

## **Air Quality Subcommittee (AQS) Meeting Notes**

October 13, 2016

### **Attendees**

Bruce Allen, DelDOT  
Kevin Black, FHWA (teleconference)  
Alex Brun, MDE (teleconference)  
Deanna Cuccinello, DNREC  
Lindsay Donnellon, FHWA  
Heather Dunigan, WILMAPCO  
Jay Gerner, DelDOT  
Eric Pugliano, DART  
Jolyon Shelton, DNREC  
Bill Swiatek, WILMAPCO  
Colleen Turner, MDOT (teleconference)  
Tigist Zegeye, WILMAPCO

### **Acceptance of the Notes from the July 21 Meeting**

- See: [www.wilmapco.org/aqs](http://www.wilmapco.org/aqs)
- The notes were accepted without corrections or clarifications.

### **Emissions Analysis for the SR 141 Signal Retiming**

- Mr. Allen provided a presentation on the ability of the Syncro model to estimate emissions benefits.
- See: [www.wilmapco.org/aqs](http://www.wilmapco.org/aqs)
- Mr. Allen said that DelDOT's Syncro model is traditionally used for Level of Service (LOS) estimates at road intersections. One of its modules, however, also allows for emissions analysis at these intersections.
- This emissions module was recently used with a signal retiming project along SR 141. Emissions benefits were shown with the optimization of signals, with up to a 25% decrease in emissions at intersections.
- Mr. Swiatek pointed out that the before/after analysis uses the same vehicle volumes. By retiming the signals, he wondered if that produced additional vehicle trips. These extra trips may have somewhat offset emissions benefits. Mr. Allen said no new "after" counts were included in the analysis.

- Mr. Allen explained that Syncro was a micro level model with the ability to model traffic behavior at intersections, but not to model induced congestion.
- He then provided some detail about how the model works.
- Mr. Shelton asked if the model considered different vehicle types, and how the model measured impacts by vehicle type. Mr. Allen said there are defaults for these emission rates by vehicle type and fuel usage. The fleet profile is a direct input.
- Emission outputs included CO, NOx, and VOCs. Mr. Swiatek asked if there were any other emissions that could be estimated, such as GHG. Mr. Allen said he was not aware of other pollutants that could be estimated with Syncro, but would look into it.
- Mr. Allen wondered what use the AQS may have for this model, moving forward. Mr. Swiatek said it was important to see if other types of emissions could be modeled – particularly GHGs which are on the rise in the transportation sector. He also thought it was important to get a handle on the induced trip/use impacts of signal retiming projects. He added that this model could be used to estimate the emissions benefits within the Intelligent Transportation System (ITS) program, now required with the FAST Act and CMAQ reporting, and could perhaps be used to help prioritize different projects within the ITS program. Mr. Allen agreed and said this could help improve transparency and prioritization.
- Mr. Shelton asked how this model compared with the MOVES model. Mr. Allen answered that MOVES was a macro, network-based model. Mr. Allen said he would talk to Mr. DuRoss to find out more.
- Ms. Dunigan challenged the group to look at a before and after pilot project using MOVES and Syncro, coupled with actual air quality monitoring.

### **Proposal to Revise the CMAQ Project Prioritization Process**

- See: [www.wilmapco.org/aqs](http://www.wilmapco.org/aqs)
- Mr. Swiatek provided an overview of this agenda item. He reviewed the WILMAPCO process for prioritizing CMAQ projects within the TIP, including the schedule.
- In response to a MAP-21 requirement, FHWA has developed CMAQ project cost-effectiveness tables to assist MPOs with project selection. Like our analysis, this analysis relies on the FHWA CMAQ database, but includes other data sources and project costs. Additionally, this analysis includes many more project types.

- The table below shows the median cost-effectiveness of the various project types considered, by controlled pollutant, in the WILMAPCO region. Two project types – diesel retrofits and natural gas fueling infrastructure – did not have data for all emission types.

Project Type	C/E - Median (\$/ton, \$ x 1M)			
	PM2.5	VOCs	NOx	Total
Diesel Retrofits	0.04		0.01	0.05
Idle Reduction	0.08	0.00	0.12	0.20
Heavy Vehicle Engine Replacements (Diesel)	0.12	0.02	0.15	0.29
Park and Ride	2.10	0.09	0.46	2.66
Transit Service Expansion	2.70	0.10	0.50	3.30
Incident Management	3.00	0.17	0.17	3.34
Extreme – Temperature cold Start Technologies	3.00	0.37	0.14	3.50
Bicycle and pedestrian	3.20	0.15	0.69	4.04
Natural Gas Fueling Infrastructure	4.50			4.50
Intermodal Freight	4.20	0.25	2.60	7.05
Transit Amenity Improvements	5.70	0.32	1.30	7.32
Employee Transit Benefits	6.10	0.30	1.40	7.80
Car sharing	7.70	0.32	1.70	9.72
Ridesharing	8.80	0.63	2.10	11.53
Intersection Improvements	13.00	0.74	1.10	14.84
Roundabouts	17.00	3.00	4.30	24.30
Bike sharing	25.00	1.20	5.40	31.60
Subsidized Transit fares	28.00	1.10	6.40	35.50
Electric Charging Stations	33.00	1.50	7.30	41.80

- Mr. Swiatek said that WILMAPCO's general proposal is to replace the current sorting methodology with this one, produced by FHWA, as it is more comprehensive. Project priorities will move around a bit. For example, we currently are forced to group "shared ride" projects together, while this methodology distinguishes between "park-and-ride" and "ridesharing." And, park-and-ride projects have a much different emissions/benefits profile than ridesharing.
- Mr. Allen asked if the bicycle/pedestrian category included on-road or off-road projects. Mr. Swiatek answered that it is a combination.
- Mr. Shelton said he was very suspicious about how all this has been put together, particularly the assumptions. Mr. Swiatek said he would send over the details of how the analysis was constructed. Mr. Allen felt that the analysis was logically put together.

- Mr. Shelton explained that he was worried of changing the agency's priorities from one year to the next, which is not helpful with consistency. Mr. Swiatek replied that planning is a dynamic process and new data and analyses can sometimes help make better plans. If we do not use those data and analyses, and stick to old methods, that it is a disservice.
- The group agreed to invite FHWA to present on their work at a future meeting before we make a final decision about utilizing it for our CMAQ project prioritization process.

### **Driving to Cleaner Transportation**

- Ms. Cuccinello provided an overview of this agenda item.
- The aim of the "Driving to Cleaner Transportation" initiative is to construct an online toolkit for elementary schools to use to reduce vehicle idling. Sample toolkit activities include: anti-idling pledges, posters, classroom activities, signage, curriculum, etc. The Tropo air quality mascot will feature heavily in the program. The toolkit will be a guide for implementing these projects at the schools.
- Ms. Cuccinello said a workgroup guiding the work has been meeting for one year. The group includes representatives from DNREC, WILMAPCO, the Delaware Air Quality Partnership, Rideshare Delaware, Mt. Pleasant Elementary School, Nemours, and the American Lung Association.
- Next steps include meeting with the DNREC artist to put together a, graphic template for the toolkit.
- Mr. Swiatek said it has been great to work with DNREC on this initiative. He noted that this work can be traced back to Nemours' Asthma Action Plan in Wilmington, which WILMAPCO then carried forward into a school bus anti-idling program. Now DNREC has taken that effort and expanded it to include not only school bus anti-idling, but all idling and sharing air quality messaging in all elementary schools within five years. He noted that the plan was for about a half dozen schools to pilot the program this year.

### **Other**

- Mr. Swiatek said that there are upcoming National Transit Institute (NTI) conformity trainings. These have been shared via e-mail with the AQS, and he encouraged AQS members to attend that have not already.