



To: Planning Committee

Date: May 31, 2006

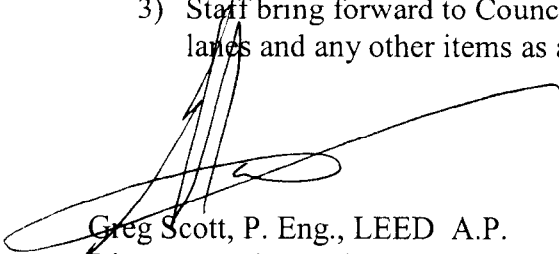
From: Greg Scott, P. Eng., LEED A.P.
Director, Major Projects

File: 10-6525-07-02/Vol 01

Re: Streetscape Study - No. 3 Road Layout Options

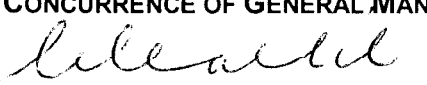
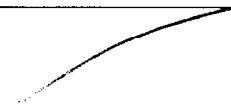

Staff Recommendation

- 1) That Council adopt Option C as the vision of the Great Street for No. 3 Road; and
- 2) Direct staff to proceed with detailed design of this vision and upon completion of the design provide Council with a cost plan that reflects the vision of the Great Street given the road right of way available, MRN/City funding (\$8M), TOD funding (\$1.5M), Canada Line Contribution for Urban Integration of the Guideway (\$2M) and negotiations with CLCO over scope of work.
- 3) Staff bring forward to Council funding options to implement the additional scope of work; cycle lanes and any other items as a result of negotiations with CLCO.



Greg Scott, P. Eng., LEED A.P.
Director, Major Projects
(4372)

Att. 4

FOR ORIGINATING DIVISION USE ONLY					
ROUTED TO:	CONCURRENCE		CONCURRENCE OF GENERAL MANAGER		
Budgets	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		 		
Parks Design, Construction & Programs	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				
Policy Planning	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				
Transportation.....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				
REVIEWED BY TAG	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	REVIEWED BY CAO	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
			<i>(Acting)</i>		

Staff Report

Origin

Background:

The Richmond City Centre Transportation Plan, as identified through the 1995 OCP, designates No. 3 Road as a rapid transit corridor. Richmond is conducting a City Centre Area Plan and Transportation Plan Update this year given the number of new catalysts for development in Richmond such as the Oval, Canada Line, Garden City Lands, and other major development projects. In 2005, Council endorsed a new vision for No. 3 Road given that Canada Line Rapid Transit Inc (CLCO) and TransLink determined that the Richmond segment of the Canada Line would be an elevated rapid transit system generally located on the east side of No. 3 Road. The key goals in the new vision for No. 3 Road are:

A. Great Street: The No. 3 Road corridor, from West Bridgeport to Richmond's Civic Precinct, shall be a 'Great Street' and the focus of Richmond's downtown as it grows to become a vibrant, attractive, urban place.

A community's downtown is its heart, and its streets are its primary public space for downtown life and commerce. Richmond lacks the great streets that define great urban downtowns: vibrant, multi-functional, pedestrian-dominant, commercial corridors that are much more than transportation routes. They are memorable places that are the signatures of their communities and the pride of their residents and businesses. No. 3 Road has the potential to become such a street – a “Great Street” – and Richmond must work to achieve this if its downtown is to mature into the high quality, high amenity, urban environment its community needs and wants. The No. 3 Road corridor and the uses along its length must: build community; create economic value; be comfortable and safe; and balance transportation needs with ‘place-making’.

B. Transit Corridor: The Richmond-Airport-Vancouver rapid transit project (Canada Line), from West Bridgeport to Richmond's Civic Precinct, shall be an attractive and integral part of No. 3 Road, serving to enhance as well as benefit from the corridor's urban character, pedestrian amenities and economic viability as a “Great Street”.

A ‘world class’ urban transit system does more than move people or connect destinations. It enhances those destinations and, in doing so, it enhances ridership and its own success. Richmond and its downtown, which is well on the way to becoming an attractive, high-density, mixed-use community, is well suited to supporting Canada Line as a ‘great urban transit system’. To be successful, however, the development of Canada Line – its form, character and operation – must likewise serve to complement and support Richmond's downtown. Transit corridor principles should:

- Serve, Not Shape, the City's Land Use,
- Enhance No. 3 Road's Image as a ‘Great Street’,
- Provide High Quality Pedestrian Amenity, Residential Liveability and Commercial Viability,
- Supply a High Level of Transit Service; and,
- Provide for Simple and Safe Road Operation.

Richmond's No. 3 Road Streetscape Study was initiated following the Council visioning workshop regarding No. 3 Road and is intended to establish a new master plan for the City's main street.

Streetscape Study Progress to Date:

The study process has progressed through 2 public meetings (i.e. 1 Open House and 1 Stakeholders Meeting). Consultants and staff have developed several iterations of the No. 3 Road realignment in response to the guideway alignment and with various constraints intended to minimize capital costs. Two recent workshops were conducted with staff to solicit comments and input. The alternative layout options for No. 3 Road have evolved from these recent staff workshops.

As the City is responding to CLCO's schedule to deliver the Canada line to Richmond in 2009, the design of the roadway and opportunities to position the ultimate curbs in the correct location is on the critical path. If we wish to not relocate newly constructed curbs, the decision of where the curbs must be located needs to be made this month. To assist in this decision, staff present three options which contain elements that have been presented to the public and committee.

Once the vision has been determined, detailed design of the public realm along No. 3 Road will follow the completion of the Streetscape Study and this in turn will be followed by working drawing, details and specifications for the street.

Expected Deliverables:

The Streetscape Study will recommend a preferred reconfiguration strategy for No. 3 Road. The anticipated products from at the conclusion of the Streetscape Study will include the following:

- No. 3 Road Master Plan Layout
- Typical No. 3 Road Cross Section Axonometric Images
- Character Zone Identification and Directions
- Site Planning and Massing Recommendations for Fronting Buildings
- Place-making Recommendations for the Station Plazas, Civic Squares, Major Intersections, Major and Minor Semi-Public Plazas
- Public Art Framework and Strategies for No. 3 Road
- Final Open House Presentation Board and Information
- Summary Report, Final Digital Presentation and Concluding Presentation to Council

Findings of Fact

The investigation of alternative No. 3 Road layouts has been narrowed to 3 options as described below.

Option A: Northbound & Southbound Shared Bike and General Purpose Traffic LanesShort Term (opening day 2009)

- Northbound and southbound curb-side traffic lanes are shared bike/vehicle lanes (4.3m wide),
- Northbound and southbound inside general purpose traffic lanes are 3.0m wide,
- Minimal width left turn bays at all existing east-west cross streets (3.0m),
- 50% of existing west roadway curb alignment is relocated to ultimate,
- Continuous centre medians 4.5m wide but vary from 1.5m to 4.5m (there are 4 short locations where medians are 4.5 m and one long section from north of Cambie to south of Capstan Way),
- East sidewalk width of 1.0 – 3.0 m,
- Decorative street lights with double davits in the centre median,
- Mixture of large deciduous and coniferous street trees in the centre medians,
- No. 3 Road alignment would be straightened and closely parallel the guideway alignment,
- Proposed east roadway curb is 0.65m from the edge of the guideway column
- Accomplishes 20% of the long term vision.

- West sidewalk is maintained at 2m except at one location where the right of way is narrow and as such the sidewalk can not be accommodated.

Long Term

- West boulevard is rebuilt according to the following specifications:
 - complete three narrow sections to full 4.3m wide curb lane,
 - 1.5m planting strip along the east curb for single row of large deciduous street trees,
 - 2.0m sidewalk between double row of large deciduous street trees, and
 - 1.5m planting strip for second row of large deciduous street trees.
- Northbound and southbound traffic lanes are re-stripped as follows:
 - 2.5m curb-side parking lane,
 - 1.5m dedicated bike lane,
 - 3.3m general purpose traffic lane with adequate width for bus traffic.

Option B: One-Way Bike Lane on East and West Boulevard

Short Term (opening day 2009)

- Two traffic lanes northbound and southbound equivalent to existing widths (3.0m - 3.25m),
- Minimal width left turn bays at all existing east-west cross streets (3.0 m),
- Continuous centre medians 3m wide but vary from 1.5m to 3m (there are 4 short locations where medians are 3m and one long section from north of Cambie to south of Capstan Way),
- East sidewalk width of 1.0 – 3.0 m,
- Decorative street lights with double davits in the centre median,
- Large deciduous street trees in the centre medians (i.e. not sufficient room for coniferous trees),
- No. 3 Road alignment meanders slightly and is not completely parallel to the guideway,
- Raised 1.5m wide one-way bike lane (with additional 0.5m shy distance on east side only) at curb level located between roadway curb and the guideway column, but jogs around bus stops and stations,
- East roadway curb is 2.0m from guideway column.
- West sidewalk is maintained at 2m except at one location where the right of way is narrow and as such the sidewalk can not be accommodated and approximately 0.9km where the sidewalk width is 1.5m.

Long Term

- West boulevard is rebuilt according to the following specifications:
 - complete three narrow sections with 2.0m raised bike lane on the boulevard aligned with the west roadway curb,
 - 1.5m planting strip along the bike lane for single row of large deciduous street trees,
 - 2.0m sidewalk between double row of large deciduous street trees, and
 - 1.5m planting strip for second row of large deciduous street trees.

Option C: Tiered Bike Lanes (recommended)

Short Term (opening day 2009)

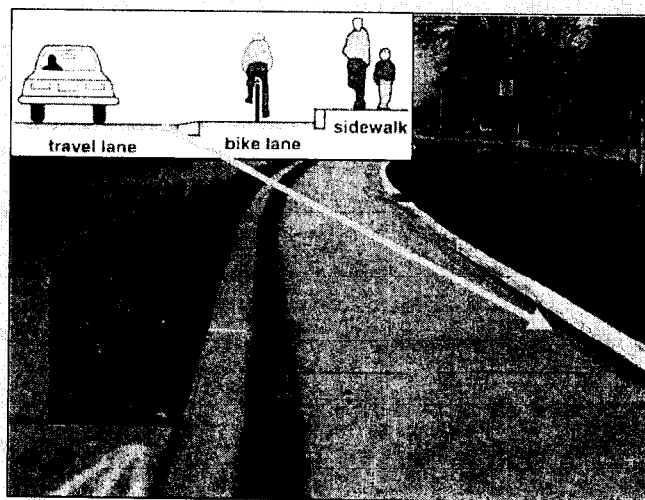
- Two traffic lanes northbound and southbound equivalent to existing widths (3.0m - 3.25m),
- Minimal width left turn bays at all existing east-west cross streets (3.0 m),
- Continuous centre medians 3.75m wide but vary from 1.5m to 3.5m (there are 4 short locations where medians are 3.75m and one long section from north of Cambie to south of Capstan Way),
- East sidewalk width of 1.0 – 3.0 m,
- Decorative street lights with double davits in the centre median,

- Mixture of large deciduous and coniferous street trees in the centre medians
- No. 3 Road alignment meanders slightly and is not completely parallel to the guideway,
- Raised one-way bike lane (50mm) between roadway and cycle lane (see **example photo below**), but jogs around bus stops and stations,
- Proposed east roadway curb is 2.0m from guideway column face.

Long Term

- West boulevard is rebuilt according to the following specifications:
 - complete three narrow sections with 1.5m raised bike lane along the west curb,
 - 1.5m planting strip along the bike lane for single row of large deciduous street trees,
 - 2.0m sidewalk between double row of large deciduous street trees, and
 - 1.5m planting strip for second row of large deciduous street trees.

Raised Bike Lane



Eugene, OR

Analysis

1. Comparison of Options

The following is a comparison table of the main difference between the three options for No. 3 Road.

Comparison Categories	Option A	Option B	Option C (recommended)
1. Facilitates Bikes	two-way	two-way	two-way
2. Flexible Use of Space Under Guideway	good	good	good
3. Straightens No. 3 Road Geometry	good	moderate	moderate
4. Reuse Curbs	poor	poor	poor
5. Minimize Bike/Pedestrian Conflicts	good	moderate	good
6. Minimize Bike/Vehicle Conflicts	moderate	Except intersection	good

Option A creates a strong urban design statement for No. 3 Road with more prominent centre medians and a straighter roadway alignment, although only 20% of the west boulevard can be constructed on opening day to the ultimate standard. However the curb-to-curb roadway would be constructed to the ultimate roadway standard eliminating the need to reconstruct the street in the future, except for three sections where existing road right-of-way is insufficient to achieve the ultimate width. The road would be constructed over the guideway column pile caps and the differential settlement experienced is expected to be manageable. The outside curb lane satisfies a fully shared vehicle and bike facility in both directions but does not meet TAC standards on opening day due to the predicted level of traffic volume on No. 3 Road.

Option A provides an opportunity now and in the future when the City's supporting ring roads are completed to give Council the opportunity to implement on-street parking. The introduction of parking would allow a dedicated bike lane. It should be noted the north loop ring road is connected to the issue of ultimate pavement width for cyclist, parking and traffic volumes which is dependent on funding. It is envisioned that this facility is 7 to 10 years away. Another option is to have on street parking on No.3 Rd during off-peak periods. This phase of the road could be implemented after the existing traffic volumes have been analysed with the impact of the Canada Line. In addition, the City Centre Transportation Plan Update will determine the impacts on traffic circulation and business/residents access. This traffic management review is expected to be completed in early 2007.

This option provide a road section that is flexible and allow this Council or Councils in the future to change the uses of the street as the City transportation structure grows.

Option B creates a bike path located off the roadway at pedestrian level. The removal of the cycling facility from the roadway requires the centre median to be reduced from 4.5m to 3.0m and the acquisition of more land in the future to create this vision is required. While this vision provides a higher form of bike facility, it impacts the other elements present in the roadway such as the pedestrian sidewalk width and the area for landscaping. The implementation of this vision will require additional funding outside the scope of this project to the amount of \$500,000-\$1,000,000 for the creation of the bike path and can not be built on the west side from one end of the project to the other without land acquisition on opening day.

Option C (recommended) is a variant of Options A&B that creates a three tiered facility; the roadway at one level, the bike lane at a raised level and the pedestrians at another separated by curb and /or landscaping. This physical separation of cyclists from vehicles and pedestrians minimizes possible cyclist-pedestrian/vehicle conflicts. To address future on street parking this road section would be required to be modified by the adjustment of the curb and cycle lane, however the center median can remain untouched. Additional funding will be required to add the cycle lane to the scope of the project and is estimated in the amount of \$1.4-1.9 million.

2. Consultation with Richmond Community Cycling Committee

The Richmond Community Cycling Committee reviewed Options A and B (referred to in their letter as options 2 & 3 respectively) and unanimously supported implementation of Option B. The Committee recommended that Option B be modified to incorporate a tiered bike lane design. This has been done and is proposed in Option C in this report. A letter from the Committee summarizing their comments is presented in Attachment 4.

Financial Impact

The current budget for streetscape improvements along No. 3 Road is as follows:

- a) Major Road Network (MRN) Funding (50% TransLink/50% Richmond) \$8,000,000.00
- b) Canada Line Contribution for Urban Integration of the Guideway \$2,000,000.00
- c) Total No. 3 Road Streetscape Improvement Budget \$10,000,000.00

The \$8,000,000 for the No. 3 Road RESTORATION projects is included in the 2006-2010 5 Year Financial Plan and is broken down as follows;

2006-2010 5 Year Financial Plan	TransLink/MRN	City	Total
2006	\$ 1,300,000	\$1,300,000	\$ 2,600,000
2007	1,300,000	1,300,000	2,600,000
2008	1,400,000	1,400,000	2,800,000
Total	\$ 4,000,000	\$4,000,000	\$ 8,000,000

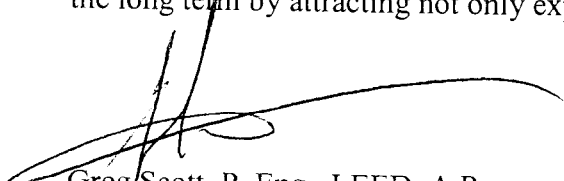
On March 15, 2005 Transportation’s report to Council on the TOD fee issue, anticipated scope of work for this fund to support City Centre improvements in support of transit-oriented development should be limited to any enhancements by the City on top of the base scope of work by the Canada Line. We recommend the use of \$1.5 M from the TOD Fund for the Streetscape improvements above the base scope of work.

At this stage of concept development staff are requesting direction on the vision of the street. Once the vision is determined a costing exercise will follow. Due to the complexity of the project, staff cannot determine the exact additional costs however an approximate range would be an additional \$3M to \$6M above the \$1.5 million TOD fund creating a project total of \$14.5 M-\$17.5 M.

Conclusion

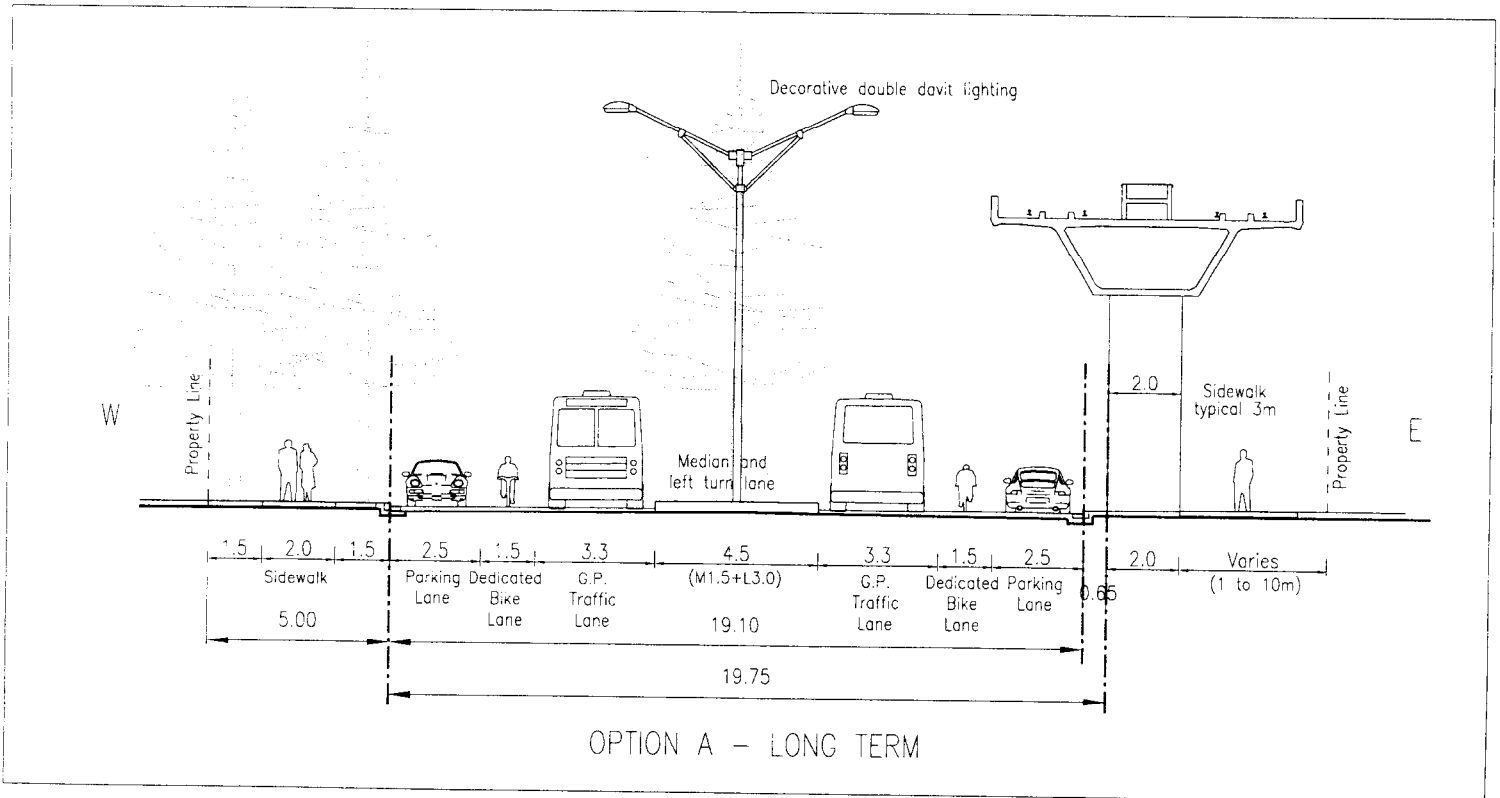
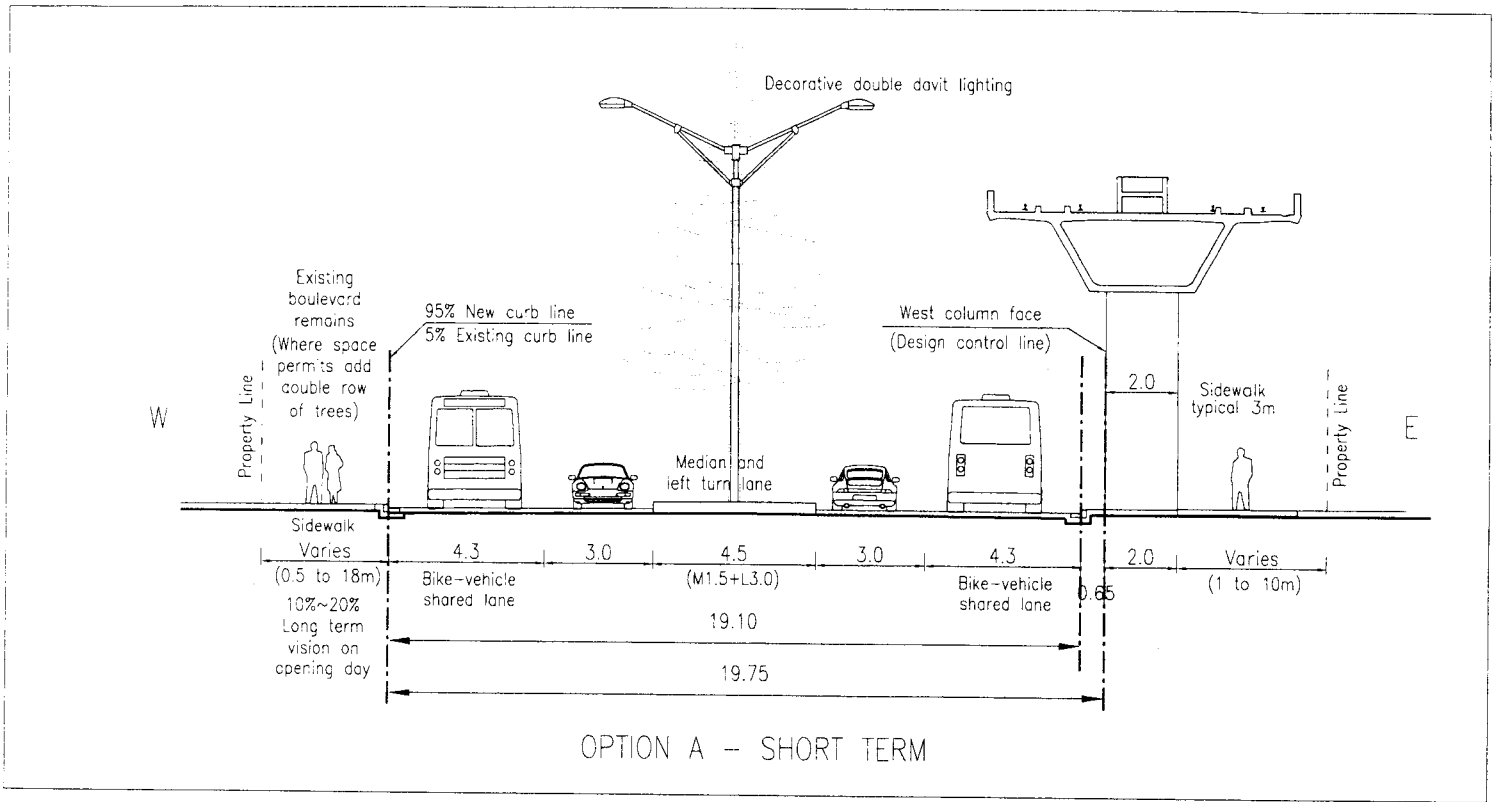
Council has supported cycling within the City and has directed staff to add a cycling facility to No. 3 Rd. Staff have developed three options that provide this facility to various degrees of service.

Staff recommend Option C to pursue for implementing bicycle lanes on No. 3 Road as it is considered by the Richmond Community Cycling Committee and staff as the best design to achieve the objectives of a transit-oriented urban cycling facility which would promote the use of sustainable transportation in the long term by attracting not only experienced cyclists but also novice cyclists.



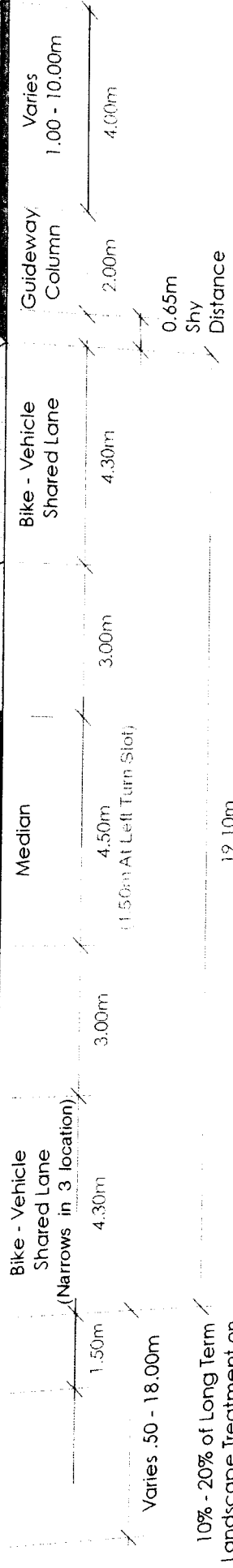
Greg Scott, P. Eng., LEED A.P.
 Director, Major Projects
 (4372)

- Attachment Package 1 – Option A Short and Long Term Strategies
- Attachment Package 2 – Option B Short and Long Term Strategies
- Attachment Package 3 – Option C Short and Long Term Strategies
- Attachment Package 4 – Richmond Community Cycling Committee





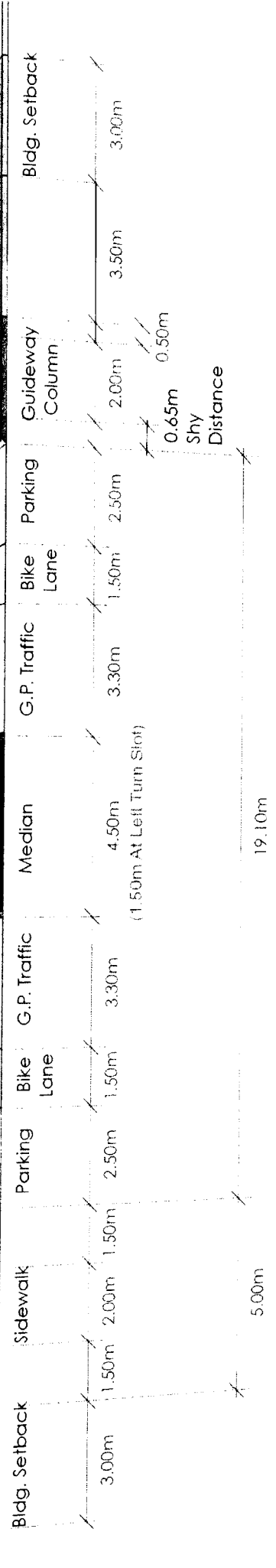
Typical Driveway
w/ Rolled & Curb



10% - 20% of Long Term
Landscape Treatment on
West Blvd. for Opening
Day

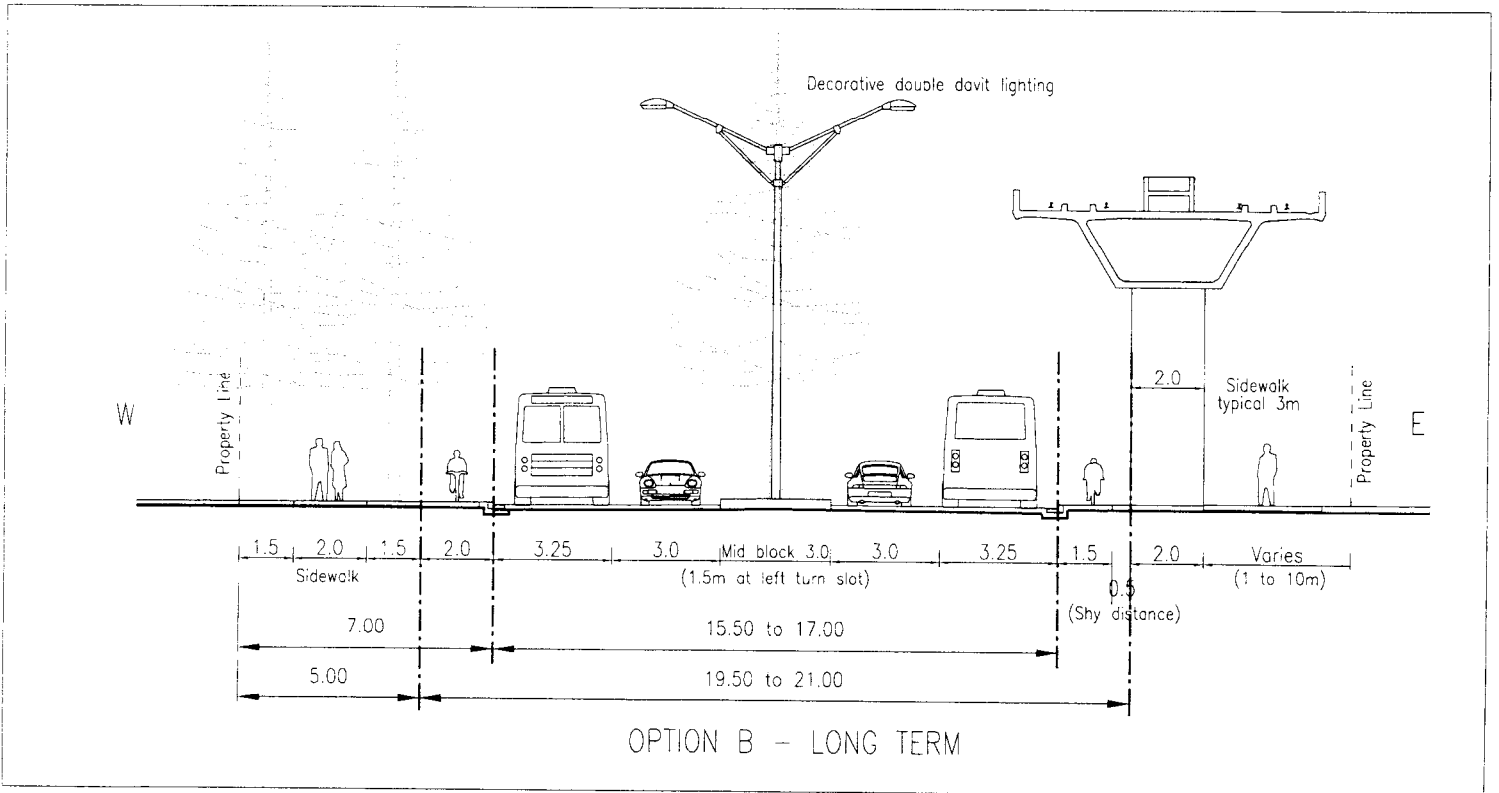
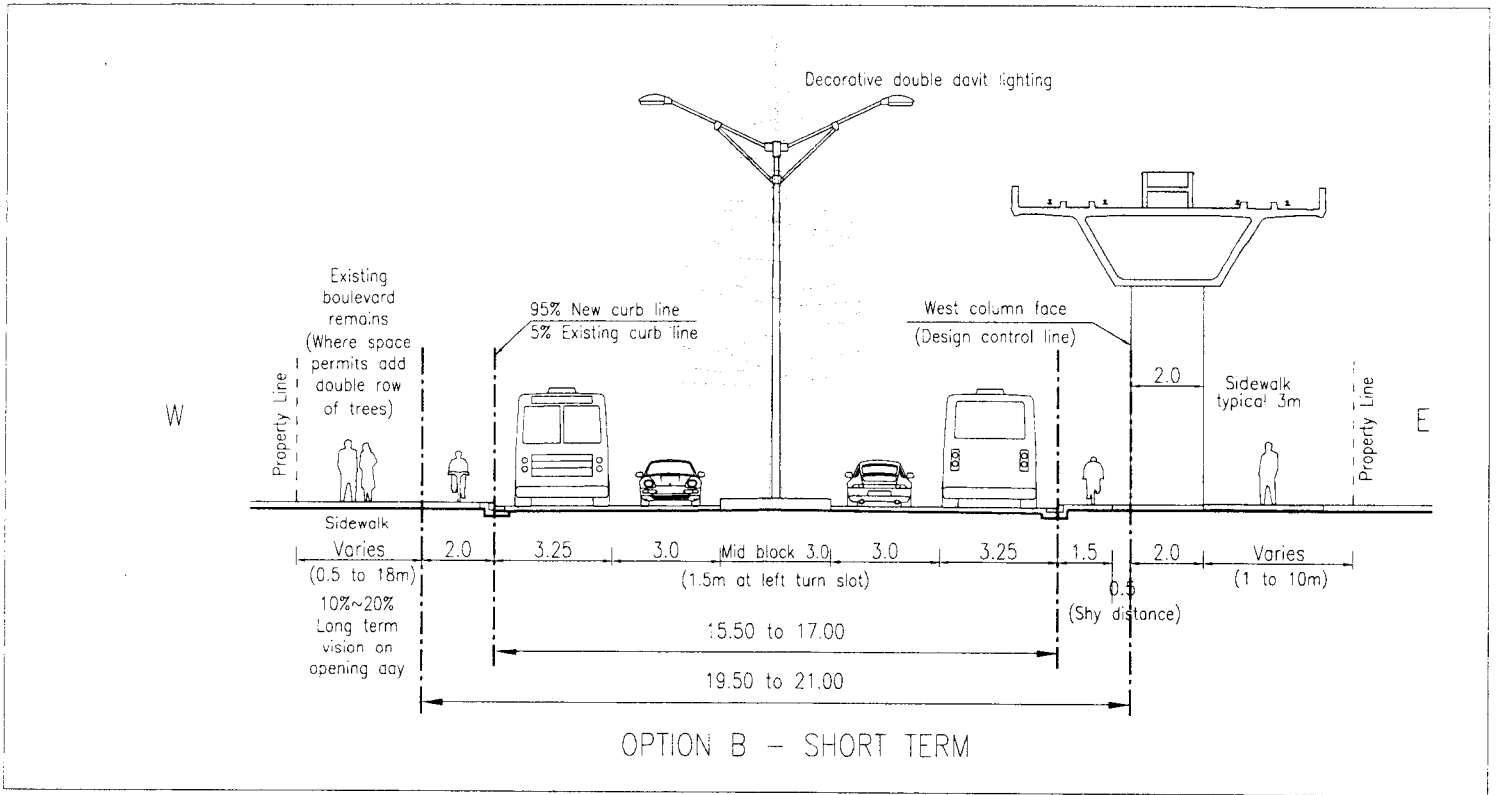
OPTION A - SHORT TERM

2006.06.01



OPTION A - LONG TERM

2006.06.01



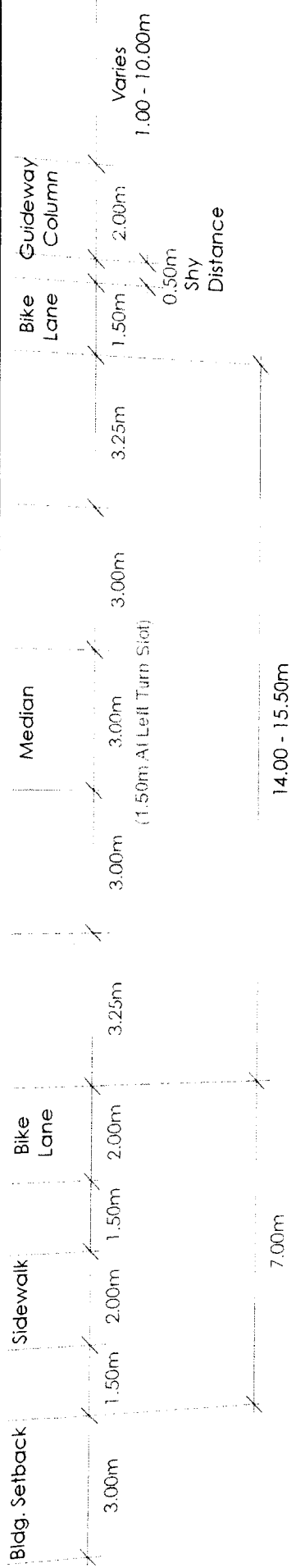


Typical Driveway
w/ a Raised Curb

Walk	1.50m	Bike Lane Discontinuous	2.00m	3.25m	3.00m	Median	3.00m (1.50m All Left Turn Slot)	3.00m	3.25m	Bike Lane	1.50m	Guideway Column	2.00m	Varies
Varies		10% - 20% of Long Term Landscape Treatment on West Blvd. for Opening Day								0.50m		Shy Distance		1.00 - 10.00m
														14.00 - 15.50m

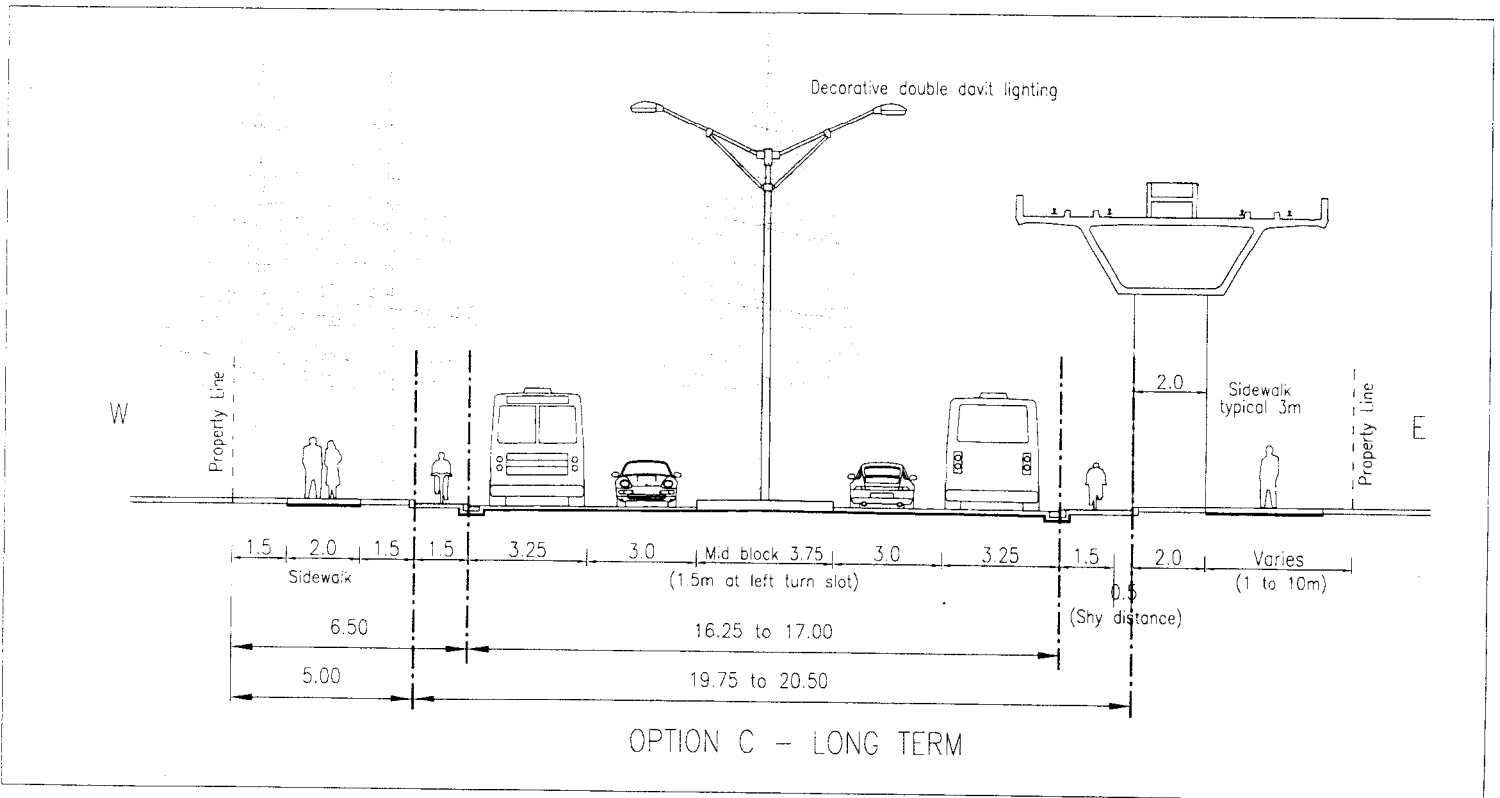
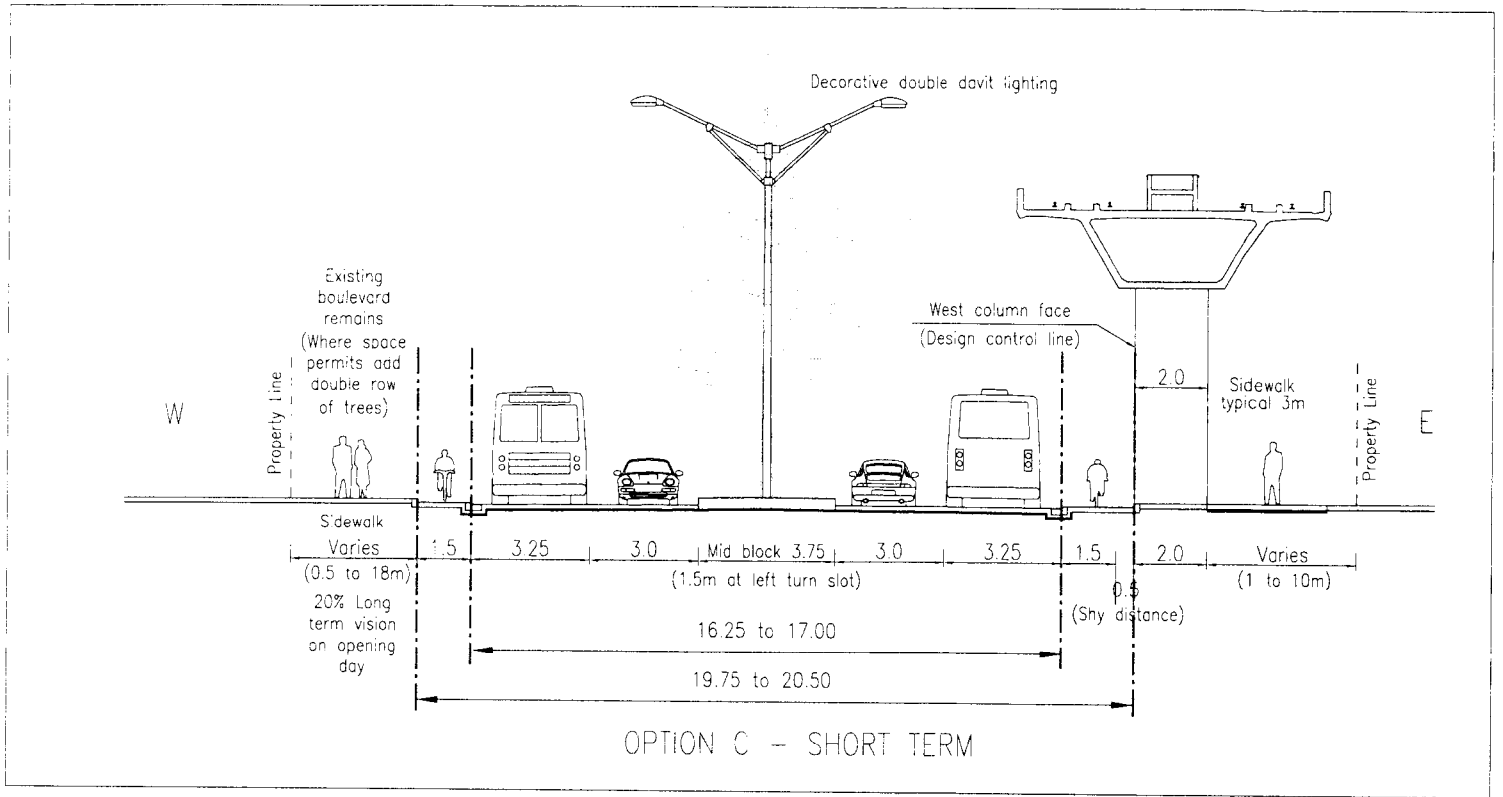
OPTION B - SHORT TERM

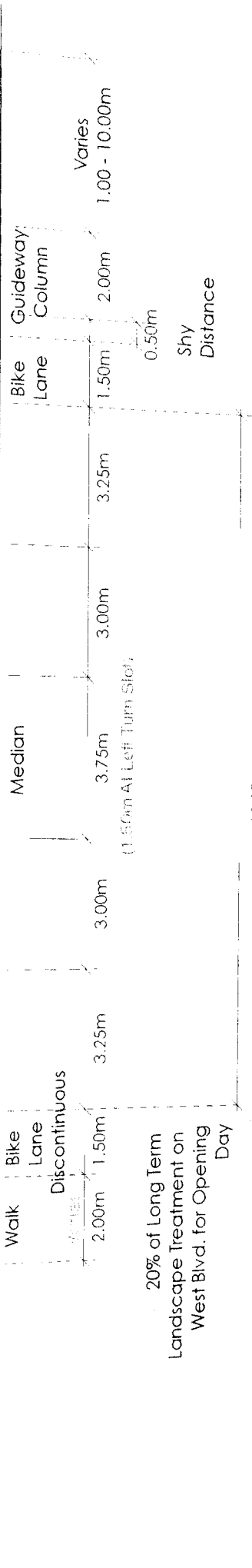
2006.06.01



OPTION B - LONG TERM

2006.06.01

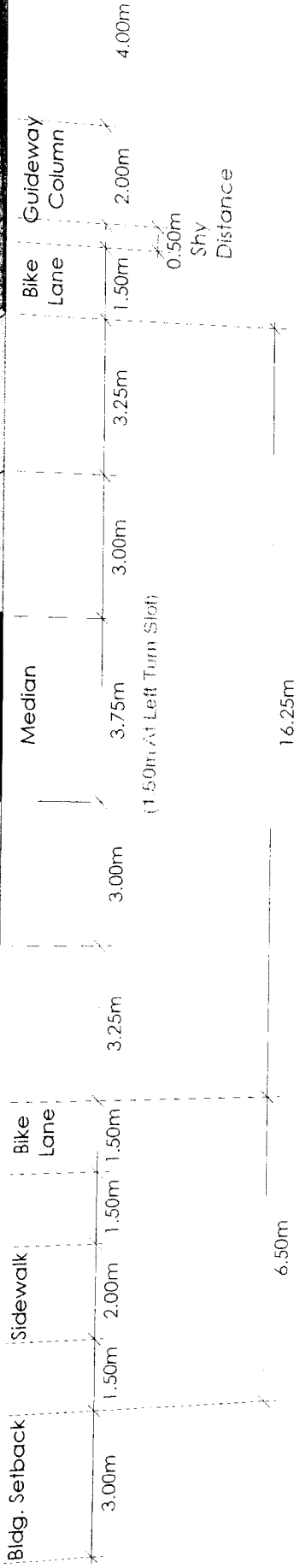




20% of Long Term Landscape Treatment on West Blvd. for Opening Day

OPTION C - SHORT TERM

2006.06.01



OPTION C - LONG TERM

2006.06.01

Richmond Community Cycling Committee

May 30, 2006

City of Richmond
6911 No. 3 Road
Richmond, BC V6Y 2C1

Attn: Victor Wei, P.Eng.
Acting Director, Transportation

Dear Victor:

Re: Streetscape Study – No. 3 Road Layout Options

At the special meeting of the Richmond Community Cycling Committee of May 29, 2006, the Committee was asked to provide comments and feedback on the following two options for the provision of cycling facilities on No. 3 Road as part of its reconstruction after the completion of the Canada Line:

- Option 2: shared bike-vehicle lanes 4.3 m wide in the short-term, which could be converted to 1.5 m wide designated bike lanes with curbside parking lanes in the long-term; and
- Option 3: raised 2.0 m wide bikeway adjacent to the vehicle curb lane at curb level.

The Committee recognizes that both of these options share three locations on the west side of No. 3 Road where existing right-of-way constraints preclude the desired cross-section in the short-term. For either option in these locations, cyclists would either dismount and walk on the sidewalk or ride on the roadway in a vehicle lane of a minimum standard width (likely 3.25 m wide).

In addition to providing comments on Option 2 versus Option 3, the Committee was also asked to respond to the following four questions regarding the proposed Option 3 design:

- is there a potential for conflicts between novice and experienced cyclists?;
- is there a potential for conflicts between cyclists and pedestrians?;
- how should the cycling facility be treated at driveway crossings?; and
- what are the pros and cons of designated on-street bike lanes versus raised bikeways at curb level?;

This letter affirms and provides the rationale for the Committee's unanimous support of Option 3 and offers comments and suggestions for addressing the four specific concerns of the proposed Option 3 design.

1. Option 2 versus Option 3

The Committee believes that a shared vehicle-bike lane is neither an appropriate nor an attractive cycling facility for No. 3 Road. Such a facility is appropriate for a local or collector road, such as Shell Road, but not for a major arterial road with high vehicle volumes such as No. 3 Road. The lack of a designated separate area for cyclists from vehicle traffic would intimidate and deter the vast majority of cyclists from riding on No. 3 Road, particularly novice cyclists. Given Option 2, we believe that any cyclist venturing out to No. 3 Road would use the sidewalk, as occurs today. While a long-term possibility for Option 2 would provide a designated on-street bike lane, this potential outcome is both highly uncertain, likely many years away from implementation, and introduces safety concerns associated with car doors opening into the bike lane and car owners exiting into the bicycle lanes. Finally, 4.3 m wide curb lanes may actually encourage speeding along No. 3 Road if there are no cyclists using the facility.

Most importantly, the Committee believes that Option 3 represents what Council and the City is trying to achieve on No. 3 Road – a Great Street that is pedestrian- and cycling-friendly and encourages community interaction. A shared bike-vehicle lane or an on-street bike lane would present No. 3 Road as a through corridor for cycling where cyclists are expected to travel quickly in order to be a vehicle in traffic and pay attention to the dangers of being on the road, such as being cut off by motorists making turns on and off of No. 3 Road or lane changes, buses pulling in and out at bus stops, etc. A bicyclist riding on such a route will not be able to have the relaxed attitude conducive to a casual shopping trip to the city's pre-eminent retail district. In effect, Council would not achieve their objective of promoting cycling as a viable means of transportation for the general community for their daily activities. The physical separation from vehicles provided by a raised bikeway improves the safety of cyclists which, in turn, will encourage greater use of the facility, particularly by novice cyclists and children. The raised bikeway would allow cyclists to become part of what Council envisions for No. 3 Road, with cyclists better able to access and interact with the amenities of No. 3 Road (e.g., Canada Line stations, shops, restaurants, public spaces at transit plazas).

2. Option 3: Potential Conflicts between Novice and Experienced Cyclists

The Committee believes there is little potential for conflicts between novice and experienced cyclists. The existing on-street bike lanes on Garden City Road as well as planned on-street bike lanes on roads parallel to No. 3 Road, such as the new road along the CP Rail corridor, provide the commuting cyclist with the means of crossing the city at speed. The vision of No. 3 Road is not to provide a cyclist with another commuter lane, but to integrate the bicycle as an alternative means of safely accessing the Canada Line stations and the various stores and amenities of No. 3 Road. The Committee would also suggest that cyclists are more co-operative when sharing a designated space than motorists.

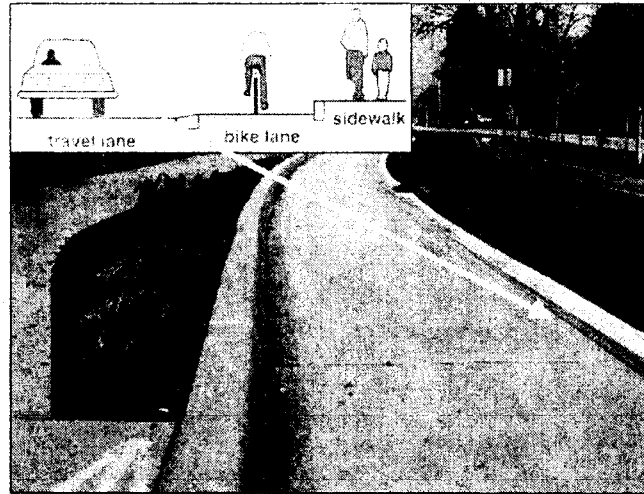
3. Option 3: Potential Conflicts between Cyclists and Pedestrians

The Committee recognizes there could be a potential for conflicts between cyclists and pedestrians, particularly at bus stops (passengers would need to cross the bike way when loading and unloading), around Canada Line stations, and when pedestrians are accessing shops (e.g., crossing the street to get to shops). However, the raised bikeway would actually provide cyclists with a more acute awareness of both pedestrian traffic and vehicle traffic entering and exiting No. 3 Road, which in turn would create a more relaxed bicyclist with an attitude more conducive to a shopping trip rather than using No. 3 Road as a means to get from one end to the other.

There are various treatments that could be used to visually identify the bikeway and raise awareness among pedestrians to expect cyclists in this area (e.g., different type of surface treatment to distinguish it from the pedestrian areas, bike stencils and other pavement markings, allowing a larger waiting area at bus stops, etc).

To further address the potential issue of cyclist-pedestrian conflicts, the Committee suggests a tiered design whereby the bikeway is raised from the road and the sidewalk is raised from the bikeway, as shown the photograph below from such a facility in Eugene, Oregon. A barrier curb between the bikeway and the sidewalk would serve to separate cyclists and pedestrians and discourage cyclists from riding on the sidewalk.

Raised Bike Lane



Eugene, OR

4. Option 3: Treatment at Driveway Crossings

The Committee suggests maintaining the raised bikeway across driveways, with a rollover curb, as the raised section would serve to slow vehicles down when entering the driveway. Pavement markings, bicycle stencils, coloured pavement could also be considered as additional treatments to raise awareness among motorists of the cycling facility and to expect and look for cyclists when crossing the bikeway.

5. Option 3: Pros and Cons of On-Street Bike Lanes versus Raised Bikeway

On-street bike lanes are a familiar, standard cycling facility throughout the Lower Mainland that improve the safety of cyclists by separating them from vehicles in a designated area reserved exclusively for cyclists. The Committee believes that a raised bikeway further improves the safety of cyclists by creating a degree of physical separation from vehicles. Vehicles often encroach into on-street bike lanes (when passing, turning, loading/unloading, illegally parking) as the painted white lane is no deterrent; having a raised bikeway would eliminate these conflicts. While a raised bikeway would be atypical for Richmond and much of the Lower Mainland (save the planned Carrall Street Greenway in Vancouver, to be constructed in Fall 2006), this design is prevalent in European cities, which typically have much higher cycling mode shares. We see Option 3 as “raising the bar” and providing a superior design that fits in with the City’s intent to create a Great Street on No. 3 Road.

Construction of the Canada Line has given the City of Richmond the unprecedented opportunity to introduce cycling facilities along its main street. The Committee believes Option 3, particularly if it is tiered between the road and sidewalk levels, will be an innovative world-class cycling facility that will strongly encourage greater and safer cycling in the city. On behalf of the Committee, thank you for the opportunity to contribute to the process of transforming No. 3 Road into a Great Street.

Yours truly,

Larry Pamer
Chair, Richmond Community Cycling Committee