

**VILLAGE OF PEMBERTON  
-COMMITTEE OF THE WHOLE MEETING AGENDA-**

**Agenda** for the **Committee of the Whole** of Council of the Village of Pemberton to be held Tuesday, December 18, 2007 at 10:00 a.m. in Council Office, 7400 Prospect Street.

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	<b>Page No.</b>
<b>1. CALL TO ORDER</b>	
<b>2. SECONDARY SUITE – STATUTORY DECLARATION &amp; INSPECTION PROGRAM</b>	2
<b>Recommendation:</b> THAT the Letter to Residents, Statutory Declaration and Program Brochure be received for Information.	
<b>3. WATER RATE STUDY REPORT</b>	6
<b>Recommendation:</b> For discussion	
<b>4. IN CAMERA</b>	
THAT pursuant to Section 90 (1) (k) of the Community Charter, the Council of the Village of Pemberton serves notice to hold an In-Camera Meeting on today's date for the purpose of dealing with matters of which the public shall be excluded from attending.	
<b>5. TERMINATION</b>	



Village of

December 12, 2007

**Re: NEW 2008 Utility Billing Procedures: Statutory Declaration and Inspection Program**

Dear Sir/Madam,

Our records indicate that you are the registered owner(s) of the property located at 5 1450 Vine Rd, Pemberton, B.C.

The Village of Pemberton has implemented a *Statutory Declaration and Inspection Program* to better provide for fair and equitable apportionment of the cost of operating our water and sewer utilities. The purpose of this program is to help us accurately identify those residences who **do not** have secondary suites so that we can ensure these residences continue to pay the lower single family sewer and water utility rate. For the purpose of this program, a secondary suite is defined as a self contained unit that is located within the same building as the principle use, and is provided with a separate entrance.

*If you **DO NOT** have a secondary suite:*

Please complete the enclosed Statutory Declaration and return it to the Village office prior to December 31, 2007. An inspection will be scheduled of all residences where owners have submitted a Statutory Declaration. Inspections will be completed by January 15<sup>th</sup>, 2008.

If you **HAVE** a secondary suite, whether occupied or not, no action is required other than payment of your utilities once received. Please note that payment of the additional utility fee in no way legalizes the existence of a suite with respect to any covenant or Village zoning and building bylaws.

Please take the time to review the enclosed brochure that further outlines important specifics of the Statutory Declaration & Inspection Program.

Thank you for your assistance, patience and co-operation.

Sincerely,

**VILLAGE OF PEMBERTON**

Nikki Gilmore  
Manager of Finance

Encl.



Village of

P.O. Box 100, 7400 Prospect St.  
Pemberton, BC V0N 2L0  
Phone: 1-604-894-6135  
Fax: 1-604-894-6136  
e-mail: [admin@pemberton.ca](mailto:admin@pemberton.ca)  
website: [www.pemberton.ca](http://www.pemberton.ca)

## STATUTORY DECLARATION

I, \_\_\_\_\_, the registered owner of the Lands at \_\_\_\_\_,  
(owner name) (civic address)  
Pemberton, British Columbia, do hereby make oath and declare that there is no secondary suite in  
existence in or on the Lands.

I make this statutory declaration under oath with the intention and knowledge that it is legally binding  
on me and will be relied on by the Village of Pemberton.

\_\_\_\_\_  
Print Name – Property Owner

\_\_\_\_\_  
Signature – Property owner

Statutory Declarations may be forwarded to the  
Village Office by:

Mail: P.O. Box 100  
Pemberton, B.C.  
V0N 2L0

Fax: (604) 894-6136  
or  
Email: [admin@pemberton.ca](mailto:admin@pemberton.ca)

<u>For Office Use Only</u>	
Roll #:	_____
Date Received:	_____
Finance:	
	Increased decreased charges (Circle)
	Changed tax code to: _____
	Date changed: _____
Development Services:	
	Inspection Date: _____

# QUICK SUMMARY

Your action is required to ensure you continue paying the lowest water and sewer utility amount possible.

- If you **DO NOT** have a secondary suite, please complete and return a Statutory Declaration to the Village Office on or before **December 31, 2007**.

- Upon receiving your Statutory Declaration, we will contact you to schedule an inspection. **Inspections will be completed by January 15, 2008.**

- Once the Village Inspector confirms that no secondary suite exists, your water and sewer rates will be adjusted accordingly.

- Other than payment of your utilities, **no action is required if you do have a secondary suite.**

- Payment of the additional utility fee in no way legalizes the existence of a suite with respect to any covenant or Village bylaws.

**THANK YOU**  
for your assistance,  
patience & cooperation.

**For more info  
please contact:**

**VILLAGE OF PEMBERTON**  
PO Box 100 | 7400 Prospect St.  
Pemberton, BC V0N 2L0  
P: (604) 894.6135  
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W: [www.pemberton.ca](http://www.pemberton.ca)

Village of



## Statutory Declaration & Inspection Program

Important information about  
changes to Village of Pemberton  
**Utility Billing Procedures**

**YOUR ACTION IS REQUIRED**  
to ensure you continue  
paying a lower water and  
sewer utility rate.

# ABOUT the Program

You certainly don't want to pay more than your household's fair and equitable share of the operation of our Village's water and sewer utilities. We don't want you to pay more either, but the existence of secondary suites within some Village residences has made it difficult to determine who should be paying single family rates and who should not.

The purpose of this Program is to help us accurately identify those residences who DO NOT have secondary suites so that we can ensure these single family without suite residences continue to pay a lower sewer and water utility rate.

**For the purpose of this program, a secondary suite is defined as either a conforming or non-conforming self contained unit that is located within the same building as the principle use, and is provided with a separate entrance.**

We are not using this program as a method of "cracking down" on non-conforming suites, but rather to ensure that the cost of additional demand on Village services created by secondary suites is shared fairly and equitably among those residences that have them.

Please note that payment of the additional utility fee in no way legalizes the existence of a suite with respect to any covenant or Village zoning and building bylaws.

# WHAT DO I NEED TO DO?

**If you DO NOT have a secondary suite**  
If you DO NOT have a secondary suite, please complete the enclosed Statutory Declaration and return it to the Village Office prior to December 31, 2007.

Statutory Declarations can be mailed, faxed, or emailed to appropriate Village number/address, located on the back of this brochure.

**If you HAVE a secondary suite**  
If you HAVE a secondary suite, whether occupied or not, no action is required other than payment of your utilities. 2008 utility bills can be expected at the end of January.

**If you do not submit a Statutory Declaration**, or we do not hear from you by December 31, 2007, your water and sewer utility bill will include an additional user fee to reflect both a single family residence and a secondary suite.

**Once the Village has received your Statutory Declaration**, we will contact you to schedule an inspection to confirm that no secondary suite exists. You will not be charged for the inspection, and the inspection will not cover any other issues beyond the confirmation that no suite exists.

Inspections will be completed by January 15, 2008. Once the Village inspector confirms that no suite exists, water and sewer user fees for the property will be adjusted accordingly in our records and on your annual utilities bill.

# ADDITIONAL Information

If a Statutory Declaration is signed and the inspector discovers that a suite is in fact in existence, whether occupied or not, the property owner will be charged a water & sewer rate to reflect both the single family residence and the secondary suite, plus a penalty in the amount of \$711.57.

## Utility Rates

Current 2007 utility rates:

- Single Family Residence: \$ 711.57
- Single Family Residence plus Suite: \$ 1,067.24

Utility rates generally fluctuate annually, usually by an amount to offset the cost of living increase. Rates for 2008 have not yet been set, but the Village will be introducing a new rate structure for 2008 based on a full cost recovery methodology.

The new 2008 utilities rate structure is an outcome of the *Cost-Benefit Analysis for Water Metering and Preliminary Water Rates Analysis Reports*, prepared for the Village by Earth-Tech Consultants. Both reports are available online at [www.penberton.ca](http://www.penberton.ca). The rationale is to determine a rate structure that will better support a transition to water metering.

Additional information regarding the 2008 rate structure will be made available in mid-December, 2007.

# Village of Pemberton

## Water Rate Study Report

**Prepared for:**

Village of Pemberton  
PO Box 100, 7400 Prospect Street  
Pemberton, BC  
V0N 2L0

**Prepared by:**

Earth Tech (Canada) Inc.  
Suite 600, 1901 Rosser Street  
Burnaby, BC  
V5C 6S3

**Project No. 102939 (03)**

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DRAFT

## 1. EXECUTIVE SUMMARY

The Village of Pemberton has committed to establishing a new water rate structure that embodies the following principles:

- A commitment to utilize full cost recovery in the financial and utility management of the water system
- Water efficiency and stewardship of water resources
- Equity in rates, based on the user pay principle

The Village is also keen to ensure that customers outside the Village boundaries are paying their fair share of the true costs of the water system, rather than only a partial contribution to these costs.

The development of new metered water rates for the Village has followed the guidelines of the Infraguide best practice document “Water and Sewer Rates: Full Cost Recovery”. This process is grounded in the determination of the full costs associated with the operations, maintenance and capital investment of the water system, and the recovery of those costs through water rates where possible. The level of detail for information required to precisely adhere to this process is considerable, and there are some instances where assumptions were made in the absence of available information from the Village. Where appropriate, trends and rate ranges for other communities in BC were used to support these assumptions, as these are continually benchmarked by Earth Tech.

Earth Tech embarked on the process of establishing a new rate structure by:

- Updating the estimated full system costs, through a review of previously completed work and the valuation of the existing system
- Developing a strategy to prioritize the implementation of a metering program through a phased approach, beginning with ICI customers and strata complexes, along with a voluntary metering program for single family residential customers
- Recommending a phase approach to implementing full cost recovery, to facilitate the transition from the existing flat rate system
- Establishing rates for residential, commercial and bulk water customers, in keeping with the best practice approach and the recognized limitations in the available information.

Proposed metered and unmetered rates are summarized in the table below:

**Table 1: Proposed Metered and Unmetered Rates**

Customer Type	Fixed Charge	Volumetric Rate
<b>Metered Customers</b>		
Residential - Single Family	\$45/year	\$0.62 per m <sup>3</sup>
Residential - Single Family with Secondary Suite	\$67.50/year	\$0.62 per m <sup>3</sup>
Institutional, Commercial Industrial	\$45	\$0.62 per m <sup>3</sup>
PNID Bulk Water & Outside Boundary Customers	\$0	\$1.02 per m <sup>3</sup>
<b>Unmetered Flat Rate Customers</b>		
Residential - Single Family	\$354	
Residential - Single Family with Secondary Suite	\$531	

As 2008 will be a transition and implementation year for the Village, it is anticipated that the Village will need to work with both the newly proposed rates for early transitioning customers, as well as maintain the existing structure for customers who will not have meters within the first year. Public consultation to build support for this new approach will also be an important aspect of the transition, one that we understand the Village has already begun.

Earth Tech recognizes that Village staff have begun to address some of the information gaps, and once these issues have been addressed, the Village will be able more closely follow best practices. Earth Tech recommends that the Village continue to advance the recommended actions outlined in previous reports, as this will support the evolution of more robust rates over time.

## 2. BACKGROUND

The Village of Pemberton has recognized that recent growth of the community, as well as limited water supply capacity, have the potential to impact the community significantly. Since 2004, the Village has been exploring options for reducing water consumption. Aspects that are being considered by the Village include:

- Business case for a universal metering program.
- Other options for implementing metering
- Water rate review

Earth Tech (Canada) Inc. (Earth Tech) was commissioned by the Village to undertake a cost-benefit analysis of a universal water metering program for the Village. One outcome of that work was the recommendation that the Village review its current water rate structure, with a view to determining a rate structure that would better support the transition to metering.

In November 2007, Earth Tech then proceeded to review the existing rate structure, with an approach that was anchored in the best practices for water rate setting as outlined in the Infraguide document "Water and Sewer Rates: Full Cost Recovery". At its core, this best practice guide is geared towards ensuring that funding for municipal water infrastructure is based on a full cost recovery approach, in order to provide a funding model that can be sustainable in the long-term.

Council received and reviewed this report in November, and subsequently engaged Earth Tech to review rates in greater detail, with a view to developing a new metered rate structure. This report reflects the outcomes of this stage of the project, and also incorporates some of the recommendations outlined in the earlier reports from October and November 2007.

## 3. PROJECT DIRECTION & SCOPE

The phased nature of this project has provided Village Council and staff with an opportunity to review recommendations in stages, and to endorse particular directions, which in turn have influenced the latter phases of the project. Of particular note were the following actions adopted by Council:

### October 2007

- Implementation of a voluntary residential metering program
- Implementation of a program to meter all ICI customers, and associated review of ICI sector rates to support a metered system for this sector

- Commitment to review and refine both metered and unmetered water rates for implementation in 2008, to support the implementation of the foregoing metering programs

#### November 2007

- Endorsed a commitment to utilize full cost recovery in the financial and utility management of the water system
- Adopted the following goals with respect to the establishment of a new water rate structure - Full cost recovery, Water efficiency, Equity/user pay.
- Support for the establishment of a water rate structure that would:
  - Encourage boundary restructure, by reflecting the true cost of services provided to customers outside the Village, such that outside users who are using selected services only are subject to a rate structure that will encourage them to support a restructuring of the boundaries.
  - Support agricultural uses of water within the Village

Through our discussions with Village staff, and in acknowledgement of these directions from Council, the scope of this phase of the project was determined to consist of the following tasks:

- Estimate the value of the existing water system infrastructure in the Village, and determine what role renewal and rehabilitation of this existing infrastructure should play in a new water rate structure
- Develop a strategy for the voluntary implementation of residential metering, and the targeted (mandatory) metering of the ICI sector
- Develop metered, unmetered and bulk water rates for implementation in 2008

## **4. APPROACH TO THE PROJECT**

As with the previous analysis, the approach outlined in the Infraguide document “Water and Sewer Rates: Full Cost Recovery” was used as a basis for the establishment of the water rates. The Infraguide document outlines a nine-step process for water rate establishment, that encompasses the determination of goals or objectives for the rate setting plan, the identification and estimation of full costs for the water system, the identification of revenue sources and financing, followed by the establishment of appropriate rates.

Information to support some of these steps is readily available; however, in other cases, Earth Tech was required to make assumptions in order to proceed. Where appropriate, we have identified these assumptions, and highlighted future actions for the Village.

## 5. GOALS FOR NEW WATER RATE STRUCTURE

The establishment of goals for the rate setting structure is the first step in the Infraguide process. Based on discussions with Village staff, and the endorsements of Council outlined in the previous section, the following were identified as the goals for the Village:

- Provide sufficient funding for the water system, based on the principles of full cost recovery
- Provide equitable basis for charging customers within groups or categories
- Support boundary expansion by charging customers outside the Village boundaries at the true cost of providing water supply services
- Facilitate transition to metered service by creating a financial incentive for voluntary metering
- Promote water conservation through a water rate structure that is based on consumption

These goals were used to guide decisions throughout the project.

## 6. IDENTIFICATION OF FULL COSTS

For the Village of Pemberton, the full costs of the system were determined to comprise of the following elements:

- Capital costs related to new or existing infrastructure, in terms of:
  - Upgrades – these are costs associated with improvements to the existing system, and would include aspects such as the implementation of the metering program, improvements to water quality, water source protection, or pressure adjustments for fire protection.
  - Expansion – these are costs associated with the expansion of the existing system into new areas, and are typically driven by new development, and financed by the developer. The Village may collect development cost charges to pay for expansions to the existing system in order to meet these new demands.
  - Renewal & Rehabilitation – these costs are to replace components of the existing system that may fail or reach the end of their useful life.
- Operations, Maintenance and Administration costs incurred in the day to day operation of the system
- Debt financing, legal fees or other costs of this nature

If full cost recovery principles are strictly applied, all these costs should be fully funded through water rates or other specifically designated water utility fees (e.g. connection charges, etc.). Currently the Village funds the operations and maintenance of the system through a combination of water rates, fees and charges, revenue from customers outside the Village boundaries and general tax revenues. The Village's share (non-developer) of capital improvement or expansion costs is typically funded through loans and grant funding. In order to transition to a full cost recovery system, it was therefore necessary to estimate the various component costs, and determine their impact on water rates in a full cost recovery scenario. The following sections outline Earth Tech's approach to estimating these cost components.

## 7. CAPITAL COSTS

Capital costs considered for the Village included the items, as outlined in Table 1 below. This list was based on known capital upgrade and expansion requirements as identified in the Water System Capacity Study (Associated Engineering Ltd., May 2007), as well as our understanding of the existing system.

**Table 2: Classification of Capital Costs**

Item Description	Classification
Groundwater supply conditioning & disinfection	Upgrade
Village Core Water Distribution System Looping	Upgrade
Implementation of Metering Program	Upgrade
Industrial Park Water Supply	Expansion
Benchlands Development	Expansion
Other New Development	Expansion
Repairs and replacement of existing system components over time	Renewal & Rehabilitation

Once these had been identified, the next phase of the project involved the estimation of costs associated with each of these, to determine potential impacts on the water rates.

### 7.1 Future Capital Upgrades and System Expansions

#### 7.1.1 System Capacity Infrastructure Costs

The known future expansion and upgrade work related to overall system capacity infrastructure (not including universal metering) is valued at approximately \$3.8 million dollars, based on the Water System Capacity Study conducted by Associated Engineering Ltd. (May 2007). These costs have been classified as upgrades or expansion in Table 2.

**Table 3: Estimated Future Capital Upgrade & Expansion Costs**

Item Description	Estimated Cost	Classification	Estimated Time Frame
Groundwater supply conditioning & disinfection	\$593,600	Upgrade	5 years
Industrial Park Water Supply	\$1,732,640	Expansion	5+ years
Village Core Water Distribution System Looping	\$619,150	Upgrade	5-10 years
Benchlands & Other Development	\$902,460	Expansion	3 – 10+ years
<b>Total Capital Funding Required</b>	<b>\$3,847,850</b>		

Table 2 also provides estimated time frames during which it is expected that this new infrastructure will need to be constructed. Although some portion of the required funding is likely to come from development cost charges, e.g. Benchlands or other new development, it is likely that the Village will finance some or most of this expenditure through loans or grants. In a full cost recovery scenario, funding for this work would be raised through water rates having been paid into a reserve, or borrowed with the expectation that loan repayment costs would be met through water rate revenues.

In order to determine the potential burden on future water rates that would result from the need to secure this capital, it was assumed that all of the costs, with the exception of the Benchlands Development costs would be funded by borrowing over a 15-year term at a 6% interest rate. This results in an annual loan repayment of approximately \$303,300.

Given the fact that this expenditure is most likely to occur at least five years from the present, Earth Tech recommends that these costs are not incorporated into the new water rate model at this time, in essence opting to not invoke a full cost recovery scenario for this future cost. This would allow the Village to delay a rapid increase in rates. However, it is important to recognize that this deferral should be mitigated to some extent by:

- The establishment of a Capital Reserve Fund and the initiation of contributions to the reserve to offset the amount to be borrowed
- A commitment to revisit the water rate model within the next five years to review this exclusion.

### 7.1.2 Metering Program Implementation Costs

The cost for the implementation of the proposed metering program also would be considered as a capital upgrade. However, estimating a precise cost for this program is not feasible at this time since the number and size of existing water services are unknown and cannot be determined by the available information. In particular, the metering of multi-family units may

present a challenge. Some strata complexes may be constructed in such a way that allows for individual metering, whereas others may only necessitate a single bulk meter to the property. The Village will need to confirm on a case-by-case basis the ability to individually meter and the preference for individual vs. bulk metering. This information gap has implications for overall costs since the cost of water meter installations can range from a few hundred dollars to tens of thousands of dollars based on the size, fire flow requirements, and installation location (i.e. pit installations or in existing buildings).

In keeping with Council's endorsement of a targeted ICI and strata development metering program, and with the absence of detailed meter requirements, Earth Tech elected to estimate metering costs for these customers as a group, based on 97 service connections estimated from Village records. A review of the characteristics of the strata complexes within the Village also revealed that there are some which combine commercial and multi-family residential units. It was further assumed that all multi-family residential strata complexes could be serviced with one large meter...This resulted in a total estimated capital cost of \$257,000 to meter these three groups, which when amortized over the ten-year expected life of the meters, results in an additional \$35,000 per year.

Given that the Village intends to transition to a metered system for these groups as a priority in 2008, Earth Tech recommends that this cost be incorporated into the metered rate structure, which would allow the cost of the meters to be recouped through rates, in alignment with the full cost recovery policy. However, since 2008 and possibly 2009 may be transition years during which the full complement of meters for these three groups will be installed, it will be necessary for the Village to budget to supplement this \$35,000 from other revenue sources such as grant funding, during the transition period.

It is also important to note that the metering cost is an estimate only. At the point when meters are actually installed, there will be a need to revisit this estimate, and the associated water rate structure, to account for the actual costs of meter installation.

## **7.2 Renewal & Rehabilitation Costs**

Renewal and rehabilitation costs will be directly related to the valuation of the existing system, its condition and age, and the remaining useful life of the various system components. According to the best practice recommendations, the development of an asset management plan is a critical step in determining life cycle capital costs. Asset management plans are typically required for both the facilities (e.g. pumps, wells, reservoirs, and water treatment plants), and the linear infrastructure (water mains, hydrants, connections, valves and manholes). In the absence of a detailed asset inventory, maintenance history and current condition assessment, Earth Tech undertook a high-level valuation of the existing system, in order to determine the capital cost component that should be allocated for renewal and replacement.

### 7.2.1 Replacement Cost Estimate for Existing System

The Village of Pemberton's existing Waterworks infrastructure is valued at approximately \$15.3 million dollars and is relatively new in age. The true value of the system is highly contingent on the existing condition and its past maintenance practices. To determine the condition of the existing system and the adequacy of the maintenance funding a detailed infrastructure asset inventory and condition assessment must be performed.

A high level "Class D" estimate summary of the Villages existing assets is described in Table 3. This summary was derived by speaking to village staff, researching past reports, scaling drawings, making assumptions, and applying conceptual unit rate estimates. Table 3 shows the estimated component counts for each asset category. These counts have varying levels of accuracy, as some were derived from guesstimates, while others were estimated from existing drawings and reports, or confirmed by the Village of Pemberton's staff. Therefore, it is important to recognize, that this valuation may need adjustment as the Village pursues its asset inventory.

**Table 4: Valuation of Existing Water System Infrastructure**

Asset Description	Estimated Component Count	Average Replacement Cost (\$)	Replacement Total Cost (\$)
Service Connections (count)	276	\$ 6,500	\$1,472,000
Water Meters (various sizes)	28	\$3,807	\$107,000
Fire Hydrants	80	\$ 5,700	\$456,000
Pressure Regulating Stations	1	\$ 75,000	\$75,000
Valves	300	\$ 1,100	\$330,000
Mains (metres)	24,500	\$ 445	\$10,900,000
Groundwater Wells	3	\$ 300,000	\$ 900,000
Reservoir	1	\$ 1,000,000	\$1,000,000
<b>Total Existing Infrastructure Value</b>			<b>\$ 15,240,000</b>

### 7.2.2 Inclusion of Future Infrastructure in Replacement Capital Estimate

It is recognized that some of this infrastructure will be initially funded by developers, but will ultimately be turned over to the Village for long-term operation, rehabilitation and then replacement at the end of its useful life.

Since much of this development is likely to occur in a relatively short period of time, the total replacement value for the system should account for these planned upgrades and expansions, as outlined in Section 6.1. Therefore, for the purposes of determining renewal and replacement costs, the following amounts were used.

**Table 5: Total Value for Renewal & Rehabilitation Estimation**

Item Description	Estimated Capital Value or Cost
Total Future Expansions & Upgrades	\$3,847,850
Metering Program Implementation Costs	\$257,000
Valuation of Existing System	\$15,240,000
<b>Total Value for Renewal &amp; Rehabilitation Estimation</b>	<b>\$19,344,850</b>

This total value should be considered a high-level conceptual cost estimate only, based on the data limitations outlined in previous sections.

### 7.2.3 Schedule for Renewal & Rehabilitation Expenditure

Based on our discussions with Village staff, and our review of the “as-built” drawings of the existing system, it was determined that the majority of the existing infrastructure appears to be relatively new (less than 30 years old), and thus still in its first half of its expected life. While specific replacement needs can only be accurately determined through condition assessments, it is reasonable, based on the age of installation, to assume that the majority of the infrastructure still has 20 years or more remaining useful life. On the other hand, it is also known that some components may be closer to the end of their useful life. In addition, there are certain system components which would result in major service disruption in the event of failure, e.g. the reservoir, and the Village should therefore be prudent in securing reserve funds for the replacement of these system components. For these reasons, an average 50-year replacement life cycle was used to estimate the required amounts for renewal and rehabilitation funding.

This is a conservative estimate for an average water system life cycle as it is based on uncertainties about the existing ground conditions, installation practices, maintenance & repair history, current maintenance programs and asset installation dates. It is possible that with better information, this replacement cost could be spread over a longer period.

Using the \$19.5 million total as the basis of the total replacement estimate, and assuming that 1/50<sup>th</sup> of this amount would need to be applied to a reserve each year, the renewal and rehabilitation component was estimated at an average of \$425,000 per year, over the next five years. This rate would need to be reassessed over time as the value of the system changed.

Earth Tech recognizes that the Village has not traditionally funded renewal and rehabilitation from water rates or reserves, although some work in the past may have been funded by loans. Under a true full cost recovery scenario, the addition of this \$425,000 would be expected to be recovered through water rates, with renewal and rehabilitation capital allocations going into a dedicated reserve.

It is clear that the addition of this cost component would result in a significant cost burden on the water customers, essentially doubling the annual budget allocations. For this reason, Earth Tech recommends that full cost recovery should be phased in over time, such that contributions to renewal and rehabilitation reserves would be gradually increased, and reflected in gradual increases to the water rates. In the remainder of the report, no renewal and rehabilitation capital has been included in the water rate determination.

### 7.3 Summary of Capital Cost Components

Table 5 summarizes the various cost components estimated for the Village, and shows which elements are recommended for inclusion in the water rate structure.

**Table 6: Summary of Capital Cost Components**

Item Description	Estimated Total Capital Value/Cost	Annual Full Cost Recovery Estimate	Impact on Water Rates
Total Future Expansions & Upgrades	\$3,847,850	\$303,300	Defer impact 5- 10 years
Metering Program Implementation Costs	\$257,000	\$35,000	\$35,000
Valuation of Existing System	\$15,240,000	\$425,000	Defer Impact 3-5 years
<b>Totals</b>	<b>\$19,344,850</b>	<b>\$763,300</b>	<b>\$35,000</b>

## 8. OPERATIONS, MAINTENANCE & ADMINISTRATION COSTS

Operations, maintenance and administration costs include expenditures for the following types of items or activities:

- Staff and contract services
- Supplies, equipment and utilities
- Regulatory compliance, e.g. testing costs, permit fees
- Studies, consulting services, research and site investigation.
- Administration, e.g. billing, accounts management, customer outreach.

The 2007 operations budget was used to estimate the operations, maintenance and administration (OM&A) costs, as summarized in Table 6.

**Table 7: Operations, Maintenance & Administration Costs**

Description	2007 Budget
<i>Direct OM&amp;A</i>	
Water - Administration	\$196,952

Water - Other Services	\$0
Water - Maintenance	\$218,465
Water - Connections O/S Boundaries	\$0
Water - Engineering	\$5,000
<i>Indirect OM&amp;A</i>	
Water Purchase (Industrial Park)	\$7,200
Water Purchases (SLRD)	\$5,000
<b>Total OM&amp;A</b>	<b>\$432,617</b>

It should be noted that the total OM&A costs outlined above are based on budget information provided by the Village, and does not take into account any operations and maintenance activities which may have been deferred and therefore not reflected in the annual budgets.

## 9. FINANCIAL COSTS

The 2007 annual budget was again the source for determining the financial costs in Table 7.

**Table 8: Financial Costs**

Description	2007 Budget
Water - Interest Expense	\$39,227
Water - Interim Debt Charge	\$10,000
Water - Principal Payment	\$22,863
<b>Total Financial Costs</b>	<b>\$72,090</b>

Table 8 summarizes the estimated annual “full costs” for the Village’s water system, and identifies those to be incorporated into the water rate structure.

**Table 9: Estimated Full Costs for Water System**

Item Description	Annual Full Cost Recovery Estimate	Recovered in Water Rates
Total Future Expansions & Upgrades	\$303,300	Defer impact 5-10 years
Metering Program Implementation Costs	\$35,000	\$35,000
Capital Reserves – Rehabilitation & Replacement	\$425,000	Defer Impact 3-5 years
Total Operating, Maintenance & Administration Costs	\$432,615	\$432,615
Total Financial Costs	\$72,090	\$72,090
<b>Total Full Cost</b>	<b>\$1,268,005</b>	<b>\$539,705</b>

This represents a funding gap of approximately **\$728,000**. This will need to be addressed gradually as the Village moved toward a more complete application of full cost recovery principles. Annual reviews of water rates, recovered revenue and system full costs should be conducted to inform the phasing in of full cost recovery practices, and the water rates should be adjusted accordingly.

DRAFT

## 10. PROPOSED WATER METERING STRATEGY

The priorities for implementing the water metering strategy for the Village need to reflect the goals adopted by Council. Priorities identified were as follows:

- Implementation of targeted metering for ICI customers, along with a process to support voluntary metering for residential users.
- Give support for boundary expansion by pricing services provided to customers outside the Village boundaries to reflect the full and true cost of service
- Encourage water conservation through an equitable water rate structure

Earth Tech recognizes that the Village does not currently have the resources to undertake these metering programs in-house. The overall approach to implementation of the metering programs should therefore encompass the procurement of contract services to provide and install meters for the Village. This approach would provide the Village with the required staff and equipment resources to undertake the metering program in a cost-effective and timely manner. Initial installation, along with on-going maintenance, meter reading and billing information generation are typically offered as a bundled service by contractors.

It should also be noted that there are provincial or federal grant and cost-sharing programs that will support metering and other water conservation activities. The Village should explore the option to secure such funding to offset metering program costs, and lessen the cost burden on the customer base.

The following list shows the universal metering installation priority plan:

- Industrial, Commercial, and Industry (ICI)
- Strata – combined Commercial/Multi-Family Residential
- Strata – Multi-family Attached
- Strata – Single Family Dwelling (SFD) detached
- Single Family Dwelling (SFD) and Duplex

Earth Tech's approach is to address the Industrial, Commercial, and Industry (ICI) water meters first, then all combined commercial and residential multi-family strata properties, then residential multi-family strata properties and finally residential single family dwelling (SFD) and duplex properties. The following sections address how the roll-out of the metering program should be prioritized, in keeping with the direction from Council.

## 10.1 Targeted Metering of ICI Customers

ICI water usage within a water system is typically difficult to characterize without metering, and the scale and nature of operations can vary so widely. Some ICI customers may be significant users of water, and therefore specific consumption information about these customers is desirable. Alternatively, other ICI customers may be paying very high flat rates for water, while actual consumption is considerably lower. An example of this type of user would be a storage facility, which would likely only have a few bathrooms contributing to water consumption, but would be charged the high flat rate.

Currently, some ICI customers within the Village, located within the Industrial Park, are already metered. Completing meter installations at the remaining properties would be advantageous to have a clearer understanding of water usage in this area, and allow cost recovery through billing to more accurately reflect water usage. In addition, as the number of ICI customers in other parts of the Village is readily identifiable and relatively small, metering this group is likely to represent an easy first step for the Village.

To maximize the effectiveness of this phase of the metering program implementation, the Village would need to commit to regular reading of all existing customer meters, and the equitable application of metered rates to the billing of these customers.

## 10.2 Metering of Combined Commercial/Residential Strata Complexes

A review of the distribution of strata title properties within the Village revealed that there are some properties with combined commercial and residential units. As these properties represent a “hybrid” of commercial and residential use, Earth Tech recommends that this group be given the next priority for metering, as part of the targeted metering program. Earth Tech estimates that there are four properties which would fall under this classification, covering a total of 19 commercial units and 42 residential units<sup>1</sup>.

Typically, where different units are contained in a single building, e.g. low-rise mixed use building, it may not be feasible to individually identify and monitor water consumption at the unit level. In many communities, such strata title properties are usually billed with one lump sum charge and the strata council then distributes the costs to the strata members.

It has been assumed that for these four properties, such conditions would prevail. Therefore the combined commercial/multi-family residential strata properties will need to be metered with a single, appropriately-sized meter.

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<sup>1</sup> Water Rates & Charges for Strata Units, provided by Village, September 27, 2007

### 10.3 Metering of Multi-Family Attached Strata Properties

According to Village records, some 528 residential units are considered to be strata-titled, with a total of 17 strata complexes being identified. Although the physical layout of each property is unknown at this time, it is common for most attached strata-titled properties to receive water service via a single large connection to the property. Many are not currently set up to further distribute the water through individual metering. In many communities, such strata title properties are usually billed with one lump sum charge and the strata council then distributes the costs to the strata members.

Earth Tech recommends that strata multi-family attached dwellings be the next group of customers to be metered, and that the Village considers a targeted rather than voluntary approach for this group. The reasons for this approach are as follows:

- The ability to meter individual properties may not be available in some cases. The use of a single service connection means that these connections will be responsible for a large portion of water consumption within the Village. As a result, it will be important to understand consumption for these units, in order to fairly apportion costs to these users.
- The number of residents living in strata-titled properties in the Village appears to represent more than half of all residential dwelling units. The ability to meter all these complexes, at least to the property boundary, would represent a relatively quick and significant step along the path to having customers universally metered.
- This would support greater equity in the rate structure, as currently these customers are being charged at the same rate as detached single-family homes. However, it is likely that the water use of a resident in an attached strata building is lower than the single-family counterpart, since they are not as likely to have high outdoor usage of water, e.g. for watering large gardens or filling swimming pools.

Some of the residential single family dwelling (SFD) and duplex strata properties, such as the Pemberton Plateau development, may be constructed in such away that easily allows for individual metering. However, their strata council will need to confirm their ability to individually meter and their desire to individually meter, instead of bulk metering.

### 10.4 Voluntary Metering of Single Family Dwellings

The SFD and Duplex properties will be the last to be phased-in. However, a voluntary plan is proposed to encourage the enrollment of these properties from the onset of the program. The incentive to transition early to a metered service will be created through a differential between the estimated costs of a flat rate and metered service, based on an assumed average consumption level. Those residents who are careful and conserving water users will recognize the cost savings potential and opt to have a meter installed under the voluntary program.

While it is expected that the voluntary program will be in place for some time, there will be a need for the Village to determine a target date for full transition, beyond which all remaining flat rate users would be mandated to have meters. Typically, municipalities select transition periods of five to ten years.

## 11. PROPOSED WATER RATE STRUCTURE

It has been established that a phased approach to implementation of full cost recovery will be employed in the Village. The cost recovery plan will need to address the timing of the transition, and also provide policy direction in terms of:

- The sources of revenue that the Village will utilize to fund both operating and capital expenditures
- An approach to infrastructure reinvestment using capital reserves, capital funding from current reserves and debt in a way that minimizes fluctuations in rate and allows for equitable allocation of costs from current to future users.
- Dedicated operating funds to ensure water and sewer revenues are spent only on water and sewer systems.
- A dedicated reserve fund (as recommended above) to ensure that water and sewer funds are spent only on the appropriate capital programs.

In the interim, it was necessary to make some assumptions about how various revenue sources would be utilized. The relative apportionment of operating revenue sources in the 2007 budget was used as a guide to determine the relative revenue shares, as outlined in Table 9 below. Note that since capital costs were for the most part excluded for the water rates, this distribution of revenue sources relates to operations and maintenance, and financing activities only.

**Table 10: Potential Distribution of Revenue Sources to Funding Contributions**

Description	% Contribution in 2007 Operating Budget	Projected % Contribution in Future Operating Budget
Water - Frontage Taxes	20.83%	21%
Water - Investment Income	0.09%	0%
Water Penalties	1.46%	0%
Water User Rates - Village customers	64.25%	63%
Water Connection Fees	0.89%	1%
Water User Rates - Industrial Park	1.65%	2%
Water User Rates - PNID	8.99%	11%
Water User Rates - Outside Boundary	1.84%	2%

Based on Table 11, it can be seen that approximately 80% of the total revenue would be expected to come from water rates paid by the different groups of customers. This represents a considerable step closer to a full cost recovery position, where 100% of total revenues would come from water rates. In addition, the portion of water revenues to be raised from non-Village residents has also increased, in keeping with Council's direction to support boundary expansion through the rate structure. This revenue distribution will be considered in fine-tuning the rate structure.

### **11.1 Rate Structure Components**

User rates are typically structured to reflect the mix of fixed and variable operating costs associated with the provision of service, such that the fixed component of a water rate should reflect the amount of money needed to cover fixed costs. The variable component of the operating budget is then linked to the volumetric or consumption-based component of the water rate.

In the case of the Village however, the majority of the operating costs are fixed, and will not vary with reduced consumption. Using the typical fixed to variable ratio would therefore not support conservation, as a typical user's water bill would remain fairly constant regardless of any conservation measures. To support the conservation objective for the Village, the water rate structure was developed with a strong weighting towards the volumetric component. The best practice guide suggests that in such a case, no more than 15% of the expected water bill should be based on a fixed charge.

### **11.2 Residential Metered Rates**

It has been noted previously that there are considerable estimations embedded in the development of full costs for the system. In addition, since full cost recovery is not going to be applied initially, it is difficult to accurately set water rates based on the total cost of system operation and the total amount of water produced. In light of this, Earth Tech elected to set rates with the voluntary incentive as the central focus, in order to position residential metered and flat rates at appropriate levels to encourage residents to transition to a metered service.

Currently, a single family residential dwelling pays an annual flat rate of \$295. Based on recent rate reviews conducted by Earth Tech, it is understood that most municipalities create a differential between metered and flat rates of about 20%, i.e. with equal consumption, a metered customer typically pays 20% less than an equivalent flat rate customer. Infraguide best practice also indicates that this 20% differential is appropriate, and seems to be of an order of magnitude that encourages voluntary metering.

Based on this, the following were assumed in the development of a residential metered rate:

- A typical single family residential service consumes 415 m<sup>3</sup> per year. This is based on Earth Tech's benchmarking of residential metered and non-metered consumption in several municipalities in BC.
- If no conservation measures are adopted, this typical user should expect to pay about the same as the current flat rate, creating an incentive to conserve more water in order to save money. In this case, this was selected to be \$300 per year.
- 15% of the total expected water bill should be a fixed charge to cover the Village's requirement to provide system access and sufficient capacity, and to cover the costs of meter reading and maintenance. This fixed portion also provides greater security to the Village for a portion of incoming revenue. The fixed portion was therefore set at \$45 per year.
- A volumetric unit rate of \$0.62 per m<sup>3</sup> was therefore calculated, based on the average 415 m<sup>3</sup> per year volumetric consumption being divided by the remaining \$255 to be recovered.

The current 50% surcharge on a single family residential unit with a secondary suite should be maintained, as this should closely align with the expected incremental number of residents over a single family residential unit with no suite. Table 10 summarizes the suggested residential metered rates:

**Table 11: Recommended Residential Metered Rates**

Description of Charges	Single-Family Residential Dwelling	Single-Family Residential with Secondary Suite
Fixed charge	\$45/year	\$67.50/year
Volumetric Charge	\$0.62 per m <sup>3</sup>	\$0.62 per m <sup>3</sup>
Assumed Annual Consumption	415 m <sup>3</sup> /year	622.5 m <sup>3</sup> /year
Total Expected Metered Water Bill with no additional conservation	\$300	\$453
Total Expected Metered Water Bill with 10% reduction in consumption	\$284	\$415
Current Flat Rate	\$295	\$443
Expected New Flat Rate with 20% Differential	\$354	\$531

### 11.3 ICI Water Rates

Earth Tech recommends that initially, the metered water rate structure for commercial and institutional customers should follow the same rate structure as the residential metered rates outlined in the previous section. However, since the service connections to provide water to these properties may vary widely, these rates may need to be reviewed at the end of 2008, when the meters have been installed, and a greater understanding of individual commercial customer consumption can be obtained.

It is recognized that there may be a need to adjust the water rate to account for the differences in service connection and meter size. The village could opt to vary the fixed portion of the rate to account for the difference in services, or employ a block rate structure for the volumetric portion of the rates, i.e. consumption up to a set amount is charged at one unit rate per cubic metre, and consumption above that level would be charged a higher unit rate.

### 11.4 Bulk Water Rates

The PNID already appears to be the single largest user of the water system consuming approximately 15% of the available capacity through two meters (4" & 6" diameters). This estimate of consumption is based on recently completed work by Earth Tech regarding the accuracy of the existing meters.

In order to estimate the bulk water rates for the PNID, the portions of the total system infrastructure required to provide outside boundary customers with service were determined, and included the reservoir, the groundwater wells and pumps, the pressure regulating station, along with a portion of the water mains. Based on the layout of the system, 40% of the mains were considered to be required to provide service to outside customers. This information was used to estimate the pro-rated system value at \$7 million, which was then used to estimate a pro-rated renewal and rehabilitation component at an average rate of \$140,000 per year for the next five years. This rate would need to be reassessed over time as the value of the system changes. Since outside customers cannot be taxed by the Village to support this capital reinvestment, it is necessary to incorporate this cost into the water rates.

The total amount of water that the Village produces is estimated at 790,000 m<sup>3</sup>/year, of which 80% is estimated as available to raise revenue, since non-revenue water uses, as well as leaks and other losses, typically account for the remaining 20%. A unit rate for bulk water was developed using:

- The full costs able to be apportioned to the outside boundary customers is a total of \$644,700, including operations and maintenance costs, financial and the \$140,000 renewal and rehabilitation cost

- The total revenue water volume of 623,000 m<sup>3</sup> per year would be the basis of calculating an overall volumetric cost of water

This results in a unit rate of \$1.02 per cubic meter, which should be applied to the PNID and other outside boundary customers.

The method outlined above offers a simple and defensible approach to calculating external customer rates, and provides a significant differential relative to volumetric rates applied to customers with the boundaries. This approach to volumetric rate setting for the PNID and other outside customers should be revisited in the event that more accurate system knowledge provides a clearer pro-ration methodology.

## 12. ANNUAL RATE REVIEW

According to Infraguide it is also very important to annually review rates to determine their continued adequacy to fund the full cost of the system, based on the parameters in the previous steps. Considerations with respect to the review should include any planned or unplanned changes to operations that have occurred or are proposed, along with adjustments necessary to account for changing priorities with respect to capital investment in the water system.

## 13. CONCLUSIONS

This report outlines a very high-level approach to rate setting, in keeping with the Infraguide best practices for the full cost recovery for water systems. The Village should consider the following in advance of pursuing significant changes to the water rates bylaw:

- Determination of desired policies and goals with respect to water rate setting
- Consideration of how a water metering program will integrate with the rate setting process
- Development of asset inventory and condition assessment for existing infrastructure

Implementation of these steps will provide a more robust information platform for the Village to base decisions on, and serve as an opportunity to revisit the establishment of rates that provide greater ability to recover costs associated with the water system, demonstrate fairness and equity with respect to different types of customers, and support water efficiency where possible.