URBAN TRANSPORTATION
POLICY AND PLANNING:
AN ANALYSIS OF FUTURE DIRECTIONS
FOR THE METROPOLITAN TRANSPORTATION
DECISION-MAKING PROCESS

by

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We accept this thesis as conforming
to the required standard

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Abstract

Despite the application of substantial financial and technological resources, metropolitan transportation continues to pose an exceedingly complex problem for contemporary cities, one which threatens to seriously undermine the quality of urban life. Numerous authors have attributed the often worsening problem of urban transportation to the inability of transportation planning to achieve a high level of accomplishment.

Serious concern for the urban future led the author to inquire what are the requirements necessary to equip the planning and policy processes to adapt to the challenge of the metropolitan transportation problem. Moreover, recognizing that future improvement of these processes would ultimately require a responsive attitude from transportation decision-makers the study attempted to assess the extent to which politicians, planners and engineers recognized and accepted the requirements.

Summarizing the views of a number of authors revealed three oft-mentioned goals towards which the transportation decision-making process should strive: comprehensiveness, coordination and participation. An essentially deductive approach was applied to fulfill the first objective of assessing the validity of these conceptual goals as necessary
requirements for future planning and policy in urban transportation.

The first task involved an analysis of the relationship between urban transportation planning and the transportation problem. A description of its components evinced a multifaceted problem of formidable scope and complexity. Tracing the development of transportation planning showed that over time, planning had broadened its scope in attempting to adapt to an expanding problem but had essentially retained an economic, technological and engineering orientation.

However, the literature review identified a rapidly changing context of transportation planning which demanded increased awareness of the social/environmental impacts of urban transportation, the problems of mass transit and the desire of citizens for participation in the decision-making process. The older methodologies were found to be incompatible with these recently emerging concerns.

To keep pace with a substantially redefined problem, the consensus of informed opinion confirmed the need for the planning process to develop a more comprehensive view, incorporating the emerging issues in the development of multimodal transportation systems with greater public participation. These were to be combined with changes in the policy development process to ensure legislative and funding support and a substantial degree of enforced coordination between fragmented transportation agencies for the effective delivery of transportation policy and programs.
The conclusions of the literature review were further supported by the results of a case study analysis of two major transportation planning efforts in the Greater Vancouver region. The fruitlessness of the freeway program was attributed to the absence of legislative and funding support combined with a narrow planning process lacking community participation. The provincial transit program, however, was founded on a firm policy base but encountered implementation problems as a result of its inability to establish coordinative mechanisms or solicit broad participation from interested agencies.

A survey approach based on uniform interviews of transportation decision-makers in the Greater Vancouver produced retrospective evaluations of the two programs. The results substantively verified the case study conclusions, adding further credence to the necessity for comprehensiveness, coordination and participation in the planning and policy phases to ensure a fruitful outcome for the transportation decision-making process.

The retrospective evaluations showed that decision-makers recognized the need for the conceptual goals. To assess their willingness to implement the requirements, the survey solicited their views on the desirable components of future policies and programs for Greater Vancouver. The results indicated strong support for a comprehensive and participatory planning process such as that of the GVRD as well as policies which took a comprehensive view, established
an organization to coordinate the activities of implementing agencies and encouraged broad participation.

On the basis of the results, the study concluded that the conceptual goals were necessary and that fundamental changes in the decision-making process were required to adapt the planning and policy processes to meet the new demands of the urban transportation problem.
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CHAPTER 1

INTRODUCTION

City planning in Canada has been forced to cope with a vast array of grave maladies which threaten to undermine the quality of life in metropolitan areas. Serious urban ills such as poor housing, traffic congestion, neighbourhood destruction, pollution, lack of open space and aesthetic deterioration have combined to reduce the attractiveness of cities as places in which to live and work.

In many cases, the underlying causes of urban deterioration can be traced to an increasing incompatibility between the way people live and the way they move. As Wilfred Owen observes:

... cities have become increasingly difficult to live in and to work in largely because they are difficult to move around in. The results for urban society everywhere are congestion, pollution and a growing sense of frustration. Where all-out efforts have been made to accommodate the car, the streets are still congested, commuting is increasingly difficult, urban aesthetics have suffered and the quality of life has been eroded.1

The preceding commentary by Wilfred Owen substantiates the existence of what is commonly referred to as the metropolitan transportation problem. Owen adopts a broad view of the problem suggesting that the quality of urban life will depend to a great extent on the capability of urban transpor-

tation planning to deal with the problem. However, it is clearly evident from Owen's commentary that not only have the efforts of transportation planning not been resoundingly successful in curing transportation ills but may even have been partly responsible for the erosion of urban life. In this sense, transportation planning seems to have caused more problems than it has solved. If this is the case then action to improve transportation planning becomes a prerequisite not only to solving urban transportation problems but also to improving the quality of urban life. Otherwise, transportation planning will become a serious obstacle to curing urban ills.

Owen's commentary suggests that a major component of the urban transportation problem and indeed the urban problem itself seems to be the inability of transportation planning to achieve a high level of accomplishment. The failure of transportation planning raises serious doubts for the future of metropolitan areas. If the problems of cities are in many cases worsening and transportation planning is exacerbating urban ills, transportation planning could produce a vicious cycle of urban deterioration. This concern for the future leads one to inquire what are the requirements to prepare transportation planning for the future and, furthermore, to what extent will transportation planning be prepared to accept these requirements as necessary to equip transportation planning to meet the challenge of the metropolitan transportation problem in all its ramifications.

To reflect these concerns, this study examines the process of transportation planning and policy development from
the viewpoint of its past and future capability to deal with
the metropolitan transportation problem. From a general per­
spective, the process will be described in terms of its
inadequacies and desirable future goals. Following this dis­
cussion, the planning and policy development process will be
specifically analyzed through a study of a selected metropol­
itan area—the Greater Vancouver region of British Columbia.
This study attempts to determine the attitudes of transporta­
tion decision-makers to previous transportation policies and
programs for Greater Vancouver and develop future goals for
the policy process as well as attempting to isolate the his­
torical determinants of these attitudes. Data for this study
was obtained from uniform interviews given to a sample of
seventeen politicians, planners, engineers and managers in­
volved in transportation policy and program development in
provincial, regional and municipal governments and the private
sector in Greater Vancouver.

The Problem
An analysis of the metropolitan transportation problem
requires first a description of its characteristics. How­
ever, the perception of the problem depends on the observer.
To the average person, the metropolitan transportation pro­
blem is perceived in terms of the physical deficiencies of
the transportation system. For the automobile user, the out­
ward manifestations of the transportation problem are immedi­
ately apparent in terms of traffic congestion, high costs,
discomfort and lack of safety; or, in the case of the mass
transit user, the problems of inconvenience, lack of comfort, low speed and obsolescent equipment. However, the practiced observers of urban transportation are more likely to consider these physical deficiencies as manifestations of a much deeper and broader problem. As Wilfred Owen has observed:

The conflict between the city and the car and the absence of satisfactory mass transit solutions stem largely from the fact that problems of transportation have been viewed too narrowly. . . . Discovering solutions to the transportation problems of cities calls for a broader view of transportation.2

This absence of a "broad view" of the transportation problem which Owen considers responsible for the physical deficiencies of the transportation system is often attributed to the inadequacies of urban transportation planning. John Kain comments:

Urban transportation planning and operations are seriously deficient. In spite of "comprehensive" metropolitan transportation studies in nearly every urban area, much talk of systems analysis and frequent references to balanced transportation systems, there is little meaningful overall analysis of urban transport problems.3

The views of Owen and Kain are echoed by numerous analysts of the urban transportation problem. These observers point to serious deficiencies and the need for improvements in transportation planning. The literature on the subject abounds with subjective evaluation of the transport planning process. The conclusions of such noted transportation authorities as Wilfred Owen, John Kain, Lyle Fitch, John Dickey

2 Wilfred Owen, The Accessible City, p. 133.

and numerous others will be presented more fully later in this study. At this point, however, it would be valuable to briefly summarize some of their observations on transportation planning.

Over the years since the beginning of the past decade, transportation analysts have uncovered more and more flaws in urban transportation planning. In the sixties, Wilfred Owen and Lyle Fitch saw the major obstacles to effective transportation planning as being the fragmentation of transportation institutions, the absence of long term budgetary policies and a lack of coordination with land use planning. Both indicated the need for more comprehensive financing and organizational arrangements, and more broadly defined goals for transportation planning. Smerk echoed the need for transportation to reflect sound land use planning while Gwilliam adopted an economic approach which suggested that transport planning must achieve modal coordination for greater transport efficiency.

The early years of the seventies saw transportation writers responding to a perceived degradation of the urban environment by proliferating automobiles and undesirable freeways. Dickey, Appleyard, Wellman, Geiser and many others

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sounded a call for transportation planning to be more responsive to the social and environmental considerations. Most of these analysts viewed more extensive citizen involvement as the logical alternative to an unresponsive and bureaucratic transportation planning process. However, Kain returned full circle to attribute transportation planning's overemphasis on freeway and rail investments to institutional fragmentation.

The preceding criticisms raise serious doubts about the adequacy of urban transportation planning and suggest the need for immediate improvements. However, these informed evaluations present only a disorderly patchwork of recommendations for the future needs of transportation planning. They touch on specific inadequacies of transportation planning but do not capture the essence of the problem. A more comprehensive and coherent presentation of future directions for transport planning is provided by Mannheim and Suhrbier.

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The analysis of transport planning by Mannheim and Suhrbier was prompted by a perceived need to incorporate social and environmental factors into the design of urban highways. Admittedly, this motivation represents a somewhat limited perspective on the transportation problem but the authors expand this focus into a comprehensive view of the future needs of urban transportation planning. They outline a set of basic principles that are indicative of the kinds of considerations which will have to be addressed in future metropolitan planning endeavours. As such, they may provide a basis for a discussion of future directions.

The urban transportation planning principles which emerge from their analysis are grouped under various headings which explain the general thrust of each principle and are described as follows:9

1. **Single Multimodal Transportation System**
   A government transportation organization should work to provide transportation as a service, coordinating all modes of a region and all options including not only investment in fixed facilities but also operating and pricing policies.

2. **Alternatives and Options**
   A range of transportation options are available and should be developed at all levels of technical studies to bring out the issues and to assist the community in clarifying its objectives and reaching a decision.

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3. **Effects**
   Identification and prediction of social, economic and environmental effects should be based on the group affected.

4. **Analysis Tools**
The technical analysis tools, particularly those for systems studies, should be responsive to the principles of supply/demand equilibrium and community/environment impacts.

5. **Uncertainty**
The transportation decision should explicitly recognize uncertainty.

6. **Evaluation**
   Evaluation of a planning process should occur periodically throughout the course of studies and should guide a process by suggesting priorities for subsequent activities.

7. **Public Involvement**
   Interaction between the technical team and potentially affected communities should occur at all planning levels.

8. **Decision Process**
The process through which decisions are reached should provide opportunities for negotiation among affected interest groups.

9. **Equity**
   Transportation decisions should be based on the principle of equity.

10. **Institutions**
The arrangement and the organizational structure of
political and technical institutions influence the degree to which social and environmental considerations are incorporated into transportation decision-making.

The principles proposed by Mannheim and Suhrbier are important for the purposes of this study because they synthesize the specific concerns of past commentators into an overall statement of objectives for urban transportation planning. However, to trace the source of the inadequacies of urban planning we should carry the synthesis one step further. By the process of further deduction, these objectives can be translated into goals which may provide fundamental concepts to explain the inadequacies and needs of urban transportation planning. Although the principles cover diverse aspects of the transportation planning process, it is possible to detect certain commonalities which bind the principles together. These commonalities represent the overriding goals for the future of transportation planning.

The principles enunciated by Mannheim and Suhrbier specify the purpose of transportation as a service for the "public good." This interpretation is evidenced by the authors' concern that transportation decisions reflect the considerations of equity and citizen involvement. To fulfill this purpose, the authors advocate a transportation planning process which defines the public good more broadly by more people.

The necessity for a comprehensive view is suggested by the authors' prescriptions that transportation planning consider "all modes and options" and, more importantly, their
social, economic and environmental effects on the community. Moreover, it is clear that this overall view can only be generated through involvement of "affected interest groups." The term "interest groups" must be broadly defined as including not only lay citizens but also numerous public and private agencies and organizations having an "interest" in transportation decision-making. And finally, Mannheim and Suhrbier foresee implementation of this broader perspective and more extensive involvement through a single government organization enforcing the coordination of transportation activities.

Thus, the principles outlined by Mannheim and Suhrbier seem to propose three major goals for transportation planning. These goals are described below.

1. **Comprehensiveness**

   To reflect the character of urban transportation as an integral part of an interactive and interdependent urban system, transportation planning must be comprehensive in respect to:

   a) the definition of the transportation problem. (Transportation planning should explicitly recognize not only the direct service problems but also the indirect impacts and the effects on transportation of other components of the urban system.)

   b) the development of overall goals and objectives for the transportation system in relation to broader community, regional and national goals.

   c) the generation of alternatives which consider all available modes and options.
d) the use of criteria to measure the success in meeting the
goals or to evaluate alternatives.

2. Participation

This goal asserts that the interdependencies of transportation within the urban system will not be fully recognized
by decision-makers without the involvement of diverse individuals, groups and organizations. The goal of participation
seeks the involvement in the decision-making process of three groups:

a) those groups presently involved in providing transportation
   services, i.e., all levels of government and private operating agencies;

b) those groups who will be affected by (or impacted by)
   urban transportation decisions; and,

c) those groups whose decisions will affect urban transportation.

Participation assumes a limited perception by transportation planning of the problem, goals, alternatives and criteria
for urban transportation which must be supplemented by a
diversity of views in order to approach comprehensiveness.

3. Coordination

This goal recognizes that an interdependent transportation system requires coordination of the institutional activities
for the effective implementation of transportation objectives and efficient delivery of transportation services. Coordina-
tion attempts to overcome the narrow perspective associated with institutional fragmentation and is thus a prerequisite
to implementation of comprehensive transportation objectives.

The principles enunciated by Mannheim and Suhrbier were intended by the authors as directions for the transportation planning process. However, the goals derived from these principles are applicable to both the policy development and planning processes. Together, both policy and planning represent key components of the overall transportation decision making process. The function of the policy development process is to broadly assess the problem, develop goals, objectives and policies guide, the planning process and establish the institutional mechanisms to implement the products of the planning process. The planning process implies a narrower function of developing programs achieve the objectives defined by the policy process. Therefore, from this point on, this discussion will examine not only transportation planning but the broader decision-making process and the inadequacies and needs of its planning and policy components.

The conceptual framework derived from the analysis by Mannheim and Suhrbier provides a basis for discussion of urban transportation decision-making. Specifically, the concepts raise two critical questions concerning the future of urban transportation policy and planning:

a) Does the evidence from other sources support the need for comprehensiveness, participation and coordination in transportation decision-making?

b) If so, to what extent is urban transportation decision-making equipped to recognize comprehensiveness, participation and coordination as necessary to deal with the urban
transportation problem?

To answer the first question, it is necessary to examine additional sources from the literature on the subject of urban transportation policy and planning. These supplementary evaluations are critical to describe the components of the urban transportation problem, to determine the inadequacies of urban transportation policy and planning and to identify the necessary adaptations to equip the decision-making process to meet the challenge of the urban transportation problem. In addition, this subjective evidence could provide certain insights into the capability of transportation decision-making to respond to the urban transportation problem, i.e., the concerns expressed in the second question. However, it must be recognized that these subjective evaluations represent only a narrow sampling of views among urban transportation decision-makers—the planners, engineers and other decision-makers who must assume the major responsibility for revising transportation planning.

Intuitive evidence can substantiate the goals for transportation decision-making but the realization of a comprehensive, participatory and coordinated process will ultimately be the responsibility of the politicians, managers, planners, engineers and others involved in the day-to-day planning and operation of urban transportation. Thus, the extent to which transportation decision-making will be equipped to deal with the metropolitan transportation problem will depend on the eventual adoption of these goals by the participants. Admittedly, however, adoption does not guarantee immediate revision
of the process but it is a prerequisite to the incorporation of these goals into transportation policies and programs.

Transportation policies and programs are the end products of urban transportation decision-making. As the outputs of the planning process, transportation policies and programs will be only as effective as the process itself. Therefore, if transportation policy is to reflect the goals of comprehensiveness, participation and coordination, then the transportation decision-making process must incorporate these goals. And finally, the degree to which the transportation policy development process internalizes these goals will depend on their recognition by policy-makers.

The importance to the development of transportation policy of the attitudes of decision-makers is substantiated by numerous policy analysts including Richard Hofferbert. In a treatise entitled, "The Study of Public Policy," he observes that

Policy development is greatly influenced by the predilections, preferences, orientations and expectations of policy-makers. ...the form of the options and the manner of their disposition are decisively dependent on individual perceptions and preferences.10

By asserting the importance of the human dimension to the emergence of public policy, Hofferbert provides a more realistic and practical explanation of the dynamics of the policy development process. Since his conclusions are derived from

an analysis of numerous case studies in public policy development, Hofferbert is able to provide many insights to explain how policies are actually created.

Hofferbert outlines a process in which policy emerges from a complex interplay of historical circumstances, the attitudes of policy-makers and the interaction of the major actors in the process. Historical circumstances set the stage and provide the range of options available to policy-makers, thereby creating some critical aspects of the occasion for decision.\(^{11}\) Historical factors thus condition to some extent the attitudes of decision-makers from which policies and programs emerge. At this point, the political process is set in operation through which policy is delayed, shaped and advanced in terms of an interplay between agency initiative, legislative perception of priorities and private group activities.\(^ {12}\)

Hofferbert's study of the formation of public policy suggests an approach to the analysis of the policy development process for urban transportation. The first step in this approach requires evidence to verify the concepts of comprehensiveness, participation and coordination as necessary to prepare transportation planning to cope with the urban transportation problem. If these concepts are supported by the theoretical literature then it becomes necessary to determine the degree of preparedness of transportation plan-

\(^{11}\)Hofferbert, *The Study of Public Policy*, p. 357

\(^{12}\)Ibid., p. 372
ning. On the basis of Hofferbert's theories, this question can be addressed by

1. describing the historical circumstances which condition the attitudes of transportation decision-makers;

2. determining the extent to which the attitudes of decision-makers recognize the need for comprehensiveness, participation and coordination in the development of transportation policies and programs.

However, the application of this approach to the problem has certain limitations. First, since there exists a wide variation in the transportation backgrounds of metropolitan regions, it is difficult to describe in general terms applicable to all cities, these peculiar historical circumstances. And second, there is an overriding problem of insufficient information about the attitudes of transportation decision-makers to permit objective evaluation. A search of the literature revealed a complete lack of empirical studies on the attitudes of transportation decision-makers to the needs of the transportation process. A major problem then is the absence of objective information about the attitudes of decision makers without which an accurate evaluation of transportation decision-making cannot be made.

Obviously then, these two limitations will dictate the method of approach to the question of determining the extent to which transportation decision-making is equipped to deal with the metropolitan transportation problem. The necessity for historical evidence limits the application of this approach to a specific metropolitan area. Furthermore, the absence of
Objective evidence about the attitudes of decision-makers underscores the necessity for an empirical study of this subject. Together, these concerns generally prescribe the objectives and methodology of this study: to determine the attitudes of decision-makers toward the need for comprehensiveness, participation and coordination in transportation planning and policy development through an objective study of a selected metropolitan area.

Objectives

The objectives of this study of transportation decision-making in a selected metropolitan area have been implied in the course of stating the research problem. The objectives raise a number of questions concerning transportation planning which must be answered to fulfill the purposes of this study. Both the objectives and their related questions are described as follows:

1. To ascertain the need for comprehensiveness, participation and coordination in the planning and policy development process for urban transportation,
   a) what are the components of the metropolitan transportation problem?
   b) what are the deficiencies of transportation planning and policy in dealing with the problem?
   c) what should be the goals of transportation decision-making?

These questions will be applied to both the general analysis of transportation decision-making and the specific study of
transportation efforts in the study area. An historical analysis of previous efforts in the study area could isolate the important historical variables which may or may not influence the attitudes of decision-makers. Therefore, an additional question is proposed:

d) what are the historical factors which influence the attitudes of decision-makers in the study area?

2. To determine the extent to which transportation decision making in the selected metropolitan area is equipped to deal with the metropolitan transportation problem,

a) to what extent do decision-makers recognize the deficiencies of past efforts in transportation planning undertaken within the study area as evincing a lack of comprehensiveness, participation or coordination?

b) to what extent do decision-makers recognize the proposed goals as future needs for transportation policy development in the study area?

The tendency of transportation decision-makers to recognize previous deficiencies in transportation planning as a basis for the future needs of planning is important for this analysis. The degree of correspondence between past deficiencies and future needs provides an indicator of the influence of historical variables on the present attitudes of decision-makers. Thus achieving this second objective could provide an answer to the question:

c) to what extent do historical factors influence the attitudes of decision-makers to the needs of transportation decision-making?
To fulfill the two major objectives of this study, the metropolitan area selected as the study area for this research was the Greater Vancouver region of British Columbia. Greater Vancouver represents a logical choice for an analysis of this kind. The existence of numerous and varied previous efforts in transportation planning in the area provides a rich source of material for examination and analysis. In addition, the fact that these previous efforts occurred within comparatively recent history permits a reasonably "fresh" retrospective evaluation of these efforts by decision-makers. And finally, it is an advantage for this study that major transportation planning efforts presently underway in the Vancouver region have focussed the concern of decision-makers on urban transportation problems in the area.

What are these previous and present transportation efforts referred to in this discussion? Transportation planning on a region-wide scale was virtually non-existent before the early fifties. Since then, three major metropolitan transportation programs have emerged:

1. the metropolitan freeway program, 1959-1972;
2. the provincial transit program, 1973-1975; and

These programs represent attempts to plan, organize and fund large-scale transportation systems for Greater Vancouver. The metropolitan freeway program envisaged the construction of a system of urban highways through the City of Vancouver to interconnect existing bridge links with an east-west and
north-south freeway already under construction at the time. The provincial transit program proposed an integrated transit system comprising interconnected suburban and local bus services, light rail transit, commuter rail and a modern ferry service. The Greater Vancouver Regional District (GVRD) transportation program of integrated transit and road improvements emerged as part of a regional plan for growth decentralization into suburban town centres.

Despite the expenditure of substantial time, effort and money in the development of these programs, none of the systems have been implemented in their entirety. The metropolitan freeway program completed two suburban highway links before being shelved after massive citizen opposition in Vancouver. The provincial transit program completed some projects for suburban bus service extension, as well as a commuter ferry service, while faced with numerous inter-agency disagreements. The GVRD transportation program has been under negotiation since 1975.

Thus, although some transportation projects have been completed, major transportation initiatives have encountered substantial obstacles to implementation. But whether these past difficulties can be attributed to a lack of comprehensiveness, participation and coordination in the planning process is open to question. However, the crucial question is whether present decision-makers recognize these proposed goals as absent in previous planning efforts and are prepared to accept them as necessary future goals. To guide the analysis of these questions, the following hypotheses will be tested:
Hypothesis 1

That past efforts in transportation decision-making for Greater Vancouver were hindered by attitudes of decision-makers which were not responsive to the goals of comprehensiveness, participation or coordination.

Hypothesis 2

That present transportation decision-makers in Greater Vancouver accept comprehensiveness, participation and coordination as necessary goals for the development of future transportation policy and programs.

As those hypotheses and the aforementioned objectives have not been rigorously examined, it has been decided in this study to present an overview from which tentative conclusions may be drawn as a basis for further research. Obviously caution must be exercised in generally applying the conclusions derived from an analysis of a specific urban region. However, the absence of research in this critical area validates the objectives of this study as a foundation for further work on this subject.

Methodology

The methodology for this study was designed in accordance with the objectives. This research involves methodological steps which are complementary and logically sequential. Organization of this thesis is based on these steps which are described as follows:
1. **Identify the components of the metropolitan transportation problem.**

It was necessary to determine the components of the metropolitan transportation problem on both a general theoretical level and more specifically, in terms of the Greater Vancouver study area. A review of literature provided a complex of overall problem variables. Analysis of the background of transportation planning in Greater Vancouver isolated the critical problem components peculiar to the study area.

2. **Evaluate transportation decision-making.**

Effective solutions to the metropolitan transportation problem will depend on the capability of transportation decision-making. To assess this capability, this study undertook an extensive review of overall evaluation of transportation planning in the literature. It was intended that from this composite of informed opinion, this study could derive tentative goals for transportation decision making.

3. **Assess previous transportation planning outputs in the study area.**

Having derived the tentative overall goals, it was necessary to determine the importance of these goals as requirements for transportation planning in the study area. This was accomplished through uniform interviews given to a sample of the major decision-makers involved in transportation planning in Greater Vancouver. Part of the interview was devoted to open-ended questions which solicited
the respondents' retrospective evaluations of the policy and program development process involving two past and one present transportation initiative. These were:
a) the metropolitan freeway program;
b) the provincial transit program; and
c) the GVRD transportation program.

This method has certain limitations which must be recognized. The responses of decision-makers introduce a certain degree of subjectivity into the evaluation of transportation planning. Regardless of the sample size, it is possible to overlook critical variables in the transportation planning process. However, the use of open-ended questions to some degree, overcomes this deficiency by permitting greater freedom of interviewee response. The alternative methods of the case study or the objective measurement of predefined variables were not considered suitable for the purposes of this study.

Additional limitations are imposed by the interview approach. Subjective reaction to the interviewer may condition the response. Moreover, the method is time-consuming, thus, limiting sample size. However, despite these deficiencies of approach, the objectives of this study require an assessment of transportation decision-making derived from the attitudes of decision-makers. Considering this objective, no other method was satisfactory for the purposes of this research.

\[13\] refer to Appendix for the interview questions.
4. **Test the two hypotheses.**

   It has been hypothesized that the capability of transportation policy and planning to effectively deal with the metropolitan transportation problem depends upon the attitude of decision-makers to the goals of a) comprehensiveness, b) participation, and c) coordination. The data on retrospective evaluations of decision-makers may accept or reject this hypothesis regarding previous transportation planning effects on the study area.

   To test a second hypothesis concerning future transportation planning and policy development, interviewees were asked to rank items in a group of possible responses.\(^{14}\) The questions were designed to test the respondents' attitude to the

   (i) extent of involvement of a number of organizations, agencies and groups in the development of future transportation policies and programs in the study area;

   (ii) the desirable characteristics of future transportation policies and programs in the study area.

   If the data obtained from the survey substantiate both hypotheses then there is reason to believe that transportation policy and planning in the study area is equipped to deal with the metropolitan transportation problem.

5. **Determine the future needs for transportation policy and programs in Greater Vancouver.**

   A supplementary objective of this study is to provide a basis for present transportation policy-makers to deter-

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\(^{14}\) see Appendix for the interview questions.
mine the desirable components of future policies. The sampled decision-makers represent a partial cross-section of informed opinion on the subject of transportation planning in Greater Vancouver. As such, their views provide valuable suggestions which should be carefully considered by policy-makers assigned the task of developing future urban transportation policies and programs.

The Interview Method

The uniform interviews were delivered during numerous meetings in the offices and homes of the interviewees. Since each interview occupied approximately 45 minutes, time constraints limited the sample size to seventeen respondents. The limitations on sample size necessitated obtaining as broad a cross-section of transportation decision-makers as possible. The sample included:

a) one former Minister of Municipal Affairs of the Province of British Columbia;
b) one official of the Provincial Department of Municipal Affairs, Bureau of Transit Services;
c) four mayors of Greater Vancouver municipalities;
d) an alderman of the City of Vancouver;
e) four planning officials of the Greater Vancouver Regional District;
f) two planning directors of Greater Vancouver municipalities;
g) the Municipal Engineer of the City of Vancouver;

See Appendix for list of respondents.
h) a planning official from the Municipality of Delta;
i) two officials of B.C. Hydro Transit Division.

The respondents, therefore, comprised officials from all levels of government except the Federal level, and from a Crown corporation involved in transit operations.

**Organization of the Balance of This Thesis**

The balance of this thesis is directed towards elaborating on the proposed objectives according to the prescribed methodology. Chapter Two presents a review of the literature that details the components of the metropolitan transportation problem and the overall deficiencies and needs of the transportation decision-making process. Chapter Three provides an historical review and survey analysis of the provincial freeway and transit programs for the Greater Vancouver region. Chapter Four presents a review of the GVRD policy and planning process for urban transportation and provides an analysis of the survey results pertaining to desirable characteristics and components of future transportation policies and programs for Greater Vancouver. And finally, Chapter Five summarizes the results and conclusions of this study.
CHAPTER 2

PLANNING FOR THE
METROPOLITAN TRANSPORTATION PROBLEM

The previous chapter identified a strong undercurrent of
dissatisfaction concerning the accomplishments of transporta-
tion planning. These doubts expressed serious reservations
about the capability of transportation planning to contend
with the metropolitan transportation problem. Briefly summar-
izing the observations of concerned professionals in the field
produced a tentative statement of future goals for the overall
transportation decision-making process and its policy and
planning components.

This chapter attempts to further develop the conceptual
goal framework established in the introduction. Recognizing
that transportation policy and planning must be suited to the
demands of the problem, this chapter begins with complete ex-
position of the dimensions of the metropolitan transportation
problem to identify its components and ramifications for the
decision-making process. From this point, the discussion will
then move on to evaluate the decision-making process and its
planning, policy development and policy implementation stages.
The analysis will attempt to assess the extent to which plan-
ing and policy is adapted to the problem and the future needs
of the decision-making process. This approach offers a meth-
od to test the validity of comprehensiveness, coordination and
participation as future goals for transportation decision-
making.
Having outlined the intent of this chapter, this discussion can now proceed to examine the urban transportation problem.

The Components of the Metropolitan Transportation Problem

As has been suggested several times up to this point, the scope of urban transportation is so broad that a complete catalogue of the problems directly or indirectly influenced by transportation is an almost impossible task. The most organized accounting of urban transportation problems the author has encountered in the literature thus far is provided by John Dickey in his work, *Metropolitan Transportation Planning.*

Therefore, this section borrows heavily from Dickey's presentation of the problem components.

Dickey delineates the urban transportation problem domain by three general classes:

a) direct transportation service problems,

b) problems affected by (or impacted by) transportation, and

c) problems that affect transportation.

The problems associated with each class are briefly described in the following.

Transportation Service Problems

These are the problems such as congestion, delay, the high

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16 John Dickey, pp. 47-72.
17 Ibid., p. 47.
cost of travel, safety and lack of privacy that primarily affect the user of the transportation system.

a) Congestion

This is perhaps the most immediately apparent of transportation problems forcing transportation users to contend with long travel times and delays in movement. Congestion is often expressed in economic terms as an excess of travel demand over the supply of road space resulting in a lowering of overall speed and ease of movement for both automobiles and transit. Although average vehicle speeds have generally been rising over the years, especially in cities with well-developed freeway systems, congestion at peak hours remains a major problem.\(^1\)

b) Inadequate Capacity

This problem results from insufficient facilities to accommodate the demand for travel when and where it occurs. Lack of capacity results in slowdowns and delays in travel and is thus a supplementary problem to that of congestion.

c) High User Cost

For most households, transportation costs as a proportion of the total budget are exceeded only by the costs of shelter and food. The high costs of transportation produce social equity considerations for those who cannot afford an automobile and for whom transit is inadequate.

\(^1\)Wilfred Owen, The Metropolitan Transportation Problem, p. 148.
d) **High Facility Cost and Low Rate of Return**

The costs of transportation services provided to the user have been rapidly escalating in recent years. In the case of roads, transport investment costs place a heavy burden on tax sources often pre-empting other uses of public funds. This problem is the source of transit financial difficulties. Faced with low patronage, relatively fixed revenues and rising operating costs, transit companies are forced to either raise rates or reduce services—a vicious circle which seriously undermines the revenue position of companies over the long term.

e) **Lack of Safety for the User**

Injuries from automobile accidents exceed by ten times all violent criminal acts combined.\(^{19}\) Automobile accidents per passenger mile far exceed those of transit modes. Accidents result in huge financial costs to society and immeasurable costs in loss of life or serious injury.

f) **Lack of Privacy and Discomfort**

Both of these are major problems of mass transit which reduce its competitive position vis-a-vis the automobile.

Problems Affected by Transportation

These problems represent the major impacts of urban

transport systems on both users and especially non-users.

a) **Air Pollution**

The noxious fumes produced by engine exhaust are responsible for almost half of all pollutants in the air. Sulfur oxides and carbon monoxide can cause damage to plant life, irritate the eyes and upper respiratory tract, and may be cancer producing. Many of the adverse effects of air pollution are difficult to measure and hence unpredictable.

b) **Noise**

One of the major impacts of transportation systems on urban residential areas is noise. It is a by-product of almost all transportation systems and is especially acute in aircraft, buses, subway and railroad trains. Abutting buildings on major arterials are exposed to almost constant noise levels of 70 - 80 decibels, equivalent to that of a continuously operating vacuum cleaner at a distance of 10 feet.

c) **Visual Intrusion and Poor Appearance**

Standards of beauty in the urban landscape are relative to the individual and therefore difficult to measure. However, the paraphernalia of urban transportation vehicles, parking lots, signs and signals are too seldom designed to enhance the visual appearance of the urban environment when traffic efficiency becomes the major design criteria.
d) **Excessive Right-of-Way and Relocation Requirements**

The need for movement places formidable demands on the relatively scarce and valuable commodity of urban land. Transportation uses are second only to housing as consumers of urban land. Transportation facilities of one kind or another occupy about 35-40 percent of the land in cities rising to 55 percent in some cities. These excessive space demands pre-empt land from other uses and often force the painful uprooting of neighbourhood residents.

e) **Inordinate Changes in Land Values**

Another aspect of the relationship between transportation and land use is the impact of transport facilities on land values. The value added or subtracted from a piece of land by changes in accessibility can be both dramatic and unpredictable.

f) **Inappropriate or Undesirable Land Development**

Land development goes hand in hand with accessibility. The type and pattern of the transport system conditions the nature, direction and extent of land development thus guiding urban structure towards either dispersal or concentration. This relationship underlines the need for land use considerations to be given considerable attention in the transport planning process.
g) **Unequal Impact on Certain Population Groups**

The costs and benefits associated with transportation impacts seldom fall evenly among population groups. Too often, most of the benefits of transportation accrue to the upper half of the socio-economic spectrum while the lower half bears a disproportionate share of the costs. For example, the poor as relative non-users of automobile transportation more often have freeways routed through their neighbourhoods making them subject to the noise, air and visual pollution that results.

**Problems Affecting Transportation**

Transportation is not only an affecting entity but also an affected one. The problems affecting transportation are very often the sources of the transportation service problems and external impacts. As a result, continuation or changes in these trends will determine to a great extent the future shape of the urban transportation problem.

a) **Increased Population Growth and Dispersion**

The amount and distribution of urban population is critical to determining future transportation needs. Continued urbanization will increase the population to be served by a transportation system and thus the demand for transport services. However, the nature of this demand will largely be a function of the distribution of population in cities. Continued suburbanization and its resulting lower densities increase the costs of providing road or transit
services. Unless the dispersion of population is accompanied by the decentralization of workplaces from the city centre, longer commuting distances and travel times exacerbate congestion.

b) **Increased Automobile Ownership**

Although household automobile ownership ratios seem to have peaked in many cities, urban population growth may result in a rapid, absolute increase in automobiles. Enlarged automobile volumes will continue to demand more road infrastructure with its resulting negative impacts. As the demand for automobile travel has risen, transit ridership levels have fallen correspondingly.

c) **Peakedness in the Amount and Timing of Travel**

Combined with the growth in travel demand is the additional problem of uneven distribution of travel demand. About one-quarter of total daily trips are concentrated in the four "rush" hours. The peakedness in urban travel requires the provision of three times the road capacity to handle peak volumes than would be required if trips were evenly distributed throughout the day. The peak problem is even more serious for transit where from 60-70 percent of total daily volumes are handled during the morning and evening peaks. Peakedness of travel initiates a cycle of overused or underused transport capacity resulting in a wasteful allocation of transport resources and thus higher costs.
Summary

The preceding catalogue showed the urban transportation problem to be one of great variety, wide ranging scope and substantial complexity. In the preceding list, the problems have been separated and categorized for the purpose of simplicity. However, in reality the components of the urban transport problem are moulded into the fabric of urban society in a complex circle of interconnections. The urban transportation problem usually traces its source to the major forces shaping urban society, some of which are included in the list of problems affecting transportation. The result of these trends is often a host of transportation service problems which in turn exert undesirable impacts on urban areas. For example, trends such as population growth and dispersal, increased automobile ownership and concentrated travel demands interact with inadequate capacity to cause congestion. Congestion produces discomfort, increases operating costs and reduces safety for the user and exacerbates the impacts of air pollution, noise and visual intrusion caused by vehicles on the non-user. This bundle of interrelated effects defines the transportation problem as it is presented to planners. Faced with such complexity, the approach taken by planners will determine whether or not an overall solution is forthcoming from the planning process.

If congestion is singled out as the focus for problem-solving action then the response might take the form of increasing roadway capacity. However, while such action
may reduce congestion, the construction of more roads or the widening of existing ones might increase the cost of providing transport services, may entail relocation of residents and could undermine transit services. More importantly, it may give impetus to increased population dispersal and automobile ownership—the original urban trends which initiated the problem. Thus, a narrow problem-solving approach within an inter-related and inter-connected problem context will not only produce limited solutions but may also exacerbate the original problem.

This examination of the urban transportation as it is presently defined uncovers an even greater number of potential pitfalls than ever before in the history of transportation decision-making. Therefore, there is a more acute need for planning to adapt to the breadth and complexity of the urban transportation problem. Whether or not substantial changes will be necessary and what form they must take are questions which require an analysis of the present transportation planning and policy development components of the decision-making process.

The approach to the analysis of the planning process is conditioned by the fact that transportation planning is not practiced in isolation. The present state of the art is a product of past practices and influences from the general field of urban planning. Therefore, the character of contemporary transportation planning cannot be determined without some pre-knowledge of how it has changed over time and an awareness of its place in the general context of urban planning.
The General Context of Urban Planning

In a world buffeted by constant and rapid change, cities mirror the transformations occurring in society as a whole and the problems associated with change inevitably become urban problems. In attempting to deal with the urban strains created by change, the field of urban planning has been forced to constantly re-evaluate its approach to urban problems.

Similarly, transportation in cities has not remained isolated from revolutionary urban change. Wilfred Owen notes that

... the past several decades have seen more revolutionary changes in transportation than all previous history. As a result, the city is confronted by a transportation problem more complex than ever before.  

To deal with the increasing complexity of the urban transportation problem resulting from change, the previous chapter suggested the need for a similar re-evaluation of transportation planning. This view implies that transportation planning must become more compatible with the emerging role of urban planning which has developed in an effort to cope with rapid change.

The problem of managing urban change has forced city planning to reassess established rational approaches to urban problems in order to adapt to the supposedly less than rational environment of public decision-making. These proposed adaptations seem to have been prompted by the

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frustration of rational policies by the political process. Richard Bolan traces the source of these emerging views in "... the wide disparity that exists between the planners' traditional notions of rationality and the actual social (or "political") processes by which policies are actually chosen."²

Various alternative styles of planning have emerged from the insecurity of planners in relation to the decision-making process. John Friedmann, for example, asserts that under conditions of relative calm and stability, planning can afford to rationally evaluate long-term goals but under conditions of crisis, planning must become an extension of politics or, in other words, a "brushfire" problem-solving activity.³ Thus, in order to receive political backing

The rationality of planning practice must therefore be a rationality adapted to its conditions; it must sacrifice comprehensiveness to the urgency of overcoming specific bottlenecks; it must be more problem than goal-oriented; it must be piecemeal and fragmented rather than co-ordinative.⁴

This notion of sacrificing comprehensive, co-ordinated and goal-oriented planning for the purpose of expedient implementation forms the basis of Friedmann's innovative and transactive planning style, Lindblom's "incremental"

⁴John Friedmann, p. 16
methods and similar objections raised by Banfield and Mann.\(^5\)

However, there is much reason to doubt that short-term problem-solving activity either qualifies as planning or represents an appropriate direction for transportation planning. In fact, Dickey in a discussion of metropolitan transportation planning distinguishes between problem-solving and planning. He views problem-solving activities as dealing with situations which are narrow in scope, more detailed and more immediate. Planning, on the other hand, more often addresses problems which are broader, more generalized and longer term.\(^6\)

More importantly, Dickey foresees dangers in carrying out problem-solving activities in isolation from an overall planning process. For example, if a short-term transportation problem such as inadequate parking in downtown areas is not viewed in the broader context of the overall transportation and urban growth process, planning activities carried out on this broader scale, such as providing additional mass transit facilities, could eliminate the short-term problem of the need for extra parking. The essential point is that problem-solving activities should only be undertaken as an adjunct to the overall planning process.\(^7\)

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\(^7\)John Dickey, p. 21.
The opposite produces inefficient allocation of resources. Moreover, there is little evidence to support an adoption of the concept of transportation planning as a purely problem-solving activity. The political constraints envisioned by Friedmann, Lindblom and others are well-founded in reality but they do not represent insurmountable obstacles to rational planning. The numerous examples of operating transportation systems derived from highly comprehensive planning refutes the contention that rational planning is both politically unacceptable and unattainable.

Thus, the perceived incompatibility between the problem orientation and comprehensive goal-orientation of planning is not borne out by the reality of transportation planning. By incorporating problem-solving activities into the overall planning process, transportation planning can accomplish both objectives within the political process. Indeed, it would seem imperative that transportation planning become both a problem-solving and goal-oriented activity. The yardstick by which transportation planning will be measured is its capability to respond effectively to the urban transportation problem. However, its future success in this endeavour would seem to be dependent on its ability to develop a planning style adapted to the scope of the problem. A problem as wide-ranging and complex as that of urban transportation therefore would require a broad goal-oriented approach.

In fact, over the years the practice of urban planning
has been broadening rather than narrowing its scope.

Perloff has succinctly noted the changing character of planning:

From (1) an early stress on planning as concerned chiefly with aesthetics, planning came to be conceived also in terms of (2) the efficient functioning of the city—in both the engineering and economic sense; then (3) as a means of controlling the uses of land as a technique for developing a sound land-use pattern; then (4) as a key element in efficient government procedures; later (5) as involving welfare considerations and stressing the human element; and more recently, (6) planning has come to be viewed as encompassing many socio-economic and political, as well as physical, elements that help to guide the functioning and development of the community.  

It is evident from this description that urban planning has expanded its area of concern in conjunction with a broadening perception of urban problems. This observation leads one to inquire whether transportation planning has similarly adapted to urban transportation problems by broadening its scope. Before defining the urban transportation problem, it is necessary therefore to examine the development of transportation planning in relation to the transport problem.

The Development of Urban Transportation Planning

Transportation planning, in one form or another, has been practiced for as long as transport systems have been designed and constructed. However, transportation planning on a metropolitan-wide scale is comparatively recent, dating back to the early 1950's. Prior to that time, planning for

8 H.S. Perloff, Education for Planning, (Baltimore 1957), pp. 11, 12.
transportation in urban areas differed only slightly from that for rural areas. Early roads in Canada and the U.S. were laid out by the users for their own convenience. Roads were designed to get from one village or town to another along a fairly reasonable path giving due consideration to topography, soil conditions, flooding, user defence and property boundaries, if any. Within the cities and towns, roads either developed haphazardly or were laid out by land surveyors in simple grids.

The development of bus, and in some cases, rail transit systems in North America's larger cities represented the first tentative efforts in transportation planning. By the early part of this century, private transit companies were designing, constructing and operating city-wide transit services in New York, Philadelphia, Boston, Montreal, Toronto, Vancouver and numerous other cities. With the advent of toll roads in the U.S., the profit motive was applied to roads as well as to transit. Wise investing required evaluation of traffic demands and some efficiency considerations in route location. By the end of the 1920's many provincial, state and local governments were involved in crude planning for road investments. Planning involved making straight line projections of traffic counts and comparing the forecasted volumes with existing capacities.


10Ibid., p. 425

11Ibid., p. 426
Thus, these early transportation planning efforts viewed the transport problem solely in terms of the user. The major participants in the transportation planning process came from engineering backgrounds and thus alternatives were proposed and evaluated according to economic or engineering design criteria.

This approach continued as the dominant method of transportation planning until the early 1950's and the emergence of major metropolitan transportation studies. These large-scale studies conducted first in Detroit then in Chicago involved the collection of vast amounts of demographic and land-use data in order to determine urban travel patterns and enable long term forecasting of travel demands. These studies aimed at developing a comprehensive, co-ordinated and continuous transportation plan. However, the ideal of comprehensiveness was compromised by a continued emphasis on user needs. Although the studies developed a broader view of the transport problem, the problems of accidents, congestion, inefficient investment and inaccessibility were given prime consideration; impacts such as ugliness, noise, nuisance and air pollution remained as secondary concerns. Moreover, although the studies gave some consideration to transit and land-use in an attempt to develop a co-ordinated system, future transport

12 John Dickey, Metropolitan Transportation Planning, pp. 2, 3.

investments tended to emphasize a single mode—the automobile. Nevertheless, the metropolitan transportation studies did radically shift the focus of transportation planning from a predominantly rural-road-predictive view to a metropolitan-transportation-process orientation.

The planning process developed by the metropolitan transportation studies formed the basis for the implementation of the Interstate freeway system in the U.S. Somewhat later, urban freeway plans were implemented in a number of Canadian cities including Montreal and Toronto. However, by the mid-sixties two specific problems caused a re-evaluation of the transportation planning process. One was the growing citizen opposition to freeways; the other was the financial decline of mass transit.\textsuperscript{14} Citizen opposition forced transportation planners to become more sensitive to the impacts of transportation investment and the possible transit alternative. The plight of mass transit sparked renewed interest in the development of transit technologies and a recognition of the disadvantaged without access to a car. Thus, transportation planning was directed towards a broader awareness of the whole gamut of social and environmental impacts.

Generally speaking, it would seem that transportation planning has changed substantially over the years. It has expanded its awareness of the urban transport problem and enlarged its base of decision-making. In this sense,

\textsuperscript{14}John Dickey, p. 4.
transportation planning seems to have broadened its scope to a similar extent as the general practice of urban planning.

As John Dickey observes:

Those who have witnessed metropolitan transportation planning in a span of as little as five years know the large and in some cases complete transformation that has taken place. One day it seems as if the transportation system user is the only person of concern. One day it seems as if travel time, cost and safety are the only factors of importance. The next day the factors seem to be regional air pollution, the national economy and the worldwide energy shortage. One day it seems as if highway engineers are perfectly capable of making complete decisions on highway planning and design. The next day, ten citizens groups, five local planning bodies, the governor, several federal executives and legislators and the Supreme Court all seemed to be making a variety of relevant decisions. This, then is the rapidly changing context in which the transportation planner is involved.  

The "rapidly changing context" of transportation planning mentioned by Dickey describes the environment in which future transportation decisions must be made. The context of transportation planning demands that the process develop a broader concept of who it serves, what factors are important and who participates in the ultimate decisions. Thus far the planning process has shown a willingness to adapt to the changing character of the urban transportation problem. However, it also leads one to inquire whether contemporary planning and policy is in fact continuing to adapt and, if not, what are the necessary requirements to equip the decision-making process for the future.

The Future Requirements of Transportation Planning and Policy Development

The foregoing examination of the history of transportation planning has shown that the planning process has always reflected the prevailing perception of the urban transportation problem. Problem definition has been the first step in a transportation planning process which exhibited the following stages:

(i) problem definition,
(ii) identification of goals and objectives,
(iii) collection of data,
(iv) generation of alternatives, and
(v) selection among alternatives.

Over the past twenty years the transportation planning process developed the following major features:

(i) The problem was defined almost exclusively in terms of the transportation service problems relevant only to the user.
(ii) The goals and objectives of the transportation system developed a problem orientation which focussed on the satisfaction of present and future travel needs.
(iii) The data gathering approach was comprehensive, regional and quantitative.
(iv) The alternatives emphasized highway solutions varying by route location and capacity.
An alternative was selected according to engineering considerations or economic criteria based on travel savings for users or required capital investments.20 Thus, the major elements of the transportation planning process reflected a rather narrow perspective derived from a limited perception of the urban transportation problem. Moreover, the policies which developed from the planning process exhibited a similarly confined focus. As Norman Cooper has commented:

Although some progress was made in the sixties in the planning process, policy action and implementation continued to be largely confined to short-range decisions that did little more than promote existing trends.21 In this sense, the decision-making process to a large extent reinforced the deficiencies of the planning process. Both planning and policy were predicated on a narrowly defined problem.

This major flaw pervaded transportation activities for the past two decades, culminating during the sixties in the planning and policy-making processes for freeways in U.S. cities. In connection with urban highway planning, Geiser identified the relationship between planning and policy and the dominant focus of the two processes by observing that

20 Some of these major characteristics are based on ideas contained in Anthony Tomazinis' report entitled, New Elements in the Transportation Planning Process for the 1970's, Philadelphia, 1971, p. 1.

...the need for a highway, although heavily documented by rational planning processes is actually determined by political decision-making processes external to the narrow planning focus. The need for a highway is predicated upon the assumed vast preference for the automobile over alternative modes of urban transportation when, in fact, there are no "equivalent" modes to choose from and where there is growing evidence of a desire for such a choice. This limited focus of decision-making is supported by a highly successful symbiotic government-business relationship, plus the narrow isolated ethos of the transportation planner and his profession.  

The foregoing discussion demonstrates the relationship between the problem, the planning process and the policy development process in urban transportation. As the initial input to the planning process, the form in which the problem is defined conditions the alternatives which emerge from the planning process. The output of alternatives from the planning process then provides the primary stimulus for the subsequent reprocessing through the political decision-making machine. The policy process then selects the final course of action but only from among the alternatives developed from the planning process. In this way, the form of the chosen alternatives is pre-conditioned by the output of the planning process and this is dependent on the problem definition.

Whether this sequencing of the phases in the transportation decision-making process is conducive to the development of a broad perspective on the transportation problem is questionable. However, before delving into the broader issue of the decision-making process, the first priority is to assess

the necessary requirements to adapt the planning and policy phases to the present context of the transportation problem.

**Requirements of Transportation Planning**

It seems clear that the context of transportation planning is changing in many ways. Urban society is demanding much more from the planning process than ever before. What is not clear is whether the planning process is in fact responding to these new demands. The capability of transportation planning to cope with the urban transport problem will depend on its ability to adapt to a changing environment.

The changing context of urban transportation planning seems to have emerged from the freeway controversies of the sixties. As Anthony Tomazinis comments,

...these plans faced extensive citizen opposition and lukewarm institutional support and in some cases court challenges as to the legality of the process that produced them and the judiciousness of their recommendations. In city after city, it became apparent that society at large was demanding much more from the huge investment involved than simple travel demand satisfaction. Also, the distribution of disbenefits occurring to the region as a whole and to the various localities in particular were found to be too important to be ignored or accepted as the legitimate output of an obscured and mechanized process to which both political leaders and citizens could not gain easy admission. Both factors (the size of the public investment required and the amount and distribution of disbenefits) introduced serious doubts. . .23

The opposition to urban freeway planning therefore focussed on two major deficiencies in the process: 1) its lack of consideration for the social and environmental impacts on the community, and, 2) its limitations on participation. Dickey adds to these two concerns, the reliance of trans-

portation planning on a single mode which ran counter to the renewed interest in transit alternatives, emerging from public opposition to the freeways. By dramatically altering the attitudes of urban society to transportation planning, these three concerns initiated a process of serious re-evaluation.

The critics attempted to trace the source of these deficiencies and suggest improvements. The consensus of a seminar sponsored by the American Institute of Planners attributed the automobile-highway emphasis to the dominance of economic and engineering goals in transport planning. As a result, the planning process developed a technical orientation which excluded from participation most of urban society except the highway industry and the technocrats. Limited participation assured a narrow view of the transport problem which gave priority to the transportation service problems of the user and under-valued social and environmental impacts. However, some authors attempted to probe a little deeper. Steger notes that the attitudes of the freeway planners are remnants of earlier values which regarded accessibility as an instrument of economic well-being and technology as a solution to every problem. Melvin Webber relates these values to a set of


ideas which viewed urban transportation as physical facilities rather than services, as connecting places rather than people and whose major criterion was the least cost of facilities rather than largest output of benefits to people.\(^{26}\)

In this sense, Steger and Webber attribute the inadequacies of transportation planning to its inability to reconcile its goals with changing societal values. This goals-values conflict has arisen because society has moved away from an accessibility-technology emphasis in transport planning. As accessibility levels have risen in urban society, its value as a transport priority has fallen in relation to the social and environmental impacts of transportation. As Steger comments

\ldots a smaller proportion of today's total population is involved as potential users in seeking substantially increased transportation availability for themselves but everyone is the recipient of a large, substantial set of direct and indirect impacts... be they of a social, economic, financial, environmental or institutional nature.\(^{27}\)

Melvin Webber points to a similar attitude with respect to technology. More and more people are becoming skeptical toward the ability of technical expertise and technology to solve urban transport problems.

From this trend of declining public confidence has come a new awareness of the needs of urban transport planning. However, it would seem that, at least in the U.S.,


\(^{27}\)Wilbur Steger, p. 2.
federal policy-making has been outstepping transportation planning in adapting to these new demands. Federal legislation since 1968 has taken the lead in recognizing the need for action to improve mass transit, incorporating social and environmental concerns and allowing broader participation in the planning process.\textsuperscript{28} The content of federal policy provides the most thorough exposition of the requirements of transportation planning, which are described as follows:

1. to meet the travel needs and provide for present and future travel demand by all population groups;

2. to incorporate non-economic goals as criteria for the evaluation of alternative multi-modal transportation systems so as to:
   a) reduce the negative social and environmental impacts to the region as a whole and the specific localities and communities in the region, and
   b) to provide for the maximum opportunities to achieve social goals and objectives that are in any way associated and facilitated by transportation;

3. to develop economically feasible plans which minimize the total economic burden on society and distribute its costs and benefits in a manner acceptable socially and economically;

4. to allow greater participation of the various governments, agencies and population groups in the region in all stages of the planning process beginning with the determination of goals and extending to the choices between alternatives for both land use and transportation;

5. to evaluate alternative transport system plans with various combinations of transit and highway elements in conjunction with present land use plans rather than forecasts.  

The requirement for transport planning to be co-ordinated with land use plans rather than forecasts reflects a recognition that forecasts often call for "more of the same" while land use plans call for change and for improvement. In addition, U.S. federal policy calls for a closer link between the planning and implementing activities to prevent the pre-conditioning of the policy process by the planning process. This requirement implies that the political decision-makers participate fully in the planning process.

The principles enunciated by U.S. federal policy and legislation impose new procedures to be met by technicians, professionals and agencies involved in urban transport planning. Tomazinis suggests that although transportation planning is behind the formal requirements of the law, as

29American Institute of Planners, Metropolitan Transportation Planning Seminars, pp. 12, 13.
yet, . . . only meagre efforts have been made and only small successes can be recorded. Very few planners and public administrators are as yet cognizant of the size of the change that has occurred. Fewer planners know how they can start complying with the new requirements.30

However, while in the U.S. transportation planning has not yet conformed to the new requirements, efforts in some Canadian cities seem to have had more success. Lack­ ing strong commitment at the federal level, the regional governments of Toronto and Vancouver have made substantial progress in incorporating social, environmental and land use factors and broader participation of local politicians and citizens in the transport planning process. These improvements have forged a stronger link between the planning and policy development processes.

In summary, then, the theoretical literature, U.S. federal policy and transportation activities in some Canadian cities stresses the need for:

1. a comprehensive approach towards defining the urban transportation problem, goals, alternatives and criteria;
2. co-ordination of transit and highway modes with land use planning; and
3. broader participation in all stages of the planning process.

In this sense, the foregoing examination of the require­ ments of the transportation planning process verifies the

future goals for transportation planning described in the previous chapter. The planning process seems to have recognized these goals as necessary to produce effective transportation plans but implementation of these plans will require equally effective policy processes.

Requirements of the Transportation Policy Process

The distinction between planning and policy-making is not altogether clearcut and straightforward. Both activities deal in the realm of goals, objectives, alternatives, priorities and choices. However, an analysis of the transportation policy process cannot proceed without some recognition of the differences between the two.

As the transportation decision-making process is presently constituted, the policy process begins where the plan leaves off. Planning involves the collection of data and information, the formulation of goals, objectives and priorities and the devising and evaluation of alternative ways of attaining goals and objectives. Lyle Fitch describes its function as "to inform, to stimulate and to produce a plan to guide those responsible for policy decisions."31 While political decision-makers may be involved in the plan making stage, it is at the conclusion of the plan that the policy process begins.

The policy process implies two stages: policy-making and policy implementation. Policy-making involves decision-

makers in choosing among alternative courses of action or inaction and committing resources to implement decisions. Policy implementation involves the application or delivery of policy decisions.\textsuperscript{32}

Another critical difference between the planning process and the policy process lies in the location of responsibilities. While planning functions are usually undertaken by planning agencies, policy-making responsibilities are generally exercised by elected officials and policy implementation is administered by the government bureaucracy. However, these functions often overlap among agencies. Planners must often become the advocates of plans before policy-makers, while administrative agencies by interpreting and applying broad policies play a crucial role in policy-making itself.

Both policy-making and implementation require the legal authority to exercise jurisdiction, the budgetary powers to raise and allocate funds and the organizational structure capable of effecting policy delivery. As the basic requirements of all policy processes, these three needs are also fundamental to effective policy development in urban transportation. As such, they can be used as general parameters for an analysis of the requirements of the transportation policy process.

To begin, the first priority of the policy process

\textsuperscript{32}Lyle C. Fitch and Associates, pp. 60, 61.
is to establish a legal basis for the implementation of transportation plans. The goals and objectives of the planning process when embodied in legislation acquire the necessary authority as basic principles governing policy implementation. Moreover, legislation usually acts as a policy delivery device by linking policy goals to government funding. Federal transportation legislation in the U.S. not only legally sanctified transportation goals but also imposed these objectives on the planning process as requirements for federal funding. In Canada, provincial rather than federal legislation has played the dominant role in urban transportation policy-making. Legislation in Ontario and in British Columbia has emphasized the organization and funding aspects of urban transport rather than attempting to revise the planning process.

Viewed in this context, transportation legislation is critical to legally adopt the necessary changes for the transport policy process. However, practical revision of policy-making must be preceded by a recognition of the necessary organization and funding requirements for urban transportation. These policy needs can be identified through a brief review of the theoretical literature, beginning with the institutional or organizational requirements.

The Institutional Requirements of the Transportation Policy Process

Most criticisms of the organizational structure for policy development have focussed on the fundamental problem of institutional fragmentation in transportation policy-making. In both the U.S. and Canada, the responsibilities
for the design, construction and operation of metropolitan transport services are divided among a host of agencies including provincial and state highway departments, municipal engineering departments, public and privately-owned transit companies and in some cases, regional authorities. Since most of these agencies are responsible for the planning as well as implementation of transport services, institutional fragmentation creates problems for both the planning and policy implementation process.

Dividing the responsibilities for developing transportation plans stands as a major obstacle to comprehensive and co-ordinated planning of transportation services. The absence of unified planning encourages the narrow view of the urban transport problem, which is the source of many of the deficiencies of the planning process. John Kain, for example, attributes to institutional fragmentation, the continued use of inappropriate engineering criteria for the evaluation of transport alternatives and the inability to develop overall "operational" criteria. John F. Kain, Essays on Urban Spatial Structure, (Cambridge, Mass. 1975), pp. 329, 330. Kain also considers it responsible for the unwillingness of the planning process to consider many promising alternatives which require multi-mode use of transport infrastructure, such as bus lanes, transit use of freeways, etc. Most of these arguments


33 Ibid., pp. 324-327.
further reinforce the need for some form of unified, institutional framework which would integrate and co-ordinate transport planning activities to develop overall objectives, alternatives and criteria for the transportation system.

Such a unified administrative framework is also crucial to the development and implementation of comprehensive transportation policies. The development of overall goals and objectives for urban transport is obstructed by the division of jurisdiction among competing government agencies involved in decision-making for urban transportation. To some extent, this problem has been mitigated in the U.S. by federal legislation which has developed broad policy goals for urban transportation. However, translating these broad policies into overall operational goals for each urban area is still complicated by lack of a unified organizational setup at the metropolitan level to co-ordinate the activities of the numerous government units operating within its boundaries. Policy-making machinery remains fragmented with one set of agencies controlling arterial highway decisions, another set controlling local street systems and others controlling transit. Each unit has its particular problems, objectives, interests and constituencies, with none having responsibility for a comprehensive understanding of the total problem, and for developing overall objectives which reflect the interests of all modes and all citizens.34

34 Lyle C. Fitch, Urban Transportation and Public Policy, p. 85.
Most observers recognize the need for comprehensive policy-making and implementation at the local level as well as at the federal level. Wilfred Owen goes so far as to say that an effective solution to the urban transport problem

...should meet three tests. First, it should be functionally comprehensive by including all forms of transportation applicable to the problem. Second, it should be comprehensive geographically but including not only the city but the metropolitan area and all the affected region. Third, it should be comprehensive from a planning standpoint by assuring that transportation is used to promote community goals and that community plans make satisfactory transportation possible.35

In stating this, Owen supports the need for comprehensive multi-modal planning in relation to land-use planning but he also makes two important points in respect to policy-making: that transportation policies should be developed at the regional level and that these policies should be developed in conjunction with community goals. Lyle Fitch restates this view by commenting that

Major decisions respecting regional transportation should be made primarily by policy-makers representing the region's interests who can take into consideration a range of diverse community values and interests.36

Moreover, reports prepared for the U.S. Department of Transportation, the Highway Users Federation and the Committee on Economic Development add their support to the regional concept.37 All suggest that the metropolitan region as a


36Lyle C. Fitch, p. 82.

focus of decision-making possesses a sufficiently broad jurisdiction to adopt a comprehensive view. As a middle level of government, the region occupies an appropriate position to coordinate the goals of the province or state and those of the municipality. And finally, it is sufficiently in touch with community needs to be responsive. As Norman Cooper has stated:

These opposing directions of flow—government to citizen to government in the form of control—cross for urban transportation at the urban regional level. Therefore, the urban regional level may be considered the most effective level for transportation decision-making.  

In this sense, overcoming the policy-making problems associated with institutional fragmentation will require comprehensive, coordinated and participatory policy development processes lodged at the regional level of jurisdiction.

The Requirements for Effective Policy Implementation

The second phase of the policy process is policy implementation. Here also, institutions of policy delivery operate in a vacuum, developing transportation programs independently without relation to their impact on other components of the transport system or the affected community. As a result, these partial programs produce only partial solutions. Moreover, lack of program coordination leads to not only ineffective but inefficient solutions resulting from overlapping and duplication of functions. Clearly, coordination of policy-making must be accompanied by similarly coordinated administrative functions.

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Coordination of transport programming must also be undertaken in conjunction with some revision of the financing policies for urban transportation programs. Fragmentation of policy implementation is accompanied by fragmentation of program funding responsibilities. As a result, broad disparities exist between the need and availability of funds among government transport agencies and the various modes. Local urban government faced with the most serious transportation problems and lacking independent taxing authority have the least access to sufficient funding without the support of federal, provincial or state agencies. Similarly, among modes of transportation, the more critical financial difficulties of mass transit are ignored in deference to already well-funded road priorities. Clearly, a comprehensive financing policy must be developed to implement new policy priorities of urban transportation. Otherwise, as Wilfred Owen observes,

... lacking a uniform policy with respect to the financing of transportation facilities results in a situation in which differences in financial methods rather than consumer transportation needs and desires are determining the nature of transportation investment.39

A uniform financing policy is also argued on the basis of efficient as well as effective policy implementation. The duplication and overlapping of transportation services in an uncoordinated system results in inefficient allocation and waste of transportation resources. The high costs of providing transportation services justifies the efficient

39 Wilfred Owen, The Metropolitan Transportation Problem, p. 142.
use of funds.

Viewed in this context, effective and efficient policy implementation would suggest the establishment of a single coordinating transportation body administering a pool of funds contributed from participating public and private agencies. Both Wilfred Owen and Lyle Fitch support this form of policy implementation machinery.

Revision of the administrative and financial arrangements of policy implementation, therefore, will play a crucial role in adapting the total policy-making process to the new demands of the urban transportation problem. To briefly summarize, this theoretical analysis of the policy-making process has shown the need for

1. comprehensive policy-making centred at the regional level of jurisdiction which coordinates the goals and objectives of transportation agencies and the community;

2. coordinated policy implementation and financing arrangements;

3. participatory policy-making among both public and private agencies involved in providing transportation services.

In this way, the theoretical literature shows the proposed future goals as plausible requirements for the policy process in urban transportation.

Chapter Summary

This chapter has attempted to identify the relationship between the urban transportation problem and the
processes of transportation planning and policy development. Initial analysis of the urban transportation problem revealed it to be one of formidable scope and complexity. Placing the transportation planning process in the general context of urban planning showed that despite criticisms of the rational view, the urban planning process was evolving toward a more comprehensive perspective on urban problems. Looking at the historical development of transportation planning also showed that it also was broadening its scope in adapting to the changing context of the urban transport problem. And finally, an attempt to determine the necessary requirements to adapt planning and policy to the problem verified the need for comprehensiveness, coordination and participation in the transport planning and policy processes.

However, as was previously mentioned, the capability of transport planning and policy to deal with the problem will depend on the recognition of these goals by planners and policy-makers. This study now turns to examine this aspect of urban transportation planning in relation to the study area.
CHAPTER 3

METROPOLITAN TRANSPORTATION PLANNING AND POLICY IN GREATER VANCOUVER

The previous chapter identified some of the critical deficiencies of the planning and policy processes which obstruct the development of effective solutions to the metropolitan transportation problem. A review of the theoretical literature suggested that planning and policy must strive towards the goals of comprehensiveness, co-ordination and participation in order to surmount these barriers. This chapter continues this theme by examining these goals in the context of transportation planning and policy in the study area of Greater Vancouver.

As was noted earlier, transportation planning and policy in Greater Vancouver has been characterized by three major initiatives: the urban freeway program, the Provincial transit program and the Greater Vancouver Regional District transportation program. An attempt will be made to evaluate these efforts in terms of comprehensiveness, co-ordination and participation so as to isolate the critical planning and policy process deficiencies. This will be accomplished through an historical review of each program supplemented by a retrospective evaluation of transportation decision-makers as found by the questionnaire survey. This information and data will then be applied to test the hypothesis that the rela-
tively low level of accomplishment for these previous efforts was due to an unresponsive attitude to the three goals of transportation planning and policy.

**Background**

The Greater Vancouver area comprises thirteen municipalities occupying the southwestern corner of Canada. With a metropolitan population of about 1.2 million, it is the third largest city in the country. Vancouver has attained its position of importance largely as a result of the presence of plentiful natural resources in the province of British Columbia and Western Canada, combined with the transportation facilities to allow their exploitation.

Transportation has always been an important element in Vancouver's development. The extension of the Canadian Pacific Railroad to its western terminus in Vancouver spurred the city's growth as a major port for the export of Prairie wheat and local forest and mining products. Urban transportation within the metropolitan area dates back to 1889 when the first electric street car service was provided in Vancouver city. The few roads which existed then were roughly slashed through the forests and farms of the area for the convenience of the military, the logging industry and agriculture.

From these early beginnings until the end of the Second World War, urban transportation activities were dominated by the expansion of public transit services. The extension of street car lines accompanied the areal expansion of the city
GREATER VANCOUVER
of Vancouver until links were established to the surrounding municipalities of Burnaby, New Westminster and Richmond. The interurban system of streetcar lines focussed on the city centre as the commercial and industrial core with residential development strung out close to transit lines. The developments closely parallel those in other North American cities; the planning and operation of the transit service was undertaken by a private utility—the B.C. Electric Company.

Government involvement in the planning of urban transportation services in Vancouver did not begin in earnest until 1926 when the city commissioned Harland Bartholemew and Associates to produce a master plan for the city.1 The Bartholemew Plan laid down the major street network and also included some elements of street car transit. Later, in 1946, Bartholemew returned to revise and update the 1929 Plan to accommodate "the increased number and use of the automobile."2 During the intervening period, automobile usage had rapidly gained and finally surpassed transit as the major transportation mode in the region. The 1947 Plan responded to this need by proposing the upgrading of some major streets to arterial capacities, completion or improvement of certain bridge links and the conversion of the transit facilities from streetcars to trolleys. Although the road plans of 1929 and 1947 were

1Harland Bartholemew and Associates, A Plan for the City of Vancouver, (Vancouver, 1929).

never officially adopted by the Vancouver City Council they became, with time, the major operative plan for roads and streets in the city.

The 1947 Bartholemew Plan is especially significant because it effectively shifted the focus of urban transportation planning in Vancouver from an emphasis on private utility company involvement in rail transit planning to major involvement by the civic government in roads and streets planning. The emerging concern for adapting to the demands of the automobile developed with a close eye on the concurrent proposals for a national expressway system in the U.S. The 1947 Plan readjusted the road network in Vancouver to allow for urban freeways connected with the Trans-Canada Highway. In this sense, the plan established the guiding philosophy underlying transportation planning in the years to come.

Subsequent political developments and transportation planning efforts during the early fifties established an economic rationale for highway planning. This link between economic and transportation goals sprang from the two dominant forces shaping post-war society: increased mobility provided by automobile ownership and a strong commitment to economic growth and technological progress. The newly elected Social Credit provincial government in 1952 adopted the prevailing ethos of the period as government policy to improve the highway system as a tool for opening up the

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resource-rich interior of the Province. The translation of the conventional wisdom of the era into expressed public policy gave impetus to large scale government activity in the area of urban transportation in Greater Vancouver. Escalating governmental involvement in providing urban transportation services coincided with the developing automobile-highway technology and the beginnings of the comprehensive metropolitan planning studies of the fifties. This parallel emergence of a policy philosophy and commitment combined with a planning process and technology set the stage for a decade of freeway planning for the Greater Vancouver.

The Provincial Freeway Program, 1959-1972

The evolution of an urban freeway program for Greater Vancouver followed the traditional process of transportation decision-making which had developed over the preceding fifty years. A perceived transportation problem initiated the transportation planning process. The planning process would define the problem, establish the goals and objectives and ultimately propose alternatives for government action. The policy process would follow the planning process to either select the most appropriate alternative for implementation, reject all alternatives or remain uncommitted.

Planning for urban freeways in Greater Vancouver was initiated by a Committee for Metropolitan Highway Planning.

4V. Setty Pendakur, p. 16
in 1956 with joint membership from the Provincial government and the central municipalities of Vancouver, Burnaby and New Westminster. In conjunction with its previously established policy, the Province was concerned with improving access through the central municipalities to other areas of British Columbia. Achieving this objective would require major crossings of the Fraser River and Burrard Inlet as well as urban highway links through the Burrard Peninsula to connect the proposed bridges.

These concerns initiated a planning process which corresponded closely to the major metropolitan highway studies underway in the U.S. at the time. The problem was narrowly viewed as providing greater accessibility for the automobile user by overcoming potential traffic congestion in the central municipalities. Congestion was perceived as an obstacle to the attainment of overriding economic goals which would accrue from transportation investments. And the application of the freeway technology represented the only alternative which could overcome the problem and achieve the goals. And finally, the reliance on the automobile-highway technology coloured the methodology of transportation planning with a dominant engineering and technical orientation.

Predictably, the final report of the Committee recommended that the transportation problems of Greater Vancouver

"could only be solved efficiently and practically by constructing an entirely separate system of high speed facilities called freeways." The proposals recommended a 45 mile system of grade level and elevated freeways at a total cost of 465 million including a Third Crossing of Burrard Inlet (see Figure 2).

The 1959 Committee Report set the pattern for subsequent urban transportation policy and planning during the sixties. It established a cooperative working relationship between the Provincial government and the central municipalities. However, this relationship focussed at the technical level with elected officials only peripherally involved and citizens not involved. Moreover, the Committee's mandate was limited to the planning process of study and recommendation excluding a policy role. Understandably, the technical focus combined with the automobile-highway philosophy to reflect the prevailing state of the transportation planning art. The transit mode was viewed not as an alternative but as a supplement to freeways as stated in the report—"no form of transit can be devised which will be a realistic substitute for the freeway system." And finally, the report proposed a number of freeway links through residential neighbourhoods as well as historical and cultural areas near the CBD without considering the potential social and environmental impacts. In total, these initial characteristics of the freeway planning process would later condition the outcome of the overall decision-making process.

1959 FREEWAY PLAN

Source: V. Setty Pendakur, Cities, Citizens and Freeways, p. 27.
Completion of the 1959 highway study solidified the commitment of provincial and local transportation planners and administrators to the implementation of the freeway plan. However, a policy commitment from the provincial government never materialized. Politicians evaluating the proposals on the basis of economic criteria were not convinced that the economic benefits were significant to justify the high costs of the plan. The withholding of policy commitment in terms of legislative and funding support left a policy vacuum which would remain a dominant feature of the freeway program in later years.

Without provincial policy support, the implementation process could not proceed. However, the perceived economic benefits of freeways to downtown Vancouver engendered substantial political and staff support at the local municipal level. This support allowed the freeway planning process to continue. The civic bureaucracy commissioned a series of freeway studies conducted by a variety of consultants from the early sixties up until 1967. Throughout this period both the policy issues and the planning methodology remained unchanged.

However, by the mid sixties, public attitudes towards freeways were beginning to shift from positive to negative. By this time, a number of freeway systems had been completed in various major U.S. cities. The resulting destruction and dislocation of residential neighbourhoods began to coalesce citizens groups into a unified front against freeways. The policy issues surrounding urban transportation began to change; social equity and environmental concerns moved to the forefront
over the economic considerations. The transportation planning process faced pressure to include transit planning and neighbourhood impacts as elements in proposing and assessing transportation alternatives.

The freeway planning process in Greater Vancouver remained unresponsive to changing societal values. The Vancouver Transportation Study, commissioned by the City of Vancouver in 1966, proposed locating a major freeway interchange in the heart of the city's historic Gastown and Chinatown areas. Recognizing the potential destruction of their cultural area, the Chinese community organized massive opposition to the freeway proposals. The Chinatown Freeway issue provided the rallying point for public opposition to the entire freeway plan. Subsequently, in early 1968, Vancouver City Council succumbed to public opposition and voted to abandon the entire city centre Freeway scheme.

The abrupt defeat of the city centre freeway proposals clearly illustrates the deficiencies of the freeway planning process. The planning process defined the transportation problem solely in terms of benefits for the automobile user. Lacking broad participation from citizens the planning process was unable to adapt to the emerging social and environmental issues surrounding transportation. However, there is much reason to doubt that even with substantial community support that the proposals would have gone beyond the planning stage.

The freeway program also lacked the support of a strong provincial policy commitment. While the Province was able to fund numerous studies, it was unwilling to establish the
legislation and funding arrangement for the construction of the facilities. Provincial transportation policy priorities focused on the provision of interior highways for resource development outside the metropolitan areas. The high costs of major transportation investments necessitates a strong financial commitment from senior governments. In the absence of a stated policy or cost-sharing arrangement, the Province was able to constantly retreat from a financial responsibility for construction of the freeways. As a result, the freeway program became a protracted planning process involved in an unsuccessful search for a policy commitment for implementation.

Both the planning and policy inadequacies of the freeway program were compounded by fundamental deficiencies in the entire decision-making process. The transportation decision-making process had evolved with the policy process following the planning process. Such a sequence allows the planning process to continue without guidance or commitment from the government responsible for implementing the alternatives which emerge. Policy guidance should be provided at the beginning of the decision-making process to assess the problem and develop goals and objectives for the planning process in the context of other government goals and priorities. The absence of policy guidance encourages a more constrained technical view of the problem, goals and objectives. Policy commitment in the form of legislation and funding should also precede the planning process. Given sufficient impetus at the local staff level, the lack of an initial policy commit-
ment can allow the planning process to continue indefinitely.

The foregoing conclusions point to the need for fundamental changes in the transportation decision-making process and its policy and planning components. The historical analysis suggests the necessity for the policy process to precede the planning process to establish a government commitment before proceeding with transportation planning. Without an initial expressed statement of government policy the freeway program was subject to two major deficiencies:

1. a focus on economic and engineering considerations produced a planning process which was not responsive to emerging social and environmental values of citizens;

2. an attitude of the provincial government which placed a lower priority on metropolitan transportation produced a policy implementation process which lacked adequate legislative and funding arrangements.

In summary, these policy and planning deficiencies seem to be symptomatic of the broader transportation decision-making problem. However, corroboration of this conclusion will require further examination of other transportation decision-making efforts in Greater Vancouver. For the present, the validity of the policy and planning deficiencies as explanations for the failure to implement the freeway program remain to be tested by the results of the survey analysis.

Retrospective Evaluations of the Freeway Program

The sample of decision-makers were asked to evaluate the freeway program by identifying:
1. the factors underlying the implementation problems of the program; and

2. the improvements necessary to have successfully implemented the program.

By posing these two questions, the research attempted to determine not only the planning and policy deficiencies but also the means of correcting these deficiencies.

Use of the open-ended question produced a wide variety of responses. Analysis of these responses required that they be classified under overall factor groupings. The results of the analysis are presented for each question.

A. Implementation Problem Factors

Decision-makers provided a total of 43 responses when asked the question, "What factors do you think were responsible for the difficulties associated with implementing the freeway program?" Analysis of the replies produced eight categories of implementation problem factors. These categories are set forth in rank order by number of responses in the following table:

Table 1
IMPLEMENTATION PROBLEM FACTORS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Public Attitude</td>
<td>15</td>
</tr>
<tr>
<td>Funding Inadequacies</td>
<td>7</td>
</tr>
<tr>
<td>Experience in Other Cities</td>
<td>7</td>
</tr>
<tr>
<td>Unfavourable Attitude of Provincial Government</td>
<td>6</td>
</tr>
<tr>
<td>Over-reaction to a Minor Problem</td>
<td>4</td>
</tr>
<tr>
<td>Unbalanced System</td>
<td>2</td>
</tr>
<tr>
<td>Late Involvement</td>
<td>2</td>
</tr>
<tr>
<td>Project Orientation</td>
<td>1</td>
</tr>
</tbody>
</table>
The implementation problems identified by decision-makers tend to corroborate the conclusions of the historical analysis of the freeway program. Decision-makers most frequently mentioned the negative public attitude, the funding inadequacies and the unfavourable attitude of the provincial government as factors which hindered implementation of the freeway program. Clarification of these factors requires specific analysis of the individual responses within each category. These are described by category as follows:

1) **Negative Public Attitude**

Most responses attributed public opposition to social and environmental concerns. Citizens feared the freeways would kill downtown Vancouver and ruin inter-city neighbourhoods. The fact that these beliefs were widely held allowed diverse groups of academics, professionals, and neighbourhood residents to coalesce into a common front against the freeways. To many observers, the constant postponement of implementation made the program more susceptible to public opposition.

2) **Funding Inadequacies**

Most responses in this category mentioned the high cost of the freeways. Some attributed the excessive costs to the topography of Vancouver and the resulting need for expensive bridges. The absence of provincial support combined with the inability of the City of Vancouver to finance the freeway program made the costs prohibitive.

3) **Experience in Other Cities**

The importance of this external factor was under-played...
by the historical analysis. Many responses perceived parallels between citizen opposition in Vancouver and the similar experiences of Toronto with the Spadina Expressway and San Francisco with the Embarcadero Freeway. Decision-makers viewed these examples of successful public opposition as explanations of why citizen concern for social and environmental impacts did not materialize until the late sixties.

4) Unfavourable Attitude of the Provincial Government

The decision-makers who mentioned this factor traced its source to the Province's use of transportation for political purposes. Many attributed the emphasis of the Social Credit government on interior highways to the fact that most of their political support came from non-metropolitan hinterland constituencies. This factor could partly explain why the freeway planning process was unable to obtain policy-making and funding support from the Province.

5) Over-reaction to a Minor Transportation Problem

Some of those sampled viewed the freeway as a solution which was too severe in relation to the problem. Criticisms were directed at the problem definition stage of the planning process and the tendency for transportation planners to define the problem in terms of projected levels of traffic and congestion. The tendency to project traffic problems too far into the future fell short of the existing reality of comparatively minor congestion. One respondent suggested that a software approach on traffic demand would have been more effective than increasing the supply of road hardware.
6) Unbalanced System, Late Involvement, Project Orientation

Some responses suggested that freeways without major transit improvements were an unbalanced system which too heavily favoured one mode. Others suggested that major causes of the implementation problems were Vancouver's relatively late entrance into freeway planning and the narrow project orientation of the process.

B. Program Improvement Factors

The program improvement factors were derived from the sampled decision-makers' responses to the question, "In what ways could Vancouver's urban freeway program have been improved to have given it a better chance for successful implementation?" The lower number of responses to this question (28 in total) indicated that it is perhaps easier to point out deficiencies in a program than to suggest means for improvement. The program improvement factors were also classified and grouped into categories for purposes of analysis. These factor categories are ranked by number of responses in Table 2.

| Table II |
|---|---|
| PROGRAM IMPROVEMENT FACTORS | Number |
| 1. Better Freeway Design | 8 |
| 2. Broader Participation in Planning | 6 |
| 3. More Comprehensive Approach | 4 |
| 4. Stronger Policy Support | 3 |
| 5. More Effective Implementation | 3 |
| 6. Not Possible to Improve | 4 |
| | 28 |
A large number of responses advocated improvements in the output of the planning process (better freeway design). However, the majority of the responses suggested improvements in the process itself (Factors 2-5). Of these, most responses dealt with correcting the planning process (Factors 2 and 3), while the remainder suggested improvements to the policy-making and implementation processes (Factors 4 and 5). A broader understanding of these results can be gained by describing the specific responses within each category as follows:

1) **Better Freeway Design**

Decision-makers viewed the scale and route alignments of the freeways as largely responsible for the adverse public reaction. Many believed that the community impacts could have been alleviated by reducing the scale of the proposals and realigning the routes to avoid destruction of historical, cultural and residential areas of the city.

2) **Broader Participation in the Planning Process**

Most responses in this category suggested that broader involvement of the community at an earlier stage of the freeway planning process could have educated both planners and the public to each other's concerns. Public involvement could have developed citizen support of the proposals and thus might have avoided confrontation. In this sense, the concept of broader participation included only citizens groups.

3) **More Comprehensive Approach**

There was some suggestion of the need for a comprehen-
sive process approach which took into account the unique transportation needs of Vancouver rather than the engineering project orientation adapted from the U.S. experience. Decision-makers advocated a planning process which evaluated all modes and options.

4) **Stronger Policy Support**

Responses in this category indicated that if the provincial government had placed a higher priority on urban transportation, the freeway program would have been implemented earlier. Thus, stronger policy support would have created a program which was less expensive and less susceptible to citizen opposition.

5) **More Effective Implementation**

Decision-makers focussed on the need for a firm provincial financial commitment to urban transportation. One respondent suggested a provincial grants system similar to that of Ontario.

**Analysis of the Retrospective Evaluations of the Freeway Program**

The evaluations of the freeway program as obtained from the sampled decision-makers attributed in large measure the failure of the freeway program to a lack of comprehensiveness and participation in planning and policy processes. The responses indicated that public concern over the social and environmental impacts of the freeway, partly as a result of similar experiences in other cities, was the major factor
preventing implementation of the freeway program. To avoid this problem, decision-makers advocated more public participation in the early stages of the transport planning process and to a somewhat lesser extent, a more comprehensive awareness of transportation impacts on the part of planners.

On the policy side of urban transportation, the sampled decision-makers pointed to major deficiencies in both the policy-making and policy implementation processes. The policy making process was hindered by an attitude of the provincial government which placed a higher priority on rural highways than on metropolitan transportation, for both economic and political reasons. As a result, the freeway program became a process of continued study without policy action. Lack of policy support inevitably produced a policy implementation process which never received the funding commitment to allow it to proceed.

While the respondents saw the need for stronger policy and financial support from the Province, they offered few suggestions as to how this would be achieved if the senior governments remained unresponsive to metropolitan transportation needs. None suggested the more obvious mechanism of developing legislation to establish and fund a regional authority to develop, coordinate and administer transportation services in Greater Vancouver. In fact, none of the decision-makers advocated coordination as a major goal for the freeway planning and policy efforts. However, it can be stated with some assurance that the retrospective evaluations of
the freeway program support the need for broad participation and, to some extent, comprehensiveness in the planning process.

Having examined the most lengthy phase of Greater Vancouver's past efforts in urban transportation planning, this study now continues with an analysis of the provincial transit efforts in the region from 1972 to 1975.

The Provincial Transit Program, 1972-1975

Public transit services have continuously operated in Vancouver since the earliest days of its existence as a settlement. The system of local and inter-urban streetcar lines existed until 1955 when they were replaced by electric trolley buses within the City of Vancouver, and gas and diesel powered buses serving the suburban municipalities of North and West Vancouver, Burnaby, New Westminster and Richmond.

Management and operation of the transit system was originally undertaken by a private transit company, the B.C. Electric Railway Company, which later diversified as a utilities company, shortening its name to the B.C. Electric Company. With time, the utilities branch of the operation expanded more rapidly than the transit operation until the fifties when the company became the B.C. Hydro and Power Corporation. By that time, the corporation had become a major generator and exporter of hydro power with a supplementary involvement in operating the vast majority of bus operations
Governmental involvement in public transit operations did not begin until 1962 when the Province expropriated B.C. Hydro as a crown corporation. During the freeway planning era, transit operation was maintained but little effort was made in the planning or expansion of transit services to meet the needs of a growing suburban population of Greater Vancouver. The rejection of the freeway program in the late sixties, the final defeat of the Third Crossing proposals in the early seventies and the election of the New Democratic Party (NDP) in 1972 as the provincial government marked the beginning of a rebirth of transit planning in Greater Vancouver. Immediately after they assumed power, the NDP announced a withdrawal of provincial financial support for the Third Crossing and a reallocation of the $27 million provincial contribution to the development of a rapid transit system for the region. In this sense, the provincial transit program was initiated with a significant provincial financial commitment, even before the government's transit policy was clearly defined.

However, the policy-making process for urban transit can be traced to the party policy platform developed before the NDP assumed power. The NDP policy document of 1972 affirmed that:

1. An NDP government will develop an extensive public transit system in our major cities in conjunction with citizen and community groups with the provincial government assuming the major financial responsibility.
2. An NDP government will establish a Provincial Transportation Authority to co-ordinate all provincial transportation systems and investigate the possible establishment of rapid transit systems and other improvements.23

These two carefully worded policy statements clearly supported the concepts of broad participatory planning and co-ordinated policy implementation. The document assumes a solely provincial responsibility for the management and funding of urban transit systems. However, it is noteworthy that the transportation policy does not affirm the goal of comprehensiveness and no specific mention is made of land use or roads planning as supplementary to transit planning.

Subsequent government transportation policy-making efforts clearly reflected party policy. Six months later, in 1973, during the Speech from the Throne debates, Municipal Affairs Minister, James Lorimer, re-affirmed an exclusive transit orientation for a provincial urban transportation policy when he stated that

... as a government, we have decided that we should move toward the transit solution to the transportation problems of urban areas.24

This declaration of transportation policy signified an abrupt change in priorities from the hinterland highway orientation of the former government to a new urban transit emphasis.


This general assertion of government policy direction was specifically defined a few weeks later in April 1973 when the Municipal Affairs Minister released a document entitled, "Policy Statement: Public Transportation for British Columbia." The policy statement outlined a number of goals, policies and programs to govern provincial action in the urban transportation field. The typology in Figure 3classifies the essential elements of the policy statement.

The goals and policies described in the policy statement are somewhat misleading in terms of the particular definition of the phrase, "transportation system." Since the policies and programs do not specifically mention the provision of road systems, the term "transportation" would seem to exclusively refer to transit systems. For this reason, the goal of providing a "balanced" transportation system does not indicate a comprehensive, multi-modal approach but only a desire to bring transit systems into balance with the existing well-developed road system. Similarly, the policies of "integrating facilities" and "reducing deficits" refer only to transit facilities and deficits. In this sense, the policy statement of the NDP as the provincial government reflects the limited comprehensive transit orientation of "pre-government" party policy. However, the policy statement did represent a significant departure from the economic-engineering orientation of previous transportation planning. The goals present a view

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Figure 3

Provincial Transit Program: Policy Statement

GOALS

I. Provide a "balanced" transportation system
   A. Decrease dependency on the automobile
   B. Integrate all transportation facilities

II. Conserve and enhance community life
   B. Reduce air pollution

III. Achieve the greatest transportation benefits from the investment of community resources
   A. Reduce transportation deficit
   B. Invite federal participation in financing urban public transportation systems

POLICIES

I. Expand current B.C. Hydro plans to achieve a region-wide system of urban and suburban services.

II. Examine the various alternatives for higher capacity rail transit services.

III. Develop inter-regional passenger services.

IV. Provide financial assistance to municipalities to improve transit systems.

PROGRAMS

of transport as a service to people rather than as a means of reducing congestion or achieving economic objectives. The policies recognize the external environment impacts of transportation, a variety of alternatives and the need to co-ordinate the various modes. In this sense, the policy statement as a whole reflects a much broader view of the urban transportation problem.

The policy statement represented the first major provincial policy-making effort in the history of urban transportation in British Columbia. Having set the policy-making process in action, the policy implementation process immediately followed. The government proceeded to develop the organizational structure to implement the transit policy. In early 1973, the Minister of Municipal Affairs created a separate agency in the Department. The Bureau of Transit Services was assigned the tasks of both transit program planning and policy implementation. The policy statement outlined the agency's responsibilities as follows:

1. to determine public transportation requirements;
2. to advise the government on policy matters relating the provision of public transportation; and
3. to implement public transportation programs.26

These actions directly concentrated transit planning and policy authority in the Provincial Cabinet and a provincial agency legally responsible only to the Cabinet.

The policy proposals of the NDP provided necessary

policy support for transit planning but did not introduce comprehensive and co-ordinated planning and implementation for transportation as a whole. The policy simply central-ized planning and implementation for urban transit similar to the control exercised by the Department of Highways over provincial roads. The transit policy did not establish mechanisms to co-ordinate the activities of the various provincial departments involved in planning and implement-ing transportation services in urban areas nor did it officially endorse the participation of regional, municipal and private transit planning and operating agencies in the decision-making processes. Thus, measures to provide a transit organization were not conducive to broad partici-pation in the planning of urban transportation per se, nor co-ordinated multi-modal transport policies and programs.

Subsequently, in September 1973, the Bureau of Transit Services initiated efforts to fulfill two of its designated responsibilities. The agency submitted to the Cabinet an initial assessment of public transportation requirements and proposed a six-point program requiring:

1. political commitment for positive action in public transport;
2. creation of a new public transport image;
3. creation and development of the necessary resources;
4. adequate funding;
5. enabling legislation; and
6. integration with other action policies.\textsuperscript{27}
The first three requirements were prompted by the view that present transit operators lacked the management and financial capability to plan and adapt to meet the challenge of the future.\textsuperscript{28} On this basis, the Bureau proposed that the provincial government assume overall control of management, funding and marketing of transit services. Combined with party policy and the policy statement, the Bureau's submission provided a firm policy-making foundation on which to develop a process of transit planning and implementation.

The legislative and funding requirements necessary to allow the Province to assume major control of transit planning, funding and implementation were immediately forthcoming. The Transit Services Act of 1974 gave the Minister of Municipal Affairs broad powers to research, design, plan, construct, equip, purchase and maintain any and all transportation systems in the Province. The Burrard Inlet (Third Crossing) Amendment Act (1974) authorized the transfer of the $27 million Third Crossing allocation into a special transit fund created by the Provincial Transit Fund Act (1974). And finally, the Provincial Rapid Transit Subsidy Act vested the major responsibility for transit fund-

\textsuperscript{27} Ministry of Municipal Affairs, Towards a Policy and Program for Public Transportation in British Columbia: A Presentation to Cabinet by the Bureau of Transit Services, (September 5, 1973), p. 7.

\textsuperscript{28} Ibid., p. 7.
ing at the provincial level by authorizing the government to subsidize 100 percent of the capital costs and 50 percent of the operating costs of municipal transit systems.

Passage of the legislation gave the Minister of Municipal Affairs and the Bureau the ultimate decision-making power in the field of urban transit. However, the responsibility of municipalities to share operating costs and the pre-existing substantial involvement of B.C. Hydro in operating and maintaining the Greater Vancouver transit system necessitated some participation by these agencies in implementing transit programs. The Greater Vancouver Regional District (GVRD), however, was effectively excluded from involvement. Even though it had previously developed a major role in regional transportation and land-use planning, the GVRD had not gained nor did the legislation assign a specific funding or operating function for urban transit. And since the planning function was exclusively assigned to the Bureau, the GVRD was left outside the decision-making process.

During 1974 and 1975, the Bureau proceeded to develop transit programs for Greater Vancouver as well as for certain of the smaller urban centres in British Columbia. Transit system plans for Greater Vancouver envisaged an integrated system of local, suburban and inter-regional buses, commuter rail and light rail transit, and a ferry service linking terminals located in major activity centres over the Lower Mainland. By the end of 1975, the Bureau
had implemented suburban services in the municipalities of Coquitlam, Surrey, Delta and White Rock; developed preliminary designs for two large-scale multi-modal transit interchanges in downtown Vancouver and North Vancouver; and completed designs for a ferry service across Burrard Inlet to link these two major terminals.

Centralized planning and implementation had accomplished a great deal in a short time but by early 1975 the transit program began to encounter difficulties. In the area of transit planning, the ambitious and reformist approach of the Bureau management conflicted with the long-established and more conservative practices of many transit operators, including B. C. Hydro. The Bureau's desire to centralize the planning function allowed for the cooperation but not the involvement of operating agencies in transit planning. As the resentment of B. C. Hydro officials to the dominance of the Bureau increased, the Bureau became more sensitive to criticism and more defensive, with the result that even the consultative arrangements between the two agencies were eroded.

Similarly, the Bureau's control over the planning function inhibited the co-ordination of transit planning with local government planning. The Bureau viewed the GVRD as a competitor rather than a possible collaborator in transit planning. The resulting exclusion of the GVRD from participation in developing transit plans undermined the relationship between the two agencies and lost for the Bureau, the technical assistance the GVRD could have pro-
vided. Moreover, the Bureau's centralized planning control ignored municipal government land-use plans, thus further inhibiting co-ordinative processes.

In essence, the desire of the Bureau for rapid implementation of transit programs bred an aggressive and impatient attitude towards the operators and the municipalities. The decision by the Bureau to expropriate prime waterfront land for the location of an integrated transit terminal led to a bitter disagreement with the City of North Vancouver. Expansion of suburban bus services was welcomed by most of the affected municipalities but many municipal politicians resented the dictatorial way the services were implemented without local participation. In some cases, the relationship between the Bureau and the municipalities degenerated into political and ideological hostility. The absence of local involvement in transit decision-making led to numerous complaints from businesses and citizens about the bus services after their introduction. And finally, the deteriorating relationship with B. C. Hydro inhibited the capability of the Bureau to take full advantage of the operating experience of the Company during the implementation of transit services. All of these difficulties produced a policy implementation process which sacrificed program effectiveness for the purposes of efficient implementation.

The deterioration of inter-agency and inter-governmental relationships in urban transportation continued until
the defeat of the NDP in the provincial elections of August 1975. The returning Social Credit government effectively shifted the Bureau's activities from metropolitan areas to transit planning for the hinterland towns of British Columbia where it remains to this day.

In retrospect, the provincial transit efforts from 1972-75 made a valuable contribution to urban transportation planning in Greater Vancouver. The abrupt shift in transportation priorities from highways to transit was long overdue. The provincial programs countered the twenty-year neglect of urban transit services and brought transit more into balance with road systems. For the first time in Greater Vancouver's history, provincial policy making emphasized metropolitan transportation.

More importantly, however, the provincial transit policy developed a more effective decision-making process by changing the sequence of policy and planning. Policy development preceded the planning process, assessing the problem and setting goals and objectives. The goals of the transit policy originated in a party policy which was fashioned from the aspirations of rank and file party members and tempered by the experience of government politicians. As such, the provincial transit policy reflected a broader view of the metropolitan transportation problem by recognizing the external impacts of transportation and the needs of the non-automobile user and emphasizing the social over the economic benefits of transportation. In short, by subordinating the planning process, the transit policy avoided the narrow technical view
and thereby reflected a greater awareness of the changing context of transportation planning identified by John Dickey and others in the previous chapter.

However, the transit efforts were subject to a number of deficiencies in the planning and policy implementation processes. The planning process lacked:

1. a comprehensive view which included consideration of the road and land use aspects of transportation;
2. coordination with transportation planning efforts conducted by other provincial departments and local governments; and
3. broad participation in system planning by other agencies.

The first deficiency can be attributed to policy limitations; the second and third, to a desire to accomplish too much too fast, necessitating over-centralized planning.

The policy implementation process possessed most of the requirements for effective programs: adequate legislation and funding combined with an organization with broad powers. However, it lacked the mechanisms to allow meaningful participation by local government and transit operating companies in decision-making. At best, other agencies were limited to a consultative role; at worst, they were excluded altogether.

The arrival of a new governing party at the provincial level marked the end of another partial attempt to develop a transportation program for Greater Vancouver; another planning effort which only partly recognized the changing values of urban society; another implementation process whose deficiencies created formidable obstacles in its path. Having arrived at these conclusions from an historical analysis, it remains to determine whether the retrospective evaluations obtained from the questionnaire substantiate these findings.
Retrospective Evaluations of the Provincial Transit Program

The questionnaire posed three open-ended questions to decision-makers in an attempt to determine:

1. the successes of the transit program in comparison to the freeway program;
2. the deficiencies of the transit program; and
3. the means of correcting these deficiencies.

The interviews yielded a significant number of responses for classification, analysis and evaluation of the transit program in these three areas. The responses were categorized in the same way as those relating to the freeway program and are reported below.

A. The Successes of the Provincial Transit Program

The sample of decision-makers were asked the question, "What were the major successes of the provincial transit program?" The thirty-four replies produced eleven categories which are ranked by frequency of response in the following:

Table III

<table>
<thead>
<tr>
<th>TRANSIT PROGRAM ACCOMPLISHMENT FACTORS</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expansion of Transit Services</td>
<td>9</td>
</tr>
<tr>
<td>2. Greater Accessibility for Non Auto-users</td>
<td>5</td>
</tr>
<tr>
<td>4. Change in Emphasis from Roads to Transit</td>
<td>4</td>
</tr>
<tr>
<td>5. Greater Policy Support from Province</td>
<td>4</td>
</tr>
<tr>
<td>6. Provided More Balanced Transport System</td>
<td>3</td>
</tr>
<tr>
<td>7. Quick Implementation</td>
<td>2</td>
</tr>
<tr>
<td>8. Relieved Some Pressure on Street Systems</td>
<td>2</td>
</tr>
<tr>
<td>9. More Comprehensive Planning</td>
<td>1</td>
</tr>
<tr>
<td>10. Encouraged Participation of Other Agencies</td>
<td>1</td>
</tr>
<tr>
<td>11. Kept Vancouver Economically Viable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>
Identifying the accomplishments of the provincial transit program was intended to serve as a basis for comparison with its predecessor, the urban freeway program, from a planning and policy point of view. However, the accomplishments most frequently mentioned by decision-makers were those which would have accrued with respect to road systems had the freeway program been implemented. In terms of the first four categories, the urban freeway program would also have expanded transportation services, provided greater accessibility, introduced new concepts and substantially shifted the pre-war emphasis on transit. Taking this view, it would seem that the major successes of the transit program involved its higher productivity rather than its planning or policy improvements.

However, the respondents did recognize the policy improvements resulting from stronger provincial support for urban transportation. Some also supported the goal of the transit policy for a more modally balanced transport system. Predictably, the decision-makers were less appreciative of the transit planning process except to infrequently observe that it progressed further on the path to comprehensiveness and participation than the freeway program.

Specific responses within each category are described as follows:

1. Expansion of Transit Services

The most frequently recognized accomplishment of the transit program was the extension of regular bus service to suburban municipalities in Greater Vancouver. Most responses indicated that recognition of the tran-
sit needs of suburban areas was long overdue.

2. Greater Accessibility for Non-Auto Users
Most responses in this category viewed the bus service improvements as broadening opportunities for senior citizens, the handicapped, the poor, the young and housewives for access to employment, recreation, social services and commercial facilities in the suburbs.

3. Introduction of New Transit Concepts
Many respondents were impressed with the Bureau's efforts to introduce advanced European operational and marketing concepts to the transit services in Greater Vancouver. Specific references were made to commuter rail, light rail transit, the ferry-bus and the timed transfer concept.

4. Change in Emphasis from Roads to Transit
Some decision-makers welcomed the transit improvements as critical to the long-term transportation requirements of Greater Vancouver. Respondents credited the program with stimulating more realistic thinking of transit options, by identifying transit problems, searching for new alternatives and engendering a transit habit among younger people.

5. Stronger Policy Support from the Provincial Government
Decision-makers recognized a greater sensitivity on the part of the NDP provincial government to Greater Vancouver's transportation needs combined with a stronger
commitment to meeting these needs.

6. More Balanced Transportation System
Respondents identifying this accomplishment viewed the transit program as producing a greater diversity of transport mode options for the user thus bringing the supply of road and transit facilities into better balance.

7. Speedy Implementation
Two respondents pointed to the expeditious implementation of the transit policy as both necessary and difficult, and therefore worthy of praise.

8. Relieved Pressure on Vancouver Street Systems
Two replies viewed the transit program as a necessary stop-gap measure to forestall the need for major upgrading of the Greater Vancouver road system.

Significantly only two responses viewed the transit program as either comprehensive or participatory, suggesting that these two features were not clearly evident in the program. A single response viewed the transit program as a major economic boost to the region.

B. The Deficiencies of the Provincial Transit Program
A total of forty-six replies were obtained in response to the following question: "What were the major problems or
The majority of responses (26: total of Factors 1, 2, 4 and 5) recognized the inability of the Bureau of Transit Services to develop cooperative working relationships with the GVRD, the municipalities and B.C. Hydro Transit Division. The absence of inter-agency coordination identified by the questionnaire sample fully substantiates the conclusions of the historical analysis.

Moreover, the other factors identified by decision-makers add further credence to the results of the historical analysis. The historical analysis partially attributed
the domineering attitude of the Bureau to political pressure on Bureau management for speedy implementation of transit programs. This conclusion is corroborated by the ratings attached to Factors 3 and 7 in the questionnaire analysis.

At this point, it is interesting to note the importance of political factors in transportation policy and program implementation. Implementation of both the freeway program and the transit program was adversely affected by the negative influence of overriding political motivation.

Further clarification of the transit program deficiency factors is contained in the following breakdown of decision-makers comments:

1. **Contentious Relations with the GVRD**
   The part of the sample who mentioned this factor characterized the relationship between the Bureau and the GVRD as one of rivalry and intense disagreement eventually degenerating into an almost complete lack of communication. The Bureau seemed to perceive the GVRD as part of the problem rather than the solution. One observer indicated an attitude of jealousy towards the Bureau on the part of the GVRD.

2. **Adverse Relations with Municipal Governments**
   Many decision-makers in this group attributed this factor to basic ideological differences between the socialist oriented NDP provincial government and the more
conservative municipal politicians. Many municipalities came to resent the reformist and dictatorial stance of the Bureau which evolved from their desire to implement a broad program very quickly with a comparatively small staff. The attitude of the Bureau courted the distrust of the municipalities which in some instances denied the Bureau municipal assistance and support for the transit programs.

3. Over-zealous Implementation
Decision-makers frequently attributed the lack of inter-agency co-ordination and participation to the constraints imposed by a new organization with a small staff attempting to implement a highly ambitious program within a comparatively short time period. Such a situation demanded inter-agency co-operation and assistance. However, the overly aggressive and domineering management style of the Bureau seriously jeopardized the development of co-ordinative processes. Characteristic of a new organization with "growing pains", the Bureau committed some serious blunders in implementing the transit program.

4. Lack of Co-operative Planning
Some comments ascribed the Bureau's distaste for co-operative planning to political pressure from the Cabinet. Provincial politicians wanted complete control over the implementation process so that they could
take all the credit for the transit services. All the agencies involved became too concerned about protecting their own interests. The resulting competitive situation led to highly redundant rather than co-operative and more efficient planning.

5. **Poor Relations with B.C. Hydro-Transit Division**

The Bureau's unwillingness to fully consult with B.C. Hydro on transit service expansions was interpreted as the major cause of the poor working relationship between the two agencies. The Bureau seemed to view B.C. Hydro as purely a subordinate agency to implement planning directives. This attitude bred resentment from older experienced Hydro officials. The Bureau's lack of sympathy for transit operating problems led to conflict and implementation mistakes.

6. **Funding Problems**

In the view of most decision-makers, the funding problems of the transit program resulted from the absence of a long-term financing policy necessary for such a costly, large-scale program. Without a funding policy, service expansions were funded on an ad hoc basis. However, during its latter stages, there is some indication that the program lost much of its support from an essentially rural oriented Cabinet.

7. **Political Manipulation**

Many decision-makers attributed the pressure for rapid
implementation to the use of the transit services as an instrument for political advantage.

8. **Modal Imbalance of Program**

Some decision-makers regarded the provincial program as unbalanced in the sense of being overly transit oriented and ignoring the needs of automobile users.

9. **Operational Difficulties**

Three responses referred to various operational implementation problems such as neighbourhood complaints about noise, littering and delinquency near the timed connection bus terminals, the difficulties in obtaining rolling stock due to high demand and strikes at coach manufacturing plants and the relative lack of Bureau commitment to a light rail transit program.

C. **Provincial Transit Program Improvement Factors**

As a third component of the retrospective evaluations of the Provincial Transit Program, the sampled decision-makers responded to the question, "How could the problems or inadequacies of the Provincial transit policy and program have been resolved?" Classification and categorization of the nineteen responses received, produced the following table of Provincial Transit Program Improvement Factors.
The relatively small number of program improvement factors could be interpreted as indicative of a high level of agreement among sampled decision-makers as to desirable program improvements. Significantly the majority of the responses advocated broader participation and better co-ordination among agencies as necessary to ameliorate the deficiencies of the transit program. Others suggested more specific policy and program changes. The retrospective evaluations clearly support two of the aforementioned proposed goals. Moreover, modal balance (Factor 4) represents one aspect of program comprehensiveness and thus indicates at least partial support for this third goal of urban transportation planning and policy.

The specific responses from which each factor grouping was derived are described in the following:

1. **Broader Participation**

   All decision-makers recognizing broader participation as a palliative suggested that the scale of the Provin-
cial transit program required the full participation of the GVRD and affected municipal governments in both policy and program planning. The adversary relationship with the GVRD could have been avoided had the Province been willing to accept regional assistance. Had the Bureau made some attempt to understand local transportation problems, the full support of municipal politicians, planners and engineers could have been more easily obtained. In general decision-makers agreed that a greater willingness to compromise and to place more faith in local government in the beginning would have avoided many of the inter-agency conflicts and implementation problems.

2. **Greater Co-ordination**

Decision-makers in this group advocated the development of broader organizational structures which would establish closer integration between transit planning undertaken by the Bureau and the GVRD and the transit operational expertise of B.C. Hydro Transit Division. This implied the development of a policy which recognized a co-operative institutional framework with clearly defined responsibilities for each agency.

3. **More Clearly Defined Policy**

Part of the sample criticized the original transit policy and its accompanying legislation as insensitive and simplistic in its assigning complete and absolute transit responsibilities to the Bureau. Similarly,
many denounced the funding legislation for its lack of clarity as to the long term financial requirements of transit programs. Decision-makers seemed to imply the need for a policy which more clearly delineated the institutional and financial role of the GVRD and the municipalities.

4. More Modally Balanced Program

All responses in this group recognized the need for a more comprehensive urban transportation policy which included provision for both road and transit modes.

Summary of Retrospective Evaluations of the Transit Program

The retrospective evaluations of the Provincial transit program point to major deficiencies in both the planning and policy implementation stages of the urban transportation process. Unlike the freeway program, the Provincial transit program was auspiciously launched with a firm policy and funding commitment. However, both the policy and supporting legislation were too narrowly conceived to provide modal balance and inter-departmental or inter-governmental coordination. The transit policy concentrated planning and implementation responsibilities in a newly created organization responsible only to the Provincial Cabinet. This action fostered a domineering attitude on the part of agency management which was not responsive to regional land use programs, municipal transportation needs, or transit operating problems.
By limiting the active participation of local government and transit operators in decision-making, the transit program was never able to develop the multilateral coordinative mechanisms necessary for a robust, broadly-based program. The absence of broad participation allowed unilateral political pressure to interfere with the implementation process. Serious blunders resulted from pressure for overly expeditious implementation within the constraints of a new insecure organization, with a comparatively small staff, charged with a large-scale program. Nevertheless, even though the transit policy had not created formal coordinative mechanisms, the Bureau could have "headed off" many of these problems through closer informal cooperation. However, the aggressive and impatient management style of Bureau officials eventually eroded even these channels of communication with local government and transit operating agencies.

Thus, the retrospective evaluations obtained from the questionnaire survey in large measure support the conclusions of the historical analysis. Decision-makers overwhelmingly identified the absence of inter-agency program coordination and participation at both the planning and policy implementation stages of the process as the most frequently mentioned deficiencies. To a lesser extent, the sample referred to lack of policy comprehensiveness in terms of long-term funding, inter-departmental coordination and modal balance. All of these deficiencies isolated by the survey were also identified by the historical analysis.
To correct these deficiencies, decision-makers most strongly advocated broader participation by the GVRD and the municipalities during the planning and policy implementation phases of the process. In second order of priority, the decision-makers recognized the need for a policy implementation process which coordinated the activities of the Bureau with those of the GVRD and B.C. Hydro. These results indicated that decision-makers were content to allow the Provincial Government to develop a transportation policy unilaterally so long as the policy provided a clearly defined role for the GVRD, the municipalities and B.C. Hydro. And finally, in addition to participation and coordination, the decision-makers wanted a broader policy which recognized both roads and transit priorities and the necessity for long-term funding arrangements—some first steps toward a more comprehensive policy.

In summary, both the historical analysis and the retrospective evaluations of the Provincial transit program substantiated the three proposed goals as both deficiencies and correctives in the planning and policy stages. It now remains to summarize in some detail the lessons learned from analyzing the freeway program and the transit program.

Concluding Interpretation of the Results

The previous chapter reviewed the literature in urban transportation to provide expert subjective evaluation of the deficiencies and needs of metropolitan transportation planning and policy. Their views provided both a general
critique of the past and a prescription for the future. This chapter attempted to objectively verify the conclusions of the experts through a case study approach supplemented by the retrospective evaluation of a sample of involved decision-makers. The case study allows for a finer grained perception than the subjective analysis of how the planning and policy process operates in real situations. Therefore, this study would be derelict if it did not attempt to draw more specific conclusions from the pattern of history presented thus far.

Closer examination of the historical and questionnaire evidence reveals many insights about each phase of the transportation decision-making process: policy development, policy implementation and planning.

1. The Policy Development Phase

The existence of a policy development process is crucial to the implementation of transportation programs. The likelihood of implementing a transportation plan is severely reduced in the absence of an expressed policy supported by legislation and allocated funding. Expression of government policy establishes the intention to initiate the planning process to develop a policy or program. Given that the government possesses the constitutional jurisdiction to implement the program, legislation and funding formalizes and solidifies governmental commitment to proceed with the implementation process. Program development may take place in the absence of these requirements but without formalization of the policy development process, implementation is much less likely.
Formalized government policy can establish the prerequisites to develop in politicians and other entrusted individuals, the positive mental and emotional commitment to proceed through the difficult planning and implementation phases. Implied policy or policy which is contradictory to program objectives does not provide the necessary support for a program. Political support may desert the program at the first sign of problems in planning or implementation.

Such was the case with the freeway program. Provincial government policy priorities supported highway programs but expressly recognized only hinterland roads. Policy commitment to urban highways was only implied by the willingness of the Province to construct bridge approaches and fund freeway studies. In reality, the freeway decision-making process reflected the traditional format in which the planning process preceded policy development. However, in the absence of a policy commitment to follow-up the planning process the freeway program never developed beyond the planning stage. Without an expressed policy intention combined with legislative and funding commitments, provincial government support was withdrawn when the errors of the planning process bred political problems.

In the area of policy development, the provincial transit program distinctly contrasted with the freeway program. The government intention to develop a transit program was clearly expressed in both the party policy document and published statements of the Minister of Municipal Affairs. This initial commitment was later solidified by numerous pieces
of legislation to establish the organization and funding requirements of the program. As a result, the provincial transit program passed swiftly from policy development through the planning stage directly to the implementation phase of the process.

Besides substantiating the importance of a policy commitment, the previous analysis verifies other policy requirements, namely, comprehensiveness, coordination and participation. Unless the policy adopts a comprehensive view and provides mechanisms for coordination and participation, it is unlikely that the planning or implementation processes will reflect these goals.

The experience of the provincial transit program verifies this conclusion. The planning and implementation of the transit program was no more or no less comprehensive, coordinated or participatory than was indicated in its policy. Policy sets the general guidelines applying to those responsible for carrying it out. Few organizations or administrators will deign to step beyond the bounds of their policy mandate. Therefore, only rarely will a program extend beyond its policy limitations.

Despite its limitations, the provincial transit policy was able to progress to implementation. Lacking a policy commitment, the flaws in the policy could have proved as fatal to the transit program as they were to the freeway program. As it was, the policy deficiencies reduced program effectiveness but the program itself survived.
The experience of the freeway and transit programs illustrates the proper function of the policy development process in achieving the goals of comprehensiveness, coordination and participation. The policy process must first attempt to broadly define the problem by placing urban transportation in its overall societal context and derive goals and objectives to guide the planning process in the context of other government policies and priorities. These efforts establish the basis for a comprehensive view.

Second, the policy process should provide the means to translate comprehensive goals into reality. In most cases, this will require establishing the mechanisms to coordinate the activities of a multiplicity of agencies to achieve policy goals. Coordination, therefore, implies the issuing of directives to subordinate agencies to establish cooperative working relationships. Thus, coordination contrasts with cooperation, which involves an agreement between equal parties to work together, and integration, which requires the institutional amalgamation of two or more agencies. In this sense, coordination can be briefly defined as enforced cooperation.

Responsibilities in the field of urban transportation have always been fragmented among a variety of public and private institutions. Therefore, the attainment of comprehensive policy goals will almost always require establishing coordination among agencies who would not otherwise voluntarily cooperate.

Participation can be an byproduct of a comprehensive and
coordinated policy. A broadly based policy through mechanisms for coordination can solicit and enjoin the participation of a wide variety of agencies in the planning and policy implementation process.

In summary then, the policy development phase performing its proper function in the context of the overall decision-making process can provide a suitable vehicle for incorporating the goals of comprehensiveness, coordination and participation.

2. The Planning Phase

Analysis of the two provincially sponsored transportation efforts showed that most of the serious deficiencies were found in the planning stage of the process. The source of these deficiencies can be easily traced to the tendency of those responsible for planning transportation services to define the urban transportation problem too narrowly.

The freeway planners defined the problems solely in terms of inadequate roadway capacity; politicians tended to view the problem in economic and political terms. Predictably, a narrowly defined problem produced a narrowly defined plan which failed to recognize either the emerging social and environmental concerns or the transit needs of the general public.

In the case of the transit program, Bureau of Transit Services planners viewed the urban transportation problem as one of improving transit as a service to people. The outmoded ideas and methods of existing transit operators
like B.C. Hydro were considered as at least partly responsible for the decline of transit. Thus, operating agencies were viewed as part of the problem rather than part of the solution. Automobiles and roads were viewed as undesirable transit competitors and, therefore, municipalities in need of road improvement funds were looked upon as opponents rather than potential collaborators. Politicians of the governing party generally concurred with these views while adding their own political motives. The end result of this limited view of the problem was an urban transportation plan which ignored road requirements and the necessity to coordinate transit planning with land use planning.

The deficiencies of the planning process inevitably re-surfaced during the implementation stage. The absence of a comprehensiveness in the planning process became the root of the public opposition to the freeways which ultimately halted the program implementation. Similarly, the narrow view of the transit planners courted the dissatisfaction of the GVRD, the municipalities and B.C. Hydro, which seriously reduced program effectiveness.

Overcoming the tendency of planners to adopt a narrow and overly simplistic conception of the urban transportation problem demands a participatory approach to planning. The problem of transportation in cities affects everyone in diverse and complex ways. Therefore, decision-makers from the municipal to the provincial level contend with a different subset of the total problem, perceive the problem in
varying ways and develop differing approaches to the problem. Such a situation imposes severe restrictions on the plan makers' knowledge of the total problem and partial knowledge inevitably produces narrow solutions. The broad perception and broad solutions necessary to solve the urban transportation problem can only be achieved through mechanisms which permit the interaction of a diversity of viewpoints. The opposite case inevitably requires the imposition of the planners' viewpoint, values and perceptions on other agencies and the citizen. The dissatisfaction which results from this non-participatory approach often carries over into the implementation phase, ultimately reducing the effectiveness of a transportation program. Thus, participation is a prerequisite for a comprehensive planning process.

3. The Policy Implementation Phase

Coordination is probably the most crucial requirement for effective policy implementation. To ensure maximum effectiveness, the delivery of transport services requires not only coordination among transportation agencies but also coordination between transportation agencies and those agencies whose activities are likely to be impacted by urban transportation.

Since planning is an ongoing process which invariably overlaps with implementation, it is difficult to separate the two. Therefore, dividing the two responsibilities among separate agencies invites problems which can only be overcome by a highly coordinated working relationship. Ideally,
the agency charged with delivering transportation services should have some say in the planning process so as to bring practical experience to bear at the outset, on the problem and its proposed solutions. The provincial transit program suffered as a result of an uneasy relationship between the Bureau as the planning agency and B.C. Hydro as the implementing agency. The experience of the transit program demonstrates that the mechanisms of coordination should be specifically defined in the policy; otherwise, it is unlikely that a cooperative relationship will develop naturally.

Coordination between transportation agencies and land use planning agencies at all levels of government is most beneficial during the planning process but there is considerable justification for coordination to extend into the implementation phase. Timing the delivery of transportation programs to coincide with the implementation of land use programs is necessary to ensure the maximum reciprocal benefits to both. In the case of high capacity transit systems which depend on concentrated land use patterns, coordination with land use plans is not only necessary but indispensable.

Ideally, the most effective delivery systems are found in organizations which integrate transportation and land use responsibilities under a single jurisdiction. However, in both the integrated single agency or coordinated multiple agency form of implementation, both the planning and delivery of transportation services requires stable, long-term funding arrangements. A piecemeal, "when funds become available" approach to transportation and land use planning and delivery
involves a constant readjustment of priorities. The resulting pattern of program cutbacks and postponement inhibits the efficient execution and delicate timing required for a coordinated transportation and land use program.

Chapter Summary

This discussion of transportation planning in Greater Vancouver was intended to examine the goals of comprehensiveness, coordination and participation as requirements for effective transportation policy and planning. The historical analysis of the two case studies was intended to develop theoretical conclusions as to what went wrong with the provincially guided freeway and transit programs and why they went wrong. These conclusions were then tested by the questionnaire evidence to determine whether the retrospective evaluations of decision-makers conformed to the author's interpretation of the events. Analysis of both case studies showed a high correspondence between the author's theoretical interpretation and the decision-makers' evaluations of history.

The results indicated that the freeway and the transit program exhibited numerous deficiencies in the stages of policy development, planning and policy implementation. The major deficiencies of both programs are presented below. To provide some indication of their relative significance they are ranked in descending order of importance based on the questionnaire results.
1. the absence of mechanisms to allow participation by other agencies and citizens in planning and implementation.
2. a policy development process which did not establish procedures to coordinate the activities of various transportation agencies or coordinate transport and land use programs.
3. the absence of long-term funding arrangements in the policy.
4. a planning process which failed to comprehensively evaluate the urban transportation problem.
5. excessive political motivation underlying the allocation of transportation services.

To correct these deficiencies, the sampled decision-makers advocated the following policy and program improvements listed in descending order of importance:

1. broader participation by other agencies in all three phases of the process.
2. broader participation of citizens in the planning process so as to minimize negative social and environmental effects.
3. development of a more comprehensive policy which more clearly supports urban transport needs and integrates road and transit priorities.
4. greater coordination among transportation agencies and land use planning agencies.

By interpreting these results, the observer comes to the conclusion that the most important requirement of urban transportation is a provincial policy which openly solicits the
participation of the region, the municipalities, transit operators and the general public in the planning process and establishes mechanisms to coordinate the activities of these agencies and groups. This would seem to be the only way to develop a comprehensive program that would satisfy the demand for integrated road, transit and land use planning. In this sense, the results not only support the goals of comprehensiveness, coordination and participation but also suggest that the process of working toward these goals begins with a provincial policy providing mechanisms for broad participation in the planning process.

Up to this point, the analysis has dealt with the goals of transportation policy and planning; it has not, however, described the methods of achieving these goals. It has analyzed provincially sponsored transportation efforts; it has not examined policy and planning in urban transportation initiated by the regional government. It has critically evaluated past attempts but it has not clearly delineated future directions for transportation policy and planning for Greater Vancouver. The next chapter attempts to satisfy these demands by applying the lessons of the past to determine the needs of the future.
Preceding chapters have developed goals for urban transportation planning and policy from the subjective evaluations of experts in the field and verified these goals with historical and objective evidence. Adopting the goals of comprehensiveness, coordination and participation seemed to offer the most effective approach to the urban transportation problem.

Casting a backward glance at the inadequacies of previous provincially sponsored efforts in Greater Vancouver provided the necessary object lessons to apply to the future. However, the time has come to determine whether the lessons of the past can be applied and, in fact, will be applied to improve the future. The former will require development of practical framework and methodologies capable of realizing the three goals and the latter will require a positive commitment from planners and policy-makers to proceed in their direction.

Therefore, the first task of this chapter will be to examine ways and means of developing a more comprehensive, coordinated and participatory process. Fortunately, however, there already exists in Greater Vancouver an example of an agency which has developed and implemented such a process, namely, the Greater Vancouver Regional District. The activities of the GVRD in urban transportation went further than previous efforts in incorporating the three goals in the policy and planning process. As such, they are worthy of analy-
sis in the context of urban transportation in Greater Vancouver.

Having presented the GVRD example, the second task of this chapter will be to present decision-makers' views as to the necessary components of future transportation policy and programs in Greater Vancouver. This will be done in two ways: indirectly by soliciting their reaction to the GVRD process and directly by determining their concepts of a desirable future state for the transportation process.

It is hoped that this format will establish whether or not decision-makers still cling to older, obsolete conceptions of urban transportation and its development process or whether they in fact foresee the need for change—a new process which strives toward the three proposed goals.

A. The GVRD Transportation Policy and Program

Numerous authors cited in earlier chapters advocated the region as the most effective administrative focus of coordinated and participatory policy development and planning. In Greater Vancouver, the GVRD has more than lived up to the expectations of the experts. The urban transportation process developed at the region in Greater Vancouver counterpoints the highly inadequate past, provincially sponsored transportation efforts.

Regional involvement in transportation planning is relatively new to Greater Vancouver. Indeed, regional administration in its present form has only been in existence since 1967, when the provincial government issued letters patent creating the Greater Vancouver Regional District. The new metropolitan form was to be a federation
with each of the 14 member municipalities represented by one Regional Board Director appointed by Council. The more populous areas of Vancouver and Burnaby received five and two Directors, respectively. Voting on the Regional Board was based on population.

The GVRD was not given a set of powers but had to apply to the Provincial Government to take on specific functions agreed upon by the members. By 1969, the regional planning function previously exercised by the Lower Mainland Regional Planning Board became a GVRD function. In 1971, public housing, water supply and sewage disposal were added, and in 1972, air pollution control and regional parks became regional district functions.

The newly created planning department under the directorship of Harry Lash expended a large part of its early efforts on transportation planning. Lash reviewed an earlier study of rapid transit commissioned by B.C. Hydro, the GVRD and the City of Vancouver and conducted by De Leuw, Cather and Company.\(^1\) He concluded that the rapid transit proposals were recommended prematurely because the study did not delineate "the alternatives to rapid transit because it dealt only with rapid transit."\(^2\)

This prompted the Planning Director to advocate a more comprehensive view of regional transportation needs. Later


\(^2\)Planning Committee Minutes, Greater Vancouver Regional District, May 27, 1970.
through consultation with the Transportation Committee of the GVRD Board and the public, the Planning Department recommended that the GVRD work toward the eventual establishment of a regional transportation authority and the development of a "broad brush" transportation plan. The transportation plan was to evolve within the context of an overall regional plan and program.

Through extensive discussions during the latter part of 1970, a consensus emerged to proceed with the creation of a plan which would produce overall and operational goals through extensive participation from various agencies and the general public.

Transportation became a major priority when in late 1970 two provincial cabinet members suggested that public transit be turned over from B.C. Hydro for one dollar, combined with an offer to absorb part of the capital and operating expenditures. In response to these proposals, the GVRD Board appointed a Transportation Function Study Committee under the Chairmanship of Allan Kelly.

To study the proposals that have been made to us and to determine the needs of the District, suggest how they might best be met, how they could be financed and how we would operate if the Region accepted responsibility for public transportation.

While work proceeded on the Kelly Report, senior members of the GVRD Planning Department staff developed a statement of operational objectives for the "broad brush" transportation plan. These were stated as:
1. Development of a program for immediate improvements to transportation.

2. Identification of future transportation corridors and their appropriate designation in the Official Regional Plan.

3. Achievement of a suitable formula for financing improvements to the regional transportation system.

4. Development of an initial five-year regional transportation program and priorities.

For the most part, these objectives were achieved by the Kelly Report submitted in October 1971. The report began with a policy statement of general principles to guide regional adoption of the transportation function. These principles are summarized as follows:

1. To provide the people of the Region with diversified transportation service adequate to meet their diverse needs at the least public cost, consistent with the Liveable Region concept and within the financial resources available to the District and its members.

2. Attainment of the objective will require continuing cooperation, coordination, joint planning, and allocation of funds by the Regional District, the municipalities and the Province.

3. The transportation function should be comprehensive and aim to provide diversified facilities for the movement of people and goods throughout the region, facilities that together with facilities provided by the municipalities, the Province, and other public and private enterprise, are formed into an integrated regional transportation system.

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4Greater Vancouver Regional District, Transportation As A GVRD Function, October, 1971.
Thus, the Kelly Report clearly espoused the three proposed goals for transportation planning: comprehensiveness in terms of mode and integration with regional land use planning; coordination with provincial, municipal and private transportation efforts; and participation in a cooperative enterprise.

To some degree, the Kelly Report achieved the four objectives set out for the "broad brush transportation plan." Both immediate and long-term improvements to the Greater Vancouver transportation system were proposed. However, all of the suggested improvements involved proposals contained in a preliminary plan for upgrading bus transit and developing LRT. The report prepared by the consultant, Brian Sullivan, who was destined to become Assistant Director of the Bureau of Transit Services, did not deal with regional road improvements. Instead, it recommended an interlocking LOCAL and FASTBUS system, LRT, commuter rail and timed connection terminals—proposals which two years later would become the basis of the provincial transit program.

Similarly, the Kelly Report did identify future transportation corridors and did propose a general five-year plan to 1976 but again, both of these pertained to transit rather than roads. However, the transit corridors were included in the regional plan released in March 1975 in conformance with the second stated objective of the transportation plan.

In retrospect, the Kelly Report was primarily significant as the first general statement of regional policy and
financial principles to guide GVRD adoption of the transportation function. In this sense, it left an important legacy for future regional transportation planning. However, regional participation in action programs to implement the recommendations of the Kelly Report was forestalled for three years by the advent of the NDP, the Bureau of Transit Services and the provincial transit program. The basic elements of the GVRD transit program were adopted by the Bureau, but, as mentioned before, regional involvement in implementation was almost non-existent.

Nevertheless, during this period, the GVRD forged ahead in other areas, the most important of which was the development of an overall regional policy and program. Having outlined the basic components of the GVRD transportation plan, the major efforts of the planning department from 1972 to 1975 were devoted to developing a regional plan which would relate transportation to other elements of the urban system. The planning process brought politicians at all levels of government together with planning staff and the general public to discuss regional goals, policies and their interrelationships. This highly cooperative and participatory planning process culminated in the summer of 1975 with the completion of the Livable Region Program (LRP).

The LRP represented the first attempt in the twenty-five year history of transportation planning in Greater Vancouver to comprehensively evaluate urban transportation needs and impacts in the context of overall land use planning. The

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plan proposed the creation of a network of suburban regional town centres linked by rapid transit. Controlling the location of commercial land use by decentralizing workplaces from the downtown core was designed to bring jobs closer to suburban residences and thus reduce transportation demands. The transit links would help to reinforce this new pattern of commercial land uses while, in turn, the concentration of activities in town centres would make rapid transit economically possible. Moreover, the LRP not only provided a comprehensive view which linked transportation with land use planning but also advocated a broader variety of options, including both transit improvements and traffic management measures. In all senses, therefore, the process of developing the LRP and the plan itself represented the most significant attempt to incorporate comprehensiveness, coordination and participation into the transportation planning and policy making procedures.

The defeat of the NDP provincial government in November 1975 elections resulted in the removal of the Bureau of Transit Services from the transportation planning scene in Greater Vancouver. This left a vacuum in transportation policy implementation which renewed GVRD interest in obtaining the transportation function. In consultation with the GVRD transportation committee and municipal politicians and staff, the planning staff worked to develop proposals for organizing and financing a regional transportation function which would be acceptable to the provincial government and the member municipalities.
The proposals for organization and financing released at the end of 1976 built upon the general principles of the Kelly Report but provided substantially more detail. The proposal for organizing regional transportation was directed straight at the heart of one of the major transportation policy problems: the fragmentation of responsibility for urban transportation. Recognizing that "Greater Vancouver is the only major metropolis in Canada that scatters responsibility for transportation among thirteen municipalities, three public transportation agencies and the Department of Highways," the GVRD proposed the creation of a Regional Transportation Commission. The Commission would consist of the provincial Ministers of Municipal Affairs, Highways and Transport, the Chairman of B.C. Hydro and three GVRD Directors, one of whom would be from the City of Vancouver. The Commission would be responsible for developing and funding a five-year transportation program for both roads and transit. The five-year program was to be prepared by a technical transportation committee composed of representatives from each member municipality, public transit operator, the provincial Departments of Highways and Municipal Affairs and the GVRD. Thus, the organizing proposals provided for an overall coordinating body for administering and funding a comprehensive


7Greater Vancouver Regional District Transportation Committee, A Proposal: Financing Regional Transportation, January, 1977, p. 3.
regional transportation program with participation from virtually all agencies presently involved in providing urban transport services in Greater Vancouver.

The proposals for financing the five-year transportation program suggested a variety of funding sources for both roads and transit requirements. Arterial highway capital costs of transit improvements were to be a regional responsibility while municipal streets would be funded by the municipalities. In this way, the proposals provided an essential long-term financing policy which was absent from the two previous transportation programs in Greater Vancouver.

Subsequently, both the organization and financial proposals were presented to each member municipal council for approval in the early part of 1977. Eight of the thirteen municipalities approved the proposals but lack of support from the City of Vancouver seriously eroded the united front the GVRD required in its negotiations with the Provincial Government. As of this date, the Province has not responded to the Regional Transportation Proposal. Instead, it has expressed an intention to bring down legislation for the creation of a Provincial Transportation Authority, but it has yet to act upon this intention.

Thus, despite five years of intensive effort by the GVRD and two decades of Provincial proposals, Greater Vancouver remains without a formally adopted, comprehensive and coordinated policy and program for urban transportation. Rather, the decision-making environment has become a competitive situation with the region and its member municipali-
ties attempting to spur the provincial government into decentralizing some of its control over regional transportation.

This state of affairs has raised an essential jurisdictional question concerning a future transportation decision-making structure for Greater Vancouver. The GVRD wants an organizational structure which would give the region a greater say in transportation decisions, while the Province may want to retain much of its present decision-making authority.

The question of who should have the major responsibility for urban transportation is crucial to future transportation planning in Greater Vancouver. The region has shown a greater awareness of the real needs of urban transportation than the provincial government. However, substantial support of decision-makers at all government levels will be necessary to realize the policies and programs developed by the GVRD. Acting on this proposition, it was decided to poll the sampled decision-makers as to their attitudes toward the level of GVRD involvement in urban transportation decision-making.

The questionnaire posed the following question to decision-makers: "Should transportation policy be a responsibility of the GVRD?" The replies were categorized by the number of decision-makers supporting each possible answer and are shown in Table 6 on the following page.
TABLE 6
GVRD Role in Urban Transportation Policy Development

| Yes, GVRD should have major responsibility | 7 |
| No, Province should have major responsibility | 7 |
| Both should have equal responsibility | 3 |
| TOTAL | 17 |

The sampled decision-makers were evenly divided as to whether either the GVRD or the Province should bear the majority of responsibility for urban transportation policy development. A lesser number of decision-makers supported the proposal for equal sharing in policy making.

The responses were also accompanied by comments in support of the various points of view. Those who supported a major role for the GVRD offered the following reasons:

1) The Province has too many other priorities—nothing will be done unless the region does it.

2) The GVRD is the only level of government which can reflect local concerns, especially land-use priorities.

3) The GVRD is the only appropriate body to establish co-ordination among municipalities; negotiate for municipalities; co-ordinate roads and transit.

On the other hand, the decision-makers advocating a strong Provincial role commented that:

1) urban transportation was too costly for the GVRD to accept without a clear-cut taxing power;

2) a strong regional role in transportation policy would create a monolithic metro authority which would not be suffi-
ciently responsible to normal checks and balances, would lose touch with member municipalities, or would result in over-government in Greater Vancouver;

3) transportation is a province-wide, not exclusively a regional problem.

And finally, the minority who supported equal Province and GVRD responsibility stated that:

1) the Province must set overall priorities based on its necessary funding capabilities;

2) the GVRD should have a major say to establish coordination with municipalities.

The results of the questionnaire analysis suggest substantial but not unqualified support for the regional model of transportation decision-making. The general thrust of the comments advocates a stronger role for the GVRD as an appropriate level for inter-agency coordination. However, the present dominant provincial funding capacity necessitates a major policy making role, partly to prevent the creation of an overpowering regional transportation authority with separate revenue sources. Thus, the results do not fully support either a dominant provincial or dominant GVRD policy making role. Clearly, some type of provincial-regional coordinating mechanism is suggested but not clearly delineated by the questionnaire results.

While the results do not indicate an exclusive role for region in transportation decision-making, they do clearly support the position of the GVRD that a provincial-regional commission is the most appropriate form of urban transporta-
tion authority. Such an organization could provide the necessary balance of recognizing the existing provincial role and funding capability while adapting to the concerns of decision-makers for local participation and coordination. Thus, the joint commission form of urban transportation authority would seem to be most desirable to promote the goals of coordination and participation in future transportation planning in Greater Vancouver.

B. Analysis of the GVRD Transportation Policy and Program

The GVRD process of formulating transportation policy and programs presents a realistic method to incorporate comprehensiveness, coordination and participation into the planning process in the context of the Greater Vancouver region.

However, perhaps the most important legacy for the future is not the method itself but an understanding of the conditions which allowed a vastly improved process and product to develop at the regional level of government rather than at the provincial level.

The source of this broad disparity in achievement between provincial and regional transportation policy can be traced to essential differences in organizational structure. At the provincial level, urban transportation planning responsibilities are scattered among three government departments. Each department is oriented towards policy formulation and delivery from the top down within its specific area of jurisdiction. Such a vertically integrated structure offers no incentive for either politicians or bureaucrats to develop close inter-departmental coordination. Such a structure reduces the potential for comprehensiveness in the policy process.
The structure of the GVRD Planning Department, however, seems to be more conducive to the development of policy comprehensiveness and coordination. The regional planning department is a comparatively small organization with varied responsibilities. Such a structure does not inhibit daily, face-to-face contact between individuals from a wide range of programs, including regional town centres, transportation, housing and parks.

From its inception, the planning department, faced with the enormous responsibility of producing an overall regional plan naturally developed a comprehensive, integrated approach. However, the inter-program coordination which developed in the early days continues using a special type of departmental meeting called "matins." "Matins" provides a key vehicle for informing staff members of ongoing projects and a forum for the questioning of how these projects relate to the overall departmental program and to other projects. These informal arrangements to provide horizontal program integration often referred to as the "collegial" approach directly contrast with the vertical bureaucratic decision-making style common to most government agencies.

In summary, the GVRD as a new organization with broad planning responsibilities was thus able to develop a comprehensive, coordinated and participatory, unfettered by pre-existing bureaucratic structures inimical to these goals. Transportation was but one facet of an organizational structure conducive to an improved process and as such, benefitted immensely from its spinoff effects.
The foregoing description and analysis of the GVRD process of overall regional planning provides numerous suggestions for incorporating the proposed goals into the urban transportation planning process. As such, it offers a bundle of methods and techniques to overcome the deficiencies of previous approaches to planning transportation services for Greater Vancouver. However, caution must be exercised in applying a methodology appropriate to the institutional and transportation service characteristics of Greater Vancouver to other urban areas. The major object lesson to be gained from this analysis of the GVRD planning process is above all that the method of developing a comprehensive, coordinated and participatory planning process must be adapted to local conditions.

C. A Future Model for Urban Transportation Decision-Making

The future is never totally predictable, especially in the area of urban transportation. Transportation is subject to a multitude of factors which may drastically alter present patterns and totally reshape the future course of events. However, for the purposes of this discussion, it is necessary to adopt a predictive stance in attempting to project the outlines of future transportation policy and programs from the views of decision-makers involved in the present transportation scene in Greater Vancouver.

The preceding chapter showed substantial skepticism with provincial efforts in shaping transportation policy and programs. The first section of this chapter presented the GVRD alternative model but analysis of decision-makers' comments also
pointed out certain reservations towards the region assuming major responsibility for urban transportation. The question, therefore, remains: What should be the components of an organizational framework and characteristics of transportation policy and programs for Greater Vancouver?

This section will present the findings derived from the questionnaire analysis of decision-makers' responses to these questions. These questions were measured by the following parameters:

1. governmental involvement in policy and program development
2. agency involvement in policy development
3. policy characteristics
4. agency involvement in program implementation
5. program characteristics
6. program components

The remainder of this chapter will be devoted to reporting and analyzing the questionnaire results in each of these areas.

1. Governmental Involvement in Policy and Program Development

In the preceding section, decision-makers were asked to express their views regarding GVRD involvement in transportation planning vis-a-vis the existing provincial agency dominance. Here, decision-makers are asked to generate a future organizational framework for government involvement. The sample were posed the question: Who should have the major responsibility for urban transportation policy and planning--the provincial government, the GVRD or the federal government? The numerical breakdown of respondents and associated comments are presented as follows.
TABLE 7

Government Level Involvement in Transportation Policy and Program Development

| Province and GVRD share responsibility | 8 |
| Province: most responsibility          | 6 |
| GVRD: most responsibility              | 3 |
| Federal: most responsibility           | 0 |

Total Respondents 17

Of the eight respondents who advocated an equal sharing of responsibility between the Province and the GVRD, five supported the GVRD proposal of a Regional Transportation Commission. The other three did not specify an organizational framework but suggested the need for stronger coordination between the Province and the GVRD. Two of these recognized the major provincial role as that of funding with the GVRD representing local needs and concerns.

Of the six respondents who wished to see the Province remain the major decision-making level of government in urban transportation, five justified the majority representation of the Province on the basis of its major role in taxation and funding. The attitude was that if the Province must provide most of the funds, it must have most of the decision-making responsibility. Additional comments explained this position on the basis of provincial constitutional responsibilities for inter-municipal affairs, land use planning, inter-regional transportation and federal relations. However, five of the six respondents in this category advocated some sharing of responsibility with the GVRD.

In the third group which proposed major GVRD responsibility, these three respondents placed a higher value on local account-
ability, sensitivity to local concerns, and coordination with local land-use planning. They all implied that the GVRD is in a better position to determine regional transportation needs and should therefore have a majority say in transportation spending. However, one respondent recognized the present vested interest in transportation of the senior government levels suggesting that they also must fully participate.

And finally, although none of the respondents advocated a majority federal role in regional transportation decision-making, ten of the seventeen decision-makers recognized a major federal funding role in urban transit and an indirect policy role in defining the national interest and responsibility for urban transportation and coordination with growth and immigration policy. Five respondents suggested some federal involvement is necessary due to present vested interests in rail rights-of-way, harbour development and air transport.

These responses to the question of governmental involvement in urban transportation delineate the major components of a future organizational framework. Fully sixteen of the seventeen respondents advocate some form of provincial-regional sharing of transportation decision-making with varying shares of responsibility between the two levels of government. The majority view seems to be weighted in favour of an organizational structure giving a major say to the Province because of its larger funding role in urban transportation. However, decision-makers perceive an important role for the GVRD as the most effective interpreter of local transportation needs and concerns.
The general thrust of decision-makers' views proposes a future transportation organization which strongly supports the GVRD proposal for a Regional Transportation Commission with the Province determining the level of funding for urban transportation in the context of other provincial transportation priorities and the GVRD exercising responsibilities for planning, programming and budgeting for the Greater Vancouver region. In this sense, decision-makers do not favour a return to the previous system of total provincial control of regional transportation decision-making.

Having outlined the general character of governmental involvement in urban transportation, this analysis can now move to delineate the level of agency involvement in transportation policy and program development.

2. Agency Involvement in Transportation Policy Development

Urban transportation planning in the Greater Vancouver region is presently carried out by numerous agencies at all levels of government. Not only do these agencies implement transportation programs but they are also very instrumental in the policy development process. Since these agencies presently have a major vested interest in urban transportation, it would be necessary to solicit their participation in any future organization responsible for transportation policy development. However, since the present involvement of these agencies differs in degree and character, it is unlikely that all agencies would be equally represented in a future policy organization. Therefore, in order to further specify the composition of a future
organization it was necessary to solicit decision-makers' views regarding the level of involvement of present agencies whose decisions affect transportation planning in the Greater Vancouver region.

With this objective in mind, decision-makers were asked to rank the degree of involvement of a number of listed agencies in transportation policy development. Each response was assigned points ranging from three for a response of "highly involved," two points for "moderately involved," one point for "less involved," and zero for "not involved." Totalling the responses for each agency produced a score. The following table ranks the agencies by score from highest to lowest.

**TABLE 8**

**Agency Involvement in Transportation Policy Development**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provincial Department of Highways</td>
<td>49</td>
</tr>
<tr>
<td>2. B.C. Hydro, Transportation Division, &amp; Greater Vancouver Regional District</td>
<td>44</td>
</tr>
<tr>
<td>3. Provincial Cabinet</td>
<td>43</td>
</tr>
<tr>
<td>4. Department of Municipal Affairs &amp; Housing</td>
<td>41</td>
</tr>
<tr>
<td>5. Municipal Governments</td>
<td>39</td>
</tr>
<tr>
<td>6. Citizens Groups</td>
<td>33</td>
</tr>
<tr>
<td>7. Federal Ministry of Transport</td>
<td>29</td>
</tr>
<tr>
<td>8. Provincial Department of Transport and Communications</td>
<td>28</td>
</tr>
<tr>
<td>9. Pacific Stage Lines</td>
<td>23</td>
</tr>
<tr>
<td>10. Federal Cabinet</td>
<td>21</td>
</tr>
<tr>
<td>11. Canadian Pacific &amp; Canadian National Railways</td>
<td>2</td>
</tr>
<tr>
<td>12. Federal Ministry of State for Urban Affairs</td>
<td>1</td>
</tr>
<tr>
<td>13. Federal National Harbours Board</td>
<td>1</td>
</tr>
</tbody>
</table>
The results indicate that decision-makers foresee a broad range of agency involvement in any future transportation organization. The first five agencies could be classified as those which would be highly involved. These agencies would likely be directly represented on any policy-making body. However logically the GVRD would represent municipal governments while the Provincial Cabinet would be represented by the Ministers of Highways and Municipal Affairs. These two Ministers, some GVRD board members and the Chairman of B.C. Hydro would comprise the most appropriate decision-making body in view of these results.

The second group of agencies (Numbers 5 - 10) are those of the moderately involved category. These government agencies less actively involved in urban transportation in Greater Vancouver and citizens groups likely to be impacted by transportation decisions fall into this class. These agencies and groups would likely play a consultative role to the inner group of transportation policy-makers.

And finally, the last three agencies comprise those peripherally involved organizations which are not actively involved in planning or providing urban transportation in Greater Vancouver but whose unilateral decisions may impact urban transportation. These agencies would not be involved in policy-making but could possibly be brought into the process at the program level in certain instances.

The results indicate that the sampled decision-makers support the principle that program implementing agencies should be actively involved in the transportation policy-making process. All three of the presently most active agencies--the
Departments of Highways and Municipal Affairs and B.C. Hydro -- are rated highly as future policy-making units. The future policy-making organization would thus be comprised of present policy-making agencies such as the Provincial Cabinet and the GVRD as well as present implementing agencies.

3. Policy Characteristics

Having delineated the composition of agency involvement in urban transport policy formulation it was also crucial to determine the desirable characteristics of the policy output of this organization. A primary objective was to test whether decision-makers remain attached to the older rationales for transportation policy or whether they are sensitive to the new goals of comprehensiveness, coordination and participation. To further this objective decision-makers were asked to choose the three most important future policy characteristics from a list. The list included a number of important characteristics common to past transportation policy efforts as well as the new goals of transportation policy. The responses were tabulated in the same way as the previous question and are presented in rank order in the following Table 9.

**TABLE 9**

<p>| Desirable Characteristics of a Future Transportation Policy for Greater Vancouver |
| --------------------------------- | --------------------------------- |</p>
<table>
<thead>
<tr>
<th>Policy Characteristic</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Comprehensive Policy Considering Land-use Programs</td>
<td>40</td>
</tr>
<tr>
<td>2. Politically Acceptable Policy</td>
<td>14</td>
</tr>
<tr>
<td>3. Participatory Policy Formulation Policy</td>
<td>13</td>
</tr>
<tr>
<td>Policy Coordination</td>
<td>13</td>
</tr>
<tr>
<td>4. Goal Oriented Towards Maximum Accessibility</td>
<td>10</td>
</tr>
<tr>
<td>5. Acceptable to Present Agencies</td>
<td>5</td>
</tr>
<tr>
<td>6. Policy which Defines Transportation Corridors</td>
<td>1</td>
</tr>
</tbody>
</table>
The responses of decision-makers substantially support the proposed goals of comprehensiveness, coordination and participation in a future transportation policy. In this sense, decision-makers differ from their predecessors in that they attach greater importance to the policy process itself than the policy end product and the necessity to overcome the institutional constraints more than the political or technological obstacles. However, concern for the characteristics of the product remains significant in terms of its political acceptability and its goal orientation towards maximum accessibility.

4. Agency Involvement in Transportation Program Implementation

The theoretical discussion of urban transportation planning emphasized that the lack of agency coordination in program implementation represented a major obstacle to solving the metropolitan transportation problem. Agency coordination is the crucial component in policy delivery: the process of translation from policy to programs. The analysis of agency involvement and desirable characteristics of a future transportation policy showed strong support for comprehensiveness and broad participation. However, decision-makers must also recognize the need for coordination during the program implementation phase if broad agency involvement in delivering a future policy is considered desirable.

To determine the composition of agency involvement in program implementation the questionnaire asked decision-makers to assign levels of involvement from "highly involved" to "not involved" to each agency in the same list as that presented for
the policy involvement question. The responses were scored in
good to the same procedure and the agency rankings are
presented in the following table.

TABLE 10

Agency Involvement in Transportation
Program Implementation

<table>
<thead>
<tr>
<th>Agency</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. B.C. Hydro, Transportation Division</td>
<td>47</td>
</tr>
<tr>
<td>2. Provincial Department of Highways</td>
<td>43</td>
</tr>
<tr>
<td>3. Greater Vancouver Regional District</td>
<td>42</td>
</tr>
<tr>
<td>4. Municipal Governments</td>
<td>41</td>
</tr>
<tr>
<td>5. Provincial Cabinet</td>
<td>37</td>
</tr>
<tr>
<td>6. Pacific Stage Lines</td>
<td>30</td>
</tr>
<tr>
<td>7. Provincial Department of Transportation and Communications</td>
<td>29</td>
</tr>
<tr>
<td>8. Citizens Groups</td>
<td>23</td>
</tr>
<tr>
<td>9. Federal Ministry of Transport</td>
<td>22</td>
</tr>
<tr>
<td>10. Federal Cabinet</td>
<td>20</td>
</tr>
<tr>
<td>11. Canadian Pacific Railway (Canadian National Railway)</td>
<td>1</td>
</tr>
</tbody>
</table>

The result closely paralleled the previous responses for
agency involvement in policy development. The same agencies
ranked as highly involved in policy formulation were also ranked
as necessarily highly involved in the future program implementa­
tion phase. The major changes in rank involved the Provin­
cial Cabinet and citizens groups. Both these agencies were
downgraded in terms of their involvement in program implementa­
tion. However, the implication remains that decision-makers
believe that agencies highly involved in the policy stage
should also be highly involved at the program stage.

The major point to emerge from the analysis is that agency
involvement at both the policy and program stages should emphasize participation from operating agencies. This arrangement is necessary to ensure that policy is brought closer to the realities of program implementation.

5. Program Characteristics

Transportation planning of twenty years ago was characterized by a deeper concern for the aspects of program delivery rather than those of policy development. As a result, the guiding rationale of past transportation reflected program characteristics rather than policy characteristics. For these reasons, analysis of desirable future program characteristics provide a more than suitable vehicle to assess decision-makers attachment to older rationales or, alternatively, their sensitivity to the new emerging ideas of transportation planning.

Thus, decision-makers were asked to respond to a mixture of both old and new ideas regarding transportation programming. As before, respondents were asked to choose from a list the three most important characteristics of future transportation programs for Greater Vancouver and rank these by placing the numerals "one", "two" and "three" beside the characteristic. The responses were scored three points for a "1"; two points for a "2" and one point for a "3", and yielded the following results.
**TABLE 11**

Desirable Characteristics of Future Transportation Programs for Greater Vancouver

<table>
<thead>
<tr>
<th>Program Characteristic</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provision of a Balance of Roads and Transit Facilities</td>
<td>26</td>
</tr>
<tr>
<td>2. Coordination with Land-use Programs</td>
<td>25</td>
</tr>
<tr>
<td>3. Provision of the Most Facilities for the Least Cost</td>
<td>22</td>
</tr>
<tr>
<td>4. Reduce Automobile Use by Encouraging Transit Usage</td>
<td>10</td>
</tr>
<tr>
<td>5. Provision of Better Transit for Those Without Automobiles</td>
<td>7</td>
</tr>
<tr>
<td>6. Provision of Sufficient Roads to Satisfy Demand</td>
<td>5</td>
</tr>
<tr>
<td>7. Encourage Urban Economic Development</td>
<td>4</td>
</tr>
<tr>
<td>8. Provision of Affordable Transportation Facilities</td>
<td>3</td>
</tr>
</tbody>
</table>

The characteristics which dealt with a comprehensiveness (Characteristic No. 1), coordination (Characteristic No. 2) were ranked highest by decision-makers. This result shows a high degree of sensitivity to the new goals of transportation planning. However, the older attitudes (Characteristic No. 3) which viewed transportation as facilities which must be economically rationalized rather than as services to people, remains strong. However, the ability of decision-makers to view the urban transportation problem from the point of view of both roads and transit is reinforced by the relatively high ranking of Characteristic No. 4 and the comparatively lower ranking of Characteristics 5 and 6. The low ranking of Characteristic No. 6 shows a lack of confidence in the narrow engineering oriented view practiced by past transportation planning. Moreover, the economic benefit rationale for transportation pro-
pounded by politicians of former years seems to have faded from the future perspective.

This analysis of future program characteristics shows a recognition of the errors of previous transportation efforts. The freeway program was guided by Characteristics 6 and 7; the provincial transit program emphasized Characteristics 4 and 5. Decision-makers attach a relatively lower rank to all of these characteristics. Thus, although decision-makers do not unanimously accept the ultimate ideal, their views of transportation programming seem well adapted to the future demands of the urban transportation problem.

However, the results of this analysis can be questioned in terms of the wording of the desirable characteristics. The three highest ranking items represent overall objectives while the lower ranking items tend to be sub-objectives. This factor could somewhat prejudice the results.

6. **Program Components**

The final part of this analysis of future transportation planning solicited decision-makers' views on the desirable modal components of a future transportation program. As before, respondents were presented with a list of program components and asked to rank their top three choices. The results were scored in the same manner as before and are presented in

8Refer Page 51 of this thesis.
Table 12 below.

TABLE 12

Important System Components of Future Transportation Programs for Greater Vancouver

<table>
<thead>
<tr>
<th>System Components</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bus Systems</td>
<td>39</td>
</tr>
<tr>
<td>2. Light Rail Transit (LRT)</td>
<td>21</td>
</tr>
<tr>
<td>3. Local Municipal Roads</td>
<td>20</td>
</tr>
<tr>
<td>4. Urban Highways and Bridges</td>
<td>11</td>
</tr>
<tr>
<td>5. Commuter Rail Systems</td>
<td>2</td>
</tr>
<tr>
<td>6. Commuter Ferry Service</td>
<td>1</td>
</tr>
<tr>
<td>7. Heavy Rail Transit Systems</td>
<td>1</td>
</tr>
</tbody>
</table>

The most striking result of the analysis was decision-makers' preference for transit mode improvements over road options in any future transportation program for Greater Vancouver. Roads and street improvements remain important but the older notions of exclusive automobile dominance seems to have yielded to more recent recognition of the necessity for upgrading transit to provide a more balanced system.

However, this willingness to accept new ideas is tempered by an underlying conservatism. This is apparent in decision-makers' preference for buses over LRT and local roads over urban freeways. Decision-makers seem to favour the smaller scale, lower cost and time tested modes over the larger, more costly and more sophisticated urban transportation options.

In general, the mode priorities of decision-makers seem to reflect an awareness of the inadequacies of previous efforts. The preference for transit over roads could be
explained by the lingering negative attitude left over from the freeway era. The basic conservativism toward an integrated system of high capacity, high cost commuter rail, commuter ferry and, to some extent, LRT may reflect a reaction against the more liberal, free-wheeling attitudes evident during the era of the provincial transit program. These observations lead to the conclusion that decision-makers have internalized past lessons to the point where they have developed an open-minded but yet cautious attitude towards the future.

Chapter Summary

This chapter began with two objectives in mind: to outline a method to incorporate comprehensiveness, coordination and participation in the policy and planning process; and, to analyze the sensitivity of policy-makers to these goals as future components of metropolitan transportation policy and programs.

The transportation planning process undertaken by the Greater Vancouver Regional District as part of an overall growth management strategy provided one example of urban transportation policy development. Policy comprehensiveness and program coordination derived from an overall regional planning approach of which transportation considerations were only a part. The GVRD encouraged the participation in the planning process of all groups having an interest in regional planning. The process attempted to develop close interaction between the politician, the planner and the public in all phases of policy development.
As has been previously demonstrated, the establishment of a comprehensive, coordinated and participatory policy framework seems to naturally carry through into the program phase. The open, collegial and non-bureaucratic planning structures originally established in the GVRD planning department permeated into the day-to-day operational aspects of program implementation. Comprehensiveness and coordination in transportation program development is maintained by informal "matins" sessions which bring a broad variety of viewpoints to bear on a problem or proposal put forward by any of the program teams. This initial participatory process is expanded when the proposal is evaluated by the constituent municipalities, the GVRD Board and other interested parties. All of these mechanisms refine, develop and generally improve the planning product for all concerned.

The benefits of incorporating the three proposed goals into the transportation planning process have been well documented throughout this study. These conclusions indicate the necessary direction for future transportation policy and program development. However, the impact of these changes on the future depends on the willingness of decision-makers to incorporate these goals in future transportation planning. The second part of this chapter attempted to measure the attitudes of decision-makers in this regard.

The most important aspect of future transportation planning measured by the responses involved the organizational structure for policy development and program implementation. The consensus of opinion favoured a broadly based structure with both
provincial and GVRD representation. Subsequent analysis of desirable agency involvement suggested participation by the major existing transportation implementing agencies at the provincial level, specifically the Ministries of Highways and Municipal Affairs and B.C. Hydro Transportation Division, along with the GVRD representing the municipalities. These agencies would comprise a Regional Transportation Commission responsible for broad transportation policy development. In the area of program implementation, however, municipal governments were allotted as high a level of participation as the aforementioned policy development agencies.

The results of the organizational analysis suggested the desire for a coordinated and participatory transportation planning process in the future, at least in terms of organizational structure. Moreover, the three proposed goals were also substantiated in the analysis of policy and program characteristics. Decision-makers prescribed a transportation policy process which was firstly comprehensive in its consideration of land use programs and, secondly, coordinated and participatory. In addition, the analysis supported future transportation programs which were modally comprehensive and coordinated with land use programs. And finally, decision-makers evinced a more far-sighted view of necessary future program components in their choice of a mix of roads and transit facilities rather than a purely roads approach to satisfying future travel demand.

In conclusion, the analysis of desirable future transportation policy and programs for Greater Vancouver reported in
this chapter shows a high degree of responsiveness to the proposed goals. Present decision-makers accept the necessity for comprehensiveness, coordination and participation in order to equip the future transportation planning process to deal with the metropolitan transportation problem. In this sense, the results of this discussion supplement the previous analysis of the deficiencies and needs of previous transportation planning efforts. Both analyses of the past and the future point to the same conclusion.
CHAPTER 5

SUMMARY AND CONCLUSIONS

This study began in search of a way to equip the transportation planning process to deal with the urban transportation problem. This search was prompted by the realization that despite the sincere efforts of transportation planning the problems of moving in cities persist, in many cases were worsening, and ultimately are threatening to engulf the whole fabric of urban life.

The Research Problem

The research problem was identified through a review of the current literature in transportation planning. This initial survey of informed opinion indicated that the inability of planning to cope with urban transportation problems could be traced to serious deficiencies in the planning process itself. Further examination of these critical analyses revealed certain common threads which appeared throughout most of the fabric of informed opinion. Owen, Kain and Dickey perceived a planning process which viewed the transportation problem too narrowly; a more comprehensive view was needed. Fitch, Smerk and Gwilliam saw the need for closer coordination between implementing agencies, between transportation and land use planning and between the various transportation modes. And finally, Appleyard, Wellman and Geiser decried
the absence of citizen involvement in the planning process; broad participation was needed.

These concerns suggested the need for an overall examination of transportation planning which focused on the question of what was needed to improve the transportation planning process so that it could better deal with the crucial problems of urban transportation. Having outlined the research problem, it then became necessary to choose an approach which could most thoroughly address the research problem.

The Approach

Objective research generally involves the use of either deductive or inductive reasoning. The deductive approach first poses a generalized theory and then attempts to prove or disprove the theory by reference to particular instances. The reverse approach of inductive reasoning examines particular instances to derive an overall theory to explain reality.

The choice between the deductive or inductive approach was resolved through the initial examination of the literature. The evaluation of transportation planning by informed observers abounded with theoretical interpretations of the needs of the planning process inductively derived from case study analyses. In few instances was any attempt made to objectively verify theoretical concepts using a survey method. The absence of research in this critical area suggested that deductive substantiation of the theory needed more effort than inductively deriving additional theory.

This realization prompted the choice of a deductive
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approach which would first pose the theoretical needs of transportation planning and then test the theory in a particular situation. Relatively little effort was directed towards developing the theory. The literature constantly reiterated certain common goals towards which transportation planning should strive to achieve better solutions to the urban transportation problem.

The consensus of informed opinion suggested three theoretical goals for transportation planning:

1. **Comprehensiveness**—incorporated into all stages of the planning process from problem definition to the development of goals and objectives to the generation and selection of alternatives.

2. **Coordination**—between agencies involved in transportation planning, policy development and program implementation.

3. **Participation**—in the planning policy and program phases by those groups providing, affecting or impacted by urban transportation.

### The Objectives

The research problem attempted to determine the characteristics necessary to equip transportation to provide better solutions and to show whether or not transportation decision making was prepared to strive to incorporate these characteristics. This dual requirement conditioned the objectives of the study. These were:

1. to ascertain the need for comprehensiveness, coordination and participation in the planning and policy development process for urban transportation;
2. to determine the extent to which transportation planning is equipped to deal with the urban transportation problem.

Fulfilling the first objective would assess the usefulness of the proposed goals; the second objective would show the practical capability of the goals.

The remainder of this thesis will summarize the conclusions in these two areas.

The Need for Comprehensiveness, Coordination and Participation

This study was originally prompted by the concerns of informed observers such as Wilfred Owen and John Kain that transportation planning was unable to achieve a high level of accomplishment in dealing with the problems of transportation in cities. In searching for the fundamental deficiencies of transportation planning the experts again and again referred to an essential incompatibility between the planning process and the nature of the problem itself. Resolving this incompatibility by developing a planning process which was better adapted to the problem itself became a necessary first step toward solving the urban transportation problem.

Having defined the research question in this form, fulfilling the initial objective of this study involved focussing on the central theme of the interface between transportation planning and the urban transportation problem. An analysis of this relationship would generate measures to equip the transportation planning process to deal with the problems of
moving in cities and thus either substantiate or refute the need for comprehensiveness, coordination and participation in the planning and policy development processes for urban transportation. Therefore, the approach involved an assessment in three major areas:

1. the characteristics and components of the metropolitan transportation problem;
2. the development and characteristics of transportation planning and policy; and
3. the needs of transportation planning, policy and programs.

As outlined earlier, the methodology was oriented to examining these areas from both a macroscopic view through an examination of the literature and also microscopically through a case study of the Greater Vancouver region. To fulfill the first objective, the following will summarize the conclusions of this study in these three areas from both viewpoints.

The General Characteristics and Components of the Metropolitan Transportation Problem

This study was founded on a serious concern for the destructive impacts of the urban transportation problem on our cities. It was recognized at the outset that the present form of the transportation problem could not be fully understood outside of its historical context.

The first transportation planners were surveyors who had little more to contend with in laying out the first roads than the problems of topography, drainage and possibly defence. The accessibility afforded by these early roads allowed the
towns to become cities.

The concentration of population in cities also concentrated the growing demand for movement; congestion and accidents enlarged the spectrum of urban travel problems. As bus and rail transit came to the forefront, masses of people had to be moved efficiently and economically. The urban transportation problem came to be conceived in terms of inaccessibility and inefficient investment.

The next step in the proliferation of the urban transportation problem came with the arrival of the automobile. The automobile added its own catalogue of deficiencies to the existing problem. Higher user costs, lack of safety, expensive facilities, air pollution, noise, aesthetic deterioration, excessive space requirements and undesirable land development ballooned the scope and complexity of the urban transportation problem.

The ultimate irony is that the same transportation networks which supported the growth of the city now threaten to undermine the foundation of urban life. To head off this potential urban decline, the onus has been placed squarely on the shoulders of transportation planning.

The Development of Transportation Planning

Tracing the development of the urban transportation problem pointed to the underlying challenge of urban change. Both transportation planning and the general field of urban planning have been faced with an expanding area of concern. To a great extent, the present capability of transportation
planning to adapt to the existing problem is a product of past practices as well as influences from the general field of urban planning.

Analysis of the development of urban planning in general showed that city planning has progressed and broadened as its subject area, the city, has grown and developed. From an early concern with social engineering, the basic rationale for urban planning has embraced economic, engineering and land-use considerations, and more recently, the whole gamut of social, environmental and political factors.

Similarly, transportation planning over the years has tried to adapt to a broadening transportation problem by enlarging its focus of concern. The original bus and rail transit companies and the U.S. toll road developers defined the problem in terms of profitability and the satisfaction of user needs. Therefore, corporate transportation planning of this sort developed an economic rationale. Governmental involvement in transportation planning emerged at about the same time during the early twenties when traffic congestion and mode conflicts were becoming the most evident urban transport problems. Engineering considerations moved to the forefront to improve road design, provide additional capacity to overcome congestion and thus satisfy public user needs rather than private consumer needs.

The post war era and the growth of automobile usage demanded a large scale approach to an expanded problem of costly road investment, continuing congestion and more serious accidents coupled with a demand for universal accessibility.
Government transportation planning responded with comprehensive metropolitan transportation studies oriented to accommodating the broader demands of the automobile user for both traffic mobility and land access. However, the studies did not expand the perception of the urban transportation problem beyond consideration of the transportation service problems of the user.

After two decades of dominance, by the automobile mode, the urban transportation has again enlarged and escalated. Transportation service problems such as congestion and accessibility remain important but they no longer represent the sole guiding rationale for transportation planning. The urban transportation problem has broadened to include those factors affecting transportation such as the energy shortage as well as the external effects of transportation such as the decline of mass transit and social/environmental impacts.

Up to this point, transportation planning has been able to cope with the expanding urban transportation problem by increasing the number of transportation service-related factors entering into the problem definition stage of the process. Recently, however, long established economic, engineering and user oriented approaches have largely proved inadequate in responding to a redefined urban transportation problem.

The deficiencies of transportation planning have also been compounded by a rapidly changing context in which decisions are made. Greater public awareness and involvement in transportation issues has given rise to a demand for more
active participation by citizens groups and other agencies in transportation decision-making. The combined effect of recent trends has demanded a fundamental re-evaluation by transportation planning of who it serves, who participates in the ultimate decisions and what factors are important.

These new demands require that transportation planning take a longer step forward than ever before in order to equip itself to deal with the urban transportation problem.

The Future Requirements of Transportation Planning and Policy

As in the past, the character of the transportation problem has defined the character of the transportation planning process, so too, the new dimensions added to the problem in recent years are defining the future requirements of the planning and policy processes.

With regard to the planning process, the consensus of informed observers pointed to the need to improve all steps of the planning process as follows:

1. problem definition should recognize non-user problems associated with social equity considerations and environmental impacts as well as the problems of mass transit.
2. the development of goals and objectives as criteria for the evaluation of alternatives should incorporate non-economic goals.
3. transportation alternatives should recognize the need for a broadly based multi-modal transportation system.

Not only have these revisions been suggested by informed
academics but they now form the basis of U.S. Department of Transportation policy. Moreover, U.S. government policy and the American Institute of Planners recognized the need to allow greater participation of various government agencies and population groups in all stages of the planning process and the coordinate land use and transportation planning. Thus, the summary conclusion of the general analysis of the planning process in North America fully supported all three of the proposed goals.

The major requirements of the policy process were determined to be legislation, funding and coordination. Federal transportation legislation in the U.S. recognized that effective implementation of policy goals requires necessary legislative authority tied to federal funding. Thus, the policy development process should provide both the legal clout as well as sufficient funding to allow the planning and policy implementation processes to proceed efficiently. However, even with legislation and funding the problem of institutional fragmentation can yet obstruct the effective delivery of transportation policy. Therefore, the policy development process may often be required to enforce coordination among existing agencies.

In summary, the general analysis of the policy development process supported the goal of coordination but did not specifically refer to the need for comprehensiveness or participation in policy development. The explanation for this can be found in the fact that the policy development process
has traditionally been viewed as following rather than preceding the planning process. The assumption has been that the policy process is chiefly concerned with implementation rather than problem definition or goal setting, which are usually ascribed to the planning process. Therefore, achievement of a comprehensive and participatory policy process may justify the removing of problem definition and goal setting from the planning process to the policy process. However, this is a question which must await a brief summary analysis of problem, development and needs of transportation policy and planning in the study area.

Transportation Policy and Planning in Greater Vancouver:

The Case Studies

Transportation planning in Greater Vancouver was similar to that of other North American cities in terms of its development in relation to the urban transport problem. The evolution of privately operated rail transit with its economic view of the problem and the freeway era with its technological and engineering orientation coincided with developments occurring elsewhere. For this reason, the case studies of the provincial freeway and transit programs provided fertile ground for the testing the practical validity of the conclusions of the literature review.

The freeway planning process narrowly viewed the transportation problem as providing for continued needs of the automobile user by avoiding future projected traffic congestion. The absence of a comprehensive view of the problem
overlooked the social/environmental attitudes and transit considerations emerging as societal values. The technical engineering approach excluded the participatory processes which could have broadened the problem definition and thus avoided the citizen confrontations.

However, in the final analysis, it was the absence of a policy development process with accompanying legislation and funding that did not allow the transition from planning to implementation. This conclusion supports the need for fundamental revision of the decision making process so that the policy development stage precedes the planning stage. Otherwise, lacking a policy commitment beforehand, the planning process becomes insecure, impotent, unnecessary or, given sufficient impetus, protracted.

The Provincial transit program conversely demonstrated the value of a firm policy commitment. Emerging from party policy, formalized as government policy and supported by legislation and funding, the transit program proceeded efficiently through the planning process to the implementation stage. However, like the freeway program, the transit program eventually suffered from a lack of comprehensiveness, coordination and participation in both policy development and planning. Government policy focussed on transit to the exclusion of a comprehensive view of transportation as a whole. Given this narrow view, the organizational structures to produce an overall transportation policy with inter-departmental coordination was not evident. Thus, even though the
policy development phase preceded the planning phase as it should, the policy deficiencies were passed on through the planning phase. The planning process as practiced unilaterally by the Bureau of Transit Services did not consider roads needs thus engendering local government opposition, and discouraged broad participation from interested agencies, thus reinforcing the narrow transit orientation and exacerbating opposition to the program.

In summary, the case studies fully substantiated the need for a decision making process in which the policy development phase precedes the planning phase and incorporates comprehensiveness, coordination and participation throughout the decision making process.

Both the case study analysis and the literature review provide sufficient evidence to fulfill the first objective of demonstrating the need for incorporating the conceptual goals in the transportation decision making process. At this point, the discussion can now move on to the second objective of determining the extent to which transportation policy and planning is equipped to deal with the problem of urban transportation.

Recognition of the Future Requirements

The original problem statement asserted that realization of the necessary improvements in the policy and planning processes ultimately will depend on the degree to which decision makers at both the political and administrative levels recognize the validity of the conceptual goals for the transporta-
tion decision-making process. The survey analysis was also intended to provide objective verification of the goals to supplement the subjective evaluations from the literature review.

Recognition of the future requirements was addressed by the two questions which dealt with the improvements needed to have successfully implemented the freeway program and the transit program. The following typology summarizes the necessary improvements suggested by decision-makers for the planning and policy processes of both programs.

A. THE PROVINCIAL FREEWAY PROGRAM

1. Planning Process
   a) recognition of social/environmental impacts on neighbourhoods through better freeway design.
   b) broader participation in the planning process from the community.
   c) more comprehensive multi-modal alternatives.

2. Policy Process
   a) an identifiable and supportive policy.
   b) a funding commitment.

B. THE PROVINCIAL TRANSIT PROGRAM

1. Planning Process
   a) broader participation of local government.
   b) coordination between the planning and implementation processes and their participating agencies.

2. Policy Process
   a) a policy development process which clearly defines
the role of local government.

b) a policy which establishes the long term funding requirements of transportation programs and the funding role of local government.

c) a more comprehensive policy which recognizes the needs of both roads and transit.

Both the case study analysis and the literature review provide sufficient evidence to fulfill the first objective of demonstrating the need for incorporating the conceptual goals in the transportation decision making process. At this point, the discussion can now move on to the second objective of determining the extent to which transportation policy and planning is equipped to deal with the problem of urban transportation.

Implementation of the Future Requirements

The problem statement also claimed that the capability of the decision making process to deal with the urban transportation problem depended not only on the recognition by decision-makers of the future requirements but also a willingness to incorporate the conceptual goals in future transportation policies and programs. The degree of willingness on the part of decision-makers was ascertained by survey analysis of their attitudes to the GVRD decision making process and the desirable components of future transportation policies and programs in Greater Vancouver.

The GVRD process provided an example of a method to incorporate comprehensiveness, coordination and participation
in transportation decision making. However, the sample was evenly divided as to whether the GVRD should have a major responsibility for future urban transportation policy and planning. Indirectly, this result did not indicate unequivocal support for an improved transportation decision making process.

However, in projecting a future model decision making process, decision-makers advocated:

1) the creation of an overall transportation policy and planning organization to coordinate the activities of government and private agencies involved in transportation planning.

2) a highly participatory policy development process with direct representation from the Provincial Cabinet, two Provincial departments, the GVRD and B.C. Hydro and a consultative role for municipal governments, citizens groups and certain federal authorities.

3) the development of a transportation policy which is comprehensive and politically acceptable, while incorporating participatory processes and establishing coordination.

4) a program implementation process with direct representation from the same agencies rated as highly involved in policy and planning.

5) a comprehensive planning process which produced program alternatives emphasizing a diversity of modes, coordination with land use programs, economic cost effectiveness and greater transit usage.

6) the development of a transportation system emphasizing bus systems, light rail transit, municipal roads and provin-
cial highways.

The results provided further verification of the conclusions derived from the literature review and the case study analysis. The sampled decision-makers fully supported the need to incorporate the conceptual goals in order to improve not only past but future policy and planning processes.

THE TWO HYPOTHESES

This study proposed two hypotheses to guide and direct the research:

**Hypothesis 1**

That past efforts in transportation decision making were hindered by attitudes of decision-makers which were not responsive to the goals of comprehensiveness, coordination or participation.

**Hypothesis 2**

That present transportation decision-makers in Greater Vancouver accept comprehensiveness, coordination and participation as necessary goals for the development of future transportation policy and programs.

The two hypotheses provide an ultimate focus for the two objectives. Both the case studies and the retrospective evaluation undertaken to demonstrate the need for the conceptual goals showed that the freeway and transit programs encountered difficulties which were directly attributable to unresponsive attitudes on the part of decision-makers to the proposed goals. The absence of a comprehensive view which
incorporated social/environmental factors as well as a lack of recognition of the need for broad participation led to the proposed goals. The absence of a comprehensive view which incorporated social/environmental factors as well as a lack of recognition of the need for broad participation led to the eventual defeat of the freeway program. Similarly, a narrow uni-modal transit orientation, combined with an attitude on the part of Bureau of Transit policy-makers and administrators which excluded interdepartmental coordination or meaningful participation from local government, substantially reduced the effectiveness of the transit program. Thus, Hypothesis 1 can be accepted as demonstrated.

So too, the results of the survey analysis of future policies and programs in the study area designed to test the future capability of the transportation decision making process indicated that the attitudes of present decision-makers are highly disposed to incorporate the conceptual goals in the policy development, planning and policy implementation phases of the future process. Thus, Hypothesis 2 can be accepted as demonstrated.

The Influence of Historical Factors

Hofferbert's theory of the influence of historical factors on the attitudes of decision-makers is difficult to objectively assess. However, this study postulated that decision-makers' evaluations of deficiencies in previous transportation policy and planning efforts in the study area would condition their attitudes to future decision making
needs. Close correspondence between these two sets of perceptions would indicate that historical factors indeed influenced the attitudes of decision-makers to the future.

Sampled decision-makers identified the negative public attitude, funding inadequacies and the lack of policy support as major deficiencies in the freeway program and the absence of coordinated or cooperative planning as the major flaws in the transit program. For future transportation policies decision-makers advocated the development of a more comprehensive, coordinated, politically acceptable and participatory policy as well as more comprehensive, coordinated and cost effective transportation programs.

The results indicate that decision-makers propose as future needs, corrective measures which would remedy past deficiencies. On this basis, one could conclude that past experiences have exerted some influence on perceptions of future needs. However, the results provide only indirect evidence. Further study of this area of policy analysis would seem to be justified.

The Final Analysis

The fulfillment of the two objectives and the acceptance of the two hypothesis concludes the tasks set out for this research in the problem statement. The study has focussed on defining and elaborating the critical gaps in transportation policy and planning and finding ways to fill them. It has thus far resisted the temptation to propose a universal methodology for the transportation decision-making process.
The GVRD process provided one method to incorporate the conceptual goals. However, it was recognized that caution must be exercised in ascribing general application to a method appropriate for a specific urban setting. For this reason, developing a universal decision-making methodology becomes an inherently fruitless exercise. In spite of these concerns however, this thesis would be blatantly remiss if it did not attempt to coalesce the findings of the research into an overall theory for the improvement of the decision-making process.

Over the past decades, the transportation decision-making process has developed as represented in Figure 4 on the following page.

The traditional decision making process has operated in the following manner. The processes of urban growth and change have impacted transportation to create an increasingly broad, varied and complex urban transportation problem. It is at this point that governments have recognized the existence of a transportation problem and have promptly organized engineering and technical staff to initiate the planning phase. Staff have then proceeded to narrowly define the problem symptoms while ignoring the urban processes as first causes. From the problem definition stage the planning phase has continued through to the identification of goals and objectives, data collection and the generation of program alternatives. Governments have then proceeded to evaluate the alternatives and either select one for implementation, reject all alternatives or simply refrain from taking a position. And finally, since
Figure 4

THE TRADITIONAL TRANSPORTATION DECISION MAKING PROCESS

Urban Processes \(\rightarrow\) Impacts \(\rightarrow\) Transportation Systems \(\rightarrow\) Creates \(\rightarrow\) Transportation Problem \(\rightarrow\) Initiates \(\rightarrow\) Transportation Planning Phase

\(\uparrow\)

Program Implementation

\(\downarrow\)

Program Alternatives

\(\downarrow\)

Evaluation of Alternatives

\(\uparrow\)

Select Alternative

Develops

Applied to
the alternatives are developed from the planning process rather than the policy process, the solutions which emerge react to the transportation problem rather than the urban processes.

The traditional transportation decision making process no matter how it is practiced reveals a number of inherent weaknesses which obstruct the development of a comprehensive, coordinated and participatory process:

1. the absence of a policy development phase ensures the dominance of the planning phase in the critical problem definition, goal development and alternative generation stages of the decision making process.

2. the dominance of the planning phase reinforces a narrow technical view of the transportation problem.

3. the process does not allow for the meaningful participation of politicians and citizens in the problem definition and goal development stages where their views could be most helpful in broadening the view of the problem.

4. a narrow view of the transportation problem fosters a project orientation which does not usually demand broad inter-agency coordination.

5. the alternatives which emerge respond to the symptoms of the transportation problem rather than its causes.

It is immediately apparent from this analysis that the development of a decision making process which incorporates the proposed goals will require an improved decision making methodology. With this objective and the need to provide a basis for further research this study considers it imperative
to summarize the conclusions into a theoretical model methodology for the urban transportation decision making process.

A decision making process better adapted to the realities of the present urban transportation problem and the demonstrated need to incorporate the conceptual goals is summarized in Figure 5 on the following page.

The process outlined in Figure 5 could provide an overall format to inculcate the necessary improvements to transportation decision making. The process begins with governments' awareness of the transportation problem in the context of the broader urban system or in many cases the national system. Such an awareness establishes the prerequisite mental attitude for a comprehensive view preparatory to initiating the policy development phase. To further this comprehensive view, the policy development phase would be responsible for defining the problem, developing goals, objectives and criteria and establishing the necessary institutional mechanisms for interagency coordination to guide the planning process. As well, the policy process would generate the legislative and funding commitment to allow the policy implementation phase to proceed pending the evaluation of alternatives which emerge from the planning phase.

The planning phase would be responsible for translating the policy goals and objectives into program alternatives. Planning would bring together a number of agencies to assess the objectives, define the technical aspects of the problem, collect data and propose alternatives. The policy development process would then apply the criteria to assess the pro-
A MODEL TRANSPORTATION DECISION MAKING PROCESS

The Problem Context

Urban Processes

Transportation Systems

The Decision Making Context

Policy Implementation

Select Desired Alternative for

Policy Development

Initiates

Planning Process

Develops

Evaluation of Alternatives
gram alternatives and either select, modify or reject the alternatives. Modification or rejection would initiate a re-evaluation of the planning process; selection would permit proceeding to the policy implementation phase with a broad range of programs to respond to the overall problem context.

Structuring the transportation decision making process in this way avoids many of the deficiencies of the traditional process as follows:

1. re-assigning the tasks of problem definition and goal setting to the policy development phase removes these critical stages from the unilateral responsibility of staff to the trilateral view of politicians, staff and citizens.

2. broad participation at the policy development stage increases the potential for a more comprehensive view of the problem.

3. comprehensiveness at the policy development stage establishes the necessity for inter-departmental and inter-agency coordination to deal with the problem.

4. the establishment of inter-agency coordination requires the creation of an organizational structure formalized by legislation and allocated funding.

However, this proposed decision making process only removes the obstacles and establishes the mechanisms for incorporating comprehensiveness, coordination and participation. The addition of a dominant policy development phase provides only the vehicle. If any point should be clear from this study, it is the crucial importance of incorporating the con-
ceptual goals at the beginning of the decision making process. The analysis of the relationship between the transportation problem and the decision making process has perennially demonstrated that the characteristics of the process established in the early stages of problem definition continue throughout the planning process to determine the character of alternatives which emerge. In short, if the policy development process strives to attain the goals, the solutions will follow.

Areas for Further Research

This study has attempted to outline the basic configurations of future transportation decision making. It has avoided becoming too deeply involved in developing a methodology to implement the conceptual goals. The methodology which was tentatively proposed should be accepted as such—a starting point for further research in this crucial but neglected area. It is hoped that this thesis will provide the reader with insights to stimulate additional work in other areas. This is important. The author has tried to shed some light on the path to improving the decision making process to meet the challenge of whatever lies ahead in the field of urban transportation. It remains for others to push back the darkness further and continue on the road to the future.
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**C. Government Publications**


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D. Studies on Metropolitan Highway Planning in the Greater Vancouver Region


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APPENDIX
My Master's thesis in Community Planning at U.B.C. deals with urban transportation policy in Greater Vancouver. I am attempting to develop an hypothesis to explain the difficulties associated with implementing a transportation program in Greater Vancouver. To test my hypothesis, I am interviewing some of the people involved in urban transportation. Your responses to the following questions will provide the basic information for my thesis. Your responses will be kept strictly confidential and your name will not appear in the thesis in connection with your replies to these questions.

1. During the early sixties, an urban freeway program was developed for the City of Vancouver. However, the urban freeway program was never implemented. What factors do you think were responsible for the difficulties associated with implementing the urban freeway program?

2. In what ways could Vancouver's urban freeway program have been improved to have given it a better chance for successful implementation?

3. From 1972 to 1975, the Provincial Government developed a transit policy and program for Greater Vancouver. What do you believe were the major successes of this policy and program?

4. What were the major problems or inadequacies of the transit policy and program? How could these problems have been resolved?

5. The GVRD Liveable Region Program and the subsequent transportation policy documents on Regional Transportation Organization and Financing represent the most recent efforts at developing a transportation policy and program for Greater Vancouver. Do you believe transportation policy development should be a responsibility of the GVRD? Why?
6. The GVRD process of policy development as reflected in the Liveable Region Program employs a high degree of participation by local governments, transportation agencies and citizens groups. What do you believe are the advantages of encouraging participation in policy development or program implementation? What are the disadvantages?

7. Who do you believe should have the major responsibility for developing a transportation policy and program for Greater Vancouver:
   a) the Provincial Government
   b) the Greater Vancouver Regional District
   c) the Federal Government

Why?

8. Transportation policy development involves defining the problem, and developing goals and alternatives to deal with the problem. What degree of involvement should the following governments, agencies and groups have in the process of transportation policy development in Greater Vancouver (see list below)?

For each organization or group listed in the left column, place a check in the appropriate column on the right.

<table>
<thead>
<tr>
<th></th>
<th>Highly Involved</th>
<th>Moderately Involved</th>
<th>Less Involved</th>
<th>Not Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) The Department of Transport &amp; Communications</td>
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<tr>
<td>b) Greater Vancouver Municipal Governments</td>
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<tr>
<td>c) The Provincial Cabinet</td>
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<tr>
<td>d) B.C. Hydro Transit Division</td>
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<tr>
<td>e) The Federal Ministry of Transport</td>
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<td>f) The G.V.R.D.</td>
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<td>g) The Department of Highways</td>
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<tr>
<td>h) The Federal Cabinet</td>
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<tr>
<td>i) Citizens Groups</td>
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</tbody>
</table>
9. Which of these government agencies or groups should be involved in implementing transportation programs in Greater Vancouver (see list below)?

For each organization or group listed in the left column, place a check in the appropriate column on the right.

<table>
<thead>
<tr>
<th>Highly Involved</th>
<th>Moderately Involved</th>
<th>Less Involved</th>
<th>Not Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>j) Pacific Stage Lines</td>
<td>k) The Department of Municipal Affairs</td>
<td>l) Other</td>
<td></td>
</tr>
</tbody>
</table>

10. What should be the most important components of a transportation program for Greater Vancouver? (Rank the top three by placing a 1, 2 or 3 beside the program component from the following list.)

   1) a) bus systems
b) urban highways and bridges
c) commuter ferry system
d) local municipal roads and streets
e) commuter rail systems
f) light rapid transit systems
g) subways
h) other

11. What should be the most important characteristics of any transportation policy development process for Greater Vancouver? (Rank the top three by placing a 1, 2 or 3 beside the characteristic from the following list.)

a) It should be a comprehensive policy which takes into account land use programs.
b) It should develop a policy which is politically acceptable.
c) It should coordinate the activities of the major agencies presently involved in providing transportation facilities and services in Greater Vancouver.
d) It should allow maximum participation of governments, agencies, and citizens groups in the policy process.
e) It should develop policies which attempt to achieve the goal of greater accessibility for all.
f) It should be acceptable to governments and agencies presently involved in providing transportation facilities and services in Greater Vancouver.
g) Other

12. What should be the most important characteristics of transportation programs for Greater Vancouver? (Rank the three most important characteristics by placing a 1, 2 or 3 beside the characteristic from the following list:

a) They should provide sufficient road facilities to accommodate present and future traffic demands.
b) They should be coordinated with land use planning of the GVRD and municipal governments in Greater Vancouver.
c) They should provide the most transportation facilities and services for the least cost.

d) They should lead to a reduction in automobile use by encouraging transit usage.

e) They should encourage the economic development of Greater Vancouver.

f) They should provide a balance of roads and transit facilities.

g) They should provide better transit facilities for those without access to an automobile.

h) Other ________________________________
LIST OF RESPONDENTS

1. Gil Blair, Mayor of the Township of Richmond
2. Don Buchanan, Planning Director, Municipality of Coquitlam
3. Jack Campbell, Mayor of the Municipality of Port Coquitlam
4. Bill Curtis, City Engineer, City of Vancouver
5. Hal Etkin, B.C. Hydro Transportation Division
6. Gerard F. Farry, Director of Planning, GVRD
7. Henry Froelich, Planner, Municipality of Delta
8. Thomas Goode, Mayor of the Municipality of Delta
9. Michael Harcourt, Alderman of the City of Vancouver
10. Bill Lane, Director of Regional Development, GVRD
11. Harry Lash, former Director of Planning, GVRD
12. James L. Lorimer, former Minister of Municipal Affairs, Province of British Columbia
13. Vic Sharman, Planning Director, B.C. Hydro, Transportation Division
14. J. Douglas Spaeth, Transportation Program Manager, GVRD
15. Ray Spaxman, Planning Director, City of Vancouver
16. Charles A. Spratt, former Marketing Director, Bureau of Transit Services
17. James L. Tonn, Mayor of the Municipality of Coquitlam