# EPCOR WATER (WEST) INC.
# CAPITAL PROJECT JUSTIFICATION SHEET

**Project Year:** 2009 – 2010
**Project Title:** New Reservoir

**Project Description:**
EWW's Resource Plan identified the need for an additional storage reservoir with a minimum size of 650 $m^3$. The key reasons for the recommendation of an additional storage reservoir are to meet forecast demand growth and requirements for fire storage in the future. Fire storage requirements are set by Fire Underwriters Survey – Water Supply for Public Fire Protection. EWW will use a contractor for this project.

**Project Justification:**
EWW's Resource Plan recommended that a minimum of 650 $m^3$ of additional storage be provided in the immediate future to provide adequate future storage for balancing, fire, and emergency storage until 2017. Increasing reservoir storage is a more cost effective solution compared to drilling additional wells. EWW considered alternative locations for the reservoir and determined that any other location for this reservoir would result in additional costs related to distribution pipes and land acquisition.

**Engineering/Financial Evaluation:**
Costs are estimated to be $825 thousand. This project is 100% contributed by developers.

**Consequences of NOT Undertaking the Project:**
If the project is not completed, the additional storage will not be available and EWW will not be able to supply water to new customers.

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | | 2. Customer Requirements | x | 3. Reliability | | 4. Life Cycle Costs | |
| 5. Water Quality | | 6. Environmental & Regulatory | x | 7. Financial | | 8. Tech./Product Dev. | |

**Forecast Capital Expenditures** (in 2009 dollars)

| | 2009 | 2010 | 2011 |
|---|---|---|---|
| Forecast | $100,000 | $ 725,000 | - |

# EPCOR WATER (WEST) INC.
## CAPITAL PROJECT JUSTIFICATION SHEET

**Budget Year:** 2012
**Project Title:** Drew Road Water Treatment Plant Upgrade (New Filter)

**Project Description:**
The current greensand filtration system at the Drew Road Water Treatment Plant is designed for the installation of a fourth sand filtration unit. This additional sand filtration unit will be required in advance of full production of new supply wells expected to be in production in 2013.

The project consists of installation of the additional new sand filtration tower along with associated pumping redundancies and necessary engineering and administration costs.

**Project Justification:**
As a result of the introduction of additional supply wells over the next 3 years, a series of upgrades will be required for the water treatment plant to ensure that it will have sufficient treatment capacity. The addition of a fourth sand filtration unit will increase the filtration capacity of the existing green sand filtration system installed that is used to treat groundwater supply from wells high in iron and manganese. This project will also provide needed pumping redundancies and additional reliability to the system.

The need for this upgrade was also identified in the French Creek Growth Assessment Study prepared by Stantec Consulting Ltd. (Appendix F-2).

**Engineering/Financial Evaluation:**
Costs are estimated to be $412,000 for the installation of the additional sand filtration unit. This project will be 100% contributed by developers.

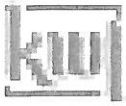
**Consequences of NOT Undertaking the Project:**
If the upgrade is not completed water may not meet the Guidelines for Canadian Drinking Water Quality for the aesthetic value for iron and manganese.

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | | 2. Customer Requirements | x | 3. Reliability | | 4. Life Cycle Costs | |
| 5. Regulatory | | 6. Environmental | | 7. Financial | | 8. Tech./Product Dev. | |

**Budgeted Project Costs**

| | 2012 | 2013 | 2014 |
|---|---|---|---|
| Budget | $412,000 | - | - |





**Project Category:** 2015 – 2018 Recommended Project

**Project Name:** Drew Road Pump Station Upgrades **Project ID:** 3

**Project Description:**

This project consists of various necessary upgrades to the pump station. This project is required to update existing infrastructure, increase capacity, and improve safety and efficiency. This project includes upgrades to the ventilation system, replacing existing pump motors and electrical upgrades, and piping upgrades.

**Project Justification:**

The list of necessary improvements was identified in the 2011 French Creek Growth Assessment Study prepared by Stantec Consulting Ltd.

The upgrades to the existing infrastructure are required to improve safety and efficiency. This project will also eliminate existing hydraulic restrictions and increase reliability and protection of the incoming and outgoing water supply.

**Engineering/Financial Evaluation:**

Costs are estimated to be $215,000 based on the 2014 construction year.

The cost to increase the piping capacity (upgrade from 100 mm diameter to 150 mm diameter) is 9% of the total cost; therefore 9% of this project is developer funded.

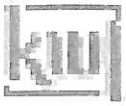
**Consequences of NOT Undertaking the Project:**

Hydraulic restrictions in the pump station will limit water supply capacity and aging infrastructure will be vulnerable to failure / downtime.

**Note:** Project description, justification and cost provided by EPCOR Water Services.

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | x | 2. Customer Requirements | x | 3. Reliability | x | 4. Life Cycle Costs | |
| 5. Regulatory | | 6. Environmental | | 7. Financial | | 8. Tech./Product Dev. | |





**Project Category:** 2015 – 2018 Recommended Project

**Project Name:** Springhill Road Additional Capacity Well (ACs1) Completion **Project ID:** 19

| **Project Description:** |
|---|
| Complete Springhill Road Additional Capacity Well (ACs1) and tie-in to system. |
| **Project Justification:** |
| The supply capacity of a water system must exceed the maximum daily demand to avoid water shortages during peak summer demands. The current rated supply capacity of the system is 35.5 L/s. The 2013 max day demand (46.3 L/s) and estimated 2031 future max day demand (61.3 L/s) exceed the current rated supply capacity by 10.8 L/s and 25.8 L/s respectively.<br>A draft 2014 report by BC Groundwater Consulting Services Ltd. indicates that the Springhill Road Additional Capacity Well can operate at a peak rate of 7.9 L/s. |
| **Engineering/Financial Evaluation:** |
| A cost of $248,000 to complete the well based on the 2014 construction year was provided by EPCOR Water Services.<br>The Springhill well projects (Project ID 18 and 19) scheduled to be completed in the 2015 – 2018 period will together add an estimated 15.3 L/s of additional capacity. Of the 15.3 L/s, 10.8 L/s is required to address existing demands; the remaining (4.5 L/s or 29%) will provide supply capacity for future developments. This project is therefore 29% developer funded. |
| **Consequences of NOT Undertaking the Project:** |
| Insufficient supply capacity to meet existing 2013 and future 2031 max day demands. |
| **Note:** Project description, justification and cost provided by EPCOR Water Services. |

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | | 2. Customer Requirements | x | 3. Reliability | x | 4. Life Cycle Costs | |
| 5. Regulatory | | 6. Environmental | | 7. Financial | | 8. Tech./Product Dev. | |



**Project Category:** 2015 – 2018 Recommended Project

**Project Name:** Springhill Road No. 2A Replacement Well (RWs1) Completion **Project ID:** 18

**Project Description:**

Complete Springhill Road No. 2A Replacement Well (RWs1) and tie-in to system.

**Project Justification:**

The supply capacity of a water system must exceed the maximum daily demand to avoid water shortages during peak summer demands. The current rated supply capacity of the system is 35.5 L/s. The 2013 max day demand (46.3 L/s) and estimated 2031 future max day demand (61.3 L/s) exceed the current rated supply capacity by 10.8 L/s and 25.8 L/s respectively.

A draft 2014 report by BC Groundwater Consulting Services Ltd. indicates that the Springhill Road No. 2A Replacement Well can operate at a peak rate of 7.4 L/s.

**Engineering/Financial Evaluation:**

A cost of $160,000 to complete the well based on the 2014 construction year was provided by EPCOR Water Services.

The Springhill well projects (Project ID 18 and 19) scheduled to be completed in the 2015 – 2018 period will together add an estimated 15.3 L/s of additional capacity. Of the 15.3 L/s, 10.8 L/s is required to address existing demands; the remaining (4.5 L/s or 29%) will provide supply capacity for future developments. This project is therefore 29% developer funded.

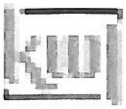
**Consequences of NOT Undertaking the Project:**

Insufficient supply capacity to meet existing 2013 and future 2031 max day demands.

**Note:** Project description, justification and cost provided by EPCOR Water Services.

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | | 2. Customer Requirements | x | 3. Reliability | x | 4. Life Cycle Costs | |
| 5. Regulatory | | 6. Environmental | | 7. Financial | | 8. Tech./Product Dev. | |





**Project Category:** 2015 – 2018 Recommended Project

**Project Name:** Church Road South Test Well (TWs1) Completion **Project ID:** 20

| **Project Description:** |
|---|
| Complete Church Road South Test Well (TWs1) and tie-in to system. |
| **Project Justification:** |
| The supply capacity of a water system must exceed the maximum daily demand to avoid water shortages during peak summer demands. The current rated supply capacity of the system is 35.5 L/s. The 2013 max day demand (46.3 L/s) and estimated 2031 future max day demand (61.3 L/s) exceed the current rated supply capacity by 10.8 L/s and 25.8 L/s respectively.<br>A draft 2014 report by BC Groundwater Consulting Services Ltd. indicates that the well can operate at a peak rate of 1.6 L/s. |
| **Engineering/Financial Evaluation:** |
| A cost of $313,000 to complete the well based on the 2014 construction year was provided by EPCOR Water Services.<br>This project is required to address future supply capacity requirements. This project is 100% developer funded. |
| **Consequences of NOT Undertaking the Project:** |
| Insufficient supply capacity to meet future 2031 max day demands. |
| **Note:** Project description, justification and cost provided by EPCOR Water Services. |

**Justification Category**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Safety | | 2. Customer Requirements | x | 3. Reliability | | 4. Life Cycle Costs | |
| 5. Regulatory | | 6. Environmental | | 7. Financial | | 8. Tech./Product Dev. | |