

Cedar Landing 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:

- ◆ One controller operates a total of 65 irrigation zones, irrigating 8.24 acres of greenspace
 - The controller is a smart (weather based) controller capable of remote monitorization
- ◆ Many rotors had the wrong nozzle size, leading to poor water coverage
- ◆ Several zones had heads with poor spacing, leading to irrigation of hard surfaces
- ◆ Spray zones had high pressure, leading to water waste through misting
- ◆ Heads were found to be irrigating native areas or had waterlines blocked by construction debris
- ◆ Several zones had misaligned heads, affecting water distribution uniformity
- ◆ A potential mainline leak was found

Table 2. Financial Implications for Recommended Efficiency Upgrades

Efficiency Upgrade(s)	Estimated Cost	Estimated Annual Cost Savings	Return on Investment
1U.) - 6U.) - 7U.) Install nozzles to correct spacing and raise/straighten heads (10% water savings)	\$655	\$1,703	~ 0.5 year
2U.) - 5U.) Reduce watering of hard surfaces and eliminate misting by adding and moving heads (10% savings)	\$5,150	\$1,703	~ 3 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	\$65/head	8	\$520
2R.) Replace broken/clogged spray nozzle	\$20	7	\$140
3R.) Move head	\$15/linear foot	173'	\$2,595
4R.) Cap unneeded head	\$35	6	\$210
5R.) Investigate potential leak	\$85	1	\$85
Total Cost			\$3,550

Recommendations

There are several items that can be implemented to increase the efficiency of Cedar Landing'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 Cedar Landing were watered according to plant requirements, the HOA could save an average of \$5,592 per year!

