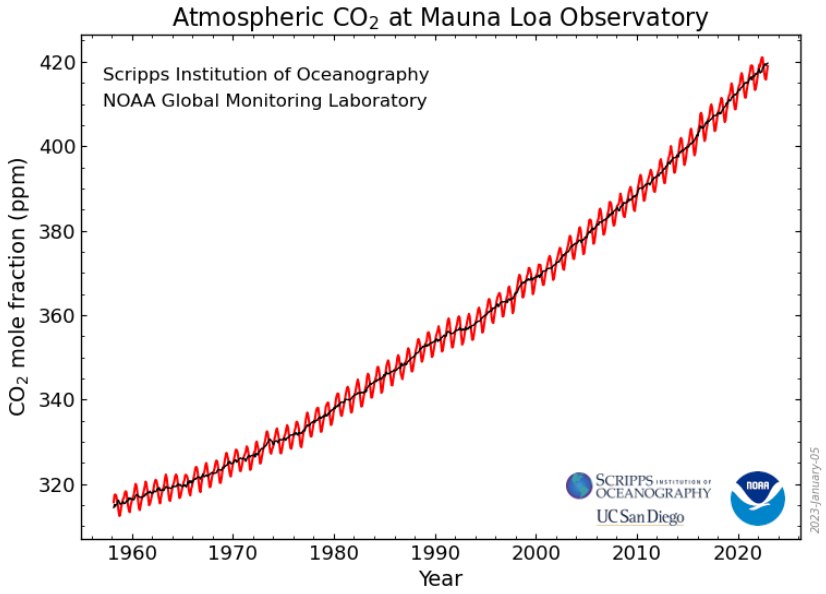
Exhibit 2-Q Climate Change

Anthropogenic climate change is the term for how combustion or industrial gases released into the atmosphere affect the atmosphere's temperature, and ocean temperature and acidity (pH). Reliable earth temperature estimates go back about 600,000 years, and there have been wide swings over the millennia. In the last 10,000 years, temperatures have been relatively stable and allowed humans to develop wide-spread agriculture and eventually cities. Ocean pH levels and temperatures have also been relatively stable allowing extensive fish and invertebrates populations to flourish.

Since the advent of the industrial revolution about 1750, humans have begun extensive extraction of fossil fuels. First coal was mined in quantity, and in the past 150 years oil and natural gas have been extracted. When burned, these materials return carbon that was sequestered underground to the atmosphere in the form of carbon dioxide (CO2). CO2 was discovered as an atmospheric 'insulator' by Joseph Fourier in the early 19th century. CO2 retains heat by preventing infrared radiation from escaping to space. Other gases produced by humans such as nitrogen oxides, methane, and halogenated carbon compounds (e.g. refrigerants) also retain atmospheric heat. Collectively these are called Green House Gases, or GHGs.

Between about 1750 and the present, the earth's human population has increased ten-fold, and today is about 8 Billion. Concomitantly, atmospheric CO2 has increased from about 275 parts per million (ppm) in 1750 to about 420 ppm today. CO2 has been monitored continuously at Mauna Loa Observatory in Hawaii for over 60 years. The figure below summarizes this monitoring data. The red line indicates seasonal variations, and the black line provides long term trend direction.



Scientists began to see warming atmospheric temperature in the 1970s, which manifested in melting polar sea ice and shrinking glaciers. Shrinking polar sea ice affects the northern hemisphere's jet stream, which can make storms move more slowly and create more damage. Warmer air holds more water vapor. Condensing water vapor provides energy for cyclones and hurricanes. More atmospheric water vapor means the likelihood of more frequent and/or stronger storms.

The ocean's pH has also become 30% more acidic and massive coral reef die-offs have been observed with high water temperatures. According to NASA, "Covering more than 70% of Earth's surface, our global ocean has a very high heat capacity. It has absorbed 90% of the warming that has occurred in recent decades due to increasing greenhouse gases, and the top few meters of the ocean store as much heat as Earth's entire atmosphere. The effects of ocean warming include sea level rise due to thermal expansion, coral bleaching, accelerated melting of Earth's major ice sheets, intensified hurricanes, and changes in ocean health and biochemistry." Source: https://climate.nasa.gov/vital-signs/ocean-warming/. The oceans provide the primary source of protein for more than 3.5 Billion people worldwide. Higher temperatures and acidification (lower pH) threaten many fisheries globally.

Responding to scientist's alarm at rapid changes never seen in the fossil record, in 1988 the United Nations convened a world-wide scientific study group. This is called the Intergovernmental Panel on Climate Change (IPCC). The IPCC publishes a summary of new research every five years and provides estimates of future climate change effects. The IPCC has determined that a stable atmospheric level of about 350 ppm CO2 would protect agriculture and marine resources. Over 190 nations have pledged reductions in climate change gases to try and keep atmospheric temperature increase to 1.5 deg C by 2050.

Effects of climate change is already seen. According to the National Council on Environmental Quality, "Rising GHG levels are causing corresponding increases in average global temperatures and in the frequency and severity of natural disasters including storms, flooding, and wildfires. Even if the United States and the world meet ambitious de-carbonization targets, those trends will continue for many years, adversely affecting critical components of the human environment, including water availability, ocean acidity, sea-level rise, ecosystem functions, biodiversity, energy production, energy transmission and distribution, agriculture and food security, air quality, and human health." Source: https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate.

<u>California specific information</u>

In response to IPCC reports California Governor Brown signed SB 32 in 2016. This bill established a 2030 GHG reduction target of 40 percent below 1990 levels. A multi-agency "Climate Action Team," identified a range of strategies and the Air Resources Board has approved the Climate Change Scoping Plan. The Plan provides measures to reduce GHG emissions 40% below 1990 levels by 2030 and achieve carbon neutrality by 2045.

Key features of the Scoping Plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions.
- Achieving a 50-percent Renewable Portfolio Standard by 2030.
- Increase energy efficiency in existing buildings.
- Develop fuels with an 18-percent reduction in carbon intensity.
- Develop more high-density, transit-oriented housing.
- Develop walkable and bikeable communities.
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half.
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions.
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else.
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons by 40 percent.

A variety of tools are available to evaluate probable future climate change impacts. The US Climate Resistance Tool Kit is a free online model developed cooperatively by a number of government agencies. The tool was used to evaluate likely future climate changes in El Dorado County, where this project is located. The tool looks at five key factors, with results summarized below:

Data for Placerville (about 4 miles northeast) is available and is considered representative of the project site. Extreme Temperature (days over 100 def F) in Placerville may more than triple to 16-20 days annually by mid-century. This is considered relatively low by national standards.

Wildfire risk at the project site is relatively low, although in the nearby Sierra Nevada foothills, the risk is high. According to recent studies "The City of Placerville is predominantly designated a Very High Fire Hazard Severity Zone … several areas in the City are at risk for wildland fires. Fire protection services within Placerville and the surrounding areas are provided by the El Dorado County Fire District."

Source: 212 ARMORY DRIVE PROJECT ENVIRONMENTAL EVALUATION PLACERVILLE, CA INITIAL STUDY/MITIGATED NEGATIVE DECLARATION MAY 2022 Page | 100

Smoke from fires in the adjacent mountains has negatively impacted air quality in recent years. This is likely to continue into the foreseeable future. By national standards, the health risk from periodic wildfire smoke is very high.

Annual precipitation is not forecast to change, although *regional* drought presents a substantial risk and is considered very high by national standards.

Flood risk is relatively moderate by national standards.

Coastal Inundation risk is nil.

Source: https://resilience.climate.gov/ Accessed 01/6/2024. The complete report is here: https://cmra-reports.s3.amazonaws.com/county/06017.html