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AN URBAN TRANSPORTATION BIBLIOGRAPHY

May 3, 1971

U.S. DEPARTMENT OF TRANSPORTATION
Urban Mass Transportation Administration
Washington, D.C. 20590

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CONTENTS

FOREWORD

This reference material is the first step in a planned program to make a complete compilation of technical and scientific publications concerning urban mass transportation. The list includes abstracts of reports, studies, articles, monographs and other publication formats.

The reference is designed to serve the scientific and technical needs of State, city and local government officials, transportation planners, industry leaders, consultants, researchers, and students of urban transportation problems.

In retrospect, urban transportation investments by the Federal Government started in 1961. In that year, Congress approved a pilot program of mass transit assistance to State and local public bodies. Twenty-five million dollars was provided in the Housing Act of 1961 for a limited program of mass transit demonstration grants and technical assistance, and a $50 million borrowing authority was enacted to assist local capital investment programs.

These programs were first administered by the Housing and Home Finance Agency, which later became the Department of Housing and Urban Development, (HUD). The programs were considerably expanded by the Urban Mass Transportation Act of 1964.

In 1966, Congress authorized three new supplemental programs: 1) Technical study grants for systems design, engineering and studies to improve transit management and operations; 2) Grants for advanced training of managerial personnel in local transit systems; and 3) Grants to institutions of higher learning for graduate research and training programs.

In 1968, the major elements of the program were transferred from HUD to the Department of Transportation (DOT) and the Urban Mass Transportation Act again was expanded notably by the Urban Mass Transportation Assistance Act of 1970.

This reference list reflects the knowledge and information gained through investigations of transportation and related problems; the research, development and demonstration of new systems; new management procedures, and new applications for existing transportation systems. Each abstract includes a full bibliographical citation and National Technical Information Service catalog number. Sufficient bibliographic information is provided to order the desired documents from local libraries, the National Technical Information Service, or other sources.

The Urban Mass Transportation Administration should not be contacted for any publications. The National Technical Information Service should be contacted directly by writing to them at 5285 Port Royal Road, Springfield, Virginia 22151 (U. S. A.).

URBAN TRANSPORTATION

AD-603 618
Rand Corp Santa Monica Calif
A MODEL OF RESIDENTIAL LAND VALUES,
E. F. Brigham. Aug 64 2p Rept. no. rm-4043-RC

Descriptors: (*TRANSPORTATION, URBAN AREAS), (*URBAN PLANNING, HOUSING), (*HOUSING, ECONOMICS), MATHEMATICAL MODELS, EQUATIONS, TRANSPORTATION, TERRAIN, CLIMATOLOGY, SOCIOLOGY, DETERMINATION, PROGRAMMING (COMPUTERS), STATISTICAL FUNCTIONS.
Identifiers: REGRESSION ANALYSIS.

This Memorandum presents the findings of a pilot study that deals with the determinants of residential land values in an urban area. As part of the RAND Urban Transportation effort, one primary purpose of this study was to develop a land-value submodel for incorporation in a model designed to simulate the effects of changes in the transportation system of an urban community. The model relates land values to several different factors, particularly to a site's amenities and accessibility to various forms of economic activity. Since residential land values were of main concern, the study concentrates on a sample of single-family properties. As a supplement, and as a basis of comparison, included is a sample of all land-use properties for urban areas. There were important differences between the two samples, and, as might be expected, much more regular patterns occur in the homogeneous single-family grouping. The findings revealed a sufficiently high degree of stability to confirm the basic nature of the relationships, but random variations made the models too unstable to use for accurate predictions of individual parcel land values.

AD-604 516
Rand Corp Santa Monica Calif
A MODEL OF HOUSEHOLD LOCATION AND TRIPMAKING BEHAVIOR WITH REFERENCE TO DETROIT,
John F. Kain. Sep 62 2p Rept. no. p-2627
In cooperation with the Ford Foundation and the U. S. Air Force Academy.

Descriptors: (*URBAN PLANNING, MATHEMATICAL MODELS), (*HOUSING, URBAN AREAS), (*TRANSPORTATION, URBAN AREAS), TRAFFIC, LABOR, PASSENGER VEHICLES, STATISTICAL ANALYSIS, COSTS, DISTRIBUTION (ECONOMICS), ECONOMICS, MICHIGAN (STATE).
Identifiers: DETROIT.

This paper deals with the residential and tripmaking behavior of Detroit workers. Residential behavior here refers to the consumption of an interrelated bundle of housing and transportation goods and services. Tripmaking, in this context, is limited to the weekday journey to and from work. The statistical analysis presented here is designed to explore the interrelationships in consumption between housing and transportation. It is hoped the analysis will provide useful information regarding the decisions to locate households in certain areas, and will indicate what implications this information may have for urban transportation and land-use planning.

AD-605 857
Rand Corp Santa Monica Calif
A REPORT ON AN URBAN TRANSPORTATION MODEL, SOME PROGRESS AND SOME PROBLEMS,
John F. Kain. Jun 62 2p Rept. no. p-2549
Paper prepared for presentation at the Annual Meeting of the Western Section of the Regional Science Association (1st), Berkeley, Calif., 29 Jun 62.

Descriptors: (*TRANSPORTATION, URBAN AREAS), (*URBAN AREAS, TRANSPORTATION), SIMULATIONS, ENGINEERING, SOCIAL SCIENCES, URBAN PLANNING, COSTS, DESIGN, CONSTRUCTION, POPULATION, INDUSTRIES, GOVERNMENT EMPLOYEES, UNITED STATES GOVERNMENT, SYMPOSIA.

An exploratory study of urban transportation is described. The skills of engineers and social scientists were combined to carry out a systems analysis embracing both the engineering and economic questions of urban transportation. The study was not tied to solving the urban transportation problems of any specific municipality or urban area; it was decided that RAND should attempt to utilize and integrate the findings and data obtained by the large and expensive urban-planning and transportation studies conducted during recent years in major urban areas. In particular, it was felt that the large amounts of data obtained for these studies had not been fully exploited. A substantial program of empirical research, drawing on this large pool of empirical information, was also decided upon.

AD-606 258
Rand Corp Santa Monica Calif
ON A ROUTING PROBLEM,
Richard Bellman. 20 Dec 56 2p Rept. no. P-1000

Descriptors: (*URBAN PLANNING, TRANSPORTATION), (*DYNAMIC PROGRAMMING, URBAN PLANNING), EQUATIONS, ITERATIVE METHODS, TIME, URBAN AREAS, MATHEMATICAL MODELS.

Given a set of N cities, with every two linked by a road, and the times required to traverse these roads, we wish to determine the path from one given city to another given city which minimizes the travel time. The times are not directly proportional to the distances due to varying quality of roads, and v varying quantities of traffic. The functional equation technique of dynamic programming, combined with approximation in policy space, and an iterative algorithm which converges after at most (N-1) iterations. (Author)

AD-607 194
Rand Corp Santa Monica Calif
RESUME OF THE RAND CONFERENCE ON URBAN ECONOMICS,
J. H. Niedercorn and A. H. Pascal. Oct 64 2p Rept. no. p-2991

Descriptors: (*URBAN PLANNING, SYMPOSIA), (*ECONOMICS, URBAN AREAS), (*URBAN AREAS, ECONOMICS), SOCIAL SCIENCES, TRANSPORTATION, POPULATION, HOUSING, STANDARDS, INDUSTRIES, LABOR.
Identifiers: NEGROES, EMPLOYMENT.

The Conference on Urban Economics was held August 24 and 25, 1964, at The RAND Corporation in Santa Monica. This conclave, which brought together public officials and members of the research community, had three major objectives: stimulation of scholarly interest in urban problem areas, evaluation of the potentialities for application of past and current research findings to policy questions, and exploration of the demand for research which might be generated by impending public decisions in this field.

AD-607 592
Rand Corp Santa Monica Calif
ON MINIMIZING THE LAND USED BY AUTOMOBILES AND BUSES IN THE URBAN CENTRAL CORE: UNDERGROUND HIGHWAYS AND PARKING FACILITIES,
George A. Hoffman. Oct 64 2p Rept. no. P-3002
Legibility of this document is in part unsatisfactory. Reproduction has been made from best available copy.

Descriptors: (*ROADS, UNDERGROUND STRUCTURES), (*UNDERGROUND STRUCTURES, TRAFFIC), (*URBAN AREAS, PASSENGER VEHICLES), OPTIMIZATION, TRANSPORTATION COSTS, URBAN PLANNING, EARTH HANDLING EQUIPMENT, ROCK (GEOLOGY).

Possibilities for reducing the land used for urban transportation in the central city core by providing ample automotive access with deep underground tunnels and parking areas are examined. The cost of conventional urban highways built through densely populated areas is described in terms of construction costs, right-of-way acquisition costs, and selected operating expenditures. Construction and ventilating costs of vehicular tunnels are presented. Beside this economic advantage of subterranean vehicular tubes, some design features of underground construction and travel are next considered, such as tunneling machines, rock removal, prefabricated lining and roadways, adaptability to mass-transit systems, land reclamation, traffic control, and obstacle removal. The study considers what may be needed if all mass-transit ridership were hypothetically transferred to passenger cars in Los Angeles, Chicago, and Manhattan. Recommendations are given for study of the underground-highway concept and developments of prototype machines capable of rapid excavation of vehicular tunnels under most rock conditions. (Author)

AD-609 754
Rand Corp Santa Monica Calif
ANALYSIS OF SOME LAND TRANSPORTATION VEHICLES, TODAY AND TOMORROW,
R. H. Haase. Aug 62 2p Rept. no. p-2625
Prepared for presentation at the Annual Meeting of the Institute of Traffic Engineers (32nd) held at the Denver Hilton Hotel, Denver, Colo., August 13-17, 1962.

Descriptors: (*TRANSPORTATION, URBAN PLANNING), (*PASSENGER VEHICLES, URBAN AREAS), (*RAILROAD CARS, URBAN AREAS), TRAFFIC, URBAN AREAS, WEIGHT, COSTS, DESIGN.

Some of the results of the study are presented as they pertain to the passenger automobile, the transit bus, and the rail rapid-transit car.

AD-609 758
Rand Corp Santa Monica Calif
A MULTIPLE EQUATION MODEL OF HOUSEHOLD LOCATIONAL AND TRIPMAKING BEHAVIOR,
J. F. Kain. Apr 62 2p Rept. no. rm-3086-FF
Sponsored by the Ford Foundation.

Descriptors: (*TRANSPORTATION, URBAN PLANNING), (*TRAFFIC, MATHEMATICAL MODELS), (*URBAN PLANNING, TRANSPORTATION), (*MATHEMATICAL MODELS, URBAN PLANNING), URBAN AREAS, HOUSING, POPULATION, LEAST SQUARES METHOD, STATISTICAL ANALYSIS, ECONOMICS, PASSENGER VEHICLES, STATISTICAL DATA.

This Memorandum describes a multiple equation model of household locational and tripmaking behavior, to be used in RAND's study of urban transportation. The model presented here is a multiple equation recursive model, estimated by applying least squares multiple regression techniques to cross-sectional data obtained from the Detroit Area Traffic Study's home-interview origin and destination study. The worktrips of more than 40,000 sampled workers were aggregated to 254 spatially separate workplace zones. The model explains four types of locational and tripmaking behavior for the white workers employed in these 254 zones: residential space consumption, automobile ownership, modal choice, and length of journey-to-work. In all, the final model has seven statistical and two definitional equations. The dependent variables for these nine equations include

four measures for residential space consumption, one for auto ownership, three for mode choice, and one for length of journey-to-work.

AD-609 771
Rand Corp Santa Monica Calif
A FIRST APPROXIMATION TO A RAND MODEL FOR STUDY OF URBAN TRANSPORTATION,
J. F. Kain and J. R. Meyer.Nov 61 2p Rept. no. rm-2878-FF

Descriptors: (*URBAN AREAS, TRANSPORTATION), (*TRANSPORTATION, MATHEMATICAL MODELS), STATISTICAL ANALYSIS, ECONOMICS, URBAN PLANNING, GOVERNMENT EMPLOYEES, SIMULATION, DISTRIBUTION, DESIGN.

The report represents a first step in a study to develop a generalized model of an urban complex, for studying the intricate interrelationships between transportation and the spatial organization of economic activities. Consideration is given to definitions and notation, workplace location and nonresidential land-use models, industrial land-use constraints, employment distributions, land value surfaces, residential distributions, residential land-use constraints, status variable modifications, and transportation models.

AD-616 712
Oklahoma Univ Norman
OPERATIONS ANALYSIS IN URBAN TRANSPORTATION GENERATES EXPRESS TRANSIT TO COPE WITH TRAFFIC CONGESTION.
Master's thesis,
James Gordon Wyatt.1965 2p
Contract AF33 608 1096
Available only for reference use at DDC field services. Copy is not available for public sale.

Descriptors: (*Traffic, Urban areas), (*Urban areas, Traffic), (*Transportation, Urban areas), Passenger vehicles, Cargo vehicles, Roads, Control systems, Management planning, Urban planning, Mathematical models.

The purpose of the thesis is to examine alternative methods of evaluating the utilization of mass transportation. Several mathematical models employed by operations research are presented and demonstrated for use in planning expanded transit facilities. It is hoped that the study will contribute toward solving problems of traffic congestion.

AD-672 150
Rand Corp Santa Monica Calif
NEW DIRECTIONS FOR PASSENGER DEMAND ANALYSIS AND FORECASTING,
Martin Wohl, and Gerald Kraft. Jun 68, 60p Rept no. P-3877
Prepared in cooperation with Charles River Associates, Inc., Cambridge, Mass.
Availability: Pub. in Transportation Research, v1 n3 1967.

Descriptors: (*Transportation, Predictions), Urban areas, Management planning, Population, Behavior, Mathematical models, Scheduling, Time, Costs, Passenger vehicles, Interactions.
Identifiers: Demand.

The problems of analyzing passenger travel demand and forecasting actual travel movements by placing passenger travel demand in an appropriate context with respect to behavioral characteristics are analyzed. To a large extent, the purpose is to raise issues and to suggest directions for their solution rather than to provide definitive answers for urban transportation planning. By raising the significant issues, it is hoped to stimulate those who actively perform research in this field to think along new lines and to arrive, ultimately, at a more complete and consistent approach to forecasting future usage of passenger transportation systems. (Author)

AD-675 164
Rand Corp Santa Monica Calif
AN ECONOMIC RE-EVALUATION OF THE PROPOSED LOS ANGELES RAPID TRANSIT SYSTEM,
Alan Carlin, and Martin Wohl. Sep 68, 20p Rept no. P-3918

Descriptors: (*Transportation, Urban areas), Railroads, Feasibility studies, Costs, Reviews, Population, Employment, Approximation (Mathematics), California.
Identifiers: *Rapid transit systems, Los Angeles (California).

An issue of immediate importance to Los Angeles residents is whether a rail rapid transit system should be built and heavily subsidized out of a proposed sales tax. Although such projects seem to be currently fashionable in the larger North American cities without such facilities, we believe that the economic feasibility of this project deserves more careful scrutiny than it has thus far received. After some summary comments of more general interest, this paper examines in some detail the economic justification recently presented for the project by the Southern California Rapid Transit District in their Final Report. (Author)

AD-687 214
Rand Corp Santa Monica Calif
A MIX-OF-MODES EVALUATION MODEL FOR TRANSPORTATION SYSTEMS,
Keith V. Smith. May 69, 30p Rept. no. P-4059
Preliminary version presented at the National Meeting of the Operations Research Society of America (34th). Philadelphia, Pa. 6 Nov 68.

Descriptors: (*Transportation, Mathematical models), Systems engineering, Urban planning, Air transportation, Railroads, Passenger vehicles, Cargo vehicles, Roads, Traffic, Cost effectiveness, Predictions, Decision making.
Identifiers: *Transportation models.

An important focus of a meaningful evaluation model for transportation systems is to evaluate alternatives within the context of the entire package or mix of transportation services. More specifically, it is the evaluation of the incremental benefits and costs from adding a modified or new transportation mode to the existing mix. The purpose of the paper is to develop a methodology which conceptually may be useful in evaluating alternative transportation systems within such a mix-of-modes context. An important characteristic of the suggested methodlogy is that alternatives are evaluated along several important dimensions so as to reflect users of transportation systems, business firms that are involved in providing transportation services, and also the general public. In order to concentrate on the more important aspects of the problem, it is convenient to confine attention to intercity transportation along a single link between two metropolitan areas. The suggested model is adaptable, however, to the larger problem of transportation within a network of large cities.

AD-692 268
Rand Corp Santa Monica Calif
COMMUNICATION SATELLITES AND THEIR POSSIBLE INFLUENCE ON THE AUTOMOBILE,
John L. Hult. Aug 69, 36p* Rept no. R-4164

Descriptors: (*Transportation, Predictions), (*Communication satellites (Active), Control systems), Navigational aids, Global communication systems, Passenger vehicles, Transformations, Automation, Safety.

The progress of communication satellites is briefly summarized and their future technological potential is highlighted. The promise of UHF satellite; for mobile communication services is described, including new concepts permitting intense sharing of these frequencies with satellites without penalizing the established and allocated usage. The future of travel and the automobile is discussed including the competition among various modes of travel and between travel and electronics for communicating. Some new ideas about future automobiles, a freeway express transit, and an automated urban local transportation utility are presented, and an interpretation is made about the possible future role of the automobile. (Author)

AD-692 837
Massachusetts Inst of Tech Cambridge Dept of Civil Engineering.
SEARCH AND CHOICE IN TRANSPORT SYSTEMS PLANNING, VOLUME XII. CONSUMER PREFERENCES AND THE ABSTRACT MODE MODEL: BOSTON METROPOLITAN AREA.
Research rept.,
Rodney Paul Plourde. Jun 68, 52p* Rept no. R68-51
Contract DOT-7-35140
See also Volume 11, AD-693 092.

Descriptors: (*Transportation, *Management planning), (*Traffic, Mathematical models), Predictions, Pattern recognition, Time, Costs, Attitudes, Urban areas, Statistical data, Regression analysis, Massachusetts.
Identifiers: Abstract mode models, Consumer preferences, Boston (Massachusetts), Travel demand models.

The document is concerned with travel demand models which predict the number of people who will freely choose to use a given system at a specified level of service. Use is one measure of the 'goodness' or effectiveness of a system, and is the end product of many individual consumer trip decisions. A travel demand model which both predicts system use and provides insights into the factors which influence consumers' preferences and motivations in travel would therefore be a good travel model. An analysis of consumer preference patterns attempts to get at the very root of trip-making decisions, and may prove vital to a planner conducting a search and evaluation of system policy alternatives. One model which offers the planner or designer the capabilities of both predicting system use and measuring the levels of service necessary to attain a given amount of system use is the abstract mode model. (Author)

AD-693 072
Massachusetts Inst of Tech Cambridge Dept of Civil Engineering.
SEARCH AND CHOICE IN TRANSPORT SYSTEMS PLANNING. VOLUME II. A PROTOTYPE ANALYSIS.
Research rept.,
Earl R. Ruiter. Jun 68, 313p* Rept no. R68-41
Contracts DCA100-67-C-0008, DOD-7-35140
See also Volume 1, AD-693 071 and Volume 3, AD-692 836.

Descriptors: (*Transportation, *Management planning), (*Traffic, Analysis), Urban areas, Equilibrium, Mathematical models, Programming (Computers), Networks, Time Passenger vehicles.
Identifiers: Traffic flow, Northeast Corridor, Multimodal transportation systems.

A prototype system designed for the equilibrium analysis of regional multimodal transportation systems is described, and the system is used to analyze an aggregated representation of air, rail and private automobile travel in the Northeast Corridor. The system has been designed to illustrate the importance and usefulness of applying the equilibrium approach to transportation systems analysis. The theoretical framework of this approach is, therefore, presented as an introduction. Many concepts arising from urban transportation planning methodology have been incorporated into the prototype system. For this reason, urban transportation is presented as a par-

ticular approximation of the equilibrium approach. (Author)

AD-693 078
Massachusetts Inst of Tech Cambridge Dept of Civil Engineering.
SEARCH AND CHOICE IN TRANSPORT SYSTEMS PLANNING. VOLUME IX. EQUILIBRIUM MODELS: (1) GENERAL EQUILIBRIUM MODELS OF URBAN TRAVEL; (2) PRODUCTION AND TRANSPORT MODELS FOR REGIONAL PLANNING; (3) USE OF A NORMATIVE MODEL IN URBAN HIGHWAY NETWORK OPERATION AND NETWORK IMPROVEMENT.
Research rept.,
L. F. Jackson, Jesse G. Schwartz, and David Bivins. Jun 68, 113p* Rept no. R-68-48
Contracts DCA100-67-C-0008, DOT-7-35140
See also Volume 8, AD-693 077 and Volume 10. AD-693 079.

Descriptors: (*Transportation, *Management planning), (*Traffic, Mathematical prediction), Networks, Urban areas, Mathematical models, Numerical methods and procedures, Economics, Industrial production.
Identifiers: *Regional planning and development, Equilibrium models, Travel habits, Traffic flow.

This report extends the model of Beckmann which gives a general equilibrium formulation to the study of the demand for travel on particular network links. The paper develops a model of travel behavior considering transportation as a production activity which must be operated at a certain level to consume other services, and not as an item for consumption. This model postulates uniform and homogenous time flows and considers macrostability of flows. (Author)

AD-699 158
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
PROCEEDINGS IDA URBAN TRANSPORTATION WORKSHOP, FEBRUARY 3 THROUGH 5, 1969.
Research paper,
Jane-Ring F. Crane, and Elizabeth A. Parker. Oct 69, 34p* Rept no. RP-P-544 IDA/HQ-69-10706
Contract DAHC15-67-C-0011

Descriptors: (*Urban areas, Transportation), (*Transportation, *Symposia), Impact, Sociometrics, Models (Simulations), Mathematical prediction, Transformations, Command + control systems, Scheduling, Pallets, Federal budgets, Experimental design.
Identifiers: Model split, Demand (Economics), *Rapid transit systems, Disadvantaged groups, Gravity vacuum transit systems.

The IDA urban transportation workshop brought together contractors for a new systems study to discuss the results and implications of their findings. The papers present the highlights of the studies and note areas for future research, development and demonstration. Potential alternative transportation modes that appear to be technologically and economically feasible include dial-a-bus, personal rapid transit, dual-mode vehicle systems, automated dual-mode bus systems, pallet or ferry systems, intraurban transit links, and high-density circulation systems. The new systems study recommended research programs to meet specific technological, economic, and political requirements. (Author)

AD-701 338
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
THE M AND O SUBWAY FORT WORTH, TEXAS.
Research paper,
Joseph A. Navarro, and Elizabeth A. Parker. Dec 69, 21p Rept no. RP-P-582 IDA/HQ-69-10966
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Urban areas, Transportation), (*Transportation, *Texas), Railroads, Economics, Acceptability.
Identifiers: *Subways, Rapid transit railways, *Fort Worth (Texas).

The study documents an example of a private enterprise providing one component of center city transportation. It highlights key factors in the implementation and operation of the subway. (Author)

AD-702 738
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
INTRA-AIRPORT TRANSPORTATION SYSTEMS: AN EXAMINATION OF TECHNOLOGY AND EVALUATION METHODOLOGY,
P. G. Freck, L. P. Minichiello, R. E. Thornton, and T. W. White. Dec 69, 152p* Rept no. S-351 IDA/HQ-69-10734
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Air transportation, *Urban planning), (*Airports, Scheduling), Interactions, Problem solving, Cost effectiveness, Optimization, Mathematical models.
Identifiers: *Intra-airport transportation, Evaluation.

The study examines the technology and analytic techniques available to provide assistance in arriving at solutions to intra-airport transportation problems. A number of proposed transportation systems are examined and their capabilities are compared to the future requirements of major U.S. airports. Technological deficiencies of proposed systems are identified, and possible major research, development, and demonstration programs are suggested. In addition, two typical airport transportation problems are identified, and simple analytical methods are developed for their solution. The applicability of both are analytical techniques and the available technology to other (non-airport) transportation problems is discussed. (Author)

AD-704 726
Massachusetts Inst of Tech Cambridge Dept of Civil Engineering
PRINCIPLES OF TRANSPORT SYSTEMS ANALYSIS.
Professional paper,
Marvin L. Manheim. Jan 67, 22p Rept no. P67-1
Contract DCA100-67-C-0008

Descriptors: (*Transportation, Systems engineering), Scheduling, Mobility, Problem solving, Advanced planning, Predictions, Logistics, Deployment, Urban areas, Management planning.
Identifiers: Management information systems.

Nine principles for the analysis of transportation systems are presented. The primary purpose of these principles is to identify the common threads underlying a great variety of seemingly disparate transportation problems, and so to stimulate the development of a 'transportation science.' The principles are equally applicable to urban transportation, megalopolitan transportation, developing country transportation, and strategic mobility. (Author)

AD-707 314
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
CENTER CITY TRANSPORTATION NEEDS OF TRANSIT-ORIENTED CITIES. SUMMARY OF THE NATIONAL URBAN COALITION SEMINAR, BOSTON, MASSACHUSETTS, APRIL 1-2, 1970,
Elizabeth Parker, and Murray Kamrass. Apr 70, 19p Rept no. N-714 (R) IDA/HQ-70-11395
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Urban planning, *Transportation), Passenger vehicles, Symposia, Budgets.
Identifiers: Boston (Massachusetts), Chicago (Illinois), Philadelphia (Pennsylvania), New York (New York).

The summary includes a discussion of general transportation problems in Category III cities, specific needs and requirements as reported by the cities, and the relevance of the present five-city effort, sponsored by UMTA. In general, the nature and the magnitude of the transportation problems in Category III cities set them apart from other cities in the program. (Author)

AD-708 019
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
RESERVED LANES FOR BUSES: THE SHIRLEY HIGHWAY EXPERIMENT.
Research paper,
Jean G. Taylor. Apr 70, 54p* Rept no. RP-P-618 IDA/HQ-70-11363
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Urban areas, Roads), (*Traffic, *Management planning), (*Motor vehicle operators, Reaction (Psychology)), Urban planning, Passenger vehicles, Control systems.
Identifiers: *Reserved traffic lanes, *Shirley Highway experiment, Transportation planning, Bus transportation, *Reserved bus lanes, Car pools.

The paper provides an initial examination of the Shirley Highway experiment and addresses specific aspects of the bus project. In the short time available for the study, experiments, measurements and evaluations were outlined and described in the detail possible. These mainly concern (1) potential reaction of automobile occupants to what will be an apparent sparse use of the reserved lanes by buses only, (2) measures of success and the associated data collection requirements before and during the experiment, (3) improvements in bus utilization during the project, (4) means to reduce car attractiveness which in turn would increase the relative attractiveness of busses, (5) utilization of excess bus lane capacity by car pools and (6) circulation systems. (Author)

AD-708 021
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
CENTER CITY TRANSPORTATION: SUMMARY OF THE NATIONAL URBAN COALITION SEMINAR, MINNEAPOLIS, MINNESOTA, MAY 4-5, 1970,
Elizabeth Parker. May 70, 22p Rept no. N-726 (R) IDA/HQ-70-11583
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Feasibility studies, Urban planning, Symposia, Georgia, Minnesota.
Identifiers: Nicollet Mall project, Intercept operation, Atlanta (Georgia), Minneapolis (Minnesota).

The summary of the Minneapolis seminar constitutes a part of IDA's on-going examination of the Center City Transportation Program. It includes a discussion of Federal funding and Federal selection criteria, priority center city transportation projects as reported by the National Urban Coalition, and examples of center city projects. The seminar was limited to the following nine cities: Cleveland, Detroit, Houston, Kansas City, Los Angeles, Miami, Milwaukee, Minneapolis and New Orleans. (Author)

AD-708 023
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
A BIBLIOGRAPHY ON AIR TRAVEL AND ASSOCIATED GROUND TRANSPORTATION.
Janet D. Kiernan. Jun 70, 48p* Rept no. N-731 (R) IDA/HQ-70-11522
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Air transportation, *Bibliographies), (*Transportation, Urban planning), Airports, Management planning.
Identifiers: Transportation planning.

A survey of documents and articles was made to help identify current data and studies relating to air travel demand projections, alternative airport configurations, flow patterns and rates, and available or potential ground transportation concepts, systems, and components. The bibliography covers the subject areas up to August 1969. (Author)

AD-711 896
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
A PRELIMINARY EXAMINATION OF MAXIBUSES,
Howard Margolis. Jul 70, 33p* Rept no. N-725 (R) IDA/HQ-70-11646
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Feasibility studies), Design, Cost effectiveness, Roads, Traffic, Problem solving, Site selection, Law, Factor analysis, Efficiency.
Identifiers: *Buses (Vehicles), *Maxibuses.

Maxibuses are discussed, which include both double-deckers and articulated (segmented) buses, provide certain benefits for bus lines, particularly when used in commuter express service. While they are able to seat more passengers per bus, they are likely to save no more than 10 to 15 percent in this mode, and even less on a systemwide basis. There are legal limitations in most states that limit buses to 55 ft long and 13/5 ft high. To gain full cost/effectiveness and comfort, it would help if some additional size could be added. Maneuverability is not a problem, but such buses would operate best in situations where curb lanes are kept free of parked cars. A test of maxibuses in selected locations is recommended. The most efficient and rapid way to test the maxibus concept would be to use European equipment. The promise of maxibuses, particularly for local transit, would increase if automatic fare collection equipment were developed. Some consideration could well be given to adding to passenger comfort, by such means as providing rush-hour seating for all passengers, as well as to increasing the number of riders per bus. (Author)

AD-711 597
Institute for Defense Analyses Arlington Va Urban Mass Transportation Project
THE USE OF ACCIDENT DATA FOR EVALUATING THE SAFETY OF URBAN TRANSPORTATION,
Harriet Biddle, and Murray Kamrass. Aug 70, 26p* Rept no. N-742 (R) IDA/HQ-70-11520
Contracts DAHC15-67-C-0011, DOT-UT-43 (IAA)

Descriptors: (*Transportation, Safety), (*Urban areas, Transportation), Motor vehicle accidents, Correlation techniques, Mortality rates, Ranges (Distance), Statistical processes, Reports, Passenger vehicles, Railroads.
Identifiers: Bus lines, Subways, Evaluation, Trip statistics.

Three primary factors are considered applicable to the evaluation of transportation system safety--accident rate, injury rate and death rate. Costs are also applicable but commensurable cost data do not seem to be available. Data are presented for some of these measures for three urban transportation modes--the automobile, the bus and the subway. (Author)

PB-166 049
Operations Research, Inc., Silver Spring, Md.
COMPARATIVE ANALYSIS OF RAPID TRANSIT VEHICLE SYSTEMS.
Preliminary study,
H. O. Davidson, J. L. Crain, and E. W. Davis. Jul 62, 129p
Prepared for the National Capital Transportation Agency.

Descriptors: (*Transportation, District of Columbia), (*Passenger vehicles, Feasibility studies), Costs, Engineering, Control systems, Automation, Propulsion, Distribution, Safety, Effectiveness, Analysis, Urban areas.

The primary objective of this analysis has been to provide a realistic set of alternatives (of rapid transit vehicle systems) on which judgment may be made as to what, if any, technological advances in rapid transit vehicle systems are feasible and worth exploring. For those systems that appear feasible and worthwhile it is required that the contractor define what additional technical analyses are required to support a final choice among the various alternatives, what program can be established for accomplishing this work, and what resources are required to implement this program. A secondary objective of the study has been a preliminary review of vehicle and traffic control systems with particular emphasis on central control devices and automated train operation. The interrelations between control systems, vehicle type, and alternative operational concepts are such that analysis of rapid transit vehicle systems would be incomplete without some preliminary assessment of control system alternatives. (Author)

PB-166 878
Cornell Aeronautical Lab., Inc., Buffalo, N. Y.
A PROJECTION OF TECHNOLOGY APPLICABLE TO THE FUTURE HIGHWAY SYSTEM OF THE BOSTON- WASHINGTON CORRIDOR.
2 Oct 64, 400p Rept. no. CAL-VJ-1913-V-1
Contract Cc6245

Descriptors: (*Urban areas, Roads), (*Roads, Civil engineering), (*Civil engineering, Roads), (*Transportation, Research program administration), United States Government, Passenger vehicles, Cargo vehicles, Standards, Safety, Traffic, Motor vehicle operators, Safety devices, Feasibility studies.
Identifiers: Washington-Boston Corridor, High-speed passenger transportation.

The objectives of this study have, therefore, been (1) to review the existing trends in highway-oriented technology, (2) to explore those aspects of existing trends, and developments in the field, that could be stimulated to achieve advantageous developments, and (3) to select certain innovations components and system concepts that, principally on the basis of technical and effectiveness considerations, appear to be promising for further research and development, especially as related to the Megalopolitan region. This study has been of relatively short duration and modest effort (six months and about three engineers). Because of these limitations, the system concepts chosen as worthy of further exploration are outlined in the merest skeletal form -- general technical feasibility is based on judgment and experience and in each system case, a great deal of engineering research, preliminary design study, and experimental prototype development will be necessary to 'put meat on the bones' to allow major policy decisions to be made by regional planners.

PB-166 879
Klauder (Louis T.) and Associates, Philadelphia, Pa.
POSSIBLE IMPROVEMENTS TO RAILROAD PASSENGER SERVICE BETWEEN NEW YORK AND WASHINGTON.
Preliminary engineering rept.,
Louis T. Klauder. 1 Jun 64, 135p
Contract Cc6238
Rept. on Washington-Boston Corridor Research Proj.

Descriptors: (*Railroads, Urban areas), (*Urban areas, Railroads), (*Transportation, Research program administration), United States Government, Civil engineering, Railroad tracks, Railroad cars, Traffic, Scheduling, Maintenance, Costs, Safety, Feasibility studies.
Identifiers: Washington-Boston Corridor, High-speed passenger transportation.

Studies are made of the possible service improvements on the Pennsylvania Railroad between Washington, D. C. and New York, N. Y. to provide in greater depth an analysis of the operational aspects of such service, the required alterations to existing facilities, and the equipment design features, as well as calculations of the cost of improvements and improved operations between these two cities.

PB-166 880
Klauder (Louis T.) and Associates, Philadelphia, Pa.
POSSIBLE IMPROVEMENTS TO RAILROAD PASSENGER SERVICE BETWEEN NEW YORK AND WASHINGTON.
Supplemental engineering rept.

12 Jun 64, 123p
Contract Cc6238
Rept. on Washington-Boston Corridor Research Proj. Supplemental rept. to preliminary rept. dated 1 Jan 64.

Descriptors: (*Railroads, Urban areas), (*Urban areas, Railroads), (*Transportation, Research program administration), United States Government, Traffic, Scheduling, Railroad tracks, Railroad cars, Maintenance, Safety, Costs, Feasibility studies, Civil engineering.
Identifiers: Washington-Boston Corridor, High speed passenger transportation.

The possibility and the cost of establishing two and onehalf hour passenger service between New York and Washington was studied, using the tracks of the Pennsylvania Railroad. The results of that study were presented in a 'Preliminary Engineering Report on Possible Improvements to Railroad Passenger Service Between New York and Washington,' dated June 1, 1964 (**PB-166 879**). In this report the possibility and cost of establishing two and onequarter and two-hour service between these same two cities are studied.

PB-166 881
Smith (Wilbur) and Associates, New Haven, Conn.
HIGHWAY TRAVEL IN WASHINGTON, NEW YORK, BOSTON MEGALOPOLIS,
Wilbur S. Smith. 15 Nov 63, 176p
See also PB-166 878.

Descriptors: (*Roads, Urban areas), (*Urban areas, Roads), (*Transportation, Research program administration), United States Government, Civil engineering, Passenger vehicles, Cargo vehicles, Traffic, Density, Mathematical models, Economics, Sociology, Feasibility studies.
Identifiers: Washington-Boston Corridor, High-speed passenger transportation.

A mathematical model was developed and tested for synthesizing current highway travel patterns in the corridor on an intercity basis. Such factors as population, vehicle registration, conventional land use, economic levels, employment, and specific major generators of intercity travel were included.

PB-166 885
United Research, Inc., Cambridge, Mass.
INTERCITY FREIGHT TRANSPORTATION REQUIREMENTS OF THE WASHINGTON-BOSTON CORRIDOR IN 1980.
Final rept.

Nov 63, 243p
Contract Cc6224

Descriptors: (*Transportation, Cargo), (*Urban areas, Transportation), Traffic, Roads, Air transportation, Shipping (Marine), Vehicles, Railroads, Sociology, Economics, Population, Labor, Industries, Industrial production, Costs, Tables.
Identifiers: Washington-Boston Corridor.

The purpose of this research is to study the intercity freight transportation requirements of the WashingtonBoston Corridor in 1980, and the improvements required in transporting commodities through and within the corridor by land, water and air. The study objectives are (1) to estimate in terms of traffic flows, the current total demand for intercity freight commodity transportation existing in the corridor; (2) to describe in qualitative terms the commodities making up these traffic flows; (3) to show how the current demand for commodity freight transportation is being met today; (4) to identify and establish a relationship between significant economic and sociological factors and levels of transportation demand; (5) to identify significant changes in these relationships which may occur in the future as a result of technological innovation; (6) to project the economic and sociological demand factors in 1980; (7) to forecast for 1980, total intercity freight transportation demand (as expressed in terms of traffic flows); (8) to allocate this total commodity flow to the various modes on the basis of foreseeable intermodal competitive relationships; (9) to identify and describe the economic and technical characteristics of the various ways and vehicles which may be made available to freight carriers by 1980; and (10) to describe the methodology by which the cost and technical characteristics of ways and vehicles could be related to possible future demand characteristics.

PB-166 886
MRD Div., General American Transportation Corp., Niles, Ill.
WASHINGTON-BOSTON TRANSPORTATION STUDY. PART B. FEASIBILITY AND COST OF IMPROVED RAILROAD SERVICE.
Final rept.,
Andrew A. Arentz, Jr., Fred W. Sander, and Richard E. Pages. Nov 63, 228p
Contract Cc6207

Descriptors: (*Transportation, Railroads), (*Railroads, Transportation), Passenger vehicles, Feasibility studies, Urban areas, Automation, Railroad cars, Railroad tracks, Costs, Population, Economics, Tables.
Identifiers: Auto ferry transportation, Washington-Boston Corridor.

Conclusions: A large portion of the total intercity passenger market in 1980 in the Washington-Boston corridor can be effectively and economically served by improved railroad service. To serve the 1980 market, major improvement of existing rail systems does not appear to be economically feasible. The most promising long-range solution to the 1980 corridor problem is a new high-speed high-frequency railriding auto ferry. An immediate improvement of the present rail systems in the corridor should be made with the object of achieving efficient, dependable, and economical operations. This improvement should be in the lower improved-speed ranges contemplated in the study and should be compatible with the structures of the railroads as they already exist. It should also be predicted on new comfortable equipment that will be consonant with future local and commuter requirements.

PB-166 887
Bingham (S. H.), New York.
HIGH-SPEED RAILROAD OPERATIONS WITHIN THE NEW YORK METROPOLITAN AREA IN CONNECTION WITH HIGH-SPEED SERVICE BETWEEN WASHINGTON, D. C. AND BOSTON, MASSACHUSETTS,
S. H. Bingham. 15 Nov 63, 156p
Rept. on Research Project.

Descriptors: (*Railroads, Urban areas), (*Urban areas, Railroads), (*Transportation, Research program administration), United States Government, Civil engineering, Railroad tracks, Railroad cars, Compatibility, Aerodynamic characteristics, Traffic, Scheduling, Costs, Feasibility studies, Maps.
Identifiers: Washington-Boston Corridor, High-speed passenger transportation.

One of the main objectives was the determination of the limits to high-speed operation imposed by existing rail route alignments and profiles, based upon studies of existing railroad valuation track maps. These studies were translated into the charted changes, presented herein, which would permit minimum train speeds of 100 miles per hour. In addition to this, four alternate routes were studied to develop alignments which give promise of greater speed capabilities within the area. All the routes studied, including two which are not compatible with conventional rail operations, are shown in a Map.

PB-167 186
Department of Commerce, Washington, D. C. Panel on Transportation Research and Development.
REPORT OF THE PANEL ON TRANSPORTATION RESEARCH AND DEVELOPMENT OF THE COMMERCE TECHNICAL ADVISORY BOARD TO THE SECRETARY OF COMMERCE,

6 May 65, 95p

Descriptors: (*Transportation, Research program administration), United States Government, Commerce, Industrial research, Traffic, Roads, Railroads, Safety, Economics, Sociology, Urban areas, Reports.

The report incorporates the panel members' experience in transportation, their recent joint study of this topic, and their discussions and exchange of views during the panel's meetings. It presents the panel's comprehensive view of transportation R and D needs in this country and describes particularly representative problems. The Panel's recommendations focus on the sort of environment which the Secretary of Commerce must foster to fulfill the Department's role as the President's principle advisor on transportation R and D. Specific programs are recommended to create this environment, and a framework is suggested for developing more detailed plans and projects in the future.

PB-167 714
National Capital Transportation Agency, Washington, D. C.
RAIL RAPID TRANSIT FOR THE NATION'S CAPITAL.
Jan 65, 48p
Rept. on Transit Development Program 1965.

Descriptors: (*Urban areas, Transportation), (*Railroads, Urban areas), Engineering, Costs, Construction, Operation, Traffic, Roads, Passenger vehicles, Tables.
Identifiers: Washington, D. C., Subways.

Conclusions and Recommendations: The solution to the transportation problem confronting the National Capital is to develop an alternative to travel by automobile that will offer convenient, fast, economical home-to-work transportation and will enable the highway system to function more effectively by encouraging some people who might otherwise drive to make use of public transportation. The National Capital Transportation Agency Concludes that: The most efficient and economical method of transporting large numbers of people during peak demand periods is by high-capacity, high-performance rail rapid transit. Such a system involves minimal right-of-way requirements, preserves taxable property, reduces the problem of displacing and relocating families and business establishments, and reduces the burden of traffic on streets and highways. By utilizing underground routes, the integrity of neighborhoods and central Washington will be protected and the beauty and dignity of the Nation's Capital preserved. The downtown subway and the network of rapid transit routes described in this Transit Development Program are not only required but are economically practicable. The Agency recommends: That the Congress authorize the Agency to undertake development of the rail rapid transit system described in this report and detailed in the Engineering Supplement. That Congress appropriate the funds necessary to implement the Transit Development Program.

PB-168 260
Parsons, Brinckerhoff, Quade and Douglas, New York.
HIGH LEVEL AND LOW LEVEL SUBWAYS: PRE- LIMINARY ENGINEERING STUDY.

27 Nov 61, 52p
Research supported by National Capital Transportation Agency, Washington, D. C.

Descriptors: (*Railroads, Underground structures), (*Underground structures, Railroads), (*Civil engineering, Underground structures), (*Transportation, District of Columbia), Engineering geology, Construction, Costs, Feasibility studies, Urban planning, Urban areas.
Identifiers: Subways, High-speed passenger transportation.

Preliminary engineering analyses of high level and low level subway construction in the downtown area of Washington, D. C. are presented. The purpose of these analyses is to provide the National Capital Transportation Agency with information on the design, construction procedures, and estimated construction costs of a route whose engineering and construction problems are considered typical of the conditions which would be encountered on routes ultimately to be chosen by the Agency for its Transit Development Program. The route selected by the Agency as being representative of these conditions is 7,800 feet long and starts at the intersection of Massachusetts Avenue and G Street, extends westward along G street to 15th Street, turns into Pennsylvania Avenue, and terminates at the intersection of Jackson Place and Pennsylvania Avenue. The high level subway is defined as a two-track structure which is located vertically as near the surface of the street as possible with just enough earth cover to permit the installation of utilities. The low level subway is defined as a two-track structure which is located vertically as near the surface of the street as possible while permitting the installation of a mezzanine at the station.

PB-168 262
Parsons, Brinckerhoff, Quade and Douglas, New York.
PROPOSED SUBWAYS AS DUAL PURPOSE FALLOUT SHELTERS: PRELIMINARY STUDY OF INCREMENTAL COSTS.

13 Sep 62, 48p
Research supported by National Capital Transportation Agency, Washington, D. C.

Descriptors: (*Railroads, Underground structures), (*Underground structures, Shelters), (*Shelters, Underground structures), Civil engineering, Civil defense systems, Radioactive fallout, Health physics, Costs, Feasibility studies, District of Columbia, Urban planning, Urban areas.
Identifiers: Subways, High-speed passenger transportation.

The purpose of this preliminary engineering study is to determine the incremental costs of providing community fallout shelters, either in the initial

construction, or in later construction, of a proposed subway system in the Washington, D. C. area. The proposed subway system is in a preliminary planning stage, with criteria as to subway section, stations, and facilities not yet determined. The incremental costs developed in this study, therefore, are based on the information contained in a previous report (PB-168 260) prepared by this firm for the NCTA. In the present study, incremental costs are developed that may be incurred under a number of alternatives, both as to subway arrangement and methods of construction; i. e., a high-level or low-level subway arrangement and cut-and-cover or tunnelling methods of construction. The incremental costs that would be incurred if provision for fallout shelters was included in the initial construction, as compared to such costs if the facilities were added subsequently, have also been developed. In addition to providing the necessary features for fallout protection, the incremental costs of providing facilities to sustain shelter occupants for a minimum of 14 days have been prepared. By directive, the additional construction necessary to create a blast-resistant shelter has not been studied, but a measure of the blast effectiveness of the dual-purpose subway shelters has been made.

PB-168 291
Dames and Moore, New York.
PROPOSED RAPID TRANSIT SYSTEM, WASHINGTON, D. C., FOR THE NATIONAL CAPITAL TRANSPORTATION AGENCY.
Rept., phase 1,
Gardner M. Reynolds and James V. Toto. 6 Aug 62, 81p

Descriptors: (*Railroads, Underground structures), (*Underground structures, Railroads), (*Civil engineering, Underground structures), (*Transportation, District of Columbia), Engineering geology, Soils, Structural geology, Well logging, Maps, Feasibility studies, Urban planning, Urban areas.
Identifiers: Subways, High-speed passenger transportation.

This report presents the results of a study concerning the subsurface conditions in the Washington, D. C. area for a proposed Rapid Transit System. Originally, three alternate interconnecting routes for the proposed Rapid Transit System were under study and it was decided that foundation investigations would be required along these routes to develop preliminary design plans. Prior to undertaking extensive foundation investigations, it was deemed feasible to make a search for existing subsurface data along the proposed routes, analyze these data and use them as a basis for planning the more extensive foundation investigations.

PB-168 292
Dames and Moore, New York.
FOUNDATION INVESTIGATION, PROPOSED RAPID TRANSIT SYSTEM, WASHINGTON, D. C., FOR THE NATIONAL CAPITAL TRANSPORTATION AGENCY.
Rept., phase 2, priorities 1 and 2,
Gardener M. Reynolds. 10 Sep 62, 47p
See also PB-168 291.

Descriptors: (*Railroads, Underground structures), (*Underground structures, Railroads), (*Civil engineering, Underground structures), (*Transportation, District of Columbia), Foundations (Structures), Engineering geology, Soils, Structural geology, Well logging, Maps, Feasibility studies, Urban planning, Urban areas.
Identifiers: Subways, High-speed passenger transportation.

PB-168 293
Dames and Moore, New York.
BORINGS 301 THROUGH 314 AND BORING 335, FOUNDATION INVESTIGATION, PROPOSED RAPID TRANSIT SYSTEM, WASHINGTON, D. C., FOR THE NATIONAL CAPITAL TRANSPORTATION AGENCY.
Preliminary rept., phase 2, priority 1,
Gardner M. Reynolds and James V. Toto. 7 Dec 62, 29p
See also PB-168 292.

Descriptors: (*Railroads, Underground structures), (*Underground structures, Railroads), (*Civil engineering, Underground structures), (*Transportation, District of Columbia), Foundations (Structures), Engineering geology, Soils, Structural geology, Well logging, Maps, Feasibility studies, Urban planning, Urban areas.
Identifiers: Subways, High-speed passenger transportation.

PB-168 294
Smith (Larry), and Co., Washington, D. C.
CASE STUDY, USE OF EXCESS LAND AND AIR RIGHTS.

31 Aug 62, 50p
Research supported by National Capital Transportation Agency, Washington, D. C. Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only.

Descriptors: (*Railroads, Underground structures), (*Underground structures, Railroads), (*Civil engineering, Underground structures), (*Transportation, District of Columbia), Costs, Urban planning, Government procurement, Law, Commerce, Urban areas.
Identifiers: Subways, High-speed transportation system.

An analysis was conducted, considering the real estate implions of the various alternative methods of developing a mass transit subway system through a segment of central Washington, in order to determine the possible implications of large scale land clearance on the cost of the transit system. The analysis has considered the cost aspects of clearance, reuse and possible resale, as it relates to over-all costs of the transit system. The study does not deal with the engineering or operating of the system but simply with the surface property rights in the right of way.

PB-168 295
Parsons, Brinckerhoff, Quade and Douglas, New York.
DIFFICULT GROUND TUNNELLING TECHNIQUES.
Engineering study.

Dec 62, 71p
Contract NTA27

Descriptors: (*Underground structures, Railroads), (*Railroads, Underground structures), (*Civil engineering, Underground structures), District of Columbia, Transportation, Construction, Engineering geology, Earth-handling equipment, Feasibility studies, Site selection, Urban planning.
Identifiers: Subways, High-speed passenger transportation.

This report presents the results of an engineering study conducted to review and evaluate present-day tunnelling techniques and to determine whether new or improved techniques could profitably be applied to proposed subway construction in the Washington, D. C. area. In addition, recommendations for a research and development program were to be made if warranted. In the conduct of this study, a review of available literature and technical articles from sources both in the United States and abroad was made, but was confined: first, to 'softground' techniques and, second, to techniques developed within the last five to ten years. To supplement the review of current literature, consultations were held with experienced tunnel contractors and an 'on-the-site' inspection was made of the work presently underway in Toronto, Canada, and at the Brooklyn-Staten Island water tunnel in New York. From the review of current literature, several new and ingenious ideas for tunnelling through difficult ground, some of which have had noteworthy success, are discussed. Selected items of particular interest are listed in the bibliography, to which reference is made throughout the report. Where available, photographs or drawings of new developments are incorporated in the text of the report adjacent to the discussion of each development.

PB-168 296
Day and Zimmermann, Inc., Philadelphia, Pa.
FEASIBILITY AND PLANT LOCATION STUDIES DESIGN AND CONSTRUCTION INDUSTRIAL ENGINEERING AND FACILITY STUDIES REPORTS, INVESTIGATIONS AND VALUATIONS MANAGEMENT.
Thomas W. Hopper. 10 Oct 62, 12p
Contract NTA38

Descriptors: (*Underground structures, Railroads), (*Railroads, Underground structures), (*Roads, Underground structures), (*Civil engineering, Underground structures), District of Columbia, Transportation, Urban planning, Construction, Costs, Feasibility studies, Site selection.
Identifiers: Subways, High-speed passenger transportation.

This report presents a preliminary study of construction cost estimates of two subways planned for motor bus operation, with the view to their ultimate conversion to rail operation.

PB-168 297
National Capital Transportation Agency, Washington, D. C.
RECOMMENDATIONS FOR TRANSPORTATION IN THE NATIONAL CAPITAL REGION. FINANCE AND ORGANIZATION.
Rept. to the President.

1 Nov 62, 117p
Available from Superintendent of Documents, GPO, Washington, D. C. HC$1.00 as Y3.M21/21:2T68. Available from CFSTI MF$0.75.

Descriptors: (*Urban planning, Transportation), (*Transportation, District of Columbia), (*Roads, District of Columbia), (*Railroads, District of Columbia), Traffic, Civil engineering, Underground structures, Research program administration, Feasibility studies, Costs.
Identifiers: Subways, High-speed passenger transportation, Rapid transit systems.

Included in this report are: (1) A plan for a balanced regional system of highway and modern rapid transit facilities; (2) a program for immediate action to construct the transportation system; (3) recommendations for organization and financial arrangements for the system; and (4) an evaluation of the 1959 Mass Transportation Survey plan.

PB-168 298
National Capital Transportation Agency, Washington, D. C.
RECOMMENDATIONS FOR TRANSPORTATION IN THE NATIONAL CAPITAL REGION. APPENDIX. VOLUME I. ENGINEERING.
Rept. to the President.

4 Jan 63, 165p
Appendix to rept. dated 1 Nov 62. See also PB-168 297.

Descriptors: (*Transportation, District of Columbia), (*Civil engineering, Underground structures), (*Underground structures, Railroads), (*Railroads, District of Columbia), Urban planning, Railroad tracks, Railroad cars, Pas-

senger vehicles, Specifications, Costs, Maps, Mechanical drawings.
Identifiers: Subways, Rapid transit systems, High-speed passenger transportation.

This volume, the first of six appendices to the November 1962 report of the National Capital Transportation Agency, discusses the engineering aspects of the rail rapid transit system recommended by the Agency for the National Capital region. Subjects presented include route alignments and profiles, establishment of criteria for the system, methods of construction, costs of construction and equipment, and the status of transit technology.

PB-168 299
National Capital Transportation Agency, Washington, D. C.
RECOMMENDATIONS FOR TRANSPORTATION IN THE NATIONAL CAPITAL REGION. APPENDIX. VOLUME II. USE OF RAILROAD FACILITIES.
Rept. to the President.

4 Jan 63, 257p
Appendix to rept. dated 1 Nov 62. Rept. includes Study of Commuter Service Using Existing Railroad Facilities for Washington, D. C., by Louis T. Klauder and Associates, Philadelphia, Pa. Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only. See only PB-168 298.

Descriptors: (*Transportation, District of Columbia), (*Railroads, District of Columbia), (*Civil engineering, Railroads), Urban planning, Railroad tracks, Railroad cars, Passenger vehicles, Traffic, Buildings, Maps.
Identifiers: High-speed passenger transportation, Rapid transit systems.

This volume of the Agency's technical appendices accompanying its November 1, 1962 report to the President is a study of use of existing railroad facilities. The contractor gave primary attention to possible use of four railroad lines: the Baltimore and Ohio Railroad lines to Rockville and to Laurel; the Pennsylvania Railroad line to Bowie and the Richmond, Fredicksburg and Potomac Railroad line to Springfield. As explained in Appendix Volume V, the Agency recommends (1) development of conventional railroad commuter services on the Pennsylvania Railroad line, and (2) use of railroad rights-of-way for rapid transit-type equipment and service between downtown Washington, on the one hand, and Rockville and Springfield, on the other hand. (Author)

PB-168 300
National Capital Transportation Agency, Washington, D. C.
RECOMMENDATIONS FOR TRANSPORTATION IN THE NATIONAL CAPITAL REGION. APPENDIX. VOLUME III. TRAFFIC FORECASTING.
Rept. to the President.

9 Jan 62, 159p
Appendix to rept. dated 1 Nov 62. See also PB-168 299.

Descriptors: (*Transportation, District of Columbia), (*Urban planning, transportation), (*Traffic, Urban planning), (*Civil engineering, Transportation), Population, Passenger vehicles, Mathematical prediction.
Identifiers: Rapid transit systems.

The volume summarizes the work done by the Agency, in cooperation with the region's highway departments and planning agencies, to arrive at estimates of travel in the National Capital region of the future, including estimates of how many people will use public transportation and how many will use autos.

PB-168 301
National Capital Transportation Agency, Washington, D. C.
RECOMMENDATIONS FOR TRANSPORTATION IN THE NATIONAL CAPITAL REGION. APPENDIX. VOLUME IV. A MODEL FOR ESTIMATING TRAVEL MODE USAGE.
Rept. to the President.

Jan 63, 226p
Prepared by Traffic Research Corp., N. Y. Appendix to rept. dated 1 Nov 62. See also PB-168 300.

Descriptors: (*Transportation, District of Columbia), (*Urban planning, Transportation), (*Traffic, Urban planning), (*Civil engineering, Transportation), Population, Passenger vehicles, Mathematical prediction.
Identifiers: Rapid transit systems.

This volume is a reproduction of three reports which were originally published by Traffic Research Corporation of Toronto, Canada pursuant to contract with the Agency. These three reports detail the development of the process by which the Agency estimated the proportion of urban travelers which would elect to use transit or automobile facilities in the future. The three reports reproduced in this Volume are: (1) Derivation of modal split relationships and outline of modal split program block; (2) reconciliation and corroboration of Washington modal split relationships; and (3) corroborative modal split relationships based on Philadelphia data. (Author)

PB-168 304
National Capital Transportation Agency, Washington, D. C.
A STUDY OF BUS RAPID TRANSIT OPERATIONS FOR THE NATIONAL CAPITAL REGION.
Technical rept.

8 Jul 63, 327p
Rept. includes Appendices 1-4, Bus Capacity Requirements in a Rapid Transit System (Downtown Peak-Hour Conditions), H. O. Davidson, F. W. Marlowe, and M. J. Zubkoff, Contract NTA36, Technical rept. no. 203. Appendix 2, Ventilation for an Underground Transit System Using Diesel Buses, Kaiser Engineers, Washington, D. C. Appendix 3, Costs Estimates, Route 66 Comparisons. Appendix 4, Volume. Capacity Implications for bus Transportation. Central Business District, Wilbur Smith and Ass., Conn. Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only. See also PB-168 303.

Descriptors: (*Transportation, District of Columbia), (*Urban planning, Transportation), (*Civil engineering, Transportation), Passenger vehicles, Roads, Effectiveness, Feasibility studies.
Identifiers: Rapid transit systems.

This report summarizes a series of studies conducted by the National Capital Transportation Agency on the feasibility of using buses to provide transit service in certain segments of the National Capital region between now and 1980, as an alternative to the rapid transit system recommended by the Agency in its November 1961 Report to the President. The relative merits of bus and rail rapid transit in providing public transportation are examined. Differences in the two types of vehicle, and in the things each does best, preclude true comparability of service. Therefore only two phases of rail and bus transit systems are explored: (1) Qualitative differences between the services afforded, and (2) cost differentials.

PB-168 305
Dames and Moore, New York.
PRIORITIES I, II, III, IV AND IV-A, FOUNDATION INVESTIGATION, PROPOSED RAPID TRANSIT SYSTEM, WASHINGTON, D. C., FOR THE NATIONAL CAPITAL TRANSPORTATION AGENCY.
Rept., phase 2.

1963, 146P
Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only.

Descriptors: (*Civil engineering, Underground structures), (*Transportation, District of Columbia), (*Underground structures, Railroads), (*Railroads, Underground structures), Foundations (Structures), Engineering geology, Soil mechanics, Well logging, Graphics, Urban planning.
Identifiers: Rapid transit system, Subways.

The purposes of this investigation were to: (1) determine the subsurface soil, rock and ground water conditions at locations along the proposed routes; (2) estimate the lateral earth pressures during construction in continually braced cuts and the lateral earth pressures on subway sections after construction; (3) estimate earth roof loads on underground sections; (4) provide general recommendations relative to construction problems associated with soil stability during construction, water seepage and areal settlements due to dewatering work areas; and (5) determine the most suitable types of foundation support and develop foundation design criteria.

PB-168 306
De Leuw, Cather, and Associates, Chicago, Ill.
RAIL RAPID TRANSIT ON THE ALEXANDRIA-SPRINGFIELD ROUTE LAFAYETTE SQUARE TO FOUR MILE RUN.
Final rept.

Mar 63, 90p
Contract NTA30
Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only.

Descriptors: (*Railroads, District of Columbia), (*Civil engineering, Railroads), (*Transportation, District of Columbia), (*Underground structures, Railroads), Urban planning, Urban areas, Virginia, Buildings, Construction, Materials, Costs, Engineering geology, Maps, Feasibility studies.
Identifiers: Rapid transit systems.

This report sets forth the results of preliminary engineering studies, estimates of cost and preliminary plans for the proposed facility. Existing base maps and uncontrolled aerial photographs have been used as a basis in development of the alignment. U. S. G. S. maps, supplemented by plans of existing completed facilities within the area of the project, have been used to determine existing ground line and topography. Soils and foundation conditions have been determined through an examination of existing available geological maps and reports, supplemented by available subsurface borings plus ten new borings made specifically in connection with this project. This project will include the use of tunneling, cut-and-cover, open cut and aerial types of structure. Careful consideration has been given to all design details to assure that the physical structures would be aesthetically in keeping with the Capital environs. Design criteria supplied by the National Capital Transportation Agency have been used as a guide in the design of structures, stations, and supporting facilities. Functional plans for stations have been prepared, based on data provided by the National Capital Transportation Agency staff. This study does not include an analysis of trackwork, power supply, power distribution, or signalization.

PB-168 307
Blair and Stein Associates, Washington, D. C.

AN EXPRESS STREET SYSTEM FOR THE NORTH CORRIDOR OF THE INNER LOOP, WASHINGTON, D. C.

Oct 62, 55p
Original document contains color other than black and white and is available in limited supply. After present stock is exhausted, it will be available in black and white only.

Descriptors: (*Roads, District of Columbia), (*Urban planning, Roads), (*Transportation, District of Columbia), (*Civil engineering, Roads), Site selection, Passenger vehicles, Traffic, Optimization, Costs, Feasibility studies.

This report presents findings on a case study of an express street system as an alternative to the North Leg of the Inner Loop in Washington, D. C. The criteria for the study were to provide for a capacity of 2,500 to 3,500 vehicles at the peak hour in each direction with minimum disruption to existing development and maximum service and safety.

PB-168 308
National Analysts, Inc., Philadelphia, Pa.
A SURVEY OF COMMUTER ATTITUDES TOWARD RAPID TRANSIT SYSTEMS. VOLUME I. THE PREFERENCE FOR RAPID TRANSIT AMONG NATIONAL CAPITAL REGION COMMUTERS TO DOWNTOWN D. C.
1963, 23p

Descriptors: (*Urban planning, Transportation), (*Transportation, District of Columbia), (*Public opinion, Transportation), Population, Sampling.
Identifiers: Rapid transit systems.

In the months of November and December 1962, a survey was conducted on a sample of 2,005 people who commute regularly to and from the downtown D. C. area. The purpose of this survey was to determine reactions and attitudes toward rapid transit as contrasted to other possible methods of transportation. This survey was conducted according to the latest accepted methods of scientific sampling (PB-168 310). Accordingly, the results of the survey can be projected to the total population of people living in the National Capital Region who commute regularly back and forth from the downtown D. C. area. The sponsor of this survey was unknown to both interviewers and respondents. Furthermore, the survey questionnaire was designed in such a manner as to avoid any possible bias in favor of one means of transportation to the detriment of others. As such, the survey results can be considered as objective, factual information regarding what people's current attitudes are toward various potential and existing forms of transportation. (Author)

PB-168 309
National Analysts, Inc., Philadelphia, Pa.
A SURVEY OF COMMUTER ATTITUDES TOWARD RAPID TRANSIT SYSTEMS. VOLUME II. CHARACTERISTICS OF PROPOSED NEW RAPID TRANSIT SYSTEM WHICH WILL MAXIMIZE RIDERS.

Jul 63, 23p
See also PB-168 308.

Descriptors: (*Urban planning, Transportation), (*Transportation, District of Columbia), (*Public opinion, Transportation), Population, Sampling, Traffic, Optimization.
Identifiers: Rapid transit systems.

This report of the data obtained from 2,005 interviews among people in the Washington, D. C. area, who are regular commuters into the downtown district, covers those aspects of commuter preferences which relate to the construction and operation of a proposed new rapid transit system. Its goal is to point up those characteristics of such a rapid transit system which would be most likely to maximize potential usage. The engineering or design feasibility of the various characteristics of construction and operation discussed here are beyond the purview of this study and are, therefore, not mentioned. What are presented are both positive assertions by commuters as to what they would prefer in a new rapid transit system as well as deduced preferences based on stated objections to presently available public transportation. (Author)

PB-168 310
National Analysts, Inc., Philadelphia, Pa.
A SURVEY OF COMMUTER ATTITUDES TOWARD RAPID TRANSIT SYSTEMS. VOLUME III-B. METHODOLOGICAL DESCRIPTION OF THE SURVEY.

1963, 38p

Descriptors: (*Urban planning, Transportation), (*Transportation, District of Columbia), (*Public opinion, Transportation), Urban areas, Population, Sampling, Sociometrics.
Identifiers: Rapid transit systems.

The study design involved interviews in the National Capital Region plus comparable interviews in 'control' cities (defined as any city containing areas where commuters could choose between some form of rapid transit and a limited access highway). The control cities were as follows: Chicago, Philadelphia, and Toronto.

PB-168 437
California Univ., Los Angeles. Dept. of Engineering.
PROJECT TRANSIM (TRANSPORTATION SIMULATOR).
Phase 1 rept.,
A. M. Feiler, F. C. Toscano, and E. O. Fisher. Jul 64, 167p Rept. no. 64-44
Contract Cc6220

Descriptors: (*Transportation, Simulators), (*Urban planning, Transportation), Sociology, Economics, Commerce, Distribution (Economics), Cargo, Roads, Railroads, Shipping (Marine), Operations research, Mathematical models, Programming (Computers).
Identifiers: TRANSIM project.

This report covers phase I of the TRANSIM program, an analytical methodology which provides the means by which transportation interchange problems can be analyzed on a systems basis. TRANSIM is based on digital computer simulation techniques. The TRANSIM methodology is generalized so it can be applicable to a wide range of interchange situations covering different transporation modes, urban situations, traffic levels and composition and other situation parameters. It consists of two basic components: (1) The TRANSIM Simulator, which includes the general purpose digital computer program and is applicable to the simulation of any interchange system, and (2) the specifications for the set of data inputs which formulates the problem and describes the parameters for a particular interchange situation to be studied. The TRANSIM simulation model of a specific transportation interchange is formulated when the Simulator and set of data inputs are combined.

PB-168 648
Massachusetts Inst. of Tech., Cambridge.
SURVEY OF TECHNOLOGY FOR HIGH SPEED GROUND TRANSPORT, PART I.

15 Jun 65, 484p
Contract C-85-65
Distribution: No limitation.

Descriptors: (*Transportation, Research program administration), (*Railroads, Research program administration), (*Roads, Research program administration), (*Civil engineering, Transportation), Urban planning, Urban areas, Economics, Sociology, Systems engineering, Feasibility studies.
Identifiers: Northeast corridor transportation project, High-speed passenger transportation, Washington-Boston corridor.

This report presents the results of a research planning study initiated at M. I. T. on September 16, 1964 in support of the Northeast Corridor Transportation Project of the United States Department of Commerce. The objective of the Northeast Corridor Transportation Project is to determine the facilities that will be needed to transport passengers and freight in the region extending roughly from Boston, Massachusetts to Washington, D. C. in the era of 1980 and thereafter. This includes study of both technological and nontechnological aspects of transportation; analysis of transportation needs and related demographic and economic forecasts for the region; and consideration of the interaction between transportation services and their impact on the development of the region as a whole and of its many urban centers. It includes studies of both existing and projected facilities for all modes of intercity transport, prospective technological improvements in each mode and alternative network configurations.

PB-169 564
Operations Research, Inc., Silver Spring, Md.
STUDY OF TRAFFIC CONTROL SYSTEMS. FEATURES OF TRAIN CONTROL SPECIFICATIONS. REQUIREMENTS FOR TRANSIT CAR SPECIFICATIONS.
NCTA Technical rept. for 15 Jun 64,
R. M. Karow, E. W. Marlowe, and John K. Sheehan. Apr 64, 174p Rept. nos. 211, 212
Contract NTA-36,

Descriptors: (*Traffic, Control systems), (*Railroads, Control systems), (*Railroad cars, Design), Specifications, Safety, Reliability, Automatic, Monitors, Propulsion, Display systems, Electrical equipment, Signals, Engines + motors, Brakes, Voice communication systems, Public address systems, Data transmission systems, Switching circuits, Control panels, Doors, Heating, Air conditioning equipment, Ventilation, Couplings, Cargo vehicles, Noise, Vibration, Construction, Materials, Tests.
Identifiers: Rapid transit systems.

The report examines the part that control plays in the operation of a rapid transit railway, and a particular operating concept is recommended. The overall requirement calls for a finer degree of control than exists in present systems along with improved devices and equipment. The recommended system employs mostly existing concepts but does require development of some advanced equipment designs. Specifications describing the functional requirements of a train control system are given. These specifications, together with appropriate contractual requirements and engineering plans and data, can be used as a basis for preparing the detailed specifications for procurement of the control system for the proposed National Capital Rapid Transit System. Requirements that are recommended for inclusion in the preparation of specifications for prototype and production-model transit cars are set forth. Continuing effort should be exercised by the National Capital Transportation Agency to observe and keep pace with the advances being made in the field of transit car component development, e.g., trucks, motors, motor controls, body framing and materials, springing, air conditioning, heating, etc., so that when the time arrived for the specifications to be prepared, the latest advances may be incorporated.

PB-169 571
Operations Research, Inc., Silver Spring, Md.
OPERATING CONCEPTS; FUNCTIONS OF AN ATTENDANT ABOARD AN AUTOMATED

TRAIN; PRELIMINARY ESTIMATE OF ZONE FARE-COLLECTION COSTS,
M. Cornell, E. Dwyer, R. Woodhead, R. M. Karow, and E. W. Marlowe. Apr 64, 110p
Technical repts. TR-201, 270, 271
Contract NTA-36

Descriptors: (*Railroads, District of Columbia), (*Urban planning, Railroads), Economics, Transportation, Urban areas, Personnel, Operations research, Civil engineering.
Identifiers: Rapid transit systems, Washington Metropolitan Area, National Capital Region.

This report presents the results of a preliminary analysis of several track arrangements and types of operation that might be applicable to the route structure, traffic projections, and service standards set by the National Capital Transportation Agency in their November 1962 report. The principal function of the system is to provide commuter service for people employed in downtown Washington. Therefore, traffic is largely in one direction at any time on the outlying lines. It was established that two tracks will carry the projected traffic with adequate margin. Because of these factors, four tracks were not considered in this study. Three-track lines were considered for the close-to-town portions of longer routes, not to increase capacity, but to improve trip times in the direction of heavier travel. The improvement is small compared with the total added cost of a third track, including switches, controls, and station platforms. Furthermore, there is available space for only two tracks over much of the route considered for a third track, and the cost of additional land acquisition or structures to accommodate the third track would be prohibitive. Therefore, the largest portion of the study dealt with various operating concepts applicable to two-track lines with and without passing sidings at stations. (Author)

PB-169 936
Pennsylvania Dept. of Highways, Pittsburgh.
PITTSBURGH AREA TRANSPORTATION STUDY. VOLUME I. STUDY FINDINGS.
Final rept.

Nov 61, 133p
Prepared in cooperation with Bureau of Public Roads, Washington, D. C.

Descriptors: (*Transportation, Pennsylvania), (*Roads, Pennsylvania), (*Pennsylvania, Transportation), Urban planning, Population, Geography, Vehicles, Maps.

Contents: Study design (The study area, The inventories, The transportation planning process); Travel characteristics (The travel surveys, The accuracy checks, The quantity of travel, The regularity of travel, The location of travel); Land use (The geographic setting, The land use survey, Patterns of generalized land uses, Patterns of the metropolis, Floor space in the golden triangle); Trip generation (Trips at households, Choice of mode, Trips at sites of urban activity); Travel facilities (Supply and use of streets, Supply and use of transit routes).

PB-169 937
Arkansas Univ., Fayetteville.
JONESBORO, ARKANSAS. A COOPERATIVE PROJECT IN TRANSPORTATION AND URBAN PLANNING.
Jun 62, 55p
Prepared in cooperation with Arkansas State Highway Dept., Bureau of Public Roads, Washington, D. C.

Descriptors: (*Urban planning, Arkansas), (*Arkansas, Urban planning), (*Transportation, Arkansas), Roads, Population.
Identifiers: Land, Highways.

The Land Use and Transportation Plan is presented in three parts: PART I, the Plan itself, is schematic and represents the goal for the year 1980. In this part are presented three Figures depicting the Plan as it applies to the rural, urban, and central business sectors of the Planning Area along with sufficient materials to explain and define the Plan. PART II presents details and recommendations to guide in achievement of the elements of the Plan; it further defines specific elements of the Plan. PART III spells out the action which must be taken by the City, County, and State agencies to carry out the Plan recommendations. The vital importance of this section lies in the necessity of a realization of the inescapable truth that satisfactory accomplishment of the planning objective hinges on how well the Plan is implemented. (Author)

PB-169 946
National Capital Transportation Agency, Washington, D. C.
ENGINEERING PLANS AND COST ESTIMATES: ENGINEERING SUPPLEMENT, TRANSIT DEVELOPMENT PROGRAM 1965.

Jan 65, 208p

Descriptors: (*Transportation, District of Columbia), (*Railroads, District of Columbia), (*District of Columbia, Transportation), Urban planning, Railroad tracks, Underground, Design, Costs, Vehicles, Maps, Operation.

The volume consists of three parts: a description of the proposed 25-mile rail rapid transit system for the Washington, D. C. area; estimates of cost; and plans and profiles, which depict the system in detail, and on which the cost estimates are based.

PB-170 581
Massachusetts Inst. of Tech., Cambridge.
BIBLIOGRAPHY OF HIGH SPEED GROUND TRANSPORT. PART IA.
15 Oct 65, 86p
Contract C-85-65
See also PB-168 648, -169 121.

Descriptors: (*Transportation, Research program administration), (*Railroads, Research program administration), (*Roads, Research program administration), (*Civil engineering, Transportation), (*Bibliographies, Transportation), Urban planning, Urban areas, Economics, Sociology, Systems engineering, Feasibility studies.

PB-173 021
National Capital Transportation Agency, Washington, D. C.
ANNUAL REPORT NO. 1.
1 Jan 66, 13p

Descriptors: (*Transportation, District of Columbia), (*Railroads, District of Columbia), (*District of Columbia, Transportation), Law, Construction, Underground structures.

PB-173 419
Booz, Allen Applied Research, Inc., Bethesda, Md.
ANALYSIS OF THE FUNCTIONS OF TRANSPORTATION: A CONCEPTUAL FRAMEWORK.
Jun 66, 560p Rept. no. 0613
Contract CPR-11-26[illegible]
Prepared in cooperation with Bureau of Public Roads, Washington, D. C.

Descriptors: (*United States Government, Research program administration), (*Transportation, *Systems engineering), Performance (Engineering), Pattern recognition, Functions, Mathematical models, Mathematical logic, Flow charting, Traffic, Passenger vehicles, Cargo, Safety, Urban planning, Human engineering.

The report summarizes work performed by Booz, Allen Applied Research Inc. under Bureau of Public Roads Contract CPR-11-2630 during the period from April 15, 1965 to April 15, 1966. The contract stipulates that the contractor: (1) Find the essential characteristics of transportation, (2) Develop a preliminary, analytic methodology systematizing these essential characteristics and their functional interactions. To accomplish these objectives, four tasks must be addressed: Task 1 - Definition of Requirement Characteristics, Task 2 - Definition of Performance Characteristics, Task 3 - Definition of Constraint Characteristics, Task 4 - Development of a Preliminary Generalized Model of Transportation. The work undertakes to conceptualize U. S. transportation by use of the systems analysis technique. It is concerned with the development of the systems analysis structure, the major subprograms, and the estimating relationships for each subprogram. A sample calculation is included to demonstrate the overall computational sequence and the manner in which subprograms are interrelated.

PB-173 473
Tri-State Transportation Commission, New York.
STATION FARE COLLECTION KEW GARDENS-FOREST HILLS QUEENS COUNTY, NEW YORK.
Final rept. 1 Jul 64-30 Jun 65.
30 Jun 65, 45p
Rept. on Mass Transportation Demonstration Proj.

Descriptors: (*Railroads, Automata), Magnetic recording systems, Feasibility studies, Traffic, Input-output devices, Malfunctions, Maintenance, Costs, Transportation.
Identifiers: Automatic fare collection systems, Magnetic tickets.

The demonstration project at two stations on the Long Island Rail Road was designed to test and evaluate newly developed automatic ticket encoding and cancellation equipment under actual operating conditions in suburban railroad stations. Automated station fare collection is a system of validating and collecting passenger fares at stations rather than on trains. On the whole the demonstration was well received by the riding public. Mechanical and functional problems occurred from time to time, but at no time did they create significant interference with normal passenger flow. The results of this demonstration have influenced the development of new ticket readers. Magnetic-surface paper tickets have been substantially improved and manufacturing costs are reported to have been reduced.

PB-173 484
CONSAD Research Corp., Pittsburgh, Pa.
DESIGN FOR IMPACT STUDIES: NORTHEAST CORRIDOR TRANSPORTATION PROJECT,
Wilbur A. Steger. Aug 65, 234p
Contract C-291-65
Prepared in cooperation with Pittsburgh Univ., Pa., Center for Regional Economic Studies.

Descriptors: (*Transportation, Urban planning), State-of-the-art reviews, Economics, Population, Mathematical models.
Identifiers: Northeast Corridor Transportation Project.

The report discusses the conduct of economic and demographic impact analyses, the development of impact models, and of measures of indirect benefits and costs constituting the impacts of changes in the regional transportation network.

PB-173 499
Mathematica, Princeton, N. J.
STUDIES IN TRAVEL DEMAND.

Sep 65, 188p
Contract C-247-65

Descriptors: (*Transportation, Urban planning), Mathematical prediction, Air transportation, Railroads, Passenger vehicles.
Identifiers: Northeast Corridor Transportation Project.

Contents: Methodological problems - A survey of demand for travel studies, by Ronald E. Miller; Some problems in forecasting transportation demand, by Henry M. Peskin; Some perspectives of gravity models, by Richard E. Quandt. Modal studies - The demand for air travel, by Roger E. Alcaly; The demand for bus travel, by John Kissin; The demand for rail travel, by Solita C. Monsod; The demand for automobile travel, by Frank Vannerson.

PB-173 684
Massachusetts Inst. of Tech., Cambridge. Dept. of Civil Engineering.
OPTIMUM ALLOCATION OF TRANSPORTATION TERMINALS IN URBAN AREAS.
Research rept.,
Barton Emmet Cramer. 1 Nov 66, 63p R66-60
Contract C-85-65

Descriptors: (*Transportation, *Urban areas), Population, Theory, Numerical analysis, Computer programs, Velocity, Costs, Feasibility studies.

The report indicates a method of determining the location of a number of transportation terminals in an urban area in such a way that they were most accessible, and thus had the greatest utility from a system customer's point of view. By equating demand distribution with population distribution, and making some straightforward assumptions about travel velocity and path, a simple circular model was constructed. Subsequent theoretical and numerical analyses using a computer program which was developed from the model suggested several important results. There seems good reason to believe that the model, which is based on very modest assumptions and requires vastly less effort to parametrize than the network approach, will generate solutions which compare favorably with more complex models. (Author)

PB-173 911
Department of Commerce, Washington, D. C. Panel on High Speed Ground Transportation.
RESEARCH AND DEVELOPMENT FOR HIGH SPEED GROUND TRANSPORTATION.
Mar 67, 40p
Rept. of Panel on High Speed Ground Transportation.

Descriptors: (*Transportation, Urban areas), (*Urban planning, Transportation), Passenger vehicles, Cargo vehicles, Railroads, Traffic, Surface propulsion, Braking, Roads, Aircraft, Aerodynamics, Vehicles.
Identifiers: Tubed vehicles.

Contents: Research recommendations for prototype studies; Roster of Panel and Subpanels; Presentations to the Panel and Subpanels; Report of the Subpanel on Guideways, Suspensions and Aerodynamics; Report of the Subpanel on Propulsion, Energy and Braking; Report of the Subpanel on Communication and Control; Report of the Subpanel on Terminals and Interfaces; Report of the Subpanel on Passenger and Freight Factors; Current HSGT R and D Contracts, Office of High Speed Ground Transportation.

PB-174 021
California Univ., Los Angeles. Dept. of Engineering.
TRANSIMVILLE: APPLICATION OF TRANSIM TO ANALYSIS OF THE EFFECTS OF MUNICIPAL REGULATIONS ON MOTOR CARRIER OPERATIONS.
Jan 67, 154p
Contract CC-6220
Report on Project Transim. See also PB-168 437, PB-173 016.

Descriptors: (*Transportation, *Law), (*Traffic, Urban areas), Cargo vehicles, Operation, Costs, Systems engineering, Simulators, Digital computers, Commerce, Simulation.
Identifiers: Transim project.

The results indicate the following: (1) Restrictions on truck movements on certain streets results in increased carrier costs for urban operations. (2) Restrictions on truck movements during certain hours results in slightly lower carrier costs. (3) Restricting the use of line haul vehicles in the central business district results in major increases in carrier costs due to additional terminal handling of freight. (4) Restrictions on terminal locations result in significantly increased carrier costs due to increased running times, when the distances are increased between terminal location on one hand, and on the other, delivery zone and access highway. (5) Restrictions requiring consolidated terminal operations result in measurable savings to the carriers due to more efficient utilization of terminal physical plant, equipment, and manpower. (6) Consolidated pickup and delivery operations result in significantly increased costs for TL shipments and decreased costs for LTL shipments. (7) Restrictions on loading and unloading at the delivery and pickup stops result in increased carrier costs due to increased freight handling time. (Author)

PB-174 220
Gilman (W. C.) and Co., Inc., New York.
THE RADIAL EXPRESS AND SUBURBAN CROSSTOWN BUS RIDER.
Final rept.
1966, 232P INT-MTD-8
A Mass Transportation Demonstration Project. Prepared in cooperation with Dept. of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Urban planning), (*Passenger vehicles, Transportation), Urban areas, Population, Traffic, Statistical analysis, Management engineering, Housing, Feasibility studies, Public opinion.

The project consisted of the establishment of (a) seven new express bus routes between suburban residential areas and the central business district of St. Louis, and (b) a cross-county local bus service providing direct transit connections between two rapidly developing commercial centers. The duration of the operating phase of the experiment was a year (May 18, 1964--May 15, 1965). A program of data collection and analysis in effect during and after the operating phase of the project provided the basis for the conclusions and criteria presented in this, the final report. Specifically, the project consisted in establishing the eight demonstration lines in as near controlled conditions as were practicable.

PB-174 313
Tri-State Transportation Commission, New York.
COORDINATED BUS-RAIL SERVICE ROCKLAND COUNTY - WESTCHESTER COUNTY - NEW YORK CITY.
Final rept., 17 Sep 63-25 Jun 65.
Jan 67, 43p Rept. no. 2037-5810-3M
Report on Mass Transportation Demonstration Project. Prepared in cooperation with Dept. of Housing and Urban Development.

Descriptors: (*Railroads, Transportation), (*Passenger vehicles, Transportation), Employment, Housing, Urban planning, Costs, Roads, Bridges, Traffic, Urban areas, Motor vehicle operators, Scheduling, Management engineering.

The assertion has frequently been made that suburban rail patronage could be improved if feeder bus service from outlying areas could be coordinated with the schedules of a rail service. This would effectively enlarge the tributary area of the suburban rail station, so many argue that this is the best way to attract spreading suburbanites from the highways back to public transportation, especially for journeys downtown. To test this concept in the Tri-State Region a mass transportation demonstration project was designed to determine whether such coordination of two modes of travel would indeed attract substantial journey-to-work and off-peak traffic when several alternatives are available.

PB-174 354
Commissariat a l'Energie Atomique, Saclay (France). Centre d'Etudes Nucleaires.
ETUDE DE LA STRUCTURE DE LA PARA-TOLUIDINE PAR LA DIFFRACTION DES RAYONS X ET DES NEUTRONS (THE STRUCTURE OF PARA-TOLUIDINE BY X-RAY AND NEUTRON DIFFRACTION).
Doctoral thesis in French,
Antoine Bertinotti. 10 Dec 65, 120p CEA-R-2928
Text in French; attached summary in English.

Descriptors: (*Toluidines, *Crystal structure), Molecular structure, X-ray diffraction analysis, Neutron diffraction analysis, Chemical bonds, Molecular association, Crystal lattices, Symmetry (Crystallography), Computer programs, Simplex method, France.

The crystal and molecular structure of para-toluidine was solved by X-ray and neutron diffraction counter techniques. The molecules are arranged in the form of infinite chains in the crystal, each molecule being linked to two neighbours by hydrogen bonds. The presence of the H bonds makes clear the difference in the melting points between para-toluidine and benzene hydrocarbons of related symmetry and molecular weight. Their direction accounts for the (001) cleavage and the growth anisotropy of crystals from supersaturated vapour phase. A structure-seeking method by computer was elaborated, using lattice energy calculations applied to molecules treated as rigid bodies and making use of a simplex method for function minimization without calculation of derivatives. The way the available information is handled allows to increase the range of convergence, as shown in the case of para-toluidine. (Author)

PB-174 414
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
AUTOMATIC TRAIN CONTROL.
Final rept.
1964, 117P Rept. no. 1
Report on San Francisco Bay Area Rapid Transit District Demonstration Project.

Descriptors: (*Railroads, *Control), Railroad tracks, Transportation, Railroad cars, Automation, Costs, Velocity, United States government, California.

Four automatic train control (ATC) systems were demonstrated on 3 miles of double track and three laboratory cars. The demonstration program was sponsored by the San Francisco Bay Area Rapid Transit District, with financial assistance from the United States Government. The four ATC systems satisfactorily demonstrated different techniques of automatic rapid transit train operation, including train protection, speed and running-time regulation, and programmed precision stopping at stations. All four successfully met the intents of the General Functional Requirements for ATC on the BART system. No single ATC system was significantly outstanding. Because the propulsion and braking systems of the three laboratory cars were themselves developmental and under test, they tended to obscure the detailed performance data. The amount of data was too small for conclusive quantitative analysis, but within this limitation other data are indicated. (Author)

PB-174 415
Kansas State Univ., Manhattan. Engineering Experiment Station.
THE USE OF DIGITAL COMPUTERS IN THE ECONOMIC SCHEDULING FOR BOTH MAN AND MACHINE IN PUBLIC TRANSPORTATION.
Special rept.,
Samy E. G. Elias.1964 65p SR-49
Research supported in part by Home Finance Agency.

Descriptors: (*Digital computers, *Scheduling), (*Economics, Transportation), Vehicles, Costs, Management planning, Man-machine systems, Computer programs, Public opinion, Time.

In recent years the number of intracity bus passengers has been steadily decreasing. Reduction in operating cost, through rescheduling, has been the aim of companies seeking to maintain operation on a profitable basis. Yet, the best manual methods fall short of solving the problem, because computations cannot be made quickly enough to keep pace with changing conditions. As a result, attention has been directed to the high speed computer as the means to overcome these difficulties. (Author)

PB-174 416
Detroit Dept. of Street Railways, Mich.
GRAND RIVER AVENUE TRANSIT SURVEY, DETROIT, MICHIGAN.
Final rept.
15 Jan 63, 152p
Prepared in cooperation with Wayne State Univ., Detroit, Mich. Urban Research Lab. Report on H.H.F.A. Demonstration Grant Program.

Descriptors: (*Passenger vehicles, Reports), Transportation, Urban areas, Traffic, Costs, Law, Maps, Data, Michigan.

The purpose of the study on Grand River Avenue, Detroit, Michigan, was twofold: To determine the extent to which passenger usage is affected by the frequency of service on a given line; To measure the effect of improved transit service on other traffic using this street.

PB-174 417
Simpson and Curtin, Philadelphia, Pa.
ACQUISITION AND PUBLIC OPERATION OF TRANSIT SERVICES IN PROVIDENCE-PAWTUCKET METROPOLITAN AREA.
Jun 65, 70p
Availability: Original document in color until exhausted. Sponsored by a grant from Housing and Home Finance Agency.

Descriptors: (*Passenger vehicles, *Urban areas), Transportation, Money, Roads, Traffic, Maps, Population, Management planning, Data, Michigan.

Contents: Background; Existing transit operations; Transit improvements over next decade; Public ownership of transit; Economies under public ownership; Obligations under public ownership; Past and prospective results of operations; Valuation of property; Acquisition of UTC system. (Author)

PB-174 418
Memphis Transit Authority, Tenn.
MASS TRANSPORTATION STUDIES IN MEMPHIS. TRANSIT SYSTEM'S HISTORY 1956-1965 SUBURBAN RIDERSHIP DEMONSTRATION PROJECT.
Mar 65, 120p
Supported in part by a grant from Housing and Home Finance Agency. Availability: Original document in color until exhausted.

Descriptors: (*Passenger vehicles, Reports), Transportation, Urban areas, Management planning, Costs, Money, Roads, Tennessee.

Contents: Memphis transit authority historical report; Demonstration project report; Memphis State University study of socio-economic characteristics and travel habits on three transit authority routes. (Author)

PB-174 419
West Virginia Univ., Morgantown. Engineering Experiment Station.
A MATHEMATICAL MODEL FOR OPTIMIZING THE ASSIGNMENT OF MAN AND MACHINE IN PUBLIC TRANSIT 'RUN-CUTTING'.
Final rept.,
Samy E. G. Elias.Sep 66, 68p Research bull-81
Research supported in part by Department of Housing and Urban Development.

Descriptors: (*Mathematical models, *Transportation), (*Man-machine systems, Mathematical models), Computers, Traffic, Management planning, Costs, Efficiency, Mathematical prediction, Reports.

Contents: Project Area; Scheduling in Transportation; Selection of Criterion of Optimality; Integer Linear Programming Model Introduction; Formulation; Discussion; Heuristic Programming Introduction; Model; Testing; Block Splitting Program; Output; Selection Combination Program; Output. (Author)

PB-174 420
Gilman (W. C.) and Co., New York.
A SURVEY TO EVALUATE THE CRITERIA WHICH INFLUENCE THE PURCHASE AND USE OF A MONTHLY TRANSIT PASS AND TO DETERMINE REASONS WHY TRANSIT NON PASS RIDERS DO NOT PURCHASE A PASS.
Final rept.
11 Dec 64, 82p
Supported in part by a grant from U. S. Housing and Home Finance Agency.

Descriptors: (*Transportation, *Public opinion), Urban areas, Passenger vehicles, Costs, Money, Questionnaires, Maps, Missouri, Illinois.

Contents: Bi-State transit fare structure; Passenger estimates; Pass cost per ride; Monthly pass sales procedures; General analysis of pass use; Detailed analyses based on post card survey; Summary and analyses of the report. (Author)

PB-174 421
District of Columbia Mass Transportation Demonstration Project, Washington.
THE MINIBUS IN WASHINGTON, D. C.
Final rept.
May 65, 79p DC-MTD-2
Prepared in cooperation with Government of the District of Columbia, and Washington Metropolitan Area Transit Commission.

Descriptors: (*Passenger vehicles, District of Columbia), Urban areas, Transportation, Operation, Economics, Effectiveness, Traffic.

The purpose of the test was to determine whether small buses, designed specially for circulation within Retail Core areas, operating on a fixed route and a frequent schedule, could attract enough riders to facilitate the movement of people, reduce traffic congestion, and stimulate business activity. The Minibus successfully achieved each of these objectives. (Author)

PB-174 422
Massachusetts Mass Transportation Commission.
MASS TRANSPORTATION IN MASSACHUSETTS.
Final rept.,
Joseph F. Maloney.Jul 64, 155p
Report on Mass Transportation Demonstration Project. Research supported in part by U. S. Housing and Home Finance Agency.

Descriptors: (*Transportation, Massachusetts), Urban areas, Railroads, Passenger vehicles, Operation, Costs, Data, Management engineering.

The major findings of the study are: (1) the declining trend in public transportation ridership is not inevitable. It can be reversed. (2) Frequency of service is a more important factor than lower fares in increasing passenger volume on public transportation. (3) Selected, incremental improvements in frequency can be self-sustaining. (4) It is possible to develop a model whereby the costs of alternative rail service levels can be accurately evaluated. (Author)

PB-174 423
Washington Univ., Seattle. Dept. of Civil Engineering.
SEATTLE MONORAIL.
Martin Ekse, Daniel E. Alexander, Robert G. Hennes, Henry P. Knowles, and Ronald Erickson.Oct 62, 121p
Prepared in cooperation with Housing and Home Finance Agency, Washington, D. C.

Descriptors: (*Railroads, Urban areas), Washington (State), Transportation, Passenger vehicles, Operation, Economics, Structures, Acceptability.

The report presents the findings of a study of the operation of 1.2 miles of monorail in connection with the Seattle World's Fair. The study includes: the analysis of capital and operating costs pertinent to a determination of financial feasibility of the system under various conditions of commuter demand; operating characteristics (such as noise, vibration, speeds, smoothness, load time and comfort) and the mechanical problems attending the operation of the trains and terminals; structural characteristics (such as footing, settlements or tilting, beam camber, switching, joints, strength and safety); right-of-way problems and effects on street capacity and traffic; public acceptance among riders, adjacent property owners, adjacent business proprietors and the general public; effects of the system on adjoining business and property values; and the coordination of the system with parking facilities and with other transit facilities.

PB-174 740
Tri-State Transportation Commission, New York.
PARK N' RIDE RAIL SERVICE: NEW BRUNSWICK, NEWARK, NEW YORK CITY.
Final rept., 27 Oct 63-24 Apr 65.
May 67, 43p
Prepared in cooperation with U. S. Dept. of Housing and Urban Development, Washington, D. C., New Jersey Dept. of Transportation, and Pennsylvania Railroad.

Descriptors: (*Transportation, Feasibility studies), (*Railroads, Passenger vehicles), New Jersey, New York, Reviews, Railroad cars, Public opinion, Attitudes, Costs, Economics.

In late October 1963, a mass transportation demonstration project was inaugurated in New Brunswick, N. J., on the main line of the Pennsylvania Railroad. The principal findings were the following: (1) Located outside the central business district of a suburban city, a Park 'N Ride station that has convenient vehicular access with ample parking space will attract new patrons to rail service. (2) The appeal of an outlying station primarily dependent upon the private automobile for access will be influenced by the availability of direct auto access routes from the surrounding residential areas. (3) The extent to which an outlying station, even with free parking, will attract passengers away from the suburban city center station is conditioned by the frequency of train service at the outlying station as contrasted with the center station.

PB-174 746
Bureau of Public Roads, Washington, D. C.

PROCEEDINGS: PROGRAM REVIEW MEETING; RESEARCH AND DEVELOPMENT OF TRAFFIC SYSTEMS, DECEMBER 6, 7, AND 8, 1966, GAITHERSBURG, MD.
Dec 66, 425p

Descriptors: (*Traffic, Symposia), (*Passenger vehicles, *Transportation), Roads, Urban areas, Maneuverability, Control systems, Motor vehicle operators, Communication systems, Optimization, Analysis, Energy conversion, Systems engineering.

Contents: Vehicle control in overtaking and passing maneuvers; Energy absorption as related to highway system modification; Improving reliability of urban intersection movements; Driving control processes; Effects of environmental factors on traffic operations; Improved utilization of interchanges; Analysis and control of traffic flow on urban freeways; Highway communications; Optimization of flow on urban networks.

PB-174 757
MPC Corp., Pittsburgh, Pa.
REPORT ON TESTING AND EVALUATION OF THE TRANSIT EXPRESSWAY.
20 Feb 67, 291p
Contract 602
Prepared in cooperation with Port Authority of Allegheny County, Pittsburgh, Pa. and Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, *Urban Areas), Railroads, Costs, Tests, Passenger vehicles, Control systems, Railroad tracks, Design, Steel, Population, Specifications, Foundations (Structures), Structural parts, Weather, Computers, Efficiency, Automation, Communication systems, Pneumatic brakes, Safety, Public opinion.

The Transit Expressway is not a monorail. The all electric vehicle resembles a bus and runs on four pairs of driven pneumatic tires. Each roadway has tracks which are 22 inch wide ribbons of concrete. A steel "I" beam called the 'guide beam' is mounted between these and is used by the guide wheels on the vehicle to steer each axle and to firmly position and lock the vehicle on the roadway. The system is based on the use of compact, minimum weight automated vehicles operating singly or in trains. The concept provides computer controlled constant service round-the-clock, with a train passing a given point as frequently as every 120 seconds. The South Park Project was operated for shake down, and engineering and operating feasibility evaluation test purposes between August 4, 1965 and June 7, 1966. The system logged 21,316 vehicle miles during this period. The economic feasibility of Transit Expressway was tested by a dynamic simulation model of a commercial system. The hypothetical system covered ten double track route miles and ten stations between a central business district and an outlying residential section in a medium population density area. Capital costs and a method of financing the system were developed. Operations were costed, revenues at a fixed fare determined, and cash flows analyzed over a twenty-six year operating period.

PB-174 758
Metropolitan Planning Commission, Nashville, Tenn.
EXPERIMENTAL BUS LINES IN METROPOLITAN NASHVILLE.
Final rept.
1966, 87P
Research supported by grant from Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Urban areas), Passenger vehicles, Traffic, Urban planning, Roads, Questionnaires, Population, Analysis, Housing, Tables, Performance (Engineering), Costs, Maps, Wages, Experimental data, Periodic variations, Feasibility studies, Tennessee.

The purpose of the demonstration project was to study the attitudes of patrons toward certain unique experimental bus lines, operated within the urban area, and to develop a basis for predicting probable results of similar lines by relating certain observed land use, social and economic characteristics of the areas served to such experimental bus lines. An additional study purpose was to demonstrate a more complete integration of transit services and to reveal how the experimental lines either complimented or detracted from the overall network of transit lines. The study did not explore the impact of changes in transit technology or the feasibility of such forms of transit as rail mass transit. Significant changes in transit technology could drastically alter the entire transit system. Past experience does show that rail transit, at its present level is most feasible for communities of larger size and higher densities than Nashville.

PB-174 849
Port of Oakland, Calif.
AIR CUSHION VEHICLE.
Final rept.,
John L. Lambert. Apr 67, 80p CAL-MTD-3
Prepared in cooperation with Dept. of Housing and Urban Development. Rept. on Mass Transportation Demonstration Project.

Descriptors: (*Ground effect machines, *Transportation), (*Amphibious vehicles, Transportation), Passenger vehicles, Water traffic, Economics, Airports, Performance (Engineering), Urban areas, Tables, Velocity, Feasibility studies, Operation, Money, Time, Air, Design, Organizations, Maps, Weather, Costs, Maintenance, California.
Identifiers: Area Redevelopment.

The study reports on the suitability of the air cushion vehicle for use in public transportation. Air cushion vehicles were utilized for a one-year period in scheduled, passenger service between three terminals in the San Francisco Bay Area: Oakland International Airport, downtown San Francisco and San Francisco International Airport. Extensive operating and economic data was collected and a continuous passenger survey was undertaken for the desired evaluations. This is the final project report, and it describes the project background and organization, the procedures followed during the project, and the results and conclusions derived.

PB-174 888
Bureau of Public Roads, Washington, D. C. Office of Research and Development.
TASK AND STUDY STATEMENTS OF THE NATIONAL PROGRAM FOR RESEARCH AND DEVELOPMENT IN HIGHWAY TRANSPORTATION.
Jan 67, 307p

Descriptors: (*Roads, *Transportation), Economics, Traffic, Urban areas, Dynamics, Control, Pavements, Design, Materials, Optimization, Environmental tests, Velocity, Stresses, Accidents, Bridges, Structures, Maintenance, Specifications, Performance (Engineering), Management planning.

Contents: Definition of underlying requirements for highway transportation; Analytic definition of complex traffic movements; Development of improved analytic techniques for designing the components of highway transportation systems; Development of methods for reliable forecasting of demand for highway transportation; Development of methods for increasing capacity, control, and safety in traffic movement; Development of techniques for more precise structural design and incorporation of new materials and structural concepts; Development of techniques for more precise structural design and incorporation of new materials and structural concepts (continued); Development and application of new technology to the location, design, construction, and maintenance processes. (Author)

PB-174 947
National Capital Transportation Agency, Washington, D. C.
ANNUAL REPORT 1966.
1 Jan 67, 28p

Descriptors: (*Transportation, *District of Columbia), Management engineering, Specifications, Traffic, Engineering, Urban areas, Budgets, Law, Reports.

Contents: Transit development program; Agency operations - 1966; Engineering; Board of engineering consultants; Public works coordination; Equipment; Architecture; Planning; Public Information and Community Services; Land acquisition and relocation services; The Washington metropolitan area transit authority compact. (Author)

PB-175 764
Barrington and Co., New York.
THE EFFECT OF THE 1966 TRANSIT STRIKE ON THE TRAVEL BEHAVIOR OF REGULAR TRANSIT USERS.
1966, 120p

Descriptors: (*Behavior, Transportation), (*Employee relations, *Transportation), Public opinion, Questionnaires, Passenger vehicles, Urban areas, Costs, Sampling, Statistical analysis, New York.

From January 1 to January 13, 1966 the City of New York experienced a major work stoppage by the operating employees. More than 40,000 transit employees struck the various companies, completely halting all services. Sixteen million residents in New York City and its metropolitan area were affected in one way or another. While negotiations were proceeding towards a strike settlement, public officials including the members of this Authority, expressed their concern, first, over the public welfare and second, over the effects of the strike on public passenger transit. Of major concern was the possible loss of rapid transit patronage and an increase in the use of other modes of travel which could further complicate the city's traffic and transportation problems. It was decided to attempt a study that would establish the effect of the strike on the public and on its future travel patterns. (Author)

PB-175 847
CONSAD Research Corp., Pittsburgh, Pa.
A PROPOSED LIBRARY AND DOCUMENTATION PROGRAM FOR TRANSPORTATION,
George Brown. Mar 67, 76p
Prepared in cooperation with the Department of Commerce, Washington, D. C. Office of the Undersecretary for Transportation.

Descriptors: (*Documentation, *Transportation), (*Libraries, Transportation), (*Technical information centers, Transportation), Feasibility studies, Information retrieval, Periodicals, Classification, Communication systems, Vocabulary, Standardization.
Identifiers: EDUCOM.

The study was addressed to a preliminary assessment of existing transportation collections in the United States. The purpose was to attempt to discern a viable approach to developing a national transportation information system to serve the missions of a coordinated field of transportation. Leadership exercised in this regard could also have the effect of strengthening the library and information services throughout the country which aim to support research, policy, and data systems efforts on the various aspects of the transportation field. Two alternative concepts were considered:

(1) Bibliographic self-sufficiency--which would imply the development of a National Library of Transportation; and (2) Resource-sharing--which would imply establishing service agreements and communication linkages among the major transportation collections to evolve into a national transportation information system. The second alternative is recommended. (Author)

PB-175 929
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
WASHINGTON, D. C. 1980 RAIL RAPID TRANSIT PATRONAGE FORECASTS.
Jul 67, 137p
Contract NTA-66-2
Prepared in cooperation with National Capital Transportation Agency, Washington, D. C.

Descriptors: (*Transportation, District of Columbia), (*Passenger vehicles, *Traffic), Government employees, Predictions, Accuracy, Costs, Population, Employment, Economics.

Rail rapid transit has been recognized as an essential ingredient in the total transportation system required to serve the Washington Metropolitan Area. The National Capital Transportation Agency, formed in 1960 to establish and maintain a transit development program, has been authorized by the Congress of the United States to proceed with final design and construction of a 25-mile rail rapid transit system. This report provides independent estimates of the patronage which would be attracted by the authorized system rail rapid transit lines. Also contained in this report are patronage estimates for the proposed revision of the authorized system known as the modified system.

PB-176 114
Mathematica, Princeton, N. J.
STUDIES IN TRAVEL DEMAND. VOLUME II,
Richard E. Quandt, and William J. Baumol. 30 Sep 66, 231p
Contract C-187-66
See also VOLUME I-PB-173 499.

Descriptors: (*Transportation, Urban planning), Mathematical prediction, Air transportation, Railroads, Passenger vehicles.

Contents: Estimation and testing in abstract mode models - The abstract mode model; theory and measurement; Tests of the abstract mode model; A non-linear model of passenger demand; A probabilistic abstract mode model; Some considerations on the choice among forecasting formulas; Alternative approaches and special problems - Some problems and prospects in collecting data on travel demand; A cross-sectional model of the demand for rail passenger service in the Northeast Corridor; Time patterns of traffic volume; An optimization model for Corridor transportation planning.

PB-176 115
Department of Transportation, Washington, D. C.
SECOND REPORT ON THE HIGH SPEED GROUND TRANSPORTATION ACT OF 1965.
Sep 67, 55p

Descriptors: (*Transportation, Railroads), (*Railroads, *Experimental design), Velocity, Statistical analysis, Urban areas, Economics, Classification, Costs, Data processing systems, Railroad cars, Design, Performance (Engineering), Instrumentation, Underground structures.

The report complies with Section 10 (a) of the High Speed Ground Transportation Act of 1965 as amended by the Department of Transportation Act of October 15, 1966, requiring the Secretary of Transportation to report to the President and the Congress, not less often than annually, with respect to activities carried out under the Act. The first report covered the fiscal year ending June 1966 and was submitted in September 1966. The three basic activities authorized by the Act are: Research and development in high speed ground transportation; Demonstration projects to determine the contributions that high speed ground transportation could make to more efficient and economical intercity transportation systems; A national program to improve the scope and availability of transportation statistics. (Author)

PB-176 158
California Univ., Los Angeles. Dept. of Engineering.
CASE STUDIES OF TRANSIM ANALYSIS,
A. M. Feiler. May 67, 140p Rept. no. 67-7
Contract C-94-66
Rept. on proj. TRANSIM. See also PB-173 016.

Descriptors: (*Transportation, *Simulators), (*Computer programs, Transportation), Traffic, Classification, Performance (Engineering), Operation, Monte Carlo method, Instruction manuals, Railroads, Merchant vessels, Costs, Vehicles, Data processing systems, Shipping (Marine), Great Lakes, Models (Simulations), Analysis.
Identifiers: Transim project.

Contents: Container ship-truck system; Rail classification yard - trailer-on-flat-car (TOFC) operations; Motor carrier urban freight operations; Rail unit train operations; Great Lakes - St. Lawrence seaway pilotage and shipping systems; Marine port-complex. (Author)

PB-176 289
National Bureau of Standards, Washington, D.C. Technical Analysis Div.
NOTES ON THE STATE-OF-THE-ART OF BENEFIT-COST ANALYSIS AS RELATED TO TRANSPORTATION SYSTEMS.
Technical note,
Joseph D. Crumlish. 1 Nov 66, 45p NBS-TN-294

Descriptors: (*Transportation, State-of-the-art reviews), (*Decision making, *Management engineering), Costs, Simulation, Economics, Water supplies, Roads, Urban planning.

This review of benefit-cost analysis as a tool for evaluating alternative courses of action describes the technique, discusses a number of benefit-cost studies, and indicates the difficulties inherent in this area of applied economics. The author concentrates on the application of the technique to large scale transport problems, reviews the literature and indicates in his conclusions where the technique can be helpful and where there is little chance for its success.

PB-176 478
CONSAD Research Corp., Pittsburgh, Pa.
IMPACT STUDIES: NORTHEAST CORRIDOR TRANSPORTATION PROJECT. VOLUME I. BACKGROUND, OVERVIEW, AND SUMMARY.
Final rept.
Sep 67, 89p
Contract C-104-66

Descriptors: (*Transportation, Economics), Design, Passenger vehicles, Cargo, Networks, Costs, Effectiveness, Urban areas, Traffic, Feasibility studies.

The report deals with the nature and strategy of the impact modeling and with the problems of developing measures to evaluate the indirect consequences of changes in the transportation network. The objective of the impact studies is to determine, insofar as possible, the interaction between alternative transportation facilities and the economic, demographic, physical, and social environment of the Northeast Corridor and its subareas. (Author)

PB-176 484
Maryland Univ., College Park. Dept. of Business Administration.
STUDYING TRANSPORTATION SYSTEMS FROM THE CONSUMER VIEWPOINT, SOME RECOMMENDATIONS,
S. J. Hille, G. A. Brunner, F. T. Paine, and A. N. Nash. Sep 67, 16p
Contract CPR-11-0960

Descriptors: (*Transportation, Urban areas), Passenger vehicles, Roads, Costs, Time, Traffic, Questionnaires, Public opinion, Feasibility studies.

The objectives of the University of Maryland Study of Consumer Demand for Transportation were to: Identify the characteristics of an ideal urban passenger transport system as conceived by the consumer, and determine the extent to which consumers consider existing modes to satisfy this ideal. The first volume reports the results of two pilot sample survey studies conducted in the Baltimore and Philadelphia metropolitan areas. The second volume is a brief 16 page overview of the conduct of the studies, their reliability and limitations, and current knowledge. These studies differ from most previous transport modal choice research in that they analyze the personal attitudinal calculus of the user in making the modal decision, and pursues the concept of measuring in scalar terms the relative importance and satisfaction of factors influencing modal choice through psychologically oriented methods. A structuring of the importance of system attributes has been accomplished for the work trip, the non-work trip, and a composite general ideal system. Eight factors appear salient to consumers in making transport mode decisions; arrayed by importance, they are: Reliability of destination achievement, convenience and comfort, travel time, cost, condition of vehicle, independence and self esteem, congestion, and diversions while in travel.

PB-176 485
Maryland Univ., College Park. Dept. of Business Administration.
CONSUMER CONCEIVED ATTRIBUTES OF TRANSPORTATION: AN ATTITUDE STUDY,
F. T. Paine, A. N. Nash, S. J. Hille, and G. A. Brunner. Jun 67, 196p
Prepared in cooperation with Bureau of Public Roads, Washington, D.C.

Descriptors: (*Transportation, Public opinion), Passenger vehicles, Urban areas, Time, Costs, Questionnaires, Roads, Traffic, Behavior, Reaction (Psychology), Weather, Economics, Tables, Attitudes.

The objectives of the University of Maryland Study of Consumer Demand for Transportation were to: Identify the characteristics of an ideal urban passenger transport system as conceived by the consumer, and determine the extent to which consumers consider existing modes to satisfy this ideal. Results are presented of two pilot sample survey studies conducted in the Baltimore and Philadelphia metropolitan areas. A structuring of the importance of system attributes was accomplished for the work trip, the non-work trip, and a composite general ideal system. Eight factors appear salient to consumers in making transport mode decisions; arrayed by importance, they are: Reliability of destination achievement, convenience and comfort, travel time, cost, condition of vehicle, independence and self esteem, congestion, and diversions while in travel. Given present levels of service, consumer satisfaction with public transportation was found to be much farther from the ideal than the private automobile for both trip purposes and is greatest for the non-work trip. (Author)

PB-176 901
Development Labs., Inc., Santa Monica, Calif.
A DISCUSSION OF TRANSIT CAR FEATURES.
Technical note,

John K. Sheehan. Jun 64, 101p TN-64-19
Contract NTA-36

Descriptors: (*Railroad cars, Design), Urban areas, Performance (Engineering), Acceleration, Seats, Costs, Railroad tracks, Power, Specifications, Air conditioning equipment, Statistical analysis, Maintenance, Velocity, Time, Vehicle brakes.

The car is a subsystem in the overall system of profile, track, car, stations, power distribution and traffic control. Final decisions have not been made in these areas; therefore, car design must be left somewhat flexible at this time. In subsequent sections it will be demonstrated that car dimensions need not or cannot reasonably exceed certain upper and/or lower limits. Each dimension which has the highest probability of adoption, and the factors affecting its determination will be presented. Behavioral characteristics, physical layout and dimensions determine overall system performance. In several instances a compromise of comfort considerations is necessary after performance and/or cost factors are considered; but the compromise is made as a last step rather than as the first, so that the effect of the compromise is understood. Performance characteristics have received a great deal of attention since they affect directly the ability of the car to provide the high speed, low trip time service specified for the NCTA system. This has involved study of adhesion in steel-wheeled cars, motors, motor controls, brakes, brake controls, suspensions, and the relationship of the car to the profile and to the traffic control system. The analyses of dimensional aspects presented in this study have been made, and the objectives of the study are given. (Author)

PB-176 902
Development Labs., Inc., Santa Monica, Calif
ON-BOARD ENERGY STORAGE IN RAIL RAPID TRANSIT.
Technical note,
E. W. Marlowe. Jun 64, 24p TN-64-23
Contract NTA-36

Descriptors: (*Railroads, Power), Flywheels, Energy, Storage, Design, Acceleration, Transmissions, Railroad cars, Velocity, Electric motors, Control systems.

The Development Laboratories, Inc. of Santa Monica, California, have developed a novel mechanical transmission suitable for use with flywhee l energy storage and they have proposed a control system in principle for applying this method of energy storage to rapid transit cars. The proposed system avoids the worst disavantages of earlier systems and appears to have enough technical merit to justify consideration for future use. (Author)

PB-176 975
Operations Research, Inc., Silver Spring, Md.
TECHNICAL APPENDIX TO OPERATING CONCEPTS REPORT.
Technical rept.,
M. Cornell, E. Dwyer, and R. Woodhead. Apr 64, 106p TR-201A
Contract NTA-36

Descriptors: (*Railroads, Feasibility studies), Operation, Design, Effectiveness, Velocity, Acceleration, Railroad cars, Time, Railroad tracks, Deceleration, Tables, Analysis, District of Columbia, Reports.

A format was developed for estimating the effectiveness of rapid transit operating concepts in terms of selected criteria. A preliminary analysis was made for the following operating patterns: local; A-B skip-stop, and three-track local-express. In this Appendix other operating concepts are described and a comparison is made of all concepts on the basis of the selected criteria. The resultant evaluations are shown. The various ratings are based upon the percent degradation from the 'best' concept for each criteria. In addition six of these operating concepts were selected for more detailed consideration. Each concept, as applied specifically to the B and O route of the proposed Washington Transit System, is investigated to determine its response to changes in design or operating characteristics. The sensitivity of operating concepts to design changes is shown. (Author)

PB-176 976
Operations Research, Inc., Silver Spring, Md.
COMPARISON OF TRANSIT VEHICLE SYSTEMS.
Technical rept.,
E. W. Marlow. Apr 64, 43p TR-213
Contract NTA-36

Descriptors: (*Railroads, Compatibility), Design, Costs, Transportation, Railroad tracks, Maintenance, Vehicle wheels, Noise, Vehicle accessories, Performance (Engineering), Safety, District of Columbia, Feasibility studies, Tires.
Identifiers: Rapid transit systems, Trucks (Railroad), Rubber-tired vehicles.

Two-axle rail cars, the Paris Metro-type rubber-tired vehicle system, and the SSG (so-called Milan type) experimental vehicle system are discussed and compared with conventional rail vehicle systems with particular reference to application on the system proposed by the NCTA for the National Capital region. The SSG system is described because it is less well known than the other systems and because it is necessary to identify the specific developmental version that is under discussion. (Author)

PB-176 977
Operations Research, Inc., Silver Spring, Md.
A RAPID TRANSIT SYSTEMS SIMULATOR.
Technical rept.,
R. P. Woodhead, T. R. Shaw, and E. W. Marlowe. Jun 64, 102p TR-217
Contract NTA-36

Descriptors: (*Railroads, Computer programs), (*Traffic, Mathematical models), Digital computers, Networks, Design, Railroad cars, Performance (Engineering), Models (Simulations), Control systems, Effectiveness, Subroutines.
Identifiers: Rapid transit.

The simulator described in this report has been developed to test track layouts, vehicle characteristics, control system characteristics, and train schedules. The simulator consists of a program for a large-scale digital computer (the Control Data Corporation (CDC) 1640A). Generally speaking, the program itself does not include descriptions of the railway, the control system, the vehicle, the train, the train schedule, etc., and it is therefore equally well suited to any rapid transit system. The details of these items are included as input data that can be changed at will. This capability is important because it is the means by which different designs and plans can be tested quickly and efficiently. Problem preparation consists of introducing the basic program, the description of the railway, certain options and constraints, schedules, etc., and an indication of the desired output information. Development of the simulator has been a formidable task. The simulator is a very flexible tool because it is organized so that its operation can be readily refined or increased in scope to solve problems beyond those mentioned in the foregoing paragraphs. (Author)

PB-176 978
Klauder (Louis T.) and Associates, Philadelphia, Pa.
PRELIMINARY DESIGN OF RAIL RAPID TRANSIT ON THE SILVER SPRING-ROCKVILLE ROUTE (UNION STATION TO ROCKVILLE) AND ALEXANDRIA-SPRINGFIELD ROUTE (FOUR MILE RUN TO CAMERON).

May 64, 233p
Contract NTA-34

Descriptors: (*Railroads, Design), Construction, Maintenance, Transportation, Costs, Structures, Railroad tracks, Storage, Maps, District of Columbia, Maryland, Virginia.
Identifiers: Rapid transit systems.

Contents: Design criteria; Description of routes; Description of stations; Maintenance shops and storage yards; Structures; Subway; Railroad crossings; Track structure; Changes to existing railroads and utilities; Estimate of cost; Construction period. (Author)

PB-176 979
Bureau of Public Roads, Washington, D.C. Office of Research and Development.
PROCEEDINGS, NATIONAL CONFERENCE, AASHO COMMITTEE ON ELECTRONICS, MAY 23-24 1967, ST. PAUL, MINNESOTA.

1967, 293p
Prepared in cooperation with Minnesota Dept. of Highways.

Descriptors: (*Management engineering, *Data processing systems), (*Transportation, Symposia), Electronic equipment, Reports, Scientific research, Optical scanning, Telemeter systems, Data transmission systems, Statistical analysis, Computer programs, Data storage systems, Computer logic, Traffic, Mathematical analysis, Programming (Computers), Urban planning, Roads, Information retrieval, Remote control systems, Time sharing.
Identifiers: Highway transportation, AASHO (American Association of State Highway Officials), Highways.

The proceedings discussed recent advances in electronic technology and allied fields which are adaptable to highway engineering and management operations. With the application of computer technology to management and administrative functions dramatic new applications of computers have been made. Potential applications include statewide and metropolitan area transportation research and planning in addition to its more traditional functions of driver licensing, traffic enforcement, safety research and promotion, highway and bridge design, and roadway maintenance. Also examined were management information systems, computer utilization, new developments in computer input, and integrated engineering systems.

PB-177 025
Simpson and Curtin, San Francisco, Calif.
FARE STRUCTURES.
Rept. on Work Item V of Northern California Transit Demonstration Project.

Feb 66, 222p
Research supported in part by Housing and Home Finance Agency, Washington, D.C. Technical rept. no. 51, Analysis of Fare Structures. Technical rept. no. 52. Alternate Fare Proposals. Technical rept. no. 53. Fare Plans. Passenger and Revenue Projections. Technical rept. no. 54, Alameda Costa District Fare Alternatives for the Existing System.

Descriptors: (*Transportation, *Urban areas), (*Urban planning, Transportation), Population, Passenger vehicles, Railroads, Economics, Traffic, Costs, Money, California, Distribution (Economics), Management control systems, Statistical analysis.
Identifiers: Fares (Transportation).

The report has been prepared to reflect current progress on this particular phase and sets forth preliminary findings and conclusions; it should be

recognized that these findings and conclusions are subject to modification depending upon the results of other phases of the project. (Author)

PB-177 030
Metropolitan Transit Authority of Maryland, Baltimore.
THE METRO FLYER: A SUBURBAN EXPRESS BUS SERVICE TO DOWNTOWN, TOWSON AREA, BALTIMORE COUNTY-BALTIMORE CITY, MARYLAND.
Final rept. 2 May 66-28 Apr 67.

28 Apr 67, 34p
Prepared in cooperation with Department of Housing and Urban Development, Washington, D. C., and McMahon Transportation Company, Inc.

Descriptors: (*Urban planning, *Transportation), (*Passenger vehicles, Feasibility studies), Research program administration, Public opinion, Decision making, Stress (Psychology), Costs, Tables, Statistical analysis.
Identifiers: Rapid transit systems, Metropolitan Baltimore area (Maryland), Area planning and development, Metro Flyer.

The purpose of this project was to explore the practicability of providing a suburban, low density, high income residential area with express buts service to the downtown shopping, recreational, and employment centers. The Towson, Maryland residential area and its several adjacent suburban areas (combined population in excess of 19,000) were provided with modern, air-conditioned express bus service to the central business district of Baltimore city, using limited access highways for approximately 72 percent of the one-way trip. Service was coordinated with the principal hours of employment, and timely trips were provided for shoppers. Included in the project were provisions for free parking facilities, an adequate promotional campaign, and a data collection program that would yield information of value to other communities contemplating similar express bus service programs. The project bus service operated as a demonstration program for one year. The great majority of transit trips were peak hour, work-oriented trips. The service was continued, with minor modifications, by the private carrier after the close of the experiment. Data pertinent to the project was collected throughout the program. (Author)

PB-177 048
New York City Transit Authority.
TWO-WAY RADIO COMMUNICATION MASS TRANSPORTATION DEMONSTRATION PROJECT.
Final rept.

1968, 96P
Contract H-638

Descriptors: (*Railroads, *Radio communication systems), Transmitter-receivers, Feasibility studies, Voice communication systems, Radio equipment, Operators (Personnel), Police, Railroad cars, Statistical analysis, Mobile, Engineering, Tables, New York, Portable, Power supplies, Operation, Maintainability, Costs.
Identifiers: Rapid transit systems, New York City.

In its search for a better medium, this Authority specified two-way communication that would be equally effective in either direction and applicable to all of its activities. The train-to-wayside systems in Chicago, Toronto and London were too limited in scope for New York. A portable transistor radio, light enough to be carried, yet powerful enough to transmit and receive in the underground tunnels, was considered ideal. The development of miniaturized transistor components made this approach feasible, subject to the solution of technical problems. The purpose of the project was to demonstrate the effectiveness of such systems in improving the reliability of operation, reducing the number and duration of delays, providing public information, and improving policing and passenger safety. (Author)

PB-177 052
Washington Metropolitan Area Transit Authority.
PROPOSED REGIONAL RAPID RAIL TRANSIT PLAN AND PROGRAM.

Dec 67, 35p
See also technical rept. nos. 1, PB-177 053; 2, PB-177 054; 3, PB-177 055; 4, PB-177 056; and 5, PB-177 057.

Descriptors: (*Transportation, Urban areas), Urban planning, Railroads, Underground structures, Costs, Traffic, Money, Passenger vehicles, District of Columbia, Maryland, Virginia, Roads, Construction, Operation, Population.
Identifiers: *Rapid transit systems.

Contents: Modern transportation for metro Washington; Capital cost analysis; Traffic, revenue and expenses; Financing the program.

PB-177 053
Washington Metropolitan Area Transit Authority.
SYSTEM PLANNING.
Technical rept.

Dec 67, 50p TR-1
See also technical rept. nos. 2, PB-177 054; 3, PB-177 055; 4, PB-177 056; and 5, PB-177 057.

Descriptors: (*Transportation, Urban areas), Urban planning, Design, Railroads, Underground structures, Organizations, Public relations, Growth, District of Columbia, Maryland, Virginia, Costs, Traffic, Analysis.
Identifiers: Rapid transit systems.

Contents: Legislative history; Action program; Regional growth; Alternative system selection; Capital costs analysis; Traffic forecast; Operating cost analysis; Airlie II-A system; Proposed regional system.

PB-177 054
Washington Metropolitan Area Transit Authority.
CAPITAL COST ANALYSIS.
Technical rept.

Dec 67, 178p TR-2
See also technical rept. nos. 1, PB-177 053; 3, PB-177 055; 4, PB-177 056; and 5, PB-177 057.

Descriptors: (*Transportation, Urban areas), Costs, Analysis, Urban planning, Railroad tracks, Underground structures, Automatic, Control systems, District of Columbia, Maryland, Virginia, Organizations, Passenger vehicles, Construction.
Identifiers: Rapid transit systems.

Contents: Establishing system criteria; Proposed regional system; Methods of construction and estimates of cost; Rapid transit vehicles and other equipment.

PB-177 055
Washington Metropolitan Area Transit Authority.
TRAFFIC FORECAST.
Technical rept.

Dec 67, 85p TR-3
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc., McLean, Va. See also technical rept. nos. 1, PB-177 053; 2, PB-177 054; 4, PB-177 056; and 5, PB-177 057.

Descriptors: (*Transportation, Urban areas), Economics, Traffic, Predictions, Models (Simulations), Urban planning, Analysis, Maps, Roads, District of Columbia, Maryland, Virginia, Organizations, Railroads, Growth, Models (Simulations).
Identifiers: RAPAID TRANSIT SYSTEMS.

Contents: Study design; Travel forecasting procedures; The Washington area - 1990; 1990 transit ridership and revenue; Traffic analysis commentary.

PB-177 056
Washington Metropolitan Area Transit Authority.
OPERATING COST ANALYSIS.
Technical rept.

1 Dec 67, 64p TR-4
See also technical rept. nos. 1, PB-177 053; 2, PB-177 054; 3, PB-177 055; and 5, PB-177 057.
Prepared in cooperation with Coverdale and Colpitts, New York.

Descriptors: (*Transportation, Urban areas), Economics, Operation, Costs, Analysis, Railroads, Maintenance, Labor, Urban planning, District of Columbia, Maryland, Virginia, Traffic, Operators (Personnel).
Identifiers: Rapid transit systems, Commuters.

Contents: Description of test systems; System criteria; Basis for estimate; Estimated operating costs.

PB-177 057
Washington Metropolitan Area Transit Authority.
FINANCIAL PROGRAM.
Technical rept.

1967, 33P TR-5
See also technical rept. nos. 1, PB-177 053; 2, PB-177 054; 3, PB-177 055; and 4, PB-177 056.
Prepared in cooperation with Kuhn, Loeb and Co.

Descriptors: (*Transportation, Urban areas), Economics, Money, Costs, Urban planning, Organizations, Public relations, Traffic, Predictions, Contracts, District of Columbia, Maryland, Virginia, Budgets.
Identifiers: Rapid transit systems, Financial program.

Contents: Revenue bonds (security, bond reserve fund, interest, maturity, sinking fund, redemption, rate covenant, service contracts, lease agreement), priorities, capital grants.

PB-177 058
Kaiser Engineers, Los Angeles, Calif.
ENGINEERING FEASIBILITY AND DEVELOPMENT STUDIES OF RAPID TRANSIT SYSTEM AND EQUIPMENT FOR THE NATIONAL CAPITAL REGION. VOLUME I.

Jul 63, 96p Rept. no. 63-11-RE
See also Volume no. 2, PB-177 059. Prepared in cooperation with National Capital Transportation Agency, Washington, D. C.

Descriptors: (*Railroads, Feasibility studies), Models (Simulations), Networks, Power supplies, Alignment, Underground structures, Geology, Traffic, Construction, Soils, Costs, Labor, Construction materials, Public opinion, Ventilation, Computers, Maryland, District of Columbia, Virginia.
Identifiers: Rapid transit systems.

The report contains the Engineering Feasibility and Development Studies of Rapid Transit System and Equipment for the National Capital Region. The study consists of development of outline specifications and criteria as a basis for future design development and is divided into the following categories: (a) Alignment; (b) Construction Methods; (c) Ventilation; (d) Electrification; (e) Train Performance Studies. (Author)

PB-177 059
Kaiser Engineers, Los Angeles, Calif.

429-500 O-LT - 71 - 2

ENGINEERING FEASIBILITY AND DEVELOPMENT STUDIES OF RAPID TRANSIT SYSTEM AND EQUIPMENT FOR THE NATIONAL CAPITAL REGION-APPENDIX, VOLUME II.

Jul 63, 209p 63-11-RE (A)
See also Volume 1, PB-177 058. Prepared in cooperation with National Capital Transportation Agency, Washington, D. C.

Descriptors: (*Railroads, Feasibility studies), Models (Simulations), Electric motors, Networks, Power supplies, Alignment, Railroad cars, Velocity, Time, Costs, Drives, Construction, Ventilation, Maryland, District of Columbia, Virginia, Auxiliary power plants.
Identifiers: Rapid transit systems.

The volume is composed of a series of six separate interim reports which were submitted initially on the dates shown. The reports are included in the order listed. Investigation of electrical traction power system; Substation size and spacing; Methods of obtaining electrical power; Realignment studies; Ventilation; Construction methods. (Author)

PB-177 100
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
LABORATORY CARS AND SUPPORT FACILITIES.
Final technical rept.

Dec 67, 51p TR-3
Prepared in cooperation with Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Railroad cars, Transportation), Railroads, Laboratories, Design, Railroad tracks, Control systems, Automatic, Electrical equipment, Safety, Heating, Cooling + ventilating equipment, Test facilities, Mechanical drawings, California.
Identifiers: Rapid transit systems, San Francisco (California).

A comprehensive evaluation of rapid transit concepts, operating equipment, and facilities has been conducted to determine the systems and equipment most suitable for the San Francisco Bay Area Rapid Transit District. It has included the development and testing of prototype equipment, and the establishment of specifications for the ultimate system which incorporate many of the best performance characteristics achieved in the test program. (Author)

PB-177 496
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
AERIAL STRUCTURE AND RAIL SUPPORT METHODS.
Technical rept.

1966, 45P TR-11
Report on San Francisco Bay Area Rapid Transit District Demonstration Project.

Descriptors: (*Mechanical fasteners, Railroad tracks), (*Fastenings, Feasibility studies), Experimental design, Manufacturing methods, Construction, Construction materials, Test methods, Test equipment, Installation, Bolts, Detents, Hooks, Locking fastener devices, Concrete.
Identifiers: Railroad ties (Roadbeds), Rapid transit systems, Isolation (Electrical).

The report describes a series of tests conducted as part of the development of the Bay Area Rapid Transit District (BARTD) system. The subject tests were performed primarily to evaluate rail fasteners and to determine their suitability for use on concrete aerial structures of advanced design. Specifically, the fasteners were evaluated in terms of their ability to maintain electrical isolation, reduce noise levels, and provide the safest and most economical system of hardware available. Upon completion of initial investigations, a totally new concept in the installation of rail fasteners and associated hardware on concrete aerial structures was tested. Additionally, several types of concrete tie were evaluated for performance under the conditions imposed by the selected BARTD system. (Author)

PB-177 505
Metropolitan Washington Council of Governments, D. C.
PRELIMINARY REGIONAL FORECASTS FOR 1990, SOCIO-ECONOMIC CHARACTERISTICS BY CENSUS TRACTS AND TRAFFIC ZONES.

May 67, 103p
Prepared in cooperation with Bureau of Public Roads, Washington, D. C., and the Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Urban planning, *Transportation), Advanced planning, Predictions, Traffic, Money, Railroads, Population, Employment, Passenger vehicles, Housing, Statistical analysis, Economics, Labor, Manpower studies, Tables, District of Columbia, Maryland, Virginia, Maps, Wages.
Identifiers: Rapid transit systems, Metropolitan Washington Council of Governments, Area planning and development.

The work program contained in the Prospectus used as the basis for establishing the Transportation Planning Board included a short range or immediate action type travel forecast. The new regional Washington Metropolitan Area Transit Authority (WMATA) has the responsibility of studying several alternative rail transit systems for the region. It developed that the short range work program would be of most help to NCTA if the 1990 trip-end estimates were available by March 1, 1967. This became the target date for completion of the short range program. (Author)

PB-177 523
General Motors Research Labs., Warren, Mich.
STUDY OF THE POTENTIAL OF HOVAIR FOR HIGH-SPEED GROUND TRANSPORTATION.
Final rept.,
Frederick Jindra. Mar 68, 131p
Contract C-197-66

Descriptors: (*Transportation, Ground effect machines), (*Gas bearings, Performance (Engineering)), Feasibility studies, Ground effect, Boundary layer transition, Fluid flow, Loading (Mechanics), Oscillation, Laminar flow, Viscosity, Resonant frequency, Velocity, Navier-Stokes equations, Pressure, Configuration, Models (Simulations), Stability, Iterative methods, Equations of motion, Stresses.
Identifiers: *Hovair air bearings, Pressure distribution.

The object of the program was to study the potential of the air bearing as a support system for high-speed ground vehicles. The tasks required included analytical investigations of performance characteristics of air bearings, analytical investigations of ride characteristics of vehicles with such support, development of dimensional analysis for experiments, and outlining future research and development requirements. (Author)

PB-177 540
Chicago Area Transportation Study, Ill.
CHANGES IN AVERAGE TRIP LENGTH,
Walter D. Stoll. Dec 67, 37p*
A case Study by Mode and Purpose of Skokie Trips made in 1956 and 1964. Prepared in cooperation with Bureau of Public Roads, Washington, D. C.

Descriptors: (*Urban planning, *Transportation), Advanced planning, Statistical analysis, Railroads, Passenger vehicles, Environment, Motivation, Sociology, Traffic, Economics, Illinois.
Identifiers: Skokie (Illinois), Chicago (Illinois).

The recommendations made by the Chicago Area Transportation Study, CATS, for the 1980 transportation requirements of its study area have been based in part upon an estimate of the total daily mileage which will be traveled within the area by that time. This estimate of person miles has been determined by multiplying the estimated future number of trips by the estimated future average trip length. It is partially from the refinement of these two basic factors that the CATS recommendations have evolved. Controversy has arisen over the use of the second factor, average trip length, in making estimates of future transportation requirements. There are two schools of thought concerning future average trip length. One group, including CATS, has based its planning on the assumption that the future average trip length for the metropolitan area will remain fairly constant. The second school of thought bases its projections on the assumption that the future average trip length will increase. A third possibility, a decrease in over-all average trip length, does not seem to be considered likely. The major arguments of these opposing viewpoints have been outlined in the CATS Technical Memo, Trends in Average Trip Length by Robert L. Olson. (Author)

PB-177 611
CONSAD Research Corp., Pittsburgh, Pa.
IMPACT STUDIES: NORTHEAST CORRIDOR TRANSPORTATION PROJECT. VOLUME II, MODELS, RESULTS, AND TECHNICAL DISCUSSION.
Final rept.

Jan 68, 377p
Contract C-104-66

Descriptors: (*Transportation, Urban planning), Programming (Computers), Management planning, Mathematical models, Mathematical prediction, Mathematical programming, Algorithms, Costs, Economics.
Identifiers: Northeast Corridor Transportation Project, Computer analysis.

(PB-176 478) provides a broad view of the work performed during Phase I of the Impact Studies project. In this Volume II, the design and implementation of the models developed by CONSAD and currently available for use by the Northeast Corridor Transportation Project is discussed. Also included are the results of thinking in several areas to which future research efforts might well be directed.

PB-177 693
Michigan Univ., Ann Arbor. Survey Research Center.
RESIDENTIAL LOCATION AND URBAN MOBILITY,
John B. Lansing, Eva Mueller, and Nancy Barth.
Jun 64, 149p

Descriptors: (*Urban areas, *Transportation), (*Manpower studies, Decision making), Distribution, Mobility, Sampling, Statistical analysis, Density, Costs, Factor analysis, Public opinion, Questionnaires, Errors, Urban planning.
Identifiers: Commuters, Area planning and development.

Since the close of World War II rapid changes have been taking place both in the geographic organization of cities and in urban transportation. These changes present a series of problems to public officials, especially to those concerned with the planning of transportation facilities. The objective of the research reported here is to make a contribution to the solution of some of these problems by means of an indirect approach. The focus is not

on specific administrative problems nor on the preparation of forecasts but on the study of the forces at work affecting urban growth and urban transportation. (Author)

PB-177 787
Regional Planning Council, Baltimore, Md.
BALTIMORE-WASHINGTON INTERREGIONAL STUDY: LAND USE AND TRANSPORTATION.
Technical rept.

Nov 60, 153p RPCB-TR-7
Availability: Original document in color until exhausted. Research supported in part by Department of Housing and Urban Development, Washington, D. C. See also TR-7-S, PB-177 788.

Descriptors: (*Urban planning, *Transportation), (*Roads, Advanced planning), Growth, Population, Economics, Commerce, Employment, Government employees, Industries, Manpower studies, Maryland, District of Columbia, Money, Statistical analysis, Management planning, Urban areas, Models (Simulations), Costs.
Identifiers: Baltimore Regional Planning Council, National Capital Regional Planning Council, Land development.

In light of the mounting impact of the population explosion, sound plans for urban development and transportation improvement become matters of urgent priority. To meet this challenge, the Baltimore Regional Planning Council and the National Capital Regional Planning Council set up a study to determine a basic program that would most effectively serve the future travel needs of this key area. (Author)

PB-177 788
Regional Planning Council, Baltimore, Md.
BALTIMORE-WASHINGTON INTERREGIONAL STUDY: LAND USE AND TRANSPORTATION; SUMMARY.
Technical rept.

Nov 60, 15p RPCB-TR-7-S
Research supported in part by Department of Housing and Urban Development, Washington, D. C. Prepared in cooperation with National Capital Regional Planning Council. See also TR-7, PB-177 787.

Descriptors: (*Urban planning, *Transportation), (*Roads, Advanced planning), Growth, Mobility, Economics, Population, Commerce, Maryland, District of Columbia, Money, Management planning, Urban areas, Costs.
Identifiers: Baltimore Regional Planning Council, National Capital Regional Planning Council, Land development.

In light of the mounting impact of this population explosion, sound plans for urban development and transportation improvement become matters of urgent priority. To meet this challenge, the Baltimore Regional Planning Council and the National Capital Regional Planning Council set up a study to determine a basic program that would most effectively serve the future travel needs of this key area. (Author)

PB-178 036
Mayo (Robert S.) and Associates, Lancaster, Pa.
TUNNELING, THE STATE OF THE ART,
Robert S. Mayo, Thomas Adair, and Robert J. Jenny. Jan 68, 27p
Contract H-766
A review and evaluation of current tunneling techniques and costs, with emphasis on their application to urban rapid-transit systems in the U.S.A. Prepared in cooperation with Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Underground structures, State-of-the-art reviews), (*Transportation, Urban areas), Construction, Earth-handling equipment, Urban planning, Railroads, Sewage, Costs, History, Safety, Rock (Geology), Soils, Concrete, Photographs.
Identifiers: Tunnels, Rapid transit systems, Graphs (Charts).

This report fills the need for a comprehensive review and evaluation of the state of the art of tunneling. Recent developments are reported in detail, based on the author's inspection of tunnel projects now underway in the United States, Canada, Europe, and Japan. These personal inspections uncovered a number of recent technological advances that may be adaptable to tunnel projects in this country. A thorough research of engineering publications also has been conducted and pertinent facts relating to tunneling have been incorporated in this report. Throughout the report, an effort has been made to present technical information in layman's language wherever possible. Chapter 3 covers rock tunneling with mechanical excavators and by conventional drilling and blasting methods. Soft-ground and subaqueous tunneling by various methods is described in Chapter 4. It includes a section on the various types of lining used for ground support. Chapter 10 contains the authors' recommendations for specific research, development and demonstration projects, as well as the authors' evaluation of how the state of the art of tunneling will evolve in the next five to ten years. (Author)

PB-178 228
General Electric Co., Schenectady, N. Y. Research and Development Center.
NONFRICTIONAL POWER COLLECTION FOR GUIDED HIGH-SPEED GROUND VEHICLES.
Final rept. (Part 2).

12 Apr 68, 147p* S-68-1056
Contract C-7-35121

Descriptors: (*Transportation, *Power supplies), (*Railroads, *Electric connectors), Systems engineering, Feasibility studies, Electric currents, Experimental design, Sparks, Electric discharges, Efficiency, Electric arcs, Control systems, Power equipment, Conductivity, Magnetic drives, Electromagnetic drives, Waveguide couplers.
Identifiers: High-speed ground vehicles, Non-contacting power collection, Gaseous conduction, Magnetic induction.

The report is a preliminary evaluation of four basic noncontacting methods of transferring motive electrical power to high-speed trains (up to 300 miles per hour). The four methods considered are: Gaseous Conduction by a Controlled Electric Arc; Magnetic Induction Using Lenz's Law of Flux Linkage; Capacitive Coupling by Displacement Currents Between Parallel Plates; Electromagnetic Directional Wave-guide Coupling. Examination and calculation of several configurations of the four methods considered established data for comparison. The evaluations include the system functions of power conditioning, power transmission, noncontacting coupling, and onboard power conversion; however, emphasis is on the equipment directly associated with the coupling. (Author)

PB-178 244
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
DESIGN OF URBAN TRANSPORTATION FOR THE USER,
George Rosinger, Kenneth F. Connell, and John R. Stock. Oct 67, 36p Monograph-1
Contract H-778

Descriptors: (*Urban planning, *Transportation), Analysis, Costs, Management planning, Human engineering, Experimental design, Public relations, Design, Urban areas, Research program administration.
Identifiers: Area planning and development, Transit systems.

The monograph presents a proposed program for establishing user-oriented requirements and criteria for urban-transit-system design and operation. The techniques and methodology for accomplishing the program objectives are presented and discussed. Briefly, the major elements of the program are (1) the identification of basic user-oriented questions or problem areas, (2) the utilization of psychological scaling methods for assessment of user needs and thei relative importance, (3) the evaluation of current and proposed urban transportation systems, and (4) the performance of field studies to augment the scaling techniques and to validate the results of scale applications. (Author)

PB-178 245
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
THE DEVELOPMENT OF A COURSE OF INSTRUCTION IN URBAN TRANSPORTATION MANAGEMENT,
William D. Hitt. Oct 67, 36p Monograph-3
Contract H-778

Descriptors: (*Urban planning, *Transportation), Education, Public relations, Predictions, Supervisory personnel, Job analysis, Industrial training, Management engineering, Mission profiles, Problem solving, Money, Logistics, Research program administration.
Identifiers: Area planning and development, Transit systems.

The monograph presents a research program for the development of a course of instruction in urban transportation management. The objectives of the program are to develop the course, evaluate and revise the course contents, and to conduct the first formal class. (Author)

PB-178 246
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
APPLICATION OF IMPROVED MANAGEMENT METHODS TO THE URBAN TRANSPORTATION INDUSTRY,
Norman E. Lobdell. Oct 67, 8p Monograph-4
Contract H-778

Descriptors: (*Urban planning, *Transportation), Personnel management, Organizations, Employment, Training, Management planning, Manpower studies, Costs, Urban areas.
Identifiers: Area planning and development, Transit systems.

The monograph proposes to develop a system for placing trained personnel into transit companies. The financial assistance of HUD will be required in this three-phase program. Phase 1 is a study to establish the needed skills and availability of appropriate personnel, the employment arrangements with potential transit-company employers, and the establishment of a performance review program. Phase 2 is the conduct of a few trial situations to gain experience and to refine the methods of conducting the program on a large scale. Phase 3 is a full-scale operation. (Author)

PB-178 247
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
LAND USE INVOLVING TRANSPORTATION RIGHTS-OF-WAY,
Norman E. Lobdell. Oct 67, 9p Monograph-5
Contract H-778

Descriptors: (*Urban planning, *Transportation), History, Law, Money, Feasibility studies, Public relations, Urban areas, Structures.
Identifiers: Rights-of-way, Area planning and development, Transit systems, Air rights.

The monograph presents a proposition to study the problems associated with the potential use of the spacial volume subtended by urban transportation systems. The study is intended to yield a set of reports which treat each basic problem area in detail and review thoroughly the existing 'air-rights' plans and developments. The end result is expected to provide a detailed documentation with recommendations for the solution of problems and the implementation of development plans. (Author)

PB-178 248
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
OPERATIONS ANALYSIS OF AUGMENTED-GUIDEWAY SYSTEMS,
Norman E. Lobdell. Oct 67, 10p Monograph-6
Contract H-778

Descriptors: (*Urban planning, *Transportation), Economics, Analysis, Costs, Design, Operations research, Urban areas, Mission profiles, Operation.
Identifiers: Area planning and development, Augmented guideway systems, Transit systems.

The monograph discusses an operations research study to develop a capability for evaluating augmented-guideway systems. It is expected that the study would provide quantitative descriptions of augmented-guideway-system operations, economics, and transportation function; would classify known system concepts; and would provide a balanced research program for the solution of problems associated with current and proposed guideways. (Author)

PB-178 250
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
GROUPED ROAD VEHICLES,
Norman E. Lobdell. Oct 67, 8p Monograph-8
Contract H-778

Descriptors: (*Urban planning, *Transportation), History, Costs, Feasibility studies, Experimental design, Urban areas, Passenger vehicles, Advanced planning, Control systems.
Identifiers: Grouped road vehicles, Grouped vehicles, Area planning and development, Transit systems.

The monograph proposes a study of the potential use of grouped road vehicles in the urban transportation environment. The study would consider a wide range of possible equipment and demand configurations, and the environment of operations. The result would be a set of complete system designs with the associated evaluations and recommendations. The documentation of this research project would also provide an essential item in the information data bank for future evaluations. (Author)

PB-178 253
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
A PROGRAM TO EVALUATE ADVANCED TECHNOLOGY FOR BUSES,
E. S. Cheaney, and C. W. Vigrass. Oct 67, 21p Monograph-11
Contract H-778

Descriptors: (*Urban planning, *Transportation), (*Passenger vehicles, Design), Steering, Economics, Performance (Engineering), Analysis, Air conditioning equipment, Costs, Urban areas, Commerce, Test methods, Configuration, Suspension devices, Control systems, Communication systems.
Identifiers: Area planning and development, Transit systems, Buses, Sizes (Dimensions).

Bus technology has become stagnant because the market in the U. S. does not present an attractive profit opportunity for innovation by equipment manufacturers. This stagnation is one factor hastening the decline of patronage of buses. A revitalization of bus technology would be of key assistance in efforts to turn the bus business into an expanding service. New technology available from many sources is applicable to buses. HUD should construct and demonstrate a bus designed to incorporate advanced technology in all its subsystems. Such an effort would provide tangible evidence of technical possibilities. It would also provide a real test-bed vehicle (or vehicles) for trying out and confirming the applicability of various items of advanced technology. The program would be aimed at catalyzing the broad adoption of advanced devices by both the equipment and operator elements in the industry. (Author)

PB-178 255
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
THE DEVELOPMENT AND DEMONSTRATION OF A FAMILY OF PRACTICAL MOVING-WAY TRANSPORT SYSTEMS FOR PEDESTRIANS,
R. D. Leis. Oct 67, 20p Monograph-13
Contract H-778

Descriptors: (*Transportation, *Conveyors), (*Urban planning, Transportation), Costs, History, Safety, Economics, Money, Experimental design, Feasibility studies, Urban areas, Scheduling, Configuration, Reliability, Research program administration.
Identifiers: Area planning and development, Pedestrian transportation systems, Moving walkways, Conveyor belts, Transit systems.

Moving-way systems occupy a significant portion of the literature on and interest in urban transportation systems. Several concepts are being promoted but the gap between the concept and urban acceptance and application is not diminishing. The reasons are quite complex, but hinge primarily on the lack of demonstrated system operations. The task of closing the gap is not one of simply demonstrating a moving-way system. These systems are highly specialized and severely limited in application. The urban environment offers an unlimited combination of factors that affect the basic configuration and the components. A family of moving-way systems to demonstrate the adaptability of particular configurations to a particular need is required. If moving-way systems are to occupy any segment of transportation, a significant development and demonstration effort must be supported. As moving-way systems are limited to those types of transportation needs that would be found only in portions of the urban environment, the effort is highly consistent with HUD's prime interest. While it might be concluded that development requirements are minimal, quite the opposite is true. Some system operating feasibilities have not been proven and technical problems remain. The lack of direction provided by a detailed market study and segmentation has undoubtedly left some applications where basic conceptual and design effort is required. (Author)

PB-178 258
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
POTENTIAL APPLICATION OF THE HELICOPTER IN URBAN MASS TRANSPORTATION,
J. P. Loomis. Oct 67, 14p Monograph-18
Contract H-778

Descriptors: (*Urban planning, *Transportation), (*Helicopters, Transportation), Air transportation, Urban areas, Reviews, Costs, Vertical take-off planes, Money, Mathematical models, Ranges (Distance).
Identifiers: Area planning and development, Transit systems.

In the first part of this monograph, the current feasibility of VTOL type machines in intraurban transportation is briefly explored. It is shown that at 50 percent load factors, the helicopter could economically compete with taxicabs for stage lengths of 10 or more miles. The seat-mile costs for such stage lengths would be about $0.34 per occupied seat mile. However, it is observed that the helicopter would not enjoy the operational fluidity of a taxi, but would likely be restricted to certain high-density, point-to-point routes. This, together with current noise levels and the disruptions often caused by weather, seems to rule the helicopter out as a 'mass transportation' device. A rather cursory examination of the effects of future research and development on VTOL feasibility is also made. Economically, it might be possible to reduce seat-mile costs by as much as 30 percent. Using the 50 percent load factor case again, and assuming 1967 dollar values, the helicopter could compete with taxicabs (in some respects) over routes as short as 5 miles. However, even these rates are not likely to permit the VTOL machine to serve in the role of mass transportation. Apart from economics, the noise problem, air-traffic-control requirements with numerous vehicles in operation, and the effects of weather almost certainly preclude VTOL in the mass transportation role. (Author)

PB-178 260
Stanford Research Inst., Menlo Park, Calif.
FUTURE URBAN TRANSPORTATION SYSTEMS: TECHNOLOGICAL ASSESSMENTS. Memorandum rept.,
Ernest G. Chilton. May 67, 146p* MR-2
Contract H-776
See also memorandum rept. no. 1, PB-178 259.

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Design, Passenger vehicles, Roads, Air traffic, Electric cables, Commerce, Underground structures, Fuel cells, Electrochemistry, Nuclear engineering, Surface propulsion, Electric motors, Ground effect machines, Power supplies, Control systems, Advanced planning.
Identifiers: Tunnels (Underground structures), Urban planning and development.

This report identifies and assesses technology related to urban transportation. It discusses the important technical components that make up a transportation system and focuses on the new technical developments and component concepts that will be important in future systems. Among these are high energy batteries, linear electric motors, air cushion suspensions, and low cost tunneling techniques. A large number of proposed urban transportation systems of many types and sizes have been reviewed. Only a few have been developed sufficiently to permit a realistic assessment of either performance or costs. The work reported here indicates that control is likely to be one of the most important and urgent areas of transportation research. (Author)

PB-178 261
General Research Corp., Santa Barbara, Calif.
SYSTEMS ANALYSIS OF URBAN TRANSPORTATION, VOLUME I, SUMMARY.
Study in new systems of urban transportation.

Jan 68, 218p*
Contract H-777
See also Volume 2, PB-178 262.

Descriptors: (*Urban planning, *Transportation), Costs, Air pollution, Advanced planning, Urban areas, Engines + motors, Fuel cells, Power supplies, Passenger vehicles, Motor vehicle accidents, Reports, Performance (Engineering), Computer programs, Population, Structures, Roads, Railroads.
Identifiers: Rapid transit systems, Guideways (Transportation), Area planning and development, Mass transit systems, Personal transit systems.

This volume is one of four that make up the final report of a study performed for the Department of

Housing and Urban Development. Volume 1 includes a summary and interpretation of the essentials of the analysis, with consequent recommendations for research, development, and demonstration. Appendices include a guide to study organization and to the 44 individual research papers. (Author)

PB-178 262
General Research Corp., Santa Barbara, Calif.
SYSTEMS ANALYSIS OF URBAN TRANSPORTATION. VOLUME 2. CASES FOR STUDY.
Study in new systems of urban transportation.

Jan 68, 603p*
Contract H-777
See also Volume 3, PB-178 263.

Descriptors: (*Urban planning, *Transportation), Reports, Costs, Population, Urban areas, Passenger vehicles, Railroads, Roads, Mathematical models, Advanced planning, Models (Simulations), Air pollution, Structures, Control systems, Computer programs, Power supplies, Electric motors, Hybrid rockets, Traffic.
Identifiers: Area planning and development, Rapid transit systems, Mass transit systems, Guideways (Transportation), Personal transit systems.

Contents: Factor analysis for city selection; Notes on urban transportation and urban form; Characteristics of travel demand for network flow calculations; Peak and off-peak network flows; Promising innovations in urban transportation; Survey of transportation technology; Trends in automotive air pollution; Feasibility of transportation innovations; Feasibility of automatic guideway control; An analytical model of genie performance; Guideway systems performance; Cost model of present urban transportation systems; Cost models of present urban transportation systems for network flow calculations; Cost model for the genie collection/distribution system; Guideway system costs; Representation of existing transportation for network flow calculations; and Representation of future transportation for network flow calculations.

PB-178 264
General Research Corp., Santa Barbara, Calif.
SYSTEMS ANALYSIS OF URBAN TRANSPORTATION. VOLUME 4. SUPPORTING ANALYSES.
Study in new systems of urban transportation.

Jan 68, 478p*
Contract H-777
See also Volume 1, PB-178 261.

Descriptors: (*Urban planning, *Transportation), Costs, Reports, Population, Cost effectiveness, Industrial training, Personnel, Wages, Sociology, Models (Simulations), Mathematical models, Management engineering, Decision making, Political science, Urban areas, Mission profiles, Traffic, Ground speed, Public opinion.
Identifiers: Area planning and development, Rapid transit systems.

Contents: Employment accessibility for special urban groups; On the supply and demand functions for urban transportation; Induced demand for travel in Boston and Houston; Metropolitan land use and urban transportation; Choice, Community, esthetics and urban transportation; Metropolitan politics and urban transportation; Comparison of costs and benefits for major transportation alternatives; Improving evaluation of proposed innovations in urban transportation; Demonstration plan for a dynamically-routed transit feeder system; Characteristics of taxicab supply and demand in selected metropolitan areas; With gun and camera through the M. T. A.; Sizing the transit evolution; and Scenarios for the transit revolution.

PB-178 265
Stanford Research Inst., Menlo Park, Calif.
FUTURE URBAN TRANSPORTATION SYSTEMS: FINAL REPORT I. DESCRIPTIONS, EVALUATIONS, AND PROGRAMS.
Study in new systems of urban transportation,
Clark Henderson. Mar 68, 426p*
Contract H-776
See also Final Report no. 2, PB-178 266.

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Population, Traffic, Models (Simulations), Structures, Vehicles, Passenger vehicles, Electric motors, Cost effectiveness, Management engineering, Management planning, Research program administration.
Identifiers: Area planning and development, Guideways (Transportation), Personal transit systems, Mass transit systems.

This report examines the goals that should be recognized in the search for new urban transportation systems and the demands for urban passenger service. It sets forth the tentative guidelines that were adopted for the formulation of system concepts. Five generic classes of systems are described together with design considerations that should influence actual development. Examples of eight future systems illustrate possible physical and operational characteristics. Applications for these hypothetical future systems are then described and evaluated, and their potentials for use on a nationwide basis are estimated. Programs for research, development, test, evaluation, and demonstration are outlined. (Author)

PB-178 266
Stanford Research Inst., Menlo Park, Calif.
FUTURE URBAN TRANSPORTATION SYSTEMS: FINAL REPORT II. IMPACTS OF URBAN LIFE AND FORM.
Study in new systems of urban transportation,
Robert A. Burco, and David A. Curry. Mar 68, 369p*
Contract H-776
See also Final Report no. 1, PB-178 265.

Descriptors: (*Urban planning, *Transportation), Costs, Urban areas, Advanced planning, Population, Sociology, Leadership, Air pollution, Models (Simulations), Passenger vehicles, Traffic, Roads, Structures, Research program administration, Political science, Construction, Public opinion, Management engineering, Terrain.
Identifiers: Area planning and development, PAS (Public automobile service), Mass transit systems.

Contents: Introduction; Conclusions, summary, and research recommendations, Urban transportation problems and needs; Summary descriptions of future urban transportation system concepts; Transportation-land use planning in a hypothetical future metropolis; Travel characteristics in the future metropolis; Summary and discussion of panel responses; Evaluation of issues by panel members; and Appendixes.

PB-178 267
Westinghouse Air Brake Co., Wilmerding, Pa.
EVOLUTIONARY IMPROVEMENTS IN URBAN TRANSPORTATION SYSTEMS, VOLUME I.
Study in new systems of urban transportation.

Feb 68, 128p*
Contract H-780
Prepared in cooperation with Wilbur Smith and Associates, The Institute of Public Administration, and Melpar, Inc. See also Volume 3, PB-178 269.

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Costs, Computers, Traffic, Passenger vehicles, Helicopters, Leadership, Air pollution, Underground structures, Public opinion, Information retrieval, Management engineering, Population, Decision making, Research program administration.
Identifiers: Area planning and development, Payoffs, Guideways (Transportation), Tunnels (Underground structures), Rapid transit systems, Mass transit systems.

The objectives of this study were to determine by analysis of technological, institutional, social, economic, and environmental factors: A program of research and development projects with short-term (3 to 5 years) promise of payoff within the context of a longer range consideration of transportation technology in order to achieve orderly, evolutionary growth toward new systems; Opportunities for incremental short-term (3 to 5 years) improvement in urban transportation; A program of highly promising demonstration projects. (Author)

PB-178 268
Westinghouse Air Brake Co., Wilmerding, Pa.
STUDY OF EVOLUTIONARY URBAN TRANSPORTATION, VOLUME II, APPENDICES 1, 2, AND 3.
Study in new systems of urban transportation.

Feb 68, 154p*
Contract H-780
Prepared in cooperation with Wilbur Smith and Associates, The Institute of Public Administration, and Melpar, Inc. See also Volume 1, PB-178 267.

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Advanced planning, Models (Simulations), Operation, Roads, Traffic, Law, Labor unions, Reports, Air pollution, Safety, Management engineering.
Identifiers: Area planning and development, Mass transit systems.

A series of three sub-reports on urban transportation. Subjects discussed include comprehensive studies of the needs, trends, labor problems and financial arrangements of proposed mass transit systems. A suggested, systematic program of research and development is also presented.

PB-178 269
Westinghouse Air Brake Co., Wilmerding, Pa.
STUDY OF EVOLUTIONARY URBAN TRANSPORTATION, VOLUME III, APPENDIX 4.
Study in new systems of urban transportation.

Feb 68, 242p*
Contract H-780
Prepared in cooperation with Wilbur Smith and Associates, The Institute of Public Administration, and Melpar, Inc. See also Volume 2, PB-178 268.

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Air pollution, Electric motors, Helicopters, Cost effectiveness, Communication systems, Programming (Computers), Law, Traffic, Command + control systems, Management engineering, Mathematical models, Advanced planning, Mission profiles.
Identifiers: Area planning and development, Guideways (Transportation), Rapid transit systems.

During the course of this study, a great number of new or improved transit systems, subsystems, and elements were derived, extracted from literature and patents, evaluated, and either synthesized (for function, performance, and cost) or discarded. The purpose of the study is to recommend research, development and demonstration tasks. In large measure, the candidate improvements recommended in section 4 of the main body derive from the many alternatives discussed in this appendix, the basic purpose of which is to present ideas, facts, advantages, disadvantages, and the status of the alternative systems. (Author)

PB-178 270
North American Rockewll Corp., Los Angeles, Calif. Los Angeles Div.
FRONTIERS OF TECHNOLOGY STUDY. VOLUME I. SUMMARY.
Study in new systems of urban transportation,
M. A. Sulkin, T. R. Parsons, and D. I. Sinizer. 5 Jan 68, 136p*
Contract H-779
See also Volume 2, AD-178 271.

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Mission profiles, Reviews, Engines + motors, Command + control systems, Underground structures, Suspension devices, Materials, Air transportation, Ground effect machines, Power supplies, Energy management, Brakes, Fuel cells, Electrochemistry.
Identifiers: Hybrid engines, Area planning and development, Energy storage, Tunnels (Underground structures).

The objective of the study was to identify technology, particularly in defense and space - oriented fields, which would be transferable to 1973 - 80 urban transportation needs and to delineate implementation requirements. The study was divided into three functional tasks: review of technology, screening of technology, and assessment and description of implementation requirements. This volume represents a summary of the entire program. Included are (1) a complete description of the program objectives, philosophy, and approach; (2) a summary of the surveyed technologies; (3) reviews of implementation requirements studies on 14 selected technological areas; and (4) a discussion of typical system applications. Also included are overall conclusions and recommendations regarding the development requirements and application of the various technologies for alleviation of some of the problems associated with improvement in urban transportation capability. (Author)

PB-178 271
North American Rockwell Corp., Los Angeles, Calif. Los Angeles Div.
FRONTIERS OF TECHNOLOGY STUDY. VOLUME II. SURVEY.
Study in new systems of urban transportation,
M. A. Sulkin, T. R. Parsons, and D. I. Sinizer. 5 Jan 68, 266p*
Contract H-779
See also Volume 3, PB-178 272.

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Programming (Computers), Digital computers, Cryogenics, Underground structures, Brakes, Suspension devices, Energy conversion, Energy management, Power supplies, Fuel cells, Electrochemistry, Costs, Materials, Passenger vehicles.
Identifiers: Area planning + development, Tunnels (Underground structures), Hybrid engines, Energy storage, Mass transit systems.

The report documents the technology review portion of the program; describes the design of the literature review and field survey; briefly discusses the potentially transferable technologies identified; and lists sources of expertise for those technological areas. (Author)

PB-178 272
North American Rockwell Corp., Los Angeles, Calif. Los Angeles Div.
FRONTIERS OF TECHNOLOGY STUDY. VOLUME III. IMPLEMENTATION.
Study in new systems of urban transportation,
M. A. Sulkin, T. R. Parsons, and D. I. Sinizer. 5 Jan 68, 491p*
Contract H-779
See also Volume 1, PB-178 270.

Descriptors: (*Urban planning, *Transportation), Air pollution, Engines + motors, Power supplies, Fuel cells, Auxiliary power plants, Passenger vehicles, Electrochemistry, Power equipment, Energy conversion, Magnetic properties, Advanced planning, Mechanical engineering, Railroads, Roads, Brakes, Suspension devices, Analog computers, Models (Simulations).
Identifiers: Hybrid engines, Guideways (Transportation), Rapid transit systems, Mass transit systems.

The report describes methods used for screening technologies and selecting technological areas for implementation requirement studies; discusses current technology status, urban transportation application, advantages, disadvantages, problems associated with application, research and development requirements, gross costs, and other factors bearing on the transferability of the selected technological areas; and makes specific recommendations with regard to these areas. (Author)

PB-178 273
General Motors Research Labs., Warren, Mich.
NEW SYSTEMS IMPLEMENTATION STUDY. VOLUME I. SUMMARY AND CONCLUSIONS.
Final rept.; Study in New Systems of Urban Transportation,
E. T. Canty, and A. J. Sobey. Feb 68, 91p*
Contract H-784
See also Volume 3, PB-178 275.

Descriptors: (*Urban planning, *Transportation), Urban areas, Roads, Advanced planning, Population, Costs, Cost effectiveness, Air pollution, Public opinion, Sociology, Models (Simulations), Noise, Reports, Management engineering, Research program administration.
Identifiers: Area planning and development, Mass transit systems.

Contents: Transportation planning and evaluation: The overall process; Detailed aspects of transportation planning and evaluation; Selection of urban areas and transportation; Selection of transportation system technology; Pairing of transportation needs and selected systems concepts; and Resume of case studies.

PB-178 274
General Motors Research Labs., Warren, Mich.
NEW SYSTEMS IMPLEMENTATION STUDY. VOLUME II. PLANNING AND EVALUATION METHODS.
Final rept.; Study in New Systems of Urban Transportation,
E. T. Canty, and A. J. Sobey. Feb 68, 443p*
Contract H-784
See also Volume 3, PB-178 275.

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Sociology, Population, Air pollution, Passenger vehicles, Costs, Roads, Noise, Safety, Motor vehicle accidents, Models (Simulations), Command + control systems, Management engineering, Decision making, Mathematical models, Suspension devices, Research program administration.
Identifiers: Area planning and development, Guideways (Transportation), Rapid transit systems, Mass transit systems.

The report is concerned with methods for transportation planning and evaluation. It includes status reports on advanced techniques for predicting future travel demand and new system ridership, together with procedures developed in this study for evaluating and comparing proposed new systems in terms of their social impact upon communities. (Author)

PB-178 275
General Motors Research Labs., Warren, Mich.
NEW SYSTEMS IMPLEMENTATION STUDY: VOLUME III. CASE STUDIES.
Final rept.; Study in New Systems of Urban Transportation,
E. T. Canty, and A. J. Sobey. Feb 68, 439p*
Contract H-784
See also Volume 2, PB-178 274.

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Passenger vehicles, Railroad tracks, Reports, Command + control systems, Electric motors, Roads, Structures, Civil engineering, Design, Models (Simulations), Advanced planning, Terrain, Mathematical models.
Identifiers: Area planning and development, Guideways (Transportation), Mass transit systems.

The objective of the case studies was to apply, insofar as practical, planning and evaluation methods to the transportation needs of several urban areas. Since such new and improved methods are only partly available in operational form, less thorough methods had to be employed in the case studies. Several urban areas in the United States were investigated to select the sample urban areas for the case studies. (Author)

PB-178 276
Peat, Marwick, Livingston and Co., New York.
PROJECTION OF URBAN PERSONAL TRANSPORTATION DEMAND.
Study in New Systems of Urban Transportation.

Mar 68, 100p*
Prepared in cooperation with Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Urban planning, *Transportation), Urban areas, Population, Passenger vehicles, Roads, Advanced planning, Research program administration, Public opinion, Mathematical models, Statistical analysis, Sociology, Ground speed, Group dynamics.
Identifiers: Area planning and development, Mass transit systems, Personal transit systems.

The report is a projected study of future urban personal transportation demands. The demographic and socioeconomic basis of future transportation system demands are discussed. Sources of information and a plan for a continuing research program are also presented.

PB-178 277
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
URBAN GOODS-MOVEMENT DEMAND.
Final rept.; Study in new systems of urban transportation,
David N. Goss, Ronald L. Heilmann, Daryl J. Rinehart, Robert J. Toepfer, and Frank M. Graves. 30 Oct 67, 275p*
Contract H-814

Descriptors: (*Urban planning, *Transportation), (*Cargo, Handling), Urban areas, Costs, Cargo vehicles, Data processing systems, Management engineering, Storage, Programming (Computers), Law, Reports, Models (Simulations), Railroads, Terrain, Advanced planning, Wastes (Sanitary engineering), Wastes (Industrial), Traffic.
Identifiers: Area planning and development.

The study developed a methodology for conducting goods-movement studies as an integral part of the urban-planning process. Four types of urban goods-movement studies are defined: regional, area, facility, and waste. For each type of study, the applicable information needs on urban goods-movement are determined and techniques for collecting the information are recommended. (Author)

PB-178 278
Day and Zimmermann, Inc., Philadelphia, Pa.
POTENTIAL NEAR TERM IMPROVEMENTS IN URBAN TRANSPORTATION.
Study in New Systems of Urban Transportation,

Mar 68, 312p*
Contract H-782

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Costs, Passenger vehicles, Advanced planning, Railroads, Roads, Underground structures, Sociology, Electric motors, Air pollution, Programming (Computers), Maintenance, Management engineering, Terrain, Human engineering, Research program administration.
Identifiers: Area planning and development, Tunnels (Underground structures), Mass transit systems.

Contents: Summary of recommendations; Transportation and urban life; The pedestrian; Vehicles and their components; Rights-of-way; The interface; Operations; Administration; Special problem areas; and Appendix.

PB-178 280
Midwest Research Inst., Kansas City, Mo.
SPECIAL TRANSPORTATION REQUIREMENTS IN SMALL CITIES AND TOWNS.
Final rept.; Study in new systems of urban transportation,
Bruce W. Macy, Robert E. Byrd, James M. Bednar, and Patricia Quinlan. 15 May 68, 92p*
Contract H-812

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Advanced planning, Management engineering, Command + control systems, Cargo, Sociology, Terrain, Research program administration.
Identifiers: Area planning and development, Mass transit systems.

The report discusses the special transportation requirements of smaller towns and cities. The financial, political, social and technical problems relating to transportation problems are analyzed and discussed.

PB-178 286
Cornell Aeronautical Lab., Inc., Buffalo, N. Y.
BI-MODAL URBAN TRANSPORTATION SYSTEM STUDY, VOLUME I.
Final rept.; Study in new systems of urban transportation,
Robert A. Hayman, Warren C. Kocmond, Terrence J. McDade, Charles B. Notess, and Louis A. Picciano. Mar 68, 137p* CAL-VJ-2431-V-2-Vol-I
Contract H-781

Descriptors: (*Urban planning, *Transportation), Urban areas, Costs, Traffic, Command + control systems, Railroads, Roads, Passenger vehicles, Electric motors, Batteries + components, Power supplies, Electric cables, Underground structures, Cost effectiveness.
Identifiers: Area planning and development, Guideways (Transportation), Mass transit systems, Urbmobiles, Tunnels (Underground structures).

This report defines and describes a dual-mode vehicle transportation system that is intended, primarily, for urban-suburban use. The vehicle is a small, 4-passenger, and is electrically propelled, and can operate on streets and highways and on an exclusive, tracked guideway. (Author)

PB-178 334
Department of Housing and Urban Development, Washington, DC.
CONFERENCE ON NEW APPROACHES TO URBAN TRANSPORTATION, WASHINGTON, DC., NOVEMBER 27, 1967.
1967, 99p

Descriptors: (*Urban planning, Symposia), (*Urban areas, Transportation), Growth, Railroads, Feasibility studies, Passenger vehicles, Employment, History, Organizations, Predictions.
Identifiers: Rapid transit systems, Model cities.

Contents: The urban transportation demonstration program; Rapid transit and urban survival; Reviving commuter rail service; Putting new spokes on urban transit networks; Adapting bus systems to present urban needs; New kinds of services; New movements by new methods; Computer contributions to management; Technological contributions to operation; Transportation and employment opportunity; Planning for transportation in Columbia; Transit shapes the city.

PB-178 436
CONSAD Research Corp., Pittsburgh, Pa.
TRANSIT USAGE FORECASTING TECHNIQUES: A REVIEW AND NEW DIRECTIONS.
Final rept.
Apr 68, 174p*
Contract H-811

Descriptors: (*Urban planning, *Transportation), Urban areas, State-of-the-art reviews, Bibliographies, Mathematical models, Costs, Advanced planning, Passenger vehicles, Performance (Human), Population, Public opinion, Information retrieval, Predictions.
Identifiers: Area planning and development.

The scope of the report includes a review, analysis, and evaluation of present modal split forecasting techniques; a review of relevant literature and special investigations; the identification of specific deficiencies in the present transit usage forecasting techniques; and recommendations of methods for overcoming these deficiencies and improving the forecasting capabilities of modal split models. (Author)

PB-178 684
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
MONOGRAPHS ON POTENTIAL RD AND D PROJECTS.
Summary rept; Study in new systems of urban transportation,
Kaj L. Nielsen. Jan 68, 310p*
Contract H-778

Descriptors: (*Urban planning, *Transportation), Reports, Research program administration, Models (Simulations), Human engineering, Management engineering, Safety, Terrain, Roads, Brakes, Railroads, Suspension devices, Power supplies, Passenger vehicles, Costs, Cargo, Sociology, Research program administration.
Identifiers: Area planning and development, Guideways (Transportation), Mass transit system.

Contents: Inventory of propositions; Inventory selection; Proposition evaluation and disposition; Ranking of recommended RD and D projects; Methodology; Criteria selection; Criteria weighting procedure; Ranking procedure; Monographs.

PB-178 766
Road Research Lab., Crowthorne (England).
STUDIES OF TRAVEL IN GLOUCESTER, NORTHAMPTON AND READING,
M. A. Taylor. 1968, 253p* RRL-LR141

Descriptors: (*Urban planning, *Transportation), Urban areas, Rural areas, Costs, Passenger vehicles, Traffic, Population, Public opinion, Motor vehicle operators, Research program administration, Programming (Computers), Data processing systems, Flow charting, Great Britain.
Identifiers: Area planning and development, Gloucester (Great Britain), Northampton (Great Britain), Reading (Great Britain).

The report demonstrates some of the functional relationships between traffic, land use and population in three medium-sized English towns. Traffic is measured in terms of the number of trips generated by traffic zones in each town. Trips are classified by the purpose for which they were made and are considered to be either produced or attracted by a zone. The numbers of trips in each category are used as dependent variables in analyses of linear relationships. (Author)

PB-178 767
Road Research Lab., Crowthorne (England).
THE GLASGOW EXPERIMENT: IMPLEMENTATION AND ASSESSMENT,
Joyce Almond, and R. S. Lott. 1968, 22p RRL-LR142

Descriptors: (*Urban planning, *Transportation), Traffic, Urban areas, Safety, Programming (Computers), Passenger vehicles, Sampling, Flow charting, Decision making, Great Britain.
Identifiers: Graphs (Charts).

The report discusses the planning and conduct of the Glasgow experiment in central control of traffic signals. The organization of the various computer programs, which will, amongst other tasks, continually take in data on current conditions, make decisions to change signals, monitor the operation of the whole system, check for faulty operation, produce records and print messages is described. A method of linking fixed-time traffic signals to minimise delay is described and the implications of some of its assumptions discussed. The general problem of assessing the efficiency of each control scheme is considered. Reasons are put forward for assessing efficiency in terms of the total vehicle-hours/h measured over the network. Some of the practical problems involved in assessment are also considered. (Author)

PB-178 797
TRW Systems Group, Washington, DC. Washington Operations.
TRANSPORTATION SYSTEM OPTIMIZATION PROGRAM DEMONSTRATION PROBLEM.
1 Jun 68, 98p* 06818-W917-R000
Contract C-353-66
Report on High Speed Ground Transportation System Engineering Studies Program.

Descriptors: (*Urban planning, *Transportation), Programming (Computers), Costs, Performance (Engineering), Input-output devices, Numerical analysis, Flow charting, Passenger vehicles, Ground effect machines, Aerodynamic characteristics.
Identifiers: Tradeoffs, TRANSOP (Transportation System Optimization Program), Transportation System Optimization Program, Guideways, Graphs (Charts).

The report describes the application of a computerized methodology to the analysis of a representative ground transportation system. The preferred design and performance characteristics of a tracked air cushioned vehicle system were determined in order to minimize the cost per passenger mile. The vehicle-guideway system was mathematically represented by a set of of simultaneous, non-linear, algebraic equations. This description was combined with a cost accounting model and structured for solution on a digital computer. Results were obtained for parametrically varied system performance levels. (Author)

PB-178 804
Highway Research Board, Washington, DC.
DESIGN AND PERFORMANCE CRITERIA FOR IMPROVED NONRAIL URBAN MASS TRANSIT VEHICLES AND RELATED URBAN TRANSPORTATION SYSTEMS.
May 68, 114p*
Contract H757

Descriptors: (*Passenger vehicles, Urban areas), (*Urban areas, *Transportation), Design, Per-

formance (Engineering), Standards, Roads, Traffic, Human engineering, Urban planning, Vehicle chassis components, Maintainability, Bibliographies.
Identifiers: *Rapid transit systems, Bus lines, Design criteria, Performance criteria.

Contents: Background and summary; Overviews of nonrail transit; Service characteristics and criteria; Characteristics and criteria for nonmechanical elements of vehicles; Characteristics and criteria for mechanical elements of vehicles; Recommendations for further research, development and evaluation.

PB-178 811
Department of Housing and Urban Development, Washington, DC.
TOMORROW'S TRANSPORTATION: NEW SYSTEMS FOR THE URBAN FUTURE,
Charles M. Haar, Leon Monroe Cole, and Harold W. Merritt. May 68, 114p
Availability: Original document in color until exhausted. Hard copy also available from Superintendent of Documents, GPO, Washington, D. C. 20402. Order as: HH 1.28:62, $1.75.

Descriptors: (*Urban planning, *Leadership), (*Urban areas, *Transportation), Management engineering, Advanced planning, Costs, Passenger vehicles, Bibliographies, Feasibility studies, Safety, Roads, Automation, Control systems.
Identifiers: Area planning and development, Hybrid engines, Guideways.

The following report is a summary of the recommendations for a comprehensive program for national leadership in research, development and demonstration in all aspects of urban transportation. (Author)

PB-178 979
Carnegie-Mellon Univ., Pittsburgh, Pa. Transportation Research Inst.
LATENT DEMAND FOR URBAN TRANSPORTATION.
Final rept.

May 68, 330p*
Contract H-813
Rept. on 'Study in New Systems of Urban Transportation.'

Descriptors: (*Urban planning, *Transportation), Urban areas, Management engineering, Public opinion, Statistical analysis, Questionnaires, Children, Adults, Passenger vehicles, Traffic, Students, Costs.
Identifiers: Area planning and development, Mass transit system.

The report is divided into five chapters. Chapter I introduces the concept of latent demand and its importance, and presents the research objectives of the study. Chapter II describes the travel behavior and travel needs of urban groups including the elderly, the poor, the handicapped, and the young. Chapter III relates the travel needs of these groups to a variety of transportation and environmental criteria. Chapter IV presents several conceptual methods of (for) measuring latent demand, and reviews research in this field. Chapter V concludes with a summary of pertinent areas for further research. (Author)

PB-178 983
Regional Economic Development Inst., Inc. Pittsburgh, Pa.
TRANSPORTATION REQUIREMENTS AND EFFECTS OF NEW COMMUNITIES.

May 68, 110p*
Rept. on 'Study in New Systems of Urban Transportation". Prepared in cooperation with Department of Housing and Urban Development, Washington, DC., Urban Transportation Administration.

Descriptors: (*Urban planning, *Transportation), Urban areas, Housing projects, Advanced planning, Management planning, Population, Costs, Economics, Traffic, Management engineering.
Identifiers: New towns, Area planning + development, Mass transit systems.

The study concerns the transportation needs of, and the potential for new solutions to urban transportation problems offered by, those comprehensively planned new communities, more simply referred to as 'new towns'. Although a relatively new development in the United States, some forty or so New Towns, either under construction or planned, have been identified, generally located near an existing metropolitan center. This record furnishes some indication of the factors likely to affect the New Town's role in the urban transportation system and its economic viability which will largely determine that role in transportation affairs. (Author)

PB-179 055
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
PERFORMANCE CRITERIA AND TECHNICAL FEASIBILITY OF THE URBAN GRAVITY-VACUUM-TRANSIT SYSTEM.
Technical memo.,
R. A. Makofski, W. C. Caywood, R. W. Henderson, G. Dailey, and H. L. Donnelly. May 68, 201p* APL-TG-984
Contract NOw-62-0604

Descriptors: (*Railroads, Performance (Engineering)), Urban areas, Feasibility studies, Gravity, Vacuum, Transportation, Models (Simulations), Acceleration, Pressure, Velocity, Stresses, Railroad cars, Deflection, Railroad tracks, Vehicle wheels, Geometry, Noise, Design.
Identifiers: Vacuum transit systems, Rapid transit systems, Graphs (Charts).

A study to determine the technical feasibility and performance criteria of an Urban Gravity-Vacuum-Transit system is described. The study is limited to certain potential problem areas such as gas dynamics, systems tolerances, wheel-rail interaction, train-tube-suspension dynamics, and noise control. The results of this study are given along with recommendations for future research. (Author)

PB-179 080
Genesee County Metropolitan Planning Commission, Flint, Mich.
GOVERNMENT AND FINANCE STUDY MANUAL AND DESIGN, FLINT-GENESEE COUNTY COMPREHENSIVE LAND USE - TRANSPORTATION PLANNING STUDY.

Apr 68, 75p
Prepared in cooperation with Department of Housing and Urban Development, Washington, DC.

Descriptors: (*Urban planning, Michigan), (*Transportation, Management planning), Urban areas, Rural areas, Law, Costs, Feasibility studies, Questionnaires, Statistical analysis, Sociology, Advanced planning.
Identifiers: Flint (Michigan), Area planning and development, Land use.

The report is a technical document to guide the execution of the research and analysis of the Government and Finance Study Item of the Flint-Genesee County Comprehensive Land Use-Transportation Planning Study. The study outlined in the manual seeks to determine the impact of governmental actions and fiscal policies upon urban development in Genesee County and seeks to determine governmental and fiscal problems encountered in response to the demands of urban growth. (Author)

PB-179 081
Genesee County Metropolitan Planning Commission, Flint, Mich.
ECONOMIC CONDITIONS STUDY MANUAL AND DESIGN, FLINT-GENESEE COUNTY COMPREHENSIVE LAND USE - TRANSPORTATION PLANNING STUDY.

Apr 68, 35p
Prepared in cooperation with Department of Housing and Urban Development, Washington, DC.

Descriptors: (*Urban planning, Michigan), (*Transportation, *Management planning), Urban areas, Rural areas, Feasibility studies, Sampling, Collecting methods, Advanced planning, Data storage systems, Costs, Economics, Industries, Population.
Identifiers: Flint (Michigan), Land use, Area planning and development.

The report is a study manual which identifies, for the Economic Conditions Study Item of the Flint-Genesee County Comprehensive Land Use-Transporation Planning Study, the required data, sources of data, the responsibilities of study participants, and the methodology to be utilized in the execution of the economic study. (Author)

PB-179 157
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
BASELINE SYSTEM DEFINITION: URBAN GRAVITY-VACUUM-TRANSIT,
L. K. Edwards, and R. E. Skov. May 68, 241p* APL-BFM-097
Prepared in cooperation with Tube Transit Corp., Palo Alto, Calif.

Descriptors: (*Transportation, *Pneumatic systems), Urban planning, Passenger vehicles, Railroads, Underground structures, Gravity, Vacuum, Propulsion, Personnel, Specifications, Reliability, Safety, Money, Pumps, Maintenance, Aerodynamic configurations, Control systems, Programming (Computers).
Identifiers: Rapid transit systems, Tubes, Gravity-vacuum transit systems.

Gravity-vacuum transit (GVT) is a passenger transportation system employing gravity and vacuum for propulsion. This report describes an urban GVT system to provide a baseline for further study. The general concept employs trains that travel through steel tubes in underground tunnels and that are accelerated and decelerated by gravity and atmospheric pressure. The trains use wheels on rails inside the tubes. The tubes are evacuated by electrically-powered pumps or compressors located near the stations. (Author)

PB-179 292
Greenville-Pickens Regional Planning Board, SC.
A PRELIMINARY REGIONAL PLAN FOR URBAN DEVELOPMENT AND TRANSPORTATION FACILITIES.
Summary rept.

26 Apr 68, 32p*
Availability: Original document in color until exhausted. Prepared in cooperation with the Department of Housing and Urban Development, Washington, DC

Descriptors: (*Urban planning, South Carolina), (*Transportation, Urban areas), Growth, Climatology, Terrain, Population, Economics, Predictions, Electric power production, Tables, Advanced planning, Roads.

The main purpose of this preliminary regional development plan is to provide a unified concept for future growth and development that will maximize resource development and minimize public expenditures for public facilities. Future studies by the Regional Board will evaluate the feedback

from this preliminary plan and establish a more detailed comprehensive plan that can be officially adopted by local governing authorities to guide future regional development. (Author)

PB-179 333
Barton-Aschman Associates, Inc., Chicago, Ill.
GUIDELINES FOR NEW SYSTEMS OF URBAN TRANSPORTATION. VOLUME I. URBAN NEEDS AND POTENTIALS.
Study in New Systems of Urban Transportation.
May 68, 290p*
Prepared in cooperation with Urban Transportation Administration, Washington, DC. See also Volume 2, PB-179 334.

Descriptors: (*Urban planning, *Transportation), Urban areas, Systems engineering, Problem solving, Feasibility studies, Predictions, Passenger vehicles, Cargo vehicles, Railroads, Power supplies, Population, Economics, Sociometrics, Organizations, Roads.
Identifiers: Rapid transit systems, Area planning and development, Objectives.

This study has attempted to discover guidelines or criteria that can be useful in selecting, developing, and planning new systems of urban transportation. These guidelines are related primarily to the impacts that can exist between urban transportation systems and their surrounding urban environment. The study has proceeded through a basic sequence which first examines goals and objectives for urban development, next, looks at general trends and problems in urban growth, third, describes alternative forms and patterns for urban development, and last, identifies different levels of transportation service needed in urban areas. Building upon these basic inputs, criteria for evaluating alternative urban transportation systems are developed, techniques for coordinating transportation and land-use planning are presented, and a series of further research needs is identified. (Author)

PB-179 334
Barton-Aschman Associates, Inc., Chicago, Ill.
GUIDELINES FOR NEW SYSTEMS OF URBAN TRANSPORTATION. VOLUME II. A COLLECTION OF PAPERS.
Study in New Systems of Urban Transportation.

Apr 68, 346p*
Prepared in cooperation with Urban Transportation Administration, Washington, DC. See also Volume 3, PB-179 335.

Descriptors: (*Urban planning, *Transportation), Urban areas, Systems engineering, Sociometrics, Environment, Performance (Engineering), Economics, Psychology, Design.
Identifiers: Objectives, Area planning and development, Rapid transit systems.

This is one of three volumes produced in the study of land-use and transportation relationships as part of the 'new systems' study. In this volume, 13 authors discuss the role of transportation in modern urban life. The papers in this volume are divided into five general categories. The first of these--containing two papers--deals with criteria for the planning of urban areas and urban transportation in particular from the standpoint of the behavioral scientist. The paper in the second category deals with the subject of human and social values. The paper in the third category describes a great number of specific environmental criteria or objectives for the design of transportation systems. The papers in the fourth category explore existing knowledge about necessary and desirable linkages between land-uses and between transportation systems and urban form. They represent an initial effort to establish an improved basis for the location and design of transportation facilities and for the location of land-uses in relation to one another and to transportation. (Author)

PB-179 335
Barton-Aschman Associates, Inc., Chicago, Ill.
GUIDELINES FOR NEW SYSTEMS OF URBAN TRANSPORTATION. VOLUME III. ANNOTATED BIBLIOGRAPHY.
Study in New Systems of Urban Transportation.

May 68, 129p*
Prepared in cooperation with Urban Transportation Administration, Washington, DC. See also Volume 1, PB-179 333.

Descriptors: (*Urban planning, *Transportation), Urban areas, Systems engineering, Bibliographies, Classification, Subject indexing, Weight.
Identifiers: Rapid transit systems, Area planning and development.

The bibliography has been prepared as part of a study of Guidelines for New Systems of Urban Transportation, conducted for the US Department of Housing and Urban Development under the provisions of the Urban Mass Transportation Act of 1964 as amended. (Author)

PB-179 350
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
RAPID TRANSIT PROPULSION SYSTEMS, VOLUME I.
Final technical rept.

Apr 68, 172p* TR-4
Rept on San Francisco Bay Area Rapid Transit District, Demonstration Project. Sponsored by Department of Housing and Urban Development, Washington, DC. See also Technical Report no. 5, PB-179 351.

Descriptors: (*Urban planning, Transportation), (*Electric propulsion, Performance (Engineering)), Drives, Power supplies, Control systems, Automatic, Frequency converters, Acceleration, Deceleration, Braking, Voltage, Railroad tracks, Electric motors, Instrumentation, Operation, Reliability, Tolerances (Mechanics), Maintainability, Costs.
Identifiers: Rapid transit systems, Traction motors, Mass transit systems, Area planning and development.

The report deals with the testing and evaluation of rapid transit propulsion systems. The tests involved five systems representing various control and traction-motor concepts. Four of these were evaluated at the Diablo Test Track; the fifth was subjected to extensive laboratory testing and was demonstrated. (Author)

PB-179 351
Parsons Brickerhoff-Tudor-Bechtel, San Francisco, Calif.
TRANSIT VEHICLE TRUCK CONCEPTS.
Final technical rept.

Mar 68, 124p* TR-5
Rept. on San Francisco Bay Area Rapid Transit District, Demonstration Project. Sponsored by Department of Housing and Urban Development, Washington, D.C. See also Technical Report no. 6, PB-179 352.

Descriptors: (*Urban planning, Transportation), (*Transportation, *Cargo vehicles), Vehicle chassis components, Acceleration, Brakes, Safety, Costs, Human engineering, Loading (Mechanics), Performance (Engineering), Railroad tracks, Test methods, Reports, Engines + motors, Instrumentation, Tables, Suspension devices.
Identifiers: Area planning and development, Mass transit system.

The report discusses an evaluation of experimental suspension systems for public transportation vehicles. Design criteria and specification data are presented.

PB-179 352
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
FRICTION BRAKING SYSTEMS.
Final technical rept.

Jun 68, 183p* TR-6
Rept. on San Francisco Bay Area Rapid Transit District, Demonstration Project. Sponsored by Department of Housing and Urban Development, Washington, DC.

Descriptors: (*Urban planning, Transportation), (*Braking, Performance (Engineering)), Hydraulic brakes, Electric brakes, Pneumatic brakes, Automatic, Control systems, Operation, Life expectancy, Efficiency, Accuracy, Stability, Safety.
Identifiers: Rapid transit systems, Mass transit systems, Friction braking systems, Pneumatic tread, Electrical tread, Electro-pneumatic tread, Pneumatic discs, Electric discs, Hydraulic discs, Hydraulic treads, Evaluation, Automatic train control, Area planning and development.

The report is a description and evaluation of the development and testing of rapid transit friction brake systems. Seven brake systems, representing various control and force application designs, were chosen for installation on the test vehicles: Pneumatic tread; Electrical tread; Electro-pneumatic tread; Pneumatic disc; Electric disc; Hydraulic disc; and Hydraulic tread. Each system was tested and evaluated with respect to its control, accuracy, linearity, efficiency, and expected life, in addition to its general performance characteristics. (Author)

PB-179 353
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
ACOUSTICS STUDIES.
Final technical rept.

Jun 68, 105p* TR-8
Rept. on San Francisco Bay Area Rapid Transit District, Demonstration Project. Sponsored by Department of Housing and Urban Development, Washington, DC.

Descriptors: (*Urban planning, Transportation), (*Railroads, *Noise), Attenuation, Vibration, Damping, Railroad tracks, Fastenings, Buildings, Concrete, Vehicle wheels, Steel, Acoustics.
Identifiers: Rapid transit systems, Mass transit systems, Sound barriers, Wheel damping, Rail damping, Area planning and development.

The report documents the noise and vibration studies for the Bay Area rapid transit District system. Several of the studies involved the investigation of new concepts of noise and vibration control, such as the use of sound barrier walls (often called sound barriers or parapets) along the right-of-way, wheel damping, rail damping, and the use of rail fasteners incorporating vibration-reduction and noise-reduction features. Considerable effort was expended in determining the rank order of the various important sources of noise produced by steel-wheel vehicles passing over steel rails. (Author)

PB-179 354
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
TEST INSTRUMENTATION.
Final technical rept.

May 68, 70p* TR-10
Rept. on San Francisco Bay Area Rapid Transit District, Demonstration Project. Sponsored by Department of Housing and Urban Development, Washington, DC.

Descriptors: (*Urban planning, Transportation), (*Test methods, Instrumentation), Control systems, Automatic, Railroad tracks, Telephone communication systems, Public address systems,

Radio communication systems, Accelerometers, Tachometers, Test equipment.
Identifiers: Rapid transit systems, Mass transit systems, Area planning and development.

The report describes the test instrumentation systems and measuring devices used for testing and evaluating the various components of rapid transit hardware. (Author)

PB-179 371-T
National Tillage Machinery Lab., Auburn, Ala.
SOIL DISTURBANCE WITH VIBRATING AND NONVIBRATING TOOLS,
R. M. Zonenberg. 15 Jun 68, 6p

Descriptors: (*Soils, USSR), (*Machines, Agriculture), Vibrators (Mechanical), Sand, Interactions, Physical properties, Force (Mechanics), Pressure, Friction, Velocity, Deformation, Hardness, Dynanometers, Moisture.
Identifiers: Farm equipment.

The investigation proved the possibility of decreasing draft of soil working by means of imparting vibrations to them. The degree of draft reduction during vibration depends on the ratio speed of forward movement of the working tools and the speed of its vibration and its increases with an increase of this ratio. (Author)

PB-179 653
Mueser, Rutledge, Wentworth and Johnston, New York.
WASHINGTON METROPOLITAN AREA RAPID TRANSIT AUTHORIZED BASIC SYSTEM: SUBSURFACE INVESTIGATION. VOLUME I. CONNECTICUT AVENUE ROUTE.
Final rept. May 66-Jul 67.

Dec 67, 378p*
Contract NTA-66-7
Prepared in cooperation with DeLeuw, Cather Co., Washington, D. C. See also Volume 2, PB-179 654.

Descriptors: (*Transportation, *Urban areas), (*Terrain, *Structural geology), Drilling, Rock (Geology), Hydrology, Soil mechanics, Test methods, Design, Substrates, Foundations (Structures), Pressure, Instrumentation, Test facilities, Construction, Maps.
Identifiers: Tunnels, Rapid transit systems, Connecticut Avenue route, *Geological cross sections, *Subsurface survey, *Core drilling.

The document is Volume I of a three-volume report on the geology and hydrology of metropolitan Washington as related to construction of a three-leg underground rapid transit system. It covers the core drill survey of the proposed Connecticut Avenue route.

PB-179 654
Mueser, Rutledge, Wentworth and Johnston, New York.
WASHINGTON METROPOLITAN AREA RAPID TRANSIT AUTHORIZED BASIC SYSTEM: SUBSURFACE INVESTIGATION. VOLUME II. PENTAGON ROUTE.
Final rept. May 66-Jul 67.

Dec 67, 338p*
Contract NTA-66-7
Prepared in cooperation with DeLeuw, Cather Co., Washington, D. C. See also Volume 3, PB-179 655.

Descriptors: (*Transportation, *Urban areas), (*Terrain, *Structural geology), Drilling, Rock (Geology), Hydrology, Rivers, Soil mechanics, Test methods, Test facilities, Design, Underground structures, Substrates, Foundation (Structures), Construction, Pressure, Instrumentation.
Identifiers: Tunnels, Rapid transit systems, Pentagon route, *Geological cross sections, *Subsurface survey, *Core drilling.

The document is Volume 2 of a three volume report on a proposed underground rapid transit system for metropolitan Washington. It covers the subsurface core drill survey of the proposed Pentagon route.

PB-179 655
Mueser, Rutledge, Wentworth and Johnston, New York.
WASHINGTON METROPOLITAN AREA RAPID TRANSIT AUTHORIZED BASIC SYSTEM: SUBSURFACE INVESTIGATION. VOLUME III. B AND O ROUTE.
Final rept. May 66-Jul 67.

Dec 67, 412p*
Contract NTA-66-7
Prepared in cooperation with DeLeuw, Cather Co., Washington, D. C. See also Volume 1, PB-179 653.

Descriptors: (*Transportation, *Urban areas), (*Terrain, *Structural geology), Drilling, Rock (Geology), Hydrology, Soil mechanics, Test methods, Test facilities, Design, Substrates, Underground structures, Foundations (Structures), Construction, Pressure, Instrumentation.
Identifiers: Tunnels, Rapid transit systems, B and O route, *Geological cross sections, *Subsurface survey, *Core drilling.

The document is Volume 3 of a three-volume report on a proposed underground rapid transit system for metropolitan Washington. It covers the subsurface core drill survey of the proposed B and O route.

PB-179 656
Washington Metropolitan Area Transit Authority. Office of Planning.
PROPOSED INTERIM RF AND P RAILROAD COMMUTER DEMONSTRATION PROJECT. APPENDIX A: TRAFFIC FORECAST, BY ALAN M. VOORHEES AND ASSOCIATES, INC. APPENDIX B: CAPITAL AND OPERATING EXPENSES, BY COVERDALE AND COLPITTS.
Staff rept.

Jan 68, 88p*

Descriptors: (*Transportation, Railroads), (*Railroads, Costs), Feasibility studies, Operation, Virginia, District of Columbia, Railroad tracks, Cost effectiveness.
Identifiers: Commuter rail service, Fairfax County (Virginia), Demonstration projects.

The purpose of the study is to provide information pertaining to the capital and operating costs and revenues for a six-year commuter rail demonstration operation on the RF and P Railroad between Union Station in Washington and Franconia in Fairfax, Virginia, as proposed by the Northern Virginia Transportation Commission, so that the Board may make a determination as to the financial feasibility of the project. The data shown in this report are preliminary, particularly the capital requirements and operating costs. (Author)

PB-179 681
Chicago Transit Authority, Ill. Research and Planning Dept.
SKOKIE SWIFT: THE COMMUTER'S FRIEND.
Final rept.,
Thomas Buck. May 68, 73p*
Rept. of Proj. Skokie Swift Route in Relation to CTA Rapid Transit System. Prepared in cooperation with Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Urban planning, *Transportation), Urban areas, Rural areas, Railroads, Costs, Public relations, Population, Public opinion, Questionnaires, Flow charting, Research program administration, Traffic.
Identifiers: Area planning and development, *Skokie Swift, Skokie (Illinois), Mass transit system.

Skokie Swift is a rail rapid transit shuttle service that was developed as one of the first transit mass transportation demonstration projects in the United States involving the cooperative sponsorship of the federal government and a transit operator. As a demonstration project authorized by the National Housing Act of 1961, the service was provided on an experimental basis during the two years beginning in April 1964, between the suburb of Skokie, Illinois, and the rapid transit system of the city of Chicago. (Author)

PB-179 707
Road Research Lab., Crowthorne (England).
A THEORETICAL ESTIMATE OF THE EFFECT OF LONDON CAR COMMUTERS TRANSFERRING TO BUS TRAVEL,
F. V. Webster. 1968, 43p* RRL-LR165

Descriptors: (*Transportation, Effectiveness), (*Passenger vehicles, Great Britain), Mathematical prediction, Volume, Traffic, Costs, Decision making, Optimization, Time, Velocity, Money, Efficiency, Statistical distributions.
Identifiers: Commuters, Bus travel, Rapid transit systems, London (England), Routes.

Calculations have been made of the effect of private transport users in the central area of London transferring to public transport in peak periods. Several alternative systems were investigated all using buses; it was assumed that the flows of taxis and goods vehicles remained at their present levels. For each type of bus considered an optimum route density was found which minimised the total walking and waiting time for a given number of buses. Calculations of direct journey speeds were made for each of the proposed systems as well as for the present system using cars, buses and motor-cycles. The reserve passenger capacities for each system were calculated. Estimates were made of the operating costs and the passengers' time costs attributable to the various systems. The results of the calculations are critically dependent on a number of important assumptions and the validity of these are discussed in the report. (Author)

PB-179 745
Abt Associates, Inc., Cambridge, Mass.
QUALITATIVE ASPECTS OF URBAN PERSONAL TRAVEL DEMAND.
Study in New Systems of Urban Transportation.

Aug 68, 140p*
Contract H-810

Descriptors: (*Urban planning, *Transportation), Urban areas, Rural areas, Passenger vehicles, Advanced planning, Questionnaires, Human engineering, Population, Public opinion, Statistical analysis, Management engineering, Mathematical models, Costs, Structures, Research program administration.
Identifiers: *Area planning and development.

The report discusses the effect of a wide range of qualitative factors on choice of mode for urban transportation. Resistance to the use of public transportation was studied in the context of an absence of desirable qualities, and recommendations designed to correct qualitative deficiencies were to be developed. (Author)

PB-179 845
Charles River Associates, Inc., Cambridge, Mass.
AN EVALUATION OF FREE TRANSIT SERVICE.

Aug 68, 177p*

Contract T8-088 (Neg.)

Descriptors: (*Urban planning, *Transportation), Urban areas, Rural areas, Costs, Law, Safety, Vehicles, Railroads, Air pollution, Mathematical models, Statistical analysis, Management engineering, Roads, Scheduling, Human engineering, Maintenance.
Identifiers: Area planning and development, *Free transit systems.

The purpose of this study is to evaluate free transit service to the extent possible given a limited amount of time and budget. The scope of the study encompasses four related tasks: (1) Identify the economic, social, technological and financial factors that are significant in evaluating a proposal to provide free transit service to metropolitan area users. (2) Provide gross estimates of the subsidy required for nationwide free transit service. (3) Conduct a case study to evaluate, to the extent possible, the factors that are identified as significant in considering a program of free transit. Boston has been selected for the case study because of the availability of data and findings from previous research work. (4) Identify the future research that is needed to improve the evaluations. (Author)

PB-179 859
Smith (Wilbur) and Associates, New Haven, Conn.
A METHOD FOR ESTIMATING THE IMPACT OF TRAVEL TIME OR COST CHANGES ON DIVERSION OF CAR DRIVERS TO TRANSIT: WORK TRAVEL TO CENTRAL BUSINESS DISTRICT.

Feb 68, 125p*
Contract CPR-11-2849

Descriptors: (*Transportation, Substitutes), (*Employment, *Urban areas), (*Motor vehicle operators, Decision making), Transformations, Impact, Costs, Time, Mathematical analysis, Acceptability, Tables.
Identifiers: Inner city, Shortcut formula, Rapid transit systems.

The document contains a non-technical description of the Shortcut Formula, with instructions on the preparation of data for use with it and an illustrative example of its application. Some constraints or limitations on use of the Formula are discussed. Chapter 3 sets forth the data which were examined during preparation of the Formula and the arguments upon which it is based. Appendix A contains a number of problems which have been worked out. Appendix B describes the use of parking surveys and on-transit interviews which may be prepared as inputs. (Author)

PB-179 865
General Research Corp., Santa Barbara, Calif.
SUPPLEMENTAL STUDIES OF URBAN TRANSPORTATION SYSTEMS ANALYSIS, VOLUME 5.
Rept. for Feb-31 Aug 68,
J. A. Boys, E. N. Dodson, W. F. Hamilton, and A. R. Sjovold. Sep 68, 151p* GRC-CR-777-2
Contract H-777
See also Volume 1, PB-178 261.

Descriptors: (*Transportation, *Urban areas), Mathematical analysis, Terrain, Traffic, Transformations, Periodic variations, Models (Simulations), Tables, Massachusetts, Texas.
Identifiers: Suburbs, Rapid transit systems, Area planning and development, Patterns (Configuration), Inner city, Land use, Boston (Massachusetts), Houston (Texas).

This volume (5) reports on studies of alternative land use and travel demand, extended rail rapid transit systems, and improved modal split formulations. Two new patterns of travel demand are discussed, one showing increased suburban nucleation of trip activity and the other showing an increased central focus. (Author)

PB-180 024
Grimble (L. E.) and Associates Ltd., Edmonton (Alberta).
DESCRIPTION OF A GUIDED AUTOMATED INDIVIDUAL TRANSPORTATION SYSTEM,
L. G. Grimble, and W. G. Atkinson. 1 Feb 68, 130p*
Prepared in cooperation with Regina Transit System (Saskatchewan), and Canadian Council on Urban and Regional Research.

Descriptors: (*Transportation, *Urban planning), Cargo vehicles, Passenger vehicles, Automation, Electric propulsion, Urban areas, Safety, Economics, Reliability, Roads, Canada.
Identifiers: Rapid transit systems, Area planning and development.

The report outlines the basic features of a Transportation System for growing cities of medium size (400,000 to 800,000 population). The major consideration of the study was toward the provision of a safe, convenient, all-weather and economical door to door movement of people and goods at reasonably high average speeds on vehicles capable of operating both on a guided enclosed system and on existing city roads. It is suggested that the proposed system must provide the following: (1) The flexibility, privacy, comfort and convenience of the private automobile. (2) Capacity adequate to handle 50% of the trips to the downtown in a city with potential growth to a total population of one million. (3) Reliable transportation, safer than the private automobile, at a cost competitive to that of transit service by a bus system. (4) A flexible and expandable system which would function efficiently at the various stages of the city's development, and be compatible with existing modes of transportation. (5) Relief to the problems of air pollution, traffic congestion, and downtown parking. (6) Good collection in the suburbs, good line haul at a reasonable speed, and an adequate downtown distribution service for the commuter and shopper. (Author)

PB-180 092
Wainwright and Ramsey, Inc., New York.
FINANCIAL FEASIBILITY OF A PROPOSED RAPID TRANSIT SYSTEM FOR THE BALTIMORE REGION.
Final rept.

Jun 68, 31p*
Sponsored by Regional Planning Council, Baltimore, Md. See also PB-180 093.

Descriptors: (*Urban planning, *Transportation), Costs, Money, Federal budgets, Feasibility studies, Reports, Economics, Construction, Law.
Identifiers: *Area planning and development, *Rapid transit systems, Baltimore (Maryland), Retail sales taxes.

The purpose of this report is to present a recommended plan of financing a proposed rapid transit system for the Baltimore region. The report estimates the net cost for the proposed system (including allowances for inflation and contingencies), and recommends proposals for financing the system. These methods include Federal grants and limited tax bonds payable from the receipts of a retail sales tax. (Author)

PB-180 093
Daniel, Mann, Johnson, and Mendenhall, Los Angeles, Calif.
EVALUATION OF TRANSPORTATION EQUIPMENT TECHNOLOGY FOR USE IN THE BALTIMORE REGION RAPID TRANSIT SYSTEM.

Jun 68, 186p*
Sponsored by Regional Planning Council, Baltimore, Md., and the Department of Housing and Urban Development, Washington, D. C. See also PB-180 094.

Descriptors: (*Transportation, Systems engineering), Design, Passenger vehicles, Railroad cars, Railroads, Urban planning, Standards, Vehicle chassis components, Economics, Reviews, Maryland.
Identifiers: *Rapid transit systems, Baltimore (Maryland), Technology, Monorail railways.

The report reviews current and anticipated developments in transit system operations equipments as they may particularly apply to the proposed rapid transit system for the Baltimore Region. The primary objective of this evaluation was to provide a realistic set of alternatives upon which to base decisions as to the inclusion of advanced techniques and equipment in the preliminary engineering of the transit system. New concepts and improvement of well-established techniques are examined. Recommendations are included for various system components and subsystems. (Author)

PB-180 094
Daniel, Mann, Johnson, and Mendenhall, Los Angeles, Calif.
ROUTE SELECTION AND COMMUNITY IMPACT OF PROPOSED BALTIMORE RAPID TRANSIT SYSTEM.
Economics rept.

Jul 68, 138p*
Sponsored by Regional Planning Council, Baltimore, Md. See also PB-180 095.

Descriptors: (*Economics, *Transportation), Roads, Site selection, Impact, Employment, Urban planning, Sociometrics, Maryland.
Identifiers: *Rapid transit systems, Baltimore (Maryland), Land use.

The report includes: (1) an analysis of the economic and social factors existing and projected within the primary area of influence of each of the six proposed transit corridors; (2) a determination of the impact of rapid transit upon the economies of those neighborhoods located within the corridors, and therefore potentially affected by the proposed system; and (3) an evaluation of the impact of rapid transit upon the Baltimore Region. (Author)

PB-180 095
Daniel, Mann, Johnson, and Mendenhall, Los Angeles, Calif.
ROUTE SELECTION AND COMMUNITY IMPACT OF PROPOSED BALTIMORE RAPID TRANSIT SYSTEM: APPENDICES I AND II.
Economics rept.

Jul 68, 178p*
Sponsored by Regional Planning Council, Baltimore, Md. See also PB-180 094.

Descriptors: (*Economics, *Transportation), Roads, Site selection, Impact, Employment, Urban planning, Factor analysis, Maryland.
Identifiers: *Rapid transit systems, Baltimore (Maryland), Land use.

Contents: Description of compared segments; Factors considered; Selection procedure.

PB-180 116
Institute of Public Administration, Washington, D. C.
PUBLIC URBAN LOCATOR SERVICE (PULSE): BACKGROUND AND CONFERENCE PROCEEDINGS.

24 Oct 68, 466p*
Contract H-1030
Prepared in cooperation with Teknekron, Inc.

Descriptors: (*Vehicles, *Position finding), (*Transportation, *Radio communication systems), Urban areas, Traffic, Passenger vehicles, Cargo vehicles, Urban planning, Monitors, Symposia.

Identifiers: PULSE (Public Urban Locator Service), *Public urban locator service.

Contents: Introduction to PULSE; IPA-TEKNEKRON report on automatic vehicle monitoring; Suggested PULSE experiments; Abstracts from PULSE conference presentations; Selected presentations from PULSE conference (General considerations, Phase-ranging TAVMs, Pulse-ranging TAVMs, Dead reckoning systems, Proximity sensing systems, Miscellaneous)

PB-180 210
Department of Transportation, Washington, D.C.
POPULATION FORECASTING METHODS. A REPORT ON FORECASTING AND ESTIMATING METHODS,
Revised ed.,
Frank V. Hermann. Jun 64, 65p*
Sponsored in part by Bureau of Public Roads, Washington, D.C.

Descriptors: (*Population, Predictions), (*Transportation, Urban planning), Statistical processes, Problem solving, Employment, Classification, Urban areas, Economics.
Identifiers: Vital statistics, Migration, Area planning and development, Census data, Estimation methods.

Planning transportation facilities for urban areas requires study, analysis, and forecasts of population, economic activity, and land use. These elements are the basic determinants of travel. This report deals with one of these elements, namely population forecasting. The report has been prepared to assist those having little or no background in demography to become acquainted with the general field and with the major population forecasting procedures in common use. (Author)

PB-180 224
System Development Corp., Santa Monica, Calif.
AN INFORMATION SYSTEM FOR URBAN TRANSPORTATION PLANNING: THE BATSC APPROACH.
Technical memo.,
Michael J. Kevany. 15 May 68, 65p* SDC-TM-3920/000/01

Descriptors: (*Transportation, *Urban planning), (*Data processing systems, Transportation), Documentation, Programming (Computers), Urban areas, Statistical analysis, Management planning.
Identifiers: Information systems, *Management information systems, SPAN (Statistical Processing and Analysis), MADAM computer program, DATADOX computer program, Data management, BATSC (Bay Area Transportation Study Commission).

The document describes selected concepts and techniques of the data processing system in use at the Bay Area Transportation Study Commission (BATSC). BATSC is charged with the preparation of a long-range regional ground transportation plan for the nine-county San Francisco region. To carry out its forecasting and planning tasks, the Study has amassed a large base of machine-processable information about the region--its people, economic activities, land use and transportation. The Study is unique in the extent to which it has employed user-oriented generalized application software for the processing and analysis of its data, and also in the emphasis it has placed upon the systematic accounting and documentation of its data resources. The document describes the SPAN, MADAM, and DATADOX systems employed at the Study, and reviews staff experiences in their application. (Author)

PB-180 227
Barton-Aschman Associates, Chicago, Ill.
JOINT PROJECT CONCEPT: INTEGRATED TRANSPORTATION CORRIDORS.

Jan 68, 143p*

Descriptors: (*Urban planning, *Transportation), Management planning, Economics, Urban areas, Civil engineering, Buildings, Roads.
Identifiers: Area planning and development, Land use.

The location of major transportation routes presents many problems for the urban transportation and land-use planner. Not only must route alternatives be tested according to engineering economics and levels of traffic service, but environmental factors such as relocation loads, disruption of neighborhood social patterns, displacement of public facilities, and potential land-use improvements must be evaluated. The study showed how a wide variety of joint development projects can serve as an effective means for integrating major urban transportation facilities with the surrounding urban environment. The influence of joint project opportunities should be felt in the actual process of route location, as one of the factors necessary in the evaluation of alternatives. The major, overriding conclusion of the study is that no unusual or especially significant problems stand in the way of a much wider adoption of the joint project concept. (Author)

PB-180 399
Genesee County Metropolitan Planning Commission, Flint, Mich.
TRANSPORTATION FACILITIES STUDY MANUAL AND DESIGN.

Sep 68, 51p
Rept. on Flint-Genesee County Comprehensive Land Use-Transportation Planning Study.

Descriptors: (*Urban planning, *Transportation), Handbooks, Management planning, Flow charting, Rural areas, Networks, Statistical data, Collecting methods, Air transportation, Passenger vehicles, Cargo vehicles, Data processing systems, Roads, Classification, Traffic, Standards, Safety, Population, Railroads.
Identifiers: Land use, Methodology, *Area planning and development, Pipelines, Parking, Genesee County (Michigan), Flint (Michgan), Public facilities.

This report is a study manual which identifies for the transportation facilities study methods of the Flint-Genesee County comprehensive land use-transportation planning study the data source, the responsibilities of study participants, and the methodology to be utilized in the execution of the transportation facilities study. The analytical approach outlined in the manual seeks to define the total transportation network, measure its adequacy, and determine improvements needed to provide adequate levels of transportation required by a growing and dynamic metropolitan area. (Author)

PB-180 413
Barton-Aschman Associates, Chicago, Ill.
STUDY DESIGN: SAGINAW COUNTY COMPREHENSIVE PLANNING PROGRAM. SAGINAW METROPOLITAN AREA TRANSPORTATION STUDY.

Apr 68, 216p*

Descriptors: (*Transportation, *Rural areas), (*Urban planning, Transportation), Management planning, Feasibility studies, Scheduling, Budgets, Costs, Air traffic, Water traffic, Roads, Population, Law, Predictions, Accidents, Sociometrics, Reports, Michigan.
Identifiers: Area planning and development, Metropolitan area studies, Land use, Objectives, Zoning ordinances, Saginaw (Michigan)

The study design report presents a detailed guide for the conduct of the County comprehensive planning program including the metro area transportation study. The document defines the content, and product, responsibility, schedule and budget for the study. The planning program as outlined is directed toward fulfilling the two needs of comprehensive land use planning and transportation planning. Detailed job descriptions are outlined for each of the ninety plus individual work items under the program. (Author)

PB-180 474
Florida State Univ., Tallahassee, Dept. of Statistics.
A PROBABILISTIC APPROACH TO TRAFFIC PROBLEMS.
Final rept.,
W. A. Thompson, R. J. Serfling, I. N. Shimi, and Duane A. Meeter. Oct 68, 176p*
Contract FH-11-6680

Descriptors: (*Transportation, *Statistical analysis), (*Roads, Traffic), (*Traffic, Control systems), Safety, Passenger vehicles, Hazards, Cost effectiveness, Queueing theory, Stochastic processes, Distribution functions, Monte Carlo method, Computer programs, Simulation.
Identifiers: Pollaczek's formula, Non-Poisson models, Traffic flow, Computer simulation.

A seventeen-month study was conducted on the development of theories of a probabilistic and statistical nature that have direct applications for the solution of network flow, queueing and congestion, safety and cost problems. Investigations were made in the existing literature on traffic flow, applications of various statistical theories and in the theory of queues for vehicles at traffic signals, at stop-signal intersections and approaching freeways from on-ramps. Five technical papers were prepared and included in the final report toward the achievement of the principle task stated in the contract objective. These papers reflect research accomplishments in the three problem areas: Tunnel Problem, Merging Problem, and the Non-Poisson Models Problem. Three of the technical papers were written in the tunnel problem area. These papers advanced respectively a simulation model, an extreme value distribution model and a queueing model. For the mergin problem, renewal theory was applied in the formulations for merging probabilities and existence of gaps. In the Non-Poisson Models problem, a technical report was prepared that considers the major assumptions and basic definitions. It then considers the differential-difference equations approach and compares this to the transition equations approach. Related topics are futher considered. (BPR abstract)

PB-180 484
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT: FACTORS INFLUENCING TRANSIT PLANNING.
Technical rept.

Oct 66, 48p TR-1
Supported by Dept. of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, *Urban planning), Programming (Computers), Factor analysis, Specifications, Urban areas, Passenger vehicles, Cost effectiveness.
Identifiers: Land use, Modal split models, Area planning and development.

The report sets out the broad specifications for a 'package' of computer programs designed specifically for transit planning in urban areas. It should be regarded as a general statement of the type of information which is needed from the programs (outputs), of the type of data which the program should accept and its format (inputs), and some

comments about intermediate results and procedures. (Author)

PB-180 485
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT COMPUTER PROGRAM SPECIFICATIONS.
Technical rept.

Oct 66, 230p TR-2
Sponsored by Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Computer programs), (*Urban planning, Transportation), Roads, Subroutines, Specifications.

The report presents the results of an intensive effort to convert transit planning needs into a set of detailed computer program specifications. The second section of the report presents the overall transportation planning process, the relationship of transit planning to this process and specifically describes the function of the transit planning computer programs in implementing this process. The third section presents detailed specifications of the individual programs. These specifications set forth in detail the input, methodology, and output of each program. In addition, a flowchart of each program is presented. The Appendices of the report describe several generalized subroutines to be used throughout the programs and a detailed description of the algorithm to be used in finding paths through a transit system. (Author)

PB-180 486
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME I. IBM 7090/94 COMPUTER PROGRAMS GENERAL INFORMATION MANUAL.
Technical rept.
Apr 67, 75p TR-3-Vol-I
Sponsored by Department of Housing and Urban Development, Washington, D. C. See also Volume 2, PB-180 487.

Descriptors: (*Transportation, Programming (Computers)), (*Urban planning, Transportation), Instruction manuals, Passenger vehicles.
Identifiers: IBM 7090 computers, IBM 7094 computers.

The computer programs described are written for the Urban Mass Transit Planning Project. They provide the user with the ability to evaluate conveniently and economically a proposed transit system. They give reliable estimates of the number of passengers using the system or any desired portion of the system, and how adequately the system or portion handles this demand. The user can quickly and easily alter the system and test the resulting effect on passenger demands and required service. Volume I is a general description of the capabilities of the programs and the preparation for using them. (Author)

PB-180 487
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME II. IBM 7090/94 COMPUTER PROGRAMS USERS' REFERENCE MANUAL.
Technical rept.

Apr 67, 127p Tr-3-Vol-2
Sponsored by Department of Housing and Urban Development, Washington, D. C. See also Volume 1, PB-180 486.

Descriptors: (*Transportation, Programming (Computers)), (*Urban planning, Transportation), Instruction manuals, Programming languages, Compilers.
Identifiers: IBM 7090 computers, IBM 7094 computers, FORTRAN 4 programming language, MAP programming language, FORTRAN.

The purpose of the document is to summarize information pertaining to the operation of a package of IBM 7090/94 computer programs for use in long-range planning of public transportation. This manual is intended as a concise reference only. The programs in the package are written in FORTRAN IV and MAP using the IBJOB processor of the IBSYS (Version 13) operating system. Although each program is an entity, all are interdependent in that one creates or reads the input or output of another. The IBSYS/IBJOB system is well suited for the sequential execution of any set of programs. Thus elements of the transit programs may be linked together in any logical order to fulfull a variety of tasks. (Author)

PB-180 488
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT MODAL SPLIT SIMULATION MODEL.
Technical rept.

Aug 67, 83p TR-4
Sponsored by Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Simulation), (*Urban planning, Transportation), Traffic, Mathematical analysis, Set theory, Scheduling, Costs, Passenger vehicles.
Identifiers: Modal split models.

The central concern in the report is with the problem of moving people about within the confines of the United States' larger metropolitan areas, particularly at those times of the day when the demand for intra-area travel is at a peak. The basis for modal classification will rest primarily on a distinction which results in a modal division which is useful in analyzing intra-urban transportation. By this definition, modal split is concerned with the division between those trips made by private means of transportation and those trips made using public means of transportation within the confines of an urban area. (Author)

PB-180 489
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. RECOMMENDATIONS FOR URBAN MASS TRANSPORTATION RESEARCH.
Technical rept.

Dec 67, 31p TR-5
Sponsored by Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Research program administration), (*Urban planning, Transportation), Costs, Traffic, Engineering, Management engineering, Decision making, Education, Training.
Identifiers: Land use.

Contents: Time-phased chart; Administrative research; Transit systems research; Urban travel characteristics; Education and training.

PB-180 490
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME I. IBM SYSTEM/360 COMPUTER PROGRAMS GENERAL INFORMATION MANUAL.
Technical rept.

Jan 68, 65p* TR-6
Supported by Dept. of Housing and Urban Development, Washington, D. C. See also Volume 2, PB-180 491.

Descriptors: (*Transportation, *Urban planning), Programming (Computers), Instruction manuals, Urban areas, Data processing systems.
Identifiers: Modal split models, IBM 360 computers.

The report is the fourth of a series of technical reports describing the development and utility of a battery of computer programs for the planning of public transportation. Volume I discusses the general capabilities of the programs, their data preparation and their use. Chapter II of this manual relates the programs to the overall transit planning process, and describes the programs as a set of interrelated elements forming a software system. The chapter sets an analytical planning framework within which the programs operate and discusses data interface. Chapter III describes the transit network program. It also serves as a network coding manual. Chapter IV exemplifies the mechanics and capabilities of the transit pathfinding program. Chapter V tells how to make effective use of the data reduction, regression and modal split programs. These programs are intended to cover a wide range of applications. Due to their flexibility, their use requires careful consideration and planning. This chapter discusses ways of making good use of these programs. (Author)

PB-180 491
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME II. IBM SYSTEM/360 COMPUTER PROGRAMS USERS' REFERENCE MANUAL.
Technical rept.

Jan 68, 163p* TR-6
Supported by Dept. of Housing and Urban Development, Washington, D. C. See also Volume 1, PB-180 490.

Descriptors: (*Transportation, *Urban planning), Programming (Computers), Programming languages, Subroutines, Control.
Identifiers: Modal split models, IBM/360 computers, FORTRAN 4 programming language, FORTRAN.

The manual summarizes information pertaining to the operation of a package of IBM System/360 computer programs for use in long-range planning of public transportation. The manual is intended as a concise reference for those who are familiar with the usage of computer programs for transportation planning. The programs in the package are written in FORTRAN IV (G) and 360 Assembler Language using the full Operating System/360. Although each program is an entity, all are interdependent in that one creates or reads the input or output of another. The Operating System is well suited for the sequential execution of any set of programs. The second chapter contains information to assist one in communicating with the Operating System through Job Control Language. The third chapter presents the 'language' or means of talking to the subject programs. The remainder of the manual consists of summaries of operating instructions for each program. (Author)

PB-180 572
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
ADHESION CHARACTERISTICS.
Final technical rept.

Aug 68, 183p* TR-9
Sponsored in part by the Department of Housing and Urban Development, Washington, D. C. A report in the San Francisco Bay Area Rapid Transit Demonstration Project series.

Descriptors: (*Urban planning, *Transportation), (*Vehicle wheels, Adhesion), Acceleration, Deceleration, Railroad tracks, California, Feasibility studies, Electric propulsion, Braking, Simulation, Railroads, Friction, Loading (Mechanics).

Identifiers: *Rapid transit systems, Mass transit systems, Area planning + development, Coefficient of adhesion, Coefficient of friction.

The report discusses the phenomenon of adhesion as it applies to the theoretical and operational performance of railway wheels in contact with rail. The term adhesion refers to the tangential friction force developed at the wheel-to-rail contact area; this force is active during acceleration, deceleration, and maintenance of train speed. The ratio between the adhesion force and the normal load transmitted by the wheel to the rail is called the coefficient of adhesion (analogous to coefficient of friction). The objectives of the study were to establish the adhesion limits anticipated on the BART system, taking into consideration significant variables, and to provide a general source of adhesion data for the transit industry. As background for the second objective, a history of the laws and theories of friction and a summary of railway adhesion research are included. (Author)

PB-180 620
Greater Bridgeport Regional Planning Agency, Trumbull, Conn.
A PRELIMINARY ASSESSMENT OF MASS TRANSPORTATION IN THE GREATER BRIDGEPORT REGION,

Nov 68, 28p*

Descriptors: (*Urban planning, *Transportation), Urban areas, Traffic, Roads, Management planning, Economics, Railroads, Commerce, Passenger vehicles, Statistical analysis, Connecticut.
Identifiers: Area planning + development, Mass transit systems, Rapid transit systems, Expressways, Parking, Turbo trains, Elevated skybuses, Monorail, Bridgeport (Connecticut).

The report assesses the mass transit situation in the region as it exists today -- and suggests in a general way, the directions in which future studies should proceed in order to come up with some positive action proposals. It has been found that there is a connection between transportation and the urban crisis. Today's urban areas face serious transportation problems, such as: Deterioration of mass transit facilities; Intensification of traffic congestion; and Lack of co-ordination between transportation and other elements of planning.

PB-180 653
Chicago Area Transportation Study, Ill.
THE SKOKIE SWIFT: A STUDY IN URBAN RAPID TRANSIT.
Rept. for 1964-1966,
Earl R. Ruiter, Jere J. Hinkle, and John D. Orzeske. Jul 68, 116p Rept. no. 317031-VI
Rept. on 'The Chicago Area Transportation Study.' Prepared in cooperation with the Bureau of Public Roads, Washington, D. C.

Descriptors: (*Transportation, Urban areas), Statistical analysis, Railroads, Vehicles, Cost effectiveness, Time studies, Sampling, Traffic, Questionnaires.
Identifiers: Skokie Swift, CATS (Chicago Area Transportation Study), Chicago Area Transportation Study.

The report is a summary of the Chicago Area Transportation Study's role in the Chicago Transit Authority - Village of Skokie Mass Transit Demonstration Project sponsored by the Housing and Home Finance Agency. The two year demonstration project period started in April, 1964. CATS participation in this project consisted of collection, processing and analyzing data from a series of field studies. This report concludes that, with the inception of Skokie Swift service, overall transit ridership in the Skokie area increased markedly during the course of the demonstration project and that this increase was absorbed almost wholly by the Skokie Swift, the bus lines in the area showing ridership figures which remained relatively constant or declined when Swift service began. (Author)

PB-180 755
Bureau of Public Roads, Washington, D. C. Office of Planning.
CALIBRATING AND TESTING A GRAVITY MODEL FOR ANY SIZE URBAN AREA.

Oct 65, 176p*

Descriptors: (*Transportation, *Urban planning), (*Mathematical models, Traffic), Urban areas, Roads, Decision making, Site selection, Scheduling, Pattern recognition, Population, Statistical distributions, Programming (Computers), Data processing systems, Punched cards, Magnetic tape, Computer programs, Calibration, Test methods.
Identifiers: Trip distribution, Gravity models, Traffic flow.

Trip distribution is an important and complex phase of the transportation planning process. It provides the planner with a systematic procedure capable of estimating zonal trip interchanges for alternate plans of both land use and transportation facilities. These zonal interchanges constitute a basic part of the travel information necessary for transportation planning. This manual documents in detail the process of trip distribution utilizing the gravity model as it is now defined. Since automated trip distribution techniques have only become available in the last decade, the details involved in the various steps are still being improved. (Author)

PB-180 955
American Academy of Arts and Sciences, Brookline, Mass.
CONFERENCE ON POVERTY AND TRANSPORTATION, JUNE 7, 1968: EDITED TRANSCRIPT.

1968, 162p*
Contract FH-11-6845
See also PB-180 956.

Descriptors: (*Economics, Symposia), (*Transportation, Symposia), Wages, Employment, Housing, Passenger vehicles, Distribution (Economics), Urban areas.
Identifiers: *Poverty, Mass transportation.

Attention at the conference focussed on the interrelationships between low income, race, housing location and transportation needs, as well as the means of alleviating transport dependence through the provision of new systems, and redesign of current systems such as mass transit, taxis, jitneys as well as novel systems. Jobs and transportation and income redistribution and transportation were well developed themes. Various experimental efforts under the Urban Mass Transportation program were described. The concern with the budgetary limitations of such programs was expressed. No definitive answers were found. Each city has unique problems but the conference yielded some common insights into the problem of providing mobility to the poor in our cities. (BPR abstract)

PB-180 956
American Academy of Arts and Sciences, Brookline, Mass.
CONFERENCE ON POVERTY AND TRANSPORTATION, JUNE 7, 1968: SUMMARY AND CONCLUSIONS AND PAPERS PRESENTED.

1968, 421p*
Contract FH-11-6845
See also PB-180 955.

Descriptors: (*Economics, Symposia), (*Transportation, Symposia), Wages, Employment, Labor, Passenger vehicles, Urban areas, Distribution (Economics).
Identifiers: *Poverty, Mass transportation.

FB-182 217
Peat, Marwick, Livingston and Co., Washington, D. C.
SYSTEM FOR SURVEYING REGIONAL TRAVEL. VOLUME I: PROPOSED METHOD FOR SELECTION OF SURVEY SITES FOR A COORDINATED AIR, AUTO, BUS AND RAIL TRAVELER SURVEY IN THE NORTHEAST CORRIDOR.

Jun 67, 58p*
Contract DT-7-35215
See also Volume 2, PB-182 218.

Descriptors: (*Transportation, Urban planning), Site selection, Manpower studies, Air traffic, Passenger vehicles, Railroads, Statistical processes, Collecting methods, Pattern recognition, Management planning, Motivation, Costs, Behavior, Predictions, United States.
Identifiers: *Northeast Corridor, Regional travel surveys, Buses (Vehicles), Preferences.

The understanding of travel choices, investment opportunities, and community impact continues to be a distinctive challenge to planning research. A system for surveying regional travel could reasonably serve several objectives, some of which are: to provide statistical data; to establish travel preferences; to determine travel motives and patterns; to establish transportation needs or demand; to produce costs and other financial information; and to forecast future travel. (Author)

PB-182 289
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
FEASIBILITY OF FRINGE PARKING FOR THE NATIONAL CAPITAL REGION.

8 Jan 65, 152p
Sponsored by General Services Administration, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *District of Columbia), (*Passenger vehicles, Site selection), Economics, Feasibility studies, Statistical data, Traffic, Costs, Questionnaires, Railroads, Urban planning, Maps, Tables.
Identifiers: Fringe parking, Rapid transit systems, Parking facilities.

Analyses are made of fringe parking experience in the Washington area, utilizing survey data previously collected. Personal interviews have been conducted with park-and-riders to learn more of their preferences and motivations. A study has been made of the transportation improvement 'bought' by a public agency investing money in fringe parking as opposed to other transport investment alternatives. Criteria for selection of fringe parking sites have been prepared, and finally a number of specific sites have been suggested where a fringe parking program might begin. (Author)

PB-182 474
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
TRACTION POWER COLLECTION.
Final technical rept.

1968, 48P* TR-7-Vol-2
Rept. on 'San Francisco Bay Area Rapid Transit District Demonstration Project'. Sponsored in part by the Department of Housing and Urban Development, Washington, D. C. See also Volume 1, PB-182 473.

Descriptors: (*Railroads, *Electric propulsion), Direct current, Power equipment, Cost effectiveness, Rods, Electrical properties, Physical properties, Materials, Configuration, Voltage, Electric insulation, Transportation, Urban areas, Installation, Test methods, California.

Identifiers: Electric power collectors, Bay Area Rapid Transit District, Rapid transit systems, Contact rails, San Francisco (California).

Volume 1 described three-phase 4160-volt ac collection systems. The volume describes the development, installation, and testing of 1000-volt dc contact rail assemblies and current collectors for the BART demonstration project. (Author)

PB-182 478
Chicago Area Transportation Study, Ill.
AN EVALUATION OF ALTERNATIVE LAND USE AND TRANSPORTATION SYSTEMS IN THE CHICAGO AREA,
E. Wilson Campbell. Oct 68, 84p Rept. no. 322021-I
Prepared in cooperation with Bureau of Public Roads, Washington, D. C.

Descriptors: (*Transportation, Feasibility studies), (*Urban planning, *Illinois), Cost effectiveness, Passenger vehicles, Railroads, Traffic, Statistical analysis, Substitutes, Volume, Networks, Tables, Maps.
Identifiers: Evaluation, Chicago (Illinois), Land use, Expressways, *Area planning and development, Rapid transit systems.

This report describes the work of the Chicago area transportation study in determining the quality of transportation services which would be provided by each of four land use alternatives developed for the Chicago Metropolitan Area. This work identifies the one land use alternative judged to provide the most effective transportation facilities at the least cost. This alternative, designated the Finger Alternative in this report, emphasizes the development of land uses and activities into radial corridors, resulting in a physical pattern resembling the human hand, with the area within the tri-state tollway forming the palm and urban corridors radiating outward. Because of this physical characteristic, the alternative allows a number of advantages in providing transportation that the other three do not. (Author)

PB-182 521
Tennessee State Planning Commission, Chattanooga. Southeast Regional Office.
TRANSPORTATION PLAN: DAYTON, TENNESSEE.

Sep 68, 55p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban areas, *Transportation), (*Tennessee, Transportation), Passenger vehicles, Roads, Construction, Traffic, Safety, Advanced planning, Site selection.
Identifiers: Area planning and development.

The report discusses a plan prepared to serve the future transportation needs of the Dayton Tennessee area. Major emphasis has been given to the street and highway needs in the area. (Author)

PB-182 522
Tri-State Transportation Commission, New York.
ANNUAL REPORT, 1968.

Oct 68, 17p
Sponsored in part by Bureau of Public Roads, Washington, D. C., and Department of Housing and Urban Development, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *Transportation), Urban areas, Advanced planning, Site selection, Roads, Airports, Water pollution, Sewage, Water, Traffic, New York, New Jersey, Connecticut.

Identifiers: Area planning and development, Mass transportation.

The report discusses the activities for the Tri-State Transportation Commission for the year 1968. Problems common to the States of New York, New Jersey and Connecticut were handled by the joint commission.

PB-182 537
Tri-State Transportation Commission, New York.
PEOPLE-TRANSPORTATION-JOBS: PUBLIC TRANSPORT SERVICES TO NON-CBD EMPLOYMENT CONCENTRATIONS.

Jan 69, 40p*

Descriptors: (*Economics, Urban areas), (*Transportation, *Employment), Urban planning, Group dynamics, Transportation, Costs, Research program administration, Effectiveness, Questionnaires, Programming (Computers), New York.
Identifiers: *Bus lines, Poverty, Suburban population, Underprivileged groups, Public transportation.

The document covers operations in which six bus routes began operation with public funds to link the suburban poor with available job openings. The report details the operating experience on the project bus routes, gives insights into the lifestyle of suburban poverty households, and details case histories of how the project has helped the unemployed or under employed. The report also provides technical data on how the cost of project bus lines are determined, describes nine additional routes that have recently been opened and explains the sources of revenue and expense. (Author)

PB-182 567
Smith (Larry), and Co., Washington, D. C.
METRO PROPERTY UTILIZATION: SUMMARY.

15 Jan 69, 27p*
Sponsored in part by Washington Metropolitan Area Transit Authority.

Descriptors: (*Transportation, *Urban planning), (*District of Columbia, Transportation), Terrain, Economics, Impact, Commerce, Predictions, Substitutes, Tables, Population, Maryland, Virginia.
Identifiers: Subway stations, Rapid transit railways, Washington metropolitan area, Taxes, Benefit cost analysis, Land use.

The document contains an economic study prepared to serve as a departing premise in the conduct of more detail studies focused on the economics of particular station service areas. The study is preliminary, based on the completion of preliminary engineering studies and selection of proposed routes for the metropolitan rail rapid system. (Author)

PB-182 568
Washington Metropolitan Area Transit Authority.
BENEFITS TO THE WASHINGTON AREA FROM THE ADOPTED REGIONAL METRO SYSTEM. TECHNICAL APPENDIX.

25 Oct 68, 49p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Urban planning), (*District of Columbia, Transportation), Cost effectiveness, Employment, Aging (Physiology), Education, Culture, Recreation, Time, Money, Commerce, Industries, Traffic, Numerical analysis, Maryland, Virginia.
Identifiers: *Rapid transit railways, Washington (District of Columbia), Benefit cost analysis.

The analysis has delineated and, wherever possible, quantified the benefits accruing to the Washington Region as a result of implementing the Adopted Regional Rapid Transit System. No attempt has been made to compare the benefits and costs of various alternative systems -- the selection of the proposed regional system was made previously on the basis of its superior patronage and revenue potentials. It is, therefore, a 'given' in the analysis. (Author)

PB-182 698
Georgia State Planning Bureau, Atlanta.
STATUS OF TRANSPORTATION IN GEORGIA.

1968, 51p*
Sponsored in part by Department of Housing and Urban Development, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Georgia), Reviews, Urban planning, Background, Roads, Railroads, Air transportation, Water traffic, Vehicles, Maps, Tables.
Identifiers: Pipelines, *Area planning and development.

There are two major sections in the report: background information, and transportation information categorized by transportation media. The first three chapters comprise the background or introductory part of the report in presenting information relevant to latter chapter. The second part of the report, including chapters four through nine, considers the elements of highways, navigation, railroads, air transportation, trucks and buses and pipelines. (Author)

PB-182 703
Wise (Harold F.) and Associates, Washington, D. C.
A STUDY DESIGN PROSPECTUS FOR GEORGIA COMPREHENSIVE STATEWIDE TRANSPORTATION PLANNING.

Dec 68, 38p
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc., McLean, Va. Sponsored in part by Department of Housing and Urban Development, Washington, D. C. and Georgia State Planning Bureau, Atlanta.

Descriptors: (*Transportation, *Georgia), Urban planning, Interactions, Budgets, Management planning, Design, Predictions, Humans, Cargo, Vehicles, Railroads, Water traffic, Airports.
Identifiers: State governments, *Area planning and development, Land use.

Carrying out a comprehensive transportation planning program involves the interaction of many specialties and the completion of hundreds of individual tasks. It is the purpose of this prospectus to assist in Georgia's comprehensive planning effort by discussing the study design preparation process and the elements to be considered in the study design. The first section describes the transportation planning process and discusses how it interrelates with the other statewide planning programs. The next part discusses six step process recommended for the preparation of the study design, and the anticipated preparation cost and schedule. (Author)

PB-182 739
Tri-State Transportation Commission, New York.
REGIONAL PROFILE: WHO RIDES TAXIS.
Regional profile, Vol. 1, no. 11.

Feb 69, 8p Rept. no. 8011-6552-5M
Supported in part by the Bureau of Public Roads, and the Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Manpower studies), (*Passenger vehicles, Urban areas), Reports, Classification, Background, Employment, Diurnal variations, Motivation, Statistical data, New York, New Jersey, Connecticut.
Identifiers: Taxicabs.

A statistical report is made of the taxicab riding public in the New York - New Jersey - Connecticut area.

PB-182 806
Washington Metropolitan Area Transit Authority.
TRAFFIC, REVENUE AND OPERATING COSTS: ADOPTED REGIONAL SYSTEM 1968; REVISED FEBRUARY 1969.

Feb 69, 123p*

Descriptors: (*Transportation, *Urban planning), Traffic, Population, Costs, Budgets, Money, Passenger vehicles, Railroads, Impact, Models (Simulations), Economics, Predictions, Maryland, District of Columbia, Virginia.
Identifiers: *Area planning and development, Counties.

The report on traffic, revenue and operating costs includes methodology, assumptions and findings for an analysis of ridership, gross revenues, operating expenses, and net revenues. Also included is a description and discussion of coordinated bus and rail operation, an analysis of the financial impact upon the four private bus companies, and an analysis of three alternative fare systems. (Author)

PB-182 817
Southern California Association of Governments, Los Angeles.
STATUS OF REGIONAL TRANSPORTATION PLANNING AND COORDINATION IN SOUTHERN CALIFORNIA.

Nov 68, 46p
Revision of report dated May 68. Sponsored in part by the Department of Housing and Urban Development, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *California), (*Transportation, California), Management planning, Systems engineering, Roads, Airports, Passenger vehicles, Railroads.
Identifiers: Rapid transit railways, Southern California Association of Governments, *Area planning and development.

The document is a review of current coordination efforts directed towards comprehensive planning with emphasis on transportation planning, including preparation of an inventory of current transportation planning and refinement of the role of SCAG in the transportation planning process. (Author)

PB-183 039
North American Rockwell Corp., Los Angeles, Calif. Los Angeles Div.
IMPLEMENTATION REQUIREMENTS FOR FOUR ADVANCED URBAN TRANSPORTATION SYSTEMS.
Final rept.,
M. A. Sulkin, T. R. Parsons, and N. Lieberman. 18 Oct 68, 222p* NA-68-807
Contract HUD-H-779

Descriptors: (*Transportation, Urban areas), Passenger vehicles, Systems engineering, Scheduling, Budgets, Models (Simulations), Costs, Urban planning.
Identifiers: Dual mode systems, Fast transit systems, Bus lines, Personal rapid transit systems.

Four generic urban transportation systems were examined to establish implementation activities and gross schedules and cost levels required to bring them to the point of full public demonstration. These four systems were selected from among those identified as promising as a result of previous work. This volume is the final report on implementation requirements for the four selected systems. (Author)

PB-183 054
Stanford Research Inst., Menlo Park, Calif.
TRANSPORTATION EFFECTS ON THE NATIONAL ALLIANCE OF BUSINESSMEN PROGRAM,
John L. Crain. Jan 69, 29p*
Contract HUD-H-10-29
Prepared in cooperation with National Alliance of Businessmen, Washington, D. C.

Descriptors: (*Transportation, Urban areas), (*Management planning, Employment), Problem solving, Inequalities, Feasibility studies, Research program administration, Costs, Passenger vehicles, Economics.
Identifiers: Recommendations, *Area planning and development, Ghettos, Evaluation, Interviews.

The report is a brief review of research findings and recommendations concerning the effects of insufficient transportation on the program of the NAB (National Alliance of Businessmen) to hire the hard-core unemployed. (Author)

PB-183 063
Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
A NATIONAL URBAN TRANSPORTATION TEST AND EVALUATION CENTER.
Summary rept.,
E. S. Cheaney, and J. T. Herridge. Oct 68, 84p
Contract HUD-H-778

Descriptors: (*Transportation, Management planning), (*Technical information centers, Transportation), Test facilities, Classification, Urban planning, Decision making, Test methods, Optimization, Cost effectiveness.
Identifiers: *Area planning and development, Rapid transit systems.

The report presents the results of study of the proposition that the federal government establish a national urban transportation test and evaluation center. The objective of the study was to formulate recommendations for a federal course of action with respect to such a center. To examine changes in urban transportation systematically for this study, the technology was segmented into seven subtechnologies, each associated with a specific vehicular mode. (Author)

PB-183 156
Massachusetts Inst. of Tech., Cambridge. Dept. of Naval Architecture and Marine Engineering.
SIMULATION ANALYSIS OF A HIGH SPEED GROUND TRANSPORTATION SYSTEM.
Thesis,
Michael Allen Crane. Sep 68, 231p 68-20
Contract C-136-66
Sponsored in part by the National Science Foundation, Washington, D. C.

Descriptors: (*Urban planning, *Transportation), Population, Urban areas, Rural areas, Passenger vehicles, Advanced planning, Computer programs, Flow charting, Theses.
Identifiers: Area planning and development, Rapid transit systems.

A ground transportation system is considered which includes as its proposed operating characteristics: real-time dispatching of trips according to passenger demand; travel from origin to destination without intermediate stops for the purpose of passenger exchange; travel through a network of links and nodes, with constant-speed travel on each link; minimum headway constraints for each link resulting in capacity limits and possible interference between trips; and the possible coupling of vehicles, for more efficient use of channel capacity and reduced propulsion costs. Quantitative measures of cost and utility are developed as criteria for a comparative analysis of operating policies and design parameters. Overall system utility is postulated as an approximate function of a worst-case level of passenger service and a patronage-weighted mean measure of service level. Cost impacts are characterized in terms of vehicle size and a measure reflecting fleet size and vehicle-hours of operation. An event-ordered simulation model representing the transportation system is described in some detail. (Author)

PB-183 158
Plotkin (H. M.) and Associates, San Bernardino, Calif.
A STUDY TO DETERMINE IMPROVEMENTS TO THE SAN BERNARDINO MUNICIPAL TRANSIT SYSTEM FOR INCREASING EMPLOYMENT OPPORTUNITIES TO RESIDENTS OF DEPRESSED AREAS,
H. M. Plotkin. Oct 68, 103p
Sponsored in part by Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, *Urban planning), (*California, Transportation), Feasibility studies, Employment, Predictions, Costs, Statistical analysis, Pattern recognition, Performance (Human).
Identifiers: San Bernardino (California), Commuters, Depressed areas, Central city.

The objective of the study was to determine if improvements to the San Bernardino municipal transit system would significantly increase employment opportunities for depressed area residents. (Author)

PB-183 162
Smith (Wilbur) and Associates, New Haven, Conn.
SHUTTLE BUS SERVICE-HUNTERS POINT AVENUE TO MANHATTAN. QUEENS-LONG ISLAND - MANHATTAN. QUEENS-LONG ISLAND MASS TRANSPORTATION DEMONSTRATION PROGRAM FEBRUARY 1965 TO JULY 1966.
Final rept.

Mar 68, 83p
Sponsored in part by the Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Urban planning, Transportation), Population, Employment, Statistical analysis, Passenger vehicles, Railroads, Costs, New York.
Identifiers: *Shuttle buses, Mass transportation, Passenger transportation.

The report contains a detailed description of the shuttle bus operation and the surveys conducted. Findings of the demonstration project are based on the analysis of passenger patronage trends, commuter characteristics, and travel times. In addition, an evaluation is presented on the financial aspects of the shuttle bus service. (Author)

PB-183 192
Illinois Univ., Champaign. Bureau of Economic and Business Research.
MASS TRANSPORTATION DEMONSTRATION PROJECTS.

1968, 166p
Sponsored in part by Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Transportation, Operations research), Urban areas, Costs, Passenger vehicles, Illinois, Attitudes, Maintenance, Statistical data.

Identifiers: *Mass transportation, *Buses (Vehicles).

Contents: Surveys of the regular systems; Home interview consumer surveys; Premium special services; Comparisons of characteristics of premium and regular system passengers; Zone fares using automatic equipment; Project off-peak routes; Equipment used (renovated buses); Potential peak-hours markets in Peoria and Decatur.

PB-183 193
Peat, Marwick, Livingston and Co., New York.
THE QUEENS-LONG ISLAND TRAFFIC DEMAND MODEL.
Project staff rept., Apr 67.

Apr 68, 153p*
Rept. on Queens-Long Island Mass Transportation Demonstration Program. Sponsored in part by the Department of Housing and Urban Development, Washington, D. C.

Descriptors: (*Traffic, Mathematical prediction), Models (Simulations), Transportation, Management planning, Data processing systems, Correlation techniques, Statistical processes, Regression analysis, New York.
Identifiers: Demonstration programs, Traffic models, Demand (Economics), Queens (Long Island).

The purpose of the program was to make both short- and long-range studies, coupled, if possible, with actual demonstration tests to improve public transportation in the Queens-Long Island sector of the New York metropolitan region. (Author)

PB-183 217
West Virginia Univ., Morgantown. Engineering Experiment Station.
SIMPLIFIED TECHNIQUES FOR DEVELOPING TRANSPORTATION PLANS -TRIP GENERATION IN SMALL URBAN AREAS,
Wilbur R. Jefferies, and Everett C. Carter. Dec 66, 119p Technical Bull-84

Descriptors: (*Transportation, *Urban planning), Management planning, Sociology, Economics, Feasibility studies, Mathematical models, Passenger vehicles, Population.

The object of this research was to investigate simplified techniques for developing transportation plans in the smaller urban areas and to investigate, in detail, the socio-economic characteristics of trip makers which affect home-based vehicle work trip generation. The investigation of simplified techniques for developing transportation plans in the smaller urban areas indicated that they were feasible using the gravity model but that determining trip generation was the key to accurately applying the gravity model in smaller urban areas. Home-based vehicle work trip production was investigated in six small urban areas. It was found that a log-log relationship existed between automobile ownership and trip generation and that the trip generation equations developed in this research satisfactorily explained the relationship. Further investigation indicated that it was feasible to develop a single equation which could be used satisfactorily to determine home based vehicle work trip production in any of the six urban areas. The equation explained the variation between urban areas as a function of dwelling unit density, residential density, and percent of the orban area in residential land use. (Author)

PB-183 231
West Virginia Univ., Morgantown. Engineering Experiment Station.
ASSESSMENT OF INTEREST IN EDUCATIONAL PROGRAMS BY THE MASS TRANSIT INDUSTRY-RESULTS OF A QUESTIONNAIRE,
Frederick J. Wegmann. Oct 68, 18p* Rept. no. 3

Descriptors: (*Transportation, Programmed instruction), Questionnaires, Feasibility studies, Universities, Management planning, Attitudes, Classification, Employment, Job analysis, Education.
Identifiers: Transit industry personnel, Curricula.

The document is concerned with the feasibility of educational programs specifically tailored to the needs and interests of the urban mass transit industry. In order to assist educational institutions in developing responsive programs, a questionnaire was submitted to members of the transit industry to ascertain the industry's view towards various educational programs. The results of the questionnaire are presented in the light of communication between the transit industry and academic institutions. (Author)

PB-183 321
Queens-Long Island Mass Transportation Demonstration Program.
SHUTTLE BUS SERVICE, HUNTERS POINT AVENUE TO MANHATTAN.
Final rept. Feb 65-Jul 66.

Mar 68, 83p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *New York), Passenger vehicles, Feasibility studies, Background, Statistical data, Costs, Scheduling, Volume, Effectiveness.
Identifiers: *Bus lines, Shuttle bus service, New York (New York), Demonstration programs, Comparison.

The report highlights the project sponsored by the Queens-Long Island mass transportation demonstration program to study the benefits which can be derived from supplemental public transportation.

PB-183 330
Texas Transportation Inst., College Station.
BUS RAPID TRANSIT ON URBAN FREEWAYS USING TRAFFIC SURVEILLANCE AND CONTROL.
Summary rept.,
Vergil G. Stover, and John C. Glennon. Jan 69, 17p
Contract H-807

Descriptors: (*Urban areas, *Transportation), Passenger vehicles, Traffic, Control systems, Cost effectiveness, Feasibility studies.
Identifiers: Freeways, *Bus lines, Urban transportation, Mass transportation, *Bus freeway systems.

The objective of the research was to investigate the technical feasibility of employing freeway surveillance and control techniques to facilitate bus rapid transit operations. In the evaluation of the technical feasibility of the System, designated the Bus-Freeway System, preliminary designs and cost estimates were prepared for four existing freeways. The study sites selected for this purpose were: John Lodge Freeway, Detroit; Gulf Freeway, Houston; Route 1-35W (South), Minneapolis; Penn-Lincoln Parkway (East), Pittsburgh. These locations represent a wide range in topography, freeway design, and traffic operations. (Author)

PB-183 390
Texas Transportation Inst., College Station.
A SYSTEM TO FACILITATE BUS RAPID TRANSIT ON URBAN FREEWAYS. THE TECHNICAL FEASIBILITY OF USING TRAFFIC SURVEILLANCE AND CONTROL TECHNIQUES,
John C. Glennon, and Vergil G. Stover. Dec 68, 104p
Contract DOT-H-807

See also Appendices, PB-183 391. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *Transportation), Feasibility studies, Roads, Advanced planning, Safety, Population, Urban areas, Rural areas, Traffic, Passenger vehicles, Statistical analysis, Control systems.
Identifiers: Rapid transit bus systems, Bus lines, Traffic surveys, Traffic control.

The report is concerned with the technical feasibility of providing priority operation for buses on urban freeways by employing freeway surveillance and control. Under this system, designated the Bus-Freeway System, the buses would be provided priority access to the freeway via exclusive bus ramps; automobiles would be metered into the system so as to utilize the excess capacity but short of that volume which would jeopardize the desired level of transit service. (Author)

PB-183 391
Texas Transportation Inst., College Station.
A SYSTEM TO FACILITATE BUS RAPID TRANSIT ON URBAN FREEWAYS: APPENDICES. THE TECHNICAL FEASIBILITY OF USING TRAFFIC SURVEILLANCE AND CONTROL TECHNIQUES,
John C. Glennon, and Vergil G. Stover. Dec 68, 127p
Contract DOT-H-807
See also PB-183 390. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Urban planning), (*Traffic, Control systems), Roads, Urban areas, Optimization, Signals, Monitors, Maps, Michigan, Texas, Minnesota, Terrain.
Identifiers: Ramps, Rapid transit bus systems, Freeways, Detroit (Michigan), Houston (Texas), Minneapolis (Minnesota).

The document is a collection of maps and graphics giving the proposed configuration of access and exit ramps for freeways in three cities, with control details.

PB-183 469
Massachusetts Dept. of Public Works, Boston.
RECOMMENDED HIGHWAY AND TRANSIT PLAN.
1968, 132p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE: SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS.

Descriptors: (*Transportation, *Massachusetts), Management planning, Roads, Traffic, Predictions, Costs, Population, Employment, Wages, Passenger vehicles.
Identifiers: Recommendations, *Area planning and development, Eastern Massachusetts regional planning project, Automobile ownership, Rapid transit bus systems.

The comprehensive transportation recommendations presented in the report are designed to accommodate the transportation and development needs of the eastern Massachusetts region in 1990. (Author)

PB-183 549
Department of Transportation, Washington, D. C.
TRANSPORTATION NOISE ENVIRONMENTS OF THE TRAVELER AND THE SPECTATOR,
William H. Close. 1969, 26p

429-500 O-LT - 71 - 3

Presented at the Annual Meeting of the Institute of Environmental Sciences (15th) 20-24 Apr 69.

Descriptors: (*Transportation, *Noise), Engine noise, Passenger vehicles, Vehicle wheels, Reverberation, Sound, Suspension devices, Airplane noise, Tables.
Identifiers: Mass transit systems, Subways.

PB-183 717
Tri-County Regional Planning Commission, Lansing, Mich.
MASS TRANSPORTATION IN THE TRI-COUNTY REGION: A DEVELOPMENT PLAN AND IMPROVEMENT PROGRAM.

Apr 69, 114p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIOS.

Descriptors: (*Transportation, Urban planning), (*Urban planning, *Michigan), Urban areas, Passenger vehicles, Traffic, Roads, Population, Industries, Commerce, Economics, History, Money, Costs, Public relations.
Identifiers: *Mass transportation, Lansing (Michigan), Bus lines.

This report contains a policy plan, three operation plans, and an improvement program for the local transit system in the Lansing Tri-County Region. The evolution of the transit system from the days of the horse car to the present day air-conditioned motor bus system is traced. Use of the system has been described in terms of ridership, tripmaking patterns, and characteristics of transit users. Much of the data was obtained in a transit origin-destination survey conducted in 1968 by personal interview onboard the buses. The policy plan stresses the need for a regional transit design concept integrated with other transportation system components, a transit system which will serve present needs and stimulate desirable future land use patterns, and the highest quality transit service possible within economic reality. Operation plans are presented for the immediate, short-range (1975), and long-range (1990) future. Thirteen short and five long-range recommendations based on the operation plans are discussed including one that a transit authority be established. The transit improvement program covers a twelve year period and includes anticipated revenues, capital costs, and operating costs. At the end of the twelve year improvement program period, it is predicted that the local bus system will be operating at a loss of some $68,000 per year unless ridership increases substantially, student fares are supplemented by local government, and Federal grants are obtained. (Author)

PB-183 912
Smith (Wilbur) and Associates, Columbia, S. C.
OPERATION BUS STOP; FEASIBILITY STUDY FOR CHARLESTON-COLUMBIA, SOUTH CAROLINA.
Final rept.

May 69, 166p
Sponsored in part by Economic Development Administration, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *South Carolina), (*Employment, *Management planning), (*Rural areas, Transportation), Feasibility studies, Reviews, Population, Classification, Education, Wages, Labor, Mobility, Passenger vehicles, Statistical data, Costs, Time, Questionnaires.
Identifiers: Bus stop operation, Charleston (South Carolina), Columbia (South Carolina), *Area planning and development.

Operation Bus Stop is a study designed to determine the feasibility of transporting unemployed and underemployed persons from rural areas to jobs in urban areas. The study area included four rural South Carolina Counties. The potential employees resided in a 5-mile corridor on either side of Interstate Route 26. A commuter transportation system was recommended to transport rural residents to jobs in Charleston and Columbia, South Carolina. The socioeconomic structure of the four rural counties was considered with regards to population characteristics, education, labor force, and employment. The existing transportation facilities available to the residents of the study area were examined. A survey of the unemployed and underemployed labor force residing in the vicinity of the Interstate 26 corridor was conducted for the purpose of determining the number of persons who were available for employment, as well as the levels of education and skill each had attained. (Author)

PB-184 060
Office of the Secretary of Transportation, Washington, D. C. Office of Economics and Systems Analysis.
A PRELIMINARY REPORT ON THE CLEVELAND BEFORE AND AFTER STUDY.
Interim technical report,
George F. Wiggers. 22 May 69, 75p

Descriptors: (*Transportation, *Ohio), Air transportation, Airports, Population, Decision making, Costs, Time, Passenger vehicles.
Identifiers: Rapid transit railways, Rapid transit systems, Air passengers.

The study was initiated for the purpose of obtaining demand information of rapid transit service, with special emphasis on this demand by intercity air travelers. The approach of the study was to use the recent extension of the Cleveland Transit System (CTS) rapid rail to Cleveland Hopkins Airport to gather empirical data on the mode choice of selected population groups both before and after the opening of the rapid rail extension. A comparative analysis of the before and after data will then be undertaken which will identify the relationships between demand for the alternative access modes as a function of trip cost, time and other variables. Included in the population groups are air passengers, air passenger related visitors, airport employees and casual visitors to the airport. (Author)

PB-184 066
Washington Metropolitan Area Transit Authority.
ADOPTED REGIONAL SYSTEM, 1968: PRELIMINARY SUBSURFACE INVESTIGATION.

Feb 69, 145p
Also available in 35MM for $0.65, as PB-184 066-1. Prepared in cooperation with Muever, Rutledge, Wentworth and Johnston, New York. See also PB-184 067. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS.

Descriptors: (*Transportation, Urban planning), (*Railroads, Site selection), (*Structural geology, Railroads), Analysis, Terrain, Drilling, Water, Geologic age determination, Silt, Sand, Clay, Gravel, District of Columbia, Maryland, Virginia.
Identifiers: *Engineering geology, Strata, Bedrock, Subways, Washington metropolitan area, Drill core analysis.

The report covers the following information: Preliminary subsurface data based chiefly on an evaluation of regional geology: More refined data based on evaluation of geology, existing borings and additional borings; and Additional test borings to clarify subsurface conditions with tests on samples recovered. (Author)

PB-184 067
Washington Metropolitan Area Transit Authority.
ADOPTED REGIONAL SYSTEM, 1968: PRELIMINARY DESIGN AND CAPITAL COSTS.

Feb 69, 269p
Also available in 35MM for $0.65 as PB-186 067-1. Prepared in cooperation with DeLeuw, Cather and Co., Washington, D. C., Harry Weese and Associates, Washington, D. C., and Meuser, Rutledge, Wentworth and Johnson, New York. See also PB-184 066. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, Urban planning), (*Railroads, Costs), Site selection, Underground structures, Air conditioning equipment, Drainage, Sanitary engineering, Electrical equipment, Control systems, Communication systems, Railroad tracks, Railroad cars, Maintenance, Construction, Design, District of Columbia, Maryland, Virginia.
Identifiers: *Subways, Escalators, Washington metropolitan area.

The objectives of the report are to provide preliminary designs and capital cost estimates of the added regional lines, to incorporate updated capital costs for the authorized basic system, and to propose a design and construction schedule with associated obligations and expenditures that would effect a fully operational adopted regional system by January, 1980. The report covers all major aspects involved in the study of the added regional lines except for the functions of planning and operations. (Author)

PB-184 147
Pennsylvania Univ., Philadelphia.
MINICAR MASS TRANSIT SYSTEM: FEASIBILITY STUDY. BOOK I. SUMMARY.
Final rept. on Phase I.

Dec 68, 50p*

Descriptors: (*Passenger vehicles, Design), (*Transportation, Feasibility studies), Air pollution, Optimization, Urban areas, Costs, Efficiency, Urban planning.
Identifiers: *Mass transportation, *Minicars.

A good case can be made for developing a safe, low pollution, full-width-but-half-length 'Minicar,' optimized for fleet type urban-suburban driving. Under appropriate Governmental stimulation and control, a fleet of about 26,000 Minicars served by 100 to 300 terminals can be introduced into Central Philadelphia, in the decade from 1972 to 1982, on a sound and practical business basis. This Minicar system could: (1) Increase the traffic capacity and flow in heavily congested areas by 25% to 75%. (2) Decrease localized rush hour air-pollution levels by 40% - 60%. (3) Release a potential investment of $0.4 - $0.7 billion in parking facilities for other important urban uses. (4) Reduce the suburban auto commuter's daily cost for transportation to his urban job by 40% - 50%. (5) Enhance the suburban commuter's usage of subway, train and bus transit systems by providing him with central city transportation convenient to the downtown terminals of those systems. (6) Provide the economically deprived non-car-owning urban driver with the short door-to-door travel times of a taxi ride at a price only slightly above that for a bus or subway trip. (7) Largely eliminate the need felt by urban dwellers for privately owned automobiles. (8) Produce substantial returns for the investors and operators of the Minicar system. (9) Attract more

customers to the central city areas by virtue of its cleaner air, more quiet and less congested environment, and more efficient transportation facilities. (Author)

PB-184 235
Metropolitan Washington Council of Governments, D.C.
ECONOMIC AND TRANSPORTATION IMPACT ANALYSIS: TAKOMA PARK STUDY AREA.

Feb 68, 115p*
Prepared in cooperation with Gladstone (Robert) and Associates, Washington, D.C. and Alan N. Voorhees and Associates, McLean, Va.

Descriptors: (*Urban planning, Maryland), (*Commerce, Urban areas), (*Transportation, Impact), Growth, Predictions, Economics, Housing, Terrain, Roads, Traffic, Problem solving.
Identifiers: Rapid transit railways, Metropolitan Washington Council of Governments, *Area planning and development, Land use, Competition, Streets, Takoma Park (Maryland).

The impact study extends for about one quarter mile from the access point of the proposed rapid transit station on Cedar Street. The total area includes portions of the District of Columbia and unincorporated sections in Montgomery and Prince George's counties.

PB-184 237
Washington Metropolitan Area Trabsut Authority.
TRAFFIC, REVENUE AND OPERATING COSTS; ADOPTED REGIONAL SYSTEM.

11 Jun 69, 124p*
Corrected version of report revised Feb. 69. Prepared in cooperation with Voorgees (Alan M.) and Associates, Inc., and Gilman (W.C.) and Co. Inc., McLean, Va. Supersedes Rept. dated May 69, PB-183 843.

Descriptors: (*Transportation, *Urban planning), Predictions, Railroads, Passenger vehicles, Feasibility studies, Costs, Population, Employment, Wages, Growth, Networks, Traffic, District of Columbia, Maryland, Virginia.
Identifiers: Revenue, Coordinated rapid transit systems, Rapid transit bus systems, Fares, Rapid transit railways, *Area development and planning.

The objective of the study was to determine for the Washington metropolitan area an equitable and practical bus-rail coordination plan and fare structure and to develop a detailed forecast of ridership, costs, and revenues for a regional system. The report presents the study results, particularly as they pertain to the net revenue estimates. (Author)

PB-184 255
Washington Metropolitan Area Transit Authority.
CONCEPTUAL DESIGN OF AUTOMATIC TRAIN CONTROL AND COMMUNICATIONS SYSTEMS.

Jun 69, 166p
Prepared in cooperation with DeLeuw, Cather and Co., Chicago, Ill., Gibbs and Hill, Inc., New York, and Klauder (Louis T.) and Associates, Philadelphia, Pa.

Descriptors: (*Communication systems, Railroads), (*Railroads, Control systems), Communication systems, Design, Display systems, Computers, Computer programs, Telephone communication systems, Radio communication systems, Public address systems, Television communication systems, Fire safety, Railroad cars, Data transmission systems, Procurement, Contracts, Maintenance, Training, Documentation, Protection, Decoding, Detection, Speed regulators, Identification, Performance (Engineering), District of Columbia, Maryland, Virginia.
Identifiers: *Railroad trains, Rapid transit railways, Railroad stations, Routing, Distributing.

PB-184 275
Washington Metropolitan Area Transit Authority.
METRO ADOPTED REGIONAL RAPID RAIL TRANSIT PLAN AND PROGRAM.

7 Feb 69, 73p
Revision of report dated 1 Mar 68. Supersedes PB-179 657. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS.

Descriptors: (*Urban planning, *District of Columbia), (*Transportation, Urban planning), Railroads, Scheduling, Construction, Design, Costs, Passenger vehicles, Money, Economics, Traffic, Maps, Maryland, Virginia.
Identifiers: *Washington (District of Columbia), *Rapid transit railways, Routes, Commuters, Fares, Revenue, Parking facilities.

Contents: Metro introduction; Background; Description of facilities; Schedules of service; Descriptions of routes; Type of equipment; Design of facilities; Timetable for provision of facilities; Provision of facilities; Capital cost estimate; Estimated ridership; Probable fares; Feeder bus service; Estimated operating expenses; Estimated revenue; Financial plan; Conclusion; Chronology; Financial consultants; Transportation consultants; Engineering consultant; Directors and alternates; Officers and staff; Consultants and contractors.

PB-184 276
Peat, Marwick, Livingston and Co., Washington, D.C.
REDISTRIBUTION OF SOCIO-ECONOMIC FORECASTS FOR 1980 AND 1990.

Dec 68, 117p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS.

Descriptors: (*Urban planning, *District of Columbia), (*Population, Predictions), (*Employment, Predictions), Sociology, Economics, Growth, Railroads, Transportation, Traffic, Mathematical models, Regression analysis, Equations, Data, Maryland, Virginia, Urban planning.
Identifiers: *Washington (District of Columbia), *Rapid transit railways, Local government, Commuters, Revenue, Parking facilities, Empiric mathematical model.

This report describes the redistribution of estimated future year population and employment in the metropolitan Washington, D.C. area based on the new 98 mile Metro system of rapid rail transit which was adopted on March 1, 1968, by the Board of Directors of the Washington Metropolitan Area Transit Authority (WMATA). This redistribution was carried out using the EMPIRIC model, an activities allocation technique developed during the period 1963-1967 by Peat, Marwick, Livingston and Co. (PML) for the Eastern Massachusetts Regional Planning Project. Population and employment were redistributed for the Washington region from development patterns previously forecast by the National Capital Regional Planning Council for their 'Regional Development Guide, 1966-2000,' which was based on a rapid rail transit and commuter rail system which differs significantly from the Metro system. (Author)

PB-184 321
Washington Metropolitan Area Transit Authority.
THE ECONOMICS OF METRO.

Jun 69, 12p
Prepared in cooperation with Development Research Associates, Los Angeles, Calif., and Voorhees (Alan M.) and Associates, Inc., McLean, Va. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *District of Columbia), (*Railroads, Urban planning), Economics, Costs, Cost effectiveness, Commerce, Feasibility studies, Growth, Population, Transportation, Motor vehicle operators, Passenger vehicles, Maryland, Virginia.
Identifiers: *Washington (District of Columbia), *Rapid transit railways, Investments, Passengers, Travel time, Savings, Availability.

A summary of the benefit-cost analysis of Metro for the National Capital Region written in non technical language. The study projects the area will receive cummulative benefits three times greater than the combined federal-local investment in Metro. Benefits to the following four groups of residents are discussed-- (1) bus riders, (2) motorists using Metro, (3) motorists not using Metro, and (4) business community. (Author)

PB-184 426
Chicago Area Transportation Study, Ill.
CHICAGO AREA TRANSPORTATION STUDY. VOLUME I. SURVEY FINDINGS.
Final rept.

Dec 59, 140p
Sponsored in part by Bureau of Public Roads, Washington, D. C. See also Volume 2, PB-184 427 and Volume 3, PB-184 428. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Illinois), (*Traffic, Inventory), Statistical distributions, Urban areas, Classification, Terrain, Roads, Railroads, Vehicles, Management planning, Recording systems, Display systems, Models (Simulations), Performance (Human).
Identifiers: Streets, Chicago (Illinois), Cartographatron displays, Origin destination surveys, Transportation facilities, *Area planning and development, Bus lines, Land use, Rapid transit railways.

The volume deals with the survey findings of the large scale travel, land use, and transportation inventories. The basic purposes of this and the following volumes are to provide the base for a Chicago transportation plan and develop a set of basic facts necessary for the continuing review of the metropolitan travel picture. The method of study is worked out and from this the needed factual data are identified. The travel inventory of the study was the standard origin and destination survey. For each trip the address of origin and destination was obtained, together with mode, purpose, travel time, and terminal land use data. The land use survey was undertaken to provide data for transportation forecasting.

PB-184 427
Chicago Area Transportation Study, Ill.
CHICAGO AREA TRANSPORTATION STUDY. VOLUME II. DATA PROJECTIONS.
Final rept.

Jul 60, 144p
Sponsored in part by Bureau of Public Roads, Washington, D. C. See also Volume 1, PB-184 426

and Volume 3, PB-184 428. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Illinois), (*Urban areas, Predictions), Population, Terrain, Economics, Recording systems, Display systems, Theory, Urban areas, Performance (Human), Growth, Transformations, Traffic.
Identifiers: Chicago (Illinois), Land use, Cartographatron displays.

The volume is concerned with estimating the amount, kind and location of travel likely to take place in the Chicago area in the year 1980. This forecasting attempt is undertaken on the assumption that there will be a fifty percent population increase in Chicago before 1980. Forecasts of population, economic activity, and land use are presented. From these forecasts are derived trip generation, modal distribution, and future travel demand estimates.

PB-184 428
Chicago Area Transportation Study, Ill.
CHICAGO AREA TRANSPORATION STUDY. VOLUME III. TRANSPORTATION PLAN.
Final rept.

Apr 62, 144p
Sponsored in part by Bureau of Public Roads, Washington, D.C. See also Volume 1, PB-184 426 and Volume 2, PB-184 427. PORTIONS OF THIS DOCUMENT ARE ILLEGIBLE. SEE INTRODUCTION SECTION OF THIS ANNOUNCEMENT JOURNAL FOR CFSTI ORDERING INSTRUCTIONS. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Illinois), (*Management planning, Analysis), Problem solving, Decision making, Costs, Roads, Networks, Advanced planning, Urban areas, Transformations, Predictions, Budgets, Scheduling, Traffic.
Identifiers: Chicago (Illinois), Objectives, *Area planning and development.

The volume delineates the objectives, road system, regional highway network, public transportation and financing of the Chicago-wide transportation plan. The volume focuses on the preparation, testing and evaluation of the plan, including the establishment of objectives and an attempt to resolve those in conflict. The primary objective was to develop the least expensive transit system possible. An attempt was made to combine operating and construction costs with traffic loads, and to find the most efficient street designs. Five different expressway plans were developed and tested by computer.

PB-184 443
Upstate New York Transportation Studies, Albany.
A STATEMENT OF OBJECTIVES FOR TRANSPORTATION PLANNING,
Technical rept.,
Robert Breuer. Nov 62, 14p TR-450:1

Descriptors: (*Transportation, *New York), Urban planning, Costs, Standards, Time, Accidents, Construction, Maintenance, Analysis.
Identifiers: Objectives, *Area planning and development.

Dollar cost is presented as the most practical common standard for comparing alternative transportation system plans. Since transportation facilities are and must be related to the community they serve, the community goals and the role transportation plays in achieving those goals are discussed. Seven goals are identified that may be directly and measurably related to system plans. The problems in estimating the costs are pointed out. Some of the costs involve one-time expenditures while others are continuing. Cost factors are analyzed for the seven factors in terms of what should be considered.

PB-184 470
Delaware Valley Regional Planning Commission, Philadelphia, Pa.
1985 TEST PLANS HIGHWAY AND PUBLIC TRANSPORTATION.

Jul 67, 33p

Descriptors: (*Transportation, *Urban planning), (*Roads, Urban planning), Railroads, Costs, Bridges, Maps, Pennsylvania, New Jersey, Delaware.
Identifiers: Mass transportation, *Freeways.

Procedures involved in formulating the freeway and mass transportation test plans for 1985 are described. Tables and maps identifying basic links in the test plans are included. In formulating test plans, it was felt that active participation by local agencies, outlining their own needs and desires, could provide a more realistic set of plans for this region than had ever been designed before. The test plans are mixes of different railroad, highway and mass transit networks. They vary in size and capital cost. Alternative networks are additive. That is, they are built up from a minimum network. In all test networks only general corridor locations of highway and transit facilities are indicated. Estimated costs in millions of dollars for the test networks are given. (Author)

PB-184 484
Metropolitan Planning Commission, Nashville, Tenn.
EXPERIMENTAL BUS LINES IN METROPOLITAN NASHVILLE.
Final rept.

1966, 87P
Report on Mass Transportation Demonstration Projects MTD-2 and 3. Sponsored in part by Dept. of Housing and Urban Development, Washington, D. C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Tennessee), (*Urban areas, Transportation), Passenger vehicles, Public relations, Attitudes, Population, Transformations, Feasibility studies, Costs, Statistical data, Analysis, Experimental design.
Identifiers: Demonstration projects, Nashville (Tennessee), Bus lines, *Area planning and development, Interviews, Comparison.

The demonstration project had two basic objectives: To relate certain unique experimental bus lines operated within the Nashville urban area to observed land use, social, and economic characteristics of the area served, and to study the attitudes of those within the service area toward the experimental bus service.

PB-184 553
York City Planning Commission, Ala.
MAJOR THOROUGHFARE PLAN OF YORK, ALABAMA.

Apr 68, 58p
Prepared in cooperation with Bateman (Robert S.) and Associates, Inc., Mobile, Ala. Sponsored in part by Alabama State Planning and Industrial Development Board.

Descriptors: (*Urban planning, *Alabama), Roads, Terrain, Traffic, Population, Design, Predictions.
Identifiers: York (Alabama), Thoroughfares, *Area planning and development, Streets.

The planning study involves an analysis of York's existing street facilities and their condition. A discussion is presented concerning factors that have influenced the development of York's street system such as topographic and geographic features and the present property development. Consideration has been given to street conditions such as rights-of-way, pavement widths, parking, traffic volumes, and travel time. From an analysis of past trends in automobile ownership, population and traffic, prognostications of future traffic volumes and automobile ownership have been made in order to ascertain what the future requirements of York's major thoroughfare plan will be. (Author)

PB-184 586
Tri-State Transportation Commission, New York.
CENSUS DATA AS A SOURCE FOR URBAN TRANSPORTATION PLANNING,
Ronald J. Fisher, and Arthur B. Sosslau. Jan 66, 70p
Presented at Annual Meeting of the Highway Research Board (45th), Washington, D.C. Jan 66. Sponsored in part by Bureau of Public Roads, Washington, D.C., and Department of Housing and Urban Development, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Urban planning), Passenger vehicles, Population, Housing, Employment, Sources, Connecticut, New Jersey, New York.
Identifiers: Census data.

The application of census data to transportation planning is discussed. The census data was taken from the nationwide 1960 census, the first to include journey-to-work and automobile ownership data. The Tri-State Transportation Committee used this data for such projects as selecting their Cordon Line, studying trends in population and housing units, examining travel characteristics such as mode choice and trip length, and examining residential mobility characteristics. The majority of the report is taken up with descriptions of how the census data was applied to the seven projects in the Tri-State studies. Also, included in the report are titles and brief annotations of descriptive reports prepared from the census material. Other sections suggest and show how to use future material for estimating trips in a region, analyze the limitations on the use of data for transportation. Sixteen suggestions are discussed for improving the 1970 census (covering classification of employment, modes of travel, geographical breakdown of data...). A glossary of Census terms is contained as an appendix. (DoHUD abstract)

PB-184 690
Regional Planning Council, Baltimore, Md.
BALTIMORE REGION RAPID TRANSIT SYSTEM PLANNING AND URBAN DESIGN STUDIES. PHASE I: RAPID TRANSIT FACILITIES.

17 Feb 69, 125p
Prepared in cooperation with Daniel, Mann, Johnson, and Mendenhall, Los Angeles, Calif.

Descriptors: (*Urban planning, *Maryland), (*Transportation, Urban planning), Railroads, Traffic, Urban areas, Site selection, Passenger vehicles, Roads, Costs, Design, Data, Collecting methods.
Identifiers: *Baltimore (Maryland), *Regional planning and development, Urban planning and development, Mass transportation, Rapid transit railways, Railroad stations, Buses (Vehicles), Relocation, Patronage, Right of way acquisition, Objectives.

The purpose of this work was to achieve, through detailed planning and refined urban design analysis, the most effective possible relationship between the proposed rapid transit facilities and the surrounding communities. It was the primary intent of the study to focus upon the Phase I facilities proposed in the July, 1968 Mass Transit report, although, in a few instances, consideration was given to special problems related to later-phase corridors. Each of the Phase I right-of-way segments and station-site areas proposed in the July, 1968 report has been reviewed and, where necessary, modifications have been made to achieve better functional and aesthetic relationships. Both the designs necessary to achieve a good urban 'fit' and illustration of the type of collateral development which might be induced by rapid transit have formed a part of the work. Heavy emphasis was placed upon the protection of scarce land resources, further-reduction of housing acquisition and relocation impacts, the maintenance of open-options future growth and the protection of impact-sensitive environments along the proposed rights-of-way, while, at the same time, maintaining efficient design characteristics of the system. (Author)

PB-184 729
Metropolitan Dade County Planning Dept., Miami, Fla.
TERMINAL FACILITIES MASTER PLAN.

Dec 68, 8p
Report on Terminals Transportation. Sponsored in part by Dept. of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, *Florida), Urban planning, Site selection, Terrain, Passenger vehicles, Cargo vehicles, Railroads, Design, Statistical data, Predictions, Advanced planning, Environment, Effectiveness, Safety, Standards.
Identifiers: Miami (Florida), *Transportation terminals, Objectives, Parking facilities, Dade County (Florida), Bus lines.

The document covers one of five master plan elements of the Miami urban area transportation study (MUATS). The master plan examines goals for truck, rail, bus and automobile parking facilities development to 1985. Four specific objectives were prepared for the study based upon the general goals of the general land use master plan. The recommendations devised to attain these objectives are broken down into sections related to trucks, railroads, intercity busses, and parking facilities. (Author)

PB-184 742
American Association of State Highway Officials, Washington, D.C.
PAPERS PRESENTED ON URBAN TRANSPORTATION PLANNING AT THE AASHO ANNUAL MEETING OCTOBER 6, 1965, NEW YORK, N.Y. THE CONTINUING URBAN TRANSPORTATION PLANNING PROCESS.

May 68, 66p

Descriptors: (*Urban planning, Transportation), (*Transportation, Symposia), Roads, Design, Construction, Budgets, Population, Bridges, Networks, Railroads, Maps, Feasibility studies.
Identifiers: Highways.

Proceedings of the 1965 American Association of State Highway Officials conference on the 'Continuing Urban Transportation Planning Process' contains the following papers: Implementation of Urban Transportation Planning Programs; The Future Role of the States in Organization and Financing of the Continuing Urban Transportation Planning Process; The Continuing Urban Transportation Planning Process in the Chicago Area; A Quarter of a Century of Continuing Urban Transportation Planning; The Urban Planning Assistance (701) Program; Major emphasis in the conference was given to the implementation problem in planning urban transportation.

PB-184 764
Metropolitan Dade County Planning Dept., Miami, Fla.
PROPOSED TRANSPORTATION MASTER PLAN FOR DADE COUNTY - TWO MILLION POPULATION (1985 ESTIMATE).
Summary rept.

Feb 69, 48p
Sponsored in part by Dept. of Housing and Urban Development, Washington, D.C.

Descriptors: (*Urban planning, Transportation), (*Transportation, *Florida), Air transportation, Passenger vehicles, Railroads, Airports, Economics, Water traffic, Shipping (Marine).
Identifiers: Dade County (Florida), Rapid transit systems.

The five elements of the Transportation Master Plan provide a comprehensive plan for a well balanced integrated system for moving people and goods in 1985. Recommendations are based upon serving the needs of 2 million residents in addition to visitors to the Miami urban area. Plans have been approved by the Policy and Technical Advisory Committees of MUATS representing the cooperative efforts of the county, State and Federal governments. Authorization will be requested for presenting a fold-out color summary to be distributed to the community for review. Public hearings will be held followed by Planning Advisory Board review. Then, formal adoption will be requested by the Board of County Commissioners. The Transportation Master Plan is a detailed component of the General Land Use Master Plan. (Author)

PB-184 824
East-West Gateway Coordinating Council, East St. Louis, Ill.
A PROTOTYPE INFORMATION SYSTEM: THE STORAGE AND RETRIEVAL OF SPACIALLY RELATED DATA IN ST. LOUIS COUNTY, MISSOURI.

Mar 69, 36p
Prepared in cooperation with St. Louis County Dept. of Planning.

Descriptors: (*Transportation, *Missouri), (*Urban planning, Transportation), (*Information retrieval, Transportation), Roads, Passenger vehicles, Population, Records.
Identifiers: Information systems, Saint Louis County (Missouri), Area planning and development, Land use.

The goals of the work project include: (1) the development of information as a base for analysis of present urban conditions in the Metropolitan St. Louis area; (2) the proposal of a coordinated development of a complete road network for the metropolitan area based on coordinated long-range planing goals; (3) feasible recommendations for the creation of a rapid transit system. Both the scope and the multiplicity of the junctions of the EWGCC are extensive. Inclusive in its interests, for example, are data on roads by type and condition; autos, by total numbers and place of residence; population by all standard census classifications by social attitudes and expressable group goals. One of its functions is to act as the reviewing agency for all planning grants, open-space (park and recreation) grants, pollution abatement grants, and others that may come about. (Author)

PB-184 853
Southwestern Illinois Metropolitan Area Planning Commission, Collinsville.
TRANSPORTATION - CIRCULATION SURVEY AND ANALYSIS, MADISON AND ST. CLAIR COUNTIES, ILLINOIS.
Leo A. Daly. Apr 69, 57p

Prepared in cooperation with Leo A. Daly Co., St. Louis, Mo. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Illinois), Traffic, Roads, Railroads, Urban areas, Rural areas, Classification, Inventory, Statistical data, Predictions.
Identifiers: Madison County (Illinois), Saint Clair County (Illinois), Streets.

The document summarizes the results of a transportation-circulation survey and analysis study that was conducted in Madison and St. Clair Counties as a basic input to subsequent transportation and land use plan preparation studies and as a supplemental study to the metropolitan land use and transportation program. Emphasis is given to the functional relationship of major municipal streets and county roads to the state and Federal highway network. An analysis of the general characteristics of the transportation and circulation system and a general determination of future needs is made. (Author)

PB-184 973
Operations Research, Inc., Silver Spring, Md.
COMPARISON OF NOISE AND VIBRATION LEVELS IN RAPID TRANSIT VEHICLE SYSTEMS.
Technical rept.,
Edward W. Davis, and M. J. Zubkoff. Apr 64, 187p
ORI-TR-216
Contract NTA-36

Descriptors: (*Railroads, Noise), (*Railroad cars, Vibration), Human engineering, Passenger vehicles, Railroad tracks, Transportation, Measurement, Data processing systems, Design, Standards, Performance (Engineering), Test methods, Audiofrequency, Roughness, Reduction, United States, Western Europe, Canada.
Identifiers: *Rapid transit railways, *Rapid transit vehicles, Subways, Buses (Vehicles), Guided roads, Noise pollution, Terminal facilities, Vehicle wheels, Sound pressure.

This report presents the results of a study of rapid transit vehicle noise and ridability, undertaken to fulfill a need for basic data on these characteristics of existing rapid transit systems. The objective of this study was to obtain noise and ridability data which might be helpful in setting vehicle design criteria. A secondary objective was to determine the relative quietness and ride smoothness of rubber-tired and steel-wheeled rapid transit vehicles to assist in the comparison of these systems. Complete correlation of the vibration data collected (and of the noise data) with the design, construction, and maintenance factors influencing them was beyond the scope of this study. However, an attempt is made to correlate some observed system conditions with measurement results. Enough information is presented herein to permit identification of these systems judged consistently best in all respects, so that the field has been narrowed to a small number for further investigation. (Author)

PB-184 974
Department of Transportation, Washington, D.C.
TRANSPORTATION INFORMATION: A REPORT TO THE COMMITTEE ON APPROPRIATIONS, U.S. HOUSE OF REPRESENTATIVES, FROM THE SECRETARY OF TRANSPORTATION,
John A. Volpe. May 69, 255p*

Descriptors: (*Management planning, Transportation), (*Transportation, Data), United States government, Industries, Decision making, Errors, Roads, Railroads, Air transportation, Shipping (Marine), Population, Traffic, Safety, Urban planning, Scheduling, Collecting methods, Costs, Cost effectiveness, Statistical data, Data processing systems, Technical information centers.

Identifiers: *Management information systems, Interurban transportation, International transportation, Terminal facilities, Pipeline transportation.

This report presents an initial five-year program for meeting the critical transportation information needs of industry and government at national, state and local levels. The program provides for information on the flows of persons and goods, information on the activities (population and industry) that generate the flows, and information on the channels (transportation facilities and terminals) that carry the flows. This information would cover all modes of transportation - highway, rail, air, water and pipeline; and all geographic levels - urban, interurban (including regional-corridor), and international. Accident experience information is provided for under information on channels (transportation facilities and terminals), but transportation safety information is not treated comprehensively. The program presented in this report provides for use of existing transportation information programs to the greatest practicable extent. The program also provides a framework for consolidation and reallocation of transportation information functions both within and outside the Department. (Author)

PB-184 995
Mathematica, Princeton, N.J.
STUDIES IN TRAVEL DEMAND. VOLUME V,
Michel R. Pinton. Mar 69, 288p*
Contract DOT-3-0009
See also Volume 4, PB-185 003.

Descriptors: (*Transportation, Mathematical models), Urban areas, Traffic, Passenger vehicles, Mathematical prediction, Statistical data, Wages, Population, Air transportation, Railroads.
Identifiers: Travel demand.

Contents: Estimation and testing in long-range demand models (An abstract model approach to the demand for travel, Relative shares model, Estimation of the behavioral model, Tests and comparisons on demand models); Time-series analysis (An empirical study of the fluctuations in passenger traffic, The time patterns of train passenger traffic in the Northeast Corridor, A regression analysis of hourly traffic patterns in the Northeast Corridor).

PB-185 218
New Castle Area Transit Authority, Pa.
MASS TRANSPORTATION IN A SMALL CITY.
Final rept.

1968, 40P

Descriptors: (*Transportation, Urban areas), Feasibility studies, Urban planning, Background, Public opinion, Budgets, Costs, Scheduling, Passenger vehicles, Quality control, Pennsylvania.
Identifiers: *Mass transportation, *Small cities, New Castle (Pennsylvania), Transit fares, Interviews, Travel habits.

The project was designed to demonstrate the feasibility of smaller, more maneuverable transit units in a small city, oriented by proper scheduling to passenger demands, with fares based upon the intensity of these same demands, in effectively providing efficient mass transit service for the urban area transit authority. (Author)

PB-185 422
TRW Systems, Houston, Tex. Houston Operations.
SYSTEM ANALYSIS METHODOLOGY IN URBAN TRAFFIC CONTROL SYSTEMS.
Final rept.,
D. L. Cooper, R. M. Knox, and R. J. Walinchus. 30 Jun 69, 255p* 11644-H014-R000
Contract FH-11-6883
See also Addendum, PB-184 952.

Descriptors: (*Urban areas, Traffic), (*Traffic, Data processing systems), Control systems, District of Columbia, Digital computers, Sensors, Models (Simulations), Subroutines.
Identifiers: Vehicle sensors.

The primary purpose of this study was to develop a second-generation surveillance methodology (for use in the 1970's) for automatically collecting traffic data in an urban network, transmitting it to a central digital computer, and processing it for system evaluation purposes. The methodology developed is generally applicable; however, it was developed with the requirements of the Urban Traffic Control System (UTCS) Laboratory in Washington, D.C., in mind. (Author)

PB-185 473
Rensselaer Polytechnic Inst., Troy, N.Y.
URBAN TRANSPORTATION PROJECT I. SPRING 1969. COLLECTED PAPERS.

Jun 69, 275p
Sponsored in part by the Ford Foundation.

Descriptors: (*Urban planning, Transportation), (*Transportation, Education), Reports, Social sciences, Economics, Design, Feasibility studies, Traffic.

Urban Transportation Project is a two-semester course sequence, initiated in the Spring of 1969, dealing with the social requirements, the economic constraints, and the technological problems of urban transportation. Its objectives are: (a) to acquaint the student with as many as possible of the social, economic, and technological factors that must be considered in the planning and design of urban transportation systems; (b) to establish, within a multi-disciplinary team, a dialogue between those who can determine what is needed or wanted in urban transportation and those who can determine what is feasible, and (c) to develop in the student, through this kind of dialogue, an awareness of aspects of the problem that are outside his own area of competence and an appreciation of their importance. (Author)

PB-185 525
American Society of Civil Engineers, New York.
URBAN TRANSPORTATION PLANNING. SOURCES OF INFORMATION ON URBAN TRANSPORTATION,
Harold Deutschman. Jun 68, 107p* Rept. no. 4
Contract H-504
Prepared in cooperation with The Journal of Urban Transportation Corp., New York, N.Y.

Descriptors: (*Transportation, *Urban planning), Reviews, Background, Traffic, Economics, Models (Simulations), Sources, Classification, Predictions, Inventory, Analysis.
Identifiers: Trip generation, Modal split, Economic forecasting, Evaluation.

A review is made of the procedures followed in the comprehensive urban transportation planning process, including a history of its development, trip generation, trip distribution methods, traffic assignment techniques, modal split determination, economic forecasting and plan implementation problems. (Author)

PB-185 616
Regional Planning Council, Baltimore, Md.
SUMMARY AND REVIEW OF RECENT TRANSPORTATION PLANNING STUDIES IN THE BALTIMORE REGION,
William Ockert. Jun 68, 40p

Descriptors: (*Urban planning, *Maryland), (*Transportation, Maryland), (*Roads, Maryland), Railroads, Passenger vehicles, Reviews.
Identifiers: *Baltimore (Maryland), Mass transportation.

The paper describes the evolution of highway-transit planning that culminated in the adoption of the Suggested General Development Plan for the Baltimore Region. The various transportation planning studies that preceded the plan adoption are related to each other in order to present an overall view of the transportation elements in the Suggested General Development Plan. Three major studies are summarized and reviewed: the 1964 study by Wilbur Smith and Associates for the Maryland State Roads Commission recommending a system of highways for the Baltimore Metropolitan Area; the Parsons, Brinckerhoff, Quade and Douglas study for the Metropolitan Transit Authority of Maryland in 1965 concerning the development of a public mass transportation system; and the preparation of the Suggested General Development Plan by the Regional Planning Council. The following points are emphasized in the discussion: (1) the network configurations that were tested (2) how the two modes, transit and highways, were related to each other as components of the overall transportation system (3) how the transportation planning process was related to the comprehensive planning process (4) how the proposed transportation networks were evaluated. (Author)

PB-185 657
Smith (Wilbur) and Associates, New Haven, Conn.
CHESAPEAKE MASS TRANSPORTATION DEMONSTRATION PROJECT VA-MTD-1.
Final rept.

Jan 69, 80p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Urban planning, *Virginia), (*Transportation, Urban areas), (*Passenger vehicles, Transportation), Employment, Efficiency, Scheduling, Costs, Roads, Commerce, Industries, Population, Money.
Identifiers: *Chesapeake (Virginia), *Urban planning and development, *Bus transportation, Mass transportation, Commuting, Patronage, Routes, Publicity, Fares, Surveys.

The Chesapeake Mass Transportation Demonstration Project, in attempting to provide adequate mass transportation to a growing city, has definite relationships to both local and metropolitan planning objectives. The Great Bridge Express Line and feeder routes were operated to test and study the design and improvement of a transit system serving a suburban community. The project was one of several pilot studies initiated throughout the United States to demonstrate various concepts and approaches to public transportation in such areas. The specific facet tested by this program was to determine whether residents of a suburban community would use public transportation for work trips to a central city if frequent, low cost, express bus service was made available. (Author)

PB-185 702
Department of Transportation, Washington, D.C.
HIGH SPEED GROUND TRANSPORTATION ACT OF 1965.
Rept. no. 3.

Jul 69, 132p*
See also Rept. no. 2, PB-176 115.

Descriptors: (*Transportation, *Management planning), Railroads, Simulation, Statistical analysis, Urban areas, Ground effect machines, Railroad tracks.
Identifiers: High speed ground transportation, Northeast Corridor Transportation project.

The Northeast Corridor simulation model was assembled and exercised; a comprehensive inventory of technology options was prepared; two rail passenger service demonstrations are beginning

and the first system for broad, regional transportation analysis was established. A national capability in R and D and transportation analysis was established in universities and in private industry across the country. The impact of the HSGT program is depicted. (Author)

PB-185 742
Massachusetts Dept. of Commerce and Development.
PARKING: A REGIONAL VIEW.

Mar 69, 148p Pub-3016
Report on Eastern Massachusetts Regional Planning Project. Prepared in cooperation with the Massachusetts Bay Transportation Authority, Metropolitan Area Planning Council, and the Massachusetts Department of Public Works, Boston. Sponsored in part by Department of Housing and Urban Development and the Bureau of Public Roads, Washington, D. C.

Descriptors: (*Urban planning, *Massachusetts), (*Traffic, Urban planning), Transportation, Advanced planning, Predictions, Roads, Passenger vehicles, Urban areas, Railroads.
Identifiers: *Eastern Massachusetts Region, *Parking facilities, *Regional planning and development, Automobile trip analysis, Rapid transit railways, Garages, Land use, Railroad terminals.

This report provides an overview of the estimated present and future parking demands of the Eastern Massachusetts Region. Analysis indicates that in some areas of the region parking might well become a critical factor in the proper functioning of the future transportation system. The impact of future parking requirements in the region will be significant for both the urban and suburban areas. Therefore, it is recommended that auto parking be a prime consideration in all future land development and redevelopment programs. (Author)

PB-185 757
Mueser, Rutledge, Wentworth and Johnston, New York.
WASHINGTON METROPOLITAN AREA RAPID TRANSIT AUTHORIZED BASIC SYSTEM: SUBSURFACE INVESTIGATION. VOLUME IV. BENNING ROUTE AND A PORTION OF THE PENTAGON ROUTE.
Final rept. Jan 68-Jun 69.

Jul 69, 248p*
Contracts TAC-20-68-E, TAC-64-69-E
Prepared in cooperation with DeLeuw, Cather Co., Washington, D.C. See also Volume 3, PB-179 655 and Volume 4, Appendix A, PB-185 758.

Descriptors: (*Transportation, *District of Columbia), (*Terrain, *Structural geology), Drilling, Rock (Geology), Underground structures, Foundations (Structures), Hydrology, Substrates, Design, Stratigraphy.
Identifiers: *Rapid transit systems, *Geological cross sections, Subsurface investigations, Coring, Tunnels.

The report contains text, tables, and contract size drawings summarizing subsurface investigations. A total of 160 test borings were made, two water wells were installed for performance of full-scale pumping tests in the field. Based on the field and laboratory data, analytical studies were performed leading to recommendations for design of foundations and underground structure. (Author)

PB-185 758
Mueser, Rutledge, Wentworth and Johnston, New York.
WASHINGTON METROPOLITAN AREA RAPID TRANSIT AUTHORIZED BASIC SYSTEM: SUBSURFACE INVESTIGATION. VOLUME IV. APPENDIX A. BENNING ROUTE AND A PORTION OF THE PENTAGON ROUTE.
Final rept.

Jul 69, 178p*
Contracts TAC-20-68-E, TAC-64-69-E
Prepared in cooperation with DeLeuw, Cather Co., Washington, D.C. See also Volume 3, PB-179 655 and Volume 4, PB-185 757.

Descriptors: (*Transportation, *District of Columbia), (*Terrain, *Structural geology), Drilling, Rock (Geology), Underground structures, Foundations (Structures), Hydrology, Substrates.
Identifiers: *Rapid transit systems, *Geological cross sections, Subsurface investigations, Curing, Tunnels.

The report contains the data sheets covering all laboratory testing performed for the specified trackage.

PB-185 760
Washington Metropolitan Area Transit Authority.
NET INCOME ANALYSIS INFORMATION ON EXISTING TRANSIT SYSTEMS.
Supplemental rept. no. 1.

Feb 69, 86p*
Sponsored in part by W. C. Gilman and Co., Inc., New York, and Alan M. Voorhees and Associates, McLean, Va. Supercedes Rept. no. PB-184 237 dated Jan 69.

Descriptors: (*Transportation, *Urban planning), Railroads, Passenger vehicles, Feasibility studies, Costs, Roads, Traffic, Population, Money, Illinois, Ohio, New York, Pennsylvania, Canada, California, District of Columbia, Massachusetts.
Identifiers: *Mass transportation, Rapid transit railways, Rapid transit bus systems, Fares, Demography, Parking facilities, Boston (Massachusetts), Chicago (Illinois), Cleveland (Ohio), New York (New York), Philadelphia (Pennsylvania), Montreal (Quebec), Toronto (Ontario), San Francisco (California), Washington (District of Columbia).

The scope of the report cuvers the following: Information on each of the eight metropolitan areas in North America which have rapid transit systems, covering both rapid transit and surface systems individually by metropolitan areas; Comparisons and evaluations of the pradctices, operations, and problems of both rapid transit and surface systems in these eight cities, so as to identify both common practices and unique strategies; Conclusions drawn from analysis of the previous sections. (Author)

PB-185 772
Massachusetts Bay Transportation Authority.
COMPARISON OF VEHICULAR TRANSIT SYSTEMS IN THE GREATER BOSTON AREA.

1969, 83p
Prepared in cooperation with Gibbs and Hill, Inc., New York.

Descriptors: (*Transportation, *Urban planning), Passenger vehicles, Railroad cars, Railroad tracks, Traffic, Control systems, Roads, Structures, Electrical engineering, Power equipment, Standards, Costs, Human engineering, Economics, Substitutes, Massachusetts.
Identifiers: *Urban planning and dcvelopment, *Mass transportation, Rapid transit railways, Bus lines, Monorail railways, Traffic engineering, Travel time, Bustun (Massachusetts).

The purpose of this report is to present the results of a study conducted to determine the requirements, and to evaluate alternative solutions, for the provision of mass transportation facilities of the externally-guided vehicular type in the Boston area. The scope uf the study included a survey of the field of transportation to determine the various types uf vehicular equipment, roadways, signaling and control, power systems, structures and other pertinent components that are available or will be fully developed for commercial application 'within a period uf two years' from the date of the submittal of the final report for this study. This report includes the results of the equipment and facilities survey, the estimate of present and future market potential, a study of the factors affecting the Boston terminus of any mass transit system, and a development of the system criteria to meet the objectives of the transportation system. (Author)

PB-185 871
Boston Regional Planning Project, Mass.
COMPREHENSIVE TRAFFIC AND TRANSPORTATION INVENTORY.

Sep 65, 311p
Prepared in cooperation with Smith (Wilbur) and Associates, New Haven, Conn. Sponsored in part by Urban Renewal Administratiun of the Housing and Home Finance Agency, and Bureau of Public Roads, Washington, D.C. PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE. SEE INTRODUCTION TO THIS JOURNAL. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductiuns will be made in black and white only.

Descriptors: (*Transportation, *Massachusetts), (*Traffic, Massachusetts), Urban planning, Invcntory, Population, Scheduling, Railroads, Airports, Passenger vehicles, Cargo vehicles.
Identifiers: Boston (Massachusetts).

Contents: Regional travel facilities; Trip making in the Boston region; Existing travel patterns; Characteristics of transit usage.

PB-185 962
Lawrence City Planning Dept., Mass.
A MASS TRANSPORTATION TECHNICAL STUDY.
Final rept.

Jun 69, 22p

Descriptors: (*Transportation, *Massachusetts), (*Urban planning, Transportation), Employment, Education, Retraining, Public health, Passenger vehicles, Questionnaires, Attitudes.
Identifiers: *Mass transportation, Buses (Vehicles), *Lawrence (Massachusetts).

The purpose of the study was: (1) To analyze the relationship between mass transit and employment opportunities for the underemployed and disadvantaged. (2) To determine if the provision of educational and job retraining courses are hampered by the existing transit system. (3) To ascertain if the provision of social and health services are hampered by inadequate transit service. (4) To determine what immediate improvements could be made to improve service to better serve the area. (5) To advance new, more detailed study design to improve Lawrence's mass transit future. (Author)

PB-185 970
Washington Metropolitan Area Transit Authority.
METRO SYSTEM CONSTRUCTION SAFETY MANUAL. PART I. GENERAL CONSTRUCTION WORK.

Apr 69, 207p
See also Parts 2 and 3, PB-185 971.

Descriptors: (*Underground structures. Construction), (*Passenger vehicles, Underground structures), (*Construction, Safety), Construction materials, Earth-handling equipment, Fire safety. Demolition, Drilling, Explosive materials, Handling. Electromagnetic fields, Visual signals. Material control, Welding. Small tools, Electrical equipment, Safety devices, Operators (Personnel). Protcctive clothing.

Identifiers: *Subways, *Tunneling (Excavation), Safety manuals.

The manual establishes the health and safety standards for new construction, alterations, repairs, improvements or maintenance for all construction projects under the control of the Washington Metropolitan Area Transit Authority. This volume consists of safety requirements for General Construction Work.

PB-185 971
Washington Metropolitan Area Transit Authority.
METRO SYSTEM CONSTRUCTION SAFETY MANUAL. PART II. UNDERGROUND EXCAVATION. PART III. COMPRESSED AIR WORK.

May 69, 142p
See also Part 1, PB-185 970.

Descriptors: (*Underground structures, Construction), (*Passenger vehicles, Underground structures), (*Construction, Safety), Drilling, Underground explosions, Construction materials, Fire safety, Ventilation, Intercommunication systems, Safety devices, Operators (Personnel), Medical equipment, Compressed air, Decompression, Visual inspection, Industrial training, Instruction manuals.
Identifiers: *Subways, *Tunneling (Excavation), Safety manuals.

The manual establishes the health and safety standards for new construction, alterations, repairs, improvements or maintenance for all construction projects under the control of the Washington Metropolitan Area Transit Authority. The volume consists of safety requirements for Underground Excavation and Compressed Air Work.

PB-186 123
Massachusetts Dept. of Commerce and Development.
TRAVEL DEMAND IN 1990: EVALUATING FUTURE NEEDS.

15 Aug 67, 165p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. and Bureau of Public Roads, Washington, D.C. Prepared in cooperation with ALAN M. Voorhees and Associates, Inc., McLean, Va.

Descriptors: (*Transportation, *Massachusetts), Mathematical models, Roads, Traffic, Population, Economics.
Identifiers: Regional planning and development, Land use.

The Eastern Massachusetts Regional Planning Project (EMRPP) seeks to indroduce a program of comprehensive transportation and land use planning on a regional scale. Planning studies are focused on the future alternatives open to the region as they encompass economic growth, land use development and transportation systems. The area of primary concern is the 2,300 square mile portion of Eastern Massachusetts. (Author)

PB-186 496
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT ON MODAL SPLIT SIMULATION MODEL.
Technical rept.

Aug 67, 83p TR-4
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Urban planning, *Transportation), Traffic, Passenger vehicles, Railroads, Models (Simulations), Statistical analysis, Operations research, Management planning, Costs, Wages, Population, Employment, Urban areas.
Identifiers: *Modal split transportation models, *Mass transportation, Rapid transit railways, Transportation management, Traffic control, Travel time, Route surveys, Urban geography, Evaluation.

Traffic congestion is an urgent urban problem. A solution is to utilize mass and/or rapid transit more extensively. The division of patronage between the personal automobile and mass transportation is called modal split. This study examines modal split in three stages: First, the major modal split models are examined to determine which variables are the key determinates; second, a particular model split model is further evaluated in the context of varying urban settings; Third, a simulation model is presented to illustrate how urban form affects modal split.

PB-186 497
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME I. IBM 7090/94 COMPUTER PROGRAMS GENERAL INFORMATION MANUAL.
Technical rept.

Apr 67, 75p TR-3-Vol-1
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. See also Volume 2, PB-186 498.

Descriptors: (*Urban planning, *Transportation), (*Programming (Computers), Transportation), Railroads, Passenger vehicles, Traffic, Predictions, Subroutines, Economics, Urban areas, Digital computers, Control sequences, Input-output devices, Management planning, Advanced planning.
Identifiers: *Mass transportation, *Computer analysis, Rapid transit railways, Demand (Economics), Transportation management, Travel time, Route analysis, IBM 7090/94 computers.

The computer programs described in this report enable convenient and economical evaluation of a proposed transit system. They give reliable estimates of the number of passengers using the system or any desired portion of the system, and how adequately the system or portion handles this demand. The user can quickly and easily alter the system and test the resulting effect on passenger demands and required service. This volume is a general description of the capabilities of the programs and the preparation for using them.

PB-186 498
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
URBAN MASS TRANSIT PLANNING PROJECT. VOLUME II. IBM 7090/94 COMPUTER PROGRAMS USERS' REFERENCE MANUAL.
Technical rept.

Apr 67, 128p TR-3-Vol-2
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. See also Volume 1, PB-186 497.

Descriptors: (*Urban planning, *Transportation), (*Computer programs, Handbooks), Digital computers, Programming (Computers), Subroutines, Control sequences, Input-output devices, Punched cards, Computer logic.
Identifiers: *Mass transportation, Computer analysis, Transportation management, IBM 7090/94 computers.

The purpose of this document is to summarize information pertaining to the operation of a package of IBM 7090/94 computer programs for use in long range planning of public transportation. Although each program is an entity, all are interdependent in that one creates or reads the input or output of another. Elements of the programs may be linked together in any logical order to fulfill a variety of tasks. To accomplish these tasks and to effect their linkage, the experienced user requires bits of information on both the object programs and the operating system. This report is designed to provide those bits of information.

PB-187 556
Urban Mass Transportation Administration, Washington, D.C.
DIRECTORY OF RESEARCH, DEVELOPMENT AND DEMONSTRATION PROJECTS.

30 Jun 69, 163p
Prepared in cooperation with the MITRE Corp.

Descriptors: (*Urban areas, Transportation), (*Transportation, Reviews), Research program administration, Railroads, Vehicles, Housing, Population, Employment, Monitors, Control, Communication systems, Underground structures, Management planning.
Identifiers: Rapid transit railways, Air cushion vehicles, Monorail railways, Feeder bus service, Crosstown bus service, Rapid transit bus systems.

The report summarizes the research, development, and demonstration programs supported by the Urban Mass Transportation Administration (UMTA). The current program divides urban mass transportation problems into eight categories. These research categories emphasize areas where the Administration wishes to focus its attention and funds. The program categories are: central city, major activity centers, lower density collection and distribution, commutation and linkage, employment facilitation, equipment and facilities, management and operations, and planning and program analysis. (Author)

PB-187 647
Massachusetts Inst. of Tech., Cambridge. Urban Systems Lab.
CARS (COMPUTER AIDED ROUTING SYSTEM) A PROTOTYPE DIAL-A-BUS SYSTEM.
Rept. for Jan 68-May 69.

Sep 69, 290p* R69-53

Descriptors: (*Urban areas, *Transportation), Passenger vehicles, Scheduling, Automation, Digital computers, Communications central, Pulse communication systems, Voice communication systems, Telephone communication systems, Special purpose computers, Control systems, Systems engineering, Mathematical models, Costs, Efficiency, Urban planning, Management planning.
Identifiers: *Bus lines, *Urban transportation, *CARS (Computer Aided Routing Systems), Computer aided routing systems, Routing, Demonstration projects, Heuristic methods, *Dial-a-bus systems.

This report describes Computer Aided Routing Service (CARS), a public transportation service offering the desirable characteristics of automobile travel at a cost commensurate with conventional public transportation services. By incorporating advances in computer and communication technology, CARS can respond to demand requests individually as they arise. The scheduling and routing of CARS vehicles is coordinated by a digital computer which receives service requests from customers over conventional telephone lines. A customer can request service by phoning the computer from his home and registering his destination. The computer will then instruct a vehicle to collect the customer. The passenger waits in the comfort of his home until that vehicle arrives at his door. The vehicle then takes him to his destination, probably stopping enroute to collect or distribute other customers. The dynamic nature of this routing technique makes it particularly useful in low-demand areas that are not currently served by public transportation systems. (Author)

PB-187 665
Peat, Marwick, Livingston and Co., Washington, D.C.

EVALUATION OF A BUS TRANSIT SYSTEM IN A SELECTED URBAN AREA.
Final rept.,
Littleton C. MacDorman, Joseph M. Goodman, and Donald M. Hill. Jun 69, 164p
Contract FH-11-6678
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

Descriptors: (*Urban areas, *Transportation), (*Urban planning, *Maryland), Substitutes, Passenger vehicles, Roads, Traffic, Transportation, Costs, Statistical analysis, Mathematical models, Economics.
Identifiers: *Baltimore (Maryland), *Urban transportation, *Bus lines, Modal split transportation models, Traffic engineering, Automobiles, Parking facilities.

The objective of this study was the investigation and evaluation of a bus transit system as a reasonably acceptable and economical alternative to the construction of additional highways in large urban areas. In a selected urban area, the location and magnitude of the forecast year peak hour vehicular overloads on the existing and committed highway system were determined. Two alternative transportation systems were designed to reduce or eliminate the forecast year overloads; one automobile-oriented and the other bus transit-oriented. Through the use of a modal split model, developed as part of the study, the ability of each system to relieve the vehicular overloads on the highway system was evaluated. The costs of each system were estimated. It is concluded that bus transit is capable of alleviating peak hour overloads on urban freeways. Based on the findings of the study, bus transit systems should be considered as an alternative to more urban freeway construction. (DOT Abstract)

PB-187 946
Tri-State Transportation Commission, New York.
PEOPLE-TRANSPORTATION-JOBS: PUBLIC TRANSPORT SERVICES TO NON-CBD EMPLOYMENT CONCENTRATIONS.
Progress rept. no 4.

Oct 69, 42p
See also PB-182 537.

Descriptors: (*Urban areas, Transportation), (*Transportation, *Employment), Urban planning, Economics, Sociology, Public relations, Population, Job analysis, Management planning, Cost effectiveness, New York.
Identifiers: *Bus lines, Suburban poor, Demonstration projects, Patronage, Publicity.

This demonstration project, which examines the role of transportation as a link between poor people and jobs, is taking place in suburban Nassau and Suffolk counties in New York's Long Island. It was initially divided into three phases: (1) an immediate-action program providing transportation services; (2) studies of transportation needs of the suburban poor with particular reference to linking people to jobs; and (3) the institution of transportation services based on the results of the Phase-Two studies. The project has now entered a fourth phase, which will be based on an overall upgrading of transit rather than the point-to-point approach used previously and described in this report. Project studies (part of Phase Two) explore the status of poverty-level households in the bicounty area and deal with economic and transportation characteristics, employment opportunities and employer reaction to public-transportation services. In another section of this document, project bus routes are described. A third chapter analyzes the project routes on the basis of fares paid, advertising and benefits, both to users and others. (Author)

PB-187 978
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
REPORT ON THE RELATIONSHIP OF FARES, SERVICES AND COSTS FOR D. C. TRANSIT SYSTEM, INC.

Nov 69, 91p AMV-R-70-1036

Descriptors: (*Transportation, *District of Columbia), (*Economics, Transportation), Passenger vehicles, Maryland, Costs, Cost effectiveness, Statistical analysis, Distribution (Economics).
Identifiers: DC Transit System, Buses (Vehicles), *Bus lines, Bus fares.

Contents: Background to the consultant assignment; The economic and legal concepts of discrimination in pricing transportation; Passenger groups used for analysis of D.C. transit service and fares; Measuring transit service as perceived by the passenger; Estimates of fares paid by each rider group; Comparison of fares with service used by riders; Estimating cost of service on each line; Alternative cost allocations compared with fares collected for each rider group.

PB-187 997
East-West Gateway Coordinating Council, East St. Louis, Ill.
ST. LOUIS METROPOLITAN AREA RAPID TRANSIT FEASIBILITY STUDY. PHASE II REPORT: ALTERNATIVE TRANSIT SYSTEMS.

1969, 113p
Prepared in cooperation with Parsons, Brinckerhoff, Tudor, Bechtel, Sverdrup and Parcel, St. Louis, Mo.

Descriptors: (*Transportation, *Missouri), Feasibility studies, Urban areas, Management planning, Traffic, Roads, Passenger vehicles, Railroads, Costs, Construction, Maintenance, State-of-the-art reviews.
Identifiers: Saint Louis (Missouri), *Rapid transit systems, Alternatives.

The report is the second in a series to determine the feasibility of rapid transit in the St. Louis metropolitan area. The report discusses criteria suggested for use in further development of the study as well as several alternative transit system schemes. Basic to all schemes is the continuing use of busses either as feeders or as part of a collector system. A review of the current 'state of the art' of transit technology is also included. (Author)

PB-188 004
Tennessee State Planning Commission, Knoxville. East Tennessee Office.
TRANSPORTATION PLAN, LENOIR CITY - LOUDON - LOUDON COUNTY, TENNESSEE.

May 69, 97p
PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

Descriptors: (*Transportation, *Tennessee), (*Urban planning, Transportation), Roads, Traffic, Standards, Design.
Identifiers: Lenoir City (Tennessee), Loudon (Tennessee), Loudon County (Tennessee).

The report is part of a series designed to provide a comprehensive plan to guide the growth and development of the Lenoir City - Loudon - Loudon County planning regions. The transportation plan outlines the existing transportation systems and sets forth applicable standards which should be used in evaluating new transportation systems. The existing systems are then analyzed in terms of these standards, to determine deficiencies and inadequacies upon which recommendations for future improvements are based. (Author)

PB-188 030
Organization for Economic Co-Operation and Development, Paris (France). Directorate for Scientific Affairs.
IMPROVEMENTS AND INNOVATIONS IN URBAN BUS SYSTEMS.

Oct 69, 227p*

Descriptors: (*Transportation, *Urban planning), (*Passenger vehicles, Efficiency), Velocity, Scheduling, Design, Control systems, Reliability, Air pollution, France.
Identifiers: *Bus lines, Buses (Vehicles), Electric buses.

Contents: The urban bus--an overview; Bus priority schemes--increasing the speed of bus travel; The dual mode bus--increasing the flexibility of bus transportation; Bus vehicle design; Real time bus control--improving the reliability of bus transportation; Bus scheduling and dispatching--improving the efficiency of bus operation; Demand responsive bus systems--adapting the bus to changing urban conditions.

PB-188 046
Pennsylvania Univ., Philadelphia.
MINICAR TRANSIT SYSTEM. FEASIBILITY STUDY. BOOK 2.
Final rept. on Phase 1.

Dec 68, 141p*
See also Book 1, Summary, PB-184 147.

Descriptors: (*Passenger vehicles, Design), (*Transportation, Feasibility studies), Urban areas, Air pollution, Costs, Urban planning, Maintenance.
Identifiers: *Mass transportation, *Minicars.

The study has focused on the feasibility and desirability of introducing emission-limited, length-limited vehicles, within a rental-fleet context called The Minicar Transit System, into central parts of metropolitan areas. The test case, upon which these concepts were based, is designed for the Philadelphia Central Business District. The system includes a specially designed vehicle, unique parking and handling facilities, and full exploitation of state of the art technologies for cost reduction and system worthiness. It promises the user the immediate and direct benefit of lower cost when compared to the use of standard automobiles as well as improved convenience. It promises society an increase in street capacity and decreased pollution in direct proportion to the number of standard cars eliminated from central-city operation with the substitution of Minicars. (Author)

PB-188 198
Automobile Manufacturers Association, Detroit, Mich.
MOTOR TRUCKS IN THE METROPOLIS.

Aug 65, 232p
Paper copy available from Automobile Manufacturers Association, Inc., 320 New Center Bldg., Detroit Mich.

Descriptors: (*Transportation, Urban areas), (*Cargo vehicles, *Urban areas), Commerce, Traffic, Roads, Statistical analysis, Urban planning.

The study is an inquiry into urban truck travel as it relates to commodity and service requirements. Primary emphasis is given to the magnitude, character, and implication of daily motor truck travel. These patterns, in turn, have been analyzed in relation to other forms of travel on streets and highways and to planning criteria which relate to these facilities. The study endeavors to quantify urban goods linkages as inferred by truck travel and to define the accompanying needs in highway, terminal, and associated auxiliary facilities. (Author)

PB-188 357
East-West Gateway Coordinating Council, East St. Louis, Ill.
TERMINAL FACILITIES INVENTORY FOR THE ST. LOUIS METROPOLITAN AREA.
Aug 69, 101p
Prepared in cooperation with Crawford, Bunte, Roden, Inc., and Voorhees (Alan M.) and Associates, Inc., St. Louis, Mo.

Descriptors: (*Transportation, *Urban areas), Reviews, Cargo vehicles, Trailers, Tractors, Handling, Railroad cars, Predictions, Periodic variations, Site selection, Cargo, Air traffic, Ranges (Establishments).
Identifiers: East West gateway area, *Saint Louis (Missouri), *Terminal transportation facilities, Trucks, Piggy back.

The report presents the results of work done in the St. Louis metropolitan area transportation planning program. The purpose of this portion of the program is to determine the relationship between goods movement terminals and the needs for transportation facilities. (Author)

PB-188 444
East-West Gateway Coordinating Council, East St. Louis, Ill.
SCHOOL TRANSPORTATION STUDY FOR GRANITE CITY, ILLINOIS, PUBLIC AND PAROCHIAL SCHOOLS.
Staff technical rept.,
Clyde E. Sweet, Jr. Feb 69, 26p EWG-CS-0034.10.6
Prepared in cooperation with Grantie City Community Unit School District No. 9, and Springfield Archdiocese of Parochial Schools, Ill.

Descriptors: (*Transportation, Urban areas), (*Students, Statistical data), (*Urban areas, Illinois), Reviews, Questionnaires, Classification, Data processing systems, Statistical processes.
Identifiers: Interviews, East West gateway area, *Granite City (Illinois), Rapid transit systems, Public schools, Parochial schools.

The report presents the results of a school transportation survey undertaken by the East-West Gateway coordinating council in the Granite City community unit school district and the Springfield Archdiocese of parochial schools. The resultant travel information from the survey is being utilized in analyzing and forecasting school travel in the St. Louis Metropolitan Area transportation studies for highways and rapid transit. (Author)

PB-188 445
East-West Gateway Coordinating Council, East St. Louis, Ill.
BELLEVILLE AREA SCHOOL TRANSPORTATION STUDY.
Staff technical rept.,
Clyde E. Sweet, Jr. Feb 69, 25p EWG-CS-0030.10.7
Prepared in cooperation with Belleville High School District and Belleville Grade School District, and Belleville Diocese of Parochial Schools, Ill.

Descriptors: (*Transportation, Urban areas), (*Students, Statistical data), (*Urban areas, Illinois), Reviews, Questionnaires, Classification, Collecting methods, Data processing systems.
Identifiers: Interviews, East West gateway area, *Belleville (Illinois), Rapid transit systems, Public schools, Parochial schools.

The report presents the results of a school transportation survey of students in the Belleville grade school district, the Belleville Township high school district, and the Belleville Diocese of parochial schools in the East-West Gateway area. The resultant travel information from the survey is being utilized in analyzing and forecasting school travel in the St. Louis Metropolitan Area transportation studies for highways and rapid transit. (Author)

PB-188 446
East-West Gateway Coordinating Council, East St. Louis, Ill.
REGIONAL PRINCIPLES FOR THE FUNCTIONAL CLASSIFICATION OF RURAL ROADS AND URBAN STREETS.
Dec 67, 16p EWG-CS-0099.10.0

Descriptors: (*Transportation, *Management planning), (*Roads, Classification), Theory, Standards, Networks, Traffic, Reviews, Control systems.
Identifiers: Rural roads, *Streets, Travel distance, Freeways.

The adopted set of principles embodies the functional classification concepts of predominant trip length or travel distance served and the level of service to be provided for these trips. The method of classification described in the report defines the manner in which desired lines of travel are converted into traffic flow through a regional road and street network. (Author)

PB-188 478
East-West Gateway Coordinating Council, East St. Louis, Ill.
SOME THOUGHTS ON A TRANSPORTATION SURVEILLANCE SYSTEM FOR CONTINUING TRANSPORTATION PLANNING,
Clyde E. Sweet, Jr. Feb 69, 7p EWG-CS-0046.06.0

Descriptors: (*Transportation, *Urban areas), Control systems, Systems engineering, Management planning, Statistical data, Data processing systems, Mathematical analysis, Traffic, Missouri, Illinois.
Identifiers: East West gateway area, *Saint Louis (Missouri).

The paper presents some thoughts on developing the transportation surveillance system required for continuing transportation planning for the St. Louis Area. Data sources and techniques for carrying out the surveillance program are suggested. (Author)

PB-188 520
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
DENVER HOME-TO-WORK TRANSPORTATION STUDY.
Nov 69, 180p AMV-R-20-1035
Prepared in cooperation with The Denver Planning Office, Denver, Colo. Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, *Colorado), (*Management planning, Urban areas), Economics, Problem solving, Labor, Employment, Population, Statistical data, Costs, Effectiveness, Predictions.
Identifiers: Poverty areas, Low income groups, *Denver (Colorado), Central city, Unemployment, Underemployment.

The particular study discussed in the report is concerned primarily with establishing better access between jobs and low income homes. It also deals with improving access between these homes and recreational, cultural and other opportunities in the metropolitan area. As such, the study is concerned with the characteristics of the residents of a particular low income area and with the transportation linkages between that area and all others in metropolitan Denver. (Author)

PB-188 582
TRW Systems Group, Washington, D.C. Washington, Operations.
STUDY OF SYNCHRONOUS LONGITUDINAL GUIDANCE AS APPLIED TO INTERCITY AUTOMATED HIGHWAY NETWORKS.
Final rept.
15 Sep 69, 103p* 06818-W666-RO-00
Contract C-353-66

Descriptors: (*Vehicles, Guidance), (*Roads, *Guidance), Algorithms, Queueing theory, Networks.
Identifiers: *Highways, SLG (Synchronous Longitudinal Guidance), Synchronous longitudinal guidance.

The report documents the results of the Synchronous Longitudinal Guidance (SLG) Study as applied to automated highway networks. The report is organized as follows. Section 1 contains a background of the SLG projects, an introduction to the basic concepts used in SLG, objectives and methods of the study, and conclusions reached as a result of the study. Sections 2 and 3 discuss results of analytical work done to verify various properties of the algorithms used for local vehicle control and for interfacing highway elements within the network. Work done in simulating the allocation algorithm for three networks is summarized in Section 4. A brief comparison between SLG and manual highway design is drawn in Section 5. Finally, Section 6 contains recommendations for further study of the SLG concept. (Author)

PB-188 886
American Society of Civil Engineers, New York.
PASSENGER PSYCHOLOGICAL DYNAMICS.
Sources of information on urban transportation, Kathleen M. Solomon, Richard J. Solomon, and Joseph S. Silien. Jun 68, 190p Rept. no. 3
Contract H-804

Descriptors: (*Transportation, Urban areas), (*Public opinion, Reviews), Decision making, Passenger vehicles, Attitudes, Group dynamics, Factor analysis, State-of-the-art reviews, Safety, Reliability, Time, Costs, Statistical data, Human engineering
Identifiers: Modal choices, Comfort, Demonstration projects, *Passenger dynamics.

A review is made of consumer attitudes underlying modal choice in urban transportation. Factors are selected from attitude surveys and transit demonstration projects include safety, reliability, time savings, cost, convenience, comfort, aesthetics, and marketing. The appendix contains notes on passenger comfort and human factors criteria, an extensive bibliography and guide to source references. (Author)

PB-188 963
Sperry Rand Corp., Great Neck, N.Y. Sperry Systems Management Div.
ADVANCED CONTROL TECHNOLOGY IN URBAN TRAFFIC CONTROL SYSTEMS. VOLUME I. SYSTEM DESCRIPTION.
Oct 69, 189p* GF-3701-1004-1
Contract FH-11-6932
See also Volume 2, PB-188 964.

Descriptors: (*Urban areas, *Traffic), Digital computers, Detectors, Control, Queueing theory, District of Columbia.

The program has as its ultimate objective the investigation of new strategies for improving traffic control in congested urban areas. The investigation will be performed by using a digital computer and a network of vehicle detectors to analyze traffic parameters and select timing patterns for the traffic signals in a 200-intersection area of Washington, D.C. This on-street testing approach to the urban traffic problem has been initiated because the alternative techniques of analysis and simulation have not yet led to significant improvements in traffic control. The objective of the Advanced Control Technology study phase of this program was to define the traffic control system in sufficient detail for estimating costs, purchasing and installing equipment, and programming the computer for basic on-line control. The major

tasks performed in meeting these objectives were: (1) establishing traffic parameters to be used as the basis for on-line selection and evaluation of control strategies, (2) developing concepts for a traffic signal control system which can readily implement experimental control strategies, (3) defining equipment configurations and operator's functions, (4) generating installation and maintenance plans, (5) generating software and equipment specifications, and (6) testing loop vehicle detectors. (Author)

PB-188 984
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
PARAMETRIC ANALYSIS OF GENERIC URBAN TRANSIT SYSTEMS.
Transportation programs rept.,
B. M. Ford, W. J. Roesler, and M. C. Waddell. Dec 69, 89p APL-TPR-001

Descriptors: (*Urban areas, *Transportation), Systems engineering, Operation, Scheduling, Costs, Urban planning.
Identifiers: Rapid transit systems.

The purposes of the analysis were: To investigate relationships between pertinent urban transit system operating parameters, e.g., line speed, vehicle headway, station and grid spacings, and hourly route demand, and to determine their effects on system performance; to estimate system costs and to explore the implications of system parameter changes on costs. The results of the analysis are presented in the report. The report is comprised of three major sections. The first of these gives a summary, including a brief sketch of the method of analysis, descriptions of the various generic systems considered in the analysis, and a listing of conclusions drawn. The second presents in some detail the results of the trip-time calculations for each of the generic systems. The third section gives estimates of certain component costs, underground guideway costs, aerial guideway costs, vehicle costs, etc., followed by overall system costs--both investment and annual operation--for each system. A glossary is appended. (Author)

PB-188 988
San Diego County Comprehensive Planning Organization Calif.
AIR TRANSPORTATION BACKGROUND AND POLICY STUDY.
Nov 69, 302p*
Prepared in cooperation with Little (Arthur D.), Inc., San Francisco, Calif. Sponsored in part by Department of Housing and Urban Development, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Air transportation, *California), (*Urban planning, *Airports), Reviews, Systems engineering, Civil aviation, Inventory, Statistical data, Site selection, Roads, Mathematical prediction, Advanced planning, Aircraft.
Identifiers: *San Diego County (California), Alternatives, Land use, Policymaking.

The study is an overview, concerned with the problems and prospects of aviation in the San Diego region during the years 1970-90. It comprises a compendium of the region's airports and their capacities, of the demands that will be made upon them during the next 20 years, and of the variety of airport-system plans which might be arranged to satisfy that demand. The information contained herein is sufficient to enable this region to chart a general course of airport-system planning, and the completion of the report places the San Diego region in favorable position.

PB-189 148
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
AUTOMATIC FARE COLLECTION.
Final technical rept.

Jan 70, 58p* TR-2
Report on 'San Francisco Bay Area Rapid Transit District Demonstration Project.' Sponsored by Department of Transportation, Washington, D.C. See also report dated Jun 67, PB-176 099.

Descriptors: (*Urban areas, Transportation), (*Money, Collecting methods), (*Railroads, *California), Automation, Electronic equipment, Programming (Computers), Human engineering, Control systems, Money, Management planning.
Identifiers: Rapid transit systems, *Automatic fare collection, Money changers, Railroad tickets, Vending machines, San Francisco (California).

The report describes the program that was conducted to develop a fare collection system that would permit collecting a graduated fare on the San Francisco Bay area rapid transit system (BART). While the report is primarily concerned with equipment test and demonstration, it also contains explanations of the rationale that influenced design decisions. The work was necessarily oriented toward BART but the results have potential application to other transportation systems. (Author)

PB-189 269
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
A SYSTEMS ANALYSIS OF TRANSIT ROUTES AND SCHEDULES.
Nov 69, 133p* AMV-R-20-1040
Report on Mass Transportation Demonstration. Prepared in cooperation with Washington Metropolitan Area Transit Commission, Arlington, Va.

Descriptors: (*Transportation, Programming (Computers)), (*Urban planning, *District of Columbia), Systems engineering, Scheduling, Automation, Feasibility studies, Sociometrics, Reviews, Maryland.
Identifiers: *Mass transportation, Systems analysis, Computerized simulation, Transit routes, Bus lines.

One of the primary objectives of the study was to investigate the possibility that the simulation of a transit system through computer methods could be effectively used as a tool for short-range transit route planning. As the system to be studied in this investigation was the D. C. Transit System covering the District of Columbia and nearby suburban Maryland, a further objective was to use this method to devise an improved route and operating plan for that system. (Author)

PB-189 330
Institute of Public Administration, Washington, D.C.
DEMAND-ACTUATED ROAD TRANSIT (DART): PERFORMANCE AND DEMAND ESTIMATION ANALYSIS.
15 Mar 69, 320p*
Prepared in cooperation with Department of Transportation, Washington, D.C. and Teknekron, Inc.

Descriptors: (*Transportation, Adaptive systems), (*Urban planning, Experimental design), Systems engineering, Passenger vehicles, Mathematical models, Feasibility studies, Cost effectiveness, Curve fitting.
Identifiers: DART (Demand Actuated Road Transit), *Demand actuated road transit, Computer analysis, Bus lines, Model choice.

The document describes an urban transportation subsystem which combines features of buses and taxis into a single mode. The basic operating mode is that of group-riding taxis which have been in use for many years. What is new in the system is the combination of advanced electronic techniques of communication and data processing together with a mathematically-based dispatching operation. The net result is a system which, under a variety of operational conditions, can give taxi-like, door-to-door service at a cost close to that of the bus. (Author)

PB-189 333
Parsons Brinckerhoff-Tudor-Bechtel, San Francisco, Calif.
SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT DEMONSTRATION PROJECT: SUMMARY.
Final rept.

Jan 70, 73p* TR-12

Descriptors: (*Transportation, California), (*Railroads, Feasibility studies), Railroad cars, Automation, Money, Electrical equipment, Control systems, Railroad tracks, Braking, Structures, Acoustic properties.
Identifiers: Automatic control systems, Demonstration projects, *Rapid transit systems, Automatic fare collection, *San Francisco (California), Evaluation.

The San Francisco Bay area rapid transit district demonstration project was conducted on a four and one-half mile test track. The purpose of the demonstration project was to test and evaluate new technical concepts in the field of rapid transit. These concepts included a variety of advanced hardware as well as completely automatic train control and automatic fare collection systems. (Author)

PB-189 383
Resource Management Corp., Bethesda, Md.
THE PRICE BEHAVIOR OF NONFUEL MINERAL COMMODITIES,
C. McCuistion, E. Battison, and A. M. Lago. 15 Jan 70, 218p BM-Open file-2-70
Contract SO 180869

Descriptors: (*Minerals, Costs), (*Economics, Management planning), Metals, Ores (Nonmetallic), Fertilizers, Analysis of variance, Regression analysis, Reviews, Stability, Correlation techniques.
Identifiers: Nonfuel minerals, Commodities, Prices, Discriminant analysis.

The document presents the results of a study of price behavior among nonfuel mineral commodities. The report is intended to provide some insight into price variability that might serve as a factor in setting policy. The study is concerned with sets of characteristics of data used to distinguish price stability (instability) within and between major nonfuel mineral and related commodities. Stepwise discriminant analysis was used as an analytical tool to discover singly and in combination those characteristics that best measure the significant differences between the price behavior of several different groups of mineral commodities. Four commodity groups were studied. (Author)

PB-189 688
Washington Metropolitan Area Transit Authority.
PROPOSED CONSTRUCTION PROGRAM METRO SYSTEM.
Feb 70, 61p

Descriptors: (*Transportation, *Urban planning), (*Railroads, *District of Columbia), Construction, Site selection, Contracts, Scheduling, Urban areas, Specifications, Railroad cars, Railroad tracks, Underground structures, Maryland, Virginia.
Identifiers: Rapid transit systems.

The document is published for the information of the construction, manufacturing and supply indus-

tries that may be interested in offering their services for the construction of the rapid rail transit system authorized for the Washington Metropolitan Area. (Author)

PB-189 840
Texas Highway Dept.
COST-EFFECTIVENESS ANALYSIS OF FREEWAY RAMP CONTROL.
Research rept.,
Conrad L. Dudek, and W R. McCasland. 1970,
61p RR-24-24
Prepared in cooperation with Bureau of Public Roads, Washington, D.C.

Descriptors: (*Roads, Control systems), (*Management planning, *Texas), Cost effectiveness, Transportation, Traffic, Analog systems, Statistical processes, Factor analysis, Systems engineering.
Identifiers: Freeways, *Ramps, Travel time.

The report is concerned with the evaluation of freeway merging control systems from a cost-effectiveness standpoint. The methodology for evaluation of freeway control systems based on a multilevel system design concept is presented and the cost-effectiveness of each of four levels of control is reported. The systems costs and effectiveness of the alternatives were determined for a section of the Gulf Freeway in Houston, Texas currently under surveillance and control. (Author)

PB-189 871
Research Triangle Inst., Durham, N.C.
TRAFFIC SYSTEMS REVIEWS AND ABSTRACTS. TRAFFIC FLOW THEORY; COMMUNICATION AND CONTROL SYSTEMS. COST EFFECTIVENESS METHODOLOGY. ISSUE NUMBER 30. REVIEWS: T-0871--T-0900.

Feb 70, 41p
Contract FH-11-6610
See also Issue no. 29 dated Jan 70, PB-189 325.

Descriptors: (*Traffic, *Reviews), Abstracts, Linear programming, Mathematical models, Statistical distributions, Roads, Queueing theory, Performance (Human), Rural areas, Cargo vehicles, Curve fitting, Control systems, Programming (Computers), Safety, Communication systems.
Identifiers: Information systems, Traffic flow theory, Travel time, Freeways, Highway crossings, Overtaking and passing.

The main objective of the technical review service is to furnish critical reviews and abstracts of current literature in the topic areas of traffic flow theory, communication and control systems, and cost effectiveness methodology.

PB-189 937
American Society of Civil Engineers, New York.
MODES OF TRANSPORTATION.
Sources of information on urban transportation,
Richard J. Solomon, Joseph S. Silien, and William H. T. Holden. Aug 68, 156p Rept. no. 2
Contract H-804
Also available from the American Society of Civil Engineers, N.Y. Price $3.00.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Classification), Standards, Velocity, Acceleration, Motorcycles, Railroads, Ground effect machines, Tracked vehicles, Rocket-propelled sleds, Aircraft, Roads.
Identifiers: Taxicabs, Escalators, Moving sidewalks, Monorail railways, Elevators (Lifts), Automated highways, Automobiles, Ferries, Bicycles, Bus lines.

The document presents an inventory of modes of urban transportation classified by vehicle types, with subclasses by guideway where applicable. Over 100 vehicle systems which have been demonstrated, or are currently operated, are described and referenced. In addition, 124 proposed systems are listed. A background on vehicle performance and an extensive appendix on rail transit systems is included. (Author)

PB-189 945
New York State Office of Planning Coordination, Albany.
MASTER PLAN BACKGROUND STUDY. TRANSPORTATION. (6.0). CAYUGA COUNTY PLANNING BOARD, AUBURN, NEW YORK.

Sep 69, 70p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. See also PB-189 944 and PB-189 946.

Descriptors: (*Urban planning, *New York), (*Transportation, Urban planning), Networks, Railroads, Roads, Water traffic, Landing fields, Classification, Inland waterways, Passenger vehicles, Statistical data, Maps.
Identifiers: Highways, *Cayuga County (New York).

The purpose and scope of the report is to assemble data and information on all transportation networks and to describe the problems inherent in them. This report lays the basis for the formulation of a transportation plan for Cayuga County that will relate to the facts as they exist now, and to conditions which may be anticipated in the future. The report offers an examination of existing transportation facilities in terms of their type, location, condition and capacity including review of inter and intra-County dominant travel patterns. The inventory of existing transport facilities provides information on the physical features and operational characteristics of major transport systems within the County. (Author)

PB-190 402
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
ACCELERATION AND COMFORT IN PUBLIC GROUND TRANSPORTATION.
Transportation programs rept.,
J. W. Gebhard. Feb 70, 49p* APL-TPR-002

Descriptors: (*Passenger vehicles, *Acceleration tolerance), (*Railroads, Acceleration tolerance), Protection, Safety, Deceleration, Test methods, Tables, Statistical analysis.

Sturdies of starting, stopping, and traversing curves in public transportation vehicles have been reviewed for the relationship between acceleration and passenger comfort and acceptance. Existing data obtained by rider ratings and, in one case, an objective measure of performance have been analyzed, tabulated, and discussed for both standing and seated passengers. Longitudinal accelerations and decelerations judged comfortable and acceptable were in the range of 0.11g to 0.15g; lateral accelerations were in the range of 0.06g to 0.22g. However, existing data are inadequate for specifying acceleration limits for systems one may want to consider for the future. Since the acceleration values found are about 0.10g lower than those that are accepted by automobile users, it may be worthwhile to investigate methods for making higher accelerations acceptable to mass transportation passengers, especially since certain new systems are being proposed that require fast starts and stops and rapid transitions between the main line and station sidings. (Author)

PB-190 458
Rhode Island Statewide Comprehensive Transportation and Land Use Planning Program, Providence.
PRELIMINARY TRANSIT USAGE FORECASTS FOR THE PROVIDENCE METROPOLITAN AREA,
Ronald G Sarros. Oct 65, 27p Technical Paper-4

Descriptors: (*Urban planning, Transportation), (*Transportation, *Rhode Island), Statistical analysis, Predictions, Urban areas.
Identifiers: *Providence (Rhode Island), Regional planning and development, *Rapid transit systems.

The purpose of the report is to develop procedures for use in forecasting future transit usage in the Providence Metropolitan Area and to apply these forecasting procedures to the year of 1985 and the intervening five year increments between 1965-1985. (Author)

PB-190 499
American Academy of Transportation, Ann Arbor, Mich.
FLINT TRANSPORTATION AUTHORITY DEMONSTRATION PROJECT.
Special interim rept. no. 2.

Feb 70, 39p*

Descriptors: (*Urban planning, Michigan), (*Transportation, *Economics), (*Economics, Urban planning), Passenger vehicles, Public relations, Systems engineering, Standards, Traffic, Costs, Commerce, Statistical data.
Identifiers: *Bus transportation, Demonstration projects, Flint (Michigan), Transportation trends, Bus lines.

The four major objectives of the program are to demonstrate the feasibility of special-purpose bus lines for specifically-identified passenger groups, to demonstrate the specialized marketing techniques needed to promote and establish personalized bus service, to demonstrate system economies through integration of these special-purpose lines with existing general-purpose operations, and to develop criteria for determining mix (balance) between special-purpose and general-purpose operations. (Author)

PB-190 636
Massachusetts Dept. of Public Works, Boston.
WORCESTER URBANIZED AREA TRANSPORTATION STUDY; SURVEY FINDINGS, DATA PROJECTIONS AND THE RECOMMENDED TRANSPORTATION PLAN.

1969, 358p
Prepared in cooperation with De Lauw, Cather and Co., Chicago, Ill. Sponsored in part by the Bureau of Public Roads, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

Descriptors: (*Transportation, *Massachusetts), (*Management planning, *Urban areas), Reviews, Inventory, Statistical analysis, Mathematical prediction, Decision making, Roads, Traffic, Vehicles, Population, Employment, Mathematical models, Costs.
Identifiers: *Worcester (Massachusetts), Evaluation, Terminal transportation facilities, Alternatives, Parking facilities.

The document is concerned with inventories of existing transportation conditions in Worcester, Massachusetts; an analysis of data and forecasts of future needs; an evaluation of alternative solutions; and determination of the best plan.

PB-190 831
California State Business and Transportation Agency.
A RESEARCH PROJECT TO DETERMINE AND TEST THE RELATIONSHIP BETWEEN A PUBLIC TRANSPORTATION SYSTEM AND JOB AND OTHER OPPORTUNITIES OF LOW INCOME GROUPS.
Interim final rept.

Jan 70, 150p
PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Employment, *Urban areas), (*Transportation, Research program administration), Reviews, Correlation techniques, Economics, Population, Mobility, Passenger vehicles, Statistical data, Predictions, Feasibility studies, California.
Identifiers: Central city, Negroes, Low income groups, Unemployment, Demonstration projects, Mexican Americans, Bus lines, Los Angeles (California).

The document is a report of a significant and important demonstration project. It did not demonstrate that providing transportation for the jobless cures unemployment; it showed that adequate transportation is a necessary but not a sufficient condition for people to have access to job opportunities. It emphasizes consideration of the location of activities necessary to improve the living conditions in the poverty pockets of metropolitan regions. It underlines the fact that substantial segments of the population in metropolitan regions lack the mobility necessary to enable them to rise out of the poverty level. It provides an extremely useful record of experience with several means of providing public transportation for the purpose of access to jobs and essential services. (Author)

PB-190 847
Sperry Rand Corp., Great Neck, N.Y. Sperry Systems Management Div.
ADVANCED CONTROL TECHNOLOGY IN URBAN TRAFFIC CONTROL SYSTEMS. VOLUME IA. BUS PRIORITY SYSTEMS DESCRIPTION.

Mar 70, 254p* GF-3701-1006-1
Contract FH-11-6932
See also Volume 1, PB-188 963.

Descriptors: (*Urban areas, *Traffic), Passenger vehicles, Digital computers, Control, Queueing theory, District of Columbia.
Identifiers: *Buses (Vehicles), *Vehicular traffic control.

An Urban Traffic Control System (UTCS), which will be installed in a portion of Washington, D.C., was designed and specified. This system will provide the means for the on-street testing of advanced control strategies as well as for field studies of traffic flow characteristics. The system's elements include on-street vehicle detectors, communications equipment to carry vehicle detector information to a central site, a computer which processes the information to determine optimum signal patterns, and signal controllers to change the signals in response to computer commands. Recognizing that the UTCS elements could also be used to experiment with methods to improve bus flow and therefore increase bus passenger throughput, a Bus Priority System (BPS) Study was conducted. The objectives of the program were: Develop methods of giving buses preferential treatment through the use of traffic signal control; Design and specify a system which can be used to test the usefulness of these methods in the UTCS area.

PB-190 848
Sperry Rand Corp., Great Neck, N.Y. Sperry Systems Management Div.
ADVANCED CONTROL TECHNOLOGY IN URBAN TRAFFIC CONTROL SYSTEMS. VOLUME II. UTCS/BPS PROGRAMMING SPECIFICATIONS.

Mar 70, 389p* GF-3701-1006-2
Contract FH-11-6932
See also Volume 1A, PB-190 847 and Volume 3, PB-190 849. Supersedes PB-188 964.

Descriptors: (*Urban areas, *Traffic), Programming (Computers), Digital computers, Flow charting, Control, District of Columbia.
Identifiers: Vehicular traffic control.

The volume describes the basic operation program routines and flow charts to be used in the traffic control computer.

PB-190 849
Sperry Rand Corp., Great Neck, N.Y. Sperry Systems Management Div.
ADVANCED CONTROL TECHNOLOGY IN URBAN TRAFFIC CONTROL SYSTEMS. VOLUME III. UTCS/BPS SYSTEM EQUIPMENT SPECIFICATIONS.

Mar 70, 249p* GF-3701-1006-3
Contract FH-11-6932
See also Volume 2, PB-190 848. Supersedes PB-188 965.

Descriptors: (*Urban areas, *Traffic), Specifications, Control, Detectors, Digital computers, Radio equipment.
Identifiers: *Vehicular traffic control.

The equipment specification presented in this volume describes the required characteristics of equipment to be used in the Urban Traffic Control System test site. These specifications have been generated to serve as the basis of requests for price quotation from potential equipment suppliers. They will be referenced in statements of work which define all tasks to be performed by the supplier in meeting the terms of the contract. These tasks will normally include the following: fabrication and test of the equipment; generation of test procedures; generation of all drawings; parts lists, and manuals; training of personnel; generation of periodic status reports, and support of maintenance. The schedule for accomplishing all tasks is also normally included in the statement of work. (Author)

PB-190 868
Rhode Island Statewide Comprehensive Transportation and Land Use Planning Program, Providence.
THE BUTTONWOODS - PROVIDENCE EXPRESS AND LOCAL SHOPPERS SHUTTLE.
Final rept. 6 Nov 67-31 Oct 68.

31 Oct 68, 46p
Report on Arriving Late in Suburbia. Prepared in cooperation with Rhode Island Public Transit Authority, Department of Housing and Urban Development, Washington, D.C., and Creamer, Trowbridge, Case and Basford, Inc.

Descriptors: (*Transportation, Feasibility studies), (*Urban planning, Rhode Island), Urban areas, Passenger vehicles, Cost effectiveness, Public opinion, Statistical data, Effectiveness.
Identifiers: Demonstration projects, Suburban areas, Express bus routes, Mass transit systems.

The Buttonwoods project was launched to determine whether mass transit would be sufficiently utilized by residents of an automobile-oriented suburban area. The project also sought to learn how the latest marketing and public relations techniques could help establish mass transit needs, and induce suburbanites to abandon automobiles in favor of mass transit. Two types of service were provided; express service from the suburban community to downtown Providence, and local bus service to major nearby shopping centers. (Author)

PB-190 896
New Haven City, Conn.
AN URBAN MANAGEMENT INFORMATION SYSTEM. VOLUME 17. TRAFFIC AND PARKING DEPARTMENT.
Joint information system study.

Apr 69, 107p*

Prepared in cooperation with IBM, New Haven, Conn. See also Volume 16, PB-190 895, and Volume 18, PB-190 897.

Descriptors: (*Management planning, *Traffic), (*Vehicles, Urban areas), Reviews, Safety, Control systems, Transportation, Problem solving, Data processing systems, Programming (Computers), Flow charting, Connecticut.
Identifiers: Parking facilities, New Haven (Connecticut), *Management information systems.

The basic responsibility of the Traffic and Parking Department is to balance expedient vehicular and pedestrian movement with maximum personal safety by installing, maintaining, and operating traffic control devices in the city of New Haven. The Department reviews all requests for changes in traffic controls, and it acts as traffic engineering consultant to all other city departments. Its long-range function is to seek solutions to traffic and transportation problems associated with the city's extensive urban redevelopment program. (Author)

PB-190 949
Harvard Law School, Cambridge, Mass.
URBAN MASS TRANSPORTATION STUDY. SEMINAR: METROPOLITAN TRANSPORTATION AND THE MOBILITY OF THE POOR.

1970, 46p*

Descriptors: (*Transportation, Symposia), (*Population, Mobility), (*Urban areas, Transportation), Problem solving, Economics, Recreation, Public health, Housing, Employment, Attitudes, Money, Passenger vehicles.

The document covers problems relating to the mobility of the poor within metropolitan areas, with special emphasis on ways in which urban mass transportation facilities and services can be improved to assist the poor in traveling to and from jobs, shops, recreation facilities, welfare and other service centers, hospitals, etc. Possible innovations in transportation are discussed in the context of other governmental and private programs designed to facilitate both the movement of the poor into suburban areas and the improvement of their conditions in the central city. Transportation needs of the poor are compared with transportation needs of middle class suburban areas, and the comparative utility of certain innovations for various segments of the metropolitan population are studied. (Author)

PB-190 950
Harvard Law School, Cambridge, Mass.
TRANSPORTATION POLITICS IN ATLANTA. THE MASS TRANSIT BOND REFERENDUM OF NOVEMBER, 1968 (WITH COMPARISONS TO REFERENDA IN LOS ANGELES, SAN FRANCISCO, SEATTLE, AND WASHINGTON, D.C.),
Matthew A. Coogan, James H. Landon, James T. Roe, III, Alan M. Rubin, and Edmund S. Schaffer.
Jan 70, 195p*
Contract HUD-H-1043

Descriptors: (*Transportation, *Georgia), (*Law, Transportation), Urban areas, Attitudes, Public opinion, Railroads, Management planning, Correlation techniques.
Identifiers: City elections, *Bond referendums, Atlanta (Georgia), Los Angeles (California), San Francisco (California), Seattle (Washington), Washington (District of Columbia).

The document is concerned with bond issue proposals for funding mass transportation projects in various cities in the United States. The purpose of the study has been to compare the experience of Atlanta with four other cities in the United States which took the matter of mass transit to the polls within the last eight years, and to suggest within the limits of investigator training and the data available factors which seem to have led to voter approval or rejection in each case. (Author)

PB-190 951
Harvard Law School, Cambridge, Mass.
MASS TRANSIT AND THE HIGHWAY TRUST FUND,
Donald N. Dewees, J. Michael Hines, Noel R. Bartsch, Gregg Harrison, and John G. Wofford.
Jan 70, 127p*
Contract HUD-H-1043

Descriptors: (*Roads, Costs), (*Transportation, *Management planning), Budgets, Factor analysis, Safety, Air pollution, Housing, Maintenance, Passenger vehicles.
Identifiers: Mass transit systems, *Highway trust fund financing.

An analysis is made of certain proposals relating to how to finance capital expenditures for mass transit facilities. The document is intended to focus upon the highway trust fund (referred to as HTF) and to discuss the appropriateness of that fund (or an analogue thereto) for mass transit expenditures. (Author)

PB-190 981
Harvard Univ., Cambridge, Mass. Dept. of City and Regional Planning.
THE PHYSICAL MOBILITY OF THE POOR. AN INTRODUCTORY OVERVIEW,
Douglas Gurin. May 69, 102p

Descriptors: (*Transportation, Problem solving), (*Population, Mobility), (*Economics, Urban areas), Reviews, Statistical data, Attitudes, Passenger vehicles, Employment, Rural areas, Theses.
Identifiers: Poverty, Travel demand

A significant minority of the U.S. population has been and will continue to be restricted in opportunities and choices of activity because of transportation deficiencies. The preference of the majority of auto-owner Americans for detached, dispersed dwellings, and of highway oriented employers for low density industrial development has combined with political, economic, social and technical constraints on mass transit that lead to a decrease in satisfactory transportation service available to urban, suburban, and rural people. The paper discusses the limited information which describes travel by poor people as well as some proposed methods for facilitating travel by these people. (Author)

PB-191 123
Tucson Area Transportation Planning Agency, Ariz.
AREAWIDE MASS TRANSIT PLANNING STUDY.

Jan 70, 78p Planning Ser-5
Report on Plan Development. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. See also Supplement A, PB-191 124

Descriptors: (*Transportation, *Arizona), Urban areas, Vehicles, Traffic, Statistical analysis, Economics.
Identifiers: Rapid transit systems, Area planning and development, *Tucson (Arizona).

The report of the Areawide Mass Transit Planning Study presents historical data on Tucson's growth and development, discusses present mass transit facilities and their use, examines the national scene with respect to Federal programs and the experience of other cities, and concludes with recommendations for continuing transit service in the Tucson area. (Author)

PB-191 124
Tucson Area Transportation Planning Agency, Ariz.
AREAWIDE MASS TRANSIT PLANNING STUDY. SUPPLEMENT A. FIELD SURVEYS.

Jan 70, 200p Planning Ser-5-Suppl-A
Report on Plan Development. See also PB-191 123.

Descriptors: (*Transportation, *Arizona), Vehicles, Traffic, Statistical analysis, Tables, Economics.
Identifiers: *Tucson (Arizona), Rapid transit systems, Area planning and development.

Contents: On-bus surveys; Areawide sample survey; and Model cities sample survey.

PB-191 125
Rhode Island Public Transit Authority.
PROPOSED TRANSIT DEVELOPMENT PROGRAM FOR RHODE ISLAND PUBLIC TRANSIT AUTHORITY: A TECHNICAL STUDY. VOLUME I.

Nov 69, 118p
Prepared in cooperation with Simpson and Curtin, Philadelphia, Pa., and Department of Transportation, Washington, D.C. See also Volume 2, PB-191 126. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Rhode Island), (*Urban planning, Rhode Island), Passenger vehicles, Scheduling, Costs, Budgets, Traffic, Management planning, Statistical data, Mathematical prediction, Rural areas.
Identifiers: Bus lines, Mass transit systems, Providence (Rhode Island), Pawtucket (Rhode Island).

The document contains an analysis of operations which is designed to provide a development program for the Rhode Island public transit authority for the years 1970 to 1975. It is coordinated with a long- and short-range transit development program prepared to complement highway improvement in meeting the Providence-Pawtucket overall transportation needs to 1990. (Author)

PB-191 126
Rhode Island Public Transit Authority.
PROPOSED TRANSIT DEVELOPMENT PROGRAM FOR RHODE ISLAND PUBLIC TRANSIT AUTHORITY: A TECHNICAL STUDY. VOLUME 2. APPENDIX.

Nov 69, 212p
Prepared in cooperation with Simpson and Curtin, Philadelphia, Pa., and Department of Transportation, Washington, D.C. See also Volume 1, PB-191 125.

Descriptors: (*Transportation, *Rhode Island), (*Urban planning, Rhode Island), Statistical data, Passenger vehicles, Population, Traffic, Scheduling, Cost effectiveness.
Identifiers: Bus lines, Mass transit systems, Providence (Rhode Island), Pawtucket (Rhode Island).

A description is given of operating bus routes linking Providence and Pawtucket with neighboring towns, plus proposed changes in the system.

PB-191 127
Smith (Wilbur) and Associates, San Francisco, Calif.
SAN JOSE - SANTA CLARA COUNTY BUS STUDY.

Sep 69, 230p
Sponsored in part by Dept. of Housing and Urban Development and Dept. of Transportation, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *California), (*Management planning, Urban areas), Passenger vehicles, Budgets, Cost effectiveness, Roads, Railroads, Airports, Statistical data, Traffic, Population, Attitudes, Predictions.
Identifiers: San Jose (California), Santa Clara County (California), Bus lines.

An analysis of public transit operations and needs for improvement are reported, and a plan is shown whereby bus service can be substantially increased, to the benefit of the entire county. Financial, management and operating details of this broad based new system are presented, including means of integrating the service with the street and highway system, airports, school transport needs, and future rapid transit. The impact of the proposed plan is described in terms of increased mobility for all residents, with particular emphasis on those with low car ownership as well as the large number of others who have indicated a desire to utilize improved bus service.

PB-191 132
Central Lane Planning Council, Eugene, Oreg.
EUGENE-SPRINGFIELD TRANSIT STUDY REPORT.

Dec 69, 97p
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc., McLean, Va., Rept. no. AMV-R-20-1062.

Descriptors: (*Urban planning, *Oregon), (*Transportation, Urban planning), Traffic, Population, Vehicles, Statistical analysis, Predictions, Urban planning.
Identifiers: Rapid transit system, Lane County (Oregon), Regional planning and development.

The study was conducted to define transit service conditions and to propose needed actions in the Eugene-Springfield area of Lane County. The first task was to analyze existing services and define future needs. The second was to identify the possible roles for local governments in meeting the problem, including financing, organization and administrative alternatives. (Author)

PB-191 133
Pensacola, Fla.
PUBLIC TRANSPORTATION IN METROPOLITAN PENSACOLA, FLORIDA.

16 May 69, 65p
Prepared in cooperation with Coverdale and Colpitts, New York. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, Transportation), (*Transportation, *Florida), Operation, Money, Organizations, History, Law, Budgets, Terrain, Buildings, Storage, Materials, Statistical analysis, Labor, Federal budgets, Costs, Maps.
Identifiers: *Pensacola (Florida).

There has been mass transportation service in Pensacola since 1884, except for a three months interruption in 1932. Pensacola Transit, Inc., owned by the same interests since 1950, has notified the City of its intention to discontinue operations because of poor earnings. The City is presently subsidizing losses in order to defer until at least June 30, 1969 the cessation of transit service. The report completes the study of the transit operations. Our conclusions and recommendations are summarized in this report. (Author)

PB-191 134
Atlantic County Improvement Authority, N.J.
TRANSIT IN ATLANTIC COUNTY.

Nov 69, 58p
Prepared in cooperation with Simpson and Curtin, Philadelphia, Pa. Sponsored in part by Urban

Mass Transportation Administration, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *New Jersey), (*Transportation, Urban planning), Traffic, Roads, Statistical analysis, Predictions, Costs.
Identifiers: Rapid transit systems, Regional planning and development, *Atlantic County (New Jersey).

Contents: Transit in Atlantic County (Atlantic City Transportation Company, Public Service Coordinated Transport, Atlantic City Jitneymen's Association), Atlantic City Transportation Company (Analysis of Operations, Potential Service Improvements), Public Participation in Transit Service.

PB-191 135
Port Authority of Allegheny County, Pittsburgh, Pa.
SOUTH HILLS TRANSIT EXPRESSWAY REVENUE LINE. VOLUME I.
Preliminary engineering rept.

Jan 70, 243p
See also Volume 2, PB-191 142.

Descriptors: (*Transportation, *Pennsylvania), Traffic, Roads, Vehicles, Railroad tracks, Air pollution, Feasibility studies, Costs.
Identifiers: *Rapid transit systems, *Allegheny County (Pennsylvania).

The study defined the system parameters for the Transit Expressway Revenue Line and developed demographic and traffic data. It also produced preliminary designs and budgetary estimates of total project construction costs, necessary right-of-way costs, equipment costs, costs for detailed engineering, and operating costs. (Author)

PB-191 136
Simpson and Curtin, Philadelphia, Pa.
TRANSIT SERVICES TO LINK CENTRAL OMAHA WITH THE SOUTHWEST INDUSTRIAL AREA.

Mar 69, 33p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, Transportation), (*Transportation, Employment), (*Nebraska, Transportation), Urban areas, Passenger vehicles, Costs, Economics, Sociology, Effectiveness.
Identifiers: *Public transportation systems, Omaha (Nebraska).

The automobile has liberated city dwellers and provided a wider choice of residential location in regard to the economic restraints of the journey-to-work. The flight from the city center which created the suburban commuter was followed by the establishment of suburban shopping centers and industrial parks. The resulting development pattern has, in turn, increased the need for mobility by scattering shopping and employment opportunities. As employment opportunities move to the suburbs, they move away from the public transportation system since it cannot economically service scattered destinations. This analysis proposes a solution to some of the transportation problems of core area job seekers with three new bus routes opening up service to 10,000 jobs, with easy access to health and welfare services and shopping opportunities at two major suburban centers. In all, 19 trips per day are proposed, providing peak hour service from Omaha's Near North Side to the Southwest Industrial Area. Economic use is made of these coaches by designing the reverse trip so that suburban commuters will have express service to downtown Omaha. It is anticipated that the total annual cost of this service will approximate $72,750, or $280 per day. On the average, 23 passengers per trip would provide a 'break even' operation.

PB-191 137
Hollywood City Commission, Fla.
TRANSIT IN SOUTH BROWARD COUNTY: TECHNICAL STUDY.

Mar 69, 103p
Prepared in cooperation with Kimley-Horn and Associates, Inc., West Palm Beach, Fla. Hollywood City Planning Dept., Fla., and Department of Transportation, Washington, D.C.

Descriptors: (*Transportation, *Florida), Economics, Population, Roads, Maps, Urban areas, Urban planning, Public opinion.
Identifiers: *Broward County (Florida), Area planning and development.

The report deals with the Technical Study of Transit in South Broward County for the City of Hollywood, Florida. Following the inventory and analysis of the area development, travel desires, and bus service, a basic transit system was defined for the study area. In addition, four alternate pilot projects were proposed for possible demonstration in South Broward County. (Author)

PB-191 138
Simpson and Curtin, Philadelphia, Pa.
FEASIBILITY OF TRANSIT SERVICE IN GREAT FALLS, MONTANA.

Jun 68, 69p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Montana), Population, Employment, Passenger vehicles, Traffic, Roads, Costs, Urban areas.
Identifiers: Area planning and development, Great Falls (Montana).

The purpose of the study is to investigate the feasibility of transit service in Great Falls. The objective is to determine the need for transit operations, the level of service required to provide an attractive transit system, and the feasibility of providing transit service with public assistance. (Author)

PB-191 139
Nassau County Planning Commission, Mineola, N.Y.
NASSAU COUNTY BUS SYSTEM: AN ANALYSIS OF PRESENT SERVICE.
Technical rept.,
Eugene H. Nickerson. Jul 68, 112p TR-1
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only. See also Technical rept. no 2, PB-191 140.

Descriptors: (*Transportation, *New York), Vehicles, Traffic, Roads, Costs, Urban planning.
Identifiers: Nassau County (New York), Regional planning and development.

The purpose of the report is to provide a system that relates to land uses, traffic generators, poverty and work areas, social and commercial centers coordinated with other modes of travel so that any trip will be reasonably economical, convenient and speedy. To these ends, the report analyzes the existing conditions so that improved bus franchises can be granted at the end of the year. (Author)

PB-191 144
Kansas City Area Transportation Authority, Mo.
KCI RAPID TRANSITWAY: INVESTIGATIONS, PRELIMINARY PLANS, PROJECT COST.
Engineering design rept.

1969, 204P
See also PB-191 145. Prepared in cooperation with Howard, Needles, Tammen and Bergendoff, Kansas City, Mo. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, Missouri), (*Airports, Transportation), Traffic, Costs, Predictions, Roads.
Identifiers: *Rapid transit systems, *Kansas City (Missouri).

The document presents the Preliminary Engineering Design Report summarizing the results of studies for a Rapid Transitway from 12th Street in the Central Business District of Kansas City, Missouri to Kansas City International Airport. (Author)

PB-191 145
Kansas City Area Transportation Authority, Mo.
KCI RAPID TRANSITWAY: FORECAST OF PASSENGERS, REVENUE, OPERATING COSTS.
Engineering design rept.

1969, 15P
See also PB-191 144. Prepared in cooperation with Howard, Needles, Tammen and Bergendoff, Kansas City, Mo.

Descriptors: (*Transportation, *Missouri), (*Airports, Transportation), Traffic, Costs, Predictions.
Identifiers: *Rapid transit systems, *Kansas City (Missouri).

In October 1969 the Preliminary Engineering Report was presented. It summarized the results of studies of location, design and cost for the Rapid Transitway from the Central Business District to Kansas City International Airport. The present document deals with the Forecast of Revenue and Expenses for this system. (Author)

PB-191 183
Praeger-Kavanagh, New York.
BUS FEEDER STUDY FOR THE LINDENWOLD RAPID TRANSIT AND THE CAMDEN, N.J. METROPOLITAN REGION.

Sep 68, 202p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *New Jersey), (*Transportation, Urban planning), Traffic, Roads, Public relations, Costs, Urban areas.
Identifiers: Rapid transit bus systems, Regional planning and development, *Transportation feed lines, *Bus feed lines.

The objective of the study was to establish the requirements for bus feeder service to the Philadelphia-Lindenwold Rapid Transit Line which best serve the needs of the New Jersey populace while maximizing patronage of the Rail Line. (Author)

PB-191 184
Praeger-Kavanagh, New York.
BUS FEEDER STUDY FOR THE LINDENWOLD RAPID TRANSIT AND THE CAMDEN, N.J. METROPOLITAN REGION.

1968, 154p
Appendix to Rept. no. PB-191 183.

Descriptors: (*Urban planning, *New Jersey), (*Transportation, Urban planning), Traffic, Roads, Public relations, Costs, Urban areas, Economics, Employment, Wages.
Identifiers: Rapid transit bus systems, Regional planning and development, Land use, *Bus feed lines, *Transportation feed lines.

Contents: A HISTORY OF TRANSIT IN Camden and Southern New Jersey, An outline of economic factors in Camden County, Land use field notes, List of attractive centers with approximate populations, and Independent feeder lines.

PB-191 195
Southeastern Michigan Transportation Authority, Detroit.
REPORT TO SOUTHEASTERN MICHIGAN TRANSPORTATION AUTHORITY ON REGIONAL BUS TRANSPORTATION IN SOUTHEASTERN MICHIGAN. DESCRIPTION OF PRESENT OPERATIONS VOLUME I.

1 Apr 69, 83p
Prepared in cooperation with Coverdale and Colpitts, New York, N.Y. Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Transportation, *Michigan), Passenger vehicles, Traffic, Statistical analysis, Predictions, Urban areas, Rural areas.
Identifiers: *Regional bus transit systems.

PB-191 196
Connecticut State Highway Dept., Wethersfield. Div. of Long Range Planning.
TRANSPORTATION 2020 IN CONNECTICUT.
Interim rept.

Sep 69, 116p
Limited number of copies containing color other than black and white are available until stock is exhausted. Reproductions will be made in black and white only.

Descriptors: (*Urban planning, *Connecticut), (*Transportation, Urban planning), Roads, Traffic, Economics, Railroads, Hydrofoils, Short takeoff planes, Passenger vehicles, Ground effect machines, Supersonic planes.
Identifiers: Regional planning and development, Rapid transit systems, Gas turbine trains, Moving sidewalks, Monorails.

The report presents a long range transportation planning. It appraises the present transportation system in terms of its ability to meet the social and economic needs of the State in the future; it projects the future needs of the State and the effect of future innovations upon the ability of the State to meet these needs; and proposes a concrete program to ensure the achievement of the transportation goals of government. (Author)

PB-191 207
Broome County Planning Board, Binghamton, N.Y.
BROOME COUNTY BUS TRANSIT STUDY. EVALUATION, ANALYSIS AND RECOMMENDATIONS.

Jul 68, 44p
Prepared in cooperation with State University of New York, Binghamton and DeLeuw Cather and Associates, New York.

Descriptors: (*Transportation, *New York), (*Rural areas, Problem solving), Statistical data, Urban planning, Population, Attitudes, Maintenance, Costs, Economics, Impact
Identifiers: *Bus lines, *Broome County (New York).

The report is an integration of three studies on the county bus system, giving a summary of the technical aspects, the economic potentials, and the social implications of the public bus transit system in Broome County. The findings constitute a data resource for future transit system planning and policy making.

PB-191 224
CONSAD Research Corp., Pittsburgh, Pa.
IMPACT STUDIES: NORTHEAST CORRIDOR TRANSPORTATION PROJECT. VOLUME IV, PART B. INTRA-II SUMMARY.
Final rept.,
Stephen H. Putman, Sarah T. Libson, Fu-chen Lo, Wilbur A. Steger, and Susan Tobey. Feb 70, 229p* NECTP-243
Contract DOT-C-104-66
See also Volume 4, Part A, PB-190 938.

Descriptors: (*Transportation, Urban areas), (*Urban areas, Statistical analysis), Mathematical models, Population, Wages, Economics, Employment, Programming (Computers), Correlation techniques, Iterative methods.
Identifiers: *Northeast Corridor transportation project, Land use.

The report describes the conceptualization and implementation of an intraregional location model component of the Northeast Corridor Project regional impact estimation model system. The purpose of this model system, as its predecessor version is to forecast, subject to alternative Northeast Corridor transportation systems, the population, personal income, land use, and economic activity by industrial sector for each of the Corridor's 131 districts. (Author)

PB-191 366
Voorhees (Alan M.) and Associates, Inc., McLean, Va.
A REPORT ON MODE CHOICE ANALYSIS FOR THE BALTIMORE REGION.

1969, 113p AMV-R-20-1043 (921)
Errata sheet included. Prepared in cooperation with Regional Planning Council, Baltimore, Md. Sponsored in part by Department of Transportation, Washington, D.C.

Descriptors: (*Transportation, *Maryland), Mathematical models, Mathematical prediction, Regression analysis, Sensitivity, Traffic, Urban planning.
Identifiers: *Baltimore (Maryland), Sensitivity analysis.

A major element in the transportation planning process in larger urban areas such as Baltimore is the prediction of the amount of travel by each of the major modes - highway and transit. This element becomes especially critical when major long-term capital investment decisions for transit are contemplated. The technical process employed in making projections of mode usage is called modal split since it allocates (splits) the total person travel into three groups - auto driver, auto passenger, and transit. From past work it has been found that the amount of transit usage depends on the purpose of the trip, the relative mobility and choice of the tripmaker, the ease of parking at the destination, and the relative ease of making the trip by transit as compared to automobile. (Author)

PB-191 411
TRW Systems Group, Redondo Beach, Calif.
SYSTEMS SIMULATION STUDIES.
Final rept.

Dec 69, 229p 06818-W008-RO00 FRA-RT-70-34
Contract DOT-C-353-66
Report on High-Speed Ground Transportation Systems Engineering Study. PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

Descriptors: (*Transportation, *Management planning), (*Programming (Computers), *Railroads), Computer programs, Simulation, Programming languages, Subroutines, Flow charting, Mathematical models.
Identifiers: TRANSIM, *Northeast Corridor, Computer printouts, *High speed ground transportation, Computerized simulation.

The report describes a computer program developed to simulate the operation of a high speed ground transportation mode within the U.S. Northeast Corridor. The program utilizes the TRANSIM user language for the simulation in conjunction with an output processor program written specifically to improve the basic TRANSIM output format. This conversion allows quicker accessibility to critical analysis variables. As a demonstration of the program, a simulation was performed of a 150-mph new rail facility within the Northeast Corridor. The results of this simulation and the documentation of the program are included. (Author)

PB-191 488
Creighton, Hamburg, Inc., Bethesda, Md.
SOME APPLICATIONS OF ACG/DIME FILES IN TRANSPORTATION AND REGIONAL PLANNING.

2 Feb 70, 36p
Contract DOT-PS-00009

Descriptors: (*Transportation, *Urban planning), Population, Classification, Operations research, Networks.
Identifiers: Addresses.

The report reviews possible applications of the coding guide framework (ACG/DIME) being developed by the U.S. Bureau of the Census to various subject areas of interest to the Department of Transportation. (Author)

PB-191 669
New York State Office of Transportation.
VIP TRANSPORTATION SYSTEM FOR THE CITY OF ROME, NEW YORK. EXTENDING URBAN MASS TRANSPORTATION IN A TYPICAL SMALL CITY.
Final rept

Mar 69, 83p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, *Urban areas), (*Passenger vehicles, Feasibility studies), (*New York, *New York), Systems engineering, Public opinion, Decision making, Costs, Effectiveness, Reviews.
Identifiers: *Rome (New York), *Mass transit systems, Bus lines, Demonstration projects, VIP transportation system.

The purpose of the demonstration program was to determine whether a small vehicle designed especially for the population and industry characteristics of Rome, New York, and operating on fixed routes and fixed schedules, could attract sufficient patronage to facilitate the movement of people, alleviate traffic and parking problems and stimulate the revitalization of the central core. (Author)

PB-191 677
Baltimore Planning Commission, Md. Dept. of Planning.
BALTIMORE REGION RAPID TRANSIT STUDY. VOLUME I. BASIC CONSIDERATIONS: INFLUENCE AREA ANALYSIS MODEL.

17 Feb 70, 45p
Report on Transit Planning and Impact Study. Prepared for Regional Planning Council, Baltimore, Md. See also Volume 2, PB-191 678.

Descriptors: (*Transportation, *Urban areas), (*Maryland, Transportation), Models (Simulations), Railroads, Terrain, Costs, Economics, Transformations, Buildings, Law, Reports, Feasibility studies.
Identifiers: *Rapid transit systems, *Baltimore (Maryland), Area planning and development, Zoning.

The major points discussed in this report are the cost of the rapid transit system's construction; the creation of new competitive forces within the region by making substantial changes in the accessibility patterns and thus changing established land value patterns and trends; development of a pattern which will have large benefits to the public; goals which must be developed to deal with the particular requirements of station areas; station area planning; and legal tools to achieve the kind of station area development required to benefit the transit service and to capitalize upon the opportunity for new investment. (Author)

PB-191 678
Baltimore Planning Commission, Md. Dept. of Planning.
BALTIMORE REGION RAPID TRANSIT STUDY. VOLUME II. STATION AREA PROPOSALS: NORTHWEST LINE.

1970, 94p
Report on Transit Planning and Impact Study. Prepared for Regional Planning Council, Baltimore, Md. See also Volume 1, PB-191 677.

Descriptors: (*Transportation, *Urban areas), (*Maryland, Transportation), Reports, Feasibility studies, Railroads, Terrain, Population, Statistical data, Maps, Site selection.
Identifiers: *Rapid transit systems, *Baltimore (Maryland), Railroad stations.

In each of two major consultant studies which have investigated the feasibility of developing a rapid transit system for the Baltimore region, one particular corridor has been identified as a desirable route for such service. The evaluation of alternative routes within the various transit corridors is described in detail. (Author)

PB-191 832
Oakland City Planning Dept., Calif.
BART IMPACT: 5 OAKLAND STATION AREAS.

Jul 69, 120p OCPD-200

Descriptors: (*Transportation, Urban areas), (*Urban planning, *California), Railroads, Terrain, Economics, Law, Traffic, Population.
Identifiers: Land use, *Bay area rapid transit system, *Oakland (California), Zoning, Railroad stations, *Area planning and development, BART (Bay Area Rapid Transit).

The report investigates the likely impact of rapid transit in the areas immediately surrounding five Oakland stations. The study area for each station consists of what is considered a convenient walking distance from the station, generally a one-quarter to one-half mile radius around the station entrance.

PB-191 903
Rensselaer County Dept. of Planning and Promotion, Troy, N.Y.
TRANSPORTATION: RENSSELAER COUNTY PLANNING BOARD, 1968.

1969, 54p

Descriptors: (*Urban planning, *New York), (*Transportation, Urban planning), Management planning, Roads, Railroads, Air transportation, Vehicles, Water traffic.
Identifiers: Regional planning and development, *Rensselaer County (New York).

The report represents information concerning all modes of transportation within the County, and in the adjoining areas: existing and proposed major highway routes, bus passenger service, rail, air, water; and the utilities, electric power, telephone, and pipelines. The report also reviews the transportation planning work currently underway by the New York State Department of Transportation. (Author)

PB-191 931
Slash Pine Area Planning and Development Commission, Waycross, Ga.
FUTURE LAND USE AND THOROUGHFARE PLAN FOR COFFEE COUNTY, GEORGIA.

Feb 70, 34p
Prepared in cooperation with Georgia State Planning Bureau, Atlanta.

Descriptors: (*Urban planning, *Georgia), Roads, Transportation, Maps.
Identifiers: *Regional planning and development, *Coffee County (Georgia), Land use.

The document presents a report and analysis of future land use needs for Coffee County through 1990. A major thoroughfare plan to 1990 is also included. Maps depict those areas involved in both future land use and transportation plan. (Author)

PB-192 006
Barton-Aschman Associates, Inc., Chicago, Ill.
COMMUTER PARKING AT HIGHWAY INTERCHANGES.
Research rept.

Mar 70, 122p
Contract FH-11-6956

Descriptors: (*Passenger vehicles, Storage), (*Roads, Urban areas), (*Transportation, Problem solving), Urban planning, Reviews, Factor analysis, Hazards, Terrain.
Identifiers: *Commuter parking facilities, Interchanges.

The study analyzes data collected at 55 interchanges in 7 states on the extent of use and potential demand for parking at interchanges for the purpose of either car pooling or transferring to transit. The survey indicated that the greatest incidence of commuter parking in interchange areas occurred primarily in urbanized northeastern and middle-Atlantic sections of this country. Areas having a combination of high CBD parking costs and existing congestion on CBD approach routes offer the greatest potential for a successful transit-fringe parking demonstration.

PB-192 079
East-West Gateway Coordinating Council, East St. Louis, Ill.
FREIGHT TERMINAL CHARACTERISTICS RELATED TO GROUND TRANSPORTATION ACCESS.

Jan 70, 67p EWG-CV-0131.10.0
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc. and Crawford, Bunte, Roden, Inc.

Descriptors: (*Transportation, *Urban areas), (*Cargo, Handling), (*Traffic, *Roads), Site selection, Impact, Control systems, Terrain, Management planning.
Identifiers: *Terminal freight facilities, Parking facilities, Zoning, *Saint Louis (Missouri).

Development and analysis are presented of the St. Louis area freight terminal (truck terminals and trailer-on-flat-car terminals) characteristics which relate to highway transportation demand - truck traffic generation, truck traffic peaking, and truck and auto parking requirements. (Author)

PB-192 085
East-West Gateway Coordinating Council, East St. Louis, Ill.
TRANSPORTATION STUDY FOR SOUTHERN ILLINOIS UNIVERSITY: EDWARDSVILLE CAMPUS.
John J. Murphy. Jan 70, 36p EWG-JM-0132.10.0
Prepared in cooperation with Southern Illinois Univ., Edwardsville.

Descriptors: (*Transportation, Students), (*Universities, Illinois), Urban planning, Predictions, Questionnaires, Data processing systems, Statistical analysis, Classification.
Identifiers: *Southern Illinois University, Travel mode.

The report presents the results of a college transportation survey. It discusses the purpose of conducting school transportation studies in the St. Louis Area and gives the reasons why information on school related travel was needed. The methods used to collect data are outlined. The manner in which the information was factored and summarized is discussed. The resultant information is being used for forecast purposes. (Author)

PB-192 086
East-West Gateway Coordinating Council, East St. Louis, Ill.
TRANSPORTATION STUDY FOR THE UNIVERSITY OF MISSOURI, ST. LOUIS,
John J. Murphy. Jan 70, 29p EWG-JM-0133.10.3

Descriptors: (*Students, Transportation), (*Transportation, *Missouri), (*Universities, Transportation), Reviews, Classification, Statistical data, Data processing systems, Analysis, Mathematical prediction.
Identifiers: *University of Missouri, *Saint Louis (Missouri), Travel mode.

The report discusses the purpose of conducting school transportation studies in the St. Louis area and gives the reasons why information on school related travel was needed. The methods used to collect data are outlined. The manner in which this information was factored and summarized for the University of Missouri also is discussed. The resultant travel information from the survey is being used to analyze current school travel and to forecast future school travel. (Author)

PB-192 152
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
TECHNICAL REVIEW OF THE AERIAL TRANSIT SYSTEM.
Transportation programs rept.,
R. W. Blevins. Jun 70, 34p* APL-TPR-005

Descriptors: (*Passenger vehicles, Reviews), (*Transportation, Reviews), Tires, Flexible structures, Railroad tracks, Aerodynamic characteristics, Urban areas.
Identifiers: *Rapid transit railways, *Aerial transit systems, Vehicle guideways.

The report presents the principal results of a technical evaluation of the Aerial Transit System. The results of this evaluation indicate the principal problem to be that of vehicle-guideway dynamics and ride quality. The remainder of the system is essentially state-of-the-art and presents no technical problems other than those normally associated with the introduction of new equipment. (Author)

PB-192 190
San Diego County Comprehensive Planning Organization, Calif.
TRANSIT SURVEY.

Mar 70, 93p Job-6103
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Traffic, Urban areas), (*Passenger vehicles, Statistical data), Statistical analysis, Sociology, Wages, Economics, Periodic variations, Motivation, Advanced planning.
Identifiers: San Diego County.

This study was designed and executed by the staff of the Comprehensive Planning Organization (CPO). Transportation planning has long been recognized by CPO as one of its major tasks. In order to develop transportation plans it is necessary to identify and understand the existing structures in the County for transporting people and materials. This survey is intended to contribute to that understanding by providing a clearer picture of the present role of public transit in the County and by supplying the background information necessary for the formulation of policy decisions and the development of transit plans for the future. (Author)

PB-192 243
Kentucky Program Development Office, Frankfort. Div. of Planning.
COMMERCIAL AREAS AND PARKING STUDY: CITY OF BENTON, KENTUCKY.

May 70, 32p CK-KPDO-70-55
Prepared in cooperation with Scruggs and Hammond, Inc., Lexington, Ky. and Benton Planning Commission, Ky.

Descriptors: (*Urban planning, *Kentucky), (*Terrain, Commerce), Urban areas, Reviews, Analysis, Traffic, Predictions.
Identifiers: Zoning, Benton (Kentucky), *Area planning and development, Central city, *Commercial areas, Parking facilities.

The commercial areas and parking study is an analysis of the existing and future commercial areas and parking requirements in the city of Benton. The location, function, and problems of the commercial areas and parking situation are analyzed, and recommendations concerning future improvements are included. (Author)

PB-192 244
Kentucky Program Development Office, Frankfort. Div. of Planning.
PARKING STUDY: CITY OF BENTON, KENTUCKY.

May 70, 40p CK-KPDO-70-56
Prepared in cooperation with Scruggs and Hammond, Inc., Lexington, Ky. and Benton Planning Commission, Ky.

Descriptors: (*Urban planning, *Kentucky), (*Traffic, *Urban areas), Passenger vehicles, Cargo vehicles, Roads, Analysis, Statistical data, Advanced planning, Population, Commerce, Diurnal variations.
Identifiers: Benton (Kentucky), *Area planning and development, Parking facilities.

The parking study is an analysis of the existing and future parking requirements in the city of Benton. The location, function, and problems of the parking situation are analyzed, and recommendations concerning future improvements are included. (Author)

PB-192 257
John Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
HUMAN SENSITIVITY TO WHOLE-BODY VIBRATION IN URBAN TRANSPORTATION SYSTEMS: A LITERATURE REVIEW.
Transportation programs rept.
R. M. Hanes. May 70, 171p API /JHU-TPR-004

Descriptors: (*Vibration, Tolerances (Physiology)), (*Transportation, *Urban areas), Sensitivity, Thresholds (Physiology), Body, Humans, Reviews.
Identifiers: *Mass transportation

A study of the literature on human sensitivity to whole-body vibration was made to find valid vibration limits for use in urban mass transportation systems. Ninety references were reviewed. Emphasis was given to studies that involved subjective estimates of vibration severity and to original experimental data, as contrasted with derived recommendations. It was found that the major part of the relevant data comes from only a few studies in which the results have been largely divergent. (Author)

PB-192 404
Tampa Bay Regional Planning Council, St. Petersburg, Fla.
MASS TRANSIT IN THE TAMPA BAY REGION.
Summary rept.

1970, 12P

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Urban planning, Florida, Reviews.
Identifiers: *Mass transportation, Passenger transportation, Urban transportation.

A summary report is given of mass transit in the Tampa Bay region.

PB-192 405
Tampa Bay Regional Planning Council, St. Petersburg, Fla.
TAMPA BAY MASS TRANSIT: PLANNING FOR TOMORROW.
Summary rept. no. 3D of 1969 Work Program.

Apr 70, 33p
Prepared in cooperation with TRW Systems Group, Washington, D.C.

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Urban planning, Florida, Analysis.
Identifiers: *Mass transportation, Passenger transportation, Urban transportation, Rapid transit systems.

The mass transit study described in this report was undertaken for the primary purpose of defining the 'transit potential' of the Tampa Bay Region and constructing a Mass Transit Study Program to incrementally improve present transit service and to evaluate, select, and implement a new TBR transit system which will serve as one component of a balanced ground transportation system. The analyses indicate that, if development continues according to current trends, financial and planning aid to the transit operations will be necessary to improve transit service to the point where it can tap the substantial potential ridership that does exist in the Region. Implementation of a rapid transit system in the Region will hinge upon both public aid and also upon changes in development trends, towards higher density development and towards a highway system that would be complementary to rather than in competition with a new system. (Author)

PB-192 409
Tampa Bay Regional Planning Council, St. Petersburg, Fla.
MASS TRANSIT CONCEPTS OF THE TAMPA BAY REGION.
Comprehensive rept. no. 3, pts. A, B, C, of the 1969-70 Work Program.

Apr 70, 79p

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Urban planning, Florida, Analysis, Passenger vehicles.
Identifiers: *Mass transportation, Passenger transportation, Urban transportation, Rapid transit systems.

The study initiates a series of mass transit planning and implementation activities to develop a regional mass transit system that is consistent with long-range comprehensive regional planning. A prime objective of the Council's comprehensive planning program is to achieve a regional transportation system that meets population demands of accessibility and level of service to desired opportunities of socio-economic activity. Hence, this study provides for an inventory and analysis of existing local transit systems, the determination of regional transit objectives, a 'Short-Range Regional Transit Improvement Program' and for a 'Regional Mass Transit Study Design.' The Council, published the results of this study in three reports. This report deals with the transit inventory and analysis, regional objectives and short-range improvement program. (Author)

PB-192 466
Richmond Regional Planning District Commission, Va.
RICHMOND REGIONAL AREA TRANSPORTATION STUDY: VOLUME I. CURRENT AND PROJECTED TRAVEL PATTERNS.

May 67, 194p
Prepared in cooperation with Smith (Wilbur) and Associates and Virginia Dept. of Highways, Traffic and Planning Div., Richmond, Va. See also Volume 2, PB-192 467.

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Traffic, Statistical analysis, Volume, Virginia.
Identifiers: Regional planning and development, *Traffic engineering, Traffic patterns, *Traffic surveys, Richmond (Virginia).

The objective of the study was the research, study and analysis of traffic patterns, travel volumes and transportation facilities, including public transit; and, population, land use, economics, and other related elements. (Author)

PB-192 467
Richmond Regional Planning District Commission, Va.
RICHMOND REGIONAL AREA TRANSPORTATION STUDY: VOLUME II. HIGHWAY TRANSPORTATION PLAN AND IMPLEMENTATION PROGRAM.

May 68, 148p
Prepared in cooperation with Smith (Wilbur) and Associates and Virginia Dept. of Highways, Traffic and Planning Div., Richmond, Va. See also Volume 3, PB-192 468.

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Traffic, Roads, Design, Costs, Virginia.
Identifiers: Regional planning and development, *Traffic engineering, Richmond (Virginia), *Highway planning, Highways.

The recommended plan is the result of a comprehensive study and testing of three trial networks. Recommendations are based on traffic demand, design criteria, estimated costs, and the needs developed from an evaluation of growth estimates and land-use parameter projections. Design criteria for the plan generally conform to geometric design policies of the American Association of State Highway Officials. Development costs are calculated on the basis of current unit values. Final costs are highly dependent on the timing of right-of-way acquisition and construction. The total estimated costs is around $550,000,000. (Author)

PB-192 468
Richmond Regional Planning District Commission, Va.
RICHMOND REGIONAL AREA TRANSPORTATION STUDY: VOLUME III. PUBLIC TRANSPORTATION - AN EVALUATION OF

SERVICE LEVELS AND PATRONS' DEMANDS.

May 68, 202p
Prepared in cooperation with Smith (Wilbur) and Associates, and Virginia Dept. of Highways, Traffic and Planning Div., Richmond, Va. See also Volume 2, PB-192 467 and Volume 5, PB-192 469.

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Traffic, Volume, Analysis, Virginia.
Identifiers: *Mass transportation, Passenger transportation, Urban transportation, Richmond (Virginia), Regional planning and development.

Evaluation of existing mass transit operations; analyzation of present and projected needs to ensure balanced overall transportation system for achieving maximum utilization of each component. Mass transit survey findings, obtained by reviewing existing transit routes, equipment, and facilities of transit companies in the study area including those of Virginia Transit Company and suburban lines, outline existing operations. Information for developing transit travel patterns is provided by two origin-destination surveys. Analysis and projections of transit travel in the Richmond Region considers characteristics of transit trip generation and transit riding related to the projected physical characteristics of the region and projected transit travel patterns. Projections of land use, population, and employment for 1980 do not indicate changes which will adversely affect the present advantageous position of public transit in Richmond. Projected increases in the total number of all types of trips in the urban area by 1980 reflect an increasing need for transit to accommodate the maximum number of trips within a 6-mile radius from the heart of the city. (Author)

PB-192 469
Richmond Regional Planning District Commission, Va.
RICHMOND REGIONAL AREA TRANSPORTATION STUDY: VOLUME V. RECOMMENDED THOROUGHFARE PLAN-STREET INVENTORY, FUNCTIONAL PLANS, AND COST ESTIMATES.

May 68, 237p
Prepared in cooperation with Smith (Wilbur) and Associates, and Virginia Dept. of Highways, Traffic and Planning Div., Richmond, Va. See also Volume 1, PB-192 466.

Descriptors: (*Urban areas, Transportation), (*Transportation, Management planning), Roads, Traffic, Costs, Virginia
Identifiers: Regional planning and development, Richmond (Virginia), *Traffic engineering.

Inventory of 1964 existing major street and highway system; preliminary line and grade plans for specified proposed new facilities; cost estimates for all recommended improvements of the 1980 thoroughfare plan. Major streets and highways in the Richmond area are inventoried alphabetically by jurisdiction, each segment described by its (1) physical characteristics, (2) 1964 average daily traffic and capacity, and (3) assigned 1980 daily traffic volumes. Preliminary functional plans, developed through an evaluation of projected traffic volumes and roadway sections required to provide adequate capacity, are shown for specified facilities. Typical cross sections for both improvements and new facilities are depicted. Estimated costs for all new or improved facilities are calculated on the basis of current unit costs for materials and recent land acquisition experience in the Richmond area. Each recommended project is listed along with its estimated construction, right-of-way, and development costs, design hour volumes, typical section to be used, suggested implementation staging, and comments on widening and new construction. Estimated costs total $111,183,000 for 79.43 miles of proposed limited access facilities and $270,459,000 for 291.61 miles of proposed major thoroughfares. (Author)

PB-192 493
Washington Univ., St. Louis, Mo. Inst. for Urban and Regional Studies.
TRANSPORTATION AND CENTRAL CITY UNEMPLOYMENT.
Working paper,
Edward D. Kalachek, and John M. Goering. Mar 70, 243p* INS-5
Contract HUD-H-1034

Descriptors: (*Urban planning, Transportation), (*Transportation, *Employment), Urban areas, Labor, Industries, Site selection, Passenger vehicles, Removal, Money, Effectiveness, Population, Wages, Questionnaires, Statistical data, Impact, Missouri.
Identifiers: *Transportation management, Area development and planning, Poverty, Ghettos, *Saint Louis (Missouri).

The persistence of overall full employment and the efforts of numerous government programs during the past decade have reduced but not eliminated high unemployment and poverty in the central city. While central cities were struggling with these problems, the locus of white population and of industry was shifting to the suburbs. Suburban industrial centers are poorly serviced by public transit. Many Negroes residing in the central city do not possess private automobiles. Furthermore, the option of relocating in the suburbs closer to industrial centers has been largely foreclosed at least until recently by housing segregation. The suburbanization of industry and the deficiencies of public transportation have thus placed individuals without access to private automobiles, particularly Negroes, at some real labor market disadvantage. Extending and improving mass transit seemed necessary in order to connect the labor resources of the ghetto with the labor demands of industry developing in suburbia. (Author)

PB-192 506
TRW Systems, Redondo Beach, Calif.
HIGH SPEED RAIL SYSTEMS.

Feb 70, 608p* 06818-6037-RO00 FRA-RT-70-36
Contract DOT-C-353-66
Report on High-Speed Ground Transportation Systems Engineering Study.

Descriptors: (*Transportation, Railroads), (*Railroads, Design), Railroad cars, Railroad tracks, Electric propulsion, Brakes, Control systems, Power supplies, Suspension devices, Acceleration.
Identifiers: *High speed rail systems, Rapid transit railways, Terminal facilities, High speed ground transportation systems.

The application of steel-wheel-on-steel rail trained vehicles to intercity passenger transportation at speeds of 200 to 300 mph is examined. The physical and human constraints, and the framework of ground-rules within which the study is constructed are described. Primary system elements are singled out and considered in the light of the higher speed requirements. The elements are the vehicle, propulsion and power, braking, suspension, guideway, control and communications and terminals. Present-day state-of-the-art operating systems are used as a point of departure. A baseline high-speed rail system is synthesized, and its performance and service characteristics are described parametrically, as a function of such independent variables as seating capacity and design cruise speed. Research and development, investment and operating costs are given. (Author)

PB-192 546
George Washington Univ., Washington, D.C. Program of Policy Studies in Science and Technology.
URBAN DEVELOPMENT MODELING.
George C. Hemmens. Apr 70, 39p* Monograph-6
Grant NGL-09-010-030
Prepared in cooperation with North Carolina Univ., Chapel Hill. Dept. of City and Regional Planning.

Descriptors: (*Urban planning, Terrain), (*Transportation, *Urban areas), Mathematical models, Programming (Computers), Economics, Decision making, Accuracy.
Identifiers: Land use models, Computer models.

The document covers the use of computer models in planning for land development and transportation facilities in metropolitan areas. The discussion is made in the context of the public agencies involved, the kinds of decisions for which they were assigned research and analysis tasks, and the intellectual context of the substance of the decisions. (Author)

PB-192 692
Regional Planning Council, Baltimore, Md.
A CONSISTENT TRADE-OFFS APPROACH TO RAPID TRANSIT SYSTEM PLANNING.

Feb 70, 105p*

Descriptors: (*Transportation, *Maryland), (*Urban planning, Linear programming), Management planning, Programming (Computers), Factor analysis, Cost effectiveness, Mathematical prediction.
Identifiers: Alternatives, *Baltimore (Maryland), Tradeoffs, Management information systems, *Rapid transit systems, Computer analysis.

The report describes the development of a planning analysis approach to comparing alternative transit system configurations in a way that keeps track of the many conflicts and trade-offs among differing transit planning goals and constraining development criteria. The method is called linear programming. In a transit planning situation, this computer operated method shows promise of being useful for conducting a series of synthetic experiments which will suggest the best feasible rapid transit system patterns for different combinations of planning conditions. (Author)

PB-192 715
San Diego County Comprehensive Planning Organization, Calif.
TRANSIT DEVELOPMENT PLAN AND PROGRAM.

Jun 70, 273p Job-6240
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc., McLean, Va., rept. no. AMV-R-50-1108.

Descriptors: (*Transportation, *California), Vehicles, Statistical analysis, Management planning, Mathematical models.
Identifiers: *Rapid transit systems, *San Diego County (California), *Bus lines.

The report presents a Development Plan and Program for the San Diego Transit Corporation. It is presented in 11 sections, followed by three appendices. The sections are the following: The transit survey; Operational analysis; Transit management; Model development; Future transit network; Ten-year expansion program; Innovative techniques; Demonstration project candidates; System priorities and costs, and Continuing transit planning process.

PB-192 727
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
SKY-KAR TRANSIVATOR SYSTEM; A BASELINE DEFINITION.
Transportation contractor rept.

May 70, 122p* APL/JHU-TCR-007
Contract DOT-UT-29
Prepared in cooperation with Sky-Kar Corp., Fort Worth, Tex.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Suspension devices), Configuration, Design, Power equipment, Beams (Structural), Electronic equipment, Control

systems, Structural parts, Human engineering, Scheduling, Maintainability, Reliability (Electronics), Feasibility studies, Advanced planning.
Identifiers: High speed rail transportation, *Sky-Kar transivator system, Guideways, Urban transportation, *Monorail transit systems.

The report describes an engineering baseline definition of an urban transportation circulation and distribution system consisting of small (6-passenger) vehicles riding on rubber tires beneath a wide-flange I-beam guideway. Switches are in guideway and control stations are off line. Propulsion is regulated by electric power.

PB-192 728
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
THE VARO MONOCAB SYSTEM: A BASELINE DEFINITION.
Transportation contractor rept.

May 70, 124p* APL/JHU-TCR-009
Contract DOT-UT-29
Prepared in cooperation with VARO, Inc., Transportation Systems Div.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Experimental design), (*Suspension devices, Structures), Control systems, Electric propulsion, Safety, Operation, Beams (Structural), Control panels, Acceleration, Braking.
Identifiers: Engineering baseline definitions, *Monorail transit systems, Transit switching equipment, *Monocab transit system, Guideways.

An engineering baseline definition is given of an urban circulation and distribution transportation system consisting of small vehicles riding on rubber tires beneath an overhead monorail guideway. Switches are in the vehicle, stations are off-line. Electric propulsion is used. (UMTA abstract)

PB-192 729
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
SCHERER MONOBEAM SUSPENSION CONCEPT OF MASS TRANSPORTATION.
Transportation contractor rept.

May 70, 60p* APL/JHU-TCR-003
Contract DOT-UT-29
Prepared in cooperation with Scherer Monobeam Co.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Systems engineering), Configuration, Design, Power equipment, Suspension devices, Control systems, Structural parts, Specifications, Costs, Interfaces, Feasibility studies, Advanced planning.
Identifiers: High speed rail transportation, *Scherer monobeam system, Guideways, Urban transportation, *Monorail transit systems.

The report describes an engineering baseline definition of an urban fast transit link transportation system consisting of large vehicles riding on steel wheels along either side of a narrow central beam on two rails, one vertically above the other. Upper trucks provide one horizontal force couple to prevent cars from overturning and lower trucks provide other couple element and provide vertical support for vehicle weight. The switch is moving beam type, on track. Stations are off-line. Propulsion is by electricity. A low speed central business district system is also discussed. (UMTA abstract)

PB-192 730
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.

URBAN GRAVITY-VACUUM TRANSIT SYSTEM: MARK 4B AND MARK 3B BASELINE SYSTEM DEFINITIONS.
Transportation contractor rept.

May 70, 143p* APL/JHU-TCR-004
Contract DOT-UT-29
Prepared in cooperation with Tube Transit Corp.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Pneumatic systems), (*Pipes, Underground structures), Feasibility studies, Gate valves, Gravity, Pressure, Velocity, Braking, Control systems, Safety.
Identifiers: Transit stations, Engineering baseline definitions, Tube transit systems, *Gravity vacuum transit systems, Mark 3B transit system, Differential air pressure propulsion, Rapid transit systems, Mark 4B transit system.

An engineering baseline definition of an urban fast transit link transportation system consisting of vehicles riding on steel wheels in underground evacuated steel tubes, using gravity and differential air pressure for propulsion and braking. Stations are on-line. No switching is required. 25K and 50K/hour capacities are discussed. (UMTA abstract)

PB-192 731
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
TECHNICAL EVALUATION OF ADVANCED URBAN TRANSPORTATION SYSTEMS: SUMMARY REPORT.
Transportation programs rept.,
R. A. Makofski. Jun 70, 63p* APL/JHU-TPR-015
Contract DOT-UT-29

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Experimental design), Systems engineering, Reviews, Control systems, Communication systems, Surface propulsion, Braking, Structures.
Identifiers: Evaluation, Rapid transit systems, Mass transit systems, Structures, Transit switching equipment, Guideways.

A summary is presented of the results of a technical evaluation of ten proposed urban transportation systems, with emphasis on the problems common to a majority of the systems. Four of the systems are fast transit link -- high-speed point-to-point systems -- and six are circulation and distribution types -- varied origin-to-destination services for high-density urban applications. The principal problem revealed is the design and development of control systems for short headway operations. (UMTA abstract)

PB-192 732
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
GENERAL ELECTRIC AERIAL TRANSPORT SYSTEM: A BASELINE DEFINITION.
Transportation contractor rept.

May 70, 327p* APL/JHU-TCR-002
Contract DOT-UT-29
Prepared in cooperation with General Electric Co. Transit Systems Dept.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Feasibility studies), (*Suspension devices, Structures), Structural parts, Electric propulsion, Human engineering, Test methods, Mathematical models, Human engineering, Braking, Control systems, Systems engineering.
Identifiers: *Monorail transit systems, *General Electric aerial transport system, Engineering baseline definitions, Transit stations, Rapid transit systems, Guideways.

An engineering baseline definition is given of an urban fast transit link transportation system consisting of large vehicles riding on rubber tires beneath an enclosed beam. Stations are on-line. Switches are in the track. Vehicles can be entrained. Electric propulsion is used. The system evolved from the French SAFEGE system. (UMTA abstract)

PB-192 733
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
BASELINE SYSTEM DEFINITION: THE AERIAL TRANSIT SYSTEM.
Transportation contractor rept.

Jan 70, 204p* APL/JHU-TCR-001
Contract DOT-UT-29
Prepared in cooperation with Aerial Transit Systems, Inc.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Feasibility studies), (*Cable assemblies, Suspension devices), Operators (Personnel), Electric propulsion, Scheduling, Model tests, Airports, Operation, Structures, Maintenance.
Identifiers: Transit fares, Engineering baseline definitions, *Aerial transit system, *Cable suspended transit systems, Rapid transit systems, Guideways.

An engineering baseline definition is given of an urban fast transit link transportation system consisting of large vehicles riding on rubber wheels beneath a flexible, cable-suspended steel guideway. Tower spacing is 1/4 mile. A driver is used. Stations are on line. Electric propulsion is used. Application to an airport is discussed. (UMTA abstract)

PB-192 734
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
DASHAVEYOR TRANSIT AND CARGO SYSTEMS: A BASELINE DEFINITION.
Transportation contractor rept.

May 70, 189p* APL/JHU-TCR-006
Contract DOT-UT-29
Prepared in cooperation with The Dashaveyor Co.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Design), Cargo vehicles, Control systems, Electric propulsion, Structural parts, Communication systems, Feasibility studies.
Identifiers: *Dashaveyor transit systems, *Guideways, Routing, Engineering baseline definitions, Automatic control equipment.

An engineering baseline definition is given of an urban transportation circulation and distribution system consisting of small vehicles riding on rubber wheels above a dual rail guideway. Switches are on-board. Stations are off-line. Electric propulsion is used. (UMTA abstract)

PB-192 736
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
GRAVITY-VACUUM TRANSIT SYSTEM: BASELINE DEFINITION OF AIRPORT ACCESS AND CORRIDOR SYSTEMS.
Transportation contractor rept.

May 70, 91p* APL/JHU-TCR-005
Contract DOT-UT-29
Prepared in cooperation with Tube Transit Corp.

Descriptors: (*Transportation, Urban areas), (*Pipes, Underground structures), Feasibility studies, Gravity, Pressure, Passenger vehicles, Gate valves, Pneumatic systems, Airports, Railroad cars, Velocity.
Identifiers: Corridor systems, *Differential air pressure propulsion, *Gravity vacuum transit systems, Engineering baseline definitions, Crossporting systems, Rapid transit systems, Airport access systems, Tube transit systems.

Gravity-vacuum transit (GVT) is a passenger transportation system employing gravity and vacuum for propulsion. The report describes GVT for airport access and corridor applications. The report concentrates on those features of airport access and corridor GVT that differ from or are not present in Urban GVT. The use of a gate valve and crossporting between tubes for long stages is discussed and the resulting pneumatic cycle is described. Baseline configurations for Airport Access and Corridor systems are defined and performance data is presented. (Author)

PB-192 737
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
ALDEN CAPSULE TRANSIT SYSTEM CONTROL SUBSYSTEM AND BASELINE DEFINITION.
Transportation contractor rept.

May 70, 295p* APL/JHU-TCR-011
Contract DOT-UT-29
Prepared in cooperation with Alden Self-Transit Systems Corp.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Systems engineering), Experimental design, Electric propulsion, Pavements, Tires, Control systems, Programming (Computers), Feasibility studies, Communication systems.
Identifiers: Alden capsule transit system, Engineering baseline definitions, Guideways, Mass transit systems, Automatic control equipment.

An engineering baseline definition is given of an urban transportation circulation and distribution system consisting of small vehicles riding on rubber tires atop a concrete roadbed. Guidance and switching are by road-side guide-follower controls linked to vehicle steering mechanism. Stations are off-line. Electric propulsion is used. (UMTA abstract)

PB-192 738
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
A WESTINGHOUSE VEHICLE SYSTEM FOR MAJOR ACTIVITY CENTERS: A BASELINE SYSTEM DEFINITION.
Transportation contractor rept.

May 70, 476p* APL/JHU-TCR-010
Contract DOT-UT-29
Prepared in cooperation with Westinghouse Electric Corp., Transportation Div., Pittsburgh, Pa.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Feasibility studies), Pavements, Idler wheels, Electric propulsion, Air conditioning equipment, Cargo vehicles, Airports, Costs, Structures, Maintenance, Communication systems.
Identifiers: *Westinghouse vehicle system, Engineering baseline definitions, I beams, *Guideways, Fare collection, Parking facilities.

An engineering baseline definition is given of an urban transportation circulation and distribution system consisting of moderate-sized vehicles riding on rubber tires atop a concrete guideway. Guidance is by idler wheels bearing against an I-beam in the center of the tracks. Switching is in the track. Stations are on-line. Electric propulsion is used. Application to an airport is discussed. (UMTA abstract)

PB-192 739
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
TRANSPORTATION TECHNOLOGY DISTRIBUTION SYSTEM FOR A HIGH DENSITY URBAN AREA: A BASELINE DEFINITION.
Transportation contractor rept.

May 70, 222p* APL/JHU-TCR-008
Contract DOT-UT-29
Prepared in cooperation with Transportation Technology, Inc.

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Experimental design), (*Induction motors, Propulsion), (*Ground effect machines, Passenger vehicles), Programming (Computers), Flow charting, Control systems, Mathematical analysis, Braking, Maintenance, Malfunctions, Reliability, Safety, Human engineering.
Identifiers: Engineering baseline definitions, *Transportation Technology transit system, Linear induction motor propulsion, Transit switching equipment, Automatic control equipment, Guideways.

An engineering baseline definition is given of an urban transportation circulation and distribution system consisting of small vehicles riding atop smooth, shallow U-shaped guideways, employing air pad suspension and linear induction motor propulsion. Stations make use of a random access and storage procedure with lateral docking movements. Switches are on the vehicle, stations off-line. The application to CBD is discussed. (UMTA abstract)

PB-192 758
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
FAST TRANSIT LINK SYSTEMS. TECHNICAL REVIEWS OF FOUR BASELINE DEFINITIONS.
Transportation programs rept.,
R. W. Blevins, J. S. O'Connor, S. J. Brown, Jr., and W. C. Caywood. Jun 70, 153p* APL/JHU-TPR-016
Contract DOT-UT-29

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Experimental design), Reviews, Operation, Feasibility studies, Systems engineering, Control systems, Propulsion, Problem solving, Human engineering, Communication systems, Structures, Mechanical properties, Electrical properties.
Identifiers: Evaluation, Engineering baseline definitions, *Rapid transit systems, Aerial transit systems, Gravity vacuum transit systems, Monorail transit systems.

Fast Transit Link (FTL) systems can serve a useful transportation function by providing a point-to-point or line haul service as, for example, from a central business district to the suburbs or an airport. The report contains individual technical evaluations of four proposed FTL systems: Aerial Transit System; Aerial Transport System; Gravity-Vacuum-Transit System; Scherer Monobeam Concept (Scherer Monobeam Co.). The report responds to the stated objectives of the UMTA evaluation study, which is to access the technological maturity of the systems, to identify potential technical problems, and to recommend, where appropriate, necessary development of the systems or important components.

PB-192 759
Johns Hopkins Univ., Silver Spring, Md. Applied Physics Lab.
COLLECTION AND DISTRIBUTION SYSTEMS: TECHNICAL REVIEWS OF SIX BASELINE DEFINITIONS.
Transportation programs rept.,
E. J. Hinman, S. J. Brown, Jr., F. F. Mark, G. Pitts, and R. S. Carlson. Jun 70, 143p* APL/JHU-TPR-017
Contract DOT-UT-29

Descriptors: (*Transportation, Urban areas), (*Passenger vehicles, Experimental design), Reviews, Dynamics, Feasibility studies, Systems engineering, Control systems, Propulsion, Idler wheels, Human engineering, Communication systems, Safety, Structures.
Identifiers: Evaluation, Engineering baseline definitions, *Rapid transit systems, Monorail transit systems, Gravity vacuum transit systems, Linear induction motor propulsion.

Individual technical evaluations of the following six proposed C and D systems are given: Varo Monocab System; Westinghouse Vehicle System; Transportation Technology System; Sky-Kar Transivator System; Alden StaRRcar; Dashaveyor Transit System. The report responds to the stated objectives of the UMTA evaluation study which is to assess the technological maturity of the systems, to identify potential technical problems, and to recommend, where appropriate, necessary development of the system or important components.

PB-192 784
Institute of Public Administration, Washington, D.C.
TRACK-SHARING FOR URBAN TRANSPORTATION.
Final rept.,
Ralph Rechel, Frank Graves, John Garcia, William Jewell, and Richard Swerzy. 30 Jan 70, 150p* INPUBADM-70-01
Contract DOT-UT-24

Descriptors: (*Railroad tracks, Urban planning), (*Passenger vehicles, Feasibility studies), Transportation, Scheduling, Costs, Problem solving, Signal lights, Safety, Management planning.
Identifiers: Railroad track sharing, Railbuses, Dual mode vehicles.

The study covers the potential use of existing under-utilized railway tracks in urban areas for passenger movements to the center city. Examination is made of the implications of instituting such service either by dual-mode railbus or by conventional rail equipment. The substantial vehicle development in railbuses is reviewed. (Author)

PB-192 833
Union County Planning Board, N.J.
UNION COUNTY TRANSPORTATION STUDY: SECTION I: SIGNAL SYSTEM EVALUATION. SECTION II: COUNTY ROAD STANDARDS. SECTION III: ANALYSIS OF MASS TRANSIT FACILITIES. SECTION IV: ANALYSIS OF AIRPORT FACILITIES. SECTION V: EFFECT OF LAND USE ALTERNATIVES ON TRAFFIC. SECOND YEAR WORK PROGRAM.
Interim rept.

May 70, 102p
Prepared in cooperation with Purcell (James P.) Associates.

Descriptors: (*Management planning, New Jersey), (*New Jersey, *Transportation), Visual signals, Traffic, Roads, Rural areas, Standards, Railroads, Passenger vehicles, Airports, Terrain, Selection, Analysis.
Identifiers: *Union County (New Jersey), *Area planning and development, *Transportation management, Traffic signals, Road standards, Mass transit systems, Land use, Airport facilities.

The report summarizes the second year work program regarding transportation and includes sections on Signal System Evaluation, County Road Standards, Analysis of Mass Transit Facilities, Analysis of Airport Facilities, and the Effect of Land Use Alternatives on Traffic. (Author)

PB-192 834
Middlesex County Planning Board, New Brunswick, N.J.
MIDDLESEX COUNTY COMPREHENSIVE PLANNING STUDY: AN ANALYSIS OF HIGHWAY PLANS.
Technical memo.

May 70, 105p
Prepared in cooperation with Voorhees (Alan M.) and Associates, Inc., McLean, Va.

Descriptors: (*Transportation, *New Jersey), (*Roads, Urban planning), Mathematical prediction, Population, Terrain, Traffic, Air pollution,

Site selection, Safety, Rural areas, Decision making, Noise, Motor vehicle accidents, Impact.
Identifiers: *Middlesex County (New Jersey), *Regional planning, Land use.

The purpose of the memorandum is to describe the various transportation findings and implications related to the Middlesex County land use projections for 1985 and 2000. These findings will provide the background for a land use and transportation – highway and transit -- development strategy and for the eventual adoption of an implementation program for Middlesex County. (Author)

PB-192 930
Connecticut Interregional Planning Program, Hartford.
INVENTORY OF RAIL LINES SERVING URBAN AREAS OF CONNECTICUT.
Sidney A. Kahn, and Mario Tonarelli. Dec 68, 54p
Prepared in cooperation with Connecticut Highway Dept.

Descriptors: (*Urban planning, *Connecticut), (*Railroads, Urban planning), Railroad tracks, Traffic, Transportation, Statistical analysis.
Identifiers: *Regional planning and development, Rapid transit systems, *Rapid transit railways.

The report represents the results of an inventory of rail lines serving the major population centers of Connecticut. The purpose of the inventory was to point out which lines were best oriented to serve central cities as future potential corridors for the exclusive rights of ways of intra-urban mass transportation systems. (Author)

PB-192 932
Connecticut Interregional Planning Program, Hartford.
TRANSIT MODEL.
Staff paper,
Mario Tonarelli. 1970, 95p 536
Prepared in cooperation with Connecticut State Highway Dept.

Descriptors: (*Urban planning, *Connecticut), (*Transportation, Urban planning), Roads, Passenger vehicles, Traffic, Statistical analysis.
Identifiers: Rapid transit systems, *Rapid transit bus systems, *Regional planning and development, Hartford (Connecticut).

The paper represents work accomplished in the study of mass transportation (specifically bus transit) in Connecticut and is an integral part of the Connecticut Interregional Planning Program (CIPP), a statewide land use, resources, and transportation study. The report traces a portion of the work performed in the study of mass transportation, specifically bus transit, and outlines the steps followed in evaluating this type of service. It describes procedures followed in the inventory of bus usage and gives tabulations of the results obtained in a survey of bus users in the Hartford area. Also included is a discussion of the methods utilized in projecting values of ridership. Although the area predominantly covered by this report is the Hartford area, other information is included pertaining to other areas of the State where bus usage reaches significant levels. (Author)

PB-192 950
Downtown Agency for Transportation Action, Cleveland, Ohio.
PROJECT DATA (DOWNTOWN AGENCY FOR TRANSPORTATION ACTION). VOLUME 1: SUMMARY REPORT.
Final rept

May 69, 75p
See also Volume 2, PB-192 951.

Descriptors: (*Transportation, *Data processing systems), (*Urban planning, *Ohio), Programming (Computers), Simulation, Mathematical models, Statistical data, Passenger vehicles, Humans, Environment, Predictions, Costs, Management planning, Reports.
Identifiers: Management information systems, DATA project, Downtown Agency for Transportation Action, Pedestrians, *Cleveland (Ohio), Computerized simulation.

Project DATA is a collaborative approach to the development of a continuous process for improving the high-density movement of people and goods within downtown Cleveland. The project was conceived as a three-phase study. The results of Phase 1 are presented in the report. (Author)

PB-192 951
Downtown Agency for Transportation Action, Cleveland, Ohio.
PROJECT DATA (DOWNTOWN AGENCY FOR TRANSPORTATION ACTION). VOLUME 2: TECHNICAL REPORT.
Final rept.

May 69, 256p
See also Volume 1, PB-192 950 and Volume 3, PB-192 952.

Descriptors: (*Transportation, *Data processing systems), (*Urban planning, *Ohio), Reports, Mathematical models, Urban areas, Research program administration, Simulation, Passenger vehicles, Population, Costs, Management planning, Public relations.
Identifiers: *DATA project, Downtown Agency for Transportation Action, Bus lines, *Cleveland (Ohio), Management information systems.

Four major data collection activities were undertaken to obtain better understanding of the transportation environment in downtown Cleveland. Volume 2 contains detailed descriptions and critiques of project tasks and results. This volume is structured to be useful primarily to all types of urban planners

PB-192 952
Downtown Agency for Transportation Action, Cleveland, Ohio.
PROJECT DATA (DOWNTOWN AGENCY FOR TRANSPORTATION ACTION). VOLUME 3: APPENDIXES.
Final rept

May 69, 648p
See also Volume 1, PB-192 950.

Descriptors: (*Transportation, *Data processing systems), (*Urban planning, *Ohio), Mathematical models, Computer programs, Traffic, Population, Passenger vehicles, Statistical data, Punched cards, Flow charting.
Identifiers: DATA project, Management information systems, Downtown Agency for Transportation Action, *Cleveland (Ohio), Computerized simulation, Computer printouts.

The project includes the formulation of a computer modeling approach for simultaneously simulating various user decisions related to selection of mode, route of travel, and destination to satisfy specific trip purposes within downtown areas. The approach can be used primarily to assist in identifying realistic downtown transportation system design concepts that are compatible with the environment of a downtown area and that serve the transportation needs of the users of the area. Volume 3 contains background data necessary to obtain a deeper understanding of project activities and conclusions as they relate specifically to downtown Cleveland. This volume is meant for use primarily by urban planners in the Cleveland urban region. (Author)

PB-192 977
Connecticut Interregional Planning Program, Hartford.
HARTFORD-BLOOMFIELD RAIL BUS FEASIBILITY STUDY.

Oct 68, 55p
Prepared in cooperation with Connecticut Highway Dept. and Bureau of Public Roads, Washington, D.C.

Descriptors: (*Urban areas, Transportation), (*Transportation, *Connecticut), Railroad tracks, Vehicles, Feasibility studies, Costs.
Identifiers: *Rail bus transit systems, Rapid transit systems.

The purpose of the study was to determine the feasibility of instituting express bus service between suburban areas and the central business district of Hartford. The manner contemplated to supply this service was the running of bus vehicles over a lightly traveled railroad track, extending from the Bloomfield-Windsor town line to the downtown area of Hartford. (Author)

PB-193 007
Syracuse-Onondaga County Planning Agency, N.Y.
JOB ACCESSIBILITY: A STUDY OF FACTORS INHIBITING EMPLOYMENT, SYRACUSE, NEW YORK.

Sep 69, 110p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Employment, *New York), (*Transportation, Urban areas), Reviews, Public opinion, Training, Population, Job analysis, Factor analysis.
Identifiers: *Syracuse (New York), Central city, Model cities, *Job accessibility, Unemployment, Public transportation systems, Low income groups.

The document reports on a study to determine whether low income residents of the inner city of Syracuse, New York, had adequate transportation access to job opportunities. The project was principally concerned with the role of public transit in providing this access, though it was also to consider other factors which might have been inhibiting the employability of these citizens. The study focused on persons residing in Syracuse's model cities neighborhood and in one area to the northeast of the C.B.D. (Author)

PB-193 144
TRW Systems, Redondo Beach, Calif.
SUPPORTING STUDIES FOR HSGT SYSTEM REPORTS.
Final rept

Jun 70, 522p* 06816-6041-RO00
Contract DOT-353-66
Report on High-Speed Ground Transportation Systems Engineering Study. See also PB-193 145.

Descriptors: (*Transportation, Feasibility studies), (*Passenger vehicles, Experimental design), Equations of motion, Programming (Computers), Railroad cars, Mathematical models, Aerodynamic characteristics, Surface propulsion, Structures, Gas turbines, Power supplies, Braking, Dynamics, Control systems, Scheduling, Ground effect machines.
Identifiers: *High speed ground transportation, Gudeways, *High speed railway trains, *Tracked air cushion vehicles, *Multimodal transportation systems, *Automated highway systems.

The document is a supporting studies volume which contains appendices covering various detailed analyses which are referenced in reports on a high speed rail system, tracked air cushion vehicle systems, multimodal systems, and automated highway systems.

PB-193 145
TRW Systems, Redondo Beach, Calif.
SUPPORTING STUDIES FOR HSGT SYSTEM REPORT (TVS).
Final rept.

Jun 70, 120p* 06818-6041-R000
Contract DOT-C-353-66
Report on High-Speed Ground Transportation Systems Engineering Study. See also PB-193 144.

Descriptors: (*Transportation, Feasibility studies), (*Railroads, Experimental design), Railroad cars, Aerodynamic characteristics, Power supplies, Braking, Computer programs, Mathematical models, Control systems, Structures, Equations of motion, Safety.
Identifiers: *High speed ground transportation, Tube transit systems, *Tube vehicles, Guideways.

The document, a supporting studies volume, contains appendices covering various detailed analyses which are referenced in a report on tube vehicle systems.

PB-193 152
Worcester Planning Dept., Mass.
TRANSPORTATION BETWEEN POVERTY POCKETS AND EMPLOYMENT CENTERS.
Final rept.

30 Nov 69, 141p
Contract HUD-H-1021
Report on Worcester Urban Mass Transportation Technical Study. Errata sheet inserted.

Descriptors: (*Transportation, *Urban areas), (*Employment, Transportation), (*Economics, *Massachusetts), Industries, Urban planning, Passenger vehicles, Feasibility studies, Population, Attitudes, Statistical data.
Identifiers: Ethnic groups, Poverty areas, Worcester (Massachusetts), *Employment centers, Bus lines, Interviews.

Contents: Primary study area---the population considered; Secondary study area---the potential job market; Existing transit facilities; Use of buses by residents of primary study area; Bus passenger interview survey, summer 1969; Analysis of the journey to work; Proposed transit improvements for psa residents; and Other transportation problems requiring solution.

PB-193 273
TRW Systems Group, Redondo Beach, California.
STATE-OF-THE-ART TUBE VEHICLE SYSTEM.
Final rept.,
M. King, and I. W. Smylie. Jun 70, 56p* 06818-6042-R000
Contract DOT-C-353-66
Report on High-Speed Ground Transportation Systems Engineering Study.

Descriptors: (*Transportation, Pneumatic systems), (*Passenger vehicles, Pipes), Feasibility studies, Costs, Underground structures, Velocity, Modification Kits, Effectiveness, Urban areas, Electric propulsion, Vacuum pumps.
Identifiers: *Tube vehicles, Tube transit systems, High speed ground transportation.

A train utilizing state-of-the-art equipment operating in a low pressure (3.5 psia) underground tunnel is analyzed. The tunnel is smaller (13.75 feet in diameter) than conventional subway tunnels (16 to 18 feet in diameter). The tunnel is deeper (200 to 500 feet) than most subways. The additional depth provides assistance to the propulsion system during acceleration and to the braking system during deceleration. The reduction in tunnel size and cost offsets the additional cost of vacuum pumps of conventional urban systems, while at the same time energy costs are reduced. The system speed is great enough to provide high capacity as a shuttle service utilizing a single tube, which may have application in an airport access link.

PB-193 274
TRW Systems Group, Redondo Beach, Calif.
TUBE VEHICLE SYSTEM PARAMETRIC INVESTIGATION.
Final rept.,
M. King, and J. W. Smylie. 15 Jun 70, 79p* 06818-6050-R000
Contract DOT-C-353-66
Report on High-Speed Ground Transportation Systems Engineering Study.

Descriptors: (*Transportation, Pneumatic systems), (*Passenger vehicles, Pipes), Urban planning, Pressure, Propulsion, Cooling + ventilating equipment, Braking, Vacuum pumps, Control systems, Structures, Velocity.
Identifiers: *Tube vehicles, Tube transit systems, High speed ground transportation, Guideways.

The report extends previous results by investigating the effects of tube pressure level and alternate propulsion modes for a 300-mph TVS system. The ventilation system relationship to the tunnel size and quantitative assessment of the requirements for repressurization of the guideway tube are presented. The results of the analyses are integrated to provide the overall system requirements which can serve as a basis for the preliminary design of a 300-mph TVS. (Author)

PB-193 277
Regional Planning Council, Baltimore, Md.
REGIONAL PROGRESS IN TRANSPORTATION, 1968 - 1969.

1969, 23p
Prepared in cooperation with Transportation Technical Committee, Baltimore, Maryland. Paper copy available Regional Planning Council, 701 St. Paul Street, Baltimore, Md. 21202. FREE.

Descriptors: (*Transportation, *Reviews), (*Urban planning, *Maryland), Systems engineering, Roads, Traffic, Harbors, Airports, Railroads, Economics, Population, Budgets, Communication systems, Control systems, Mathematical prediction.
Identifiers: *Baltimore (Maryland), Freeways, Travel patterns, Parking facilities, Land use.

The report covers the progress which has been made in achieving a workable and adequate transportation system for the Baltimore region since the adoption of a suggested general development plan in 1967. (Author)

PB-193 355
Charles River Associates, Inc., Cambridge, Mass.
PROSPECTS FOR URBAN TRANSIT.

1970, 75p*
Contract DOT-OS-A9-060

Descriptors: (*Urban planning, Transportation), (*Transportation, Public opinion), Construction, Railroads, Employment, Site selection, Passenger vehicles, Selection, Industries, Volume, Population, Statistical data, Costs, Automation.
Identifiers: *Urban Transit systems, Urban decentralization, *Transit alternatives.

The most common resistance concerns specific alignments rather than an outright opposition to expressway construction itself. Nevertheless, there is growing interest in the search for viable transit alternatives, especially in cities where expressway programs have stalemated or opponents have started to oppose the idea of expressways rather than just specific alignments or designs. The paper examines the prospects for an increased reliance on transit alternatives. The discussion has three sections. The first explores postwar trends in urban land-use and examines the implications for transportation planning of the rapid decentralization in urban employment and residential locations that has taken place in the past two decades. The second section reviews the evidence bearing on the potential of the existing transit technologies for serving the demand for urban passenger transportation. Following this is an examination of the transit technologies that are likely to be available in the near future and an evaluation of these technologies for serving the demands of urban travel. (Author)

PB-193 450
Washington Univ., Seattle. Transportation Research Group.
SUMMARY OF USER BENEFITS ON URBAN ARTERIALS AND THE INTERSTATE FREEWAY IN THE SEATTLE METROPOLITAN AREA.
Traffic and operations series research rept.,
Roy B. Sawhill, and Jerome W. Hall. Jun 70, 24p
RR-14
Contract Y-1142
Report on Freeway Benefits Restudy and Analysis.

Descriptors: (*Roads, Traffic), (*Urban areas, Economics), Motor vehicle accidents, Gasoline, Statistical analysis.
Identifiers: Seattle (Washington), Interstate freeways.

The report presents a summary of an extensive study of highway user benefits resulting from the construction and operation of an Interstate Freeway in an urban area. Travel time and fuel consumption studies were made on several test routes both in and adjacent to the major north-south travel corridor in the City of Seattle. (Author)

PB-193 569
Berks County Planning Commission, Reading, Pa.
BERKS COUNTY MASS TRANSPORTATION STUDY. VOLUME I: DATA AND ANALYSIS.

1970, 130p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, *Pennsylvania), (*Urban areas, Analysis), Reviews, Analysis, Problem solving, Systems engineering, Advanced planning, Environment, Statistical data, Population, Employment, Roads, Railroads, Air transportation.
Identifiers: Mass transit systems, *Berks County (Pennsylvania), *Management information systems, Regional planning.

The report is the first publication of the Berks County mass transportation study. This study was developed to meet specified goals, and the purpose of Volume 1 is to analyze the existing environment in terms of demand characteristics and the transit system. The publication is designed as a datum from which decision makers within the community can outline problems and solution methods. (Author)

PB-193 572
Berks County Planning Commission, Reading, Pa.
REVIEW AND ANALYSIS OF THE PENNSYLVANIA DEPARTMENT OF HIGHWAY'S 'CLASSIFICATION AND NEEDS STUDY'.
Technical rept.

8 Jul 70, 20p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Transportation, Urban planning), (*Urban planning, *Pennsylvania), Roads, Classification, Traffic.
Identifiers: *Regional planning and development, *Berks County (Pennsylvania).

The purpose of the Technical Report is to compare the proposed 'State Classification' to the Highway Classification developed by the Berks County Planning Commission. The key differences are

noted and changes are outlined. The goal of the comparison is to input the local knowledge of Berk's Highways into the Pennsylvania Department of Highway's project. (Author)

PB-193 574
Berks County Planning Commission, Reading, Pa.
STATUS REPORT: MASS TRANSPORTATION AND HIGHWAY PLANNING.
Information bulletin no. 19.

May 70, 22p
Sponsored in part by Department of Housing and Urban Development, Washington, D.C.

Descriptors: (*Urban planning, *Pennsylvania), (*Transportation, Urban planning), Traffic, Statistical analysis, Roads, Construction.
Identifiers: *Regional planning and development, *Berks County (Pennsylvania), Rapid transit systems.

The Berks County Comprehensive Plan has proposed a 'balanced' transportation system based not only on the travel desires of the community, but also on estimated patterns of land development. The desired system, or network, will be a product of local, state, and federal programs and will aim toward the proper linkage of both private and public transportation forms. Progress toward the achievement of a balanced system is the subject of this bulletin. (Author)

PB-193 721
West Virginia Univ., Morgantown. Engineering Experiment Station.
A FEASIBILITY STUDY OF AN INTEGRATED CITY AND UNIVERSITY TRANSPORTATION SYSTEM.
Final rept.,
Samy E. G. Elias. Aug 70, 112p Technical Bull-97
Pub. as West Virginia Univ. Bull.Ser-71, no. 1-7, Jul 70.

Descriptors: (*Universities, Transportation), (*Transportation, Feasibility studies), (*Urban planning, Transportation), Universities, Urban areas, Passenger vehicles, Tires, Pavements, Management planning, Experimental design, Systems engineering, Control systems, Cost effectiveness.
Identifiers: *Morgantown (West Virginia), *Alden capsule transit system, Concepts, Guideways, Systems analysis.

The goal of the project was to determine the feasibility of demonstrating a new mass transportation technology for West Virginia University and the adjacent areas of the city of Morgantown, West Virginia. The purpose of this report is to summarize the activities and findings of the first three phases of a five-phase design cycle: These are concept validation, system sorting, and preliminary design and system definition. (Author)

PB-193 905
West Virginia Univ., Morgantown. Engineering Experiment Station.
THE DEVELOPMENT AND DEMONSTRATION OF AN AUTOMATIC PASSENGER COUNTER, VOLUME I.
Final rept.,
Samy E. G. Elias, and Nelson S. Smith, Jr. Jul 70, 81p* Technical Bull-94
Pub. as West Virginia Univ. Bull.Ser-70, no. 12-6, Jun 70. See also Volume 2, PB-193 906.

Descriptors: (*Urban transportation, Bus lines), (*Humans, Counting), (*Recording instruments, Photodetectors), Automation, Buses (Vehicles), Beams (Radiation), White light, Input output devices (Computers), Paper tape, Transmitters, Data acquisition.
Identifiers: Automatic passenger counters, *Passenger counters.

The objective of the research project was the design and construction of an automatic passenger counter that will count the number of passengers entering and leaving a bus at selected stops, relate these counts with the bus stop location, record both counts and location data on a tape which can be used as an input to a computer; and the development of a set of computer programs which will convert these data into bus schedules showing optimum vehicle numbers and headway required under specific assumptions of load and capacity. (Author)

PB-193 906
West Virginia Univ., Morgantown. Engineering Experiment Station.
THE DEVELOPMENT AND DEMONSTRATION OF AN AUTOMATIC PASSENGER COUNTER, VOLUME II.
Final rept.,
Samy E. G. Elias, and Nelson S. Smith, Jr. Jul 70, 83p* Technical Bull-94
Pub. as West Virginia Univ. Bull.Serv-70, no. 12-6, Jun 70. See also Volume 1, PB-193 905.

Descriptors: (*Urban transportation, Bus lines), (*Humans, Counting), (*Recording instruments, Photodetectors), Automation, Buses (Vehicles), Input output devices (Computers), Punched cards, Printouts, Electric equipment, Wiring diagrams, Computer programs, Schematic diagrams, Specifications.
Identifiers: Automatic passenger counters, *Passenger counters.

Volume 2 is intended to supply the tabular and graphical information required for an in-depth understanding of the automatic passenger counter data accumulating system and of the methods of data processing developed to make optimum use of the counter output. Included are the counter block diagram, overall schematic diagram, schematic diagrams for each block, wiring diagrams showing interconnections, lists of major parts and electrical components together with specifications and ratings. This is followed by description of the computer system which consists of two programs and a detailed description of the input cards for each program. Also included is a third program which is a modification of Program 1, so that it may accept counts as produced by the automatic passenger counter. (Author)

PB-194 093
Consortium of Universities, Washington, D.C. Urban Transportation Center.
WMA TRANSIT COMPANY.
Final rept.,
Beach W. Aten, Gary F. Bulmash, and Edward A. Morash. Aug 70, 82p UTC-1 UMTA-URT-11-(69)-1
Contract UMTA-URT-11

Descriptors: (*Bus lines, Evaluation), (*District of Columbia, Mass transportation), Operations, Maintenance management, Financial management, Regulations, Routes, Marketing.
Identifiers: *WMA Transit Company, *Washington Metropolitan Area.

The report investigates the WMA Transit Company, a small privately-owned bus line serving the eastern half of the Washington metropolitan area, and analyzed its problems, both internal and external, in detail in the following functional areas: operations, maintenance, finances, and the controlling regulatory commission. Major findings were: WMA has no marketing program and is not oriented toward selling its services; WMA has made no attempt to design an optimum route structure based on empirical studies; WMA is in serious financial difficulty due primarily to a substantial increase in fixed costs relative to revenues; The controlling regulatory commission has not indicated that they have established any clear objectives for their policies. The project also discussed some possible solutions to each of these problems and described some of the work that has been done by consultants, academicians, transit industry associations, and the government, and attempted to relate some of this work to WMA's problems. (Author)

PB-194 094
Consortium of Universities, Washington, D.C. Urban Transportation Center.
DULLES INTERNATIONAL AIRPORT ACCESS.
Final rept.,
Robert G. Baxter. Aug 70, 48p* UTC-2 UMTA-URT-11-(69)-2
Contract UMTA-URT-11

Descriptors: (*Access roads, *Traffic surveys), (*Airports, Access roads), Passenger vehicles, Parking facilities, Bus lines, Vehicular traffic, Periodic variations, Statistical data, Regional planning, Recreation, Predictions.
Identifiers: Advanced planning, *Dulles airport access road.

The Dulles International Airport Study conducted between March and May 1970 has shown that in several years the peaking of automobile traffic will be so pronounced with the introduction of larger aircraft, that the congestion on the Dulles Airport Access Road will parallel the present congestion on Shirley Highway during the evening rush-hour periods. An analysis of the number of enplaning passengers has shown that 86% of the passengers depart Dulles between 9 a.m. and 8 p.m. Since the majority of the transcontinental flights and the intercontinental flights depart during the late afternoon-early evening hours, the peaking at Dulles is sharpest during those periods. The modal percentage distribution of departing passengers indicates taxis bring 7.2% of the departing passengers to the airport, buses 28.5%, limousines 2.3%, and passenger cars 62.0%. Whereas these figures present the traffic distribution for departing passengers, the study also includes an analysis of the percentage of total airport vehicular activity. (Author)

PB-194 095
Consortium of Universities, Washington, D.C. Urban Transportation Center.
METHODS OF IMPROVING TRANSPORTATION FACILITIES FOR INNER-CITY DWELLERS.
Final rept.,
Ernest Cooper, Jr. Aug 70, 54p* UTC-3 UMTA-URT-11-(69)-3
Contract UMTA-URT-11

Descriptors: (*Passenger transportation, *Central city), (*Urban transportation, Improvement), Requirements, Socioeconomic status, Budgeting, Planning, Project management, Systems analysis, Rural urban fringe, Organizations, Benefit cost analysis, Trends, Surveys, Feasibility studies.
Identifiers: Washington (District of Columbia), Nashville (Tennessee), New York (New York).

The purpose of the project is to consider methods of improving transportation facilities for inner-city dwellers within the scope of a metropolitan area. Case studies of Washington, D. C.; Nashville, Tennessee; New York, New York; and other major urban areas are exemplified. The major aim is to explore methods of providing optimal transportation services for inner-city residents and giving equality of access to employment, recreation, and other urban opportunities. Combinations of improved planning and operating methods, or 'software' program elements, and the technological or 'hardware' elements are compared using cost-benefit calculations to evaluate alternatives. (Author)

PB-194 096
Consortium of Universities, Washington, D.C. Urban Transportation Center.
SPECIALIZED TRIP DISTRIBUTION STUDY OF METROPOLITAN RECREATION.
Final rept.,

Theodore F. Ehrlich. Aug 70, 35p UTC-4 UMTA-URT-11- (69)-4
Contract UMTA-URT-11

Descriptors: (*Recreation, Urban planning), (*Recreational facilities, Urban areas), (*Passenger transportation, Automobiles), Urban transportation, Statistical data, Surveys, District of Columbia, Maryland, Virginia, Mathematical models, Statistical analysis.
Identifiers: Trip statistics, *Washington metropolitan area, Outdoor recreational facilities, *Automobile trips, Arlington County (Virginia), Fairfax County (Virginia), Montgomery County (Maryland), Prince Georges County (Maryland).

The research investigated a methodology for specialized trip generation studies. Automobile trips to outdoor recreational facilities in the Washington, D.C. metropolitan area comprised a case study. A literature search was made on methodological improvements in metropolitan outdoor recreational planning. Modeling techniques used in transportation planning were applied to this problem, to develop procedures useful to both transportation and recreational planners. License plate survey data for trips to selected regional parks in the Washington, D.C area were utilized. Socio-economic and transportation facility data from a recent home interview transportation survey for the same area were also employed. (Author)

PB-194 097
Consortium of Universities, Washington, D.C. Urban Transportation Center.
METHODOLOGICAL AND PARAMETRIC FOUNDATIONS FOR URBAN TRANSPORT TECHNOLOGY EVALUATION.
Final rept.,
Philip A. Graham. Aug 70, 110p* UTC-5 UMTA-URT-11- (69)-5
Contract UMTA-URT-11

Descriptors: (*Urban transportation, Transportation management), (*Transportation management, Urban areas), Systems management, Decision making, Correlation techniques, Interactions, Evaluation, Passenger transportation, Mass transportation, Statistical analysis.
Identifiers: *Management information systems.

The objective of this project was to explore techniques t help urban transportation planners in systematic comparison of technologically disparate transport systems. Particular attention was focused on urban passenger travel, but the techniques evolved are applicable in principle to all fields of transportation. The 'methodological' portion of the project was concerned with preliminary development of quantified procedures for evaluation of candidate modes. The 'parametric' portion of the project sought to answer the question: Which characteristics must be considered in evaluating candidate transport technologies. This subject area is quite distinct from that of methodology, which concerns the manner in which these characteristics are to be used once they are identified. (Author)

PB-194 098
Consortium of Universities, Washington, D.C. Urban Transportation Center.
THE POLITICS OF INNOVATION IN URBAN MASS TRANSPORTATION POLICYMAKING: THE NEW SYSTEMS EXAMPLE.
Final rept.,
David G. Lawrence. Aug 70, 59p UTC-6 UMTA-URT-11- (69)-6
Contract UMTA-URT-11

Descriptors: (*Mass transportation, *Government policies), (*Urban transportation, Government policies), Decision making, Economics, Law (Jurisprudence).
Identifiers: Urban Mass Transportation Act of 1964.

The focus of the paper is upon the formulation, articulation and implementation of the Act to Amend the Urban Mass Transportation Act of 1964. The purpose of the paper is threefold. The first is to describe the progress of a new policy or policy proposal through three stages of the policy process, until it in fact beomes policy. A second purpose is to describe within a policy process framework the three stages and their contribution to policymaking. The third is to describe the impact of individual and group policymaking participants in the policymaking system. (Author)

PB-194 099
Consortium of Universities, Washington, D.C. Urban Transportation Center.
THE TRIP-TO-WORK, A SUBMODULE OF A GENERAL METROPOLITAN-REGIONAL AREA MAN-MACHINE SIMULATION.
Final rept.,
Jerre Anthony Manarolla. Aug 70, 65p* UTC-7 UMTA-URT-11- (69)-7
Contract UMTA-URT-11

Descriptors: (*Routes, Selection), (*Urban transportation, Simulation), Man machine systems, Routing.

An attempt was made to design the detailed relationships involved in the trip-to-work, one of five submodules which compose the transportation module, of a general operational simulation of a metropolitan or regional area. The general model considers spatial relations in some detail with the basic land area units (parcels) flexible in both size and shape; includes a large number of private economic activities (up to over 30) defined on the basis of the SIC categories; includes all the major local governmental functions as well as Federal-State Aid; and represents the people who live within the system in their desires for good jobs and public facilities, the way they spend their leisure time and their voting decisions. Transportation, along with communications, are the principal internal connectors among the various sectors of society and of the model. The goal of the trip-to-work submodule is to select a route for every population unit, basing that selection process on as realistic criteria as possible and with a resultant routing pattern which represents the real world splits, and the motivation for such splits among the various modes available. (Author)

PB-194 100
Consortium of Universities, Washington, D.C. Urban Transportation Center.
THE EVOLUTION OF METRO.
Final rept.,
William J. Murin. Aug 70, 45p* UTC-8 UMTA-URT-11- (69)-8
Contract UMTA-URT-11

Descriptors: (*Mass transportation, *District of Columbia), (*Subways, Urban areas), History, Legislation, Bus lines, Highway planning, Urban transportation.
Identifiers: METRO transit system.

The research reported, part of a larger effort, examines the evolution of the Washington, D. C. area subway system (METRO) from early legislation in the 1950's through adoption late in 1969. The specific purpose of the evolution narrative is to provide a common framework of understanding for the larger effort and to present the incremental nature of the decision-making process relevant to the system's planning. (Author)

PB-194 101
Consortium of Universities, Washington, D.C. Urban Transportation Center.
IMPACT OF TRANSPORTATION NOISE ON URBAN RESIDENTIAL PROPERTY VALUES WITH SPECIAL REFERENCE TO AIRCRAFT NOISE.
Final rept.,
Inja Kim Paik. Aug 70, 24p* UTC-9 UMTA-URT-11- (69)-9
Contract UMTA-URT-11

Descriptors: (*Aircraft noise, Urban areas), (*Residential buildings, Economic analysis), Econometrics, Regression analysis, Time series analysis, Human behavior, Motivation.
Identifiers: *Noise pollution, *Property values.

In view of an existing controversy on the impact of transportation noise on real property, the purpose of this study is to establish some statistical evidence bearing on the hypothesis that, in general, transportation noise affects residential property value adversely and, especially, the values of residential properties in the strictly residential area in comparison to those in the more commercial area. The technique used is the multiple regression method; data consist of 162 observations from the 1960 U. S. Census of Housing and Population. The study is made of two parts: The first is an attempt to measure the impact of variations in the level of aircraft noise on residential property values in the vicinity of the John F. Kennedy Airport. The second consists of a comparative evaluation of the noise effects between the relatively commercialized neighborhood and the strictly residential neighborhood in the same vicinity. (Author)

PB-194 102
Consortium of Universities, Washington, D.C. Urban Transportation Center.
D. C. TRANSPORTATION CONTROVERSIES, VALUES AND INTEGRATION OF COMMUNITIES.
Final rept.,
Francis R. Parente. Aug 70, 43p* UTC-10 UMTA-URT-11- (69)-10
Contract UMTA-URT-11

Descriptors: (*Mass transportation, *District of Columbia), (*Highway planning, Urban areas), History, Legislation, Subways, Communities, Group dynamics, Urban transportation.
Identifiers: Race relations.

The study concerns the question of community integration in the light of recent controversies relating to the Three Sisters Bridge, the North Central Freeway, and the Maryland Northern Freeway segments of the D. C. Metropolitan Area highway system. Prominent in the study is an analysis of the values and behavior of community groups and a discussion of what integration means for urban planning. (Author)

PB-194 103
Consortium of Universities, Washington, D.C. Urban Transportation Center.
COMMUTER TRANSPORTATION PROBLEM, UNIVERSITY OF MARYLAND.
Final rept.,
Robert E. Prangley. Aug 70, 38p UTC-11 UMTA-URT-11- (65)-11
Contract UMTA-URT-11

Descriptors: (*Universities, *Parking facilities), (*Vehicular traffic control, Universities), Bus lines, Maryland, Cost estimates, Routes.
Identifiers: University of Maryland.

The purpose of the study was to investigate the feasible alternate solutions to the commuter traffic problem on the University of Maryland campus. It was the objective of the study to recommend to the Administration of the University of Maryland a system which will alleviate the commuter traffic and the parking space required to accommodate this traffic on campus. The research considers three possible alternatives to the commuter transportation problem: the present auto system, the auto-bus system, and the auto-bus system with regulated parking. The study examines each alternative, considering both the ranges and constraints of variables related to the supply and demand

characteristics of each system. The study contrasts and compares both present conditions with the projected needs for each system. It finally compares each system using a very basic cost-benefit analysis. (Author)

PB-194 104
Consortium of Universities, Washington, D.C. Urban Transportation Center.
COMMUTER RAILROAD SERVICE IN THE NATIONAL CAPITAL REGION.
Final rept.,
Arthur J. Smith. Aug 70, 115p* UTC-12 UMTA-URT-11- (69)-12
Contract UMTA-URT-11

Descriptors: (*Rail transportation, *District of Columbia), (*Urban transportation, District of Columbia), Interstate transportation, Railroad terminals, Maryland.

The study explores the possibility of establishing a new commuter service system on the various railroad lines in the Washington area. As a background to the Washington situation, commuter rail strategies in other metropolitan areas are discussed. At the present time the Nation's Capital is served by less than 20 commuter trains, carrying only approximately 1100 riders, on a weekday. Rail commuter service in Washington faces a number of severe problems including: Union Station car fees, the location of the terminal, work rules, and aging equipment. Area decision makers have concentrated their efforts in the realms of rail rapid transit and freeways despite the existence of commuter rail schemes. The report discusses a set of three railroad commuter systems which could be implemented in the Washington area. Each system is coordinated with segments of Metro which may be in operation. Internal factors of each system ranging from Union Station and a new South Mall station to forms of management, work rules and financial arrangements are discussed. (Author)

PB-194 105
Consortium of Universities, Washington, D.C. Urban Transportation Center.
A METRO PARK-RIDE FARE COLLECTION SYSTEM.
Final rept.,
Edward D. Studholme. Aug 70, 44p* UTC-13 UMTA-URT-11- (69)-13
Contract UMTA-URT-11

Descriptors: (*Parking facilities, Automobiles), (*Fees, *Collection), (*Vendors, Automation), District of Columbia, Cards, Detectors, Urban transportation, Cost analysis, Subways.
Identifiers: *Fare collection systems, *Metro park ride fare collection system, Token vending machines.

A system which would extend the automated fare collection system proposed for the Washington Metropolitan Area Transit Authority to include the collection of parking fees and the controlling of parking areas for over 30,000 automobiles is designed and evaluated. The systems discussed insure that only patrons who have taken a ride on the subway will be eligible to park at reduced rates and eliminate the need for attendants. The control exercised over the paid area of the transit system by the automated fare gates is extended to the park-ride facilities by a transfer issued by a special machine when evidence is present on a magnetically encoded fare indicating that the paid area has been occupied. The transfer must be used in exiting the parking area as it is consumed by a parking gate control unit in exchange for admission to the street. Based on favorable design impressions a free area token vending machine is selected for a general cost analysis and compared with a manual system. The operating costs for the automated system are approximately $7.09 per space per year, while the costs for a manual system are about $45.00 per space per year. (Author)

PB-194 106
Consortium of Universities, Washington, D.C. Urban Transportation Center.
PARKING AND URBAN DYNAMICS.
Final rept.,
Burnell W. Vincent. Aug 70, 32p UTC-14 UMTA-URT-11- (69)-14
Contract UMTA-URT-11

Descriptors: (*Urban planning, *Parking facilities), Local government, Economic factors, Urban transportation, Availability.

The reported research explored the effects of parking supply availability as an urban form determinant. Advantages of providing availability are enumerated, as are the costs of its absence. Disadvantages of meeting the parking demand are presented, as are the benefits of reduced availability. The optimal availability is defined as that balance point from which any change in the number, location, cost, and price and convenience of automotive terminal facilities would be detrimental to the urban development objectives. The role of the local government is to provide a setting for community participation in goal formulation, to develop a formula for parking management which encourages attainment of that goal, and to measure feed-back data to insure a continuity of formula efficiency. The report suggests variable which are parking induced and demonstrates how these may be considered in paradigmatic presentations. A parking model, it is suggested, will provide a format which will be adaptable for use in a linked system of models which portray the many facts of urban dynamics in such a way that trade-offs may be readily compared between divergent disciplines. (Author)

PB-194 107
Consortium of Universities, Washington, D.C. Urban Transportation Center.
RESEARCH PROJECT SUMMARIES.
Final rept.,
Aug 70, 56p* UTC-16 UMTA-URT-11- (69)-16
Contract UMTA-URT-11

Descriptors: (*Transportation, Reviews), (*Mass transportation, Reviews), (*Passenger transportation, Reviews), Transportation management, Maryland, District of Columbia, Urban transportation, Urban planning, Land use, Bus lines, Airports, Parking facilities, Noise (Sound), Economic analysis, Rail transportation.

Summaries are provided of research projects concerning transportation facilities and planning for the Washington Metropolitan Area.

PB-194 156
Palm Beach County Area Planning Board, West Palm Beach, Fla.
WEST PALM BEACH URBAN AREA TRANSPORTATION STUDY. CONTINUING OPERATIONS PLAN,
Carl E. Hultman, and Ned R. Brooke. Sep 70, 42p WPBUATS-1
Prepared in cooperation with Florida Dept. of Transportation, Tallahassee.

Descriptors: (*Transportation, Urban areas), (*Urban planning, *Florida), Economic factors, Population, Traffic control, Traffic engineering, Highways, Land use, Ordinances, Traffic regulations, Law (Jurisprudence), Finance, Accident investigations.
Identifiers: West Palm Beach (Florida).

The report is a guidance manual for Urban Transportation Planning, specifically the continuing phase. The report summarizes what has been accomplished and sets forth the procedures or methods of collecting data, operating a surveillance program, determining deviations from forecasts and of her techniques and methods for updating transportation networks. It contains information as to sources of data and defines areas of responsibility for each of the participating agencies. (Author)

PB-194 203
Consortium of Universities, Washington, D.C. Urban Transportation Center.
THE NEW TOWN AND TRANSPORTATION PLANNING - GENERAL OVERVIEW WITH A CASE STUDY OF COLUMBIA, MARYLAND.
Final rept.,
Cameron Wiegand. Aug 70, 49p UTC-15 UMTA-URT-11- (69)-15
Contract UMTA-URT-11

Descriptors: (*Urban planning, Transportation), (*Transportation, Problem solving), Population growth, Automobiles, Vehicular traffic, Substitutes, Bus lines, Feasibility, Surveys, Maryland.
Identifiers: New towns, Columbia (Maryland), New town concept, Demonstration projects.

Research for the paper centers on two areas. The new town is generally assessed as to the possible advantages it offers over existing urbanized areas in transportation planning, and in the testing of new transportation systems. A case study is reported on the developing new town of Columbia, Maryland. This study examines the transportation planning process being utilized in Columbia, the existing internal transportation system, and some of the more innovative transportation technologies being proposed.

PB-194 359
South Bend Public Transportation Corp., Ind.
TRANSIT TECHNICAL STUDY. SOUTH BEND-MISHAWAKA AREA.
May 69, 116p
Prepared in cooperation with Gilman (W.C.) and Co., Inc., Cleveland, Ohio. Sponsored in part by Department of Transportation, Washington, D.C.

Descriptors: (*Urban transportation, Surveys), (*Regional planning, *Indiana), Benefit cost analysis, Inventories, Economic analysis, Evaluation, Forecasting, Recommendations.
Identifiers: *South Bend (Indiana), *Mishawaka (Indiana).

The thrust of the report is toward an action oriented transit improvement program directed at optimizing transit ridership in the South Bend-Mishawaka, Indiana, area within a realistic financial framework. The general guidelines adhered to in developing the transit improvement program are outlined. (Author)

PB-194 500
Port Authority of Allegheny County, Pittsburgh, Pa.
ADVERTISING AND PROMOTION DEMONSTRATION PROGRAM, URBAN MASS TRANSPORTATION DEMONSTRATION PROJECT, ALLEGHENY COUNTY, PENNSYLVANIA.
Final rept.

1970, 122P
Contract DOT-H-822

Descriptors: (*Publicity, Mass transportation), (*Mass transportation, *Pennsylvania), Urban areas, Promoting, Effectiveness, Models, Questionnaires, Simulation, Statistical data, Attitudes, Maps.
Identifiers: Allegheny County (Pennsylvania), Mass transit systems.

The basic purpose of this project is to develop concepts and techniques for information, advertising, and promotion, and to test their effectiveness for increasing ridership in an existing transit system which controls virtually all of the public transit in a large metropolitan area. The project pinpoints economic, racial, ethnic and age groups within the community and, using market research techniques such as attitude testing, determines why these people now use public transportation and why they do not, and what messages or means should be utilized in changing attitudes and habits. The focus of the program is on off-peak ridership

since the existing transportation facilities are already overcrowded during peak-time service. The market research techniques and the ridership simulation model provide assurance that the campaign will have been adequately pretested and that substantial research will have been done in identifying how to orient promotion activities. (Author)

PB-194 686
Virginia Polytechnic Inst., Blacksburg. Dept. of Industrial Engineering.
THE URBAN MASS TRANSIT GAME (MAINTENANCE), PHASE I - A. INSTRUCTIONS TO PARTICIPANTS.
Final rept.

Dec 69, 43p*
See also Phase 1 - B, PB-194 687.

Descriptors: (*Urban transportation, *Management games), (*Bus lines, Maintenance), Mass transportation, Scheduling, Decision making, Game theory, Computer programming, Maintenance personnel, Repair shops, Personnel management, Simulation, Management engineering, Benefit cost analysis, New York.
Identifiers: *Urban mass transit game, Management information systems.

The urban mass transit game (maintenance) is a computer based simulation exercise or management game that is focused upon the maintenance function of a municipal bus company. The game participant is required to manage this department - to direct a work force towards the completion of a daily schedule of work requirements. A unique feature of the game is the inclusion of distinct people - a work force of mechanics who assume separate and diverse identities. The report includes a brief introduction, first to gaming, and then to the urban mass transit industry. The main body of the report consists of the instructions to participants. Near the end of the report are some auxiliary case problems. It is anticipated that each game participant will be provided with a copy of the report. (Author)

PB-194 825
Tri-State Transportation Commission, New York.
NEW HAVEN RAILROAD COMMUTER SERVICE.
Final rept.

May 70, 31p TSTC-2052-3576-35C
Report on Mass Transportation Demonstration Grant Project. Sponsored in part by U.S. Department of Transportation.

Descriptors: (*Rail transportation, Performance), Economics, Transportation management, New York, Connecticut, Railroads.

The New Haven project was initiated with federal support and participation to meet the urgent threat of disruption in the indispensable rail service between New Haven, Conn., and New York City. In July 1961, the railroad went into bankruptcy, following years of increasing costs, declining freight revenues and years of deficit operations. In early 1965 court-appointed trustees sought to curtail commuter service, including the elimination of service at four key stations in Westchester County, New York. The demonstration project stayed the curtailment while studies determined the measures that would be necessary to change the railroad into a modern transportation route. (Author)

PB-194 958
Washington Metropolitan Area Transit Commission, D.C.
THE SCRIP SYSTEM OF THE D.C. TRANSIT SYSTEM, WASHINGTON, D.C.
Final rept.
Jun 70, 64p*

Descriptors: (*Bus lines, District of Columbia), (*Passenger transportation, *Fees), (*Cash basis, Substitutes), Feasibility, Crimes, Prevention, Statistical data, Effectiveness, Management planning.
Identifiers: *Transit fare collection, *Scrip systems, Management information systems, Locked fare boxes, *Crime deterrence.

In 1968, the rate of bus robberies in Washington, D.C. was more than twice that of the previous year. The problem reached its climax on May 17, 1968, when six bus robberies occurred within a five hour period and a driver was killed in a seventh attempted robbery. Since the principal stimulus to these robberies was the $100 to $175 in cash that bus drivers were required to carry, the drivers' union urged that a fare system be initiated which would reduce the hazard to the drivers. The Washington Metropolitan Area Transit Commission applied for and received a mass transportation demonstration grant to determine the feasibility of using a fare system in which drivers would carry no cash but would issue scrip or redeemable coupons as change to passengers who did not have exact fare available. A major purpose of the project was to test whether use of this system would eliminate robberies of bus drivers. Such a system had never been tried in the United States. The scrip system was first put into limited use during the nighttime hours for a period of forty-five days beginning June 11, 1968. When this test proved successful, the system was extended to twenty-four hour per day use. In terms of the goals of the project, the most important question was whether the use of the scrip system had been successful in reducing assaults and robberies of drivers. Unquestionably, it did so. Only four robberies directly related to the transit system occurred between the time the initial test of the scrip plan began and the end of the project five months later. Losses were minimal, and no drivers or other bus company employees were injured. The WMATC staff therefore recommended that use of the scrip system be continued after the close of the project in October, 1968. It has continued to function effectively since that time. (Author)

PB-196 329
Washington Metropolitan Area Transit Commission, D.C.
TRANSIT INFORMATION AIDS: MASS TRANSPORTATION DEMONSTRATION.
Final rept.

1970, 52P
Prepared in cooperation with Sidney Hollander and Associates.

Descriptors: (*Mass transportation, Information), (*Bus lines, Information), Attitudes, Markers, Routes.

The urban mass transportation demonstration project consisted of five phases: Phase I, Organization and Initial Surveys; Phase II, Design of Information Aids; Phase III, Production and Installation of Aid Devices; Phase IV, Testing; Phase V, Evaluation and Reporting. During Phase I, hypotheses were developed for testing by before and after surveys. These hypotheses postulated that more and better information aids would: (1) Increase the number of riders using more than one bus route, (2) Improve attitudes toward mass transit, (3) Increase predisposition to use mass transit, (4) Increase knowledge of a transit system as a whole, and (5) Decrease satisfaction with information currently being offered. None of the hypotheses were clearly affirmed although the study found that people do accept and use new information aids when available. It was also found that riders tended to use a limited number of bus lines for specified, repetitive purposes, and therefore efforts to increase the number of people to use buses should focus more on information aids which will improve ease of use for regular riders than on aids for the occasional rider. (Author)

PB-196 362
New York City Transit Authority.
AN AIR CONDITIONING STUDY OF THE NEW YORK CITY TRANSIT SYSTEM. PART I. A THERMAL SYSTEM MODEL AND EQUIPMENT VALUATION.
Final rept.
1968, 113P UMTA-NY-MTD-12-Pt-1
See also Part 2, PB-196 363.

Descriptors: (*Air conditioning, *Subways), (*Cooling systems, Cost analysis), Rapid transit railways, Subway cars, Ventilation, Ventilation fans, Air conditioning equipment, Refrigerating machinery, Refrigerating, New York.
Identifiers: New York City (New York).

The subways in New York City are uncomfortable in summer because of high temperatures. No simple solution to this problem is available because of the complex nature of the subway thermal system. A mathematical model of the thermal characteristics of a subway segment was developed as a tool for performance evaluation of proposed cooling systems. The model was programmed for computer computation. Several types of air conditioning systems for cars and for stations were examined both singly and in combination. The study showed that ventilation in the subway is the most important factor affecting passenger comfort. The most significant finds of this study are: (1) Vapor compression air conditioning was found to be the best system for cooling subway cars. (2) Car and station comfort can be improved by the use of large fans to increase nightime ventilation. (3) Air conditioning new subway stations is best accomplished by large, centrally located absorption cycle refrigeration units which would serve a number of nearby stations. (Author)

PB-196 363
New York City Transit Authority.
AN AIR CONDITIONING STUDY OF THE NEW YORK CITY TRANSIT SYSTEM. PART II. FEASIBILITY OF A THERMOELECTRIC AIR CONDITIONER FOR SUBWAY CARS.
Final rept.

1968, 120P UMTA-NY-MTD-12-Pt-2
See also Part 1, PB-196 362.

Descriptors: (*Air conditioning, *Subways), (*Subway cars, Air conditioning equipment), (*Air conditioning equipment, *Thermoelectric refrigeration), Rapid transit railways, Dynamic braking, Feasibility.
Identifiers: New York City (New York).

The purpose of the study was to evolve the basic design of a thermoelectric air conditioning system for a transit car and to determine its technical and economical feasibility. Since thermoelectric cooling devices operate from a DC power source, converting this power directly to heat pumping, (the wasted kinetic energy during dynamic braking appears as DC power), it is logical to consider thermoelectrics for subway car cooling. The primary questions to be answered are how much cooling is required for comfort and how much of it can be obtained from dynamic braking. The study determined that a maximum of 19 tons of air conditioning was required for a 200 passenger car in tunnel conditions of 100F at 60 percent relative humidity. It was found that the conversion efficiency of the thermoelectric system was too low to provide a significant portion of the air conditioning load from available dynamic braking energy. (Author)

PB-196 370
Pennsylvania Univ., Philadelphia.
MINICAR TRANSIT SYSTEM.
Final rept. Dec 68-Apr 70,
Vukan R. Vuchic, Donald Bergmann, G. Bruce Douglas, III, and Bondada V. A. Murthy. 1970. 289p*
Contract DOT-H-830
See also PB-188 046.

Descriptors: (*Passenger vehicles, Urban areas), (*Mass transportation, Feasibility), (*Passenger transportation, *Urban transportation), Demand (Economics), Fleets, Exhaust gases, Gasoline engines, Electric propulsion.
Identifiers: *Minicars.

The desirability and practicality of using small, fumeless, fleet-managed vehicles in the central cities as collectors and distributors were examined with Philadelphia as the case study area. The actual and potential transportation demand for the area was analyzed, and information on desirable system characteristics collected. Data on small, three passenger vehicles powered by hybrid gasoline-electric engines were gathered and the available technology matched against operational constraints. (Author)

PB-196 408
Massachusetts Inst. of Tech., Cambridge. Urban Systems Lab.
PROJECT IS/IMPROVED SCHEDULING.
Final rept.,
Marc Roddin. May 70, 68p UMTA-URT-9- (69)-1
Contract UMTA-URT-9

Descriptors: (*Urban transportation, Surveys), (*Rapid transit railways, *Massachusetts), (*Street railroads, Scheduling), Manpower, Questionnaires, Economic factors, Benefit cost analysis.
Identifiers: Owl service, *Boston (Massachusetts).

The report describes research of the possibilities of re-instituting owl service (that is, between midnight and 6 a.m.) on certain rapid transit and street-car lines operated by the Massachusetts Bay Transportation Authority. The major user groups are workers who would then be able to work overtime or on night shift, workers who are now on the night shift but cannot take public transportation to work because it is not available at the time when they need it, and persons who would be able to enjoy more social and recreational facilities in Boston if they could take public transit after midnight. (Author)

PB-196 464
Cleveland Transportation Action Program, Ohio.
THE J AND L STORY -- A MANPOWER/TRANSPORTATION DEMONSTRATION PROJECT.
Final rept. Sep 69-Jun 70,
David Goss. Sep 70, 116p CTAP-1 UMTA-Ohio-MTD-3
Contract DOT-UT-125

Descriptors: (*Bus lines, *Manpower utilization), (*Unemployment, *Transportation), Iron and steel industry, Cost estimates, Urban planning, Ohio.
Identifiers: *Intercity transportation systems, *Disadvantaged groups, Poverty, *Job related transportation, *Hard core unemployed groups, *Cleveland (Ohio).

The Cleveland Transit Action Program started bus service to the Jones and Laughlin Steel Plant in Cleveland, Ohio. The purpose was to provide inner city residents with transportation to a major area employer. The project was coordinated with AIM-JOBS, a local manpower agency. The project was successful in placing unemployed workers in jobs at the Jones and Laughlin plant. The bus service proved so effective that Jones and Laughlin agreed to cover operating losses and it is now running on a permanent basis. (Author)

PB-196 774
American Academy of Transportation, Ann Arbor, Mich.
ORIGIN-DESTINATION DATA PLOTTING AND ANALYSIS.
Technical rept.,

Jun 70, 73p TR-4

Descriptors: (*Traffic surveys, Bus lines), (*Mass transportation, Buses (Vehicles)), (*Urban transportation, Traffic surveys), Routing, Sampling, Statistical quality control, Urban areas, Michigan.
Identifiers: *Maxi-Cab transportation systems, Flint (Michigan).

This is one of five technical report documenting the Flint Maxi-Cab mass transportation demonstration project. The report explores origin-destination (O-D) analysis as it was applied to the Flint project. O-D data is commonly obtained through statistical sampling. In Flint, residence locations were matched with employment centers to determine potential bus route locations. In addition to providing information for the establishment of special purpose door-to-door bus service, specific O-D data may be valuable for determining adequacy of line-haul service in terms of route and schedule; in traffic assignment modeling, snow removal priority determination, traffic control priority determination, or regional and highway planning. (UMTA abstract)

PB-196 782
Simpson and Curtin, Philadelphia, Pa.
IMPROVED TRANSIT SERVICES: PREPARED FOR CITY OF LINCOLN, NEBRASKA.
Final rept.

Oct 70, 75p* UMTA-NEB-T9-3

Descriptors: (*Passenger transportation, Economic conditions), (*Bus lines, Acquisition), (*Urban transportation, *Nebraska), Requirements, Population (Statistics), Feasibility, Benefit cost analysis, Management, Problem solving.
Identifiers: *Lincoln (Nebraska), Public ownership, Private management.

If Lincoln City Lines no longer can be operated profitably as a private concern, it is recommended that public acquisition of the system take place, coupled with capital improvements necessary to restore operations to attractive level of service. Although bus service is a secondary form of travel in Lincoln, the poor, the aged, students and others not able to afford an automobile are dependant on buses for transportation. Public ownership is urged noting the advantages of tax savings, the absence of profit necessity, availability of capital funds, and the use of minicipal services for accounting, legal, police, and other administrative functions. To offset the tendency for city-owned operations to become inefficient, the study recommends inviting private management firms to manage the day to day operations. (UMTA abstract)

PB-196 819
System Development Corp., Santa Monica, Calif.
SUMMARY OF SKYLOUNGE SYSTEM.
Final rept.

20 Jan 69, 30p*
Sponsored in part by the Department of Housing and Urban Development, Washington, D.C., and the Los Angeles Department of Airports, Calif.
Prepared in cooperation with Pereira (William L.) and Associates.

Descriptors: (*Passenger transportation, Airports), (*Urban transportation, *Helicopters), (*Buses (Vehicles), Air cargo), Mass transportation.
Identifiers: *Skylounge transportation system.

The SKYLOUNGE study was charged with determining the economic and technical feasibility of the design, development, and implementation of a combined helicopter and road transportation system between airports and urban centers. The SKYLOUNGE concept concept examined in the study is based on the existing Sikorsky S-64A crane-type helicopter and a mobile lounge (bus) that could be quickly attached to the helicopter (and detached) in the transfer process between helicopter and ground vehicle while the passengers remain seated in the lounge. Many alternative configurations of this concept were examined. The major conclusion resulting from the study is that the SKYLOUNGE concept is technically feasible but economically unattractive in light of the alternative means of solving the problem of transporting people from urban centers to airports. (Author)

PB-196 843
Florida State Univ., Tallahassee, Transportation Center.
THE EFFECT OF AGE ON URBAN TRAVEL BEHAVIOR.
Research rept. (Final),
Norman Ashford, and Frank M. Holloway. 30 Jun 70, 207p Rept. no. 1 UMTA-URT-12-1
Contract UMTA-URT-12

Descriptors: (*Travel, Urban areas), (*Age, Travel), Urban transportation, Statistical distributions, Analysis of variance, Demography, Regression analysis, Mathematical models, Behavior, Central city, Attitudes, Automobiles, Wisconsin, Georgia.
Identifiers: Elderly persons, Albany (Georgia), Milwaukee (Wisconsin), Augusta (Georgia), Columbus (Georgia), Macon (Georgia), Savannah (Georgia).

A study was conducted to obtain quantitive analysis of the effect of a tripmaker's age upon several urban travel parameters. The most significant findings concern the average trip length for adults. Elderly people are found to make proportionately fewer intrazonal trips and more trips to the central business district. Transit usage is high for the young and the elderly and reaches its minimum value for young adults. Trip generation rates are correlated with age and purpose. Work and shopping trips increase in importance with age; the work trip declines rapidly in importance when the individual reaches retirement age. The study is concerned with variations in travel behavior and travel demand over an individual's life span, especially such variations as are not apparent in aggregated travel demand as traditionally analysed and projected in urban transportation studies. (UMTA abstract)

PB-196 844
Tube Transit Corp., Palo Alto, Calif.
STUDY OF TECHNICAL AND COST QUESTIONS RELATED TO THE FEASIBILITY OF THE GRAVITY-VACUUM TRANSIT SYSTEM.
Final rept.,
Bruce E. Skov. 28 Jul 70, 132p* 70-0063
Sponsored by Urban Mass Transportation Administration, Washington, D.C.

Descriptors: (*Passenger transportation, Pneumatic lines), (*Subway railways, Feasibility), Cost analysis, Problem solving, Temperature control, Humidity control, Pipe joints, Welded joints, Failure, Maintenance.
Identifiers: *Gravity vacuum transit systems, *Tube vehicles.

The report indicates that capital, operating, and maintenance costs of a gravity-vacuum concept transit system may be 4-10 times greater than originally estimated. Specific problem areas yet to be solved are those of thermal management and humidity control, design of a tube and rail joint capable of maintaining required rigidity and alignment under a wide range of ambient temperature changes, and means of tunneling through soft ground. A cost of 25-30 million dollars per mile is estimated for the system (1972 prices), assuming facile solutions of the problems noted above. A method of retrieving trains stopped between stations is also discussed. (UMTA abstract)

PB-196 904
Syracuse Univ., N.Y. Urban Transportation Inst.

RESIDENTIAL SEGREGATION, METROPOLITAN DECENTRALIZATION, AND THE JOURNEY TO WORK.
Final rept.,
David Greytak. Jul 70, 29p Occasional Paper-3
UMTA-URT-7-(69)-1

Descriptors: (*Employment, Distance), (*Travel, Urban areas), (*Ethnic groups, Employment), Urban transportation, Demographic surveys, Central city, Cost analysis, Residential buildings, Correlation techniques, Income, Transformations, Mathematical models.
Identifiers: Work travel patterns, Housing segregation.

The paper reports the results of a study of the interrelationship between housing segregation, the decentralization of urban areas, and work trips. Conventional wisdom asserts that non-whites travel further to work in metropolitan areas than do whites. The author has investigated this relationship, verified it, and estimated the dollar cost difference of work trip time as between whites and non-whites. When translated into cost, the effect of work travel patterns of whites and non-whites is to reduce the effective wage for non-white workers. One implication of this finding is that, at equal contract wages, non-whites will undertake longer work trips than whites and thereby incur a larger time cost and receive a relatively lower effective wage. Another finding has to do with the effect of city size on work trip patterns. (Author)

PB-197 346
Southeastern Pennsylvania Transportation Authority, Philadelphia.
COMMUTER RAILROAD SERVICE IMPROVEMENTS FOR A METROPOLITAN AREA - SEPACT 1.
Final rept. 28 Oct 62-30 Oct 65.

1 Apr 69, 149p UMTA-PA-MTD-1-69
Library of Congress catalog card no. 73-151295.

Descriptors: (*Passenger transportation, Urban planning), (*Urban planning, Pennsylvania), (*Urban transportation, *Electric railroads), Rail transportation, Public opinion, Improvement, Bus lines, Parking facilities.
Identifiers: Demonstration programs, *Philadelphia (Pennsylvania), SEPACT (Southeastern Pennsylvania Transportation Compact), Southeastern Pennsylvania Transportation Compact.

SEPACT I was the first Federally assisted commuter railroad demonstration project in the nation. Its basic goals were: (1) To prevent commuter service in the Philadelphia area from abandonment, (2) demonstrate the effectiveness of improved service and reduced fares in reversing the ridership decline, and (3) relieve traffic congestion on parts of the region's highway network. The demonstration program, 1962-1965, included the following: increased train service by the Pennsylvania and Reading Railroads, fare simplification and reduction, new equipment, additional parking spaces, bus-train transfers, and a promotion program. The demonstration findings were that in order to induce commuters to patronize rail transportation: modern, attractive rolling stock is helpful, feeder bus and taxi service can enlarge the market area, and clean and attractive stations are important. The following were found to be essential in increasing ridership: an aggressive public information program, frequent service, reliable schedules, a competitive fare structure, and provision of adequate parking. (UMTA abstract)

PB-197 532
Alameda-Contra Costa Transit District. Oakland, Calif.
REDUCTION OF ROBBERIES AND ASSAULTS OF BUS DRIVERS. VOLUME I: SUMMARY AND CONCLUSIONS.
Final rept.
Dec 70, 50p* UMTA-CAL-MTD-11-70-I
Prepared in cooperation with Stanford Research Inst., Menlo Park, Calif. and California Univ., Berkeley.

Descriptors: (*Buses (Vehicles), Crimes), (*Motor vehicle operators, Protection), (*Crimes, Reduction), Criminology, Motivation, Recommendations, Protectors, Police, Surveys, Ethnic groups, Socioeconomic status.
Identifiers: *Robbery prevention, *Assault prevention, Bus drivers, Exact fare systems.

In the years immediately preceding 1968, robbery and assault of bus drivers escalated into a serious crime problem. The primary objective of the study was to develop an understanding of the nature and causes of robbery and assault of bus drivers, and to evaluate potential solutions to those problems. The study report concludes that the installation of an exact fare system solves the robbery problem, but leaves a residual assault problem that must be dealt with by other means. Exact fare gained acceptance by the public, but drivers and transit management. No evidence was found that implementation of exact fare results in robbery of passengers. It was found that bus robberies are economically rather than racially motivated. The following countermeasures were suggested for future testing: Physical barriers between driver and passengers, use of paid riders to protect passengers on high-risk runs, and use of cameras on low traffic trips. (UMTA abstract)

PB-197 575
Syracuse Univ., N. Y. Urban Transportation Inst.
SOCIOECONOMIC FACTORS UNDERLYING PUBLIC TRANSIT USE IN THE JOURNEY TO WORK.
Final rept.,
Mark J. Kasoff. Jun 70, 65p* Occasional Paper-1
UMTA-URT-7-69-3
Contract UMTA-URT-7

Descriptors: (*Travel, *Employment), (*Socioeconomic status, *Urban transportation), (*Transportation models, Urban areas), Urban sociology, Empirical equations, Central city, Pattern recognition, Regression analysis, Municipalities.
Identifiers: *Work travel model choices.

In urban transportation planning the cost of data collection has been a particularly burdensome expense, with data collection often accounting for fifty percent of planning costs. The ratio is often greater for medium sized cities. This paper is an attempt to bridge the gap between the need for detailed data required for transportation planning and the expense involved in generating such data. The primary purpose of this study is to develop an empirical model for the evaluation of the main socio-economic determinants of model choice for the journey to work, with particular reference to medium size cities. The parameters of the model were found to be useful and reliable in the prediction of public transit use (in each census tract) for medium-sized cities not included in the original sample, but performed poorly in estimating transit use in large cities. Generally, the estimates of the model's parameters confirm findings of earlier journey-to work studies, regarding the relationships between auto ownership and declining transit use and race and transit usage. The former factor is more important in medium-sized than in large cities, while the opposite is true regarding the race transit relationship. (UMTA abstract)

PB-197 579
Tulsa Metropolitan Area Planning Commission, Okla.
A TRANSIT IMPROVEMENT PROGRAM FOR THE TULSA METROPOLITAN AREA 1970-1974.
Final rept.

Oct 70, 135p UMTA-OKLA-T9-1-70
Prepared in cooperation with W. C. Gilman and Co., Inc. Cleveland, Ohio.

Descriptors: (*Urban transportation, Improvement), (*Urban planning, Oklahoma), Surveys, Recommendations, Bus lines, Financing, Personnel management, Pattern recognition, Travel, Forecasting, Public opinion, Maintenance, Management engineering.
Identifiers: Tulsa (Oklahoma), Fare structures, Travel patterns.

The purpose of the report was to develop a short-range transit plan that would serve Tulsa over the next five years. Development of the recommended plan was based upon an on-board ridership survey, various socioeconomic characteristics of the Tulsa area, and an analysis of the existing transit in Tulsa was drawn up to formulate the guidelines for developing a recommended plan. In developing a single recommended plan, three separate plans plus the existing operation were evaluated. The plan which best met all aspects of the policy guidelines represented a slight expansion of the present route network and a modification of the level of service now provided. In general, the system was made more responsive to the travel demands of the riding public with an emphasis on service to the lower income areas. The recommended plan can provide the justification for a Capital Grant application for new buses and related equipment. (UMTA abstract)

PB-197 580
Syracuse Univ., N. Y. Urban Transportation Inst.
URBAN TRANSPORTATION POLICY: FACT OR FICTION.
Final rept.,
Herman Mertins, Jr., and David R. Miller. Jun 70, 25p* Occasional Paper-2 UMTA-URT-7 (69)-2
Contract UMTA-URT-7

Descriptors: (*Urban transportation, *Government policies), Organizations, Project planning, Legislation, Management engineering, Highway planning, Passenger transportation.

The purpose of the analysis is to examine briefly existing Federal urban transportation policy with particular attention to some of its inherent paradoxes. The concern is primarily with the movement of people in urban areas; goods traffic receives only incidental consideration. No integrated national policy governs the passage and funding of Federal legislation pertaining to urban transportation. What exists now is 'piecemeal policy'-an amalgam of responses to particular crises; legislative, executive, administrative, and legal; and private enterprise actions in the absence of specific Federal (or other) policy. The first section of the paper reviews Federal highway legislation, particularly in terms of its impact on the formation and implementation of urban transportation policy. This is followed by a review and an appraisal of legislation that specifically pertains to urban mass transportation. The third section deals with the effects of federal organizational changes on the scope and emphasis of urban transportation policy. In the final section, the interactions of federal policy and urban transportation problems are evaluated. (UMTA abstract)

PB-197 800
Metropolitan Transit Authority of Nashville, Tenn.
HOSPITAL AND MEDICAL CENTER EXPRESS BUS SERVICE PROJECT.
Final rept.
Dec 70, 84p UMTA-Tenn-MTD-4-70

Descriptors: (*Passenger transportation, *Medical services), (*Bus lines, Urban areas), (*Urban transportation, *Tennessee), Central city, Rural urban fringe, Traffic, Parking facilities, Public opinion, Surveys, Effectiveness, Hospitals, Statistical data.
Identifiers: *Medical centers, Express bus service, *Nashville (Tennessee), Demonstration projects.

A demonstration project established direct express bus service between various medical centers and downtown Nashville. The study demonstrates that frequent express bus service influenced many employees to use public transportation although outpatients, visitors, and other persons associated with the medical centers were not drawn in significant numbers to public transportation. In spite of the provision of direct public transit service, there was no apparent alleviation of parking and traffic congestion in the area surrounding medical centers. It was found that employees, outpatients and medical center visitors who have automobiles available will generally drive if parking space is available at a reasonable cost. Those persons with limited incomes and others without an automobile available must use public transportation to work, shop, and for other trip purposes. (UMTA abstract)

PB-197 816
Georgia Inst. of Tech., Atlanta. School of Civil Engineering.
THE RELATIONSHIP OF WORK TRIPS TO EMPLOYMENT CONNECTED SOCIAL AND ECONOMIC FACTORS.
Final rept.,
George E. Mouchahoir. Oct 70, 173p UMTA-URT-19- (69)-1
Contract DOT-URT-19

Descriptors: (*Travel, *Employment), (*Socioeconomic status, Travel), Planning, Multivariate analysis, Passenger transportation, Industrial relations, Distance.
Identifiers: *Work travel patterns.

The thesis concerns itself with inventorying social, economic and travel variables connected with employees of 20 large Atlanta Work Centers making trips to work. This material is then analyzed to determine the degree of association between the employee socioeconomic and travel variables. With that done, a mathematical model is attempted having causal and functional characteristics providing an analysis of present conditions and calibration of forecasting techniques. The study concluded that factor analysis multivariate statistical techniques can be used to determine the interrelationship and degree of association between socio-economic and travel variables related to the employee and place of work, a point highly doubted before the study. Component analysis multivariate statistical technique was then used to determine a multivariate statistical model relating the number of work trip attractions variable to the significant employer and employee variables. This showed the number of work trips attracted to the work centers depends on the floor space of the center, and on the average occupational level and average distance of travel of the employees of this center. (UMTA abstract)

PB-197 817
Sacramento Transit Authority, Calif.
RIDES, TRIPS AND MOVES ON A BUS.
Interim technical rept. no. 6,
Graham Tomlinson. Dec 70, 106p UMTA-CAL-MTD-10-70-6
Contract DOT-UT-42

Descriptors: (*Buses (Vehicles), *Behavior), Mass transportation, Seats, Selection, Social psychology, California.
Identifiers: *Transit riders, *Sacramento (California).

A new crosstown bus line was established for demonstration purposes. This technical report is one of a series on the demonstration project. This study examines the social setting of the bus with emphasis on what in fact people do on the bus, how they choose seats, etc. The report provides some suggestions that the sociology of a bus has a relationship to the nationwide decline in mass transit patronage. (Author)

PB-197 818
Sacramento Transit Authority, Calif.
WHO RIDES THE BUS. PASSENGER CHARACTERISTICS AND RIDING PATTERNS OF THE SACRAMENTO TRANSIT AUTHORITY, MAY 1968.
Interim technical rept. no. 3,
Carole Wolff Barnes. Aug 70, 106p UMTA-CAL-MTD-10-70-3
Contract DOT-UT-42
See also rept. no. 4, PB-197 823.

Descriptors: (*Buses (Vehicles), Utilization), (*Passenger transportation, Buses (Vehicles)), Habits, Socioeconomic status, Bus lines, California
Identifiers: *Transit riders, *Sacramento (California).

A new crosstown bus line was established for demonstration purposes. This technical report is one of a series on the demonstration project. This report gives a detailed analysis of a passenger survey taken on the crosstown bus line. The report is in five sections: (1) the sociological characteristics of the passengers, (2) an analysis of origins and destinations, (3) riding patterns, (4) a comparison of discretionary and captive riders, and (5) an association of household income with passenger characteristics and riding patterns. (Author)

PB-197 819
Florida State Univ., Tallahassee, Transportation Center.
JOINT DEVELOPMENT: AN ECONOMIC INPUT.
Final rept.,
David W. Rasmussen. Jun 70, 40p Rept. no. 2 UMTA-URT-12- (69)-2
Contract DOT-URT-12

Descriptors: (*Urban transportation, Economic analysis), (*Community development, Urban transportation), Economic development, Project planning, Cost effectiveness, Sociometrics, Employment, Urban areas, Systems analysis, Forecasting, Florida.
Identifiers: Joint development, Modal choices.

Joint development is a subset of planning that is based on an integration of social, physical and transportation planning. It differs from planning in that it is based on a transportation system. It is argued in the paper that joint development projects are unlikely to significantly affect the number of jobs in a metropolitan area or increase the level of aggregate income. The economic benefits that might accrue to a community from a joint development project are discerned in terms of its unique contribution to urban space. It is a tool for changing the urban form. Two benefits that joint development can create are the improvement of access from the urban poor areas and a viable option for high density living for those who desire such a life style. The paper analyzes methods by which the economists can contribute to the joint developments. A cost effectiveness method is recommended for nonquantifiable benefits in social policy decisions. (UMTA abstract)

PB-197 820
Sacramento Transit Authority, Calif.
A DEMOGRAPHIC PROCEDURE FOR BUS ROUTE DESIGN.
Interim technical rept. no. 5,
Carole Wolff Barnes. Oct 70, 53p UMTA-CAL-MTD-10-70-5
Contract DOT-UT-42

See also rept. no. 6, PB-197 817.

Descriptors: (*Bus lines, Design), (*Demography, Bus lines), Routes, California.
Identifiers: *Transit riders, *Sacramento (California).

A new crosstown bus line was established for demonstration purposes. This technical report is one of a series on the demonstration project. This report presents a new approach to the design or reorientation of a bus route. The approach has in all probability been used in an unsystematic, informal way by transit authorities in the past. However, the method described is systematic and logical. The method basically consists of connecting population groups in specific geographic areas with generalized destination points. (Author)

PB-197 821
Sacramento Transit Authority, Calif.
SERVICE CHANGES AND THEIR EFFECTS ON REVENUE, RIDERSHIP, AND RIDERS PER MILE.
Interim technical rept. no. 1,
Carole Wolff Barnes. Apr 70, 68p UMTA-CAL-MTD-10-70-1
Contract DOT-UT-42
See also rept. no. 2, PB-197 822.

Descriptors: (*Bus lines, Economic factors), (*Revenue, Bus lines), (*Passenger transportation, Expenses), Services, Utilization, California.
Identifiers: *Bus fares, *Transit riders, *Sacramento (California).

A new crosstown bus line was established for demonstration purposes. This technical report is one of a series on the demonstration project. Transit ridership has been declining in Sacramento, California and in most other American cities since 1945. It is the objective of this study to define some of the variables contributing to the decline of transit patronage in Sacramento, to delineate their effects on ridership and revenue, and to suggest methods of manipulating these variables in order to improve service, revenue and patronage. (Author)

PB-655 567
Stanford Research Inst Menlo Park Calif.
U.S. PASSENGER TRANSPORTATION: AN INVENTORY OF RESOURCES AND AN ANALYSIS OF CAPABILITIES OF SURFACE MODES.
Final rept.,
Howard R. Ross. Mar 67, 96p
Contract OCD-PS-64-201

Descriptors: (*Transportation, *Inventory), (*Passenger vehicles, *Roads), Railroads, Traffic, Urban areas, Pavements, Nuclear weapons, Blast, Radioactive fallout, Shielding.

The report presents the results of a study of U.S. passenger transportation by surface modes, consisting essentially of an inventory of resources and an analysis of capabilities. The modes considered include the private automobile; intercity, city, and nonrevenue buses; and passenger trains, commuter rail, and rail rapid transit. The principal elements of each of these are identified as facilities and vehicles. These resources are inventoried in gross summary form and located in terms of large geographical units. A general analysis of these resources is made in terms of their capabilities to handle passengers under normal and emergency conditions, and such capabilities are compared by mode. Where available, data based on actual observations of passenger capacities are shown. For a specific area of limited geographical extent, a sample analysis of the combined passenger capacities of various modes is presented.

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