



## CITY OF VANCOUVER

### ADMINISTRATIVE REPORT

Report Date: July 9, 2007  
Author: Chris Darwent  
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RTS No.: 6746  
VanRIMS No.: 13-1400-22  
Meeting Date: July 24, 2007

TO: Standing Committee on Transportation and Traffic

FROM: General Manager of Engineering Services

SUBJECT: Roadway Modifications at Boundary Road and Grandview Highway and the Highway 1 off ramp at Boundary Road

#### RECOMMENDATION

THAT Council approve the following geometric roadway modifications, subject to approval of their final costs:

- i. The addition of High Occupancy Vehicle (HOV) queue jumper lanes on Grandview Highway;
- ii. The construction of left turn bays to allow left turns from Grandview Highway to Boundary Road; and,
- iii. Closure of the median on Boundary Road at 11<sup>th</sup> Avenue to improve safety near the Highway 1 off ramp at Boundary Road.

#### COUNCIL POLICY

In 1994, Council endorsed the Regional Transportation Plan (Transport 2021) which included the long range concept of providing HOV lanes on the Trans Canada Highway and the Grandview Highway Corridor.

In 1997, Council approved the Vancouver Transportation Plan which included the following policies and principles:

- Supporting the LRSP policy of implementing transportation demand management (TDM), to change the behaviour of travelers in order to make better use of the existing transportation system,
- Expanding the regional freeway network only for High Occupancy Vehicle (HOV) lanes, with no additional bridge capacity leading to the City, and,

- Providing HOV lanes (with 3+ occupants) in circumstances where they can be implemented as short queue jumpers.

At their meeting on June 13, 2006, Council passed a number of motions relating to the Gateway Program, including noting its unanimous opposition to twinning of the Port Mann Bridge and widening of Highway 1 and requesting the Provincial Government carry out a comprehensive review of alternatives to increasing Highway 1 road capacity.

At their meeting December 12, 2006, Council directed staff to consult with the community and report back on the results of several potential City initiated transportation projects in the vicinity of the Highway 1 on and off ramps including:

- i. HOV Queue Jumper Lanes on Grandview Highway,
- ii. Left turn bays to allow left turns from Grandview Highway to Boundary Road, and
- iii. Safety improvements to the Highway 1 off ramp at Boundary Road.

## **PURPOSE**

This report requests approval of roadway modifications at Grandview Highway and Boundary Road and the Highway 1 off ramp at Boundary Road (Boundary Road at 11<sup>th</sup> Avenue).

## **BACKGROUND**

In December 2006, staff requested Council approval to consult on a number of projects in the vicinity of the Highway 1 on and off ramps that were consistent with City's Transportation Plan including:

- i. HOV Queue Jumper Lanes on Grandview Highway,
- ii. Left turn bays to allow left turns from Grandview Highway to Boundary Road, and
- iii. Safety improvements to the Highway 1 off ramp at Boundary Road.

It was noted that these projects are initiated by the City to address existing concerns and that they are consistent with the City's Transportation Plan. It was also noted that the cost of these projects could be reduced and their operational effectiveness improved, if they are coordinated with the design of the Ministry of Transportation's Gateway Program.

## **DISCUSSION**

### **PUBLIC CONSULTATION PROCESS**

After receiving direction from Council to begin a public consultation process, an opinion survey was delivered to residents and businesses in the area bounded by Rupert Street, Broadway/Lougheed Highway, Boundary Road, and 22<sup>nd</sup> Avenue. Included in this survey, was an invitation to an Open House on May 3<sup>rd</sup>, 2007 which would provide more information on these projects. Although the Open House was lightly attended, 168 surveys of the 831 surveys delivered were returned to staff, representing a 20.2% response rate. A copy of the survey is located in Appendix B. Specific comments received by staff on returned survey forms can be found in Appendix C.

The designs outlined in the survey were also presented to the Bicycle Advisory Committee on May 1, 2007. Their recommendation was to have space allocated for bicycle lanes on Boundary Road. Staff have noted this recommendation and will attempt to reserve space for bicycles on Boundary Road. However, given that the majority of work proposed occurs on Grandview Highway, opportunities to do so may be limited. A copy of the BAC resolution can be found in Appendix D

In addition to the feedback received during the public consultation process, staff also received a resolution from the Grandview Woodlands Area Council (GWAC) opposing the proposed projects. A copy of the resolution can be found in Appendix E.

It should be noted that the survey includes a question regarding the redesign of Canada Way and Boundary Road. City staff are planning to report back on this intersection at a later date after further discussions with staff at the City of Burnaby.

#### HIGH OCCUPANCY VEHICLE (HOV) QUEUE JUMPER LANES ON GRANDVIEW HIGHWAY

The intersection of Grandview Highway at Boundary Road is normally congested during peak periods. High occupancy vehicles (HOVs) are mixed with single occupant vehicles and are delayed in the same queues as general purpose traffic entering and exiting Highway 1. Once eastbound HOVs enter the Highway 1 on-ramp, they must cross two through lanes of traffic to access the median HOV lane on Highway 1.

Gateway Program staff have identified the possibility of including HOV flyovers that would provide direct connections to the median HOV lanes on the highway. Staff have also suggested that Gateway consider an eastbound HOV rejection lane before the Highway 1 on-ramp to reduce HOV violations.

The HOV queue jumper lanes will be placed in the curb lane and are expected to begin (eastbound) and end (westbound) mid-block on Grandview Highway between Boundary Road and Skeena Street. General purpose vehicles will be permitted to make right turns at Boundary Road as well as to any driveways as they do now. A figure showing the design can be found in Appendix A.

The HOV queue jumper lanes in combination with the HOV measures being considered by the Gateway Program would provide significant travel time savings for HOVs. The use of high occupancy lanes as short queue jumpers is consistent with the City's transportation policy.

This modification will not result in an increase in capacity for general purpose vehicles travelling in the westbound direction. When combined with the left turn bays and a dedicated left turn signal, staff project a reduction in capacity for general purpose traffic westbound. There may be an increase in general purpose vehicle capacity in the eastbound direction (out of the City), due to more efficient use of the existing general purpose lanes. A summary of the capacity analysis can be found in Appendix F.

The following survey results were received regarding the installation of HOV queue jumpers:

Do you support the installation of HOV “queue jumpers” on Grandview Highway near Boundary Road?			
Yes - 47.6 %	No - 37.5 %	Neutral - 13.7%	No Comment - 1.2%

The HOV facility serves mainly regional interests, yet it received a relatively high level of support from the surrounding community. Given the survey results and current City policy on HOV queue jumpers, staff recommend the approval of this facility.

**LEFT TURN BAYS TO ALLOW LEFT TURNS FROM GRANDVIEW HIGHWAY TO BOUNDARY ROAD**

Left turns are currently prohibited from Grandview Highway onto Boundary Road constraining mobility within the surrounding area. The westbound left turn prohibition forces trucks exiting Highway 1 at Grandview and destined to SE Marine Drive, to take more circuitous routes through Vancouver neighbourhoods.

The westbound left turn prohibition also pushes this movement onto streets that are further west such as Rupert Street. The eastbound left turn prohibition limits access to Burnaby’s Still Creek neighbourhood. This restriction will become more of an issue with the Gateway Program’s plans to eliminate the highway overpass east of Boundary Road that currently provides access to Still Creek. Accordingly, Burnaby staff support the introduction of left turns at this intersection.

The following survey results were received regarding the installation of left turn lanes and a left turn signal:

Do you support the addition of left turn lanes and a left turn signal to allow left turns from Grandview Highway onto Boundary Road?			
Yes - 78.0 %	No - 17.3 %	Neutral - 2.4%	No Comment - 2.4%

The original design presented in the survey provided a single left turn lane for the westbound to southbound left turn. However, further analysis of the intersection provided by Ministry of Transportation staff revealed that in order to prevent the queuing of vehicles onto Highway 1, a potential safety hazard, dual left turn lanes will be required. The dual left turn lanes will be located on Ministry of Transportation Right of Way and will not add general purpose vehicle capacity to the intersection. The eastbound to northbound turn will remain as a single left turn bay. A figure showing the design presented in the original survey, and the recommended design with the westbound dual left turn lanes can be found in Appendix A.

Given the benefits to mobility and circulation of the Vancouver street network, and the high level of support from the surrounding neighbourhood and City of Burnaby staff, City staff recommend the approval of this facility.

**MEDIAN CLOSURE ON BOUNDARY ROAD AT 11<sup>TH</sup> AVENUE TO IMPROVE SAFETY NEAR THE HIGHWAY 1 OFF RAMP AT BOUNDARY ROAD**

There are several operational issues with the intersection adjacent to the highway off-ramp at Boundary Road and 11<sup>th</sup> Avenue. Southbound vehicles using the off ramp are often travelling at high speed and conflict with a number of turning movements that are permitted at this intersection.

Staff presented a design in the survey which consisted of “closing” the gap in the existing median on Boundary Road and installing a right-out only diverter on 11<sup>th</sup> Avenue. A figure showing this design can be found in Appendix A.

The following survey results were received regarding the proposed modifications to the intersection of Boundary Road and 11<sup>th</sup> Avenue:

Do you support the proposed reconfiguration of Boundary Road and 11th Avenue?			
Yes - 57.7 %	No - 29.8 %	Neutral - 10.7 %	No Comment - 1.8 %

Even though there was a positive survey result, staff received concerns from several businesses and a key landowner of the properties on 11<sup>th</sup> Avenue regarding the loss of vehicular access to their businesses. Therefore, staff recommend that only the median be “closed” and the paint at the south end of the off ramp be modified. The safety of the intersection will be monitored to determine if future modifications are necessary. A figure showing the new design is included in Appendix A.

Burnaby staff have noted that if the current “closed” median design occurs at the same time as a Ministry of Transportation proposed closure of Esmond Avenue at Grandview Highway (located in Burnaby), there will be a loss of vehicular egress from the neighbourhood northeast of Boundary Road and Grandview Highway. Vancouver staff are aware Burnaby staff’s concerns, and will explore different designs at this intersection, if necessary, to ensure egress from this neighbourhood is retained.

Due to the removal of the westbound to northbound left turn, this work would have to be completed in conjunction with the left turn bay at Grandview and Boundary to ensure vehicular access is retained.

**FINANCIAL IMPLICATIONS**

If the projects outlined within this report are approved by Council, staff will seek a number of funding sources, including, but not limited to:

- Future City of Vancouver Capital Plans;
- Ministry of Transportation Cost Sharing Programs;
- TransLink Major Road Network (MRN) Cost Sharing Programs; and,
- Insurance Corporation of British Columbia (ICBC) Cost Sharing Programs.

Once all funding sources have been identified and cost estimates are available, staff will seek Council approval of the final construction costs.

**CONCLUSION**

Staff recommend that Council approve the roadway modifications at Grandview Highway and Boundary Road and the Highway 1 off ramp at Boundary Road (Boundary Road at 11<sup>th</sup> Avenue) as outlined in this report, subject to approval of the report back on final construction costs.

\* \* \* \* \*

EXISTING CONDITIONS AND PROPOSED DESIGNS

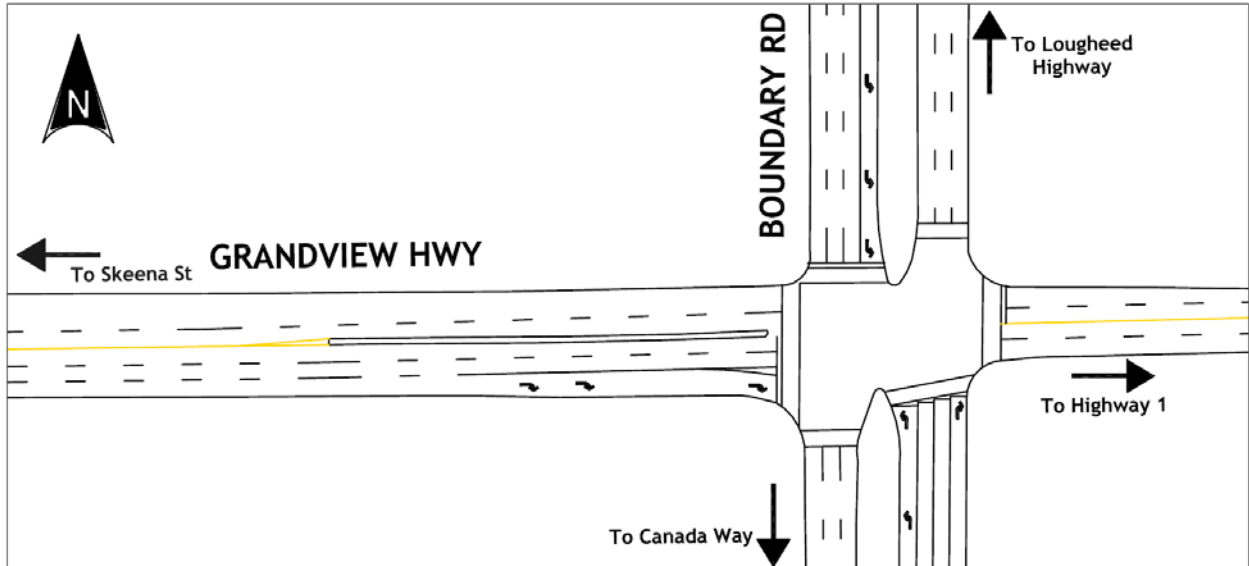


Figure 1 - Grandview Highway and Boundary Road - Existing Conditions

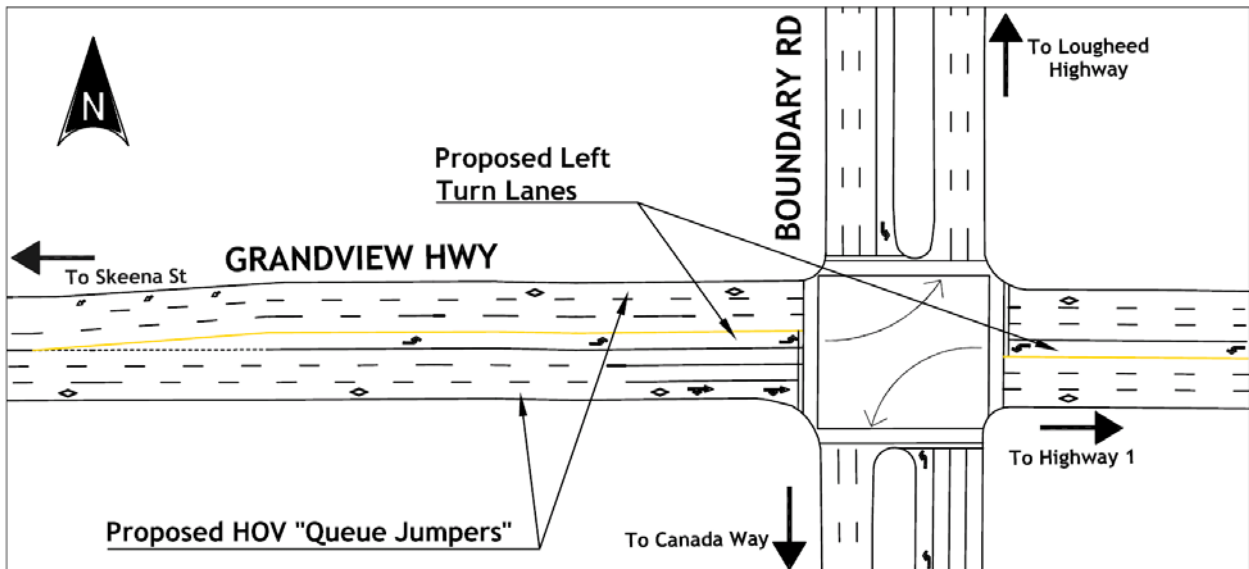


Figure 2 - Grandview Highway and Boundary Road - Design Proposed in Survey

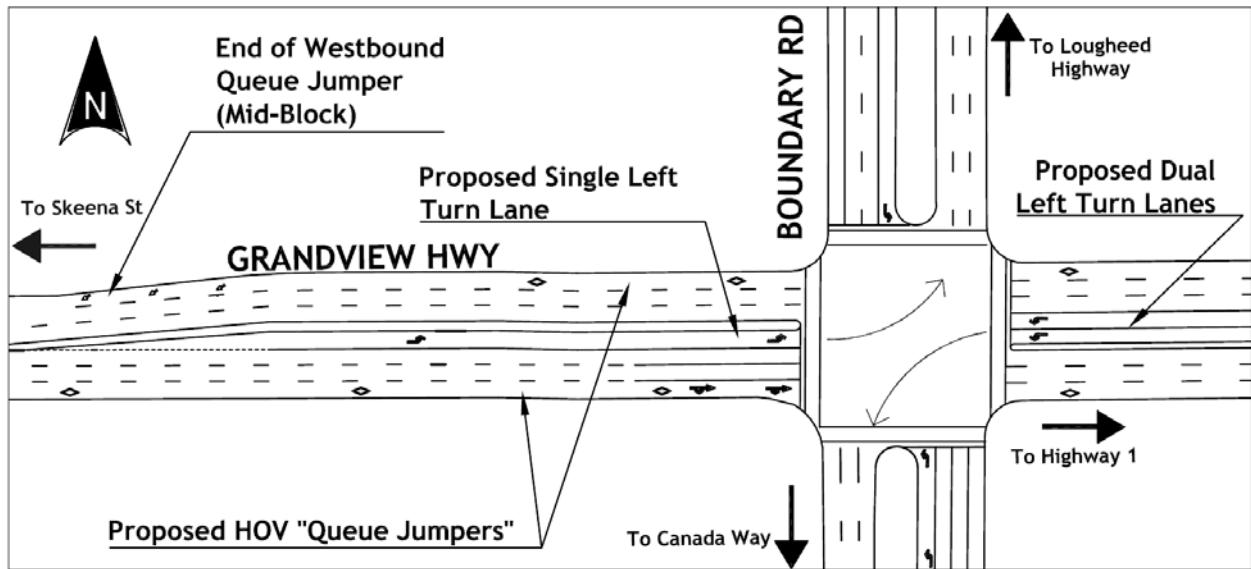


Figure 3 - Grandview Highway and Boundary Road - Design Recommended by Staff

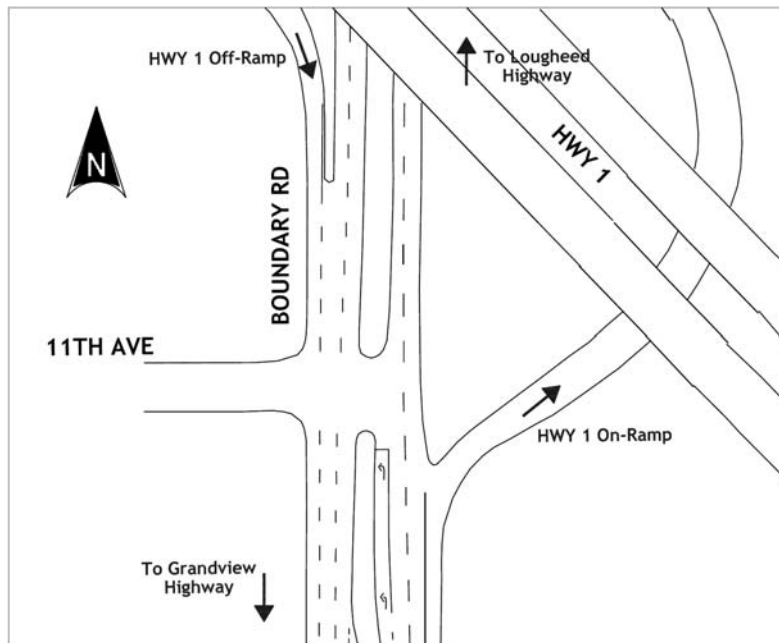


Figure 4 - Boundary Road and 11th Avenue - Existing Conditions

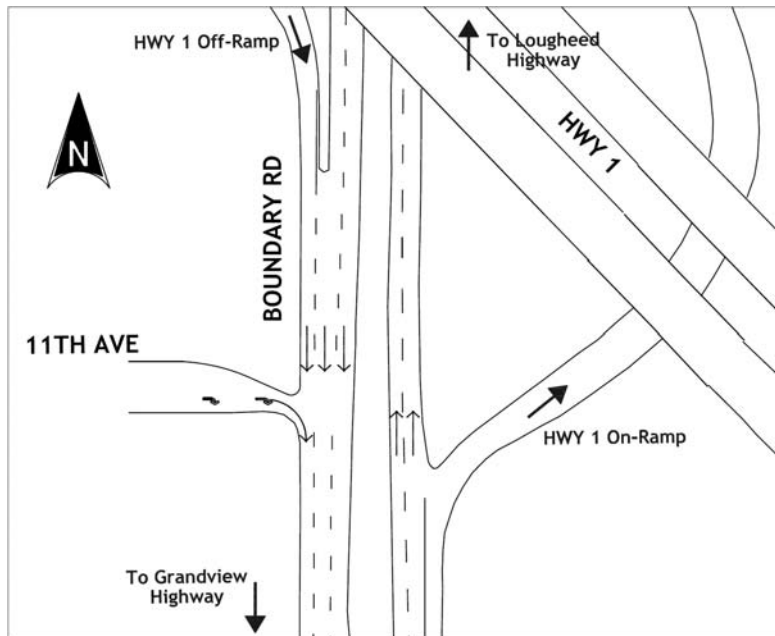


Figure 5 - Boundary Road and 11th Avenue - Design Proposed in Survey

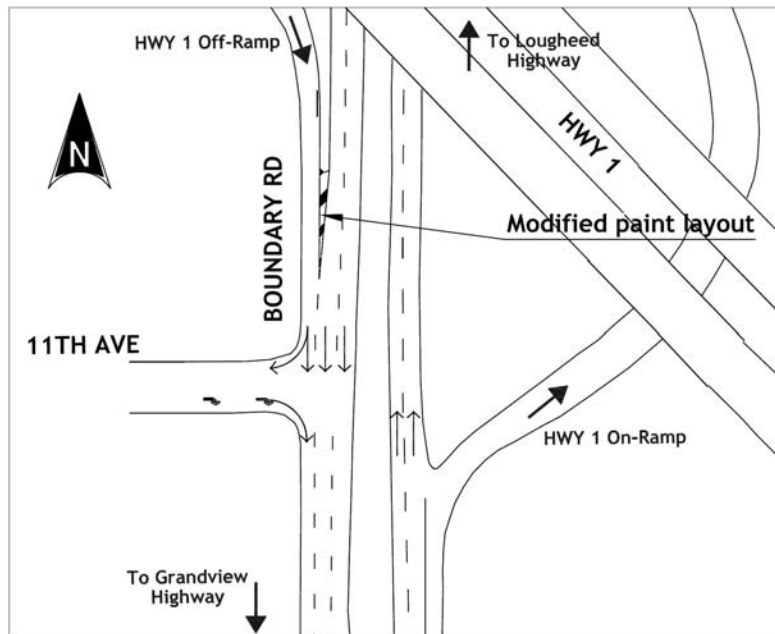


Figure 6 - Boundary Road and 11th Avenue - Design Recommended by Staff





ENGINEERING SERVICES  
T.R. Timm, P.Eng., General Manager

April 19, 2007

Dear: Resident/Business Owner/Property Owner

**RE: Potential Transportation Projects in the Vicinity of Boundary Road and Grandview Highway**

The City of Vancouver has identified potential transportation projects in your area at:

- Boundary Road and Grandview Highway;
- Boundary Road and 11<sup>th</sup> Avenue; and,
- Boundary Road and Canada Way.

Included with this letter is a survey which briefly outlines each of the potential transportation projects and asks for your opinion. Return your survey using the postage-paid envelope included in this letter or fax it to (604) 871-6192 by Friday, May 4, 2006.

If you would like more information regarding these projects, please attend our open house:

7 PM, Thursday, May 3, 2007  
Thunderbird Community Centre  
2311 Cassiar Street  
Vancouver, BC

For your reference, a map showing the location of the Thunderbird Community Centre has been included on the reverse of this letter.

Should you have any further questions, please feel free to contact me at 604-873-7358 or at christopher.darwent@vancouver.ca.

Yours truly,

**Christopher Darwent, EIT**

*christopher.darwent@vancouver.ca  
453 W. 12th Avenue Vancouver BC V5Y 1V4  
Phone: 604.873.7358*

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## Survey Form

### Potential Transportation Projects in the Vicinity of Boundary Road and Grandview Highway

We appreciate you taking the time to complete this survey. Your input is being sought for the following potential projects:

- 1) Grandview Highway and Boundary Road
  - a. High Occupancy Vehicle "Queue Jumpers"
  - b. Left Turn Bays from Grandview Highway to Boundary Road,
- 2) Boundary Road and 11<sup>th</sup> Avenue access changes, and
- 3) Canada Way and Boundary Road intersection reconfiguration.

These potential transportation projects are consistent with the City of Vancouver Transportation Plan (1997) policies including the use of High Occupancy Vehicle (HOV) lanes in circumstances where they can be implemented as short queue jumpers.

A copy of the City of Vancouver Transportation Plan (1997) is available on-line at <http://vancouver.ca/engsvcs/transport/plan/index.htm>.

Please return your completed survey in the postage-paid envelope provided or fax it to (604) 871-6192 by **Friday, May 4, 2006**. Should you have any questions, please contact Christopher Darwent in Engineering Services at 604-873-7358 or [christopher.darwent@vancouver.ca](mailto:christopher.darwent@vancouver.ca).

**To validate your survey, please provide your name and address.** Individual responses will remain confidential as per the Freedom of Information and Privacy Act\*.

Name: _____	Phone#: _____
Address: _____ _____	<b>Do you wish to be informed of City Council meetings related to these projects?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>

\*Your comments are collected under the authority of the *Freedom of Information and Protection of Privacy Act (FOIPPA)* for the purpose of gauging support for the transportation projects outlined within this survey. Your responses will be treated as public information, but any information that may be used to identify you will not be disclosed to the public, except in accordance with the FOIPPA or as required by law. Questions about how the FOIPPA applies to this information can be directed to the Manager, Corporate Information and Privacy, 453 W 12th Ave, Vancouver BC V5Y 1V4, (604) 873-7999.

**1) Grandview Highway and Boundary Road**

The City of Vancouver is proposing the following modifications to the intersection of Grandview Highway and Boundary Road:

a. High Occupancy Vehicle "Queue Jumpers"	b. Left Turn Bays from Grandview Highway to Boundary Road
The City of Vancouver is proposing to add HOV "queue jumpers" to provide enhanced access and travel times to the Highway 1 HOV lanes.	Currently, left turns are prohibited from Grandview Highway onto Boundary Road. The City of Vancouver is proposing to allow this movement by providing left turn lanes and a dedicated left turn signal.

Refer to Figures 1 and 2 for an outline of the existing and proposed conditions.

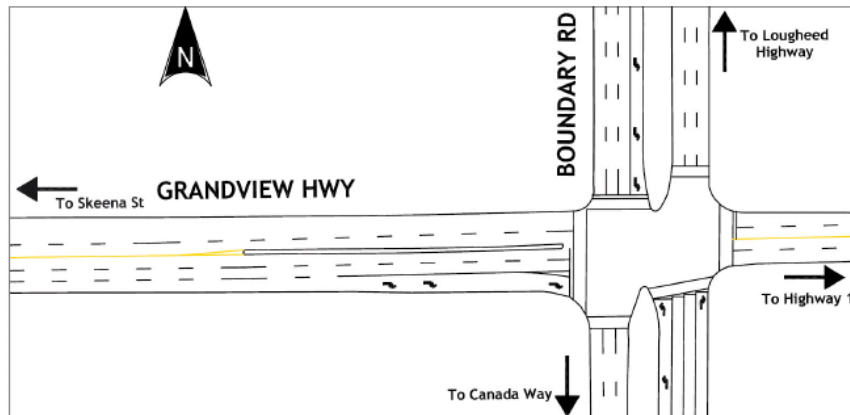


Figure 1: Grandview Highway and Boundary Road - Existing

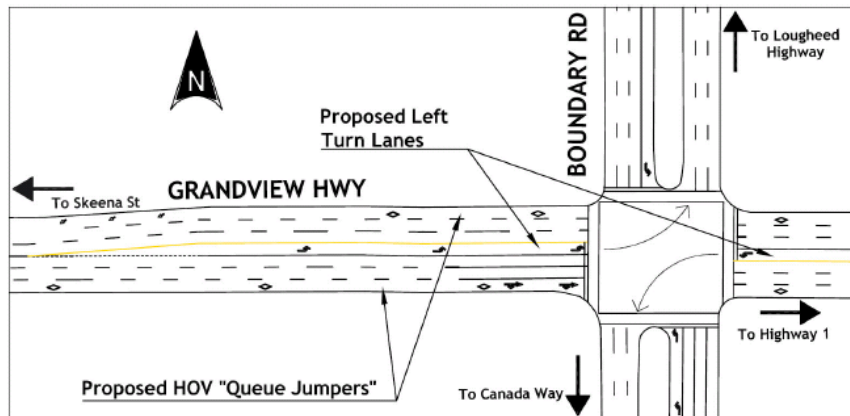


Figure 2: Boundary Road and Grandview Highway - Proposed

Do you support the installation of HOV "queue jumpers" on Grandview Highway near Boundary Road?			Do you support the addition of left turn lanes and a left turn signal to allow left turns from Grandview Highway onto Boundary Road?		
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Neutral <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Neutral <input type="checkbox"/>

## 2) Boundary Road and 11<sup>th</sup> Avenue

The intersection of Boundary Road and 11th Avenue is located close to the Highway 1 off-ramp at Boundary Road. Currently, there is limited sight distance for the vehicle manoeuvres that occur at this intersection. City of Vancouver Staff have determined that the most effective way to improve safety at this intersection is to reduce the number of manoeuvres that are permitted. It has been proposed to allow only the right-out only movement from 11th Avenue onto Boundary Road. This option would be reconsidered if the left turn facility from Grandview Highway to Boundary Road is not implemented.

Refer to Figures 3 and 4 for an outline of the existing and proposed conditions.

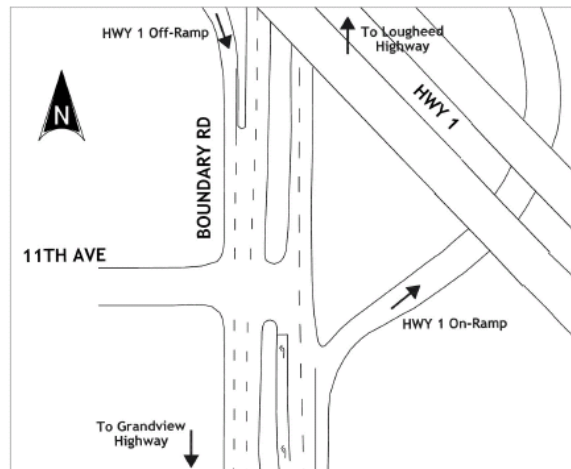


Figure 3: Boundary Road and 11<sup>th</sup> Avenue - Existing

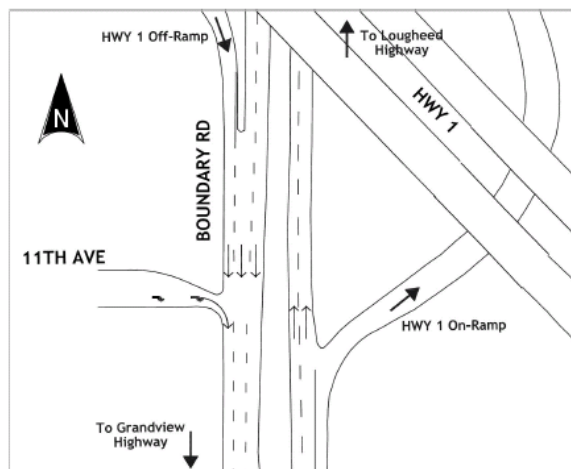


Figure 4: Boundary Road and 11<sup>th</sup> Avenue - Proposed

Do you support the proposed reconfiguration of Boundary Road and 11<sup>th</sup> Avenue?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Neutral	<input type="checkbox"/>
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### 3) Canada Way and Boundary Road

In conjunction with the City of Burnaby, the City of Vancouver has generated a concept for the intersection of Boundary Road and Canada Way. This proposed design relocates the existing left turn from Boundary Road and Grandview Highway further south.

Refer to Figures 5 and 6 for an outline of the existing and proposed conditions.

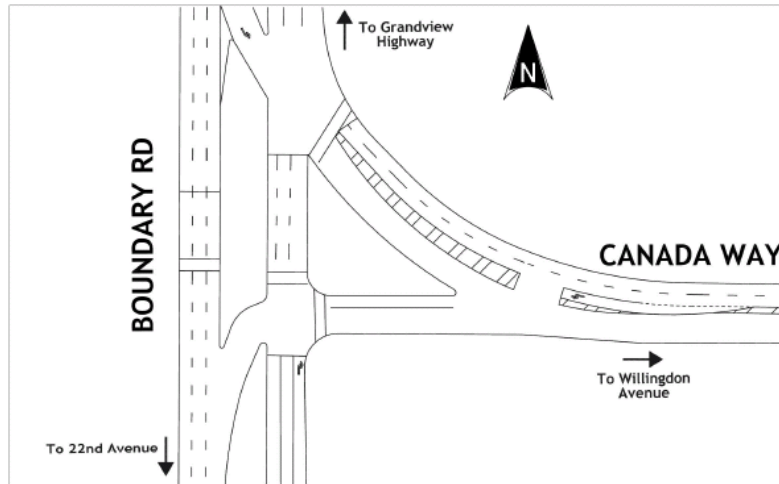


Figure 5: Canada Way and Boundary Road - Existing

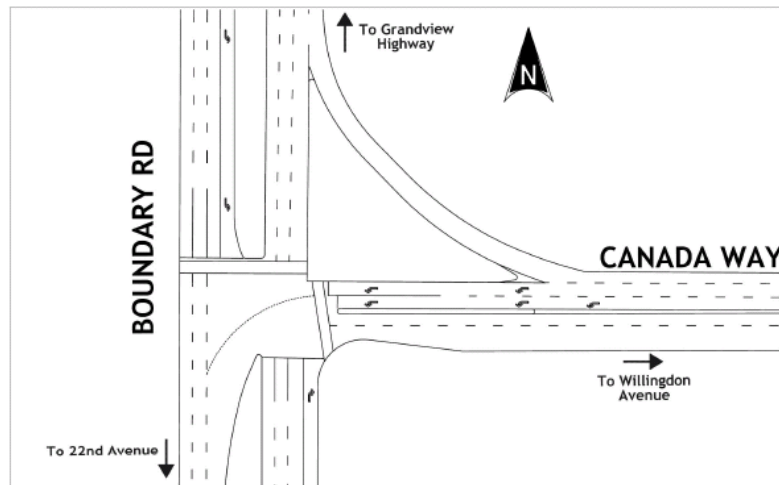


Figure 6: Canada Way and Boundary Road - Proposed

Do you support the proposed reconfiguration of Boundary Road and Canada Way?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Neutral	<input type="checkbox"/>
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SPECIFIC COMMENTS RECEIVED IN SURVEY

Survey No. 14: 3300 Block Anzio - I hope that these projects will help to divert some of the heavy truck traffic away from Rupert Street. Rupert from Grandview to Kingsway is simply not adequate for a truck route.
Survey No. 25: 3400 Block Anzio - All of these conceptions are great. They will ease the problems that we have when we use these intersections and will help us get around better.
Survey No. 28: 3400 Block Dieppe - HOV "Queue Jumpers". At Boundary and Grandview, eastbound curb lane: this lane is already very busy with people turning right, (southbound) in the curb lane. Won't the Queue Jumpers Lane restrict the cars trying to turn on Boundary Rd? P.S. Will my taxes be reduced as a result of these improvements?
Survey No. 31: 4100 Block Boundary Rd - There is more than enough traffic on Boundary Rd causing noise and pollution which is unhealthy. The vinyl siding is always dirty from the pollution, exhaust fumes. Also the window sills. We definitely do not need more traffic on Boundary Rd.
Survey No. 34: 3400 Block Mons Dr. - "Queue Jumpers" don't work! They create just that - queue jumpers - non HOV users! This in turn causes more frustration for those waiting in the queue.
Survey No. 35: 00 Block Malta Pl. - The priority is the Left Turn Bay at Boundary. This has been really needed for a long time.
Survey No. 36: 3500 Block - Very good initiatives. I would also recommend that the on ramp unto Hwy 1 at Grandview Hwy be made double lane, see diagram. Also on page 3 Hwy 1 on ramp, the single lane should continue longer before merging with Hwy traffic. Blind spot, dangerous merge. Could be extended further down to allow seamless merging, see diagram.
Survey No. 37: 3400 Block Worthington Dr. - We propose that the ability to turn right onto 11 <sup>th</sup> from Boundary remain but that the ability to turn left from 11 <sup>th</sup> be disallowed. Due to the severe right turn at the end of the off ramp from the highway, speeds should automatically be slow merging onto Boundary. Perhaps a precautionary sign should be placed at or near the train tracks stating limited visibility ahead - Reduce Speed/Use Caution.
Survey No. 41: Location unknown - If the proposed queue jumpers lane is implemented it will cause problems for people turning right off Grandview Hwy onto Boundary and then onto Canada Way.
Survey No. 42: 3400 Block Mons Dr. - Will drivers no longer be able to turn right from Grandview onto Boundary? That's a little unclear! What about right turn hand turns from Boundary onto Grandview heading to the Freeway?
Survey No. 43: 3400 Block Matapan Cr. - We do not need an HOV lane on Grandview Hwy! Nor do we need to cut off westbound traffic onto 11 <sup>th</sup> avenue. If we cut off westbound traffic on 11 <sup>th</sup> it will make traffic worse on Grandview. The other two suggestions are great and should be implemented.
Survey No. 49: 3200 Block Dieppe - 1. I live in Falaise Park area and use Skeena for access. I hope this queue jumper proposal allows easy access as is currently. 2. There should be no parking anywhere on Grandview, E 12th and Broadway between 7 am and 7 pm. 3. The City should explore making all right curb lanes right turn only at intersections. Other cities have this and it improves safety and slows down

<p>"lane surfers".</p> <p>4. Install parking no parking in alley so kids and parents do not risk being hit parking on Grandview between Rupert and Skeena. Again parking creates traffic slow downs.</p>
<p>Survey No. 53: 3600 Block Vimy - I think the best decision for the traffic problem at Boundary and Grandview is to make a tunnel. What I mean is make Grandview Highway almost level and add a bridge for Boundary Rd. Similar to the one near 1<sup>st</sup> avenue near Boundary Rd. Cars will not stop at the intersection anymore. The only time cars stop is to let the car that wants to turn left to Boundary.</p>
<p>Survey No.54: 3500 Block Vimy - 1. There needs to be a better separation of traffic going onto the Freeway and those continuing on Grandview east. A barrier that stops last minute cut-ins for the Freeway entrance. Traffic lines up in the right lane of Grandview eastward to get ready to go on the Freeway. Other drivers speed up in the left lane so they can cut in at the last moment.</p> <p>2. Cars traveling east on Grandview that turn at Skeena are getting hit by speeding traffic in the westbound curb lane on Grandview. Needs a turn light.</p> <p>3. The parking on both sides of Skeena is blocking the vehicles coming off Grandview. This is also causing accidents.</p>
<p>Survey No. 56: 3500 Block Normandy - For Grandview Hwy eastbound put HOV Queue Jumper Lane on outside and connect this lane to Hwy 1 by a bridge ramp leading into existing start of HOV lane on Hwy 1 Eastbound. This would prevent HOV "Queue Jumpers" having to cross 3 or 4 lanes of traffic. I think this would permit better traffic flow and help prevent accidents on Hwy 1 between Boundary and Willingdon.</p>
<p>Survey No. 59: 3400 Block Mons Dr. - 1a) The queue jumpers are a good idea provided that there is some enforcement by police and plastic posts are put in place in the merging area to prevent both the left and queue jump lanes from merging at the same time into the middle lane at the on ramp to Hwy 1. Currently people use the left lane to queue jump.</p> <p>1b) I am for the Left Turn lanes if they reduce traffic on Rupert by diverting cars to Boundary. I would further put a limit on truck traffic on Rupert. I am concerned that the Left Turn lanes will make people wait too long at red lights.</p> <p>2. The Right Turn on 11<sup>th</sup> provides a good bypass when traffic is clogged on Boundary.</p> <p>3. Great! This is much needed and will improve traffic flow if the lights are properly synchronized.</p>
<p>Survey No. 61: 3400 Block Rupert - I am strongly not supportive of the installation of HOV queue jumpers on Grandview Hwy near Boundary. My opinion is that the sign HOV will delay, slow down, and congest the traffic flows and will cause more accidents than before. Hope you look into it. The HOV sign from Hwy 1 from Boundary to Port Mann Bridge should come down and never and ever to install the sign HOV in the Highway. I been ???? 4 times a day during rush hour. Cannot move? 0007 we get more cars every days, have to move fast. Hope you bring up this problem for me during Open House.</p>
<p>Survey No. 62: 3500 Block Haida - Make it soon! Thanks</p>
<p>Survey No. 65: 3500 E 22<sup>nd</sup> - The ramp going onto Hwy 1 N of Grandview Hwy should be closed off. The merge to Hwy 1 is so short it is too dangerous. Everyone can just go to ramp on 1<sup>st</sup> ave to get on Hwy 1 going North. Thank you for your attention.</p>
<p>Survey No. 66: 3300 Block Dieppe - 1. Left Turn Lanes from Eastbound Grandview to</p>



<p>Northbound Boundary are a must. If they were there 2 months ago I would be still driving my old car. Instead of having it totalled trying to make a left turn onto Esmond. These would make the turn safer. On figure 2 the HOV lanes are only in place west of Boundary. This is fine. If they are put in place east of Boundary they will encourage people to maintain highway velocity into the city which is unsafe for left turns onto Esmond (refer to flipped car above).</p> <p>2. The right hand lane of Northbound Boundary from Grandview to Hwy 1 on ramp (westbound) is unsafe as drivers wishing to gain access to the Trans-Canada have approximately 150 meters to get in the right hand lane after crossing Grandview. Taking into consideration the fact that 95% of Vancouver drivers are homicidal maniacs this situation is dangerous.</p> <p>3. It takes some faith (see homicidal maniacs above) to enter the Boundary-Canada Way intersection in the current design. The traffic lights (which are generally ignored anyway) operate under some mysterious system and cars routinely appear out of nowhere to obliterate the unwary. Simplify the system. Figure 6 is a damn sight better.. These changes will make it more difficult for said maniacs to find victims. That being said some police presence is needed here. An average of 2 - 3 cars run every red light (I count) and virtually everyone runs stop signs. When you're done with this mess see if you can install traffic calming devices between Grandview and Skeena and Dieppe and 18<sup>th</sup>. People skip through here to avoid Grandview/Boundary. This is a lot of info. Call if you like.</p>
<p>Survey No. 69: 3600 Block Haida - Any changes will increase traffic flow. Therefore safety come first and no more traffic. We should make use of public transport.</p>
<p>Survey No. 71: 3400 Block Mons Dr - Figure 6, there is no pedestrian access to northeast Boundary Rd.</p> <p>1b) I find this proposal hilarious. In the 1980's the left turn from Grandview onto Boundary was eliminated. We were told because of increased traffic. There are more cars now than there were 25 years ago so why are you thrusting increased death and injury rates on us? Will the traffic lights be numerical to give pedestrians greater safety crossing? When we cease to drive personal vehicles and walk or travel by bus what will be the need of this expense?</p>
<p>Survey No. 75: 00 Block Worthington - Re: Grandview and Boundary. Will there be two lanes leading onto the Hwy 1 or will there still be people trying to merge into one lane at the entrance to the Freeway? Will there be proper signage to show which lanes go where..... well ahead of time? A dedication left turn light is much appreciated as the only safe way to go. Thank you</p>
<p>Survey No. 76: 3600 Block Vimy Cr. - Please do as little improvement as possible. Every time you do something the situation gets worse. When Skeena hill was improved the traffic on Dieppe became a lot worse. At times it takes 4 - 5 minutes to cross Dieppe as a pedestrian. The proposed left turning lanes from Grandview to Boundary will make it impossible for a pedestrian to get to nearby bus stops on Boundary Rd. When my wife wants to go to the North Shore she takes a southbound bus travels two blocks south then catches a northbound bus and gets to North Vancouver. Come at busy hour and try to cross Boundary Rd. Oh by the way: what is an HOV "Queue Jumper"? The so called Open House is a sham you have already decided what you are going to do. It is nothing more than a public relation exercise. I will not be attending any more meetings. I tried to phone Mr. Darwent, he was out of town for training. I tried to phone Engineering Services. I gave up after 20 minutes.</p>
<p>Survey No. 78: location unknown - An additional traffic light or crosswalk should be</p>

<p>placed on Boundary and 18<sup>th</sup>. Many people cross the street on Boundary to take the bus across the street and it is really dangerous to cross there.</p>
<p>Survey No. 80: 3400 Block Matapan - This should have been done twenty years ago.</p>
<p>Survey 82: 3200 Block Dieppe - The left turn bays are long over due as there is a lot of traffic cutting through neighbourhood to get to Boundary Rd southbound. The proposed queue jumper (Grandview eastbound) could pose a problem if it reaches capacity and forces Boundary Road traffic to turn up Skeena to get to Boundary Rd. Also your proposal does not state how many occupants constitute "HOV" and at which point on Grandview Hwy the lane becomes an HOV lane. I would suggest three occupants and a starting point of at least Rupert street.</p>
<p>Survey No. 90: 3500 Block Grandview - Southbound lane from Hwy 1 exit to Boundary - can turn right onto 11<sup>th</sup>. ??? no left turn from 11<sup>th</sup> to Boundary - northbound (right turn only from 11<sup>th</sup>)</p>
<p>Survey No. 91: 3200 Block Matapan - Excellent proposals. Hopefully you will also plant some trees, shrubs, flowers etc to beautify the area.</p>
<p>Survey No. 93: 3400 Block Seaforth - I do not support the Grandview and Boundary Plan. This will only increase traffic volume. The current system breaks up the Boundary traffic via Willingdon ave to Canada Way. The Canada Way and Boundary Plan, which I support should handle the left turn Boundary traffic. The 11<sup>th</sup> &amp; Boundary Plan also closes an avenue to break up Boundary traffic so I would like the current system to stay in place.</p>
<p>Survey No. 98: 3400 Block Seaforth - 1. The current design of the Boundary/Canada Way intersection does ??? danger to drivers heading east (the stop sign on Canada Way). I am not sure how much would the reconfiguration proposed here help to improve the situation but I personally do not support relocating the existing left turn further south. If possible I would like to see the existing stay where it is but have a traffic light set up to replace that confusing stop sign. 2. The Hwy 1 entering ??? on Grandview Hwy got congested ALL THE TIME. I personally think that no lane cutting should be allowed ??? the ?????light on Boundary and Grandview Hwy.</p>
<p>Survey No. 99: 3200 Block Vimy - I am strongly supporting the addition of left turn lanes and a left turn signal on busy streets. Consequently reduce most of the serious accidents. Thanks</p>
<p>Survey No. 100: 3400 Block Mons Dr - I expect that the population density of Vancouver will increase. Therefore we cannot afford to lose land to accommodate our desire to increase road traffic volume. It would be contrary to our desire to have more or at least not reduce, space for living and outdoor's activities near our dwellings. Other side effects of paving over more land, like reduced percolation of rain works into the ground and a more extreme micro-climate are additional reasons to oppose projects resulting in a net loss of vegetated areas (in and outside Vancouver).</p>
<p>Survey No. 101: 3400 Block McMillan - This is good. It will help keep the traffic out of our residential area as no turns were allowed on Boundary. Traffic onto the Freeway off of Boundary Rd &amp; Grandview needs work reconstruction. When one is trying to merge onto Freeway there is traffic trying to come off Freeway onto Willingdon south dangerous area.</p>
<p>Survey No. 102: 00 Block Dieppe - At Boundary Rd and 11<sup>th</sup> ave I think it's good idea to close median but I would like to have access Boundary Rd to 11<sup>th</sup> on southbound.</p>
<p>Survey No. 103: 3400 Block Normandy - Too many times you change things + it makes congestion even worse all that is really needed is left turn signal off Grandview onto</p>

<p>Boundary that will ?????to traffic that goes onto Hwy 1 + the other traffic travelling up to Lougheed Hwy plus you get people turning left on side street (1 block east of Grandview) which is an accident waiting to happen + also backs up traffic.</p>
<p>Survey No. 104: 3600 Vimy Cr - Re: 1a) Need to allow right turn for single occupancy vehicle at Rupert or any subsequent road 1b) Excellent as we don't need to turn right at Boundary and make a "U" turn. 2) Even now it is quite a challenge to turn left at Boundary from 11<sup>th</sup> avenue anyway. 3) It is nice to have two lanes that turn left unto Boundary road from Canada Way and one lane that turns left from Boundary unto Canada Way less confusing + flow is not interrupted.</p>
<p>Survey No. 114: 3500 Block - 2) need Right hand turns for Boundary (southbound) from curb lane only onto E 11<sup>th</sup> avenue. Agree with no left hand turn from E 11<sup>th</sup>.</p>
<p>Survey No. 122 3400 Block Grandview Hwy - I don't see why you need HOV lanes when it doesn't exit towards the Freeway. You still need to back into the entrance of the Freeway if you are on Hwy 1 going westbound. There is only two line traffic on each side on Grandview Hwy as well as all the way to UBC. Plus you are in the city of Vancouver already, you don't need HOV to just exit out of the Freeway. I think it is important to keep the speed limit down by having cars parked on the lane then to create HOV lanes to have vehicle merging back &amp; forth. This to me will cause more accidents.</p>
<p>Survey No. 123: 3500 Block Cornett - Hwy off ramp cars should be allowed to turn right on East 11<sup>th</sup>. I do agree with closing off left turns off east 11<sup>th</sup>. If you eliminate all right turns onto east 11<sup>th</sup> traffic on the corner of Boundary &amp; Grandview will increase as much as 200 cars an hour creating greater traffic problems on Boundary Rd during rush hour. Allowing Hwy off ramp to turn right would decrease this problem and allow access into the industrial land and service to existing buildings.</p>
<p>Survey No. 124: 375 Water St. - The McLean Group owners of 2 city blocks (Burlington Northern south to Grandview Hwy, Skeena street east to Boundary) would like to see an incremental approach to the redesign of the intersection of E 11<sup>th</sup> &amp; Boundary Rd. We agree with the idea to close off left turns from Boundary to E 11<sup>th</sup> ave. &amp; from E 11<sup>th</sup> ave across onto Boundary. We disagree with the idea to eliminate right turns from Boundary road onto E 11<sup>th</sup> We would like to see if accident rates improve with the elimination of the left turns before this option is considered. We strongly disagree with the idea of eliminating right turns from the far right lane (the off ramp lane) of Boundary onto E 11<sup>th</sup>. The loss of this turn will add congestion on the hill &amp; make Boundary access to "Roots" &amp; 2755 Boundary (Building L) more difficult. As the landlords of commercial tenants on these properties it is in our interest to see that the best possible access is ensured. Many Vancouver film studio employees make this turn &amp; being stuck on the Boundary hill will not serve any purpose. Safety must be balanced with accessibility. We support the queue jumper &amp; left turns at Boundary and Grandview.</p>
<p>Survey No. 125: 3400 Grandview Hwy - What is the point of having HOV lanes on Grandview Hwy one mile and HOV marching back into two lanes. This causes more congestion. If majority voted no, City Council will still go ahead with the project. It is not confirmed how long HOV continues to travel, will it pass Skeena towards Rupert or merge before Skeena and who will decide to change the project? Will it be on papers confirming how far HOV lane?</p>
<p>Survey No. 126: 3100 Block E 16<sup>th</sup> - I'm concerned about ??? volume southbound on</p>

Boundary then onto Joyce!! (and north on Joyce!) I'm also concerned about Kingsway impacts.
Survey No. 128: 3600 Block Haida Dr - Please Note: The left turn lane from Freeway onto Boundary Road may slow down traffic even more & also a hotspot for accidents. Just a thought.
Survey No. 129: 3200 Block Dieppe - Ensure safe pedestrian crossing of Boundary with these changes.
Survey No. 133: 00 Block Worthington - A) For item no. 1 Grandview & Boundary for Grandview traffic to Hwy 1. There are lots of queue jumpers already where the left lane traffic jumps into the right lane main traffic. My suggestion is to remove one straight eastbound lane through traffic, use the left lane for left turn into northbound Boundary Rd. With the additional HOV lane the through ??? would probably come out to be the same. B) For item no. 2 Boundary & 11 <sup>th</sup> , Highway traffic should be allowed to go to 11 <sup>th</sup> to access the Costco store not to add traffic to Grandview which is congested already.
Survey No. 136: 3500 Block Haida Dr - Re: HOV Queue Jumpers lane only effective if properly policed. Not effective if someone races access Boundary on Grandview to get ahead of traffic. HOV lanes only effective if there are actually HOV vehicles in it.
Survey No. 137: 3900 Block Boundary Rd - At 22 <sup>nd</sup> and Boundary there should be barriers put up to stop vehicles from driving up curb lane.
Survey No. 141: 3400 Block Anzio - Please ban parking on Skeena near Grandview Hwy intersection on south side. It is dangerous for vehicles taking left turn on Grandview Hwy into Skeena which is blocked by northbound vehicles and parked vehicles.
Survey No. 143: 3200 Block Dieppe - I think having a left hand turn at Boundary coming from the highway is a great idea. When I'm coming home from the highway it takes me more time to turn left on Skeena to go home. Left on Boundary would be quicker & more convenient. Thank you.
Survey No. 146: 2800 Block - Petition by 21 people. We the undersigned request that the City of Vancouver amend the proposed reconfiguration of Boundary Road and 11 <sup>th</sup> avenue to the following. Continue to allow right turns from Hwy 1 off ramp onto 11 <sup>th</sup> ave and extend the diverter from the underpass so that right turns off Boundary onto 11 <sup>th</sup> ave are no longer possible. We feel this will properly address the safety issue, prevent large back-ups at the intersection of Boundary and Grandview Hwy, and not impede on our ability to access the businesses in the 11 <sup>th</sup> avenue area which we frequent on a daily basis.
Survey No. 152: 3200 Block Matapan - With all proposed changes considered I wish you would consider a left turn light at Skeena off Grandview Hwy West. Thanks for listening.
Survey No. 158: 00 Block Malta Pl - 2) Need right turn onto 11 <sup>th</sup> for Costco access. Left turns needed on Boundary to allow westbound Hwy 1 access and for those going south on Boundary. Also parking issue on Skeena/Grandview must be dealt with - this is a nightmare and very dangerous.
Survey No. 164: 3500 Block Normandy - HOV lane restrictions should be limited to peak hours only.

Survey No. 165: 3300 Block Worthington - Grandview Hwy & Boundary queue jumpers lane. Do I get fined for being in an HOV lane if I want to go south on Boundary from Grandview Hwy? How do I get into Wendy's on the corner of Grandview & Boundary if the curb lane is an HOV lane? If the HOV lane is solid cars from Rupert to Boundary how do I get in this lane to turn south onto Boundary without getting a ticket for being one person in a car in an HOV lane? When Skeena & Grandview Hwy was altered a few years ago we were promised our neighbourhood wouldn't be turned into a through route for cars. How do you avoid this with the HOV lane changes at Grandview & Boundary?

Survey No. 166: 3400 Block Falaise - Re Project 3: Please consider local residents on Vancouver side from 18<sup>th</sup> avenue crossing Boundary Rd to enter Canada Way. Thank you.

RECOMMENDATIONS OF THE BICYCLE ADVISORY COMMITTEE

At its meeting on May 16, 2007, the Bicycle Advisory Committee approved the following:

RESOLVED

THAT the Bicycle Advisory Committee recommend to Council

THAT provision for bicycle lanes planned as part of any future work on  
Boundary Road.

CARRIED UNANIMOUSLY

RESOLUTION RECEIVED VIA EMAIL FROM THE GRANDVIEW WOODLANDS AREA COUNCIL (GWAC)  
ON 6/5/2007

Chris, Don,

Last night the Grandview Woodlands Area Council (GWAC), held a well-attended, special Gateway Project Direct Action meeting.

Our board and community are directly opposed to proposals to expand the HWY 1/First St interchange, and - with regards to the pending Grandview/Boundary survey - we are opposed to City proposals to add any additional lanes of car traffic on Grandview Highway (including HOV).

Last night, the GWAC board unanimously passed the following motion:

WHEREAS the Province proposes to move forward with the Gateway Program, which could dramatically increase motorized vehicle traffic through Grandview-Woodland,

THEREFORE, the Board of Directors of the Grandview Woodlands Area Council resolves to call on the City of Vancouver to

1. bar use of any city resources to further the Provincial Gateway Project or to accommodate any additional traffic through Vancouver, and

2. take immediate steps, including permanent installation of traffic diverters, to counter increased traffic volumes in Grandview-Woodland.

Please be aware that the current board of GWAC ran as a slate on an anti-Gateway, pro-traffic-calming platform. The 12-member board was voted in by a 3 to 1 margin in one of the best attended AGMs in recent GWAC history.

I look forward to your confirmation of receipt of this message. Please advise when this matter will be going to Council.

Thank you,  
Jill Smith, Esq.  
Secretary, Grandview-Woodland Area Council

CAPACITY ANALYSIS SUMMARY FOR GRANDVIEW HIGHWAY AND BOUNDARY ROAD

To evaluate the capacity before and after the proposed modifications at Boundary Road and Grandview Highway, the intersection was modelled using the intersection analysis software, Synchro. Among its many features, this software is able to generate signal timings and calculate the capacity for each movement of the intersection.

*Green Time Comparison for the Eastbound and Westbound Through Movements*

A simple way of determining the capacity for a movement at an intersection is to examine the percentage green time allocated to the phase used by that movement. More green time allocated to a phase results in an increase in capacity for the movement which uses that phase.

The Synchro model was run using existing AM Peak volumes with the existing configuration of the intersection as well as for projected AM Peak volumes with the proposed configuration of the intersection. Figures 1 and 2 below outline the percentage green time allocated to each signal phase.

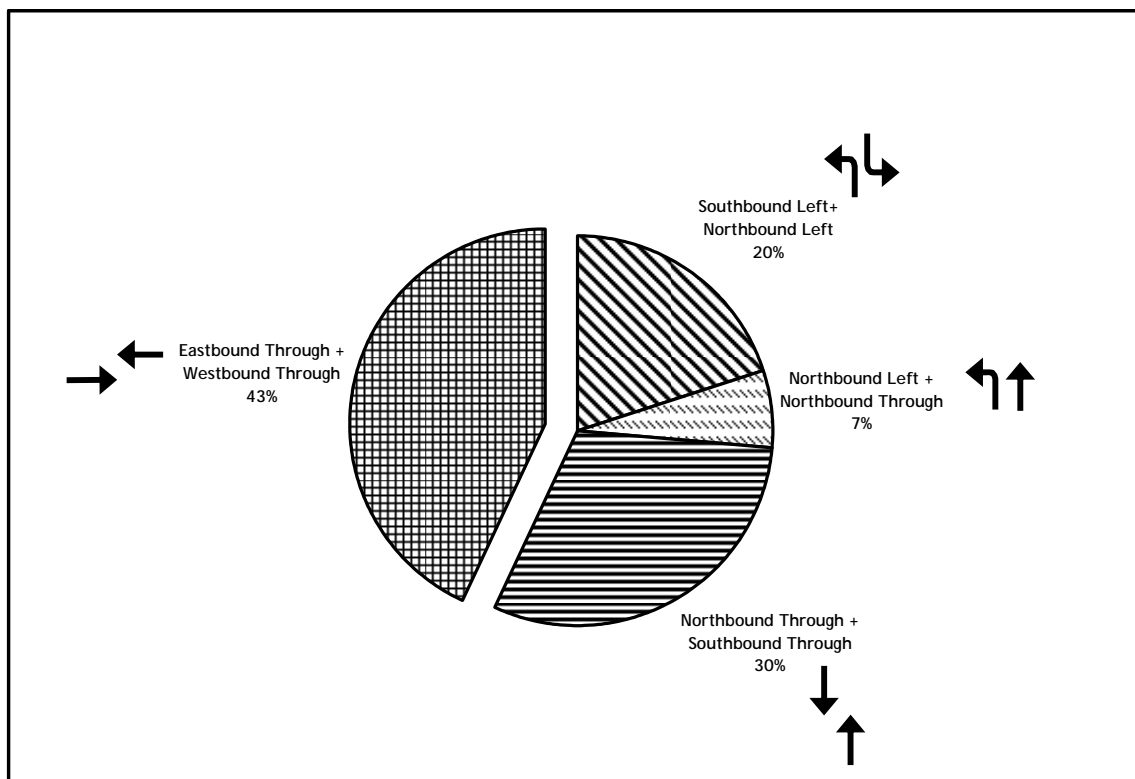


Figure 1 - Grandview Highway and Boundary Road Existing Configuration  
Percent Green Time\* By Phase, AM Peak Period

\*for simplification, green time in this analysis also includes yellow and red time



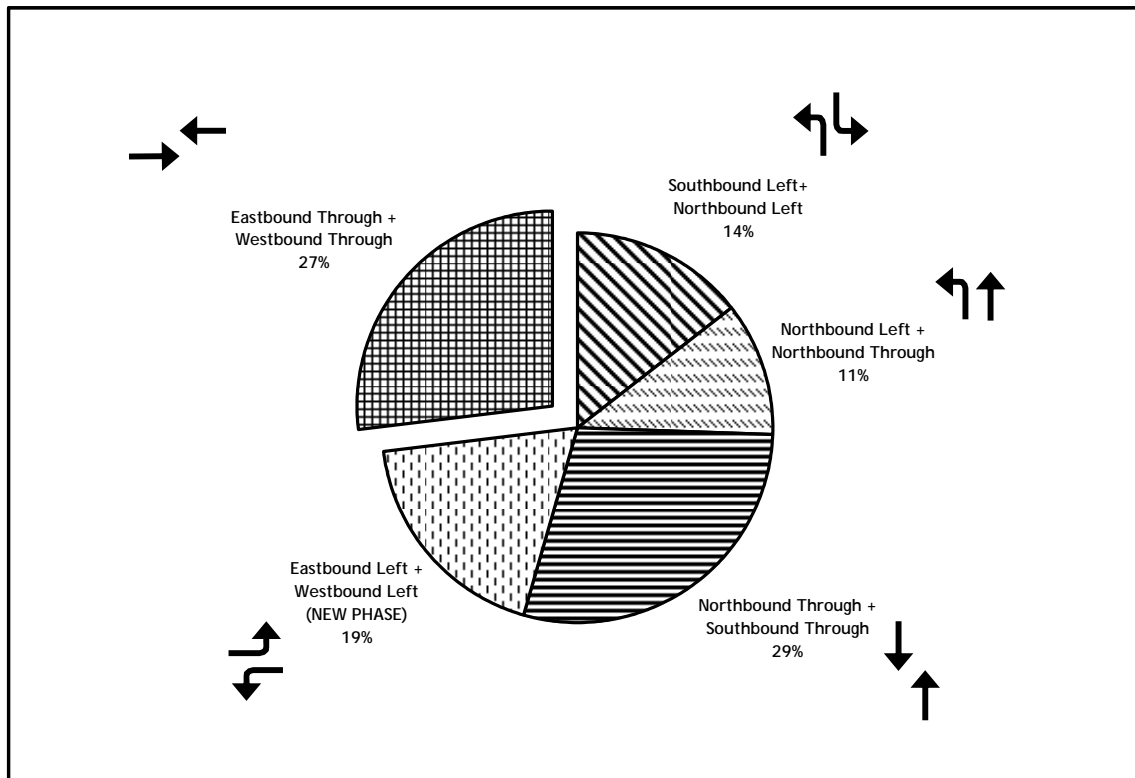


Figure 2 - Grandview Highway and Boundary Road Proposed Configuration  
Percent Green Time\* By Phase, AM Peak Period

\*for simplification, green time in this analysis also includes yellow and red time

An examination of the percentage green time allocated to each phase reveals that green time for the eastbound through and westbound through movement is significantly reduced (43% to 27%) with the introduction of the new eastbound and westbound left turn phase. Given that no additional general purpose lanes would be added to this movement (only HOV lanes), it can be concluded that there will be a decrease in general purpose vehicle capacity.

*Total Intersection Capacity*

From the Synchro analysis, the total capacity of all of the left and through movements of the intersection in the AM peak period was calculated. The following table provides an overview of this analysis. It should be noted this analysis does not take into lane utilization effects for eastbound vehicles exiting the City.

Table 1 - Summary of % change in capacity relative to existing conditions by Scenario

<u>Scenario</u>	<u>Description</u>	<u>% change in capacity relative to existing conditions</u>	
		<u>General Purpose Vehicles Only</u>	<u>General Purpose and HOV</u>
1)	Existing Conditions	-	-
2)	As Proposed	Decrease of 3 - 7%	Increase of 5 - 11%
3)	Same as Scenario 2) with no Eastbound or Westbound Left	No Change	Increase of 10 -20%
4)	Same as Scenario 2) with no HOV queue jumper lanes	Decrease of approximately 4 %	Decrease of approximately 4 %

From these results, staff project that there will be no net increase in capacity to the intersection for general purpose vehicles. All increase in capacity is expected to be allocated to HOV vehicles only.

*Examination of Dual Left Turn Bay*

The dual left turn bay proposed for the westbound leg of the intersection of Boundary Road and Grandview Highway will add significant width to the intersection; however, this extra width does not correspond to additional overall capacity. Since eastbound and westbound left turns are currently prohibited at this intersection, they will require an additional phase to accommodate this movement. As shown in the comparison of Figures 1 and 2 above, the green time for this new phase is expected to be reallocated primarily from the eastbound and westbound through movement. Figure 3 below outlines how the new green time will be reallocated by phase.

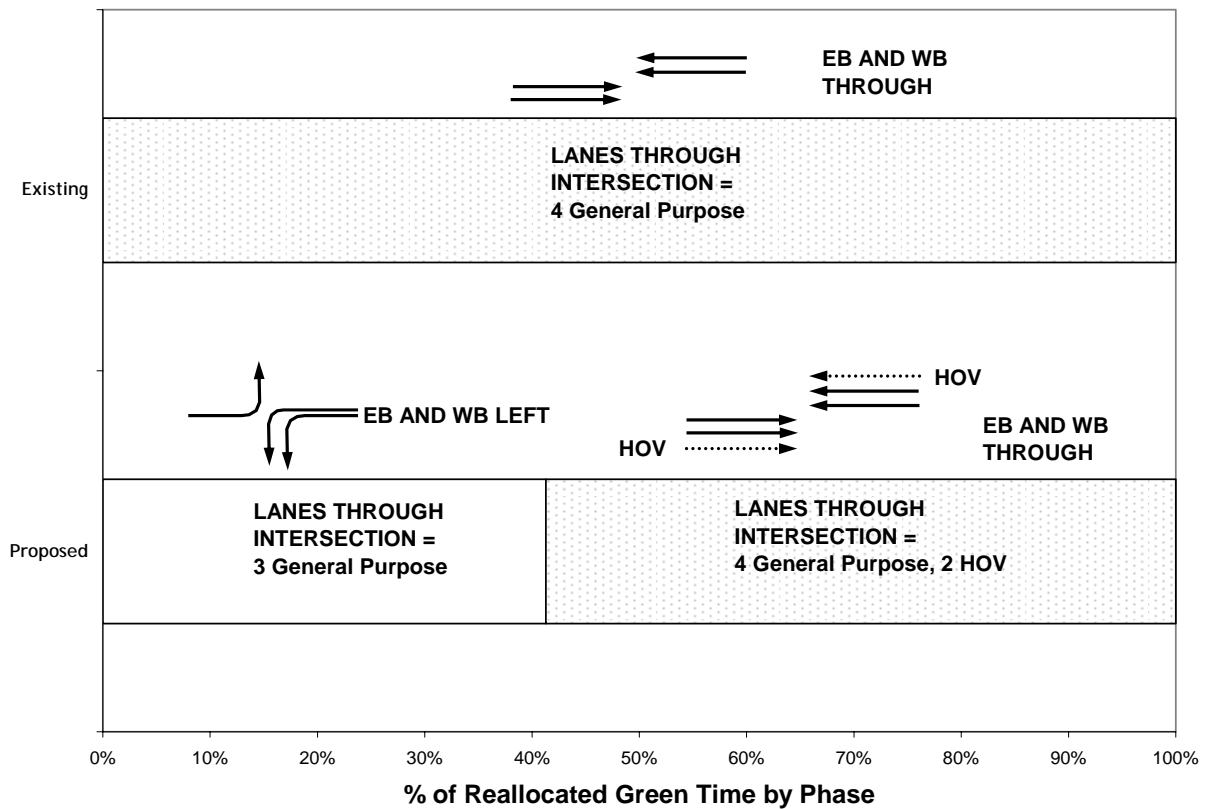


Figure 3 - Reallocation of Green Time for EB and WB Through Movement by Phase

During the eastbound and westbound left turn phase, there are three general purpose lanes moving through the intersection, whereas during the eastbound and westbound through phase there are four general purpose lanes and two HOV lanes moving through the intersection. Therefore, when the left turn phase operates during time which was previously allocated to the through phase, there are fewer lanes moving through the intersection. This represents the slight decrease in general purpose vehicles as shown previously in the total intersection capacity analysis for scenarios with eastbound and westbound left turns.