

Bellante Townhomes 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:

- ◆ Three controllers operate a total of 84 irrigation zones, irrigating 13.1 acres of greenspace
 - Controllers are smart controllers that are not using weather sensing technology
 - This means that controllers have the ability to reduce water usage using weather data, but the controllers need to be programmed to do so
- ◆ A single rain sensor is tied to all controllers
 - A failure of this one sensor could impact over all water usage
- ◆ A substantial amount of heads were leaking or not functioning, meaning system maintenance is likely not taking place
- ◆ Sloped areas did not have check valves installed—meaning water is wasted as those lines drain after every cycle through the lowest head in the zone
- ◆ Several zones have heads watering non-maintained vegetation
- ◆ Zones had mixed application rates, leading to water being applied three to four times greater than the needed amount

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

Table 1. Critical Repairs and Adjustments

Critical Repair(s)	Estimated Cost	Count	Total Cost
1R.) Replace rotors	\$65/head	250	\$16,250
2R.) Raise/straighten head	\$15/head	2	\$30
Total Cost			\$16,280

If turf areas at Bellante were watered according to plant requirements, the HOA would save an average of \$16,881 per year!

If Bellante does not implement any critical repairs or efficiency upgrades, and waters at the same rate as 2020, the HOA can expect to pay \$33,966 or more for irrigation alone

Table 2. Financial Implications for Recommended Efficiency Upgrades

Efficiency Upgrade(s)	Estimated Cost	Estimated Annual Cost Savings	Return on Investment
1U.) Optimize smart features on controllers (22% water savings)	\$750	\$7,164	<1 year
2U.) Move heads out of non maintained vegetation areas (10% savings)	\$5,700	\$3,256	< 2 years
3U.) Add heads for proper spacing and coverage (10% savings)	\$7,650	\$3,256	~ 2.5 years
4U.) Correct precipitation rates along driveways (10% savings)	\$960	\$3,256	<1 year
5U.) Upgrade existing spray nozzles with high-efficiency nozzles (10% savings)	\$2,990	\$3,256	< 1 year

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 Bellante’s irrigation system. However, prior to implementing recommended efficiency upgrades, the Board should implement the critical repairs 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.

