Transportation
The Road Ahead

With a focus on road-based transportation, this issue looks at three distinct intersections between mobile sources and the environment: compliance, balancing energy drivers, and estimating impacts.
Movement is essential to everything we do and how we assess the environmental world. How air moves, how waste is transported, emissions being emitted and dispersing, energy transmissions, and so forth; movement is key to all environmental discussions, but none likely more so than in how it relates to transportation.

A holistic discussion of the environmental impacts of transportation is needed because the transportation sector dominates usage of energy globally, yet impacts individuals daily. Historically the largest consumer of petroleum, environmental regulations for all modes of transportation have varied as widely as automotive styles in the last century, focusing on operational standards and idling, engine emissions, alternative fuels, alternative transport modes, and/or some combination of each. Regulations are promulgated by local and federal governments alike, and standards have focused on minimizing localize carbon monoxide impacts, reducing regional smog issues, or countering the impacts of global greenhouse gas emissions.

The focus of this issue is road-based transportation, as opposed to sea and air mobile sources, which each face their own unique challenges, regulations, and emission profiles. This issue looks at three distinct intersections between mobile sources and the environment: compliance, balancing energy drivers, and estimating impacts.

Unlike stationary sources, on- and off-road mobile source compliance predominantly lies with the manufacturer and not the ultimate owner or operator. In the first article, William Haak provides his insights on lessons learned from the Volkswagen Diesel Emission settlement. While specific to the elements of the settlement, the lessons learned from the outcome of this case can be related to air and waste non-compliance issues across many industries.

Understanding the interplay and connections between the energy and transportation sectors is an important consideration when assessing the environmental impacts of transportation solutions. The next article, by Brian P. Flynn and Jennifer K. Kelley, discusses the growth of electric cars and the connection to electrical generation in Texas.

In our third article, Jeremy Heiken, Mark Hixson, and Jim Lyons walk the reader through the U.S. Environmental Protection Agency’s MOtor Vehicle Emission Simulator (MOVES), which is the primary tool for developing both on-road and off-road mobile emission source inventories in the United States. MOVES is used for both State Implementation Plan (SIP) development and project specific applications, giving us another example of the local yet regional aspects that are always a part of environmental considerations for the transportation sector.

Last but not least, we include a summary of the 2018 Annual A&WMA Critical Review, “Trends in Onroad Transportation Energy and Emissions,” by Dr. H. Christopher Frey, which traces key issues and trends in the measurement, control, and regulation of onroad transportation emissions.

This issue provides an overview of the array of transportation challenges, inviting EM readers to consider the environmental road ahead.