

# Prairie of Village Creek 2021 Irrigation Audit



## Key findings

In 2021, 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 system efficiency. Key findings included:

- ◆ One controller operates a total of 24 irrigation zones, irrigating 5.92 acres of greenspace
  - The controller is a basic set and forget controller, not incorporating weather data
  - All zones run for 60 minutes every other day and this incorrect programming results in significant water runoff
- ◆ The rain sensor connected to the controller is operational
- ◆ A substantial amount of heads were leaking or not functioning, meaning regular system maintenance is likely not taking place
- ◆ Zones had mixed application rates, leading to some spots being overwatered vs. others being underwatered
- ◆ Coverage gaps existed along driveways
  - This leads to wasted water through tendencies of "watering to the dry spot"
- ◆ Zone 10 has a line leak that needs to be repaired
- ◆ The entirety of Zone 20 is watering unmaintained vegetation

**Table 2. Financial Implications for Recommended Efficiency Upgrades**

Efficiency Upgrade(s)	Estimated Cost	Estimated Annual Cost Savings	Return on Investment
1U.) Implement smart (weather-based) controller (22% savings)	\$2,000	\$2,877	< 1 year
2U.) Move and add heads for proper coverage (10% savings)	\$2,250	\$1,308	~ 1.5 year
3U.) Eliminate Zone 20 by capping mainline (5% savings)	\$80	\$654	<1 year

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

## Recommendations

Did you know that a single broken or leaking sprinkler head can waste thousands of gallons of water per week?

There are several items that can be implemented to increase the efficiency of Prairie of Village Creek's irrigation system. However, prior to implementing recommended efficiency upgrades (shown in Table 2), the Board should implement the critical repairs seen in Table 1. Water and cost savings shown in Table 2 only apply when the system is operating without deficiencies (broken heads, sunken heads, etc.). Annual cost savings associated with efficiency upgrades are based on City of Lakeville 2022 utility billing rates, historic use trends and audit findings.

**Table 1. Critical Repairs and Adjustments**

Critical Repair(s)	Estimated Cost	Count	Total Cost
1R.) Repair broken/leaking rotors	\$70/head	279	\$19,530
2R.) Repair lateral line leak	\$90	1	\$90
<b>Total Cost</b>			<b>\$19,620</b>

If turf areas at Prairie of Village Creek were watered according to plant requirements, the HOA would save an average of \$6,449 per year!

If Prairie of Village Creek does not implement any critical repairs or efficiency upgrades, and waters at the same rate as 2020, the HOA can expect to pay \$10,963 or more for irrigation alone in 2022

