



## STAFF REPORT

DATE: April 2, 2019

**REGULAR**

**TO:** Mayor and Council

**AGENDA ITEM:** Request for Smart Controller Cost share Pilot Program

**SUBMITTED BY:** Jake Foster, Assistant City Administrator

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### **BACKGROUND:**

Water efficiency and water conservation continue to be very important topics within the City of Lake Elmo. John Hodler is a Lake Elmo resident and is working toward becoming a Certified Master Water Steward. As part of that certification, he is required to complete a water stewardship project. Mr. Hodler is requesting the City approve his proposal to share the costs associated with installing smart controllers for water conservation. This project would also serve as his water stewardship project to achieve the Master Water Steward certification.

### **ISSUE BEFORE COMMITTEE:**

Should the Council approve the request for a smart controller cost-sharing pilot program?

### **PROPOSAL DETAILS/ANALYSIS:**

Mr. Hodler has been in contact with the City of Woodbury to learn more about their smart controller cost share pilot program and how that program was rolled out into an on-going citywide program. As part of his water steward project, he is looking to create a similar pilot program within the Fields of St. Croix 2 neighborhood in which he resides. As this program aims to benefit the City, specifically in regards to water usage, there is potential for cost-sharing with the City. Staff recommends that the City contribute 50% of the cost of each controller, with the resident paying the other 50%. Only residents on City water would be eligible to participate in this program.

As mentioned previously, this program would be similar in nature to the pilot program that was launched in Woodbury, prior to their citywide expansion of their smart controller cost share program. Woodbury has seen a great deal of success with this type of program, and has drastically reduced their water usage.

Based on information Mr. Hodler collected from the Minnesota Technical Assistance Program (MnTAP) 1 smart controller can save approximately 30,000 gallons of water each year. With enough success of this program through enough of a reduction in water usage, there is potential that the City may not require an additional well. This would save the City approximately \$2 million in the cost of a new well.

### **FISCAL IMPACT:**

The cost of each of these controllers is approximately \$200. The cost to the City would then be \$100 per controller.

**RECOMMENDATION:**

*“Move to approve the request for a cost-sharing program by contributing 50% of the cost of each smart controller.”*

**ATTACHMENTS:**

- Lake Elmo Water Conservation Presentation

# Lake Elmo water conservation

## Reduce Non-Essential Irrigation

Information sources:

*Woodbury, MN Environmental Services*

*Water Efficiency Study – Washington County Municipal Water Coalition*

*CDM Smith: Metropolitan Council Community Water Conservation 2018 – 2040  
programs*

# Water Supply Stressors:

- 100% groundwater-based system.
- PFC Contamination.
  - 4 wells (2 not operating; surpass health index guidance values for PFCs).
  - No treatment other than chlorine and fluoride.
- White Bear Lake litigation.
  - North & East Groundwater Mgmt. area plan.  
*Guide DNR's efforts to manage groundwater appropriations sustainably next five years.*

# Goal: Water Supply a Priority Issue

- Provide sustainable, reliable, high-quality potable water.
- Protect environmental asset - groundwater.
- Cost effective/financially responsible.
  - Minimize need for new wells @ approx. \$2.4 Million/well.
  - Reduced water usage = reduced homeowner water costs.

# **Lake Elmo Water Use, Per Person, gallons/day**

- Peak Summer Use to Winter Use Ratio – 5.0
  - All Uses in Summer – 283 gal/person/day.
  - All Uses in Winter – 57 gal/person/day.

**Table 3 – Incremental Benefits by Conservation Measure for the City of Lake Elmo**

Conservation Measure(s)	Percent Peak Reduction	At 15% Participation per Year			At 15% Participation per Year		
		Years of Implementation: 5 Years			Years of Implementation: 5 Years		
		100% Incentive			50% Incentive		
		Cost per Participant	Year of New Well	Net Savings (\$million)	Cost per Participant	Year of New Well	Net Savings (\$million)
No program	-	\$0.00	2032	-	\$0.00	2032	-
Marketing & Education (M&E)	2%	\$1.56	2033	\$0.007	\$1.56	2033	\$0.007
M&E + Irrigation Audit	5%	\$102.00	2033	(\$0.043)	\$52.00	2033	(\$0.018)
M&E + Sprinklerhead	7%	\$72.00	2034	\$0.002	\$37.00	2034	\$0.019
M&E + Irrigation Audit + Sprinklerhead	10%	\$172.00	2035	(\$0.018)	\$87.00	2035	\$0.024
M&E + Native Landscaping	15%	\$1,502.00	2037	(\$0.626)	\$752.00	2037	(\$0.247)
M&E + Smart Controller	22%	\$202.00	2039	\$0.075	\$102.00	2039	\$0.125
M&E + Smart Controller + Sprinklerhead	27%	\$272.00	2040	\$0.066	\$137.00	2040	\$0.133
M&E + Irrigation Audit + Smart Controller + Sprinklerhead	30%	\$372.00	2040+	\$0.546	\$187.00	2040+	\$0.637
M&E + Native Landscaping + Smart Controller	35%	\$1,702.00	2040+	(\$0.109)	\$852.00	2040+	\$0.310
M&E + Native Landscaping + Smart Controller + Sprinklerhead	40%	\$1,772.00	2040+	(\$0.143)	\$887.00	2040+	\$0.292
M&E + Native Landscaping + Smart Controller + Sprinklerhead + Irrigation Audit	43%	\$1,872.00	2040+	(\$0.192)	\$937.00	2040+	\$0.268

# **Issue identified – Non essential irrigation**

- Resident's Smart Controller program – city water users only.
- WaterSense certified controllers sold to home owners with existing irrigation systems at a discounted rate.
- Minnesota Technical Assistance Program (MnTAP) pilot results:  
1 smart controller can save 30,000 gallons of water/year.



# Smart controller pilot project timeline:

2019 – Start-up:

- Lake Elmo city environmental strategy/policy.
  - Lake Elmo Environmental committee agree and assist in preparation/execution.
  
- Obtain L.E. City council approval/funding for pilot project:
  - Funding for 25 smart controllers - installed in pilot community Fields of St. Croix II
  - Projected controller cost (utilize Woodbury, MN contract: \$135 - \$150).
  - Cost to residents = \$35/household + contractor installation cost.
  
- Complete pilot project administrative, logistics details w/staff & Environ. Committee.
  
- Educate city residences re: non-essential usage, costs, opportunities, etc.
  - River Falls students' and other materials.
  
- Agreement from FoSC II homeowners to participate.
  - Obtain 3-5 years historic water usage for pilot participants – base line data.
  
- Controllers installed – assisted as needed by Environ. Committee.
  - Digital picture sent to City by homeowner documenting date controller goes active.

# Smart controller pilot project timeline:

2020

- Conduct pilot project.
  - Complete controller installation as needed prior to irrigation season.
  - Require technology be maintained and operational.
  
- Track and Analyze data.
  - 2020 water usage vs. water usage history adjusted for weather conditions.
  
- Communicate results to L.E. City Council.
  - Results drive Council approval of expanded city/homeowner lawn irrigation system sharing costs for installation of controllers program.
  
- Education of Lake Elmo City residents – market the program.

# **Pilot project objective: verify that smart irrigation controllers reduce water consumption and help accomplish these goals:**

- Provide sustainable, reliable, high-quality potable water.
- Protect environmental asset - groundwater.
- Cost effective/financially responsible.
  - Minimize need for new wells @ approx. \$2.4 Million/well.
  - Reduced water usage = reduced homeowner water costs.

# Approval request – Smart controller pilot project.

- Approve pilot project to include the following:
  - Purchase of 25 smart controllers.
    - Projected purchase price: \$135-\$150/controller (utilize Woodbury purchase contract).
    - Cost to residents = \$35/household + contractor installation cost.
  - Pilot community will be Fields of St. Croix II homeowner on City water.
  - City document pilot homeowners' water usage: 2015 – 2018 (baseline).
  
- Assistance by City staff to complete administrative, logistic, installation, analysis, and documentation details.