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URBAN PEDESTRIAN ACCIDENT COUNTERMEASURES EXPERIMENTAL EVALUATION

Volume II - Appendix A

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16. Abstract

This technical appendix presents an overview of the national pedestrian safety effort. The appendix also reports the results of a survey of 48 ongoing educational programs being conducted in eight U.S. urban centers. A final chapter suggests procedures for the systematic development and evaluation of pedestrian safety programs.

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CHAPTER I
INTRODUCTION AND OVERVIEW

Most citizens become aware of pedestrian safety issues through the public schools and media. Relatively few ever witness a pedestrian accident or have other first hand knowledge of the seriousness of the pedestrian accident problem. The paucity of experiential inputs shifts a great deal of the burden for pedestrian safety to the educational and informational institutions.

This document reviews the pedestrian safety activities conducted by various jurisdictions - state, city, and school district. The review attempts to reveal the characteristics of ongoing pedestrian safety programs and the extent to which these programs are responsive to the learning needs of the audience and the realities of the accident picture.

For the purposes of this report, the "program review" has been presented in two chapters. Chapter II consists of a general overview of the history of pedestrian safety education in the United States and a description of the pedestrian safety programs currently being conducted by various political jurisdictions (e.g., the States of Maryland and Virginia) and various national safety organizations (e.g., AAA and the National Safety Council). The information included in this chapter was obtained by reviewing the available curriculum guides, instructional materials, and films from each of the contacted sources. A list of the resource

materials consulted during the course of this review is presented at the end of Chapter II. Interviews were also conducted with individuals responsible for the design, implementation, and delivery of the various pedestrian education and information programs.

Chapter III represents the results of a mail survey conducted during the course of this study. The survey was sent to the eight cities that participated in the behavior evaluation and accident study of the present contract effort.* The cities were:

1. Washington, D.C.
2. New York, New York
3. Miami, Florida
4. San Diego, California
5. San Jose, California
6. Akron, Ohio
7. Columbus, Ohio
8. Toledo, Ohio

A survey form was mailed to those individuals who were directly involved in the design, coordination, and implementation of the pedestrian safety materials. In most cases, the police department, traffic engineering department, department of motor

*A description of the behavioral evaluation and accident studies is presented in Volumes I and II of this report, respectively.

vehicles, school board, and local safety councils were individually queried via the survey. A copy of the survey format and an example of the explanatory form (sent with each packet of survey forms) is presented as Exhibit A at the end of Chapter III.

Thus, both Chapters II and III are concerned with reviewing the state of the art in pedestrian safety education. The material was, however, separated into two chapters because of the differing investigatory techniques employed and the resulting level of detail gathered about the programs. In addition, Chapter II attempts to provide a more general orientation to the nationwide pedestrian safety effort than would be available from a review of city activities.

Finally, Chapter IV is devoted to the discussion of the program deficiencies uncovered in the preceding two chapters. Chapter IV deals with the general problems associated with the development of a sound, i.e., accident effective, pedestrian education program. This final chapter also suggests some guidelines of the design and evaluation of educational/informational programs.

Before proceeding to Chapter II, the reader should be forewarned about several potential limitations of the present report. By necessity, the materials presented in the report are only a fraction of the total number of pedestrian programs currently underway in the United States. The representativeness of the sample programs is questionable, due to the concentration on

relatively large urban areas. Another area of potential concern is that in many instances, it was not feasible to personally review the programs. In those cases, we relied on the oral and written (survey) responses concerning the programs. It is, therefore, quite likely that some aspects of particular programs may have been inadvertently omitted or misrepresented.

CHAPTER II
Review of Pedestrian Safety Education

Historical Perspectives

The main historical thread of pedestrian safety education has been laid down in the public schools. There have been intermittent efforts to influence adults through the mass media and industry based programs but the main educational target, as it should, has been school-age children. Consequently, the historical narrative which follows is essentially directed toward the development of safety education in the schools.

A general pattern characterizes this development from the onset of the automotive age, circa 1910. The pattern follows a decade-by-decade sequence and can be summarized as follows:

1910 - 1920	The problem emerges; automobile traffic is recognized as a health and safety problem.
1920 - 1930	The problem is defined and community resources are mobilized to confront the problem.
1930 - 1940	Extensive pedestrian safety education programs are put into operation.
1940 - 1950	The hazard level declines while effective programs are continued.
1950 - 1960	Near optimum safety levels are achieved.
1960 - 1970	The hazard level increases while the impetus and resource devoted to safety education goes through a relative decline.

1970 - Present The cycle of problem recognition, definition, and resource mobilization is reinitiated.

What might be considered the golden age of pedestrian safety education spanned the 30-year period from the beginning of World War I to the end of World War II. Early in that period, the basic concepts were laid down and the major institutional arrangements were established. Toward the end of the period, these developments achieved a higher degree of formalization. To illustrate the latter point, by the late 1920's, safety education began to become a recognized and distinct area of professional activity.

The beginning of the era can be anchored in the establishment of the first school safety patrol in Tacoma, Washington, in 1913. Almost simultaneously, the National Safety Council began to express official concern about the problem of pedestrian accidents. Given this authoritative push, the Tacoma idea was picked up and expanded. New Jersey had a state-wide program by 1915. The school system in Rochester, New York, instituted the first Junior Safety Council in 1918. The Detroit schools launched a model program in 1919 and Kansas City, Missouri, was not far behind.

In the same year, E. G. Payne had published a book called "Education in Accident Prevention" which sold over 50,000 copies. Payne was very influential in popularizing the idea of safety education.

In 1922, at the instigation of A. W. Whitney, the National Bureau of Casualty and Surety Underwriters began the subsidy of

research and development in safety education at New York University. By 1938, this original relationship had led to the establishment of the Center for Safety Education at that University which has continued to the present time. The founding Director was Hubert J. Stack who served through the developmental era as a central figure in the development of safety education programs in the schools.

While the situation at N.Y.U. was in transition, Teachers College at Columbia University and George Peabody University in Nashville, Tennessee, both instituted courses on safety education in their teacher training curricula (circa 1928). There was enough of a constituency by this time for the National Education Association to form the National Commission for Safety Education.

The early 1930's witnessed the spread of safety patrols and junior safety councils throughout the country. In 1939, Stack and his associates wrote and edited the first edition of "Education for Safe Living." This book helped give the field its academic legitimacy. This condition was reinforced by the production of NEA in the same year of the first substantial bibliography of safety and safety education.

Somewhat ironically, the termination of the developmental era was signaled by the National Conference on Highway Safety convened by President Truman in 1946. Safety education was one of the main themes of this meeting.

Perhaps, in this context, the issuance of the second edition of "Education for Safe Living" in 1949 could be regarded as the true climax of the era. There were only sparse curricula materials developed, few scholarly works produced, and little research done on pedestrian safety education in the 1950's and 1960's. Safety research continued and some excellent studies were done under the aegis of public health during the last two decades but safety education was in decline.

It may be speculated that several forces were at work. In the 1950's, the rates of incidence (per vehicle miles driven) for pedestrian accidents were lower than they had been in the 1920's. The problem, as it was originally defined, was, in a sense, "solved." It could have been presumed that all that was needed was a rather low level commitment to the continuation of well proven programs. The factors that appear to have emerged to invalidate this sanguine presumption have been changes in the distribution of population, changes in the physical environment, and changes in the schools that had been carrying the main programatic burden.

In 1928, it was asserted by those engaged in teacher training that teachers were not being prepared to carry out safety education in their classrooms. This lack was never really overcome although it was ameliorated for a time. Given this rather fragile base, the onslaught of curricular demands, general overcrowding in classes, and other pressures of the 1960's almost

inevitably forced pedestrian safety education into the position of reduced significance in the schools. Thus, in the 1950's and early 1960's, it was felt that there was little need for intensive safety education development. By the latter 1960's, the institutional resource had dwindled due to disuse. Consequently, when accident rates began to rise, there was only a small base of resources available to meet the resurgence of the need. It has not been until the past year or two that the gap between the need and the capability for safety education has been recognized and the capability has begun to catch up.

Organizational Factors

In order to clearly comprehend what is happening in pedestrian safety education, one requires some overview of the institutional base from which instructional materials are generated and by means of which instructional messages are transmitted to audiences.

The most straightforward framing dimensions are: (a) public versus private institutions and (b) scope of operations, in the sense of national versus state versus local levels of activity.

The national level public organizations are those of the Federal Government.

The national level private organizations are, in several ways, engaged more in the operational aspects of pedestrian safety education than are the agencies of the Federal Government. Probably the most prominent national level organization is the American

Automobile Association which, while not as prolific as in years past, is still producing and providing teachers' guide materials, pamphlets, posters, etc. on a demand basis.*

The National Safety Council and the National Bureau of Casualty and Surety Underwriters most prominently represent a public service manifestation of enlightened self-interest. Again, this subclass of organizations is less active now than in past years but they are still the direct or indirect source of some instructional materials.

Through the years, the National Education Association has maintained an organizational component concerned with safety education. In this same subclass should also probably be included the Center for Safety Education at New York University.

At the state level, the principal institutional element is the state educational authority (SEA) which is mainly designated as the state Department of Education. In the past few years, there has been a significant resurgence of activity regarding safety education at the state level, mainly in the forms of curriculum guides and the production of curriculum support materials. However, this resurgence is so far limited to a handful of states.

At the local level, the two key institutions are the schools and the police; the latter in their role of disseminators of

*Historically, AAA provided materials free and unsolicited to local school systems. Currently, materials must generally be specifically ordered and nominal charges are made for these materials.

public safety materials through various school programs and the media.

The private institutions at the local level tend to play a secondary role. These institutions include such agencies as various welfare organizations, citizens groups, and commercial organizations. In the latter category, commercial radio broadcasters can get involved through the traffic advisory broadcasts. Traffic advisories often entail a helicopter patrol and the crew become safety spokesmen to the community at large, particularly via the schools. Finally, in the commercial domain, there is a national-level factor represented by the school book publishers. At one time (circa 1930-1940), instructional materials for the schools in pedestrian safety were produced by commercial publishers. This condition could recur but, at the present time, there is very little action on this front. Most of the newer materials are being produced by staff members within the central administration of the school systems at the state and local level.

Technical Review

The review and analysis which follows is structured under two main topical headings: (a) instructional materials and (b) channels and programs. We have discerned that these two aspects of safety education are somewhat isolated or in the sense that materials have been and are being prepared without a specific plan for overcoming the constraints in the dissemination

channels through which the educational messages are expected to move. Moreover, some programs are undertaken without a clear perception of the lack of supporting materials or of the deficiencies inherent in the materials that do happen to be available.

Methodology

The main premise behind the data collection for this study was to discover and identify exactly what materials and programs are available in the field of pedestrian safety at all governmental levels as well as through public and private organizations. Special emphasis was placed on seeking information concerning the two main target groups: the younger child (5 to 14) and the senior citizen. It is within these two target groups that the majority of the pedestrian safety programs are conducted.

The very first step was to search the literature that is easily accessible to the public. For the most part, those documents found were published prior to 1950. On the national level, the organizations that were contacted were the National Safety Council, AAA, and the National Education Association. Both the National Safety Council and AAA conduct broad safety programs which furnish a wide range of materials for all groups of people. There are many national organizations which are concerned primarily with elderly people. Those contacted were the National Council of Senior Citizens, the National Council on Aging, the American Association of Retired Persons, the Senate's Special Committee on Aging, the National Institute of Health's Institute

on Aging (previously handled in the Child Health section), Health, Education, and Welfare's Administration of Aging and the Commission on Aging. None of these organizations had any significant information.

On the state and local levels, safety education is very often handled through the educational departments. Maryland State Department of Education proved to be a great source of materials since it is currently implementing a state-developed safety curriculum for the Maryland school system. The District of Columbia Education Department provided only sketchy information since it is currently formulating curriculum guidelines for safety education. Both the District's and Maryland's Motor Vehicle Administrations provided many brochures and pamphlets directed at pedestrian safety.

In order to explore state level programs for the elderly, we contacted the Maryland State Aging Commission. We learned that very few counties in Maryland initiate their own individual materials or programs although Montgomery County Public Schools have recently prepared a Safety Handbook.

Through a series of discussions with people within the state and local governments, many civic programs backed by the police departments were identified such as "Officer Friendly."

As can readily be seen from the bibliography, very few private organizations on any level have published any materials in

this subject area. The New York Railroad Association is the rare exception. In general, we have found that private organizations have very little, if any, interest in this topic. Organizations such as Binai Brith, Ralph Nader's Retired Professional's Action Group, the Washington Center for Metropolitan Studies, and the Organization of Senior Citizen Centers were contacted but had no information, materials, or programs dealing with pedestrian safety.

The range of materials and programs that we do identify in this study is by no means exhaustive. However, the documents reviewed do represent the diversity of materials currently in use. Through our discussions with these various organizations, we have been able to identify the great diversity and limitations of the present materials and programs, as well as identifying the currently developing trends within the field of pedestrian safety.

Summary Description of Materials

The materials from the Maryland State Department of Education are the most recent documents in the safety education field. Mr. Donald LaFond, the pedestrian project coordinator, has formulated materials whose main objectives are to teach the elementary school child through a system of interdisciplinary behavioral instructions. These materials seem to be on a scale from more general conceptual lessons to more specifically oriented programs and lessons.

The Interdisciplinary Traffic Safety Instructional System presents a program of instructions and guidelines for the teacher to enable him to teach the child perceptual concepts. The basic assumption of this program is to first make the child consciously aware of his own abilities through a general instructional program. Hopefully, the child will then be able to apply his new found knowledges and attitudes to his daily life.

The Signal Light Program is aimed at teaching primary (K-3) grade children to be able to properly understand and use traffic signals. Understanding traffic signals is one of the very basic and important concepts underlying many of the pedestrian safety education programs. Actual traffic lights have been redesigned for use in the classroom and are rotated from school to school.

In addition to these two programs, Maryland has an important supportive teaching device through the media. This is in the "Way to Go" program presented on instructional television. Designed for K-2, this program presents skits concerning safety in such areas as on a bus, on a bike, on the street, or in a car. Coinciding with the television lessons is a teacher's manual which provides various guidelines for activities and programs to be planned for the children to reinforce the concepts presented in the visual lesson.

Additional materials such as the Bicycle Guide, Teacher's Guide, and Bike Basics, which is a student's copy, are also available through this program. The teacher's guide provides teachers

with learning activities and programs for the child which will help teach the child and help to reinforce in the child the various concepts of bicycle safety. The children's manual primarily presents the rules and regulations for bicycle safety in a simplistic and interesting style.

Through these materials, therefore, Mr. LaFond and the Maryland Department of Education have organized a well structured program for learning, beginning with a broad perceptual learning program extending to a basic understanding of traffic signals, a media program dealing with all types of safety pertinent to the child, and finally to bicycle safety which is specifically applicable to most children. Since the program is still relatively new, each manual contains evaluation sheets for the teachers to fill out and return. These evaluation tools could be used to continually monitor the program and provide feedback as to its deficiencies.

The National Safety Education Curriculum Guidelines is similar to the Maryland State Department of Education's materials, but far less extensive. These guidelines concern all types of safety, one of which is traffic and pedestrian safety. The guidelines are divided into three main areas: (1) the essential learnings to be stressed, (2) the behavioral objectives desired, and (3) potential activities for the students. Despite its limited emphases, these guidelines provide a good overall picture of the needed lessons to be taught and learned.

AAA conducts a broad program of safety education for all groups of people. Representative documents for each target group - the children, the adult, the teacher, and the senior citizen - have been included in the bibliography. Each one of these materials strives to alert their individual target group to the causes of pedestrian accidents. In addition, they inform their group of possible programs of ways which will help to reduce the number of traffic and pedestrian accidents within their specific group. There is definite overlap in each of these manuals. For instance, in The Young Pedestrian there are tips to teachers and parents on ways they too can help teach children about safety. The Teacher's Triptik presents helpful guidelines to teachers in merging safety concepts with other subject areas. Sportsmanlike Driving is the most widely used driver education text book and contains information on pedestrian safety.

AAA therefore strives to reach out and provide material for every important target group and, as can be seen from our bibliography, has achieved its goal.

Most of the materials from the District of Columbia come directly from their Motor Vehicle Department. These materials are primarily very simplified brochures which are characterized by snappy slogans such as "Expect the Unexpected" and "How to Walk and Stay Alive." These brochures usually contain a synopsis of basic safety rules and regulations and, like most other

"pamphlet efforts," the content has not been affected by recent information on accident causation.

Discussion of Educational Materials

A large proportion of the accidents involve pedestrians who are 5 to 14 years old. This age group has 34 percent of the pedestrian accidents. Many educators feel that one reason for these increasing accident rates is due to a lack of the development of the necessary skills for safe walking in these young children. Such skills include the ability to read and fully understand traffic signals and terms, to localize sounds, to judge distance and speed, and to be attentive to the environment. To be able to teach children these skills is the primary objective of several materials packages which have been recently designed. Many disciplines have been utilized such as education, psychology, optometry, etc. These programs do not set out to formulate restrictive lists of "do's and don'ts" of traffic safety (as characteristics of materials of past decades). These packages are intended to help open areas of basic awareness in regard to safety to the children, and to instill in them an individual responsibility to incorporate the concepts they learn into their daily lives.

Some of these instructional packages, done both on the national and state level, include specific curriculum guidelines. Packages containing guidelines are not widespread; they can be found only in a limited number of counties throughout the United States.

As can be seen from the list of titles, a few of the resources are teachers' guides. These guides hopefully fill the void in the teachers own education in the field of safety education. Safety education has not been considered an important field of learning in recent years so teachers themselves had no training in it and therefore they have tended not to teach or concentrate on any safety units.

Supporting these interdisciplinary programs are various media resources: Instructional Television Schedule and a Traffic Safety Catalog. Posters are also furnished by such institutions as AAA and the National Safety Council.

These instructional interdisciplinary programs try to identify the major safety-related concepts in the elementary curriculum so as to be presented on a contiuum of increasing complexity from K-6. These levels of complexity purportedly coincide with the developmental capabilities, interests, and levels of comprehension.

The materials collected that are geared toward the adolescent (6th, 7th, 8th, and 9th grades) are different in scope than those for the basic and elementary school level children. Where the programs for the elementary children have been behaviorally oriented, for the adolescent there appear to be very few specific programs with well defined sets of goals. The only delineated guidelines are to imbed traffic safety materials in a variety of subject fields. As seen from the titles, most of the materials

are geared toward teaching the adolescent pedestrian safety rules. This is not to say that the teaching of these rules are useless. However, these materials do not build upon the skills learned in elementary school. Consequently, adolescent safety programs tend to be disjointed, unsystematic, and inadequate to the task.

An adult has been defined, for present purposes, as any person in senior high school or older. Materials pertinent to adults and their awareness of the importance of and need for traffic safety can be put into two classes: instructive and informative. The instructive materials are driver education and proper driving procedure manuals. Driver education provides a well focused, behaviorally-oriented context for the promotion of pedestrian safety. Unfortunately, the pedestrian problem often receives less emphasis than skid control, parallel parking, and a host of other manual skill procedures. The driver preparation materials generally consider the pedestrian as an unpredictable user of the roadway. Such examples as dart-outs, illegal street crossings, and failure to obey traffic signals are called out as indicative of the pedestrian unpredictability. The student is also instructed that even though the pedestrian has been granted privileges (such as having the right-of-way over the vehicle at intersections), the pedestrian also has certain legal responsibilities in traffic (such as crossing streets properly). The situations conducive to pedestrian accidents are not systematically covered.

Many of these manuals assume that the adult has previously received considerable pedestrian education. This assumption is problematic. However, with this as their basis, many driver educators look at and discuss the pedestrian merely from the operator's viewpoint, striving to improve their students' perceptual skills and judgments with respect to the pedestrian as only one important element in driver education. Pedestrians and pedestrian problems are not discussed as an individual entity or problem area in and of itself.

Also available to the adult population are those materials that are primarily informative in nature. Such materials as The Young Pedestrian are excellent synopses of the present conditions of pedestrian safety, the increasing problem of pedestrian safety, and also what types of programs are needed to reduce this problem. Several of the materials, such as Pedestrian Safety Rules and How to Walk and Stay Alive, are applicable to both the adolescent and adult populations. It has already been stated that they are needed as basic guidelines to safety rules and regulations for adolescents. For adults, many of whom have little knowledge of traffic safety rules, they can also serve as a teaching or reinforcing device.

There is a definite lack of written materials and of those available only a smaller number ever actually reach the adults. Adults themselves are often ignorant of accident causation and avoidance. In addition to improving their own driving skills,

adults need to understand the relative vulnerability of pedestrians in order to teach their children about pedestrian safety. Parents can, of course, serve as a powerful reinforcer of the programs taught in school. The concepts in these programs are not meant to be oriented only to the school environment; they must carry over to the home and play environment.

Senior citizens are another group which is over-represented in pedestrian accidents. However, we did not find any state or national program geared toward senior citizens. The only document we found was put out by AAA, Older Adult Pedestrian Safety. However, when we contacted various organizations geared specifically to the senior citizen, such as the National Council of Senior Citizens, only one organization had heard about the document.

Conclusions From State and National Programs

Safety education is handled to some degree by the Federal Government, the state government, and the local government. Each individual institution currently provides safety materials. In the 1930's and the 1940's, safety education and the materials published in this field was, for the most part, a commercial market. Individual authors wrote the majority of the materials. Today, organizations such as the National Safety Council, AAA, the District of Columbia government, and the Maryland State Department of Education publish their own materials. This shows a

change of emphasis and a renewed interest in the centralization of safety information. Despite this growing interest by the various institutions, there are still definite omissions and gaps in the materials, the services, and the specific emphasis placed on the distribution and advertisement of these materials and services.

The National Safety Council and AAA no longer provide their materials and resources in a broad, open program to all school systems, free of charge as they did in past years. All resources have a set stipulated cost attached to them and the National Safety Council has only recently developed a safety resource unit for teachers. AAA, in addition, sends information or materials, for a charge, only if specifically asked by a school system or individual school itself. It does not openly solicit their orders. The school systems are able to afford the rather minimal cost associated with these materials and any other materials that can and should be developed. The question then becomes whether safety is important enough to be taught to school children. It is up to the schools to decide whether money should be spent on these materials.

Another problem which emerges from the examination of safety education at the institutional level is that there is no coordination among the three levels of government. Most of the new interdisciplinary programs and materials for children are being initiated at the state and local levels. Illinois already has an established state-wide curriculum for safety education; Maryland is currently establishing a similar program in their schools; and

the District of Columbia is presently drawing up their own curriculum guidelines. The National Safety Council has developed curriculum guidelines but, once again, the problem becomes one of getting them to the attention of the people, and these are primarily the children at school.

In addition, the materials put out by the various governments are severely limited in their focus. The materials that have been developed and circulated are aimed primarily at the elementary level child. The adolescent, the adult, and the senior citizen are, for the most part, overlooked. Small passages in driver education manauls are the main materials for adolescents and adults. There are also a wide variety of pamphlets on rules and regulations.

The senior citizens, except for AAA's pamphlet, have been completely overlooked in the pedestrian safety programs despite their involvement in pedestrian accidents. In our study, such organizations as the National Council of Senior Citizens, the National Council on Aging, the Senate's Special Committee on Aging, NIH's Institute on Aging, HEW's Administration of Aging, Maryland's Aging Commission, etc. were contacted and questioned concerning possible programs or materials available on the topic of pedestrian safety for the senior citizen. Not one of these national or state organizations had any type of program or even any knowledge of anything done in this area. The closest thing to the topic was a study of environmental barriers done last Fall by the Senate's Special Committee on Aging. This study discussed the

need for such ease-making devices for the elderly as more ramps, lighter weight doors, and one-story office buildings.

Overall, therefore, there is needed some sort of definite coordination at the federal, state, and local levels in the field of safety education. Definitive programs for all target groups, the school child, the adolescent, the adult, the senior citizen, any sort of special group, such as the handicapped, must first be developed. The next important step is that these groups are made aware of the programs through an all-encompassing advertising endeavor. There is absolutely no way to insure that all people will learn and gain from these programs. But a major step will be made if programs are developed and if they are widely known to the people.

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CHAPTER III

CITY SURVEY RESULTS

This Chapter presents the results of a survey of the pedestrian educational programs existing in seven cities.* In all, 48 programs were reviewed. (See Exhibit A at the end of this chapter for a copy of the mailed survey.) The review, as reported in this Chapter, is divided into two sections. The first section presents a survey of the findings. The second section is designed for those who desire the specific survey results. For presentation purposes, each section is subdivided into the following six areas:

A. Programs by Target Populations

B. Media Types & Media Aids by Target Population

C. Program Objectives by Target Population

D. Sponsoring & Delivering Organizations

E. Frequency of Program Presentation

F. Evaluation Method

Summary of Survey Results

Programs by Target Population

The large preponderance of programs were used to address more than one audience (39 of 48 programs). Nine programs were

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*See page I-2 for a list of the cities. One city did not reply to the survey and, therefore, the following discussion is based on seven cities.

specifically designed to address the perceived needs of a distinct population group. Of these nine programs, five were directed at elementary school children, with two directed at senior citizens, and one program each to pre-school and adult populations. Although more programs were reported to be applicable to pre-school and elementary school children (28 and 33, respectively), any correspondence between the number of programs and the frequency of pedestrian accidents for a particular age group was not evident.

Media Types and Media Aids by Target Population

The media methods and media-aids associated with the programs sort out rather quickly into a set of rather familiar techniques and media-aids. The greatest visible variation in programs were those programs dedicated or specifically oriented toward pre-school and elementary school age children. Information is often presented to these population groups through demonstrations.

Programs reportedly based upon learning needs and learning capabilities considered unique to a particular population group were in the minority. The preponderate program medium was the lecture, with the availability of questions and answers. All cities reported the use of posters as being both a media-aid and, in all cases, as being a program type. Frequent media-aids cited (usually a supportive element of the "lecture") were films, slides, pamphlets and handouts. The frequency of use of such aids, and the program relevance of such aids, appeared to be almost totally a function

of availability. One particularly interesting phenomenon concerning media-aids and information delivery was noted from the data. The media-aids cited, their type and usage would vary two ways:

a. In programs "tailored" to a population group, the learning needs and learning capabilities combined with the pedestrian safety educational objectives would tend to dictate the type and usage of various media-aids.

b. Where programs were not tailored to a population group, the available media-aids would appear to be the program.

Program Objectives by Target Population

Based upon the responses, it appeared that some programs did have identifiable and meaningful learning objectives. The preponderance of programs may be meaningful, but, short of examination at the delivery level, identification of objectives was unclear and, at the least, inconsistent. The value of the great majority of programs, as viewed from a learning objective viewpoint, remains unresolved. It appeared, however, that stated program objectives, and the degree of definable objectives, closely followed the degree to which a program attempted to serve a unique population group. Where this was not the case, and the program was somewhat generic to all population groups, the objective(s) of such programs appeared to be general "safety education." It should be realized, however, and appreciated, that individuals delivering such universal programs did report that they varied the presentations to serve specific needs. This, however, was difficult to document and to analyze.

Sponsoring and Delivering Organizations

The most involved organization appeared to be the police department, followed by the school system and the local safety council. In the great preponderance of cases, the police departments were responsible for the creation, delivery, and continuing viability of pedestrian education programs. The greatest source of documented information was the AAA. The role of the school system in pedestrian safety education was largely passive, being limited to supporting the need for such education and to providing the "site" for such program delivery by others. This passive role by the school systems appeared to be as much by default as for any other reason. Pedestrian safety education was generally not considered part of the formal education process. Thus, there were few if any separate or integrated education programs directed at or attendant to pedestrian safety education with the educational system. Given the above situation, it was not too surprising to find that the police, who are the most intimately familiar with pedestrian accidents, were in the role of "educators."

Frequency of Program Presentation

From the reported data, not one program could be construed as providing continuing pedestrian education. A possible exception might have been those "programs" designated as "mass media" and "poster" programs.

Evaluation Method

The most important, and obvious, issue to present itself from the data was that, given evaluation is useful, not enough programs are evaluated (only 12 reported the use of evaluation). Of those reporting "no evaluation method", a consistent disclaimer was also provided. "No evaluation method is available." This response can, of course, cover a wide range of issues, but one issue is almost a mandatory question -- What are these programs accomplishing.

Detailed Survey Results

Programs by Target Population

1. Pre-School

Of the 48 total programs reported by the participating cities, 28 programs addressed the pre-school children population group. Of these 28 programs, only one program was unique to this population group, with six programs serving this population group as well as the next age grouping, elementary school age children. From a point of study, therefore, only seven programs were specific to this population group. The remaining 21 programs serving this population group utilized techniques and media from programs directed at audiences with various learning levels and various learning needs. The seven pre-school specific programs, while quite often working from similar "generic" sets of presentation data, exercised techniques and media aids which were

more attuned to the learning needs and levels associated with the pre-school population.

2. Elementary School Children

Thirty-three of the 48 reported programs addressed the elementary school child. Of these 33 programs, eleven programs were reported to serve this population group uniquely. As in the case of the pre-school group cited above, this group does have both unique learning needs and learning capabilities most often associated with their early age. The eleven programs found to be specific to this age group did attempt, as in the above group, to provide the information with methods and in formats specific to this group.

3. Jr. High School

Twenty-six of the 48 reported programs addressed the jr. high age population group. Of these 26 programs, nine programs could be construed as being more or less specifically addressed to this population group. There were no programs which singularly addressed this group; however, four programs were in fact, tailored to unique needs associated with this population group. All four of these "unique" programs served the next higher population age grouping (high school level), but reportedly made specific differentiations for each group (jr. vs. sr. high level) within the programs.

4. High School

Twenty-five of the 48 reported programs addressed the high school age population group. Of these 25 programs, four programs could be considered specific to the learning needs and learning capabilities associated with this population group. These four programs were modifications of those cited for the jr. high group above.

5. Young Adults (17-21)

Fifteen of the 48 programs were reported to serve the young adult (age 17-21) population category. Of these 15 programs, 14 served other younger audiences. One program was found to serve this group somewhat uniquely in that address was limited to jr. and sr. high school groups on the lower age group side, and that the program extended to the next higher age groups: adults (21-64), and senior citizens (65+).

6. Adult (21-64)

Nineteen of the 48 programs reportedly addressed the adult population category. Of these 19 programs, 13 served other audiences, one program, cited above, served a more narrow population band, and five programs were specific to adults and senior citizens.

7. Senior Citizens (65+)

Seventeen of the 48 programs were reported as serving the senior citizen. Two programs were unique to senior citizens. Of the remaining 15 programs, 11 served younger population

groups, two were limited to senior citizens and categories (1) and (2) above, and two other programs were designed for the adult and senior citizen categories.

Media Types and Media Aids by Target Population

1. Pre-School

For the single program reported to uniquely serve this population group, a multi-media program was employed which incorporated skits, demonstrations, lectures and posters as the information/education delivery method. The media-aids supportive of this program were a textbook for instructors, pamphlets, coloring books, and various handouts such as buttons, citations, T-shirt emblems, etc. The six pre-school and elementary school oriented programs were found to incorporate the same basic delivery components with the additional use of films as a media component. Some differentiation (level unknown) was made to accommodate learning capability differences between pre-school and school attendant children (reading, writing, etc.). The remaining 21 programs reported to address pre-school children were constructed to provide information/education via posters, television programming (national media, "Sesame Street," "The Electric Company," and various childrens shows; and in one case a special local film presented on television), radio (program descriptions unknown), lectures delivered to elementary/kindergarten schools, and materials for parental guidance.

2. Elementary School Children

Of the 11 programs found to be unique to this population group, all exercised techniques, media, and media aids as characterized in the pre-school group in addition to media features of pamphlets and storybooks which relate or convey pedestrian safety messages. Almost without exception, such textual materials were obtained through the American Automobile Association by the local AAA affiliates. In addition, the National Safety Council served as a source for literature concerning bicycle safety. Other literature does become available through a wide variety of local sources. These materials appear to be quite diverse, often drawing upon the content and techniques exhibited in the AAA literature. The preponderance of the remaining 22 programs which related to elementary school children, as in the pre-school group, provided information via the mass media of television, radio, posters, and lectures/discussions in school assemblies. At variation with the pre-school group would be the additional demonstration programs relating to bicycle safety. There were three programs which placed particular emphasis upon the technique of improper bicycle performance noted, resultant citations, and remedial instruction as a media program.

3. Jr. High School Children

The instructional or educational media employed for programs in this population group exhibited a departure from demonstration programs and media aids, such as creative and participatory poster and slogan contests. Increased use was made of the school crossing guard program. The great majority of the programs, 19 of 26 programs, made use of lectures and question/answer discussion sessions, supplemented by films and slide presentations. Of the five programs found to be most specific to this population group, two were found to have what would appear to be innovative media methods. One program exploited available technology and creative student interest in the form of a student film contest. Textual guides were provided which promoted an interest in a given safety problem area; lectures were used to discuss film as a medium and at the same time address pedestrian safety. Lastly, the process of production was a media tool for the involved students and later the viewing audience. A second jr. high school specific program created a "safety speaker's" bureau from among the students. The participating "speakers" developed and delivered safety programs to peer groups as well as to population groups on both sides of the age spectrum.

4. Sr. High School

Of the 25 programs reported relevant to sr. high school students, 21 programs made extensive use of lectures and question/answer sessions as the primary media. These were supplemented variously by films, slides, and safety pamphlets. Pedestrian education as part of driver education was only cited in one program. This would appear to be an oversight as all of the participating cities have driver education programs, and most such programs incorporate some aspects of pedestrian safety education. Two programs reported were continuations or extensions of the film contest and speaker's bureau previously cited. One program reported made note of a "student court" which served to direct pedestrian safety education in the schools, established the "laws" for pedestrian safety, and administered "justice" to offenders cited by the crossing guards and police. Such "justice" could extend to "sentencing" to an official "pedestrian safety school" administered by the police for adult offenders of pedestrian related traffic laws.

5. Young Adults (age 17-21)

Young adults were reportedly addressed by 15 of the 48 programs. In 14 of the cases cited, the programs were of the lecture, question/answer discussion type program. All of

these programs used films, slides, posters, and safety literature in some capacity. The 15th program used volunteers from this age group as speakers and instructors. Mass media was cited as a program element in all 15 programs. In no case was sufficient data provided to examine where the lecture and discussion programs were normally held.

6. Adults (21-64)

Nineteen of the 48 programs were represented as serving the adult population. Thirteen of the 19 programs also served younger population categories. No special differentiation as to media and media-aid was made. The arena of delivery was cited in the 13 cases as PTA meetings. In nine of these 13 cases, the additional media of television and radio was cited. No mention was made, with one exception, as to content or type of such mass media. The exception cited a city prepared and produced film which was presented on local television. The media methods and media aids for this population group were the same as those for the young adult group.

7. Senior Citizens (age 65+)

Seventeen of the 48 programs were reported to be directed, in some capacity, toward senior citizens. Of these 17 programs, two were uniquely directed at senior citizens. The remaining 15 programs also included 11 programs which used media and media-aids used for other target populations.

The primary media was the lecture/discussion technique followed by posters and the mass media of television and radio. No specific adaptations of this media were reported for this group, nor was specific mention made as to details of mass media. Of the two programs reported as designed for senior citizens, both exercised a primary media of lecture/discussions, followed by handouts and safety pamphlets. In one of the two cases, the speaker was a senior citizen(s), this being a major component of this program's concept of delivery. A key datum reported concerning these two programs was the provision of the arena for presentation; specific mention being private homes and senior citizen recreation centers. Four other programs of the 15 exhibited a somewhat unique categorization in that these programs served a narrow population band of "other" population groups. As in the case of the 11 programs cited above, the primary media was lecture/discussion followed by posters and the mass media. No special program characteristics were reported which might serve special senior citizen learning needs or capabilities.

Program Objectives by Target Population

1. Pre-School

The stated objectives of the 28 programs reported to address this population group were to:

a. Educate concerning basic traffic operations (vehicular and pedestrian).

b. Educate and explain traffic hazards.

Specific reference was made to introducing the child to proper conduct, use, and understanding of the traffic light, the pedestrian crosswalk, moving into the path of vehicles (the hazards and avoidance of) and the proper use of bicycles. The primary objective consistantly stated that the objective was "introductory safety education."

2. Elementary School

The objectives of the elementary school programs closely followed that of the pre-school programs--basic education. This population group, however, would appear to receive a higher dose of "hazard awareness and avoidance" information. The stated objectives of these programs continued to be overall education as to pedestrian safety. No program reported specific learning objectives beyond those cited in the pre-school population group.

3. Jr. High School

The stated program objectives for this group continued to be "general safety education." Two programs reported upon, however, gave indication that the program objectives changed continually; being based on "accident trends" and "the direction of a current or given safety program."

4. Sr. High School

The stated program objectives for this group were also reported as "general safety education." The added objective of "pedestrian safety from a vehicle-operator's viewpoint" began to appear. Specific learning objectives for drivers were not provided by the responding municipalities.

5. Young Adults (17-21)

The stated program objectives for the 15 young adult programs were the same as those reported for the senior high school group.

6. Adults (22-64)

The stated program objectives for this group fell into three categories:

a. Educate and inform generally (as in all previous population groups).

b. Educate and inform concerning the specific hazard of "jaywalking."

c. Educate and inform concerning pedestrian safety from "the viewpoint of the vehicle operator."

7. Senior Citizens

The preponderance of stated program objectives was to provide a general education concerning pedestrian safety. Two programs stated that the objectives were "to educate senior citizens to the unique or special hazards confronting them as pedestrians."

Sponsoring and Delivering Organizations

1. Traffic Engineering

Of the traffic engineering departments which were involved in pedestrian safety education, two basic variations for involvement or participation were revealed. The first case was where the traffic engineering department served other organizations or departments in an advisory role. The second, and less common case, was where the traffic engineering department was actively engaged in either the structuring or design of programs or the actual delivery of programs. It was an interesting feature that such involvement, of whatever type, was usually at the higher, or managerial, levels of traffic engineering departments. As might be expected, the professional expertise concerning the structure and use of roads, crosswalks, signals, etc., are continually available, but perhaps unexpectedly considerable inputs as to pedestrian and driver behavior are what is ultimately provided. The level and degree of involvement of the traffic engineering departments in pedestrian safety education appears to be growing quite rapidly.

Of the 48 programs reported, seven programs were sponsored by traffic engineering departments. Six of the seven programs were in a co-sponsorship role with other organizations. The exception was a program consisting of new releases concerning pedestrian "conduct" and safety. The

primary role in the remaining six cases is reported as being that of a consultative relationship with other organizations engaged in the preparation and conduct of pedestrian education programs.

2. Police Departments

The police departments in each of the responding cities were actively involved in pedestrian safety education. The largest single variant would appear to be the size or number of personnel involved. The proportion of manpower involved was directly proportional to city size. In all cases, pedestrian safety education was assigned as a full time function of an identifiable unit within the police department. Police departments were involved in every program type across all population groups and utilized in every media type.

The police departments of the participating cities were indicated as being the sponsors or participants in 32 of the 48 reported programs. The police were involved in the program delivery of 31 of the 32 programs. (The exception being a film that they had helped to make.) In 20 of the police-involved programs, the police department either developed or brought into being the actual programs.

3. School System

In all cases reported, the school systems showed some level of involvement in the various pedestrian education programs.

School system involvement took basically two forms:

a. The school system served primarily as the physical location for pedestrian education programs which were administered by personnel from other city departments or organizations.

b. The school system used data and materials supplied by other agencies and conducted the programs using school personnel.

Case "a" above was the predominant form of involvement, with the police department being the primary program source. The more "tailored" that a program was toward the needs of a particular population group, the greater the level of direct involvement by school system personnel. We only found one case out of the 48 reported programs where school system personnel were actually involved in the planning and program design of the program.

In case "b", the school system personnel appeared to have more of an administrative form of involvement (classroom management and directing the use of media-aid such as coloring books, films, etc.), rather than serving to deliver the actual program of instruction. Such instruction was generally the purview of an invited speaker. There are, of course, exceptions to the two general cases as cited above, and it was determined from further investigation that direct school system delivery of pedestrian education programs takes place most often in the smaller school systems.

The school system was reported as being involved in 26 of the 48 pedestrian education programs. A co-sponsorship role was indicated in all cases. The school system was the preparer of one program involving curriculum design. No cases were cited where the school system delivered a complete program. The school system was cited in four programs as having a central role in the overall program planning as to population learning capabilities. In 11 cases, the school system was the central source of distribution of pedestrian education related "software" (pamphlets, brochures, posters, and textual material).

4. Local Safety Councils

Local safety councils were found in each of the cities. The role of these safety councils was largely a process of coordination between the various interested and operating city organizations in the general area of "public" safety, including a category of pedestrian safety. Additionally, these safety councils served to coordinate the physical program resources, such as the media-aids available and/or needed to conduct programs. The composition of different safety councils varied, but generally, staffing was composed of managerial level personnel from city organizations, personnel from private public interest organizations, prominent local businessmen and women, and occasionally "citizen" members. Most safety councils served a somewhat continuous

function of providing various types of safety information (auto, home, work,and pedestrian) to the general public. Perhaps the most important function, from the viewpoint of pedestrian safety, was that the safety council often provided the only comprehensive intergovernmental and city-wide forum where problems were discussed and programs initiated. The data provided would indicate that the safety council, as an organizational body, is a major force in establishing local pedestrian education programs.

Local safety councils were reported as being co-sponsors of 18 pedestrian education programs. In two of the 18 programs, the local safety council served to actually conduct the programs. Of these programs, one was a poster campaign, the other a lecture-question-answer program, supported by slides and films. The role of the local safety council within the remaining 16 programs was primarily coordinative, to include providing public advertising of the programs.

5. The American Automobile Association (AAA)

The AAA is displayed as a separate pedestrian education program source within this report due to the fact that this organization does in fact possess and provide extensive pedestrian safety information. All of the cities reported using (to a greater or lesser degree) materials, information, pamphlets, various media-aids, and entire

programs available through and derived from the AAA. Additionally, the local AAA affiliate quite often served in a leadership role in the community concerning the establishment and conduct of pedestrian education programs.

The AAA was cited as playing a co-sponsorship role in eight programs. Participation was largely coordinative to include the provision of media-aids and planned programs. The AAA was further cited as a source of data and media-aids in 26 programs. The AAA is a member of each of the cities' safety councils.

6. Department of Motor Vehicles

Department of Motor Vehicles (DMV's) involvement in pedestrian education programs varied dramatically from city to city. The level of involvement ran from actually conducting and delivering entire pedestrian education programs for specific population groups, to providing handouts concerning the legal regulations governing pedestrians. Although only six of the 48 reported programs were sponsored by DMV's, most DMV's were active in helping to establish pedestrian education programs and in providing accident data concerning the need for such programs. One of the six programs was designed and delivered by a local DMV. Additionally, DMV's provided some educational information to various population groups via the driver education and license programs under their control.

7. Other Organizations

No other organizations were cited as having a planning or delivery role. Three organizations were, however, cited as having participatory roles:

a. Department of Parks and Recreation -- providing space for the conduct of a "bike rodeo" and publicity concerning same.

b. The National Safety Council -- providing media-aids in the form of posters, pamphlets, and hand-outs.

c. Citizen Organizations -- providing volunteer personnel to aid in program delivery and administrative (delivery) management.

Frequency of Program Presentation

As indicated in the summary, not one program could be construed as providing continuing pedestrian education to target populations. Most programs were presented rather briefly once a year. A possible exception might have been those "programs" designated as "mass media" and "poster" programs.

Evaluation Method

No special differentiation concerning evaluation method was reported which would lend itself to a categorical analysis by population group. Quite simply, there were six reported strategies as follows:

a. 36 programs reported no evaluation

b. 7 programs evaluated by interest/attendance

c. 6 programs evaluated by accident records

d. 5 programs evaluated by behavioral observation

e. 2 programs evaluated by retention tests

f. 1 program evaluated by "parental feedback."

Of those 12 programs reporting the use of evaluation ("b" through "f"), six exercised more than one method. One program exercised four methods. Of the six programs evaluated by accident records, five were conducted by the police department. Of the 12 programs reporting evaluation methods in use, 11 of these programs were reported to serve all population groups. The single exception to universal program type was a program specifically oriented toward pre-school children. This same program is cited as above exercising four different evaluation methods.

EXHIBIT - A

ORGANIZATION _____ of (City) _____.

Individual completing this form _____. Date _____.

Audience

Method of Presentation and Presentation Aids

How Often Presented and to What Size Audiences?

Where is the Program Presented, and how many People Participated in the Conduct of the Program?

What is the Source of the Program?

What are the Program Objectives?

What Method(s) is used for Evaluation and/or is there a Need for Evaluation?

EXHIBIT - A

Explanation Copy

ORGANIZATION (Police Dept. School System, etc.) _____ **of (City)** _____.

Individual completing this form _____. **Date** _____.

Audience The type or particular group of people the programs are directed toward (i.e., senior citizens, elementary school children, pre-school, etc.)

Method of Presentation and Presentation Aids

- How the program message is conveyed to the audience (class, skit, group discussion, poster campaign, TV, radio)
- Presentation aids (films, textbooks, slides, handouts such as badges, etc.)

How Often Presented and to What Size Audiences?

- (i.e., during the beginning of the school year, throughout the year, etc.)
  and
- (once-a-week–approx. 30/class)
- (in the case of TV or radio–cite time slots and frequency.)

Where is the Program Presented, and how many People Participated in the Conduct of the Program?

- The type of setting (school room, park, residence meeting hall.)
- The number of people assigned to conduct or coordinate the program.

What is the Source of the Program?

Where was the program developed (i.e., State, Federal, in-house, other city agency), AAM, National Safetv Council, etc.)

What are the Program Objectives?

What is the program supposed to accomplish (i.e., alert children to the dangers associated with mid-block crossings, etc.)

What Method(s) is used for Evaluation and/or is there a Need for Evaluation?

Describe the methods used for determining whether the program meets its objectives (accident data, retention tests, behavioral observations, none, etc.) and whether you feel additional program evaluation would be useful.

CHAPTER IV

DESIGN AND EVALUATION OF PEDESTRIAN SAFETY EDUCATION PROGRAMS

This Chapter is comprised of two major sections. The first section is concerned with inadequacies uncovered in current programs. These deficiencies may exist in the program's content, delivery or evaluation. Only those problems which apply to several programs and appear to seriously affect the efficiency of the programs were considered for inclusion in this section. The second section presents a general paradigm for the design and evaluation of education/informational safety programs.

General Problems of Current Programs

Selection of Program Content

Perhaps the most serious problem associated with the pedestrian safety programs was one of content. The overwhelming majority of the programs did not attempt to develop content which was specific to the population group being addressed. Thus, very few programs seemed to reflect the fact that certain age groups are differentially involved in different types of accidents. The failure to recognize the age-specific nature of pedestrian accidents is most evident by the large number of programs "certified" for two or more diverse age groups.

In discussing the above matters with safety program personnel, it became evident that these individuals were not familiar with

current accident facts. Most of the personnel held quite "stereotypic" views concerning pedestrian accidents (e.g., running after a ball, playing between cars, crossing against the light). Unfortunately, these concepts of accident causation appear to be associated with only a small fraction of the total number of pedestrian accidents. Ignoring available accident findings has led to the development of many irrelevant and non-cost-effective programs.

Delivery and Implementation of Programs in the Schools

While both state and local educational authorities are beginning to create curriculum guides, curriculum support and direct instructional materials in the area of pedestrian safety, these materials are yet to have a denotable effect in the actual classroom. The decision to include or exclude pedestrian safety as part of the educational program is, in most jurisdictions, completely at the discretion of the individual classroom teacher. A few teachers routinely include safety content; most such instances occur at the K-6 levels. The obvious problem, however, is that relying on the teacher's discretion constitutes an uncertain communication channel at best.

The most widely heralded programs in the schools are based on the participation of the police or other "outside" safety authorities. Most such programs involve presentations to relatively large groups of children in assemblies. One senses that a large amount of the content is in the nature of institutional "public relations" for the sponsoring organization whether this is the police department,

some agency of government, or a commercial broadcaster. Under any circumstances, this channel also lacks reliability in the sense that scheduling is somewhat haphazard and coverage in the larger urban school systems is rarely universal.

Other school programs are difficult, or impossible, to implement or enforce. One of the major themes of present safety education programs, known as the "prescribed route" approach, falls into this category. The concept which was instigated and is supported by the AAA focuses on the child's journey to and from school. The objective is to direct the child along routes which are "best" in the sense that the routes make use of those intersections which are controlled by stop lights or which are explicitly signed (e.g., through-stops) and of intersections or crossings manned by a crossing guard during the pre-school and post-school periods.

Insofar as the prescribed route is an inconvenient or lengthy route compared to less safe routes, many children will decline to follow the prescription and will "get away with it." Thus, while the program appears to be addressing a significant problem, its method of implementation does not support the achievement of the program's goals.

Evaluation Used by the Surveyed Programs

The most striking feature of the reviewed programs was their lack of formal or informal evaluation. Most of the safety program personnel were well aware of the difficulties associated with an accident based evaluation. However, few of these individuals

considered the option of developing intermediate criteria; such as, teacher and audience evaluation, knowledge acquisition tests, knowledge retention tests, attitude change tests, and behavioral evaluations. In several instances, some of these options were exercised. It was unclear, however, how, if at all, these evaluation procedures were used to modify the content or delivery of the program materials.

It is quite possible that the lack of program evaluation reflects the public relations nature of many of the programs. To a certain extent, the existance of a program was seen as its sole justification. These observations may be particularly relevant to school safety programs, where concerned parents often demand the initiation of pedestrian safety programs.

Message Characteristics Necessary for an Effective Program

Learning Potential of the Audience

Very little evidence was found to indicate that the learning capabilities of the target audience was considered in the design of the safety programs. (A notable exception is the program developed by the State of Maryland under the direction of Mr. LaFond.) The learning potential of the audience appeared to be particularly critical for those pedestrian safety programs geared to pre-school and grade school audiences.

It is evident from the educational literature that two basic issues must be addressed when dealing with youngsters. The first is the problem of message complexity. The concept of complexity

is here taken to include word usage, rapidity of presentation and demands on short term memory (or "chaining" required during the presentation). A second consideration is the ability of the presentation to gain and hold the audience's attention. Techniques such as animation and audience participation have been successfully employed in other content areas to obtain the required degree of attention, e.g., the "Trigger" Film concept developed by Dr. Donald Pelz at the University of Michigan.

There is ample literature on learning capabilities of various populations and the attention values of various delivery procedures which could be consulted during the design of a safety program. In addition, the designer can, with little effort, develop testing procedures that can provide information concerning the efficacy of the proposed program before its finalization.

Paradigm for the Design and Evaluation of Pedestrian Safety Programs

The development of an effective pedestrian safety program involves the performance of a complex series of tasks. To our knowledge, none of the reviewed programs attempted the type of systematic program development that is discussed in this section. It will become evident that a considerable amount of time, money, and expertise is required to successfully complete the development process here proposed. Fortunately, the National Highway Traffic Safety Administration is currently undertaking several contract efforts to develop pedestrian safety messages and programs.

Figure IV-1 presents a schematic overview of the program development procedure. The suggested procedure explicitly recognized the availability of pedestrian safety materials from the accident literature, learning literature, and existing pedestrian safety programs. However, given the state of most programs, it might be applicable to omit Sub-Tasks 4 and 5. (These functions deal with the review and analysis of existing programs.) A less extensive review may be desirable in order to familiarize the program designer with presentation media and techniques.

Sub-Task 1 consists of an analysis of the accident data in order to:

1. identify common types of accidents, and
2. isolate the predisposing and precipitating factors associated with these accident types.

The ORI report and the accident data collected under Task 2 of the present contract should provide sufficient information to complete this Sub-Task. In a smiliar fashion, these data can be used as inputs to Sub-Task 2.

Sub-Task 2 is concerned with the characteristics, both demographic and educational, of the accident-involved populations. This Sub-Task consists of determining the learning requirements of the target audience, i.e., what they should know in order to become safer pedestrians.

Sub-Tasks 1 and 2 provide direct inputs for the selection and/or development of the media and methods of presentation. The procedures by which such media and methods are specified are

considered under Sub-Task 3. "What is the educational level of the audience?" and "What procedure can be used to effectively communicate the message?" are the central issues associated with this Sub-Task. As indicated in the previous section, the educational level of the target audience can be gleaned from published literature, school testing programs, or achievement tests specifically designed for the safety program. Similarly, there exists ample documentation on presentation procedures and the applicability of these procedures to various population groups.

As already indicated, Sub-Tasks 4 and 5 can be omitted or abbreviated in scope. These Tasks should be considered in their entirety if the program is an extremely costly one or if the program is expected to be widely used, e.g., statewide or national distribution.

Sub-Task 6 is devoted to the development of evaluation procedures. Two points deserve clarification. First, evaluation is considered to be an integral part of the program development effort. Evaluation is conducted in order to verify the extent to which the program efficiently and adequately meets the objectives for which it was designed. The results of the evaluation can then be used as a dynamic tool to modify and update the program. The second point is that a variety of evaluation options are available to the program developer. Each option outlined in Figure IV-1 does, however, provide unique and useful information for the design of the safety program. We realize that it is often not feasible to conduct <u>all</u> of the suggested evaluations

within the context of any one safety program. We have, therefore, ordered the evaluation methods in terms of their relative ease of implementation.

The development of an acquisition/retention test is the first evaluation procedure called out under Sub-Task 6. This test(s) is used to assess the extent to which the audience acquires the information presented during the course of the program. A second objective of these knowledge tests is to determine the retention or decay of the program material. The slope of the retention curve will provide considerable insight into which aspect of the program requires repetition and reinforcement, and at what intervals.

In most school safety programs, the goal is to motivate rather than impart information. Thus, the second evaluation procedure attempts to determine the effective impact of the safety program. The audience might be queried as to the importance of observing certain precautions and the potential consequences. Often times, audience participation can reveal otherwise latent attitudes that are counter productive to our pedestrian safety effort.

A third evaluation procedure involves the nonreactive observations of audience members. These observations should occur in the traffic environment. A detailed description of the design and execution of behavioral studies is presented in Volume I of this report.

The last evaluation procedure consists of determining the accident effectiveness of the safety program. This process is more complex and costly than any of the preceding evaluation procedures. A detailed discussion of the requirements for such an accident study is presented in Volume II of this report.

We cannot fruitfully develop the evaluation methods any further without specific knowledge of the program. Procedures for the development of the necessary instruments and the supporting experimental designs do, of course, require an explicit definition of the program's objectives.

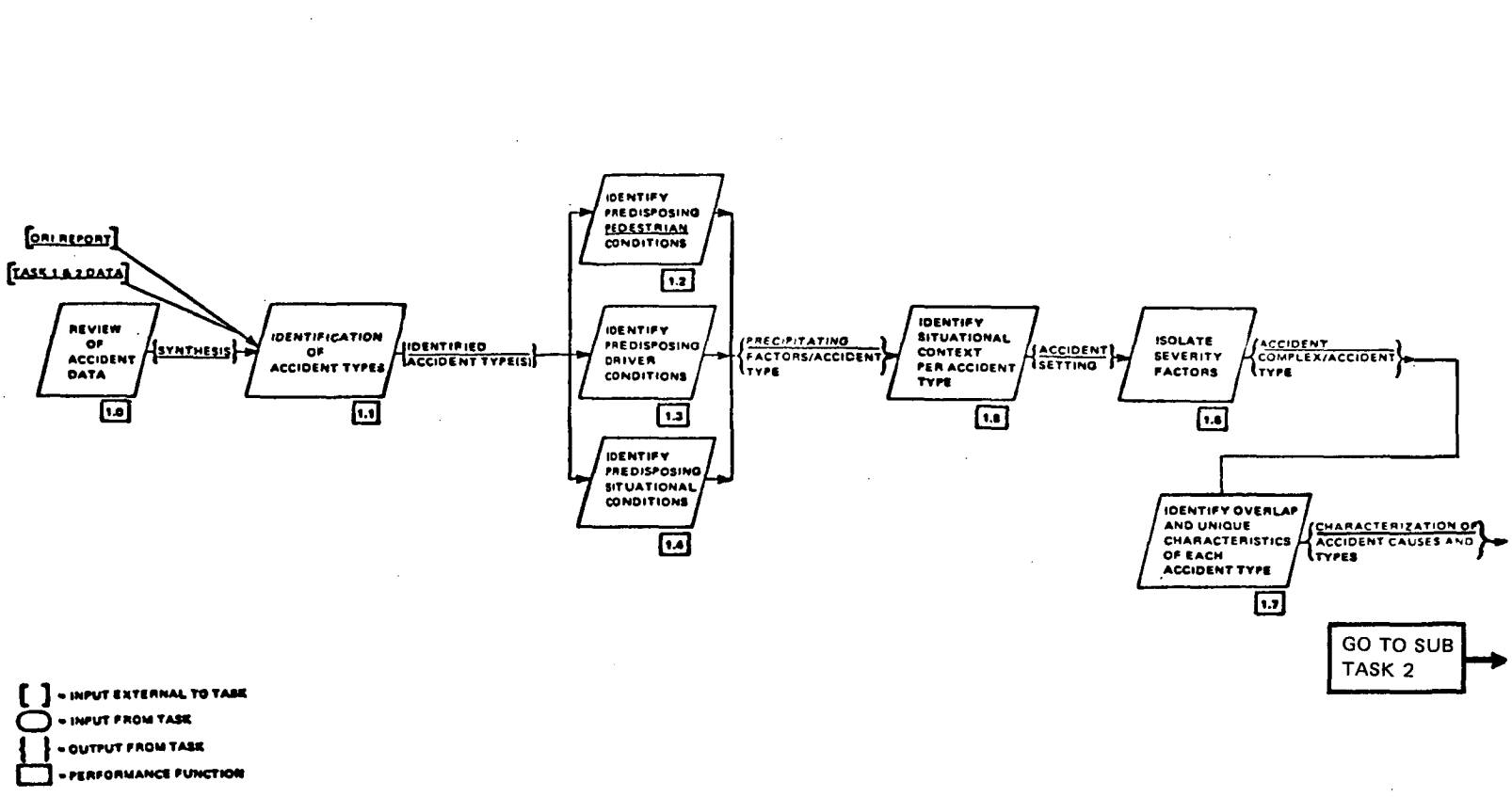

Figure IV–1. Preparation of educational and public information materials. (Task–1)

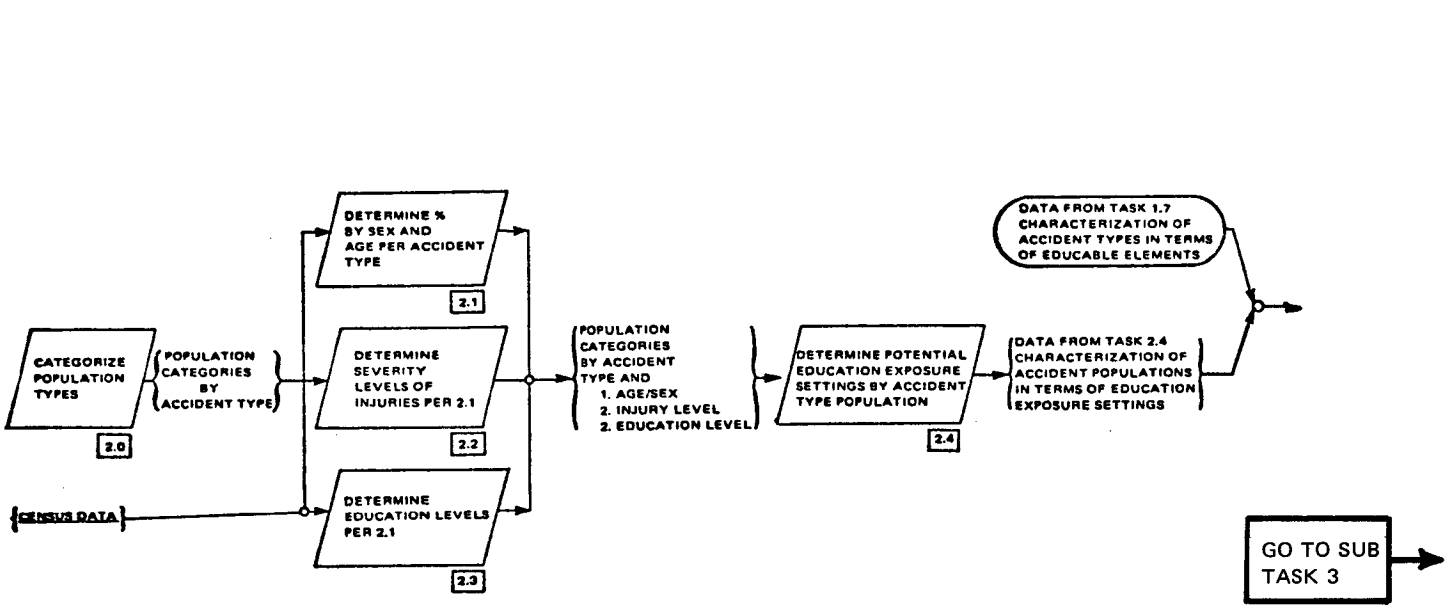

Figure IV–1. (Continued) Preparation of educational and public information materials. (Task–2)

SUB TASK – 3
DEVELOPMENT OF EDUCATIONAL REQUIREMENTS', DETERMINATION OF METHOD AND MEDIA OF PRESENTATION

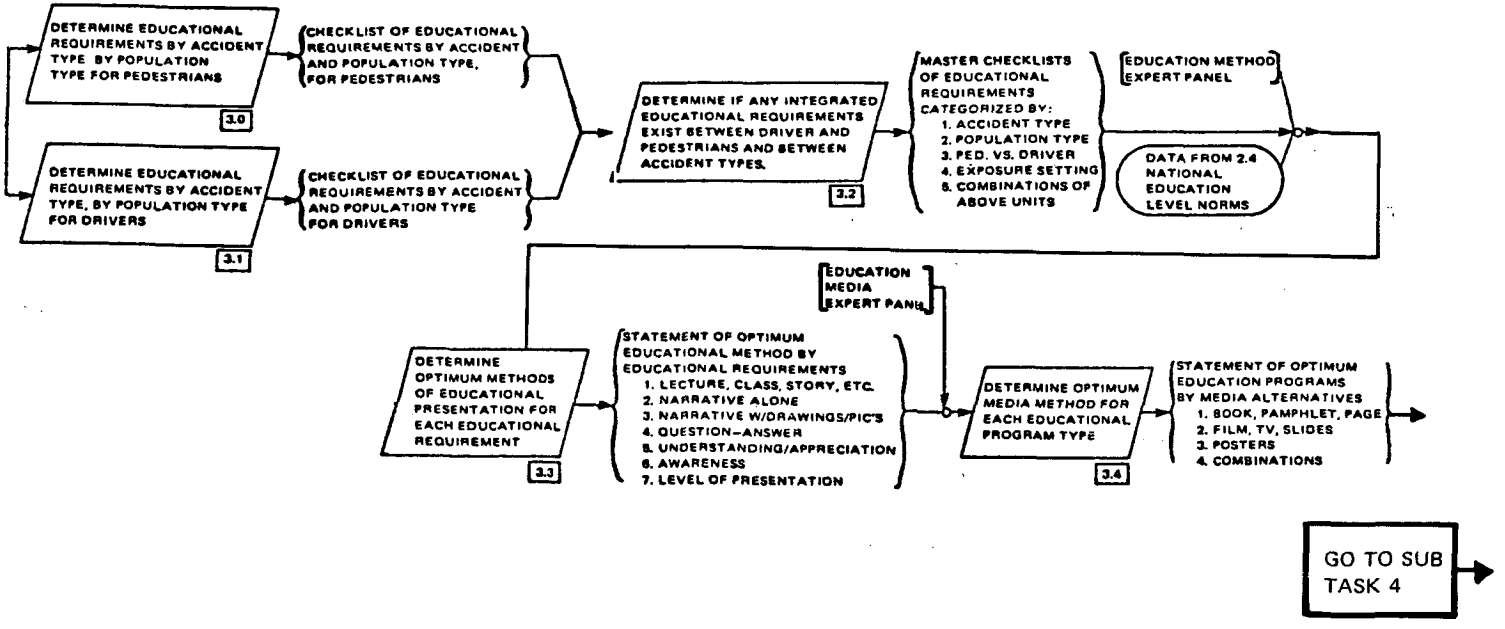

Figure IV–1. (Continued) Preparation of educational and public information materials. (Task–3)

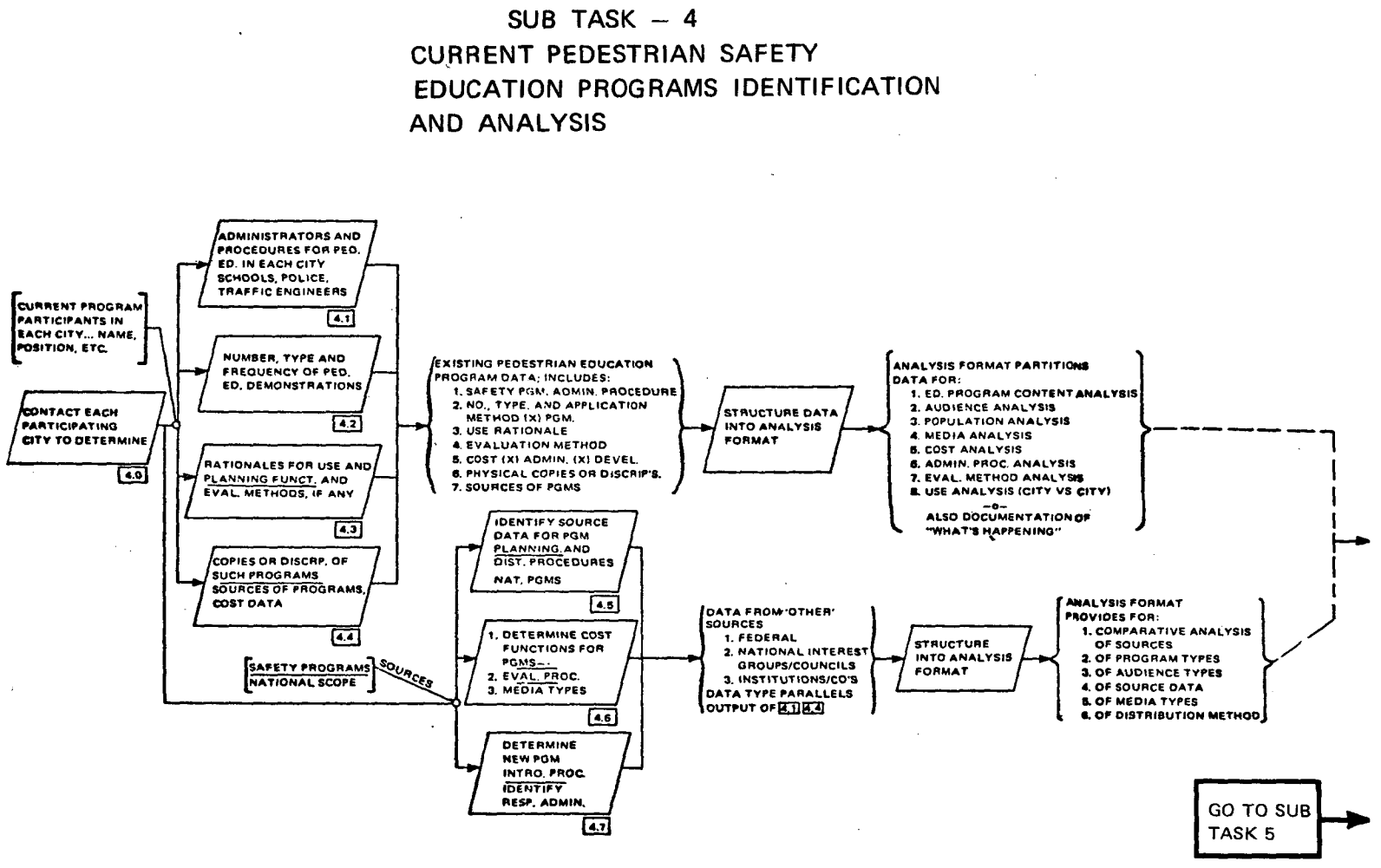

Figure IV–1. (Continued) Preparation of educational and public information materials. (Task–4)

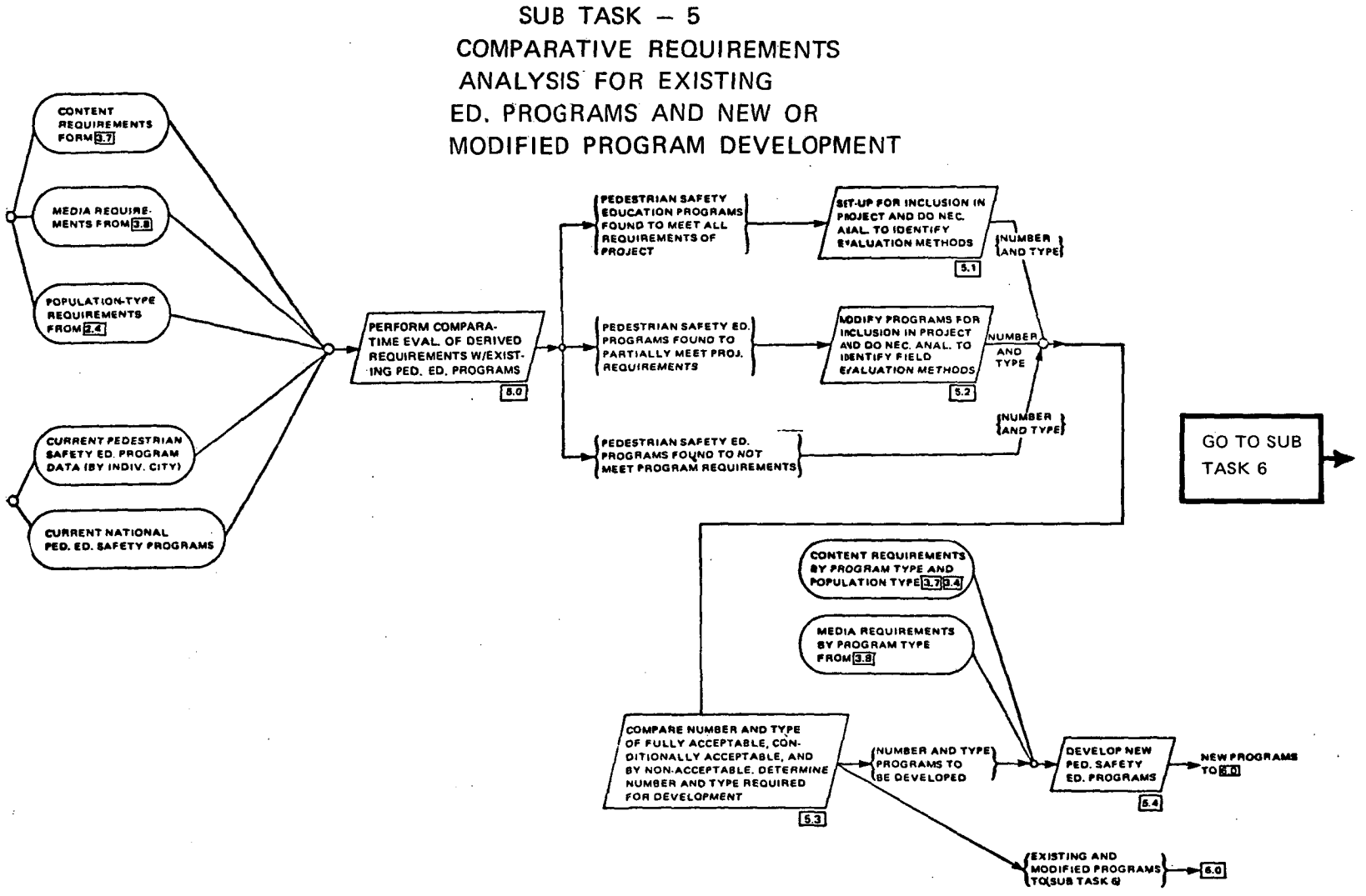

Figure IV–1. (Continued)Preparation of educational and public information materials. (Task–5)

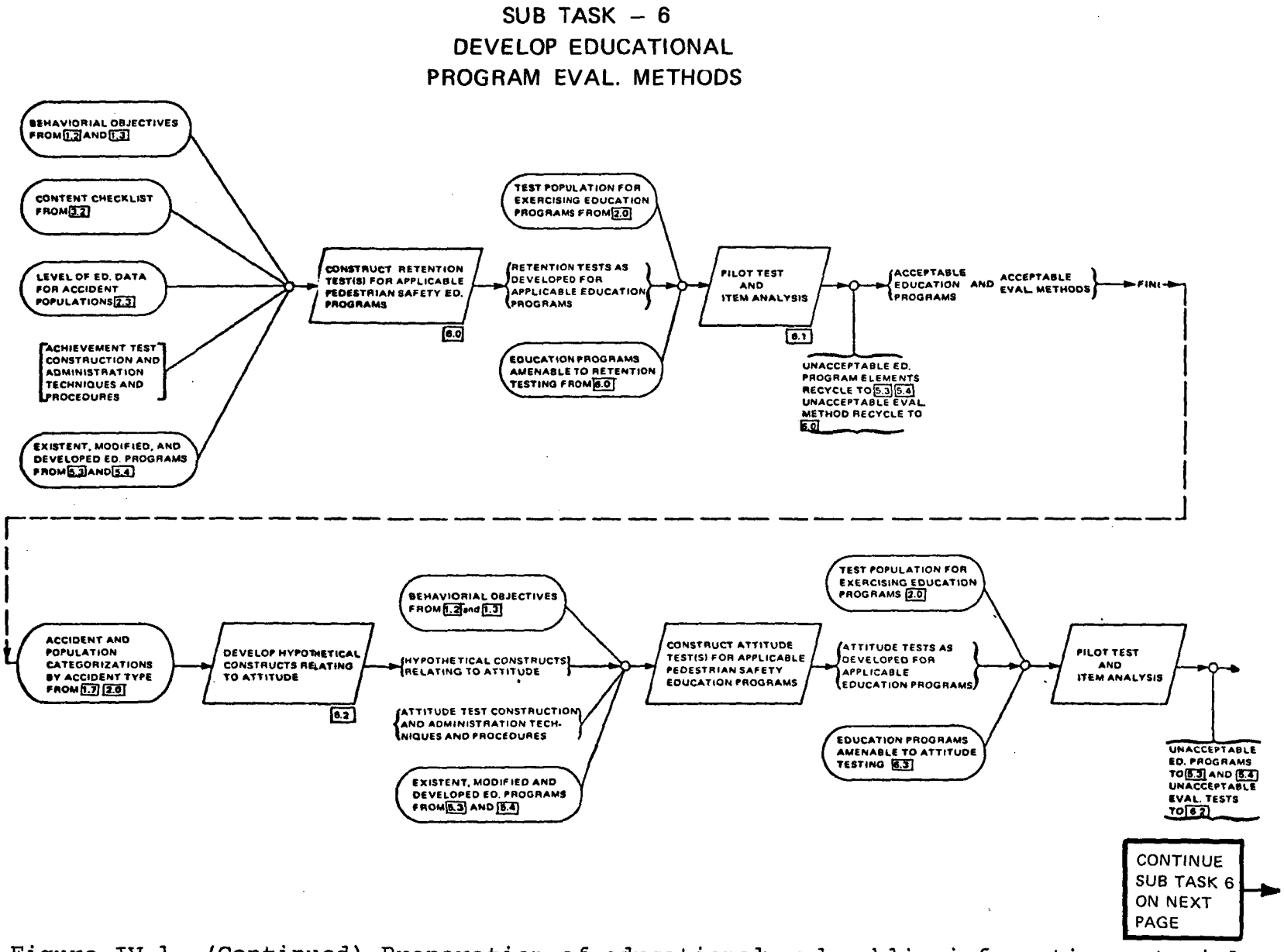

Figure IV–1. (Continued) Preparation of educational and public information materials. (Task–6)

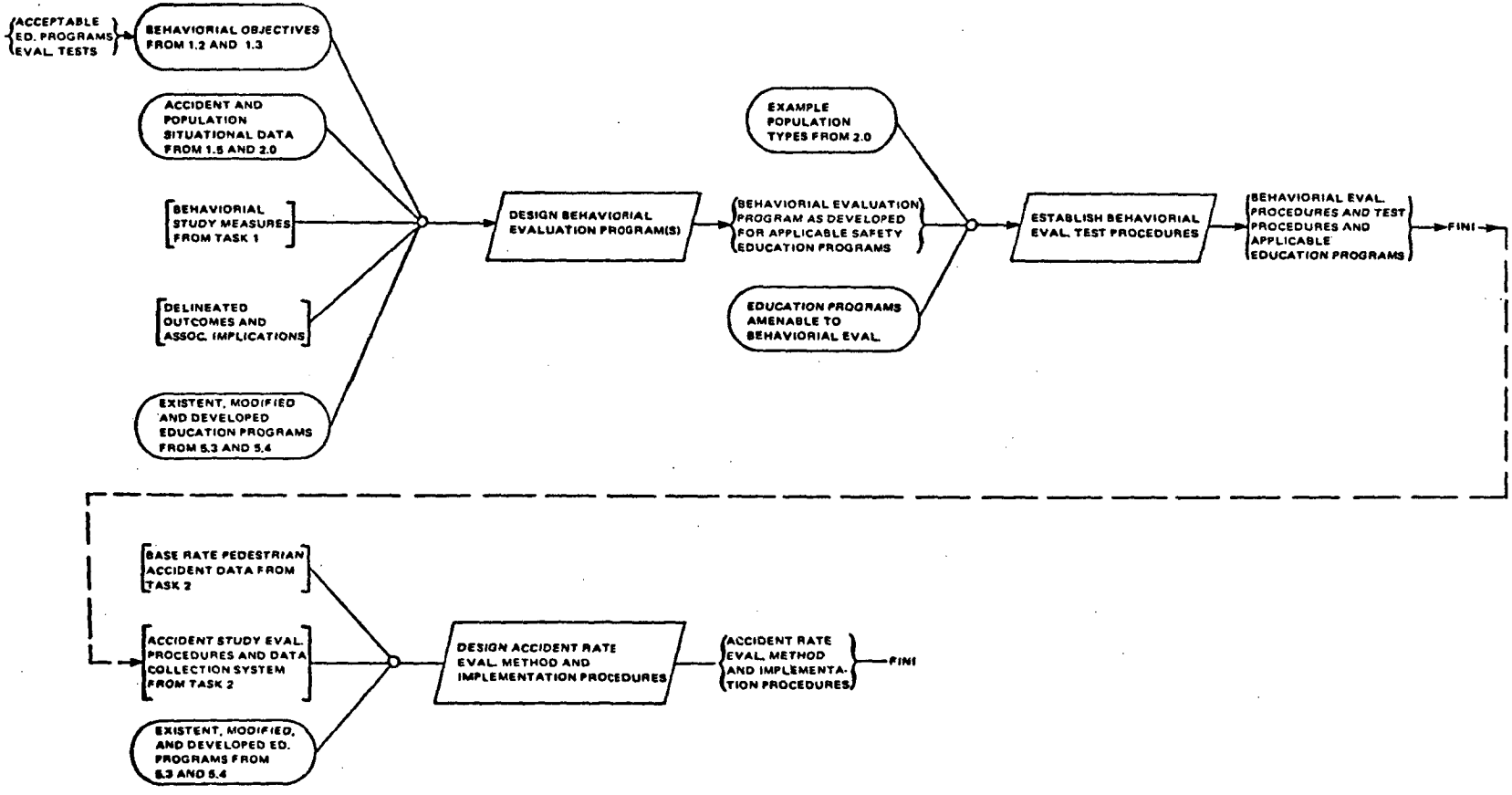

Figure IV–1. (Continued) Preparation of educational and public information materials. (Task–6)