



AIR QUALITY

AIR QUALITY MONITORING RECEPTOR SITES

Macroscale (Region-wide) Air Quality Analysis

Performed by Wilmington Area Planning Council (WILMAPCO)

- State Implementation Plans (SIPs) are developed to define how a region will meet the primary and secondary National Ambient Air Quality Standards (NAAQS).
- The WILMAPCO develops a Constrained Long Range Plan (CLRP) and a Transportation Improvement Plan (TIP).
- A computer model is developed to predict CLRP and TIP impacts on air quality in New Castle County and to check conformity to the SIP.
- Emissions determined in the air quality analysis are summertime Nitrous Oxides (NO_x) and Volatile Organic Compounds (VOC) and wintertime Carbon Monoxide (CO). The NO_x and VOC emissions are pre-cursors for forming Ozone (O₃).
- The US 301 Project is included in the 2005-2010 CLRP.
- The US 301 Project conforms to the SIP since it is included in a conforming CLRP.

Microscale (Project-level) Air Quality Analysis

Performed by DeIDOT

- CO hotspot analysis along the US 301 alignments and at 2 signalized intersections within the US 301 project area. CO impacts are analyzed as the acceptable indicator of vehicle-generated air pollution.
- 25 air quality receptor locations were selected to represent air quality sensitive locations. The sensitive receptor locations were defined as locations on either side of the proposed alignments that would be affected by changes in air quality.
- 2 signalized intersections along the proposed US 301 alignments were analyzed using 40 air quality receptors.
- The 1-hour State/National Ambient Air Quality Standard (S/NAAQS) for CO is 35 ppm. The 8-hour S/NAAQS for CO is 9 ppm.
- The 1-hour CO concentrations include a 1.7 ppm background level and the 8-hour average CO concentrations include a 1.2 ppm background level.
- The highest CO concentrations are as follows:

	HIGHEST CO CONCENTRATIONS (ppm)							
	2010				2030			
	Sensitive Receptor Sites		Intersections along US 301		Sensitive Receptor Sites		Intersections along US 301	
	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
No Build Alternative	4.8	2.7	5.5	3.2	4.0	2.3	4.4	2.7
Yellow Alternative	5.1	2.9	5.1	2.6	4.2	2.5	4.1	2.3
Purple + Spur Alternative	6.1	3.3	4.0	2.6	5.0	2.8	3.5	2.2
Brown Alternative (North & South)	6.3	3.4	5.1	2.6	5.2	2.9	4.1	2.3
Green + Spur Alternative (North & South)	6.3	3.5	4.0	2.6	5.2	2.9	3.5	2.2

- There will be no violations of the S/NAAQS for CO along any of the alternatives.
- Any alternative selected under this process will be included in a conformity analysis and the programming of any monies for design, right-of-way, or construction will proceed based on the results of that analysis.

