

CONTENTS

	Page
Preface	Xiii
Chapter 1: Summary	1
Definitions	:
Shuttle-Loop Transit (SLT)	7
Group Rapid Transit (GET)	:
Potential Role of Personal Rapid Transit (PRT)	:
U.S. Government Research and Development of AGT Systems.	18
Budget Alternatives For Fiscal Year 1976	18
Chapter 2: The Status and Potential of Automated Guideway Transit in Urban Areas	23
The Current Status of Urban Passenger Transportation	23
Alternative Approaches to Meeting Urban Transportation Needs	:
Characteristics and Current Applications of AG Systems	:
AGT Installations Studied in the United States	34
Suppliers of AGT Systems	38
Chapter 3: Major Problems in Automated Guideway Transit	41
Institutional	41
Technical	48
Economic	51
Social	56
Chapter 4: Assessment of AGT Research and Development	59
The Federal Program	59
Industry	61
Commentary	64
Scenarios for Developing Market Ready Systems	66
Alternative Institutional Arrangements	68
Other Transportation Alternatives	71
Chapter 5: The Fiscal Year 1976 Program—Alternative Courses of Action	76
A. Approve the Program as Submitted	76
B. Provide No New Funds	77
C. Approve Funding Level But Restructure Program	77
D. Increase Funding and Expand Scope of Program	78
Appendices	
A. Organization and Procedure for Conducting the Assessment	83
B. Abstracts of Panel Reports	95
C. Bibliography	103
Supporting Panel Reports	
Current Developments in the United States	111
International Developments	197
Economics	283
Social Acceptability	325
Operations and Technology	355

ASSESSMENT PROJECT TEAM MEMBERS

Program Direction

Frederick A. F. Cooke, Consulting Engineer.
H. William Merritt, Transportation Consultant.
Leon M. Cole, The Library of Congress.

Panel on Current Developments in the United States

Clark Henderson, Chairman Stanford Research Institute.
John K. Howell, Gerald D. Hines Interests (BRH Mobility).
John R. Jamieson, Twin Cities Area Metropolitan Transit Commission.
Thomas A. Lancaster, Rohr Industries, Inc.
Roy Lobosco, Port Authority of New York and New Jersey.

Panel on Economics

Lyle C. Fitch, Chairman, Institute of Public Administration.
J. Edward Anderson, University of Minnesota (on leave).
Thomas B. Deen, Alan M. Voorhees and Associates, Inc.
Paul K. Dygert, Peat, Marwick, Mitchell and Company.
Aaron J. Gellman, Gellman Research Associates.
Charles Hickox, LTV Aerospace Company.
Douglas . Lee, Fairfax County, Virginia.
Sumner Myers, Institute of Public Administration.

Panel on Social Acceptability

Jacquelyn A. Ingersoll, Chairman, Citizen Advisor, Twin Cities Area.
Ralph Jackson, Denver Regional Transportation District.
Alain L. Kornhauser, Princeton University.
Rodney K. Lay, The MITRE Corporation.
John B. Schnell, American Public Transit Association.
Reed H. Jt-inslow, The MITRE Corporation.
George V. Wickstrom, Metropolitan Washington Council of Governments.

Panel on Operations and Technology

Robert A. Makofski, Chairman, Applied Physics Laboratory, Johns Hopkins University.
Richard H. Donlon, Otis-Transportation Technology Division.
Eugene Jones, Frederic R. Harris, Inc.
Thomas McGean, De Leuw Cather and Company.
David R. Phelps, Transit Development Corporation, Inc.
Stanley A. Spinwebbor, Port Authority of New York and New Jersey.
Vukan Vuchic, University of Pennsylvania.

Panel on International Developments

H. William Merritt, Chairman, Transportation Consultant.
Robert A. Burco, Public Policy Research Associates.
Thomas H. Floyd, Jr., DIA International.
Howard R. Ross, Transportation Consultant.

Preface

This assessment of Personal Rapid Transit and other forms of Automated Guideway Transportation has been prepared in response to a request from the United States Senate Committee on Appropriations on behalf of the Transportation Subcommittee.

The scope of this assessment complements two other studies conducted by the Office of Technology Assessment (OTA). The subjects of these other assessments are:

- . The degree of automation which is technically feasible, economically justifiable, or otherwise appropriate to rail rapid transit; and
- . The process by which communities plan, select or reject, and implement rail rapid transit systems in conjunction with other modes of transit.

The objectives of this assessment are threefold:

- To provide the Senate Appropriations Committee with information on the current status and the social and economic aspects of Automated Guideway Transit (AGT) developments,
- To assess the key problems associated with Automated Guideway Transit as perceived by potential riders, the communities, and the transit industry; and
- To identify major policy issues and automated guideway transit program alternatives, and to explore their implications.

Dual-mode systems, moving walkways, and continuous flow systems are beyond the scope of this study. Other urban transportation options (e.g., electric automobiles) that might contribute to overcoming some of our current difficulties are covered, but only briefly.

The assessment was accomplished during a four-month period by a special team of experts in the field representing divergent views on the subject. Study panels were organized to examine the current status of development and implementation. Consideration was given to the economic, social, and technical aspects of Automated Guideway Transit in the United States and foreign countries. The panels consulted with other interested and knowledgeable individuals, including representatives of urban planning organizations, transit operators, industry, and other groups who could make a significant contribution. The panel on social acceptability invited a representative of organized labor to participate in discussions on the impact of automation.

Members of the assessment team made visits to important Automated Guideway Transit installations in the United States. Meetings were held with the urban Mass Transportation Administration. Advocates and opponents of Automated Guideway Transit presented their views to the assessment team. Research reports and technical data were obtained from a variety of domestic and foreign sources.

This report has been prepared by the OTA Transportation Assessments Group, based upon the findings and conclusions of the study panels and other information developed independently. The panel reports are included in this volume.