
August 1 2026



Irrigation
Audit
Management
and
Redesign

Scott Duncan

What is an Irrigation Audit?

Before we answer that question, we need to ask & understand another. What is the purpose of an irrigation system? The system should provide supplemental water to meet the needs of all of the different types of plant material in a specific landscape. It should do this in the most efficient way possible, meaning the water applied is all available with very little to no water wasted. An irrigation audit is performed to identify all of the areas where a system is not meeting this objective & the steps required to correct any problems discovered. When the recommendations of a comprehensive audit (see audit worksheet below) are followed, water & dollars will be saved & the landscape will benefit.

First, what is the water source? What is the maximum gallons per minute water flow of the system? If it is municipal water, the water meter service line & meter must be sized to handle the maximum water flow of the system. What type & size backflow preventer is used? Does it meet code requirements & is it installed properly? Is there a master valve &/or flow sensor installed immediately after the backflow. What is the static water pressure with no water flowing?

What is the operating pressure of the largest flow rate at the furthest distance from the water source? Is the mainline pipe sized to handle this flow rate & maintain an industry standard pipe velocity of five feet per second or less? Do the pipe fittings used meet industry standards? If not, pipe & fitting failures will occur. What size & type of wire is used in the system? It should be rated to handle the distance to the furthest solenoid valve. Are waterproof wire splices used at all valves or other splice locations?

Next we look at each lateral zone. Does the product selected have a precipitation rate which will allow full utilization & prevent runoff? Is the solenoid valve sized to handle the flow rate for the zone. Is pressure regulation &/or filtration required at the zone valve such as in a drip zone or spray zone to produce proper operating pressures? Is the head spacing of the zone or the emitter & row spacing in a drip zone providing an acceptable distribution uniformity? Are all of the heads or emitters operating at a similar flow rate & pressure. When this is not the case, uneven



Irrigation Audit Management and Redesign

The most important questions are how the system will be operated & who will be responsible. Landscape water requirements can change on a daily basis. Timely adjustments are often needed to make sure plant water requirements are met & that water is not wasted. A SMART controller can make these adjustments as well as report on the real time performance of the system including flow & electrical issues. A professional audit should include a recommendation for the best controller for the site if the current controller does not have the capability to make timely program adjustments based on real time weather &/or soil moisture conditions.

These are some of the considerations that should be taken into account when completing an irrigation system audit. Take a look at the attached Evaluation sheet to see many of the other issues that can be reported. A comprehensive audit will define all issues unique to each property. It will lead to better utilization & water savings. With the ever increasing cost of water, a professional audit & the completion of the suggestions contained therein will produce water & dollar savings that can offset the costs involved to prepare the audit & implement the recommended changes.

[illegible]