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AIR QUALITY ANALYSIS

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113 US 113 North / South Study

AIR QUALITY

Macroscale (Region-wide) Air Quality Analysis

- State Implementation Plans (SIPs) are developed to define how a region will meet the primary and secondary National Ambient Air Quality Standards (NAAQS). DelDOT is responsible for ensuring that the mobile source components of these standards are met.
- The Dover / Kent County Metropolitan Planning Organization develops and maintains a long-range transportation plan (LRTP) and Transportation Improvement Program (TIP) for Kent County; DelDOT maintains a Long Range Transportation Plan for Sussex County because it is not represented by a metropolitan planning organization.
- A computer model is used to predict the air quality impacts of the projects contained in the LRTP and TIP, and to check conformity with 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 (O_3).
- The US 113 Project is included in the Dover / Kent County Metropolitan Planning Organizations LRTP as a study that is expected to be implemented by 2020. The actual conformity determination will be completed when the project is programmed for right-of-way, engineering and/or construction.

Microscale (Project-level) Air Quality Analysis

- CO hotspot analysis along the US 113 alignments and at 6 signalized intersections along US 113 in the project area. CO impacts are analyzed as the acceptable indicator of vehicle-generated air pollution.
- 28 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.
- 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 1.4 ppm background level and the 8-hour average CO concentrations include a 1.1 ppm background level.
- The highest CO concentrations are as follows:

YEAR FOR 2030	Sensitive Receptor Sites 1 hr	Sensitive Receptor Sites 8 hr	Intersections along US 113 1 hr	Intersections along US 113 8 hr
No-Build	3.2	2.7	4.5	4.0
Yellow Alternative (On Alignment)	2.7	2.3	--	--
Orange Alternative (West Bypass)	2.6	2.2	2.8	2.5
Blue Alternative (West Bypass)	1.8	1.4	4.0	3.4
Green Alternative (East Bypass)	2.6	2.1	3.8	3.4
Purple Alternative (East Bypass)	2.6	2.1	3.8	3.4
Brown Alternative (East Bypass)	2.3	1.9	3.6	3.3

- *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.***

AIR QUALITY MONITORING RECEPTOR SITES