

**Wood-Washington-Wirt Interstate Planning Commission
(WWW-IPC)**

PM_{2.5} Air Quality Conformity Determination Report [2005]

[Technical Report-Summary]



Prepared by

Sreevatsa Nippani, Transportation Specialist,

[With guidance from Mr. Randy Durst and Mr. Fred Rader]

Wood-Washington-Wirt Interstate Planning Commission,

The Mid-Ohio Valley Regional Council,

Parkersburg, WV 26101.

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Abstract

The Wood Washington Wirt Interstate Planning Commission [WWW-IPC] is the federally designated metropolitan planning organization [MPO] for the metropolitan area, consisting of urbanized portions of Washington County [OH] and Wood County [WV] in the Mid-Ohio valley area. In this summary document, results of the transportation conformity analysis were demonstrated for both of these counties, which were categorized by EPA as non-attainment for the annual PM_{2.5} National Ambient Air Quality Standard [NAAQS]. Areas that have failed to meet the standards outlined in the NAAQS have been designated as non-attainment areas and are now subject to transportation conformity.

Transportation conformity requires nonattainment areas to demonstrate that all future transportation projects will not come in the way of the area from reaching its air quality attainment goals. All non-attainment areas are required to demonstrate conformity by 5 April 2006, one year following the original designations. Nonattainment areas are required to meet the PM_{2.5} attainment standards by 2010.

The U.S. EPA final rule addressed PM_{2.5} precursor emissions for transportation conformity. Among the pollutants to be monitored in this process were: Direct PM_{2.5} emissions [tail pipe emissions, brake and tire wear], Nitrogen Oxides [NO_x], Volatile Organic Compounds [VOC's], Sulfur Oxides [SO_x] and Ammonia [NH₃]. Until a SIP was established, the EPA had ruled that indirect PM_{2.5} emissions be analyzed for only NO_x unless the EPA or the State's Division of Air Quality can prove that NO_x is insignificant. In this determination, NO_x emissions were the only indirect PM_{2.5} component that was analyzed

The transportation air quality conformity analysis for the WWW area took into account all the regional capacity projects, which are scheduled for implementation through the transportation plan horizon year and the four year TIP. Wood County was designated as a maintenance area under the 1-hour ozone standards, with SIP approved highway vehicle emission budgets for Nitrogen Oxides [NO_x] and Volatile Organic Compounds [VOC]. But, both Washington and Wood Counties were later collectively designated as non-attainment area under the 8-hour ozone standards. However, there

were no budgets published for PM_{2.5}. Both the counties must meet either the “build no greater than no-build” test or the “build no greater than base year [2002] test”.

For the PM_{2.5} air quality conformity analysis, the West Virginia Division of Air Quality and ODOT recommended that conformity tests are performed for calendar years 2002, 2009, 2015 and 2025 for both the winter and summer representative months [January for winter and July for summer]. For each of those years, VMT and Speed were developed by the Federal Functional Class codes within Wood County and Washington County [for both January and July], which are derived from the regional traffic model assignments that are made for each of those years.

The regional travel demand model for the base year was run to obtain the total VMT for the region. The base year estimates of VMT output by the model were compared with the HPMS VMT estimates on roadway class-specific bases. Then the VMT factors with facility class [which are developed as an average of HPMS and those derived from the local vehicle distribution factors] were used to calculate the VMT for each facility class. The output by the regional travel demand model was input to the MOBILE emissions model to develop roadway class-specific emission factors for the base year. The resulting emissions estimates are then summed to compute total regional emissions from on-road motor vehicles.

As part of the PM_{2.5} Air Quality analysis, a small portion of Pleasants County [WV] was added to the Wood County area as a “donut”. In this “donut” area there were roads with different classifications. WVDOT provided WVV with 2004 VMT on these roads [in the “donut area”]. Based upon the region’s growth factor, the donut area VMT [for each functional class] for the years 2002, 2009, 2015 and 2025 was calculated. This donut area VMT was added to the Wood County VMT, and the Air Quality results were determined based upon that information. The results of the analysis showed positive transportation conformity. However, this determination needs to obtain final approval from WVDOAQ, ODOT, FHWA and EPA.

Introduction

The Wood Washington Wirt Interstate Planning Commission [WWW-IPC] is the federally designated metropolitan planning organization [MPO] for the metropolitan area that consists of urbanized portions of Washington County [OH] and Wood County [WV], within the Mid-Ohio valley area. One of the MPO's responsibilities is to make decisions regarding the short-term and long-term solutions to the transportation-derived problems such as air quality.

Transportation conformity analysis report for the Mid-Ohio valley was prepared after consulting the Transportation Conformity Reference Guide [1] prepared by the Federal Highway Administration [FHWA]. The guide was used to facilitate compliance by Local and State agencies with the transportation conformity requirements. The transportation conformity rule applies to Particulate Matter finer than 2.5 microns, referred to as PM_{2.5} and Nitrogen Oxides [NO_x] emissions in non-attainment or maintenance [non-attainment areas that are re-designated as attainment] Ozone [O₃] areas.

The report documents the assumptions, procedures and the analysis used to illustrate the transportation conformity for the Mid-Ohio Valley region [consisting of Wood County (WV) and Washington County (OH)]. The analysis demonstrates the transportation conformity for the 2025 Long Range Transportation Plan for the Mid-Ohio valley region PM_{2.5} non-attainment area.

Organization of the Air Quality Report:

In the Air Quality report, the terms involved in air quality conformity are listed and defined in the first chapter. The second chapter of the report discusses air quality designation and travel demand model development for the WWW [Wood-Washington-Wirt] metropolitan area. The third chapter of the report refers to the development of input files for the MOBILE 6.2 program which were used for air quality modeling. The chapter also highlighted the subsequent analysis of output files from MOBILE 6.2, while determining the quantity of pollutants for the analysis years. The fourth chapter of the report listed the conclusions from the study.

Requirements:

The U.S. EPA passed a final rule which addressed PM_{2.5} emissions for transportation conformity. Among the pollutants to be monitored in this process were: Direct PM_{2.5} emissions [tail pipe emissions, brake and tire wear], Nitrogen Oxides [NO_x], Volatile Organic Compounds [VOC's], Sulfur Oxides [SO_x] and Ammonia [NH₃]. Until a SIP was established, the EPA has ruled that apart from the direct PM_{2.5} emissions, the indirect PM_{2.5} emissions be analyzed for only NO_x unless the EPA or the State's Division of Air Quality can prove that NO_x is insignificant. In this determination, NO_x emissions were the only indirect PM_{2.5} component that was analyzed.

The Clean Air Act (CAA) Section 176 [c] [1] [B] mandates that transportation conformity be demonstrated to ensure that federally supported highway and transit project activities are conforming to the SIP. Conformity requirements are applied for non-attainment areas and for those that have been re-designated to attainment after 1990. The conformity for the purpose of SIP means that the transportation projects will not worsen the existing violations [if any], and will not cause any new air quality violations. A regional emissions analysis for NO_x is required as a PM_{2.5} precursor in all the PM_{2.5} non-attainment areas, based upon a recommendation by the Head of the State's Division of Air Quality. However, the regional emissions analysis is not required for VOC, SO_x or ammonia, before SIP budgets for such precursors is established. The following criteria will be used in determining significance or insignificance findings for PM_{2.5} precursors:

1. On-road emissions of the precursor to the total 2002 baseline SIP inventory.
2. The current state of air quality in the area.
3. The results of air quality [speciation] monitoring in the area.

EPA Designations:

All the current PM_{2.5} non-attainment areas were found to violate the annual PM_{2.5} standard and were advised by EPA, to develop annual emission inventories for SIP motor vehicle emissions budgets and transportation conformity determinations. However, there is a problem to create annual inventories for on-road motor vehicles, than creating daily

inventories. This is because the MOBILE6 software was designed to capture the daily variation of pollutants, than on an annual basis. To circumvent this problem, the EPA released a guidance document describing the various approaches the state and local agencies could take to estimate annual on-road emissions of PM_{2.5} and PM_{2.5} precursors. The guideline also encourages the use of the interagency consultation process to determine the best approach for the areas in question. It emphasizes the need for consistency between the approach used in the SIP's motor vehicle emissions budget and subsequent regional conformity analysis.

While the PM_{2.5} implementation strategy was not yet finalized through the public involvement process, the EPA went ahead with the designations. This enabled the EPA to re-evaluate the need for finalizing the PM_{2.5} precursor requirements until the implementation rule comes into effect. The one-year conformity grace period began on 5 April 2005. One of the advantages of doing this is that, during this period, the non-attainment areas would determine the conformity for all applicable precursors [and their related issues]. Conformity applies one year after the effective date of EPA's initial non-attainment designation for a given pollutant and standard. This means that by 5 April 2006, all the PM_{2.5} non-attainment areas must have in place, a transportation plan and transportation improvement plan [TIP] that conforms to the PM_{2.5} precursor requirements.

Air Quality Analysis Requirements and Travel Demand Modeling.

Air Quality Analysis Requirements:

The transportation air quality conformity analysis for the WWW area took into account all the regional capacity projects, which are scheduled for implementation through the transportation plan horizon year and the four year TIP. Wood County was designated as a maintenance area under the 1-hour ozone standards, with SIP approved highway vehicle emission budgets for Nitrogen Oxides [NO_x] and Volatile Organic Compounds [VOC]. But, both Washington and Wood Counties were later collectively designated as non-attainment area under the 8-hour ozone standards. However, there were no budgets published for PM_{2.5}. Both the counties must meet either the “build no greater than no-build” test or the “build no greater than base year [2002] test”.

The recommended long range transportation plan was evaluated in the “2003 Comprehensive Long Range Multimodal Transportation Plan” [3]. Its evaluation was done to insure that the region is in conformity with the air quality standards established for the region.

For the PM_{2.5} air quality conformity analysis, the West Virginia Division of Air Quality and ODOT recommended that conformity tests are performed for calendar years 2002, 2009, 2015 and 2025 for both the winter and summer representative months [January for winter and July for summer]. For each of those years, VMT and Speed were developed by the Federal Functional Class codes within Wood County and Washington County [for both January and July], which are derived from the regional traffic model assignments that are made for each of those years.

Travel Demand Model Development:

The WWW study area covers the Parkersburg-Marietta Metropolitan area and includes two entire counties: Wood County in West Virginia and Washington County in Ohio. Parkersburg [WV] along with Marietta and Belpre [OH] are the major urban areas. The metropolitan area has a population of 151,000, out of which 87,000 in the urbanized area according to 2000 census. The study area includes the urban areas of Parkersburg,

Marietta and Belpre in addition to all of Wood County, West Virginia and Washington County, Ohio. The townships of Belpre, Dunham, Fearing, Marietta, Muskingum, Newport and Warren are included in the study, as part of Washington County. The transportation plan, on the other hand, is a comprehensive examination of the future transportation needs for Wood County [WV] and portions of Washington County [OH]. The study area is 571.6 square miles, with Wood County representing 376.9 square miles, with Wood County representing 376.9 square miles and the seven Ohio townships representing 194.7 square miles.

The QRS-2 Version 6.0 software package developed by AJH Associates was chosen by WWW-IPC, to develop the model. Advanced General Network Editor [GNE] version 7.0 is being used to edit the WWW base year model network. The WWW QRS-2 traffic model is a 24-hour traffic analysis model with three internal trip purposes: home-based work, home-based non-work, and non-home based; internal to external trips; through trips; and truck trips developed based on roadway functional classes.

The model base year is 2000, and the model future year for the Long Range Multimodal Transportation Plan [LRTP] is 2025. In this model, both QRS-2 default parameters [national averages] and the location-specific parameters derived from the 2002 WWW household survey were used. The Wood-Washington-Wirt [WWW] Travel Demand Model Technical Report [4] outlined the tasks and activities in the base year model calibration and validation process. The four major model development tasks are listed as follows: Detailed activities can be found in Table 1.

1. Developing Highway Network System and Related Attributes.
2. Developing Traffic Analysis Zone [TAZ] System and Related Attributes.
3. Deriving Internal-Internal, External-Internal and External-External Trips.
4. Model Calibration and Validation.

Task	Description
1	Identify network level of detail and specific highways for base year model and future year model with Existing + Committed (E+C) projects.
2	Identify traffic analysis zone (TAZ) system.
3	Collect network attributes from WVDOT, ODOT, and field survey: functional class, cruising speed, number of lanes, lane geometry and sign, roadway cross section type, intersection control type, cycle length for signalized intersections, heavy vehicle PCE and proportion, traffic counts, etc.
4	Collect/classify socioeconomic data by TAZ for base year and future year: area-wide population, zonal average autos/household, number of households, retail, non-retail, and service employment.
5	Derive External-External (E-E) trips from DOT's traffic surveys.
6	Derive External-Internal (E-I) trips and code them to the external stations in the model network.
7	Set all parameters needed to run the model: trip production rates, trip attraction rates, gravity model exponential function parameters, average vehicle occupancies, number of iterations for double-constraint trip distribution, number of iterations for MSA trip assignment. Derive Internal-Internal (I-I) trips.
8	Run the model in QRS-2, investigate system-wide model performance, and adjust the parameters as necessary.
9	Adjust the model based on its performance across screenlines, cutlines, and in major corridors.
10	Adjust the model for certain local areas to get the model calibrated.
11	Develop truck trips based on roadway functional classes.

Table 1. Model Development Activities

[Reference: WWW Travel Demand Model Development Technical Report-2004]

Trip tables for the years listed above [2002, 2009, 2015 and 2025], along with the networks for those years were necessary for running conformity determination. For the horizon years, projects from the LRTP were coded onto the networks by adding links for new construction projects and adjusting the link capacities for projects that add lanes to existing roadways. Refer to the “2003 Comprehensive Long Range Multimodal Transportation Plan” [3] and the Wood-Washington-Wirt [WWW] Travel Demand Model Technical Report [4]. These reports have documented the following:

1. Development of Base Year Network System.
2. Development of Traffic Analysis Zone System.
3. Development of Base Year Traffic Model.
4. Summary of Base Year Model Performance.
5. TAZ Socio-Economic data.
6. WWW Model Network and Zone Systems.
7. WWW Balanced Productions and Attractions.
8. WWW Model Calibration Summaries.

The report documents the development of the transportation model involving trip generation, trip distribution and traffic assignments. The model calibration assumptions were also discussed in the report. There was a very low deviation of the estimated volumes from the counts, indicating that the model performs well in major corridors.

Analysis Requirements for Horizon Years:

The transportation plan must describe the highway and transit system envisioned for selected future years which are called “horizon” years, so that regional emissions analysis for conformity determinations can be performed. A horizon year is a year for which the transportation plan describes the envisioned transportation system pursuant to 40 CFR 93.106.

Conformity Analysis Interagency Consultation Process:

WWW has coordinated between the West Virginia Department of Air Quality [WVDOAQ] and Ohio Department of Transportation [ODOT] during the interagency consultation process. WWW is the transportation planning agency for the metro area

[defined earlier] and is responsible for the air quality analysis for the two counties that are in question [Wood County (WV) and Washington County (OH)]. As a follow-up of the air quality analysis, public involvement, preparation of mobile source inventories and plans related to the control of air pollution emissions from public sources, would be the ones that need to be accomplished.

The interagency meeting took place on 31 August 2005 at WWW Headquarters, Parkersburg [WV], where the criteria for air quality analysis was established, and the procedures for transportation conformity determinations were determined. WWW would use its current Travel Demand Model [TDM] for conformity tests. It was also resolved that WWW would use the “less than-or-equal to 2002” base line emissions test for both Wood County [WV] and Washington County [OH].

Analysis Networks for Conformity:

Conformity analysis for the transportation system in the LRTP plan is as follows:

- Analysis Base Year [2002].
- Interim Analysis Years [2009 and 2015].
- Last Year of Long Range Plan [2025].

VMT Derivation:

The regional travel demand model for the base year was run to obtain the total VMT for the region. The base year estimates of VMT output by the model must be adjusted to match the HPMS VMT estimates on roadway class-specific bases, resulting in HPMS-adjusted VMT estimates for each roadway class. Then the VMT factors with facility class [which are developed as an average of HPMS and those derived from the local vehicle distribution factors] were used to calculate the VMT for each facility class.

The output by the regional travel demand model was input to the MOBILE6.2 emissions model [a program developed and required by the Environmental Protection Agency to calculate mobile source emissions] for developing the roadway class-specific emission factors for the base year. These emissions factors were combined with the HPMS-adjusted VMT estimates to compute on-road emissions for each roadway class.

The resulting emissions estimates are then summed to compute total regional emissions from on-road motor vehicles.

For each future year of interest (i.e., analysis year), the regional travel model must first be used to develop roadway-class specific VMT estimates. These estimates are then compared to the base year VMT estimates output by the travel model, to develop roadway-class specific growth rates. The base year HPMS-adjusted VMT estimates above are then multiplied by these growth rates to compute future year HPMS-adjusted VMT estimates.

Similar to the base year computation methodology, congested speeds output by the model were input to MOBILE to develop roadway class-specific emissions factors. The HPMS-adjusted VMT estimates for each roadway class were then multiplied by the emissions factors output by MOBILE, and the resulting emissions estimates summed across all roadway classes to compute total regional on-road emissions. The process was followed for each selected analysis year. The above example provides one approach to computing HPMS-adjusted VMT estimates for each analysis year and scenario. There are, however, a number of other variations that could be pursued depending on the robustness of the available data and desired level of analysis [3, 4].

Table 2 shows the VMT for the model area for the years 2002, 2005, 2009, 2015 and 2025. Appendix A [of the report] lists the VMT by facility type for all the above-listed years.

County Name	Year	Winter VMT	Summer VMT
Wood	2002	2295840	2604982
Washington	2002	2061782	2353125
Wood	2009	2658148	3015859
Washington	2009	2224337	2538645
Wood	2015	2854781	3240181
Washington	2015	2569827	2932187
Wood	2025	3111562	3531210
Washington	2025	2835467	3236821

Table 2. VMT from the Travel Demand Model for Different Years.

Donut-Area VMT:

During the month of June 2005, EPA clarified how transportation conformity was determined in non-contiguous PM_{2.5} non-attainment areas. EPA's clarification was as follows: *“Noncontiguous PM_{2.5} nonattainment areas (NNAs) are areas that contain “satellite portions” that are not contiguous with the main portion of the nonattainment area. These satellite areas are designated as part of the overall nonattainment area because they have a point source which contributes, via transport, to the air quality problems of the main geographic portion of the PM_{2.5} nonattainment area. We believe that the satellite portions of NNAs best fit the definition of a donut area for transportation conformity purposes. Section 93.101 of the conformity rule defines “donut areas” as “geographic areas outside a metropolitan planning area boundary, but inside the boundary of a nonattainment or maintenance area that contains any part of a metropolitan area(s). These areas are not isolated rural nonattainment and maintenance areas.”*

The conformity guidance for “donut” areas was entitled “Companion Guidance for the July 1, 2004, Final Transportation Conformity Rule: Conformity Implementation in Multi-jurisdictional Nonattainment and Maintenance Areas for Existing and New Air Quality Standards.” This document was available on EPA's website. This document was consulted by WWW, as part of the conformity determination.

As part of the PM_{2.5} Air Quality analysis, a small portion of Pleasants County [WV] was added to the Wood County area as a “donut”. In this “donut” area there were roads with different classifications. The WVDOT provided WWW with the VMT on these roads [in the “donut area”] for the year 2004. Based upon the advice of the WVDQAQ, the modeling area's growth factor was used to calculate the donut area VMT [with respect to functional class] for the years 2002, 2009, 2015 and 2025 [Refer to Appendix C of the report]. This donut area VMT was added to the Wood County VMT and the Air Quality results were determined based upon that information.

Vehicle Distribution Factors:

The distribution of VMT by vehicle types was derived based upon a set of vehicle fractions. Interagency coordination with WVDOAQ resulted in a consensus, that a combined set of vehicle fractions that are based upon the average of the HPMS derived vehicle fractions and the Mobile6.2 defaults were to be used for the air quality analysis. The recommended fractions were provided in Appendix B [of the report].

Financial Constraint:

FHWA's planning regulations, Sections 450.322(b) (11) and 450.324(e) require the transportation plan to be financially constrained while operating and maintaining the existing transportation system. Only the projects for which construction and operation funds are being committed [or have a reasonable chance of being committed] are included. The region's MPO WWW, in conjunction with WVDOT and ODOT has developed an estimate of the cost to maintain and operate the existing transportation infrastructure in the MPO area, in comparison to the projected revenues and maintenance needs for the area.

Public Involvement Process:

The public involvement process would follow after the first draft was reviewed by WVDOAQ, WVDOT, ODOT and other agencies that might be involved in the conformity process. The draft report will be available for public comment and review at local libraries in the area, as well as the offices of WWW-IPC.

Air Quality Analysis Results Documentation

2002 Model VMT and Speed Data:

The 2002 travel demand model VMT and the vehicle fractions for the area was quoted from the earlier documentations [3, 4].

2009 Model VMT and Speed Data:

The socio-economic factors of the zones within the study area for the year 2000 were scaled for the year 2009 using a growth factor, and these values were updated for all the TAZ's. The socio-economic factors forecasted included average autos/household per zone, number of households per zone, number of retail, non-retail, and service employees per zone. Trip generation of special generators and external stations were also adjusted correspondingly.

Later, the 2009 transportation network was derived from 2015 network. In this step, all the projects that were supposed to be implemented from 2009 to 2015 were identified and subsequently deleted from the network, leading to the 2009 network.

2015 Model VMT and Speed Data:

The 2002 travel demand model VMT and the vehicle fractions for the area was quoted from the earlier documentations [3, 4].

2025 Model VMT and Speed Data:

The 2002 travel demand model VMT and the vehicle fractions for the area was quoted from the earlier documentations [3, 4].

Input Files:

Input files were developed for modeling mobile emissions with the Mobile6.2 software by using the VMT split by functional class. The area type parameters were established by the West Virginia Division of Air Quality (WVDOAQ) for Wood County. A list of all the input files for the analysis years listed before, is represented in Appendix E [of the Air Quality Report]. The assumptions related to the derivation of model inputs

were developed as part of an interagency consultation process involving the following agencies:

1. West Virginia Division of Air Quality.
2. West Virginia Department of Transportation.
3. Wood-Washington-Wirt Interstate Planning Commission.
4. Federal Highway Administration.
5. Ohio Department of Transportation.
6. U.S. EPA.
7. Ohio EPA.

Output Files, Emissions Estimates and Conformity Analysis:

The results of the Mobile6.2 analysis gave mobile emission rates that can be used along with the VMT by functional class of roadway in order to derive estimates of total mobile source emissions for Nitrous Oxides (NO_x) and PM_{2.5}. These emissions estimates would then be compared to the base year emissions, as agreed upon at the interagency consultation meeting.

The conformity results are represented in Table 3. The consolidated results of air quality analysis are displayed in Appendix D [of the Air Quality Report]. The output files are documented in Appendix F [for NO_x] and Appendix G of the Air Quality Report [for PM_{2.5}] respectively and using those results, the air quality analysis was conducted.

Conformity Statement:

The conformity rule required the region's LRTP to conform to the SIP and cleared by the MPO, before FHWA approves the funding of future projects. The conformity is determined by the processes outlined in the conformity rules to the various analyses performed. The WWW PM_{2.5} non-attainment area has demonstrated conformity with the PM_{2.5} transportation conformity rule using the base year interim emissions test. This finding reinforces the MPO's vision to meeting the regional goals for an effective transportation system. The Conformity Statement is displayed in Appendix 1 of this summary document.

Year	Nox (tpd)	PM2.5 (tpd)	Nox (Annual)	PM2.5 (Annual)
2002	6.54385	0.12675	2388.50	46.26
2009	4.22825	0.08395	1543.31	30.64
2015	2.441	0.05885	890.96	21.48
2025	1.3698	0.04935	499.97	18.01

Wood County Results [Average of Winter and Summer]

Year	Nox (tpd)	PM2.5 (tpd)	Nox (Annual)	PM2.5 Annual
2002	5.8969	0.1142	2152.36	41.68
2009	3.5494	0.0705	1295.53	25.73
2015	2.20345	0.05315	804.25	19.39
2025	1.25365	0.0452	457.58	16.49

Washington County Results [Average of Winter and Summer]

Table 3. Air Quality Conformity Results

Conclusions from the Analysis

The conclusions of the air quality analysis study were as follows:

- The travel demand model was used to provide the data set for establishing the 2002 base line emissions.
- The travel demand model used the socio-economic factors of the metropolitan area, and mirrored the land use characteristics, vehicle mix and trip-making characteristics and other variables.
- Both the Transportation Plan (2025), as well as the TIP [FY 2006-2009] were fiscally constrained.
- The air quality analysis for Washington County (OH) proves that the PM_{2.5} emissions for the analysis years [2009, 2015] and horizon year 2025 are less than the base year emissions for 2002.
- The air quality analysis for Wood County (WV) proves that the PM_{2.5} emissions for the analysis years [2009, 2015] and horizon year 2025 are less than the base year emissions for 2002.
- Both the Transportation Plan (2025), as well as the TIP [FY 2006-2009] was found to conform to Air Quality standards.

References:

1. “Estimating Regional Mobile Source Emissions” [2003] (NHI Course 152071) Publication No. FHWA-NHI-04-120. Prepared by Texas Transportation Institute.
2. “Ohio Transportation Conformity Workshop” [2004], Columbus (OH). Conducted by the Federal Highway Administration.
3. “2003 Comprehensive Long Range Multimodal Transportation Plan for Wood County, WV and Washington County, OH [2004]. Prepared by Wilbur Smith Associates.
4. “WWW Travel Demand Model Development Technical Report”-Final [2004], Wood Washington Wirt Interstate Planning Commission. Prepared by Wilbur Smith Associates.
5. “USEPA Region III Transportation Conformity Training” [2004], U.S. EPA Conformity Training, Philadelphia, PA.
6. http://www.epa.gov/ttn/naaqs/standards/pm/data/pmstaffpaper_20050630.pdf
7. <http://cfpub.epa.gov/ncea/cfm/partmatt.cfm>
8. <http://www.epa.gov/otaq/transp/traqconf.htm>

Appendix 1.

**Air Quality Conformity Analysis Documentation
Requirements**

CRITERIA FOR EVALUATING CONFORMITY DETERMINATIONS

Evaluation of the Conformity Determinations for the 2025 Long Range Plan and Transportation Improvement Program [TIP]

SECTION of 40 CFR Part 93	CRITERIA	Y/N	COMMENTS
93.110	<p>Are the conformity determinations based upon the latest planning assumptions?</p> <p>(a) Is the conformity determination, with respect to all other applicable criteria in §§93.111 - 93.119, based upon the most recent planning assumptions in force at the time of the conformity determination?</p> <p>(b) Are the assumptions derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other designated agency? Is the conformity determination based upon the latest assumptions about current and future background concentrations?</p> <p>(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership discussed in the determination?</p> <p>(d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.</p>	Y	<p>(a, b). The latest available planning assumptions were used. Trip tables for each analysis year, along with their corresponding traffic networks, were used to run the Travel Demand Model [TDM]. VMT per facility type was derived from the TDM output for WWW area.</p> <p>The VMT fractions were the average of the MOBILE 6.2 national default values as well as the HPMS [Highway Performance Monitoring System] data provided by the West Virginia DOT. HPMS is the only source of VMT data collected in the State.</p> <p>(c, d). The ratio of regional transit trips to total trips is less than one percent. However, the recommended future</p>

	<p>(e) The conformity determination must use the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented.</p> <p>(f) Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105.</p>		<p>system enhancements are addressed in the LRTP report. The emissions analysis did not address future changes in transit service, fares, and road and bridge tolls because the changes would not impact the forecasts of the travel demand model.</p> <p>(e) This is not applicable because there are no TCMs in the SIP. The PM_{2.5} SIP is due in April 2008 for EPA's consideration.</p> <p>(f). Already mentioned in (a, b).</p>
93.111	Is the conformity determination based upon the latest emissions model?	Y	Mobile 6.2 was used for the determination.
93.112	Did the MPO make the conformity determination according to the consultation procedures of the conformity rule or the state's conformity SIP?	Y	The standard consultation procedures were followed. After the public comment period, the policy board meeting was held. No public comments were received.

TRANSPORTATION PLAN

SECTION of 40 CFR Part 93	CRITERIA	Y/N	COMMENTS
93.106(a) (1)	Are the Horizon Years correct?	Y	The conformity analysis addressed all the horizon years: 2009, 2015 and 2025. These are the years needed for the PM _{2.5} NAAQS conformity determinations.
93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Y	The relevant information is provided in the region's LRTP document.
93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of the regionally significant additions or modifications to the existing transportation network which the transportation plan envisions to be operational in the horizon years?	Y	The ratio of regional transit trips to total trips is less than one percent. However, the recommended future system enhancements are addressed in the LRTP report. The emissions analysis did not address future changes in transit service, fares, and road and bridge tolls because the changes would not impact the forecasts of the travel demand model.
93.108	Is the Transportation Plan Fiscally Constrained?	Y	The Fiscally Constrained Analysis documentation is included in the LRTP report.
93.113(b)	Are TCM's being implemented in a timely manner?	N/A	There are no TCM's identified for our area in the SIP.
93.118	For Areas with SIP Budgets: Is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	A SIP will not be established for the PM _{2.5} nonattainment area until 2008. For Wood County [WV]: The projected emissions are far below the one hour SIP budget for the years 2005, 2009, 2015 and 2025. For Washington County [OH]: The projected emissions are far below the base year emissions for the years 2009, 2015 and 2025. Refer to Table A.

TRANSPORTATION IMPROVEMENT PROGRAM

SECTION of 40 CFR Part 93	CRITERIA	Y/N	COMMENTS
93.108	Is the Transportation Improvement Program Fiscally constrained?	Y	The Fiscally Constrained Analysis documentation is included in the FY [2006-2009] TIP.
93.113(c)	Are TCM's being implemented in a timely manner?	N	There are no TCM's identified for our area in the SIP.
93.118	For Areas with SIP Budgets: Is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	<p>For Wood County [WV]: The projected emissions are far below the one hour SIP budget for the years 2005, 2009, 2015 and 2025.</p> <p>For Washington County [OH]: The projected emissions are far below the base year emissions for the years 2009, 2015 and 2025.</p> <p>Refer to Table A [in the following page].</p>

Year	Nox (tpd)	PM2.5 (tpd)	Nox (Annual)	PM2.5 (Annual)
2002	6.54385	0.12675	2388.50	46.26
2009	4.22825	0.08395	1543.31	30.64
2015	2.441	0.05885	890.96	21.48
2025	1.3698	0.04935	499.97	18.01

Wood County Results [Average of Winter and Summer]

Year	Nox (tpd)	PM2.5 (tpd)	Nox (Annual)	PM2.5 Annual
2002	5.8969	0.1142	2152.36	41.68
2009	3.5494	0.0705	1295.53	25.73
2015	2.20345	0.05315	804.25	19.39
2025	1.25365	0.0452	457.58	16.49

Washington County Results [Average of Winter and Summer]

Table A. Air Quality Conformity Results