

CDOT Research Area of Emphasis:

Construction and Operations/Maintenance impacts on Air Quality

Colorado is committed to promoting clean and healthy air for our citizens and visitors, protecting our scenic and natural resources, and promoting statewide greenhouse gas pollution abatement (Colorado Air Pollution Prevention and Control Act, Section 25-7-101 et seq., C.R.S., as amended).

CDOT realizes that transportation-related activities can be major contributors to local and regional air quality, and to greenhouse gas emission. Vehicles produce significant amounts of nitrogen oxides, volatile organic compounds, carbon monoxide, particulate matter, and other pollutants.

While vehicle tailpipe emissions have received considerable research attention, with highways being line-sources of pollutants and networks having regional impacts, the effects of construction activities and of Maintenance activities are less studied. CDOT construction and maintenance can take place on highways very close to homes and businesses, roads passing through sensitive ecological areas, and even on highways bordering city centers.

This Research Area of Emphasis is to gain a deeper knowledge of these activities' impacts on air quality, to understand if and when these impacts are a threat to people and natural resources, and, where needed, to seek innovations that mitigate threats that may exist.

We invite research Problem Statements to address this important topic, understanding and potentially mitigating air quality impacts of roadway construction activities in Colorado.

While all Problem Statements on this topic are welcome, a recently initiated project presents a strong opportunity to leverage a new, extensive dataset. CDOT, in collaboration with CDPHE, has begun a multi-year, multi-location data collection effort along I 270 to support a series of research inquiries as this corridor undergoes reconstruction over the next few years. More information on that project can be found here (link to summary). There may be opportunities to participate in that research, to utilize that project's dataset for other research questions, or to supplement that data-rich environment with additional measurements for other investigations.

Recent CDOT research projects that fall within this Area of Emphasis are:

- R121.05: Air Quality Impacts of Highway Construction