Water Application Management in an Urban Environment

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Challenge

Water, you see it all the time, running down the gutter from sprinklers that are set to run too long, from a clock that was programmed long ago, that has not been changed for years. Or worse, sprinklers running during a rainstorm. It makes you wonder if anybody is watching.

Applying water efficiently in urban landscapes such as parks, parkways and medians is no easy task. It could require large amounts of resources and time to create, much less manage a system that only applies water in the amounts actually needed to keep the landscape healthy without wasting water. Which is probably the reason most people don't tackle the problem. In an ideal situation, no water would ever be wasted but no system is ideal.

For the City of Fontana implementing water budgets, taking full advantage of existing technology and adding a new GIS application is helping manage water application and getting us closer to the ideal. This GIS application visually identifies which meters meet budget targets and which do not. This simple GIS application gives users a simple tool to aid in monitoring irrigation water application. For the 844 acres of public areas we maintain, the target for water application is 835,000,000 gallons of water. The target is established by using data obtained from the California Irrigation Management Information System (CIMIS). CIMIS helps us set the benchmark for irrigation application by calculating several different factors including average annual rainfall and climate conditions. But the real magic is our weather station driven, central computer irrigation control system.   Since our goal is to only apply the amount of water that is lost through evapotranspiration. Using technology like a central control system helps us apply only what is needed. Any water applied over and above the target, potentially wastes water. Overwatering by just 1" over 844 acres is the equivalent to over 14,800,000 gallons of water.

Given the magnitude of the challenge, the City of Fontana has chosen to use GIS and other technology to aid in creating a Water Application Management (WAM pronounced "wham") system. The City is using this system to determine appropriate water budgets and monitor water application as specified by AB 1881 the State of California's Model Water Efficient Landscape Ordinance as well as the City's Landscape Water Efficient Landscape Ordinance. The goal being to reduce water waste by only applying what is needed to keep the landscape healthy. – See map on following page

Water Application Management - Webmap Application

Red = Overwatering

Blue = Under Watering

Green = Meets Target Budget