This product will consist of the development of a consistent set of modeled fire emissions from 2016 through 2023 for North America at 36 km spatial resolution. This new fire emissions will have unique specificity with respect to how different types of fires are processed and tracked for contribution using the source apportionment feature in the Community Multiscale Air Quality (CMAQ) model. These new fire emissions will have a consistent methodology for emissions estimation and provide differentiation with respect to source (e.g., U.S., Canada, and Mexico) area for wildfire and fire type (e.g., prescribed broadcast burns, prescribed pile burns, etc.) for managed burns.

The CMAQ model will be applied for multiple years to quantify human exposure to particulate matter less than 2.5 microns (PM2.5) and ozone (O3) from the different types of fire tracked with source apportionment. It is expected that this application will provide needed information about the relative persistence of exposure of population to wildfire compared to other types of managed fires. Currently, little is known about the comparative exposure for people in different parts of the U.S. to wildfire compared to managed fire that may be more common in their area and the times of year that exposure might be typically expected. A subset of the CMAQ output will be made publicly available to support human health and exposure equity applications.

The project is also intended to provide complimentary timeseries information about air quality impacts as the EQUATES (AE.3.6.3) project. Many of the model inputs will be leveraged from the EQUATES project and new fire emissions will be generated in a way that is generally consistent with the methods used for that sector as part of the EQUATES project.