Ivins City Landscape and Irrigation Specifications

Commented [KK1]: Standards of Excellence?

These specifications apply to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation for the establishment of newly installed plant materials.

The irrigation system and its related components shall be designed for appropriate installation, water-efficient management, and ease of maintenance.

An irrigation design and plan containing the specific details listed below shall be submitted to the city to meet the requirements for Certificate of Occupancy (of Water Efficiency).

Commented [KK2]: Dependent on state legislation.

1. Irrigation System

(A) Landscape water meters shall be installed for all irrigated landscapes. A landscape water meter may be either:

1. a customer service meter dedicated to landscape irrigation use provided by the utility; or
2. a privately owned meter or submeter.

Commented [KK3]: Better for enforcement.

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(B) Automatic irrigation controllers employing either evapotranspiration or soil moisture sensor data and utilizing non-volatile memory is *encouraged/preferred* for irrigation scheduling in all irrigation systems.

(C) If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device or pressure-regulated irrigation components is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

1. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
2. Static water pressure, dynamic or operating pressure, and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

(D) Irrigation should be avoided during freezing weather or during rain events. To that end, sensors (rain, freeze, etc.), either integral or auxiliary, that suspend irrigation operation during unfavorable weather conditions are *encouraged/preferred* on all irrigation systems.

(E) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) are required, as close as possible to the point of connection of the water supply to the irrigation system, to minimize water loss in case of breaks or routine repairs.

(F) Backflow prevention devices are required to protect the water supply from contamination by the irrigation system in accordance with Ivins, UT Code of Ordinances 10.04.103: BACKFLOW PREVENTION DEVICES OR ASSEMBLIES.

(G) Flow sensors that detect high flow conditions created by system damage or malfunction are required for all landscapes.

(H) Master shut-off valves are required on all projects.

(I) The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water sprays or flows onto non-targeted areas, such as adjacent properties, non-irrigated areas, hardscapes, roadways, or structures.

(J) Relevant information on the soil, such as soil texture and infiltration rate, should be considered when designing irrigation systems.

(K) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

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~~(L) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.~~

(L) All sprinkler heads installed in the landscape should document a distribution uniformity low quarter of 0.70 (70%) or higher using the protocol defined in ASABE/ICC 802-2014.

Commented [KK4]: More enforcement/guidance throughout the county?

(M) In all non-sod planting areas, the use of drip irrigation is required to maximize water application efficiency and infiltration into the root zone.

(N) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise instructed by the manufacturer's recommendations.

(O) Head-to-head sprinkler coverage is recommended in most cases. However, sprinkler spacing should be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.

(P) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turfgrass.

(Q) Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.

(R) Areas less than eight (8) feet in width in any direction shall be irrigated with low volume or subsurface irrigation or other means that produce no runoff or overspray.

(S) Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow, non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:

~~1. The landscape area is adjacent to permeable surfacing and no runoff occurs; or~~
~~2. The adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping (like with a detention basin?); or~~
~~3. The irrigation designer specifies an alternative design or technology, that prevents overspray and runoff. Prevention of overspray and runoff must be confirmed during the irrigation audit.~~

(T) Slopes greater than 10% shall not be irrigated with an irrigation system with an application rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology that clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.

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2. Hydrozones

(A) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

(B) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant materials within that hydrozone.

(C) Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turfgrass to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.

(D) Individual hydrozones that mix plants of moderate and low water use, or moderate and high-water use, may be allowed if:
1. Plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
2. The plant factor of the higher water using plant is used for calculations.

~~(E) Individual hydrozones that mix high and low water use plants should not be permitted. (If designed properly I think they can work together, we utilize this in our right of way, trails or roadway, areas by using low use plants such as desert daisies on the outer drip rings of a high use plant such as a Chinese pistachio. By doing this we can create a shaded environment with a flowering aesthetic. I may be wrong in utilizing the plants that way. I'm open to discussion. Maybe it's a suggestion)~~

Commented [KK5]: Black Desert and Entrada examples.

The irrigation design plan, at a minimum, shall contain:

(1) Location and size of separate water meters for landscape irrigation;

(2) Location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain sensors, freeze sensors, quick couplers, pressure regulators, and backflow prevention devices;

(3) Static water pressure at the point of connection to the public water supply;

(4) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each irrigation station or zone;

(5) The signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system.

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