

*Automated Guideway Transit: An
Assessment of PRT and Other New Systems*

June 1975

NTIS order #PB-244854

Office of Technology Assessment

Automated Guideway Transit

AN ASSESSMENT OF PRT
AND OTHER NEW SYSTEMS

PREPARED AT THE REQUEST OF
THE SENATE COMMITTEE ON APPROPRIATIONS
TRANSPORTATION SUBCOMMITTEE

MAY 1975

UNITED STATES CONGRESS
Office of Technology Assessment

AUTOMATED GUIDEWAY TRANSIT

**AN ASSESSMENT OF PRT AND
OTHER NEW SYSTEMS**

INCLUDING

SUPPORTING PANEL REPORTS

PREPARED AT THE REQUEST OF THE

SENATE COMMITTEE ON APPROPRIATIONS

TRANSPORTATION SUBCOMMITTEE

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JUNE 1975

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Congress of the United States
Office of Technology Assessment
Washington, D.C. 20510

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May 20, 1975

The Honorable John L. McClellan
 Chairman
 Committee on Appropriations
 U.S. Senate
 Washington, D. C. 20510

Dear Mr. Chairman:

On behalf of the Technology Assessment Board, we are pleased to forward to you the following report on Automated Guideway Transit: An Assessment of PRT and Other New Systems. This report was prepared by the Office of Technology Assessment and is based upon the findings of five panels established to explore major topics. The report distinguishes three classes of Automated Guideway Transit and discusses the major institutional, technical, economic and social implications of each class.

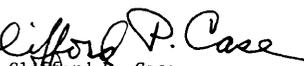
This report is being made available to your Committee in accordance with Public Law 92-484, with appreciation and thanks to the many panelists who gave so generously of their time and energy.

Sincerely,


 Olin E. Teague
 Chairman

Technology Assessment Board

Sincerely,


 Clifford P. Case
 Vice-Chairman

Technology Assessment Board

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May 16, 1975

The Honorable Olin E. Teague
 Chairman of the Board
 Office of Technology Assessment
 United States Congress
 Washington, D. C. 20510

Dear Mr. Chairman:

In response to the letter of September 27, 1974, from Senator John L. McClellan, Chairman, Senate Committee on Appropriations, the Office of Technology Assessment is pleased to forward this report, Automated Guideway Transit: An Assessment of Personal Rapid Transit (PRT) and Other New Systems.

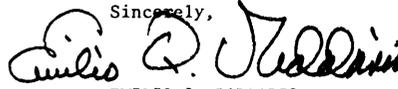
This assessment was conducted by OTA'S Transportation Group, headed by Dr. Gretchen S. Kolsrud. The assessment was undertaken by five panels of experts who addressed the following five areas:

- Current Developments in the United States
- International Developments
- Operations and Technology
- Social Acceptability
- Economic Considerations

I am pleased to submit this report to you and to express my appreciation to all of the participants who contributed to it.

Sincerely,

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EMILIO Q. DADDARIO
 Director

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WASHINGTON, D.C. 20510

September 27, 1974

The Honorable Edward M. Kennedy
 Chairman
 Technology Assessment Board
 Washington, D. C. 20510

Dear Mr. Chairman:

On behalf of Senator Robert C. Byrd, Chairman of the Transportation Subcommittee, and Senator Clifford P. Case, the Subcommittee's Ranking Minority Member, I am transmitting an attached suggested revision to the Mass Transit Assessments you presently have underway.

With kindest personal regards, I am

Sincerely,



John L. McClellan
 Chairman

JLM:cej

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September 10, 1974

Honorable John L. McClellan
 Chairman
 Committee on Appropriations
 United States Senate
 Washington, D. C. 20510

Dear Mr. Chairman:

We would like to enlist your support for an increase in the scope of the urban mass transportation assessments currently being conducted for the Committee by the Office of Technology Assessment. As you will recall, one of these assessments is concerned with the question of the degree of automation which is technically feasible, economically justifiable or otherwise appropriate to rail rapid transit. The second assessment addresses the process by which communities select, plan and implement a new transit system or modernize an existing one.

While the need for these studies of conventional rail transit remains unchanged, there have been significant developments since the date of our original request to the Office of Technology Assessment which indicate that the coverage of the assessments should be expanded in two directions.

--First, it seems clear that we will be required to deal with the issue of "personal rapid transit" and related high technology projects earlier and in greater depth than had been anticipated.

--Second, the increasingly serious condition of the economy suggests that these assessments should be expanded to consider the development and potential of urban mass transit under conditions in which federal funding may be severely decreased -- or greatly increased in the event that unemployment becomes an overriding problem.

To expand on the first point, communities (such as Minneapolis and Las Vegas) are showing increasing interest in new types of fixed guideway systems. Personal rapid transit (PRT) systems are increasingly discussed as alternatives to more conventional rail transit. Implementation of new technologies may be proposed such as magnetically levitated vehicles. The considerable effort underway in other countries to advance the state of the art in fixed guideway systems should be further investigated. The current assessments do address some of these issues. However, if addressed

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they lie at the boundaries of the ongoing assessments rather than being fully included in the scope of work.

Concerning the second suggestion for expanding the assessments already underway, the economic picture has changed greatly since these assessments were initiated. As you know, a major purpose of a technology assessment is to identify policy alternatives and quantify the probable effects of such alternatives. Certainly, these assessments should address the full range of contingencies affecting policy alternatives and their impacts. Examples of varying economic outlooks that should be considered are as follows:

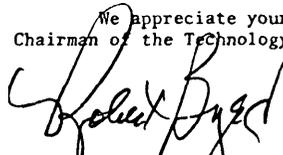
1. A revived fuel shortage leading to greatly increased (and funds for) mass transit. How much of the additional funds should be spent for fixed guideway transit, including personal rapid transit? How would R and D be affected? Would private industry have the capacity to support increased demands upon it?
2. A severe recession or actual depression. Should major

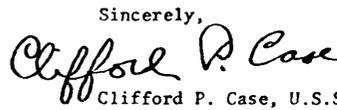
On the other hand, if funds for major transit projects were severely curtailed, how quickly could communities, low planning or building new transit systems alter their plans? What are the probabilities associated with such a future? Are they sufficiently high that communities should be encouraged to place more emphasis on staging the development of new transit systems so that working subsystems are obtained if development of the entire system is interrupted?

To summarize, we feel the needs of the Committee will be best served by extending the current assessment efforts. These extensions would

- increase the range of technologies under assessment; and,
- permit assessment of the interrelationships between alternate economic futures and a variety of mass transit policy alternatives.

We appreciate your assistance in transmitting this request to the Chairman of the Technology Assessment Board.


Robert C. Byrd, U.S.S.
Chairman, Transportation
Appropriations Subcommittee

Sincerely,

Clifford P. Case, U.S.S.
Ranking Minority Member
Transportation Appropriations
Subcommittee