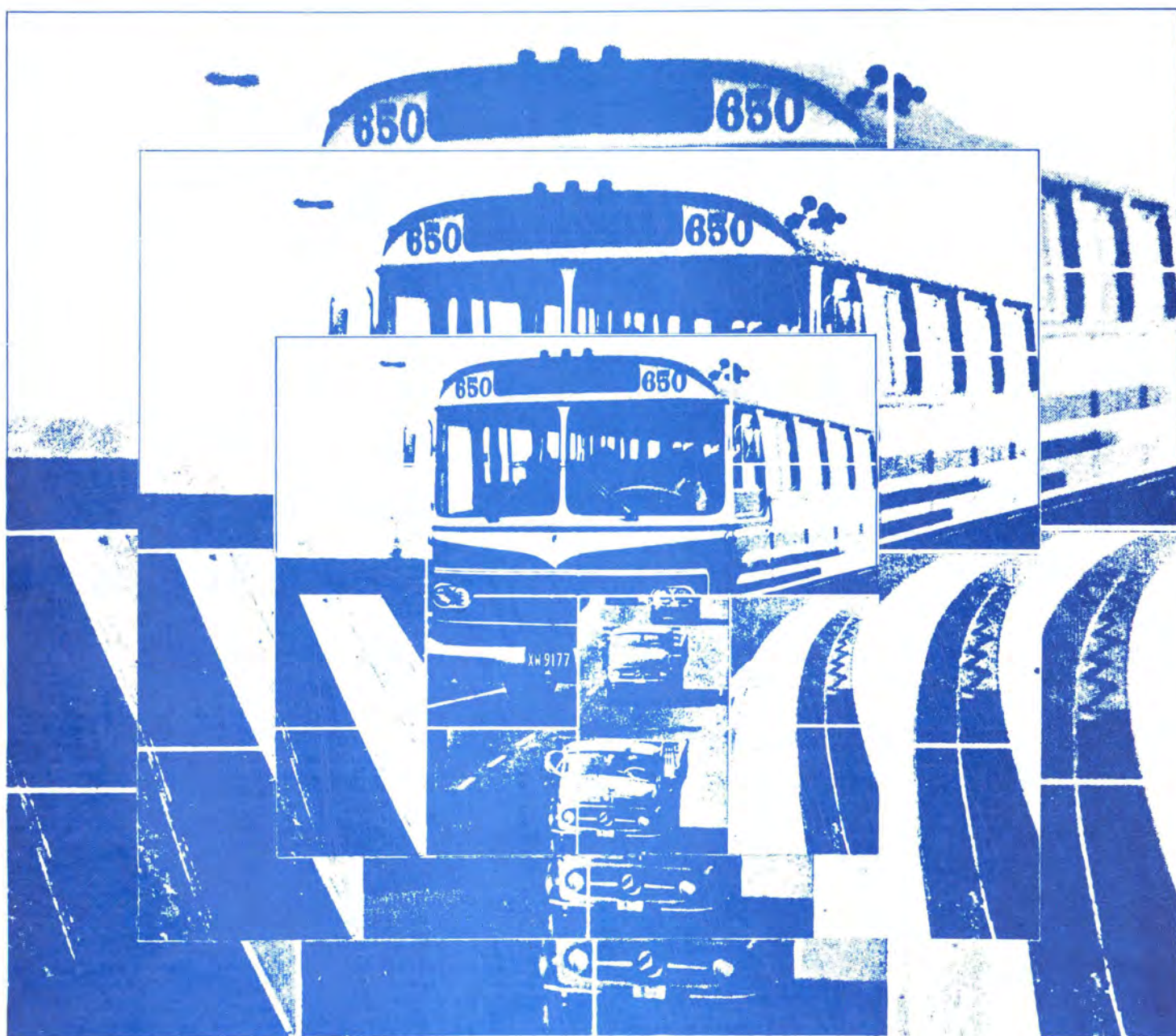


Research on the Interrelationships Between Costs of Highway Construction Maintenance and Utilization



TRDF

Texas Research and Development Foundation A Non-Profit Corporation

ICR/BCB/123/78

11 May 1978

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Ref: Summary - Midterm Report

Dear Bob,

Enclosed for your use are English and Portuguese copies of our most recent publication "Summary - Midterm Report". I am still waiting for the English Midterm to be published and will forward a copy as soon as it is ready.

I hope we can get together later in May as noted in my earlier letter.

Sincerely,

BCB/zdc

B. C. Butler, Jr.
Deputy International Director

4 Enclosures

c.c.: Dr. Teixeira
Dr. Flavio
Prof. Hudson
Mr. Visser

Research on the Interrelationships Between Costs of Highway Construction Maintenance and Utilization

SPONSORED BY:

**Secretaria de Planejamento da Presidência da República - SEPLAN
Instituto de Planejamento Econômico e Social - IPEA
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WITH THE PARTICIPATION OF:

**Departamento Nacional de Estradas de Rodagem - DNER
Departamento de Estradas de Rodagem de Goiás
Departamento de Estradas de Rodagem de Minas Gerais**

PREFACE

This report summarizes the results and status of the project entitled "Research on the Interrelationships between Costs of Highway Construction, Maintenance and Utilization." A detailed Midterm Report has been prepared and should be used by those desiring a complete detailing of the progress of the work. The Inception Report of the project, published in early 1976, is a useful reference for a detailed background on the planning of the project.

Although the project was intended primarily to produce results at the end of the full term in the form of a computer-based model, this report attempts to present some of the interim results of the project that may have immediate application.

The project is the result of an agreement signed in January 1975 between the Government of Brazil and the United Nations Development Program (UNDP). According to this agreement, the Ministry of Transport of Brazil is the Government Cooperating Agency, through "Empresa Brasileira de Planejamento de Transportes" - GEIPOT, and the International Bank for Reconstruction and Development (IBRD) is the executing agency for UNDP.

The project is being conducted by GEIPOT and by the "Departamento Nacional de Estradas de Rodagem" (DNER), through its "Instituto de Pesquisas Rodoviárias" (IPR), and both have received grants from the "Instituto de Planejamento Econômico e Social" (IPEA) and from the "Secretaria de Cooperação Econômica e Técnica Internacional" (SUBIN), respectively. In addition, the project has the technical support of research institutions and universities, both in Brazil and overseas.

The IBRD has contracted with the Texas Research and Development Foundation (TRDF) to provide the international staff, and to select and purchase overseas the equipment needed to conduct the project.

LIST OF PROJECT PUBLICATIONS

for

Research on the Interrelationships Between
Costs of Highway Construction, Maintenance
and Utilization

REPORT N^o 1, Project Inception Report - Research Concepts and Procedures, April 1976; describes and condenses the project details and presents the overall research approach to be taken in the project.

REPORT N^o 2, Project Midterm Report - Preliminary Results and Analyses, September 1977; describes project achievements at midterm and presents some preliminary results on relationships identified.

WORKING DOCUMENT N^o 1, "Project Background Documents for the Expert Working Group", November 1975; describes the beginning of the project activity and the mobilization of the Project Staff.

WORKING DOCUMENT N^o 2, "Summary of Findings EWG Meeting", December 1975; describes the basic experiments agreed on for further development in the pre-pilot studies of the project.

WORKING DOCUMENT N^o 3, "Appendix to the Project Inception Report-Research Concepts and Procedures", April 1976; describes material useful for consideration in the project but too detailed for publication in the formal report.

WORKING DOCUMENT N^o 4, "Project Technical Memos 1976"; 24 Technical papers describing completed phases of work or revisions to project study procedures during the year 1976.

ABSTRACT

This summary of the project midterm report presents achievements and results at Midterm. The accomplishments of the 150-man research team are presented, and include preliminary equations relating roadway characteristics to vehicle speed and fuel consumption. The extent of vehicle overloads in Brazil is highlighted. A program is outlined to update the combined MIT/TRRL/World Bank Highway Design and Maintenance Standards Model (HDM).

SENIOR PROJECT STAFF

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(*) On loan from Departamento de Estradas de Rodagem de Goiás

(**) On loan from the Government of the Federal District

TABLE OF CONTENTS

	Page
PREFACE	i
LIST OF PROJECT PUBLICATIONS	ii
ABSTRACT	iii
SENIOR PROJECT STAFF	iv
INTRODUCTION	1
Existing Models	2
Scope of the Study	4
Schedule	4
STATUS OF STUDIES	8
Road User Costs Surveys	8
Road User Costs and Traffic Experiments	8
Pavement and Maintenance Studies	9
INTERIM RESULTS	11
VEHICLE SPEEDS	11
Preliminary Analysis on TB-2	11
Effect of the Speed-Limit Enforcement Program	15
FUEL CONSUMPTION	15
Steady-State Fuel Consumption (FC-1)	19
Fuel Consumption on Curves (FC-3)	38
FUEL CONSERVATION	48
User Considerations	49
Vehicle Considerations	51
Roadway Considerations	51
Summary	54
AXLE LOADS	54
Collection with Portable Scales	54
Portable Scale Results	55
Weigh-in-Motion System	58
Conclusions	60
MODEL DEVELOPMENT	61
Approach	64
SUMMARY	66
REFERENCES	67

