



# MEMORANDUM

Date: April 15, 2015  
To: Doug Allin, CAO  
cc:  
From: Scott Shepherd, BA, ASCT, Cory Sivell, E.I.T.  
File: 0788.0036.04  
Subject: **Universal Water Meters – Next Steps**

As requested, the following memo is intended to outline the available options on how to proceed with the implementation of the universal water metering program for the City's consideration as well as a brief summary for each of the next steps once a path forward is selected.

## Background

The decision to move forward with the implementation of universal water meters for the community is founded on the premise of sustainable service delivery. Sustainable service delivery ensures that delivery of services meets current community needs in a socially, environmentally and economically responsible manner. As outlined in the City's Water Supply Plan, the implementation of water meters is to achieve a 20% reduction in water use and defer costly capital upgrades.

A water system can reach its full potential for sustaining a community when clear knowledge of water supply and demand is available and integrated as part of utility decision making. Water meters provide direct benefits to three critical utility principles:

1. **Water Conservation** to protect the resource;
2. **Equity billing** for user pay financing;
3. **Minimize system losses** to provide low cost of service.

Water metering directly aligns with all three critical utility principles. **Water conservation** will help reduce water demands to a level that can be readily supported by the local groundwater resources. **Equity billing** will help ensure all customers are being billed fairly for their water consumption. **Minimizing system losses** helps reduce the cost of service by reducing water and pumping demands which as a result reduces energy consumption costs. As part of Council's overall Corporate Strategic Plan for 2012 – 2014, universal water metering was identified as a critical action for optimizing water system services and reducing energy requirements.

In 2014, the City adopted the Water Regulations Bylaw No. 1973 and entered into a contract with Neptune Technology Group Inc. for the installation of universal water meters. Based on recent conversations with city staff it was concluded that the program is approximately 70% complete (1184 of 1688 meters are installed). A summary of the water meter installation program to date can be found in **Table 1** below.

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**Table 1: Residential Meter Installation Summary**

<b>Residential Meters Installation - Summary</b>		
<b>Description</b>	<b># of Homes</b>	<b>% of Total</b>
<b>Installed</b>		
Interior	1163	69%
Exterior	21	1%
<b>Total</b>	<b>1184</b>	<b>70%</b>
<b>Want Meters (Not Installed Yet)</b>		
Interior	95	6%
Exterior	147	9%
<b>Total</b>	<b>242</b>	<b>14%</b>
<b>Refusals</b>		
Hard Refusal	28	2%
Soft Refusal	234	14%
<b>Total</b>	<b>262</b>	<b>16%</b>
<b>Total # Meters</b>	<b>1688</b>	<b>100%</b>

Of the remaining 504 meters to be installed, it is anticipated that 147 of those will be outside pit meters and Neptune has received requests from residents for 95 inside installations. Exterior pit meters are required due to a variety of reasons including the ability to capture irrigation water usage and extremely difficult interior installations. There are 262 of the 504 remaining installations that are named as 'refusals' of which 28 are 'hard' refusals (never will want a meter) and 234 are 'soft' refusals (no response to request to install).

The discussion below outlines the available options on how to proceed with the implementation of the universal water metering program for the City's consideration.

**Options for Meter Implementation**

Based on our experience and in discussions with other communities in BC who have experienced similar issues with 'refusals' (Fort St. John, Hudson's Hope, Sicamous, Chase, Kamloops), there are two options available for the City based on the provisions in Bylaw No. 1973.

**1. Proceed as planned with Bylaw No. 1973**

The following summarizes the key points outlined in the provisions of Bylaw No. 1973.

The City shall supply and install water meters to all properties, which receive the supply of water from the water utility, built prior to Jan 1<sup>st</sup>, 2015. If an Owner refuses installation, then the City (upon giving notice) may:

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1. Install an exterior pit meter at the curb stop (property line) with the property owner responsible for the increased cost difference, or
2. Shut off the supply of water to the property (with 30 days' notice) for non-compliance with the provisions of the bylaw.

Table 1 below outlines the advantages and disadvantages of this option.

Table 1: Advantages and Disadvantage of Proceeding as planned with Bylaw No. 1973

Proceed as planned with Bylaw No. 1973	
<b>Notes:</b> <ul style="list-style-type: none"> <li>- Install and supply meters to all properties as planned under Bylaw No. 1973</li> </ul> Stakeholder who refuse meters: <ul style="list-style-type: none"> <li>- Install pit meter at property line.</li> <li>- Shut off water supply for non-compliance</li> </ul>	
Advantages	Disadvantages
<ul style="list-style-type: none"> <li>- City meets it universal metering target.</li> <li>- Water rates are more easily administered (only dealing with a metered rate structure)</li> <li>- Proceed with meter installation in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>- Contractual arrangements must be made to facilitate exterior pit meters (adds extra costs);</li> <li>- Public push back and complaints.</li> </ul>

**2. Amend Bylaw No. 1973, Section 11 to allow for opting out**

The second option is to amend Bylaw No. 1973, Section 11 with a provision to allow residents who fail to install a water meter as required by the bylaw, the option to opt out of the installation. These properties would then be subject to an unmetered rate (as opposed to a consumptive rate). Table 2 below outlines the advantages and disadvantages of this option.

Table 2: Advantages and Disadvantages to Amending Bylaw No 1973, Section 11

Amend Bylaw No. 1973	
<b>Notes:</b> <ul style="list-style-type: none"> <li>- Allow stakeholders to opt out of the meter installation though amending bylaw no 1973.</li> <li>- Develop an unmetered rate.</li> </ul>	
Advantages	Disadvantages
<ul style="list-style-type: none"> <li>- Maintain goodwill with those looking to opt out;</li> <li>- Provide the City with the means to collect additional funds to cover cost associated with lack of consumption data.</li> </ul>	<ul style="list-style-type: none"> <li>- The City may be responsible for paying overhead plus profit for the meters that are not installed;</li> <li>- Bylaw must be amended (staff time and resources);</li> <li>- Increased difficulty of administering water rates (metered and unmetered rate);</li> </ul>

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	<ul style="list-style-type: none"> <li>- City does not achieve its universal metering target;</li> <li>- Metered customers could now want their meters removed (fairness);</li> <li>- Time intensive.</li> </ul>
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**3. Other Alternatives**

**Alternative A – Passively Opt Out (No Bylaw Amendment)**

There are communities who have passively allowed opting out without amending their bylaw. This means that a meter may or may not be installed but it would not be used. Residents in these situations are charged an unmetered rate. There are various different methods and formulae available to calculate the unmetered rate and this task should be completed as part of an overall rate study. **Table 3** below outlines the advantages and disadvantages of this option.

**Table 3:** Advantages and Disadvantages to Alternative A

Alternative A – Passively Opt Out (No Bylaw Amendment)	
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>- Passively opt out without amending bylaw.</li> <li>- Develop unmetered rate</li> </ul>	
Advantages	Disadvantages
<ul style="list-style-type: none"> <li>- Proceed under bylaw No 1973;</li> <li>- Maintain goodwill with those looking to opt out;</li> <li>- Provide the City with the means to collect additional funds to cover cost associated with lack of consumption data;</li> <li>- Meter could be utilized over time.</li> </ul>	<ul style="list-style-type: none"> <li>- Increased cost for installing a pit meter;</li> <li>- Increased difficulty of administering water rates (metered and unmetered rate);</li> <li>- Water meter asset deteriorates while not being utilized (i.e. collecting funds or reading data).</li> </ul>

**Alternative B – Pause Meter Program**

The City may wish to pause the entire water meter program. In this case, contractual details would need to be worked out with Neptune which may result in a significant cost to the City for lost profit and overhead. Table 4 below outlines the advantages and disadvantages to alternative B.

**Table 4:** Advantages and Disadvantages to Alternative B

Alternative B – Pause Meter Program
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>- Pause the water meter program</li> </ul>

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Advantages	Disadvantages
<ul style="list-style-type: none"><li>- Maintain goodwill with stakeholders looking to opt out.</li></ul>	<ul style="list-style-type: none"><li>- The City may be responsible for paying overhead plus profit (Significant cost);</li><li>- Increased difficulty of administering water rates (metered and unmetered rate);</li><li>- City does not meet its universal metering target;</li><li>- Metered customers could now want their meters removed (fairness);</li><li>- Time intensive.</li></ul>

**Next Steps**

Once the City has charted a path forward with the installation of the water meters, the following outlines the next steps to successfully complete the universal water metering program:

- Prepare a terms of reference for the rates committee;
- Billing and Rate Study;
- On-going Meter Management (demand measurement, meter testing, performance and monitoring).

**Terms of Reference for the Rates Committee**

A sample terms of reference can be found in **Appendix A**

**Billing and Rate Study**

Setting sustainable water rates reduces the system's financial risks, encourages water conservation and promotes fairness. Sustainable water rates stimulate a user pay financing system which holds the users accountable for their water consumption behaviours. This helps to create a financially sustainable water system which will ensure Grand Forks can provide safe, reliable drinking water now and into the future.

The proposed approach to setting water rates in **Figure 1** below is based on our experience working with similar communities who have been successful in establishing a sustainable water rate structure.

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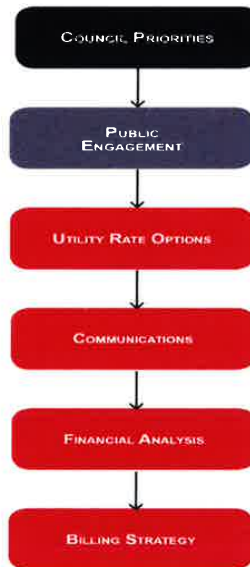


Figure 1: Billing and Rate Study Process

Through developing this process we found that it is important to focus on; the political, the technical and the communicative aspects. Below is a brief summary of the key tasks that comprise the phases listed above in **Figure 1**.

**Council Priorities:** Moving forward with setting a sustainable water rate is a significant political decision because of the implications to various stakeholders, customer groups and residents. Council will be engaged to developing principals related to water which will help guide the project moving forward. Council will be asked to determine preferred water system financing principles and develop new rate structure that balances revenue needs, water conservation, meter financing, and asset management requirements.

A successful funding model and rate strategy is typically based on the following key principles.

1. Simplicity
  - Easy for the customer to understand
  - Efficient to administer
2. Revenue Stability
  - Revenues generated are predictable
  - Providing sufficient revenue to the utility
3. Conservation
  - Pricing (rate) to encourage water conservation
4. Equity
  - Fair to all types of users
  - Defendable strategy

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- 5. Affordability
  - o Recognition that certain customers may need assistance

**Public Engagement:**

As mentioned, setting sustainable water rates is a necessary but sensitive community issue which requires a unique engagement process to gather input which can be used to shape decisions. Council and public engagements need to be in sync and focus on the values, needs and aspirations of the entire community.

**Utility Rate Options:**

Once the council priorities are established and meaningful public input is gathered, staff can better explore and analyze various utility rate options. Best practices and water rate principles such as fairness, equity and simplicity will be better understood.

**Communications:**

A communications expert and City staff would design a group of events that will keep the public informed and more importantly, encourage stakeholders to provide input along the way. There should be multiple check-in points with stakeholders throughout the process.

**Financial Analysis:**

Once the community's water values and ambitions are better understood, staff can select 1 or 2 rate structures they believe would work best for Grand Forks. An analysis will be completed on the selected options so that the community can better understand the financial implications of each choice (i.e. annual revenues, annual expenditures, fluctuations, cash flow).

**Billing Strategy:**

Developing a billing strategy will help the community transition from an old way of collecting revenues to a new more financially sustainable system. Typically communities will establish a mock billing system for their customers over the first year so that they can begin to understand how their current water consumption behaviours will affect them financially. After the mock billing period is over, the community can start to collect revenue from its customers.

**On-going Meter Management:**

On-going meter management is important for extending the service life of meters and promoting the sustainable delivery of services. Just like any municipal asset, meters require on-going care to ensure the newly acquired asset can be utilized to its full potential. On-going meter management includes (but not limited to):

- **Meter Testing** – Overtime meters will have to be tested and calibrated to ensure they are providing accurate information. Meter accuracy is important to ensure users are being billed fairly and that water consumption behaviours are representative.
- **Billing** – Ongoing billing administration work.

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- **Meter Maintenance and Replacement** – Over time meters will need to be repaired and replaced.
- **Demand Management** – Over time the city will want to analyze and study their water consumption data to better understand where water is being consumed and how their demands can be better managed. Managing water demands helps to promote a safe environment, longevity of assets and postpones expensive infrastructure upgrades.

Proper meter management ensures the cities return on investment is maximized, water consumption data is being utilized to reduce capital expenditures and that customers are being billed appropriately.

We trust the above information is informative and if you have any questions or require any clarification please contact the undersigned.

Sincerely,  
**URBAN SYSTEMS LTD.**

A blue ink signature of Scott Shepherd, consisting of a stylized 'S' followed by a horizontal line.

Scott Shepherd, BA, ASCT  
Principal

A blue ink signature of Cory Sivell, written in a cursive style.

Cory Sivell, E.I.T.  
Community Consultant



# *APPENDIX A*

**City of Grand Forks**  
**Sample Terms of Reference**  
**City Council Water Rate Select Committee**

**Introduction**

The City Council Water Rate Select Committee is formed to provide direction on water rates and conservation goals.

**Objective:**

The objective of the Select Committee is:

- To report its findings and opinion to council which will assist in the development of a water conservation program and cost recovery policy.

**Scope of Work:**

To achieve this objective, the City Council Water Rate Committee will undertake the following activities:

- Review and develop a city strategy to implement the goals of council with respect to water conservation and cost recovery;
- Review and approve educational material for rates and conservation;
- Provide input into billing strategy and other elements of engagement with rate payers over water matters;
- Provide input into the water utility rate decision.

**Membership**

- 3 members of Council plus technical support from City Staff.

**Appointment and Term**

Select committee members shall be appointed to the Council for the project duration.

Members of the Committee shall serve without remuneration.

In the event of a vacancy occurring during a regular term of office, the vacancy may be filled for the remainder of that term upon resolution of Council.

Council appointment must adhere to section 142 of the Community Charter.

**Chair**

The Chair of the Committee shall be appointed by Council resolution.

### **Meeting Procedures**

The Chairperson shall call meetings of the Committee as required.

Unless otherwise authorized by Section 242.2 of the *Local Government Act* all meetings will be held in open session and in a location accessible to the public

The order of business is to be as set out in an agenda package to be provided to the committee members in advance of the meeting date. A copy of the agenda shall be forwarded electronically to the City Clerks Department at least three complete working days prior to the meeting date. Minutes of the meetings will be prepared by the staff liaison and then signed by the Committee Chair. Originals of the minutes will be forwarded to the City Clerk for safekeeping.

Committee members have a responsibility to make decisions based on the best interests of the City-at-large. Committee members must abide by the conflict of interest provisions of the Local Government Act. Members who have a direct or indirect pecuniary interest in a matter under discussion are not permitted to participate in the discussion of the matter or to vote on a question in respect of the matter. They must declare their conflict and state the general nature of their conflict, and then leave the meeting or that part of the meeting where the matter is under discussion. The member's declaration must be recorded in the minutes, and the Committee member must not attempt in any way, whether before, during or after the meeting to influence the voting on any question in respect of the matter.

### **Voting:**

- All members of a committee, including the chair, vote on every question unless they have declared a conflict and left the meeting;
- Any member who does not indicate how they vote, or has left the meeting without declaring a conflict, is counted as having voted for the question;
- If the votes are equal for and against, the question is defeated.

### **Reporting to Council**

Recommendations of the Committee must be adopted by Committee resolution prior to presentation to Council. The Committee will regularly report to Council regarding current activities and recommendations. The Chairperson will report to Council on behalf of the Committee.

### **Budget**

The routine operations and any special project initiatives of the Committee will be funded by allocations within the annual budget.

### **Staff Support**

The City of Grand Forks will provide all staff support for the committee. Typical support functions include the following:

- Organizing and preparing the agenda, in conjunction with the committee chair;
- Distributing the agenda packages to committee members;
- Forwarding the agenda to the City Clerk for posting as a public notice;
- Taking and preparing draft minutes;
- Managing the files of the committee, as necessary;
- Maintaining a list of outstanding issues for committee action;
- In conjunction with the Chair, drafting Committee reports to Council;
- Providing the position of City Staff on issues discussed by the Committee.