Orchard Meadows
2018 Irrigation Audit

Key findings

On September 6, Water in Motion, partnering with the Vermillion River Watershed Joint Powers Organization and the City of Lakeville, conducted a Stage II Irrigation Audit to detail system efficiency. Key findings included:

- System infrastructure (including wiring) was deteriorated or nonfunctional
- Two controllers were found to be set to operate a total of 32 stations
  - Only one of the two controllers was found to be functional
  - With Controller 2 nonfunctional, 21 stations were operating independently of the overall system (illustrating break-fix system maintenance)
- Approximately **50%** of irrigated stations had sprinklers spraying houses, garages, windows or non-maintained vegetation (ex: wooded areas)
- Current controller scheduling was as follows: 30 minutes per station, run on odd days with no adjustment for season (manual system shut-off was done following rain events)
  - Irrigation runoff was observed after 5-8 minutes of watering, likely resultant of saturated (over-watered) soils
- Mismatched sprinkler types were found throughout the site and the uniformity of water application was 50-66% less than a typical system

Irrigation system integrity is dependent on proactive maintenance and continual scheduling adjustment

Recommendations

Due to the nonfunctional nature of the irrigation system, it is recommended that the system be abandoned and a new system be installed.

However, additional options with variable implementation costs are presented below. Annual cost savings associated with implementation of management options are based on City of Lakeville utility billing historic use data for Orchard Meadows.

A properly maintained and water-managed landscape irrigation system can save 33% or more than the same system not proactively managed

A broken sprinkler head can waste thousands of gallons of water per week.

Management Option	Estimated Cost	Estimated Annual Cost Savings*
1. Redesign and install a new irrigation system.	$85,000-$125,000	$7,860
2. Replace failed system field control wiring.	$40,000-$60,000	$6,550
3. Controller 1 upgrade—install rain sensor, repair/ replace broken sprinkler heads and modify controller programming.	$2,960-$4,830	$2,620- $3,930
4. Perform all actions in Option 3. In addition, repair/replace broken sprinkler heads within Controller 2 zone.	$4,600-$7,700	$3,275- $4,585
5. Turn off irrigation system.	$0	$13,100

*Estimates provided by Water in Motion.