

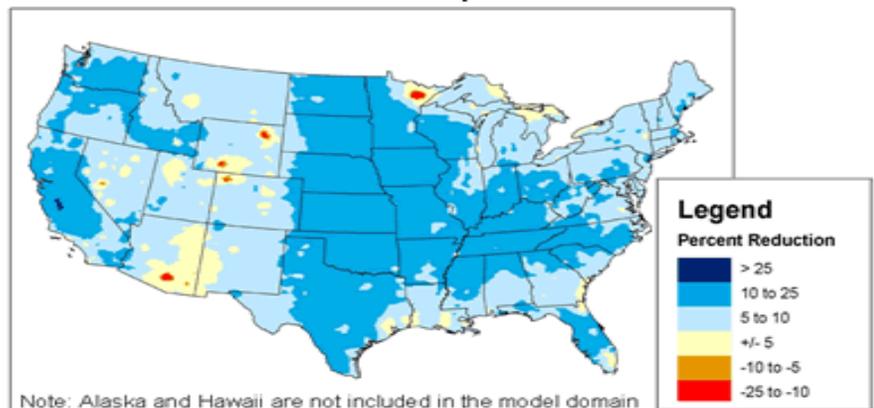
APPENDIX 7.2 – C: Air Quality History

In the Winston-Salem Urban Area, carbon monoxide, particle pollution, and ozone have been declining steadily for several years and are now below the National Ambient Air Quality Standards (NAAQS) for each pollutant.

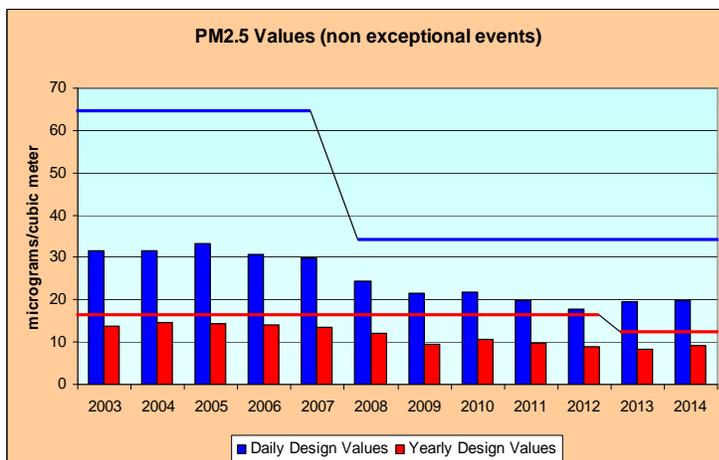
Levels of nitrogen oxides and sulfur dioxide have declined more gradually and continue to stay well below the national standards year round. Overall, the air quality of our region has shown significant improvement from previous years including a decline in the number of ozone exceedances recorded in the region. In October of 2015 a new, more protective ozone standard (NAAQS) will be proposed which will be lower than the current standard of 75 ppb. This new standard could require the area to implement additional measures to meet the challenge of lowering ozone levels in the area even further in order to comply with the new NAAQS. Ozone levels remain an issue of concern during a typical summer when long, hot periods are accompanied by a lack of precipitation and stagnant atmospheric conditions persist. Also, elevated fine particle pollution levels can pose significant health risks for susceptible individuals as these particles are inhaled deeply into the lungs and cannot be removed by the body's natural defense mechanisms.

Prolonged periods of even moderate levels of particle pollution can have an aggregate effect resulting in increased health risks for some individuals. For these reasons, the Forsyth County Office of Environmental Assistance and Protection (FCOEAP) measures and records daily readings of ozone and particle pollution for dissemination to the public. Through the Daily Air Quality Forecast, citizens and visitors are informed of the levels and advised when precautions are warranted for the following day.

Projected Changes in Fine Particles with the Base Case in 2020 Compared to 2001



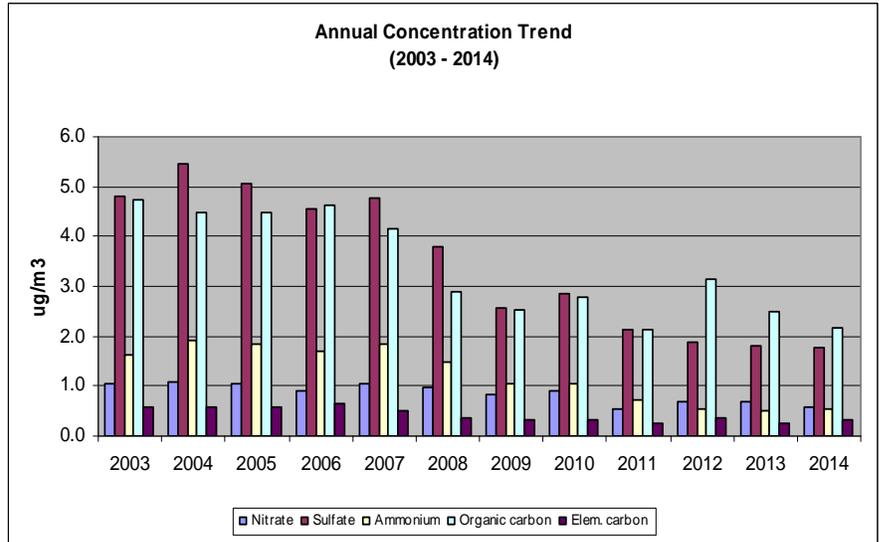
PM_{2.5} (Particle Pollution)



Particle pollution is one of the six criteria pollutants tracked by federal, state, and local environmental regulatory agencies. "Particle pollution" refers to particulate matter smaller than 2.5 microns in diameter (for reference, a human hair is approximately (70 microns in diameter). These particles are inhaled deeply into the lungs and since the human body cannot easily rid itself of these particles, the

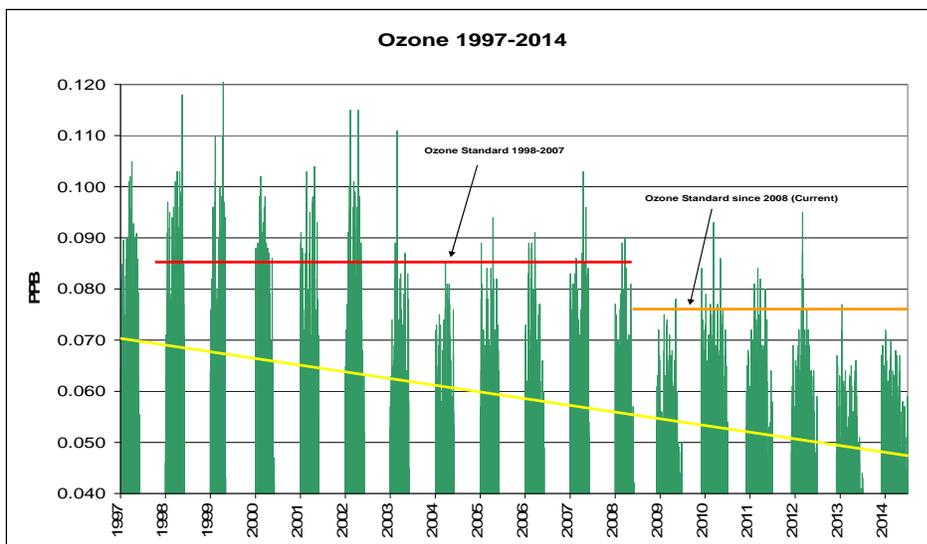
pollution can cause serious breathing problems. Particle pollution has been monitored in the Triad since 1999.

Since then, annual averages in most of our region have steadily declined and remain well below the National Standard. In addition to monitoring the total concentrations of particle pollution in Forsyth County, the Office of Environmental Assistance and Protection also operates specialized ambient air monitoring equipment for identification and speciation of the constituents that make up PM_{2.5} locally, including sulfate, nitrate and ammonium ions and organic carbon. This Office reports collected speciation data for use in statewide PM_{2.5} analysis. This data can help identify regional sources of particle pollution and inform strategies for abatement of pollution issues to further enhance protection of public health in the Triad.



Ozone

Ozone in the Triad has been the primary pollutant of concern for several years. In the early 1990's, the area was classified as non-attainment for the 1-hour ozone standard. In 1995, the area was reclassified as maintenance for the 1-hour standard and has not violated the NAAQS since that time. In 1999, EPA adopted an 8-hour ozone standard based on scientific research indicating the human body was more susceptible to exposure to ozone pollution at lower levels over a longer period of time than previously recognized. Municipalities in the Triad realized local air quality would likely not meet the new standard initially, but with new regulations, policies, and strategic planning, the area would achieve attainment with the



standard in an accelerated time frame. In December 2002, the Triad area, including Winston-Salem and Forsyth County, entered into an Early Action Compact (EAC). The Triad area signed a partnership between local, State, and Federal agencies “to develop the State Implementation Plan early, implement control strategies

earlier than would be required under non-attainment, and achieve compliance with the 8-hour ozone standard in a more expeditious manner than the normal State Implementation Plan process". Through the work of the EAC Stakeholder's, the implemented control strategies across the region, and improved technologies in controlling stationary and mobile sources of emissions, the area was able to demonstrate compliance with the 8-hour ozone standard by the end of 2007, two years earlier than required.

Currently, the area remains in compliance with the current 2012 8-hour ozone standard of 75 ppb.

Air Quality Summary

Positive trends in improved air quality continue across the Triad. Although all criteria pollutants are currently below the National Standards for compliance purposes and continuing to diminish, local levels of ozone and particle pollution remain the primary pollutants of concern. With the announcement by EPA of a new, more health protective ozone standard in October of 2015, ozone is likely to become the top priority pollutant for many future air quality regulatory decisions and compliance strategies. Advances in transportation efficiencies and emissions reductions have helped the area lower pollution levels, but growing trends in population and VMT provide additional challenges for maintaining healthy air quality. The expanded vehicle inspection and maintenance ("I/M") program across the state ensures motor vehicles utilize the necessary equipment to reduce automobile pollution. Many additional efforts have been made to reduce the amount of pollution in the Triad. These efforts employ a regional approach to air quality improvements and incorporate an understanding of the concerns of citizens, elected officials, government, and industry in an effort to balance economic growth with environmental issues. And while many improvements have been accomplished, it is important for the general public, elected officials and other decision makers to be aware that mobile sources are the primary local sources of emissions of particle pollution and ozone precursors. With continued collaboration, the Triad will likely continue to be a leader in air quality improvements and serve a model for other areas across the state and nation.