of these regulatory revisions or voluntary measures would be selected within three (3) months after verification of a monitored ozone standard violation. Quality assurance procedures must confirm the monitored violation within 45 days of occurrence. For each regulatory revision selected, a draft rule would be developed by the WVDEP. The WVDEP will adopt the selected control measure(s) as emergency rule(s) which will be implemented within six (6) months after adoption and will file the rule(s) as legislative rule(s) for permanent authorization by the legislature. For each voluntary measure selected, the WVDEP will initiate

program development with local governments within the area by the start of the following ozone season.

Furthermore, if the triennial inventories indicate emissions growth in excess of 10% of the 2011 base-year inventory or if a monitored ozone air quality exceedance pattern indicates that an ozone NAAQS violation may be imminent, then the WVDEP will evaluate existing control measures to ascertain if additional regulatory revisions are necessary to maintain the ozone standards. Such an exceedance pattern would include, but is not limited to, the measurement of three (3) exceedances or more occurring at the same monitor during a calendar year.

Based on the 2011 inventory data and calculation methodology, it is expected that area and mobile source emissions would not exhibit substantial increases between consecutive periodic year inventories. Therefore, if significant unanticipated emissions growth occurs, it is expected that point sources would be the cause. Regulation 45CSR30 requires major point source emitters to submit annual air emission inventories and Certified Emission Statements (CES), which contain VOC and NO_x emission totals. Any significant increases that occur can be identified from these inventories or statements without waiting for a triennial emissions inventory. This gives West Virginia the capability to identify needed regulations by source, source category, and pollutant and to begin the rule promulgation process, if necessary, in an expeditious manner.

Control measures from the initial Maintenance Plan have aided in the continual improvement of the area's ambient ozone air quality. Implementation of Contingency Plan measures have not been necessary during the initial Plan's performance period.

VII. Conformity:

The Transportation Conformity Rule (40CFR, Parts 51 and 93) and the General Conformity Rule (58 FR 63214; November 30, 1993) apply to areas operating under maintenance plans. Under either conformity rule one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Per EPA policy, emissions budgets in an LMP area may be treated as essentially not constraining for the length of the maintenance period on the grounds that growth during that time is not expected to trigger a violation of the 8-hour ozone NAAQS. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation

conformity purposes, the EPA would conclude that emission caps or motor vehicle emission budgets (MVEB) for highway vehicles in these areas are not constraining for the length of the maintenance period of the LMP because one can reasonably expect emissions growth in the area will not result in a violation of the ozone NAAQS; therefore, a regional emissions analysis would not be required under 40CFR, §93.109. In addition, the 1997 ozone NAAQS is a revoked standard, and the federal regulations specifically sunset the regional emissions analysis provisions on the effective date of a NAAQS revocation as explained in “Transportation Conformity Guidance for the South Coast II Court Decision”, EPA-420-B-18-050 November 2018. Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the “budget test” specified in Section 93.158 (a)(5)(i)(A) of the rule (incorporated by reference by §45-35-4). Adoption of Requirements, for the same reasons that the budgets are essentially considered to be unlimited.

To comply with the 1997 8-hour ozone NAAQS requirements, West Virginia established VOC and NO_x MVEB for the five (5) areas mentioned above. MVEB were established for future years, which extended to 2018. In March 2011, West Virginia requested the EPA approve revisions to the 8-hour ozone Maintenance Plans for the five (5) West Virginia 1997 8-hour ozone maintenance areas, including Charleston, Huntington, Parkersburg, Weirton, and Wheeling. These revisions also reallocated emissions from the existing “safety margins” in each of the maintenance plans to increase the available MVEB for highway vehicles. The MVEBs were being increased in anticipation of mandatory use of the EPA’s most recently approved highway vehicle emissions model, MOVES10, in future transportation conformity determinations. It was anticipated the MOVES10 model would result in higher mobile NO_x emissions as compared to the MOBILE6 model originally used to calculate the MVEB. The EPA took direct final action to approve this SIP revision on September 15, 2011 (76 FR 56975).

The EPA’s approval of an LMP will provide that if the LMP criteria are no longer satisfied and a full maintenance plan must be developed to meet CAA requirements, the approval of the LMP would remain applicable for conformity purposes only until a full maintenance plan is submitted and the EPA has found the motor vehicle emissions budgets adequate for conformity purposes under 40CFR, Parts 51 and 93. The EPA will condition its approval of all LMPs in this fashion because in the case where the LMP criteria are not met and a full maintenance plan is required the EPA believes that LMPs would no longer be an appropriate mechanism for assuring maintenance of the standards.

As a result of the February 16, 2018 D.C. Circuit Court decision in *South Coast Air Quality Management District v. EPA*, West Virginia had regional air quality conformity analysis conducted for the Wheeling area, which includes Marshall and Ohio counties in WV and Belmont county in Ohio. The Bel-O-Mar Regional Council Metropolitan Planning Organization (MPO), in conjunction with Ohio Department of Transportation (ODOT), initiated a new conformity analysis/determination for its existing Transportation Plan for 2040. This new conformity process was in response to FHWA’s April 23, 2018 guidance requiring conformity analyses for “orphaned” US EPA 1997 Ozone standard areas. ODOT provided future year emissions estimates using the MOVES2014a model. These years included 2018, 2025 and 2030 to cover the performance period of the second Maintenance Plan. To compare the area’s emissions to the previously established 2018 Motor Vehicle Emissions Budget (MVEB), 2018 emissions were estimated. A summary of the Bel-O-Mar MPO report is provided in **Appendix C** and the Air Quality Analysis section of the Bel-O-Mar Transportation Plan for 2040 is provided in **Appendix D**.

Table 2 below summarizes the results and shows, as compared to the 2018 MVEB, future VOC and NOx emissions are well below the 2018 established MVEB. Therefore, based upon this analysis by Bel-O-Mar and ODOT, West Virginia concludes that it is reasonable to expect that the area will not experience enough motor vehicle emissions growth for a violation of the 1997 8-hour ozone NAAQs to occur through 2027.

Table 2. Projected motor vehicle emissions in short tons per day.

Area	2018 Budget		2018		2025		2030	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
Marshall Co & Ohio Co, WV	7.7	3.1	0.63	1.25	0.42	0.73	0.30	0.54
Belmont Co, OH	2.15	5.18	n/a	n/a	0.72	1.15	0.54	0.83
Total	9.85	8.28	0.63	1.25	1.14	1.88	0.84	1.37

VIII. Public Review

WVDEP published notification for the public review and comment period concerning the draft second maintenance plan in The Intelligencer/Wheeling News-Register, widely distributed newspaper serving the Wheeling area. This maintenance plan was also available for public download at:

<https://dep.wv.gov/daq/publicnoticeandcomment/Pages/default.aspx>

Results of the public review may be found in **Appendix E**.

IX. Conclusion

As discussed, qualification for a limited maintenance plan requires that the area should be attaining the 8-hour ozone NAAQS. The average design value for the area, based upon the most recent five (5) years of ambient air quality data at all monitors in the area, should be at or below 85% of the NAAQS. WV elected to take a conservative approach and use a 5-year weighted design value rather than simply averaging the most recent five (5) years. Even subject to this more stringent analysis, the Wheeling area 5-year weighted design value is 0.064 ppm. This falls under the maximum design value of 0.071 prescribed by the EPA and fulfills this requirement to qualify for an LMP.

Qualification for an LMP further requires that the area should have no NAAQS violations at any ambient air monitor in the area. The Wheeling area has not had any NAAQS violations after the approval of the initial Maintenance Plan and has consistently had design values below the 1997, 2008, and 2015 NAAQS. The consistent achievement of decreasing ozone NAAQS fulfills this requirement to qualify for an LMP.

Finally, qualification for an LMP requires that the area should have a low risk of future exceedances. The historic data presented in *Figure 1* demonstrates a downward trend in ozone levels in the area. With regulatory controls currently in place, this trend is expected to continue in the future. This expectation is supported by the 2023 projection produced by the EPA presented in *Table 1*.

Furthermore, a transportation conformity analysis conducted by ODOT and Bel-O-Mar indicates that the 2018 VOC and NOx emissions fall below our budget for the Wheeling area and future VOC and NOx emissions are projected to be on the decline.

Under consideration of the information presented, West Virginia requests that the EPA approve this limited maintenance plan as meeting the requirements of CAA Section 175(A) with respect to the 8-hour standard. This plan is effective until June 14, 2027.

Appendix A

**EPA's Resource Document For 1997 Ozone NAAQS
Areas: Supporting Information for States Developing
Maintenance Plans**

November 20, 2018

**RESOURCE DOCUMENT FOR 1997 OZONE NAAQS AREAS:
SUPPORTING INFORMATION FOR STATES DEVELOPING MAINTENANCE PLANS**

PURPOSE

The purpose of this resource document is to provide technical information that may be helpful for a state wishing to develop and submit a revision of its state implementation plan (SIP) to ensure maintenance of the 1997 ozone National Ambient Air Quality Standards (NAAQS). This document includes information addressing ambient air quality monitoring data, air quality modeling, and emissions inventory data. Note that this resource document also provides information that may be useful for states wishing to pursue the limited maintenance plan (LMP) option.

BACKGROUND

- The EPA revoked the 1997 ozone NAAQS effective April 5, 2015. Under the EPA’s regulations implementing the ozone NAAQS,¹ states were no longer responsible, under certain conditions, for developing and submitting maintenance plans for former 1997 ozone NAAQS nonattainment areas. See 40 Code of Federal Register (CFR) 51.1105(d). Environmental groups filed a petition for judicial review of the EPA’s regulation, challenging certain aspects of the decision. Among other things, the groups challenged the Agency’s rule that excused “orphan maintenance areas,” i.e., areas that had been redesignated to attainment for the 1997 ozone NAAQS and were initially designated attainment for the 2008 ozone NAAQS, from submitting a second maintenance plan for the 1997 ozone NAAQS.
- On February 16, 2018, the D.C. Circuit Court issued a decision in [*South Coast Air Quality Management District v. EPA*](#) (*South Coast II*) that, among other things, granted the petition on this point. 882 F.3d 1138. The Court held that “orphan maintenance areas” are required to submit second maintenance plans under Clean Air Act (CAA) section 175A(b). These areas, therefore, must submit a second maintenance SIP revision to ensure maintenance through the full 20-year period following the effective date of redesignation. (Note that depending on when an area received its redesignation, the area may only need to submit a second maintenance plan that covers the remainder of the second 10-year maintenance period.) The Court’s decision also addressed the EPA’s longstanding interpretation that, once a NAAQS was revoked, the EPA does not have authority to issue new designations or redesignations for that standard. The Court vacated the “redesignation substitute,” one of the Agency’s procedural mechanisms for removing antibacksliding requirements for the revoked 1997 NAAQS. In so doing, the *South Coast II* court decision held that the EPA could only lift those antibacksliding requirements with a full statutory redesignation under CAA

¹ 80 Federal Register (FR) 12264 (March 6, 2015).

section 107(d)(3)(E), suggesting that the Agency's prior interpretation of its lack of authority to redesignate areas under a revoked NAAQS was incorrect. Therefore, under the Court's decision, areas that were designated nonattainment for the 1997 ozone NAAQS at the time of revocation may request full redesignation under CAA section 107(d)(3) in order to remove antibacksliding requirements for the revoked 1997 standard, such as nonattainment new source review (NNSR).

- The EPA also notes that this resource document does not cover requirements for other CAA programs that apply in nonattainment and maintenance areas following the *South Coast II* decision. For example, guidance implementing transportation conformity requirements following the *South Coast II* decision is being developed by the EPA's Office of Transportation and Air Quality and will be available at: <https://www.epa.gov/state-and-local-transportation/policy-and-technical-guidance-state-and-local-transportation>.
- At the time the 1997 ozone NAAQS were revoked in 2015, 35 areas remained designated as nonattainment for that NAAQS, and 80 former nonattainment areas had been redesignated to attainment and were also initially designated attainment for the newer 2008 ozone NAAQS. (See table 1 for a list of these areas.)

LIMITED MAINTENANCE PLAN

- CAA section 175A(a) requires that areas seeking redesignation to attainment submit "a revision of the applicable state implementation plan to provide for the maintenance of the [NAAQS] for such air pollutant in the area concerned for at least 10 years after the redesignation." Section 175A(b) requires the state to submit a second plan for maintaining the NAAQS for another 10 years (i.e., 20 years after redesignation). In most cases, the EPA guidance instructs states to "provide for the maintenance of the [NAAQS]" using projected emissions inventories or air quality modeling showing continued maintenance until the end of the relevant maintenance period.²
- In three past guidance documents describing "limited maintenance plans," the EPA has interpreted section 175A to indicate that an area can "provide for maintenance of the NAAQS" if it meets certain air quality-related criteria. Specifically, the key criteria outlined in these documents are that the current air quality levels for ambient monitoring sites in the area should be substantially below the level of the standard (e.g., below 85% of the level of the standard), and that air quality levels had not been highly variable during preceding years.
- The three previously-issued limited maintenance plan memoranda are the following:

² See memorandum dated September 4, 1992, from John Calcagni, Director of OAQPS Air Quality Management Division, to the EPA Regional Office Air Division Directors, "Procedures for Processing Requests to Redesignate Areas to Attainment," pages 9-11.

- A. ["Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas." November 16, 1994.](#) This document addressed the LMP option available for the 1979 1-hour ozone NAAQS.
 - B. ["Limited Maintenance Plan Option for Nonclassifiable Carbon Monoxide Nonattainment Areas." October 6, 1995.](#) This document addressed the LMP option available for the 1971 carbon monoxide NAAQS.
 - C. ["Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas." August 9, 2001.](#) This document addressed the LMP option for the 1987 PM₁₀ NAAQS.
- These memoranda cite specific NAAQS, but states have also developed – and the EPA has also approved – LMPs for other specific NAAQS when those NAAQS were under active implementation planning.³ Accordingly, the EPA believes that in appropriate cases states can apply the principles outlined in these existing guidance documents in developing LMPs for certain 1997 ozone NAAQS maintenance areas, and 1997 ozone NAAQS nonattainment areas that are eligible for redesignation to attainment.
 - As compared to developing a regular maintenance plan, development of an approvable LMP generally should be less resource intensive for local, state, and federal air quality and transportation agencies. A LMP submission may primarily rely on air quality data to demonstrate that the area is not expected to experience a future NAAQS violation, and it does not need to include projected future year emissions inventories or air quality modeling to make that demonstration, though including such information could further support the maintenance demonstration.

STATUTORY REQUIREMENTS FOR AREA REDESIGNATIONS AND MAINTENANCE PLANS

- A nonattainment area can be redesignated to attainment only if it satisfies the requirements of CAA section 107(d)(3)(E) of the CAA. The EPA's general guidelines for redesignation requests and maintenance plan SIP revisions are found in the 1992 the EPA guidance "Procedures for Processing Requests to Redesignate Areas to Attainment," Memorandum from John Calcagni, USEPA Office of Air Quality Planning and Standards, Director, Air Quality Management Division, September 4, 1992.
 1. The EPA has determined that the NAAQS for the applicable pollutant has been attained.
 - a. An area that is designated nonattainment for the 1997 ozone NAAQS would be eligible to be redesignated to attainment for that NAAQS if its most recent ozone design value is less than 0.085 parts per million (ppm). Areas with

³ See, e.g., 79 FR 41900 (July 18, 2014). Approval and Promulgation of Air Quality Implementation Plans; New Mexico; Grant County Sulfur Dioxide Limited Maintenance Plan.

design values of 0.085 ppm or greater are not eligible to redesignate to attainment for the 1997 ozone NAAQS.

2. The EPA has fully approved the applicable implementation plan under CAA section 110(k).
 3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
 4. The state has met all applicable requirements for the area under CAA section 110 and the part D nonattainment area requirement (CAA sections 171-193).
 5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under CAA section 175A.
- A maintenance plan must satisfy the requirements of CAA section 175A, including:
 1. A SIP revision providing for the maintenance of the NAAQS in the area.
 - a. The initial maintenance plan must provide for maintenance of the NAAQS in the area for 10 years after redesignation.
 - b. Eight (8) years after redesignation, the state must submit a second SIP revision for maintaining the NAAQS through the end of the second 10-year period beyond redesignation.
 2. Additional measures as necessary to ensure maintenance of the NAAQS in the area during this period.
 3. A contingency plan assuring that the state will promptly correct any violation of the standard which occurs after the redesignation of the area to attainment.
 4. The contingency plan shall include a requirement that the state will continue to implement all measures with respect to the control of the pollutant for the area that were contained in the SIP prior to the redesignation.
 - Each limited maintenance plan submission will be evaluated by the EPA on a case-by-case basis, taking into consideration the weight of evidence of the information presented in the SIP submission.

SUPPORTING INFORMATION

The information described below may be helpful for a state interested in developing a regular maintenance plan or a limited maintenance plan SIP submission for a 1997 ozone NAAQS nonattainment or maintenance area.

1. AMBIENT AIR QUALITY DATA

The spreadsheet provided on the EPA website includes ozone ambient air quality monitoring data for the 115 areas that were initially designated as nonattainment for the 1997 ozone NAAQS beginning in 2004. The spreadsheet includes the following information for each 1997 ozone NAAQS area:

- Current designation status as of July 2018 (nonattainment or maintenance)
- Current area classification as of July 2018 (e.g., Marginal, Moderate, Serious)
- Three (3) year design values for 15 design value periods, from the 2001-2003 period to the 2015-2017 period.

2. AIR QUALITY MODELING DATA

The spreadsheet provided on the EPA website contains projected 2023 design values (based on projected emissions inventory data and air quality modeling performed by EPA in support of interstate ozone transport actions by the EPA and/or states for the 2008 and/or 2015 ozone NAAQS). Projected air quality values below the level of the standard for the area for one or more years during the maintenance plan period can be useful supporting information in a demonstration to show that the area is expected to continue to attain the standard during the maintenance period.

- More information on the EPA 2023 air quality modeling is available at:

<https://www.epa.gov/airmarkets/october-2017-memo-and-supplemental-information-interstate-transport-sips-2008-ozone-naaqs>

https://www.epa.gov/sites/production/files/2018-06/documents/aq_modelingtsd_updated_2023_modeling_o3_dvs.pdf

3. EMISSIONS INVENTORY DATA

Consistent with the EPA guidance, maintenance plans often use a projection of the attainment year emissions inventory to demonstrate that an area will maintain the NAAQS for 10 years. That is, state submissions provide a showing that nonattainment area emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC) are projected to remain at or below a level that is consistent with demonstrated attainment throughout the maintenance plan period. While past guidance documents have indicated that areas eligible for a limited maintenance plan need not demonstrate maintenance using emission inventory projections, we include this information to the extent it is helpful.

The spreadsheet provided on the the EPA website contains NO_x and VOC emissions data for two years for the 115 areas that were initially designated as nonattainment for the 1997 ozone NAAQS in 2004. The spreadsheet includes the following information for each area:

- Emissions Inventory data for 2014: Summer season NOx and VOC emissions (tons/season). These data are from the the EPA 2014 modeling platform and are based on the most recently available National Emissions Inventory (2014 NEI version 2).
 - The 2014 emissions inventory information is from the the EPA 2014 version 7.0 modeling platform. The inventory documentation for this platform can be found here: <https://www.epa.gov/air-emissions-modeling/2014-version-70-platform>.
- Projected emissions inventory for 2028: Summer season NOx and VOC emissions (tons/season), which may help support a conclusion that emissions will not increase in the future and the improvement in air quality is due to permanent and enforceable reductions in emissions.
- The 2028 emissions inventory is projected from the EPA 2011 version 6.3 modeling platform. The inventory documentation for this platform can be found here: <https://www.epa.gov/air-emissions-modeling/2011-version-63-platform>.

The relevant inventory scenario names are “2014fd” and “2028el.” The 2028 scenario was used to support past air quality modeling to support the regional haze program.

Due to the limited availability of emissions modeling information, the EPA is not able to provide a completely consistent set of emissions estimates for multiple projection years. In general, the emissions of NOx and VOC are going down over time in most areas. But there may be some methodological inconsistencies between the emissions scenarios noted above, which could lead to unexpected projected emissions increases. Therefore, emissions trends should be carefully examined for each area, especially where an emissions increase is projected.

PAST CRITERIA SUPPORTING LIMITED MAINTENANCE PLANS

As noted, the EPA’s prior guidance describes that states may satisfy the section 175A requirement to “provide for maintenance of the NAAQS” with a LMP according to the following criteria:

- Current air quality levels significantly below the level of the standard: As indicated in prior memoranda, the EPA believes that an air quality design value below 85% of the level of the standard (i.e., a design value of 0.071 ppm as compared to a level of 0.084 ppm, which is considered to be in compliance with the 1997 ozone standard to three digits) could be considered significantly below the standard and may be a good indicator that air quality is not likely to deteriorate to a level that would violate the NAAQS over the next 10 year period.
- Stable or improving air quality trend: Several kinds of analyses can be performed to assess whether an area has had relatively stable or consistently improving air quality

levels over the long term such that the probability of the area violating the standard in the future would be considered low. One basic approach would be to take the most recent design value for the area and add the maximum design value increase (over one or more consecutive years) that has been observed in the area over the past several years. A sum that does not exceed the level of the 1997 ozone standard may be a good indicator of expected continued attainment. This type of metric should be considered on a case-by-case basis.

TABLE 1
1997 OZONE NAAQS AREAS WITH MAINTENANCE AND NONATTAINMENT STATUS
AT THE TIME THE NAAQS WERE REVOKED IN 2015
AND THAT WERE ALSO DESIGNATED ATTAINMENT FOR THE 2008 OZONE NAAQS

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
AL	Birmingham Area	Maintenance
GA	Atlanta	Maintenance*
GA	Macon Area	Maintenance
GA	Murray County (Chattahoochee Nat Forest) Area	Maintenance
IN	Evansville Area	Maintenance
IN	Fort Wayne Area	Maintenance
IN	Greene County Area (IN)	Maintenance
IN	Indianapolis Area	Maintenance
IN	Jackson County Area	Maintenance
IN	La Porte County Area	Maintenance
IN	Muncie Area	Maintenance
IN	South Bend-Elkhart Area	Maintenance
IN	Terre Haute Area	Maintenance
KY-IN	Louisville Area	Maintenance
MA-NH	Boston-Manchester-Portsmouth (SE) Area	Maintenance
MD	Kent and Queen Anne's Counties Area	Maintenance
ME	Hancock, Knox, Lincoln and Waldo Counties (Central Maine Coast) Area	Maintenance
ME	Portland Area	Maintenance
MI	Allegan County Area	Maintenance
MI	Benton Harbor Area	Maintenance
MI	Benzie County Area	Maintenance
MI	Cass County Area	Maintenance
MI	Detroit-Ann Arbor Area	Maintenance
MI	Flint Area	Maintenance
MI	Grand Rapids Area	Maintenance
MI	Huron County Area	Maintenance
MI	Kalamazoo-Battle Creek Area	Maintenance
MI	Lansing-East Lansing Area	Maintenance
MI	Mason County Area	Maintenance
MI	Muskegon Area	Maintenance
MO-IL	St. Louis Area	Maintenance*
NC-SC	Charlotte-Gastonia-Rock Hill Area	Maintenance*
NC	Haywood and Swain Counties (Great Smoky NP) Area	Maintenance
NC	Raleigh-Durham-Chapel Hill Area	Maintenance
NC	Rocky Mount Area	Maintenance

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
NV	Las Vegas	Maintenance
OH	Canton-Massillon Area	Maintenance
OH	Cincinnati-Hamilton Area	Maintenance*
OH	Dayton-Springfield Area	Maintenance
OH	Lima Area	Maintenance
OH	Toledo Area	Maintenance
OH-PA	Youngstown-Warren-Sharon Area	Maintenance
OH-WV	Steubenville-Weirton Area	Maintenance
PA	Altoona Area	Maintenance
PA	Clearfield and Indiana Counties Area	Maintenance
PA	Erie Area	Maintenance
PA	Franklin County Area	Maintenance
PA	Greene County Area (PA)	Maintenance
PA	Harrisburg-Lebanon-Carlisle Area	Maintenance
PA	Johnstown Area	Maintenance
PA	Scranton-Wilkes-Barre Area	Maintenance
PA	State College Area	Maintenance
PA	Tioga County Area	Maintenance
PA	York Area	Maintenance
TN-KY	Clarksville-Hopkinsville Area	Maintenance
TN	Knoxville Area	Maintenance*
TX	Beaumont-Port Arthur Area	Maintenance
VA	Fredericksburg Area	Maintenance
VA	Madison and Page Counties (Shenandoah NP) Area	Maintenance
VA	Norfolk-Virginia Beach-Newport News (Hampton Roads) Area	Maintenance
VA	Richmond-Petersburg Area	Maintenance
WI	Door County Area	Maintenance
WI	Kewaunee County Area	Maintenance
WI	Manitowoc County Area	Maintenance
WI	Milwaukee-Racine Area	Maintenance
WV	Charleston Area	Maintenance
WV-KY- OH	Huntington-Ashland Area	Maintenance
WV-OH	Parkersburg-Marietta Area	Maintenance
WV-OH	Wheeling Area	Maintenance
CA	Sutter County (part) (Sutter Buttes)	Nonattainment
MA	Springfield (W. Mass) Area	Nonattainment
NY	Albany-Schenectady-Troy	Nonattainment
NY	Buffalo-Niagara Falls	Nonattainment
NY	Essex County (Whiteface Mtn.)	Nonattainment

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
NY	Jefferson County Area	Nonattainment
NY	Poughkeepsie Area	Nonattainment
NY	Rochester	Nonattainment
RI	Providence (all of RI) Area	Nonattainment

* The 2008 ozone NAAQS nonattainment area did not include all portions of the 1997 ozone NAAQS area. Thus, the remaining portion of the 1997 ozone NAAQS area should be addressed in a second maintenance plan.

Appendix B

**Limited Maintenance Plan Option for Moderate
PM10 Nonattainment Areas. August 9, 2001**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

AUG 09 2001

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas

FROM: *John A. Edvardson*
Lydia Wegman, Director
AQSSD (MD-15)

TO: Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning & Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides & Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Air Pesticides & Toxics, Region VI
Director, Air and Toxics Division, Regions VII, IX
Director, Air Program, Region VIII
Director, Office of Air Quality, Region X

I. What is a Limited Maintenance Plan?

This memorandum sets forth new guidance¹ on maintenance plan submissions for certain moderate particulate matter (PM₁₀) nonattainment areas seeking redesignation to attainment (see section IV for further details on qualifying for the policy). If the area meets the criteria listed in this policy the State may submit a maintenance plan at the time it is requesting redesignation that is more streamlined than would ordinarily be permitted. This new option is being termed a limited maintenance plan (LMP)².

II. Why is there a need for a limited maintenance plan policy?

Before the U.S. Court of Appeals for the District of Columbia handed down its decision vacating the 1997 PM₁₀ national ambient air quality standards (NAAQS)(see American Trucking Associations, et al. v. Environmental Protection Agency (EPA), 175 F.3d 1027 (D.C. Cir. 1999),

¹This memorandum is intended to provide EPA's preliminary views on how certain moderate PM₁₀ nonattainment areas may qualify to submit a maintenance plan that meets certain limited requirements. Since it represents only the Agency's preliminary thinking that is subject to modification, this guidance is not binding on States, Tribes, the public, or EPA. Issues concerning the applicability of the limited maintenance plan policy will be addressed in actions to redesignate moderate PM₁₀ nonattainment areas under § 107 of the CAA. It is only when EPA promulgates redesignations applying this policy that those determinations will become binding on States, Tribes, the public, and EPA as a matter of law.

²Moderate PM₁₀ areas that do not meet the applicability criteria of this policy, and all serious PM₁₀ nonattainment areas, should submit maintenance plans that meet our guidance for submission of a full maintenance plan as described in the September 4, 1992 memorandum. "Procedures for Processing Requests to Redesignate Areas to Attainment," from John Calcagni, former Director of the Office of Air Quality Planning and Standards (OAQPS) Air Quality management Division to the Regional Air Division Directors (hereafter known as the Calcagni Memo).

we were prepared to make case-by-case determinations that would make the 1987 PM₁₀ NAAQS no longer applicable in any area meeting the standards. In taking actions to remove the applicability of the 1987 NAAQS, we would have removed, as well, the nonattainment designation and Clean Air Act (CAA) part D requirements from qualifying areas. As a result of the D.C. Circuit's decision, for areas subject to the 1987 NAAQS, the only route to recognized attainment of the NAAQS and removal of nonattainment status and requirements is formal redesignation to attainment, including submittal of a maintenance plan. Since many areas have been meeting the PM₁₀ NAAQS for 5 years or more and have a low risk of future exceedances, we believe a policy that would allow both the States and EPA to redesignate speedily areas that are at little risk of PM₁₀ violations would be useful.

III. How did EPA develop the approach used in the LMP option?

The EPA has studied PM₁₀ air quality data information for the entire country over the past eleven years (1989-1999) and has determined that some moderate PM₁₀ nonattainment areas have had a history of low PM₁₀ design values with very little inter-annual variation. When we looked at all the monitoring sites reporting data for those years, the data indicate that most of the average design values fall below 2 levels, 98 : g/m³ for the 24-hr PM₁₀ NAAQS and 40 : g/m³ for the annual PM₁₀ NAAQS. For most monitoring sites these levels are also below their individual site-specific critical design values (CDV). The CDV is an indicator of the likelihood of future violations of the NAAQS given the current average design value and its variability. The CDV is the highest average design value an area could have before it may experience a future exceedance of the NAAQS with a certain probability. A detailed explanation of the CDV is found in Attachment A³ to this policy which, because of its length, is a separate document accompanying this memorandum.

We believe that the very small amount of variation between the peaks and means in most of the data indicates a very stable relationship that can be reasonably expected to continue in the future absent any significant changes in emissions. The period we assessed provides a fairly long historical record and the data could therefore be expected to have been affected by a full range of meteorological conditions over the period. Therefore, the amount of emissions should be the only variable that could affect the stability in the air quality data. We believe we can reliably make estimates about the future variability of PM₁₀ concentrations across the country based on our statistical analysis of this data record, especially in areas where the amount of emissions is not expected to change.

IV. How do I qualify for the LMP option ?

To qualify for the limited maintenance plan option, an area should meet the following applicability criteria. The area should be attaining the NAAQS and the average PM₁₀ design

³ Dr. Shao-Hang Chu's paper entitled "Critical Design Value and Its Applications" explains the CDV approach and is included in its entirety in Attachment A. This paper has been accepted for publication and presentation at the 94th Air and Waste Management Association (A&WMA) Annual Conference in June 2001 in Orlando, Florida.

value⁴ for the area, based upon the most recent 5 years of air quality data at all monitors in the area, should be at or below 40 : g/m³ for the annual and 98 : g/m³ for the 24-hr PM₁₀ NAAQS with no violations at any monitor in the nonattainment area⁵. If an area cannot meet this test it may still be able to qualify for the LMP option if the average design values of the site are less than their respective site-specific CDV.

We believe it is appropriate to offer this second method of qualifying for the LMP because, based on the air quality data we have studied, we believe there are some monitoring sites with average design values above 40 : g/m³ or 98 : g/m³, depending on the NAAQS in question, that have experienced little variability in the data over the years. When the CDV calculation was performed for these sites we discovered that their average design values are less than their CDVs, indicating that the areas have a very low probability (1 in 10) of exceeding the NAAQS in the future. We believe it is appropriate to provide these areas the opportunity to qualify for the LMP in this circumstance since the 40 : g/m³ or 98 : g/m³ criteria are based on a national analysis and don't take into account each local situation.

The final criterion is related to mobile source emissions. The area should expect only limited growth in on-road motor vehicle PM₁₀ emissions (including fugitive dust) and should have passed a motor vehicle regional emissions analysis test. It is important to consider the impact of future transportation growth in the LMP, since the level of PM-10 emissions (especially from fugitive dust) is related to the level of growth in vehicle miles traveled (VMT). Attachment B (below) should be used for making the motor vehicle regional emissions analysis demonstration.

If the State determines that the area in question meets the above criteria, it may select the LMP option for the first 10 year maintenance period. Any area that does not meet these criteria should plan to submit a full maintenance plan that is consistent with our guidance in the Calcagni Memo in order to be redesignated to attainment. If the LMP option is selected, the State should continue to meet the qualifying criteria until EPA has redesignated the area to attainment. If an area no longer qualifies for the LMP option because a change in air quality affects the average design values before the redesignation takes effect, the area will be expected to submit a full maintenance plan.

Once an area selects the LMP option and it is in effect, the State will be expected to recalculate the average design value for the area annually and determine if the criteria used to qualify for the LMP will still be met. If, after performing the annual recalculation of the area's average design value in a given year, the State determines that the area no longer qualifies for the LMP, the State should take action to attempt to reduce PM₁₀ concentrations enough to requalify for the LMP. One possible approach the State could take is to implement a contingency measure

⁴The methods for calculating design values for PM₁₀ are presented in a document entitled the "PM₁₀ SIP Development Guideline", EPA-450/2-86-001, June 1987. The State should determine the most appropriate method to use from this Guideline in consultation with the appropriate EPA Regional office staff.

⁵If the EPA determines that the meteorology was not representative during the most recent five-year period, we may reject the State's request to use the LMP option and request, instead, submission of a full maintenance demonstration.

or measures found in its SIP. If, in the next annual recalculation the State is able to re-qualify for the LMP, then the LMP will go back into effect. If the attempt to reduce PM₁₀ concentrations fails, or if it succeeds but in future years it becomes necessary again to address increasing PM₁₀ concentrations in the area, that area no longer qualifies for the LMP. We believe that repeated increases in PM₁₀ concentrations indicate that the initial conditions that govern air quality and that were relied on to determine the area's qualification for the LMP have changed, and that maintenance of the NAAQS can no longer be assumed. Therefore, the LMP cannot be reinstated by further recalculations of the design values at this point. Once the LMP is determined to no longer be in effect, a full maintenance plan should be developed and submitted within 18 months of the determination.

Treatment of data used to calculate the design values.

Flagged Particulate Matter Data:

Three policies allow PM-10 data to be flagged for special consideration:

- Exceptional Events Policy (1986) for data affected by infrequent events such as industrial accidents or structural fires near a monitoring site;
- Natural Events Policy (1996) for data affected by wildfires, high winds, and volcanic and seismic activities, and;
- Interim Air Quality Policy on Wildland and Prescribed Fires for data affected by wildland fires that are managed to achieve resource benefits.

We will treat data affected by these events consistently with these previously-issued policies. We expect States to consider all data (unflagged and flagged) when determining the design value. The EPA Regional offices will work with the State to determine the validity of flagged data. Flagged data may be excluded on a case-by-case basis depending on State documentation of the circumstances justifying flags. Data flagged as affected by exceptional or natural events will generally not be used when determining the design value. However, in order for data affected by a natural event to be excluded, an adequate Natural Events Action Plan is required as described in the Natural Events policy.

Data flagged as affected by wildland and prescribed fires will be used in determining the design value. If the State is addressing wildland and prescribed fire use with the application of smoke management programs, the State may submit an LMP if the design value is too high only as a result of the fire-affected data.

We are in the process of developing a policy to address agricultural burning. When it is finalized we will amend the LMP option to account

for the new policy.

V. What should an LMP consist of?

Under the LMP, we will continue to satisfy the requirements of Section 107(d)(3)(E) of the Act which provides that a nonattainment area can be redesignated to attainment only if the following criteria are met:

1. The EPA has determined that the NAAQS for the applicable pollutant has been attained.
2. The EPA has fully approved the applicable implementation plan under section 110(k).
3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under section 110 and part D.
5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

However, there are some differences between what our previous guidance (the Calcagni memo) recommends that States include in a maintenance plan submission and what we are recommending under this policy for areas that qualify for the LMP. The most important difference is that under the LMP the demonstration of maintenance is presumed to be satisfied. The following is a list of core provisions which should be included in an LMP submission. Note that any final EPA determination regarding the adequacy of an LMP will be made following review of the plan submitted in light of the particular circumstances facing the area proposed for redesignation and based upon all available information.

a. Attainment Plan

The State's approved attainment plan should include an emissions inventory (attainment inventory) which can be used to demonstrate attainment of the NAAQS. The inventory should represent emissions during the same five-year period associated with the air quality data used to determine whether the area meets the applicability requirements of this policy (i.e., the most recent five years of air quality data). If the attainment inventory year is not one of the most recent five years, but the State can show that the attainment inventory did not change significantly during that five-year period, it may still be used to satisfy the policy. If the attainment inventory is determined to not be representative of the most recent 5 years, a new inventory must be developed. The State should review its inventory every three years to ensure emissions growth is incorporated in the attainment inventory if necessary.

b. Maintenance Demonstration

The maintenance demonstration requirement of the Act will be considered to be satisfied for the moderate PM₁₀ nonattainment areas meeting the air quality criteria discussed above. If

the tests described in Section IV are met, we will treat that as a demonstration that the area will maintain the NAAQS. Consequently, there is no need to project emissions over the maintenance period.

c. Important elements that should be contained within the redesignation request

1. Monitoring Network Verification of Continued Attainment

To verify the attainment status of the area over the maintenance period, the maintenance plan should contain a provision to assure continued operation of an appropriate, EPA-approved air quality monitoring network, in accordance with 40 CFR part 58. This is particularly important for areas using an LMP because there will be no cap on emissions.

2. Contingency Plan

Section 175A of the Act states that a maintenance plan must include contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plan is considered to be an enforceable part of the SIP and the State should ensure that the contingency measures are adopted as soon as possible once they are triggered by a specific event. The contingency plan should identify the measures to be adopted, and provide a schedule and procedure for adoption and implementation of the measures if they are required. Normally, the implementation of contingency measures is triggered by a violation of the NAAQS but the State may wish to establish other triggers to prevent a violation of the NAAQS, such as an exceedance of the NAAQS.

3. Approved attainment plan and section 110 and part D CAA requirements:

In accordance with the CAA, areas seeking to be redesignated to attainment under the LMP policy must have an attainment plan that has been approved by EPA, pursuant to section 107(d)(3)(E). The plan must include all control measures that were relied on by the State to demonstrate attainment of the NAAQS. The State must also ensure that the CAA requirements for PM₁₀ pursuant to section 110 and part D of the Act have been satisfied. To comply with the statute, the LMP should clearly indicate that all controls that were relied on to demonstrate attainment will remain in place. If a State wishes to roll back or eliminate controls, the area can no longer qualify for the LMP and the area will become subject to full maintenance plan requirements within 18 months of the determination that the LMP is no longer in effect.

V. How is Conformity treated under the LMP option?

The transportation conformity rule (40 CFR parts 51 and 93) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either conformity rule one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the PM₁₀ NAAQS would result. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required. Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the “budget test” specified in section 93.158 (a)(5)(i)(A) of the rule, for the same reasons that the budgets are essentially considered to be unlimited.

EPA approval of an LMP will provide that if the LMP criteria are no longer satisfied and a full maintenance plan must be developed to meet CAA requirements (see Calcagni Memo referenced in footnote #2 for full maintenance plan guidance), the approval of the LMP would remain applicable for conformity purposes only until the full maintenance plan is submitted and EPA has found its motor vehicle emissions budgets adequate for conformity purposes under 40 CFR parts 51 and 93. EPA will condition its approval of all LMPs in this fashion because in the case where the LMP criteria are not met and a full maintenance plan is required EPA believes that LMPs would no longer be an appropriate mechanism for assuring maintenance of the standards.

For further information concerning the LMP option for moderate PM₁₀ areas please

contact Gary Blais at (919) 541-3223, or for questions about the CDV approach contact Dr. Shao-Hang Chu at (919) 541-5382. For information concerning transportation conformity requirements, please contact Meg Patulski of the Office of Transportation and Air Quality at (734) 214-4842.

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ATTACHMENT B: MOTOR VEHICLE REGIONAL ANALYSIS METHODOLOGY

The following methodology is used to determine whether increased emissions from on-road mobile sources could, in the next 10 years, increase concentrations in the area and threaten the assumption of maintenance that underlies the LMP policy. This analysis must be submitted and approved in order to be eligible for the LMP option.

The following equation should be used:

$$DV + (VMT_{pi} \times DV_{mv}) \# MOS$$

Where:

DV	=	the area's design value based on the most recent 5 years of quality assured data in : g/m^3
VMT_{pi}	=	the projected % increase in vehicle miles traveled (VMT) over the next 10 years
DV_{mv}	=	motor vehicle design value based on on-road mobile portion of the attainment year inventory in : g/m^3
MOS	=	margin of safety for the relevant PM-10 standard for a given area: 40 : g/m^3 for the annual standard or 98 : g/m^3 for the 24-hour standard

Please note that DV_{mv} is derived by multiplying DV by the percentage of the attainment year inventory represented by on-road mobile sources. This variable should be based on both primary and secondary PM_{10} emissions of the on-road mobile portion of the attainment year inventory, including re-entrained road dust.

States should consult with EPA regarding the three inputs used in the above calculation, and all EPA comments and concerns regarding inputs and results should be addressed prior to submitting a limited maintenance plan and redesignation request.

The VMT growth rate (VMT_{pi}) should be calculated through the following methods:

- 1) an extrapolation of the most recent 10 years of Highway Performance Monitoring System (HPMS) data over the 10-year period to be addressed by the limited maintenance plan; and
- 2) a projection of VMT over the 10-year period that would be covered by the limited maintenance plan, using whatever method is in practice in the area (if different than #1).

Areas where method #1 is the current practice for calculating VMT do not also have to do calculation #2, although this is encouraged. All other areas should use methods #1 and #2, and VMT_{pi} is whichever growth rate produced by methods #1 and #2 is highest. Areas will be expected to use transportation models for method #2, if transportation models are available.

Areas without transportation models should use reasonable professional practice.

Examples

1. DV = 80 : g/m³
 VMT_{pi} = 36%
 DV_{mv} = 30 : g/m³
 MOS = 98 : g/m³ for 24-hour PM-10 standard

$$80 + (.36 * 30) = 91$$

Less than 98 – Area passes regional analysis criterion.

2. DV = 35 : g/m³
 VMT_{pi} = 25%
 DV_{mv} = 6 : g/m³
 MOS = 40 : g/m³ for annual PM-10 standard

$$35 + (.25 * 6) = 37$$

Less than 40 – Area passes regional analysis criterion.

3. DV = 115 : g/m³
 VMT_{pi} = 25%
 DV_{mv} = 60 : g/m³
 MOS = 98 : g/m³ for 24-hour PM-10 standard

$$115 + (.25 * 60) = 130$$

More than 98 – Area does not pass criterion. Full section 175A maintenance plan required.

Appendix C

**Belomar Regional Council
Air Quality Conformity Analysis**

Belomar Regional Council
Air Quality Conformity Analysis - Technical Memo
Ohio DOT, Modeling & Forecasting Section June 2018 revised December 2018

Wheeling Area Air Quality Analysis

States of Ohio and West Virginia

The Wheeling MPO (Wheeling WV, – Bridgeport, OH urbanized area) is initiating a new conformity analysis/determination for its existing 2040 Transportation Plan and 2018 – 2021 Transportation Improvement Program. This new conformity process is in response to FHWA’s April 23, 2018 guidance requiring conformity analyses for “orphaned” US EPA 1997 Ozone standard areas.

Table 2.1 summarizes the summertime daily HC and NOX emissions estimates for all three counties for years 2018, 2020, 2025, 2030, and 2040. Table 2.2 shows the regional total emissions. The comparison to regionwide budget figures is shown below in Table 1.

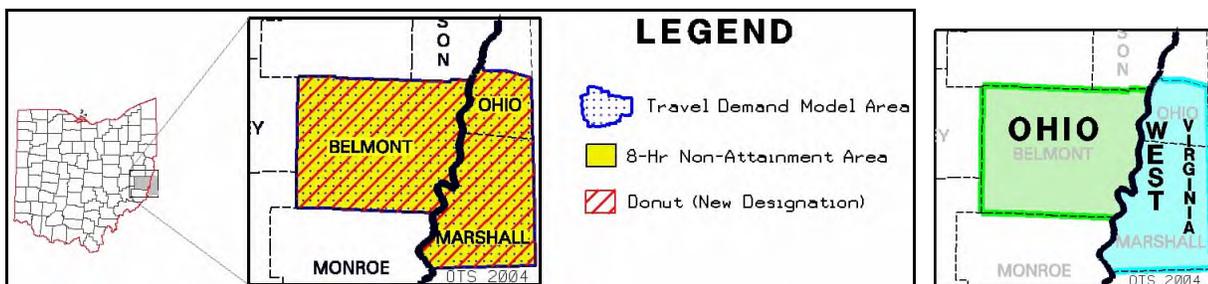


Table 1							
Belmont Co. (OH)	2010 Baseline	2018 Budget	2018 Emissions	2020 Emissions	2025 Emissions	2030 Emissions	2040 Emissions
VOC		2.15	n/a	0.93	0.72	.54	.40
NOx		5.18	n/a	1.82	1.15	.83	.57
Marshall & Ohio Co. (WV)	2010 Baseline	2018 Budget	2018 Emissions	2020 Emissions	2025 Emissions	2030 Emissions	2040 Emissions
VOC		7.7	.63	.53	.42	.30	.24
NOx		3.1	1.25	1.03	.73	.54	.43

Table 2.1 – HC and NOX Summer Emissions by County

Year	Belmont County OH		Marshall County WV		Ohio County WV		WV Total	
	HC	NOX	HC	NOX	HC	NOX	HC	NOX
2018	n/a	n/a	0.22	0.43	0.41	0.82	0.63	1.25
2020	0.93	1.82	0.19	0.35	0.34	0.68	0.53	1.03
2025	0.72	1.15	0.15	0.25	0.27	0.48	0.42	0.73
2030	0.54	0.83	0.11	0.19	0.20	0.36	0.30	0.54
2040	0.40	0.57	0.08	0.15	0.16	0.28	0.24	0.43

Note: Emissions are expressed in tons per day

Table 2.2 Three-County Region Total Emissions

Year	HC	NOX
2018	n/a	n/a
2020	1.46	2.85
2025	1.13	1.88
2030	0.84	1.38
2040	0.64	1.00

Note: Emissions are expressed in tons per day

Travel Demand Model

A travel demand model (TDM) is the traditional forecasting tool used to examine potential changes in future travel patterns. The digital road networks within them include all planned federal-aid projects as well as any regionally significant projects found in the TIP and LRTP expected to be open for traffic by the end of each respective analysis year. All projects identified in the LRTP having an impact on travel time and/or vehicle carrying capacity regardless of funding source were included in the air quality analysis. Trip generation figures by zone, with some exceptions, are assumed to change linearly with time between 2010 and the Plan Horizon year of 2040.

The Wheeling area travel demand model network covers about 1500 miles of streets and highways in the 3-county metro area and has recently been reconstructed from digital e-911 roadway centerline files from Belmont County and the state of West Virginia’s SAMB program, and most recently validated to observed traffic volumes for the year of 2010. The Long Range Plan project listings were used to create digital networks for the Years 2018, 2020, 2025, 2030 and 2040. Land use data comes from the Census, ES202 employment reporting, and local vehicle registrations. A trip generation model was borrowed from another urban area and adjusted as needed for local land use data. The hourly distribution of trips by trip purpose and direction are constrained to match the hourly distribution of traffic counts. Trip distribution also begins with a trip-length distribution by purpose borrowed from another urban area and adjusted to ensure modeled VMT matched HPMS estimates of VMT within 1% in the model base year of 2010.

The modeling software program utilizes hourly saturation flow rates that are calculated based on road inventory data, roadway type, and the Highway Capacity Manual (HCM). Coded speeds by street segment are a function of road type and posted speed limits and are based on the Ohio statewide travel time study conducted in 2000 (available on the web at <http://www.dot.state.oh.us/urban/data/statewid/report.doc>) using the “run time” version of speeds without intersection delays. The modeling software program internally estimates additional travel times for vehicles that stop for traffic control (stop signs and red lights) based on HCM methods and modeled traffic patterns. A more complete description of the modeling procedures is available at <http://ajhassoc.com/>. (This is also the first working travel model in the country to make use of travel time reliability to estimate travel routes, as described in the Transportation Research Record at <https://trrjournalonline.trb.org/doi/pdf/10.3141/2302-20>.)

Land Use / Socio-Economic Data

Data used to forecast future travel patterns include households, population, school enrollment, vehicle ownership, labor force participation, and employment by industry category and location. Sources for year 2010 data include the 2000 Census (primarily block-level data, aggregated to 551 zones), QCEW (U.S. BLS) employment data from state-based employment agencies, and school enrollment information from the US Department of Education. Table 3 below provides a summary of forecasted growth in metro area population and employment. The land use forecasts for the three-county area (including sources and rate of change over time) are documented in the latest update to the Long-Range Transportation Plan prepared by Bel-O-Mar staff (Table 5-1 at <http://www.belomar.org/trans/lrp/> , which is copied as Table 3 below.

Table 3 – Summary of Key Metro Area Land Use and Forecasted Growth Assumptions

	2010	2040 Projected
Population	147,950	145,665
Households	61,462	61,590
Vehicle registrations	104,317	104,789
Employment	79,608	101,047
K-8 School Enrollment	15,105	15,012
High School Enrollment	7,617	7,206
Post Secondary/College	10,406	9,762

Table 4 – Forecasted daily vehicle-miles of travel (VMT)

County	Travel Model VMT by County				
	Yr 2018	Yr 2020	Yr 2025	Yr 2030	Yr 2040
Ohio	1,463,000	1,501,000	1,585,000	1,668,000	1,951,000
Marshall	812,000	829,000	868,000	910,000	1,057,000
Belmont	2,582,000	2,844,000	2,996,000	3,154,000	3,648,000
Total	4,857,000	5,174,000	5,449,000	5,732,000	6,656,000

Emission Factors

The U.S. EPA’s emissions model MOVES2014a was used to develop emission factors for applicable years for both VOCs and NOX. The input files contains local parameters, developed through consultation with OEPA, for temperature, humidity, vehicle inspection and maintenance programs, and fuel characteristics. Total emissions were computed as described in the CMAQ report prepared by Ohio DOT staff and available on the World Wide Web at http://www.dot.state.oh.us/Divisions/Planning/SPR/ModelForecastingUnit/Documents/cmaqr6_revised_jan_2012.pdf. (The network format used is as described in Appendix B of the report.) Unless cited otherwise in this report, U.S. EPA default values are utilized. For the three-county Wheeling metro area, this includes the distribution of vehicles by age and type by functional class.

Table 5 summarizes the settings used in the MOVES run specification file and the MOVES County-Data Manager. The subsequent tables provide the specific inputs not using the MOVES default values.

Table 5 – MOVES Inputs

RunSpec Parameter Settings	
MOVES Version	MOVES2010a
Scale	Custom Domain
MOVES Modeling Technique	Emission Factor Method Rates per Profile (grams/vehicle) Rates per Distance (grams/mile) Rates per Vehicle (grams/vehicle)
Time Span	Time Aggregation: Hour 1 Month representing average summer temperatures All hours of day selected, 16 speed bins, Weekdays only
Geographic Bounds	Belmont county OH, Ohio and Marshall counties WV
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 _x , NO, NO ₂ , Total Energy Consumption
Strategies	None
General Output	Units = grams, joules and miles
Output Emissions	Time = hour, Location = custom area, on-road emission rates by road type and source use type.
Advance Performance	None
County Data Manager Sources	
Source Type Population	Combination of local and default data Local data (OH&WV) from motor vehicle registration Default data used for source types 41, 51, 54, 61, and 62 Future year growth rate MPO model Household growth rate.

Vehicle Type VMT	Combination of local and default data $HPMSVTypeYear\ VMT = \text{daily VMT from travel demand model, monthVMTFraction} = \text{default}$ $dayVMTFraction = \text{default, hourVMTFraction} = \text{local}$
I/M Program	None
Fuel Formulation	Default
Fuel Supply	Default
Meteorology Data	Local data obtained from NOAA National Climatic Data Center. Data will consist of monthly high and low temperatures and daily relative humidity for 2009.
Ramp Fraction	Using the base year travel demand model for VHT fractions.
Road Type Distribution	Use ODOT and WVDOH county summary VMT categorized by federal functional classes
Age Distribution	Combination of local and default data. Local data (2010) ODOT from motor vehicle registration Default data used for source types 41, 51, 54, 61, and 62 The same age distribution will be used for all analysis years
Average Speed Distribution	Default
Alternative Fuel Type	Default

TEMPERATURE AND RELATIVE HUMIDITY

The single season approach for temperature and relative humidity uses weather data collected by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). The data used in this report, taken from the Wheeling Airport collection center, is representative of 12 months in 2009. Data entered into a spreadsheet provided by U.S. EPA converted the Mobile6 to get the correct data for the MOVES model. Table 6 below contains the average annual hourly temperatures and relative humidity distribution profiles used for the Belomar region.

**Table 6
AVERAGE TEMPERATURE AND RELATIVE HUMIDITY DATA**

Time of Day	Average Temperature	Average Relative Humidity (%)
Midnight	47.2	79.7
1 AM	46.1	67.1
2 AM	45.2	80.7
3 AM	44.6	82.9
4 AM	44.1	83.8
5 AM	43.6	84.1
6 AM	43.1	82.6
7 AM	43.5	79.6

8 AM	45.9	74.8
9 AM	49.6	70.1
10 AM	53.5	65.7
11 AM	56.8	62.0
12 PM	59.7	59.8
1 PM	61.3	58.2
2 PM	61.9	57.4
3 PM	62.0	57.3
4 PM	61.6	58.3
5 PM	60.5	61.2
6 PM	58.6	65.3
7 PM	56.2	69.2
8 PM	53.7	66.1
9 PM	51.6	74.3
10 PM	50.1	75.7
11 PM	48.6	78.1

RAMP FRACTION

The Vehicles Hour of Travel (VHT) fractions from the travel demand model were used to derive the Ramp Fraction values needed for the MOVES model procedures (approximately 4% in Belmont county Ohio, 8% in Ohio county West Virginia, and 4% in Marshall county West Virginia).

SOURCE TYPE POPULATION

A combination of local and MOVES default data is the Source Type Population for vehicle classifications. The MOVES default values provided the data for vehicle Source Types 51, 52, 53, 61, and 62 while local data from Ohio and West Virginia motor vehicle registrations accounted for all other Source Type Populations needed to run the MOVES model. Table 7 shows the Source Type Population identifications, the corresponding Source Type Name, and the number of vehicles analyzed for Belmont County, OH and Ohio/Marshall County, WV combined.

Table 7

SOURCE TYPE POPULATION FOR YEAR 2018

year	Source Type	Belmont #	Marshall co #	Ohio co #
2005	11 MotorCycle	4877	965	1184
2005	21 Passenger Car	50280	9942	18392
2005	31 Passenger Truck	23322	10247	14487
2005	32 Light Commercial Truck	622	1808	2354
2005	41 Intercity Bus	59	6	17

2005	42 Transit Bus	2	3	9
2005	43 School Bus	131	102	52
2005	51 Refuse truck	36	8	14
2005	52 Single Unit Short-haul Truck	14	475	843
2005	53 Single Unit Long-haul Truck	56	54	96
2005	54 Motor Home	170	22	49
2005	61 Combination Short-haul Truck	811	80	252
2005	62 Combination Long-haul Truck	1015	89	280

VEHICLE AGE DISTRIBUTION

A grouping of data from Ohio and West Virginia sources along with the MOVES model defaults make up the Vehicle Age Distribution. MOVES default values included Vehicle Type ID 41, 42, 51, 52, 53, 61, and 62. Local data from Ohio and West Virginia motor vehicle registrations accounted for all other Vehicle Type ID. Table 8 shows a sample Vehicle Age Distribution By Source Type for Belmont County, OH in 2005.

Table 8

VEHICLE AGE DISTRIBUTION BY SOURCE TYPE FOR BELMONT COUNTY, OHIO IN 2005

yearid	ageid	11	21	31	32	41	42	43	51	52	53	54	61	62
2005	0	0.003	0.004	0.006	0.010	0.000	0.000	0.023	0.000	0.000	0.000	0.003	0.003	0.011
2005	1	0.025	0.020	0.022	0.028	0.053	0.000	0.031	0.000	0.000	0.000	0.018	0.012	0.033
2005	2	0.052	0.033	0.047	0.069	0.026	0.000	0.047	0.000	0.000	0.000	0.033	0.024	0.018
2005	3	0.068	0.039	0.051	0.066	0.026	0.000	0.055	0.286	0.286	0.286	0.039	0.028	0.096
2005	4	0.085	0.042	0.061	0.068	0.316	0.000	0.047	0.000	0.000	0.000	0.030	0.037	0.079
2005	5	0.083	0.048	0.076	0.025	0.079	0.000	0.016	0.000	0.000	0.000	0.037	0.049	0.064
2005	6	0.068	0.047	0.066	0.015	0.053	0.000	0.063	0.000	0.000	0.000	0.041	0.047	0.030
2005	7	0.079	0.048	0.065	0.045	0.000	0.000	0.070	0.214	0.214	0.214	0.028	0.047	0.038
2005	8	0.064	0.057	0.068	0.048	0.079	0.000	0.070	0.000	0.000	0.000	0.033	0.043	0.033
2005	9	0.051	0.054	0.056	0.035	0.053	0.000	0.070	0.000	0.000	0.000	0.034	0.043	0.052
2005	10	0.042	0.062	0.063	0.069	0.026	0.000	0.063	0.000	0.000	0.000	0.043	0.057	0.085
2005	11	0.032	0.060	0.056	0.041	0.105	0.000	0.086	0.000	0.000	0.000	0.043	0.051	0.083
2005	12	0.027	0.056	0.054	0.055	0.053	0.000	0.141	0.000	0.000	0.000	0.035	0.045	0.080
2005	13	0.020	0.055	0.045	0.030	0.000	0.000	0.078	0.000	0.000	0.000	0.024	0.045	0.041
2005	14	0.020	0.050	0.041	0.031	0.000	0.000	0.008	0.071	0.071	0.071	0.020	0.038	0.053
2005	15	0.014	0.051	0.048	0.055	0.026	0.000	0.047	0.071	0.071	0.071	0.032	0.048	0.053
2005	16	0.015	0.043	0.043	0.040	0.000	0.500	0.000	0.071	0.071	0.071	0.027	0.051	0.027
2005	17	0.012	0.038	0.031	0.028	0.000	0.000	0.008	0.071	0.071	0.071	0.025	0.035	0.011
2005	18	0.012	0.034	0.020	0.036	0.026	0.000	0.000	0.000	0.000	0.000	0.028	0.030	0.029

2005	19	0.009	0.031	0.017	0.031	0.000	0.500	0.031	0.000	0.000	0.000	0.020	0.033	0.005
2005	20	0.007	0.022	0.013	0.028	0.026	0.000	0.000	0.071	0.071	0.071	0.014	0.028	0.006
2005	21	0.008	0.019	0.012	0.025	0.000	0.000	0.023	0.000	0.000	0.000	0.029	0.029	0.017
2005	22	0.006	0.015	0.009	0.033	0.000	0.000	0.000	0.071	0.071	0.071	0.024	0.032	0.015
2005	23	0.010	0.010	0.008	0.018	0.000	0.000	0.016	0.000	0.000	0.000	0.025	0.021	0.015
2005	24	0.018	0.007	0.006	0.018	0.027	0.000	0.008	0.072	0.072	0.072	0.024	0.023	0.005
2005	25	0.019	0.006	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.016	0.006
2005	26	0.014	0.006	0.004	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.014	0.008
2005	27	0.016	0.002	0.002	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.008	0.003
2005	28	0.017	0.001	0.001	0.002	0.026	0.000	0.000	0.000	0.000	0.000	0.013	0.007	0.000
2005	29	0.018	0.002	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.007	0.000
2005	30	0.088	0.038	0.006	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.201	0.054	0.006

ROAD TYPE DISTRIBUTION

The ODOT and WV Division of Highway county summary Vehicle Miles Traveled (VMT) data categorized by federal functional class for the three county non-attainment areas is the basis for Road Type Distribution Fraction. Table 9 illustrates Road Type Distribution.

Table 9

ROAD TYPE DISTRIBUTION FOR THE BELOMAR REGION

sourceTypeID	roadTypeID	roadTypeVMTFraction	sourceTypeID	roadTypeID	roadTypeVMTFraction
11	1	0	51	1	0
11	2	0.25	51	2	0.25
11	3	0.24	51	3	0.24
11	4	0.18	51	4	0.18
11	5	0.33	51	5	0.33
21	1	0	52	1	0
21	2	0.25	52	2	0.25
21	3	0.24	52	3	0.24
21	4	0.18	52	4	0.18
21	5	0.33	52	5	0.33
31	1	0	53	1	0
31	2	0.25	53	2	0.25
31	3	0.24	53	3	0.24
31	4	0.18	53	4	0.18
31	5	0.33	53	5	0.33
32	1	0	54	1	0
32	2	0.25	54	2	0.25
32	3	0.24	54	3	0.24
32	4	0.18	54	4	0.18
32	5	0.33	54	5	0.33
41	1	0	61	1	0

41	2	0.25	61	2	0.25
41	3	0.24	61	3	0.24
41	4	0.18	61	4	0.18
41	5	0.33	61	5	0.33
42	1	0	62	1	0
42	2	0.25	62	2	0.25
42	3	0.24	62	3	0.24
42	4	0.18	62	4	0.18
42	5	0.33	62	5	0.33
43	1	0	roadTypeID	roadDesc	
43	2	0.25	2	Rural Restricted Access	
43	3	0.24	3	Rural Unrestricted Access	
43	4	0.18	4	Urban Restricted Access	
43	5	0.33	5	Urban Unrestricted Access	

OUTPUT EMISSION FACTORS

Table 10 shows the first record in a MOVES sample output (rate per distance) emission file for year 2020 with I/M programs. For any given month, day of week, hour of the day, pollutant, and source type; the rate per distance varies by road type and speed bin. Rates per distance emissions are applied to link and intrazonal VMT.

Table 10 – Sample Emission File (Rate per Distance) for year 2020

Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID	hourID
Record:			2020	7	5	1
Heading:	linkID	pollutantID	processID	sourceTypeID	SCC	fuelTypeID
Record:		87	0	1		0
Heading:	modelYearID	roadTypeID	avgSpeedBinID	temperature	relHumidity	ratePerDistance
Record:	0	2	1			1.388011

Table 11 shows the first record in a MOVES sample output (rate per vehicle) emission file for year 2020 with I/M programs. 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 11 – Sample Emission File (Rate per Vehicle) for year 2020

Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID
Record:			20 20	7	5
Heading:	hourID	zoneID	pollutantID	processID	sourceTypeID
Record:	1		87		1
Heading:	SCC	fuelTypeID	modelYearID	temperature	ratePerVehicle
Record:		0	0		0.14004

Table 12 shows the first record in a MOVES sample output (rate per profile) emission file for year 2020 with I/M programs. The rate per vehicle varies for any combinations of month, day of week, hour of the day, pollutant, and process. Rates per profile emissions are applied to the vehicle source type population.

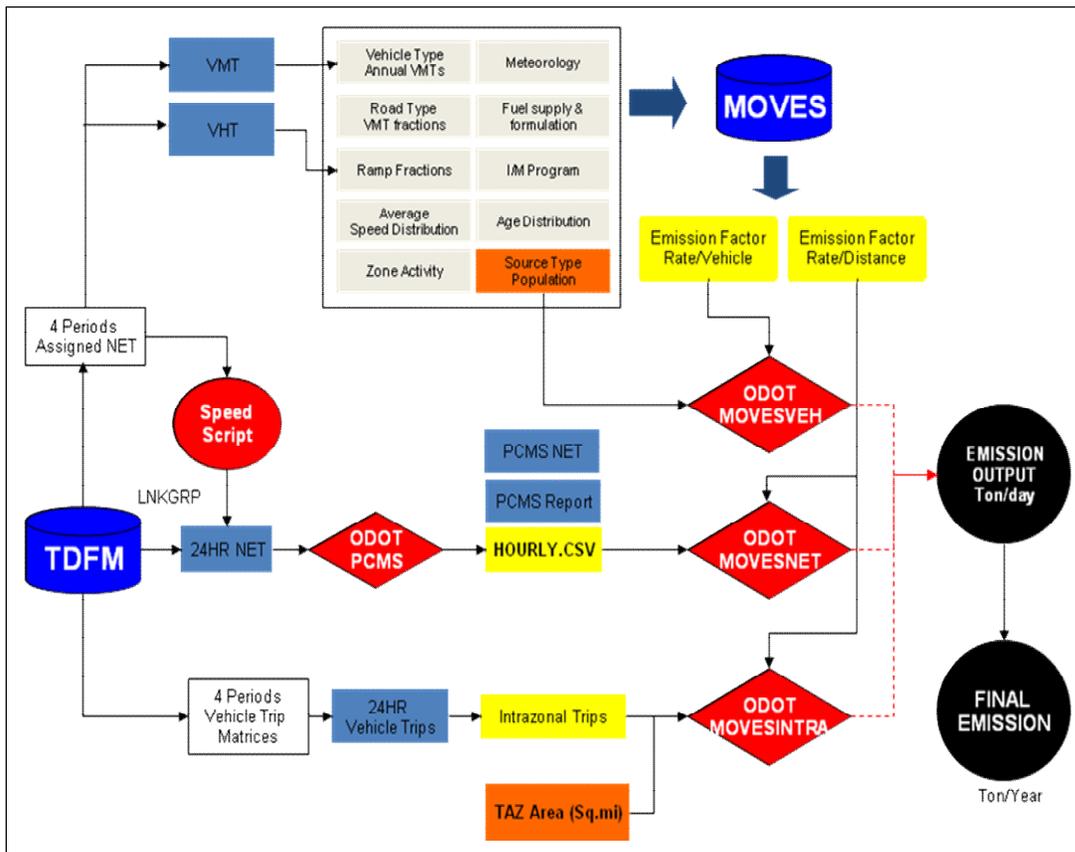
Table 12 – Sample Emission File (Rate per Profile) for year 2020

Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID
Record:			2020	0	5
Heading:	hourID	zoneID	pollutantID	processID	sourceTypeID
Record:	24		87	12	54
Heading:	SCC	fuelTypeID	modelYearID	temperature	ratePerVehicle
Record:		0	0	71.5	0.027222

POST PROCESSING

Several custom programs created by ODOT staff were used to compute total emissions. See Figure 2 below for the general schematic of the process. Details are provided at <http://www.dot.state.oh.us/Divisions/Planning/SPR/ModelForecastingUnit/Documents/cmaq3.pdf>

Figure 2 – Emission Calculation Process



ATTACHMENT A – PROJECTS IN THE 2040 MPO LONG-RANGE PLAN

Ohio County, WV:

Upgrade I-70 to six lanes from Elm Grove/Triadelphia Interchange to Cabela Drive
Analysis Year 2040

Marshall County, WV:

Upgrade WV2 to add a fifth lane (TWLTL) from 6th Street in Moundsville (M.P. 19.50) to US250
intersection (M.P. 20.35)
Analysis Year 2020

Upgrade WV2 from Kent (M.P. 4.5) to Franklin (M.P. 6.5)
Analysis Year 2030

Upgrade WV2 from Wetzel County Line (M.P. 00) to Kent (M.P. 4.5)
Analysis Year 2030

Belmont County, OH:

Upgrade I-70 to six lanes from the SR9 Interchange to Mall Road Interchange.
Analysis Year 2030

Construct a new Commons Mall Crossing Road from US40 South to Mall Rd and Banfield Rd
Intersections.
Analysis Year 2018

Appendix D

**Bel-O-Mar Transportation Plan for 2040 Air Quality
Analysis**



Belmont • Ohio • Marshall Counties



**Transportation
Plan for
2040**



*June, 2016
(Amended July 26, 2018)*

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- Appendix C ODOT and WVDOT Revenue Projection Tables
- Appendix D Environmental Justice Target Areas
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- Appendix F Project Overlay Maps for Environmental Impact Assessments
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- Appendix J Federal Planning Factors
- Appendix K Air Quality Analysis and Conformity Determination

ADDENDUMS

Addendum I Safety Performance Measures and Targets

AMENDMENTS

Amendment I Resolution, Public Notice, Press Release

Ohio County Projects

- Upgrade I-70 to six lanes from Elm Grove/Triadelphia interchange to Cabela Drive.
Anticipated Year of Construction: 2036
Cost Estimate: \$98.8 million
- Add a new interchange between Cabela Drive and Elm Grove/Triadelphia Interchange
Anticipated Year of Construction: 2030
Cost Estimate: \$58.8 million

Marshall County Projects

- WV2, from the intersection of 6th Street to US 250, widen to five lanes for a two way left turn lane (TWLTL).
Anticipated Year of Construction: 2017
Plan Funds: \$0
TIP Project Cost: \$20.3 million
 - Upgrade WV2 to four lanes from 0.18 miles south of CR78 (MP 4.50) to 0.12 miles south of CR27 (MP 6.46)
Anticipated Year of Construction: 2030
Cost Estimate: \$59.5 million
 - Upgrade WV2 to four lanes from Wetzel County Line to 0.18 miles south of CR78 (MP 4.50).
Anticipated Year of Construction: 2030*
Cost Estimate: \$210 million
 - Radii improvements at the intersection of US250 and 1st Street/Jefferson Avenue in Moundsville.
Anticipated Year of Construction: 2017
Cost Estimate: \$783,000
 - Upgrade Rude Bridge (CR5) from one lane to two lanes (a carryover project).
Anticipated Year of Construction: 2017
Plan Funds: \$0
TIP Project Cost: \$2,300,000
- * Amended on July 26, 2018

Belmont County Fiscal Constraint

In Belmont County, based on the level of service analysis of the 2040 traffic assignment, three major projects are identified. These are:

CHAPTER 19

AIR QUALITY AND TRANSPORTATION CONFORMITY

The Wheeling Metropolitan Area, consisting of Belmont County in Ohio and Ohio and Marshall Counties in West Virginia, was designated as non-attainment of 1997 National Ambient Air Quality Standards (NAAQS) for Ozone and PM_{2.5} (fine particulate matter). The area was in violation of the 8-hour standard of 0.08 ppm for Ozone. For PM_{2.5}, the non-attainment was for the annual standard only. The PM_{2.5} annual standard is exceeded if the three year average of annual mean concentration of PM_{2.5} is greater than 15 micrograms per cubic meter.

These designations required Transportation Conformity under the Clean Air Act. The purpose is to ensure that the federally supported highway and transit projects/activities are consistent with (conform to) the state air quality implementation plan (SIP). Bel-O-Mar has made conformity determinations for the Long Range Plans (LRP) and the Transportation Improvement Programs (TIP) prepared after the year 2004.

Effective June, 2007, all three counties in the Bel-O-Mar region were re-designated as attainment for Ozone. However, transportation conformity determination was still required and made for the LRP and TIP. In April, 2012, EPA designated non-attainment areas based on the 2008 revised standard of 0.075 ppm. Bel-O-Mar areas were unclassified. In 2015, EPA again revised the Ozone Standard by lowering it to 0.070 ppm. Belomar's area was unclassified for the 2015 standards. In April, 2015, the 1997 Ozone NAAQS were revoked. As per EPA guidance, no further conformity determinations were needed for the 1997 Ozone NAAQS. It is also noted, based on the current area ambient monitoring, the area is in attainment of 2015 ozone standard of 0.070 ppm.

For the PM_{2.5}, the area was re-designated to attainment of the 1997 annual NAAQS in September, 2013. As a part of the attainment ruling, EPA also determined that for the purpose of transportation conformity, emissions from on road mobile sources are insignificant. This finding relieved both states of the obligation to comply with nonattainment-related planning requirements for PM_{2.5} pursuant to Part D of the Clean Air Act. As a result, emissions analysis is not required for PM_{2.5} transportation conformity. However, the conformity process, including interagency consultation and other conformity requirements are still to be satisfied. In addition, a project level hot-spot analysis is also potentially required.

The interagency consultation process initially started with a meeting on August 31, 2004 followed by another on August 31, 2005. Since then, consultations have been via conference calls and emails. The conference call for the FY2016 - FY2019 Transportation Improvement Program occurred on January 7, 2015. This was followed with additional discussions and it was decided that no Ozone conformity is required for the 1997 Ozone NAAQS.

On March 29, 2016, Belomar initiated the interagency consultation process, via an email, for the conformity of the Transportation Plan for 2040. There was a consensus that the PM_{2.5} conformity for the long range plan can be established based on qualitative regional conformity determination. The qualitative regional conformity is to include other requirements of the rule such as interagency consultation process, fiscal constraints, latest planning assumptions and public involvement. A qualitative conformity determination of the Transportation Plan was made by Belomar and affirmed jointly by FHWA and FTA on September 9, 2016.

This conformity determination is not affected by the new FHWA guidelines and the court decision of February, 2018. However, there is a need to add the emissions based conformity determination for the 1997 Ozone Standard for the conformity of the Transportation Plan for 2040 and the FY2018 – FY2021 Transportation Improvement Program (TIP).

On May 30, 2018, ODOT initiated an interagency conference call for the purpose of initiating and establishing the process for the Ozone conformity determination. It was decided to use the budgets for the Ozone precursors, previously published in the Federal Register, along with MOVES based emissions for the years 2018, 2020, 2030 and 2040. The 2018 emissions were required for the West Virginia portion only.

Emission budgets were developed by the OEPA for Belmont County and WVDEP for Ohio and Marshall Counties. These are part of the maintenance plan for the area and approved by USEPA. West Virginia budgets are based on MOBILE6.2 and Ohio's budgets are based on MOVES software.

An "Air Quality Analysis and Conformity Determination for Belmont, Ohio and Marshall Counties" document is prepared by Belomar. It includes "Air Quality Conformity Analysis – Technical Memo" prepared by ODOT. These documents include the detailed background and technical information and are included in Appendix K. The budget and emissions Table 19-1 is reproduced from the ODOT – Technical Memo.

The early public involvement for the development of the Long Range Transportation was through public notices that were published twice in the local newspapers. A list of stakeholders was prepared and input was solicited. The list of stakeholders is included as Appendix G. Public notices are shown on page 22-2. Public notices were also posted on the agency website and facebook page. Comments could be provided on website, via email, regular mail, or by face to face meetings. Goals and Objectives were also placed in local libraries located in the environmental justice target areas. Open houses were held for presenting the draft plan for review and comment. Announcements of open houses were made well in advance. All comments were responded to and included as Appendix H. Approved citizen participation plan is followed for the public participation.

For the Plan Amendment 1, a press release was issued and a public notice was published in the local newspapers. The hard copy and electronic version of the document was available for review and comments. Comments could be provided via email, USPS mail, in person or online.

No comments were received. The public notice and policy board resolution approving the amendment is included in the “Amendments” section of this document.

PM 2.5 Conformity

For the Transportation Plan for 2040, Bel-O-Mar initiated the interagency consultation process and followed the agreed upon process. All plan projects have been included in the emissions analysis and are conforming projects. As noted above early participation opportunities were provided for the public participation. Comment received was addressed and is included with the response in Appendix H. Most recent assumptions are used and recent trends are documented in this plan. The plan includes fiscally constraint projects and is fiscally constrained.

The hot spot analysis requirement is met for Ohio projects through the Ohio PM_{2.5} hot spot analysis addressed through the NEPA process. For West Virginia projects, no project will involve significant increase in diesel trucks and diesel buses and no project will even approach AADT (Annual Average Daily Traffic) of 125,000. Therefore, the Transportation Plan for 2040 has met the requirements of a PM_{2.5} qualitative conformity analysis.

Ozone Conformity

The conformity process utilized for the Ozone conformity was the outcome of a conference call on May 30, 2018. The budget test is used for the conformity determination. EPA approved budgets and MOVES based emissions are used. Table 19-1, used for the conformity determination, is reproduced from the ODOT Technical Memo, as per the Public Participation Plan. A public notice seeking comments was published in local newspapers. A press release was also issued for the public comment. The press release and public notice are included in Amendment 1.

**Table 19-1
Ozone Budgets and Emissions
(Tons/Day)**

Belmont Co. (OH)	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC	2.15	n/a	0.93	.54	.40
NOx	5.18	n/a	1.82	.83	.57
Marshall & Ohio Co. (WV)					
Marshall & Ohio Co. (WV)	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC	7.7 *	.63	.53	.44	.24
NOx	3.1	1.25	1.03	1.07	.43

* On July 11, 2018, USEPA published the revised budget for Ohio and Marshall Counties in the Federal Register, Vol. 83, No. 133. The revised VOC budget is 9.1 tons per day (tpd). This is significantly higher than the 7.7 tpd used for the conformity determination. Therefore, the budget test is also met with the revised (9.1 tpd) budget for Ohio and Marshall Counties.

Conformity Determination

A fiscally constrained 2040 Transportation Plan was prepared by the Belomar Regional Council in accordance with the provisions of MAP-21 and FAST ACT. The financial constraint determination is made by Belomar based on the project cost estimates and future revenue stream estimates provided by ODOT and WVDOT. All plan projects by anticipated year of completion were included in the emissions analysis.

Since the area has been redesignated as attainment/maintenance for ozone by USEPA and separate ozone budgets for the Ohio and West Virginia side have been established, the ozone conformity test is based on approved budgets. Conformity determination is made separately for Belmont County, Ohio and Ohio and Marshall Counties, West Virginia.

As per Table 19-1 for ozone in Belmont County, the VOC and NOx emissions for the analysis year 2020 are less than budgets for 2018. Also, the emissions for interim year 2030 and the horizon year 2040 are less than the budget for 2018. Therefore, the conformity test for ozone is met for Belmont County, Ohio.

For the Ohio and Marshall Counties in West Virginia, the emissions for the years 2018, 2020, and 2030 and the plan horizon year 2040 are less than the budgets for 2018. Since the emissions for both Ozone precursors VOC and Nox are less than the 2018 approved budgets, the conformity test is met.

Since the budget test for both Ozone precursors is met, the 2040 Transportation Plan is in conformity with the requirements of the CAAA, Ohio SIP and West Virginia SIP.

Transportation Improvement Program (TIP) for FY2018-FY2021 includes projects derived from the conforming plan. Only the analyzed plan projects and plan consistent exempt projects are included in this TIP. Therefore, the TIP for FY2018-FY2021 is in conformity with the requirement of the CAAA, Ohio SIP and West Virginia SIP.

The TIP and the long range transportation plan are financially constrained and this determination is made by Bel-O-Mar in cooperation with the WVDOT and ODOT.

APPENDIX K

Air Quality Analysis and Conformity Determination

AIR QUALITY ANALYSIS
AND
CONFORMITY DETERMINATION
FOR
BELMONT, OHIO AND MARSHALL COUNTIES

June, 2018

Prepared by:

**Bel-O-Mar Regional Council
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INTRODUCTION

As per the EPA's final rule published in the Federal Register Vol. 69, No. 126 on July 1, 2004, "Transportation Conformity is required under the Clean Air Act section 176(c) (42 U.S.C. 7506(c) to ensure that federally supported highway and transit project activities are consistent with ("Conform to") the purpose of the state air quality implementation plan (SIP). Conformity currently applies under EPA's rules to areas that are designated nonattainment or maintenance." Areas are designated "nonattainment" for violating the National Ambient Air Quality Standards (NAAQs). Final Rules published in the Federal Register Vol. 69, No. 84 on April 30, 2004 state "CAA definition of the nonattainment area that is defined in Section 107(d)(1)(A)(I) as an area that is violating the standard. If an area meets this definition, EPA is obligated to designate the area as nonattainment." The nonattainment areas can be redesignated as attainment/maintenance as per section 107(d)(3) of the Clean Air Act.

Nonattainment designations are based on violating the NAAQs for any one or more criteria pollutants. Six (6) common air pollutants that are harmful for our health and for which specific standards are established by the EPA, are Nitrogen Dioxide, Ozone, Carbon Monoxide, Sulfur Dioxide, Particulate Matter and Lead. The area is designated nonattainment for particulate matter (PM_{2.5}) and was designated nonattainment for Ozone. Effective June, 2007 all three counties have been redesignated as attainment for Ozone.

As per 1997 NAAQs, the Ozone standard was exceeded if the three year average of the 4th highest Ozone reading was greater than 0.08 ppm. This value is also referred to as "design value." Bel-O-Mar was designated as non-attainment under this 1997 8-hour standard. In 2008, the standard was lowered to 0.075 ppm. EPA further revised this to 0.070 ppm in October, 2015.

As part of the redesignation process, OEPA and WVDEP were required to submit a SIP revision including maintenance plan for their respective area. Both agencies were able to demonstrate that the area will continue to be in attainment of the 8-hour Ozone NAAQs. In doing so, emission budgets were established in the maintenance plan and were found to be adequate by USEPA. Emissions budget was developed using MOBILE 6.2. As a maintenance area, it is Bel-O-Mar's responsibility to make a conformity determination based on established budgets for ozone precursors NO_x and VOC.

West Virginia revised the Motor Vehicle Emissions budgets for Ozone precursors in 2011. The final (corrected) USEPA approved budgets were published on December 22, 2011 in the Federal Register Vol. 76, No. 246. These budgets are used for the ozone conformity for the Ohio and Marshall Counties. Belmont County budgets were first developed using MOBILE 6.2. The VOC and NO_x budgets were published in Federal Register Vol. 72, No. 94 on May 17, 2007. These budgets were replaced by the MOVES based budget published in Federal Register Vol. 78, No. 112 on June 11, 2013. These budgets are used for the Belmont County Ozone Conformity.

In April, 2015, the 1997 Ozone NAAQs were revoked and as per EPA guidance, conformity determination for 1997 Ozone NAAQs was not needed for the Wheeling Metropolitan Planning area. Thus, following the interagency consultation process, a qualitative conformity determination was made for the Long Range Plan for 2040 and the FY2018 - FY2021 TIP. However, the United States Court of Appeals for Washington, D.C. in the ruling issued on February 16, 2018, reversed EPA's decision, and emission analysis based conformity

determination is required again. As per an interagency conference call on May 30, 2018, it was decided that the emissions analysis based conformity of the 1997 Ozone NAAQs is needed for the previously adopted Long Range Plan and TIP. Thus, an emissions analysis based Ozone conformity determination for Belmont County, Ohio and Ohio and Marshall Counties in West Virginia is done. MOVES based emissions developed by ODOT for the Ohio and West Virginia portions are used for this conformity.

As per EPA's final rule 40 CFR Part 93 conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards. The metropolitan planning organization (MPO) is charged with the responsibility to demonstrate conformity. Thus as per Court of Appeals ruling and guidance from FHWA and EPA, the MPO is adding the emissions based transportation conformity to the existing conforming plan.

For the PM_{2.5}, the area was re-designated to attainment of the 1997 annual NAAQS in September, 2013. As a part of the attainment ruling, EPA also determined that for the purpose of transportation conformity, emissions from on road mobile sources are insignificant. This finding relieved both states of the obligation to comply with nonattainment-related planning requirements for PM_{2.5} pursuant to Part D of the Clean Air Act. As a result, emissions analysis is not required for PM_{2.5} transportation conformity. However, the conformity process, including interagency consultation and other conformity requirements are still to be satisfied. In addition, a project level hot-spot analysis is also potentially required.

It was determined that the PM_{2.5} conformity can be established based on qualitative regional conformity determination pursuant to 40 CFR §93.109(f). The qualitative regional conformity is to include other requirements of the rule such as interagency consultation process, fiscal constraints, latest planning assumptions and public involvement.

As per interagency consultation process, a qualitative conformity determination was done for the PM_{2.5}. The PM_{2.5} conformity is not affected by the court ruling. The emissions analysis based conformity is being done for Ozone precursors only.

Transportation Conformity Process

The regulatory requirements that govern this process, require that a locally relevant conformity process be developed through interagency consultation. An initial interagency meeting was held on August 31, 2004 in Marietta, Ohio to establish a process for addressing Ozone conformity. Another interagency meeting was held on August 31, 2005 in Parkersburg, West Virginia to address PM_{2.5} conformity issues. Since then, several meetings have been held via conference calls. The most recent interagency consultation was via a conference call on May 30, 2018.

The purpose of this interagency conference call was to establish an appropriate conformity process for the previously adopted Long Range Plan and TIP. A conformity process summary was prepared and sent for the interagency review. The process summary and associated emails are included in Appendix A. A qualitative conformity analysis was done for the Long Range Transportation Plan for 2040 and the FY2018 - FY2021 TIP. In the light of

Washington, D.C. Court of Appeals ruling on February 16, 2018, it is necessary to do a quantitative analysis including emissions analysis and approved budgets for Ozone precursors VOC and NOx. It was decided that USEPA published VOC and NOx budgets for the three counties will be used for the budget test. On-road emissions will be generated using the current Travel Demand Model and MOVES emissions. Emissions are to be generated for the following analysis years:

- 2018 - 1st year ¹
- 2020 - Interim year
- 2030 - Interim year
- 2040 - Long Range Plan horizon year

The conformity determination is done separately for Belmont County, Ohio and Ohio and Marshall Counties in West Virginia. The Ozone conformity is based on estimated plan emissions being less than the established budgets.

In developing emissions a Travel Demand Model² (TDM) and MOVES software is used. The TDM inputs the roadway network and land use data for the relevant year. All roadways classified collectors and up are included in this network. The TDM outputs vehicle miles of travel (VMT). The VMT and MOVES emission factors for Ozone, are used to generate emissions. The latest available data or extrapolation from the most recent available data for the base year (2010) is used. A typical summer day is used. The horizon year of the transportation plan is 2040. The Ozone budget year is 2018. Emissions are generated for the years 2018, 2020, 2030, and 2040. The Ohio portion emissions for 2018 are not generated by ODOT for the Ohio MPOs in EPA Region 5. The year 2040 is the plan horizon. For the West Virginia portion, 2018 is the first analysis year, while 2020 and 2030 are the interim years. On the Ohio side, 2020 is the first analysis year and 2030 is the interim year. In forecasting demographics and land use variables for the analysis years and LRP horizon year, the latest planning assumptions and available data are used.

Latest Planning Assumptions

The base year for the Travel Demand Model (TDM) was updated from the year 2002 to 2010. The 2010 decennial census block level data was aggregated for subareas known as Traffic Analysis Zones (TAZs). Population and households were used for benchmarking other variables used for the TDM. The variables used are households, school enrollment, number of vehicles and employment. Most recent available employment data from the Bureau of Labor Statistics was used for the employment. School enrollment was obtained from the Department of Education of each State. Number of vehicles was obtained using the rate for number of vehicles available for household.

¹ 2018 Emissions are generated for the West Virginia portion only, as for Ohio portion, they are not required.

² The TDM is developed, validated and maintained by ODOT with MPO input and assistance.

Latest available employment projections, acquired from the Woods and Poole Economic, Inc., were used for the future employment. Employment at TAZ Level was generated by disaggregating the countywide employment projection.

Transit trips in the area are significantly low in relation to the auto trips. On an average, there are less than 2,500 transit trips per day. Thus, as agreed upon by the participating agencies, model split was not used.

The area has experienced population loss in the past. As per the 2010 Census, the region lost 3% of the population. However, the percentage population lost has continually decreased since 1990, and this is projected to continue with the estimated regional population decreasing by just 1.5% by the year 2040. Due to this relatively small change, the number of households, vehicle registration and school enrollment are expected to remain nearly the same as 2010 values. With many new businesses and developments expected in the area, and the continued growth of the natural gas industry, the employment growth between 2010 and 2040 is expected to be significant. Even with the slight loss in population, the number of people employed is expected to increase by 27% by the year 2040.

Land Use Data

Travel analysis zones (551 in the 3-county area) and external roadway “stations” (32) are the basic geographic units for estimating travel patterns. Socioeconomic data used to forecast future travel patterns include population, households, school enrollment, vehicle registrations, and employment by category and location. Sources for the 2010 data include the 2010 Census (primarily SF1 block data) and ES202 employment data. All data sources were geocoded and aggregated to the zone level. Future year data for each variable was projected through various methods. A table showing base and horizon year variables is included as Table 3 in Appendix B.

The area is experiencing significant activity related to the extraction of natural gas from the shale formations. The employment outlook for the future is very good.

A survey of local elected and appointed officials and economic development agencies in the region was conducted to determine areas of future growth and known gain/loss of jobs and housing. Survey results were incorporated in developing the 2040 zonal statistics. The zonal assignment was based on the developmental potential of each TAZ, planned and committed developments and local knowledge. In assigning growth to TAZs, it was assumed that new sites with developed infrastructure or in close proximity to one, will have a larger share of future growth. Given the topography of the region, it is assumed generally that new economic development will mostly occur in one east-west corridor (I-70/US40) and one north-south corridor (Ohio Route 7 and US250/WV Route 2 along the Ohio River). In Belmont County, however, additional development is expected along SR331 and in areas surrounding the urban core. Due to a scarcity of developable land in Ohio County, development will occur on sites that are generally flat and can be adequately serviced. In addition, over time, generally flat land in the valley will selectively go through planned land use changes to optimize economic development. The population and employment projections prepared by the Woods and Poole Economics, Inc. are used. Countywide employment projection was disaggregated to traffic analysis zone level.

Travel Demand Model

The TDM covers all three MPO counties and is maintained by ODOT. It was validated based on 2010 variables and traffic counts. Since emissions analysis was not required, forecasted volumes and VMT were generated for the horizon year (2040) only. Digital roadway network for each of the four analysis years, used for emissions analysis, are prepared and used now. Trip generation figures, with some exceptions, are assumed to change linearly between 2010 and 2040. All plan projects are included based on the assigned analysis year. The list of these projects is included below. Additional TDM details are provided in the Technical Memorandum prepared by ODOT and included as Appendix B.

Highway Project Recommendations

Belmont County

- | | |
|-----------------------------------------------------------------------------------------------|--------------------|
| Upgrade I-70 to six lanes from the SR9 Interchange to Mall Road Interchange. | Analysis Year 2030 |
| Construct a new Commons Mall Road from US40 South to Mall Rd. and Banfield Rd. Intersections. | Analysis Year 2018 |

Ohio County

- | | |
|-----------------------------------------------------------------------------------|--------------------|
| Upgrade I-70 to six lanes from Elm Grove/Triadelphia Interchange to Cabela Drive. | Analysis Year 2040 |
|-----------------------------------------------------------------------------------|--------------------|

Marshall County

- | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Upgrade WV2 to add a fifth lane (TWLTL) from 6 th Street in Moundsville (M.P. 19.50) to US250 Intersection (M.P. 20.35) | Analysis Year 2020 |
| Upgrade WV2 from Kent (M.P. 4.5) to Franklin (M.P. 6.5). | Analysis Year 2030 |
| Upgrade WV2 from Wetzel County Line (M.P. 00) to Kent (M.P. 4.5) | Analysis Year 2030 |

Emissions Factor Model

ODOT utilizes USEPA's MOVES2014a emissions modeling software. Emissions generated for this conformity analysis are generated through MOVES2014a. Emissions are generated at county level. The Technical Memorandum prepared by ODOT and included as Appendix B, includes settings and inputs used to run this model. The MOVES emissions used for the conformity are shown in Table 1.

Public Involvement

An amendment of the Long Range Transportation Plan was needed to include the emissions analysis based conformity determination. The Long Range Transportation Plan amendment procedures for public participation from the approved Public Participation Plan were followed. This document was prepared in accordance with the procedures agreed upon by the agencies party to the interagency consultation process. All agencies were provided opportunities to review and comment. The document was available for public review after the interagency review.

A required press release was issued. In addition, a public notice was also published in local newspapers. This document was available in hard copy and electronic version for comments. Comments could be provided 24/7 on the website or via Facebook. Comments could also be provided via USPS mail, email, online, and in person. A copy of the public notice is included here. No comments were received.

Wheeling Intelligencer
Wheeling News Register
July 9, 2018

Times Leader
July 9, 2018

PUBLIC NOTICE	PUBLIC NOTICE
<p>Pursuant to guidance from the FHWA, Belomar Regional Council is amending the approved Transportation Plan for 2040 to include: 1) Emissions based air quality conformity determination 2) Statewide safety performance targets of Ohio and West Virginia and 3) Revised analysis year of the WV2 upgrade to 4 lanes project from Wetzel County line to near CR78 in Marshall County.</p> <p>Pursuant to the recent FHWA guidelines, emissions analysis-based conformity for the 1997 National Ambient Air Quality Standards (NAAQs) is needed. An "Air Quality Analysis and Conformity Determination" document is prepared and available for comments.</p> <p>As per the requirements of the Fixing America's Surface Transportation Act (FAST ACT), State DOTs and Metropolitan Planning Organizations are required to adopt safety targets. Safety targets include fatalities, serious injuries and crash rates. These were approved by the policy board on February 22, 2018. Belomar is amending the transportation plan to include the approved safety targets for both states.</p> <p>Since the construction of WV2 upgrade to 4 lanes project at Marshall-Wetzel county line has been moved up, the analysis year of the project for air quality conformity will be revised from 2040 to 2030.</p> <p>The proposed addendum to the Transportation Plan for 2040 includes the safety targets and related narrative and a new Air Quality conformity determination. These documents are available at http://www.belomar.org/proposed-transportation-plan-for-2040-amendment for your input and comments.</p> <p>Written comments can be submitted online at Belomar's website, emailed to belomar@belomar.org, or mailed to:</p> <p style="text-align: center;">Transportation Director Belomar Regional Council P.O. Box 2086, Wheeling, WV 26003</p> <p>Comments must be received by July 25, 2018.</p>	<p>Pursuant to guidance from the FHWA, Belomar Regional Council is amending the approved Transportation Plan for 2040 to include: 1) Emissions based air quality conformity determination 2) Statewide safety performance targets of Ohio and West Virginia and 3) Revised analysis year of the WV2 upgrade to 4 lanes project from Wetzel County line to near CR78 in Marshall County.</p> <p>Pursuant to the recent FHWA guidelines, emissions analysis-based conformity for the 1997 National Ambient Air Quality Standards (NAAQs) is needed. An "Air Quality Analysis and Conformity Determination" document is prepared and available for comments.</p> <p>As per the requirements of the Fixing America's Surface Transportation Act (FAST ACT), State DOTs and Metropolitan Planning Organizations are required to adopt safety targets. Safety targets include fatalities, serious injuries and crash rates. These were approved by the policy board on February 22, 2018. Belomar is amending the transportation plan to include the approved safety targets for both states.</p> <p>Since the construction of WV2 upgrade to 4 lanes project at Marshall-Wetzel county line has been moved up, the analysis year of the project for air quality conformity will be revised from 2040 to 2030.</p> <p>The proposed addendum to the Transportation Plan for 2040 includes the safety targets and related narrative and a new Air Quality conformity determination. These documents are available at http://www.belomar.org/proposed-transportation-plan-for-2040-amendment for your input and comments.</p> <p>Written comments can be submitted online at Belomar's website, emailed to belomar@belomar.org, or mailed to:</p> <p style="text-align: center;">Transportation Director Belomar Regional Council P.O. Box 2086, Wheeling, WV 26003</p> <p>Comments must be received by July 25, 2018.</p>

Transportation Conformity Test

The ozone conformity tests are based on the data in Table 1. In this table, the 2018 budgets are USEPA approved budgets and emissions are estimated using a Travel Demand Model, maintained and run by ODOT and MOVES2014a emissions modeling software was also run by ODOT. The table is reproduced here from the report “Bel-O-Mar Region Air Quality Conformity Analysis - Technical Memo” prepared by ODOT in June 2018. This report is included as Appendix B. West Virginia Department of Environmental Protection submitted revised budget for Ozone. The revised (corrected) Ozone budgets for Ohio and Marshall counties were published by USEPA in the Federal Register on December 22, 2011 (Federal Register Vol. 76, No. 246). Revised budgets are used. West Virginia budgets are MOBILE based. ODOT prepared MOVES based budget in the year 2013. These were approved by USEPA on June 11, 2013 (Federal Register Vol. 78, No. 112). For Belmont County, these budgets are used. The USEPA approved budgets and MOVES based emissions are shown in Table 1.

**Table 1
Ozone Budgets and Emissions
(Tons/Day)**

Belmont Co. (OH)	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC	2.15	n/a	0.93	.54	.40
NOx	5.18	n/a	1.82	.83	.57
Marshall & Ohio Co. (WV)					
2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions	
VOC	7.7 *	.63	.53	.44	.24
NOx	3.1	1.25	1.03	1.07	.43

Conformity Determination

A fiscally constrained 2040 Transportation Plan was prepared by the Bel-O-Mar Regional Council in accordance with the provisions of MAP-21 and FAST ACT. The financial constraint determination is made by Bel-O-Mar based on the project cost estimates and future revenue stream estimates provided by ODOT and WVDOT. All plan projects by anticipated year of completion were included in the emissions analysis.

* On July 11, 2018, USEPA published the revised budget for Ohio and Marshall Counties in the Federal Register, Vol. 83, No. 133. The revised VOC budget is 9.1 tons per day (tpd). This is significantly higher than the 7.7 tpd used for the conformity determination. Therefore, the budget test is also met with the revised (9.1 tpd) budget for Ohio and Marshall Counties.

Since the area has been redesignated as attainment/maintenance for ozone by USEPA and separate ozone budgets for the Ohio and West Virginia side have been established, the ozone conformity test is based on approved budgets. Conformity determination is made separately for Belmont County, Ohio and Ohio and Marshall Counties, West Virginia.

As per Table 1 for ozone in Belmont County, the VOC and NO_x emissions for the analysis year 2020 are less than budgets for 2018. Also the emissions for interim year 2030 and the horizon year 2040 are less than the budget for 2018. Therefore, the conformity test for ozone is met for Belmont County, Ohio.

For the Ohio and Marshall Counties in West Virginia, the emissions for the year 2018, interim years 2020 and 2030 and the plan horizon year 2040 are less than the budgets for 2018. Since the emissions for both Ozone precursors VOC and Nox are less than the 2018 approved budgets, the conformity test is met.

Since the budget test for both Ozone precursors is met, the 2040 Transportation Plan is in conformity with the requirements of the CAAA, Ohio SIP and West Virginia SIP.

Transportation Improvement Program (TIP) for FY2018-FY2021 includes projects derived from the conforming plan. Only the analyzed plan projects and plan consistent exempt projects are included in this TIP. Therefore, the TIP for FY2018-FY2021 is in conformity with the requirement of the CAAA, Ohio SIP and West Virginia SIP.

The TIP and the long range transportation plan are financially constrained and this determination is made by Bel-O-Mar in cooperation with the WVDOT and ODOT.

APPENDIX A

Interagency Consultation

EXHIBIT A

Interagency Consultation

After a conference call on May 30, 2018 as per interagency consultation a “Wheeling/Bridgeport 2040 Transportation Plan Conformity Analysis Summary” was prepared based on the template provided by ODOT. This summary outlined the process and timeline for the conformity. This summary document is included here. The conformity summary was emailed for consensus on the process and timeline. The consensus emails received are presented below.

From: Fewell, David R
<David.R.Fewell@wv.gov>
Sent: Wednesday, June 06, 2018 3:53 PM
To: Rakesh Sharma
Subject: FW: Bel-O-Mar 1997 Ozone Conformity
- Interagency Consultation
Attachments: Wheeling conformity sum_May 2018.doc

Rakesh,

The WVDEP concurs.

Thanks,

David Fewell
304-926-0499 ext.1255

From: Toole, Laura (FHWA)
<laura.toole@dot.gov>
Sent: Wednesday, June 06, 2018 1:05 PM

To: Maietta, Anthony;
Michael.Maleski@epa.ohio.gov; Rakesh Sharma; Dave.Moore1@dot.ohio.gov; Keller,
Perry J; Oesterling, Leigh (FHWA); Inglis-Smith, Chandra (FHWA); McKenzie,
Stewart (FTA); David Fewell; Becoat, gregory; DeAngelis, Michele (FTA)
Cc: Sam.Granato@dot.ohio.gov;
Nino.Brunello@dot.ohio.gov
Subject: RE: Bel-O-Mar 1997 Ozone Conformity
- Interagency Consultation

The FHWA Ohio Division concurs with the Wheeling/Bridgeport 2040 Transportation
Plan Conformity Analysis Summary.

Sincerely,
Laura

From: Maietta, Anthony [mailto:maietta.anthony@epa.gov]
Sent: Wednesday, June 6, 2018 11:59 AM
To: Michael.Maleski@epa.ohio.gov; Rakesh Sharma <rsharma@belomar.org>; Toole,
Laura (FHWA) <laura.toole@dot.gov>; Dave.Moore1@dot.ohio.gov; Keller, Perry J
<Perry.J.Keller@wv.gov>; Oesterling, Leigh (FHWA) <Leigh.Oesterling@dot.gov>;
Inglis-Smith, Chandra (FHWA) <chandra.inglis-smith@dot.gov>; McKenzie, Stewart
(FTA) <Stewart.Mckenzie@dot.gov>; David Fewell <david.r.fewell@wv.gov>; Becoat,
gregory <becoat.gregory@epa.gov>; DeAngelis, Michele (FTA)
<Michele.DeAngelis@dot.gov>
Cc: Sam.Granato@dot.ohio.gov; Nino.Brunello@dot.ohio.gov
Subject: RE: Bel-O-Mar 1997 Ozone Conformity - Interagency Consultation

EPA Region 5 concurs as well.

Thanks,

-Tony

Anthony Maietta
EPA Region 5
(312) 353-8777
maietta.anthony@epa.gov

From: Michael.Maleski@epa.ohio.gov [mailto:Michael.Maleski@epa.ohio.gov]
Sent: Wednesday, June 06, 2018 9:59 AM
To: Rakesh Sharma <rsharma@belomar.org>; Toole, Laura (FHWA)
<laura.toole@dot.gov>; Dave.Moore1@dot.ohio.gov; Keller, Perry J
<Perry.J.Keller@wv.gov>; leigh.oesterling@dot.gov; Maietta, Anthony
<maietta.anthony@epa.gov>; Inglis-Smith, Chandra (FHWA)
<chandra.inglis-smith@dot.gov>; McKenzie, Stewart (FTA)
<Stewart.Mckenzie@dot.gov>; David Fewell <david.r.fewell@wv.gov>; Becoat,
gregory <becoat.gregory@epa.gov>; DeAngelis, Michele (FTA)
<Michele.DeAngelis@dot.gov>
Cc: Sam.Granato@dot.ohio.gov; Nino.Brunello@dot.ohio.gov
Subject: RE: Bel-O-Mar 1997 Ozone Conformity - Interagency Consultation

All,

Ohio EPA concurs with the Wheeling/Bridgeport 2040 Transportation Plan
Conformity Analysis Summary.

Thanks,

Mike Maleski

Ohio EPA - Division of Air Pollution Control

From: Rakesh Sharma <rsharma@belomar.org>

Sent: Monday, June 04, 2018 3:07 PM

To: Toole, Laura (FHWA) <laura.toole@dot.gov>; Moore, David

<Dave.Moore1@dot.ohio.gov>; Keller, Perry J <Perry.J.Keller@wv.gov>; Oesterling, Leigh <leigh.oesterling@dot.gov>; Maleski, Michael <Michael.Maleski@epa.ohio.gov>; Maietta.Anthony@epa.gov; Inglis-Smith, Chandra (FHWA) <chandra.inglis-smith@dot.gov>; McKenzie, Stewart (FTA) <Stewart.Mckenzie@dot.gov>; Fewell, David R <David.R.Fewell@wv.gov>; becoat.gregory@epa.gov; DeAngelis, Michele (FTA) <Michele.DeAngelis@dot.gov>
Cc: Granato, Samuel <Sam.Granato@dot.ohio.gov>; Brunello, Antonino <Nino.Brunello@dot.ohio.gov>
Subject: RE: Bel-O-Mar 1997 Ozone Conformity - Interagency Consultation

All,

I have included David Fewell (WVDEP) and Gregory Becoat (EPA) and Michele DeAngelis (FTA).

Rakesh Sharma

From: Toole, Laura (FHWA) <laura.toole@dot.gov>
Sent: Monday, June 04, 2018 2:49 PM
To: Dave.Moore1@dot.ohio.gov; Keller, Perry J <Perry.J.Keller@wv.gov>; Oesterling, Leigh (FHWA) <Leigh.Oesterling@dot.gov>; Michael.Maleski@epa.ohio.gov; Maietta.Anthony@epa.gov; Inglis-Smith, Chandra (FHWA) <chandra.inglis-smith@dot.gov>; McKenzie, Stewart (FTA) <Stewart.Mckenzie@dot.gov>
Cc: Rakesh Sharma <rsharma@belomar.org>; Sam.Granato@dot.ohio.gov; Nino.Brunello@dot.ohio.gov
Subject: RE: Bel-O-Mar 1997 Ozone Conformity - Interagency Consultation

All,

I am including Steward McKenzie, FTA Region V, in this email.

Sincerely,

Laura

From: Dave.Moore1@dot.ohio.gov [mailto:Dave.Moore1@dot.ohio.gov]

Sent: Monday, June 4, 2018 2:29 PM

To: Keller, Perry J <Perry.J.Keller@wv.gov>; Oesterling, Leigh (FHWA)

<Leigh.Oesterling@dot.gov>; Toole, Laura (FHWA) <laura.toole@dot.gov>;

Michael.Maleski@epa.ohio.gov; Maietta.Anthony@epa.gov; Inglis-Smith, Chandra
(FHWA) <chandra.inglis-smith@dot.gov>

Cc: rsharma@belomar.org; Sam.Granato@dot.ohio.gov; Nino.Brunello@dot.ohio.gov

Subject: Bel-O-Mar 1997 Ozone Conformity - Interagency Consultation

All,

See attached Bel-O-Mar Conformity Summary – Interagency Consultation documentation. Bel-O-Mar is initiating a new 1997 Ozone Standard 2040 Transportation Plan and 2018-2021 TIP transportation conformity determination. This documentation summarizes the conformity criteria, procedures, and schedules and SIP mobile budget tests by which Bel-O-Mar proposed to advance its conformity demonstration.

Please forward this documentation to WV interagency planning partner agencies.

Please review this document and respond with interagency consultation comments and/or concurrence with the procedures TMACOG is proposing.

Thanks

DM

Did You Know: Children of parents who talk to their teens about drugs are

up to 50% less likely to use. Start the conversation:

StartTalking.Ohio.Gov

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the

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EXHIBIT B

Wheeling/Bridgeport 2040 Transportation Plan Conformity Analysis Summary

The Wheeling MPO (Wheeling WV, – Bridgeport, OH urbanized area) is initiating a new conformity analysis/determination for its existing 2040 Transportation Plan and 2018 – 2021 Transportation Improvement Program. This new conformity process is in response to FHWA’s April 23, 2018 guidance requiring conformity analyses for “orphaned” US EPA 1997 Ozone standard areas.

Interagency consultation topics

- **Latest planning assumptions** – The base year for the Travel Demand Model (TDM) was updated from the year 2002 to 2010. The 2010 decennial census block level data was aggregated for subareas known as Traffic Analysis Zones (TAZs). Population and households were used for benchmarking other variables used for the TDM. The variables used are households, school enrollment, number of vehicles and employment. Most recent available employment data from the Bureau of Labor Statistics was used for the employment. School enrollment was obtained from the Department of Education of each State. Number of vehicles was obtained by using the rate for number of vehicles available per household.

Latest available employment projections, acquired from the Woods and Poole Economic, Inc., were used for the future employment. Employment at TAZ Level was generated by disaggregating the countywide projected employment.

Transit trips in the area are significantly low in relation to the auto trips. On an average, there are less than 2,500 transit trips per day. Thus, as agreed upon by the participating agencies, model split was not used.

The area has experienced population loss in the past. As per the 2010 Census, the region lost 3% of the population. However, the percentage loss has continually decreased since 1990, and is projected to continue with the estimated regional population decreasing by just 1.5% by the year 2040. Due to this relatively small change, the number of households, vehicle registration and school enrollment are expected to remain nearly the same as 2010 values. With many new businesses and developments expected in the area, and the continued growth of the natural gas industry, the employment growth between 2010 and 2040 is expected to be significant. Even with the slight loss in population, the number of people employed is expected to increase by 27% by 2040.

- **Latest emission modeling**
 - Conformity analyses will utilize MOVES2014a
- Conformity tests – 1997 Ozone SIP budgets tests
- **Analyzed, regionally significant projects list –**

Ohio County:

Upgrade I-70 to six lanes from Elm Grove/Triadelphia Interchange to Cabela Drive
Analysis Year 2040

Marshall County:

Upgrade WV2 to add a fifth lane (TWLTL) from 6th Street in Moundsville (M.P. 19.50) to US250 intersection (M.P. 20.35)

Analysis Year 2020

Upgrade WV2 from Kent (M.P. 4.5) to Franklin (M.P. 6.5)

Analysis Year 2030

Upgrade WV2 from Wetzel County Line (M.P. 00) to Kent (M.P. 4.5)

Analysis Year 2030

Belmont County:

Upgrade I-70 to six lanes from the SR9 Interchange to Mall Road Interchange.

Analysis Year 2030

Construct a new Commons Mall Crossing Road from US40 South to Mall Rd and Banfield Rd Intersections.

Analysis Year 2018

- **Conformity Analysis/Determination schedule**

- AQ conformity runs – Received by June 27, 2018 (ODOT/Belomar)
- Final Bel-O-Mar Conformity documentation recording emissions analysis methodology and results. – By July 3, 2018 (Belomar)
- Public Involvement effort to review conformity results – Commences on July 10th and ends on July 25, 2018 (Public Notice, Webpage and Facebook postings and email comments received via email, on webpage 24/7, thru Facebook 24/7, onsite and thru regular mail)
- Bel-O-Mar Transportation Plan/2018 – 2021 TIP Conformity determination – July 26, 2018 presented for board action.

8-Hour Ozone

Attainment/SIP status:

- 1997 8-Hour Ozone Standard Maintenance Area –
- MOVES Based Ohio SIP budgets - [June 11, 2013](#) - 78 FR 34903
- Revised West Virginia MOBILE budgets December 22, 2011 - 76 FR 79540

Geography:

- Belmont County, Ohio
- Marshall and Ohio Counties, WV

Conformity Tests:

- 8-Hour SIP budget tests of Bel-O-Mar 2040 T-Plan and 2018 – 2021 TIP analysis year networks

Analysis Years:

- 2018 - 1st analysis year
- 2020 - Interim year
- 2030 - Interim year
- 2040 - Transportation Plan horizon year

1997 8-Hour Ozone -Tons/Day					
OH	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC	2.15				
NOx	5.18				
WV	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC	7.7				
NOx	3.1				

APPENDIX B

**Air Quality Conformity Analysis - Technical Memo
Ohio DOT, Modeling & Forecasting Section
June 2018**

APPENDIX B

Belomar Regional Council Air Quality Conformity Analysis - Technical Memo Ohio DOT, Modeling & Forecasting Section June 2018

Wheeling Area Air Quality Analysis

States of Ohio and West Virginia

The Wheeling MPO (Wheeling WV, – Bridgeport, OH urbanized area) is initiating a new conformity analysis/determination for its existing 2040 Transportation Plan and 2018 – 2021 Transportation Improvement Program. This new conformity process is in response to FHWA’s April 23, 2018 guidance requiring conformity analyses for “orphaned” US EPA 1997 Ozone standard areas.

Table 2.1 summarizes the summertime daily HC and NOX emissions estimates for all three counties for years 2018, 2020, 2030, and 2040. Table 2.2 shows the regional total emissions. The comparison to regionwide budget figures is shown below in Table 1.

Figure 1 –Area Analyzed

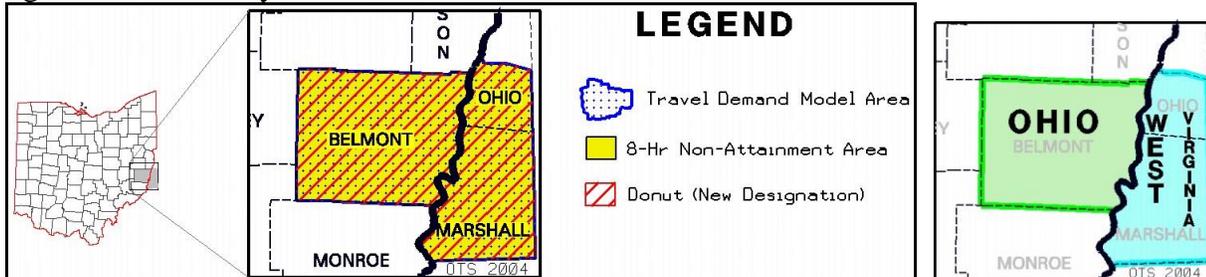


Table 1						
Belmont Co. (OH)	2010 Baseline	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC		2.15	n/a	0.93	.54	.40
NOx		5.18	n/a	1.82	.83	.57
Marshall & Ohio Co. (WV)	2010 Baseline	2018 Budget	2018 Emissions	2020 Emissions	2030 Emissions	2040 Emissions
VOC		7.7	.63	.53	.44	.24
NOx		3.1	1.25	1.03	1.07	.43

Table 2.1 – HC and NOX Summer Emissions by County

Year	Belmont County OH		Marshall County WV		Ohio County WV		WV Total	
	HC	NOX	HC	NOX	HC	NOX	HC	NOX
2018	n/a	n/a	0.22	0.43	0.41	0.82	0.63	1.25
2020	0.93	1.82	0.19	0.35	0.34	0.68	0.53	1.03
2030	0.54	0.83	0.15	0.36	0.29	0.70	0.44	1.07
2040	0.40	0.57	0.08	0.15	0.16	0.28	0.24	0.43

Note: Emissions are expressed in tons per day

Table 2.2 Three-County Region Total Emissions

Year	HC	NOX
2018	n/a	n/a
2020	1.46	2.85
2030	0.98	1.90
2040	0.64	1.00

Note: Emissions are expressed in tons per day

Travel Demand Model

A travel demand model (TDM) is the traditional forecasting tool used to examine potential changes in future travel patterns. The digital road networks within them include all planned federal-aid projects as well as any regionally significant projects found in the TIP and LRTP expected to be open for traffic by the end of each respective analysis year. All projects identified in the LRTP having an impact on travel time and/or vehicle carrying capacity regardless of funding source were included in the air quality analysis. Trip generation figures by zone, with some exceptions, are assumed to change linearly with time between 2010 and the Plan Horizon year of 2040.

The Wheeling area travel demand model network covers about 1500 miles of streets and highways in the 3-county metro area and has recently been reconstructed from digital e-911 roadway centerline files from Belmont County and the state of West Virginia’s SAMB program, and most recently validated to observed traffic volumes for the year of 2010. The Long Range Plan project listings were used to create digital networks for the Years 2018, 2020, 2030 and 2040. Land use data comes from the Census, ES202 employment reporting, and local vehicle registrations. A trip generation model was borrowed from another urban area and adjusted as needed for local land use data. The hourly distribution of trips by trip purpose and direction are constrained to match the hourly distribution of traffic counts. Trip distribution also begins with a trip-length distribution by purpose borrowed from another urban area and adjusted to ensure modeled VMT matched HPMS estimates of VMT within 1% in the model base year of 2010.

The modeling software program utilizes hourly saturation flow rates that are calculated based on road inventory data, roadway type, and the Highway Capacity Manual (HCM). Coded speeds by street segment are a function of road type and posted speed limits and are based on the Ohio statewide travel time study conducted in 2000 (available on the web at <http://www.dot.state.oh.us/urban/data/statewid/report.doc>) using the “run time” version of speeds without intersection delays. The modeling software program internally estimates additional travel times for vehicles that stop for traffic control (stop signs and red lights) based on HCM methods and modeled traffic patterns. A more complete description of the modeling procedures is available at <http://ajhassoc.com/> . (This is also the first working travel model in the country to make use of travel time reliability to estimate travel routes, as described in the Transportation Research Record at <https://trrjournalonline.trb.org/doi/pdf/10.3141/2302-20> .)

Land Use / Socio-Economic Data

Data used to forecast future travel patterns include households, population, school enrollment, vehicle ownership, labor force participation, and employment by industry category and location. Sources for year 2010 data include the 2000 Census (primarily block-level data, aggregated to 551 zones), QCEW (U.S. BLS) employment data from state-based employment agencies, and school enrollment information from the US Department of Education. Table 3 below provides a summary of forecasted growth in metro area population and employment. The land use forecasts for the three-county area (including sources and rate of change over time) are documented in the latest update to the Long-Range Transportation Plan prepared by Bel-O-Mar staff (Table 5-1 at <http://www.belomar.org/trans/lrp/> , which is copied as Table 3 below.

Table 3 – Summary of Key Metro Area Land Use and Forecasted Growth Assumptions

	2010	2040 Projected
Population	147,950	145,665
Households	61,462	61,590
Vehicle registrations	104,317	104,789
Employment	79,608	101,047
K-8 School Enrollment	15,105	15,012
High School Enrollment	7,617	7,206
Post Secondary/College	10,406	9,762

Table 4 – Forecasted daily vehicle-miles of travel (VMT)

County	Travel Model VMT by County			
	Yr 2018	Yr 2020	Yr 2030	Yr 2040
Ohio	1,463,000	1,501,000	1,668,000	1,951,000
Marshall	812,000	829,000	910,000	1,057,000
Belmont	2,582,000	2,844,000	3,154,000	3,648,000
Total	4,857,000	5,174,000	5,732,000	6,656,000

Emission Factors

The U.S. EPA’s emissions model MOVES2014a was used to develop emission factors for applicable years for both VOCs and NOX. The input files contains local parameters, developed through consultation with OEPA, for temperature, humidity, vehicle inspection and maintenance programs, and fuel characteristics. Total emissions were computed as described in the CMAQ report prepared by ODOT staff and available on the World Wide Web at http://www.dot.state.oh.us/Divisions/Planning/SPR/ModelForecastingUnit/Documents/cmaqr6_revised_jan_2012.pdf. (The network format used is as described in Appendix B of the report.) Unless cited otherwise in this report, U.S. EPA default values are utilized. For the three-county Wheeling metro area, this includes the distribution of vehicles by age and type by functional class.

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

Table 3 – MOVES Inputs

RunSpec Parameter Settings	
MOVES Version	MOVES2010A
Scale	Custom Domain
MOVES Modeling Technique	Emission Factor Method Rates per Profile (grams/vehicle) Rates per Distance (grams/mile) Rates per Vehicle (grams/vehicle)
Time Span	Time Aggregation: Hour 1 Month representing average summer temperatures All hours of day selected, 16 speed bins, Weekdays only
Geographic Bounds	Belmont county OH, Ohio and Marshall counties WV
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 _x , NO, NO ₂ , Total Energy Consumption
Strategies	None
General Output	Units = grams, joules and miles
Output Emissions	Time = hour, Location = custom area, on-road emission rates by road type and source use type.
Advance Performance	None
County Data Manager Sources	
Source Type Population	Combination of local and default data Local data (OH&WV) from motor vehicle registration Default data used for source types 41, 51, 54, 61, and 62 Future year growth rate MPO model Household growth rate.

Vehicle Type VMT	Combination of local and default data HPMSVTypeYear VMT = daily VMT from travel demand model, monthVMTFraction = default dayVMTFraction=default, hourVMTFraction=local
I/M Program	None
Fuel Formulation	Default
Fuel Supply	Default
Metereology Data	Local data obtained from NOAA National Climatic Data Center. Data will consist of monthly high and low temperatures and daily relative humidity for 2009.
Ramp Fraction	Using the base year travel demand model for VHT fractions.
Road Type Distribution	Use ODOT and WVDOH county summary VMT categorized by federal functional classes
Age Distribution	Combination of local and default data. Local data (2010) ODOT from motor vehicle registration Default data used for source types 41, 51, 54, 61, and 62 The same age distribution will be used for all analysis years
Average Speed Distribution	Default
Alternative Fuel Type	Default

TEMPERATURE AND RELATIVE HUMIDITY

The single season approach for temperature and relative humidity uses weather data collected by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). The data used in this report, taken from the Wheeling Airport collection center, is representative of 12 months in 2009. Data entered into a spreadsheet provided by U.S. EPA converted the Mobile6 to get the correct data for the MOVES model. Table 4 below contains the average annual hourly temperatures and relative humidity distribution profiles used for the Belomar region.

**Table 4
AVERAGE TEMPERATURE AND RELATIVE HUMIDITY DATA**

Time of Day	Average Temperature	Average Relative Humidity (%)
Midnight	47.2	79.7
1 AM	46.1	67.1
2 AM	45.2	80.7
3 AM	44.6	82.9
4 AM	44.1	83.8
5 AM	43.6	84.1
6 AM	43.1	82.6
7 AM	43.5	79.6
8 AM	45.9	74.8
9 AM	49.6	70.1

10 AM	53.5	65.7
11 AM	56.8	62.0
12 PM	59.7	59.8
1 PM	61.3	58.2
2 PM	61.9	57.4
3 PM	62.0	57.3
4 PM	61.6	58.3
5 PM	60.5	61.2
6 PM	58.6	65.3
7 PM	56.2	69.2
8 PM	53.7	66.1
9 PM	51.6	74.3
10 PM	50.1	75.7
11 PM	48.6	78.1

RAMP FRACTION

The Vehicles Hour of Travel (VHT) fractions from the travel demand model were used to derive the Ramp Fraction values needed for the MOVES model procedures (approximately 4% in Belmont county Ohio, 8% in Ohio county West Virginia, and 4% in Marshall county West Virginia).

SOURCE TYPE POPULATION

A combination of local and MOVES default data is the Source Type Population for vehicle classifications. The MOVES default values provided the data for vehicle Source Types 51, 52, 53, 61, and 62 while local data from Ohio and West Virginia motor vehicle registrations accounted for all other Source Type Populations needed to run the MOVES model. Table 5 shows the Source Type Population identifications, the corresponding Source Type Name, and the number of vehicles analyzed for Belmont County, OH and Ohio/Marshall County, WV combined.

Table 5

SOURCE TYPE POPULATION FOR YEAR 2018

year	Source Type	Belmont #	Marshall co #	Ohio co #
2005	11 MotorCycle	4877	965	1184
2005	21 Passenger Car	50280	9942	18392
2005	31 Passenger Truck	23322	10247	14487
2005	32 Light Commercial Truck	622	1808	2354
2005	41 Intercity Bus	59	6	17
2005	42 Transit Bus	2	3	9
2005	43 School Bus	131	102	52
2005	51 Refuse truck	36	8	14

2005	52 Single Unit Short-haul Truck	14	475	843
2005	53 Single Unit Long-haul Truck	56	54	96
2005	54 Motor Home	170	22	49
2005	61 Combination Short-haul Truck	811	80	252
2005	62 Combination Long-haul Truck	1015	89	280

VEHICLE AGE DISTRIBUTION

A grouping of data from Ohio and West Virginia sources along with the MOVES model defaults make up the Vehicle Age Distribution. MOVES default values included Vehicle Type ID 41, 42, 51, 52, 53, 61, and 62. Local data from Ohio and West Virginia motor vehicle registrations accounted for all other Vehicle Type ID. Table 6 shows a sample Vehicle Age Distribution By Source Type for Belmont County, OH in 2005.

Table 6

VEHICLE AGE DISTRIBUTION BY SOURCE TYPE FOR BELMONT COUNTY, OHIO IN 2005

yearid	ageid	11	21	31	32	41	42	43	51	52	53	54	61	62
2005	0	0.003	0.004	0.006	0.010	0.000	0.000	0.023	0.000	0.000	0.000	0.003	0.003	0.011
2005	1	0.025	0.020	0.022	0.028	0.053	0.000	0.031	0.000	0.000	0.000	0.018	0.012	0.033
2005	2	0.052	0.033	0.047	0.069	0.026	0.000	0.047	0.000	0.000	0.000	0.033	0.024	0.018
2005	3	0.068	0.039	0.051	0.066	0.026	0.000	0.055	0.286	0.286	0.286	0.039	0.028	0.096
2005	4	0.085	0.042	0.061	0.068	0.316	0.000	0.047	0.000	0.000	0.000	0.030	0.037	0.079
2005	5	0.083	0.048	0.076	0.025	0.079	0.000	0.016	0.000	0.000	0.000	0.037	0.049	0.064
2005	6	0.068	0.047	0.066	0.015	0.053	0.000	0.063	0.000	0.000	0.000	0.041	0.047	0.030
2005	7	0.079	0.048	0.065	0.045	0.000	0.000	0.070	0.214	0.214	0.214	0.028	0.047	0.038
2005	8	0.064	0.057	0.068	0.048	0.079	0.000	0.070	0.000	0.000	0.000	0.033	0.043	0.033
2005	9	0.051	0.054	0.056	0.035	0.053	0.000	0.070	0.000	0.000	0.000	0.034	0.043	0.052
2005	10	0.042	0.062	0.063	0.069	0.026	0.000	0.063	0.000	0.000	0.000	0.043	0.057	0.085
2005	11	0.032	0.060	0.056	0.041	0.105	0.000	0.086	0.000	0.000	0.000	0.043	0.051	0.083
2005	12	0.027	0.056	0.054	0.055	0.053	0.000	0.141	0.000	0.000	0.000	0.035	0.045	0.080
2005	13	0.020	0.055	0.045	0.030	0.000	0.000	0.078	0.000	0.000	0.000	0.024	0.045	0.041
2005	14	0.020	0.050	0.041	0.031	0.000	0.000	0.008	0.071	0.071	0.071	0.020	0.038	0.053
2005	15	0.014	0.051	0.048	0.055	0.026	0.000	0.047	0.071	0.071	0.071	0.032	0.048	0.053
2005	16	0.015	0.043	0.043	0.040	0.000	0.500	0.000	0.071	0.071	0.071	0.027	0.051	0.027
2005	17	0.012	0.038	0.031	0.028	0.000	0.000	0.008	0.071	0.071	0.071	0.025	0.035	0.011
2005	18	0.012	0.034	0.020	0.036	0.026	0.000	0.000	0.000	0.000	0.000	0.028	0.030	0.029
2005	19	0.009	0.031	0.017	0.031	0.000	0.500	0.031	0.000	0.000	0.000	0.020	0.033	0.005
2005	20	0.007	0.022	0.013	0.028	0.026	0.000	0.000	0.071	0.071	0.071	0.014	0.028	0.006
2005	21	0.008	0.019	0.012	0.025	0.000	0.000	0.023	0.000	0.000	0.000	0.029	0.029	0.017
2005	22	0.006	0.015	0.009	0.033	0.000	0.000	0.000	0.071	0.071	0.071	0.024	0.032	0.015

2005	23	0.010	0.010	0.008	0.018	0.000	0.000	0.016	0.000	0.000	0.000	0.025	0.021	0.015
2005	24	0.018	0.007	0.006	0.018	0.027	0.000	0.008	0.072	0.072	0.072	0.024	0.023	0.005
2005	25	0.019	0.006	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.016	0.006
2005	26	0.014	0.006	0.004	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.014	0.008
2005	27	0.016	0.002	0.002	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.008	0.003
2005	28	0.017	0.001	0.001	0.002	0.026	0.000	0.000	0.000	0.000	0.000	0.013	0.007	0.000
2005	29	0.018	0.002	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.007	0.000
2005	30	0.088	0.038	0.006	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.201	0.054	0.006

ROAD TYPE DISTRIBUTION

The ODOT and WV Division of Highway county summary Vehicle Miles Traveled (VMT) data categorized by federal functional class for the three county non-attainment areas is the basis for Road Type Distribution Fraction. Table 7 illustrates Road Type Distribution.

Table 7

ROAD TYPE DISTRIBUTION FOR THE BELOMAR REGION

sourceTypeID	roadTypeID	roadTypeVMTFraction	sourceTypeID	roadTypeID	roadTypeVMTFraction
11	1	0	51	1	0
11	2	0.25	51	2	0.25
11	3	0.24	51	3	0.24
11	4	0.18	51	4	0.18
11	5	0.33	51	5	0.33
21	1	0	52	1	0
21	2	0.25	52	2	0.25
21	3	0.24	52	3	0.24
21	4	0.18	52	4	0.18
21	5	0.33	52	5	0.33
31	1	0	53	1	0
31	2	0.25	53	2	0.25
31	3	0.24	53	3	0.24
31	4	0.18	53	4	0.18
31	5	0.33	53	5	0.33
32	1	0	54	1	0
32	2	0.25	54	2	0.25
32	3	0.24	54	3	0.24
32	4	0.18	54	4	0.18
32	5	0.33	54	5	0.33
41	1	0	61	1	0
41	2	0.25	61	2	0.25
41	3	0.24	61	3	0.24
41	4	0.18	61	4	0.18
41	5	0.33	61	5	0.33
42	1	0	62	1	0
42	2	0.25	62	2	0.25
42	3	0.24	62	3	0.24

42	4	0.18	62	4	0.18
42	5	0.33	62	5	0.33
43	1	0	roadTypeID	roadDesc	
43	2	0.25	2	Rural Restricted Access	
43	3	0.24	3	Rural Unrestricted Access	
43	4	0.18	4	Urban Restricted Access	
43	5	0.33	5	Urban Unrestricted Access	

OUTPUT EMISSION FACTORS

Table 8 shows the first record in a MOVES sample output (rate per distance) emission file for year 2020 with I/M programs. For any given month, day of week, hour of the day, pollutant, and source type; the rate per distance varies by road type and speed bin. Rates per distance emissions are applied to link and intrazonal VMT.

Table 8 – Sample Emission File (Rate per Distance) for year 2020

Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID	hourID
Record:			2020	7	5	1
Heading:	linkID	pollutantID	processID	sourceTypeID	SCC	fuelTypeID
Record:		87	0	1		0
Heading:	modelYearID	roadTypeID	avgSpeedBinID	temperature	relHumidity	ratePerDistance
Record:	0	2	1			1.388011

Table 9 shows the first record in a MOVES sample output (rate per vehicle) emission file for year 2020 with I/M programs. 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 9 – Sample Emission File (Rate per Vehicle) for year 2020

Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID
Record:			20 20	7	5
Heading:	hourID	zoneID	pollutantID	processID	sourceTypeID
Record:	1		87		1
Heading:	SCC	fuelTypeID	modelYearID	temperature	ratePerVehicle
Record:		0	0		0.14004

Table 10 shows the first record in a MOVES sample output (rate per profile) emission file for year 2020 with I/M programs. The rate per vehicle varies for any combinations of month, day of week, hour of the day, pollutant, and process. Rates per profile emissions are applied to the vehicle source type population.

Table 10 – Sample Emission File (Rate per Profile) for year 2020

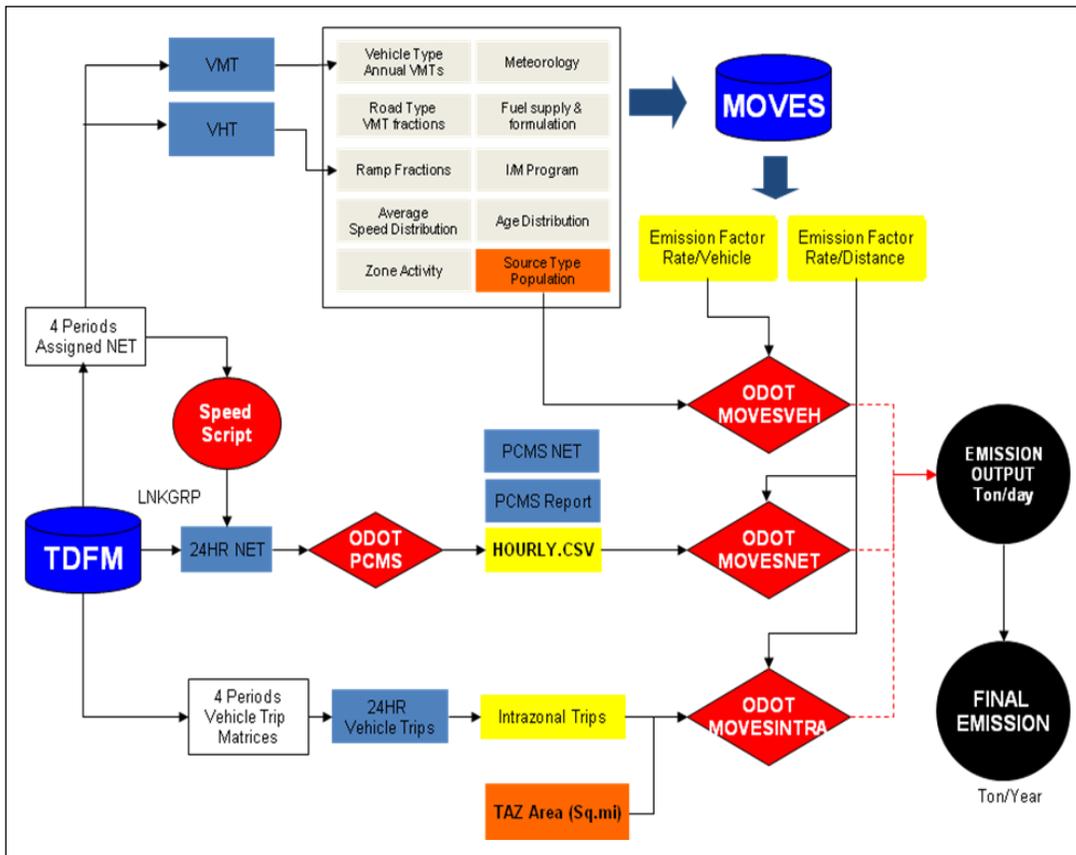
Heading:	MOVESScenarioID	MOVESRunID	yearID	monthID	dayID
Record:			2020	0	5
Heading:	hourID	zoneID	pollutantID	processID	sourceTypeID

Record:	24		87	12	54
Heading:	SCC	fuelTypeID	modelYearID	temperature	ratePerVehicle
Record:		0	0	71.5	0.027222

POST PROCESSING

Several custom programs created by ODOT staff were used to compute total emissions. See Figure 2 below for the general schematic of the process. Details are provided at <http://www.dot.state.oh.us/Divisions/Planning/SPR/ModelForecastingUnit/Documents/cmaq3.pdf>

Figure 2 – Emission Calculation Process



PROJECTS IN THE 2040 MPO LONG-RANGE PLAN

Ohio County, WV:

Upgrade I-70 to six lanes from Elm Grove/Triadelphia Interchange to Cabela Drive
Analysis Year 2040

Marshall County, WV:

Upgrade WV2 to add a fifth lane (TWLTL) from 6th Street in Moundsville (M.P. 19.50) to US250
intersection (M.P. 20.35)
Analysis Year 2020

Upgrade WV2 from Kent (M.P. 4.5) to Franklin (M.P. 6.5)
Analysis Year 2030

Upgrade WV2 from Wetzel County Line (M.P. 00) to Kent (M.P. 4.5)
Analysis Year 2030

Belmont County, OH:

Upgrade I-70 to six lanes from the SR9 Interchange to Mall Road Interchange.
Analysis Year 2030

Construct a new Commons Mall Crossing Road from US40 South to Mall Rd and Banfield Rd
Intersections.
Analysis Year 2018

Addendum I
Safety Performance Measures and Targets

ADDENDUM 1: SAFETY PERFORMANCE MEASURES AND TARGETS

The Federal Rule 23 CFR 490 requires states and Metropolitan Planning Organizations (MPOs) to establish targets for five highway safety performance measures applicable to all public roads. The five performance measures are: number of fatalities, number of serious injuries, fatality rate, serious injury rate and number of non-motorized fatalities and serious injuries. While states must establish statewide targets, MPOs can establish targets by either agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure or committing to a quantifiable target for that performance measure for their metropolitan planning area. In Chapter 9 of this document, safety data and narrative are included. This addendum supersedes any discussion regarding the performance measures and targets. It also includes more recent data.

Statewide Highway Safety Targets

Both Ohio and West Virginia have established statewide calendar year (CY) 2018 highway safety targets. Belomar Regional Council and Interstate Planning Commission has adopted Ohio's statewide highway safety targets for Belmont County and West Virginia's statewide targets for Ohio and Marshall Counties. These were adopted by resolution on February 22, 2018. Belomar will plan and program projects so they contribute towards the accomplishment of ODOT and WVDOT's CY2018 highway safety targets for the performance measures.

ODOT's CY18 highway safety Targets are based on the following baseline data:

- Number of Fatalities < 1,072
- Number of Serious Injuries < 9,216
- Fatality Rate per 100 MVMT* < 0.92
- Serious Injury Rate per 100 MVMT* < 8.17
- Number of Non-Motorized Fatalities & Non-Motorized Serious Injuries < 856

In accordance with federal legislation, Ohio used five-year rolling averages to calculate historic crash trends and identify CY2018 statewide reduction targets. After reviewing historical crash trends, external factors, and through consultation with Ohio's MPOs and RTPOs, Ohio adopted targets based on a 1 percent annual reduction for 2018 across all five measures.

ODOT CY2018 Highway Safety Targets

- Number of Fatalities < 1,051
- Number of Serious Injuries < 9,033
- Fatality Rate per 100 MVMT* < 0.91
- Serious Injury Rate per 100 MVMT* < 8.01
- Number of Non-Motorized Fatalities & Non-Motorized Serious Injuries < 840

While ODOT and its partners agree that "Zero Deaths" is the only acceptable goal, states must recognize that reaching that goal will require time and significant effort by many different partners – including the public. The 2018-2021 STIP shows an estimated \$288 million or 261 safety-related projects currently programmed to aid in meeting the safety targets. Belomar has also made significant contribution of suballocated STP funds for safety projects in Belmont County.

WVDOT CY2018 Highway Safety Targets

WVDOT targets are shown in the following table:

WVDOT STATE TARGETS	2013 - 2017	2014 - 2018
1) Base fatalities average for 2005 - 2009 = 390.2 Target five-year average number of fatalities	288.8	281.6
2) Base injuries average for 2009 - 2013 = 1,999.8 Target five-year average number of injuries	1,397.2	1,341.0
3) Base fatality rate per hundred million vehicle miles traveled 2005 - 2009 = 1.980 Target fatality rate per hundred million vehicle miles traveled	1.458	1.370
4) Base injury rate per million hundred vehicle miles traveled 2009 - 2013 = 10.602 Target injury rate per hundred million vehicle miles traveled	6.797	6.327
5) Base number of non-motorized fatalities 2005 - 2009 = 22.2 Target number of non-motorized fatalities	22.5	21.6
6) Base number of non-motorized serious injuries 2009 - 2013 = 93.4 Target number of non-motorized serious injuries	75.2	72.5

West Virginia Highway Safety plan has adopted zero fatalities as a long-term goal with an interim goal of reducing fatalities by one-half by 2030. To achieve the 2030 fatalities goal, an annual reduction of approximately 3.2 percent is necessary.

Belomar will plan and program safety projects for the locations identified by WVDOT with MPO input. Projects will be programmed based on WVDOT schedule.

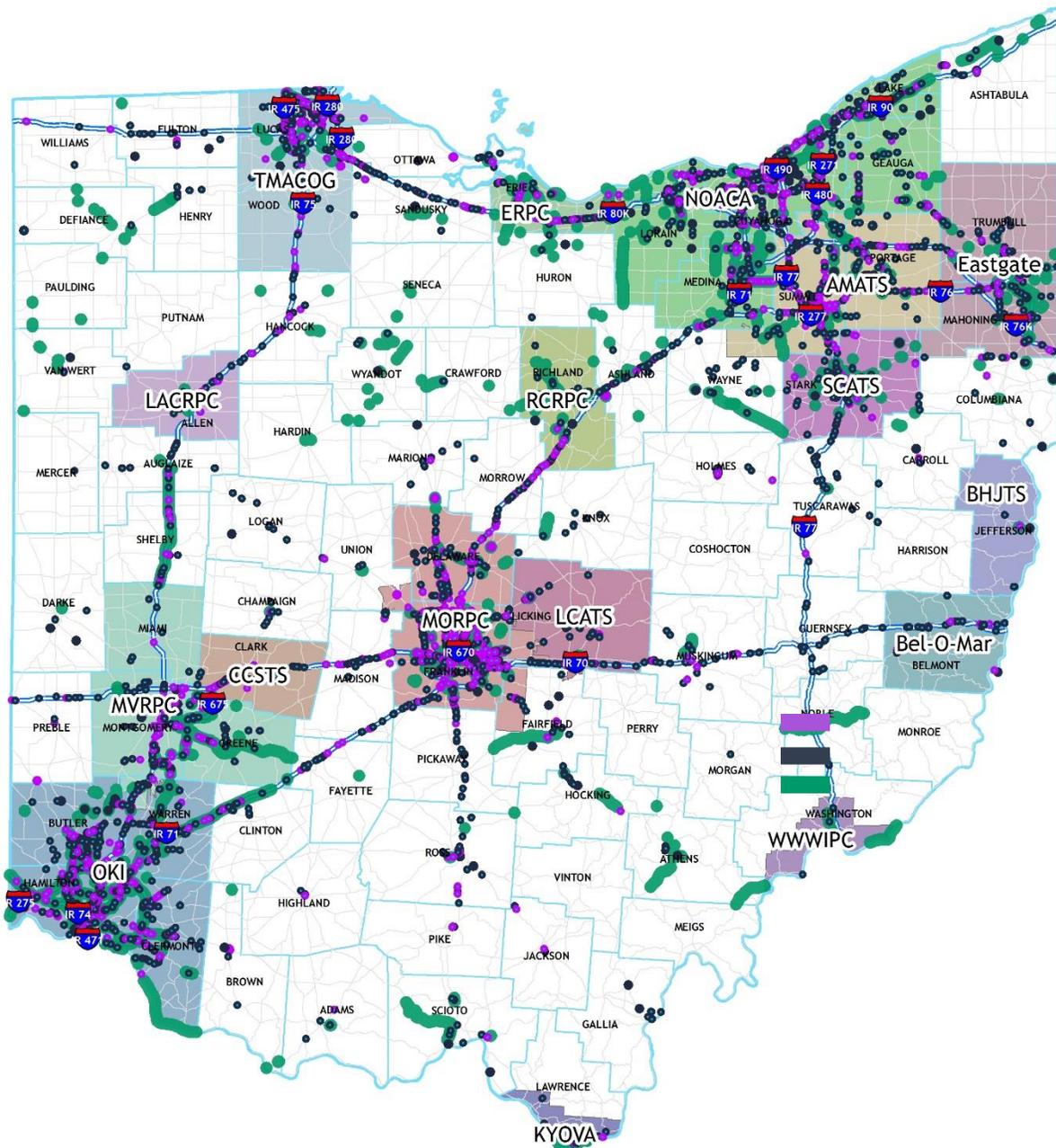
Belomar will participate in the preparation of a performance report. Performance report will include progress made towards achieving the safety targets of each state.

MPO Safety Target Selection Process

WVDOT and ODOT generally identify and program projects. The MPO incorporates these in the local Transportation Improvement Program through the policy board action. No state or federal funds are suballocated to MPOs with population under 200,000 in West Virginia. While in Ohio Congestion Mitigation and Air Quality (CMAQ) funds and Surface Transportation Block Grant (STBG) funds are suballocated based on population, these are not enough to undertake significant roadway improvements on a consistent basis.

Both states have been programming safety projects in the region. ODOT has prepared a map (included as Figure 1) showing 2018 – 2021 Safety Funded Projects vs. Safety Improvement Priority locations. This map includes several locations in Belmont County. Safety priority locations are selected based on the statewide selection criteria. These locations will be addressed as per ODOT schedule. Safety locations in West Virginia are also programmed as per WVDOT's schedule.

FIGURE I
2018-2021 Safety Funded Projects vs. Safety Improvement Priority (SIP) Locations



- High Priority SIP Locations
- Low Cost Treatment SIP Locations
- 2018-2021 Safety Funded Projects

Data as of 03/01/2018

Belomar has identified high hazard locations in the regions for over a decade. Locations are selected based on the local criteria. The previous crash data is included in Chapter 9 of this document and the selected locations are shown in Appendix B. While these are of interest locally, non-interstate locations seldom make the statewide locations list based on the statewide selection criteria. The systemwide crash data by county, showing the current conditions and performance of the system, can be found here and in Chapter 9 of this document. Single vehicle crashes, including the roadway departure crashes, continue to be the predominant crash type in the three counties. Roadway departure crashes are also the emphasis area in West Virginia Strategic Highway Safety Plan (SHSP) and Ohio SHSP.

Previously, Belomar used the crash data of three years for the analysis and selection of locations. This is changed to include five years data as per the TPM requirements. The five-year crash summaries are included as Figure II, Figure III and Figure IV. The statewide targets (as percentage) will be used to evaluate the local contribution in meeting the statewide targets. The annual MPO crash data analysis report and the list of selected locations will be provided to both states. Belomar also participates in the roadway safety planning related activities of the both states by attending meetings, conferences and through the MPO association.

Since the statewide high hazard locations are selected by ODOT and WVDOT and the MPO has no dedicated funding source for programming projects annually, Belomar has opted to support the statewide safety performance targets and projects to be programmed for meeting the targets.

Belomar will participate in the preparation of a performance report showing the progress made in achieving the targets. The annual performance report, new statewide safety targets and the rolling averages derived from the local five-year crash data will be reviewed for the annual safety target setting. Belomar will also support safety projects with suballocated funds in Belmont County.

FIGURE II
Belmont County Crash Summary
2012 – 2016

Time Of Day	2012	2013	2014	2015	2016	Total
6AM - 9AM	204	200	219	247	188	1058
9AM - 3PM	539	465	595	522	532	2653
3PM - 6PM	430	359	363	356	332	1840
6PM - 6AM	601	548	566	515	498	2728
TOTAL	1774	1572	1743	1640	1550	8279
Crash Type						
SINGLE VEHICLE	925	834	817	797	722	4095
REAR-END	344	282	353	365	330	1674
ANGLE	216	175	202	171	207	971
SIDESWIPE - PASSING	116	126	184	135	132	693
SIDESWIPE - MEETING	62	66	81	89	67	365
HEAD-ON	56	38	49	45	42	230
OTHER	55	51	57	38	50	251
TOTAL	1774	1572	1743	1640	1550	8279
Light Conditions						
DAYLIGHT	1136	972	1126	1072	1033	5339
DARK	554	531	546	493	455	2579
DAWN/DUSK	63	56	59	67	53	298
UNKNOWN	17	13	12	8	8	58
OTHER	4	0	0	0	1	5
TOTAL	1774	1572	1743	1640	1550	8279
Road Conditions						
DRY	1327	1107	1193	1188	1187	6002
WET	300	290	303	282	238	1413
SNOW/ICE	121	161	234	160	113	789
MUD, DIRT, GRAVEL, SAND	11	8	5	7	2	33
UNKNOWN	14	6	8	3	8	39
OTHER	1	0	0	0	2	3
TOTAL	1774	1572	1743	1640	1550	8279
Crash Severity						
PDO	1298	1178	1293	1241	1158	6168
INJURIES	675	544	629	550	534	2932
FATALITIES	10	11	6	10	4	41
TOTAL	1983	1733	1928	1801	1696	9141
Non Motorized Crashes						
FATALITIES	2	2	0	2	1	7
INJURIES	12	8	14	8	7	49
TOTAL	14	10	14	10	8	56

The injuries and fatalities fields now indicate number of injuries and fatalities as opposed to number of injury and fatality crashes.

Source: Ohio Department of Public Safety; Belmont County Data and ODOT's GCAT Belmont County Data

FIGURE III

Ohio County Crash Summary 2012 – 2016

Time Of Day	2012	2013	2014	2015	2016	Total
6AM - 9AM	87	81	77	57	54	356
9AM - 3PM	260	268	188	189	151	1056
3PM - 6PM	228	173	126	112	157	796
6PM - 6AM	222	194	137	154	137	844
TOTAL	797	716	528	512	499	3052
Crash Type						
SINGLE VEHICLE	269	235	194	157	173	1028
REAR-END	265	226	152	162	146	951
ANGLE	111	106	85	97	77	476
SIDESWIPE - PASSING	99	84	45	55	73	356
SIDESWIPE - MEETING	38	45	36	27	23	169
HEAD-ON	15	20	16	14	7	72
TOTAL	797	716	528	512	499	3052
Light Conditions						
DAYLIGHT	568	508	388	362	355	2181
DARK	199	175	123	137	124	758
DAWN/DUSK	26	30	15	11	19	101
OTHER	4	3	2	2	1	12
TOTAL	797	716	528	512	499	3052
Road Conditions						
DRY	636	511	359	337	369	2212
WET	107	120	95	98	80	500
SNOW/ICE	48	74	70	72	42	306
MUD, DIRT, GRAVEL, SAND	4	11	4	5	8	32
UNKNOWN	2	0	0	0	0	2
TOTAL	797	716	528	512	499	3052
Crash Severity						
PDO	582	529	399	389	372	2271
INJURIES	307	260	284	191	182	1224
FATALITIES	2	3	2	3	0	10
TOTAL	891	792	685	583	554	3505

The injuries and fatalities fields now indicate number of injuries and fatalities as opposed to number of injury and fatality crashes.

Source: West Virginia Department of Transportation; Ohio and Marshall County Data

FIGURE IV

Marshall County Crash Summary 2012 – 2016

Time Of Day	2012	2013	2014	2015	2016	Total
6AM - 9AM	54	74	67	49	53	297
9AM - 3PM	116	121	122	78	88	525
3PM - 6PM	97	78	91	63	41	370
6PM - 6AM	123	139	125	95	81	563
TOTAL	390	412	405	285	263	1755
Crash Type						
SINGLE VEHICLE	212	241	221	165	161	1000
REAR-END	60	65	50	29	35	239
ANGLE	60	58	60	48	34	260
SIDESWIPE - PASSING	23	18	27	13	10	91
SIDESWIPE - MEETING	25	22	23	19	14	103
HEAD-ON	10	8	24	11	9	62
TOTAL	390	412	405	285	263	1755
Light Conditions						
DAYLIGHT	260	268	281	181	174	1164
DARK	108	125	111	91	80	515
DAWN/DUSK	21	19	13	13	8	74
UNKNOWN	0	0	0	0	0	0
OTHER	1	0	0	0	1	2
TOTAL	390	412	405	285	263	1755
Road Conditions						
DRY	276	255	251	173	170	1125
WET	71	84	61	51	48	315
SNOW/ICE	39	63	85	60	40	287
MUD, DIRT, GRAVEL, SAND	3	10	8	1	5	27
UNKNOWN	1	0	0	0	0	1
TOTAL	390	412	405	285	263	1755
Crash Severity						
PDO	269	288	289	191	187	1224
INJURIES	164	157	151	131	119	722
FATALITIES	3	2	1	5	1	12
TOTAL	436	447	441	327	307	1958

The injuries and fatalities fields now indicate number of injuries and fatalities as opposed to number of injury and fatality crashes.

Source: West Virginia Department of Transportation; Ohio and Marshall County Data

Amendment I
Resolution, Public Notice, Press Release

**RESOLUTION OF THE
BELMONT-OHIO-MARSHALL TRANSPORTATION STUDY (BOMTS)
POLICY COMMITTEE
ENDORING A REVISION OF THE TRANSPORTATION PLAN FOR 2040 AND
THE AIR QUALITY CONFORMITY DETERMINATION**

WHEREAS, the Transportation Plan for 2040 was prepared pursuant to the planning requirements of the Moving Ahead for Progress in the 21st Century (MAP-21) and Fixing America's Surface Transportation Act (FAST Act); and

WHEREAS, the Transportation Plan was previously adopted, and the conformity of the plan was determined jointly by FHWA and FTA on September 9, 2016; and

WHEREAS, the conformity of the plan was based on a qualitative analysis; and

WHEREAS, a new emissions analysis-based conformity is now required for the 1997 Ozone NAAQS as per new FHWA guidance; and

WHEREAS, the analysis year of WV2 4-lane upgrade project from Wetzel County Line to Kent needs to be revised from 2040 to 2030; and

WHEREAS, as per the requirements of the Transportation Performance Management statutes and regulations, the safety performance measure targets, approved on February 22, 2018, must be included in the long range plan; and

WHEREAS, an emissions analysis based conformity document has been prepared; and

WHEREAS, public has been provided an opportunity to comment on the plan amendments and conformity document, in accordance with the Participation Plan; and

WHEREAS, conforming FY2018 – FY2021 Transportation Improvement Program was adopted on April 20, 2017; and

WHEREAS, based on the budget test, the Transportation Plan for 2040 is a conforming plan; and

WHEREAS, the Transportation Plan can be amended at any time in accordance with the state and federal regulations; and

WHEREAS, a need exists to amend the conforming Transportation Plan for 2040, and

NOW THEREFORE BE IT RESOLVED, that the amendment of the Transportation Plan for 2040 to include: 1) Air Quality Conformity Determination; 2) revision of the analysis year for the WV2 upgrade project from Wetzel County Line to Kent and 3) adding the approved safety performance measure targets is hereby approved.

Adopted this 26th day of July, 2018.

ATTEST:





Timothy P. McCormick, Chairman
Bel-O-Mar Regional Council/
BOMTS Policy Committee

PUBLIC NOTICES

Wheeling Intelligencer
News Register
July 9, 2018

Times Leader
July 9, 2018

PUBLIC NOTICE

Pursuant to guidance from the FHWA, Belomar Regional Council is amending the approved Transportation Plan for 2040 to include: 1) Emissions based air quality conformity determination 2) Statewide safety performance targets of Ohio and West Virginia and 3) Revised analysis year of the WV2 upgrade to 4 lanes project from Wetzel County line to near CR78 in Marshall County.

Pursuant to the recent FHWA guidelines, emissions analysis-based conformity for the 1997 National Ambient Air Quality Standards (NAAQs) is needed. An "Air Quality Analysis and Conformity Determination" document is prepared and available for comments.

As per the requirements of the Fixing America's Surface Transportation Act (FAST ACT), State DOTs and Metropolitan Planning Organizations are required to adopt safety targets. Safety targets include fatalities, serious injuries and crash rates. These were approved by the policy board on February 22, 2018. Belomar is amending the transportation plan to include the approved safety targets for both states.

Since the construction of WV2 upgrade to 4 lanes project at Marshall-Wetzel county line has been moved up, the analysis year of the project for air quality conformity will be revised from 2040 to 2030.

The proposed addendum to the Transportation Plan for 2040 includes the safety targets and related narrative and a new Air Quality conformity determination. These documents are available at <http://www.belomar.org/proposed-transportation-plan-for-2040-amendment> for your input and comments.

Written comments can be submitted online at Belomar's website, emailed to belomar@belomar.org, or mailed to:

Transportation Director
Belomar Regional Council
P.O. Box 2086, Wheeling, WV 26003

Comments must be received by July 25, 2018.

PUBLIC NOTICE

Pursuant to guidance from the FHWA, Belomar Regional Council is amending the approved Transportation Plan for 2040 to include: 1) Emissions based air quality conformity determination 2) Statewide safety performance targets of Ohio and West Virginia and 3) Revised analysis year of the WV2 upgrade to 4 lanes project from Wetzel County line to near CR78 in Marshall County.

Pursuant to the recent FHWA guidelines, emissions analysis-based conformity for the 1997 National Ambient Air Quality Standards (NAAQs) is needed. An "Air Quality Analysis and Conformity Determination" document is prepared and available for comments.

As per the requirements of the Fixing America's Surface Transportation Act (FAST ACT), State DOTs and Metropolitan Planning Organizations are required to adopt safety targets. Safety targets include fatalities, serious injuries and crash rates. These were approved by the policy board on February 22, 2018. Belomar is amending the transportation plan to include the approved safety targets for both states.

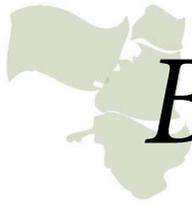
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Written comments can be submitted online at Belomar's website, emailed to belomar@belomar.org, or mailed to:

Transportation Director
Belomar Regional Council
P.O. Box 2086, Wheeling, WV 26003

Comments must be received by July 25, 2018.



Belomar Regional Council

P.O. Box 2086 • Wheeling, WV 26003

Phone: 304-242-1800

Fax: 304-242-2437

TTY/TDD 1-800-982-8771

FOR: IMMEDIATE RELEASE

July 9, 2018

The Bel-O-Mar Regional Council is planning to amend the FY2018 - FY2021 Transportation Improvement Program (TIP) and the Transportation Plan for 2040. TIP Fiscal Year programming is on a July 1 basis with FY2018 beginning July 1, 2017. Projects must be included in the local TIP and the State TIP to be eligible for federal funding. TIP projects must be consistent with the local long range plan. Bel-O-Mar is currently accepting public comments regarding the revisions described below.

As per the requirements of Fixing America's Surface Transportation Act (FAST Act) and other federal and state regulations, both documents will be amended to include the safety performance measure targets approved by the policy board on February 22, 2018. A quantitative analysis based air quality conformity of both documents will also be added. The air quality analysis year of the WV2 4-lane upgrade project from Wetzel County Line to Kent will also be changed from the year 2040 to 2030. Relevant documents are available at www.belomar.org.

In addition, comments are currently accepted regarding the projects described below:

As requested by the Ohio Valley Regional Transit (OVRTA) and Eastern Ohio Regional Transit (EORTA), the following revisions are planned:

OVRTA

- Operating assistance for FY2019 will be revised from \$3,087,643 to \$2,771,000. The operating assistance includes Federal Transit Direct (5307) funds, Fare Revenue and Levy funds.
- The cost of FY2019 Repair/Replace Office/Garage Roof will be revised from \$300,000 to \$400,000.
- A project to include FY2019 Replacement of 6 under 30 ft. Medium Medium Duty Buses will be added. The total cost is \$743,040.

EORTA

- Operating Assistance for FY2019 will be revised from \$1,453,009 to \$1,304,000. Operating Assistance consists of Federal Transit Direct (5307) funds, General Revenue Funds, Fare Box Revenue and Levy funds.

A public comment period regarding the proposed Transportation Improvement Program and Transportation Plan for 2040 amendments extends through July 25, 2018. Interested parties who desire to present their views on the proposed amendments should submit written comments to:

Transportation Director
Bel-O-Mar Regional Council
P.O. Box 2086
Wheeling, WV 26003

or provide comments at www.belomar.org or email: belomar@belomar.org

Appendix E

Public Review and Comment

NOTICE OF PUBLIC COMMENT AND HEARING

West Virginia Department of Environmental Protection Second Maintenance Plan for the 1997 Ozone Nonattainment Areas Wheeling, WV (Comprising Marshall and Ohio Counties)

The West Virginia Department of Environmental Protection (DEP), Division of Air Quality (DAQ) is soliciting comment and will hold a public hearing on the proposed *West Virginia Department of Environmental Protection Second Maintenance Plan for the Wheeling, WV 1997 Ozone NAAQS Maintenance Area (Comprising Marshall and Ohio Counties)*.

The first Maintenance Plan for the Wheeling area was approved by the United States Environmental Protection Agency (U.S. EPA) concurrent with the Wheeling area redesignation to attainment with the 1997 Ozone National Ambient Air Quality Standard (NAAQS) effective June 14, 2007. Under Clean Air Act (CAA) section 175A(b), states must submit a revision to the first Maintenance Plan eight years after redesignation to attainment to provide for maintenance of the NAAQS for an additional ten years following the end of the first 10-year period. The second Maintenance Plan was delayed because the U.S. EPA's final implementation rule for the 2008 ozone NAAQS revoked the 1997 ozone NAAQS and removed the requirement for a second Maintenance Plan for areas that had been redesignated to attainment with the 1997 ozone NAAQS and were designated attainment with the 2008 ozone NAAQS. The D.C. Circuit (2018) in *South Coast Air Quality Management District v. EPA* vacated U.S. EPA's previous interpretation therefore, states must now submit Maintenance Plans for the second maintenance period.

Air quality monitoring data collected in this area continues to demonstrate attainment of the NAAQS. Historical and projected emissions show that existing state and federal requirements are sufficient to maintain the NAAQS in the Wheeling area. The area has been designated attainment with both the 2008 and 2015 ozone NAAQS, which are more stringent than the 1997 ozone NAAQS.

The State of West Virginia is requesting that U.S. EPA approve a second 10-year Maintenance Plan for the Wheeling area with respect to the 1997 8-hour ozone NAAQS. Once finalized the *Second Maintenance Plan for the Wheeling, WV 1997 Ozone NAAQS Maintenance Area (Comprising Marshall and Ohio Counties)* will be submitted to U.S. EPA for approval and incorporation as a revision to the State Implementation Plan (SIP).

A public hearing will be held at 6 PM, November 6th, 2019 at the following location:

West Virginia DEP Wheeling Satellite Office
131A Peninsula St.
Wheeling, WV 26003

Written and oral comments will be accepted until the close of the hearing on November 6th, 2019 and will be made part of the formal record. Written comments will also be accepted for inclusion in the formal record by mail, facsimile, email or other delivery to the Division of Air Quality if postmarked or transmitted by 5:00 PM on November 6th, 2019. Please identify the document to which the comments apply, the commenter's name, address and telephone number. Send written comments to Laura M. Crowder, Director of the Division of Air Quality at the following address:

E-mail: Sandra.K.Adkins@wv.gov
Mailing address: West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Fax: (304) 926-0479

Copies of the proposed Maintenance Plan and documentation may be viewed on weekdays between 8:30 a.m. and 4:30 p.m. at the DEP Charleston office located at the above address, and may be viewed on the DAQ website under the Public Notice and Comment section: <https://dep.wv.gov/daq/publicnoticeandcomment/Pages/default.aspx>