APPENDIX I
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Sulfur Dioxide (SO_2): A toxic, colorless gas with a distinctly detectable odor and taste. Oxides of sulfur in the presence of water vapor, such as fog, may result in the formation of sulfuric acid mist. Human exposure to SO_2 can result in irritation to the respiratory system, which can cause both temporary and permanent damage. SO_2 exposure can cause leaf injury to plants and suppress plant growth and yield. SO_2 can also cause corrosive damage to many types of manmade materials.

Particulates ($PM_{2.5}$)/(PM_{10})/(TSP): Particulates originate from a variety of natural and anthropogenic sources. Some predominant anthropogenic sources of particulates include combustion products (wood, coal and fossil fuels), automotive exhaust (particularly diesels), and windborne dust (fugitive dust) from construction activities, roadways and soil erosion. Human exposure to inhalable particulate matter affects the respiratory system and can increase the risk of cancer and heart attack. Small particulates affect visibility by scattering visible light and when combined with water vapor can create haze and smog. Micron and submicron particles are those that assume characteristics of a gas and remain suspended in the atmosphere for long periods of time. Particulate pollution had been measured in terms of total suspended particulates (TSP) but those standards were replaced with revised measurements of particulate matter under 10 microns in diameter (PM_{10}). Particles less than 10 micrometers in diameter pose a health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter ($PM_{2.5}$) are referred to as "fine" particles and are believed to pose the greatest health risks. In 1997, USEPA established annual and 24-hour NAAQS for $PM_{2.5}$ for the first time and in 2006, it revised the 24-hour NAAQS for $PM_{2.5}$.

Carbon Monoxide (CO): A colorless, odorless, tasteless and toxic gas formed through incomplete combustion of crude oil, fuel oil, natural gas, wood waste, gasoline and diesel fuel. Most combustion processes produce at least a small quantity of this gas, while motor vehicles constitute the largest single source. Human exposure to CO can cause serious health effects before exposure is ever detected by the human senses. The most serious health effect of CO results when inhaled CO enters the bloodstream and prevents oxygen from combining with hemoglobin, impeding the distribution of oxygen throughout the bloodstream. This process significantly reduces the ability of people to do manual tasks, such as walking.

Nitrogen Dioxide (NO_2): A reddish-brown gas with a highly detectable odor and is highly corrosive and a strong oxidizing agent. Nitric oxide (NO) and nitrogen dioxide (NO_2) constitute what is commonly referred to as nitrogen oxides (NO_x) which are formed by all combustion and certain chemical manufacturing operations. During combustion, nitrogen (N) combines with oxygen (O) to form NO and when combined with more oxygen, forms NO_2. Under intense sunlight, NO_2 reacts with organic compounds to form photochemical oxidants. Oxidants have a significant effect on atmospheric chemistry and are gaseous air pollutants that are not emitted into the air directly. They are formed through complex chemical reactions which involve a mixture of NO_x and reactive volatile hydrocarbons (VOC) in the presence of strong sunlight. Human exposure to NO_2 at high concentrations can cause respiratory inflammation and respiratory irritation at lower concentrations. NO_x reduces visibility and contributes to haze and exposure to NO_x can cause serious damage to plant tissues and deteriorate manmade materials, particularly metals.

Ozone (O_3): An oxidant that is a major component of urban smog. O_3 is a gas that is formed naturally at higher altitudes and protects the earth from harmful ultraviolet rays. At ground level, O_3 is a pollutant created by a combination of VOC, NO_x and sunlight, through photochemistry. Ground-level O_3 is odorless and colorless and is the predominant constituent of photochemical smog. Human exposure to O_3 can cause eye irritation at low concentration and respiratory irritation and inflammation at higher concentrations. Respiratory effects are most pronounced during strenuous activities. O_3 exposure will deteriorate manmade materials and reduce plant growth and yield.

Lead (Pb): Lead is in the atmosphere in the form of inhalable particulates. The major sources of atmospheric lead are motor vehicles and lead smelting operations. USEPA estimates that ambient concentrations have decreased substantially largely due to the decreasing use of leaded gasoline. Health effects from lead occur through inhalation and consequent absorption into the bloodstream. Excessive accumulation causes lead poisoning with symptoms such as fatigue, cramps, loss of appetite, anemia, kidney disease, diminished mental capacity, blindness and death.