



Subject:	Town Wide Water Meter Replacement and AMI Installation Project Award
To:	Community Services & Infrastructure Committee
From:	Public Works Department

Report Number:	PW 11-19
Wards Affected:	All
Date to Committee:	Wednesday, April 3, 2019
Date to Council:	Monday, April 15, 2019

Recommendation:

Receive and File PW-11-19 Town Wide Meter Replacement and AMI Installation Project Award; and

Approve the company of Neptune Technology Group be retained to supply and install equipment at a cost of \$2,280,160.58; and

Approve the firm of Diameter Services be retained to supply contract administration and site inspection; and

Approve the Mayor and Clerk to sign and seal contract documents on behalf of the municipality.

Purpose:

The completion of the Town Wide Meter Replacement and Advanced Metering Infrastructure (AMI) Installation aligns with the Town’s Mission/Vision/Values by taking an approach to improve all areas of water meter reading and billing and will provide for an efficient, effective and customer centered approach, resulting in a more sustainable community.

Background:

In 2017 it was identified that several water meters in the system were past their accurate reading life. Additionally, it was becoming apparent that the current meter reading company was not meeting expectations for deliveries and a significant number of meters were required to be read by Town Water operators or be estimated based on previous reads by the Water Clerk. At the time it was identified that 5,600 were at the end of their service life and needed to be installed. It was also identified that a more advanced means of reading should be included and automatic meter reading (AMR)/Advanced Metering Infrastructure (AMI) system to allow for improved reading.

In May 2018 the Town retained Diameter Services to complete design stage of the Town wide meter replacement and AMR/AMI installation. During the design phase, a steering committee was created that included staff from public works, finance and IT. Communications was also included in portions of the design relating to public outreach. The consultant led the steering committee through a number of workshops to identify project goals, key business drivers, available technologies and overall project expectations. The project goals, key business drivers and operational requirements were used to identify and develop the terms of reference in which the Request for Proposals were based on. Following this process, it was determined that all of the Town's 6,343 meters be replaced, for continuity purposes, and that AMI technology be utilized for meter reading purposes. In addition, the potential for a customer portal was added as a provisional item to be included in the submissions. The intent of the RFP was for a single company, or group of companies to present a turn-key deliverable addressing: meters, installation (booking and physical installation), reading technology, customer support and capability of integration with the Town's existing Finance and reporting/monitoring systems.

Report:

RFP Process

In December 2018, the Request for Proposal for the Town Wide Water Meter Replacement and AMI Installation Project was issued. Given the nature of the RFP and the request for a turn key solution, and the understanding of the market, it was anticipated that 3 or 4 companies would be providing submissions. A total of 3 proposals were received from Corix Water Products Limited Partnership, KTI Limited and Neptune Technology Group.

Upon initial review for submission conformance, it was found that the submission from Corix was deemed not compliant.

The following table provide a ranking of the submissions:

Ranking of Submissions	Comments
1. Neptune Technology Group	Preferred Vendor
2. KTI Limited	
3. Corix Water Products Limited Partnership	Non-Compliant

A review team consisting of 9 people from the consultant (Diameter Services) and the Town was assembled. The review team included staff from Public Works, Finance and IT. In addition to reviewing the prepared written RFP submissions, the evaluation process also included contacting previous project references and interviews with the bidders. Following evaluation process, Neptune was identified as the preferred vendor.

Key Features of Neptune's Proposal

Project Team

Neptune's proposal included an extremely diverse and experienced team which demonstrated that the Town of Lincoln's project would be a priority. The depth of the team covered all areas from public outreach, call centre, meter support, meter installation, AMI support, project management, training and integration.

Meter

The meter recommended by Neptune is the meter that is currently being installed by Town Water Operators. The Neptune meter, as with the other meters presenting in other submissions, meets or exceeds the technical requirements identified in our specifications. The Town is satisfied with the warranty provided and confident that the meter will operate as intended for the life of the meter.

AMI System

The AMI system presented by Neptune was designed exclusively for the water industry and functionalities are first and foremost for water. The system is currently in operation in several municipalities across North America both large and small. The references provided during the proposal process all provided positive feedback about not only the installation phase of the project but also operations following the completion.

The system availability provides for a 99% uptime to ensure that the Town maintains accurate near real time reads. In the 1% event, the meter transmitter can store 96 days of hourly data. The response time for addressing down time on the system is anticipated to be less than 8 hours during normal business hours. Neptune will be able to utilize existing building and towers to provide reading coverage for the Town of Lincoln.

The AMI system and data is able to interface with other systems the Town has including our Vadim Billing system and our E.Ris. system used within the Environmental Services Department.

Neptune's AMI system allows for near real time reporting and analytics and alarms to be incorporated into every day operations.

Security and privacy of data is taken seriously. The system, including the customer portal portion, follow Open Web Application Security Project (OWASP Top Ten) and have undergone third party security auditing.

Installation Experience

Neptune has worked with over 4,000 water utilities in North America and over 600 in Canada. In the last 5 years, Neptune has installed over 1 Million AMI enabled meters and over 650,000 of those meters were installed on an AMI network like the system that is proposed to be installed in Lincoln.

Customer Portal

An important feature that the project team wanted to ensure would be an option to bring forward was a Customer Portal. Neptune has provided a customer portal that would allow residents to log in and access real time data on water usage. The portal will also provide residents with answers to frequently asked questions about water use and conservation.

Existing Neptune Meters

Meters that have been installed in Lincoln within the past 2 years are the same Neptune meters included in their proposal, as such, it is proposed that only the existing read touchpads be replaced with AMI Transponders. The benefit for the Town to be able to utilize these existing similar type meters is estimated to provide a savings per meter and also provides a cost savings in operations as the water operations staff are experienced with the meters.

Next Steps

Following approval by Council and project award, Neptune will initiate the process to install the AMI portion of the system. The meter installation will begin in July of 2019 with completion in February 2020. The meter installations will be done in phases and only portions of the Town will be installed during each phase.

Financial, Legal, Staff Considerations:

Financial:

The following provides a breakdown of the capital costs for the project:

Table 1: Estimated Project Cost Summary	
Design Phase (Awarded in 2018)	\$93,160.00
RFP Price (Neptune)	\$2,280,160.58
Contract Administration and On-Site Inspections	\$224,310.00
Contingency Allowance	\$240,000.00
Total Estimated Cost	\$2,837,630.58
<i>Total Budget Allocation (2018 and 2019 Capital Budget Allocations)</i>	<i>\$3,343,950.60</i>

Contract administration and on-site inspection would include spot inspections of installations across town, vetting of information being provided to finance and IT as part of the migration and completing weekly status reports over the duration of the project. As this project does impact all homes on Town water, the success of this project from all areas is important and contract administration and on-site inspection plays a key role in ensuring this success.

The Contingency Allowance may not be used but is important in addressing potential additional costs associated with wiring and plumbing concerns as well as any unplanned meter changes due to reading concerns.

The RFP submission and proposed project agreement included a breakdown of annual operating costs related to the meter reading and customer portal maintenance for a period of 15 years.

Current Annual Operating Costs

The current annual operating costs related to meter reading include the current meter reading contractor, as well as costs associated with Town Water Operators completing missed reads. In 2017, Town Water Operators were required to complete over 1,800 reads to support water billing. The costs associated with the reads are over \$175,000 per year.

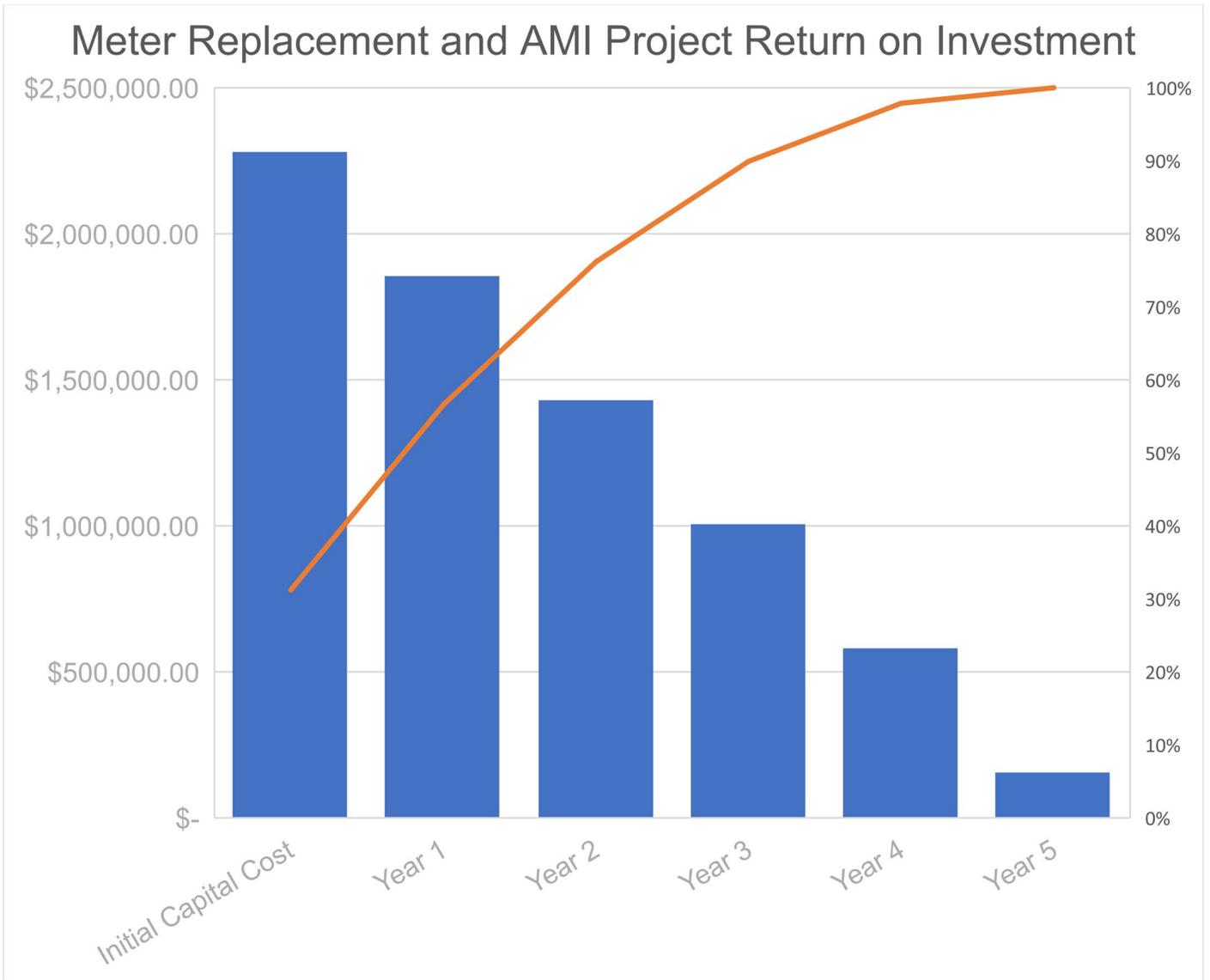
In addition to the impacts from completing reads, using industry standards, it is estimated that the current meters nearing or past their anticipated service life are resulting in \$309,380 in inaccurate reads per year.

Anticipated Annual Operating Costs

The anticipated annual operating costs including access to the customer portal anticipated to be available to residents in early 2021 is \$60,000.

Anticipated Return on Investment

Considering missed revenue with inaccurate meter reads and the reduction in operating costs associated with meter reading, the anticipated return on investment is just over 5 years.



The anticipated useful life of the meter and/or reading equipment is 20 to 25 years. It is recommended that the process for meter replacement be initiated in 2038 with meters being replaced in 2040.

Staffing:

To assist with the water billing requirements associated with changing meters, an additional contract position water clerk is required. The costs associated with this was included in the 2019 Operating Budget. This costs for this contract position will also extend into Q2 of 2020.

Legal:

N/A

Public Engagement Matters:

A detailed public engagement plan will be developed that will include public information centres, social media posts, highlighting that Neptune is working on behalf of the town, the benefit of the new technology and associated features and that the replacement of meters and reading equipment is mandatory.

Frontline staff will be equipped with responses to anticipated key questions in advance of the initial mailing.

Neptune has been responsible for the installation of over 1 Million meters across North America and understands that the success of the project is directly related to being able to get into the customers' homes.

The property owners will be able to arrange for a 2-hour installation window Monday to Saturday, including evenings, through an online portal or call centre. The management of the bookings will be completed through Neptune.

Neptune will be responsible for mailouts, door hangers and in person contact regarding the booking process for the installation of the meters. All materials will be reviewed and approved by Town of Lincoln staff prior to distribution.

It is important to note that the work will be completed in phases across Town and not all residents will be notified at once.

Conclusion:

The Town Wide Meter Replacement and AMI Installation project is an import project to improve water operations and reporting, improve impacts to finance and water billing and ultimately provide added resources and tools to the residents to reduce the impacts of high water bills due to leaks or periods of high-water use.

While the project is a major under taking and will involve contact with all property owners connected to our water distribution system, the approach and attention given to the project.

Respectfully submitted,

Gillian Harris, P.Eng., PMP
Manager, Environmental Services
905-563-2799 Ext.286

Appendices:

Appendix A - Town Wide Meter Replacement and AMI Installation Presentation

Report Approval:

Report has been reviewed and/or approved by Director of Public Works, Chief Strategic Communications and Public Affairs Office, Director of Finance and Administration. Final approval is by Chief Administrative Officer.



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| Agenda

- Project Background
- Project Goals and Business Drivers
- Proposed Meter Reading Technology
- Customer Portal
- Project Benefits
- Financials
- Next Steps
- Questions

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| Project Background

- 2017
 - Identified that 5,600 meters past service life
 - Despite training and numerous meetings with reading company, monthly response declining and impacting water operations and billing
- 2018
 - Consultant retained to assist with design stage
 - Steering Committee including Public Works, Finance and IT created
 - Project goals and key business drivers were identified
 - RFP Issued Q4 2018

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| Project Goals and Business Drivers

- Project Goals
 - Elimination of manual meter reading and transition to AMI technology
 - Completion of project within 10 months
 - Proven system reliability
 - Reliable long-term supplier partner to support product supply requirements post project
 - Project and on-going system and product training for Town Staff

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| Project Goals and Business Drivers

- Business Drivers
 - Improve meter reading reliability
 - Detect register and cut wiring problems
 - Reduce regular meter reading costs
 - Same day reads
 - Proactive leak detection alerts
 - Customer consumption analysis including customer portal
 - Dynamic water balance
 - Detect backflow events
 - Vacation monitoring

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| Proposed Meter Reading Technology

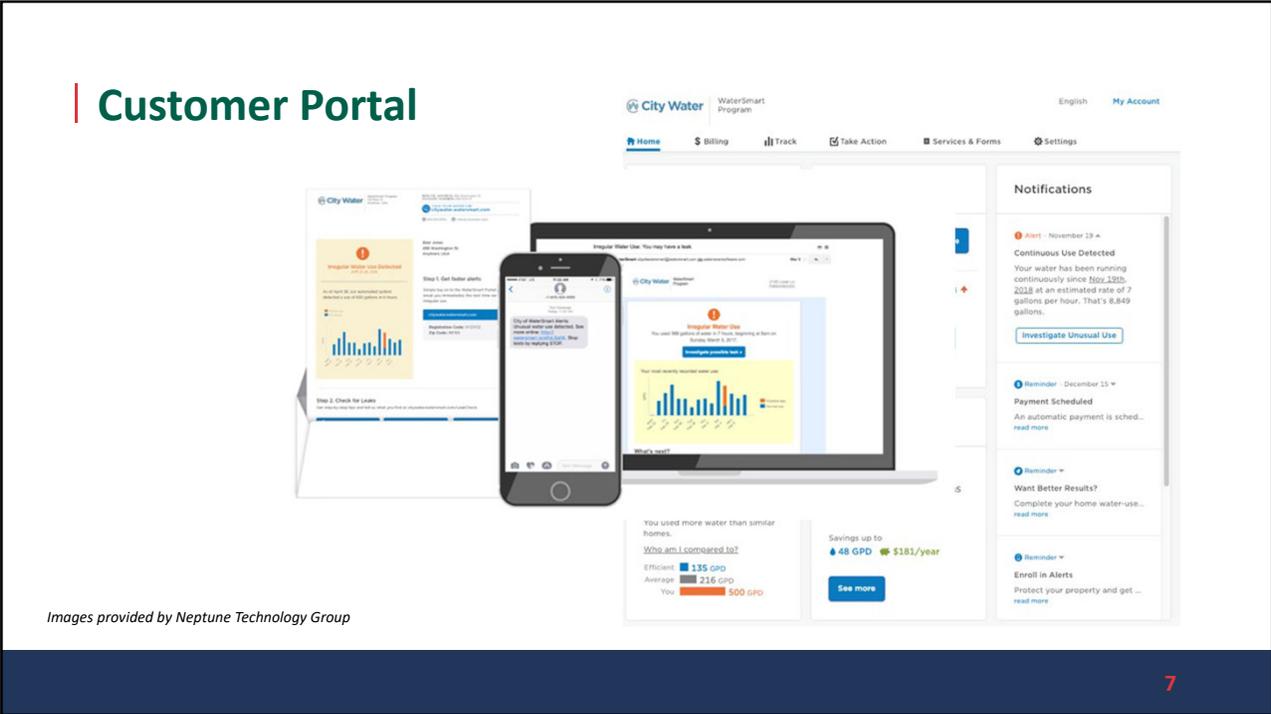
- During the project it was identified that Advanced Meter Infrastructure (AMI) or fixed towers was the preferred option
- Allows for near real time response
- Improved customer service
- Reducing reading costs
- Allows for alarms for high water consumption, backflow events and tampering



*Images obtained from
Evans Supply Limited
and Neptune
Technology Group*

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Project Benefits

- **Town Perspective**
 - Improved reading
 - Reduction of losses associated with inaccurate reads
 - Improved customer service
 - Increased knowledge of system
- **Customer Perspective**
 - Easy options for booking water meter installations
 - Portal available to monitor water usage in between billing periods
 - Supporting videos and documents to identify sources of water leaks in home
 - Able to set alarm notifications for high consumption
 - Tips and tricks

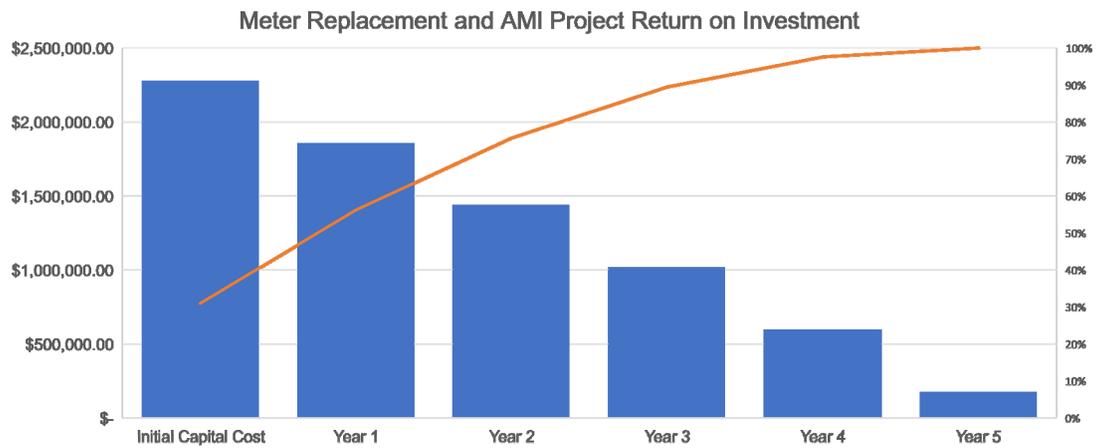
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Financial Information

Item	Cost
Design Phase Price (Awarded in 2018)	\$93,160.00
RFP Price	\$2,280,160.58
Contract Administration and Site Inspection	\$224,310
Contingency	\$240,000.00
Total Estimated Costs	\$2,837,630.58
Estimated Savings Per Year	\$430,000.00

Financial Information – Return on Investment



| Next Steps

- Contract Award – May 2019
- AMI Preparation and Installation – Q2 2019
- Meter Installation – July 2019
- Project Completion – February 2020

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| Questions

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