

TO: CITY MANAGER 1994 MARCH 23

FROM: DIRECTOR PLANNING AND BUILDING OUR FILE:

**SUBJECT: TRANSPORT 2021; RESPONSE FROM  
THE CITY OF BURNABY**

PURPOSE: To respond to the Transport 2021 Long Range and Medium Range Plans submitted by the GVRD to the City of Burnaby for review and comment.

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**RECOMMENDATIONS:**

1. **THAT** Council forward a copy of this report to the Chairperson, GVRD Board of Directors, as a further, more detailed response from the City of Burnaby to the Transport 2021 Long Range and Medium Range Plans to be read in conjunction with the City's response of 1994 March 21 to the Livable Region Strategic Plan.
2. **THAT** a copy of this report be forwarded to the Honourable J. Pement, Minister of Transportation and Highways and the Honourable Glen Clark, Minister of Employment and Investment and the MPs and MLAs for Burnaby.

**REPORT**

**1.0 BACKGROUND**

The Transport 2021 Project was established in 1991 as a joint project of the Province of B.C. and the Greater Vancouver Regional District to "recommend a long range transportation plan for Greater Vancouver with associated policies, demand management measures and priorities for transportation investment." In 1993 July, the Province of British Columbia and the Greater Vancouver Regional District distributed the Transport 2021 Long Range Plan to the municipalities for review and comment by 1994 March 31.

Subsequently in 1993 October, the Province and GVRD Board conveyed the Transport 2021 Medium Range Plan to the municipalities. The Medium Range Plan is responsible for developing transportation policies, services and infrastructure between now and the year 2006. In transmitting the Plan the GVRD Board noted that it was a discussion paper only and "not intended to be the views of the Board and that the Board is inviting challenge and comment on the proposals."

In conjunction with Council's response to the GVRD Board on the Livable Region Strategy, which was adopted at its meeting of 1994 March 21, this report provides a further response from the City of Burnaby to both the Long Range Plan and Medium Range Plans developed by Transport 2021.

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## 2.0 SUMMARY

The Transport 2021 Report provides a transportation strategy for the next thirty years to respond to the challenges of rapid growth and our increasing reliance on the automobile. The proposals in the Long Range and Medium Range Plan set a bold new direction for transportation which departs from the traditional approach to planning transportation in response to ever increasing demand.

Appendix A of this report, provides a comprehensive and detailed review of the Transport 2021 Long Range and Medium Range Plans. The major conclusions of this review are summarized in the following major points:

- the goals of the Transport 2021 Long Range Plan are compatible with those defined in the Burnaby Transportation Plan (draft) with respect to the need to reduce our heavy reliance on the automobile for commuting and to protect livability and the environment.
- current trends are leading the Region "on a development path that carries it away from rather than towards its own declared goals." From a regional perspective, the City of Burnaby recognizes the need to deflect the Region away from the highly undesirable future dictated by current trends.
- the early provision of rapid transit within the Lougheed Corridor together with the concurrent application of the four policy levers is required to avoid a transportation future for Burnaby worse than the Trend. Controlling land use through a Compact Growth Strategy without Transportation Demand Management (TDM) or major transit improvements would increase vehicle travel on Burnaby's road system.
- the Long Range Plan achieves the goal of reversing the Trend but, faced with the enormous impacts of regional growth by 2021, is able to only marginally improve the status quo in transportation. While transit and carpool use would increase and air quality would substantially improve, the Region would continue to rely largely on the automobile for commuting.
- the financial proposals in the Long Range Plan would result in a substantial reduction in transportation funding relative to population and would move revenue sources towards a "user pay" concept. These aspects of the Financial Plan raise questions about the adequacy of funding for rapid transit and the other major improvements proposed by Transport 2021.
- the Medium Range Plan conclusions about rapid transit staging have been made without reference to efficiency, cost effectiveness, economic benefits, or transit system considerations. The Medium Range Plan is therefore not in a position to draw conclusions regarding the construction staging of very high cost rapid transit investments. Burnaby is of the view that land use shaping should be a primary objective of a future rapid transit line.
- until functional planning studies have been completed to fully assess rapid transit priorities, the conclusions of the Medium Range Report regarding staging of rapid transit lines should be withdrawn.

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## CONCLUSIONS

Council has adopted the recommendations of a report which reviewed the overall Livable Region Strategy at its meeting of 1994 March 21. That report, together with this more detailed review of the Long Range and Medium Range Plans, provides a response from Council to the Transport 2021 proposals.

It is recommended that a copy of this report be forwarded to both the Province of B.C. and the GVRD as co-sponsors of the Transport 2021 Project and to Burnaby's MPs and MLAs.

  
D.G. Stenson, Director  
PLANNING AND BUILDING

  
RG/gi

Attachment

cc: Director Planning and Building  
Director Administrative & Community Services  
Director Recreation & Cultural Services  
Director Engineering  
Director Finance

## TRANSPORT 2021 LONG RANGE AND MEDIUM RANGE PLANS: IMPLICATIONS FOR BURNABY

### 1.0 BACKGROUND

In 1993 September, the Greater Vancouver Regional District and the Province of British Columbia issued copies of the Transport 2021 Long Range and Medium Range Transportation Plans for Greater Vancouver to the municipalities for review and comment.

The Transport 2021 Project was established in 1991 as a joint project of the Greater Vancouver Regional District and the Province of B.C. to "recommend a long range transportation plan for Greater Vancouver with associated policies, demand management measures and priorities for transportation investment." The recommendations of Transport 2021 were intended to be the transportation component of the G.V.R.D.'s Livable Region Strategic Plan in order to provide an integrated land use and transportation plan for Greater Vancouver.

The G.V.R.D. has requested municipalities to review and provide comment on the Transport 2021 Long Range and Medium Range reports by 1994 March 31. Council adopted the recommendations of a report concerning the Livable Region Strategy at its meeting of 1994 March 21. Both this overall review of the Livable Region Strategy and this more detailed review of the Long Range and Medium Range Plans are intended for transmittal to the GVRD as Council's response to Transport 2021.

### 2.0 THE LONG RANGE PLAN

#### 2.1 Goals

The Transport 2021 Long Range Plan notes that the goal of the transportation system is to "move people and goods effectively, efficiently, safely and reliably at an affordable cost." As well, the citizens of the Region expect the transportation system to provide transportation to a diverse population and to minimize the impacts of the transportation system on the livability of Greater Vancouver. Underlying these expectations there is strong support for a diversity of transportation options - transit, cycling and walking coupled with a concern regarding a heavy reliance on the automobile.

**The goals of Transport 2021 are compatible with the views expressed by the residents of Burnaby during the course of the issue identification and policy development phases of the Burnaby Transportation Plan.** Maintaining a well functioning road system relatively free of traffic congestion was a priority for Burnaby residents but there was also a strong desire to expand opportunities to travel by alternative modes. Another common theme was the need to restrain and mitigate the negative impacts of transportation on the community and the environment.

2.2 Current Trends

2.2.1 An Outlook on the Future

Currently, on a typical day, the 1.6 million people in Greater Vancouver make approximately 4.2 million trips. About 83% of those trips are in a private car while 9% are taken by transit and 8% by foot or bicycle. To provide a glimpse into the direction current trends are taking us in the future, Transport 2021 took a retrospective view on the period from 1985 to 1992 based on the results of travel surveys conducted in both years. Some discomfoting conclusions emerged namely:

- **Travel grew faster than population** - although population grew by 21% from 1985 to 1992 the number of rush hour trips grew by 37%.
- **Transit lost ground** - while the number of trips taken by transit increased, the transit share of all trips taken declined from 11.2% in 1985 to 9.9% in 1992.
- **Automobile dependence increased** - the number of automobiles registered by ICBC for commuting grew faster than the population and the number of people per car declined.
- **Suburb to suburb travel dominated further** - the number of trips destined for work in the suburbs and municipalities outside of the City of Vancouver increased from 60.4% in 1985 to 64.4% in 1992. Suburb to suburb trips are significant as they are much more difficult to serve by transit.
- **People travelled further and slower** - the average trip distance to work increased by 12% to 14.0 km, the average speed declined by 7% to 34.7 kph and the average trip time increased by 20% to 24 minutes.

Based on these results, Transport 2021 concludes that, despite major investments in rapid transit, we have become more auto dependent. Further, this dependency is growing primarily due to the increasing suburbanization of people and jobs, a development pattern which is difficult to serve by transit. Unless this trend is reversed, it is expected that transit's market share will continue to fall and more road building will be required to prevent congestion from getting any worse. In summary the Transport 2021 report notes that current trends are leading the "region on a development path that carries it away from rather than towards" its own declared goals.

### 3.0 CHANGING THE TREND:

#### 3.1 Four Policy Levers

The Transport 2021 recommendations for changing the trend involve the application of four policy levers including the following:

- **Control land use** - by applying regulation to shape a more compact, transit-friendly urban form.
- **Apply Transportation Demand Management (TDM)** - measures to change human behaviour toward the transportation system away from single occupant vehicles to carpools, transit, etc.
- **Adjust Transport Service Level** - to allow more congestion for single occupant vehicles while improving the speed of other modes.
- **Supply Transport Capacity** - by directing transportation investments to more appropriate travel modes including transit, carpools, cycling and walking.

The Transport 2021 Long Range Plan is essentially concerned with determining the optimal setting of these four policy levers required to change the trend. In this regard, the policy levers comprise a range of measures available to the policy maker to redirect the transportation system or to use transportation to support pre-defined land-use objectives. The following sections review each of these policy levers from the viewpoint of their implications for Burnaby.

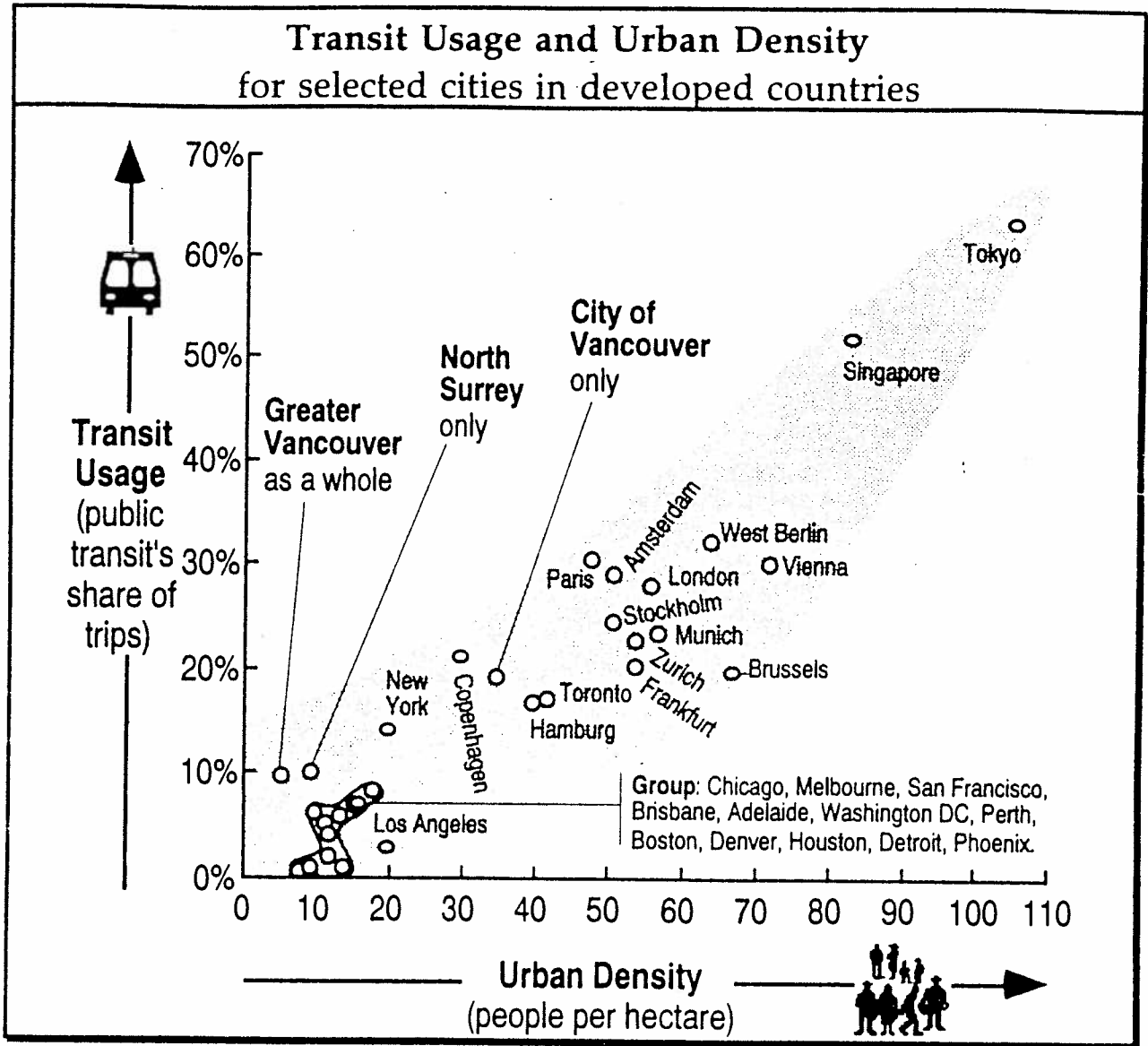
#### 3.2 Control Land Use

##### 3.2.1 Overview

The Livable Region Strategic Plan proposes to compact most of the regional growth to the year 2021 in Vancouver, Burnaby, New Westminster, the NE Sector, North Delta and North Surrey. All other areas of the Lower Mainland would experience the same or lower growth than the "trend". Under the regional plan population in Burnaby would rise from the 157,800 IN 1991 to 278,500 while employment would increase from the 62,800 to 120,000. Under the regional plan Burnaby accommodates approximately 96,000 more people and 37,000 more jobs than would develop under current trends. According to the Transport 2021 the higher densities in the developed metropolitan areas would reduce travel distances and time and support increased transit usage as shown in Figure 1.

FIGURE 1

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SOURCE: TRANSPORT 2021  
LONG RANGE PLAN

### 3.2.2 Implications for Burnaby

As shown in Table 1, a more compact urban form has major implications for the transportation system in Burnaby. While the higher density of development within the metropolitan area would increase the transit share of peak period travel in Burnaby from the 19.2% projected by 2021 under the current trend to 25% under the Livable Region Strategic Plan the number of rush hour vehicles in Burnaby would rise from the current 51,000 to 78,500. Therefore, by controlling land use in the absence of the other three policy levers, Burnaby would experience an increase of 6,500 vehicles more than if Burnaby continued on current trends.

**TABLE 1  
AM PEAK HOUR, TRAVEL IN, FROM AND THROUGH BURNABY  
2021 TREND AND 2021 COMPACT GROWTH**

	<b>Current</b>	<b>Trend Growth 2021</b>	<b>Compact Growth 2021</b>
Total Trips	82,500	114,000	151,000
Vehicles	51,000	72,000	78,500
Transit Riders	13,500	22,000	37,500
Transit Share	16.5%	19.2%	25%

### 3.3 Apply Transport Demand Management

#### 3.3.1 Overview

The second set of policy levers applies measures to change the demand for transportation especially during peak periods. Transportation Demand Management (TDM) measures can change the amount, mode, or time of travel. Telecommuting, working at home and compressed work weeks can reduce the amount of peak period travel. Other measures such as high occupancy vehicle lanes, road user fees and transit priority measures can promote a switch of mode from auto to carpools or transit. And finally trips can be shifted out of the peak period by flexible working hours, road user fees and peak period parking charges.

The Transport 2021 Project estimated that a package of TDM measures as shown in Figure 2 could result in a 10% reduction in the total number of rush hour trips region-wide by shifting solo driver trips to carpools and transit. Transit ridership regionwide would be 25% higher than it would be without TDM.



FIGURE 2

TRANSPORTATION DEMAND MEASURES (TDM)

TDM MEASURES	DESCRIPTION
1. Telecommuting	Promotional program with target elimination of some peak hour work trips.
2. Employer-based Trip Reduction Program	Implement mandatory trip reduction by-laws applicable to all employers with greater than 100 workers at single work sites (40% of total employees);
3. Bus Priority	Provide bus queue jumpers at bridge/tunnel approaches, existing and committed bus priority projects including bus lanes on selected new road lanes but excluding taking away existing general purpose lanes for bus lanes.
4. HOV Lanes	Provide at existing and committed projects permitting car and van pools to use bus queue jumpers; including all trips from outer suburbs to Burrard Peninsula.
5. Parking Charges	Increase all CBD parking rates and increase Regional Town Centre parking fees.
6. Gas Tax	Increase the gas tax and increase fuel price at the pump.
7. Road Pricing	Impose a fee on all vehicles destined to the CBD during the a.m. peak hour.
CBD License Fee	Impose fee on all vehicles on all bridges into the Burrard Peninsula during the a.m. peak hour.

3.3.2 Implications for Burnaby

In Burnaby the application of TDM measures is critical to restrain the growth in the number of vehicles on Burnaby's road system resulting from the growth management strategies of the Livable Region Strategic Plan. As shown in Table 2 rush hour vehicle volumes of 78,000 on Burnaby's road system would drop to 61,000 vehicles with TDM while the transit share of trips in Burnaby would increase from 19.2% to 25.8%. **Clearly to accommodate the increased travel in Burnaby resulting from the regional plan, measures to control land use must be accompanied by the application of measures to manage transportation demand.** If TDM is not implemented, Burnaby's transportation system would function better under Trend Growth than Compact Growth.

TABLE 2

AM PEAK HOUR, TRAVEL IN, FROM AND THROUGH BURNABY  
IN 2021 WITH AND WITHOUT TDM

	Current	2021 Trend Growth No TDM	2021 Compact Growth	
			No TDM	With TDM
Total Trips	82,500	114,000	151,000	148,000
Vehicles	51,000	72,000	78,500	61,000
Transit Riders	13,500	22,000	37,500	49,500
Transit Share	16.5%	19.2%	25%	33%

### 3.4 Adjust Transport Service Level

#### 3.4.1 Overview

As defined in the Transport 2021 Long Range Plan, service level refers to the quality of service offered to the traveller. Usually measured in terms of speed, convenience, frequency of service, comfort, etc. As a policy lever, changing the relative service level offered by different modes can induce travellers to switch modes. For example allowing traffic congestion to increase the travel time by single occupant vehicles and providing High Occupancy Vehicle (HOV) lanes to shorten travel times by carpools and transit would cause a shift to these alternative modes.

#### 3.4.2 Implications for Burnaby

In Burnaby the major east/west provincial highways including Highway 1, Hastings Street, Lougheed Highway are obvious candidates for applying service level adjustments and transportation demand management to increase transit and carpool use. **However, this policy lever must be applied judiciously as worsening traffic congestion in the past has induced drivers to shift from the highway system to the municipal street system causing traffic infiltration through Burnaby neighbourhoods.**

### 3.5 Supply Transport Capacity

#### 3.5.1 Overview

The Transport 2021 Project recognized that even after application of the first three policy levers there will be a need to provide more transportation capacity but that these transportation improvements should support regional land use and transportation goals and objectives.

In defining the need for more transportation capacity, Transport 2021 took the following approach:

- support the GVRD Livable Region Strategy by increasing relative accessibility in areas which the land use plan calls for increased densities and reducing it elsewhere.
- estimate the demands for transportation capacity which remain after the application of the first three policy levers.
- restrain the single occupant private vehicle by supplying more physical capacity for this mode very selectively and
- emphasize transit and high occupancy vehicles.

#### 3.5.2 Implications for Burnaby

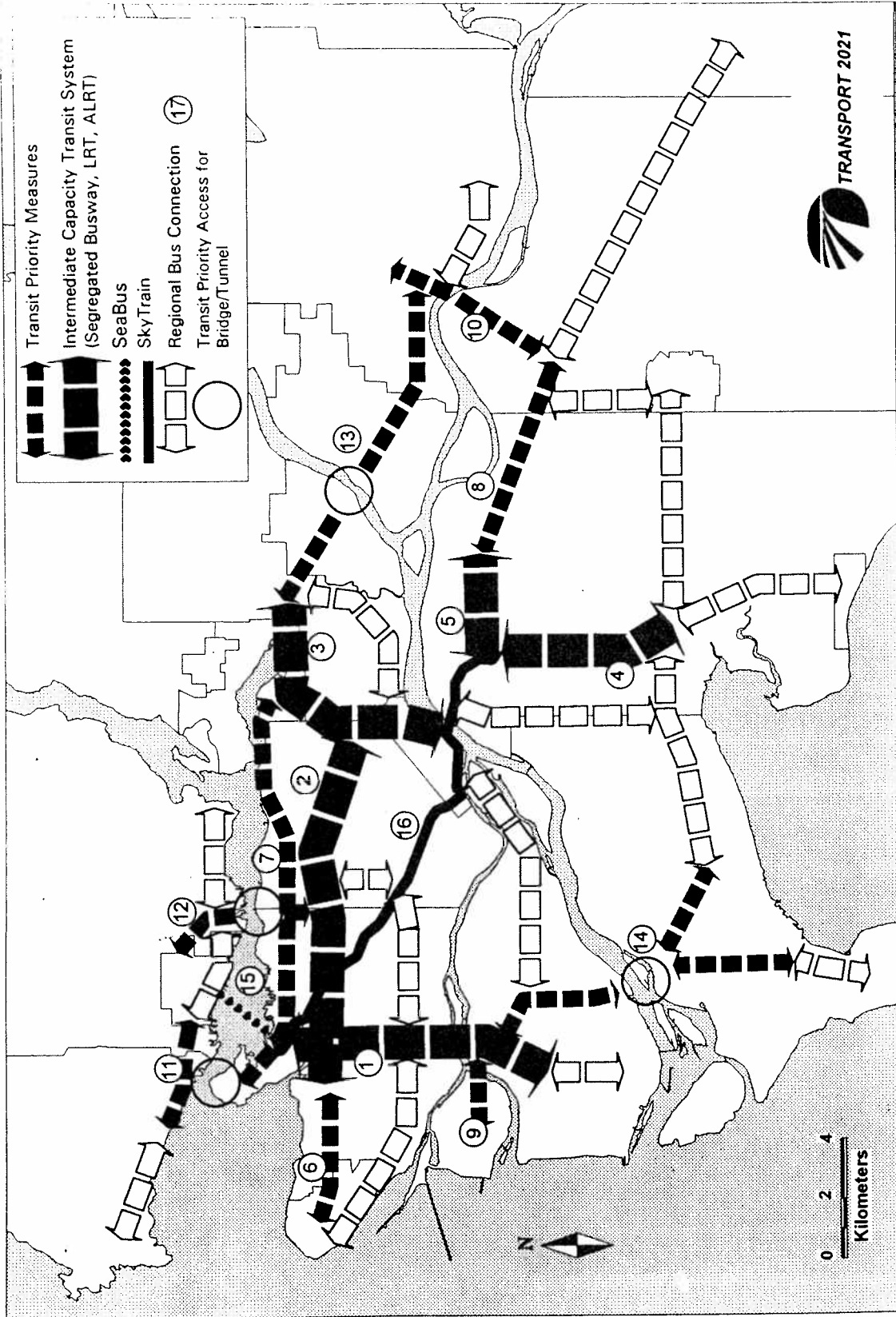
This approach led to the long range transportation system concept which emphasizes the development of the transit system (Figure 3) especially in the denser urban areas of the compact Metropolitan area including Vancouver, Burnaby, the NE Section and North Surrey. Specific to Burnaby the concept includes rapid transit in the Lougheed/Broadway corridor, bus priority measures in the Barnet/Hastings corridor and a regional bus connection on Willingdon Avenue.

A High Occupancy Vehicle (HOV) network and new roads serving as goods movement connections (Figure 4) are the other major components of the System Concept. The HOV lanes would be combined with road user fees to offer an incentive to use carpools or transit. In Burnaby, High Occupancy Vehicle lanes would be provided in conjunction with the Barnet/Hastings Project and on Highway 1. Additional general traffic lanes to facilitate goods movement would be provided on Tenth Avenue and the proposed Stormont McBride Connector. A new goods movement connection would be extended from Marine Way to New Westminster and Coquitlam.

# Long Range Transportation System Concept - Transit

FIGURE 3

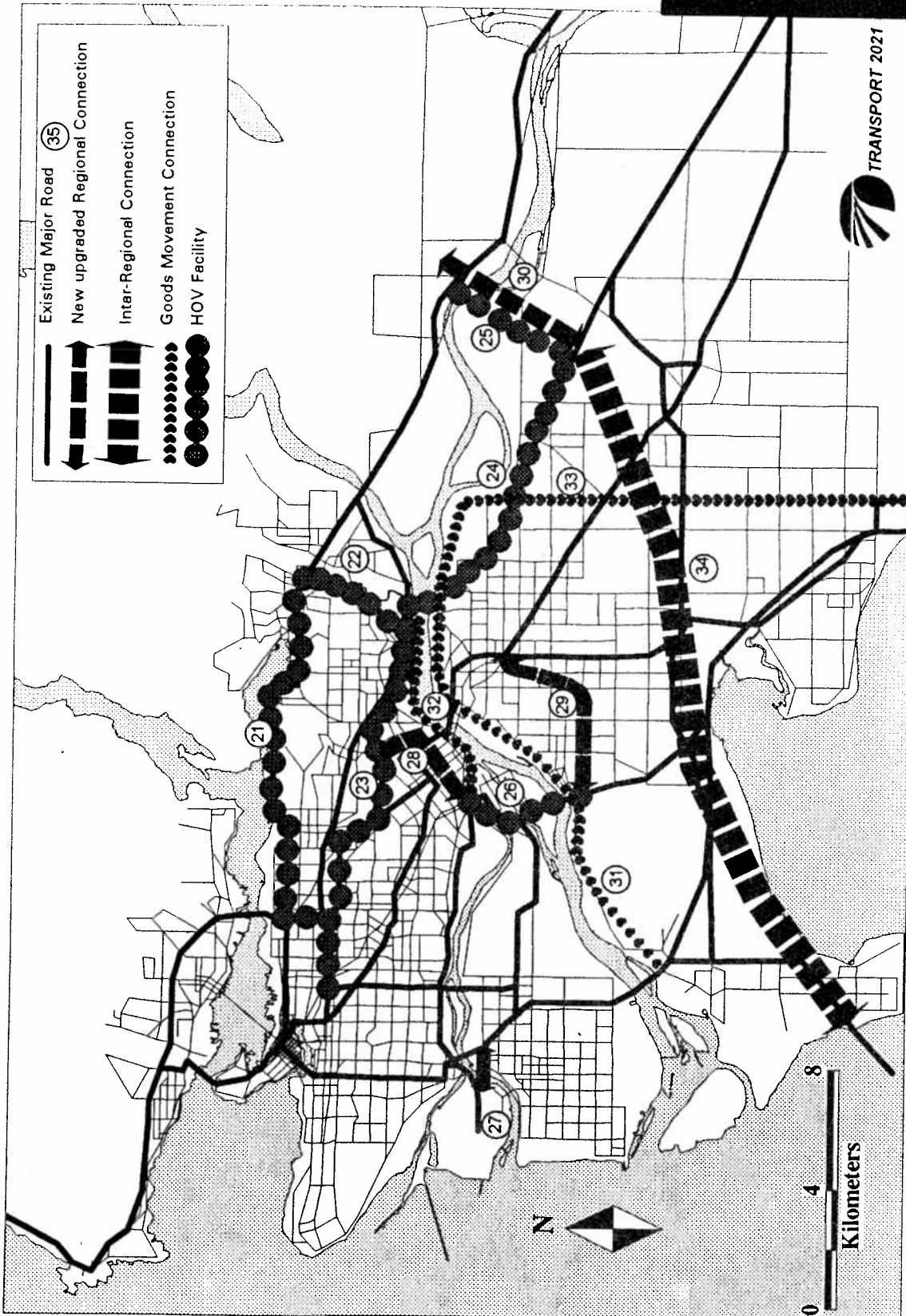
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# Long Range Transportation System Concept - HOV and Mixed Traffic

FIGURE 4

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While the System Concept does include the development of an Intermediate Capacity Transit System in the Lougheed/Broadway corridor, it does not include the development of Lougheed Highway to a widened standard as an HOV facility. This project has been identified by the City of Burnaby as a priority and in practical terms, reconstruction of the Lougheed Highway would be required to accommodate rapid transit.

#### 4.0 THE ACHIEVEMENTS OF THE PLAN

##### 4.1 Deflecting the Trend

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The success of the Long Range Plan was to be measured by the capability of the proposals to achieve the desired goal to deflect the Region away from the direction set by current trends. Under the Livable Region Strategy and the Transport 2021 Long Range Plan the GVRD envisions a future in which Greater Vancouver would achieve the development densities and transit orientation comparable to cities such as Sydney, Australia and Toronto. This future would be different from the trend in the following respects:

- **total travel is approximately the same for both Trend and the Long Range Plan** - the number of people travelling by all modes during the morning rush hour is approximately 700,000.
- **the number of vehicles on the road network is reduced** - Trend Growth would have generated 410,000 vehicles on the road network compared to 350,000 for the Plan - a reduction of 13%.
- **the average number of people per auto would rise** - from 1.33 persons per car under Trend to 1.4 under the Long Range Plan.
- **transit ridership is higher** - the number of transit riders during the morning rush hour increases from the current 50,000 to 80,000 under Trend Growth and to 130,000 under the Long Range Plan.
- **more homes would be near rapid transit** - an additional 99 route/kilometres of rapid transit would be provided increasing the percentage of the population within 1 km of a rapid transit line from 8% today to 30% in 2021.
- **auto dependence would be reduced** - the percentage of people travelling during rush hours as car drivers rather than car passengers or transit riders would decline from 59% in 1991 to 50% in 2021.
- **traffic congestion would be worse** - the average speed of vehicles in the morning rush hour drops from 38.5 km/hour today to 37.5 km/hour in 2021.
- **truck traffic faces higher but tolerable costs**

- **emissions of local air pollutants would be decreased** - due to improved engine technologies, vehicle emissions would fall by 2/3 over today's level.

#### 4.2 Commentary

The Transport 2021 Plan in tandem with the Livable Region Strategic Plan would have major implications for development and the transportation system in the Region over the next thirty years. Increased densification in the Burrard Peninsula, the NE Sector and North Surrey, the construction of three rapid transit lines equivalent in length to SkyTrain and the introduction of HOV lanes and road user fees would be expected to have major implications over a thirty year period for the way we live, work and transport ourselves. In reality, in the face of burgeoning regional growth these major initiatives can yield only modest gains over the status quo of the transportation system. **While the Long Range Plan is successful in reversing the undesirable trend transportation scenario, the Region would continue to be largely dependent on the automobile and traffic congestion would be worse than it is today.**

### 5.0 FINANCING THE LONG RANGE PLAN

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#### 5.1 Overview

Recognizing constraints on government budgets, Transport 2021 defines affordability as the most important test of the achievability of the Long Range Transportation Plan. Affordability is defined by two criteria:

- historical rates of capital spending on transportation in Greater Vancouver.
- recognition of the prospects for new sources of dedicated revenue for transportation.

Transport 2021 notes that preparation of a financial plan goes beyond the terms of reference for the Project but proceeds to define overall capital requirements and revenue sources for funding the Long Range Plan.

#### 5.2 The Financial Plan

##### 5.2.1 Transportation Capital Program

To fund the transportation program in the Long Range Plan Transport 2021 identifies the need for \$10 billion (1992\$) of capital expenditures for transit, provincial highways and municipal roads. Table 3 provides a comparison of public expenditures on transportation capital projects over the past ten years and the future 28 years to 2021.

TABLE 3

**CAPITAL EXPENDITURES ON TRANSPORTATION  
 IN GREATER VANCOUVER (1992\$ MILLIONS).**

Capital Cost Item	Actual 1983-1992		Plan 1993-2021	
	Total Expenditures	Annual expenditures	Total Expenditures	Annual Expenditures
Transit	1,500	150	3,600	130
Provincial Highways	1,000	100	3,900	130
Municipal Roads	900	90	2,500	90
<b>Total</b>	<b>3,400</b>	<b>340</b>	<b>10,000</b>	<b>350</b>

Comparing the projected rate of capital expenditures on transportation reveals the following conclusions:

- despite a substantially more ambitious program of major improvements to the rapid transit and highway system to 2021 annual expenditures on transportation increase only marginally over those of the past ten years.
- annual capital expenditures on transit decrease from the previous 150 million per year from 1983-1992 to 130 million per year to 2021 while provincial highway expenditures increase from the 100 million average over the past ten years to 130 million for the next 28 years. While many of the highways expenditures would involve the development of HOV lanes, the decline in spending on transit appears incompatible with the stated objectives of the Long Range Plan.

Thus, while the capital program in the Long Range Plan meets the criteria of affordability it would seem to be overly conservative relative to actual needs. This conclusion is further substantiated by the comparison of per capita expenditures on transportation noted in Table 4. Over the next twenty-eight years to 2021 per capita spending on transit would be cut by 48% while overall per capita spending on roads and transit would fall by 35%.



TABLE 4

**AVERAGE ANNUAL PER CAPITA EXPENDITURES ON  
 ROADS AND TRANSIT IN GREATER VANCOUVER**

Capital Cost Item	1983-1992	1993-2021	Percent Difference
Transit	\$103	\$54	-48%
Provincial Highways	\$69	\$59	-15%
Municipal Roads	\$59	\$37	-37%
<b>Total</b>	<b>\$231</b>	<b>\$149</b>	<b>-35%</b>

The rationale offered by Transport 2021 for the substantial decline in expenditures on transportation, and specifically transit, is that the past rate of capital spending on transportation is not sustainable due to the following:

- the implications of debt financing rapid transit,
- competition from other spending priorities.

Transport 2021 concludes that to maintain transportation spending at the reduced levels will require new sources of revenue.

**5.3 Revenue**

The Long Range Plan proposes to shift funding for transportation away from Provincial general revenues to dedicated user fees including the following:

- **Bridge Tolls** - assuming a 24 hour toll is implemented in both directions on all major bridges into the Burrard Peninsula. **Annual Revenue: \$540 M**
- **Motive Fuel Tax** - a doubling of the motive fuel tax. **Annual Revenue: \$483 M**
- **Parking Charges** - an increase in long term parking rates in downtown Vancouver and regional town centres. **Annual Revenue: \$ 65 M**

The total annual revenue potential in 2021 by phasing in these revenue sources over the next thirty years would be \$1.1 billion in 1992 dollars.

**5.4 Commentary**

By applying the affordability criteria the Financing Plan developed by Transport 2021 would radically alter transportation financing in two major ways as follows:

- transportation expenditures relative to population would be dramatically reduced over the next thirty years compared with rates of spending over the past ten years.

- this lower level of spending on transportation would be funded exclusively by transportation user related fees rather than of government general revenues.

The Financing Plan raises serious questions regarding the adequacy of projected expenditures to meet the needs for capital spending under the Long Range Plan. Of specific concern is the ability of the Financial Plan to fund major transit projects in view of the significant reduction in per capita spending on transit projected over the next twenty-eight years.

**The Financing Plan needs to address the question of why historical spending levels of transportation cannot be maintained into the future in view of the obvious needs and the expectation that new revenue sources will be available.** Clearly this historical rate of transportation spending has been maintained using provincial general revenues through two recessionary periods from 1982-84 and 1989-92 which included substantial provincial budget restraints. Barring future economic conditions of greater severity over the next 28 years, the Financial Plan not only appears overly conservative, but possibly underfunded relative to the needs.

## 6.0 THE MEDIUM RANGE PLAN

### 6.1 Overview

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The Medium Range Plan focuses on the specific strategies required during the period up to 2006 to implement the Long Range Plan policy levers including the following:

- guidance on how to use transportation to shape growth
- the implementation of transportation demand management
- implementation of improvements to the transportation network to 2006.

The following sections describe the recommended approach under each of these areas.

## 6.2 Shaping Growth Through Transportation

### 6.2.1 Approach

From a review of the available literature on the relationship between land use and transportation, the Medium Range Plan concludes that "transportation investments should be made with the goal of shaping land use". In making transportation investments, governments should ensure that land use policies are likely to be put in place prior to making investment decisions and finally governments should avoid promoting urban sprawl by giving priority to transportation investments that improve the accessibility of the inner suburbs to and from each other. These basic principles are recommended to provide guidance in the formulation of partnership agreements between the GVRD and individual municipalities to coordinate land use and transportation.

### 6.2.2 Commentary

It is well known that rapid transit offers the primary vehicle to shape growth in directions which are compatible with Compact Growth. While other transportation investments such as major highways and new bus routes may have either a contrary or minimal effect on managing growth rapid transit alone has the potential to support more compact development. While the Medium Range Plan appears to somewhat understate, the influence of rapid transit on development the SkyTrain line provides ample evidence of the effectiveness of rapid transit in shaping growth.

The City of Burnaby has been at the forefront in laying the foundation to support rapid transit. Burnaby was the first municipality to put in place zoning to allow town centre development to flourish at Metrotown and Edmonds stations. **The City would maintain this approach in ensuring development along the Lougheed corridor which would both link town centres and improve accessibility to the inner suburbs. Therefore a rapid transit line in the City of Burnaby would be fully compatible with the regional approach to transportation as a tool for growth management.**

### 6.3 Transportation Demand Management

The approach for introducing transportation demand management (TDM) advocates the introduction of incentive "carrot" measures such as telecommuting, vanpooling, rideshare programs, employer trip reduction, removal of parking subsidies and "Pay as you drive" vehicle insurance prior to applying disincentives such as parking charges, motive fuel taxes and bridge tolls. As shown in Figure 6 these disincentive "sticks" would be introduced gradually as more carpooling and transit options come available.

### 6.4 Improving the Transportation Network

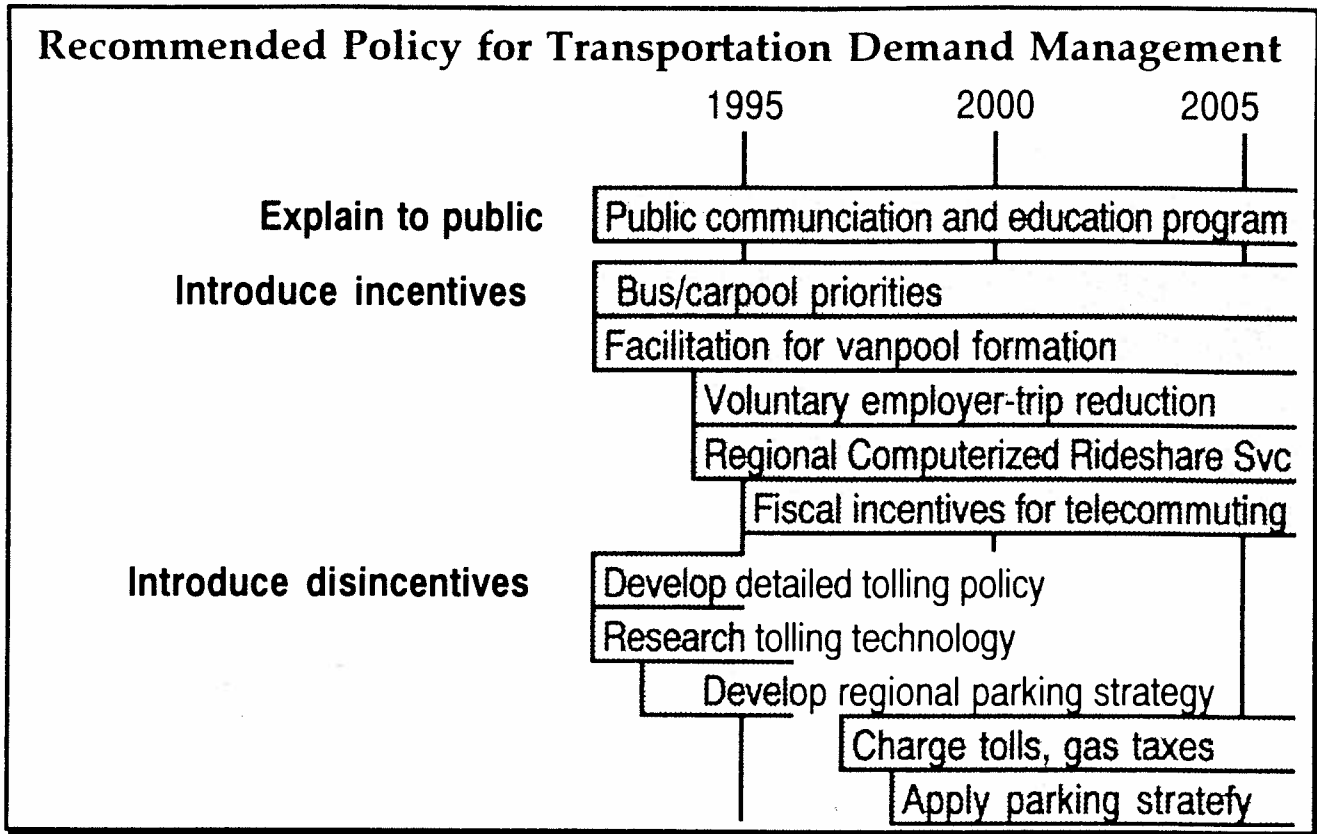
#### 6.4.1 Overview

The Medium Range Plan defines a recommended list of Transit improvements and HOV and Mixed Traffic improvements to be put in place by 2006 as shown in Figures 7 and 8. The transit system concept proposes the development of Intermediate Capacity Rapid Transit in three trunk corridors including:

- Vancouver - Richmond
- Lougheed - Broadway
- Coquitlam - New Westminster

FIGURE 6

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**SOURCE: TRANSPORT 2021  
MEDIUM RANGE PLAN**

# Medium-Range Transportation System Concept - Transit

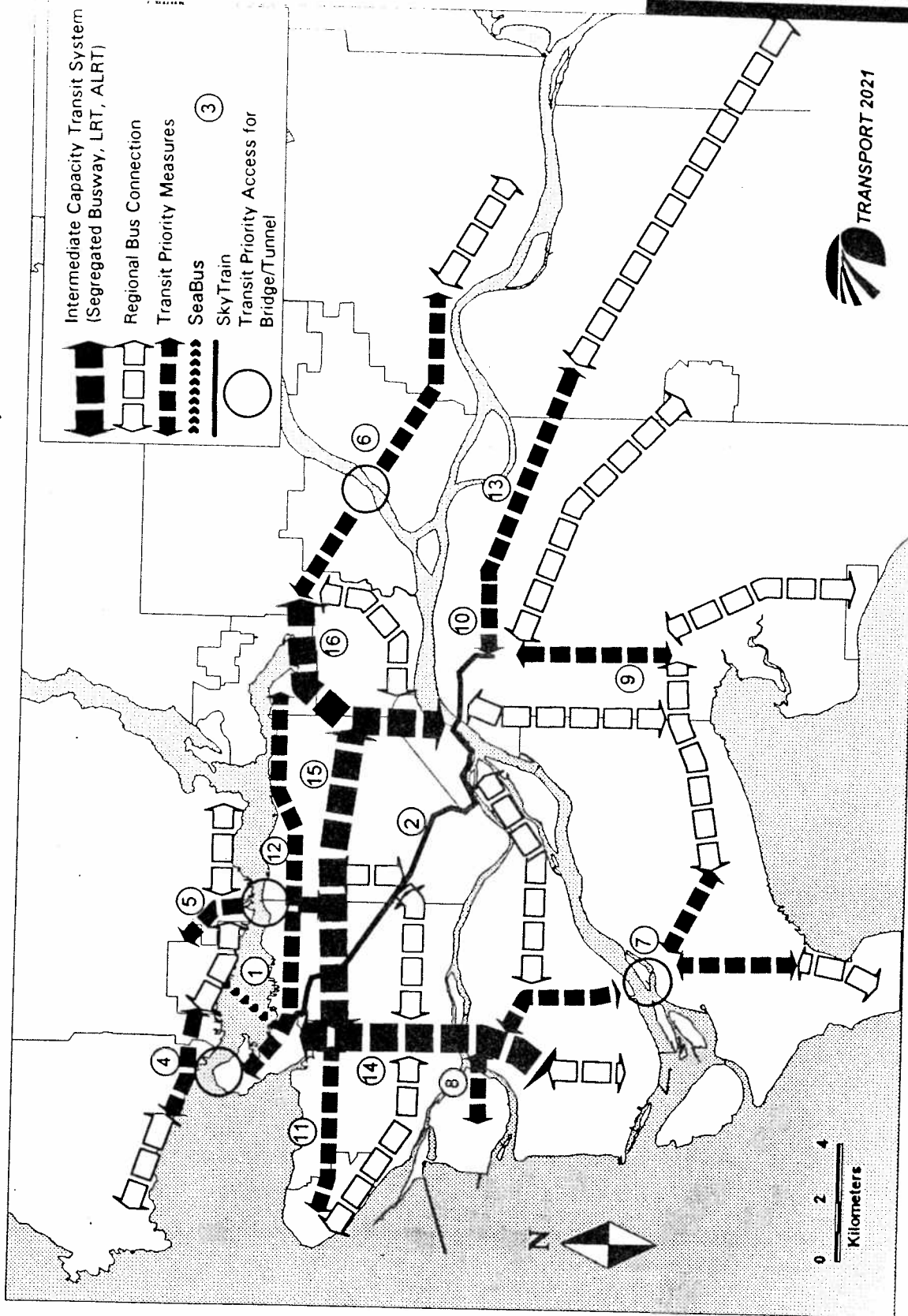
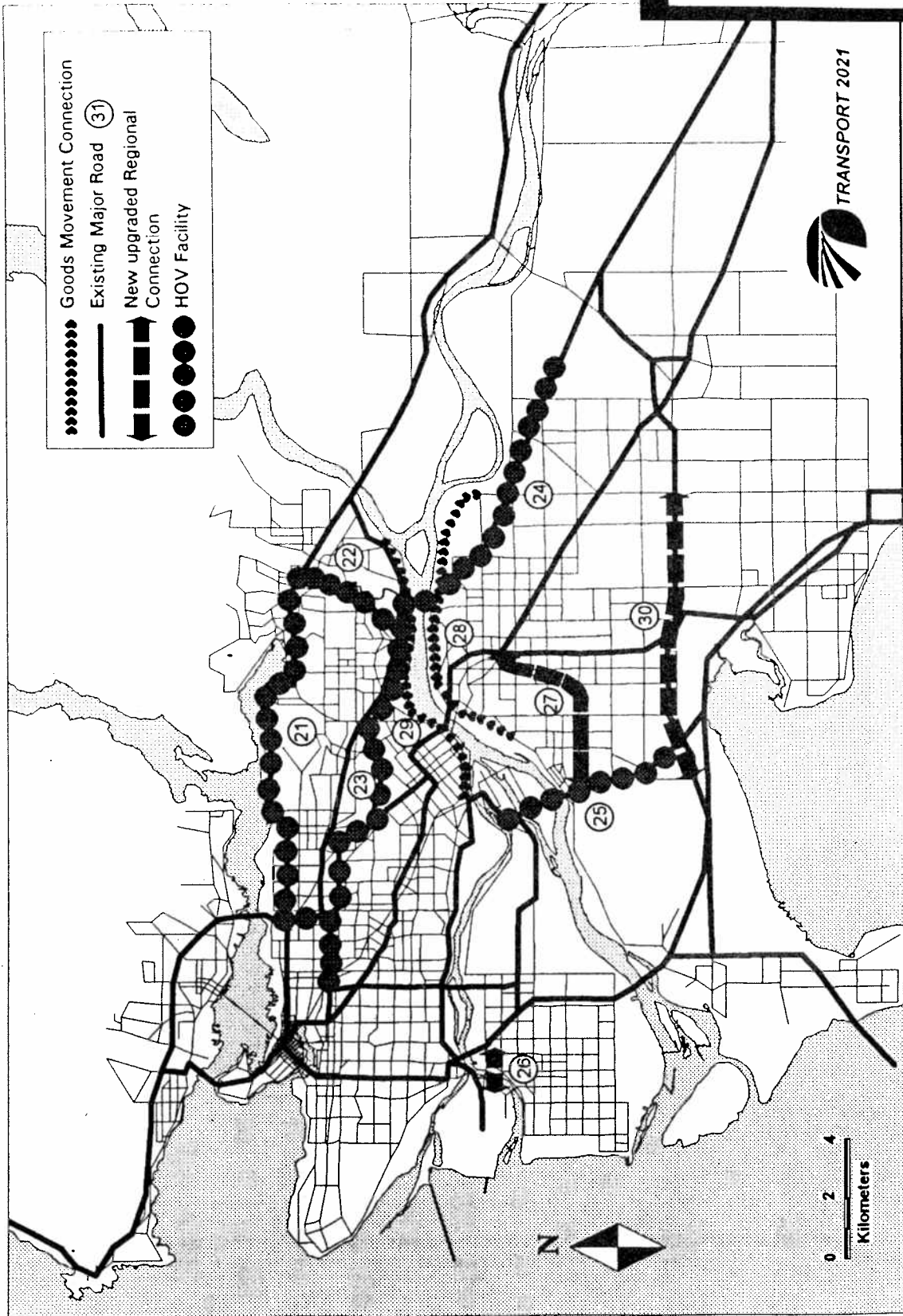


FIGURE 7

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FIGURE 8

Medium-Range Transportation System Concept - HOV and Mixed Traffic



In addition, the transit system concept includes the development of bus priority measures, bus lanes and upgrading of existing transit facilities. Staging of transit improvements in the three trunk corridors would be phased as follows:

- Step A -** provide cost effective bus priority measures
- Step B -** in corridors with high transit demand (up to 5,000 passengers per hour) provide limited stop express type services as a precursor to rapid transit.
- Step C, D, E** upgrade to rapid transit in each of the three trunk corridors in town.

Figure 9 provides a comparison of the transit corridors in terms of performance.

Based on the evaluations of corridor performance, only two corridors Richmond - Vancouver (7,200 passengers per hour) and Lougheed - Broadway (5,300 passengers per hour) by 2006 would meet the warrant for moving to Step C - consideration of rapid transit.

#### 6.4.2 Rapid Transit Staging

##### (i) Approach

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While the Medium Range Plan identifies the need for all three rapid transit corridors to be developed by 2006, it attempts to define a staging strategy for rapid transit based on two criteria:

- transport efficiency as measured by intensity of usage in passengers per kilometre per hour.
- land use shaping a measured by targeted growth relative to accessibility.

Based on these criteria the Vancouver - Richmond corridor is identified as superior in transport efficiency while the New Westminster - Coquitlam corridor is noted as first in land use shaping.

Transport 2021 then defines two possible paths for staging rapid transit improvements as shown in Figure 10. Path 1 places a higher value on transport efficiency and places Richmond - Vancouver first, New Westminster - Coquitlam second and Lougheed - Broadway third. Path 2 emphasizes shaping land use and ranks the corridors with Coquitlam - New Westminster first, Richmond - Vancouver second and Lougheed - Broadway third.

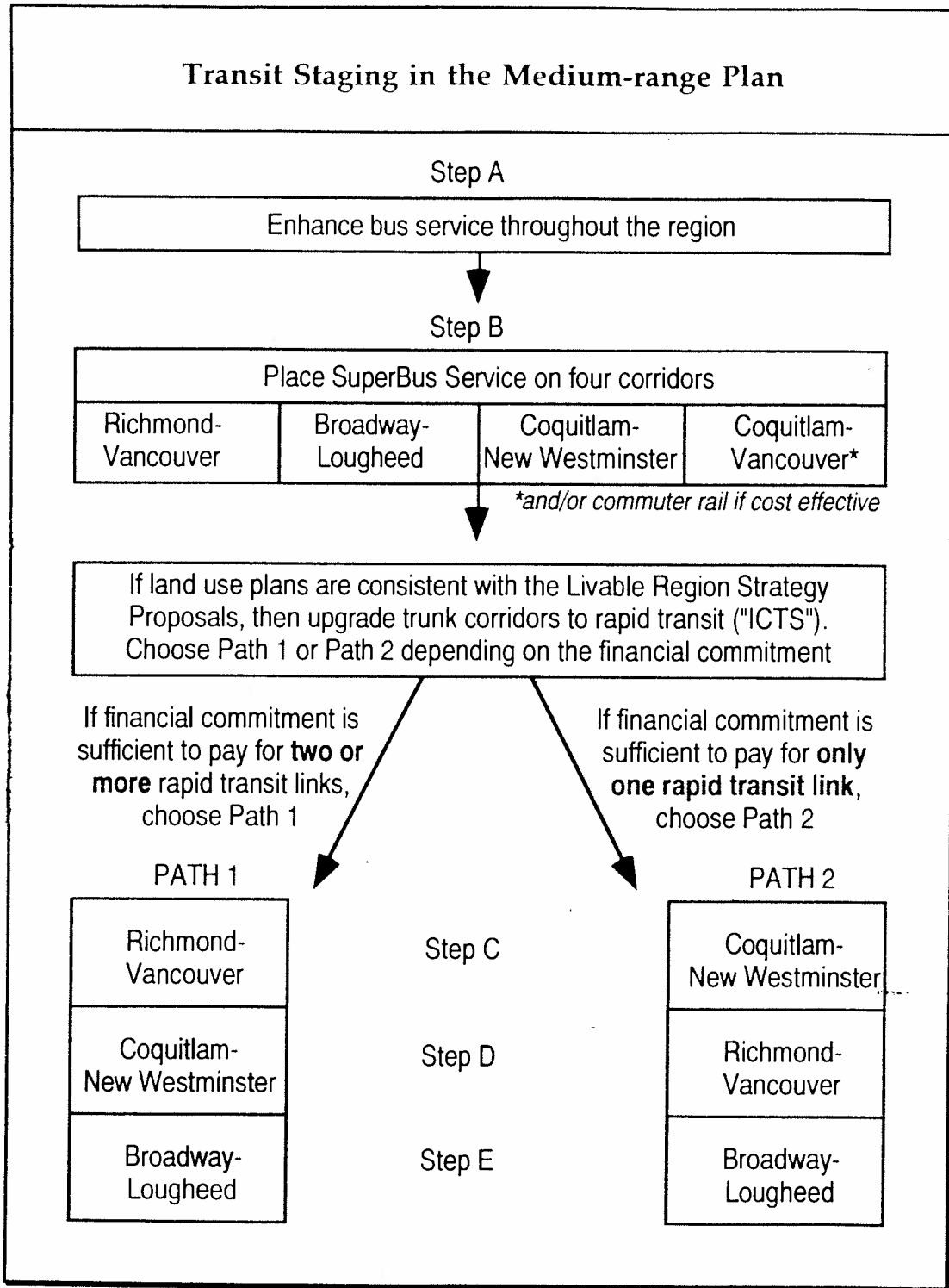
FIGURE 9

<b>Transit Corridor Performance</b> (during morning peak hour)	Projections for year 2006 are based on: <ul style="list-style-type: none"> <li>• Livable region strategy land use targets for population and employment being achieved by 2006 along each corridor</li> <li>• The recommended medium-range transportation demand management package in place as described in Chapter 2 of this report</li> <li>• The given corridor being the only one in place at the time (other combinations, not shown, were also tested)</li> </ul>			
	<b>Three Trunk Corridors</b>			<b>Coquitlam Vancouver SuperBus</b>
	<b>Richmond Vancouver ICTS</b>	<b>Broadway Lougheed ICTS</b>	<b>Coquitlam New West ICTS</b>	
<b>Ridership at maximum load point/hr ('000)</b>	7.2	5.3	4.1	4.3
<b>Total boardings/hr ('000 psgrs)</b>	15	11	9.2	6.1
<b>Total Psgr-km/hr ('000)</b>	119	85	71	103
<b>Route length</b>	15 km	18.5 km	13.5 km	34 km
<b>Intensity of use ('000 psgr km/route km, per peak hour)</b>	<b>8.0</b>	<b>4.6</b>	<b>5.2</b>	<b>3.0</b>
<b>Land use: difference between trend and target corridor populations</b>	<b>Low</b>	<b>High</b>	<b>High</b>	<b>High</b>

**SOURCE: TRANSPORT 2021  
MEDIUM RANGE PLAN**



Figure 10



**Source: Transport 2021  
 Medium Range Plan**

(ii) **Commentary**

The approach taken by Transport 2021 to determine staging of rapid transit is highly unusual in the field of transportation planning and engineering. While land use shaping is a primary objective of a rapid transit line, decisions about rapid transit priorities in studies undertaken for major cities worldwide should also be based on the following criteria:

- cost per rider - usually applied as a measure of cost effectiveness of capital expenditures on rapid transit.
- transportation system benefits from reductions in traffic congestion and road expenditures.
- transit operating cost savings - reduction in overall transit system operating costs due to replacement of buses by rapid transit.
- revenue - increased transit system revenue from the rapid transit line.
- value of travel time - overall economic benefits due to net saving in total travel time for all riders.

The Medium Range Plan conclusions about rapid transit staging have been made without reference to efficiency, cost effectiveness, economic benefits, or transit system considerations. **Based on insufficient analysis of the corridor options, the Medium Range Plan is not in a position to draw conclusions regarding the construction staging of very high cost rapid transit investments. This section of the report should therefore be withdrawn until sufficient studies have been completed to evaluate rapid transit priorities as a basis for defining staging.**

### 6.4.3 Rapid Transit Recommendations

(i) **Overview**

The Medium Range Plan concludes that the choice of Path 1 or Path 2 will depend on the level of financial commitment. The extent to which funding is available determines whether one or more of the rapid transit lines could be completed in the period to 2006. Its recommendation on choice of path is as follows:

- if a financial commitment to build two or more rapid transit corridors is made, Path 1 would be chosen and the Vancouver - Richmond corridor would be the first priority.

- if a financial commitment is adequate for only one corridor then Path 2 would be chosen and the New Westminster - Coquitlam corridor would be the priority.

In both cases the Lougheed - Broadway corridor would be the lowest priority for staging.

(ii) Commentary

As previously noted, the Medium Range Plan staging strategy is derived from inadequate analysis of the costs, benefits and implications of developing rapid transit in the proposed corridors. Therefore the recommendation cannot be either evaluated or supported by the City of Burnaby.

The introduction of the "financial commitment" criterion however also calls into question the efficacy of the financial analysis of expenditures and revenues for transportation improvements in the Long Range Plan. **The recommendations on choice of rapid transit priorities would appear to be based on the assumption that sufficient funding may not be available from the proposed "user pay" revenue sources to fund all rapid transit lines. This potential underfunding of transit capital projects was previously noted in the commentary on the Financial Plan and points to obvious inconsistencies between the financial plan, and staging strategy. Unless these inconsistencies are addressed recommendations on rapid transit corridors cannot be evaluated and should be withdrawn from the Medium Range Plan.**

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