



Common Irrigation Problem

Problem:

Property Manager or Owner Concerned with Landscape Water Issues

- the landscape is too wet, too dry, or both
1. Manager Seeks Evaluation of the Irrigation System
 - problems with sprinkler coverage are evaluated which are expensive to repair
 2. Landscape Water Issues are **Not** Resolved
 - problems persist following expensive sprinkler system upgrades & modifications
 3. Manager Looks for New Irrigation Contractor
 4. Repeat

There is **no resolution** to the Property Manager's concerns because the **real problem** has **not** been addressed.

The Primary Problem with most Irrigation Systems is a Water Management and Scheduling Issue, not a Sprinkler Coverage Issue



Two Sides to Irrigation Maintenance



1

Service and Repair

- **Start-up and Repair**
 - it is just as important straighten and align sprinklers as it is to repair any damage. Tilted and misaligned sprinklers are typically not addressed yet are one of the leading problems associated with dry spots & wet spots.
- **Mid-Season Inspections**
 - proactively make repairs and adjustments at least 3 times between Start-up and Winterization.
- **Winterization**
 - when performed correctly, this is the most important service to maximize the lifecycle of any irrigation system. Improper Winterization is a common mistake stemming from an unregulated industry.

“setting a timer to arbitrarily water for 15 to 45 minutes, 3 days/week is not water management”

2

Water Management

- **Efficient Water Application Based on Changing Climatic Conditions**
- **Automated Adjustments based on Weather and Rainfall Data**
- **Setting Controller Run Times to Eliminate Run Off and Waste**
- **Follow Best Horticultural Practices** – deeper, less frequent watering
- **Monitor and Measure Results**
- **Report Annual Water Usage and Savings**

“water use is the most important and most costly irrigation expense yet it is always the most overlooked and most neglected”

Water Management

(Climate Controlled Irrigation)



1

How Long to Water

- **Efficient Water Application:**
 - Run times based on in-depth site analysis
 - Evaluation of soil type, water infiltration rate, soil depth, root depth, plant type, slope, micro-climate factors, and the water application rate of the sprinklers.
- **Identify Potential Sprinkler Coverage Issues and Make Recommendations for Improvement *(if required)***
 - Improve areas that do not receive adequate water to keep the landscape green and healthy

2

When to Water

- **Efficient Scheduling & Automated adjustments for constantly changing weather conditions:**
 - use Accurate Real Time ET Weather Data & Effective Rainfall
 - measure solar radiation, temperature, wind, relative humidity, and rainfall
- **Follow Best Horticultural Practices of Deeper, Less Frequent Watering**
 - Plant health is optimized when water is received only when needed. This allows for proper soil oxygenation & healthier plants (more trees die from drowning than from lack of water).

3

- **Monitor the Landscape**
 - Ensure the landscape is green and healthy and water use is in line with current weather patterns
- **Measure the Results**
 - Annual performance review and measurement of water use and savings

“Irrigation is only required when the soil is getting dry and it hasn’t rained, not because it is Monday, Wednesday, or Friday”



Irrigation Service & Repair

- **Proper Sprinkler Adjustment & Alignment** – complete a proper adjustment and alignment of sprinklers, as well as, repairing the obvious damage. Tilted and misaligned sprinklers are a leading cause of water waste, and dry & wet spots.
- **Repair for Sprinkler Coverage Deficiencies** – when, where, & if necessary
- **Repair Damage with Higher Quality Components** - high quality products are slightly more expensive but have a much longer lifecycle. This greatly reduces future servicing costs and ensures you are not replacing the same products over and over...
- **Ensure Matched Precipitation Rates of Sprinklers** - for even water application
- **Replace Damaged Sprinklers with Water Conservation Sprinklers and Nozzles** - One pressure regulating sprinkler w/high efficiency nozzle can reduce water use by 2000 litres/year and improve performance. The cost of water is the largest irrigation expenditure and the ROI for these products is much less than 1 summer.
- **Perform 3 Mid-Season Service Inspections** - at current water rates, it is less expensive to repair undetected damage than it is to waste water. A proactive service program will ensure the landscape remains green & healthy while virtually eliminating reactionary service calls – “take the irritation out of irrigation.”
- **Evaluate the Installation of an Irrigation Master Valve** - a master valve will reduce the liability of a catastrophic system failure while also reducing wear and tear on the irrigation.

Irrigation Water Cost Analysis

example (actual Foothills Industrial Property - one season):

Benefit of Proactive Service

Water Cost of Undetected Sprinkler Damage

Damage Discovered:	7 rotor sprinklers 6 spray sprinklers
Potential Water Waste:	1348 m ³ (if left undetected)
Cost of Water Waste ¹ :	\$3495.00
Cost of 3 Inspections and repairs:	\$1109.75 (incl. parts.)
Total Cost Reduction: from Proactive Service	\$2380.25
<small>(2018 cost of water \$2.5911/m³)</small>	

“it is less expensive to proactively complete repairs than it is to waste water”

Benefit of Water Management

Water Cost From Timer Based Watering

Typical Timer Setting:	3 days/wk. or 66x /yr. 20 minutes – sprays 45 minutes – rotors
Annual Water Use:	3000 m ³
Cost of Water:	\$7900.00
Install Cost of Climate Controlled Irrigation:	\$3400.00 (avg. cost)
Avg. Water Savings:	\$3100.00 (annual avg.)
Avg. ROI:	1 – 1.5 seasons

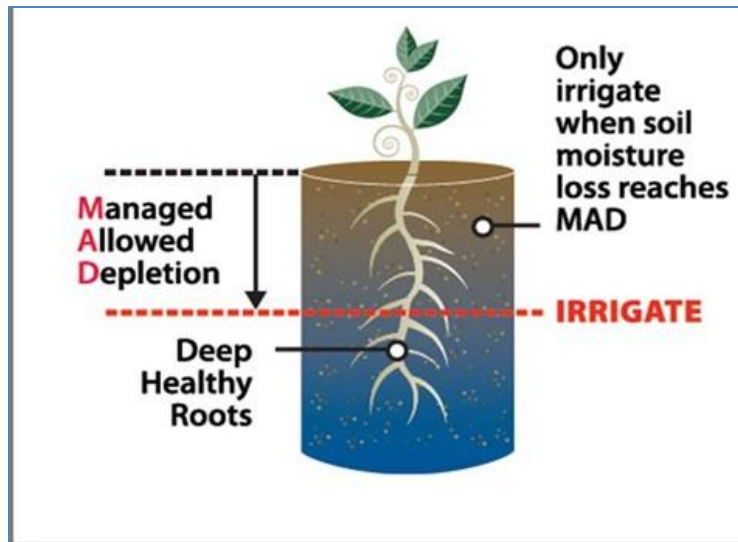
“Climate Controlled Irrigation ensures a green and healthy landscape while eliminating the waste from arbitrary timer based watering”

¹ Calculations based on an average timer controller setting of 3 watering's per week. Damaged sprinkler calculations are based on water free flowing for 45 minutes from a ¾" inlet rotor sprinkler and water free flowing for 15 minutes from a ½" inlet spray head sprinkler. All flow rates are very conservative and are based on an average City of Calgary water pressure of 75 PSI and using the 2018 irrigation water rate of \$2.5911/m³.

Recommendation

Evaluate: Climate Controlled Irrigation for Automated Water Management

Implement: A Proactive Irrigation Service and Maintenance Program



2011 to 2018 Irrigation Frequencies: Calgary

	2011	2012	2013	2014	2015	2016	2017	2018
Climate Controlled	28	37	33	31	33	26	49	39
Timer-Based	66	69	66	60	66	66	66	60

