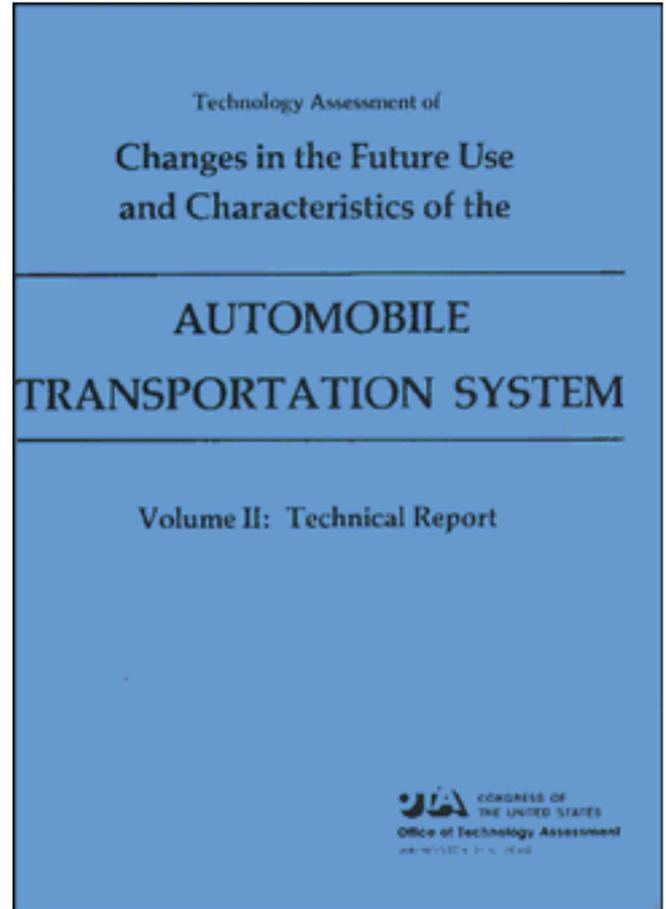


*Technology Assessment of Changes in the
Future Use and Characteristics of the
Automobile Transportation
System—Volume II: Technical Report*

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Preface

Origin of the Assessment

This assessment of the automobile transportation system was undertaken at the request of Chairman Warren G. Magnuson of the Senate Commerce, Science, and Transportation Committee. It examines the automobile as a mode of personal transportation and considers issues and policy options pertaining to vehicles, highways, and related industries, services, and institutions. The assessment was authorized in February 1976 by the Technology Assessment Board, which approved a program to:

“Assess the changes in the future use and characteristics of the automobile transportation system in the near term (to 1985) and the long term (to 2000 and beyond).”

The objectives of the automobile technology assessment were:

- To describe the factors that influence the characteristics of the automobile system, its use, and the services supporting its use,
- To identify and characterize potential changes in automobile characteristics and use,
- To assess the near-term and far-term effects of various alternative Federal Government policies relating to automobile characteristics and use,
- To present the findings of the assessment in a form useful to Congress and the public.

Study Approach

As a first step in the assessment, OTA identified a number of issues that now confront, or in the future might confront, the Congress in formulating policies related to the automobile. These issues were grouped in five areas:

- **Energy**—conserving petroleum as a motor fuel and making the transition to alternate energy sources,
- **Environment**—protecting the environment from the adverse effects of automobile use,
- **Safety**—reducing the toll of death and injury on the highways,
- **Mobility**—providing adequate personal mobility for all, either by automobile or by alternate modes of transportation, and
- **Cost and Capital**—dealing with the consumer costs of personal transportation and assuring the capital resources to support the evolution of the automobile transportation system.

With the assistance of the Automobile Assessment Advisory Panel and independent consultants, the OTA Transportation Group prepared a series of working papers describing these issues and identifying the interests of various stakeholders. These papers were issued in October 1977 and served as a framework for later activities in the assessment.

The major task of the assessment, analysis of policy alternatives, was carried out with the help of two contractors: SRI International and a team composed of System Design Concepts, Inc. (Sydec), Energy and Environmental Analysis, Inc. (EEA), and The Institute for Safety Analysis, Inc. The results of these contractor efforts are contained in two working documents:

Potential Changes in the Use and Characteristics of the Automobile, Stanford Research Institute International, January 1978.

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile, System Design Concepts, Inc.; Energy and Environmental Analysis, Inc.; The Institute for Safety Analysis, Inc., January 1978.

Based on these studies, the OTA Transportation Group has prepared this report, which is a synthesis of the contractors' work and supplementary analyses by the OTA staff and consultants. Thus, while this report is derived from material prepared by contractors, OTA bears sole responsibility for interpretation of the information and presentation of findings.

Organization of the Report

This report consists of three basic parts. The first part—chapters 1 through 4—contains background information, a description of the elements of the automobile transportation system, Base Case projections, and delineation of the policy alternatives that were considered. These chapters provide a baseline of present and future automobile system characteristics that serves as the frame of reference for policy analysis.

The second part of the report—chapters 5 through 9—contains analyses of policy options in each of the five issue areas: energy, environment, safety, mobility, and cost and capital. Each chapter is similarly organized and contains a discussion of issues, a summary of present policy, a statement of policy options, and analysis of effects and impacts.

The third part of the report—chapter 10—is a survey of expected technological developments in the near term (through 1985) and in the far term (to 2000 and beyond).

A summary of major findings is presented at the beginning of each chapter. A detailed table of contents is also provided at the beginning of each chapter to facilitate reference to specific topics.

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The OTA Automobile Assessment Advisory Panel provided valuable advice, critique, and assistance to the OTA staff throughout this assessment. Their participation, however, does not necessarily constitute approval or endorsement of this report. OTA assumes sole responsibility for the report and the accuracy of the content.