

## Considerations for the Greatest Public Health Benefits

The following table lists anticipated Air and Energy (A-E) deliverables relevant to Charge Question 2. The Outputs and Products may change as new scientific findings emerge. Completion of Outputs and Products is contingent on appropriate resources being available. A-E will continue to actively engage with EPA Partners to meet their needs and optimize health and environmental benefits of the NAAQS.

Number	Research Area, Output, or Product Title
	<b><i>Research Area 1: Approaches to Support Air Quality Management for Multiple Pollutants at Multiple Scales</i></b>
<b>Output 1.1</b>	<b>Fine-scale assessment and mitigation methods for near-source impacts</b>
AE.1.5.4	Factors influencing near-road monitoring network measurements
	<b><i>Research Area 3: Public health and environmental responses to air pollution</i></b>
<b>Output 3.1</b>	<b>Report synthesizing progress to improve characterization of nitrogen deposition budgets for North America and identification of remaining critical knowledge gaps related to nitrogen deposition for assessments of critical loads</b>
AE.3.1.1	Report synthesizing progress to improve nitrogen deposition budgets for North America and identification of remaining knowledge gaps related to nitrogen deposition for assessments of critical loads
<b>Output 3.2</b>	<b>Summary of advancements in understanding health impacts of air pollutants in healthy and at-risk populations and lifestyles and identification of remaining critical knowledge gaps.</b>
AE.3.2.1	Peer-reviewed article identifying and characterizing key factors that influence maternal, reproductive and developmental susceptibility to air pollution
AE.3.2.2	Peer-reviewed article(s) and summary report describing the role of sociodemographic factors in air pollution health disparities: interactions of acute and chronic stressors
AE.3.2.3	Peer-reviewed article describing the dietary impacts on air pollution responses and interventional strategies to reduce adverse health effects.

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AE.3.2.4	Peer-reviewed articles describing factors impacting long-term wellness, progression of chronic disease and responses to air pollution.
<b>Output 3.3</b>	<b>Synthesis of enhanced understanding of peak/intermittent/short-term/cumulative exposures and relationship to longer term exposures; development of health messages, in collaboration with partners, to communicate risks.</b>
AE.3.3.1	Journal articles describing health effects of multi-day vs single-day exposures and air filtration interventions in controlled human exposure, animal, and in vitro models
AE.3.3.2	Journal articles describing the health impacts and susceptibility of peak air pollution exposure in vulnerable populations and associated mechanisms.
AE.3.3.3	Journal articles will provide evaluation of health impacts from wildfire smoke and identify mitigation strategies.
<b>Output 3.5</b>	<b>Summary of advancements in interactions of environmental changes on PM, ozone, wildfires and associated human health impacts</b>
AE.3.5.1	Estimates of the effect of changing environmental conditions on the chemistry and health impact of air pollution mixtures.
AE.3.5.2	Estimated effects of changing environmental conditions on responsiveness to air pollution.
AE.3.5.3	Estimates of modifying effects of air pollution on subsequent responsiveness to air pollutant exposure
<b>Output 3.6</b>	<b>Synthesis of the scientific advances on deposition and critical load-related research</b>
AE.3.6.1	Advanced measurements of air-surface exchange and ecosystem exposure.
AE.3.6.2	Advanced modeling of air-surface exchange processes to produce improved deposition estimates.
AE.3.6.3	Atmospheric modeling to develop air quality and deposition estimates to support human health and ecosystem assessments.
AE.3.6.4	Advanced Estimates of Critical Loads and Impacts from Atmospheric Deposition on Natural Ecosystems.
	<b><i>Research Area 8: Novel approaches to assess human health and ecosystem impacts and risks</i></b>
<b>Output 8.1</b>	<b>Development of new health research approaches that take advantage of newly available electronic health databases, molecular data cohorts, and advanced cellular models</b>
AE.8.1.1	Peer-reviewed articles describing advanced pollutant detection and toxicity screening through novel data systems and cellular methodologies

Number	Research Area, Output, or Product Title
AE.8.1.2	Articles on subclinical and clinical effects of PM2.5, its composition, and sources on sensitive groups evaluated via novel electronic health records, traditional data sources and in vivo models
AE.8.1.3	Assessment of air pollution health effects in sensitive populations using novel electronic health record cohorts
AE.8.1.4	Novel cellular models and cohort approaches to understanding biomarkers of susceptibility and identification of at-risk populations
	<i>Research Area 9: Wildland fires</i>
<b>Output 9.1</b>	<b>Interim Progress Update on Wildland Fire Research Summarizing Multidisciplinary Research Being Conducted Across A-E Research Topics</b>
AE.9.1.5	Advanced Individual-Level Air Pollution Exposure Models for Improving Exposure Assessments for Wildland Fires