

Air Quality Subcommittee (AQS) Meeting Notes

August 10, 2017

Attendees

Ian Beam, MDOT (teleconference)
Gregory Becoat, EPA (teleconference)
Alex Brun, MDE (teleconference)
Kevin Black, FHWA (teleconference)
Lauren DeVore, DNREC
Lindsay Donnellon, FHWA (teleconference)
Heather Dunigan, WILMAPCO
Jay Gerner, DelDOT (teleconference)
Mark Glaze, FHWA
Jacob Guise, WILMAPCO
Jolyon Shelton, DNREC
Cathy Smith, DART (teleconference)
Bill Swiatek, WILMAPCO
Tigist Zegeye, WILMAPCO

Acceptance of the notes from the July 20th Meeting

- See: www.wilmapco.org/aqs
- The notes were accepted without corrections or clarifications.

Draft Delaware FY 2018 CMAQ Project Discussion - B. Swiatek

- Mr. Swiatek reviewed DelDOT's proposals for Congestion Mitigation and Air Quality (CMAQ) spending that were discussed at the Technical Advisory Committee (TAC) meeting last month. It was proposed that money will be spent on: the statewide rideshare, industrial track greenway, Christina River Bridge and approaches, as well as statewide transportation management improvements.
- Mr. Swiatek reiterated WILMAPCO's questions for the Federal Highway Administration (FHWA) about CMAQ spending eligibility from the TAC meeting last month. FHWA reviewed the proposal and said that DelDOT should be allowed to program CMAQ funds for the Christina River Bridge (CRB) project with the expectation and commitment that DelDOT will provide additional future details about its eligibility. For SR 141 and I-95 interchange there was a good case made by DelDOT to make this project eligible for CMAQ's Particulate Matter 2.5 (PM2.5) set aside based on this reduction of the truck starts/stops at this interchange. FHWA also found that the DelDOT Mobile App was eligible for CMAQ spending.

- Mr. Swiatek said the question he brought up regarding the ITMS project was about the electronic detection system that would build a monitoring system. Mr. Swiatek asked Ms. Donnellon to look at that project, because it is necessary for the ITMS project to work.
- Mr. Swiatek informed the group that the concern he brought up about the Christina River Bridge Project had to do with location and whether it is going to have any immediate benefits or pull cars off the road. Mr. Swiatek pointed out that there are not any residential developments surrounding the bridge, which made him skeptical toward whether the project will benefit emissions.
- Ms. DeVore discussed DNREC's opinion, she agreed with Mr. Swiatek, that there is not anything across the Christina River Bridge conducive to non-recreational pedestrian movements. This created the question of why people would want to bike across the bridge if there is nothing to bike to.
- Ms. Zegeye informed Ms. DeVore that the city has plan to develop the area. Mr. Shelton offered a rebuttal, and said that even though there are plans for development it does not mean the Christina River Bridge Project will have air quality benefits. Ms. DeVore asked Ms. Zegeye what the development plans were for the area. Ms. Zegeye encouraged Ms. DeVore to check out the City of Wilmington's website.
- Mr. Swiatek stated that there is a renewal plan for that area and has not gotten traction because of the financial crisis. Mr. Swiatek believes that in the future there might be some air quality benefits, but as of now there is none.
- Ms. DeVore asked if any of the projects were modeled. Mr. Swiatek responded saying he does not believe that they were modeled and that Mike DuRoss preformed a qualitative assessment as to why the SR 141 and I-95 interchange project would be eligible.
- Ms. Zegeye asked regarding the CRB in the model, if Ms. DeVore meant specifically a hot spot analysis or conformity in general. Ms. DeVore asked specifically about conformity. Ms. Zegeye reassured her that it was modeled in the long-range plan, and the Transportation Improvement Plan (TIP).
- Mr. Swiatek believes that from a traffic flow perspective it may have short-term traffic congestion relieving benefits. Christina River Bridge was put in the model because it adds capacity and therefore reduces congestion.
- Mr. Glaze asked what DelDOT's method is for estimating bike/ped trips. Ms. Dunigan said that DelDOT has been working on improving their model so that they could do a better job estimating bike/ped trips. As of now, DelDOT says to use their household travel survey to get baseline information.

- Mr. Swiatek asked Ms. Donnellon if it was expected to have more information and analysis on Christina River Bridge by next spring because it will be beneficial to see an improvement in emissions from a ped/bike perspective.
- Ms. Donnellon responded saying they are hoping to receive something more quantitative from the model; this will be in the next review. Ms. Donnellon informed Mr. Swiatek there have not been any explicit requests for the information that he is looking for. Mr. Swiatek said it would be helpful if DelDOT could have a nice quantitative projection of the benefits. Ms. DeVore agreed that there needs to be a demonstrated emissions benefit.

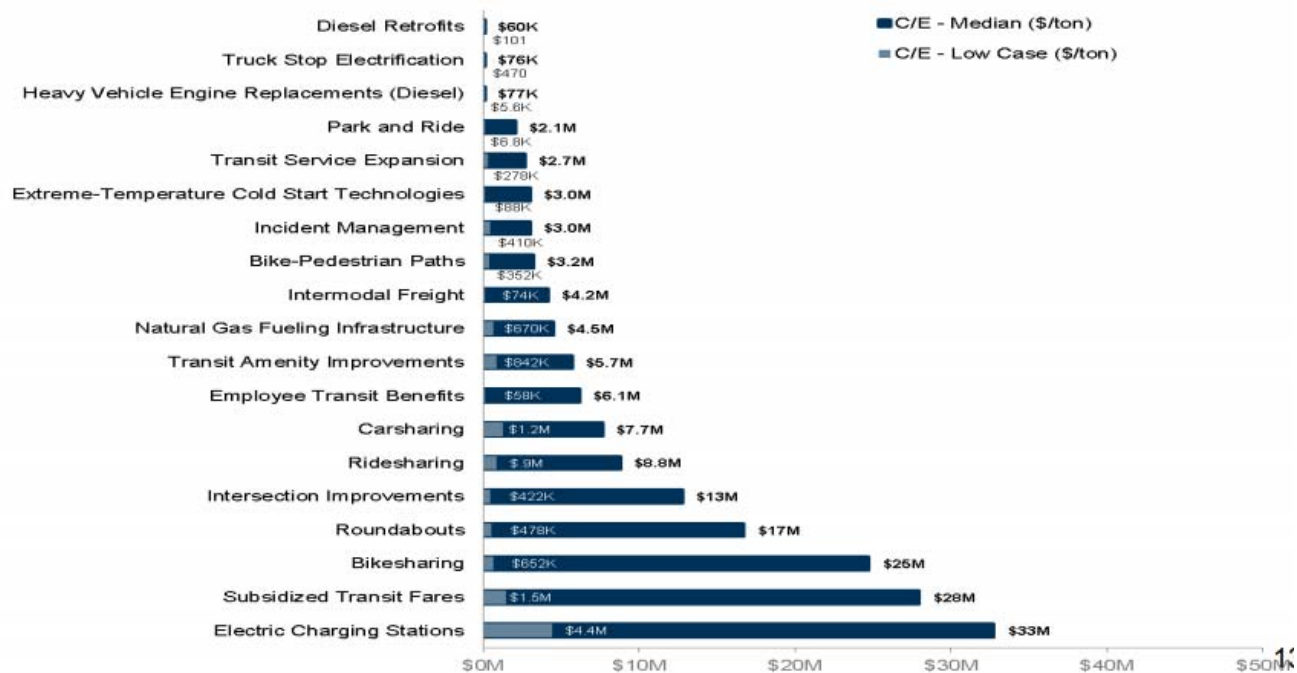
FHWA CMAQ Analysis – M. Glaze

- Mr. Glaze's presentation was on the CMAQ Cost-Effectiveness Tables and Emissions Calculator tool. For full access to the presentation please visit: www.wilmapco.org/aqs
- Mr. Glaze began with a quick overview of CMAQ stating: it was established in 1991 under the Intermodal Surface Transportation Efficiency Act (ISTEA) and reauthorized in all subsequent transportation reauthorization acts, most recently the Fixing America's Surface Transportation (FAST) act. The FAST act annual funding level begins at about \$2.3 billion and ends with around \$2.5 billion (FY 2016-2020).
- Mr. Glaze listed the basic CMAQ project eligibility. Each CMAQ project must: be a transportation project, generate emissions reductions, and be in or benefit the nonattainment or maintenance area. Projects must reduce emissions from transportation sources such as: CO, ozone precursors (VOC and NOx), PM_{2.5}, and PM₁₀. Reductions must contribute to the area's overall clean air strategy and should be demonstrated by the emissions analysis required by FHWA.
- Mr. Glaze talked about expanded project eligibility under the FAST Act. Diesel emissions control technology for non-road diesel vehicles and engines used in construction projects or port-related freight operations must be: located in ozone and PM areas and funded under Titles 23 or 49. Port related landside non-road or on-road equipment concentrates on PM_{2.5}. New technology includes installation of vehicle to infrastructure communications equipment. Mr. Glaze believes this technology is on the horizon but will not be out soon.
- Mr. Glaze described the general requirements for the cost effectiveness tables. In general: "The Secretary in consultation with the Administrator of the Environmental Protection Agency shall evaluate projects on a periodic basis and develop a table or other similar medium that illustrates cost effectiveness of a range of project types for funding under this section as to how the projects mitigate congestion and improve air quality". When using the table: "States and

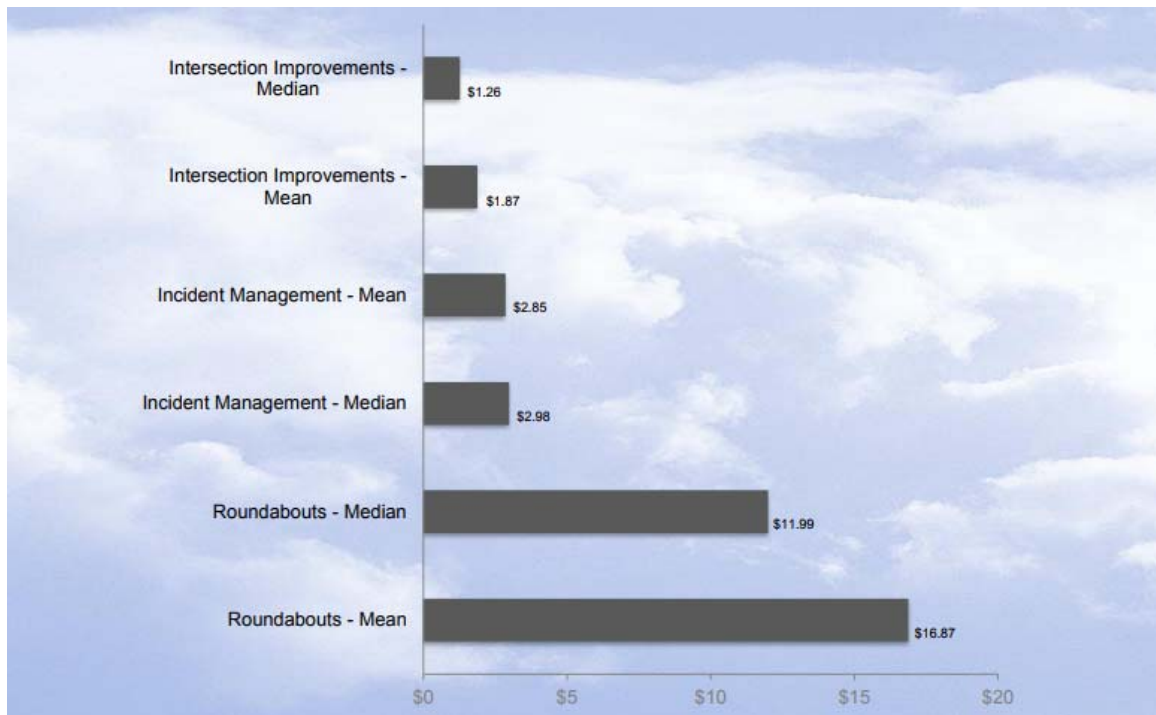
metropolitan planning organizations shall consider the information in the table when selecting projects or developing performance plans under subsection (l)". Mr. Glaze informed the AQS that the tables are valuable in terms of project selection.

- Mr. Glaze discussed FHWA's objectives. The two main objectives are: "Provide representative cost-effectiveness (C-E) estimates to guide project selection and funding request processes at the State and local level" and "Promoting ownership of a role in achieving high environmental impact returns on project funds".
- Mr. Glaze talked about the scope of the analysis, starting out by evaluating everything based on CMAQ eligibility. FHWA evaluated projects for PM_{2.5}, PM₁₀, NO_x, CO, and VOCs. All project types will either receive CMAQ funding or may receive CMAQ funding soon. Congestion impacted a small portion of all eligible projects.
- Mr. Glaze informed the AQS that they provided cost effective estimates to guide project selection. FHWA was hoping to educate their userbase for the most effective use of their CMAQ dollars.
- Mr. Glaze said that items within the scope of the analysis were estimates of the criteria pollutants (which was part of the CMAQ mandate). FHWA was asked why they had not considered greenhouse gas health effects. Mr. Glaze responded t they were out of the scope of the analysis.
- A portion of the key data sources include: CMAQ assessment studies, CMAQ project tracking system, state and local project summaries. The full list can be found in the presentation.
- A portion of project types selected for analysis include: bike sharing, bicycle/pedestrian projects, car sharing, and dust mitigation. The full list can be found in the presentation.
- Mr. Glaze talked about the analytical scenarios. Cost effectiveness estimates represent lifetime emissions mitigation for a single pollutant, divided by project cost. A range of individual cases were analyzed for each project type, to generate cost effectiveness estimates at the project-type level.
- Mr. Glaze explained the data reporting for the cost estimates. Median C-E estimates were reported to represent C-E because medians are: not distorted by abnormally-performing outliers, likely to be more representative within project types than best-case scenarios, and likely to be more comparable across project types than best-case scenarios.

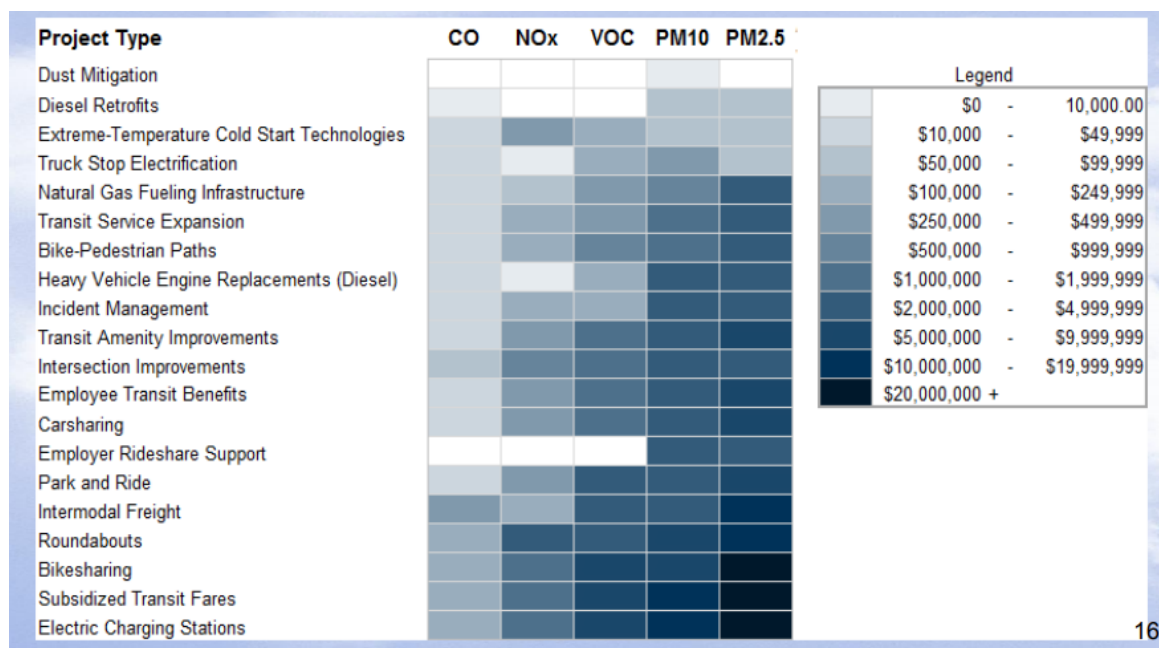
- Median Cost-Effectiveness (Cost per Ton Reduced) of PM_{2.5}:



- Mr. Glaze reviewed the PM_{2.5} findings. The most effective finding was the diesel engine technologies, all under \$100,000/ton. While the least effective finding included: Electric vehicle charging stations, subsidized transit fares, bike sharing, roundabouts, and intersection improvements; all over \$13 million/ton.
- Congestion Impacts (Dollars per Vehicle-Hour of Delay Reduced):



- Median C-E for All Pollutants:



- Mr. Glaze reported that there was a high general effectiveness in: idle reduction, heavy vehicle diesel engine replacements, diesel retrofits, transit service expansion, and park and ride.

- Mr. Shelton asked which urban areas were looked at in the study. Mr. Glaze responded: “There were no specific urban areas that were chosen; national averages were used for inputs for the emission rate on MOVES”. The scenarios were not really identified for one location. Mr. Shelton responded in terms of the dollar cost the emissions benefit, the cost of the program would vary by geographical location. For instance, it might cost a lot more to build a bridge in the northern climate than the southern climate. Mr. Glaze responded that FHWA completed real world examples but they did not identify them in the study; they became part of the database to assemble the data.
- Mr. Glaze informed the AQS that in terms of product, FHWA was looking to develop a representative ranking of all the project types.
- Mr. Swiatek asked: “From a policy prospective, the projects that are consistently on the bottom of the list, will FHWA look at them again and maybe eliminate them from CMAQ spending in the future”. Mr. Glaze said: “That would be up to congress”. Mr. Glaze informed Mr. Swiatek that they are scheduled to do some updates using MOVES14; FHWA’s goal is to find better cases to analyze.
- Mr. Swiatek asked if Mr. Glaze knew of other Metropolitan Planning Organizations and Department of Transportations (MPO and DOT) that are actively using the analysis in their prioritization process. Mr. Glaze responded: “People are using the analysis, but the information he receives arrives periodically (information is found through FHWA’s website)”. Therefore, as of now, it is difficult for Mr. Glaze to give a definite answer.
- Mr. Glaze moved onto the next portion of his presentation: the CMAQ emissions calculator toolkit. The main purpose of the calculator is to: “Develop tools to assist the estimation of emission benefits of CMAQ projects, and to support reporting activities: annual CMAQ report and proposed CMAQ on-road mobile source performance measure”.
- Mr. Glaze elaborated a little more saying that the purpose is to provide analysis methodologies for most encountered CMAQ projects, provide a common set of methodologies using consistent assumptions, available data sources, and serve as a resource only. He explained the idea is not for this to take over as the standard for evaluating emissions.
- Mr. Glaze discussed the approach used to develop the tool. Air quality and Congestion Mitigation Measure Outcomes Assessment Study, Highway Capacity Manual, and Emissions quantification tools were included in the list of research reviewed for this tool. The list of emissions quantification tools includes: EPA MOVES, EPA’s Diesel Emissions Quantifier, and MPO methods (including ARC’s CMAQ Calculator). FHWA identified 80 project types, and prioritized 20 project types in 5 CMAQ categories. For a list of the grouped project types please refer to the presentation.

- Mr. Glaze informed the AQS that FHWA ran the project categories through MPO beta testers and received excellent feedback. FHWA also gathered feedback and data from EPA on diesel retrofits and replacement modules. FHWA coordinated with DOE Clean Cities and Argonne National Laboratory on alternative fuels tool. Lastly, FHWA is working closely with FTA in the development of Transit 1 & 2 tools.
- The tool methodology includes: years 2016-2021, MOVES national default data, inputs readily available, and outputs by pollutant in kg/day.

CMAQ Project Category	Eligible Project Types
Congestion Reduction and Traffic Flow Improvements	<ul style="list-style-type: none"> • Intersection Improvements • Traffic Signal Synchronization • Roundabouts
Advanced Diesel Truck / Engine Technologies	<ul style="list-style-type: none"> • Diesel Retrofits • Diesel Replacements
Alternative Fuels	<ul style="list-style-type: none"> • Vehicle Purchase • Fueling Facilities (Restricted and Unrestricted Access Infrastructure)

- The modules (left) and individual tools (right) are listed above. The list of tools can be found at: http://www.fhwa.dot.gov/environment/air_quality/cmaq/toolkit/
- Below are the project tools planned in 2017:

CMAQ Project Category	Eligible Project Types
Carpooling and Vanpooling	<ul style="list-style-type: none"> • Carpooling • Vanpooling
Transit Bus Retrofit and Replacement	<ul style="list-style-type: none"> • Diesel Engine Retrofits • Diesel or CNG Bus Replacement • Alternative Fuel Bus Replacement

- Mr. Glaze summarized the tool kit by saying: it is easy to use, it has consistent methods, and is customizable with local data.

- Ms. DeVore asked how the tool kit compares with the other methodologies that some DOT's are using. Mr. Glaze informed her that they have not made any direct comparisons with other tool kits. Mr. Glaze assumes that they are probably specific to a certain area. Mr. Glaze encouraged Ms. DeVore to go on the website for more information.
- Mr. Swiatek said it would be interesting to sample a couple of projects within an area that does plex analysis and run the tool kit against their analysis. Mr. Glaze said that FHWA borrowed heavily from Atlanta's Regional Council (ARC); they have a lot of approaches and tools already in place.
- Mr. Shelton asked how the tool took into account that the vehicle fleet is projected to continue becoming cleaner over the next five years. Mr. Glaze said that the MOVES model calculates emission rates with some of that data built in.
- Mr. Swiatek asked how everybody would feel adopting the analysis for the CMAQ project prioritization in the future, and if anybody had any concerns. Mr. Shelton asked, for example, the Christina River Bridge, who would be responsible for completing the analysis. This answer is determined by who is completing the project.
- Ms. Zegeyes believes that the CMAQ prioritization has to be separate. Ms. Zegeyes said that WILMAPCO needs to work with DelDOT to come up with a mechanism that works for everybody.
- Mr. Swiatek said things would be shifted around; bike/ped would get a bump and be more beneficial than intersection improvements. Mr. Swiatek said that it would be more beneficial than what was being done in the past because in the past we were looking at just 5/6 project types vs a dozen.
- AQS agreed to use the new FHWA cost benefit analysis, for CMAQ project prioritization.

Other

- Mr. Becoat wanted to update the group that on August 10th, 2017, EPA published a notice withdrawing the condition deadline for promulgated designation for the 2015 ozone standard. That puts the initial designation back on October 1st, 2017, Delaware has recommended two options. The first one was a larger non-attainment area that included Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. They did a five-factor analysis that touches on how transportation can lead to the area having elevated monitoring numbers. Option two was just to make New Castle County a single

non-attainment county. EPA is not finished with their decision what that non-attainment area will be. Although the deadline is October 1st, 2017, the administration still has the right to extend the time for which the designation is necessary.

- Mr. Swiatek responded to Mr. Becoat and asked if a revised conformity determination will be needed by October 2018. WILMAPCO's question is, they have an RTP approaching in March 2019 (which is a trigger), could they do one run in the summer for both. Mr. Becoat said they have done that in the past, and that he will have guidance during the appropriate time.
- Ms. DeVore asked Mr. Becoat when DNREC would have a sense of when they would receive their 120-day letter; Mr. Becoat did not know the answer.
- Mr. Swiatek stated that WILMAPCO has a Progress Report that is being worked on. The Progress Report measures the progress of the Regional Transportation Plan (RTP). In the progress report, there is going to be charts that show the conformity analysis that has been done. These charts show that air emissions are projected to go down through 2040. Mr. Swiatek told everybody, that if they have any other performance measures related to air quality to let him know.
- Mr. Black informed the AQS that the Southern Transportation and Air Quality Summit (STAQS) conference is in a few weeks in Arlington, Texas at the MPO at the north central Texas Council of Government.
- Ms. DeVore reiterated everything Mr. Becoat had discussed. Another thing that DNREC is watching is the Ozone Review of Designation and Evaluation of Assessment Length Act (ORDEAL Act).
- There was no other business addressed.