



# Peer Review of MOVES Nonroad Update Reports: Final Report

EPA Contract No. EP-C-16-020

Work Assignment No. 1-14

**DRAFT**

**February 9, 2018**

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## 1. Introduction

The U.S. Environmental Protection Agency's (EPA) Office of Transportation and Air Quality is tasked with assessing the air quality impacts of mobile emission sources.

EPA's MOtor Vehicle Emission Simulator (MOVES) model estimates exhaust and evaporative emissions from light-duty vehicles, medium- and heavy-duty vehicles, and nonroad vehicles and engines. Additional information on MOVES is available on the EPA website (<https://www.epa.gov/moves>).

EPA is updating MOVES to refine the model's ability to estimate accurately the emissions impacts of nonroad vehicles and engines. Three draft reports, listed below, describe proposed updates to the nonroad data and methods in MOVES:

- "Nonroad Engine Population Growth Estimates in MOVES201X";
- "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compression-Ignition in MOVES201X"; and
- "Speciation Profiles and Toxic Emission Factors for Nonroad Engines in MOVES201X".

EPA has submitted these draft reports for independent peer review per specific agency protocols, to assure the use of the highest quality science in EPA's predictive assessments and to assure stakeholders that each analysis/study has been conducted in a rigorous, appropriate, and defensible way.

This technical report describes the external peer review of the aforementioned MOVES draft reports. The peer review was carried out from November 2017 – February 2018, in accordance with the current version of EPA's *Peer Review Handbook*.<sup>1</sup> At the conclusion of the peer review, ICF collected from the reviewers their comments on the peer review materials and their completed conflict of interest (COI) forms, and submitted them to EPA electronically.

## 2. Peer Review Process

ICF conducted the peer review process for the draft nonroad update reports in three stages. First, ICF identified two qualified reviewers for the peer review materials. ICF then established subcontracts with the selected reviewers, facilitated the peer reviews, and collected and forwarded to EPA the reviewers' comments. In the third and final stage, ICF documented the peer review process by preparing this technical report. The following sections provide further detail on the first two stages.

### Task 1: Peer Reviewer Selection

To begin the peer review process, ICF first assembled peer reviewer candidates based on the list of independent subject matter experts provided by EPA. A total of four candidates were considered.

ICF contacted the four peer reviewer candidates by email (and when necessary, by telephone). At all times, ICF identified itself as a contractor to EPA. In its initial email, ICF provided general information on the materials to be reviewed, including the subject matter, approximate length (in

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<sup>1</sup> U.S. Environmental Protection Agency, *Peer Review Handbook*, 4<sup>th</sup> Edition (Oct. 2015), available at <https://www.epa.gov/osa/peer-review-handbook-4th-edition-2015-0>.

pages), estimated number of hours for review and preparation of comments, and the anticipated peer review schedule. ICF requested a response that indicated the candidate's interest and availability to perform the work. ICF also asked each peer reviewer candidate to provide a resume or curriculum vitae and to disclose any actual or apparent conflict(s) of interest. Overall, this initial communication was designed to assess each potential reviewer's expertise in the field, his/her ability to perform the work during the period of performance, and any association with the work that would preclude him/her from being independent and objective.

Candidates who expressed interest in serving as a peer reviewer were evaluated for any actual or apparent conflict(s) of interest, as well as on having one or more areas of expertise to ensure a robust peer review. Ultimately, based on the results of its outreach, ICF selected two qualified, independent peer reviewers. ICF submitted its "List of Selected Peer Reviewers" to EPA on November 30, 2017. The list identified the following two peer reviewers, and specified January 2, 2018, as the target start date for the peer review:

- Dr. Robert F. Sawyer, University of California at Berkeley/Sawyer Associates
- Dr. Phil Lewis, Texas A&M University

ICF expressed its beliefs that "the selected reviewers cover the topic areas well, and that their combined expertise will result in a robust peer review," and it appended to the list the selected reviewers' resumes. On December 5, 2017, EPA provided written acknowledgement that it had no disagreement with ICF's peer reviewer selections. Thereupon, ICF notified both reviewers of their selection.

## **Task 2: Facilitation of Peer Review**

ICF established subcontracts with the peer reviewers and then composed a charge letter based on the charge elements and questions provided by EPA. Once it had the materials required for the peer review, ICF distributed the charge letter, peer review materials, and COI form to each reviewer, along with instructions on how to complete the review and a schedule. The charge letter was distributed to each peer reviewer on January 8, 2018. The letter specified February 5, 2018, as the due date for the reviewers' written comments and completed COI forms.

After distributing the charge letter and materials, ICF arranged and hosted a teleconference between the selected peer reviewers, EPA, and ICF staff. The teleconference took place on January 12, 2018. During the conference call, ICF and EPA provided background information on the peer review process and the materials being reviewed, and answered questions the reviewers had about the peer review.

Both of the peer reviewers completed their reviews in a timely manner. ICF provided the peer reviewers' comments and signed COI forms to EPA on February 1 and February 6, 2018. In addition, ICF provided the respective charge letters on February 9, 2018.

## **3. Difficulties Encountered**

ICF encountered no significant difficulties while conducting the peer review.