

CITY OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRANSPORTATION AND TRANSIT DIVISION)

*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

RE: BIKEWAYS PROGRAM FOR 2002

RECOMMENDATIONS:

1. **THAT** Council approve the inclusion of the Bike Route Network in the Burnaby Transportation Plan.
2. **THAT** Council direct staff to initiate a neighbourhood public consultation process to determine the alignment and costs of the East Burnaby BikeWay.
3. **THAT** Council consider inclusion of \$100,000 in the 2002 Capital Budget Review Process to finance the East Burnaby BikeWay.
4. **THAT** Council consider inclusion of \$50,000 in the 2002 Capital Budget Review Process for bicycle signing and stencilling for the Lougheed Highway, Gaglardi Way and Barnet Highway.
5. **THAT** a copy of this report be forwarded to the Bicycle Advisory Committee.

REPORT

The Traffic and Transportation Committee (Transportation and Transit Division), at its meeting held on 2001 October 16, received and adopted the attached report advising of the results of the public consultation process for BikeWays in Burnaby as a basis to proceed to implementation in 2002 of the East Burnaby BikeWay and other improvements to cycling facilities in Burnaby.

Respectfully submitted,

Councillor Nick Volkow
Chair

Councillor D. Evans
Vice Chair

Councillor B. Der
Member

: COPY - CITY MANAGER
- DIRECTOR ENGINEERING
- DIRECTOR FINANCE
- DIR. PLNG. & BLDG.
- DIR. PARKS, REC. & CULT. SERV.

TO: CHAIR AND MEMBERS
TRAFFIC AND TRANSPORTATION COMMITTEE
(Transportation and Transit Division)

2001 October 10

Our File: 08.625.1

FROM: DIRECTOR PLANNING AND BUILDING

SUBJECT: BIKEWAYS PROGRAM FOR 2002

PURPOSE: To advise Council of the results of the public consultation process for BikeWays in Burnaby as a basis to proceed to implementation in 2002 of the East Burnaby BikeWay and other improvements to cycling facilities in Burnaby.

RECOMMENDATIONS:

1. THAT Council be requested to approve the inclusion of the Bike Route Network in the Burnaby Transportation Plan.
2. THAT Council be requested to direct staff to initiate a neighbourhood public consultation process to determine the alignment and costs of the East Burnaby BikeWay.
3. THAT Council consider inclusion of \$100,000 in the 2002 Capital Budget Review Process to finance the East Burnaby BikeWay.
4. THAT Council consider inclusion of \$50,000 in the 2002 Capital Budget Review Process for bicycle signing and stencilling for the Lougheed Highway, Gaglardi Way and Barnet Highway.
- 5.. THAT a copy of this report be forwarded to the Bicycle Advisory Committee.

REPORT

1. **BACKGROUND**

At its regular meeting of 1999 September 20, Council approved a process to develop a program for BikeWays in Burnaby. BikeWays are an intermediate level cycling facility between an **Urban Trail** (an off-street pedestrian and cycling path which serves the recreational cyclist) and a **Cycle Road** (which provides an additional width in the curb lane of major roads for the more experienced cyclist). **BikeWays** are on-street Bike Routes (using primarily local streets) similar in concept to the existing Francis-Union cycling facility which provides an alternate route for cyclists to Hastings Street.

BIKE ROUTES

These three types of cycling facilities comprise the various classes of **Bike Routes** in Burnaby.

Cycle Road

Urban Trail

BikeWay

At its regular meeting of 2001 April 23, Council approved a public consultation process for the development of BikeWays. This process was undertaken through the Bicycle Advisory Committee (BAC) with the objective of developing a revised Bike Route Network and overall improvements to the Bike Route Network in Burnaby including Cycle Roads, Urban Trails and BikeWays. At its meeting of 2001 October 11 the BAC approved this Bike Route Network and appearing elsewhere on this agenda is a memorandum from the BAC advising of this approval. This process was also intended to identify the 2002 priorities for new BikeWays and signing improvements to existing Bike Routes in Burnaby and this report requests Council approval of financing for these improvements and more specifically approval of a neighbourhood public consultation process for the East Burnaby BikeWay.

2. BIKEWAYS PROCESS

The process to develop a BikeWays network, as reported to Council in 2001 April, was a four phase process as shown in *Figure 1 attached* involving the development of a preliminary Concept Plan followed by a Public Consultation Process. We are now at the third step in this process involving the development of longer term priorities for Bike Routes including Urban Trails, Cycle Roads and the identification of a priority BikeWay for implementation in 2002.

In Phase 4, implementation of a particular route would involve a neighbourhood public process to solicit the views of the local community affected by the route and identify and address any concerns. Following this input, staff would develop a preferred alignment and more precise costs as a basis to bring forward a Capital Expenditure Bylaw for Council consideration.

3. BIKEWAYS PUBLIC CONSULTATION

3.1 Outreach Activities

The first stage of the process used a various activities to increase the public profile of the overall BikeWays process. One activity was outreach presentations (see *Figure 2*). Presentations were made to each of the following groups:

- Burnaby Bicycle Advisory Committee March 22
- Kingsway Transportation Management Association May 15
- BEST / Go Green Choices April 6
- Burnaby School District, Building and Grounds Committee April 17
- Community Policing Committee May 10
- Burnaby North Secondary School June 4
- Ballard Generation Systems June 5
- BC Hydro June 11
- Telus June 28
- Willingdon Transportation Action Group August 8



Figure 2 *Presentation to Students at Burnaby North Secondary School*

On 2001 May 17 a new page was added to the City's web-site outlining the BikeWays program, noting upcoming open houses and providing a questionnaire that could be downloaded and faxed back to the City.

In addition to the web-page and outreach presentations, newspaper ads were also run in the *Newsleader* on Sunday May 20th and the *Burnaby Now* on Wednesday, May 23rd (see *Figure 3*).

A press release was also issued in advance of the open houses and this initiative resulted in the "*Burnaby does an awesome job on cycling*" article which appeared in the Wednesday, June 6th Edition of the *Burnaby Now*.

A full page article was also included in the Summer issue of *InfoBurnaby* which was circulated to Burnaby residents on the week of June 6.

The City of Burnaby Wants Your Opinion !

The "Bikeways" initiative is being proposed that could:

- ✓ Improve community connections within your neighbourhood
- ✓ Provide bike routes that could appeal to all cycling abilities
- ✓ Complete the bike network in Burnaby

however, before this concept is put into motion the City would like to hear from cyclists and non-cyclists alike. If any of these issues are important to you please attend one of the following open houses:

5:30-9 pm Wednesday May 23 Auditorium, Edmonds Community Centre	5:30-9 pm Wednesday May 30 Seniors Activity Room, Cameron Recreation Centre	5:30-9 pm Wednesday June 6 Main Hall, Confederation Community Centre	5:30-9 pm Tuesday June 12 Banquet Hall, Bonar Recreation Centre
---	---	--	---

or visit the City's website at <http://www.city.burnaby.bc.ca> and click on "what's new"
or call either 244-7216 or 244-7404




 City of Burnaby

Figure 3

BikeWays Newspaper Ad

A static mall display was also developed and set up in a prominent community space for about a week preceding each open house (see **Figure 4**) in the following locations:



Figure 4 *Static Mall Display at Metropolis*

- | | |
|---------------------------------------|------------------|
| • Eastburn Community Centre | May 17 to May 22 |
| • Brentwood Mall | May 22 to May 27 |
| • Hats Off Day (Heights) | June 2 |
| • Metropolis (formerly Eatons Centre) | June 4 to June 8 |

3.2 Open Houses

All of these activities culminated in the four interactive open houses, with one held in each of the four quadrants of the City of Burnaby.

- Eastburn Community Centre, May 23
- Cameron Recreation Centre, May 30
- Confederation Centre, June 6
- Bonsor Recreation Centre, June 12

At each open house a series of 21 interactive display panels (see **Figure 5**) were presented which encouraged participants to:

- identify routes that they now use;
- identify existing problem areas;
- show their favourite places and necessary destinations; and comment on the draft evaluation criteria to be used in evaluation of specific BikeWay route options and in determining priorities amongst the different Bike Routes.

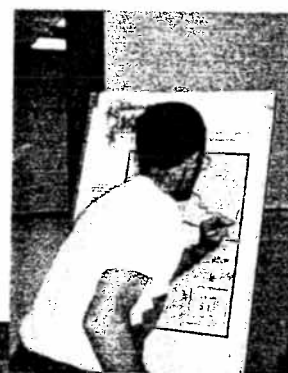


Figure 5 *BikeWays Open Houses*

In total the outreach presentations had an audience of approximately 110 people. The open houses were attended by more than 100 people and 65 questionnaires were received by the City. It should also be noted that these open houses occurred during the bus strike when there were a higher number of cyclists on the streets of Burnaby.

4. BIKE ROUTE NETWORK

4.1 Directions from the Public

Emerging from the public consultation process, the directions from the public reflected the cycling needs of each geographic quadrant of Burnaby and of the City as a whole.

4.1.1 Predominant Cycling Needs by Geographic Quadrant

QUADRANT/OPEN HOUSE	PREDOMINANT DIRECTION(S)
NW - Confederation Community Centre Open House	Gilmore corridor from Hastings to south of Canada Way (includes Highway crossing)
SW - Bonsor Recreation Centre Open House	BC Parkway improvements
NE - Cameron Recreation Centre Open House	Cariboo Road from Government Road south to 10 th Avenue (includes Highway crossing)
SE - Edmonds Community Centre Open House	1. Cariboo Road from Government Road south to 10 th Avenue (includes Highway crossing); 2. Corridor between Cariboo Road and Edmonds SkyTrain Station

4.1.2 Overall City Wide Cycling Needs

Overall directions from the public regarding cycling needs on a Citywide basis are summarized below in decreasing priority.

- **North/South Routes and Highway 1 Crossings**

The difficulty in cycling in a north-south direction in Burnaby and specifically in crossing Highway 1 was the predominant comment made throughout the public consultation process. Gilmore, Willingdon, Douglas, Kensington and Cariboo were identified as important corridors to develop further, in part because of their Highway crossing potential.

Specific Highway 1 crossings such as Kensington/Sperling and Cariboo stood out as the most important crossings because of three factors: their relative geographic positions in Burnaby (central, east Burnaby respectively), the lack of suitable alternative crossings, and the safety issues associated with the vehicle on and off ramps (Kensington) and narrow pavement width on the bridge deck and approaches (both Kensington and Cariboo). It should be noted that all Highway 1 crossings and their approaches suffer from narrow pavement width while only Willingdon, Kensington and Sprott have on and off ramp concerns.

- **Millennium SkyTrain Line/Central Valley Urban Trail**

A strong desire emerged to develop Urban Trails along both the new SkyTrain guideway alignment and through the Central Valley. Development of both of these facilities would be desirable because of their ability to provide service to different areas, length and connectivity to other municipality's facilities, and the potential for loop cycling trips within the City of Burnaby. If these two facilities were created, they could connect at Gilmore Avenue and lead into Vancouver where the City is pursuing a greenway along the Millennium SkyTrain line. It should be noted that development of a Millennium SkyTrain Urban Trail is hampered where the guideway is in a centre median location, particularly between Bainbridge and Lake City Way.

- **Signage**

The public consultation process identified a desire for better signage of all bicycle facilities for cyclist way-finding, promotion, driver awareness and education. Appropriate signage can be used to help improve overall use of such facilities and aid in local community building through encouragement of use by local residents.

- **Connectivity To Neighbouring Municipalities' Bicycle Facilities**

This comment recognizes the need for our municipal network to fit into a regional bike route system. Desire for connectivity to both Vancouver and New Westminster was identified.

- **Localized “Spot” Improvements**

A number of safety and cyclist convenience improvements were located on the Open House Interactive Maps. These items apply to both existing bicycle facilities and other roads.

- **Connectivity to Existing and Future SkyTrain Stations**

Analysis of the Open House Interactive Maps revealed a strong interest in the potential of multimodal transportation (bike - SkyTrain).

- **Service To Areas Currently Underserved**

Analysis of the Open House Interactive Maps identified the desire to provide bicycle facilities where none currently exist. This also may represent extension of an existing facility to an under-served area or development of a new facility that connects to an existing facility.

4.2 Draft Bike Route Network

The emerging issues identified through the public consultation process formed the basis for development of the Draft Bike Route Network shown in *Figure 6 attached*. The Plan seeks to provide a consistent level of service across Burnaby, provide access to major origin and destination points, connect to neighbouring municipalities, and reconnect north and south Burnaby across Highway 1. If approved by the Bicycle Advisory Committee this draft Bike Network Plan would be incorporated in the next update of the Burnaby Transportation Plan for consideration by Council before the end of this year.

5. BIKE ROUTE PROGRAM

5.1 Recommended Bike Route Improvements

Based on the route options presented and comments received at the open houses, more than 80 different potential cycling facilities were identified within the City of Burnaby. Of these, 34 were identified as recommended improvements to the Bike Route Network based on the evaluation criteria. The Bike Routes listed have been placed into one of five groups based on the type of facility including:

- Five (5) Urban Trails;
- Twenty (20) BikeWays;
- Two (2) Cycle Roads with marked bike lanes;

- Nine (9) Cycle Road without marked bike lanes; and
- One (1) Cycle Road which is a primary arterial.

If constructed these facilities would expand the number of existing Bike Routes into a continuous Bike Route Network throughout Burnaby.

5.2 Bike Route Priorities

Within each category the evaluation criteria listed across the top of the *Figure 7 attached* was used to score each of the 34 Bike Routes including Cycle Roads, Urban Trails and BikeWays. The routes have been listed from highest scoring to lowest scoring within each of the categories.

It is important to note that at this stage of the process all of the 20 potential BikeWays listed in *Figure 7* should be thought of as thick crayon lines representing “desire lines”. Staff have used generic community names at this time in an effort to reflect this level of detail. However, to better identify where some of these routes may be located, some specific street names have been used in the “description” column. These “descriptions” are very preliminary and each individual BikeWay would be subject to a separate neighbourhood consultation process to review a route options in detail before the final route alignment is recommended to Council.

Based on this evaluation the following Bike Routes are being recommended as the highest priority within each category:

- Urban Trail *BC Parkway*
- BikeWay *East Burnaby BikeWay*
(Armstrong / 13th area from Edmonds SkyTrain Station / BC Parkway to Cariboo)
- Cycle Road *Lougheed Highway*
with marked bike lanes (from Boundary to North Road)
- Cycle Road *Moscrop¹ Street*
without marked bike lanes (from Boundary to Willingdon)

It should also be noted that although the Midtown BikeWay was ranked first overall in the BikeWay category (as an alternative route to Moscrop), and Moscrop itself ranked first

¹ Assumes a Major Collector Greenway standard is used to retain the mature trees along this route.

overall in the Cycle Roads category, Moscrop is scheduled to be reconstructed to a "Major Collector Greenway" standard (including on-street bicycle provision and an off-street urban trail) during years 2003 and 2004 as part of the current 2001-2005 Annual Capital Program. To reduce duplication of effort and increase the overall effectiveness of bicycle network investments, the East Burnaby BikeWay was recommended over the Midtown BikeWay.

6. 2002 BIKE ROUTE INITIATIVES

6.1 The East Burnaby BikeWay

The East Burnaby BikeWay as shown in *Figure 6 (attached)* emerged from evaluation as one of the highest priority BikeWay routes for the following reasons:

- **connectivity** - serves the SE Burnaby quadrant of Burnaby which lacks Bike Routes and connects to the BC Parkway and other planned Bike Routes in New Westminister as well as the Edmonds SkyTrain Station.
- **ease of implementation** - could be implemented at relatively low cost as much of the infrastructure is already in place and the route could make use of existing traffic signals to cross 6th Avenue, Canada Way, Kingsway, and Griffiths Avenue between Cariboo Road and Edmonds SkyTrain Station and the BC Parkway.

A public process would have to be held with residents in the East Burnaby corridor before a final route (Street "A" or Street "B") could be determined. If Council approves the East Burnaby Route in principle, a route planning process would be initiated this year to finalize the route, provide more detailed costs and an implementation schedule.

As part of the BikeWays open houses, evaluation criteria were presented to help make the future choice between candidate streets along a general alignment (Street "A" or Street "B"). Although the BikeWays initiative was very well received, some residents were concerned with the possible biophysical impacts associated with some route options. In response to these concerns staff have expanded the route selection criteria (these changes are underlined in *Figure 8 attached*) to incorporate more environmental factors. Specific criteria were added to minimize environmental impact (protecting sensitive areas, avoiding fragmenting existing natural areas, and avoiding new stream crossings). In addition several criteria were also added to respond to cyclists comments (fresh air for cyclists, opportunity for shade along the route, and avoiding roadway hazards).

The cost of the East Burnaby BikeWay for budgeting purposes is estimated at \$100,000 pending the outcome of the route selection process (with neighbourhood involvement) at which time more precise costs will be available.

6.2 Existing Cycle Roads Signing and Stencilling

While the City of Burnaby has completed a number of cycling facilities over the past few years including Urban Trails and Cycle Roads, few of these facilities are properly identified and signed for safety. As a result, cyclists travelling in Burnaby or through Burnaby either is unaware of the existence of bike routes or are uncertain how to use the bike routes that do exist. More problematic from a safety perspective is the concern that motorists are unaware that the road on which they are travelling is also an on-street bike route or the upcoming intersection is a Bike Route crossing.

As the Lougheed Highway was identified as a priority Cycle Road with marked lanes the following improvements would be undertaken (see *Figure 9 attached*):

- **new full-width bike lanes are being provided** at a number of locations including the Lougheed-Gaglardi Queue Jumper Project, the Lougheed Highway Reinstatement Project sections and the station-area civil works around Production Way-University Holdom and Brentwood stations.
- **Cycle Road signing** including bike symbol stencils on the pavement within the bike/emergency stopping lanes, route signage, and cross street tabs along the Lougheed Highway.

For consistency and to increase safety the existing marked bike/emergency stopping lanes on the Barnet Highway and Gaglardi Way would also be signed and stencilled. This work would be undertaken by the City crews.

6.3 Existing Urban Trail and BikeWay Signing

Comments from the BikeWay public consultation process indicated that many cyclists are not aware of existing Urban Trail and BikeWays (ie. Francis Union in Burnaby) due to the lack of appropriate signing. The following measures would address this concern for existing routes (also see *Figure 9 attached*):

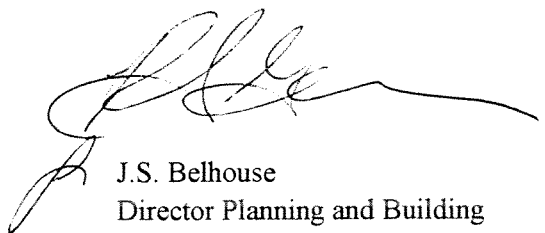
- **Signing of existing Urban Trails** as “Shared Pathway” cycling and pedestrian routes and stencilling of the cyclist and the pedestrian symbol on all completed Urban Trail sections.
- **signing of existing BikeWays** such as Francis/Union to a similar standard as the Greenways in the City of Vancouver including on-street name signs and bike symbol stencilling.

The cost of these signing and pavement marking initiatives outlined above is estimated for budgeting purposes at \$50,000. In the 2001 April report to Council it was anticipated that cost sharing for these improvements was to be available from an ICBC cycling program, however this program has been cancelled.

7. CONCLUSION

Burnaby is fortunate to have had the foresight to develop a broad selection of Bike Routes appealing to a wide range of user abilities and cycling needs and to commit significant funding for Urban Trails and Cycle Roads. However, the focus of the bicycle program over the next five years needs to change to developing a more balanced and continuous Bike Route Network by directing more resources to constructing these less costly and more easily implemented intermediate facilities called BikeWays. Further, increased effort needs to be directed to broadening public awareness of the many cycling facilities that are available in Burnaby and enhancing cyclist safety by consistent and widespread application of signing and stencilling. Notwithstanding these efforts on behalf of BikeWays, it is recognized that Urban Trails will continue to play an important role in the City's Bike Route Network.

The approach outlined within this report builds on the comments received from the BikeWays public consultation process conducted in 2001 June to develop a Bike Route Network and priorities for implementation of Bike Routes. Specifically, this report recommends initiating a public process this fall to identify and cost a route for the East Burnaby BikeWay for implementation in 2002 and to undertake signing and pavement marking on existing Cycle Roads and Urban Trails in Burnaby for the remainder of 2001 and into 2002.



J.S. Belhouse
Director Planning and Building

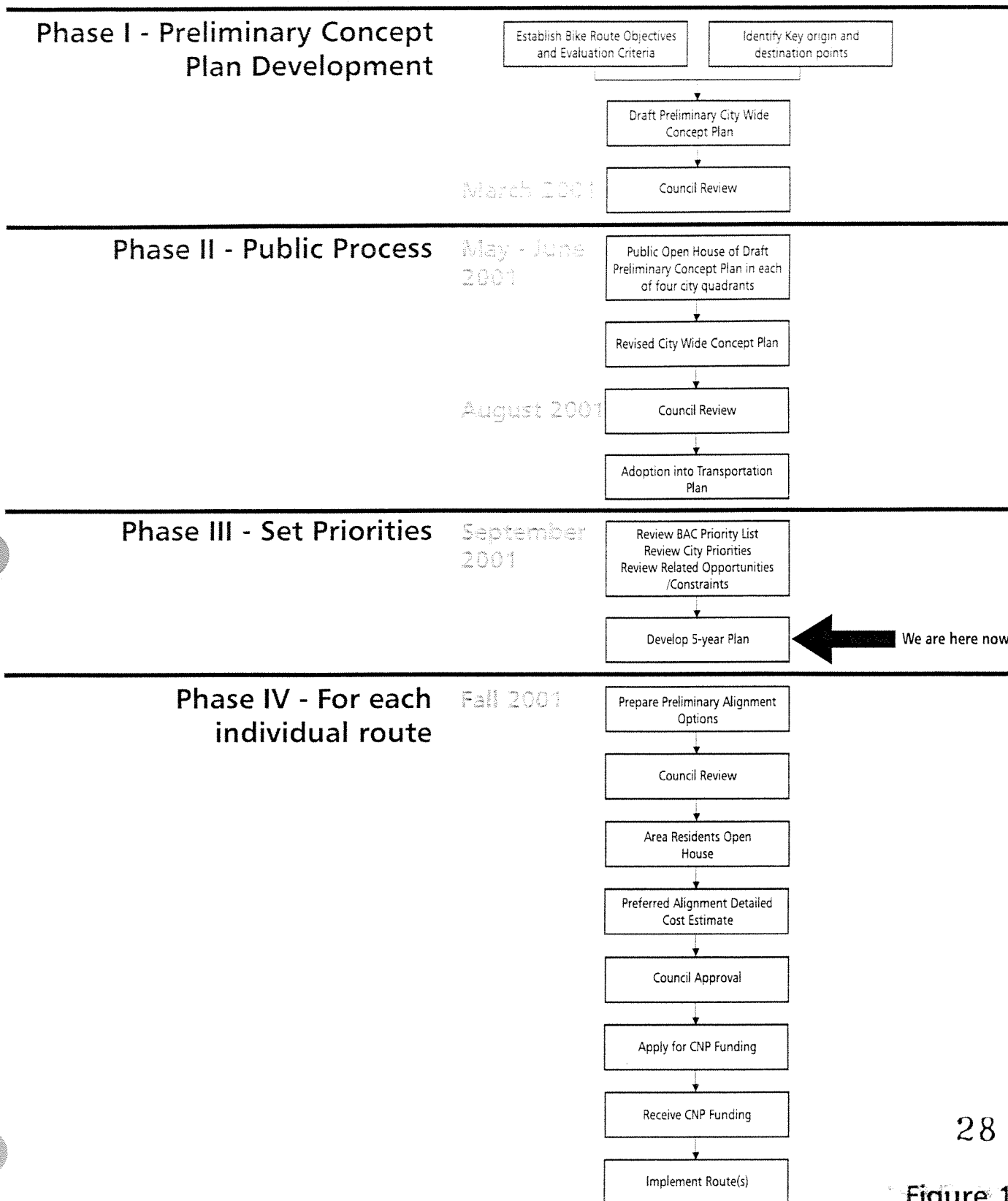
RG\DC\MP\sa
Attachments

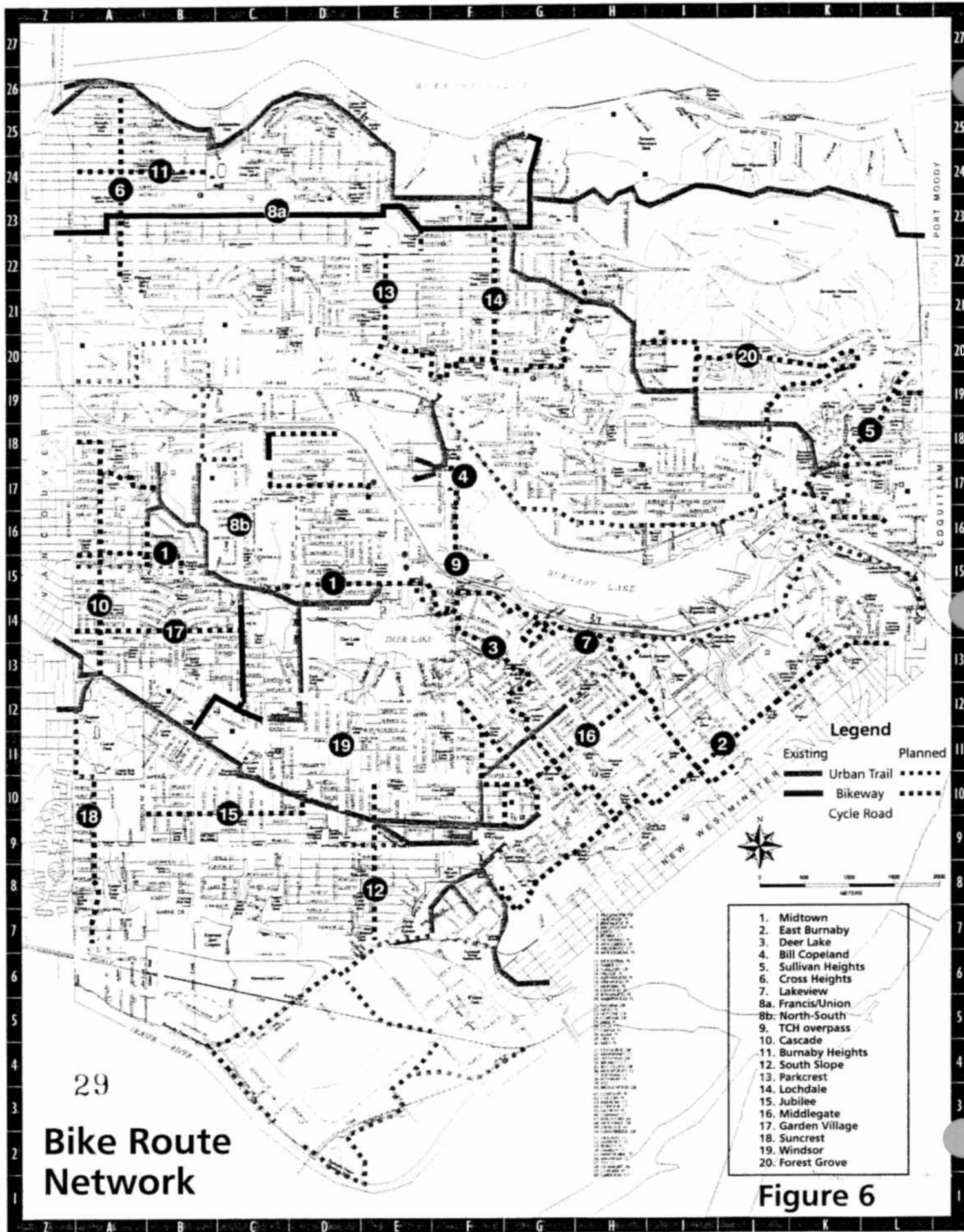
cc: City Manager
Director Engineering
Director Parks Recreation and Cultural Services

P:\Bob Glover\BikeWays Implementation .wpd

Where we are in the process

We are now in the third step of a four part process. Next we will launch a neighbourhood consultation process for the first specific route(s) this fall.





ISSUE	CONNECTIONS		DEMAND		TIMING & RELATED DEVELOPMENT		EASE OF IMPLEMENTATION				COST AND FUNDING PARTNERS		
	Filling in Gaps in the System	Connecting to Major Destinations	Connections to Bike Routes in Other Jurisdictions	Existing Bicycle Use	Anticipated Bicycle Use	Coordinating with Other Projects	Equal Distribution Across the City	Cost	Opportunity	Local Support	Minimizing Environmental Impact	Number of Agencies Having Jurisdiction	Maximize How Facilities
more the better	more the better	more connectivity the better	more connectivity the better	more use the better	more use the better	timing with other projects	servicing under-supplied areas	lower the better	how much infrastructure is already in place	reaction to the route	less impact the better	lower the better	agencies participating

POTENTIAL CONNECTION	DESCRIPTION	TO	FROM	TYPE	TOTAL SCORE
1 Midtown	Fr. Street	Boundary	Huxley	1 bikeway	56
2 East Burnaby	Armstrong / 13th	Mary	Cariboo	2 bikeway	53
3 Deer Lake	Buckingham / Huntleys / Mary	Sperling	10th Ave	1 bikeway	51
4 Bill Copeland	Kensington Hike A-Bike (gates)	Neel	Broadway	1 bikeway	49
5 Sullivan Heights	MacDonald / 2nd Narrows	Douglas	Edinburgh	1 bikeway	49
6 Cross Heights	Lakewood	Canada Way	10th Ave	3 bikeway	47
7 Lakeview	existing bikeways	signage	/ traffic calming	3 bikeway	46
8 Francis/Jon, North-South	at Sperling/Kensington	Dominion	Kingsway	14 bikeway	45
9 ICH overpass	Smith / Patterson	Boundary	Willingdon	1 bikeway	45
10 Cascade	Triumph / Cambridge	Boundary	Willingdon	1 bikeway	44
11 Burnaby Heights	Buller	Kingsway	Gilley	1 bikeway	43
12 South Slope	Fall	Broadway	Curtis	1 bikeway	42
13 Parkcrest	Cliff	Hastings	Sperling Stn	1 bikeway	42
14 Locustdale	Victory	Patterson	BC Parkway	1 bikeway	40
15 Jubilee	Elwell / Walker / Salsbury	Salsbury	4th St	1 bikeway	38
16 Middlegate	Burke	Boundary	Willingdon	1 bikeway	37
17 Garden Village	Joffe	Marine	Imperial	1 bikeway	35
18 Suncrest	Edgar / MacPherson	Rumble	Oakland	1 bikeway	34
19 Windsor	Forest Grove Drive	East Lake	Audien	1 bikeway	34
20 Forest Grove		Boundary	North Road	6 cycle road (bl)	57
Lougheed		wilder lanes		1 cycle road (bl)	44
Burnaby Min Pkwy (SFU)		Boundary	Willingdon	6 cycle road (tbl)	52
Moscrop (hybrid greenway)		Winston	10th Ave	5 cycle road (tbl)	49
Cariboo Road		Douglas	Canada Way	9 cycle road (tbl)	48
Gilmore		MacPherson	Gilley	2 cycle road (tbl)	48
Rumble		Hastings	Douglas	2 cycle road (tbl)	44
Gilmore		Boundary	Lougheed	1 cycle road (tbl)	44
Douglas Road		Lougheed	Canada Way	4 cycle road (tbl)	42
Douglas Road		Boundary	Kingsway	2 cycle road (tbl)	41
Imperial		Penzance	Canada Way	8 cycle road (tbl)	38
Willingdon		Kingsway		4 primary arterial	48
BC Parkway				3 urban trail	49
Millennium SkyTrain Line UT				6 urban trail	37
Central Valley UT				8 urban trail	36
Gagliardi UT				3 urban trail	35
ICH Urban Trail				3 urban trail	29

Legend: bl = bike lane, tbl = no bike lane
Scale: of 1 to 5 (5 = best and 1 = worst)
version: 2001 October 2
Figure 7

Making the Choice Between Candidate Streets

CATEGORY	ISSUE	OBJECTIVE	MEASUREMENT
FUNCTION			
	safety	Reduce the volume of traffic competing with bicycles.	Traffic volume on existing local street (less is better).
		Minimize the difference between traffic speed and bicycle speed.	Average speed of traffic (lower is better).
		Ensure safe crossings at busy cross-streets.	Number of existing traffic signals that can be used.
		Maximize road surface quality.	Percentage of the route that is smooth, clean paved surface.
		<u>Avoid hazards.</u>	Percentage of the route that has asphalt curbs (less is better).
			Number of shared through / right turn lanes used along the route (less is better).
		Maximize personal safety.	Distance that the route is in remote or isolated areas (less is better).
	Ability to add traffic calming features, if required.	Length of route on local streets where traffic calming measures are permitted.	
	environment	Improve the environment.	Estimate of the amount of new bicycle trips attracted to the proposed route (low, medium, or high).
		<u>Protect sensitive areas.</u>	Amount of sensitive area impacted (less is better).
		<u>Avoid fragmenting existing natural areas.</u>	Distance of trail that travels through undisturbed natural area (less is better).
		<u>Avoid new stream crossings.</u>	Number of new stream crossings (less is better).
	air quality	<u>Fresh air for cyclists.</u>	Distance from point sources of pollution (i.e. trucks).
	shade	<u>Opportunity for some shade along the route.</u>	Percentage of the route in shade (higher is better).
	community	Reinforce community by involving neighbourhoods in the process.	Public support.
LOCATION (CUSTOMER SERVICE)			
	access	Close by and easy to find.	Number of major streets or other barriers between major origins or destinations and the route (the fewer the better).
	direct	Maximize convenience.	Overall distance (shorter is better).
			Number of stops along the route - stop signs or lights (fewer is better).
	connections	Maximizes travel options.	Number of routes within other municipalities that the route would connect to (more is better).
Number of major transit transfer points that the route would connect to (more is better).			
easy to use	Limits the number of steep hills (grade changes).	Total cumulative change in elevation along the route (lower is better).	
POINTS OF INTEREST / KEY DESTINATIONS			
	key destinations	Improves community connections.	Number of favourite places and community destinations adjacent to the route (more is better).
			Number of regional destinations adjacent to the route (more is better).
	access to nature	Increase ability to visit parks and conservation areas.	Number of sites the route provides direct access to (more is better).
	waterfront connections	Increases ability to visit waterfront parks.	Number of sites the route provides direct access to (more is better).
	views	Increase access to areas with scenic views.	Number of vistas along the routes (more is better).
	landscapes	Maximizes the number of pleasant places along the route.	Number of unique landscapes or streetscapes along the route (more is better).
IMPLEMENTATION			
cost	Minimize the overall cost of the route.	Cost estimate (lower is better).	
opportunities	Uses existing opportunities.	Percentage of the route that uses existing roads or other connections.	
local support	Maximize local community support.	Amount of community support for route from the local neighbourhood.	

Figure 8

Revised Bikeway Route Evaluation Criteria

Proposed Bike Route Signage

This table shows the type of signage that would be used for each type of bike route including urban trails, bikeways and cycle roads.

Type	Sign	Purpose	Urban Trails	Bike ways	Cycle Roads	
					bike lane	shared lane
Regulatory		Post mounted sign used to advise users that are permitted on Urban Trails - to increase use, courtesy and safety.	✓			
Warning		Road side sign used to advise motorists to watch for cyclists and encourage safe, courteous motorist / cyclist behaviour. Promote cycling on specific roads.				✓
Guide and Information		Road side sign used to identify bike routes for cyclists as both a "reminder" sign and to guide the cyclist during changes in direction of route and intersections with other routes.	✓	✓	✓	
		Pavement marking used as a reminder to motorists to watch for cyclists and when combined with arrows can be used as a guide for cyclists.		✓	✓	
		Street signs identify the route to cyclists and remind motorists that bikes may be encountered.		✓	✓	
		Additional signs at major cross-streets (hung from the traffic signal davit arm) to identify the bike route and warn motorists that bicycles may be encountered.		✓	✓	
		Information signs to advise cyclists where points of interest are relative to the bike route (particularly if they are close but not right on the bike route).	✓	✓		

Figure 9

