



MEMORANDUM

Policy and Planning Department

DATE: May 8th, 2007

FILE NO.: CP-19-02-018

TO: Toivo Allas; Fred Nenninger

CC:

FROM: Gary Venuti

RE: **GVWD Bulk Water Supply and GVW&DD Sewer Service to Anmore**

Water

Anmore is now indirectly supplied with GVWD water by way of a servicing agreement with Port Moody. Port Moody receives GVWD water from the District's Port Moody Main No. 2 after which it is boosted by its High Ridge pump station to their North Shore Reservoir. Water from the North Shore Reservoir is then boosted by Port Moody's Zone V pump Station to their Zone V reservoir which in turn provides Anmore with its water connection. Port Moody therefore supplies peak hour and fire fighting reservoir storage. The existing system is generally shown on the attached Figure 1.

The Port Moody mains connecting the reservoirs are relatively new and are designed to service residential areas. As a result they contain numerous residential service connections, fire hydrants and lateral main connections. If direct service is to be provided to Anmore using these facilities, the GVWD would have to obtain the following works:

1. High Ridge Pump Station which is rated at 128 liters per second
2. Zone V Pump Station (capacity unknown)
3. Zone V Reservoir (1MG)
4. Zone V Reservoir (size unknown)
5. 1600 meters of 500mm diameter water mains
6. 2300 meters of 350,300 and 250mm diameter watermains
7. Approximately 16 hydrants
8. Approximately 15 lateral connections.

In accordance with the District's Operation Policies and Design Criteria, lateral connections directly off GVWD supply lines are to be metered and include a check valve in order to prevent return water once it has left the GVWD system. This is required to prevent potentially contaminated water in the municipal system from returning to the transmission system and extending the contamination.

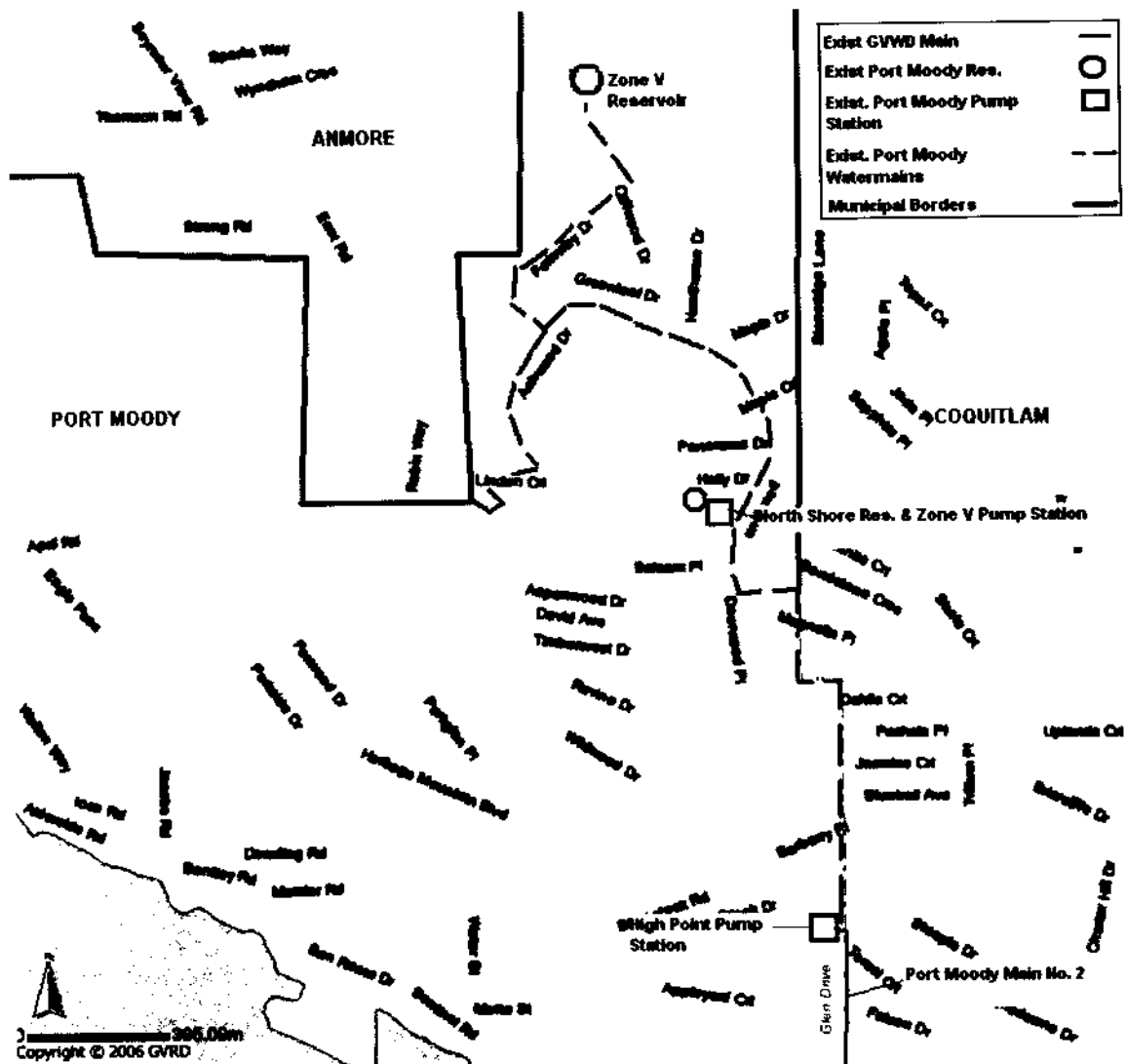


Fig. 1 Existing Anmore Servicing

In addition, the District requires individual municipalities to provide their own fire flows, peak hour flows and fire fighting service in general. The GVWD does not currently own or maintain fire hydrants on any system. Municipal owned storage is required to provide fire demand volume over and above the peak day demand since it is the District's practice to provide peak day supply only.

Meeting these objectives will not be possible with the GVWD purchasing all of the existing Port Moody system. To meet these guidelines, a proposed GVWD servicing scheme could work by assuming ownership of the High Ridge Pump Station and 2000 m of 500 and 600mm diameter watermains. The watermains would be the existing line on the pump discharge to David Avenue and along David Avenue to Forest Park Drive. A small pump station would then boost the supply to a new dedicated line to the existing Anmore connection. This configuration is shown on Figure 2.

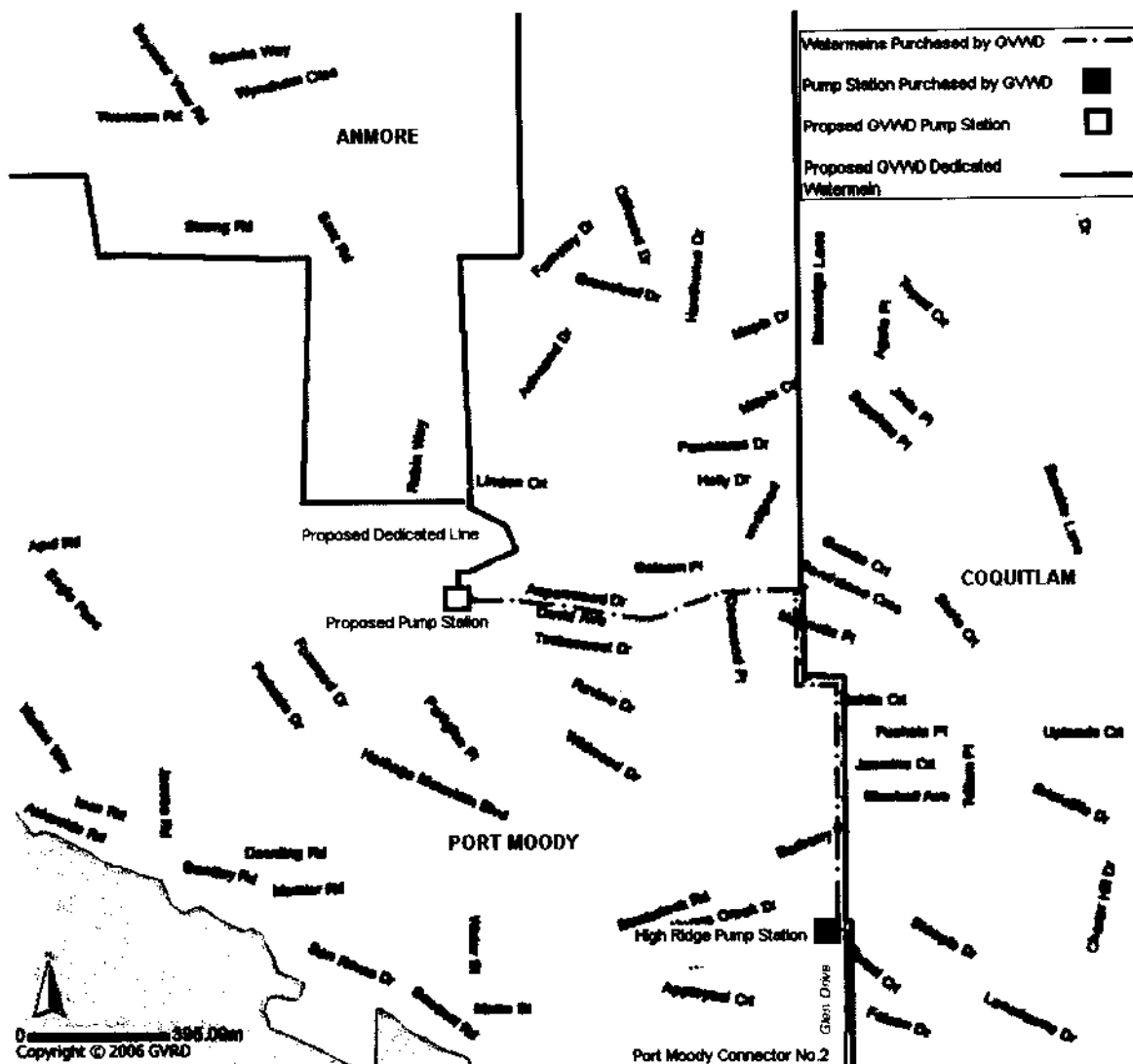


Fig. 2 Potential Anmore Servicing

Therefore, the estimated cost of providing bulk GVWD water supply directly to Anmore must include the capital cost of a pump station and dedicated line, the transfer value of the existing mains and pump station, the removal of all hydrants and their transfer to Port Moody's system and the disconnection and looping of all laterals. These laterals will be required to be looped within the Port Moody system in order to maintain their minimum service requirements such as pressure and flows.

Reservoir storage will no longer be available to Anmore under this scenario. Anmore would need to install their own storage to provide peak hour, emergency and fire demand.

Transfer Costs

GVWD ownership of these works would be subject to negotiation with Port Moody. Operationally, the GVWD would have to absorb the cost of pumping the water to Anmore and again to Port Moody.

The total estimated capital costs will be generally as follows:

Description	
1. Proposed Pump Station	\$1,000,000
2. Water main extensions from David Avenue	\$200,000
3. Purchase the High Ridge Pump Station	\$600,000
4. Purchase 2000 meters of 500 & 600mm diameter Water mains	\$750,000
5. Removal of laterals and relocation of hydrants	\$450,000
Total	\$3,000,000

The annual average water demand for Anmore is currently about 350,000 cubic meters per year and is expected to grow to 650,000 cubic meters. Using a 5% financing rate and a 20 year payback period, the cost of each cubic meter of water would be \$0.67 in the short term just to finance the capital costs alone.

With the GVWD current bulk water rate of \$.30 per cu. meter, the total cost to provide bulk water directly to Anmore would be about \$0.97 per cu. meter. This does not include the capital costs of improvements required within Anmore such as providing storage. These will add at least another \$1,000,000 of direct costs to Anmore.

Sewer

The City of Port Moody's North Slope Sewer design anticipated an expansion of sewer service to the Anmore area. The sewer along Heritage Mountain Boulevard is oversized but only extends as far north as Turner Creek Drive as shown on the following Fig. 3. This sewer serves the upper elevations of Port Moody and connects to the GVS&DD Port Moody Interceptor.

An extension of the Heritage Mountain Sewer along Foxwood Drive as shown is the most efficient method of servicing Anmore. This would allow gravity service to most of the south end of East Road in Anmore. However, areas west and north would probably have to be pumped. A right-of-way would be required through the existing school site or bordering green space to get to the Anmore border.

The estimated cost to complete this off-site extension is in the general order of \$700,000 and is subject to agreement with Port Moody.

Alternately, as in the water system described above and subject to negotiation, the Port Moody system could potentially be purchased by the GVS&DD and the costs recovered from Anmore. The value of the existing system and extension is assumed to be in the order of \$3.5 million. Using a 5% financing rate and a 20 year payback period, the cost of sewer servicing to Anmore just to pay the capital cost would be \$280,000 per annum.

These estimates do not include the improvements required on the Anmore side or the annual sewer utility rate payable to the GVS&DD.

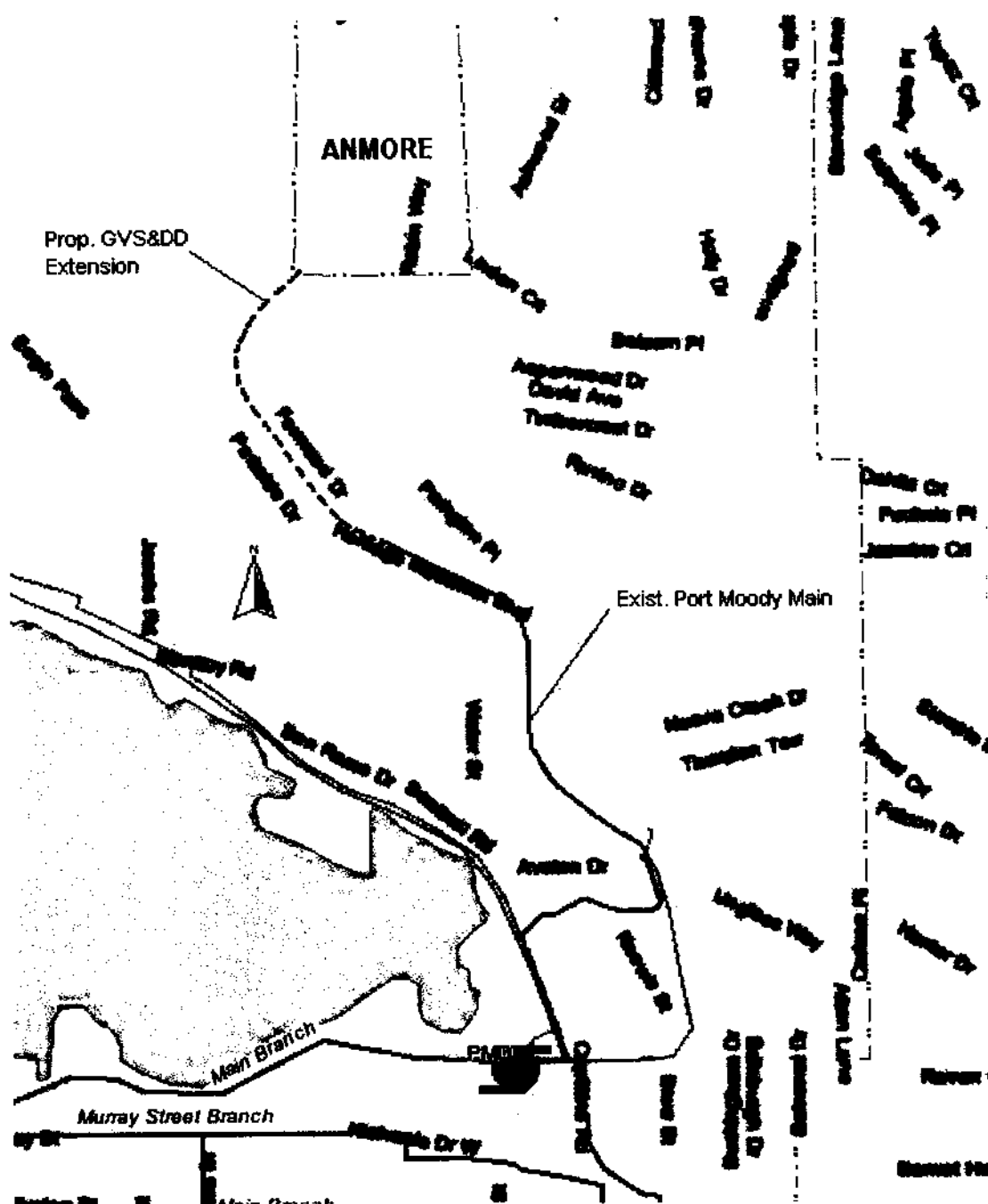


Fig. 3 Potential Sewer Service Extension