

Grand Lakes Common Area Irrigation Systems

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The Grand Lakes irrigation system is a complex mostly centrally managed system. The system controls watering within the green belts, color cycled beds, and other common areas of the neighborhood. 95% of the irrigation can be managed via laptop wirelessly, and weather stations help determine whether or not to water based on recent rainfall. This article explains what residents should expect to see watering wise and how to report problems in a way that allows them to be addressed in the timeliest manner.

System Overview

Grand Lakes has approximately 62 irrigation controllers, operating 2-48 zones each. Each day the central computer calculates watering schedules using available data such as recent rainfall temperature, humidity, and wind amounts and combines it with historic evapotranspiration rates. Evapotranspiration is the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants. The central computer sends watering schedules to the controllers daily, and they send back operating information and malfunction reports.

We have two different brands of controllers within Grand Lakes - Maxicom and Calsense. Both talk to the central computer but use different protocols. All but a handful of the controllers east of SH99 are Maxicom controllers; those west of SH99 are Calsense.

The Maxicom brand uses a centralized communication/control approach. The approximately 50 Maxicom controllers communicate via radio signal with one of the three central control units (CCUs) in Grand Lakes. The CCUs talk to the central computer via phone line. The CCUs are the “brains out in the field” of the Maxicom system. CCUs monitor the controllers to ensure watering is commencing as expected and send stop/start watering commands to the controllers during rain events or when equipment malfunctions are detected.

The Calsense brand uses a distributed communication/control approach. The Calsense controllers utilize phone lines to talk directly to the central computer. Each Calsense controller is its own “brains out in the field”. The central computer relays communications between controllers in order to stop/start watering during rain events.

Additionally, there are approximately 120 cul-de-sacs in the community. In general, cul-de-sacs that do not back up to a green belt utilize simple battery-operated controllers that do not tie into the central computer system. There are 65 of these. The remaining 55 cul-de-sacs tie into the computer system.

Normal Watering and Adjusting for Rain

When possible, watering takes place between 8pm and 9am. However, during the summer months it is normal to see watering during the middle of the day. This is because watering all of the zones for the amount of time needed takes more than half the day. Also, until the irrigation system is fully converted to gray water (a project sponsored by the Grand Lakes MUDs and the North Fort Bend Water Authority), the irrigation system must take care not to affect resident’s water pressure.

As of April 2018, Phase 1 North and South pump water from the lakes for their irrigation (Phase 1 lakes are connected, other phases are not); the other phases water with potable water from the MUDs. All phases will move to gray water after the MUD project is completed.



The Maxicom system utilizes rain buckets throughout Grand Lakes and the weather station near the waste water treatment plant in Phase 3. The weather station is like a beacon that broadcasts the temperature, humidity, wind speed, solar radiation, and rainfall that it records. Each rain bucket measures in increments of .10" of rain. All of this data is utilized by the central computer to update historical evapotranspiration rates to determine how much it should water. Rainfall amounts contribute to reducing the amount of watering needed for the week.

The Calsense system utilizes rain buckets throughout Grand Lakes and three local weather stations. As Calsense is a distributed system, the rain buckets connect to a specific controller and communications cascade to other controllers. The central computer utilizes the information in the same way as it does with the Maxicom system.

If you see watering during the rain, it may not indicate a problem. There are multiple reasons this could occur. One, the rain buckets may not have picked up .10" yet; this amount halts watering momentarily. Watering may resume later in the day if only .10" is received but will stop for the day if at least .20" are received. Two, communications have not caught up yet so some controllers are still watering. Three, the bed may not be tied into the central system (e.g. the 55 cul-de-sacs). Four, there is a communication problem - maintenance is needed.

Flower bed sprayers in color cycled beds (which have flowers replaced multiple times a year) may water after heavy rain events in order to meet watering requirements prescribed by the Color Specialist. Turf will not.



Preventative Maintenance

After big rain events the landscaping company reviews watering reports to ensure that rain cans are communicating properly. Controllers and zones are also periodically run with landscaping personnel onsite checking to ensure sprinkler heads are turning and spraying as expected. Not every zone will be checked during a given month due to the magnitude of the Grand Lakes irrigation system. It takes a minimum of 5-6 weeks to complete an inspection cycle that goes through all zones. An inspection cycle is continuously underway. The entire system is worked through before starting over again. Actively engaged residents reporting issues ensures that problems do not inadvertently go unnoticed for long periods of time.

How to Report Issues

Report issues and questions to the Grand Lakes management company as soon as you notice them. Water leaks and "stuck" watering (e.g. a sprinkler zone that is stuck on) need to be reported as soon as possible. If you see an urgent issue during the day report it right away. Landscaping personnel are on-sight during the day and can address the problem more quickly than if an afterhours call-out is required.

For urgent issues, call and email the management company. Ensure you speak to someone. Phone numbers and email addresses are available on grandlakeslife.com.

For nonurgent issues, such as a turf zone that consistently waters after heavy downpours or a dead patch of turf that appears not to be watered, email the management company and follow up with a phone call if you don't receive response within a week.