



REGIONAL DISTRICT  
of  
NORTH OKANAGAN

# MABEL LAKE WATER

## AGENDA & NOTES

File No.: 5650.1.2

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**Friday July 22, 2011**

### **AGENDA**

1. Introductions
2. Mabel Lake Water Utility Financials
3. Mabel Lake Water Utility Reserve Funds
4. Work Initiated or Completed in 2011
5. Legislative Requirements and Planning
6. Recent Water Quality Advisory and Emergency Response Planning Update
7. Fire Protection at the Community of Mabel Lake
8. Voluntary Water Restrictions
9. Emergencies – who to call

Material specified within this package as “see website” can be found on the Mabel Lake Water Utility site at the RDNO website ([www.rdno.ca](http://www.rdno.ca)).

Go to Services → Engineering → Mabel Lake Water OR

Type in [http://www.rdno.ca/services/community\\_infrastructure/mabellake/index.php](http://www.rdno.ca/services/community_infrastructure/mabellake/index.php)

Posted are:

- Maps of the Mabel Lake Water Utility
- Agenda & Notes from February 4, 2011 Public Information Meeting
- Meeting Summary of the February 4, 2011 Public Information Meeting
- Kerr Wood Leidal Associates Limited (KWL). May 13, 2011. Technical Memo Re: Mabel Lake Water Treatment Study – Phase 1. Evaluation of Water Treatment Options. Prepared for RDNO.
- Interior Health Brochure Outlining 43210 Objectives for Clean Drinking Water

## **NOTES ON AGENDA ITEMS**

### **1. Introductions**

Herman Halvorson, RDNO Director, Area F

Zee Marcolin, P.Eng., Utilities Engineer

Rod Pleasances, P.Eng., Project Engineer

See website for map of the facility.

### **2. Mabel Lake Water Utility Financials**

A fee increase of 12 % for the user and availability fees was implemented in the 2011 the fee bylaw # 2474 (available at <http://www.rdno.ca/publications/bylaws.php>).

Attachment 1 provides the 2004 to 2010 Financials for the Mabel Lake Water Utility and includes the Budget for 2011.

Increases in the 2011 Budget include:

- Upgrading pump house computer and software
- Increased chemical costs
- Increased sampling and laboratory fees
- Special projects as outlined in Section 3 (identified within the Repairs & Maintenance budget)
- Budgeted \$3,500 to reserves

An examination of the residential rate is \$262 per annum (availability + user rate) or \$236 if the 10% discount was taken advantage of. Attachment 2 provides a comparison table of rates from other small water utilities within the BC interior. Mabel Lake Water Utility rates are currently on the low end of this comparison.

The budgeting process for 2012 will begin in September 2011 with the goal to have the budget set and the fee bylaw adopted before January 1<sup>st</sup>, 2012. It is a goal of the Engineering Department to have the fees set for the next three years (2012 to 2015) in the upcoming budget assessment.

Notes regarding the 2010 expenditures - at year end in 2010, \$29,493 was transferred to reserves, of which, \$24,600 was carry over for the treatment study completed and as required by Interior Health, the remaining \$4,893 was transferred to reserves and is a result of the employee cost charge not being fully allocated due to the untimely demise of Mr. Campbell.

### **3. Mabel Lake Water Utility Reserve Funds**

Mabel Lake Water Utility is a function of RDNO. All functions of RDNO are managed on a user pay principal and each function has a separate budget, as provided above for the Mable Lake Water Utility. The RDNO can not make a profit on services and any surplus revenue for a particular year is transferred to reserves for that particular function. If a deficit is experienced, it is transferred from reserves to cover any short falls. If there are no reserves, the RDNO must raise rates the following year to cover the short-fall and/or borrow to off set the costs and add to property taxes at an amortized rate. The goal of reserves is to avoid large expenditures in the budget that can cause unacceptable increases rates within one year (rate stabilization). Reserves can be used for unexpected “emergency” expenditures or for planned works.

The RDNO Board made a resolution to support the development of reserves for the continued sustainable operations of their functions. The RDNO Engineering Department has set a goal of 6 months operating budget within the operating reserve for all functions they manage as well as developing sustaining capital reserves for replacement of existing capital works. The operating reserve for Mabel Lake Water Utility was \$157,461 at the end of 2010; however, \$24,601 was carried into the 2011 budget leaving a reserve of \$136,219 projected for year end in 2011. The operating reserve has surpassed the operating reserve goal, which is currently set for \$47,000 for Mabel Lake Water Utility and the remaining \$90,000 will be transferred to a Sustaining Capital Reserve. The objective of the operating reserve is to fund large expenditures of unexpected/emergency operating or maintenance works as required.

The objective of a Sustaining Capital Reserve is to budget for the replacement cost of the utilities amortized over 30 years. For example, the operating reserve may be used for the unexpected servicing of an existing pump whereas the sustaining capital reserve would be used to replace the pump. This is considered the consumption cost of the utility. An annual contribution of \$7,000 was previously quoted for the Sustaining Capital Reserve for the Mabel Lake Water Utility. This was based on a purchase price of \$200,000 which undervalued the utility worth. The actual utility worth is estimated at \$1,500,000 and the annual contribution will require recalculation and is in progress.

The Engineering Department is currently developing policy regarding reserve structure, reserve uses and contribution goals for each utility.

### **4. Work Initiated or Completed in 2011**

- Treatment Option Study (Interior Health (IH) Mandatory) – Study completed by KWL Consulting Engineers. Results indicate that the MLW system requires another form of disinfection to meet 43210 objectives by IH. UV treatment was recommended. Preliminary assessment for Filtration Deferral, however not enough information to make an application. See website for a link to the study.
- Filtration Deferral Planning and Monitoring – Interior Health requires filtration of all surface water sources unless water purveyors can provide sufficient evidence that their water quality meets all Canadian Drinking Water Guidelines. To gather sufficient supporting evidence requires one year. Development of a sampling program is in progress and the RDNO will likely initiate sampling in the fall or

early winter. Other initiatives underway by the RDNO will also support the application such as the Shuswap River Watershed Assessment Process and the initiation of the survey to extend the Mabel Lake Sewer to the Northshore residents.

- Increasing Size of Intake Screen - There is currently a 150 mm intake screen on a 250 mm intake pipe which restricts flow and decreases the volume of water that can be extracted from the lake. The reduced screen also increases the entrance velocity at the intake causing sand to enter the intake which can cause operational problems. This project is recommended as the restricted flow at the intake may impede flow to customers during peak demands in the summer and may be increasing turbidity when increased pumping rates occur. A Community Works Grant of \$15,600 was approved to assist in completing this work.

Part of the work will include divers examining and replacing the intake structure. The RDNO will also instruct the divers to examine the bathymetry around the intake to assess if extending the intake to a deeper location would be cost effective. This would only be examined further to improve water quality and support a filtration deferral.

- Installation of Additional Chlorine Analyzer and Repairing Chlorine Injection System (IH Mandatory) – In-progress. Chlorine injection system did not respond to increases in flow and needed immediate repair. The system also experienced a high level of gassing problems. These repairs have been completed.

To complete these mandatory works, a contact loop still needs to be installed and an additional chlorine analyzer is required. These upgrades will allow monitoring of the chlorine residual going into distribution system after contact time. The turbidity meter is also being repositioned. These works will improve the safety of the system and better enable the operator and the RDNO to manage the system. An application for \$7,800 to the Community Works Grant was submitted to cover the improvement works.

- Installing Operator Alarms on SCADA (IH Mandatory) – Completed. An alarm call-out system was installed in June 2011. This will improve the safety of the system by contacting the operator or RDNO staff to alert them of specific operational events (high or low chlorine, pump failure, etc.) so that the operator can respond in a timely manner.
- Upgrading of Computer and SCADA software – Completed. This will improve the safety as the prior computer was old. Updating of the software was completed for all RDNO small utilities allowing for consistent operation of the systems and will assist RDNO in IH reporting requirements and monitoring.

Other works that have been initiated by RDNO Engineering staff in 2011

- Watershed Assessment/Protection Plan (IHA Mandatory) – Staff have partnered with the Shuswap Planning Study to initiate this process and some key objectives for drinking water quality at Mabel Lake have been included. Further site specific works may be required in the future as identified within this study.
- Operational Procedures
- Reserve Policy Development (as discussed in Section 3)

- Detailed Facility Inventory
- Strategic Planning – to plan for required improvement works and potential upgrades for next 5 to 10 years (in-progress)
- Hydraulic Modeling of System (assess flows and future development potential)
- Website to provide information on Mabel Lake Water Utility (see

## **5. Legislative Requirements and Planning**

BC Drinking Water Protection Act was enacted in 2001 and under this Act, water suppliers are required to meet the expectations of the Act including meeting the Canadian Drinking Water Quality Guidelines (CDWQG). IH is the provincial government body tasked with overseeing the implementation of the Act. In response, IH has developed the 43210 objectives for clean drinking water (see website).

The 43210 IH objectives require two barriers to pathogens, and they prefer one to be filtration for surface water sources. Filtration deferral may be granted for sources with acceptable water quality. As indicated above, the RDNO is required to either start planning for installation of filtration or apply for a filtration deferral and install a second form of disinfection. The RDNO currently completes sampling of the water source, but increased parameter analysis is required to support a filtration deferral. Planning is underway and will likely commence in the fall or early winter.

Mabel Lake Water Utility has one form of disinfection (chlorination). If a filtration deferral is successful, UV treatment will still be required at an estimated cost of \$400,000 (Class D cost estimate). See website for Kerr Wood Leidal Technical Memo.

## **6. Recent Water Quality Advisory and Emergency Response Planning Update**

A Water Quality Advisory (WQA) was issued for the Mabel Lake Water Utility on June 17<sup>th</sup>, 2011 and rescinded on July 8<sup>th</sup>, 2011. The WQA was issued as the turbidity ranged between 1.0 and 2.0 NTU due to high water (“freshet”). Turbidity is the measure of cloudiness in water and is not generally noticeable to the human eye until it exceeds 5 NTU. Between 1.0 and 5.0 NTU, Interior Health guidelines rates water quality as FAIR and requires Water Purveyors to issue a Water Quality Advisory for the protection of customers with potentially lower immune response (i.e. young children, elderly, people with weakened immune systems).

Public notification is part of the Emergency Response Plan, which the RDNO is in the process of updating. For WQA's, sign boards will be placed on Mabel Lake Road at the Kingfisher Hall, Club Kingfisher and Mabel Lake Golf Course. Signs will also be posted at the Mabel Lake Store, Mabel Lake Campground, Mabel Lake Resort and the Post Office. The media will also be notified and the website will also contain information regarding any advisories or notices. A similar procedure for Boil Water Advisories will also be taken, although, increased notification may occur depending on the specific situation and the risk.

The RDNO is also developing a sensitive customer list where notification direct to the customer will occur. Sensitive customers can be notified by email, fax or phone. Delivery of direct notification will also be considered. The RDNO prefers customers to

sign up for email or fax notification as these systems are automated and are given priority of notification. If you are interested in signing up on the sensitive customer list, please contact Connie Kruger at RDNO (250-550-3680 or email [connie.kruger@rdno.ca](mailto:connie.kruger@rdno.ca))

## **7. Fire Protection at the Community of Mabel Lake**

Fire protection at the community of Mabel Lake is not a function of the RDNO. The Mabel Lake Water Utility is not designed or operated for fire protection as specified by the BC Fire Underwriters Association. The RDNO would not object to the use of water from the Mabel Lake Water Utility in fighting local fires, however, the RDNO does not have responsibility in providing water, water delivery or assistance in the delivery of water for the purposes of fire fighting. There is also no backup generation for the water system, limiting water capacity to reservoir volume only during power outages.

Some areas in the community of Mabel Lake have fire hydrants, hoses and fire truck(s), which are not owned, serviced, maintained nor have they been tested by RDNO. The use, maintenance, operations and responsibility of these facilities are strictly the responsibility of the residents that installed them.

Some areas are organizing and training themselves and neighbours in operating equipment and fire response. For example, the Strata Council of Holiday Parks supplies hoses and provides training to neighbours on operating the hoses. They have also received training from the Ministry of Forests on fire response. The Strata Council asks that the hoses and fire equipment only be used for fire response and for training. For further information contact Ken Graves, Vice Chair Strata Council (250-838-0264).

The RDNO asks residents to contact the system operator as soon as possible after water equipment has been used for fire response in order that we may inspect the equipment and check reservoir levels.

## **8. Voluntary Water Restrictions**

Residents will be asked to conserve water and undertake voluntary water restrictions in the peak summer months. The RDNO is asking residents to comply with the following:

- Water on an Odd-Even schedule (i.e. odd numbered addresses water only on odd numbered days);
- Do not water outdoors during the hot time of the day – water from 8:00 pm to 8:00 am; and
- Install water conservation devices whenever possible.

The following websites provide excellent tips on how to conserve water:

[www.livingwatersmart.ca](http://www.livingwatersmart.ca) or [www.okwaterwise.ca](http://www.okwaterwise.ca)

## **9. Emergencies – who to call**

Mabel Lake Water Emergencies:

Primary Operator – Lane Skead 250-838-7481

Back-up Operator - Steve Wall 250-838-2551

Other Inquiries:

Zee Marcolin, P.Eng., Utilities Engineer 250.550.3660

Rod Pleasance, P. Eng., Project Engineer 250.550.3796

## **Attachments**

1. Mabel Lake Water Utility 2004 to 2010 Financials
2. Rate Comparison Table for Small Water Utilities within BC

**Attachment 2**  
**MABEL LAKE WATER UTILITY**  
**2004 - 2010 Financials**  
**February 18, 2011**

GL Code	Description	2004	2005	2006	2007	2008	2009	2010	2011 Budget
11100952	INTEREST INCOME	-	-	-	-	-	-	(1,311)	-
11102952	SUNDRY INCOME	-	(374,134)	(1,727)	(399)	(1,117)	(210)	(75)	-
11137319	MLW: AVAILABILITY FEE	-	(7,215)	(16,060)	(33,813)	(36,619)	(37,089)	(37,186)	(39,875)
11137320	MLW: USER FEES	-	(4,800)	(15,691)	(37,488)	(44,696)	(45,400)	(46,897)	(54,557)
11137322	MLW: DISCOUNTS TAKEN	-	-	3,326	6,360	7,337	3,636	7,445	9,443
11137323	MLW: CONNECTION FEES	-	(225)	(1,800)	(800)	(525)	(630)	(1,260)	-
11193952	TRANSFER FROM OPERATING RESERVE	-	-	(58,657)	-	-	-	-	(24,601)
11198495	(SURPLUS) DEFICIT: PRIOR YEAR	-	1,603	-	-	-	-	-	-
		-	(384,770)	(90,609)	(66,140)	(75,621)	(79,693)	(79,285)	(109,590)
12772513	GIS OVERHEAD	-	-	500	500	500	500	500	500
12772514	EMPLOYEE COST ALLOCATION	1,023	3,561	9,538	16,724	19,660	16,423	4,701	21,067
12772517	COMMUNITY INFRASTRUCTURE CHARGE	-	497	492	527	-	-	610	862
12772518	FINANCE OVERHEAD CHARGE	219	2,716	2,520	2,786	3,130	3,341	3,590	4,282
12772519	CORP. ADMIN. ALLOCATION	-	390	380	450	430	460	550	1,009
12772521	PERMITS AND FEES	-	401	456	281	250	469	505	500
12772550	COMMITTEE REMUNERATION	-	-	294	200	274	(4)	-	-
12772558	COMMITTEE/BOARD TRAVEL	-	-	9	-	70	(3)	-	-
12772560	VEHICLE & TRAVEL	-	-	24	-	-	-	189	620
12772571	WATER TREATMENT CHEMICALS	-	288	1,124	1,317	1,355	2,226	1,121	2,250
12772573	CONTRACT OPERATIONS	-	4,953	9,898	9,286	8,415	10,455	11,029	10,500
12772574	REPAIRS & MAINTENANCE	334	3,128	3,593	14,374	11,752	13,278	14,563	37,000
12772577	LAB FEES - WATER QUALITY MONITORI	-	-	1,547	2,814	3,340	4,084	4,995	5,300
12772581	CONTINGENCY	-	510	71	13	499	-	-	1,000
12772593	EQUIPMENT & LEASES	28	170	981	1,135	17,824	378	303	1,000
12772594	INSURANCE	-	250	280	753	439	448	1,327	841
12772599	UTILITIES	-	1,856	4,197	5,190	5,871	5,892	5,348	6,500
12772810	TRANSFER TO OPERATING RESERVE	-	145,498	-	2,925	1,811	21,748	29,493	3,359
12772899	TRANSFER TO FEASIBILITY RESERVE	-	4,000	4,904	-	-	-	-	-
12772900	CAPITAL EXPENDITURES	-	216,552	49,801	6,866	-	-	462	13,000
		1,603	384,770	90,609	66,140	75,621	79,693	79,285	109,590
		1,603	-	-	-	-	-	-	-
<b>RESERVE HISTORY</b>									
	OPENING BALANCE	-	-	145,498	92,830	99,859	105,185	127,968	157,461
	DEBITS	(835)	-	(58,657)	-	-	-	(180)	(24,601)
	CREDITS	835	145,498	5,989	7,029	5,326	22,783	29,673	3,359
	CLOSING BALANCE	-	145,498	92,830	99,859	105,185	127,968	157,461	136,219



**Attachment 2 - Rate Comparisons of Other Small Utilities in BC**

RDNO Small Utilities Rates	# Units/Connections	Residential User Fee \$/yr	Parcel Fee \$/yr	Total Residential Rates/yr	Residential Rates with Discount/yr <sup>1</sup>	Disinfection/ Treatment	System
Silver Star Water <sup>2</sup>	742	\$625		\$625	\$563	Chlorination, future UV	8 Wells, 3 reservoirs,
Mabel Lake Water	310	\$266		\$263	\$237	Chlorination, future UV	Lake Intake + reservoir
Grindrod Water	52	\$450	\$861	\$1,311	\$1,266	Treatment Plant + Chlorination	Shuswap River intake + reservoir
Whitevale Water	92	\$544		\$544	\$517	Chlorination	Well + reservoir
Gunther-Ellison Water	10	\$251	\$1,331	\$1,582	\$1,557	Same as Enderby	Extension of Enderby Supply

1. Approximately 70 % to 90 % of residents take advantage of the early payment discounts

2. Residential rate for first 100 m<sup>3</sup> of water used

**Rate Comparison with Other Small Utilities in BC**

WATER SYSTEM	Connections	User Fee	Parcel Fee	Total Residential Rates/yr	Disinfection/ Treatment	District - SOURCE
Cedar Heights	400	\$195	\$114	\$309	UV / Chlorination	CSRD - Shuswap Lake
Eagle Bay	75	\$214	\$260	\$474	Chlorination	CSRD - Shuswap Lake
Falkland	230	\$165	\$145	\$310	No Treatment	CSRD - Well
Mac/Reed	97	\$500	\$160	\$660	Filtration / UV / Chlorination	CSRD - Shuswap Lake
Sorrento	248	\$350	\$200	\$550	UV / Chlorination	CSRD - Shuswap Lake
Saratoga	99	\$185	\$537	\$722	UV / Chlorination	CSRD - Shuswap Lake
Copperview	27	\$500	\$472	\$972	No Treatment	CSRD - Well
Woodsdale	29	\$467	\$1,270	\$1,737	Extension of DLC	DLC - Okanagan Lk
Olalla	app200	\$692		\$692	Chlorination	RDOS - Well + Reservoir
Evergreen	16	\$1,200	\$24	\$1,224	Chlorination	TNRD - Well, Cap on water use fee
Maple Mission	16	\$1,200	\$24	\$1,224	None	TNRD - Well, Cap on water use fee
Walhachin	31	\$1,164	\$24	\$1,188	Filtration / Chlorination	TNRD - Creek
Loon Lake	45	\$660	\$24	\$684	Chlorination	TNRD - Well
Falcon Ridge	57	\$454	\$200	\$654	Chlorination	CORD - Well
Killiney Beach	280	\$232	\$200	\$432	Chlorination	CORD - Okanagan Lk
Trepanier Bench	8		\$1,132	\$1,132	Filtration/ Chlorination	CORD - Creek
Westshore	235	\$232	\$200	\$432	Chlorination	CORD - Okanagan Lk
Sunset Ranch	200		\$256	\$256	Chlorination	CORD - Well

**Large Communities - fixed**

Nakusp	Residential User Fees Per annum
Oliver	\$ 407
Osoyoos	\$ 327
Winfield	\$ 467
Naramata	\$ 624
Black Mtn ID	\$ 381
Glenmore-Ellison ID	\$ 419
Kamloops	\$ 577
Lakeview ID	\$ 353
SE Kelowna IR (1)	\$ 466
Summerland	\$ 686
Westbank	\$ 431

Acronyms

UV - water treatment with ultraviolet light

CSRD - Columbia Shuswap Regional District

DLC - District of Lake Country

RDOS - Regional District of Okanagan Similkameen

TNRD - Thompson-Nicola Regional District