IDENTIFICATION OF TRANSPORTATION DATA NEEDS AND MEASURES FOR FACILITATION OF DATA FLOWS

FINAL REPORT
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16. Abstract

The purposes of this study were (a) to identify the data needs and problems of non-federal users of transportation data and (b) to identify steps that might be taken to improve the quality and accessibility of statistical data that these users need. Questionnaires and interviews were used in a nationwide inquiry that brought substantive responses from 350 data users in state and local governments, transport industries, consulting firms, academic institutions, and other types of private organizations. The study was planned and conducted by the Transportation Research Board with the guidance of a Steering Committee that represented all major elements of the transportation community and whose collective experience provided first-hand knowledge of the study scope.

The report's conclusions and 12 recommendations reflect the Committee's interpretation of the inquiry results and the Committee's judgment on how best to improve the current status of processes by which transportation data are collected and made available to users. The inquiry and findings fall in three general categories: the needs and practices of users, the improvement of data processes, and the facilitation of data access and flows. The inquiry materials and extensive tabulations of the inquiry results are presented in the report appendixes.

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CONTENTS

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The Transportation Research Board hereby expresses its deep appreciation to each person who contributed to this report by completing the inquiry questionnaire or by participation in interviews. The Board recognizes that thousands of dollars worth of valuable time were thus spent and that the aggregate response is a landmark contribution to the understanding of the data practices, needs, and wants of non-federal users of transportation data.

The Board is also greatly indebted to the Chairman and members of the project Steering Committee who spent many hours of deliberation in planning the inquiry and in developing this report.

Finally, the Board acknowledges the sponsorship and cooperation of the Research and Special Programs Administration and the Transportation Systems Center of the U.S. Department of Transportation.

CHAPTER 1. SUMMARY

1.1 BACKGROUND AND OBJECTIVES

The quality of transportation planning and decision making is highly dependent upon the availability and adequacy of statistical data upon which plans and decisions are based. For the most part these transportation data are numerical values for various characteristics of (a) transportation facilities and equipment, (b) passengers and commodities, (c) origins, destinations, and flows, or (d) the socioeconomic environment of transport operations. Some of the basic and needed data are non-existent, and some are existent but not generally available. Transportation data sources are scattered among all levels of government and throughout the private sector. Even if needed data are located and acquired, the user may all too often find the data to be seriously lacking in timeliness, completeness, or other qualities.

The purposes of this study are (a) to identify the data needs and problems of non-federal users of transportation data and (b) to identify steps that might be taken to improve the quality and accessibility of data that are needed by these users. These objectives have been pursued through a nationwide inquiry that brought substantive responses from 350 data users in state and local governments, transport industries, consulting firms, academic institutions, and other types of private organizations. Many of the respondents were planners and administrators, but other types of work such as research, engineering, and transport operations were well represented. In addition to the considerable time and care that each respondent spent in completing the inquiry questionnaire, approximately 40 respondents participated in interviews with the project staff and thereby contributed an even greater depth and breadth to the inquiry response.

Over the past 20 years there have been a number of conferences and studies on transportation data needs and issues, but none has specifically addressed the non-federal community. In general, the findings presented in this report are consistent with those reached in the previous studies and are reinforced by the wide range of data users and data concerns that are covered in this study.

The study was planned and conducted under the guidance of a Steering Committee that represented the major elements of the transportation community and whose collective experience provided first-hand knowledge of the study scope. The conclusions and recommendations that follow reflect the Steering Committee's interpretation of the inquiry results; they represent the Committee's judgment on how

best to improve the current status of transportation data and the processes by which data are collected and made available to users. The Committee judgments were greatly influenced but not necessarily constrained by the inquiry results.

1.2 CONCLUSIONS AND RECOMMENDATIONS

Community Concern

The inquiry has proved the existence of important and continuing needs for transportation data. There is strong concern for improvement of the processes by which data are made available to users. The consistency of response over the widespread representation of different types of organizations and types of work indicates that this concern exists throughout both the public and private sectors of the non-federal user community.

Data Needs

Data needs of the inquiry respondents are quite diverse with respect to types of transportation and types of data. The typical respondent has major concerns for several types of transport and for all types of data. The most pervasive needs are for data that describe the origins and destinations of passengers and freight, commodity flows, transport facilities, transport system performance, and the energy and environmental impacts of transportation. More than 100 specific types of data in these categories were identified by the respondents.

Data Practices

The inquiry shows that the average respondent goes to about ten different data sources to acquire needed data and that the total number of national data sources used by the collective respondents is somewhat less than 200.

The dominant method by which respondents access data in their daily work is to refer to data publications that are in their personal files or in the files of their organizational units. There is need, however, to improve and extend this mode of access to transportation data.

Recommendation 1. At least until on-line computer access becomes a dominant mode for acquisition, the U.S. Department of Transportation should encourage developers of transportation data to publish well-indexed and well-documented copies of data sets whose usefulness is warranted by user demand.

A substantial majority of the respondents have budgets for data acquisition and other data processes. At least two-thirds would pay reasonable charges for data they have been unable to acquire; some would even assume the collection costs of needed data that are unavailable.

Data Problems

Data timeliness is a foremost need. Data released by government agencies are often outdated at the time of their release.

Recommendation 2. Data providers should be encouraged by the U.S. Department of Transportation to release partial data sets during the early steps of data processing, perhaps through sampling, and thus provide users with representative preliminary data from sets that will be fully released at a later date.

After the timeliness problem, the following problems are most significant to data users and justify efforts to reduce their seriousness:

- Unavailability of needed data, including basic data sets whose continuation is made uncertain by deregulation of the transportation industry;
- Insufficient data detail with regard to geographic areas or because of confidentiality constraints on release of details; and
- Insufficient knowledge about existing data sets and their availability.

The following recommendation relates to data sets whose termination would have serious impacts on the quality of transportation planning and decision-making.

Recommendation 3. Alternatives for future provision of basic data now provided by programs that will be discontinued should be prepared by every agency or organization within which such programs exist.

Improvement of Data Processes

There is no strong support for specific reallocation of fundamental responsibilities that now exist for the collection and provision of transportation data. There is concern, however, for the continued meeting of basic data needs as changes occur in the present allocation of responsibilities. Better definition is needed for the roles most appropriate to the respective levels of

government.

In addition to improved availability of existing data, there is need for improved access to available data, particularly for data sets that represent continuing collection efforts. A most significant need, however, is an improved process for preparing and disseminating up-to-date information on what transportation data are available, how the data may be accessed, and what the data do and do not represent.

Recommendation 4. A special group should be established to develop criteria and specifications for data reference services. The group should represent data suppliers and users and should be fully aware of the availability, application, and relative value of data sets to the transportation community. The group should also promote the dissemination of current knowledge about transportation data and the implementation of new data reference services that are needed.

Although there are many transportation data sets that are generally available from respondent organizations, it appears that many are local in application and do not represent continuing collection efforts. There is need, however, for continuing inventory and announcement of data sets that are available in the respondent community.

Recommendation 5. Reference services for transportation data should include a regular newsletter that contains reviews of newly available data sets and that identifies important unmet needs for transportation data. The newsletter should reach all users of transportation data who wish to be so informed.

Data Collection

General approaches to the collection of transportation data are given in the following recommendations.

Recommendation 6. Transportation data should be collected primarily through the administrative functions of public and private transportation programs, but carefully administered sample surveys should be used to collect data that cannot be acquired otherwise on a cost-effective basis.

Recommendation 7. The U.S. Department of Transportation should identify federal administrative functions and data collection activities that can generate useful transportation data and should develop procedures for making such data available.

An ancillary approach is through qualified extensions of data collection by the Bureau of the Census.

Recommendation 8. Continued support should be given to the Census of Transportation program, but any extension of the program should be consistent with assured improvements in timeliness of data to be provided. Strong consideration should be given to a continuing survey that would replace many of the present efforts and to the allocation of transportation questions to other surveys that are conducted by the Bureau of the Census.

Facilitation of Data Flows

Although there is little support in non-federal sectors for the centralization of federal data programs, there is need and support for a strong U.S. Department of Transportation (DOT) role in coordination of federal programs that generate transportation data. To provide representative inputs for coordination functions and for other improvements in data flows, a focal point is needed for the viewpoints of all sectors of the transportation community.

Recommendation 9. A national forum should be established to represent all categories of transportation data suppliers and users. The forum should make continuing assessments of user needs and should make recommendations on priorities and mechanisms for improvement of transportation data processes. The forum should be independent of but responsive to all major elements of the transportation community in both the public and private sectors. Consideration should be given to combining the functions of the forum with those of the group that was proposed in Recommendation 4.

Recommendation 10. The U.S. Department of Transportation should lead the coordination of all federal transportation data programs and should provide the transportation community with information on the status, content and availability of data produced in all such programs.

It is assumed that DOT's coordination would be consistent with the more general functions of the office of Federal Statistical Policy and Standards. The forum agenda would include items submitted by DOT and other members of the forum.

Data Program Costs and Funding

The inquiry did not reveal need for a greater total amount of funds for data collection and data provision than is currently available. Needs were expressed, however, for better targeting of available funds and for greater efficiency in their use. For example, data estimation through sample surveys and modeling will become a more and more important means for meeting data needs within budgetary constraints. Savings that are achieved through appropriate use of these techniques can be applied to other data needs that are not now fulfilled.

Recommendation 11. The U.S. Department of Transportation should encourage and support the development of cost-effective sampling and modeling techniques for the collection and provision of transportation data.

Transportation programs will continue to be primary sources of funds for transportation data programs, but data users can be expected to provide a fair share of support for the costs of data collection and provision.

Recommendation 12. Major financial support for federal transportation data programs should be derived from federal-aid and grant funds that are applicable to transportation programs. Remaining program costs should be derived from an equitable system of charges to transportation data users.

1.3 IMPLICATIONS OF THE FINDINGS

The foregoing conclusions and recommendations imply that a number of follow-up tasks should be performed. The implied tasks are listed below in five categories. First are those recommended for DOT performance. Tasks in the second and third categories would be performed by groups that would come into existence if all DOT tasks were carried out. Tasks in the last two groups would generally be performed by federal agencies, including DOT, to which the tasks were applicable.

Tasks for the U.S. Department of Transportation

- Lead the coordination of federal transportation data programs and provide the transportation community with information on the status, content, and availability of data produced by federal programs.
- Identify federal administrative functions and data collection activities that do or can generate useful transportation data, and develop procedures for making such data available wherever such is not now the case.
- Encourage data providers to release representative preliminary data sets in advance of their full release and encourage developers of transportation data to make their respective data sets available in published form.
- Encourage and support the development and proper use of sampling and modeling techniques that are cost-effective for the collection and provision of transportation data.
- Support the establishment of a national forum to represent data suppliers and users in the continuing assessment of user needs and data programs, and support the establishment of a special group for the facilitation of data reference services that include newsletters on data availability.

Tasks for a national forum of data suppliers and users

- Make a continuing assessment of user needs and recommend priorities and mechanisms for cost-effective improvements that include the filling of existing or imminent gaps in the provision of needed data.
- Address specific data issues that are raised by DOT or other elements of the transportation community and that include the respective data collection roles of the various elements.

Tasks for facilitation of data reference services

- Develop criteria and specifications for transportation data reference services and promote the implementation of new reference services that are needed.
- Promote the dissemination of knowledge about existing data sets and publicize the nature of new data sets that become available.

Tasks for agencies and organizations that discontinue basic data programs

- Evaluate the losses and impacts of program discontinuation and give users adequate opportunities to make their views known.
- Develop alternatives for future provision of data now provided by programs whose discontinuation will seriously impair transportation planning and decision making.

Tasks for applicable federal agencies, including DOT

- Collect transportation data primarily through the administrative functions of transportation programs.
- Continue support for the Census of Transportation program, but with assured improvements in timeliness.

Successful accomplishment of the foregoing tasks can provide benefits for many users of transportation data and thereby enhance the planning, development, operation, and maintenance of the nation's transportation systems.

CHAPTER 2. BACKGROUND

Over the past two decades there have been many intermittent efforts to characterize transportation data needs and to facilitate transportation data access and flows. Some of these efforts are represented by conferences and studies on transportation data needs, others are represented by various mechanisms that have been proposed or implemented to facilitate the availability of needed data. Implicit in all these efforts is the importance of statistical data to transportation planning and decision making at all levels. There has been widespread concern for improving the status of data collection and data provision.

Background for this study is provided by the following series of selected events over the period from 1960 to date. It is acknowledged that other events, some prior to 1960, might also have been selected as relevant background.

Conference on Transportation Research, 1960

This wide-ranging, multidisciplinary conference on transportation research was conducted by the National Academy of Sciences at Woods Hole, Massachusetts. The conference report emphasized the importance of adequate and timely data in the planning and improvement of the nation's transportation systems. (*1*)*

High Speed Ground Transportation Act, 1965

This act authorized the U.S. Secretary of Commerce to collect and provide transportation data that can contribute to the improvement of the national transportation system. This legislative authority was transferred to the U.S. Secretary of Transportation in 1966. In the 1966 Department of Transportation Act, the Secretary was charged with responsibility for promotion and development of statistical and other information that is relevant to domestic and international transportation. (*2*)

U.S. DOT Proposal for Transportation Information, 1969

This report (*3*) provided a framework and description for transportation data. It presented an initial five-year program for meeting the critical transportation needs of industry and all levels of government. Provision was made for consolidation and reallocation

* Italic numbers in parentheses correspond to references listed on pages 8/1 and 8/2.

of transportation data functions both within and outside DOT, but it was not implied that a centralized data base would serve all needs. Instead it presented a program for using existing information programs to the greatest practicable extent. (3)

Development of a Transportation Information Library Locator System, 1972

In this project a computer-based bibliographic file was developed for references to specific data sources. Retrieval was accomplished through classification and index terms that covered all major aspects of transportation data. (4)

Conference on Use of Census Data in Transportation Planning, 1974

This 1974 conference was held by TRB (then HRB) in Albuquerque, New Mexico, and was attended by approximately 70 transportation planners and Bureau of the Census employees. The conference proceedings (5) contain prepared papers and recommendations concerning the usefulness and adequacy of Census data.

Congressional Bill to Establish a National Center for Transportation Statistics, 1975

HR7778 was a bill to establish a national center for transportation statistics that would collect and disseminate statistics and other data related to all modes of transportation in the United States and other nations. Hearings were held but the bill was not enacted. (6)

Study of Urban Transportation Data Reporting Requirements, 1976

This TRB report (7) was prepared in 1976 at the request of the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA). The recommendations include new measures of transport performance, basic data elements, and allocation of responsibilities.

Study of Freight Data Requirements for Statewide Planning, 1977

This study was performed through the National Cooperative Highway Research Program (NCHRP) at the request of the American Association of State Highway and Transportation Officials. The report (8) identifies

and ranks freight data needs, recommends ways to improve transportation data, and includes a classified catalog of available data resources.

Transportation Research Board Ad Hoc Conference on Transportation Data, March 1977

A wide variety of transportation data issues was discussed in this one day conference of approximately 50 participants from all sectors of the supplier-user community. Much of the discussion related to an Office of Management and Budget (OMB) proposal that a significant improvement in transportation data would be realized if a transportation data center were created within DOT. It was recommended that TRB should provide a continuing national forum for transportation data suppliers and users. (*9*)

Transportation Research Board Ad Hoc Meeting on Transportation Data, June 1978

Approximately 15 participants in this meeting constituted an ad hoc task group for further discussion of issues that had been raised at the 1977 Ad Hoc Conference.

In follow-up of this meeting, a paper was prepared on Institutional Impediments to Comprehensive Data Collection. (*10*)

Federal Statistics Framework, 1978

The Office of Federal Statistical Policy and Standards developed a report on Framework for Planning U.S. Statistics for the 1980s. The report contains a chapter on transportation statistics that advocates a U.S. Department of Transportation center for coordination of transportation data collection and provision. (*11*)

DOT/RSPA Recommendations, 1978

These recommendations (*12*) proposed that the availability and quality of transportation information would be improved through the establishment and operation of a center for the Management of Transportation Information. The Center would provide economies of scale in the collection and processing of transportation data, would be a data service bureau

for the DOT administrations, and would share information with other agencies, the transportation industry, and the public.

An initial step in this proposed program was the development of a directory to transportation data by DOT's Transportation Systems Center. (*13*)

Study of the Adequacy of Maritime Data and Statistics, 1979

The Maritime Transportation Research Board of the National Research Council held six regional conferences at which users and suppliers spoke to data problems and needs in the maritime field (*14*). An adjunct to the study was a catalog of maritime information sources (*15*) that was published by the TRB Maritime Research Information Service (MRIS).

ICC Report on Financial and Statistical Information, 1979

This report (*16*) contains conclusions and recommendations for the U.S. Interstate Commerce Commission's (ICC) report forms and is based on interviews with approximately 50 people within ICC and approximately 100 individuals from outside agencies.

Report by the National Transportation Policy Study Commission, 1979

This report (*17*) stated that any reporting requirements established by a federal agency must be kept to a minimum, be directly related to a federal objective, and be reviewed periodically. Furthermore, the concept of a national transportation data center should be explored, without pre-empting private state and local efforts, and without generating unnecessary information.

CAB Regulatory Information Planning Project, 1980

This report (*18*) is a U.S. Civil Aeronautics Board (CAB) effort to align its regulatory information system in view of the 1978 airline deregulation act. Conclusions and recommendations identify a reduced reporting responsibility and a five-year regulatory information plan.

In 1979, the Research and Special Programs Administration, U.S. Department of Transportation, provided funds through the Transportation Systems Center at Cambridge, Massachusetts, for a study of non-federal users of transportation data. Because of its unique relationship with the transportation research community and its long-standing concern for transportation data, the Transportation Research Board was invited to carry out the study. Contract negotiations were completed in August 1979. Objectives, scope, methods, and results of the study are detailed in the remainder of this report.

CHAPTER 3. OBJECTIVES AND METHODS

This chapter begins by stating an overall purpose for the study, then gives two major objectives that were set forth in the contractual agreement. The remainder of the chapter describes the inquiry methods that were used, characterizes the respondents to the inquiry, and discusses methods that were used to develop this report.

3.1 PURPOSE AND OBJECTIVES

The overall purpose of this study is to determine what steps might be taken to improve those processes whereby needed transportation data* are provided to non-federal users. Data processes include, for example, the definition, collection, storage, and transmittal of data, including quality control. Improvements to be considered are those that are cost-effective and enhance data flows between suppliers and users, or that otherwise reduce or eliminate user's problems in acquiring the data they need.

To meet this purpose it is clearly necessary to know the data needs and problems of non-federal users. It is equally important to know the views of suppliers and users on the needs for and merits of alternatives that might be advanced for process improvements. Thus, the study objectives can be stated as follows:

1. To identify the transportation data needs of users in non-federal governmental agencies and private organizations, and
2. To identify measures for the facilitation of transportation data flows among all government agencies and private organizations.

Subsidiary objectives include the evaluation and recommendation of possible improvements for existing data programs, and recommendations for new data programs that can enhance data flows.

3.2 METHODS AND SCOPE

Methods used in this study began with the appointment of a project Steering Committee (see inside front cover) whose collective experience and expertise cover the study scope with respect to types of organizations, types of work, and types of data that are implied by the study objectives.

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*Seven general types of transportation data are listed in parts A-G of questionnaire Item 14 on page 4/1.

Through the Steering Committee's advice and guidance a study plan was developed for a nationwide inquiry in which non-federal users of transportation data would be asked to state their data needs and problems and to give views on needs and possibilities for improvement of data processes. The plan included priorities for lines of inquiry to be pursued, a questionnaire that addressed the lines of inquiry through (a) both short-answer and open-ended response items and (b) guidelines for in-depth interviews that would be held with selected recipients of the questionnaire. The questionnaire and letter of transmittal are shown in Appendix A.

An early decision was that the TRB constituency of more than 10,000 associates, committee members, and other recipients of TRB services would be an adequate basis for defining an inquiry universe, perhaps with some supplementation. Another important decision was that the inquiry participants would be selected from the TRB rolls in much the same manner as would have been used to select invitees to regional conferences on transportation data needs. Thus, the respondent universe would consist of those people who were invited to participate, including the Steering Committee, and would be a purposive rather than a random sample of the TRB constituency or any larger community.

Potential respondents were selected on the basis of their geographic locations, the types of organizations with which they are affiliated, the types of work in which they are engaged, and their transport interests with respect to modes. To the extent that these factors could be inferred from TRB files and staff knowledge of the TRB constituents, selections were made with a view to providing adequate representation for all major cross-classifications of the selection factors. To provide this type of balance, selections from some classes of the TRB constituency were made in much greater proportions than from others. In a few classes, such as air transport, the TRB rolls were supplemented with additional names of known users of transportation data.

The initial plan called for the participation of about 400 questionnaire respondents and about 20 in-depth interviews. To give greater assurance that this level of participation would be reached, a total of 600 potential respondents was selected for the questionnaire survey, and 41 of these were selected for in-depth interviews by the consultant staff. The inquiry was begun in early April 1980, and virtually all responses had been received by the end of July 1980.

The distributions of transmittals and responses are shown graphically in Figure 1 and in greater detail in Table 1 of Appendix B. The total of 350 questionnaire responses represented an overall response rate of nearly 60%

and was well-distributed with respect to organization types and geographic regions. About 40% of the respondents were from state, regional, and local government agencies, about 30% from transport and transport-related businesses and industries, and about 30% from consulting firms and academic institutions. On a regional basis, nearly half were from eastern states, about one-fourth were from central states, and about one-fourth from western states. Had regional conferences been used instead of the questionnaire method, the equivalent attendance would have been approximately 170, 90, and 90 in the eastern, central, and western regions, respectively. There were at least 2 respondents from each of 39 states and a single respondent from each of 9 additional states.

Both Figure 1 and Table 1 show the distributions of in-depth interviews that correspond to the questionnaire distributions. In general, the in-depth interviews were for at least two hours and often involved several colleagues of the primary interviewee.

It is estimated that an average of more than one hour was contributed to the study by each questionnaire respondent and that the total contribution of all respondents amounted to at least three man-months of professional concern for transportation data issues.

In questionnaire Item 1 each participant was invited to respond for a stated unit of the respondent organization. Item 2 asked for a description of the unit's work and how that work relates to the transportation field. The two items are shown below in the format that is used throughout the remainder of this report whenever new questionnaire items are introduced.

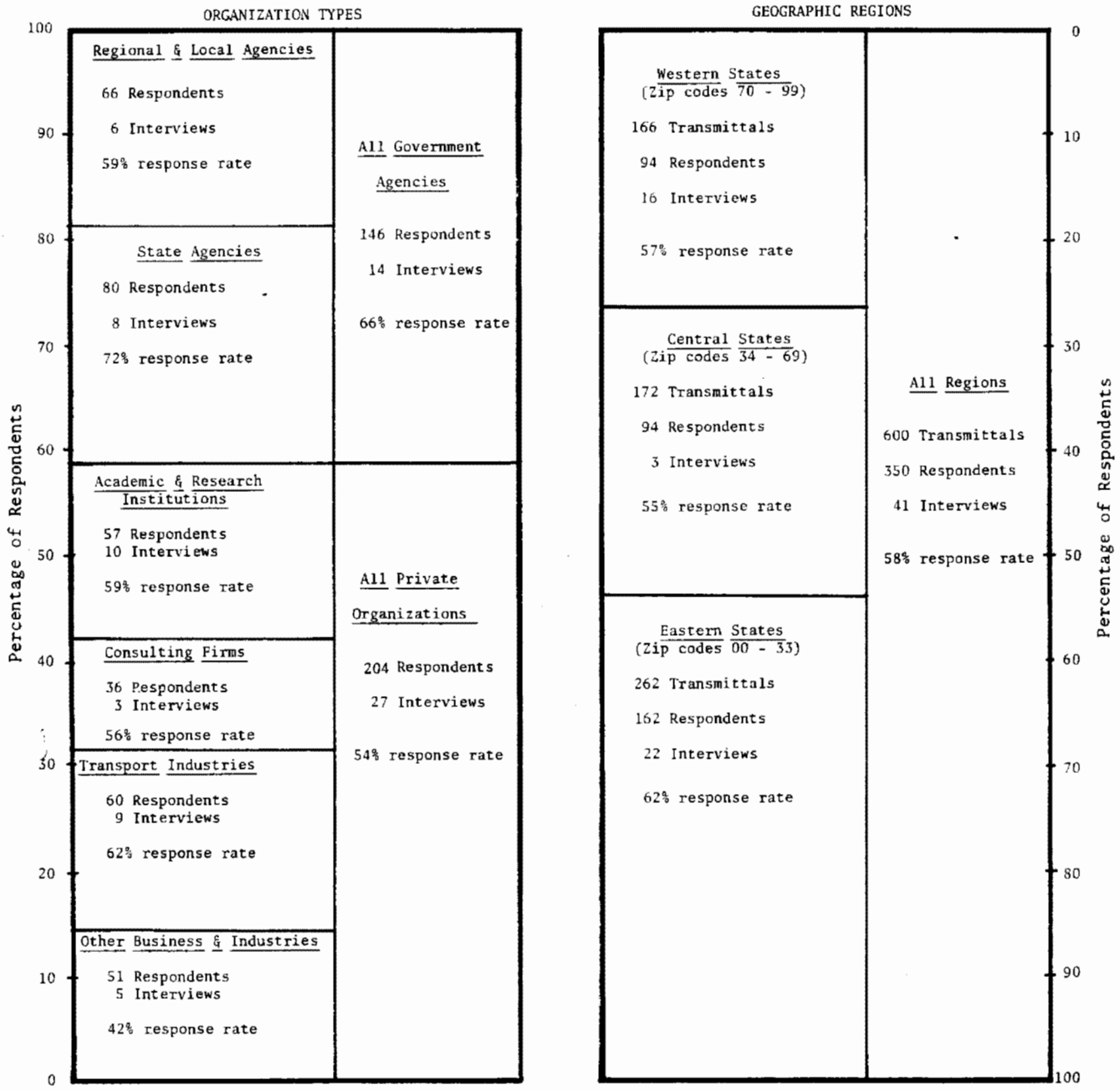
Item 1. Many of the items in this questionnaire refer to the organization unit in which you work. If applicable to your case, please write the name of your unit in the space below.

Name of Unit _____

Item 2. Please sketch briefly the nature of the work of your organization unit (e.g., administration, planning, operations, . . .), how this work relates to your overall organization, and how it relates to the transportation field.

In some cases the respondent stated explicitly that the response represented the entire organization, in other cases that the response was as an individual, and finally there were cases where the representation was unclear or unstated. In general, however, the type of work classification is applicable to the respondent and his immediate coworkers within the respondent organization.

FIGURE 1. DISTRIBUTIONS OF INQUIRY TRANSMITTALS AND RESPONDENTS BY ORGANIZATION TYPES AND GEOGRAPHIC REGIONS (From Table 1)



Distributions of type of work and major transportation interests are shown in Figure 2 and in greater detail in Tables 2A, 2B, and 2C of Appendix B. Classification of respondents by type of work is somewhat subjective, particularly because any given respondent is likely to be involved in several types of work to varying degrees and at different times. The distribution shows that 6 of the 9 work categories included about 40 respondents each, and that the planning and programming category included over 80 respondents. Somewhat fewer than 20 respondents represented each of the two remaining categories.

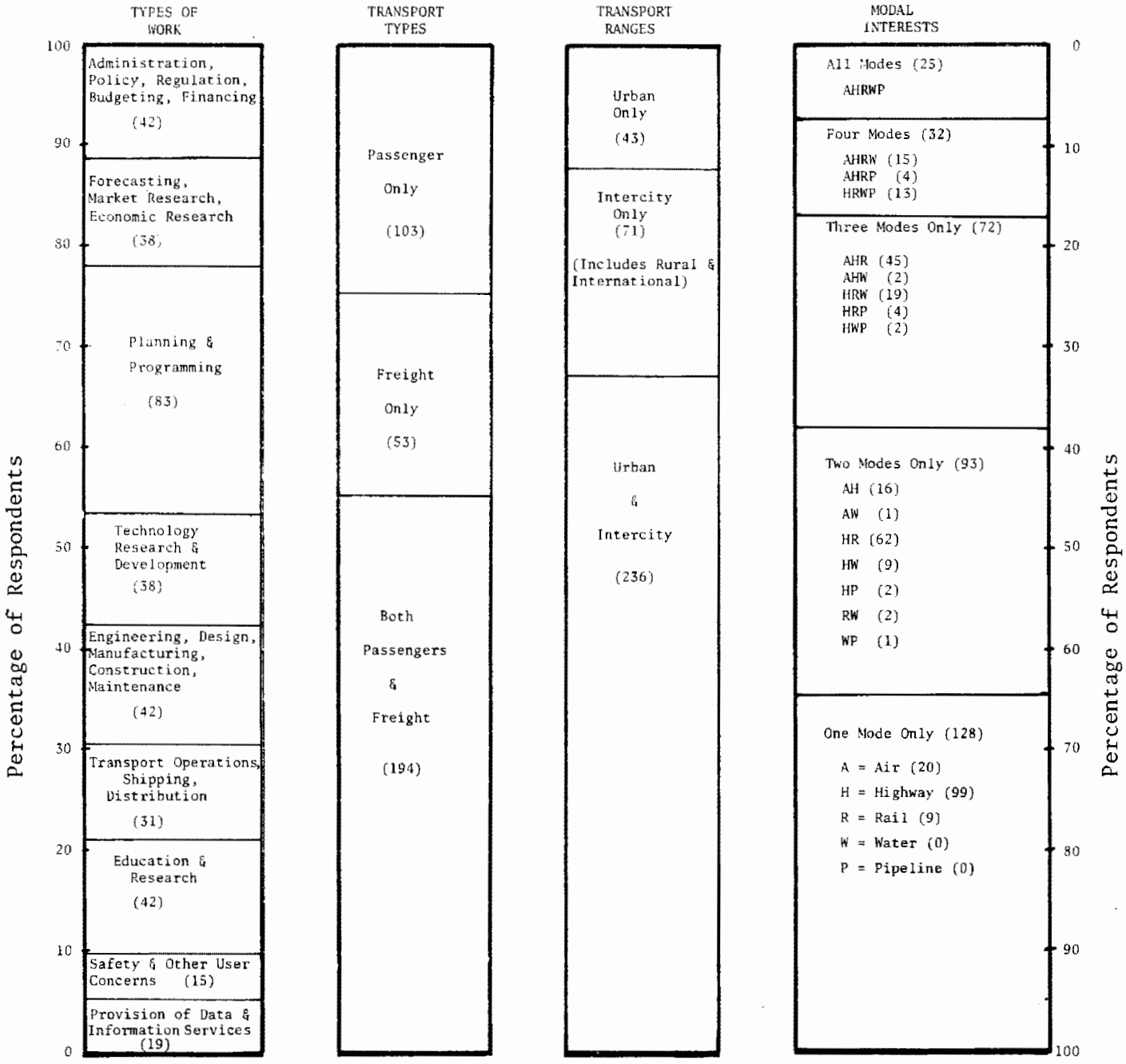
Classification of respondents as to transport interest was governed partly by the open-ended response to questionnaire Item 2, i.e., the relation of the respondent's work to the transportation field, and partly by the response to questionnaire Items 11-13 in which the respondents were asked to state their level of need for data concerning transport types (passenger or freight), transport ranges (urban, rural, intercity, or international), and transport modes (air, highway, rail, water, or pipeline).

Perhaps the most striking observation about transportation interests is that most respondents have major interests in both passenger and freight transport, in all ranges of transport, and in more than one transport mode. On the other hand, the coding of responses by transport interests makes it possible to single out, for example, all those who have major interests in urban passenger transport only.

The collection of respondents who have major interests for any particular mode reveals that about 90% have major interests in highway transport, 50% in rail, 35% in air, 25% in water, and 15% in pipeline (see Table 2B, Appendix B).

The inquiry responses have been entered into a machine-readable data base in which each record represents one respondent. The contents of each record include the classification data described above, responses to all fixed-answer questionnaire items, coded responses to open-ended items, and excerpts of the verbatim responses to open-ended items. It has not been possible to examine the hundreds of cross-classifications that can be made by sorting the data base and tabulating the results, but existence of the data base makes it possible to carry out many further studies of the inquiry responses.

Figure 2. DISTRIBUTION OF RESPONDENTS BY TYPE OF WORK AND MAJOR TRANSPORT INTERESTS (From Tables 2A, 2B, 2C)



Note: Number of respondents in each category is shown in parentheses.

After the first 100 questionnaire responses had been received, preliminary tabulations of the results, including lists of open-ended responses, were distributed to the Steering Committee. Three subcommittees were then formed to examine the preliminary and succeeding results. The respective scopes for the subcommittee work correspond to Chapters 4, 5, and 6 of this report. In turn, these chapters relate to questionnaire Items 3-16, 17-21, and 22-35.

Each subcommittee drew upon and interpreted the inquiry results to formulate conclusions that were presented to the entire committee. The conclusions that appear in the remainder of this report include both those that were reached by the subcommittees and those that evolved mainly from deliberations of the overall Steering Committee. The conclusions were greatly influenced but were not necessarily constrained by the inquiry results. The report recommendations are based upon the conclusions and represent Steering Committee judgment and consensus on how best to make cost-effective and needed improvements in transportation data processes.

The term "cost-effective" is not used in a rigorous sense but rather to imply that a cost-effective process is an efficient method for meeting specific user needs. A data collection program, for example, would be cost-effective if it produced a maximum yield of useful data per dollar expended.

The Committee's initial conclusions are stated below; they imply that the study objectives are important to a wide range of transportation data users.

Conclusion 1. The inquiry respondents are adequately diverse with respect to geographic location, organization type, type of work, and transportation interests. The collective universe of 350 respondents provides a substantial basis for the inquiry findings.

Conclusion 2. The high rate of response to the study inquiry and the degree to which individual respondents expressed their needs and views prove the existence of important and continuing needs for transportation data and strong concern for improvement of the processes by which data are made available to users. The consistency of response over the widespread representation of different types of organizations and types of work indicates that this concern exists throughout both the public and the private sectors of the non-federal user community.

CHAPTER 4. DATA NEEDS AND PRACTICES

This chapter begins by describing respondents' data needs in terms of general and specific types of transportation data. The second section gives a description of how and from whom the respondents acquire transportation data and includes discussion of the respondents' data budgets. The last and perhaps most important part of the chapter continues the discussion of data needs in terms of various types of problems that the respondents have encountered. In essence, this chapter speaks to the questions: "What data are needed?", "How are data acquired?", and "What problems have been encountered?"

4.1 DATA NEEDS

Four questionnaire items were used to determine respondents' data needs with respect to transport type (Item 11), transport range (Item 12), transport mode (Item 13), and data type (Item 14). These items and the number of respondents who checked each level of need are shown below.

Items 11-14. Please check each category listed below to indicate the levels of your general needs for transportation-related data.

TRANSPORT SYSTEMS AND DATA CATEGORIES		LEVEL OF NEED * High	Med.	Low	None
11. Transport Type Needs	A. Passenger	189	46	35	80
	B. Freight	136	60	61	93
12. Transport Range Needs	A. Rural	103	57	72	118
	B. Urban	165	60	42	83
	C. Intercity	152	68	48	82
	D. International	47	37	76	190
13. Transport Mode Needs	A. Air	69	46	84	151
	B. Highway (General	148	43	32	127
	Auto	166	39	39	106
	Bus	121	65	58	106
	Truck	146	70	48	86
	C. Rail	120	54	78	98
	D. Water (General)	20	37	86	207
	Inland	35	42	91	192
	Maritime	24	32	72	222
	E. Pipeline	21	30	92	207

		LEVEL OF NEED * High	Med.	Low	None
14. Data Type Needs	A. Traveler/Commodity Characteristics	158	74	49	69
	B. Origins/Destinations of Passengers/Freight	182	65	40	63
	C. Transport Performance (speed safety, quality, costs, etc.)	184	82	32	52
	D. Transport Facilities (roads, ways, terminals, etc.)	155	80	54	61
	E. Transport Equipment (vehicles, controls, safety, costs, etc.)	113	95	71	71
	F. Population/Land Use Characteristics	125	93	57	75
	G. Energy/Environment Impacts of Transport Systems	155	88	43	64
	H. Other	18	3	0	329

*Entries in the None columns include respondents who did not check any box in the respective lines

The distributions of "high" and "medium" needs are shown in Figure 3 for each category of items 11-13 and in Figure 4 for each category of Item 14. Further details for these distributions are given in Tables 11-14 of Appendix B.

Figure 3. DISTRIBUTION OF DATA NEEDS WITH RESPECT TO TRANSPORT TYPE, RANGE, AND MODE (From Tables 11-13)

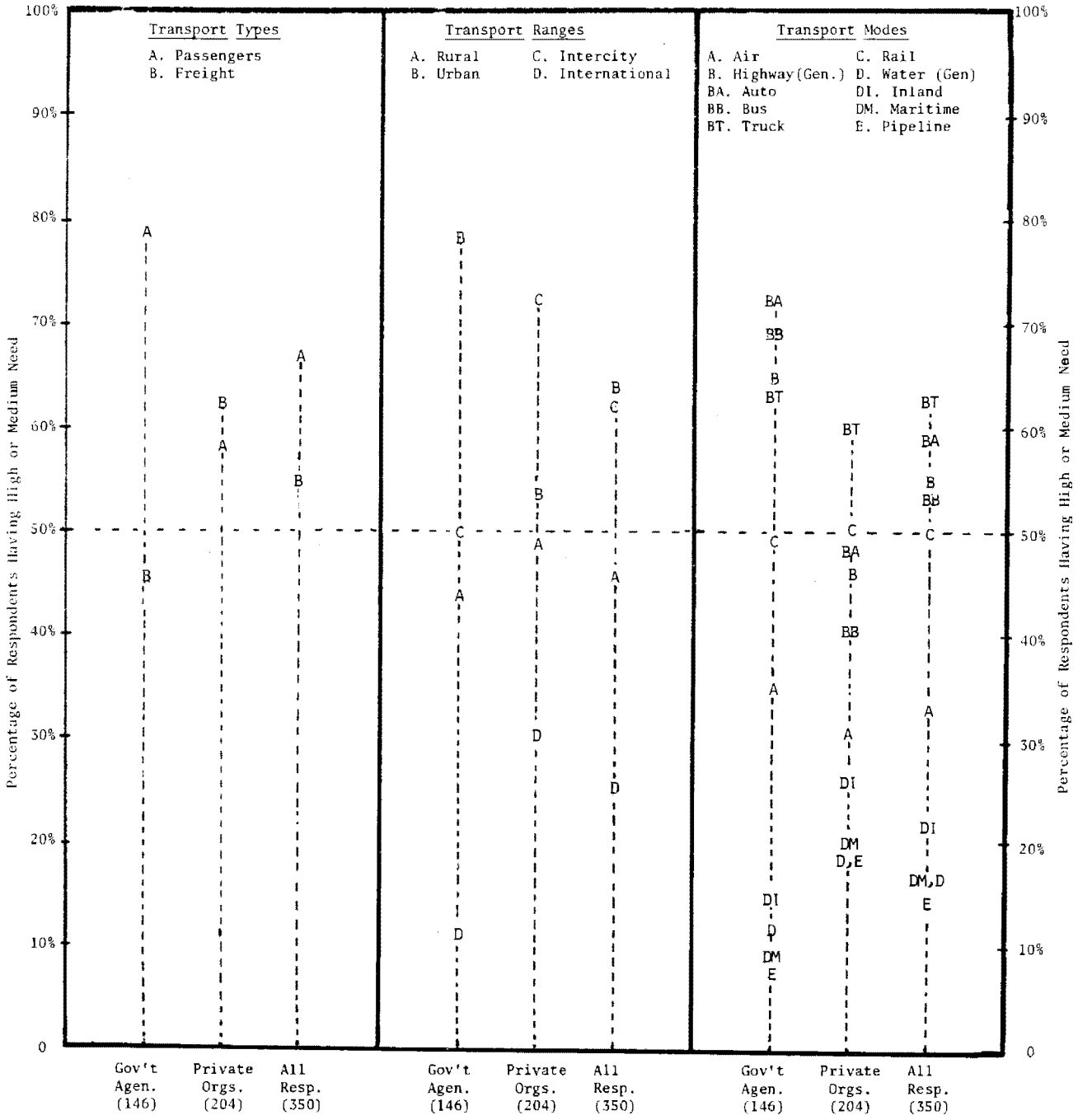


Figure 4. DISTRIBUTION OF DATA NEEDS WITH RESPECT TO DATA TYPES (From Table 14)

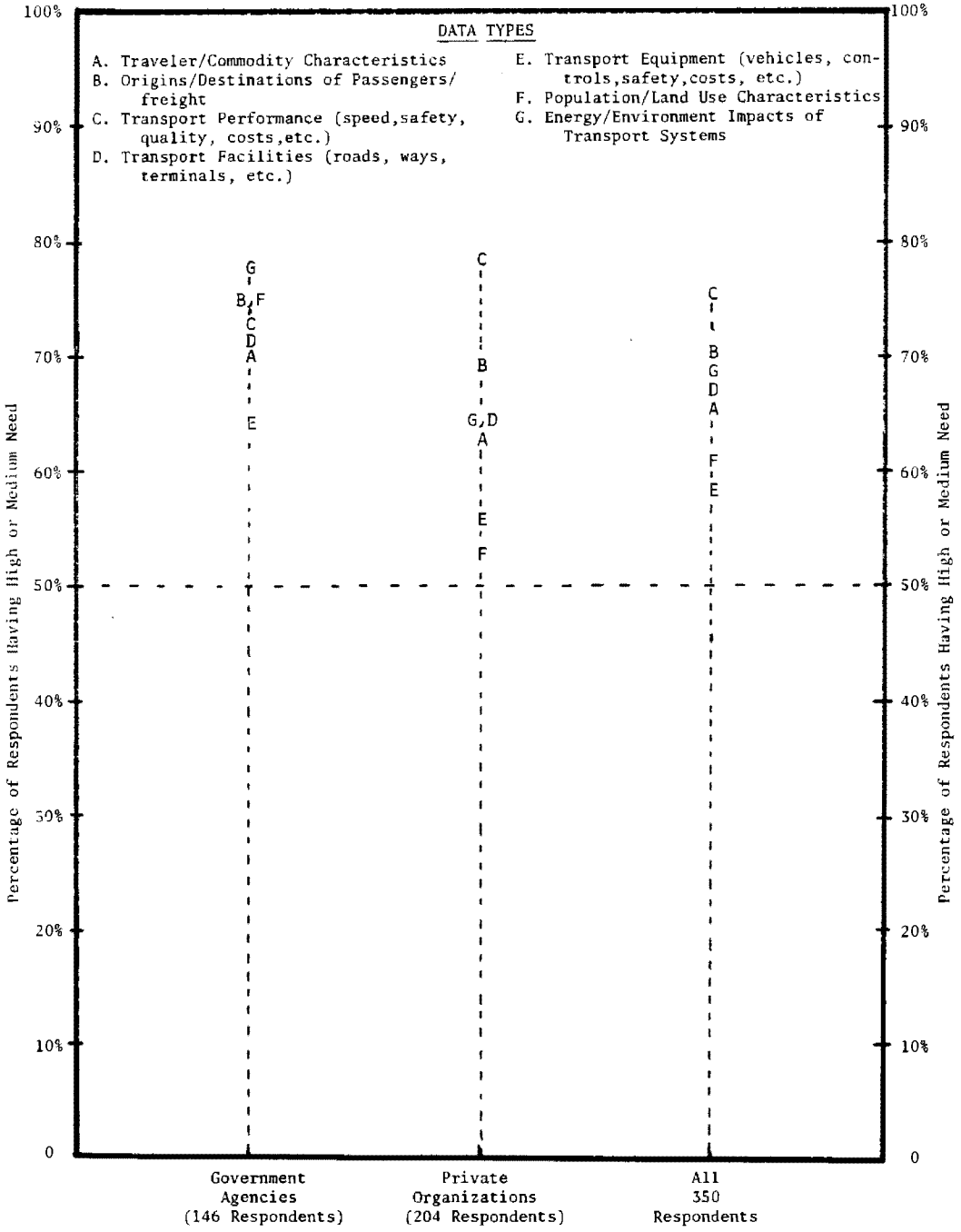


Figure 3 shows that the majority of all respondents has high or medium needs for both passenger and freight data and for both urban and intercity data.

On an overall basis, high or medium needs for modal information are about 60% each for several types of highway transport, 50% for rail, 35% for air, 20% for water, and 15% for pipeline transport. As was stated in Chapter 3, about 65% of the respondents have needs for data in two or more of the five modes.

When needs for different types of data are considered, Figure 4 shows that most respondents have high or medium needs for any type of transportation data that was listed in Item 14. The top-ranked needs are generally for data on transport performance, origins and destinations, and energy or environmental impacts of transportation.

In questionnaire Item 10, respondents were asked to describe two of their most important and current needs for transportation data. A total of 235 respondents listed one need, and 127 of these listed two needs. The summary tabulation of their expressed needs is shown below in the categories that were used for Item 14.

Item 10. Please sketch two of your most important and current needs for transportation-related data (other than any you may have described in Item 9).

Type of Data Implied by Response	Number of Responses
A. Traveler/Commodity Characteristics	44
B. Origins/Destinations & Passenger/Freight Flows	130
C. Transport Performance	44
D. Transport Facilities	84
E. Transport Equipment	10
F. Population/Land Use Characteristics	11
G. Energy/Environment Impacts	17
Other	22
Total	362

The more specific nature of these needs is given in Table 10 of Appendix B. The following list is taken from Table 10 and contains those needs that were stated by more than 10 respondents.

- Financial data on transport facilities (39 respondents)
- Commodity flows in various modes (35)
- Accident data (18)
- Airline seat availability (17)
- Airport data (17)
- Traffic counts and forecasts (16)
- Travel behavior vs. fuel costs (16)
- Energy/fuel use (16)
- Auto ownership and use (14)
- Pavement life vs. vehicle loads (13)

It is apparent that the respondents have emphasized their need for commodity flow data and costs of transport facilities. Examination of the verbatim responses shows that these needs encompass all modes of transportation.

Conclusion 3. Data needs of the inquiry respondents are quite diverse with respect to types of transportation and types of data. The typical respondent has major concerns for several types of transportation and for all types of data, but the most pervasive needs are for data that describe the origins and destinations of passengers and freight, commodity flows, transport facilities, transport system performance, and the energy and environmental impacts of transportation.

4.2 DATA PRACTICES

Two primary aspects of data practices are methods used to acquire data and the sources from which data are acquired. A secondary aspect is the payment of data costs.

In questionnaire Item 3, respondents were asked to indicate their relative dependence on each of six methods that might be used to acquire transportation data. The item and summary responses are shown below.

Item 3. For each of the methods listed in lines A-F at right, please check to indicate your dependence on that method for acquiring statistical data that are needed by your unit.

METHODS FOR ACQUIRING NEEDED STATISTICAL DATA	Degree of Dependence				No Response
	High	Medium	Low	None	
A. Look up in publications held personally or within my unit	233	91	33	2	1
B. Request published data from other library/service within my organization	56	104	138	45	7
C. Through contacts with other specialists within my organization	107	133	88	14	8
D. Through contacts with other specialists outside my organization	92	158	93	5	2
E. Through mail or phone contacts with data sources (outside organization)	91	132	106	11	10
F. By on-line terminal access to computer-stored data bases	54	44	86	160	6

The distribution of responses by organization type is shown in Table 3 of Appendix B. It is quite clear that around 90% of the respondents depend mainly on readily accessible publications to acquire the data they need. About 70% depend upon contacts with other people both within and outside the respondent organization. Only about 30% depend heavily upon on-line computer access to data. This latter result must be tempered by the fact that on-line access is relatively new. The same question asked 10 years ago might have shown that less than 10% used computer access. It may be that 10 years hence, more than 50% of data users will use on-line technology to access needed data. Nevertheless, the experience of librarians and other bibliographic information services has been that published data, whether statistical or bibliographic, play the very important role of providing assured access for browsing purposes. If the publications are well-indexed, they may also be used to retrieve specific data.

Conclusion 4. The dominant method by which the respondents acquire transportation data is by referring to data publications that are in their personal files or in the files of their organizational unit.

If data providers follow through on the recommendations below, then users will have more complete personal access to existing data sets than is now the case.

Recommendation 1. At least until on-line computer access becomes a dominant mode for acquisition, DOT should encourage developers of transportation data to publish well-indexed and well-documented copies of data sets whose usefulness is warranted by user demand.

It may be assumed that publication costs would be recovered through sales of the publications, either by private publishers or by an agency such as the National Technical Information Service (NTIS).

To identify the use of various data sources, questionnaire Item 4 provided a check list for 35 general sources of statistical data (see page 4/8). After checking the sources used, respondents were asked to rank the four most important sources to their work (Item 5). Since a number of the sources, e.g., Bureau of the Census, provide more than one data service, respondents were invited to circle any specific services that have been used (Item 6) during the past year. The sources and specific services were listed in a supplement that was transmitted with each questionnaire.

The overall response tabulation for Items 4-5 is shown on the following page. Each entry for Item 4 is the number of respondents who use the source; each entry for Item 5 is the number of respondents who ranked the source as being among the four most important sources used. Detailed distributions for Items 4-6 are given in Tables 4-6 of Appendix B.

Virtually every respondent completed Items 4 and 5. In spite of the extra time required to respond to Item 6, 305 respondents did refer to the supplement and circle the specific services that they had used.

Much use was made of the blank lines at the bottom of the original list of data sources. In all, about 130 additional sources were added by one respondent or another. Twenty-eight of these were written in by more than one respondent and appear in the detailed distributions shown in Tables 4 and 5 of Appendix B. Generic terms such as "state agencies" or "local libraries" are not included in the list.

The original questionnaire supplement has been updated to include the additional sources and is contained in Appendix A.

Items 4-5. For each source listed below (including any sources you may add in lines 36-40), please check Item 4 if your unit has sought data from that source during the past 12 months. In Item 5 enter rank 1 for the most important source you checked in Item 4, rank 2 for the next most important, etc., but do not rank more than four sources.

DATA SOURCE	4. Use of Source (check)	5. Importance Rank (1,2,...)	6. Use of Specific Services (circle)
1. Air Transport Association of America	74	30	A
2. Association of American Railroads	126	47	A
3. Amer. Assoc. of State Hwy. & Transp. Off.	152	113	
4. American Bus Association	40	1	
5. American Petroleum Institute	92	17	A
6. Amer. Public Transit Assn.	168	37	
7. American Trucking Associations, Inc.	103	22	A
8. Bureau of Census, U.S. Dept. of Commerce	211	105	A B C D E F G H I J
9. Civil Aeronautics Board	81	33	A B C D E
10. Dun & Bradstreet	62	17	
11. Federal Aviation Admin. U.S. DOT	112	40	A B C D E F G H I J K
12. Federal Highway Admin. U.S. DOT	246	166	A B C D E F G H I J K L
13. Federal Railroad Admin. U.S. DOT	127	39	A B C D E F G
14. Highway Users Federation	89	14	
15. Interstate Commerce Commission	109	44	A B
16. Motor Vehicle Manuf. Assn.	117	17	A
17. Motorcycle Industry Council	15	0	A
18. Nat'l Hwy Traff. Safety Admin. U.S. DOT	106	28	A B C D E F
19. Nat'l Industrial Traffic League	28	12	
20. National Technical Information Service	174	81	
21. R.L. Polk Vehicle Registrations	48	5	
22. Research & Spec. Prog. Admin. U.S. DOT	62	4	A B C D E F
23. St. Lawrence Seaway Develop. Corp.	9	0	A
24. Transportation Association of America	71	18	A
25. Transportation Research Board	254	178	A B C
26. Transportation Systems Center U.S. DOT	112	18	A
27. Urban Mass Transp. Admin. U.S. DOT	141	63	A B C
28. U.S. Army Corps of Engineers	82	25	A
29. U.S. Coast Guard U.S. DOT	28	5	A B C D E F G H
30. U.S. Dept. of Agriculture	54	8	
31. U.S. Dept. of Energy	132	23	A
32. U.S. Maritime Admin. U.S. Dept of Commerce	33	5	
33. U.S. Dept. of Labor	78	16	A B
34. U.S. DOT Library	62	9	
35. U.S. Travel Data Center	25	8	
36.			
37. 36-63. Twenty-eight			
38. additional, each by more	79	15	
39. than one respondent			
40.			

Item 6. The Supplement to this questionnaire lists specific services that are available from those sources for which code letters A, B, etc., are shown in Item 6 above. If you have checked any of these sources in Item 4, it will be most appreciated if you can take the time to refer to the Supplement, then circle any code letters in Item 6 for specific services you have used during the past 12 months.

Note: Entries in Column 4 are number of respondents who use the respective sources. Entries in Column 5 are numbers of respondents who ranked the respective sources as either 1st, 2nd, 3rd, or 4th in importance.

It is likely that the frequent use of TRB as a data source is associated with the fact that virtually all respondents were selected from the TRB constituency at the outset of the inquiry. On an overall basis the 10 most used data sources were those listed below:

- Transportation Research Board (73% of all respondents)
- Federal Highway Administration (70%)
- Bureau of the Census (60%)
- National Technical Information Service (50%)
- American Public Transit Association (48%)
- American Association of State Highway & Transportation Officials (43%)
- Urban Mass Transportation Administration (40%)
- U.S. Department of Energy (38%)
- Association of American Railroads (36%)
- Federal Railroad Administration (36%)

These overall results are, of course, related to the distribution of respondent affiliations and types of work. Respondents, for example, who have major concerns for air transport are likely to use the Civil Aeronautics Board as a major data source. There is need for further study of source use with respect to the respondents' type of work and major transportation interests.

Some of the sources listed are essentially primary sources; many are mainly intermediaries between the end user and a more primary source. The Interstate Commerce Commission is an example of the former, but the National Technical Information Service is strictly an intermediary for users. A listed source, such as the Transportation Research Board or an industry association, may sometimes be a primary source and at other times be strictly an intermediary for most users. The fact remains that from the user's point of view, a data source is generally a place from which needed data can be acquired.

The average number of data sources used was about 10 per respondent, irrespective of the respondent's organization type (see Table 4, Appendix B).

Conclusion 5. The inquiry shows that the average respondent uses about 10 different data sources, that the total number of major data sources used is about 30, and that the total number of national data sources used by the collective respondents is slightly less than 200.

The quantities identified in this conclusion are relevant to respondents' needs for information about available data. These needs are discussed in later sections of this report.

Use of specific data services is given in detail in Table 6 of Appendix B. Some 17 specific services were used by at least 50 respondents:

- National Cooperative Highway Research Program, TRB (178 respondents)
- Transportation Research Information Services, TRB (178)
- Transportation Research Record and Special Reports, TRB (178)
- Highway Statistics, FHWA (151)
- Statistical Abstracts of the United States Census (109)
- National Highway Needs, FHWA (77)
- Nationwide Personal Transportation Study, Census, FHWA, NHTSA (75)
- National Travel Survey, Census (73)
- Fatal and Injury Accident Rates, FHWA (69)
- Journey to Work Supplement, Census, FHWA, UMTA (62)
- Census of Government Statistics, Census (60)
- Commodity Transportation Survey, Census (60)
- Highway Performance Monitoring System, FHWA (58)
- Truck Inventory and Use Summary, Census (55)
- Interstate Statistics, ICC (54)
- Aviation Forecast Information, FAA (52)
- Aviation Statistics, CAB (50)

About 20 of the 50 specific services listed for DOT modal administrations were used by at least 10% of the respondents. Many of the remaining 30 services are specific to modes (marine and pipeline transport) that were of relatively less concern to most of the respondents.

Thus, the inquiry has revealed which specific services are most used by the respondents and that some services have little or no use within the respondent group. The value of the latter services may therefore be mostly to federal users and, possibly, to types of non-federal users who had very small representation among the inquiry respondents.

Respondents were asked to indicate whether their budgets included certain types of data expenditures and whether greater budgets were needed for the respective categories (Items 15-16). The summary tabulation of responses is shown below. Details for the distributions are given in Tables 15-16 of Appendix B.

Items 15-16. For the data budget categories listed below, please check Item 15 to indicate which are part of the annual operating expenses of your unit. Check Item 16 to indicate categories for which your unit needs a larger budget.

Data Budget Category	15. Check if in budget	16. Check if greater budget needed
A. Collection of Original Data	201	115
B. Data Subscription/Purchase from other organizations	215	59
C. On-Line Computer Access to Data of other organizations	96	83
D. Consultant/Contract Services for Data Acquisition	128	59
E. Synthesis/Analysis of Collected/Acquired Data	209	92
F. Provision/Distribution of Data Internally/Externally	182	55
G. (Other)	0	0

Note: Differences between 350 and the entries in Cols. 15-16 are the numbers of respondents who did not check the respective boxes.

Most respondents have budgets for data collection, data subscription or purchase, data synthesis and analysis, and data provision. Categories for which only a minority of respondents have budgets are for consultant or contract services and on-line computer access. However, Table 15 shows that consultant service budgets exist for a majority of the industry respondents.

These results are consistent with the acquisition methods used by respondents. For example, the dominant budget item of data subscription corresponds to the dominant acquisition method of personal publications, and the least prevalent budget item and acquisition method is on-line computer access.

Needs for greater budgets were not expressed by a majority of the respondents, either for any budget item or by any organization type. The most prevalent budget need is for collection of original data, expressed by about 35% of the respondents. On the average, only about 20% of the respondents expressed needs for greater budgets in the other categories.

Conclusion 6. A substantial majority of the respondents have budgets for the data processes they employ. The most prevalent need for greater budgets is for the collection of original data.

One implication of this conclusion is that most of the respondents expect to pay for data services and provide budgetarily for these costs. It is noted, however, that Items 15-16 did not probe into the actual size of respondents' data budgets. The inquiry did not address the extent to which users receive free data services or share data acquisition costs with other organizations.

4.3 DATA PROBLEMS

Data problems are perhaps the most important aspect of data needs and practices because problems are almost certain indicators of data process improvements that are most needed. Moreover, problem analysis will often point the way to one or more alternatives for cost-effective improvements.

In Item 7, respondents were asked to indicate the relative seriousness of problems in eight general categories. Summary responses are shown on the following page. The distribution of responses by organization types is shown in Figure 5 and in greater detail in Table 7 of Appendix B.

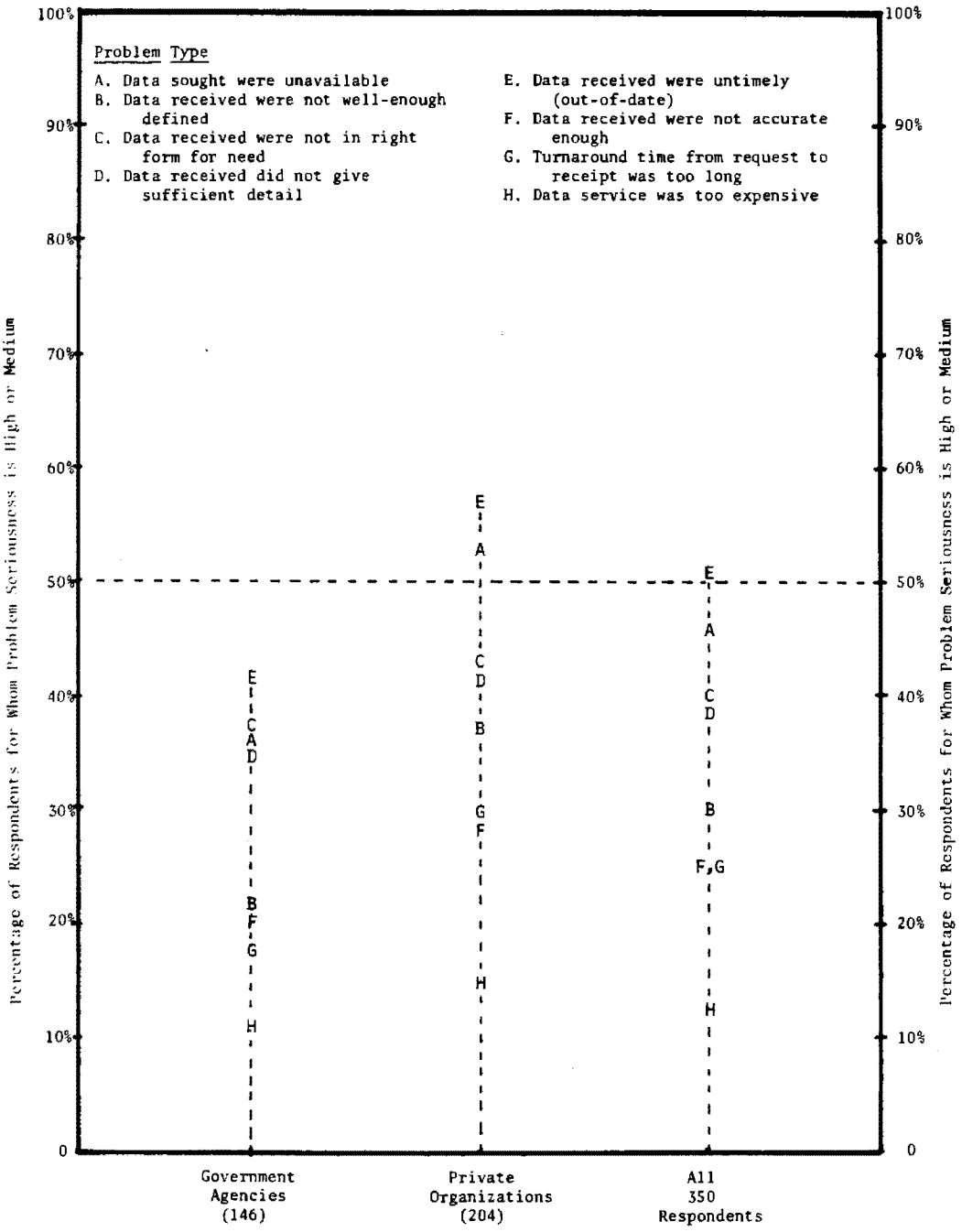
Item 7. If you encountered any of the problems listed in lines A-I at right when seeking data from the sources you checked in Item 4, please check to indicate the level of seriousness that problem presented to your work.

TYPE OF PROBLEM ENCOUNTERED	7. SERIOUSNESS OF PROBLEM			No Response
	High	Medium	Low	
A. Data sought were Unavailable	66	95	54	135
B. Data received were not well-enough defined	38	68	68	176
C. Data received were not in right form for need	44	77	48	161
D. Data received did not give sufficient detail	55	81	58	156
E. Data received were untimely (out-of-date)	83	95	42	130
F. Data received were not accurate enough	33	55	75	187
G. Turnaround time from request to receipt was too long	32	56	76	186
H. Data service was too expensive	15	32	105	198
I. (Other) (23 other types)	16	6	1	327

There were 71 respondents who checked no boxes at all for Item 7. Because a column headed "none" was inadvertently omitted from the table there is no way to know whether these individuals had no problems or simply chose to skip over this item. Of the 279 respondents who checked at least one box, 178 checked "high" seriousness for at least one type of problem. Thus, most respondents have encountered at least one type of problem that was regarded as highly serious.

Figure 5 shows that four types of problems are relatively most serious for all types of organizations (problem types A, C, D, and E), and that data timeliness is the most serious problem for nearly all types of respondents. Three additional problem types (B, F, and G) are at the next level of seriousness, and type H (cost of data service) is of least concern for all respondents. This last finding is consistent with Conclusion 5 concerning data budgets.

Figure 5. RELATIVE SERIOUSNESS OF DATA PROBLEMS
(From Table 7)



Most prevalent among the open-ended additions to Item 7 was the problem of knowing where to go to find data. This problem was reasserted many times in the open-ended responses to Item 8 in which 241 respondents sketched details for one or two of their most serious problems. The general distribution of these problems is given in Table 8 of Appendix B. A number of excerpts from the responses are given in later pages of this chapter.

The particular problem of not being able to acquire needed data was addressed in Item 9. Respondents were asked to state how far they might go towards paying for the solution to this problem. The summary results are shown below. Details for the response distribution are given in Table 9 of Appendix B.

Item 9. Please describe briefly an experience you have had during the past year or two in which important data needs could not be met because the data were either non-existent, unlocatable, or unavailable. Then check one box at the right to indicate how far your *organization* might have gone towards paying for acquisition costs.

Note: Written descriptions were given by 179 respondents. Boxes were checked by 266 respondents in the distribution shown at right.

52 ☐ Acquire only if free.
172 ☐ Pay reasonable service charge.
44 ☐ Share in collection costs.
18 ☐ Assume all collection costs.

Conclusion 7. At least two-thirds of the respondents would pay for data they have been unable to acquire. About 5% would even assume the collection costs of needed data that are unavailable.

Members of Subcommittee I examined nearly 600 open-ended responses to Items 8 and 9 in the light of their own experience. Problem areas thus identified are listed below in their order of priority. Discussions of the four most important problems contain illustrative excerpts from the inquiry responses and suggestions for reducing the degree to which the problem now exists.

a. Timeliness of Available Data

Users of transportation data are often confronted with the problem of not having current information. Frequently there are long lags in obtaining timely data from government agencies that are the principal source of transportation data. The long time lags have sometimes led to the collection and reporting of preliminary and estimated data by trade associations. For example, the Air Transport Association collects and reports monthly airline traffic data on a preliminary basis about 15 days after the end of the month covering the previous month's statistics. Although trade associations provide current information in a number of areas, there still are many areas where no current data are available. Specific examples of the timeliness problem are listed below.

- Air origin-and-destination data on tape are frequently 6-9 months old.
- FHWA only recently produced 1978 Highway Statistics.
- Motor Vehicle Facts & Figures, Fatal Injury and Accident Statistics, and Accident Facts have been cited as being outdated on release.
- Highway User Fees for Selected Vehicles has not been updated since 1973.
- 1977 National Travel Survey was not available until October 1979.
- As of April 1980, the latest available "Airport Activity Statistics" publication is for 1978.
- Transit operating data are frequently 2-3 years old.
- Up to January 1981 when 1977 data were expected, the latest Bureau of the Census commodity data were for 1972.
- As of early April 1980, third quarter 1979 "Air Carrier Financial Statistics" had not been published by the CAB.

There are two major reasons for the timeliness problem. First, the agency may not require the data to be reported on a timely basis, and second, the agency may take too long to process the data that have been received. Either one of these or a combination of both can result in the release of outdated information.

Conclusion 8. Data timeliness is a foremost need. Data released from government agencies are often outdated at the time of release. Possible solutions include the anticipation of data needs in advance and the use of continuous surveys rather than one-time or infrequent studies.

If data providers comply with the following recommendation, users will be given previews of data collections far in advance of their final release.

Recommendation 2. Data providers should be encouraged by DOT to release partial data sets during the early steps of data processing, perhaps through sampling, and thus provide users with representative preliminary data from sets that will be fully released at a later date.

Taken together, Recommendations 1 and 2 could result in both a preliminary and final publication of many data sets.

b. Unavailability of Basic and Needed Data

In the context of energy shortfall and evaluation of socioeconomic and environmental impacts of transportation, certain types of transportation data are nonexistent or unavailable. Also, as the state departments of transportation and DOT begin to develop modal trade-off policies, identify taxation alternatives, and evaluate regulatory reforms, entire areas of private sector commodity and passenger flow information either will not exist or will not be publicly available. Examples include the following types of data:

- Truck commodity flow information,
- Oil pipeline data,
- Cost allocation data, and
- Post-accident crash factors for assessment of accident counter measures.

Although the problem of unavailable data exists for several reasons a key factor is the rapid emergence of new issues that demand new types of data analysis. In addition there will always be needs for

geographic or modally specific data to solve an immediate problem that can only be met by special data projects.

The problem also exists because data either are not collected or are not reported to any agency that will disseminate the information in usable form. In some cases the data may be developed by the company or organization involved, but, if it is not required to be reported to a particular agency that will disseminate the material, the data are generally unavailable to the public. Collecting and reporting information by a company can be a definite burden requiring, in some cases, significant funding that tends to inhibit data compilation and availability. The confidential nature of certain types of data also prevents disclosure.

One solution for this data problem is the establishment of priorities and requirements for nationwide data summaries, state data summaries, and regional summaries. Only when the collection is determined to be cost-effective can judgments be made as to whether additional data collection is necessary.

Discontinuance of data collection creates a significant problem for past users of the information. This problem is becoming more important with the growing trend of deregulation of the transportation industry.

Domestic air cargo has been deregulated and domestic air passenger service is in the process of being deregulated with the enactment of the Airline Deregulation Act of 1978. Legislation was recently enacted to deregulate the railroads and trucking industry. As a result, less reporting is being required. The CAB is in the process of reducing the amount of reporting required by the air carriers, and the ICC has reduced the amount of data required from regulated motor carriers.

Conclusion 9. There will be continuing and important needs for certain transportation data whose collection and provision are made uncertain by deregulation of the transportation industry.

The following recommendation would provide a basis for users to participate in decisions on data discontinuations.

Recommendation 3. Alternatives for future provision of basic data that are now provided by programs that will be discontinued should be prepared by every organization or agency within which such programs exist.

Implementation of this recommendation is exemplified by the recent information planning project that has been carried out by the Civil Aeronautics Board (*18*).

c. Insufficient Detail for Needed Data

Data collected at a national level are generally at a geographic scale too large to permit detailed statewide and local use. This problem is multimodal and is primarily experienced by consulting firms, state and local government agencies, and academic and research institutions.

This problem is partly due to a lack of supplier understanding of users' data needs and partly because the costs associated with increased specificity outweigh the benefits.

Examples given by respondents include the following:

- Trucking data are not specific enough for corridor analysis,
- Railroad data are not specific enough for state rail planning,
- Detailed agricultural export commodities data are available only by custom district rather than individual port within custom district, and
- Geographic and commodity detail are not fine enough for foreign trade statistics.

This problem could be minimized by greater cooperation and understanding of data requirements between data sources and data users and by making disaggregate data from national surveys available to users at a reasonable cost.

Another reason that data lack necessary detail stems from disclosure or privacy constraints. This problem is multimodal and is experienced by most data users.

d. Lack of Communications and Knowledge About Existing Data

Inadequate knowledge of data availability frustrates many data users before their studies are even begun.

Most data users are convinced that the data they need are available "somewhere." The effects of inadequate knowledge are costly searches; costly because of the direct expense of the data and because time is spent in searching rather than analysis. Even after a costly search the user is never certain he has all available data or the best available data.

Illustrative comments by respondents on this problem are listed below.

- Referral chain reaction is very time consuming and costly. Interagency paths are obscure. We need a good referral system.
- The availability of data and where to look for the data constitute the most serious problem. There are hundreds of associations that probably publish data, but where do you start?
- Sometimes supply and source data are difficult to identify. A centrally published catalog or 800 telephone number would be helpful.
- We find that there is a vast amount of data available from a large number of agencies. The biggest problem is finding out who has published the data that are needed. We spend more time looking for the source of data than using the data after we get it.
- We are convinced much good information is available. How to find it in a reasonable time is difficult.
- Specific procedures for locating data should be taught in technical graduate and undergraduate curricula.
- Meetings and workshops are the most effective means of learning about available data quickly.

Computerization is not necessarily a solution to this problem because computer reference files and indexes have the same limitations as manual reference systems. Many users feel certain that large numbers of sources are not entered into computer files. New data sources are often discovered as much by accident as by any organized approach.

The inquiry respondents have made two suggestions for increasing knowledge about available data. One is to improve user knowledge and ability through education, either in formal curricula or through training and meetings. The other approach is through superior indexing by data providers and coordinators.

Educating the user appears to be the more expensive alternative because it requires a separate investment for each user. The development of a comprehensive transportation data index may be a more practical solution. The index could be based on types and levels of data rather than on publications and articles that contain data. The user would then be able to go from data need to data source rather than from known sources to only the data they provide.

Although many advances have already been made towards providing users with data reference services, breakthroughs are still needed to improve communications and knowledge on transportation data. One relatively simple and immediate step would be to disseminate widely the existing information on data sources.

Conclusion 10. After the timeliness problem, the following problems are most significant to users of transportation data and justify efforts to reduce their seriousness:

- *Unavailability of needed data, including the discontinuance of basic data sets;*
- *Insufficient detail with respect to geographic areas or because of confidentiality constraints; and*
- *Insufficient knowledge about existing data sets and their availability.*

In addition to the major problems just discussed, alleviation of the following problems would bring benefits to transportation data users:

- Lack of comparability among data sets;
- Lack of coordination among overlapping or duplicative data sets;
- Inadequate definitions and explanations for data sets and their elements;
- Lack of data quality with respect to accuracy, reliability, and completeness; and
- Inordinate turnaround time between data request and data receipt.

The first three problems noted above call for improved data standards and coordination of data programs at the national level. The last two problems must be addressed by the individual collectors and providers of transportation data.

CHAPTER 5. NEEDS AND POTENTIALS FOR IMPROVED DATA PROCESSES

The first part of this chapter describes data processes and respondents' views on the importance and need for improvement of the respective processes. The second part deals with the question of possible changes in responsibility for data collection and data provision, including the special case of changes that arise from deregulation of transport services. The concluding discussion is about data sets that have been collected or provided by respondent organizations and that may be useful to other organizations.

5.1 IMPROVEMENT OF DATA PROCESSES

During the planning phase of this study the Steering Committee named six general processes whose improvement could do much to alleviate users' data problems and to facilitate data access and flows.

The first two processes are (a) the identification and synthesis of user needs and (b) the evaluation of user needs and response to user needs. Examples of these processes are represented by some of the citations in Chapter 2 and by this study. Improvements in these processes might include the establishment of (a) continuing rather than intermittent efforts and (b) mechanisms for ensuring better communications between data providers and data users.

The third process is provision of adequate knowledge about available data. Many allusions to this process were made in Chapter 4 in the context of user needs and problems.

The next two processes, adequate access to and increased availability of existing data, are also related to many user needs and problems. Improved access here refers to the channels and mechanisms by which the data user is linked to the data provider. Availability refers to the degree to which existing data will be provided by any access route.

The sixth process is the collection and provision of needed data that have not yet been collected or produced.

These processes were listed in questionnaire Items 17-18 for check-off response to the importance and need for improvement of each process. Summary details are tabulated below and are shown graphically in Figure 6. Details for the response distribution are given in Tables 17-18 of Appendix B.

Items 17-18. The general processes listed on lines A-F below refer to improvements that might be made through national efforts to benefit the overall community of transportation data users. In Item 17 please check the importance of each process to your unit. Check Item 18 to indicate what you perceive to be the need for improving each process.

General Processes for Improvement of Data Access and Flows	Number of Respondents						Number of Non-Respondents	
	17. Importance of Process			18. Need for Improvement				
	High	Med.	Low	High	Med.	Low	Item 17	Item 18
A. Identification & Synthesis of User Needs	136	112	57	81	127	83	45	59
B. Evaluation of User Needs and Response to User Needs	124	123	53	73	141	70	50	66
C. Provision of Adequate Knowledge About Available Data	181	102	25	118	120	59	42	53
D. Provision of Adequate Access to Available Data	171	105	22	92	133	58	52	67
E. Increased Availability of Data already Collected or Produced	163	110	29	116	120	49	48	65
F. Collection and Provision of Needed Data not yet Collected or Produced	145	116	43	115	115	59	46	63

Figure 6 shows that at least 60% of the respondents perceive that any one of the processes is important and in need of improvement. The figure shows that the greatest concerns are for processes C, D, and E, and that there is a somewhat reduced concern for processes A, B, and F.

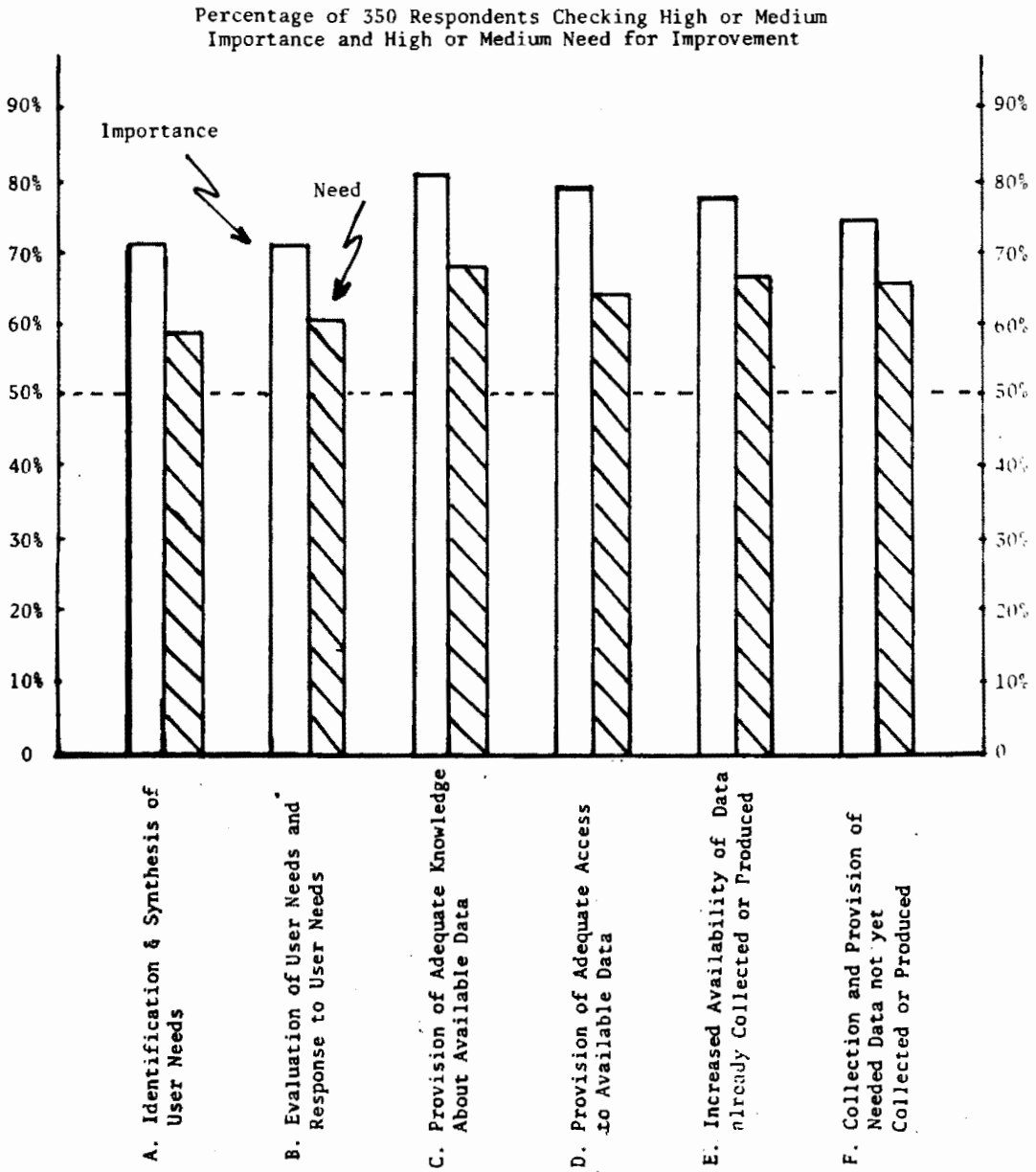
In response to questionnaire Item 19, somewhat more than 200 respondents wrote statements that were directed at one or another of the processes and that were often further elaborations on data problems they had experienced. The distribution of these open-ended responses is given in Table 19 of Appendix B.

Item 19. Please give an example of what might be done to improve any process you rated *High* on both of Items 17 and 18. Indicate how the improvement would bring benefits to your unit.

(written comments by 202 respondents)

Members of Subcommittee II examined the responses to Items 17-19 and found that three additional processes should be added to the initial list:

Figure 6. SUMMARY OF RESPONSE TO IMPORTANCE AND NEED FOR IMPROVEMENT OF DATA PROCESSES (From Tables 17-18)



- Increased understanding of data applications and of the value of transportation data,
- Development of cost-effective methods and procedures for data collection and distribution, and
- Development of cooperation and coordination among data collectors and data providers.

Although improvement of any of the processes named above would bring benefits to the user community, outstanding needs are represented by the following conclusions.

Conclusion 11. The most significant need is an improved process for preparing and disseminating up-to-date information on what transportation data are available, what types of data are not available, how available data may be accessed, and what the data do and do not represent.

Conclusion 12. There are major needs for the improved availability of existing data and for improved access to available data, particularly for data sets that represent continuing collection efforts.

Respondents from the government sector indicated a more pronounced need for information on available data than did respondents from the private sector. Most consultants, for example, have accumulated much knowledge about existing data in the course of their daily work.

Improvement of data knowledge dissemination would include the publicizing of newly available data sets and adequate descriptions of the potential uses and benefits that are associated with any available data set.

Taken together, Conclusions 11 and 12 imply that a sustained effort should be made to develop and maintain a reference service for available data sets that are most needed by users, and that the reference information for each data set should make clear what data are in the set and how the set can be acquired. Moreover, the reference service itself should be easily accessible and simple to use. There have been a number of substantial efforts to provide reference services and clearinghouses for statistical data (for example, see *4*, *8*, *13*, *15*, and *19*). These and other reference services have been valuable to many users, but most have been provided in the absence of guidance and oversight implied by the following recommendation.

Recommendation 4. A special group should be established to develop criteria and specifications for transportation data reference services. The group should represent data suppliers and data users and should be fully aware of the availability, application, and relative value of data sets to the transportation community. This group should also promote the dissemination of current knowledge about transportation data and the implementation of any new or extended data reference services that are needed.

The proposed group might also be charged with responsibility for the identification of gaps that exist in the availability of needed transportation data, and with responsibility for identifying and assessment of alternatives for filling the gaps and for enhancement of data access. Thus the group would be addressing needs that are implied by both Conclusions 10 and 11. The Steering Committee and a number of inquiry respondents have suggested that the proposed group might well be established within an organization such as the Transportation Research Board.

5.2 CHANGES IN RESPONSIBILITY FOR DATA COLLECTION AND PROVISION

An important aspect of data collection and data provision is the allocation of responsibility for those functions. In questionnaire Item 20 (see page 5/6) respondents were asked whether they saw a need for changes in the allocation of these responsibilities. The summary results are shown in Figure 7. Overall, a majority of respondents did not perceive needs for change.

Figure 7 shows that this result is much more pronounced in the government than in the private sector. Only for consulting firms was there a reversal of the overall result.

Tabulations of the responses for Item 20 are given in Tables 20A and 20B of Appendix B. The following list includes all (generalized) comments that were made by at least three respondents:

- Move towards centralized knowledge and computer access for transportation data (11 respondents),
- Decentralize data collection to metropolitan planning organizations (MPOs) and local planning agencies (6 respondents),

Item 20. Do you perceive a need for change in the present allocation of responsibility for data collection and data provision among various levels of government or between the public and private sectors? If *Yes*, please sketch below what changes should be made and why.

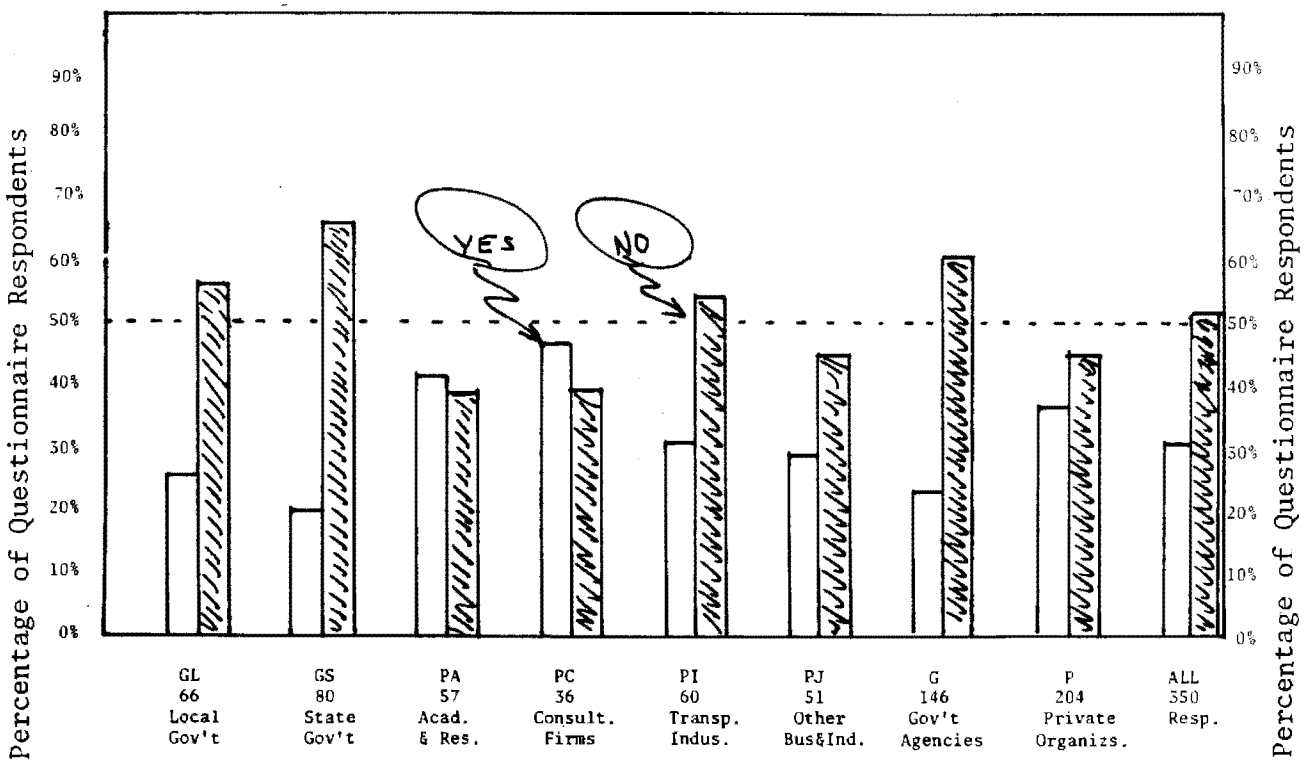
(Written comments by 126 respondents

113 Yes

183 No

54 Non-response

Figure 7. PERCEIVED NEED FOR CHANGE IN RESPONSIBILITY FOR DATA COLLECTION/PROVISION (From Table 20A)



Note: Approximately 15% of all questionnaire respondents did not respond to this item and are not represented in Figure 7.

- Move collection responsibility from DOT to the private sector (6 respondents),
- Establish more cooperation and conformity of collection among state and local agencies (5 respondents),
- Consider private sector takeover of the CAB data base (5 respondents),
- Continue CAB data collection by a federal agency (3 respondents),
- Decide who will take over the CAB data base and provide authority and funding for the takeover (3 respondents),
- Create a national data center (3 respondents), and
- Not necessary to change responsibility, just improve data access (3 respondents).

The above examples indicate that there is no general agreement among the minority of respondents who perceive needs for changes in responsibility. On the other hand, the Steering Committee and many respondents recognize that deregulation of transport carriers will lead to the loss of certain important data bases. Examples are the data sets collected and provided by the Civil Aeronautics Board. Unless provisions are made for changes in responsibility, say to other agencies or to the private sector, these data bases will be lost. This situation has been discussed in Chapter 4 as an existing or imminent problem for users and is addressed again in Chapter 7.

Finally, there is need for better definition of roles that are most appropriate for the respective levels of government. For example, a number of the inquiry responses imply that local agencies should have strong roles in data collection and that higher levels of government should provide financial support when local resources are not sufficient.

Conclusion 13. There is no strong support for specific reallocation of fundamental responsibilities that now exist for the collection and provision of transportation data. There is concern, however, for the continued meeting of basic data needs as changes occur in the existing allocation of responsibilities and for better definition of the most appropriate roles for the respective levels of government.

5.3 DATA COLLECTED OR PRODUCED BY RESPONDENT ORGANIZATIONS

One specific objective in this study was to learn of data sets that are collected or produced by respondent organizations and that might be useful to other organizations, including DOT. As shown below, this part of the study was covered by questionnaire Item 21.

Item 21. Please respond to this item if your *organization* collects or produces transportation-related data that are not part of federal programs listed in the questionnaire Supplement and that are probably useful to a number of other organizations. In column A briefly describe the nature of such data. In column B indicate any conditions or limitations your *organization* places on making the data available to other organizations.

A. Data collected/produced	B. Availability conditions/limitations
(212 data sets described by 156 different respondents)	

In all, 156 respondents reported on the existence and availability of 212 different data sets. The general nature of these responses is given in Table 21 of Appendix B where each data set is cross-tabulated by type of organization and by type of data. Additionally, each data set is tallied according to its availability over a range from "no restriction" or "available on request" to "for internal use only" or "unavailable." A condensed version of Table 21 is shown below.

TYPES OF DATA COLLECTED OR PRODUCED BY RESPONDENT ORGANIZATIONS		NUMBER OF DATA SETS AVAILABLE AT GIVEN LEVELS				
		GENERALLY AVAILABLE	LIMITED AVAILABILITY OR SOME RESTRICTIONS	CONFIDENTIAL, PROPRIETARY, UNAVAILABLE	AVAILABILITY NOT STATED	TOTAL
Traveler/Commodity Characteristics		47	7	14	0	68
Transport Performance, Facilities,& Equipment		57	7	14	3	81
Population, Land Use, Energy, Environment		17	1	2	1	21
Other Types of Data		20	3	9	10	42
Totals	No.	141	18	39	14	212
	%	67%	8%	18%	7%	100%

It can be seen that about 140 data sets are generally available from the respondent organizations and that virtually all types of data are represented. From the limited information provided by respondents it appears that most of these available data sets are either of local application only or represent one-time rather than continuing data collection programs.

Conclusion 14. While many transportation data sets are generally available from the respondent organizations, it appears that most are local in application and do not represent continuing collection efforts. There is, however, need for continuing inventory and announcement of data sets that are available in the respondent community.

If Recommendation 4 were to be implemented, one function of the proposed group could be the further investigation of data sets that were named by respondents to Item 21. A more general function could be the continuing review of data sets that become available, and the continuing assessment of available data in the light of user needs. A communication mechanism for this function is proposed in the following recommendation.

Recommendation 5. Reference services for transportation data should include a regular newsletter that contains reviews of newly available data sets, and that identifies important unmet needs for transportation data. The newsletter should reach all users of transportation data who wish to be so informed.

CHAPTER 6. PROPOSALS FOR FACILITATION OF DATA ACCESS AND FLOWS

This chapter deals with specific proposals that respondents were asked to consider as possible mechanisms for the improvement of data processes and for the facilitation of data access and flows. The proposals fall in seven categories that range from uniform definitions to the financing of data programs. General instructions for responding to each proposal are shown below.

> **Items 22-34.** Each of these items describes a proposal that relates to data access and flows. After reading each proposal, please check in Line A the level of need you perceive for the proposal. In Line B check the level of support that your *organization* would give to the proposal. If Line B is not checked "High," use Line C to indicate any changes in wording that would make the proposal more supportable. If you checked "Oppose" in Line B, please indicate your reason for opposition in Line C.

Subcommittee III examined all responses in each category and presented findings that are basic to the Steering Committee conclusions and recommendations contained in this chapter.

6.1 UNIFORM DEFINITIONS

Two proposals on uniform definitions for data elements were presented in questionnaire Items 22 and 23. The proposals and overall levels of need and support that respondents held for the two proposals are shown below. Values shown for indexes are explained on the following page.

Uniform Definitions		NUMBER OF RESPONSES				INDEXES		
						Gov't.	Priv.	All
Item 22. Authorize U.S. DOT to lead in the development and enforcement of uniform definitions for commodities, geography, vehicles, packaging, etc. The definitions would be mandatory for all federally-funded and federal-regulatory data collection.	A. Need	118 High	85 Med	64 Low	54 None			
	B. Support	High 109	Low 74	None 70	Oppose 58	0.24	0.14	0.18
c. 103 Comments								
Item 23. Use existing institutions and procedures to encourage the development of uniform definitions and widespread recognition of benefits to be derived therefrom.	A. Need	137 High	97 Med	56 Low	24 None			
	B. Support	High 149	Low 90	None 47	Oppose 18	0.46	0.37	0.41
c. 55 Comments								
	No. of Respondents for Index Base					146	204	350

For these and succeeding proposals an index was constructed to provide a single number to compare responses to alternative proposals in any category or to compare responses among categories. The arbitrary weights that were selected for the index are as follows:

High Need	0.50	High Support	0.50
Medium Need	0.25	Low Support	0.25
Low Need	- 0.25	No Support	- 0.25
No Need	- 0.50	Oppose	- 0.50

To calculate the index for any given proposal, each weight is multiplied by the fraction* of respondents who checked the respective response box, then the products are accumulated to produce a value that can range from 1.00 to -1.00. On this scale, zero represents a more or less neutral view, +0.50 represents a relatively high positive attitude towards the proposal, and -0.50 represents a quite negative attitude. The last column of the summary table on page 6/1 shows that the overall index values were 0.18 and 0.41 for Items 22 and 23, respectively. This difference was approximately the same for respondents either in the public or private sector. Detailed distribution of responses to Items 22 and 23 are given in Tables 22-23 of Appendix B. The tables include distributions of comments that were written in Line C, generally by respondents who were not highly in favor of the given proposal. Comments are tabulated in broad classes that characterize the respondents' views on the set of proposals presented in each category, e.g., on proposals 22-23 for uniform definitions.

The proposal in Item 23 stresses the use of existing institutions and procedures to encourage development of uniform definitions and widespread recognition of benefits to be delivered therefrom. The proposal is exemplified by current cooperation between DOT and the National Bureau of Standards to establish data standards. This proposal received relatively high support and very little opposition from the respondents.

In contrast, considerably less support was given to the proposal in Item 22 wherein DOT would be authorized to lead in the development and enforcement of uniform definitions. The proposal was opposed by about 20% of the private sector respondents and by about 10% of the respondents from state and local government agencies.

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* Denominators for these fractions include questionnaire respondents who did not check any box in one line or another of Items 22-34. This rule is equivalent to zero weights for non-responses.

The open-ended comments indicate that there is general recognition of the need for uniform definitions but that there is much objection to mandating requirements for data definitions. Thus there is agreement on objectives but not on methods of attaining the objectives.

The consensus seems to be that most respondents would opt for the status quo. Let those who need to worry about uniform definitions do so, but do not create any centralized bureaucracy to force those definitions on others. Possibly the reason for this response is that, with the notable exception of consulting firms, many respondents work within fairly limited data sets and have had little experience with consolidating information from several sources. Nevertheless, the direction is clear—existing institutions, including DOT, should be used to develop and encourage the use of uniform definitions for transportation data.

6.2 DATA COLLECTION

Two general alternatives for collection of transportation data were presented in Items 24 and 25. The proposals and summary tabulations of responses are shown below. Detailed distributions for the responses are given in Tables 24-25 of Appendix B.

Data Collection

Item 24. Obtain transportation data primarily through the administrative functions of public and private transportation programs.

C. 68 Comments

Item 25. Obtain transportation data primarily through expanded confidential sample surveys that would provide detailed cost and operational data for all classes of regulated and non-regulated transport of people and goods and with no identification of individuals, carriers, or operators.

C. 80 Comments

	NUMBER OF RESPONSES				INDEXES		
					Gov't.	Priv.	All
A. Need	134 (High)	102 (Med.)	48 (Low)	16 (None)			
B. Support	(High) 135	(Low) 91	(None) 45	(Oppose) 18	0.51	0.34	0.41
A. Need	120 (High)	84 (Med.)	66 (Low)	31 (None)			
B. Support	(High) 122	(Low) 91	(None) 48	(Oppose) 35	0.29	0.30	0.30
No. of Respondents for Index Base					146	204	350

These two proposals contrast the acquisition of transportation data through normal administrative procedures in public and private agencies with the use of expanded confidential sample surveys. Two-thirds of all respondents saw high or medium need for the administrative procedure approach. The relatively high overall support for this approach, however, arises mainly because of very high support from the government sector respondents.

Support for data collection through sample surveys was relatively low except for respondents from academic and consulting organizations who generally have greater knowledge about and confidence in sample surveys.

Nearly one-third of the written comments implied that the sample surveys would be too difficult and costly to perform. It appears that this approach is viewed with a great deal of skepticism. The Steering Committee believes, however, that greater use of sample surveys will be necessary in the future and that they should be used when needed data cannot be collected through the administrative functions of public and private transportation programs.

Recommendation 6. Transportation data should be collected primarily through the administrative functions of public and private transportation programs, but carefully administered sample surveys should be used to collect data that cannot otherwise be acquired on a cost-effective basis.

Recommendation 7. DOT should identify federal administrative functions and data collection activities that can generate useful transportation data and should develop procedures for making such data available.

6.3 CENSUS OF TRANSPORTATION

For many years the Bureau of the Census, U.S. Department of Commerce, has collected transportation data. Under the heading of Census of Transportation, the Bureau carries out programs that are listed in the questionnaire supplement (Appendix A) and that are funded to a large degree by various administrations within DOT. The extent of use and the importance of these programs are reflected in the results shown on page 4/8 and in Tables 4, 5, and 6 of Appendix B. These results imply need for continuation of existing programs. Two proposals for expanding these Census programs appear in questionnaire Items 26 and 27. The proposals and summary results are shown on the following page. More detailed distributions of the responses, including open-ended comments, are given in Tables 26-27 of Appendix B.

Census of Transportation		NUMBER OF RESPONSES				INDEXES		
						Gov't.	Priv.	All
Item 26. (Passengers) Expand the scope and sample size of the National Transportation Survey (tourism) and the Nationwide Personal Transportation Study to provide data for reliable local estimates, operating data, and fuel cost data. Include a quarterly or annual procedure for timely updating and monitoring of trends.	A. Need	140 (High)	80 (Med)	61 (Low)	27 (None)			
	B. Support	136 (High)	88 (Low)	59 (None)	13 (Oppose)	0.48	0.29	0.37
c. 46 Comments								
Item 27. (Goods) Expand the scope of the Truck Inventory and Use Survey and the Commodity Transportation Survey to include truck commodity flow data and commodity transportation cost data for all modes and shipper classes.	A. Need	120 (High)	64 (Med)	69 (Low)	42 (None)			
	B. Support	111 (High)	80 (Low)	75 (None)	15 (Oppose)	0.24	0.25	0.25
c. 55 Comments								
	No. of Respondents for Index Base					146	204	350

There was relatively high overall support for the expansion of passenger data programs, but this support came largely from government agency respondents. The lesser support that was given for expansion of freight data programs is a possible reflection of the fact that there were more respondents with passenger interests than for freight (Table 2C, Appendix B).

There was a relatively high non-response to both proposals; nearly half of the open-ended comments were made by respondents who have little or no need for transportation data provided by Census programs. Other comments implied that

- disclosure rules make it difficult or impossible to acquire Census data that have sufficient detail,
- the present level of data untimeliness should be corrected before any consideration is given to program expansion, and
- money for the Census transportation programs would be better spent in state and local agency collection efforts.

On the other hand, the level of opposition for either proposal was less than for any other proposal that was presented in the inquiry.

Recommendation 8. Continued support should be given to the Census of Transportation program but any extension of the program should be consistent with assured improvements in timeliness of the data to be provided. Strong consideration should be given to a continuing survey that would replace many current efforts and to the allocation of transportation questions to other surveys that are conducted by the Bureau of the Census.

6.4 ASSESSMENT OF DATA PROGRAMS

The inquiry included two proposals for continuing assessment of transportation data needs and improvement of data processes. In both proposals the assessments and recommendations would be made by a duly appointed oversight group. The proposals and summary results are shown below. Detailed distributions are given in Tables 28-29 of Appendix B.

Assessment of Data Programs		NUMBER OF RESPONSES				INDEX		
						Gov't.	Priv.	All
Item 28. Establish a continuing federal board to review and recommend policy for all aspects of transportation data programs. The board would advise and report to the Secretary of Transportation.	A. Need	86 High	68 Med.	86 Low	80 None	.01	-.01	.00
	B. Support	High 83	Low 75	None 78	Oppose 77			
C. 87 Comments								
Item 29. Establish a continuing forum independent of U.S. DOT to represent all categories of data producers and users. Make continuing assessments of user needs, and make recommendations on priorities and mechanisms for improvement of data programs.	A. Need	145 High	82 Med	49 Low	35 None	.32	.41	.37
	B. Support	High 146	Low 76	None 54	Oppose 23			
C. 54 Comments		No. of Respondents for Index Base				146	204	350

The establishment of a continuing federal board to review and recommend policy for transportation data programs (Item 28) was clearly a most unpopular suggestion. It received less support and more opposition than any other proposal. Two respondent comments sum it up, "too much bureaucracy exists now in government," and "spare us from any more boards."

The proposal for a non-federal continuing forum of data suppliers and users (Item 29) received relatively high support, particularly from the private sector respondents. The comments included a number of suggestions that the forum should be a TRB activity.

Recommendation 9. A national forum should be established to represent all categories of transportation data suppliers and users. The forum should make continuing assessments of user needs and should make recommendations on priorities and mechanisms for improvement of transportation data processes. The forum should be independent of but responsive to all major elements of the transportation community in both the public and private sectors. Consideration should be given to combining the functions of the forum with those of the group that was proposed in Recommendation 4.

Implementation of Recommendation 9 would involve questions of sponsorship, funding, and institutionalization. Possibilities include sponsorship by the U.S. Department of Transportation and establishment within the Transportation Research Board. Such an arrangement could assure that forum agenda and tasks would include those that were set out by the sponsoring agency. Consideration could be given, for example, to combining the role of the special group noted in Recommendation 4 with that of the forum set out in Recommendation 9.

6.5 CENTRALIZATION OF DATA PROGRAMS

Three proposals were presented for the centralization of data programs. The first two were for the establishment of a national coordination and referral center for transportation data, either within DOT (Item 30) or outside DOT (Item 31). The third proposal was to centralize authority and responsibility within DOT for the collection and provision of transportation data. Summary responses are shown below; detailed distributions of responses are given in Tables 30-32 of Appendix B.

Centralization of Data Programs		NUMBER OF RESPONSES				INDEXES		
		167	60	44	47	Gov't	Priv.	All
Item 30. Establish a center within U.S. DOT for coordinating all federal transportation data programs. The center would catalog and monitor all programs, would publish progress and activity reports, and would be a referral center for data users.	A. Need	High	Med	Low	None	0.41	0.32	0.36
	B. Support	High	Low	None	Oppose			
		158	60	48	42			
c. 55 Comments								
		95	61	68	71			
Item 31. Same proposal as in Item 30 except that the center would be outside U.S. DOT. Could be in the public sector, private sector, or exist as a special institution.	A. Need	High	Med	Low	None	0.02	0.14	0.09
	B. Support	High	Low	None	Oppose			
		95	72	69	54			
c. 82 Comments								
		107	60	60	78			
Item 32. Centralize within U.S. DOT all federal transportation data programs, including compliance authority and confidentiality regulations. Include programs now at Census, CAB, ICC, Corps of Engineers, etc.	A. Need	High	Med	Low	None	0.16	0.03	0.09
	B. Support	High	Low	None	Oppose			
		101	64	63	71			
c. 78 Comments								
	No. of Respondents for Index Base					146	204	350

Relatively high support in both the public and private sectors was given for DOT coordination of all federal transportation data programs, and for a DOT data referral center (Item 30). On the other hand, there was much opposition to the centralization of data programs within DOT (Item 32), particularly

from respondents in the private sector. Approximately 60% of the open-ended comments implied favor with DOT coordination; about 40% implied that data program centralization within DOT would be unacceptable.

Conclusion 15. There is relatively high support for a DOT coordination role in all federal transportation data programs, but there is little support for the centralization of these programs.

Recommendation 10. DOT should lead the coordination of all federal transportation data programs and should provide the transportation community with information on the status, content, and availability of data produced in all such programs.

6.6 DATA ESTIMATION

Quantities and costs of data that are required for specific objectives can be greatly reduced through the use of sample surveys. Analyses of the sample data then lead to estimates of what would have been learned from complete surveys, i.e., from 100% samples. The estimation techniques generally include the use of assumptions and mathematical models for the "way things really are" in the universe of data that has been sampled. Whether or not the survey objectives can be met with sufficient validity and reliability then depends upon the adequacy of the sampling procedures and the models that are used for estimating. Respondents' views on data estimation through sample surveys and models are summarized below. More detailed distributions are given in Table 33 of Appendix B.

Data Estimation		NUMBER OF RESPONSES				INDEX		
						Gov't	Priv.	All
Item 33. Reduce data collection requirements through the use of minimum sample sizes in conjunction with models that provide estimates for categories of data. Thus greater emphasis is placed on modeling and data analysis while data collection costs are reduced through carefully designed small samples.	A. Need	124 High	87 Med.	61 Low	41 None	0.37	0.21	0.28
	B. Support	High 120	Low 94	None 49	Oppose 45			
c. 97 Comments	No. of Respondents for Index Base					146	204	350

It is to be noted that sampling and modeling are linked in this proposal. This linkage would lead to less support, for example, by those respondents who may favor sample surveys but who do not trust the current state of modeling.

The greatest support for this proposal came from academic institutions, consulting firms, and state transportation agencies. Overall, however, the proposal received only a medium amount of support. About 55% of the open-ended comments were favorable, with the proviso that significant improvements must be made in the area of modeling and sampling. About 45% of the comments represented serious doubts that data estimation procedures can be both credible and cost-effective. Excerpts from the comments include the following:

- sample data are often not specific enough except for national or policy level use,
- political and public support of data developed in this way may not be acceptable, and
- this proposal would be supported only if greater emphasis is placed on developing data and models together.

Conclusion 16. Data estimation through sample surveys and modeling will become a more and more important means for meeting data needs within budgetary constraints.

The implication of Conclusion 16 is that samples and models are here to stay and that the need is to concentrate on improvement of sampling and modeling procedures.

Recommendation 11. DOT should encourage and support the development of cost-effective sampling and modeling techniques for the collection and provision of transportation data.

This recommendation could be partially implemented by requiring that plans for large-scale data collections include sampling or modeling techniques that can be shown to be cost-effective.

6.7 FINANCING OF DATA PROGRAMS

The final proposal was that the implementation costs for other proposals that might be adopted be covered by federal-aid and grant funds that are applicable to transportation programs. The summary results are shown below and in greater detail in Table 34 of Appendix B.

		NUMBER OF RESPONSES				INDEX		
						Gov't	Priv.	All
Financing of Data Programs		151	74	45	42			
Item 34. Derive major financial support for any or all of Items 30-33 from federal-aid and grant funds that are applicable to transportation programs. (The maximum support required is likely to be about 2-3% of the applicable funds.)	A. Need	High	Med	Low	None			
	B. Support	High	Low	None	Oppose	0.31	0.40	0.36
		153	73	44	36			
C. 56 Comments	No. of Respondents for Index Base					146	204	350

The overall response to this proposal was generally favorable, particularly among respondents from academic institutions and consulting firms. The financing issue is somewhat academic because the most expensive proposals among Items 30-33 were not generally acceptable to the respondents. Several respondents suggested that 2-3% of the applicable funds would be more than needed for implementing the more acceptable proposals.

About half of the open-ended comments suggested that data program costs should be no more than at present and that increased efficiency in existing programs could provide the funds necessary to make many improvements in data processes. The remaining comments were to the effect that additional funds should be raised through charges to data users.

Perhaps the most reasonable position is for the federal government to make federal-aid and grant funds available to meet the transportation data needs of federal programs, but leave the funding of all else to the user.

Recommendation 12. Major financial support for federal transportation data programs should be derived from federal aid and grant funds that are applicable to transportation programs. Remaining program costs should be derived from an equitable system of charges to transportation data users.

In Item 35, respondents were invited to submit their own proposals for the improvement of data access and flows.

Item 35. Along the lines of Items 22-34, please sketch any additional proposal your organization needs and would support for the facilitation of transportation data access and flows.

There were approximately 60 responses to Item 35. Many of the comments were further statements about data needs or elaborations of the respondents' position on data issues. Responses that were in the form of proposals are illustrated by the following list.

- Create a central registry for local agency reports that contain transportation data.
- Establish a directory or catalog for data sources and the nature of data available therefrom.
- Establish a centralized telephone referral system for transportation data.
- Establish periodic publications on data availability.
- Establish regional or state centers for transportation data.
- Create transportation data user groups.
- Establish a multidisciplinary task force to assess data needs and data methodology.
- Establish a federal training program for data users.
- Hold local seminars on data issues.
- Standardize model inputs and modeling methods.
- Develop multilateral agreements for data sharing among industry groups.
- Give U.S. DOT full responsibility for improving the quality of and access to transportation data.

It is noteworthy that more than half of the foregoing responses are addressed to the need for better communications and knowledge about transportation data.

CHAPTER 7. OTHER RESPONSES AND FOLLOW-UP IMPLICATIONS

This chapter begins with open-ended remarks that were made by respondents when no particular question had been posed. This situation prevailed in the last item of the inquiry questionnaire and throughout the in-depth interviews. Both sets of responses are identified with recurrent data issues that appeared to be of uppermost concern among the respondents. The chapter ends with a summary of follow-on tasks that are implied by the report findings.

7.1 QUESTIONNAIRE CLOSURE AND INTERVIEW RESPONSES

In questionnaire Item 36, respondents were invited to express any additional comments of their own choice. The item and general nature of the 90 responses are shown below.

Item 36. Please use the space below for any additional comments or recommendations you may wish to make on the subjects covered by this questionnaire.

Focus of Comment	No. of Respondents
Questionnaire/inquiry design	31
Data program responsibility	14
Data needs and problems	11
Data uses and user influence on programs	8
Data centers and on-line access	4
Miscellaneous	22

About half of the 31 comments on the questionnaire were critical of its format, length, or emphasis. Ten respondents stated that the inquiry and questionnaire had little relevance to the work of the respondent organization. The other comments in this category spoke to the timeliness and importance of the inquiry.

In-depth interviews were held by the consultant staff with individuals in 41 different organizations. In most cases the interview was actually a conference among the consultant, the primary respondent, and a number of the respondent's associates. In all but three cases, the interviewees were also questionnaire respondents.

Interviewees were invited to present their views and suggestions on whatever aspects of transportation data they felt were most significant. Approximately 250 major points were extracted from the interview records as a basis for summarizing the interviews.

Approximately one-fourth of the responses from interviews and questionnaire Item 36 are presented below in categories that are closely related to the concerns set forth in Chapters 4, 5, and 6. Each bullet represents one response that has been selected to provide further emphasis and elaboration for findings that were presented in the earlier chapters.

a. Timeliness of Census Data

It was concluded in Chapter 4 that data timeliness is much needed and often lacking. This problem was emphasized by a number of interview responses as illustrated below.

- The time lag between collection of Census data and its availability for local use is a real problem.
- Our first concern is the long time lapse between completion of survey work and availability of the National Travel Survey data.
- We would like to see the Census of Transportation maintained but on a more timely and expanded basis.

b. Availability and Adequacy of Needed Data

The most prevalent types of data that respondents need but perceive to be unavailable are related to commodity flows, fuel use, and travel behavior. These needs are illustrated by the following interview excerpts.

- There is need for freight transportation performance data that can be used to optimize national productivity. Comparisons should be made of data availability in the United States and freight data availability in other countries that have high productivity per capita.

- The knowledge of freight movements and the lack of sufficient reliable data to develop patterns for modeling have resulted in planning policy that is largely guesswork.
- We need to know more about truckload transport. This need for good truck flow data will be especially important in an unregulated environment. Census data do not give sufficient coverage.
- There is no good data file for air freight movements.
- Improved information on fuel consumption is needed. We do not know enough about where fuel is and how it is used.
- We have been unable to find adequate data on travel behavior and what influences choice of mode for travel.
- Improvements are needed in the collection, compiling and reporting of state level public transportation statistics. Annual publication of public transportation statistics similar to the FHWA "Highway Statistics" series would be helpful. An organizational foundation is needed for the exchange of both passenger and freight statistics between many jurisdictional levels.
- Studies are needed to determine the extent to which confidentiality and disclosure rules are unnecessarily restrictive.
- Feedback mechanisms are needed so that users can have significant influence on data scope and quality.

c. Level of Detail for Available Data

Several respondents spoke to the need for data that give finer geographic coverage or that are otherwise less aggregate than that available.

- A method is needed whereby local areas can obtain journey to work and other Census data in sufficient detail for local planning.
- Most federal data are too general and cannot be related to our state.
- DOT data are too aggregated for our use in forecasting models.
- The Corps of Engineers traffic flow data that are available are too aggregated.

d. Information on Available Data

A recurring theme of the inquiry is that many users of transportation data are handicapped by their lack of knowledge about available data and the uncertainty that needed data are in fact available. Illustrative responses are listed below.

- There is considerable lack of knowledge of what data are available. We tend to believe that needed data must exist somewhere but do not know how to find out if this is really the case.
- Our MPO is not really aware of data that are available at the federal level and that would be useful in our studies.
- DOT should publish knowledge on data sources, data quality, level of aggregation, data age, acquisition costs, etc.
- Data knowledge should be taught as part of university courses.

e. Deregulation Effects

Concern for the effects of deregulation on the availability of needed data was expressed by a number of interviewees. Various aspects of these effects are illustrated by the following views.

- With deregulation we will see a change in coverage, priorities, and availability of data. We believe that carriers will see needs in their own interests to collect data and make it available on an aggregate basis. Sampling confidentiality will be required.
- Our experience has been that top management does not accept reporting needs but that planning staff perceives the value of a continuing reporting system.
- No Census of Transportation survey procedure could substitute for the existing CAB data base in either scope or timeliness.

f. On-Line Access to Available Data

As was observed in Chapter 4, only a minority of data users has adopted and advocated on-line access to data and to knowledge about data. The views of this minority are typified by the following responses.

- The day of paperwork is over. Terminals should be required and installed within each state department of transportation.
- The use of computers has not been maximized. Useful data should be stored for on-line access and for production of hard-copy data sets.
- We need on-line information about data sources and the data they hold.
- Our organization would like to have on-line terminal access to a central computer-stored data base. The data base must provide monthly descriptions of newly stored data. Every transit operation in the country should report its performance data, as well as its management data.

g. Standardization of Definitions and Procedures

In Chapter 6 it was concluded that the majority of respondents sees need for increased standardization but that existing institutions should cooperate to improve the present state. Illustrative views of respondents are as follows.

- There are still great differences in terminology that is used by transit properties. We need more standardization.
- It would be helpful if federal agencies developed and established base uniform standards.
- There is a need for continuing efforts to establish national standards for accident reporting. There is even difficulty in establishing the definition of a fatal accident.
- The most important project is standardization of collection methodologies, and variable definitions. Each MPO has a unique set of travel data. Few, if any, have standardized their methodologies. This makes dealing with secondary source data from DOT difficult.
- Attempts at standardization of data collection efforts by the federal government would be counterproductive. We prefer initiation of data collection without permission from a board.

h. Coordination and Cooperation

The following responses identify areas where a greater degree of coordination and cooperation is needed for data programs.

- We need better coordination among federal agencies. For example, decennial Census data should be related to DOT data collection.
- There is very little intermodal data. Greater cooperation is needed among the modal administrations of DOT.
- There is not enough cooperation between the private and public sectors. The federal government should take the lead for cooperation with private organizations, including the function of data dissemination.

i. The Federal Role in Data Programs

As was discussed in Chapter 6, there are a number of mixed and competing views on the federal role for transportation data programs. Illustrative views that were expressed by respondents are listed below.

- A central coordinating agency such as DOT would help answer many of our questions.
- We do not want to enlarge on federal bureaucracy for the sake of data improvements.
- Modal agencies should have primary responsibilities for DOT data programs.
- Our concern for DOT as a central data agency is that the agency does not have a long-range viewpoint or proven ability to sustain the long-term effort that is required.
- The federal or other centralized national role should be limited to the development of sufficient standards for the comparison of state and locally collected data.
- The DOT role should include everything except data collection. Outside groups should advise.
- Although DOT should probably be the focus for data collection and dissemination, there might not be continuity of effort unless required by statute.
- We favor a stronger coordinating role for DOT and greater reliance on non-governmental organizations.

- It appears that EEC, Japan, OPEC, and various other competitors for the international market have developed comprehensive staff capability for acquiring information useful for investment decisions. Similar capabilities would be highly cost-effective for the United States.
- There is no need for an organization to compete with the federal government in the collection and dissemination of information. There is a need to improve the federal system.
- DOT needs to assume the lead in collecting, coordinating, and disseminating data. Appropriate interface with other federal data collection efforts needs to be provided.
- Even though we support strong federal government including regulation, not deregulation, of transportation we hesitate to recommend any proposal, even data collection and dissemination, which encourages the federal government to expand its current activities. Nor do we recommend such a center in the private sector without a great deal more thought. Such a center should not become a sounding board for self-serving interests of so-called citizen interest groups.
- It is very difficult to assess the correct organization in which data should be collected, maintained, and disseminated without knowing the costs and benefits of alternative systems. The answer is to proceed carefully along lines that are manifested by the issuance of this questionnaire.
- Transportation data coordination is valuable, but should be vested with Census, not DOT.
- The transportation data-gathering responsibilities and assessment of industry data requirements have been met by the trade associations. Public data requirements have been provided by the principal regulatory body responsibile for each mode. There is no perceived deficiency in the type or method of data collection and evaluation at the moment.

j. Centralization of Data Programs

The previously noted lack of majority support for centralization of data programs is illustrated by the following responses.

- A single central computer cannot and should not be expected to provide direct access to all transportation data.
- Major problems are likely with data centralization—past efforts have not been too productive. We do not believe it is possible now.
- A substantial number of different government agencies collect transportation data, but centralization within DOT is not the answer. What is needed is DOT authority for coordination of data collection and dissemination.
- Data centralization can be either a very good solution or a waste, depending on its structure.

k. Collector-User Linkages

In both the questionnaires and interviews a number of respondents proposed the principle that collected data will better meet the user's needs whenever there are adequate communication links between collector and user. At one extreme is the case where collector and user are the same; at the other is the situation where collection is done in the complete absence of any communications with users.

- The closer the link between data collector and data user the more useful will be the data.
- The unsuccessful 1970 Census effort to obtain journey to work data is an example of situations where the data collection staff was too far removed from the staff that needed the data for program policy and direction.
- Data quality is improved by a close relationship between data gatherer and data user and by designing the summary format before data collection.
- Rather than expanding, we should be using what we have. Keep data acquisition simple, work towards better distribution of what is available. Use existing facilities wisely.

- It is vital that we understand probable uses before we make any investment in data gathering. We need a "Primer on Transportation Data Sources, Databases, and State-of-the-Art Use of Transportation Data."
- We believe that one of the major problems in the transportation data area is the lack of established procedures whereby data users can constructively influence the data collection process.

1. Private Sector Involvement

Transportation data are often collected by private organizations strictly for internal use or proprietary use. On the other hand, there are a number of private organizations that acquire, organize, and vend transportation data as a business enterprise. Although there are advocates of greater private sector involvement, there is considerable concern for the objectivity and completeness with which needed data are collected. This concern applies to any organization that collects, processes, disseminates data, and represents a need for maintaining the integrity of transportation information. Illustrative comments are given below.

- Commercial data sources provide useful urban and regional planning data at a reasonable cost. These data need to be checked for reliability; the 1980 census will provide check data.
- Several private firms are collecting data from federal sources and selling it. Should this be permitted?
- Before an expanded census of transportation or other federal surveys are instituted, private industry should be given an opportunity to fill the gaps.
- We would be happy to see federal agencies eliminate most data collection and have private service bureaus collect and vend data on a subscription basis.
- We support efforts to bring improvements to the areas of data collection and dissemination but feel strongly that much of the responsibility should remain in the private sector.
- The deregulation of transportation provides a new opportunity for data collection through private enterprise that is perhaps commissioned by public agencies.

m. Sampling and Modeling

The subject of sampling and using models to generate transportation data has been discussed at several points in previous chapters of this report. The following excerpts illustrate views on this subject.

- Modeling tends to absorb excessive resources for an MPO staff but is useful for testing alternatives when tested models are available.
- Within our agency we have encountered considerable resistance in the use of sampling. We are using these methods more and more but believe that more development and education is needed.
- Modeling based on small samples should be done at the national level and made available for public use.
- Complex modeling and projection procedures have been overemphasized. Projections are frequently invalidated by international occurrences and economic shifts. Models can provide useful insights but only if they are understood and accepted by decision-makers.
- Data are only useful if methods exist to analyze the effects due to changes or trends. More effort should be centered on the limitations of methodologies currently used.

n. Funding of Data Programs

Inquiry responses on the subject of paying for data program costs generally imply that costs should be shared between government funding and user charges.

- We have to have public funding on a continuing basis that is established and changed only by Congress.
- Data should be at a cost to the user and should not be collected if the user is not to be charged.
- A most critical need is for continuity of organization and resources. If an adequately funded unit that is not decimated every time someone decides to reorganize can be established in DOT, the prospects for improved data availability and access would be enhanced.

7.2 FOLLOW-UP IMPLICATIONS

A number of follow-up tasks are implied by the findings of this report. Some tasks are stated explicitly in recommendations, others are implied by various conclusions and statements that appear throughout the report. All are steps that can be taken towards meeting user needs and to facilitate transportation data access and flows.

The implied tasks are listed below in five categories. First are those recommended for DOT performance. Tasks in the second and third categories would be performed by groups that would come into existence if all DOT tasks were carried out. Tasks in the last two groups would generally be performed by federal agencies, including DOT, to which the tasks were applicable.

a. Recommended tasks for the U.S. Department of Transportation

1. Consistent with functions of the Office of Federal Statistical Policy and Standards, lead the coordination of federal transportation data programs (Recommendation 10, page 6/8).

2. Provide the transportation community with information on the status, content, and availability of data produced by federal programs (Recommendation 10, page 6/8).

3. Identify the federal administrative functions and data collection activities that do or can generate useful transportation data and develop procedures for making such data available wherever such is not now the case (Recommendation 7, page 6/4).

4. Encourage data providers to release representative preliminary data sets in advance of their full release (Recommendation 2, page 4/17).

5. Encourage developers of transportation data to make their respective data sets available in published form (Recommendation 1, page 4/7).

6. Encourage and support the development and proper use of cost-effective sampling and modeling techniques for the collection and provision of transportation data (Recommendation 6, page 6/4 and Recommendation 11, page 6/9).

7. Support the establishment of a national forum to represent data suppliers and users in the continuing assessment of user needs and data programs (Recommendation 9, page 6/6).

8. Support the establishment of a special group for the facilitation of data reference services (Recommendation 4, page 5/5).

b. Tasks for a national forum of data suppliers and users

1. Make continuing assessments of user needs and the degree to which needs can be met by the ensemble of data programs that exist currently or that are likely to exist in the near future. The assessments should be based on data set costs, use, and benefits derived from the use. (Recommendation 9, page 6/6)

2. Identify significant gaps in the existence and availability of transportation data and identify cost-effective alternatives for filling the gaps.

3. Assess alternatives and make recommendations for cost-effective mechanisms that can lead to improvements in data processes that include data collection, data analysis, and data provision to users. (Recommendation 9, page 6/6)

4. Address specific data issues that may be raised by the U.S. Department of Transportation and other elements of the transportation community. The issues should include definition of the respective roles of federal, state, and local agencies in the collection and provision of transportation data. (Conclusion 13, page 5/7)

5. Provide oversight for the facilitation of data reference services.

c. Tasks for the facilitation of data reference services

1. Develop criteria and specifications for transportation data reference services and promote the implementation of new reference services that are needed. (Recommendation 4, page 5/5)

2. Promote the dissemination of knowledge about existing data sets and publicize the nature of new data sets that become available. (Recommendation 5, page 5/9)

d. Tasks for agencies and organizations that will discontinue basic data collections. (Recommendation 3, page 4/19)

1. Evaluate the losses and impacts of data base termination and give users adequate opportunities to make their views known.

2. Develop alternatives for future provision of data now provided by programs whose discontinuation will seriously impair transportation planning and decision-making.

e. Tasks for applicable federal agencies, including DOT

1. Collect transportation data primarily through the administrative functions of transportation programs (Recommendation 6, page 6/4).

2. Continue support for the Census of Transportation program, but with assured improvements in timeliness of the data to be provided (Recommendation 8, page 6/5).

Although this study has addressed many of the above tasks in a general way, much work remains to be done. A continuing and dedicated effort will be required for meeting user needs and for facilitating flows of transportation data.

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APPENDIX A

INQUIRY MATERIALS

CONTENTS

NATIONAL RESEARCH COUNCIL
COMMISSION ON SOCIOTECHNICAL SYSTEMS
2101 Constitution Avenue Washington, D. C. 20418

TRANSPORTATION RESEARCH BOARD

April 3, 1980

(Copy of letter transmitted to 600 potential respondents)

This is to ask your cooperation in a study the Transportation Research Board is now making to learn about current uses and needs for statistical data that are relevant to transportation policy, planning, engineering, operations, and research. The study scope covers data users in all types of non-federal agencies and private organizations and in all parts of the United States. From our files we have selected about six hundred people, including yourself, whose experiences and views can make valuable contributions to the study. From the inputs we receive we expect to draw conclusions and make recommendations on what is needed and what might be done to improve the quality and availability of transportation data.

We are using the enclosed questionnaire to cover a rather wide range of inquiry on the practices, needs, wants, and views of transportation data users. The Board will be most appreciative if it is possible for you, or someone you may designate, to contribute to the project work by completing and returning the questionnaire.

The questionnaire is rather lengthy but we believe the range and complexity of transportation data issues call for more than a casual investigation of user concerns, and that user views should be brought to bear on the multi-million dollar annual investment in transportation data programs. We look upon this inquiry as a national conference of invited participants wherein each person has the opportunity to "speak" for an hour or so on a wide range of questions about transportation data.

Advice and guidance for the project is provided by a Steering Committee whose members represent all levels of non-federal transportation agencies and many associations of transportation industries. Your response will help the Committee make an objective evaluation of the magnitude and character of data problems and point the way to their resolution. More details about the project are given in the enclosed reprint from Transportation Research News.

Responding individuals and organizations will not be identified by name in the project report. Each respondent will receive a complimentary copy of the report.

We look forward to your cooperation, but if it is not possible for you to participate in this study, please let us know by simply returning the questionnaire within the postage-free envelope that is provided.

Very truly yours,

W. N. Carey, Jr.
Executive Director

Enclosures

Questionnaire for the

INQUIRY ON TRANSPORTATION DATA NEEDS AND FLOWS

by the

TRANSPORTATION RESEARCH BOARD

NATIONAL RESEARCH COUNCIL

Under Contract
No. DOT-TSC-1710

March 1980

682

Questionnaire No._____

FOREWORD TO QUESTIONNAIRE RECIPIENTS

The purpose of this inquiry is to identify data practices, needs, and wants of non-federal users of statistical data that are related to the field of transportation. The inquiry is a basic part of a Transportation Research Board project that is performed with advice and guidance from the Steering Committee listed below. The project is sponsored by the Research and Special Programs Administration, U.S. Department of Transportation, through the U.S. DOT Transportation Systems Center.

The questionnaire will be augmented by in-depth interviews with a number of questionnaire respondents. Summary results will form the basis for a TRB report on user needs and priorities for transportation data, and on user views on mechanisms for facilitating data access and data flows. Each respondent will receive a complimentary copy of the report. The report will not identify names of individual respondents or individual responding organizations.

Approximately half of the 38 questionnaire items are for the identification of the respondent's work, data practices, experiences, and needs. The remaining items solicit the respondent's views on various policies and processes that relate to data access and flows. Thirty of the items call for very brief responses such as check marks. The remaining eight items call for open-ended responses that might range from a short comment to several sentences. It is estimated that about one hour is required for full response to all items.

Provision is made on the last page for the questionnaire recipient to name one or more other individuals as respondents, perhaps in addition to the recipient. If it is not possible to respond at all, the recipient should so inform the Transportation Research Board by simply returning the questionnaire in the postage-free envelope provided. Additional copies of the questionnaire may be photocopied or requested from TRB by the recipient.

The project Steering Committee and the Transportation Research Board hope that each recipient will find it possible to provide a full and prompt response to this inquiry and thus make a significant contribution to the understanding of transportation data needs within the community of non-federal users.

PROJECT PERSONNEL

Steering Committee

Alan E. Pisarski (Chairman), Gellman Research Associates, Inc.
W. Bruce Allen, University of Pennsylvania
E. Wilson Campbell, New York State Dept. of Transportation
Dan C. Dees, Illinois State Dept. of Transportation
James L. Duda, U.S. DOT/RSPA (Liaison)
Stanley G. Feinsod, American Public Transit Association
K. William Horn, Air Transport Association of America
Raymond L. Kassel, Iowa Dept. of Transportation (AASHTO Liaison)
Jeffrey C. Kline, National Industrial Traffic League
Wesley R. Kriebel, American Trucking Associations, Inc.
A. Scheffer Lang, Transportation Consultant
Warren B. Lovejoy, Port Authority of New York and New Jersey
Joseph M. Manning, Gordon Fay Assocs., Inc. (A1C03 Liaison)
Thomas H. May, Pennsylvania Dept. of Transportation
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Frank A. Smith, Transportation Association of America
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DATA EXPERIENCES AND NEEDS

Item 1. Many of the items in this questionnaire refer to the organization unit in which you work. If applicable to your case, please write the name of your unit in the space below.

Name of Unit _____

Item 2. Please sketch briefly the nature of the work of your organization unit (e.g., administration, planning, operations, . . .), how this work relates to your overall organization, and how it relates to the transportation field.

Item 3. For each of the methods listed in lines A-F at right, please check to indicate your dependence on that method for acquiring statistical data that are needed by your unit.

METHODS FOR ACQUIRING NEEDED STATISTICAL DATA	Degree of Dependence			
	High	Medium	Low	None
A. Look up in publications held personally or within my unit				
B. Request published data from other library/service within my organization				
C. Through contacts with other specialists within my organization				
D. Through contacts with other specialists outside my organization				
E. Through mail or phone contacts with data sources (outside organization)				
F. By on-line terminal access to computer-stored data bases				

DATA EXPERIENCES AND NEEDS

Items 4-5. For each source listed below (including any sources you may add in lines 36-40), please check Item 4 if your unit has sought data from that source during the past 12 months. In Item 5 enter rank 1 for the most important source you checked in Item 4, rank 2 for the next most important, etc., but do not rank more than four sources.

DATA SOURCE	4. Use of Source (check)	5. Importance Rank (1,2,...)	6. Use of Specific Services (circle)
1. Air Transport Association of America			A
2. Association of American Railroads			A
3. Amer. Assoc. of State Hwy. & Transp. Off.			
4. American Bus Association			
5. American Petroleum Institute			A
6. Amer. Public Transit Assn.			
7. American Trucking Associations, Inc.			A
8. Bureau of Census, U.S. Dept. of Commerce			A B C D E F G H I J
9. Civil Aeronautics Board			A B C D E
10. Dun & Bradstreet			
11. Federal Aviation Admin. U.S. DOT			A B C D E F G H I J K
12. Federal Highway Admin. U.S. DOT			A B C D E F G H I J K L
13. Federal Railroad Admin. U.S. DOT			A B C D E F G
14. Highway Users Federation			
15. Interstate Commerce Commission			A B
16. Motor Vehicle Manuf. Assn.			A
17. Motorcycle Industry Council			A
18. Nat'l Hwy Traff. Safety Admin. U.S. DOT			A B C D E F
19. Nat'l Industrial Traffic League			
20. National Technical Information Service			
21. R.L. Polk Vehicle Registrations			
22. Research & Spec. Prog. Admin. U.S. DOT			A B C D E F
23. St. Lawrence Seaway Develop. Corp.			A
24. Transportation Association of America			A
25. Transportation Research Board			A B C
26. Transportation Systems Center U.S. DOT			A
27. Urban Mass Transp. Admin. U.S. DOT			A B C
28. U.S. Army Corps of Engineers			A
29. U.S. Coast Guard U.S. DOT			A B C D E F G H
30. U.S. Dept. of Agriculture			
31. U.S. Dept. of Energy			A
32. U.S. Maritime Admin. U.S. Dept of Commerce			
33. U.S. Dept. of Labor			A B
34. U.S. DOT Library			
35. U.S. Travel Data Center			
36.			
37.			
38.			
39.			
40.			

Item 6. The Supplement to this questionnaire lists specific services that are available from those sources for which code letters A, B, etc., are shown in Item 6 above. If you have checked any of these sources in Item 4, it will be most appreciated if you can take the time to refer to the Supplement, then circle any code letters in Item 6 for specific services you have used during the past 12 months.

DATA EXPERIENCES AND NEEDS

Item 7. If you encountered any of the problems listed in lines A-I at right when seeking data from the sources you checked in Item 4, please check to indicate the level of seriousness that problem presented to your work.

TYPE OF PROBLEM ENCOUNTERED	7. SERIOUSNESS OF PROBLEM		
	High	Medium	Low
A. Data sought were Unavailable			
B. Data received were not well-enough defined			
C. Data received were not in right form for need			
D. Data received did not give sufficient detail			
E. Data received were untimely (out-of-date)			
F. Data received were not accurate enough			
G. Turnaround time from request to receipt was too long			
H. Data service was too expensive			
I. (Other)			

Item 8. Please sketch details for the two most serious problems represented by your checks in Item 7.

A. (Most serious)

B. (Second most serious)

Item 9. Please describe briefly an experience you have had during the past year or two in which important data needs could not be met because the data were either non-existent, unlocatable, or unavailable. Then check one box at the right to indicate how far your *organization* might have gone towards paying for acquisition costs.

- ☐ Acquire only if free.
- ☐ Pay reasonable service charge.
- ☐ Share in collection costs.
- ☐ Assume all collection costs.

DATA EXPERIENCES AND NEEDS

Item 10. Please sketch two of your most important and current needs for transportation-related data (other than any you may have described in Item 9).

A.

B.

Items 11-14. Please check each category listed below to indicate the levels of your general needs for transportation-related data.

TRANSPORT SYSTEMS AND DATA CATEGORIES		LEVEL OF NEED High	Med.	Low	None
11. Transport Type Needs	A. Passenger				
	B. Freight				
12. Transport Range Needs	A. Rural				
	B. Urban				
	C. Intercity				
	D. International				
13. Transport Mode Needs	A. Air				
	B. Highway (General				
	Auto				
	Bus				
	Truck				
	C. Rail				
	D. Water (General)				
	Inland				
	Maritime				
	E. Pipeline				
14. Data Type Needs	A. Traveler/Commodity Characteristics				
	B. Origins/Destinations of Passengers/Freight				
	C. Transport Performance (speed safety,quality,costs,etc.)				
	D. Transport Facilities (roads, ways,terminals,etc.)				
	E. Transport Equipment(vehicles, controls,safety,costs, etc.)				
	F. Population/Land Use Characteristics				
	G. Energy/Environment Impacts of Transport Systems				
	H. Other				

Items 15-16. For the data budget categories listed below, please check Item 15 to indicate which are part of the annual operating expenses of your unit. Check Item 16 to indicate categories for which your unit needs a larger budget.

Data Budget Category	15. Check if in budget	16. Check if greater budget needed
A. Collection of Original Data		
B. Data Subscription/Purchase from other organizations		
C. On-Line Computer Access to Data of other organizations		
D. Consultant/Contract Services for Data Acquisition		
E. Synthesis/Analysis of Collected/Acquired Data		
F. Provision/Distribution of Data Internally/Externally		
G. (Other)		

DATA ACCESS AND FLOWS

Items 17-18. The general processes listed on lines A-F below refer to improvements that might be made through national efforts to benefit the overall community of transportation data users. In Item 17 please check the importance of each process to your unit. Check Item 18 to indicate what you perceive to be the need for improving each process.

General Processes for Improvement of Data Access and Flows	17. Importance of Process			18. Need for Improvement		
	High	Med.	Low	High	Med.	Low
A. Identification & Synthesis of User Needs						
B. Evaluation of User Needs and Response to User Needs						
C. Provision of Adequate Knowledge About Available Data						
D. Provision of Adequate Access to Available Data						
E. Increased Availability of Data Already Collected or Produced						
F. Collection and Provision of Needed Data not yet Collected or Produced						

Item 19. Please give an example of what might be done to improve any process you rated *High* on both of Items 17 and 18. Indicate how the improvement would bring benefits to your unit.

DATA ACCESS AND FLOWS

Item 20. Do you perceive a need for change in the present allocation of responsibility for data collection and data provision among various levels of government or between the public and private sectors? If *Yes,* please sketch below what changes should be made and why.

Yes

No

Item 21. Please respond to this item if your *organization* collects or produces transportation-related data that are not part of federal programs listed in the questionnaire Supplement and that are probably useful to a number of other organizations. In column A briefly describe the nature of such data. In column B indicate any conditions or limitations your *organization* places on making the data available to other organizations.

A. Data collected/produced	B. Availability conditions/limitations

DATA ACCESS AND FLOWS

Items 22-34. Each of these items describes a proposal that relates to data access and flows. After reading each proposal, please check in Line A the level of need you perceive for the proposal. In Line B check the level of support that your *organization* would give to the proposal. If Line B is not checked "High," use Line C to indicate any changes in wording that would make the proposal more supportable. If you checked "Oppose" in Line B, please indicate your reason for opposition in Line C.

Uniform Definitions

Item 22. Authorize U.S. DOT to lead in the development and enforcement of uniform definitions for commodities, geography, vehicles, packaging, etc. The definitions would be mandatory for all federally-funded and federal-regulatory data collection.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

Item 23. Use existing institutions and procedures to encourage the development of uniform definitions and widespread recognition of benefits to be derived therefrom.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

Data Collection

Item 24. Obtain transportation data primarily through the administrative functions of public and private transportation programs.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

Item 25. Obtain transportation data primarily through expanded confidential sample surveys that would provide detailed cost and operational data for all classes of regulated and non-regulated transport of people and goods and with no identification of individuals, carriers, or operators.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

Census of Transportation

Item 26. (Passengers) Expand the scope and sample size of the National Transportation Survey (tourism) and the Nationwide Personal Transportation Study to provide data for reliable local estimates, operating data, and fuel cost data. Include a quarterly or annual procedure for timely updating and monitoring of trends.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

Item 27. (Goods) Expand the scope of the Truck Inventory and Use Survey and the Commodity Transportation Survey to include truck commodity flow data and commodity transportation cost data for all modes and shipper classes.

A. Need [High] [Med.] [Low] [None]
B. Support [High] [Low] [None] [Oppose]

C. _____

DATA ACCESS AND FLOWS

Assessment of Data Programs

Item 28. Establish a continuing federal board to review and recommend policy for all aspects of transportation data programs. The board would advise and report to the Secretary of Transportation.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Item 29. Establish a continuing forum independent of U.S. DOT to represent all categories of data producers and users. Make continuing assessments of user needs, and make recommendations on priorities and mechanisms for improvement of data programs.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Centralization of Data Programs

Item 30. Establish a center within U.S. DOT for coordinating all federal transportation data programs. The center would catalog and monitor all programs, would publish progress and activity reports, and would be a referral center for data users.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Item 31. Same proposal as in Item 30 except that the center would be outside U.S. DOT. Could be in the public sector, private sector, or exist as a special institution.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Item 32. Centralize within U.S. DOT all federal transportation data programs, including compliance authority and confidentiality regulations. Include programs now at Census, CAB, ICC, Corps of Engineers, etc.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Data Estimation

Item 33. Reduce data collection requirements through the use of minimum sample sizes in conjunction with models that provide estimates for categories of data. Thus greater emphasis is placed on modeling and data analysis while data collection costs are reduced through carefully designed small samples.

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

Financing of Data Programs

Item 34 Derive major financial support for any or all of Items 30-33 from federal-aid and grant funds that are applicable to transportation programs. (The maximum support required is likely to be about 2-3% of the applicable funds.)

A. Need — High | Med. | Low | None
B. Support — High | Low | None | Oppose
C. _____

DATA ACCESS AND FLOWS

Item 35. Along the lines of Items 22-34, please sketch any additional proposal your organization needs and would support for the facilitation of transportation data access and flows.

Item 36. Please use the space below for any additional comments or recommendations you may wish to make on the subjects covered by this questionnaire.

RESPONDENT IDENTIFICATION

Item 37. *Recipient Identification.* Your mail label as recipient of this questionnaire is shown at right. Use lines A-D below for entry of any changes needed for the label information.
Please enter your phone number in line E.

A. Personal Name _____

B. Position/Title _____

C. Organization Name _____

D. Mail Address _____

E. Telephone _____

Item 38. *Respondent Identification.* Skip this item if the recipient above is also the sole respondent to this questionnaire. Please identify any other respondent(s) by entering in lines A-E below any information that *differs* from that in Item 37.

A. Personal Name _____

B. Position/Title _____

C. Organization Name _____

D. Mail Address _____

E. Telephone _____

Finally, thank you very much for the time you have contributed to the work of this project. Please use the postage-free envelope that was provided for the return of this questionnaire. The Supplement need not be returned.

Transportation Data Needs Project
Transportation Research Board
2101 Constitution Avenue, N.W.
Washington, DC 20418

682

Questionnaire No. _____

TRANSPORTATION DATA

SOURCES AND SERVICES

A SUPPLEMENT FOR THE

TRANSPORTATION RESEARCH BOARD

INQUIRY ON TRANSPORTATION DATA

NEEDS AND FLOWS

Revised Version
December 1980

The original version of this supplement contained brief descriptions for only those data sources numbered 1-35 in questionnaire Item 4 and for only those specific data services whose code letters were given in questionnaire Item 6.

This revised version contains the original information plus data on each of 27 additional specific sources that were written in lines 36-40 of questionnaire Item 4 by at least two respondents. Alphabetical insertion of the new sources has changed sequence numbers for the original sources as indicated on the pages that follow.

It is recognized that the contents of this supplement do not include all important sources of statistical data and that additional services could be listed for many of the sources. Emphasis has been placed on services provided by U.S. Department of Transportation modal administrations, Bureau of Census, and other transportation-related federal agencies.

TRANSPORTATION DATA SOURCES AND SERVICES

SOURCE ORGANIZATION NO.*	NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME	DESCRIPTION
1. (1)	Air Transport Association of America (ATA) 1709 New York Avenue S.W. Washington, D.C. 20006	Air Transport 19YY.	Statistics cover employees, passengers, departures, revenue, freight ton-miles, and expenses for U.S. scheduled airlines, domestic trunk lines and local service airlines. Published annually.
2.	Airport Operators Council International (AOCI) 1700 K Street N.W. Washington, D.C. 20006		
3.	American Association of Airport Executives (AAAE) 2029 K Street N.W. Washington, D.C. 20006		
4.	American Association of Motor Vehicle Administrators (AAMVA) 1201 Connecticut Avenue, N.W. Washington, D.C. 20036		
5. (3)	American Association of State Highway & Transportation Officials (AASHTO) 444 N. Capitol Street, N.W. Washington, D.C. 20001		
6.	American Automobile Association (AAA) 1712 G Street N.W. Washington, D.C. 20006		
7. (4)	American Bus Association (ABA) 1025 Connecticut Avenue N.W. Washington, D.C. 20036	America's Number 1 Passenger Transportation Service	
8. (5)	American Petroleum Institute (API) 2101 L Street N.W. Washington, D.C. 20037	Statistical Bulletin	
9. (6)	American Public Transit Association (APTA) 1225 Connecticut Avenue, N.W. Suite 200, Washington, D.C. 20036	Transit Fact Book.	Annual summary tables report operating and financial data for all U.S. transit systems operating motor buses, heavy rail cars, light rail cars, trolley coaches, cable cars and inclined plane cars.
10.	American Road and Transportation Builders Association (ARTBA) 525 School Street S.W. Washington, D.C. 20024		
11. (7)	American Trucking Association (ATA) 1616 P Street N.W. Washington, D.C. 20036		
12. (2)	Association of American Railroads (AAR) 1920 L Street N.W. Washington, D.C. 20036	Statistics of Railroads of Class I in the United States.	Statistics cover the operations of line-haul railroads of Class I only.

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.*	NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME	DESCRIPTION
13. (8)	Bureau of Census, U.S. Dept. of Commerce (BoC) Data Users Service Division 14th Between E and Constitution Avenue, N.W. Washington, D.C. 20231		A. Census of Government Statistics. Local and state governments revenue and expenditure by highway construction, public transit, airport, water facilities, and inter-governmental transfer. Census extraction from government records. Published every 5 years. B. Census of Nonregulated Bus Carriers and Motor Carriers of Property and Public Warehousing. Operation of non-ICC regulated carriers of commodities. Samples established from economic census. C. Commodity Transportation Survey. Physical characteristics and geographic distribution of commodity shipments from manufacturers along with means of transport. Data collected from shipping documents. Published every 5 years. D. Inland Waterway Origin and Destination: Domestic and International Transportation of U.S. Foreign Trade. Movement of imports and exports within U.S. by origin of export, mode costs, volume, weight, value, and containers (excludes grain and other agricultural commodities). E. Journey to Work Supplement to Annual Housing Survey (coordinated with HUD, UMTA and FHWA). See 61B. F. National Travel Survey. Regional and some long state trips (over 75 miles) and tourism. Travel by type, origin and destination, season, mode, purpose, and traveler characteristics. Data collected from home interviews and questionnaires mailed to households. Published every 5 years. G. Nationwide Personal Transportation Study (coordinated with FHWA and NHTSA). See 25J. H. Statistical Abstract of the U.S. I. Truck Inventory and Use Survey. Contains number of trucks by State, vehicle type, fleet size, type of operation, typical use and owner characteristics. Data collected from questionnaires mailed to 120,000 registered owners. Published every 5 years. J. Waterborne Freight. Foreign trade from census defined merchandise (bonded and exports) coming into U.S. Data collected from Customs Declarations. Published annually.
14.	California Department of Transportation Sacramento, California 95819		
15.	Chicago Transit Authority (CTA) Merchandise Mart Plaza P.O. Box 3555 Chicago, Illinois 60654		
16. (9)	Civil Aeronautics Board (CAB) 1825 Connecticut Avenue, N.W. Washington, D.C. 20428		A. Air Carriers Operating and Financial Statistics. Contains financial operating statistics, revenue, expense, etc. Data collected from air carrier reports. B. Air Carrier Traffic and Capacity Statistics. Contains air carrier traffic, load factor by flight stages and aircraft. Data collected from domestic and foreign carrier reports. C. Aviation Statistics (coordinated with FAA). Contains airline activities and aviation facilities. Data collected from bases and aircraft operators. Published annually. D. International Airlines Passenger Ticket Sample. Origin destination of foreign flight passengers by carrier, class, flight, date and citizenship. Data collected from Naturalization Service Record. E. Ten Percent Airline Passenger Ticket Sample. A continuing ticketed airport O-D survey. Data collected from 10% sample of tickets. Published quarterly.

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO. *	NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME	DESCRIPTION
17. (30)	Department of Agriculture (DOA) Independence Avenue, S.W. Washington, D.C. 20250		
18.	Department of Commerce 14th Between E Street and Constitution Avenue Washington, D.C. 20231		
19. (31)	Department of Energy (DOE) 1000 Independence Avenue Washington, D.C. 20585		Transportation Energy Conservation Data Book. Compilation of secondary data. Presented to show relationships useful to energy conservation. Details for each transportation mode. Published irregularly.
20. (33)	Department of Labor (DOL) 200 Constitution Avenue, N.W. Washington, D.C.		A. Consumer Price Index. Price indexes by components of private automobile transport and public, local and intercity bus. Related indexes. Published monthly and annually. B. Union Wages & Hours. Minimum hourly union wages by industry and craft. Separately for truck drivers and transit operators. Data collected from BLS surveys. Published monthly and annually.
21. (34)	Department of Transportation (DOTL) Library Services Division 400 Seventh Street, S.W. Washington, D.C. 20590		
22. (10)	Dun & Bradstreet 299 Park Avenue New York, N.Y. 10017		A. Dun's Market Indicators. Dun's numbered codes correspond to coverages of business establishments. B. TRINC Motor Carrier Red Book File. Specific data on truck motor carriers, eg, company name; principal officer, DUN Number, revenue and operating taxes. (TRINC Transportation Consultant's is a Division of D & B).
23.	Environmental Protection Agency 401 M Street, N.W. Washington, D.C. 20460		
24. (11)	Federal Aviation Administration (FAA) U.S. Dept. of Transportation 800 Independence Avenue, S.W. Washington, D.C. 20591		A. Aeromedical Research Information. Data related to personnel, performance, efficiency, management and public concern related to aircraft operation. Data from research studies. B. Aircraft Information. Data collected from owners, manufacturers and FAA inspectors on aircraft ownership, inspections, malfunctions, defects and operating categories. C. Airmen (Non-Medical) Information. Data on airmen characteristics related to ratings, experience, and safety record. Data collected from FAA airman applications and ratings. Computer summaries printed annually. D. Aviation Accident Incident and Violation Information. FAA investigators, operators, and witness reports on circumstances, causes, mechanical failures, and injuries. Summarized annually. E. Aviation Activity Information. Data collected from FAA, owners and operators on air traffic, enplaned passengers, tower operations, flight service, registration, and usage. F. Aviation Facilities Information. Data collected by FAA on performance, status and outages of FAA facilities. Reports published irregularly. G. Aviation Forecast Information. FAA staff provides 12 years forecasts of enplaned passengers, revenue, aircraft activity, IFR activity, and general aviation operations. Annual summary reports are published as well as special analysis.

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.* NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME DESCRIPTION
24 Federal Aviation Administration (continued)	H. Aviation Statistics (coordinated with CAB). See 16C. I. FAA Aircraft Management Information. FAA operating staff maintains internal FAA fleet operation statistics. J. Federal Airports Program. Data collected by airport planning agencies and FAA staff on airport and airway extent, performance characteristics, environmental impacts, projects, improvements, expenditures, certification, compliance and safety. K. National Aviation Systems Plans. Data on funding and facility plans. Data collected from aviation review conferences, operators and staff. Published annually.
25. Federal Highway Administration (FHWA) (12) U.S, Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590	A. Grade-Crossing Inventory System (coordinated with FRA and and States). Data on physical characteristics of 430,000 rail-highway grade crossings; as well as grade separations and pedestrian crossings. Data collected from states, railroads, and contractors and placed in a computer file. B. Highway Performance Monitoring System. Detailed characteristics of highway performance and operating conditions related to expenditures for a sample of highway sections. Intended to provide improved Highway Needs Report data through routine Highway Statistics Proceedings. Data being collected from states and FHWA staff. C. Highway Statistics. Mileage by characteristics, vehicle registrations, driver licenses, VMT, truck weight, speed trends, receipts by source, dispersments by object, construction costs, fuel consumption, safety, highway fatalities and injuries. Data collected from state highway, motor vehicle, financial and safety agencies. Published annually. D. Fatal and Injury Accident Rates. Includes various summaries based on Table TA-1 provided by States shows fatal and non-fatal injury accident number, and rates per 100 million vehicle miles by State and highway system. Published annually. E. Journey to Work Supplement to Annual Survey (coordinated with BoC, HUD, and UMTA). See 61B. F. Motor Carrier Accident Reports. Data on vehicle, driver, load, operating conditions, and location of highway accidents involving regulated interstate motor carriers. Data collected from operator and BMCS accident reports. Annual summaries are published. G. National Accident Sampling System (lead agency is NHTSA) See 44C. H. National Exposure Data System (coordinated with NHTSA). Vehicle mile exposure data by detailed class of driver, vehicle, roadway, and traffic environment to provide risk factors for various classes of environment. Data collected by FHWA, States, NPTS, and TIUS. In planning phase. I. National Highway Needs. Data collected by States and MPOs on highway extent, condition, performance, and forecast usage and needs. Published as a biennial report to Congress. J. Nationwide Personal Transportation Study (coordinated with BoC and NHTSA). Contains characteristics of all types of trips related to household characteristics. Data collected from home interviews of 18,000 households. Originally conducted in 1969-70 with update in 1977-78. Release of initial reports is planned in the summer of 1980. K. Nationwide Truck Commodity Flow Study (coordinated with States). 1972 one time State samples on truck operation, loading, commodity, stops, and class of operation. Questionnaires mailed to sample of registration. Published as an FHWA report. L. Urban Transportation Reporting System (coordinated with UMTA). Detailed transportation performance by urban area, mode, and demographic and economic characteristics. Data to be collected

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.* NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME DESCRIPTION
25. Federal Highway Administration (12) (continued)	L. (continued) by MPOs, States, and census. Presently under development.
26. Federal Railroad Administration (FRA) (13) U.S. Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590	A. Grade-Crossing Inventory System (coordinated with FHWA and States). See 25A. B. Rail Carload Waybill Sample (coordinated with ICC). Origin-destination of shipments by commodity, roads, stations, rate, revenue, miles, car type, and tons. Data collected from one percent sample of audited revenue carload waybills. FRA publishes annually. C. Rail Passenger Data (coordinated with AMTRAK). Data on rail passengers, passenger count, and train operation. Data automated from train and station operations. D. Railroad Accident Incident Reporting System. Data collected from operators on accident and occupational illness related to damage to equipment structures, injury to persons, costs, location, environment and operation. Summarized annually. E. Railroad FRA Safety Inspection. Inspection results related to all types of safety features and potential hazards. Data collected from FRA inspectors and summarized annually. F. Railroad Locomotive Inspection. Data collected from FRA inspectors on compliance, locomotive, inventory, and potential hazards. Summarized annually. G. Track Inspection System. Inspection report data related to condition, maintenance, and potential hazards related to track. Data collected from FRA and State inspectors and summarized annually.
27. General Accounting Office (GAO) 441 G Street, N.W. Washington, D.C. 20548	
28. General Aviation Manufacturers Association (GAMA) 1025 Connecticut Avenue Washington, D.C. 20036	G.A. Shipment Report, monthly .
29. Helicopter Association of America (HAA) 1156 15th Street, N.W. Suite 610 Washington, D.C. 20005	
30. Highway Users Federation for Safety & Mobility (14) (HUFSM) 1776 Massachusetts Avenue, N.W. Washington, D.C. 20036	
31. Immigration & Naturalization Service 425 I Street, N.W. Washington, D.C.	
32. Institute of Transportation Engineers (ITE) 1815 N. Fort Myer Drive P.O. Box 9234 Arlington, Va. 22209	

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.* NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME DESCRIPTION
33. International Air Transport Association (IATA) P.O. Box 550 Intl. Aviation Sq. 1000 Sherbrooke St. W. Montreal, PQ, Canada H3A 2R4	World Air Transport Statistics, annual.
34. International Civil Aviation Organization (ICAO) 1000 Sherbrooke St. W. Montreal PQ, Canada H3A 2R2	Compiles statistics on international air transport.
35. Interstate Commerce Commission (ICC) (15) 1112 ICC Buidling Washington, D.C. 20423	A. Interstate Statistics. Data on revenues, expenses, assets, liabilities, capital, facilities, equipment, employment, earnings, hours, passenger movement, commodity movement, safety and security. Data collected from regulated carriers and operators. Annual summaries of some items are published. B. Rail Carload Waybill Sample (coordinated with FRA). See 26B.
36. Iowa Department of Transportation Capitol Building 1007 East Grand Avenue Des Moines, Iowa 50319	
37. Maritime Administration (MarAd) U.S. Dept. of Commerce (32) Main Commerce Bldg. Washington, D.C. 20230	
38. Motor Vehicle Manufacturers Association of the United States (MVMA) (16) 300 New Center Bldg. Detroit, Michigan 48202	Motor Vehicle Facts and Figures. Data on vehicle production, registration, use, owners, and economic impact. Published annually.
39. Motorcycle Industry Council (MIC) 4100 Birch Street (17) Newport Beach, California 92660	Motorcycle Statistical Annual.
40. Motorcycle Safety Foundation (MSF) 780 Elkridge Landing Road Linthicum, MD 21090	Compiles statistics on motorcycle accident and injuries.
41. National Association of State Aviation Officials (NASAO) 444 N. Capitol Street, N.W. Suite 318 Washington, D.C. 20001	
42. National Coal Association (NCA) 1130 17th Street N.W. Washington, D.C. 20036	A. Coal Data, annual. B. Coal Facts, biennial
43. National Governor's Conference Hall of the States 444 N. Capitol Street Washington, D.C. 20001	

*Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.* NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME DESCRIPTION
44. National Highway Traffic Safety Administration (NHTSA) (18) U.S. Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590	A. Fatal Accident Reporting System. All fatal highway accidents by driver, victim, vehicle characteristics and location. Data collected by NHTSA teams, local police, and other accident authorities. Summary and report published annually. B. National Accident Reporting System. Pilot study under test and development for non-fatal highway accidents driver, victim, and vehicle characteristics on sample. Data collected by NHTSA teams, local police, and other accident authorities. C. National Accident Sampling System (coordinated with FHWA). Extensive detail for a sample of fatal and non-fatal highway highway accidents to provide pre-and post-crash characteristics of vehicle, driver, victim, roadway, and traffic environment. Data collected by NHTSA field teams. Presently in testing phase. D. National Driver Registration Program. Central directory of those denied and withdrawn driving privileges. Provides licensing agencies means of identifying the delicensed when applying in different jurisdictions. Data collected from licensing agencies and enforcement officials. Personal data available to authorities along with annual summaries. E. National Exposure Data System (coordinated with FHWA). See 25H. F. Nationwide Personal Transportation Study (coordinated with BoC and FHWA). See 25J.
45. National Industrial Traffic League (NITL) (19) 1909 K Street N.W. Washington, D.C. 20006	
46. National Safety Council (NSC) 444 N. Michigan Avenue Chicago, Illinois 60611	Accident Facts
47. National Technical Information Service (NTIS) (20) U.S. Dept. of Commerce 5285 Port Royal Road Springfield, Va. 22161	
48. National Transportation Safety Board (NTSB) 800 Independence Avenue Federal Office Building 10A Washington, D.C. 20594	
49. Northwestern University Transportation Center Library Evanston, Illinois 60201	
50. R.L. Polk & Co. (21) 431 Howard Street Detroit, Michigan 48231	National Vehicle Population Profile Data Base. Profile counts for specified dates by county, state, and U.S. for domestic and imported passenger cars and light trucks.
51. Research and Special Programs Administration (RSPA) (22) U.S. Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590	A. Hazardous Materials Incident Reporting System. Hazardous materials incident related to transportation including storage, packaging, loading, time, location, commodity, amount, impacts, and damage. Data collected from operators and investigators. Subject reports and annual summaries are published. B. National Transportation Statistics.

*Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO. * NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME DESCRIPTION
51. Research and Special Programs Administration (continued)	C. Pipeline Carrier Accident Reporting System. For applicable incidents carrier; time, location, leak characteristics, fatalities, injuries, damage, commodity, and facility characteristics. Data collected from operators and investigators. Subject reports and annual summaries are published. D. Pipeline Certification and Agreement Data. Inventory of gas pipeline operators by State, accidents, incidents, enforcement and surveillance activity. Data collected from State public service commissions. Summarized annually. E. Pipeline Leak and Test Failure Reporting System. For natural gas pipeline operations, sizes, age, leaks, repairs, pipe characteristics fatalities, injuries, damage environmental damage, pressures, and duration. Data collected from operators and inspectors. Summarized annually. F. Pipeline Safety Grant-In-Aid Program. Narrative and unstructured statistics on State pipeline safety operations and activity expenditures by object. Data collected from State public service commissions.
52. St. Lawrence Seaway Development Corporation (SLSDC) (23) U.S. Dept. of Transportation 800 Independence Avenue, S.W. Washington, D.C. 20591	St. Lawrence Seaway Statistics. Movement of vessels and cargo in Seaway by commodity, vessel, registry, and origin-destination. Published annually by corporation.
53. Transportation Association of America (TAA) (24) 1100 17th Street, N.W. Suite 1107 Washington, D.C. 20036	Transportation Facts and Trends. National economic trends, gross national product GNP, intercity freight, ton-miles, loads, passengers carried, overseas travel, expenditures, and taxes. Published annually.
54. Transportation Research Board (TRB) (25) National Academy of Sciences 2101 Constitution Avenue N.W. Washington, D.C. 20418	A. NCHRP Publications. Contain research results in highway planning, design, construction, operation and maintenance. Published irregularly. B. Transportation Research Information Services. Provide abstracts of research reports and articles, and resumes of ongoing research and development projects in highway, railroad, maritime and air transportation. Abstract bulletins published regularly. C. Transportation Research Record & Special Reports. Technical reports on transportation systems planning and administration, design and construction of facilities, operation and maintenance of facilities, and legal resources. Published irregularly.
55. Transportation Systems Center (TSC) (26) U.S. Dept. of Transportation Kendall Square Cambridge, MA 02142	Transportation Statistical Reference File. Identifies and describes sources of transportation data and statistics.
56. Tri-State Regional Planning Commission One World Trade Center, 56 South New York, New York 10048	
57. United States Army Corps of Engineers (USACE) (28) 1000 Independence Avenue Washington, D.C. 20314	Waterborne Freight. Domestic movements, cargo, origin-destination and commodity. Data collected from shipping documents.

*Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

TRANSPORTATION DATA SOURCES AND SERVICES (Continued)

SOURCE ORGANIZATION NO.*	NAME AND ADDRESS	SPECIFIC SERVICES WITHIN SOURCE ORGANIZATIONS NAME	DESCRIPTION
58. (29)	United States Coast Guard (USCG) U.S. Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590		A. Merchant Seamen Information. Seamen certification and status by vessel, voyage, and wanted seamen. B. Merchant Vessels of the U.S. Data on register number, vessel name, vessel description, and owner information. Published annually. C. Merchant Vessel Documentation System (MVD). Input data derived from merchant vessel documents. Principal data elements are the official register number, vessel number, name description, home port, and owner information. Monthly updates and annual hardcopy reports. D. Motorboat Accident Statistics. Boat accident data related to date, place, cause, fatalities, injuries, operator, vessel and time. Data collected from operators and investigators. Summarized and published annually. E. Nationwide Boating Survey. Triennual survey on recreational boats, boaters, activities and safety. F. Pollution Incident Reporting System. Reports all pollution incidents that occur in U.S. and American territories. Principal data elements are types of pollution incidents, types of responses, and enforcement data. Updated monthly. G. Search & Rescue Information. Coast Guard responses related to lives saved and lost, property values and equipment characteristics. Data collected by Coast Guard and summarized annually. H. Standardized Aids to Navigation Data System. Position and status of navigational aids and changes in status and standards.
59. (35)	United States Travel Data Center (TDC) 1899 L Street, N.W. Washington, D.C.		
60.	University of California Institute of Transportation Studies Library Berkeley, California 94720		
61. (27)	Urban Mass Transportation Administration, (UMTA) U.S. Dept. of Transportation 400 Seventh Street, S.W. Washington, D.C. 20590		A. Uniform System of Transit Accounts and Reporting. Section 15(a) of the transit act requires financial and operating data for operations participating in UMTA programs. Includes revenues by source, expenses by object, assets, liabilities, capital, facilities, equipment, maintenance, performance, fuel, safety, service, vehicle use, and passengers. Formerly named FARE. Data collected from operating authorities. Summaries prepared for agencies. Published summaries not yet developed. B. Journey to Work Supplement to Annual Housing Survey. (coordinated with BoC, HUD and FHWA). Journey to work characteristics, related to household and traveler characteristics. Home interview of 76,000 households over a 3 year period (1975-1978). C. Urban Transportation Reporting System. (coordinated with FHWA). See 25L.

* Numbers in parentheses correspond to the numbers that appear in questionnaire Item 4 on page A-7

APPENDIX B

TABULATIONS OF INQUIRY RESPONSES

This appendix contains summary tables for responses to questionnaire Items 1-34. Table numbers correspond to the respective questionnaire item numbers. The tables are presented in the order listed below.

CONTENTS

TABLE 1. DISTRIBUTION OF QUESTIONNAIRES AND RESPONDENTS BY ORGANIZATION TYPES AND GEOGRAPHIC REGIONS

GEOGRAPHIC REGIONS	TABLE ENTRIES	GL Regional & Local Gov't Agencies	GS State Gov't Agencies	PA Academic & Research Institutions	PC Consulting Firms	PI Transport Industries	PJ Other Business & Industry	G All Gov't Agencies	P All Private Organiz.	ALL Agencies & Organizs.
Eastern States Zip Codes 01-33	No. of Transmittals	51	41	35	32	48	55	92	170	262
	% of All Transm'ls	8%	7%	6%	5%	8%	9%	15%	28%	43%
	No. of Respondents	30	30	23	22	27	30	60	102	162
	% of All Respond'ts	9%	8%	7%	6%	7%	9%	17%	29%	46%
	Response Rate	59%	73%	66%	69%	56%	55%	65%	60%	62%
	No. of Interviews	3	3	6	3	3	4	6	16	22
Middle States Zip Codes 34-69	No. of Transmittals	29	36	31	12	24	40	65	107	172
	% of All Transm'ls	5%	6%	5%	2%	4%	7%	11%	18%	29%
	No. of Respondents	19	25	18	4	16	12	44	50	94
	% of All Respond'ts	5%	7%	5%	1%	5%	3%	13%	14%	27%
	Response Rate	66%	69%	58%	33%	67%	30%	68%	47%	55%
	No. of Interviews	0	0	2	0	1	0	0	3	3
Western States Zip Codes 70-99	No. of Transmittals	31	34	30	20	24	27	65	101	166
	% of All Transm'ls	5%	6%	5%	3%	4%	5%	11%	17%	28%
	No of Respondents	17	25	16	10	17	9	42	52	94
	% of All Respond'ts	5%	7%	5%	3%	5%	3%	12%	15%	27%
	Response Rate	55%	74%	53%	50%	71%	33%	65%	51%	57%
	No. of Interviews	3	5	2	0	5	1	8	8	16
ALL REGIONS	No. of Transmittals	111	111	96	64	96	122	222	378	600
	% of All Transm'ls	18.5%	18.5%	16%	11%	16%	20%	37%	63%	100%
	No. of Respondents	66	80	57	36	60	51	146	204	350
	% of All Respond'ts	19%	23%	16%	10%	17%	15%	42%	58%	100%
	Response Rate	59%	72%	59%	56%	62%	42%	66%	54%	58%
	No. of Interviews	6	8	10	3	9	5	14	27	41

TABLE 2A. DISTRIBUTION OF QUESTIONNAIRE RESPONDENTS BY ORGANIZATION TYPES AND WORK TYPES

ORGANIZATION TYPES (SEE CODE 1)		TOTAL	WORK TYPE (SEE CODE 2) AD	FM	PL	RD	EM	OP	ER	SC	IS
GL	Class 1 (No.)	24	1	0	16	1	2	3	0	1	0
	Class 2 (No.)	42	5	1	21	3	3	6	0	1	2
	All (No.)	66	6	1	37	4	5	9	0	2	2
	(%)	100%	9%	2%	56%	6%	7%	14%	0	3%	3%
GS	Class 1 (No.)	73	17	0	26	5	10	5	0	4	6
	Class 2 (No.)	7	3	0	0	2	0	1	0	1	0
	All (No.)	80	20	0	26	7	10	6	0	5	6
	(%)	100%	24%	0	33%	9%	13%	8%	0	6%	7%
PA	Class 1 (No.)	46	1	0	0	6	0	0	39	0	0
	Class 2 (No.)	11	2	0	0	6	0	0	3	0	0
	All (No.)	57	3	0	0	12	0	0	42	0	0
	(%)	100%	5%	0	0	20%	0	0	73%	0	0
PC	Class 1 (No.)	11	3	3	2	1	2	0	0	0	0
	Class 2 (No.)	25	1	4	9	6	4	0	0	0	1
	All (No.)	36	4	7	11	7	6	0	0	0	1
	(%)	100%	11%	19%	31%	19%	17%	0	0	0	3%
PI	Class 1 (No.)	46	5	17	7	2	3	7	0	1	4
	Class 2 (No.)	14	2	5	2	0	3	0	0	1	4
	All (No.)	60	7	22	9	2	6	7	0	2	5
	(%)	100%	12%	36%	15%	3%	10%	12%	0	3%	8%
PJ	Class 1 (No.)	15	1	1	0	1	0	4	0	3	5
	Class 2 (No.)	36	1	7	0	5	15	5	0	3	0
	All (No.)	51	2	8	0	6	15	9	0	6	5
	(%)	100%	4%	15%	0	12%	31%	18%	0	10%	10%
G-All Gov't Agencies	(No.)	146	26	1	63	11	15	15	0	7	8
	(%)	100%	18%	1%	43%	8%	10%	10%	0	5%	5%
P-All Priv. Organizs.	(No.)	204	16	37	20	27	27	16	42	8	11
	(%)	100%	8%	18%	10%	13%	13%	8%	20%	4%	5%
All Respondents	(No.)	350	42	38	83	38	42	31	42	15	19
	(%)	100%	12%	11%	24%	11%	12%	9%	12%	4%	5%

CODE 1. TYPE OF RESPONDENT ORGANIZATION

G. Non-Federal Government Agency (146)

- GL. Regional/Local Government Agency (66)
  - 1. Regional (Interstate/Intrastate) Agency (24)
  - 2. Metropolitan/City Agency (42)
- GS. State Government (80)
  - 1. Transportation Agency (73)
  - 2. Other State Agency (7)

P. Private Organization (204)

- PA. Academic/Research Institution (57)
  - 1. University (46)
  - 2. Research Institution (11)
- PC. Consulting Firm (36)
  - 1. Medium/Large Firm (11)
  - 2. Small/Individual Firm (25)
- PI. Transport Industry (60)
  - 1. Carrier Firm/Association (46)
  - 2. Manufacturing/Supply Firm/Association (14)
- PJ. Other Business & Industry (51)
  - 1. Transport Oriented Organization (15)
  - 2. Other Organization (36)

CODE 2. MAJOR WORK OF RESPONDENT UNIT

AD	Administration, Management, Policy Making, Regulation, Costing, Budgeting, Financing	(42)
FM	Forecasting, Market Research, Economic Research	(38)
PL	Planning, Programming	(83)
RD	Technology Research, Development	(38)
EM	Engineering, Design, Manufacturing, Construction, Maintenance	(42)
OP	Transport Operations, Shipping, Distribution	(31)
ER	Education & Research	(42)
SC	Safety & Other User Concerns	(15)
IS	Provision of Data/Information Services	(19)

TABLE 2B. DISTRIBUTION OF QUESTIONNAIRE RESPONDENTS BY TRANSPORT TYPES, RANGES, AND MODES

TRANSPORT MODES (SEE CODE 3)		TOTAL	TRANSPORT TYPES & RANGES (SEE CODE 4)								
			UIPF	UIP.	UI.F	U.PF	U.P.	U..F	.IPF	.IP.	.I.F
One Mode Only	A....	20	4	1	0	0	0	0	11	3	1
	.H...	99	39	29	3	4	18	0	1	3	2
	..R..	9	1	0	1	0	2	0	1	0	4
	Subtotal	128	44	30	4	4	20	0	13	6	7
Two Modes Only	AH...	16	5	3	0	1	2	1	4	0	0
	A..W.	1	0	0	0	0	0	0	1	0	0
	.HR..	62	22	17	4	1	7	0	3	1	7
	.H.W.	9	3	1	0	1	2	0	1	0	1
	.H..P	2	1	1	0	0	0	0	0	0	0
	..RW.	2	0	0	0	0	0	0	0	0	2
	...WP	1	0	0	1	0	0	0	0	0	0
	Subtotal	93	31	22	5	3	11	1	9	1	10
Three Modes Only	AHR..	45	33	1	0	2	0	0	3	5	1
	AH.W.	2	0	0	1	0	0	0	1	0	0
	.HRW.	19	4	3	5	0	1	0	1	0	5
	.HR.P	4	1	2	1	0	0	0	0	0	0
	.H.WP	2	1	0	0	0	0	0	0	0	1
	Subtotal	72	39	6	7	2	1	0	5	5	7
Four Modes Only	AHRW.	15	11	1	1	0	0	0	2	0	0
	AHR.P	4	3	0	0	0	0	0	0	0	1
	.HRWP	13	6	0	2	0	0	0	2	0	5
	Subtotal	32	20	1	3	0	0	0	2	0	6
All Modes	AHRWP	25	22	0	2	0	0	1	0	0	0
	TOTALS	350	156	59	21	9	32	2	29	12	30

SINGLE FACTORS WITH OVERLAPS*

All Air	No.	127
	%	36%
All Highway	No.	314
	%	90%
All Rail	No.	175
	%	50%
All Water	No.	87
	%	25%
All Pipeline	No.	50
	%	14%

All Urban	No.	279
	%	80%
All Intercity	No.	307
	%	88%

All Passenger	No.	297
	%	85%
All Freight	No.	247
	%	71%

*All percents are based on 350 respondents

CODE 3. MAJOR CONCERN FOR TRANSPORT MODES

One Mode only (128)

- A.... Air Transport Only (20)
- .H... Highway Transport Only (99) (Cycles/Autos/Buses/Trucks)
- ..R.. Rail Transport Only (9)
- ...W. Water Transport Only (0) (Inland/Maritime)
- ....P Pipeline Only (0)

Two Modes only (93)

- AH... Air & Highway (16)
- A.R.. Air & Rail (0)
- A..W. Air & Water (1)
- .HR.. Highway & Rail (62)
- .H.W. Highway & Water (9)
- .H..P Highway & Pipeline (2)
- ..RW. Rail & Water (2)
- ...WP Water & Pipeline (1)

Three Modes only (72)

- AHR.. Air, Highway, & Rail (45)
- AH.W. Air, Highway & Water (2)
- .HRW. Highway, Rail & Water (19)
- .HR.P Highway, Rail & Pipeline (4)
- .H.WP Highway, Water & Pipeline (2)

Four Modes only (32)

- AHRW. All but Pipeline (15)
- AHR.P All but Water (4)
- AH.WP All but Rail (0)
- .HRWP All but Air (13)

Five Modes (25)

- AHRWP Air, Highway, Rail, Water & Pipeline (25)

CODE 4. MAJOR CONCERN FOR TRANSPORT TYPES & RANGES

- UIPF All ranges of passenger & freight transport (156)
- UIP. All ranges of passenger transport (only) (59)
- UI.F All ranges of freight transport (only) (21)
- U.PF Urban movements of people & freight (9)
- U.P. Urban movements of people (32)
- U..F Urban movements of freight (2)
- .IPF Intercity movements of people & freight (29)
- .IP. Intercity movements of people (12)
- .I.F Intercity movements of freight (30)

TABLE 2C. DISTRIBUTION OF QUESTIONNAIRE RESPONDENTS BY TRANSPORT MODES, ORGANIZATION TYPES, AND WORK TYPES

TRANSPORT MODES (SEE CODE 3 IN TABLE 2B)		TOTALS	ORGANIZATION TYPES (SEE CODE 1)												All G	All P
			GL		GS		PA		PC		PI		PJ			
			1	2	1	2	1	2	1	2	1	2	1	2		
One Mode Only	A....	20	1	3	4	0	0	0	0	0	7	3	2	0	8	12
	.H...	99	9	14	25	4	10	1	3	6	5	4	6	12	52	47
	..R..	9	1	1	0	0	0	0	1	0	4	2	0	0	2	7
	Subtotal	128	11	18	29	4	10	1	4	6	16	9	8	12	62	66
Two Modes Only	AH...	16	1	4	2	0	3	0	0	0	1	0	0	5	7	9
	A..W.	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	.HR..	62	5	6	15	1	8	3	0	7	5	2	3	7	27	35
	.H.W.	9	2	2	0	0	1	0	0	2	1	0	1	0	4	5
	.H..P	2	0	1	0	0	0	0	0	0	0	0	0	1	1	1
	..RW.	2	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	...WP	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Subtotal	93	8	13	17	1	12	3	0	9	8	2	5	15	39	54
Three Modes Only	AHR..	45	3	5	10	1	6	2	0	3	9	1	1	4	19	26
	AH.W.	2	0	0	0	0	1	0	0	0	1	0	0	0	0	2
	.HRW.	19	2	2	2	0	2	0	1	2	6	0	0	2	6	13
	.HR.P	4	0	0	1	0	2	0	0	0	0	0	0	1	1	3
	.H.WP	2	0	0	0	0	1	0	0	0	1	0	0	0	0	2
	Subtotal	72	5	7	13	1	12	2	1	5	17	1	1	7	26	46
Four Modes Only	AHRW.	15	0	3	7	0	3	0	0	1	0	1	0	0	10	5
	AHR.P	4	0	1	1	1	1	0	0	0	0	0	0	0	3	1
	.HRWP	13	0	0	0	0	3	2	3	0	4	0	0	1	0	13
	Subtotal	32	0	4	8	1	7	2	3	1	4	1	0	1	13	19
ALL FIVE MODES		25	0	0	6	0	6	2	3	4	1	1	1	1	6	19
TOTALS		350	24	42	73	7	47	10	11	25	46	14	15	36	146	204
			66		80		57		36		60		51			

WORK TYPES (SEE CODE 2)									
AD	FM	PL	RD	EM	OP	ER	SC	IS
2	4	7	0	0	4	0	0	3
12	4	21	10	21	9	8	10	4
1	1	1	1	4	0	0	1	0
15	9	29	11	25	13	8	11	7
1	1	4	3	3	1	2	0	1
0	1	0	0	0	0	0	0	0
10	3	19	7	7	7	6	1	2
0	2	2	2	1	1	1	0	0
0	1	1	0	0	0	0	0	0
0	0	0	0	0	2	0	0	0
1	0	0	0	0	0	0	0	0
12	8	26	12	11	11	9	1	3
8	3	10	6	4	3	7	1	3
1	1	0	0	0	0	0	0	0
0	6	6	2	0	3	1	0	1
1	0	0	1	0	0	2	0	0
0	1	0	0	0	0	1	0	0
10	11	16	9	4	6	11	1	4
2	1	6	1	0	0	3	0	2
1	0	0	0	0	0	2	1	0
1	4	1	3	1	1	2	0	0
4	5	7	4	1	1	7	1	2
1	5	5	2	1	0	7	1	3
42	38	83	38	42	31	42	15	19

CODE 1. TYPE OF RESPONDENT ORGANIZATION

G. Non-Federal Government Agency (146)

GL. Regional/Local Government Agency (66)

1. Regional (Interstate/Intrastate) Agency (24)

2. Metropolitan/City Agency (42)

GS. State Government (80)

1. Transportation Agency (73)

2. Other State Agency (7)

P. Private Organization (204)

PA. Academic/Research Institution (57)

1. University (46)

2. Research Institution (11)

PC. Consulting Firm (36)

1. Medium/Large Firm (11)

2. Small/Individual Firm (25)

PI. Transport Industry (60)

1. Carrier Firm/Association (46)

2. Manufacturing/Supply Firm/Association (14)

PJ. Other Business & Industry (51)

1. Transport Oriented Organization (15)

2. Other Organization (36)

CODE 2. MAJOR WORK OF RESPONDENT UNIT

AD Administration, Management, Policy Making, Regulation, Costing, Budgeting, Financing

FM Forecasting, Market Research, Economic Research

PL Planning, Programming

RD Technology Research, Development

EM Engineering, Design, Manufacturing, Construction, Maintenance

OP Transport Operations, Shipping, Distribution

ER Education & Research

SC Safety & Other User Concerns

IS Provision of Data/Information Services

TABLE 3. DISTRIBUTION OF ACQUISITION METHODS USED BY RESPONDENTS

ACQUISITION METHOD AND DEGREE OF DEPENDENCE		TYPE OF ORGANIZATION AND NUMBER OF RESPONDENTS								
		GL - 66 R&L GOVT	GS - 80 STATE GOVT	PA -57 ACAD&RES	PC - 36 CONSULT	PI -60 TRANS IND	PJ - 51 OTHER B&I	ALL 143 GOVT	ALL 204 PRIVATE	ALL 350 RESPOND.
A. Look up in publications held personally or within my unit	High	38	40	47	21	45	32	78	145	223
	Medium	21	28	9	9	10	14	49	42	91
	Low	7	10	1	6	5	4	17	16	33
	None	0	1	0	0	0	1	1	1	2
	%H/M	89%	85%	96%	83%	92%	90%	87%	92%	90%
B. Request published data from other library/service within my organization	High	6	12	18	4	13	3	18	38	56
	Medium	17	25	17	10	20	15	42	62	104
	Low	33	39	16	10	23	17	72	66	138
	None	8	3	6	11	4	13	11	34	45
	%H/M	35%	47%	61%	39%	56%	35%	41%	49%	46%
C. Through contacts with other specialists within my organization	High	24	34	10	7	19	13	58	49	107
	Medium	26	27	28	9	27	16	53	80	133
	Low	13	16	18	14	14	13	29	59	88
	None	2	2	1	4	1	5	4	10	14
	%H/M	96%	76%	66%	44%	78%	57%	76%	63%	69%
D. Through contacts with other specialists outside my organization	High	20	11	22	14	12	13	31	61	92
	Medium	26	37	24	16	29	26	63	95	158
	Low	20	30	9	5	18	11	50	43	93
	None	0	1	2	0	1	1	1	4	5
	%H/M	70%	59%	80%	83%	68%	76%	64%	76%	71%
E. Through mail or phone contacts with data sources (outside organization)	High	12	12	20	17	18	12	24	67	91
	Medium	24	28	25	9	23	24	52	80	132
	Low	29	28	11	8	18	12	57	49	106
	None	0	5	1	1	2	2	5	6	11
	%H/M	55%	49%	79%	72%	70%	71%	52%	72%	63%
F. By on-line terminal access to computer-stored databases	High	9	14	0	5	20	6	23	31	54
	Medium	11	8	10	7	7	1	19	25	44
	Low	10	22	24	9	11	10	32	54	86
	None	36	35	22	14	22	31	71	89	160
	%H/M	30%	28%	18%	33%	46%	14%	29%	28%	28%

TABLE 4. DISTRIBUTION OF DATA SOURCE USE BY ORGANIZATION TYPE

DATA SOURCE	ORGANIZATION TYPES AND NUMBER OF RESPONDENTS USING DATA SOURCE									
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	All 350 Respondents Number	Percent
1. Air Transportation Assn. of America	6	15	16	5	20	12	21	53	74	21 %
2. Association of American Railroads	4	28	28	16	33	17	32	94	126	36
3. Amer. Assn. of State Hwy & Transp. Officials	15	55	30	12	16	24	70	82	152	43
4. American Bus Association	2	10	8	6	10	4	12	28	40	11
5. American Petroleum Institute	4	16	14	8	18	12	20	52	92	26
6. American Public Transit Assn.	29	25	30	13	8	9	54	60	168	48
7. American Trucking Associations, Inc.	5	20	30	10	23	15	25	78	103	29
8. Bureau of Census, U.S. Dept. of Commerce	44	46	39	24	38	20	90	121	211	60
9. Civil Aeronautics Board	6	19	15	9	22	10	25	56	81	23
10. Dun & Bradstreet	9	7	3	7	23	13	16	46	62	18
11. Federal Aviation Admin., U.S. DOT	12	34	21	5	20	20	46	66	112	32
12. Federal Hwy Admin., U.S. DOT	44	66	48	26	26	36	110	136	246	70
13. Federal Railroad Admin., U.S. DOT	11	43	19	15	26	13	54	73	127	36
14. Highway Users Federation	14	25	19	9	9	13	39	50	89	17
15. Interstate Commerce Commission	6	18	17	14	34	20	24	85	109	31
16. Motor Vehicle Manufacturers Assn.	11	27	30	13	20	16	38	79	117	33
17. Motorcycle Industry Council	0	5	6	1	0	3	5	10	15	4
18. Nat'l Hwy. Traffic Safety Admin, U.S. DOT	8	35	20	14	13	16	43	63	106	30
19. Nat'l Industrial Traffic League	0	4	2	4	8	10	4	24	28	8
20. National Technical Information Service	32	35	36	22	26	23	67	107	174	50
21. R.L. Polk Vehicle Registrations	5	15	7	6	8	7	20	28	48	14
22. Research & Special Programs Admin., U.S. DOT	7	12	18	7	11	7	19	43	62	18
23. St. Lawrence Seaway Development Corp.	0	0	4	4	1	0	0	9	9	3
24. Transportation Association of America	2	11	19	6	24	9	13	58	71	20
25. Transportation Research Board	51	69	46	23	31	34	120	134	254	73
26. Transportation Systems Center, U.S. DOT	18	21	22	17	23	11	39	73	112	32
27. Urban Mass Transportation Admin., U.S. DOT	46	33	28	14	12	8	79	62	141	40
28. U.S. Army Corps of Engineers	10	23	11	15	11	12	33	49	82	23
29. U.S. Coast Guard, U.S. DOT	3	9	4	4	6	2	12	16	28	8
30. U.S. Dept. of Agriculture	2	17	7	7	12	9	19	35	54	15
31. U.S. Dept. of Energy	24	26	24	11	27	20	50	82	132	38
32. U.S. Maritime Admin., U.S. Dept. of Commerce	2	6	7	6	9	3	8	25	33	9
33. U.S. Dept. of Labor	14	18	8	6	19	13	32	46	78	22
34. U.S. DOT Library	8	7	10	15	12	10	15	47	62	18
35. U.S. Travel Data Center	1	2	5	4	8	3	3	20	25	7
36. Airport Operators Council International	1	2	0	1	0	0	3	1	4	1
37. American Assn. of Airport Executives	1	1	0	0	0	0	2	0	2	1
38. Amer. Assn. of Motor Vehicle Administrators	0	1	0	0	0	1	1	1	2	1
39. American Automobile Association	1	2	0	0	0	0	3	0	3	1
40. American Road & Transp. Builders Assn.	0	0	1	0	0	1	0	2	2	1
41. Caltrans	0	0	1	0	0	1	0	2	2	1
42. Chicago Transp. Authority	2	0	0	0	0	0	2	0	2	1
43. Gen. Aviation Manufacturers Assn.	0	1	0	0	0	1	1	1	2	1
44. Helicopter Assn. of America	1	1	0	0	0	0	2	0	2	1
45. Immigration & Naturalization Service	0	0	2	0	0	0	0	2	2	1
46. Institute of Traffic Engineers	1	0	0	1	0	0	1	1	2	1
47. Institute of Transportation Engineers	1	0	2	3	0	0	1	5	6	2
48. Int'l Air Transport Association	0	1	0	0	2	0	1	2	3	1
49. Int'l Civil Aviation Organization	0	1	1	0	1	0	1	2	3	1
50. Iowa DOT	0	0	2	0	0	0	0	2	2	1
51. Motorcycle Safety Foundation	0	0	0	0	0	0	0	3	3	1
52. Nat'l Assn. of State Aviation Officials	0	2	0	0	0	0	2	0	2	1
53. National Coal Association	0	0	1	1	0	0	0	2	2	1
54. Nat'l Governors Conference	0	1	1	0	0	0	1	1	2	1
55. National Safety Council	0	0	2	1	1	1	0	5	5	1
56. Nat'l Transportation Safety Board	0	0	1	0	0	1	0	2	2	1
57. Northwestern Univ. Transp. Library	1	1	0	0	0	0	2	0	2	1
58. Tri State Regional Planning Comm.	2	0	0	0	1	0	2	1	3	1
59. Univ. of Cal. Transp. Library, Berkeley	0	0	1	0	0	1	0	2	2	1
60. U.S. Dept. of Commerce	0	0	0	1	2	0	0	3	3	1
61. U.S. Environmental Protection Agency	3	4	0	1	1	1	7	3	10	3
62. U.S. General Accounting Office	0	0	0	0	1	1	0	2	2	1
63. Highway Safety Research Institute	0	1	0	0	0	1	1	1	2	1
Total Use	469	821	666	387	616	464	1290	2133	3423	
Average = Total/No.	7.1	10.3	11.7	10.8	10.3	9.1	8.8	10.5	9.8	

TABLE 5. DISTRIBUTION OF DATA SOURCE IMPORTANCE BY ORGANIZATION TYPE

DATA SOURCE	ORGANIZATION TYPES AND NUMBER OF RESPONDENTS RANKING DATA SOURCE								All 350 Respondents	
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	Number	Percent
1. Air Transportation Assn. of America	3	1	2	1	16	3	4	26	30	9
2. Association of American Railroads	1	4	9	3	17	8	5	42	47	13
3. Amer. Assn. of State Hwy & Transp. Officials	5	36	14	4	2	11	41	72	113	32
4. American Bus Association	0	0	0	0	1	0	0	1	1	0
5. American Petroleum Institute	1	7	1	1	4	3	8	9	17	5
6. American Public Transit Assn.	18	5	7	3	2	2	23	14	37	11
7. American Trucking Associations, Inc.	0	2	6	0	8	6	2	20	22	6
8. Bureau of Census, U.S. Dept. of Commerce	25	22	13	14	21	10	47	58	105	30
9. Civil Aeronautics Board	3	2	5	1	17	5	5	28	33	9
10. Dun & Bradstreet	3	0	0	4	8	2	3	14	17	5
11. Federal Aviation Admin., U.S. DOT	8	11	6	1	10	4	19	21	40	11
12. Federal Hwy Admin., U.S. DOT	23	61	34	11	10	22	84	82	166	47
13. Federal Railroad Admin., U.S. DOT	1	14	4	5	12	3	15	24	39	11
14. Highway Users Federation	4	4	3	1	0	2	8	6	14	4
15. Interstate Commerce Commission	2	4	3	6	19	10	6	38	44	13
16. Motor Vehicle Manufacturers Assn.	2	4	5	1	2	3	6	11	17	5
17. Motorcycle Industry Council	0	0	0	0	0	0	0	0	0	0
18. Nat'l Hwy. Traffic Safety Admin, U.S. DOT	3	7	7	6	1	4	10	18	28	8
19. Nat'l Industrial Traffic League	0	1	0	1	1	9	1	11	12	2
20. National Technical Information Service	21	14	21	10	9	6	35	46	81	23
21. R.L. Polk Vehicle Registrations	1	1	0	1	0	2	2	3	5	1
22. Research & Special Programs Admin., U.S. DOT	0	0	3	0	0	1	0	4	4	1
23. St. Lawrence Seaway Development Corp.	0	0	0	0	0	0	0	0	0	0
24. Transportation Association of America	0	2	6	1	6	1	2	16	18	5
25. Transportation Research Board	40	54	34	16	11	23	94	84	178	51
26. Transportation Systems Center, U.S. DOT	3	3	6	3	3	0	6	12	18	5
27. Urban Mass Transportation Admin., U.S. DOT	25	15	11	3	6	3	40	23	63	18
28. U.S. Army Corps of Engineers	2	3	5	6	3	6	5	20	25	7
29. U.S. Coast Guard, U.S. DOT	0	0	1	1	2	1	0	5	5	1
30. U.S. Dept. of Agriculture	1	0	2	1	2	2	1	7	8	2
31. U.S. Dept. of Energy	3	5	4	2	2	7	8	15	23	7
32. U.S. Maritime Admin., U.S. Dept. of Commerce	1	0	0	3	0	1	1	4	5	1
33. U.S. Dept. of Labor	2	3	1	1	4	5	5	11	16	5
34. U.S. DOT Library	2	0	4	2	0	1	2	7	9	3
35. U.S. Travel Data Center	1	0	3	0	2	2	1	7	8	2
36. Airport Operators Council International	0	2	0	0	0	0	2	0	2	1
37. American Assn. of Airport Executives	0	0	0	0	0	0	0	0	0	0
38. Amer. Assn. of Motor Vehicle Administrators	0	0	0	0	0	0	0	0	0	0
39. American Automobile Association	0	0	0	0	0	0	0	0	0	0
40. American Road & Transp. Builders Assn.	0	0	0	0	0	1	0	1	1	0
41. Caltrans	0	0	0	0	0	0	0	0	0	0
42. Chicago Transp. Authority	0	0	0	0	0	0	0	0	0	0
43. Gen. Aviation Manufacturers Assn.	0	0	0	0	0	0	0	0	0	0
44. Helicopter Assn. of America	0	0	0	0	0	0	0	0	0	0
45. Immigration & Naturalization Service	0	0	1	0	0	0	0	1	1	0
46. Institute of Traffic Engineers	1	0	0	0	0	0	1	0	1	0
47. Institute of Transportation Engineers	1	0	0	2	0	0	1	2	3	1
48. Int'l Air Transport Association	0	0	0	0	0	0	0	0	0	0
49. Int'l Civil Aviation Organization	0	0	0	0	1	0	0	1	1	0
50. Iowa DOT	0	0	1	0	0	0	0	1	1	0
51. Motorcycle Safety Foundation	0	0	0	0	0	0	0	0	0	0
52. Nat'l Assn. of State Aviation Officials	0	0	0	0	0	0	0	0	0	0
53. National Coal Association	0	0	0	0	0	0	0	0	0	0
54. Nat'l Governors Conference	0	1	0	0	0	0	1	0	1	0
55. National Safety Council	0	0	1	0	0	1	0	2	2	1
56. Nat'l Transportation Safety Board	0	0	0	0	0	1	0	1	1	0
57. Northwestern Univ. Transp. Library	0	0	0	0	0	0	0	0	0	0
58. Tri State Regional Planning Comm.	0	0	0	0	0	0	0	0	0	0
59. Univ. of Cal. Transp. Library, Berkeley	0	0	0	0	0	0	0	0	0	0
60. U.S. Dept. of Commerce	0	0	0	0	1	0	0	1	1	0
61. U.S. Environmental Protection Agency	0	0	0	0	0	0	0	0	0	0
62. U.S. General Accounting Office	0	0	0	0	0	0	0	0	0	0
63. Highway Safety Research Institute	0	0	0	0	0	0	0	0	0	0

TABLE 6. DISTRIBUTION OF USE OF SPECIFIC SERVICES BY ORGANIZATION TYPES

DATA SOURCE & SPECIFIC SERVICES	ORGANIZATION TYPES & NUMBER OF RESPONDENTS								ALL 350 RESPONDENTS		
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	No.	% Total	%Source
8. Bureau of Census No. Using(Item4) U.S. Dept. of Comm. No. Ranking (Item 5)	44/25	46/22	39/13	24/14	38/21	20/10	90/47	121/58	211/105	60/30	100
A. Census of Gov't Statistics	12	15	10	10	7	6	27	33	60	17	28
B. Census of Non-reg. Bus & Motor Carriers of Property & Pub.Whse	0	4	5	4	7	2	4	18	22	7	11
C. Commodity Transportation Survey	5	12	15	10	16	1	18	42	60	17	28
D. Inland Waterway O&D, Domestic & Int'l Transport of US Foreign Trade	4	5	9	7	10	0	9	26	35	10	17
E. Journey to Work Supplement to Annual Housing Survey (See 12E & 27B)	23	12	12	5	4	6	35	27	62	18	29
F. National Travel Survey	11	15	16	8	13	10	26	47	73	21	35
G. Nationwide Personal Transportation Study (See 12J & 18F)	9	12	14	5	8	7	21	34	55	16	26
H. Statistical Abstracts of the U.S.	16	21	20	15	25	12	37	72	109	31	52
I. Track Inventory & Use Survey	3	16	11	9	12	4	19	36	55	16	26
J. Waterborne Freight	3	2	3	8	9	0	5	20	25	7	12
9. Civil Aeronautics Board No. Using(Item4) No. Ranking (Item 5)	6/3	19/2	15/5	9/1	22/17	10/5	25/5	56/28	81/33	23/9	100
A. Air Carriers Operating & Financial Statistics	2	6	5	6	19	6	8	36	44	13	54
B. Air Carrier Traffic & Capacity Statistics	3	7	6	5	12	4	10	27	37	11	46
C. Aviation Statistics (See 11H)	5	13	9	5	14	4	18	32	50	14	62
D. International Airlines Passenger Ticket Sample	2	2	3	2	7	1	4	13	17	5	21
E. Ten Percent Airline Passenger Ticket Sample	5	7	4	1	13	2	12	21	33	9	41
11. Federal Aviation Admin. U.S. DOT No. Using(Item4) No. Ranking (Item 5)	12/8	34/11	21/6	5/1	20/10	20/4	46/19	66/21	112/40	32/11	100
A. Aeromedical Research Information	0	0	1	0	3	0	0	4	4	1	4
B. Aircraft Information	0	8	3	1	7	5	8	16	24	7	21
C. Airmen Information (Non-Medical)	0	1	1	0	3	1	1	5	6	2	5
D. Aviation Accident Incident and Violation Information	0	5	3	0	6	6	5	15	20	6	18
E. Aviation Activity Information	6	15	7	0	10	5	21	22	43	12	38
F. Aviation Facilities Information	1	6	4	1	8	3	7	16	23	7	21
G. Aviation Forecast Information	6	17	6	5	12	6	23	29	52	15	46
H. Aviation Statistics (See 9C)	5	16	6	2	12	4	21	24	45	13	40
I. FAA Aircraft Mgt. Information	1	1	0	0	2	1	2	3	5	1	4
J. Federal Airports Program	5	14	8	1	6	6	19	21	40	11	36
K. National Aviation Systems Plans	7	15	4	0	6	6	22	16	38	11	34

TABLE 6. (Continued)

DATA SOURCES & SPECIFIC SERVICES	ORGANIZATION TYPES & NUMBER OF RESPONDENTS								ALL 350 RESPONDENTS		
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	No.	% Total	%Source
12. Federal Highway Admin. U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	44/23	66/61	48/34	26/16	26/10	36/22	110/84	136/82	246/166	70/47	100
A. Grade-Crossing Inventory System (See 13A)	6	29	3	2	3	1	35	9	44	13	18
B. Highway Performance Monitoring System	6	29	9	5	4	4	35	23	58	17	24
C. Highway Statistics	20	49	33	16	12	21	69	82	151	43	61
D. Fatal and Injury Accident Rates	5	30	13	9	7	5	35	34	69	20	28
E. Journey to Work Supplement to Annual Survey(See 8E &27B)	16	10	10	5	4	4	26	23	49	14	20
F. Motor Carrier Accident Reports	1	14	4	4	9	2	15	19	34	10	14
G. National Accident Sampling System	3	8	9	5	2	0	11	16	27	8	11
H. National Exposure Data System	1	5	4	2	2	1	6	9	15	4	6
I. National Highway Needs	11	23	17	11	7	8	34	43	77	22	31
J. Nationwide Personal Transportation Study	14	24	15	9	7	6	38	37	75	21	30
K. Nationwide Truck Commodity Flow Study	1	19	12	7	7	1	20	27	47	13	19
L. Urban Transportation Reporting System (See 27C)	6	13	8	4	1	1	20	14	34	10	14
13. Federal Railroad Administration U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	11/1	43/14	19/4	15/5	26/12	13/3	54/15	73/24	54/15	36/11	100
A. Grade Crossing Inventory System (See 12A)	2	24	5	4	4	1	26	14	40	11	31
B. Rail Carload Waybill Sample (See 15B)	1	9	9	8	14	5	10	36	46	13	36
C. Rail Passenger Data	2	13	4	2	2	1	15	9	24	7	19
D. Railroad Accident Incident Reporting System	1	6	3	0	6	3	7	12	19	5	15
E. Railroad FRA Safety Inspection	1	4	2	0	5	1	5	8	13	4	10
F. Railroad Locomotive Inspection	0	0	2	0	1	0	0	3	3	1	2
G. Track Inspection System	2	8	2	2	3	0	10	7	17	5	13
15. Interstate Commerce Commission — No.Using(Item4) / No. Ranking (Item 5)	6/2	18/4	17/3	14/6	34/19	20/10	24/6	85/38	109/44	31/13	100
A. Interstate Statistics	1	10	8	7	20	8	11	43	54	15	50
B. Rail Carload Waybill Sample (See 13B)	1	8	7	5	11	4	9	27	36	10	33
18. Nat'l Hwy Traffic Safety Admin. U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	8/3	35/7	20/7	14/6	13/1	16/4	43/10	63/18	106/28	30/8	100
A. Fatal Accident Reporting System	3	19	8	8	6	6	22	28	50	19	47
B. National Accident Reporting System	2	11	11	6	1	4	13	22	35	10	33
C. National Accident Sampling System (See 12G)	2	11	5	6	3	6	13	20	33	9	31
D. National Driver Registration Program	0	5	2	0	0	1	5	3	8	2	8
E. National Exposure Data System (See 12H)	0	4	4	1	2	1	4	8	12	3	11
F. Nationwide Personal Transportaiton Study (See 8G and 12J)	1	4	3	3	3	3	5	12	17	5	16

TABLE 6. (Continued)

DATA SOURCES & SPECIFIC SERVICES	ORGANIZATION TYPES & NUMBER OF RESPONDENTS								ALL 350 RESPONDENTS		
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	No.	% Total	%Source
22. Research & Spec. Programs Admin. U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	7/0	12/0	18/3	7/0	11/0	7/1	19/0	43/4	62/4	18/1	100
A. Hazardous Materials Incident Reporting System	1	1	4	0	2	1	2	7	9	3	15
B. National Transportation Statistics	3	10	11	5	8	3	13	27	40	11	65
C. Pipeline Carrier Accident Reporting System	0	0	0	0	0	1	0	1	1	0	2
D. Pipeline Certification & Agreement Data	0	0	0	1	0	1	0	2	2	1	3
E. Pipeline Leak and Test Failure Reporting System	0	0	0	0	0	1	0	1	1	0	2
F. Pipeline Safety Grant-in-Aid Program	0	0	0	0	0	1	0	1	1	0	2
25. Transportation Research Board — No. Using(Item4) / No. Ranking (Item 5)	51/40	69/54	46/34	23/16	31/11	34/23	120/94	134/84	254/178	73/51	100
A. NCHRP Publications	34	58	34	19	11	22	92	86	178	51	70
B. Transportation Research Information Services	34	54	33	17	19	21	88	90	178	51	70
C. TR Record & TRB Special Reports	37	57	35	18	9	22	94	84	178	51	70
27. Urban Mass Transp. Admin., U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	46/25	33/15	28/11	14/3	12/6	8/3	79/40	62/23	141/63	40/18	100
A. Uniform System of Transit Accts & Reporting	11	12	9	4	3	0	23	16	39	11	28
B. Journey to Work Supplement (See 8E & 12E)	12	8	8	3	2	4	20	17	37	11	26
C. Urban Transpo. Reporting System (See 12L)	10	6	4	3	1	1	16	9	25	7	18
29. U.S. Coast Guard U.S. DOT — No. Using(Item4) / No. Ranking (Item 5)	3/0	9/0	4/1	4/1	6/2	2/1	12/0	16/5	28/5	8/1	100
A. Merchant Seamen Information	0	0	0	0	1	0	0	1	1	0	4
B. Merchant Vessels of the U.S.	0	0	0	0	0	0	0	0	0	0	
C. Merchant Vessel Documentation System	0	0	0	1	0	0	0	1	1	0	4
D. Motorboat Accident Statistics	0	0	1	1	0	0	0	2	2	1	7
E. Nationwide Boating Survey	0	1	0	1	0	0	1	1	2	1	7
F. Pollution Incident Reporting System	0	1	0	0	1	0	1	1	2	1	7
G. Search & Rescue Information	0	1	0	0	0	0	1	0	1	0	4
H. Std. Aids to Navigation Data System	0	0	0	0	0	0	0	0	0	0	
33. U.S. Dept. of Labor — No. Using(Item4) / No. Ranking (Item 5)	14/2	18/3	8/1	6/1	19/4	13/5	32/5	46/11	78/16	22/5	100
A. Consumer Price Index	8	15	7	6	12	9	23	34	57	16	73
B. Union Wages & Hours	4	4	1	3	5	2	8	11	19	5	24

TABLE 7. SERIOUSNESS OF GENERAL TYPES OF DATA PROBLEMS

DATA PROBLEMS AND LEVELS OF SERIOUSNESS		ORGANIZATION TYPES AND NUMBER OF RESPONDENTS								
		GL-66 Reg&Loc Agency	GS-80 State Agency	PA-57 Academ & Res.Inst	PC-36 Consult. Firms	PI-60 Transp. Indust.	PJ-51 Other Bus.&Ind.	G-146 Gov't Agencies	P-204 Private Orgs.	ALL 350 Respond.
A. Data Sought were unavailable	High	9	7	21	8	13	8	16	50	66
	Med.	9	27	15	13	18	13	36	59	95
	Low	8	18	1	6	12	9	26	28	54
	%H/M*	27%	43%	63%	60%	52%	41%	36%	53%	46%
B. Data received were not well-enough defined	High	4	7	8	8	7	4	11	27	38
	Med.	6	14	15	8	12	13	20	48	68
	Low	10	21	7	5	16	9	31	37	68
	%H/M*	15%	26%	40%	44%	32%	33%	21%	37%	30%
C. Data received were not in right form for need	High	4	6	12	8	10	4	10	34	44
	Med.	15	29	13	15	15	10	44	53	97
	Low	9	11	7	2	8	11	20	28	48
	%H/M*	29%	44%	44%	64%	42%	27%	37%	43%	40%
D. Data received did not give sufficient detail	High	7	8	13	9	9	9	15	40	55
	Med.	8	28	11	14	14	6	36	45	81
	Low	11	14	6	2	15	10	25	33	58
	%H/M*	23%	45%	42%	64%	38%	29%	35%	42%	39%
E. Data received were untimely (out-of-date)	High	7	15	16	13	21	11	22	61	83
	Med.	17	22	17	11	17	11	39	56	95
	Low	12	15	1	3	7	8	27	15	42
	%H/M*	36%	46%	58%	67%	63%	43%	42%	57%	51%
F. Data received were not accurate enough	High	2	6	6	6	8	5	8	25	33
	Med.	11	10	9	8	13	4	21	34	55
	Low	9	26	8	7	14	11	35	40	75
	%H/M*	20%	20%	26%	39%	35%	18%	20%	29%	25%
G. Turnaround time from request to receipt was too long	High	3	6	7	5	6	5	9	23	32
	Med.	9	8	14	7	10	8	17	39	56
	Low	12	17	9	9	17	12	29	47	76
	%H/M*	18%	17%	37%	33%	27%	25%	18%	30%	25%
H. Data service was too expensive	High	2	1	4	4	3	1	3	12	15
	Med.	5	8	9	2	4	4	13	19	32
	Low	14	29	11	14	21	16	43	62	105
	%H/M*	11%	11%	23%	17%	12%	10%	11%	15%	13%
I. Other (Listed below)	High	a	c	g,h	k,l,m,n	p,q,r,s	t,u,v,w			
	Med.		d,e,f	i,j	o					
	Low	b								

*Percents are based on number respondents shown at top of each column

a. didn't know data were available
b. nat'l data not relevant at local level
c. data were too general
d. need data on effect of recent gas prices
e. data not correlated among sources
f. data not on uniform basis
g. can't remember where to look
h. accessibility is a problem
i. can't find right person to ask
j. data not well enough explained
k. source doesn't have enough manpower to respond
l. data retrieval was too cumbersome
m. can't find proper agency
n. difficult to locate source
o. data doesn't include prior to 1968
p. incomplete reports on submitted data
q. release data and mailed date inconsistent
r. data not dependable
s. data not comparable for different financing methods
t. data were incomplete
u. can't locate source
v. spend more time finding than using
w. too much time spent looking

TABLE 8. DISTRIBUTION OF SERIOUS DATA PROBLEM DESCRIPTIONS

TYPE OF PROBLEM	TYPE OF ORGANIZATION AND NUMBER OF RESPONSES*								ALL 350	
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	No.	%
A. Timeliness of Available Data	9	20	10	8	29	10	29	57	86	21%
B. Unavailability of Basic and Needed Data	16	29	15	10	23	9	45	57	102	25%
C. Discontinuance of Basic Data	0	0	0	0	4	0	0	4	4	1%
D. Insufficient Detail for Needed Data	12	14	8	7	11	9	26	35	61	15%
E. Lack of Communications and Knowledge About Existing Data	2	4	4	5	1	7	6	17	23	6%
F. Comparability Among Data Sets	1	2	3	4	6	1	3	14	17	4%
G. Duplicative Data Not Integrated or Coordinated	1	0	1	0	1	0	1	2	3	-
H. Data Not Adequately Defined or Well-Explained	2	6	3	5	4	3	8	15	23	6%
I. Data Lack Quality With Respect to Accuracy, Reliability, and Completeness	6	7	7	8	10	3	13	28	41	10%
J. Turnaround Time from Request to Receipt Is Too Long	7	8	4	3	3	2	15	12	27	6%
K. Other (Miscellaneous)	4	0	13	3	4	0	4	20	24	6%
Total Number of Responses	60	90	68	53	96	44	150	261	411	100%

*Questionnaire Item 8 was completed by 241 respondents. Seventy-one respondents gave one response, 170 gave two responses.

TABLE 9. DISTRIBUTION OF EXPERIENCES OF UNAVAILABLE DATA

TYPE OF DATA	ORGANIZATION TYPES AND NUMBER OF RESPONDENTS								
	GS 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	ALL 350
A. Traveler/Commodity Characteristics transport needs, travel behavior, income levels, air passenger profiles, motor vehicle registration data, recreation travel, ride sharing	2	4	5		2		6	7	13
B. Origins/Destinations of Passengers/Freight commodity flows, waybill consignees, intercity market data, international operations, container data, intra city movements	6	7	5	6	11	1	13	23	36
C. Transport Performance (speed, safety, quality, costs, etc.) vehicle occupancy, law enforcement, moving way systems, transit use, speed data, accident data, demonstration projects, operating costs, airport delays, small airport operations	14	8	5	2	2	1	22	10	32
D. Transport Facilities (roads, ways, terminals, etc.) revenues & costs, bridge data, pavement service life, airports, construction designs & costs, operators, intermodal terminals, running traffic, funding services	3	7	5	1	6	4	10	16	26
E. Transport Equipment (vehicles, controls, safety, costs, etc.) vehicle types, traffic control, vehicle dimensions, vehicle operating costs, traffic signal effectiveness, bus maintenance	2	3	2	1	1		5	4	9
F. Population/Land Use Characteristics Local land use		1					1		1
G. Energy/Environment Impacts of Transport Systems fuel sales & use, energy shortage effects	3	4	3		3		7	6	13
H. Other motorcycles & bicycles, general aviation, oil pipeline, data source indexes, miscellaneous	3	12	10	6	11	7	15	34	49
Total No. of Responses	33	46	35	16	36	13	79	100	179

TABLE 10. IMPORTANT AND CURRENT NEEDS FOR TRANSPORTATION DATA

TYPE OF DATA NEEDED	TYPE OF ORGANIZATION & NUMBER OF RESPONDENTS								
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	All 350 Number
A. Traveler - Commodity Characteristics									
1. Travel behavior vs. fuel costs	2	8	3	2	0	1	10	6	16
2. Auto ownership, modal, use, etc.	6	4	1	0	1	2	10	4	14
3. Non-work travel	2	0	0	1	0	0	2	1	3
4. Public opinion/consumer complaints	0	0	1	0	0	2	0	3	3
6. Travel patterns for forecasting	1	1	0	2	1	0	2	3	5
7. Handicapped Needs	1	0	0	1	0	0	1	1	2
8. Driver ages by states	0	1	0	0	0	0	1	0	1
B. Origin/Destination & Passenger/Freight Flow									
1. Railway bill	0	0	0	1	2	0	0	3	3
2. ICC-R-1 Repts and other ICC transport stats.	0	0	0	1	1	1	0	3	3
3. MV Occupancy	1	2	0	0	1	0	3	1	4
4. Airline seat availability/fares/CAB data	3	1	0	0	12	1	4	13	17
5. Hwy vehicle mix/truck trailer	1	2	0	0	0	0	3	0	3
6. Freight flows	1	4	8	5	7	1	5	21	26
7. Airport data/air cargos	4	4	1	2	4	2	8	9	17
8. Traffic counts/forecasts	8	2	3	2	0	1	10	6	16
9. General aviation data	0	1	0	0	0	1	1	1	2
10. Bicycle/motorcycle data	0	0	0	0	0	1	0	1	1
11. Water carrier commodity flow	0	0	3	2	3	1	0	9	9
12. O/D data for rapid transit systems	2	0	0	1	1	0	2	2	4
13. Urban traffic control data	2	0	2	2	0	0	2	4	6
14. Delay costs	1	0	0	1	0	0	1	1	2
15. Bus ridership, line profiles, transfers	3	0	1	1	1	0	3	3	6
16. Household O/D data	0	2	2	1	0	0	2	3	5
17. O/D data for rural areas	0	0	3	0	0	0	0	3	3
18. Hazardous materials flow	0	0	2	0	0	1	0	3	3
C. Transport Performance									
1. Energy/fuel usage	1	6	1	2	5	1	7	8	16
2. Accident data	3	4	4	2	2	3	7	11	18
3. Level of highway service	0	2	2	0	0	1	2	3	5
4. Transit operating stats/performance data	2	1	1	0	0	0	3	1	4
5. Carrier performance standards	0	0	1	0	0	0	0	1	1
D. Transport Facilities									
1. Highway revenues	0	4	0	0	2	1	4	3	7
2. Bridge stresses/strength/fatigue	0	1	1	0	1	0	1	2	3
3. Pavement life vs. vehicle weights	0	6	4	1	1	1	6	7	13
4. Financial data	7	6	2	0	4	2	13	8	21
5. Transit routes	0	0	1	1	0	0	0	2	2
6. Rail-track	1	1	1	0	3	1	2	5	7
7. Inland waterway user charges	0	0	0	0	2	0	0	2	2
8. Photo logging data	0	2	0	0	0	0	2	0	2
9. Transit interface facilities design	2	0	0	0	1	0	2	1	3
10. Comparative data for rapid rail systems	1	0	0	0	0	0	1	0	1
11. Cost of construction and maintenance	2	4	5	1	1	5	6	12	18
12. Coal haul road data	0	1	0	0	0	0	1	0	1
13. RR Grade Crossings	0	1	0	1	0	0	1	1	2
14. Bicycle facilities	0	0	0	0	0	1	0	1	1
15. Pipeline data	0	0	0	0	1	0	0	1	1
E. Transport Equipment									
1. Mv excise taxes	0	1	0	0	0	0	1	0	1
2. Handicapped facilities	0	0	0	0	1	0	0	1	1
3. Hwy lighting value	0	1	0	0	0	0	1	0	1
4. Taxicab inventories	0	0	0	0	1	0	0	1	1
5. Truck weight data	0	2	1	0	0	1	2	2	4
6. Vehicle miles by vehicle size	0	0	1	0	0	1	0	2	2
F. Population/Land Use Characteristics									
1. Parking demand	1	0	0	0	0	0	1	0	1
2. Land use planning data	4	0	1	0	0	1	4	2	6
3. Income Data for small areas	1	0	1	0	0	0	1	1	2
4. Zoning data	1	0	0	0	1	0	1	1	2

TABLE 10 (Continued)

TYPE OF DATA NEEDED	TYPE OF ORGANIZATION & NUMBER OF RESPONDENTS								
	GL 66	GS 80	PA 57	PC 36	PI 60	PJ 51	G 146	P 204	All 350 Number
G. Energy/Environment Impacts									
1. Air quality	2	3	0	1	0	0	5	1	6
2. Noise data	0	1	0	0	0	1	0	2	2
3. Cost of construction and maintenance	1	1	1	0	0	0	2	1	3
4. Data to estimate energy const. measures	1	2	0	0	1	0	3	1	4
5. Cost assoc. with enforcement of 55 MPH MSL	1	1	0	0	0	0	2	0	2
H. Other									
1. Deregulation impact data	1	2	0	0	2	0	3	2	5
2. 1980 census-social & economic data	0	1	0	0	0	0	1	0	1
3. "Buy America" interpretation/FHWA budget/ subsidies	0	1	0	0	0	1	1	1	2
4. Exposure data, risk coefficients, trend data	0	1	0	0	0	0	1	0	1
5. TRIS/On-Line Data access/source index	0	0	3	5	1	0	0	9	9
6. Tort Liability losses	0	0	2	1	0	0	0	3	3
7. Traffic law enforcement data	0	0	1	0	0	0	0	1	1

TABLES 11-12. DISTRIBUTION OF DATA NEEDS RELATED TO TRANSPORT TYPES AND RANGES

	TRANSPORT CATEGORIES & LEVELS OF NEED		ORGANIZATION TYPE AND NUMBER OF RESPONDENTS								
			GL-66 Reg&Loc Gov.Ag.	GS-80 State Agency	PA-57 Acad & Res.Ins	PC-36 Consult Firms	PI-60 Transp Indus.	PJ-51 Other Bus&Ind	G-146 Gov't Agen.	P-204 Private Organs.	ALL 350 Respond
TABLE 11. TRANSPORT TYPES	A. Passenger Transport	High	49	44	37	17	26	16	93	96	189
		Med.	9	14	7	6	2	8	23	23	46
		Low	5	8	3	4	8	7	13	22	35
		None	1	7	4	6	15	9	8	34	42
		%H/M*	88%	73%	77%	64%	47%	47%	79%	58%	67%
	B. Freight Transport	High	10	26	25	17	41	17	36	100	136
		Med.	12	19	10	6	7	6	31	29	60
		Low	22	14	12	5	3	5	36	25	61
		None	14	10	4	6	3	6	24	19	43
		%H/M*	33%	56%	61%	64%	80%	45%	46%	63%	56%
TABLE 12. TRANSPORT RANGES	A. Rural Transport	High	3	36	23	8	11	22	39	64	103
		Med.	8	18	12	9	6	4	26	31	57
		Low	19	11	11	7	17	7	30	42	72
		None	22	6	4	7	12	5	28	28	56
		%H/M*	17%	67%	61%	49%	28%	51%	44%	47%	46%
	B. Urban Transport	High	48	39	30	16	12	20	87	78	165
		Med.	8	19	13	7	9	4	27	33	60
		Low	4	9	5	5	10	9	13	29	42
		None	1	5	2	5	14	5	6	26	32
		%H/M*	85%	73%	58%	64%	35%	47%	78%	54%	64%
	C. Intercity Transport	High	12	24	30	19	45	22	36	116	152
		Med.	13	24	11	7	5	8	37	31	68
		Low	17	14	7	3	3	4	31	17	48
		None	15	9	3	5	3	4	24	15	39
		%H/M*	38%	60%	72%	72%	83%	59%	50%	72%	63%
	D. International Transport	High	4	3	9	6	20	5	7	40	47
		Med.	4	7	7	3	10	6	11	26	37
		Low	7	21	18	10	11	9	28	48	76
		None	42	37	12	14	8	12	79	46	125
		%H/M*	12%	12%	28%	25%	50%	22%	12%	32%	24%

*The base for each percent is the number at the top of the column in which the percent appears.

TABLE 13. DISTRIBUTION OF DATA NEEDS RELATED TO TRANSPORT MODES

TRANSPORT MODES AND LEVELS OF NEEDS		GL-66 Reg&Loc Gov.Agy	GS-80 State Gov.Agy	PA-57 Acad. & Res.Ins	PC-36 Consult Firms	PI-60 Transp. Indus.	PJ-51 Other Bus&Ind	G-146 Gov't Agency	P-204 Private Organs.	ALL 350 Respond.
A. Air Transport	High	10	17	11	3	21	7	27	42	69
	Med.	10	14	8	5	3	6	24	22	46
	Low	14	18	18	13	12	9	32	52	84
	None	22	20	10	9	12	11	42	42	84
	%H/M*	30%	39%	33%	22%	40%	25%	35%	31%	33%
BG. Highway Transport (General)	High	33	45	32	13	8	17	78	70	148
	Med.	6	11	7	7	6	6	17	26	43
	Low	6	1	5	1	15	4	7	25	32
	None	5	3	0	4	7	5	8	16	24
	%H/M*	59%	70%	68%	55%	25%	45%	65%	47%	55%
BA. Auto Transport	High	37	53	33	15	7	21	90	76	166
	Med.	10	5	8	3	10	3	15	24	39
	Low	6	7	6	4	10	6	13	26	39
	None	4	3	3	6	19	9	7	37	44
	%H/M*	71%	73%	72%	53%	28%	47%	72%	49%	59%
BB. Bus Transport	High	40	32	23	9	6	11	72	49	121
	Med.	11	19	15	8	8	4	30	35	65
	Low	4	15	10	6	13	10	19	39	58
	None	5	3	2	7	18	10	8	37	45
	%H/M*	77%	64%	67%	47%	23%	29%	70%	41%	53%
BT. Truck Transport	High	17	47	32	12	20	18	64	82	146
	Med.	17	12	12	14	8	7	29	41	70
	Low	15	5	6	3	11	8	20	28	48
	None	9	5	3	4	7	7	14	21	35
	%H/M*	51%	74%	77%	72%	47%	49%	64%	60%	62%
C. Rail Transport	High	21	24	20	14	28	13	45	75	120
	Med.	7	20	5	9	7	6	27	27	54
	Low	20	12	13	8	15	10	32	46	78
	None	11	14	4	4	4	7	25	19	44
	%H/M*	42%	55%	44%	64%	58%	37%	49%	50%	50%
DG. Water Transport (General)	High	1	0	9	6	1	3	1	19	20
	Med.	7	10	7	5	4	4	17	20	37
	Low	16	23	17	9	14	7	39	47	86
	None	27	28	12	9	16	16	55	53	108
	%H/M*	12%	12%	28%	31%	5%	14%	12%	19%	16%
DI. Inland Waterway Transport	High	2	2	8	11	7	5	4	31	35
	Med.	8	10	10	4	6	4	18	24	42
	Low	16	24	16	6	14	5	40	41	81
	None	30	31	11	11	17	19	61	58	119
	%H/M*	15%	15%	32%	42%	22%	18%	15%	27%	22%
DM. Maritime Transport	High	2	3	5	6	5	3	5	19	24
	Med.	5	5	7	6	3	6	10	22	32
	Low	12	16	15	10	13	6	28	44	72
	None	35	37	16	10	19	17	72	62	134
	%H/M*	11%	10%	21%	33%	13%	18%	10%	20%	16%
E. Pipeline Transport	High	0	3	8	6	1	3	3	18	21
	Med.	3	6	9	4	6	2	9	21	30
	Low	15	27	16	12	15	7	42	50	92
	None	38	32	15	10	23	21	70	69	139
	%H/M*	5%	11%	30%	28%	12%	10%	8%	19%	15%

*The base for each percent is the number of respondents for the column in which the percent appears.

TABLE 14. DISTRIBUTION OF DATA NEEDS RELATED TO DATA TYPES

DATA TYPES AND LEVELS OF NEED		GL-66 Reg&Loc Gov.Agy	GS-80 State Gov.Agy	PA-57 Acad & Res.Ins	PC-36 Consult Firms	PI-60 Transp. Indust.	PJ-51 Other Bus&Ind	G-146 Gov't Agy	P-204 Private Organs.	ALL 350 Respond
A. Traveler/ Commodity Characteristics	High	37	27	33	17	33	11	64	94	158
	Med.	12	28	11	8	6	9	40	34	74
	Low	8	15	7	4	8	7	23	26	49
	None	5	5	2	4	2	8	10	16	26
	%M/H*	74%	69%	77%	69%	65%	39%	71%	63%	66%
B. Origin/ Destinations of Passengers/ Freight	High	42	38	36	17	39	10	80	102	182
	Med.	13	16	10	10	9	7	29	36	65
	Low	6	15	5	3	3	8	21	19	40
	None	3	6	3	5	4	10	9	22	31
	%M/H*	83%	67%	81%	75%	80%	33%	75%	68%	71%
C. Transport Performance (speed,safety, quality, costs, etc)	High	38	31	33	21	36	25	69	115	184
	Med.	12	26	18	4	15	7	38	44	82
	Low	9	11	1	2	4	5	20	12	32
	None	3	6	3	4	2	2	9	11	20
	%M/H*	76%	71%	89%	69%	85%	63%	73%	78%	76%
D. Transport Facilities (roads, ways, terminals, etc.)	High	34	44	25	15	18	19	78	77	155
	Med.	13	14	19	9	16	9	27	53	80
	Low	9	13	5	6	10	11	22	32	54
	None	2	2	3	3	5	1	4	12	16
	%M/H*	71%	72%	77%	67%	57%	55%	72%	64%	67%
E. Transport Equipment (vehicles,controls, safety, costs, etc.)	High	25	21	20	10	23	14	46	67	113
	Med.	19	28	10	10	16	12	47	48	95
	Low	8	19	17	8	9	10	27	44	71
	None	6	4	3	5	5	1	10	15	25
	%M/H*	67%	61%	53%	55%	65%	51%	64%	56%	59%
F. Population/ Land Use Characteristics	High	40	33	23	14	9	6	73	52	125
	Med.	16	21	20	9	20	7	37	56	93
	Low	4	14	5	6	15	13	18	39	57
	None	2	6	4	3	7	9	8	23	31
	%M/H*	85%	67%	75%	64%	48%	25%	75%	53%	62%
G. Energy/ Environment Impacts of Transport Systems	High	38	37	27	11	24	18	75	80	155
	Med	13	24	18	11	13	9	37	51	88
	Low	8	8	6	5	9	7	16	27	43
	None	2	4	1	5	2	4	6	12	18
	%M/H*	77%	76%	79%	61%	62%	53%	77%	64%	69%
H. Other (see list below)	High	abcde	fg	hi jkl	mn	nopq	onr	7	11	18
	Med							0	3	3

a. need data at 3 levels: nat'l, state, local
b. data on mgt. system facilities
c. need pedestrian & bicycle data
d. data on auto registration & auto use
e. (self-enrolled) employment data
f. bridge performance data
g. user perceptions of transport
h. institutional finance data
i. law enforcement data
j. insurance data
k. data on facility maintenance
l. design/construction data
m. data on corrosion
n. traffic accident data, including costs
o. data on general aviation
p. motorcycle data
q. modal costs-revenues
r. data on structures

*Percents are based on the number of respondents for the column in which the percent appears.

TABLES 15-16. DATA BUDGETS AND BUDGET NEEDS FOR TRANSPORTATION DATA

BUDGET CATEGORIES	TAB. 15 In Budget?	TAB. 16 Greater Need?		GL-66 Reg&Loc Gov.Agy	GS-80 State Gov.Agy	PA-57 Acad. & Res.Ins	PC-36 Consult Firms	PI-60 Transp. Indust.	PI-51 Other Bus&Ind	G-146 Gov't Agcy	P-204 Private Organs.	ALL 350 Respond
A. Collection of Original Data	Yes	No		23	39	13	11	26	20	62	70	132
	Yes	Yes		26	27	6	3	11	5	53	25	78
	No	Yes		9	4	13	2	4	8	13	27	40
	%Yes	-	*	74%	83%	33%	39%	62%	49%	79%	47%	60%
	-	%Yes		53%	39%	33%	14%	25%	25%	45%	25%	34%
B. Data Subscription/Purchase from other organizations	Yes	No		34	50	18	18	44	33	84	113	197
	Yes	Yes		4	5	10	5	5	3	9	23	32
	No	Yes		6	2	13	1	3	3	8	20	28
	%Yes	-	*	58%	69%	49%	64%	82%	71%	64%	67%	65%
	-	%Yes		15%	9%	41%	17%	13%	12%	12%	21%	17%
C. On-Line Computer Access to data of other organizations	Yes	No		16	20	10	9	21	5	36	45	81
	Yes	Yes		2	5	4	2	4	2	7	12	19
	No	Yes		11	14	16	5	10	12	25	43	68
	%Yes	-	*	27%	31%	25%	31%	42%	14%	29%	23%	29%
	-	%Yes		20%	24%	35%	19%	23%	27%	22%	27%	25%
D. Consultant/ Contract Services for Data Acquisition	Yes	No		22	30	7	12	32	11	52	62	114
	Yes	Yes		8	5	2	0	3	1	13	6	19
	No	Yes		10	8	10	1	4	9	18	24	42
	%Yes	-	*	45%	44%	16%	33%	58%	24%	45%	33%	38%
	-	%Yes		27%	16%	21%	3%	12%	20%	21%	15%	17%
E. Synthesis/ Analysis of Collected/ Acquired Data	Yes	No		28	40	19	12	34	18	68	83	151
	Yes	Yes		18	23	8	4	8	5	41	25	66
	No	Yes		6	3	8	1	3	7	9	19	28
	%Yes	-	*	70%	79%	47%	44%	70%	45%	75%	53%	62%
	-	%Yes		36%	33%	28%	14%	18%	24%	34%	22%	27%
F. Provision/Distribution of Data Internally/ Externally	Yes	No		35	44	9	10	36	22	79	77	156
	Yes	Yes		7	13	8	1	4	1	20	14	34
	No	Yes		3	3	10	2	3	3	6	18	24
	%Yes	-	*	64%	71%	30%	31%	67%	45%	68%	45%	54%
	-	%Yes		15%	20%	32%	8%	12%	8%	18%	16%	17%
G. Other (Respondents did not add budget categories to A-F above)												

* Percents are based on number of respondents to questionnaire, not number responding to item.

TABLES 17-18. DISTRIBUTION OF IMPORTANCE AND NEED FOR DATA PROCESS IMPROVEMENTS

A. Identification and Synthesis of User Needs

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	3	9	11	2	20	1	4	2	11			6	25	44	69
		5	8	17		4	2		1	5	2	3	3	30	20	50
	Low Blank	1		2					4	3	1	1	1	3	10	13
		1						1		1			1	1	3	4
Medium	High Med.	2		3		2		1		1		1	1	5	6	11
		4	8	19	1	9	4		6	7	5	5	5	32	41	73
	Low Blank	1	4	5		2	1		2	2			3	10	10	20
		1	1	1	1	1				1			2	4	4	8
Low	High Med.	1						1						0	1	1
								2	1					1	3	4
	Low Blank		6	12	1	5	2	2	7	6	3	3	2	19	30	49
		1								1			1	1	2	3
Blank	High Med.													0	0	0
														0	0	0
	Low Blank												1	0	1	1
		4	6	3	2	3	1		2	8	3	2	10	15	29	44
High Medium	All All	10	17	30	2	24	3	5	7	20	3	4	11	59	77	136
		8	13	28	2	14	5	1	8	11	5	6	11	51	61	112
Low Blank	All All	2	6	12	1	5	2	5	8	7	3	3	3	21	36	57
		4	6	3	2	3	1	0	2	8	3	2	11	15	30	45
All All	High Med.	2	10	24	2	8	3	2	13	12	4	4	7	38	53	91
		10	16	36	1	13	6	2	8	12	7	8	8	63	64	127
All All	Low Blank	2	10	19	1	7	3	2	13	11	4	4	7	32	51	83
		7	7	4	3	4	1	1	2	11	3	2	14	21	38	59
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

B. Evaluation of and Response to User Needs

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	2	10	17	2	13	2	2	1	6			6	31	30	61
		8	6	12		4		1	1	6	3	3	2	26	20	46
	Low Blank	1		5					2	2	1			6	5	11
		1		2						1			2	3	3	6
Medium	High Med.	1		3		2	1	1		1			3	4	8	12
		3	9	19	1	10	4	3	8	12	5	7	6	32	55	87
	Low Blank	1		2	1	4	1		1		2		2	7	10	17
			3	2	1			1					1	5	2	7
Low	High Med.					3		1	2		1			0	0	0
														0	7	7
	Low Blank	1	6	7		5	2	1	7	7		3	2	14	27	41
		1							1	2			1	1	4	5
Blank	High Med.									1				0	0	0
														0	1	1
	Low Blank												1	0	1	1
		5	6	4	2	5	1	1	2	8	2	2	10	17	31	48
High Medium	All All	12	16	36	2	17	2	3	4	15	4	3	10	66	58	124
		5	14	26	3	16	6	5	9	13	7	7	12	48	75	123
Low Blank	All All	2	6	7		8	2	2	10	9	1	5	5	15	38	53
		5	6	4	2	5	1	1	2	9	2	2	11	17	33	50
All All	High Med.	3	10	20	2	15	3	3	1	7			9	35	38	73
		11	15	31	1	17	4	5	11	19	9	10	8	58	83	141
All All	Low Blank	3	9	14	1	9	5	1	10	9	5	5	5	27	43	70
		7	8	8	3	5	1	2	3	11	2	2	14	26	40	66
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

C. Provision of Adequate Knowledge about Available Data

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	9	12	20	3	16	6	2	4	11	2	7	12	44	60	104
		6	8	15	1	9	2	1	5	6	3	1	1	30	28	58
	Low Blank	3	1	1				1	1	5		1	1	5	9	14
			1		1	1				1			1	2	3	5
Medium	High Med.	1	2	2		3	1		1	2				5	7	12
			6	19		7	2	1	6	6	5	3	5	25	35	60
	Low Blank	1	2	6		3		1	1	5	2	1	3	9	16	25
			1					1		2			1	1	4	5
Low	High Med.			1	1		1		1					0	2	2
														2	0	2
	Low Blank	1	3	3	1	1		2	5	4			1	6	13	19
														2	0	2
Blank	High Med.													0	0	0
														0	0	0
	Low Blank	3	5	5	2	5		1	2	4	2	2	1	0	1	1
													10	15	26	41
High Medium	All All	18	22	36	5	26	8	4	10	23	5	9	15	81	100	181
		2	11	27			3	3	8	15	7	4	9	40	60	102
Low Blank	All All	1	4	5		2		3	5	4			1	10	15	25
		3	5	5	2	5		1	2	4	2	2	11	15	27	42
All All	High Med.	10	14	22	3	20	7	3	5	13	2	7	12	49	69	118
		6	15	35	1	16	4	2	11	12	8	4	6	57	62	120
All All	Low Blank	4	6	10		4		4	7	14	2	2	6	20	38	58
		4	7	6	3	6		2	2	7	2	2	12	20	33	53
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

CODE 1. TYPE OF RESPONDENT ORGANIZATION (2 characters)

G. Non-Federal Government Agency (146)

GL. Regional/Local Government Agency (66)

1. Regional (Interstate/Intrastate) Agency (24)

2. Metropolitan/City Agency (42)

GS. State Government (80)

1. Transportation Agency (73)

2. Other State Agency (7)

P. Private Organization (204)

PA. Academic/Research Institution (57)

1. University (46)

2. Research Institution (11)

PC. Consulting Firm (36)

1. Medium/Large Firm (11)

2. Small/Individual Firm (25)

PI. Transport Industry (60)

1. Carrier Firm/Association (46)

2. Manufacturing/Supply Firm/Association (14)

PJ. Other Business & Industry (51)

1. Transport Oriented Organization (15)

2. Other Organization (36)

TABLES 17-18. (Continued)

D. Provision of Adequate Access to Available Data

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	2	10	16	3	13	3	6	6	11	1	6	8	31	54	85
		7	5	11		13	7	2	5	7	2	2	4	23	37	60
	Low Blank	5	4	2				1	1	4	3			11	9	20
		1	1	1		2							1	3	3	6
Medium	High Med.			1		2				1		1		1	4	5
		3	10	23		9	6		7	5	2	2	5	36	36	72
	Low Blank	2		6	1				2	3	2	2	4	9	13	22
		1		2	1	1				1				4	2	6
Low	High Med.					1		1						0	2	2
			1											1	0	1
	Low Blank		3	3	1	1		1	2	4			1	6	9	15
			1	1						2				2	2	4
Blank	High Med.													0	0	0
														0	0	0
	Low Blank	3	7	7	2	4			2	8	4	2	1 12	9 19	1 32	1 51
High Medium	All All	15	20	30	3	28	5	9	12	22	6	8	13	68	103	171
		6	10	32	2	12	6		9	10	4	5	9	50	55	105
Low Blank	All All	3	5 7	4 7	2	2 4		2	2 2	6 8	4	2	1 13	9 19	13 33	22 52
All All	High Med.	7	10	17	3	16	3	7	6	12	1	7	8	32	60	92
		10	16	34		22		2	12	12	4	4	8	60	73	133
All All	Low Blank	7	7	11	1	1		2	5	11	5	2	6	26	32	58
		5	9	11	3	7			2	11	4	2	13	28	39	67
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

E. Increased Availability of Data Already Collected or Produced

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	4	10	13	1	20	4	7	6	15	4	7	8	28	71	99
		3	5	17		5	2		5	3	1	2	4	25	22	47
	Low Blank	3	1	3	1	1		1	1		1			8	4	12
			1			3				1				1	4	5
Medium	High Med.	5	2 7	2 19	1	3 9	1 3	1 1	1 7	3 6	3	1 2	1 5	5 31	11 36	16 67
	Low Blank	2	3	7		1			1	2	1	1	3	12	9	21
		2		1	1								2	4	2	6
Low	High Med.	1	2	1		1			1	1				0	1	1
														4	2	6
	Low Blank	1	4	3			1		1	4			1	8	7	15
		1		2	1					2			1	4	3	7
Blank	High Med.													0	0	0
														0	0	0
	Low Blank	2	7	5	2	3		1	2	9	4	2	1 10	0 16	1 31	1 47
High Medium	All All	10	17	33	2	29	6	8	12	19	6	9	12	62	101	163
		9	12	29	2	13	4	2	9	11	4	4	11	52	58	110
Low Blank	All All	5	6	6	1	1	1		2	7			2	16	13	29
		2	7	5	2	3		1	2	9	4	2	11	16	32	48
All All	High Med.	4	12	15	2	24	5	8	7	18	4	8	9	33	83	116
		9	14	37		14	5	1	13	10	4	4	9	60	59	119
All All	Low Blank	6	8	13	1	2	1	1	3	6	2	1	5	28	21	49
		5	8	8	4	6		1	2	12	4	2	13	25	40	65
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

F. Collection & Provision of Needed Data Not Yet Collected or Produced

Item 17 Level of Import.	Item 18 Level of Need	ORGANIZATION TYPE (SEE CODE 1) GL 1	GL 2	GS 1	GS 2	PA 1	PA 2	PC 1	PC 2	PI 1	PI 2	PJ 1	PJ 2	ALL G	ALL P	ALL
High	High Med.	8	6	16	3	23	2	4	8	12	1	6	11	33	67	100
		2	6	6			1	2	3	5	1	3	2	14	20	34
	Low Blank		1	1					2		1			2	3	5
			1			1	1			1			1	1	4	5
Medium	High Med.		2	4		3		2	1	2	1			6	9	15
		2	10	25		8	6	3	3	6	5	3	3	37	37	74
	Low Blank	6	2	4		1				4	1		2	12	8	20
			1	2	1	1							2	4	3	7
Low	High Med.			1					2	1			2	0 1	0 5	0 6
	Low Blank	1	6	9		2			2	6	2	1	2	16	15	31
				1	1	1			1	2				2	4	6
Blank	High Med.													0	0	0
														0	0	0
	Low Blank	5	7	4	2	2	1		3	7	2	2	1 10	0 18	1 27	1 45
High Medium	All All	10	14	23	3	28	4	6	13	18	3	9	14	50	95	145
		8	15	35	1	13	6	5	4	12	7	3	7	59	57	116
Low Blank	All All	1	6	11	1	3			5	9	2	1	4	19	24	43
		5	7	4	2	2	1		3	7	2	2	11	18	28	46
All All	High Med.	8	8	20	3	26	2	6	9	14	2	6	11	39	76	115
		4	16	32		12	7	5	8	12	6	6	7	52	63	115
All All	Low Blank	7	9	14		3			4	10	4	1	5	20	37	57
		5	9	7	4	5	2		4	10	2	2	13	25	38	63
Subclasses		24	42	73	7	46	11	11	25	46	14	15	36			
Types		66		80		57		36		60		51		146	204	350

CODE 1. TYPE OF RESPONDENT ORGANIZATION (3 characters)

G. Non-Federal Government Agency (146)

GL. Regional/Local Government Agency (66)

1. Regional (Interstate/Intrastate) Agency (24)

2. Metropolitan/City Agency (42)

GS. State Government (80)

1. Transportation Agency (73)

2. Other State Agency (7)

P. Private Organization (204)

PA. Academic/Research Institution (57)

1. University (46)

2. Research Institution (11)

PC. Consulting Firm (36)

1. Medium/Large Firm (11)

2. Small/Individual Firm (25)

PI. Transport Industry (60)

1. Carrier Firm/Association (46)

2. Manufacturing/Supply Firm/Association (14)

PJ. Other Business & Industry (51)

1. Transport Oriented Organization (15)

2. Other Organization (36)

TABLE 19. DISTRIBUTION OF COMMENTS AND SUGGESTIONS ON IMPROVEMENT OF DATA PROCESSES

Item 19. Please give an example of what might be done to improve any process you rated *High* on both of Items 17 and 18. Indicate how the improvement would bring benefits to your unit.

GENERAL PROCESSES AND SPECIFIC SUGGESTIONS	GL LOCAL GOV'T	GS STATE GOV'T	PA ACAD. & RES.	PC CONSUL FIRMS	PI TRANSP INDUS.	PJ OTHER BUS&IND	LINE TOTAL
A. Identification & Synthesis of User Needs (General)		1	2			1	4
1. Identify & collect only most critical & useful data		2					2
2. Identify & prioritize needs for federal, state, and local agencies		1					1
3. Identify needs for commodity flow data					1		1
B. Evaluation of User Needs & Response to User Needs (General)	1	2	1	1	1		6
1. Data needs should relate to the understanding of transportation			1				1
2. Need to understand how data will be used	2	1					3
C. Provision of Adequate Knowledge About Available Data (General)	7	9	1		1	1	19
1. Create useful catalog, index, glossary for available data	3	3	12	3	6	3	30
2. Improve transp. library networking & data reference services	1	1				1	3
3. Provide newsletter on data sources and their changes			1		1	2	4
4. Provide better documentation for data files						2	4
5. Establish a data knowledge clearinghouse	1						1
D. Provision of Adequate Access & Distribution for Available Data (General)	1	1	1	2	1	2	8
1. Create central data file with confidentiality as needed	2	1	2	1	1	3	10
2. Develop regional or community data bases for access	1		1				2
3. Provide more dollar resources for access & distribution	2					1	3
4. Publish urban transportation statistics	2		1				3
5. Provide data on disaggregate basis			1	1			2
6. Distribute data on microfiche			1				1
7. Establish a consolidated data subscription service				1			1
8. Publish transportation data subsets on regular basis				1	1		2
E. Increased Availability of Data Already Collected or Produced (General)	2	1	4	1	5	1	14
1. Make planning studies generally available	1						1
2. Improve availability of data on motor freight flows	1	2	1		2	1	7
3. Increase extent of data sharing among data holders	1						1
4. Open the Corps of Engineers data to public				1			1
5. Fund a nationwide transportation reporting system	1						1

TABLE 19. (Continued)

Item 19. Please give an example of what might be done to improve any process you rated *High* on both of Items 17 and 18. Indicate how the improvement would bring benefits to your unit.

GENERAL PROCESSES AND SPECIFIC SUGGESTIONS	GL LOCAL GOV'T	GS STATE GOV'T	PA ACAD. & RES.	PC CONSUL FIRMS	PI TRANSP INDUS.	PJ OTHER BUS&IND	LINE TOTAL
F. Increase Scope of Data Collection & Provision (General)	2	1	2		2	3	10
1. Collect aircraft operational delay statistics	1						1
2. Collect data on cause & effect of travel behavior	1						1
3. Collect data for transportation performance indicators		1					1
4. Collect both metro & non-metro household OD data		1					1
5. Do 5-yr. transp. survey on all goods movement				1			1
6. Collect data on concerns of airport users					1		1
7. Collect data on general aviation						1	1
8. Collect data on bicycle flows						1	1
9. Collect data on Class II & Class III motor carriers					1		1
10. Collect data on actual OD's of airline passengers					1		1
11. Collect data on level of highway service provided					1		1
12. Expand the Census of Transportation					2		2
13. Collect data on air travel needs for business & pleasure					1		1
G. Increase Understanding of Data Applications & Value	1	1	2			1	5
1. Provide local seminars & national workshops				1			1
2. Publish case studies on data applications							
H. Improve Methods Used to Collect & Distribute Data							
1. Provide library & exchange for data collection methods	1						1
2. Provide methods for evaluating needs of transpo. disadvantaged	1						1
3. Develop methods for comparison of performance among modes		1					1
4. Use smaller OD units such as Commerce (BEA) requires				1			1
5. Use small samples on continuous basis for household & travel data			1	1			2
6. Make greater use of computer & communication technologies					3		3
7. Establish effective database mgt. system for terminal access					1	1	2
8. Make greater use of private sector for data collection		1					1
I. Improve Cooperation & Coordination Among Data Collectors/Providers							
1. Improve communications among & through MPO's & FHWA	2						2
2. Establish regional cooperation for data collection		2					2
3. Establish a national network/committee on behalf of users & suppliers		1	2		1		4
4. Improve coordination of data collection			1				1
5. Correlate hazardous materials data sets					1		

Item 19. Please give an example of what might be done to improve any process you rated *High* on both of Items 17 and 18. Indicate how the improvement would bring benefits to your unit.

GENERAL PROCESSES AND SPECIFIC SUGGESTIONS	GL LOCAL GOV'T	GS STATE GOV'T	PA ACAD. & RES.	PC CONSUL FIRMS	PI TRANSP INDUS.	PJ OTHER BUS&IND	LINE TOTAL
J. Alleviate Most Serious Data Problem (Keyed to Item)							
E. Provide better definitions & explanations for data sets	1						1
I. Provide more geographic detail for collected data		1					1
K. Improve timeliness of data distribution	1				1		2
N. Reduce cost of data access		1	1				2
P. Coordinate duplicative data sets				1			1
S. Improve software used for data processing				1			1
Totals for Processes A-J	40	36	39	18	36	25	194
Other Responses to Item 19	1	0	4	0	2	1	8
Total Response to Item 19	41	36	43	18	38	26	202

TABLE 20A. PERCEIVED NEED FOR CHANGES IN RESPONSIBILITY FOR DATA COLLECTION/PROVISION

Item 20. Do you perceive a need for change in the present allocation of responsibility for data collection and data provision among various levels of government or between the public and private sectors? If *Yes*, please sketch below what changes should be made and why.

Yes

No

ORGANIZATION TYPE	NUMBER OF RESPONDENTS			
	Saying YES	Saying NO	No Response	Total
GL Regional and Local Government Agencies	19	38	9	66
GS State Government Agencies	15	53	12	80
PA Academic & Research Institutions	25	21	11	57
PC Consulting Firms	17	15	4	36
PI Transport Industries	19	29	12	60
PJ Other Business and Industry	18	27	6	51
G All Government Agencies	34	91	21	146
P All Private Organizations	79	92	33	204
ALL RESPONDENTS	113	183	54	350

TABLE 20B. DISTRIBUTION OF SUGGESTIONS FOR CHANGES IN DATA COLLECTION/PROVISION RESPONSIBILITY

CATEGORIES AND SUGGESTIONS FOR RESPONSIBILITY CHANGES	GL LOCAL GOV'T	GS STATE GOV'T	PA ACAD. & RES.	PC CONSUL FIRMS	PI TRANSP INDUS.	PJ OTHER BUS&IND	LINE TOTALS
A. General Changes - Government and/or Private Sectors							
1. Not necessary to change responsibility, just improve access		1			2		3
2. Need better definition of federal, state, local & private roles						2	2
3. Changes are needed because improvements are needed			1		1		2
4. Data collection responsibility should be planned & assigned		1					1
5. The number of data sources and overlaps should be reduced	1					1	2
6. A single control group should coordinate planning data collection		1	1				2
7. Shift data collection to primary source with gov't funding		1					1
8. Establish a coordinated network of suppliers and data banks					1		1
9. Move towards centralized knowledge and computer access	1	3	3	1	1	2	11
10. Provide a central data referral center						1	1
11. Create a national data center					1	2	3
12. Shift some responsibility to research projects that collect data	1						1
13. Decide who will take over CAB database & provide authority and funding for the takeover					3		3
14. Skeptical of government involvement that is potentially detrimental to suppliers					1		1
B. General Changes for Federal Sector							
1. Provide more coordination responsibility at federal level		1			1		2
2. Provide greater compatibility for geographic coding		1					1
3. Federal sector must present all data since private sector will not			1				1
4. Continue CAB data collection by a federal agency	1				2		3
5. A single agency should coordinate data requirements					1		1
6. Provide more coordination of research	1				1		2
7. Greater control of public agencies by federal gov't	1						1
C. Changes for U.S. DOT/Bureau of Census							
1. Establish a single data center in the federal government			1		1		2
2. Establish a data center in DOT			1				1
3. Give DOT responsibility for collection & processing but determine needs on community wide basis	1		1				2
4. DOT should have responsibility for dissemination and access	1		1		1		3
5. DOT should be ombudsman for all data users				1			1
6. Have TSC carry out surveys on short notice	1						1
7. FHWA, not states, should collect local data		1					1
8. Need better understanding between FHWA and states		1					1
9. More use should be made of the Bureau of Census			2				2
10. Census should contract out surveys				1			1

TABLE 20B. (Continued)

CATEGORIES AND SUGGESTIONS FOR RESPONSIBILITY CHANGES	GL LOCAL GOV'T	GS STATE GOV'T	PA ACAD. & RES.	PC CONSUL FIRMS	PI TRANSP INDUS.	PJ OTHER BUS&IND	LINE TOTALS
D. Changes for State & Local Government Agencies							
1. Reduce federal role, increase state and local efforts				1			1
2. Legislate to fund state collection of data for all modes		1					1
3. States should provide information to local areas	1					1	2
4. Collection by non-federal governments only		1					1
5. States should do more on rail data collection		1					1
6. More cooperation & conformity of collection among states and locals	2		2	1			5
7. Decentralize collection to MPOs and local planning agencies	4		1		1		6
8. Fund collection and storage at regional level	2			2			4
9. More funding for local agency collection	1						1
E. Changes for Private Sector							
1. Move collection responsibility from U.S. DOT to private sector				1	4	1	6
2. Reduce collection burden of private sector				1			1
3. Private sector may have to take over CAB database		1	2	1	1		5
4. Rely on private sector to define data types and formats for collection				2			2
Totals for Categories A-E	19	15	17	12	23	10	96
Other Responses to Item 20B	2	7	8	6	2	5	30
Total Responses to Item 20B	21	22	25	18	25	15	126

TABLE 21. TYPE AND AVAILABILITY OF DATA COLLECTED OR PRODUCED BY RESPONDENT ORGANIZATIONS

GENERAL TYPE OF DATA COLLECTED OR PRODUCED	DATA AVAILABILITY BY ORGANIZATION TYPES						SUBTOTALS FOR AVAILABILITY STATUS LEVELS (SEE CODE 5)										TOTAL
	GL Local Gov't	GS State Gov't	PA Acad.& Research	PC Consult. Firms	PI Transp. Indus.	PJ Other Bus&Ind.	A	B	C	D	E	F	G	H	I	X	
A. Traveler or Commodity Characteristics	2A, 1C	1D		1G	2A, 1G	1A, 1C	5	0	2	1	0	0	3	0	0		10
B. Origin/Destination and Flow of Passengers/Freight	14A, 6B 3C, 1D 2F, 1G	6A, 3B 1C, 3D 1E	3C, 1D 1G	4B, 1I	1F, 3G 1H, 1I	1I	20	13	7	5	1	3	5	1	3		58
C. Transport Performance (speed, safety, quality, cost, etc.)	1A, 2B 1C, 1D 1X	7A, 4B 1D, 2H	1B, 1C 1G, 1X	1A	3A, 3C 1D, 5F	1D, 2F 1G, 1H	12	7	5	4	0	7	2	3	0	2	42
D. Transport Facilities (roads, ways, terminals, etc.)	2A, 1B	2A, 2B 1D, 1E	1B	1D, 1G	1B		4	5	0	2	1	0	1	0	0		13
E. Transport Equipment (vehicles, control, safety,fuel,costs, etc.)	2A, 1B	2A, 2B	2A	1A	10A, 1B 2C, 1F 1X		18	4	2	0	0	1	0	0	0	1	26
F. Population/Land Use Characteristics	3A, 2B 1C, 1E 1X	2B	1C		2A, 1B		5	5	2	0	1	0	0	0	0	1	14
G. Energy/Environment Impacts of Transport Systems		1B, 2C 1I	1A	1G		1B	1	2	2	0	0	0	1	0	1	0	7
H. Other Types (not specified)	2A, 1B 1C, 1X	1C,1D,1G 1I, 3X	4A, 3B 3X	1B, 1D 1G, 1H 1X	1A, 1C 2G, 1H 2X	2A, 1B 2C, 1D 1F, 1G	9	6	5	3	0	1	5	2	1	10	42
TOTAL NO. Data Sets	55	52	24	16	47	18	74	42	25	15	3	12	16	6	5	14	213
TOTAL NO. Respondents	40	32	30	6	32	16											156

CODE 5. AVAILABILITY STATUS OF EXISTING DATA	
A. No Restrictions	F. Data are Confidential
B. Available on Request	G. Data are Proprietary
C. Available on Fee Basis	H. For Internal Use Only
D. Limited Availability	I. Unavailable
E. Some Restrictions on Confidentiality	X. Availability is Unknown/Unstated

Uniform Definitions

Item 22. Authorize U.S. DOT to lead in the development and enforcement of uniform definitions for commodities, geography, vehicles, packaging, etc. The definitions would be mandatory for all federally-funded and federal-regulatory data collection.

Item 23. Use existing institutions and procedures to encourage the development of uniform definitions and widespread recognition of benefits to be derived therefrom.

		GL-Reg. & Local Gov't		GS-State Gov't		PA-Academic & Research		PC-Consult. Firms		PI-Transp. Industry		PJ-Other Bus. & Ind.		G-All Gov't Agencies		P-All Priv. Organizs.		All 350 Respondents		INDEX WEIGHTS
		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		
		22	23	22	23	22	23	22	23	22	23	22	23	22	23	22	23	22	23	
A. LEVEL OF NEED	High	24	27	28	26	27	30	14	14	14	26	11	14	52	53	66	84	118	137	.50
	Medium	16	18	20	23	14	9	12	9	15	17	8	11	36	51	49	46	85	97	.25
	Low	17	13	16	10	8	10	2	4	12	8	9	11	33	23	31	33	64	56	-.25
	None	8	3	12	5	5	4	5	4	11	4	13	4	20	8	34	16	54	24	-.50
	(Blank)	1	5	4	6	3	4	3	5	8	5	10	11	5	11	24	25	24	36	0
	Total	66		80		57		36		60		51		146		204		350		
B. LEVEL OF SUPPORT	High	27	31	25	34	23	25	14	16	11	29	9	14	52	65	57	84	109	149	.50
	Low	13	17	24	32	11	11	4	4	14	14	8	12	37	49	37	41	74	90	.25
	None	20	10	15	6	12	10	4	7	11	5	8	9	35	16	35	31	70	47	-.25
	Oppose	5	3	11	2	5	3	10	3	15	3	12	4	16	5	42	13	58	18	-.50
	(Blank)	1	5	5	6	6	8	4	6	9	9	14	12	6	11	33	35	39	46	0
	Total	66		80		57		36		60		51		146		204		350		
INDEX		.28	.43	.22	.41	.39	.40	.32	.39	.02	.48	-.06	.20	.24	.46	.14	.37	.18	.41	

C. GENERALIZATION OF LINE COMMENTS	Favor uniform definitions with conditions	4	11	1	5	1	10	15	17	32			
	Favor mandatory application	5	2	6	6	0	9	7	21	28			
	Oppose mandatory application	13	15	6	10	10	9	28	25	63			
	See role for U.S. DOT	0	2	2	0	0	0	2	2	4			
	See role for TRB	1	0	1	0	1	2	1	4	5			

Data Collection

Item 24. Obtain transportation data primarily through the administrative functions of public and private transportation programs.

Item 25. Obtain transportation data primarily through expanded confidential sample surveys that would provide detailed cost and operational data for all classes of regulated and non-regulated transport of people and goods and with no identification of individuals, carriers, or operators.

		GL-Reg. & Local Gov't		GS-State Gov't		PA-Academic & Research		PC-Consult. Firms		PI-Transp. Industry		PJ-Other Bus. & Ind.		G-All Gov't Agencies		P-All Priv. Organizs.		All 350 Respondents		INDEX WEIGHTS
		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		
		24	25	24	25	24	25	24	25	24	25	24	25	24	25	24	25	24	25	
A. LEVEL OF NEED	High	32	29	33	18	22	24	13	17	20	18	14	14	65	47	69	73	134	120	.50
	Medium	16	22	25	19	16	16	12	10	18	11	15	6	41	41	61	43	102	84	.25
	Low	12	9	11	25	5	7	4	1	8	10	8	14	23	34	25	32	48	66	-.25
	None	1	4	2	9	4	0	2	2	4	11	3	5	3	13	13	18	16	31	-.50
	(Blank)	5	2	9	9	10	10	5	6	10	10	11	12	14	11	36	38	50	49	0
	Total	66		80		57		36		60		51		146		204		350		
B. LEVEL OF SUPPORT	High	33	28	37	20	19	25	12	18	20	19	14	12	70	48	65	74	135	122	.50
	Low	16	26	22	24	11	14	8	6	18	13	16	8	38	50	53	41	91	91	.25
	None	10	6	6	13	9	6	7	3	6	5	7	15	16	19	29	29	45	48	-.25
	Oppose	1	4	3	11	4	1	3	3	4	12	3	4	4	15	14	20	18	35	-.50
	(Blank)	6	2	12	12	14	11	6	6	12	11	11	12	18	14	43	40	61	54	0
	Total	66		80		57		36		60		51		146		204		350		
INDEX		.51	.47	.51	.06	.39	.57	.39	.54	.36	.13	.28	.09	.51	.29	.34	.30	.41	.30	

C. GENERALIZATION OF LINE COMMENTS	GL-Reg. & Local Gov't	GS-State Gov't	PA-Academic & Research	PC-Consult. Firms	PI-Transp. Industry	PJ-Other Bus. & Ind.	G-All Gov't Agencies	P-All Priv. Organizs.	All 350 Respondents
Both proposals are needed	2	6	12	1	1	2	8	16	24
Item 24 proposal is good for time series data	1	5	1	1	1	1	6	4	10
Item 24 proposal is too difficult and costly	4	2	3	5	6	0	6	14	20
Item 25 proposal is too difficult and costly	9	16	8	4	10	1	25	23	48

Census of Transportation

Item 26. (Passengers) Expand the scope and sample size of the National Transportation Survey (tourism) and the Nationwide Personal Transportation Study to provide data for reliable local estimates, operating data, and fuel cost data. Include a quarterly or annual procedure for timely updating and monitoring of trends.

Item 27. (Goods) Expand the scope of the Truck Inventory and Use Survey and the Commodity Transportation Survey to include truck commodity flow data and commodity transportation cost data for all modes and shipper classes.

		GL-Reg. & Local Gov't		GS-State Gov't		PA-Academic & Research		PC-Consult. Firms		PI-Transp. Industry		PJ-Other Bus. & Ind.		G-All Gov't Agencies		P-All Priv. Organizs.		All 350 Respondents		INDEX WEIGHTS
		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		
		26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	26	27	
A. LEVEL OF NEED	High	32	14	32	31	33	35	18	17	16	15	9	8	64	45	76	75	140	120	.50
	Medium	18	13	21	17	10	8	5	6	13	14	13	6	39	30	41	34	80	64	.25
	Low	8	22	17	15	9	6	6	5	10	7	11	14	25	37	36	32	61	69	-.25
	None	3	7	3	9	1	2	3	2	11	12	6	10	6	16	21	26	27	42	-.50
	(Blank)	5	10	7	8	4	6	4	6	0	12	12	13	12	18	30	37	42	55	0
	Total	66		80		57		36		60		51		146		204		350		
B. LEVEL OF SUPPORT	High	31	15	35	32	32	31	16	14	16	13	6	6	66	47	70	64	136	111	.50
	Low	21	20	25	20	11	9	5	5	11	16	15	10	46	40	42	40	88	80	.25
	None	7	17	10	15	7	8	7	8	15	11	13	16	17	32	42	43	59	75	-.25
	Oppose	2	2	3	3	0	0	2	2	2	4	4	4	5	5	8	10	13	15	-.50
	(Blank)	5	12	7	10	7	9	6	7	16	16	13	15	12	22	42	47	54	69	0
	Total	66		80		57		36		60		51		146		204		350		
INDEX		.52	.08	.42	.32	.57	.58	.46	.39	.19	.16	.07	-.08	.48	.24	.20	.25	.37	.25	

C. GENERALIZATION OF LINE C COMMENTS													
	Proposed expansions are much needed	1	1	0	2	0	1	2	3	5			
	Low use is made of existing surveys	2	8	4	2	6	2	10	14	24			
	Disclosure rules prevent sufficient detail	2	4	2	1	0	2	6	5	11			
	Money would be better spent by other agencies	1	2	1	2	0	0	3	3	6			
	Any untimeliness should be corrected first	1	3	1	0	1	0	4	2	6			

Assessment of Data Programs

Item 28. Establish a continuing federal board to review and recommend policy for all aspects of transportation data programs. The board would advise and report to the Secretary of Transportation.

Item 29. Establish a continuing forum independent of U.S. DOT to represent all categories of data producers and users. Make continuing assessments of user needs, and make recommendations on priorities and mechanisms for improvement of data programs.

		GL-Reg. & Local Gov't		GS-State Gov't		PA-Academic & Research		PC-Consult. Firms		PI-Transp. Industry		PJ-Other Bus. & Ind.		G-All Gov't Agencies		P-All Priv. Organizs.		All 350 Respondents		INDEX WEIGHTS
		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		
		28	29	28	29	28	29	28	29	28	29	28	29	28	29	28	29	28	29	
A. LEVEL OF NEED	High	22	24	16	30	20	34	10	21	8	22	10	14	38	54	48	91	86	145	.50
	Medium	16	15	11	22	12	13	7	5	14	14	8	13	27	37	41	45	68	82	.25
	Low	16	14	25	13	13	4	8	4	11	7	13	7	41	27	45	22	86	49	-.25
	None	10	10	24	9	9	1	9	3	18	6	10	6	34	19	46	16	80	35	-.50
	(Blank)	2	3	4	6	3	5	2	3	9	11	10	11	6	9	24	30	30	39	0
	Total	66		80		57		36		60		51		146		204		350		
B. LEVEL OF SUPPORT	High	23	27	15	31	17	31	9	21	9	21	10	15	38	58	45	88	83	146	.50
	Low	14	14	18	24	14	12	7	3	12	14	10	9	32	38	43	38	75	76	.25
	None	19	16	23	11	10	3	6	6	10	11	10	7	42	27	36	27	78	54	-.25
	Oppose	6	4	20	5	9	1	11	2	20	3	11	8	26	9	51	14	77	23	-.50
	(Blank)	4	5	4	9	7	10	3	4	9	11	10	12	8	14	29	37	37	51	0
	Total	66		80		57		36		60		51		146		204		350		
INDEX		.22	.29	-.16	.34	.14	.64	-.03	.53	-.15	.35	-.06	.21	.01	.32	-.01	.41	.00	.37	
C. Generalization of Line Comments	In favor of given proposal	1	7	4	9	2	14	0	5	1	9	0	5	5	16	3	33	8	49	
	Opposed to given proposal	7	4	13	3	6	2	2	1	10	4	4	2	20	7	22	9	42	16	
	In favor of status quo	1		3		1		0		3		0		4		4		8		

TABLES 30-32. NEED AND SUPPORT FOR PROPOSALS ON CENTRALIZATION OF DATA PROGRAMS

Centralization of Data Programs

Item 30. Establish a center within U.S. DOT for coordinating all federal transportation data programs. The center would catalog and monitor all programs, would publish progress and activity reports, and would be a referral center for data users.

Item 31. Same proposal as in Item 30 except that the center would be outside U.S. DOT. Could be in the public sector, private sector, or exist as a special institution.

Item 32. Centralize within U.S. DOT all federal transportation data programs, including compliance authority and confidentiality regulations. Include programs now at Census, CAB, ICC, Corps of Engineers, etc.

		GL-Reg. & Local Gov't			GS-State Gov't			PA-Academic & Research			PC-Consult. Firms			PI-Transp. Industry			PJ-Other Bus. & Ind.			G-All Gov't Agencies			P-All Priv. Organizs.			All 347 Respondents			INDEX WEIGHTS
		Item No.			Item No.			Item No.			Item No.			Item No.			Item No.			Item No.			Item No.			Item No.			
		30	31	32	30	31	32	30	31	32	30	31	32	30	31	32	30	31	32	30	31	32	30	31	32	30	31	32	
A. LEVEL OF NEED	High	31	21	25	38	17	25	40	20	20	15	9	12	20	16	12	23	12	13	69	38	50	98	57	57	167	95	107	.50
	Medium	11	9	13	20	13	14	7	11	9	5	8	4	10	11	11	7	9	9	31	22	27	29	39	33	60	61	60	.25
	Low	13	15	11	4	20	12	6	11	14	3	7	8	10	8	9	8	7	6	17	35	23	27	33	37	44	68	60	-.25
	None	6	13	11	11	22	20	3	7	9	9	3	8	12	13	19	6	13	11	17	35	31	30	36	47	47	71	78	-.50
	(Blank)	5	8	6	7	8	9	1	8	5	4	9	4	8	12	9	7	10	12	12	16	15	20	39	30	32	55	45	0
	Total	66			80			57			36			60			51			146			204			350			
B. LEVEL OF SUPPORT	High	33	21	25	39	14	27	33	23	16	15	10	11	21	16	11	17	11	11	72	35	52	86	60	49	158	95	101	.50
	Low	12	12	13	14	21	14	11	13	12	5	6	6	9	10	9	9	10	10	26	33	27	34	39	37	60	72	64	.25
	None	11	20	12	13	20	18	6	5	10	2	8	4	9	10	13	7	6	6	24	40	30	24	29	33	48	69	63	-.25
	Oppose	5	5	12	7	16	12	2	7	11	8	4	9	12	10	16	8	12	11	12	21	24	30	33	47	42	54	71	-.50
	(Blank)	5	8	4	7	9	9	5	9	8	6	8	6	9	14	11	10	12	13	12	17	13	30	43	38	42	60	51	0
	Total	66			80			57			36			60			51			146			204			350			
INDEX		.39	.14	.22	.46	-.08	.15	.60	.24	.08	.21	.18	.03	.14	.10	-.08	.26	.00	.05	.41	.02	.16	.32	.14	.03	.36	.09	.09	
C. GENERALIZATION OF LINE COMMENTS	Favor U.S. DOT Coordination	13			21			20			9			20			9			34			58			92			
	Favor non-U.S. DOT Coordination	1			2			1			1			1			1			3			4			7			
	Oppose U.S. DOT Coordination	14			13			10			2			14			5			27			31			58			

TABLES 33-34. NEED AND SUPPORT FOR PROPOSAL ON DATA ESTIMATION AND FOR PROPOSAL ON FINANCING OF DATA PROGRAMS

Data Estimation

Item 33. Reduce data collection requirements through the use of minimum sample sizes in conjunction with models that provide estimates for categories of data. Thus greater emphasis is placed on modeling and data analysis while data collection costs are reduced through carefully designed small samples.

Financing of Data Programs

Item 34. Derive major financial support for any or all of Items 30-33 from federal-aid and grant funds that are applicable to transportation programs. (The maximum support required is likely to be about 2-3% of the applicable funds.)

		GL-Reg. & Local Gov't		GS-State Gov't		PA-Academic & Research		PC-Consult. Firms		PI-Transp. Industry		PJ-Other Bus. & Ind.		G-All Gov't Agencies		P-All Priv. Organizs.		All 347 Respondents		INDEX WEIGHTS
		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		Item No.		
		33	34	33	34	33	34	33	34	33	34	33	34	33	34	33	34	33	34	
A. LEVEL OF NEED	High	26	27	34	32	26	35	13	20	15	19	10	18	60	59	64	92	124	151	.50
	Medium	12	16	24	16	14	10	12	9	14	14	11	9	36	32	51	42	87	74	.25
	Low	14	12	10	11	5	7	4	3	15	6	13	6	24	23	37	22	61	45	-.25
	None	9	7	7	13	7	1	4	1	7	11	7	9	16	20	25	22	41	42	-.50
	(Blank)	5	4	5	8	5	4	3	3	9	10	10	9	10	12	27	26	37	38	0
	Total	66		80		57		36		60		51		146		204		350		
B. LEVEL OF SUPPORT	High	25	32	35	31	20	33	14	20	16	20	10	17	60	63	60	90	120	153	.50
	Low	18	12	24	20	15	11	7	7	20	14	10	9	42	32	52	41	94	73	.25
	None	10	10	6	10	7	6	4	4	10	6	12	8	16	20	33	24	49	44	-.25
	Oppose	7	9	8	12	8	0	8	1	5	9	9	5	15	21	30	15	45	36	-.50
	(Blank)	6	3	7	7	7	7	3	4	9	11	10	12	13	10	29	34	42	44	0
	Total	66		80		57		36		60		51		146		204		350		
INDEX		.25	.36	.42	.28	.34	.61	.32	.61	.15	.23	.02	.24	.37	.31	.21	.40	.28	.26	
C. GENERALIZATION OF LINE C COMMENTS	Item 33. Favor with improvements	11	-	14	-	10	-	9	-	15	-	3	-	25	-	37	-	62	-	
	33. Credibility & cost-effectiveness doubtful	10	-	11	-	6	-	11	-	9	-	1	-	21	-	27	-	48	-	
	34. Hold present costs or increase efficienty	-	8	-	13	-	0	-	0	-	5	-	1	-	21	-	6	-	27	
	34. Get additional user charges from non-transport users.	-	11	-	3	-	3	-	2	-	8	-	3	-	14	-	16	-	30	