

VILLAGE OF PEMBERTON
-COMMITTEE OF THE WHOLE MEETING AGENDA-
-RESCHEDULED FROM MAY 5, 2015-

Agenda for the **Committee of the Whole** of Council of the Village of Pemberton to be held **Tuesday, May 12, 2015 at 4:00 PM** in the Council Office, 7400 Prospect Street. This is meeting No. 132.

"This meeting is being recorded on audio tape for minute-taking purposes as authorized by the Village of Pemberton Audio recording of Meetings Policy dated September 14, 2010."

Time	Item of Business	Page No.
	1. CALL TO ORDER	
	2. APPROVAL OF AGENDA	
	Recommendation: THAT the agenda be approved as presented.	
	3. 2015 Water Rates Discussion	2
	Recommendation: THAT the Committee of the Whole provide direction to Staff on preparing the 2015 Water Rates Amendment Bylaw;	
	AND THAT the Water Rates Amendment Bylaw to be brought to the next Regular Meeting of Council to be held on Tuesday, May 19, 2015 for First, Second and Third Readings.	
	4. ADJOURNMENT	

Date: May 12, 2015
To: Committee of the Whole
From: Nikki Gilmore, Chief Administrative Officer
Subject: 2015 Water Rates Discussion

PURPOSE

To present to the Committee of the Whole the Implementation of Water Rates 2014 – 2019 Technical Memorandum dated February 3, 2014 prepared by Kerr Wood Leidal (KWL) for review and to seek direction to prepare the 2015 Water Rate Amendment Bylaw for First, Second and Third Readings at the next Regular Meeting of Council to be held on Tuesday, May 19, 2015.

BACKGROUND AND COMMENTS

At the Regular Meeting of Council No. 1366 held Tuesday, June 17, 2014, Council adopted the 2014 Water Rates Amendment Bylaw No. 768, 2014, which established the water rates as per Alternative 2 of the Water Rates Analysis prepared by KWL. This Alternative was chosen in the absence of a signed agreement with the SLRD for the Pemberton North Water Service (PNWS).

Following adoption of the 2014 Water Rates, the Village and the SLRD were able to reach agreement on water rates for PNWS and settlement of outstanding fees dating back to 2007.

As a result of the settlement, Staff brought back the water rates bylaw to adjust the metered rates to Alternative 1 and to remove the PNWS rate as this is now part of a separate negotiated agreement. At the Regular Meeting of Council No. 1372, held Tuesday, July 22, 2014, the following resolution was passed:

Moved/Seconded

THAT 2014 Water Rates Amendment Bylaw No. 772, 2014, amending the metered rates as per Alternative 1 of the KWL Water Rates Analysis Report dated February 3, 2014 and removing the PNWS rate, receive First, Second and Third Readings.

CARRIED

Moved/Seconded

THAT the 2014 Water Rates Amendment Bylaw No. 772, 2014 be brought forward for Fourth and Final Readings at a Special Meeting of Council to be held on Thursday, July 24, 2014 at 9:00 am in Council Office.

CARRIED

The 2014 Water Rates Amendment Bylaw No. 772, 2014 was adopted at the Special Meeting of Council No. 1373 held July 24, 2014 based on the resolution above. The 2014 rates for the in-boundary flat fee users remained as Alternative 2, as the invoices had been calculated and

distributed. A revised schedule, that reflects Alternative 1, will take effect for in boundary flat fee users commencing 2015. The 2015 rate has been adjusted based on the difference between the 2014 Alternative 2 billed rates and the 2015 Alternative 1 rate. The remaining metered users will have no adjusted rates and will continue to be billed using the Alternative 1 rates. See below under Impact on Budget, Policy and Staffing for the impact to single family annual flat fee users.

DISCUSSION & COMMENTS

At this time, Staff are recommending that the sewer rates remain unchanged until such time as a sewer rate review can be undertaken. This review has been identified in the Village's Strategic Priorities 2015 document to be conducted near the end of 2015. It is not yet known what the timeframe or process will be to undertake this review. More information will be brought forward once Staff are able to determine the next steps.

COMMUNICATIONS

There are no communication elements planned at this time.

LEGAL CONSIDERATIONS

There are no legal considerations at this time.

IMPACT ON BUDGET, POLICY, STAFFING

The table below shows the impact to the single family annual flat fee users on the 2015 rates, which consist of Alternative 1 rates, plus the adjustment between the Alternative 1 and Alternative 2 rates charged in 2014. The rates for 2016 – 2019 are those under Alternative 1 rates as per the KWL report.

	2014	2015	2016	2017	2018	2019
Current year rate	\$383.86	*493.11	\$481.75	\$510.76	\$539.77	\$568.78
Prior year rate	343.00	383.86	493.11	481.75	510.76	539.77
Variance	\$40.86	\$109.25	-\$11.37	\$29.01	\$29.01	\$29.01

*The 2015 rate is the 2015 Alternative 1 KWL rate of \$452.74, plus the adjustment of \$40.37 for the difference between the 2014 Alternative 2 (billed rate) and the Alternative 1 rate.

INTERDEPARTMENTAL IMPACT & APPROVAL

The Finance and Administration Department will be responsible for preparing and invoicing the utilities notices once the rates have been adopted through the bylaw amendment. This process has been incorporated into the daily departmental work plan.

IMPACT ON THE REGION OR NEIGHBOURING JURISDICTIONS

There are no impacts on regional or neighbouring jurisdictions as the Pemberton North Water Service Agreement (PNWS) was completed in 2014.

ALTERNATIVE OPTIONS

There are no alternative options suggested at this time.

POTENTIAL GOVERNANCE CONSIDERATIONS

Reviewing the Village of Pemberton Implementation of Water Rates 2014 – 2019 Technical Memorandum as prepared by KWL meets with Strategic Priority Two: Good Governance being an open and accountable government and to fiscal responsibility.

RECOMMENDATION

THAT the Committee of the Whole provide direction to Staff on preparing the 2015 Water Rates Amendment Bylaw;

AND THAT the Water Rates Amendment Bylaw to be brought to the next Regular Meeting of Council to be held on Tuesday, May 19, 2015 for First, Second and Third Readings.

Attachments:

Appendix A – KWL Implementation of Water Rates 2014 – 2019 Technical Memorandum

CHIEF ADMINISTRATIVE OFFICER REVIEW



Nikki Gilmore, Chief Administrative Officer

Technical Memorandum

DATE: February 3, 2014

TO: Lonny Miller
 A/ Manager of Public Works and Capital Projects
 Village of Pemberton

FROM: Colwyn Sunderland, ASCT

RE: VILLAGE OF PEMBERTON
Implementation of Water Rates 2014-2019
Our File 0743.009

The Village of Pemberton (VoP) retained Kerr Wood Leidal Associates (KWL) in January 2013 to conduct a review of its water rate structure, with particular focus on the allocation of costs of service to the Pemberton North Water Service area (PNWS) and other customers outside the municipal boundary. Our April 2013 *Water Rate Review - Final Report* included recommendations to:

- Adjust the distribution of rate revenue among customer classes based on our cost of service review;
- Establish a budget for asset renewal;
- Engage SLRD to negotiate terms of service for customers located outside the municipal boundary, including PNWS; and
- Prepare an implementation plan for water rate changes, including analysis of customer impacts.

VoP has retained KWL to develop an implementation plan for water rate changes, including recommended amendments to Water Regulations and Rates Bylaw No. 232, 1989. For metered customers, KWL was asked to develop a conservation-oriented rate structure option. This technical memorandum presents our methodology and recommendations for implementing changes to water rates. The principles, terminology and cost of service allocation methodology used in this memorandum are described in the April 2013 *Water Rate Review* report.

1. Assumptions for Rate Design

The cost of service analysis and rate design presented in this memorandum are based on limited available water usage and financial information. Several assumptions and estimates are made throughout the process, and are identified in the following sections. In general, it is assumed that:

- The required annual budget for sustainable asset renewal is \$324,000¹;
- All costs associated with growth and development will be recovered through other means;
- Operating and administration costs will remain constant; and
- Inflation will not significantly change the revenue requirement over the implementation period (2014-2019).

These assumptions are unlikely to be entirely accurate, and rate adjustments may be required within the implementation period to address variances from the assumed parameters. A discussion of financial and user-pay equity risks is provided in Section 5.

¹ *Village of Pemberton Water Rate Review – Final Report*, Kerr Wood Leidal Associates Ltd., April 2013. The estimated asset replacement value is based on Earth Tech (2008), adjusted for additions since 2008 and for inflation. The replacement value is annualized using life expectancies provided by the BC Ministry of Community Services (2008).



2.2 Rate Revenue Requirement

Excluding debt-related costs, the revenue requirements per customer class were calculated for each year between 2014 and 2019 to implement a \$324,000 asset renewal budget over a six-year period in annual increments of \$54,000. Two alternatives are considered for implementing changes the cost distribution among customer classes:

- Under **Alternative 1** (Table 2), changes to the cost distribution among customer classes are fully implemented in 2014; and
- Under **Alternative 2** (Table 3), all changes are phased in incrementally between 2014 and 2019.

Table 2: Non-Debt Revenue Requirements by Customer Class and Year – Alternative 1

Year	Unmetered Residential	Unmetered ICI	Metered Residential	Metered ICI	Outside Boundary	PNWS	TOTAL
2013	\$294,628	\$164,793	\$456	\$26,263	\$19,995	\$138,373	\$644,508
2014	\$363,981	\$172,191	\$600	\$28,018	\$27,909	\$107,983	\$700,682
2015	\$388,901	\$187,082	\$640	\$30,497	\$30,575	\$116,989	\$754,682
2016	\$413,820	\$201,973	\$679	\$32,975	\$33,240	\$125,995	\$808,682
2017	\$438,740	\$216,863	\$718	\$35,454	\$35,906	\$135,001	\$862,682
2018	\$463,660	\$231,754	\$757	\$37,932	\$38,572	\$144,007	\$916,682
2019	\$488,579	\$246,645	\$797	\$40,411	\$41,237	\$153,013	\$970,682

Table 3: Non-Debt Revenue Requirements by Customer Class and Year – Alternative 2

Year	Unmetered Residential	Unmetered ICI	Metered Residential	Metered ICI	Outside Boundary	PNWS	TOTAL
2013	\$294,628	\$164,793	\$456	\$26,263	\$19,995	\$138,373	\$644,508
2014	\$326,954	\$178,435	\$513	\$28,621	\$23,535	\$140,813	\$698,871
2015	\$359,279	\$192,077	\$570	\$30,979	\$27,076	\$143,253	\$753,233
2016	\$391,604	\$205,719	\$626	\$33,337	\$30,616	\$145,693	\$807,595
2017	\$423,929	\$219,361	\$683	\$35,695	\$34,156	\$148,133	\$861,957
2018	\$456,254	\$233,003	\$740	\$38,053	\$37,697	\$150,573	\$916,320
2019	\$488,579	\$246,645	\$797	\$40,411	\$41,237	\$153,013	\$970,682

2.3 Total Cost of Service Per Retail Customer

The forecast average annual revenue per customer in each class, including both taxation and rate revenue components, is shown in Figure 1 (Alternative 1) and Figure 2 (Alternative 2). For PNWS, the cost shown is for bulk water supply, which is included as a component of the cost SLRD charges its retail customers. The large 2014 adjustment is primarily the new debt cost for reservoir construction. For PNWS, the new debt cost is offset by a downward adjustment in operating cost allocation.

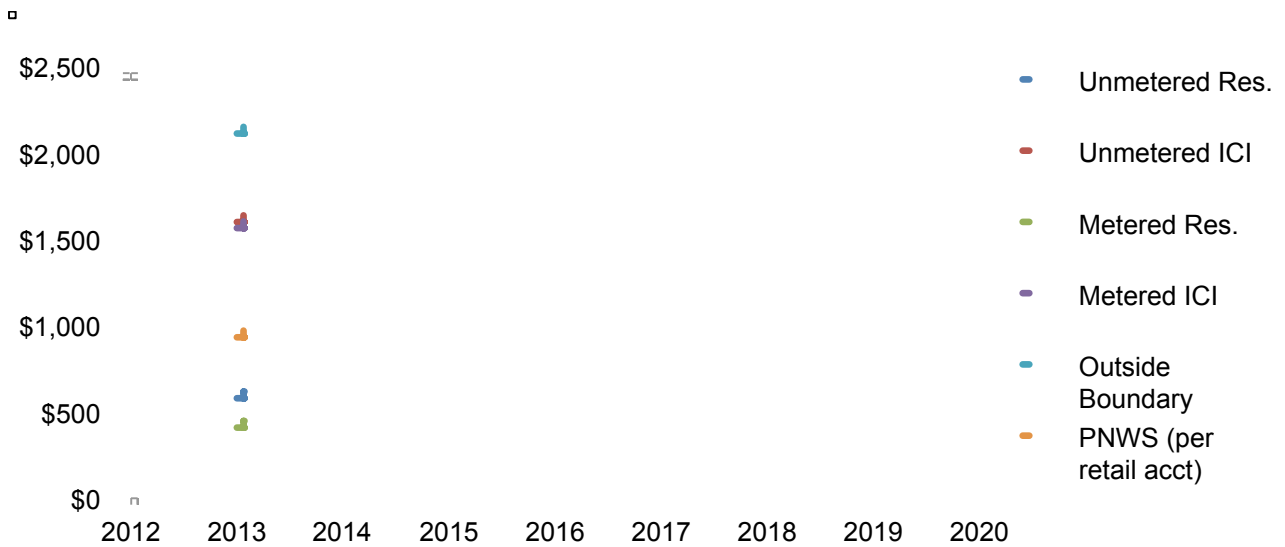


Figure 1: Forecast Average Annual Water Service Cost per Retail Account – Alternative 1

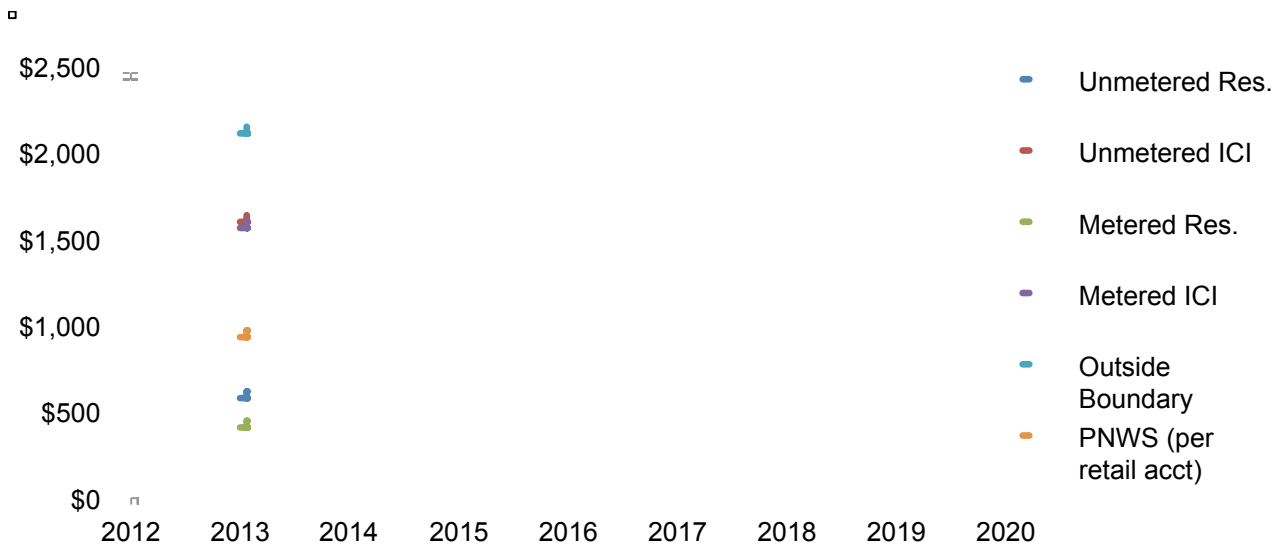


Figure 2: Forecast Average Annual Water Service Cost per Retail Account – Alternative 2

Alternative 1 has the advantages of achieving equitable cost distribution among customer classes in the first year of implementation, and providing a smooth transition in the total annual cost to PNWS. However, the unmetered residential and outside boundary retail classes each experience a single-year rate increase of more than 30% in 2014.

Alternative 2 reduces the maximum single-year rate increases in all classes below 20%. However, this approach sustains significant inequities between customer classes over several years. In particular, the addition of new debt cost causes a sharp, short-term peak in the cost of water service to PNWS until the cost distribution adjustment gradually reduces the cost over the next five years.



3. Rate Adjustments for Unmetered Customer Classes

For unmetered classes, the rate adjustments required to meet the non-debt revenue targets were calculated based on the percentage change in total revenue requirement in each year. The annual adjustments to unmetered rates are shown in Table 4. Rates are calculated for each year by multiplying the prior year's rates by these factors.

Table 4: Annual Rate Adjustments for Unmetered Classes

Year	2013	2014	2015	2016	2017	2018	2019
Alternative 1 - Cost of Service Reallocation Implemented in 2014							
Unmetered Residential	0.00%	23.54%	6.85%	6.41%	6.02%	5.68%	5.37%
Unmetered ICI	0.00%	4.49%	8.65%	7.96%	7.37%	6.87%	6.43%
Alternative 2 - Cost of Service Reallocation Phased over Six Years							
Unmetered Residential	0.00%	10.97%	9.89%	9.00%	8.25%	7.63%	7.08%
Unmetered ICI	0.00%	8.28%	7.65%	7.10%	6.63%	6.22%	5.85%

4. Rate Alternatives for Metered Classes

For metered connections, 2012 actual water demands and revenues were used as a basis for calculating the rates required to achieve the target revenue requirements.

4.1 Adjustments to Cost Allocations

The 2012 actual billing data revealed two significant anomalies that had not been taken into account in the *Water Rate Review*:

1. Of the six accounts identified as Metered Residential in the *Water Rate Review*, only two were active and billed in 2012, resulting in over-allocation of costs to this class; and
2. Adjustments to billing for very high usage (leak adjustments) accounted for a significant proportion of total usage revenue in the Outside Boundary class, resulting in over-allocation of costs to this class.

It was necessary to recalculate the cost allocations from those in the *Water Rate Review* to account for these changes. The resulting allocations of total revenue requirement are significantly different for the Metered Residential and Outside Boundary classes, but are unchanged for the unmetered classes (Table 5). These changes are reflected in the total revenues shown in Tables 2 and 3.

Table 5: Percentage of Rate Revenue Requirement by Customer Class and Year – Alternative 1

Year	Unmetered Residential	Unmetered ICI	Metered Residential	Metered ICI	Outside Boundary	PNWS	TOTAL
2013	45.7%	25.6%	0.1%	4.1%	3.1%	21.5%	100.0%
2014	51.9%	24.6%	0.1%	4.0%	4.0%	15.4%	100.0%
2015	51.5%	24.8%	0.1%	4.0%	4.1%	15.5%	100.0%
2016	51.2%	25.0%	0.1%	4.1%	4.1%	15.6%	100.0%
2017	50.9%	25.1%	0.1%	4.1%	4.2%	15.6%	100.0%
2018	50.6%	25.3%	0.1%	4.1%	4.2%	15.7%	100.0%
2019	50.3%	25.4%	0.1%	4.2%	4.2%	15.8%	100.0%



Table 6: Percentage of Non-Debt Revenue Requirement by Customer Class and Year – Alternative 2

Year	Unmetered Residential	Unmetered ICI	Metered Residential	Metered ICI	Outside Boundary	PNWS	TOTAL
2013	45.7%	25.6%	0.1%	4.1%	3.1%	21.5%	100.0%
2014	46.8%	25.5%	0.1%	4.1%	3.4%	20.1%	100.0%
2015	47.7%	25.5%	0.1%	4.1%	3.6%	19.0%	100.0%
2016	48.5%	25.5%	0.1%	4.1%	3.8%	18.0%	100.0%
2017	49.2%	25.4%	0.1%	4.1%	4.0%	17.2%	100.0%
2018	49.8%	25.4%	0.1%	4.2%	4.1%	16.4%	100.0%
2019	50.3%	25.4%	0.1%	4.2%	4.2%	15.8%	100.0%

4.2 Water Usage Characteristics

Water demands were analyzed to determine the impacts that water rate changes would have on water bills for a range of customers in each class. A distribution of annual water use per customer for metered retail accounts is shown in Figure 3.

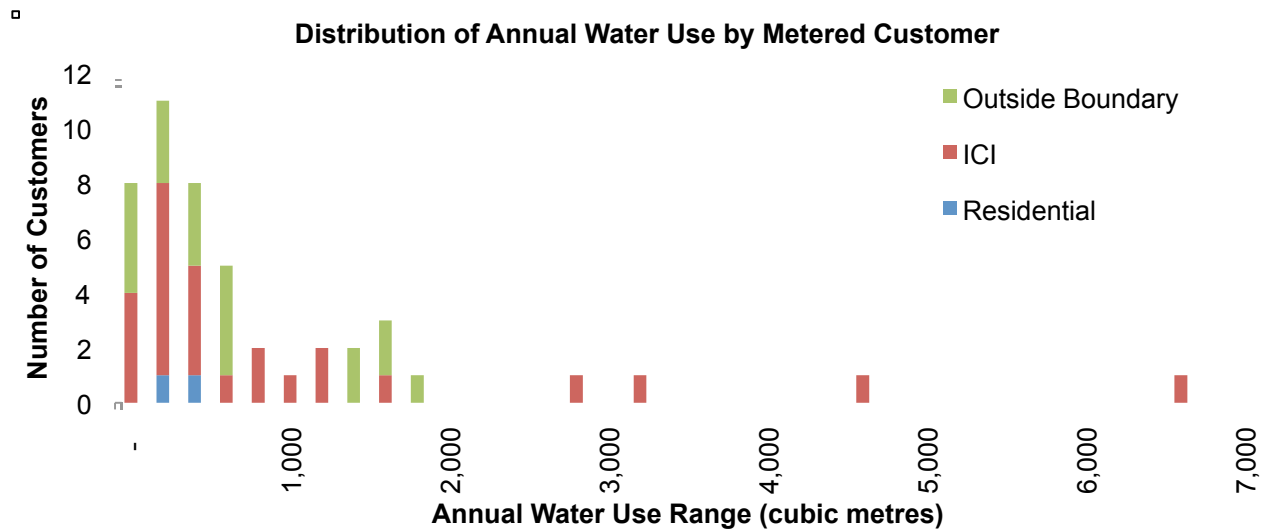


Figure 3. 2012 Retail Water Use Distribution

Seasonal water use profiles for each customer class are shown in Figure 4.

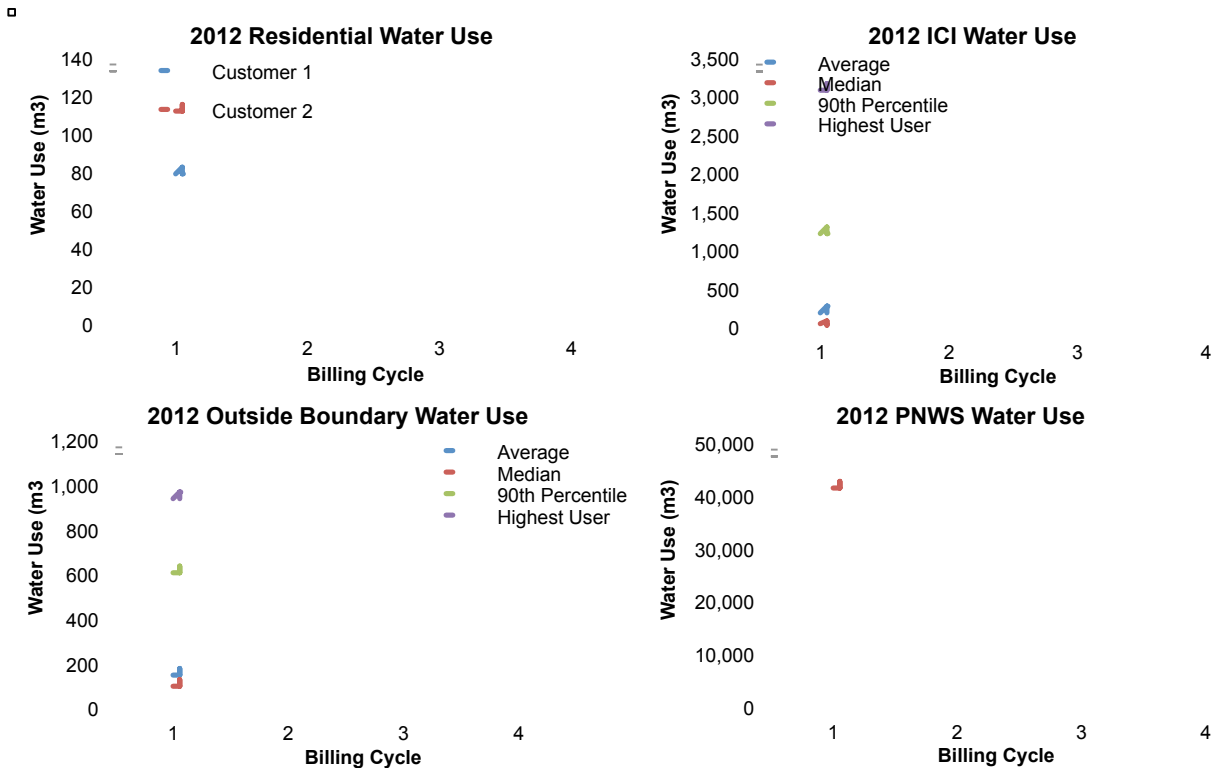


Figure 4: Seasonal Water Use per Customer Statistics

4.3 Revenue Adjustment for Water Demand Changes

Water demands per capita are generally declining in North America, driven by increasing awareness of water efficient practices, rising unit costs of water and sewer services, and the gradual replacement of inefficient fixtures such as toilets and washing machines with new, much more efficient units. Changes in VoP water rates are likely to result in substantial decreases in usage, particularly by high users facing increased costs. The risks of a revenue shortfall are discussed in detail in Section 4. To mitigate these risks and adjust for the expected decrease in water demands, a 10-12% adjustment is added to the revenue target in each of the following rate design scenarios.

4.4 Metered Residential Rates

Only two residential customers within the VoP boundary were billed based on water usage in 2012, providing an inadequate sample for reliably estimating future revenues. Both are relatively low water users (150 and 285 m³/year), with a high ratio of seasonal to annual average water use (one customer appears to be a part-time occupant, having essentially no winter water use).

In order to establish rates for a broader range of demand patterns, two hypothetical customer profiles were created. The water use profiles used in the rate calculations are shown in Table 7.

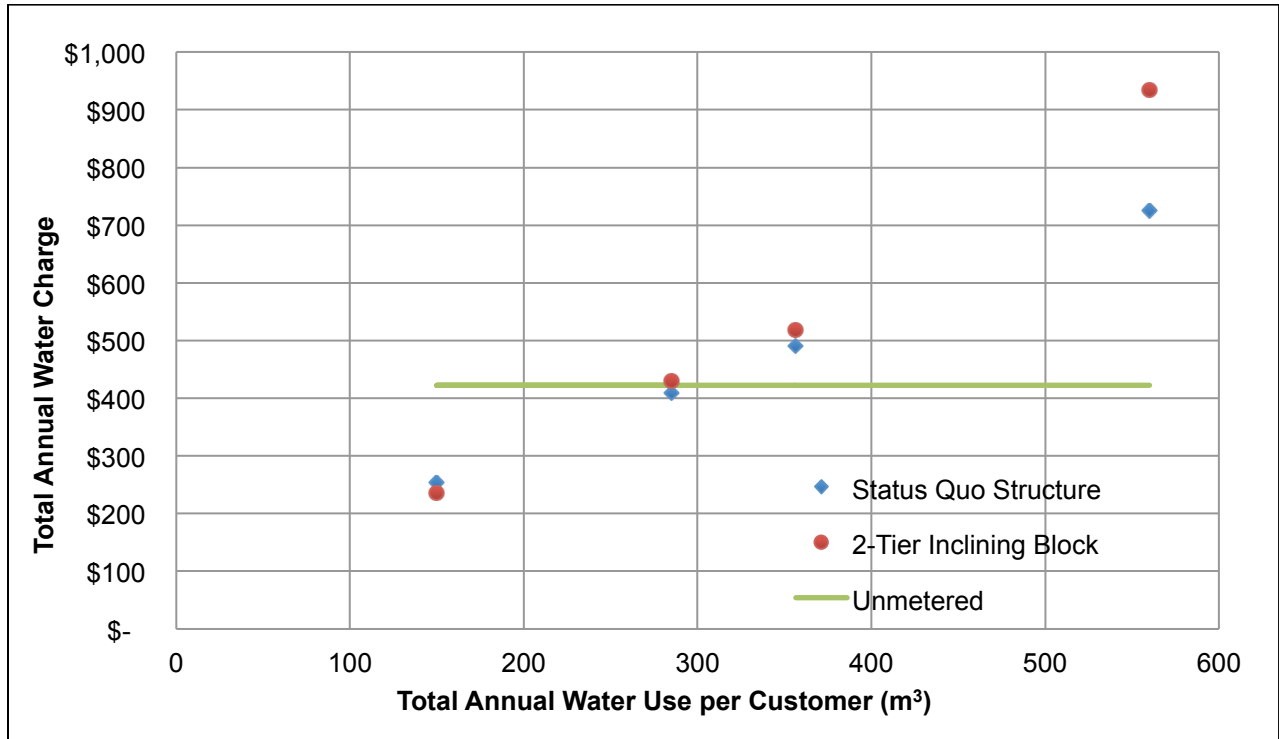


Figure 5: Residential Water Usage vs. Charges, 2014 – Alternative 1

4.5 Metered Industrial, Commercial, Institutional (ICI) Rates

Rate calculations for metered ICI accounts are based on 2012 water use by 26 customers with annual use ranging from zero to 6,600 m³.

The status quo ICI rate scenario includes a flat quarterly charge that includes up to 300 m³ of consumption. Only consumption above 300 m³ per quarter is billed at a variable consumption charge. Only 8 of the 26 customers paid more than the minimum charge in 2012; these customers have no economic incentive to reduce water demands below the quarterly threshold.

The status quo structure and a flat meter charge plus uniform rate scenario with no lower threshold were developed to calculate total revenue and annual costs per user based on the 26 existing customers' 2012 demands. The scenario inputs are shown in Tables 10 and 11, and the Alternative 1 results are shown in Figure 6 with flat (unmetered) 'Retail < 1,000 sq.ft.' and 'Industrial/Commercial' rates for comparison. The Alternative 2 results (not shown) are essentially identical.



Table 10: Metered ICI Rate Scenarios – Alternative 1

Scenario:	Status Quo Structure		Scenario:	Meter Charge and Uniform Rate	
	2014	2019		2014	2019
Frontage tax (average)	\$95.92	\$95.92	Frontage tax (average)	\$95.92	\$95.92
Quarterly meter charge	\$169.65	\$244.69	Quarterly meter charge	\$100.00	\$144.23
Tier 1 rate	-	-	Tier 1 rate	\$0.82	\$1.18
threshold m ³	300	300	threshold m ³	-	-
Tier 2 rate	\$0.98	\$1.41	Tier 2 rate	-	-
Calculated total revenue	\$31,082	\$44,831	Calculated total revenue	\$30,925	\$44,604
Target revenue	\$28,018	\$40,411	Target revenue	\$28,018	\$40,411
Calculated / target	111%	111%	Calculated / target	110%	110%

Table 11: Metered ICI Rate Scenarios – Alternative 2

Scenario:	Status Quo Structure		Scenario:	Meter Charge and Uniform Rate	
	2014	2019		2014	2019
Frontage tax (average)	\$95.92	\$95.92	Frontage tax (average)	\$95.92	\$95.92
Quarterly meter charge	\$169.65	\$239.53	Quarterly meter charge	\$115.00	\$162.37
Tier 1 rate	-	-	Tier 1 rate	\$0.79	\$1.12
threshold m ³	300	300	threshold m ³	-	-
Tier 2 rate	\$1.03	\$1.45	Tier 2 rate	-	-
Calculated total revenue	\$31,768	\$44,854	Calculated total revenue	\$31,734	\$44,807
Target revenue	\$28,614	\$40,411	Target revenue	\$28,621	\$40,411
Calculated / target	111%	111%	Calculated / target	111%	111%

The 'meter charge and uniform rate' scenario is more equitable than the 'status quo' scenario, ensuring that basic customer and direct fire protection costs are recovered through frontage tax and meter charges, while commodity and demand costs are recovered through the uniform consumption charge. Under this scenario, 16 of the 26 customers would enjoy cost savings compared to the status quo, which tends to overcharge customers with usage less than 300 m³/year while undercharging customers with usage close between 400 and 1,200 m³/year.



Table 12: Metered OB Rate Scenarios – Alternative 1

Scenario:	Status Quo Structure		Scenario:	2-Tier Inclining Block	
	2014	2019		2014	2019
Quarterly meter charge	\$297.90	\$440.17	Quarterly meter charge	\$25.00	\$36.94
Tier 1 rate	-	-	Tier 1 rate	\$1.00	\$1.48
threshold m ³	300	300	threshold m ³	65	65
Tier 2 rate	\$2.65	\$3.92	Tier 2 rate	\$2.60	\$3.84
Calculated total revenue	\$30,794	\$45,501	Calculated total revenue	\$31,012	\$45,823
Target revenue	\$27,909	\$41,237	Target revenue	\$27,909	\$41,237
Calculated / target	110%	110%	Calculated / target	111%	111%

Table 13: Metered OB Rate Scenarios – Alternative 2

Scenario:	Status Quo Structure		Scenario:	2-Tier Inclining Block	
	2014	2019		2014	2019
Quarterly meter charge	\$287.00	\$505.86	Quarterly meter charge	\$20.00	\$35.04
Tier 1 rate	-	-	Tier 1 rate	\$1.00	\$1.75
threshold m ³	300	300	threshold m ³	65	65
Tier 2 rate	\$1.35	\$2.37	Tier 2 rate	\$2.15	\$3.77
Calculated total revenue	\$25,966	\$45,496	Calculated total revenue	\$26,125	\$45,774
Target revenue	\$23,535	\$41,237	Target revenue	\$23,535	\$41,237
Calculated / target	110%	110%	Calculated / target	111%	111%

Assuming that OB customers are primarily residential water users, the ‘2-tier inclining block’ scenario is more equitable than the ‘status quo’ scenario and recovers most costs at the same rates as residential customers inside the municipal boundary. Under the inclining block structure, 13 of the 19 customers would enjoy cost savings compared to the status quo structure, which tends to overcharge users with low to moderate usage while undercharging customers with very high usage.

If an OB customer uses water primarily for non-residential purposes, the uniform ICI rate structure could be used as an alternative to the inclining block residential structure.

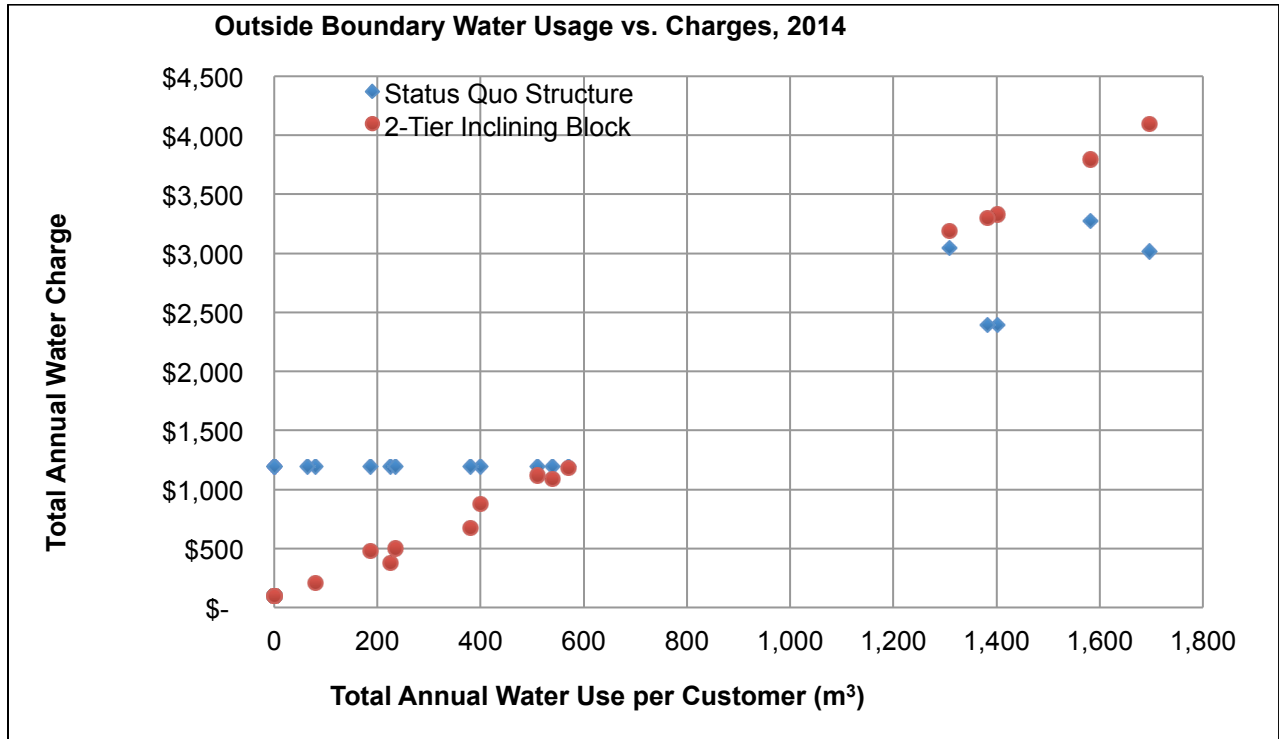


Figure 7: Outside Boundary Retail Water Usage vs. Charges, 2014 – Alternative 1

4.7 Pemberton North Water Service (PNWS) Rates

PNWS is a metered bulk water account that provides water supply to the Pemberton North Water Service Area operated by the Squamish-Lillooet Regional District (SLRD). The service area is situated outside VoP’s municipal boundary, although two of the 153 customer connections to the PNWS system are dwellings in VoP. Retail connections to the PNWS system are unmetered, and are primarily residential.

Distribution losses in the PNWS system are believed to account for a substantial proportion of the bulk water demand³. VoP wishes to provide an economic incentive for reducing losses in the PNWS system to make water supply capacity available for future needs. However, the PNWS already carries a high debt load associated with previous watermain replacement aimed at reducing losses, and high bulk water costs may impair the users’ capacity for further investment in water loss reduction. The potential for a substantial reduction in base demand also poses significant revenue risk to VoP.

A modified status quo structure is modelled, simplified by removing the bottom tier, where the first 300 m³ per quarter are provided at no consumption charge (which will never be used since consumption will always exceed this amount). A two-tier inclining block rate scenario with no lower threshold is also modelled. The scenarios are shown in Tables 14 and 15.

³ Water Rate Review, Section 2.3



Table 14: PNWS Rate Scenarios – Alternative 1

Scenario:	Modified Status Quo Structure		Scenario:	2-Tier Inclining Block	
	2014	2019		2014	2019
Quarterly meter charge	\$150.26	\$212.92	Quarterly meter charge	\$200.00	\$283.40
Tier 1 rate	\$0.89	\$1.26	Tier 1 rate	\$0.62	\$0.88
threshold m ³	-	-	threshold m ³	9,945	9,945
Tier 2 rate	-	-	Tier 2 rate	\$1.00	\$1.42
Calculated total revenue	\$119,016	\$168,648	Calculated total revenue	\$118,735	\$168,248
Target revenue	\$107,983	\$153,013	Target revenue	\$107,983	\$153,013
Calculated / target	110%	110%	Calculated / target	110%	110%

Table 15: PNWS Rate Scenarios – Alternative 2

Scenario:	Modified Status Quo Structure		Scenario:	2-Tier Inclining Block	
	2014	2019		2014	2019
Quarterly meter charge	\$150.26	\$163.28	Quarterly meter charge	\$200.00	\$217.33
Tier 1 rate	\$1.16	\$1.26	Tier 1 rate	\$0.65	\$0.71
threshold m ³	-	-	threshold m ³	9,945	9,945
Tier 2 rate	-	-	Tier 2 rate	\$1.38	\$1.50
Calculated total revenue	\$154,940	\$168,364	Calculated total revenue	\$155,371	\$168,832
Target revenue	\$140,813	\$153,013	Target revenue	\$140,813	\$153,013
Calculated / target	110%	110%	Calculated / target	110%	110%

Under either alternative, the modified status quo rate structure achieves the revenue target while providing a substantial economic incentive to reduce leakage losses and end user demands. The inclining block structure provides a stronger price incentive to reduce demands below 9,945 m³ per quarter (65 m³ per retail connection), and a more favourable rate for basic needs. However, this scenario increases revenue risk, as discussed in Section 5.

4.8 Summary of Cost of Service Implementation Alternatives

Alternative 1 has the advantages of achieving equitable cost distribution among customer classes in the first year of implementation, and providing a smooth transition in the total annual cost to PNWS. However, the metered residential and outside boundary retail classes each experience a single-year rate increase of more than 30% in 2014.

Alternative 2 reduces the maximum single-year rate increases in all classes below 20%. However, this approach sustains significant inequities between customer classes over several years. The inequity is particularly significant for the outside boundary classes: In the first few years of implementation PNWS would pay significantly more than its fair share, while retail customers outside the boundary would pay significantly less than their fair share.

Alternative 1 is recommended, and is the only alternative considered in the following sections.



5. Financial Risks

As municipalities retrofit water meters and adopt consumption-based pricing for water and sewer services, utility revenues become dependant on consumption patterns. Unit water demands are generally declining in North America as customers replace old, inefficient fixtures and appliances with much more water-efficient ones. Summer water demands vary with weather, and a cool, wet summer can substantially reduce seasonal water use. Long-term trends and seasonal variations must be considered in rate setting.

5.1 Overall Revenue

The revenue risk in VoP's current rate structure is extremely low. Currently, 75% of VoP's water revenue is received from unmetered customers that pose no risk of revenue shortfall related to water demand. In addition, fixed or minimum charges and frontage taxes account for 64% of revenue from metered customers. In total, 91% of 2013 budget revenue is derived from fixed charges and only 9% is dependent on consumption. Even a dramatic drop in overall water usage of 30% of current total demand would likely result in a revenue shortfall of less than 5% of budget. The 10-12% contingencies included in metered rate structures mitigate the risk of a revenue shortfall.

Increasing financial incentives to conserve water will introduce corresponding increases in revenue risk. Under the most aggressive scenarios (inclining block residential, OB and PNWS rates), fixed revenue decreases to 80% of total, and 20% is dependent on consumption⁴. The overall revenue risk would roughly double under these scenarios; however, the year-to-year variability is likely still well under 5% of total revenue. A general decreasing trend in consumption over several years may necessitate adjustments to rates to ensure budget targets are achieved in an average year.

5.2 Revenues in Metered Classes

Revenue risks are much greater in the metered customer classes than overall. This poses two potential problems:

- A large decrease in usage within a single class will result in a large shortfall in associated revenue, introducing user-pay inequity; and
- If a significant proportion of unmetered accounts are metered, the overall revenue risk will increase.

For example, if SLRD is able to reduce PNWS leakage losses by 1.5 L/s (47,000 m³/year, or 35% of 2012 total demand), revenue would decrease by 35% under the uniform rate scenario, or by 44% under the inclining block scenario. While its share in the total cost of service would also decrease, the actual revenue decrease would be greater than the decrease in its share of the cost of service. Customer costs are fixed, and demand costs are based on peak demands. Reducing water losses will proportionally decrease commodity costs, but has relatively little impact on peak demand.

There is a large degree of variability and uncertainty in the total demands (and associated revenues) in the residential metered and OB classes based on the records for the years 2010-2012. It is likely that actual revenues in these classes will vary widely from the budget targets outlined in the previous sections, particularly as price signals from increasing rates and more conservation-oriented structures motivate customers to eliminate unnecessary water uses such as fixture leaks and over-irrigation.

⁴ Although a conservation-oriented rate structure would typically recover a higher proportion of total revenue using consumption charges, VoP is constrained by the relatively small proportion of customer connections having meters.



The cost of service analysis may need to be revisited before 2019 as demands change, particularly if a significant number of connections are retrofitted with meters. Given the sensitivity associated with these risks, VoP may wish to specifically establish a one- to two-year review of actual vs. forecast results.

6. Review of Water Rates Bylaw

A consolidated version of *VoP Water Regulation Connection and Rates By-law No. 232, 1989* (with amendments to June 2013) is included in Attachment 1, including review comments in the right margin. Implementing changes to water rates as discussed in this Technical Memorandum will require the replacement of Schedule 'A' only; however, some other parts of the Bylaw currently conflict with Schedule A (e.g., user rates for Industrial Park customers set out in Schedule 'E') and will require amendment.

7. Recommendations

The following actions are recommended for implementing changes to Village of Pemberton water rates:

1. Revise budget revenue requirements to:
 - Achieve the cost of service distribution calculated using the methodology set out in the April 2013 Water Rates Review;
 - Accommodate new borrowing through the Municipal Finance Authority in 2014 for a new distribution reservoir; and
 - Phase in a total annual asset renewal budget of \$324,000 over the years 2014-2019.
2. Fully implement cost of service reallocations among customer classes in 2014 (Alternative 1).
3. Adopt water rate structures as follows for metered customer classes:
 - Residential: Two-tier inclining block and fixed quarterly meter charge;
 - ICI: Uniform rate and fixed quarterly meter charge;
 - Outside Boundary: Two-tier inclining block and fixed quarterly meter charge; and
 - PNWS: Uniform rate and fixed quarterly meter charge (Modified Status Quo).
4. Set water frontage taxes for the sole purpose of recovering the inside-boundary share of long-term capital debt servicing costs, using the cost of service distribution methodology set out in the April 2013 Water Rates Review (see Table 1). For outside boundary classes, the utility basis water rate recovers debt costs through amortization and return on capital.
5. Amend, or repeal and replace, Bylaw No. 232, 1989 based on the comments included in Attachment 1.
6. Replace Schedule 'A' of Bylaw No. 232, 1989 with the Schedule provided in Attachment 2.
7. Provide opportunities for public and stakeholder presentation and dialogue on the recommended rate changes before January 1, 2014.
8. Review actual vs. target rate revenues annually, and amend rates as required to meet targets and maintain equitable cost distribution among customer classes. Review estimates and assumptions used for rate design in 2017, including review and adjustment of asset renewal charges based on an asset management plan and long-term financial plan.



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Revision History

Revision #	Date	Status	Revision	Author
0.1	August 15, 2013	Draft	Issued for VoP review	CPS
0.2	September 17, 2013	Draft	Revised for VoP comments on Draft 0.1	CPS
1.0	November 14, 2013	Final	Revised for VoP comments on Draft 0.2	CPS
1.1	November 28, 2013	Final	Corrected typo in debt charge calculation	CPS
1.2	February 3, 2014	Revised	Revisions per SLRD review	CPS