



## memorandum

**DATE:** November 2, 2017

**TO:** Mayor and Members of Council

**FROM:** Stephen Collins, Deputy City Manager, Public Works  
Laura Mirabella-Siddall, Chief Financial Officer and City Treasurer

**RE:** **Communication: Finance, Administration and Audit Committee (November 6, 2017 - PM Meeting) Item #1 – Draft 2018 Budget and 2019-2022 Financial Plan - Smart Water Meter Project**

**C 1**  
**COMMUNICATION**  
**FAA - November 6/2017 (pm)**  
**ITEM - 1**

### Recommendation

The Deputy City Manager of Public Works, Chief Financial Officer and City Treasurer, and the Director of Environmental Services, in consultation with the Director of City Financial Services and Deputy City Treasurer and the Director of Financial Planning and Development Finance and Deputy City Treasurer, recommend:

1. That the recommended Draft 2018 Budget be updated to include both the capital and operating impacts of the Smart Water Meter Project as outlined in this communication;
2. That upon further investigation in to the merits of internal or external borrowing for the project, that the Chief Financial Officer and City Treasurer be delegated the authority to finance the project with the method that minimizes financial risk and interest costs and maximizes value for money; and
3. That staff be directed to pursue a partnership with Alectra to implement an Advanced Metering Infrastructure solution.

### Purpose

The purpose of this memo is to inform Council of the benefits and costs associated with the installation of smart water meters and automated meter reading technologies and to update the 2018 draft budget submission to recommend the inclusion of this project and associated costs.

### Background

**A smart water meter feasibility study was completed by Util-Assist (external consultant) in 2017 to help solve issues related to water meter billing and non-revenue water.**

The City has approximately 90,000 water meters (residential, industrial, commercial and institutional), which are currently manually read on a monthly or bi-monthly basis by 3rd party meter readers. Issues with water meter billing, such as high-water consumption and estimated water meter reads are an ongoing concern for Vaughan's water customers. With our current meters and processes, customers are only alerted to high or unusual water consumption in their bills (issued monthly for ICI customers and bi-monthly for residential customers). This means it takes up to sixty days for our customers to be made aware of leaks and other problems in their plumbing. Further, if the water meter reader cannot access the reading point, an estimated water meter read occurs. The estimate is calculated using previous consumption data and a bill is issued. The next time an actual meter read is done the actual consumption versus estimated consumption is reconciled. Frequently, the estimated read is lower than the actual consumption, resulting in a larger than expected catch-up bill. These two issues limit the customer's control over their water meter bills.

Non-revenue water (NRW) in the City is the difference between what is purchased from York Region and what is billed to Vaughan's water customers. NRW has averaged 13% which equates to \$15.1M in the 2018 budget, based on purchases of \$116.2M. Non-revenue water includes water loss through leaks, main breaks, and water theft as well as unbilled, authorized consumption such as water used for fire suppression and for a routine flushing activity by staff. Leaks in water mains, water curb boxes, thefts from hydrants and other infrastructure remains hard to detect. Water main leaks often are only discovered when there is a water main break.

**The Smart Water Meter Feasibility Study examined two types of smart water meter technologies – Automated Meter Reading (AMR) and Advanced Metering Infrastructure (AMI)**

Automated Meter Reading allows the water meter to be read by a meter reader as they drive by a home or business. The technology is one step up from the current manual meter reading process that requires meter readers to walk to every house or business in the city to collect meter data.

Advanced Metering Infrastructure allows two-way communication between the meter and a communication network. The AMI solution could be implemented in two ways, either through a partnership with Alectra where the City uses Alectra's existing infrastructure (shared AMI) or through an independent, stand-alone system. Preliminary discussions have been held with Alectra to discuss a shared solution.

**AMI is the recommended solution to meet the City's objectives**

An operational assessment and cost/benefit analysis of both technologies including a determination of which approach met the study's stated goals and objectives was completed by staff and supported by Util Assist. The study concluded that the shared AMI technology was the recommended solution.

Alectra is ten years into its AMI system life-cycle for collecting electric meter reads and will likely need to replace or upgrade the system during the City's system life-cycle. This represents a potential risk especially if Alectra selects a different meter vendor, leaving the City with stranded assets.

**The benefits of implementing an AMI solution include enhanced customer experience, increased operational efficiencies, promotion of water conservation, and alignment with the City's Smart City Digital Strategy**

Although the original study focused on improving the customer experience with respect to water meter billing, examination of the two technologies revealed many more benefits than were not originally anticipated at the beginning of the study. The AMI solution provided the most benefits to the City and also showed the highest rate of return. The cost estimates are described in the Economic Impact section of this memo.

Enhances customer experience (residential and ICI):

- Prompt notification of high water consumption (within 24 hours)
- Capability to view individualized detailed consumption data
- Capability to view water consumption patterns which can promote water conservation
- Reduction of high water bills associated with estimated reads

Improves operational performance:

- Supports process re-engineering as meter reading processes will be reviewed, updated and optimized as part of the project implementation.
- Supports Asset Management by accurately identifying and replacing meters that are in need of repair or have exceeded their useful life.
- Supports the reduction of non-revenue water through:
  - Improved data for audits focused on water loss, leak detection, and water system efficiency;



- The replacement of inaccurate meters;
- Prompt notice of meter tampering and potential water theft; and
- Information to support the proactive repair of the water system, reducing watermain breaks and interruptions of water service to citizens and businesses.

Promotes water conservation:

- Citizens and businesses will be able to monitor their water consumption, adjust their water use behavior thus reducing their costs and conserving water resources.
- Ability to identify high water users and refer them to York Region's Water Conservation Program for recommendations and potential financial incentives to reduce water consumption.

Aligns with the City's strategic objectives

- Environmental Stewardship through water conservation and reducing environmental carbon footprint due to fewer required field visits
- Support the City's Smart Cities Initiative and Digital Strategy through:
  - Enhanced communications
  - Timely access to consumption data and content
  - eServices and mobile apps
  - Internal digital transformation
  - Municipal transformation

### **Economic Impact**

Implementation of the project and installation of new water meters and data collectors would be rolled out over a 4-year period starting from 2018.

### **Impact on the Capital Budget**

The project has a total capital cost of \$38.5 million, of which \$3.1 million of water meter related projects were approved in 2017, leaving a net capital request of \$35.4 million. The project is expected to be funded through borrowing either from internal reserves or through external debenture markets, and which will ultimately be repaid through water rates. Further analysis will be required to determine the most cost-effective financing strategy for the City. The payback period is estimated to be approximately 15 years.

### **Capital Costs of Shared Smart Metering Solution**

<b>Capital Cost</b>	<b>\$M</b>
AMI Capital	24.7
Meter Installation	8.3
Meter Data Management System (MDM) Capital	2.6
Customer Information System (CIS)/Workforce Management (WFM)/ Enterprise Service Bus (ESB) Capital	2.1
Corporate Services & Other Capital	0.8
<b>Total Capital Cost</b>	<b>38.5</b>

*Note: Two Additional Resource Requests are included in the capital cost to support the AMI implementation. The positions are Business Analyst and Project Manager. They are contract positions with a 4-year term.*

### **Impact on the Operating Budget**

Purchases from the Region are expected to decrease as a direct result of the reduction in non-revenue water (i.e. improved meter accuracy, identification of leaks and network losses), generating a positive change in gross margin starting in 2019.

Notable expenditure increases starting in 2022, are a result of IT integration changes and repayment of debt incurred to implement this project. The debt is expected to be retired in 2042.

Lifecycle contributions are expected to trend lower as the increase in gross margin would more than offset by increased costs. Debt repayment would impact lifecycle contributions and will be linked to the 20-year life span of the meters.

**Net Financial Impact to the Proposed 2018 Operating Budget and 2019-22 Plan**

(\$M)	2018 Budget	2019 Plan	2020 Plan	2021 Plan	2022 Plan
Revenue					
Purchases	0.0	-0.2	-0.9	-1.9	-2.8
<b>Gross Margin</b>	<b>0.0</b>	<b>0.2</b>	<b>0.9</b>	<b>1.9</b>	<b>2.8</b>
<b>Other Revenue</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Expenditures</b>					
Maintenance & Installation	0.4	0.5	0.3	0.7	0.7
General Administration	0.0	0.1	0.1	0.1	3.3
Other					
Lifecycle Contribution	-0.4	-0.3	0.5	1.2	-1.1
<b>Total</b>	<b>0.0</b>	<b>0.2</b>	<b>0.9</b>	<b>2.0</b>	<b>2.9</b>
<b>Net</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

**Conclusion**

**AMI is the most cost-effective solution combined with a shared-solution partnership with Alectra.**

In order to realize the most cost-effective way to implement an AMI solution, the City should partner with Alectra, leveraging their current infrastructure and software. The City has had preliminary discussions with Alectra to discuss this shared solution and how to move forward should Council approve the capital budget in the 2018 budget submission.

Installation and operation of an AMI network would provide several important benefits to the City including a higher level of customer service, the ability to encourage conservation by educating customers on usage patterns, and the ability to reduce water costs by reducing water losses.

**Memo prepared by:**

Nadia Paladino, Manager, Special Projects, Ext. 8054

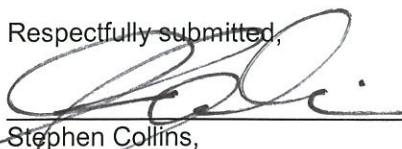
Sean Skinkle, Finance Manager, Ext. 8486


Attachment #1: ARR – Business Analyst (4 year contract)

Attachment #2: ARR – Project Manager – Water (4 year contract)

Attachment #3: Capital Project Summary

Respectfully submitted,

  
Stephen Collins,  
Deputy City Manager, Public Works

 on BEHALF OF  
Laura Mirabella-Siddall,  
Chief Financial Officer and City Treasurer

cc: Daniel Kostopoulos, City Manager  
Jennifer Rose, Director Environmental Services  
Dean Ferraro, Director City Financial Services and Deputy City Treasurer  
Lloyd Noronha, Director Financial Planning and Development Finance and Deputy City Treasurer



**CITY OF VAUGHAN  
2018-2022 OPERATING BUDGET**

**ADDITIONAL RESOURCE REQUEST**

<b>Request Title</b>	Business Analyst (4 year contract)			(limit 70 Characters)
<b>Business Unit #</b>	2340001	Water- 100%		
<b>Department</b>	Environmental Services			
<b>Term of Council Service Excellence Strategy Map</b>	Invest, renew and manage infrastructure and assets			
<b>Tied to a Capital Project</b>	Yes	Project	Water Meter Changeout and AMI Project	Approved/ Recognized
<b>Legal/Regulatory Requirement</b>	No	Indicate the Statute or Regulation		
<b>ARR Type</b>	New	Labour/Non-Labour	Labour	

**Annual Budget Change Summary**

Financial Components	2018	2019	2020	2021	2022	2018-2022 Sub-total	2023 (One Time. Adj.)	2018-2023 Sub-total
<b>Staffing</b>								
Complements	1.00	-	-	-	-	1.00	-	1.00
Net FTE's	1.00	-	-	-	-	1.00	-	1.00
<b>Operating Revenue</b>	-	-	-	-	-	-	-	-
<b>Operating Costs</b>								
Staffing & Benefits	121,083	-	-	-	-	121,083	-	121,083
Other continuous costs	4,200	-	-	-	-	4,200	-	4,200
One-time expenses	14,000	(14,000)	-	-	-	-	-	-
Offsets/reductions	-	-	-	-	-	-	-	-
Offsets Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	-
<b>Net Operating Budget</b>	<b>\$ 139,283</b>	<b>\$ (14,000)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 125,283</b>	<b>\$ -</b>	<b>\$ 125,283</b>
<b>Associated Capital Costs</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**Please provide a brief description of the request. (Limit 1,325 characters)**

The City of Vaughan owns over eighty-five thousands customer water meters and the number continues to increase as the City is experiencing growth. The City is embarking to upgrade its water meter infrastructure, and a feasibility study was completed in August 2017 with positive recommendations to implement Advanced Metering Infrastructure (AMI) to enhance customer services, improve water conservation, process and operational efficiencies. This position will engage in the AMI project and lead water meter analysis including water demand analysis, billing data trending and analysis, cost-benefit analysis, monitoring and reporting on the performance & efficiencies of AMI initiatives, providing customer services and maintaining communication and be a liaison with the key internal and external keyholders.

**Identify the results or outcome that will be achieved with the new request. (limit 720 characters)**

The Business Analyst position will be engaged in the AMI project which is expected to generate positive results that may include reduction in meter reading cost, water losses and water billing disputes, improved water conservation, customer satisfaction and water demand management. The AMI project will also improve environmental stewardship, asset management and support the City's Smart Cities Initiatives and Digital Strategies.

**Indicate any impacts this request will have on other departments.**

x	Building & Facilities		Legal	Type of consultation: (limit 200 characters)
x	Information Technology		Other: _____	Ongoing support required from various departments as per the norm.
x	Human Resources		Other: _____	

**Are there any implications if this ARR is not approved? Please describe. (limit 600 characters)**

Water Services will struggle to meet compliance, new business and infrastructure renewal target as the overall workload increases with the growth in Vaughan.

**Financial Planning & Development Finance Only**

Questica Budget Change Request:

Included in Draft Budget:

Approval Received:

<b>Request Title</b>	Business Analyst (4 year contract) <span style="float: right; font-size: small;">(limit 70 Characters)</span>			
<b>Implications/Consequences (if request not approved)</b>				
<i>Legislative/Regulatory Requirement due to Law, Regulation, or Act. (NOTE: A By-Law is not a legal requirement)</i>				
Are there any Legislative or Regulatory Requirements that this ARR is addressing? _____ If yes, Type: _____				
What is the consequence of non-compliance? (fine, other penalty, amount) <span style="float: right; font-size: small;">(limit 650 characters)</span>				
<b>Risk Management</b>				
What is the risk associated with not approving this ARR? (Speak to severity and financial impact)				
<b>Complement Details</b>				
Do not gap positions - If required, please contact the Budget Dept. for instructions Future year progressions & eco. adj. will be calculated corporately by the Budget Dept.				
Complement Information	Position #1	Position #2	Position #3	Sub-total
Budget Year	2018			
Position title	Business Analyst			
Estimated start date	January 1, 2018			
# of positions requested	1.00			1.00
Full-time equivalents (FTEs)	1.00			1.00
Position type	Full-time			
Position agreement classification	Contract			
If contract, specify length (months or yrs.)	4 year			
If Casual/Seasonal PT enter Hourly wage				
Business unit # (override if different than # shown)	2340001			
Grade level	7			
Est. starting step	1			
Desktop (HR) Review Performed?	No			
B&F Accommodations Available?	Yes			
Desktop Computer or Laptop required?	Laptop			
Fleet Vehicle Required?	Yes			
Blackberry/Cell Phone Required?	Cell Phone			
<b>Complement Annual Cost Detail</b>				
Annual full-time \$	89,185			89,185
Annual part-time \$	-	-	-	-
Annual shift premiums, etc.	-	-	-	-
Annual overtime \$	3,528	-	-	3,528
* PT vacation pay (calculated field)	-	-	-	-
* Annual benefits (calculated field)	-	-	-	-
* FT contract benefits (calculated field)	28,370	-	-	28,370
<b>Subtotal (Per Employee)</b>	<b>\$ 121,083</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 121,083</b>
<b>Subtotal (Per Position)</b>	<b>\$ 121,083</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 121,083</b>
Continuous costs	(BU & Acct #.)	Please fill in per Complement. The total will account for multiple positions if indicated above.		
Cellular Line Charges	2340001.7122.01	960		960
Memberships/Dues/Fee	2340001.7105	40		40
Mileage	2340001.7100			-
Office Supplies	2340001.7200	300		300
Training & Development	2340001.7115	1,500		1,500
Protect. Clothing/Uniform	2340001.7300	1,400		1,400



Request Title		Business Analyst (4 year contract)					(limit 70 Characters)			
Other (Please detail in										
Subtotal (Per Employee)		\$	4,200	\$	-	\$	-	\$	4,200	
Subtotal (Per Position)		\$	4,200	\$	-	\$	-	\$	4,200	
One-time costs		(BU & Acct #.)		Please fill in per Complement. The total will account for multiple positions if indicated above.						
Office Equip. & Furnitu		2340001.7210		10,000				10,000		
Computer Hardware		2340001.7211.01		3,000				3,000		
Cellular Hardware Equ		2340001.7122.03		1,000				1,000		
Subtotal (Per Employee)		14,000						14,000		
Subtotal (Per Position)		\$	14,000	\$	-	\$	-	\$	14,000	
2017 Total Annual Costs		\$	-	\$	-	\$	-	\$	-	
2018 Total Annual Costs		\$	139,283	\$	-	\$	-	\$	139,283	
2019 Total Annual Costs		\$	-	\$	-	\$	-	\$	-	
2020 Total Annual Costs		\$	-	\$	-	\$	-	\$	-	
Additional Comments:										
Capital Funding										
Are there any Capital requests already submitted/approved or to be submitted related to this ARR? (e.g. new car)										
ASSOCIATED CAPITAL FUNDING		Status	Year asset Available for	Proj #	2018	2019	2020	2021	2022	Total
1	AMI and Smart Water Metering Impleme									\$ -
2										\$ -
3										\$ -
TOTAL ASSOCIATED CAPITAL FUNDING					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Financial/Resource Detail										
Component				BU Acct. #	2018	2019	2020	2021	2022	
REVENUE - continuous operating detail										
1										
2										
3										
4										
Subtotal					-	-	-	-	-	-
REVENUE - one-time operating detail										
1										-
2										-
Subtotal					-	-	-	-	-	-
EXPENSES - continuous operating detail (For staffing costs please fill out section 7)										
1	* Staffing costs (calculated field)			(From sect. 7)	92,713	-	-	-	-	-
2	* Benefits			(From sect. 7)	28,370	-	-	-	-	-
3	* Complement sch. Expenses (calculated field)			(From sect. 7)	4,200	-	-	-	-	-
4										
5										
6										
7										
Subtotal					125,283	-	-	-	-	-
EXPENSES - one-time operating detail (For staffing costs please fill out section 7)										
1	* Complement sch. Expenses (calculated field)			(From sect. 7)	14,000	-	-	-	-	-
2										-
3										-
Subtotal					14,000	-	-	-	-	-
OFFSETS - cost savings, reductions, etc.										
1										

Request Title		Business Analyst (4 year contract)					(limit 70 Characters)
2							
3							
Subtotal			-	-	-	-	-
OFFSETS - Capital Projects							
1							
2							
3							
Subtotal			-	-	-	-	-
Additional Comments:							
TOTAL OPERATING BUDGET CHANGE			139,283	-	-	-	-
COMPLEMENTS & FTE's		2018	2019	2020	2021	2022	Total
# of positions requested	(From sect. 7)	1.00	-	-	-	-	1.00
FTE's	(From sect. 7)	1.00	-	-	-	-	1.00
FTE reductions/offsets	(Manual Field)						-
Net FTE's		1.00	-	-	-	-	1.00



**CITY OF VAUGHAN  
2018-2022 OPERATING BUDGET**

**ADDITIONAL RESOURCE REQUEST**

<b>Request Title</b>	Project Manager -Water (4 year contract)			(limit 70 Characters)
<b>Business Unit #</b>	2340001	Water- 100%		
<b>Department</b>	Environmental Services			
<b>Term of Council Service Excellence Strategy Map</b>	Invest, renew and manage infrastructure and assets			
<b>Tied to a Capital Project</b>	Yes	<b>Project</b>	Water Meter Changeout and AMI Project	<b>Approved/ Recognized</b>
<b>Legal/Regulatory Requirement</b>	No	<b>Indicate the Statute or Regulation</b>		
<b>ARR Type</b>	New	Labour/Non-Labour	Non-Labour	

**Annual Budget Change Summary**

Financial Components	2018	2019	2020	2021	2022	2018-2022 Sub-total	2023 (One Time. Adj.)	2018-2023 Sub-total
<b>Staffing</b>								
Complements	1.00	-	-	-	-	1.00	-	1.00
Net FTE's	1.00	-	-	-	-	1.00	-	1.00
<b>Operating Revenue</b>	-	-	-	-	-	-	-	-
<b>Operating Costs</b>								
Staffing & Benefits	132,736	-	-	-	-	132,736	-	132,736
Other continuous costs	4,200	-	-	-	-	4,200	-	4,200
One-time expenses	14,000	(14,000)	-	-	-	-	-	-
Offsets/reductions	-	-	-	-	-	-	-	-
Offsets Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	-
<b>Net Operating Budget</b>	<b>\$ 150,936</b>	<b>\$ (14,000)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 136,936</b>	<b>\$ -</b>	<b>\$ 136,936</b>
<b>Associated Capital Costs</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**Please provide a brief description of the request. (Limit 1,325 characters)**

The City of Vaughan owns over eighty five thousands residential and industrial, commercial and institutional (ICI) water meters and the number of meters required continue to increase as the City is experiencing growth. The City is embarking to upgrade its water meter infrastructure and to provide advancement through smart water metering functions. A feasibility study was conducted in August 2017 and recommended to implement Advanced Metering Infrastructure (AMI) to enhance customer services, improve water conservation, process and operational efficiencies. The proposed Project Manager position is required to implement the AMI initiatives as identified in the feasibility study.

**Identify the results or outcome that will be achieved with the new request. (limit 720 characters)**

The Project Manager will lead the implementation of AMI project which is expected to generate positive results that may include reduction in meter reading cost, reduction in water losses and water billing disputes, improved water conservation, customer satisfaction and water demand management. The AMI project will also improve environmental stewardship, asset management and support the City's Smart Cities Initiatives and Digital Strategies.

**Indicate any impacts this request will have on other departments.**

x	Building & Facilities	Legal	Type of consultation: (limit 200 characters)
x	Information Technology	Other: _____	Ongoing support required from various departments as per the norm.
x	Human Resources	Other: _____	

**Are there any implications if this ARR is not approved? Please describe. (limit 600 characters)**

Water Services will struggle to meet compliance, new business and infrastructure renewal target as the overall workload increases with the growth in Vaughan.

**Financial Planning & Development Finance Only**

Questica Budget Change Request:

Included in Draft Budget:

Approval Received:

<b>Request Title</b>	Project Manager -Water (4 year contract) <span style="float: right; font-size: small;">(limit 70 Characters)</span>			
<b>Implications/Consequences (if request not approved)</b>				
<i>Legislative/Regulatory Requirement due to Law, Regulation, or Act. (NOTE: A By-Law is not a legal requirement)</i>				
Are there any Legislative or Regulatory Requirements that this ARR is addressing? _____ If yes, Type: _____				
What is the consequence of non-compliance? (fine, other penalty, amount) <span style="float: right; font-size: small;">(limit 650 characters)</span>				
<b>Risk Management</b>				
What is the risk associated with not approving this ARR? (Speak to severity and financial impact)				
<b>Complement Details</b>				
Do not gap positions - If required, please contact the Budget Dept. for instructions Future year progressions & eco. adj. will be calculated corporately by the Budget Dept.				
Complement Information	Position #1	Position #2	Position #3	Sub-total
Budget Year	2018			
Position title	Project Manger -Water			
Estimated start date	Jan, 2018			
# of positions requested	1.00			1.00
Full-time equivalents (FTEs)	1.00			1.00
Position type	Full-time			
Position agreement classification	Contract			
If contract, specify length (months or yrs.)	4 years			
If Casual/Seasonal PT enter Hourly wage				
Business unit # (override if different than # shown)	2340001			
Grade level	8			
Est. starting step	1			
Desktop (HR) Review Performed?	No			
B&F Accommodations Available?	No			
Desktop Computer or Laptop required?	Laptop			
Fleet Vehicle Required?	Yes			
Blackberry/Cell Phone Required?	Cell Phone			
<b>Complement Annual Cost Detail</b>				
Annual full-time \$	98,107			98,107
Annual part-time \$	-	-	-	-
Annual shift premiums, etc.	-	-	-	-
Annual overtime \$	3,528	-	-	3,528
* PT vacation pay (calculated field)	-	-	-	-
* Annual benefits (calculated field)	-	-	-	-
* FT contract benefits (calculated field)	31,100	-	-	31,100
<b>Subtotal (Per Employee)</b>	<b>\$ 132,736</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 132,736</b>
<b>Subtotal (Per Position)</b>	<b>\$ 132,736</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 132,736</b>
Continuous costs	(BU & Acct #.)	Please fill in per Complement. The total will account for multiple positions if indicated above.		
Cellular Line Charges	2340001.7122.01	960		960
Memberships/Dues/Fee	2340001.7105	40		40
Mileage	2340001.7100			-
Office Supplies	2340001.7200	300		300
Training & Development	2340001.7115	1,500		1,500
Protect. Clothing/Uniform	2340001.7300	1,400		1,400



Request Title		Project Manager -Water (4 year contract)				(limit 70 Characters)			
Other (Please detail in		-				-			
Subtotal (Per Employee)		\$	4,200	\$	-	\$	4,200		
Subtotal (Per Position)		\$	4,200	\$	-	\$	4,200		
One-time costs	(BU & Acct #.)	Please fill in per Complement. The total will account for multiple positions if indicated above.							
Office Equip. & Furnitu	2340001.7210		10,000				10,000		
Computer Hardware	2340001.7211.01		3,000				3,000		
Cellular Hardware Equi	2340001.7122.03		1,000				1,000		
							-		
Subtotal (Per Employee)			14,000		-		14,000		
Subtotal (Per Position)		\$	14,000	\$	-	\$	14,000		
2017 Total Annual Costs		\$	-	\$	-	\$	-		
2018 Total Annual Costs		\$	150,936	\$	-	\$	150,936		
2019 Total Annual Costs		\$	-	\$	-	\$	-		
2020 Total Annual Costs		\$	-	\$	-	\$	-		
Additional Comments:									
Capital Funding									
Are there any Capital requests already submitted/approved or to be submitted related to this ARR? (e.g. new car)									
ASSOCIATED CAPITAL FUNDING	Status	Year asset Available for	Proj #	2018	2019	2020	2021	2022	Total
1 AMI and Smart Water Metering Impleme									\$ -
2									\$ -
3									\$ -
TOTAL ASSOCIATED CAPITAL FUNDING				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Financial/Resource Detail									
Component			BU Acct. #	2018	2019	2020	2021	2022	
									Budget
REVENUE - continuous operating detail									
1									
2									
3									
4									
Subtotal				-	-	-	-	-	-
REVENUE - one-time operating detail									
1									-
2									-
Subtotal				-	-	-	-	-	-
EXPENSES - continuous operating detail (For staffing costs please fill out section 7)									
1	* Staffing costs (calculated field)	(From sect. 7)	101,635	-	-	-	-	-	-
2	* Benefits	(From sect. 7)	31,100	-	-	-	-	-	-
3	* Complement sch. Expenses (calculated field)	(From sect. 7)	4,200	-	-	-	-	-	-
4									
5									
6									
7									
Subtotal				136,936	-	-	-	-	-
EXPENSES - one-time operating detail (For staffing costs please fill out section 7)									
1	* Complement sch. Expenses (calculated field)	(From sect. 7)	14,000	-	-	-	-	-	-
2									-
3									-
Subtotal				14,000	-	-	-	-	-
OFFSETS - cost savings, reductions, etc.									
1									

Request Title		Project Manager -Water (4 year contract)					(limit 70 Characters)
2							
3							
Subtotal			-	-	-	-	-
OFFSETS - Capital Projects							
1							
2							
3							
Subtotal			-	-	-	-	-
Additional Comments:							
<b><u>TOTAL OPERATING BUDGET CHANGE</u></b>			150,936	-	-	-	-
<b>COMPLEMENTS &amp; FTE's</b>		<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
# of positions requested	(From sect. 7)	1.00	-	-	-	-	1.00
FTE's	(From sect. 7)	1.00	-	-	-	-	1.00
FTE reductions/offsets	(Manual Field)						-
Net FTE's		1.00	-	-	-	-	1.00





## Project Summary

<b>Project Number:</b> EV-2124-18																																																									
<b>Project Title:</b> Smart Water Metering - City Wide Advanced Metering Infrastructure (AMI) Implementation																																																									
<b>Asset Type:</b> WTS001 Piped Infrastructure (WTS)																																																									
<b>Department:</b> Environmental Services																																																									
<b>Budget Year:</b> 2018	<b>Approval Year:</b> 2018																																																								
<b>Scenario Name:</b> Main	<b>Scenario Active:</b> Yes																																																								
<b>Project Stage:</b> Concept	<b>TCA:</b> Yes																																																								
<b>Regions:</b>																																																									
<b>Project Type:</b> New Infrastructure																																																									
<b>Project Description</b>																																																									
<p>A program to identify and replace existing water meters with AMI compatible water meters including implementation of associated AMI infrastructure.</p> <p>Objectives of the program to include:</p> <ul style="list-style-type: none"> <li>- Analytics / reporting system for timely customer service.</li> <li>- Address non-revenue water and district meter areas to lower and measure unaccounted for water.</li> <li>- A smart meter system will allow customers to view their up to date consumption and billing info which promotes conservation and wise use of water.</li> <li>- Provide a customer-focused solution which enhances abilities to identify leaks, water quality and/or safety issues</li> <li>- Determine the most cost effective method to deliver smart metering and associated technologies</li> <li>- Enhance accuracy of water meter billing (eg. hard to read meters and estimated reads)</li> </ul>																																																									
<b>Project Timelines</b>																																																									
4 years implementation																																																									
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<b>Other Dept Impact</b>																																																									
OCIO: Support AMI network and integration, communication and data storage components and applications, Alectra: Update water meter details associated the water meter change out program, Corporate Communication: Education and Public Outreach programs, Corporate Asset Management: Update GIS database																																																									
<b>Project Forecast</b>																																																									
<b>Project Detailed 2018</b>																																																									
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