NOTICE TO THE GVRD WATER COMMITTEE

You are requested to attend a Regular Meeting of the GVRD Water Committee to be held at 9:00 a.m. on Wednesday, February 8, 2006, in the 2nd Floor Boardroom, 4330 Kingsway, Burnaby, British Columbia.

A G E N D A

1. ADOPTION OF THE AGENDA

1.1 February 8, 2006 Regular Meeting Agenda
   Staff Recommendation:
   That the Water Committee adopt the agenda for the Water Committee Regular Meeting scheduled for February 8, 2006 as circulated.

2. ADOPTION OF MINUTES

2.1 October 14, 2005 Regular Meeting Minutes
   Staff Recommendation:
   That the Water Committee adopt the Minutes of the Water Committee Regular Meeting held October 14, 2005 as circulated.

3. DELEGATIONS

No delegations presented.

4. REPORTS

4.1 2006 Committee Orientation (Oral Report)
   Designated Speaker: Tim Jervis

4.2 2006 GVWD Capital Projects
   Designated Speaker: Tim Jervis
   Recommendation:
   That the Committee receive for information, the report dated January 25, 2006 titled “2006 GVWD Capital Projects”.

4.3 Douglas Road Main No. 2 – Construction
   Designated Speaker: Simon So
   Recommendation:
   That the GVWD Board authorize the expenditure of up to $8.9 million of budgeted capital funds for construction of Douglas Road Main No. 2 - Buckingham Heights and Delta Avenue Sections.
4.4 Boundary Road Main No. 5 (North) Phase 2 – Pre-purchase of Steel Water Pipe  
*Designed Speaker: Simon So*  
*Recommendation:*  
That the GVWD Board authorize the expenditure of up to $8 million of budgeted capital funds for pre-purchase of steel water pipe for Boundary Road Main No. 5 (North) - Phase 2.

4.5 Coquitlam Ozone Power Supply Upgrade  
*Designated Speaker: Frank Huber*  
*Recommendation:*  
That the GVWD Board authorize the expenditure of up to $6.56 million of budgeted capital funds to construct a dedicated underground power line to the Coquitlam Ozone Disinfection Facility.

4.6 Seymour-Capilano Filtration Project – Project Status  
*Designated Speaker: Doug Neden*  
*Recommendation:*  
That the GVWD Board receive for information the report dated January 19, 2006 titled “Seymour-Capilano Filtration Project – Project Status”.

4.7 Managers’ Report  
*Designated Speaker: Tim Jervis*  
*Recommendation:*  
That the Committee receive for information the report dated January 25, 2006 titled “Managers’ Report”.

4.8 2006 Water Committee Meeting Dates (on-table)  
*Designated Speaker: Tim Jervis*  
*Recommendation:*  
That the Water Committee receive for information the report dated February 1, 2006 titled “2006 Water Committee Meeting Dates”.

5. INFORMATION ITEMS

5.1 Letter from Hon. Carole Taylor, Minister of Finance to Derek Corrigan, Chair Water Committee, dated October 6, 2005 re: PST Exemption

6. OTHER BUSINESS

No items presented.

7. RESOLUTION TO CLOSE MEETING  
*Staff Recommendation:*  
That the regular meeting of the GVRD Water Committee scheduled for February 8, 2006 be closed pursuant to the Community Charter provisions, Section 90(1)(g):

“90(1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(g) litigation or potential litigation affecting the regional district.”

8. ADJOURNMENT
Minutes of the Regular Meeting of the Greater Vancouver Regional District (GVRD) Water Committee held at 1:03 p.m. on Friday, October 14, 2005 in the 2nd Floor Boardroom, 4330 Kingsway, Burnaby, British Columbia.

PRESENT:
Chair, Director Derek Corrigan, City of Burnaby
Vice Chair, Director Scott Young, City of Port Coquitlam
Director Fred Bass, City of Vancouver
Councillor Janis Elkerton, District of Pitt Meadows
Councillor Pam Goldsmith-Jones, District of West Vancouver
Director Janice Harris, North Vancouver District
Councillor Terry Smith, Langley City

ABSENT:
Councillor Barbara Steele, City of Surrey
Director Hal Weinberg, Village of Anmore

STAFF:
Delia Laglagaron, Deputy Chief Administrative Officer
Tom Heath, Manager, Operations and Maintenance Department
Tim Jervis, Manager, Engineering and Construction Department
Marjorie Whalen, Assistant to Regional Committees, Corporate Secretary’s Department

1. ADOPTION OF THE AGENDA

1.1 October 14, 2005 Regular Meeting Agenda

It was MOVED and SECONDED
That the Water Committee adopt the agenda for the Water Committee Regular Meeting scheduled for October 14, 2005 as circulated.

CARRIED

2. ADOPTION OF MINUTES

2.1 September 14, 2005 Regular Meeting Minutes

It was MOVED and SECONDED
That the Water Committee adopt the minutes of the Water Committee Regular Meeting held September 14, 2005 as circulated.

CARRIED
3. **DELEGATIONS**
No delegations presented.

4. **REPORTS**

4.1 **2006 Programs of the Water Committee**
Report dated October 4, 2005 from Tim Jervis, Manager, Engineering and Construction Department, providing the proposed 2006 programs under the committee’s purview for consideration and recommendation to the board.

**Main Motion**

*It was MOVED and SECONDED*

That the Water Committee endorse the proposed programs outlined in the report dated October 4, 2005, titled “2006 Programs of the Water Committee” and forward the report to the GVRD Board for endorsement at the time of budget approval.

Discussion ensued relative to amending the main motion to address demand side management strategies to decrease water consumption.

**Amendment to the Main Motion**

*It was MOVED and SECONDED*

That the Water Committee amend the main motion by adding the phrase “with a specification of a component to implement demand side management strategies to decrease water consumption”.

Discussion ensued relative to decreasing water consumption and the use of low-flush toilets and water metering. Members were advised that the Drinking Water Management Plan has been approved and the long-term goal of changing behaviour is being addressed.

Concern was expressed with the way the budget priorities had been presented. Members would prefer to know the outcomes rather than amounts relative to other things.

**Request of Staff**

Staff was requested to include a milestone pertaining to Demand Side Management initiatives under the Water Planning program.

**Question on the Amendment to the Main Motion**

Question was then called on the Amendment to the Main Motion and it was

**DEFEATED**
Question on the Main Motion
Question was then called on the Main Motion and it was CARRIED

4.2 Cleveland Dam Hydroelectric Power Generation Potential
Report dated September 9, 2005 from Fred Nenninger, Regional Utility Planning Division Manager, Policy and Planning Department, seeking revision to the Greater Vancouver Water District Act to allow the GVWD to sell power and to have the board support exploration of the regulatory and policy issues associated with developing hydroelectric power generation capability at Cleveland Dam.

Discussion ensued relative to prioritizing environmental concerns.

It was MOVED and SECONDED
That the GVWD Board request the Province to revise the Greater Vancouver Water District Act to allow the GVWD to sell power, and if this is achieved, request staff to explore the environmental, regulatory, policy and financial issues associated with developing hydroelectric power generation capability at Cleveland Dam.

CARRIED

4.3 Coquitlam Ozone Disinfection Facility - Backup Chlorine Disinfection System and Liquid Oxygen Storage Tank
Report dated September 30, 2005 from Goran Oljaca, Senior Engineer, Water Treatment Engineering Division, Engineering and Construction Department, and Doug MacQuarrie, Senior Project Engineer, Water Treatment Operations Division, Operations and Maintenance Department, seeking approval for construction of a replacement backup chlorine disinfection system and a second liquid oxygen storage tank and feed system for the Coquitlam Ozone Disinfection Facility.

It was MOVED and SECONDED
That the GVWD Board authorize the expenditure of up to $1.2 million of budgeted capital funds for construction of a replacement backup chlorine disinfection system and a second liquid oxygen storage tank for the Coquitlam Ozone Disinfection Facility.

CARRIED

4.4 Status of Capital Expenditures to August 31, 2005
Report dated September 26, 2005 from Tim Jervis, Manager, Engineering and Construction Department, advising of the status of capital expenditures.

Members were advised the work on the Seymour Main No. 5 – Seymour River Crossing was now substantially complete, with the exception of the final tie-in on the west bank of the river.
On-table presentation material was provided and is retained with the October 14, 2005 Water Committee agenda package.

**It was MOVED and SECONDED**
That the Water Committee receive the report titled “Status of Capital Expenditures to August 31, 2005” dated September 26, 2005 for information.

**CARRIED**

4.5 Managers’ Report (Oral Report)
Members were advised by Tim Jervis, Manager, Engineering and Construction Department, of two upcoming open houses:
- Water Main Replacement – Delta Avenue, October 25, 2005, Brentwood Park Alliance Church, 1410 Delta Avenue; and
- Water Main Replacement – Buckingham Heights, October 27, 2005, Shadbolt Centre, 6450 Deer Lake Avenue.

On-table open house correspondence was provided and is retained with the October 14, 2005 Water Committee agenda package.

Members were advised by Tom Heath, Manager, Operations and Management Department, of upcoming seismic upgrade to the Coquitlam Dam by BC Hydro. The Coquitlam intake could be shut down for three months to meet BC Hydro’s construction schedule. During this time, there will be increased risks with the area’s water coming from the Seymour and Capilano sources. If there is a period of turbidity, the GVRD will not be able to utilize the Coquitlam supply as in the past. The Medical Health Officers have been advised of the issue.

**Request of Staff**
Staff was requested to be proactive and advise the public of the possibility of water turbidity during the seismic upgrade to the Coquitlam Dam.

**It was MOVED and SECONDED**
That the Water Committee receive for information the Managers’ Report of October 14, 2005.

**CARRIED**

5. INFORMATION ITEMS

**It was MOVED and SECONDED**
That the Water Committee receive the following for information:

5.1 Correspondence dated September 23, 2005 to Minister of Finance from Chair Corrigan regarding the Provincial Sales Tax (PST) Exemption for Local Government.

**CARRIED**
6. **OTHER BUSINESS**
No items presented.

7. **RESOLUTION TO CLOSE MEETING**
No items presented.

8. **ADJOURNMENT**

   **It was MOVED and SECONDED**
   That the meeting now conclude.

   **CARRIED**
   (Time: 2:19 p.m.)

__________________________________________
Marjorie Whalen, Derek Corrigan, Chair
Assistant to Regional Committees

Derek Corrigan, Chair
To: Water Committee

From: Tim Jervis, Manager
    Engineering and Construction Department

Date: January 25, 2006

Subject: 2006 GVWD Capital Projects

Recommendation:

That the Committee receive for information, the report dated January 25, 2006 titled “2006 GVWD Capital Projects”.

1. PURPOSE

The purpose of this report is to inform the Committee of the water capital projects under its purview expected to be brought forward for capital expenditure approval this year.

2. CONTEXT

As part of the Long Range Plan and annual budget process, a determination is made of the capital projects that are required in order to continue to meet the District’s service obligations. For 2006, water capital projects account for approximately $41.9 million of the $75 million capital budget (excluding projects associated with the Drinking Water Treatment Program and BC Hydro’s seismic upgrade of the Coquitlam Dam), with approximately $33.1 million allocated to liquid waste capital projects. Budgeted capital expenditures for 2006 for projects associated with the Drinking Water Treatment Program and the Coquitlam Dam infrastructure relocations total approximately $227.5 million.

The projects within the various water capital programs are referenced in the 2006 Program Summaries (Grey Book) and the 2006 Budget and Long Range Information (Blue Book) distributed to Committee and Board members in fall 2005 as part of the 2006 budget process. GVWD capital projects expected to be brought forward for capital expenditure approval in 2006 and major projects “approved in progress” are summarized for reference purposes on Attachment No. 1.

Attachment:
1. 2006 Water Capital Projects Map
To: Water Committee  
From: Simon So  
Civil, Mechanical Design and Construction Division Manager  
Engineering and Construction Department  
Date: January 25, 2006  
Subject: Douglas Road Main No. 2 – Construction  

Recommendation:

That the GVWD Board authorize the expenditure of up to $8.9 million of budgeted capital funds for construction of Douglas Road Main No. 2 - Buckingham Heights and Delta Avenue Sections.

1. PURPOSE

To obtain Board authorization for the expenditure of budgeted capital funds for construction of Douglas Road Main No. 2 - Buckingham Heights and Delta Avenue Sections.

2. CONTEXT

a) Background

As shown on Attachment No. 1, the proposed Douglas Road Main No. 2 comprises approximately 14,800 metres (48,560 feet) of 1500 mm (60-inch) diameter pipe from the GVWD’s Vancouver Heights Reservoir and Pump Station in Burnaby to the Westburnco Reservoir and Pump Station in New Westminster. This main will replace the existing Douglas Road Main No. 1 and enhance long-term water supply capability and operational reliability.

Douglas Road Main No. 1 was constructed in 1952 out of reconditioned steel pipe from the Seymour Creek Main which was believed to have been installed in 1913. In recent years this main has been susceptible to leaks on a frequent basis, particularly along Canada Way and Delta Avenue. Frequent repair of leaks, which required excavation in the heavily traveled roadways, has raised concerns over system reliability and public safety. This main has reached the end of its useful life.

Considerable changes in system demand and operational requirements have also occurred since the construction of the existing main. This includes the proposed operational changes required after the commissioning of the Seymour-Capilano Filtration Plant in 2008, and the continued growth of the region. These factors all contribute to the need to construct
Douglas Road Main No. 2 to meet the long term needs for water supply and operational reliability.

Construction of the Douglas Road Main No. 2 will be phased over a number of years. Route selection and preliminary design are complete and have been reviewed by City of Burnaby staff. The proposed alignment is shown on Attachment No. 1. Construction priorities will be given to sections where the need to coordinate with local initiatives exists.

The Buckingham Heights Section will be coordinated with the City of Burnaby’s reconstruction of Canada Way from Stanley Street to Sperling Avenue in 2006/07. The City has requested that the existing Douglas Road Main No. 1 under Canada Way be replaced prior to the road reconstruction in view of the leak history and poor condition of the main. The Buckingham Heights Section is 1,450 m in length.

The Delta Avenue Section will be coordinated with the reconstruction on Delta Avenue by a developer and the City of Burnaby. This section involves the replacement of 350 m of pipe on Delta Avenue, just north of the Lougheed Highway.

b) Cost Estimate and Schedule

Pipe installation for both sections is scheduled to start in April 2006 in order to meet the schedule requested by the City. Construction is expected to be complete by the end of November, when the final connections will be made.

Due to the long lead time (5-6 months) required to procure the large diameter steel pipe and valves for this project, the Board authorized the expenditure of up to $3.6 million of budgeted capital funds for the pre-purchase of pipe and valves for this project at its regular meeting in November, 2005. A pipe supply contract in the amount of $1.7 million was awarded in December 2005 and delivery is scheduled to start in April 2006. Steel prices have retracted about 15% from their peak in January-March 2005. Current forecasts suggest a possible resurgence in prices in late 2006 or early 2007. These factors point to the whole of 2006 as a relatively good time for the GVRD to be buying steel and steel products. Tendering of large diameter valves is scheduled for late January 2006.

The 2006 GVWD Budget includes $12.5 million for supply and installation of the Buckingham Heights and Delta Avenue Sections of Douglas Road Main No. 2, under the Infrastructure Maintenance - Capital program. This funding request of up to $8.9 million, including a 15% contingency, is for pipe installation and is brought forward at this time in order to maintain project schedule.

c) Public Consultation

The GVRD has provided information and opportunities for community input to residents and businesses that may be impacted by the construction. In 2005, these public involvement activities focused on two neighbourhoods, Brentwood (which includes Delta Avenue) and Buckingham Heights. Two open houses were held in October, 2005, one in each neighbourhood.

The main concerns of the public, as communicated at the open houses and by telephone, were temporary traffic impacts, potential property damage during construction, impacts to property access, and interruption of utility service. Mitigation of these issues is being addressed in the detailed design and construction management.
3. **ALTERNATIVES**

a) Authorize this funding request. This alternative maintains the overall project schedule which is based on completion of pipe installation, and the subsequent decommissioning of the affected sections of the existing main, by the fall of 2006 to coordinate with road reconstruction by the City of Burnaby.

b) Defer the funding approval. This approach would delay the start of construction for the Douglas Road Main No. 2 project and thereby delay the City of Burnaby’s road reconstruction of Canada Way and Delta Avenue. This option would also continue to expose the District to the risk of further watermain leaks from these two sections and costs associated with repairs.

Alternative a) is recommended.

4. **CONCLUSION**

Construction of Douglas Road Main No. 2 is planned to take place in stages to replace the aging Douglas Road Main No. 1 and to upgrade the water transmission capacity between the GVWD’s Vancouver Heights and Westburnco Reservoirs. Pre-purchase of steel pipe and valves for the Buckingham Heights and Delta Avenue Sections of this project was authorized by the Board in November 2005. Board authorization for expenditure of up to $8.9 million of budgeted capital funds for construction of these sections is requested to maintain the project schedule and to coordinate with the City of Burnaby’s road reconstruction program.

Attachment:

1. Drawing W-3071, X-034
To: Water Committee

From: Simon So
Civil, Mechanical Design and Construction Division Manager
Engineering and Construction Department

Date: January 25, 2006

Subject: Boundary Road Main No. 5 (North) Phase 2 – Pre-purchase of Steel Water Pipe

Recommendation:

That the GVWD Board authorize the expenditure of up to $8 million of budgeted capital funds for pre-purchase of steel water pipe for Boundary Road Main No. 5 (North) - Phase 2.

1. PURPOSE

To obtain Board authorization for the expenditure of budgeted capital funds for pre-purchase of steel water pipe for Boundary Road Main No. 5 (North) – Phase 2.

2. CONTEXT

As shown on Attachment No. 1, the proposed Boundary Road Main No. 5 comprises approximately 9,400 meters (30,800 feet) of 1800 mm (72-inch) diameter pipe from north of the GVWD’s Vancouver Heights Reservoir and Pump Station to the Central Park Reservoir and Pump Station in Burnaby. This main will replace the existing Boundary Road Mains No. 2 and 3, and enhance long-term water supply capability and operational reliability.

Boundary Road Mains No. 2 and 3, built in 1925 and 1930 respectively, are part of the major supply system conveying water from the Seymour Lake source to Central Park Reservoir and Pump Station. However, both mains have reached the end of their useful life and are in poor condition. In recent years both mains have been susceptible to leaks on a frequent basis which required excavation for repairs in the heavily traveled Boundary Road corridor raising system reliability and public safety concerns.

Considerable changes in system demand and operational requirements have also occurred since the construction of the GVWD’s existing transmission mains in the Boundary Road corridor. This includes the proposed operational changes required after the commissioning of the Seymour-Capilano Filtration Plant in 2008. These factors all contribute to the need to construct Boundary Road Main No. 5 to strengthen this critical transmission link in the GVWD system to meet the short and long term needs for water supply and operational reliability and flexibility.
The proposed phased construction plan for Boundary Road Main No. 5 is summarized as follows:

<table>
<thead>
<tr>
<th>Section</th>
<th>Length</th>
<th>Location</th>
<th>Construction Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>North (Phase 1)</td>
<td>3,150m</td>
<td>Eton St./Ingleton Ave. to Rupert St./First Ave.</td>
<td>2006</td>
</tr>
<tr>
<td>North (Phase 2)</td>
<td>3,310m</td>
<td>Rupert St. from First Ave. to 29th Ave. and Vancouver Heights Reservoir to Edinburgh St. /Ingleton Ave.</td>
<td>2006/07</td>
</tr>
<tr>
<td>South</td>
<td>2,940m</td>
<td>Rupert St./29th Ave. to Central Park Reservoir</td>
<td>2007/08</td>
</tr>
</tbody>
</table>

The total estimated construction cost for all sections is $52.0 million.

Route selection and preliminary design for the North section of this main has been completed and approved by the Cities of Vancouver and Burnaby. Construction of Phase 1 was approved by the Board in July 2005 and is scheduled to commence in March 2006 with completion in November 2006. Phase 2, which is the subject of this request, comprises approximately 3,310 metres (10,860 feet) of 1800 mm (72-inch) diameter steel pipe on Rupert Street as shown on Attachment No. 1. Detailed design is anticipated to be complete in August 2006 and construction is scheduled for October 2006 to August 2007.

A public consultation plan for Phase 2 is being developed to ensure that the public and business owners are informed about the purpose and associated impact of the project and consulted on ways to best mitigate those impacts.

Due to the long lead time (5-6 months) required to tender, award, manufacture, line/coat and deliver the large diameter steel pipe, this funding request for Phase 2 pipe supply is being brought forward at this time in order to maintain the project schedule. Steel prices have retracted about 15% from their peak in January-March, 2005. Current forecasts suggest a possible resurgence in prices in late 2006 or early 2007. These factors point to the whole of 2006 as a relatively good time for the GVRD to be buying steel and steel products.

The 2006 GVWD Budget includes $23 million for supply and installation of Boundary Road Main No. 5 (North) Phases 1 and 2. This funding request for expenditure of up to $8 million is to cover the cost of pre-purchase of steel pipe and includes a 20% contingency. In accordance with the approval process for capital projects, a separate funding request for construction of this section will be brought forward for approval later this year upon completion of detailed design and confirmation of the construction cost estimate.

3. ALTERNATIVES

a) Authorize the funding request and proceed with pre-purchase of steel water pipe. This alternative maintains the overall project schedule which is based on staged completion to ensure that Boundary Road Main No. 5 becomes operational in spring 2008 to coordinate with commissioning of the Seymour-Capilano Filtration Plant. Based on current forecasts for steel prices, 2006 is also a relatively good time for the GVWD to be buying steel products.
b) Defer the funding approval. This approach would delay the completion of this large diameter main and compromise the District's ability to meet its water supply obligations to its members during the summer of 2008, following commissioning of the Seymour-Capilano Filtration Plant. Based on current forecasts, delaying pipe pre-purchase could also expose the GVRD to higher steel prices.

Alternative a) is recommended.

4. CONCLUSION

Construction of Boundary Road Main No. 5, between the GVWD’s Vancouver Heights and Central Park Reservoirs, is being planned to take place in stages to upgrade the transmission capacity of the Seymour supply system. This main needs to be operational prior to the first peak demand period following the start-up of the Seymour-Capilano Filtration Plant in spring 2008. Construction of Phase 1 of Boundary Road Main No. 5 (North) was authorized by the Board in July 2005. Board authorization for the expenditure of up to $8 million of budgeted capital funds for the pre-purchase of steel water pipe for Phase 2 is requested in order to maintain the overall project schedule.

Attachment:
1. Drawing WF-2599, Sketch 46
To: Water Committee

From: Frank Huber
Engineering Support and Technical Services Division Manager
Engineering and Construction Department

Date: January 26, 2006

Subject: Coquitlam Ozone Power Supply Upgrade

Recommendation:

That the GVWD Board authorize the expenditure of up to $6.56 million of budgeted capital funds to construct a dedicated underground power line to the Coquitlam Ozone Disinfection Facility.

1. PURPOSE

To obtain authorization for the expenditure of budgeted capital funds for the construction of a dedicated underground power line to the Coquitlam Ozone Disinfection Facility in order to improve ozone treatment reliability.

2. CONTEXT

The Coquitlam Ozone Disinfection Facility was placed into service in mid-2000. Since commissioning, the facility has experienced numerous power system disruptions and disturbances that have resulted in the complete loss of the ozone treatment process used for primary disinfection. The original design of the ozone disinfection facility did not require or include either standby generation or uninterrupted power for the ozonation process. On average, for the period 2001 to 2005, the facility experienced 16 outages per year equating to 38 hours of loss of ozonation annually, or a 0.43% decrease in ozonation availability.

A review of the causes behind the power system problems identified the BC Hydro 25kV overhead electrical service feeding the facility as the primary problem. This electrical service is a multi-user service which starts at BC Hydro's Como Lake Substation south of the Lougheed Highway (see Attachment No. 1) and travels overhead on power poles along roadways and through heavily forested sections on its way to the ozone disinfection facility. BC Hydro records indicate that this service experiences more outages than should normally be expected due to the shared use and overhead exposure of this service.
Concern over the frequency and duration of the power system related ozonation outages was noted by the Chief Medical Health Officer (MHO) in 2003 and 2004. In June 2005 Dr. Blatherwick indicated that the installation of a reliable standby power source at the Coquitlam Ozone Disinfection Facility would be a condition of the GVWD’s operating permit in 2006 (see Attachment No. 2).

In 2004 it was determined that either a standby generation and UPS (Uninterruptible Power Supply) system, or a BC Hydro upgrade (dedicated underground service), are the options available to address power related problems at the ozonation facility. Based upon the 2001 to 2003 power outage experiences, it was estimated that either option could eliminate most of the power related ozonation availability losses. In March 2004 the GVWD Board approved design funds to investigate the two options further. The consulting firm of Westmar Consulting Engineers was subsequently engaged to conduct a predesign of the options to confirm their technical requirements, feasibility, and cost.

Further to this, in January 2005, the MHO’s recommended that the GVRD implement ultraviolet (UV) disinfection at Coquitlam by approximately 2009. At that time, UV will become the primary disinfection process for Coquitlam. Ozonation will be maintained to provide supplementary primary disinfection and reduces the cost of UV treatment. The future UV facility will require reliable power which is currently not available from the existing shared overhead power line.

Westmar observed that both the standby generation/UPS option and the BC Hydro dedicated underground service option were technically feasible, could address the power problems being experienced at the Ozonation facility, and were of similar capital cost. However the standby generation/UPS option was technically complex, difficult to integrate into the existing facility, required ongoing maintenance, and would provide no benefit to UV in the future. On the other hand, the BC Hydro dedicated underground service option was simple, required no maintenance or changes to the existing facility, and could provide reliable power for UV. In light of all of the available information, it was concluded that the dedicated underground service was the better of the two options.

Consequently, the GVWD engaged BC Hydro to complete the detailed design of the dedicated underground service. This design includes system reconfiguration, and 11.4 km of new and existing concrete encased underground duct banks and related cabling from the BC Hydro Como Lake Substation to the Coquitlam Ozone Disinfection Facility. Provision for connection of this service to the future UV facility in 2009 is also included. The dedicated underground power supply would be constructed by BC Hydro and their subcontractors commencing March 2006, and would be in service in early 2007. Funding approval in the amount of $6.56 million (including 10% contingency) is requested for this budgeted capital project under the Drinking Water Treatment - Capital program.

3. ALTERNATIVES

a) Authorize funding in the amount of up to $6.56 million to construct a dedicated underground BC Hydro power service to the Coquitlam Ozone Disinfection Facility. A dedicated underground service will improve ozone availability, address the concerns raised by the Chief Medical Health Officer and will also provide reliable power for the proposed UV facility at Coquitlam in 2009.
b) Defer Funding Approval – Deferral of funding approval results in continued power related ozonation availability problems at the Coquitlam Ozone Disinfection Facility, and does not address the concerns expressed by the Chief Medical Health Officer regarding this issue. An upgraded power supply will still need to be constructed before 2009 in order to meet the needs of future UV treatment.

Alternative a) is recommended.

4. CONCLUSION

The Coquitlam Ozone Disinfection Facility currently experiences ozonation losses as a result of power disturbances and outages in its overhead electrical service from BC Hydro. The Chief Medical Health Officer has noted that the frequency and duration of the ozonation losses related to the power system problems is of concern and needs to be addressed by the GVWD. This capital project is recommended for Board approval in order to address these concerns, and to prepare for future UV treatment at Coquitlam.

Attachments:
1. Location Plan
2. June 22, 2005 letter to GVWD from Vancouver Coastal Health
June 22, 2005

Mr. Johnny Carline
Commissioner, Greater Vancouver Water District
Greater Vancouver Regional District
4330 Kingsway
Burnaby, BC V5H 4G8

Dear Mr. Carline:

RE: 2005 Water Permit for the Greater Vancouver Water District

The 2005 Water System Operating Permit for the Greater Vancouver Water District has already been issued. Consistent with past practice and in recognition of the close collaboration we have on drinking water protection, I have not attached any conditions to the permit.

The Administrative Council of Medical Health Officers of the Lower Mainland has instructed that I inform you of certain conditions that we are contemplating attaching to the 2006 Water Permit. We usually give an operator some advance notice when we plan to add conditions to the permit. Since we work closely with your office and in particular with Mr. Bob Jones, Director of Water Quality Control for the GVRD, none of these conditions will come as a surprise.

The conditions being considered for 2006 are as follows:

**Disinfection**

The three GVWD water supplies will meet the most current Health Canada treatment guidelines with respect to log reductions for viruses, giardia, crypto and bacteria, as follows:

- **Capilano** – primary disinfection with chlorine until completion of the tunnel to the Seymour/Capilano water filtration plant (estimated for 2009). At that time, Capilano water will be filtered, followed by UV disinfection, pH adjustment and secondary disinfection with chlorine.

- **Seymour** – primary disinfection with chlorine and pH adjustment until completion of the Seymour/Capilano water filtration plant (estimated for 2008\(^1\)). At that time, Seymour water

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1 Filtration plant, although operational in early 2008, may not be able to deliver filtered water to all of the Seymour service area during the summer of 2008.
will be filtered, followed by UV disinfection, pH adjustment and secondary disinfection with chlorine.

- Coquitlam - primary disinfection with ozone (3 log Giardia inactivation) followed by pH adjustment and secondary disinfection with chlorine. Pre-design and design work on a standby power source at Coquitlam will be complete in 2005 and it is expected that a reliable standby power source will be in place and operational by the end of 2006. In addition, I understand that the addition of UV disinfection after ozonation, resulting in at least a 2 log inactivation of cryptosporidium, is being recommended in the Drinking Water Management Plan, which is expected to be considered by the GVRD Board in July.

**Construction Permits**

Construction Permit(s) will be obtained from the Public Health Engineer or the Drinking Water Officer for specific additions or changes to the GVRD drinking water system in accordance with the Drinking Water Protection Act.

**Water Quality Monitoring and Reporting Plan For The GVRD and Member Municipalities**

The GVRD will conduct the following activities in accordance with protocols recommended in the latest version of the Water Quality Monitoring and Reporting Plan for The GVRD and Member Municipalities:

- Immediate reporting of fecal coliform or E. coli positive treated water samples.
- Publication of an annual report on water quality.
- Emergency response planning

**Qualification Standards for Operators**

The GVRD will comply with the requirements of Section 12 of the Drinking Water Protection Regulation.

Yours truly,

[Signature]

F.J. Blatherwick, CM, CD, MD, FRCPC
Chief Medical Health Officer
Vancouver Coastal Health

*Promoting wellness. Ensuring care. Vancouver Coastal Health Authority*
To: Water Committee

From: Doug Neden, Water Treatment Engineering Division Manager
Engineering and Construction Department

Date: January 19, 2006

Subject: Seymour-Capilano Filtration Project – Project Status

Recommendation:
That the GVWD Board receive for information the report dated January 19, 2006 titled “Seymour-Capilano Filtration Project – Project Status”.

1. PURPOSE

To advise the Committee and Board of the status of the Seymour-Capilano Filtration Project to December 31, 2005.

2. CONTEXT

2.1 Implementation Status

a) Design: Detailed design for the project is substantially complete.

b) Materials and Equipment Procurement: The tunnel liner pipe, energy recovery turbine and some materials and equipment for the filtration plant remain to be procured.

c) Construction: All major construction contracts are well underway. The construction status for each major component of the project is summarized as follows:

i) Capilano Pumping Station (Kingston Construction Ltd.)

- Construction was substantially complete as of the end of December 2005, with some deficiencies and cleanup remaining.
- Interim operational testing of the eight large pumps remains to be done in early 2006.
- The station will be maintained in operational readiness for the completion of the twin tunnels needed to deliver water to and from the new filtration plant.
ii) **Energy Recovery Facility and Break Head Tank (Kingston Construction Ltd.)**

- Concrete for the Break Head Tank base slab and overflow structure is complete, and walls are being cast.
- GVRD’s proposal for energy recovery, including an $800,000 incentive grant, has been accepted by BC Hydro. Power generated from the excess pressure in the treated water tunnel will be delivered to the new Capilano Pumping Station thereby reducing the GVWD’s overall power requirement from BC Hydro.
- Overall completion is 35%, Break Head Tank projected completion is July 2006, and Energy Recovery Facility projected completion is July 2008.

iii) **Twin Tunnels (Bilfinger-Berger Canada Inc.)**

- Excavation of the 180 m deep Seymour access shaft was completed in November 2005, and work is proceeding on the starter chamber for the tunnel boring machines.
- Work continues 24 hours a day, seven days per week.
- Blasting noise levels continue to meet the DNV bylaw levels.
- GVRD’s Technical Advisory Board and the joint GVRD/Bilfinger-Berger Canada Inc. Dispute Review Board met on site in November and December, respectively.
- Monitoring of steel price indices continues, noting that steel prices have retracted from their peak in early 2005. Steel liner pipe will be tendered in the spring of 2006 for delivery commencing in January 2007.
- The two tunnel boring machines are scheduled to be installed in May and June, respectively.
- Overall completion is 18%, projected completion is December 2008.

iv) **Filtration Plant and Clearwells (NAC Constructors Ltd. and Graham Industrial Services Ltd.)**

- The filtration plant contractor continues to cast concrete floor slabs and walls. Most of the UV disinfection units have been delivered to site awaiting installation. Work on the post-treatment facility is also underway.
- Clearwells construction is nearly complete, including successful hydrostatic testing of the second of the two clearwell cells. The large diameter treated water pipelines to Seymour Mains No. 2 and 5 and the tunnel site boundary are complete. The contractor has demobilized two of the three stationary cranes, and work on deficiencies, backfilling and cleanup continues.
- Overall completion is 39%, projected completion is December 2007.

2.2 **Financial Status**

The project budget is summarized as follows:
### Seymour-Capilano Filtration Project Cost Summary

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Budget</th>
<th>Capital Expenditure Authorization</th>
<th>Cost Committed to Date</th>
<th>Projected Final Cost (See Notes 1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Project Management</td>
<td>$4,500,000</td>
<td>$4,500,000</td>
<td>$4,309,000</td>
<td>$4,500,000</td>
</tr>
<tr>
<td>Capilano Pumping Station/Energy Recovery</td>
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<td>$87,385,000</td>
<td>$62,395,400</td>
<td>$73,191,500</td>
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<tr>
<td>Twin Tunnels</td>
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<td>$194,130,000</td>
<td>$116,077,900</td>
<td>$171,305,400</td>
</tr>
<tr>
<td>Filtration Plant</td>
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<td>$307,900,000</td>
<td>$262,623,700</td>
<td>$306,949,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$600,000,000</strong></td>
<td><strong>$593,915,000</strong></td>
<td><strong>$445,406,000</strong></td>
<td><strong>$555,945,900</strong></td>
</tr>
</tbody>
</table>

**Notes:**
1. Projected Final Cost includes $15.5M 3% net GST (recoverable after February 1, 2004)
2. Provincial ($18M) and Federal/Provincial ($100M) infrastructure grants not included
3. BC Hydro filtration plant geoexchange ($100,000) and Capilano energy recovery ($800,000) grants not included.
4. Contingency remaining (to Board authorized level) = $38 million
5. Overall project completion: 35% to December 31, 2005.

### 2.3 Surplus on Capital Projects

At the September meeting of the Water Committee, there was some discussion with regard to the Budget as compared to the Projected Final Cost. It was noted that the project was forecast to complete under the $600 million budget and the Water Committee requested information as to District policy for surplus on capital projects.

As part of the annual financial process for establishing long term financial targets and setting annual budgets, cash flow estimates are made on all capital projects currently underway or planned. These estimates are used to calculate the projected debt costs that are then included in annual budgets and long range forecasts. Therefore, in the case of the SCFP, there is no anticipated surplus included in the water rate.

### 3. ALTERNATIVES

No alternatives presented.
4. CONCLUSION

This is the fourth quarterly status report for the construction phase of the Seymour-Capilano Filtration Project. Detailed design is substantially complete and all of the major construction contracts are well underway. Overall completion of the project is 35% as of the end of December 2005. The project continues to track within budget, with overall completion scheduled for the end of 2008.
To: Water Committee  
From: Tim Jervis, Manager  
Engineering & Construction Department  
Date: January 25, 2006  
Subject: Managers’ Report

Recommendation:

That the Committee receive for information the report dated January 25, 2006 titled “Managers’ Report”.

1. BC Hydro Coquitlam Dam Seismic Upgrade - Relocation of GVWD Infrastructure

To facilitate the seismic upgrade of BC Hydro’s Coquitlam Dam, GVWD infrastructure within the footprint of the new dam, is being relocated. The construction work has been underway since June 2005 and involves approximately 45 metres of new rock tunnel, 225 metres of large-diameter steel pipeline, a new valve chamber and tie-ins to the existing system. The budget for the construction work is $12 million and costs are fully recoverable from BC Hydro.

At the end of 2005, installation of the new pipeline and tunnel was substantially complete and work on the new valve chamber was about 90% complete. The tie-in work to the existing water system commenced on December 1, 2005 after the Coquitlam water supply system was shut down in mid-November. The pipeline tie-ins have been completed and tie-in of the new tunnel to the existing tunnel is currently underway. The tie-in work is planned for completion in early February and the Coquitlam water supply will be returned to service shortly thereafter.

Attachment:
1. Relocation of GVWD Infrastructure at Coquitlam Dam – Site Photo
Coquitlam Dam
Water Intake Relocation
To: Water Committee

From: Tim Jervis, Manager
Engineering & Construction Department

Date: February 1, 2006

Subject: 2006 Water Committee Meeting Dates

Recommendation:

That the Water Committee receive for information the report dated February 1, 2006 titled “2006 Water Committee Meeting Dates”.

Pursuant to the new Procedure Bylaw, committees must pass a resolution related to their meeting dates. Following are the proposed 2006 Water Committee meeting dates:

- February 8, 2006
- March 8, 2006
- April 12, 2006
- May 17, 2006
- June 14, 2006
- July 12, 2006
- September 13, 2006
- October 11, 2006
- November 15, 2006

All meetings are held on Wednesday at 9:00 a.m. in the 2nd floor Boardroom, 4330 Kingsway, Burnaby.
OCT 06 2005

Derek Corrigan  
Chair, GVRD Water Committee  
Greater Vancouver Regional District  
4330 Kingsway  
Burnaby BC V5H 4G8

Dear Mr. Corrigan:

Thank you for your September 23 letter on behalf of the GVRD Water Committee in which you request extending the provincial sales tax (PST) exemption for production machinery and equipment (M&E) to local governments. As you point out, this issue was originally raised by the Greater Vancouver Sewerage and Drainage District in 2003 and was considered by the then Minister of Finance during the preparation of the 2004 Provincial Budget. The decision at that time was not to extend the exemption because of competitive equity concerns between public and private sector power producers, the need to focus tax cuts on the private sector given limited financial resources and the legal requirement to balance the Budget in 2004/05.

However, I understand your concerns and would be pleased to reconsider this issue during the preparation of the 2006 Provincial Budget.

Thank you for writing.

Sincerely,

Carole Taylor

Minister