General and Residential Outdoor Watering (GROW) Performance Specifications

Residential irrigation accounts for over half of an average home's annual water use for homes with sprinkler systems. Consumer research conducted by Pecan Street Inc. identified several aspects of irrigation sprinkler systems that often result in inefficient use and wasted water. The University Municipal Water Consortium identified the following performance specifications for a general and residential outdoor watering (GROW) system that could effectively reduce irrigation water waste without sacrificing the health of flora landscapes.

- **Volumetric watering feedback**

  Water pressure can vary from home to home, resulting in significantly different quantities of water used over the same period of time for irrigation systems. A GROW system should include the ability to monitor and report how much water is used per irrigation zone.

- **Best practices default schedule**

  By working with water conservation experts at prominent cities across, system should embed region-appropriate default water schedules for maximum water efficiency.

- **Incorporate projected and actual rainfall information**

  Utilize rain sensors along with NOAA weather station information to enable smart, controlled rain delay modes.

- **"Irrigator Setup" mode**

  Include an "Irrigator Setup" mode in the GROW system that allows for quick and efficient configuration and testing of the irrigation system for system maintenance without disrupting programs or schedules put in place by the homeowner.

- **"System summary" mode**

  For effective irrigation audits, a "system summary mode" should be included in the controller that allow provides a summary of system run-time and volumetric use parameters, settings and configurations so that municipal conservation staff can

easily provide assistance to residents seeking to ensure their irrigation system is operating at maximum efficiency.

- **User-friendly touchscreen interface**

  Allow for flexibility in deployment via a touch screen interface that enables fast software deployments and ease of use for participants. The touchscreen interface should be designed for intuitive and easy use by the resident. Many interviewed homeowners reported that they never changed their irrigation control system from the default setting input by the installer because they found the system confusing and/or intimidating. An easy-to-use interface will encourage proactive system management by the resident, reducing wasted water and their water utility bill.

- **Programmable mobile application**

  Allow for both direct input as well as input and feedback from an associated free mobile application that reflects the ease-of-use principles for the touchscreen interface, enabling remote management of the GROW system.

- **Wifi capabilities**

  A controller that communicates over wifi or cellular network with existing irrigation systems to enable more user-friendly management and updatable default settings that reflect conservation best practices.

- **Re-programmable controller**

  In order to make sure that controllers are setup and operating effectively, system should include the ability to update default settings and local rules and regulations to ensure continued compliance and efficient water management practices.

- **Location aware rules and regulations**

  Incorporate watering schedules and run-time rules into control software and apply the appropriate municipal rules and regulations via the input of address from the installer. Municipal water use rules and schedules should be incorporated into the system's default settings to ensure compliance with local regulations.