

Air Quality

Air quality analysis in the Draft EIS includes the quantification, modeling, and evaluation of:

- Regulated criteria pollutants
- A small number of pollutants regulated by other Clean Air Act programs
- Hazardous air pollutants (HAPs), which are toxic substances ordinarily not present in the atmosphere (or present only in trace amounts), including manganese.

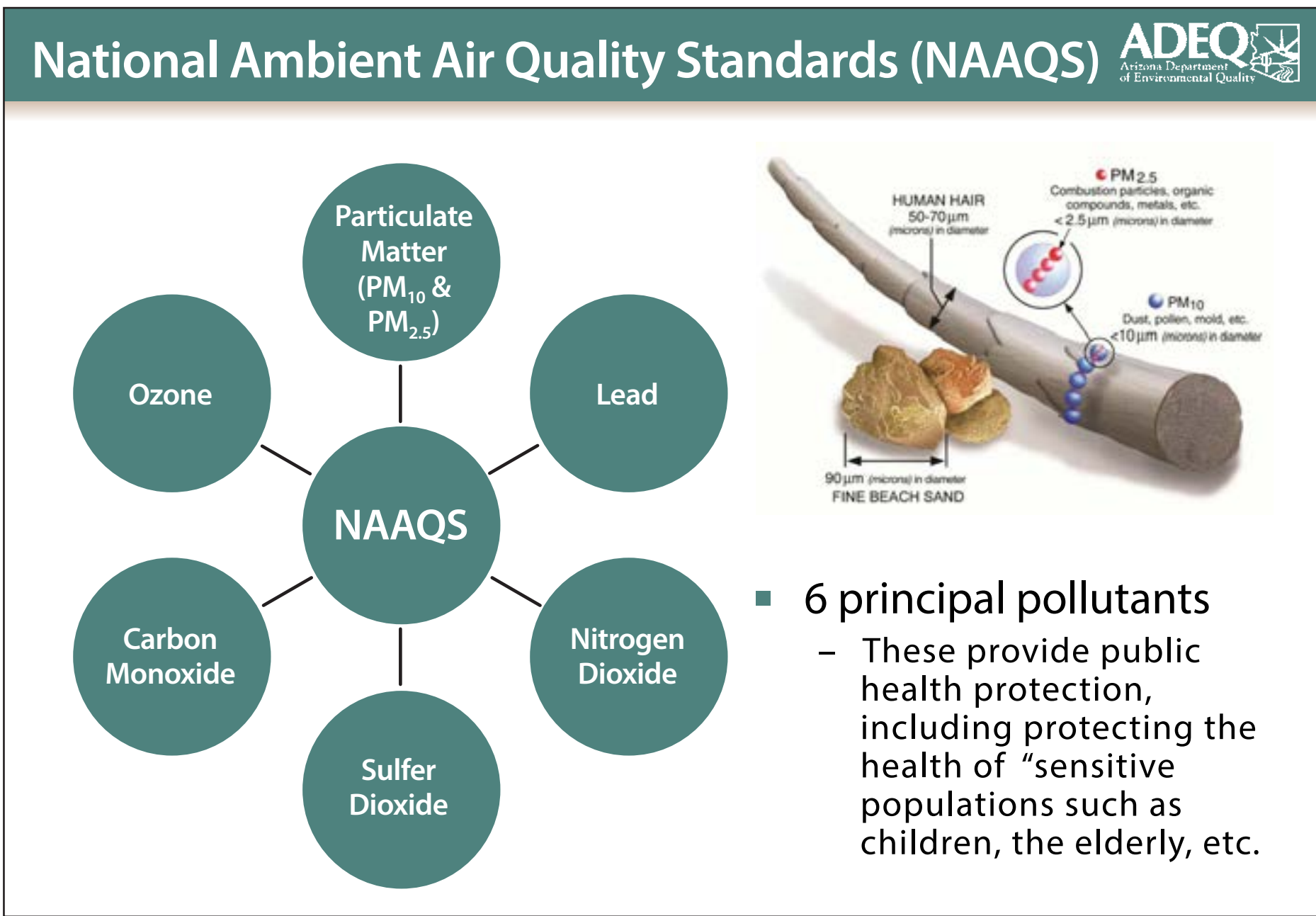
Criteria pollutants have regulatory thresholds and standards set by the U.S. Environmental Protection Agency (EPA) in the form of National Ambient Air Quality Standards (NAAQS).

Criteria pollutants include:

- Oxides of nitrogen (NO_x)
- Carbon monoxide (CO)
- Sulfur dioxide (SO₂)
- Ozone
- Particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀)
- Lead
- Particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5})

The EPA and local governments regulate toxic air pollutants and HAPs such as acetaldehyde, manganese, benzene, asbestos, naphthalene, toluene, and xylenes.

Existing air quality in the analysis area does not exceed any regulatory thresholds. Current contributors to criteria pollutants include sources such as mobile emissions, dust emissions from driving on unpaved roads and winds blowing across unvegetated fields. Background concentrations of criteria pollutants in the region were found to be below the NAAQS thresholds in all cases.



Environmental Consequences

Localized emissions would occur during all Project phases for all alternatives at or near the emission source. It is expected that air quality would return to baseline conditions in the analysis area at end of mining under all alternatives.

The following presents a comparison of effects between alternatives:

Alternative 1 – No Action

- Would not exceed NAAQS

Alternative 2 – Proposed Action

- Alternative with the most emissions from onsite natural gas generators and fuel truck deliveries
- Would not exceed NAAQS

Alternative 3 – Modified Proposed Action

- Reduced emissions compared with Alternative 2 due to use of transmission line power
- Alternative 3 TSF location and access route would contribute to a NAAQS exceedance of 24-hour PM₁₀ and annual PM_{2.5}

Notes: NAAQS = National Ambient Air Quality Standards;
PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less;
PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less



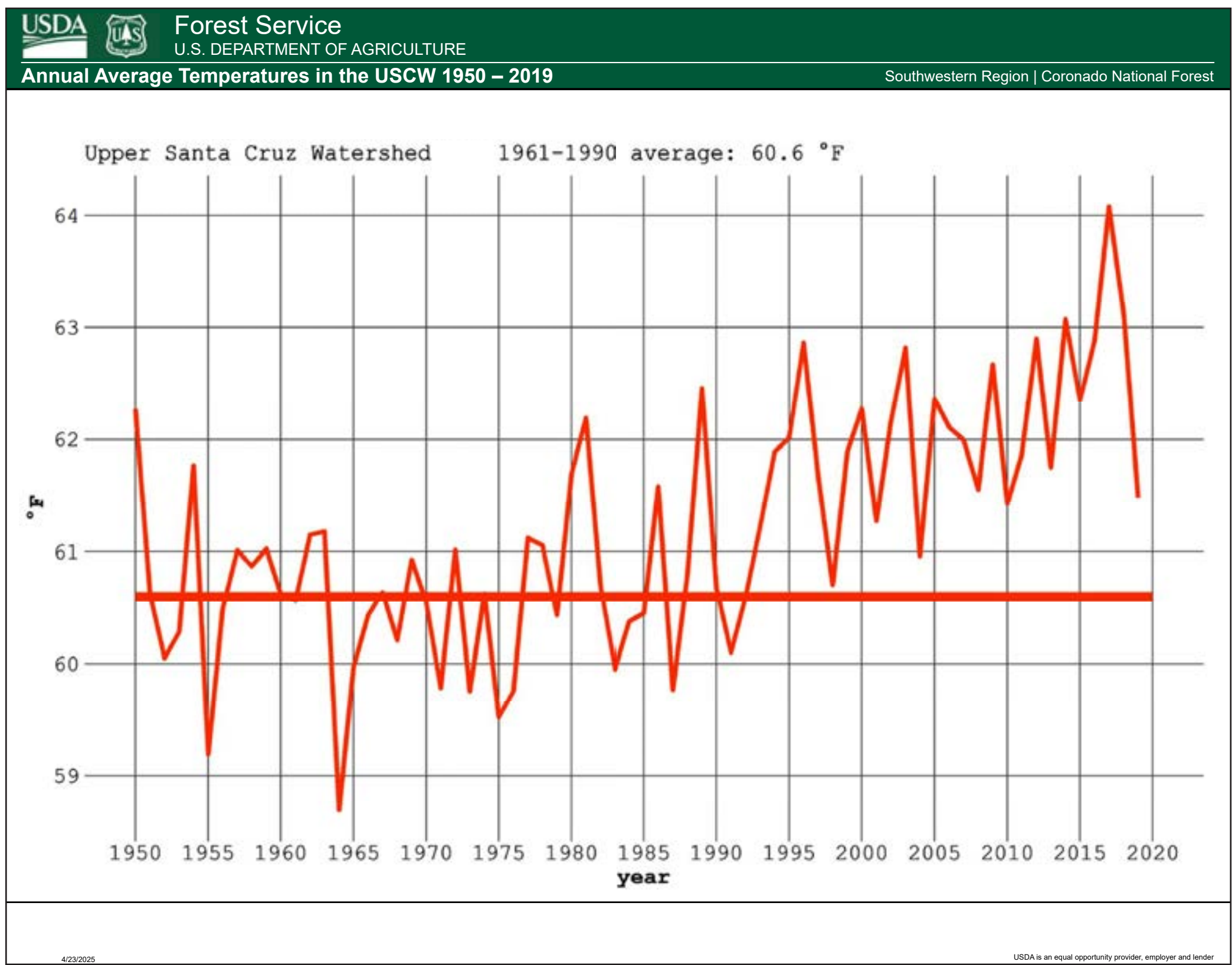
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Climatic Trends

The Draft EIS evaluated the potential impacts of the Project on climate through the calculation of greenhouse gas (GHG) emissions, the presentation of emissions in terms of understandable equivalencies, and consistency with regional climate action goals. The Draft EIS also discusses impacts from short-term weather events and long-term climate conditions on Project infrastructure.

GHG emissions were calculated for activities at the mine site, access roads, and along the transportation corridor. GHG calculations include emissions from diesel mobile equipment; construction, operation, transportation to the beneficiation site, and reclamation activities; the construction of Primary Access Road and transmission line; as well as emissions from land use changes. Emissions from onsite electricity production are also accounted for. The Project provides a domestic source of zinc and manganese needed to reduce America’s reliance on foreign sources of these critical minerals, facilitating domestic energy development.



Environmental Consequences

Total estimated GHG emissions (metric tons of carbon dioxide equivalent) for the life of the project under each alternative are shown below.

	Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3 – Modified Proposed Action
Total GHG Emissions	2,323,826	11,827,049	7,111,214

The table below shows representative emissions (metric tons of carbon dioxide equivalent) from one year during the peak of mining operations (during mining of both sulfide and oxide ore). To put these emissions in a familiar context to convey the scale of the impact, a GHG equivalent is also included: the number of gasoline-powered passenger vehicles that would produce roughly the same amount of GHG emissions over 1 year.

	Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3 – Modified Proposed Action
One year of peak emissions during sulfide and oxide ore operations	148,415	300,923	169,224
GHG equivalent –number of gasoline-powered passenger vehicles driven for one year	34,619	70,192	39,472



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