

Somerset 2020 Irrigation Audit



Key findings

In 2020, Conserva Irrigation was hired by the City of Lakeville and the Vermillion River Watershed Joint Powers Organization (VRWJPO) to conduct a Stage 2 Irrigation Audit. The purpose of conducting the audit was to document and recommend upgrades to improve system efficiency. Key findings included:

- ◆ Six controllers operate a total of 63 irrigation zones
 - Controllers were basic “set and forget” controllers (non-weather based) requiring manual adjustments
- ◆ Five of the six controllers had a functional rain sensor
- ◆ Zone layout did not account for microclimates (differing conditions across the landscape including sunlight/shade, vegetation, soil type, slope and wind), leading to inefficient water distribution
- ◆ Water waste over sidewalks was observed
- ◆ Many instances of: leaking, broken or misaligned heads; heads in landscaping; and heads in wooded areas were observed
- ◆ Controller 6, zone 6 did not operate from the controller

Table 2. Financial Implications for Recommended Efficiency Upgrades

Efficiency Upgrade(s)	Estimated Cost	Estimated Annual Cost Savings	Return on Investment
1U.)—2U.) Install smart (weather based) controllers (22% water savings)	\$625-\$1,000 (depending on controller) \$5,625 installation \$15 monthly wireless hotspot cost	\$1,874	~ 3 years
3U.) Replace nonfunctional rain Sensor (10% savings)	\$150	\$852	~ <1 year
4U.)-7U.) Match all system head types, raise/straighten heads, add heads to optimize coverage (10% savings)	\$2,075	\$852	~ 2.5 years

The VRWJPO has a service contract template to ensure your contractor is performing maintenance checks

Table 1. Critical Repairs and Adjustments

Critical Repair(s)	Estimated Cost	Count	Total Cost
1R.) Replace damaged 5” rotor	\$50/head	119	\$5,950
2R.) Move head	\$15/linear ft	104’	\$1,560
3R.) Fix poly line root pinch/obstruction	\$120	1	\$120
4R.) Cap unneeded head	\$30	7	\$210
5R.) Troubleshoot electrical failure on controller 6, zone 6	\$100	1	\$100
Total Cost			\$8,320

Recommendations

There are several items that can be implemented to increase the efficiency of Somerset’s irrigation system. However, prior to implementing recommended efficiency upgrades, the Board should implement the critical repairs in Table 1 before implementing efficiency upgrades. Water and cost savings shown in Table 2 only apply when the system is operating without deficiencies (broken heads, poly line leaks, etc.). Annual cost savings associated with efficiency upgrades are based on City of Lakeville 2021 utility billing rates, historic use trends and audit findings.

Ensuring your irrigation contractor performs 3-4 maintenance checks annually will alert you to broken equipment more quickly

If turf areas at Somerset were watered according to plant requirements, the HOA would save an average of \$2,223 per year!

