

## PREFACE

NARSTO is a public/private partnership whose membership spans government, the utilities, industry, and academia throughout Canada, the United States, and Mexico. NARSTO's primary mission is to coordinate and enhance policy-relevant scientific research and assessment of tropospheric pollution behavior; its activities provide input for science-based decision-making and determination of workable, efficient, and effective strategies for local and regional air-pollution management. NARSTO was formerly an acronym for "North American Research Strategy for Tropospheric Ozone." However, the term NARSTO has become a wordmark signifying this tri-national, public-private partnership for dealing with multiple features of tropospheric pollution, including ozone and suspended particulate matter. More information on NARSTO can be found at <http://www.cgenv.com/narsto/>.

NARSTO conducted and released two previous Assessments on ozone and particulate matter (*An Assessment of Tropospheric Ozone Pollution: A North American Perspective* – 2000 and *Particulate Matter Science for Policy Makers* – 2004). Both of these Assessments recommended improvements in emission inventory programs. To investigate and pursue these recommendations, NARSTO supported an Emission Inventory Workshop in October 2003 in Austin, Texas. Based on the results of the two previous Assessments and the Workshop (reference the NARSTO website for additional information), NARSTO decided to conduct an Assessment of Emission Inventories to identify actions needed to enhance these programs. This document is the result of that Assessment.

This NARSTO Emission Inventory Assessment was prepared by the NARSTO Emission Inventory Steering Committee. The project was initiated in October 2003. The first draft of this document was reviewed by the NARSTO members and interested public parties in October 2004. A second draft, prepared in response to comments received from that review, was reviewed by an external scientific review panel in February 2005. The third draft was prepared in response to comments received from that panel. The third draft was presented to the NARSTO Executive Assembly in April 2005 and approved for publication following technical edit. This is the final report of the Assessment.

## NOTE ON URLS

This document contains a number of universal resource locators (URL) and hyperlinks to web addresses. At the time of document preparation, these were all checked and verified for proper functionality. URLs may change over time; therefore, NARSTO does not guarantee their future functionality for users wishing to access specific web sites.

## DISCLAIMER

The views expressed in this Assessment are those of the authors and do not necessarily reflect the views or policies of any organization within or outside the NARSTO community. Further, any policy implications derived from the material herein cannot be considered to be endorsed by NARSTO or its member organizations.

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The Co-Chairs of the NARSTO Emission Inventory Assessment were: Marc Deslauriers (Environment Canada), Howard Feldman (American Petroleum Institute), Christopher Frey (North Carolina State University), David Mobley (U.S. Environmental Protection Agency), Leonora Rojas-Bracho (National Institute of Ecology of Mexico), and Susan Wierman (Mid-Atlantic Regional Air Management Association).

The NARSTO leadership who also contributed significantly to the planning and preparation of the document included: Steven Cadle, Co-Chair, NARSTO Emission Team (General Motors); Jeremy Hales, NARSTO Management Coordinator (Envair); George Hidy, Co-Chair, NARSTO Assessment Team (Envair); David Mobley, Co-Chair, NARSTO Emission Team (U.S. EPA); Jeffrey West, NARSTO Associate Management Coordinator (NOAA); and Susan Wierman, Co-Chair, NARSTO Assessment Team (Mid-Atlantic Regional Air Management Association).

NARSTO would also like to thank the lead and contributing authors of the nine chapters of this Assessment:

Executive Summary – William Pennell (Columbia Research and Education Associates).

Chapter 1 – *Introduction*: Jeremy Hales (Envair).

Chapter 2 – *Vision for Future North American Inventory Programs*: Lead Authors: Charles Kolb (Aerodyne) and David Mobley (U.S. EPA). Contributing Authors: Jeremy Hales (Envair), David Parrish (NOAA), and Art Werner (MACTEC).

Chapter 3 – *Current Status of North American Emission Inventories*: Lead Authors: Bernd Haneke (MACTEC) and Art Werner (MACTEC). Contributing Authors: Leonora Rojas-Bracho (National Institute of Ecology of Mexico), Veronica Garibay Bravo (National Institute of Ecology of Mexico), Marc Deslauriers (Environment Canada), Paula Fields (ERG), David Mobley (U.S. EPA), David Streets (Argonne National Laboratories), and Jim Wilson (Pechan).

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Chapter 7 – *Top-Down Assessments of Emission Inventories*: Lead Author: David Parrish (NOAA).

Chapter 8 – *Methods for Assessment of Uncertainty and Sensitivity in Inventories*: Lead Author: Christopher Frey (NCSU). Contributing Author: Junyu (Allen) Zheng (NCSU).

Chapter 9 – *Recommendations and Conclusions*: Lead Author: Andy Miller (U.S. EPA). Contributing Authors: the NARSTO Emission Inventory Steering Committee.

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The External Scientific Peer Review Panel's comments and suggestions were an important contributor to the final document. The Panel was chaired by Donald C. McKay of Canadian ORTECH Environmental. Other panel members were: Lyle R. Chinkin, Sonoma Technology, Inc.; Robert Harley, University of California, Berkeley; Wick Havens, Pennsylvania Department of Environmental Protection; Luis R. Sánchez Cataño, independent environmental consultant in Mexico City; John G. Watson, Desert Research Institute; and Stephen Ziman, ChevronTexaco Energy Technology Company.

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