This presentation premiered at WaterSmart Innovations

watersmartinnovations.com

Precise Control of Landscape Irrigation Water Consumption for Developers and Agencies
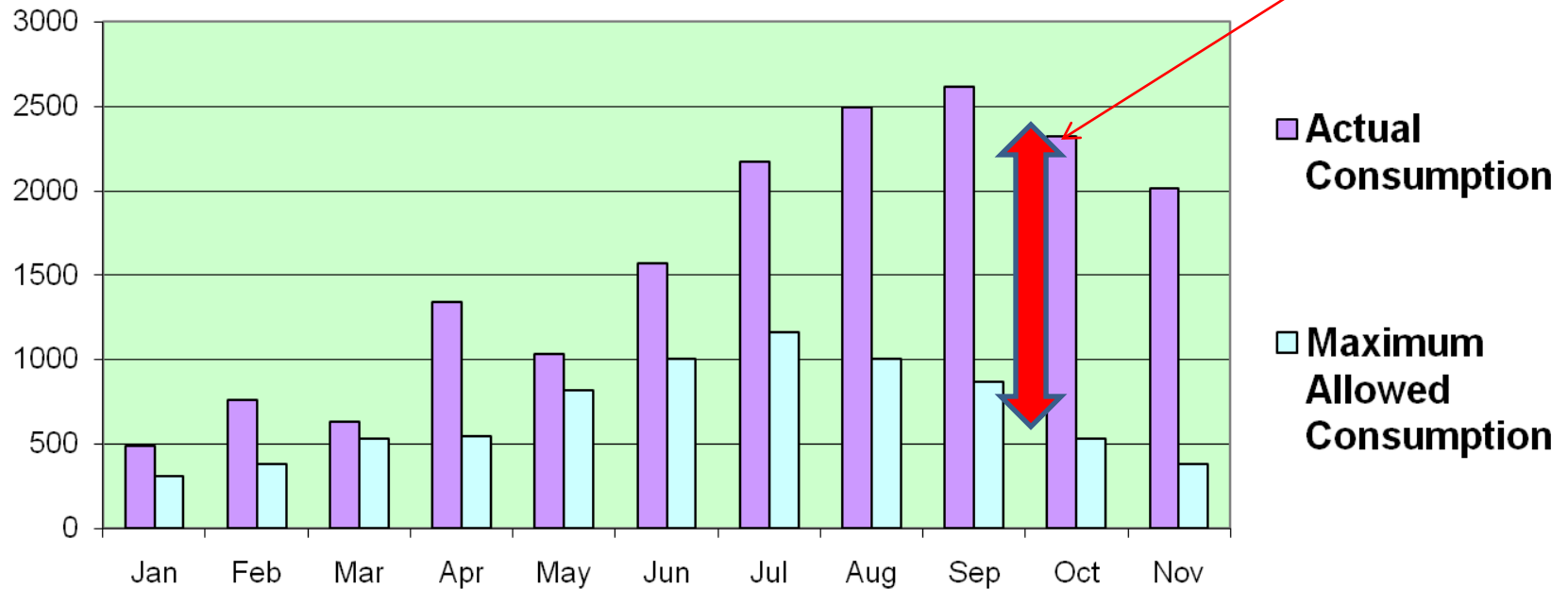
Geza Kisch
Tim Lindsey

Water Management Group
Riverside, CA

October 5, 2011

Accurate Control of Water Consumption

Must Close Gap!

Wasted Amount of Water in 2007 *

Water Budget Violation $$$ fines, penalties
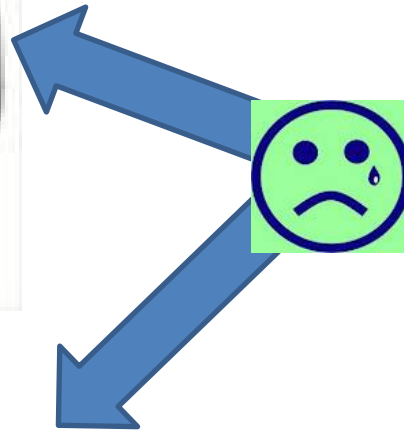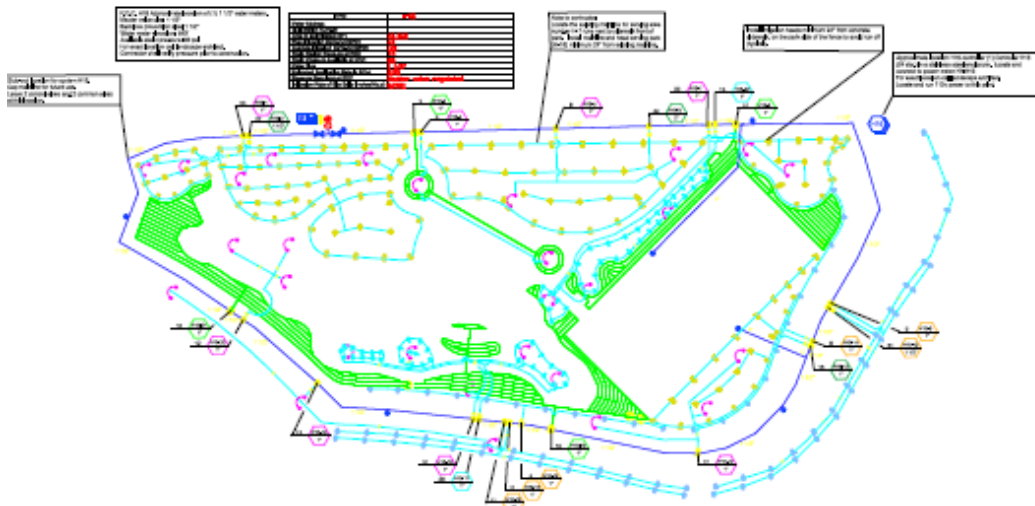
* Water Budget Compliance Chart for A Customer's Water Use Report

Inefficiencies Must be Fixed

Existing

New Design

Wrong Heads

Wrong Nozzles

Wrong Head Spacing

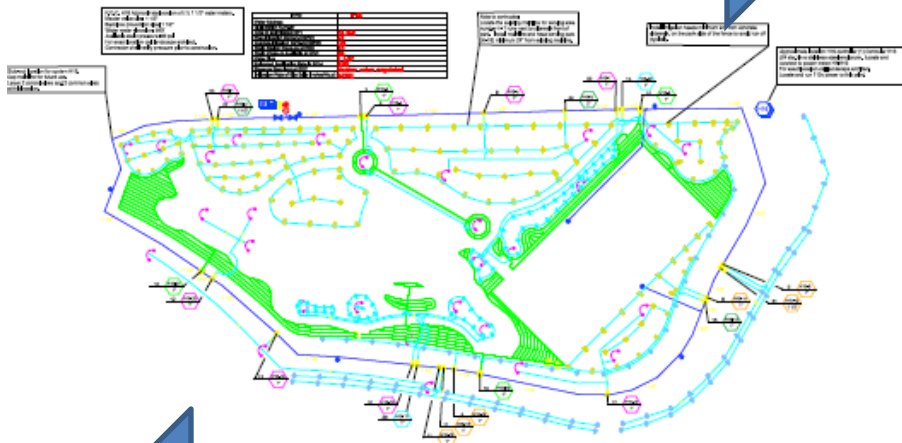Wrong Pipe Sizing

Wrong Timing

Mixed Condition

Mixed Hydrozone

Etc.

GIS based Water Management using GPS

Design to Installation & As-built

As-built to Analysis

Flagger Measures Pressure /Throw, etc.

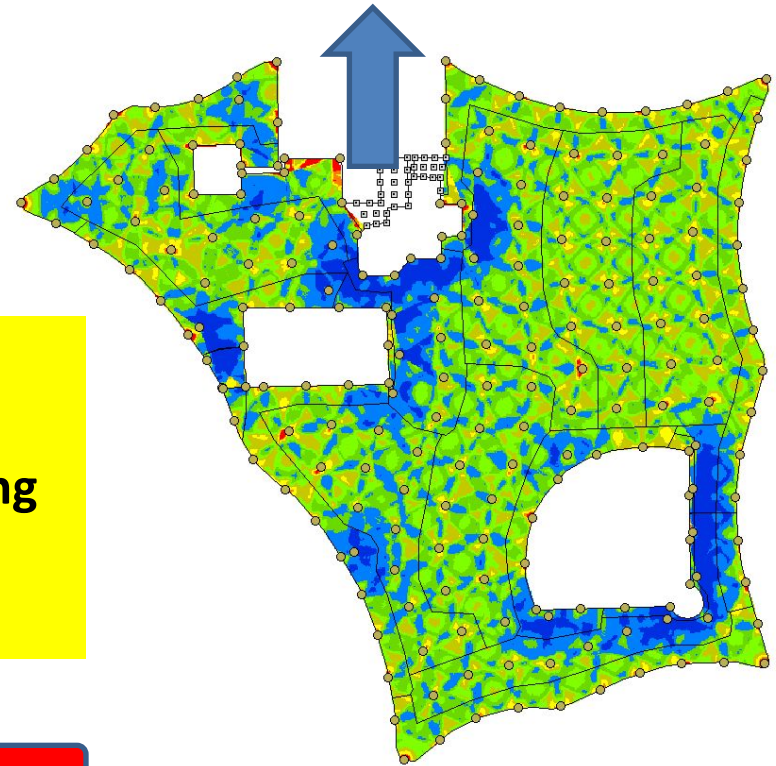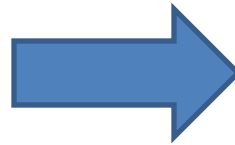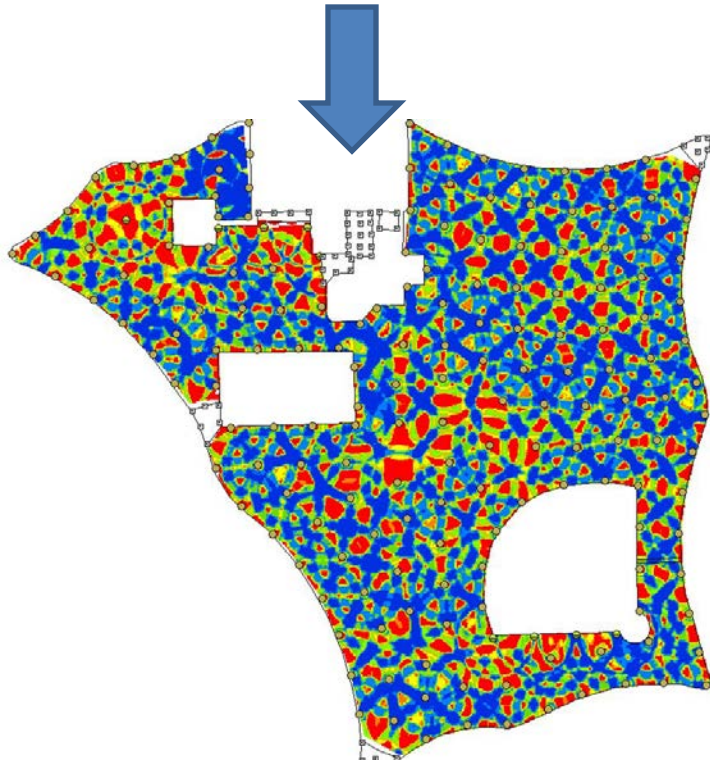GPS Instrument Measures Head Location
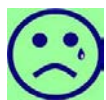
Design to Installation & As-built

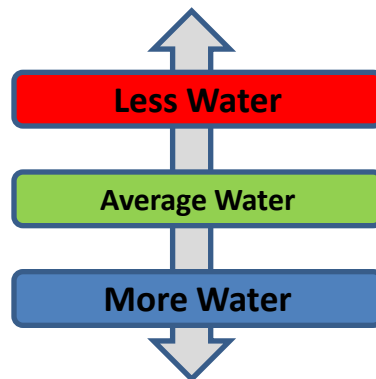# Design Plan Check using Simulation Software

Proposed Design

Installed System is Efficient

Test Corrected Design Using Simulation Software

Less Water

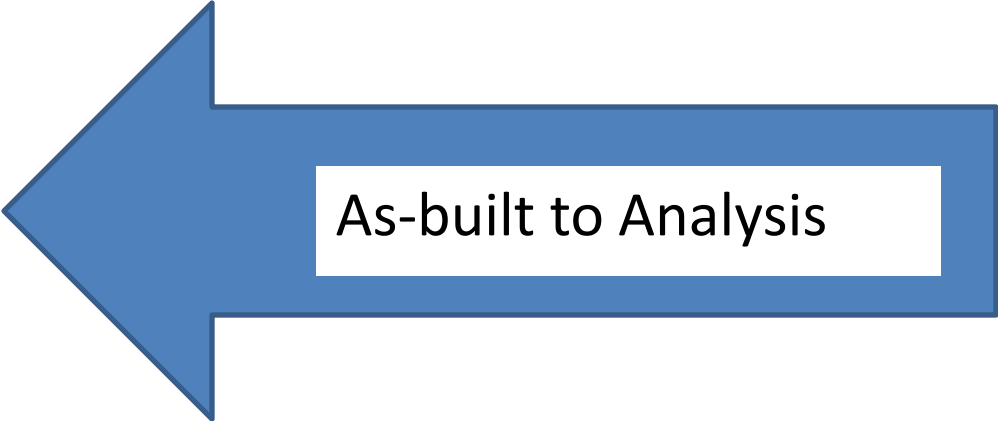Average Water

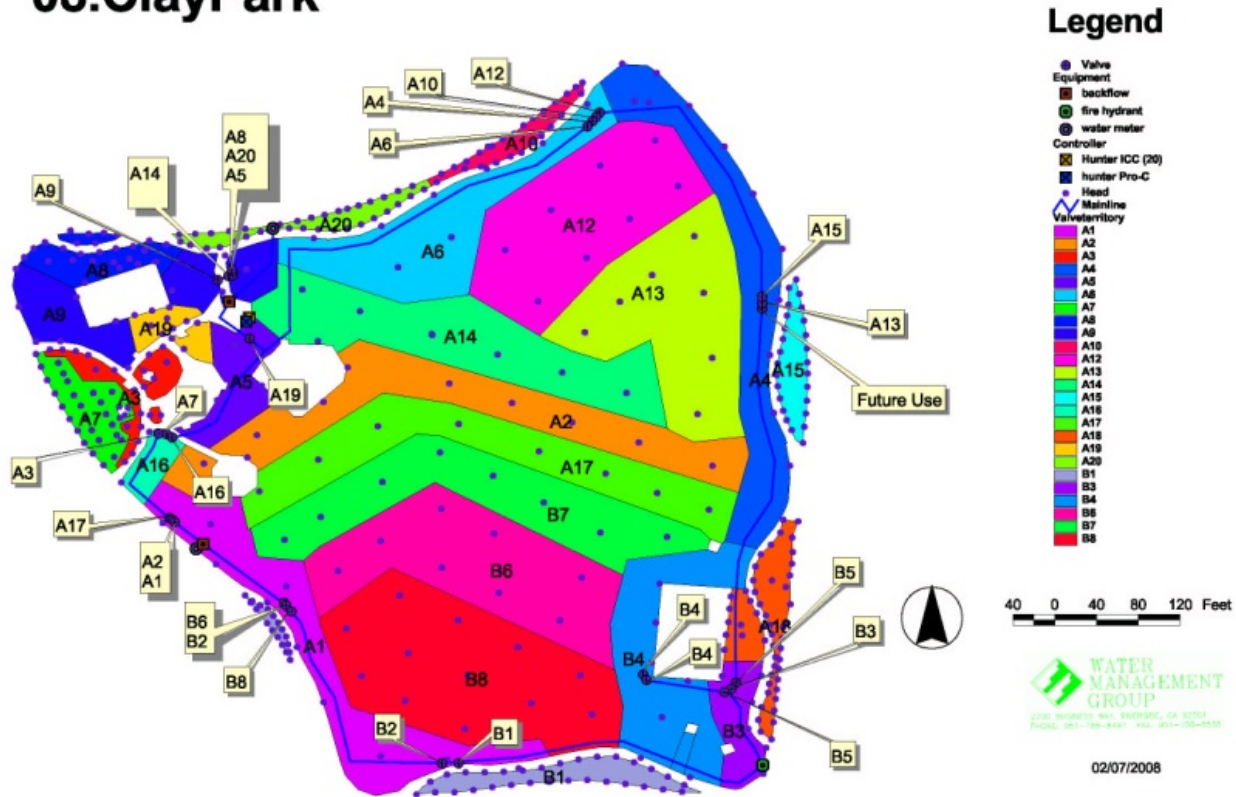More Water

Before

After

Design to Installation & As-built

As-built to Analysis
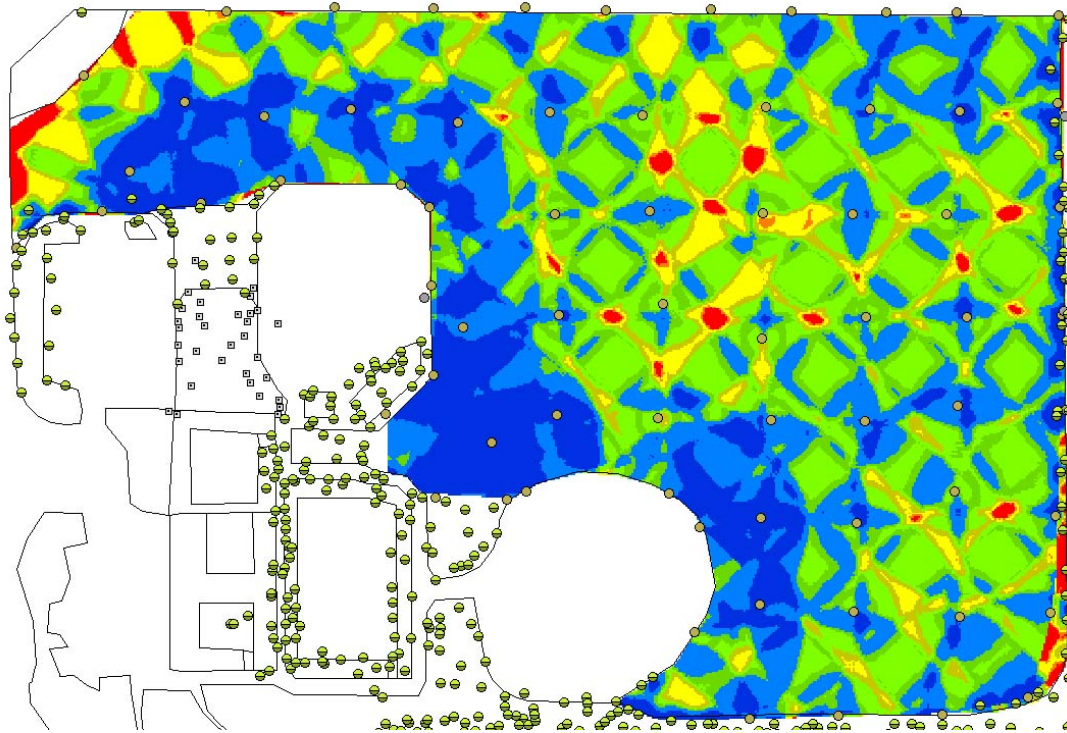
Irrigation System As-Built

As-built to Analysis (1)

Water Distribution Analysis
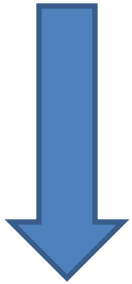# of As-Built

Less Water

Average Water

More Water
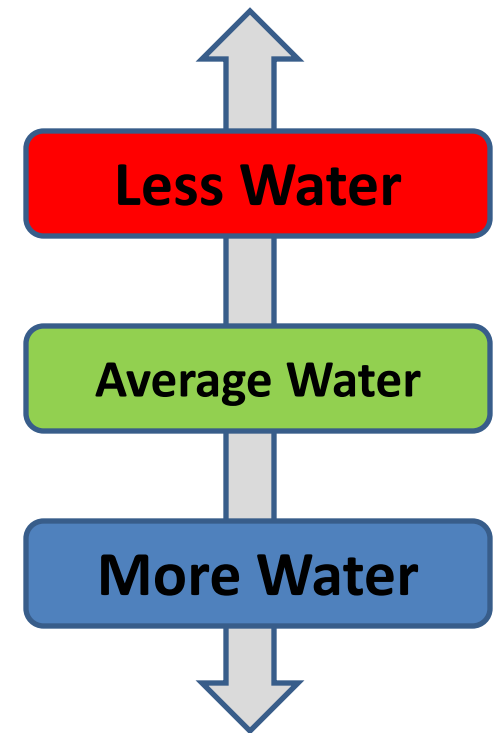
- **System Distribution Uniformity: 75.5%**

As-built to Analysis (1)

System Rehabilitation

Modeling of As-Built System

BEFORE

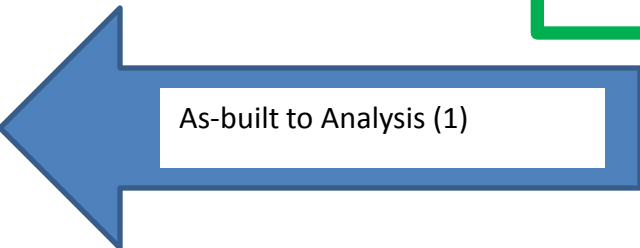**Modeling of Proposed Rehabilitation Solution**
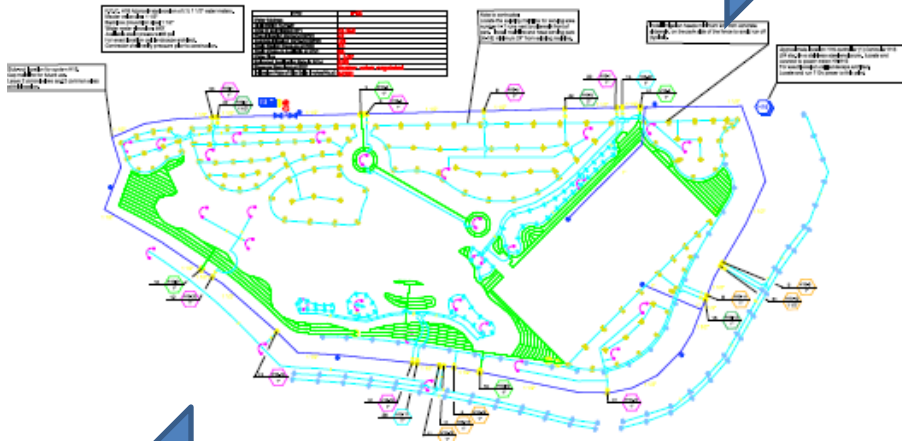

AFTER
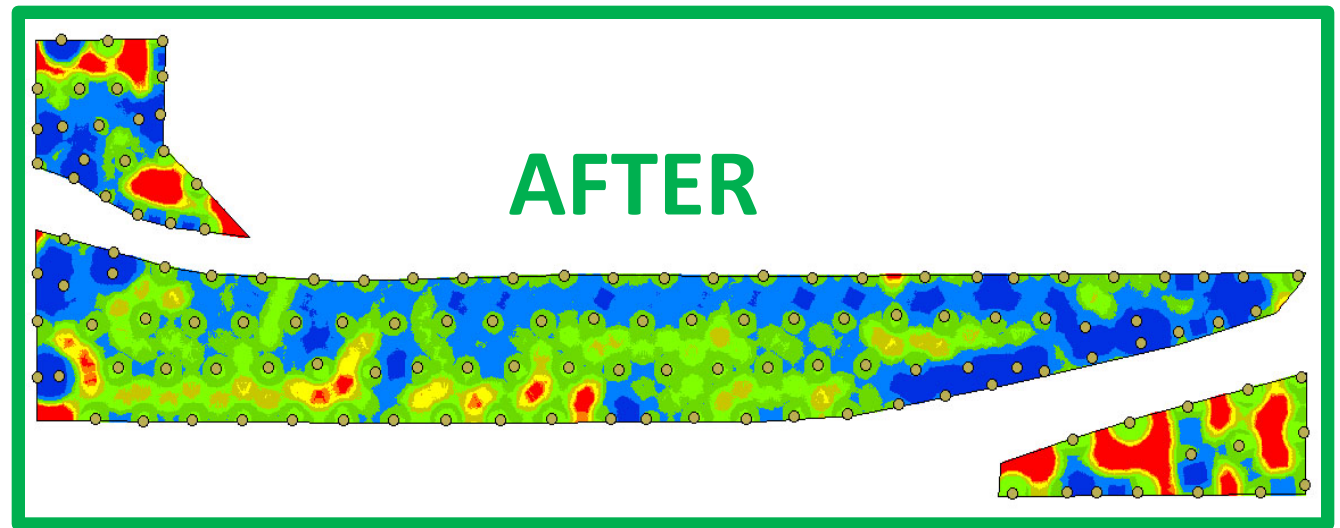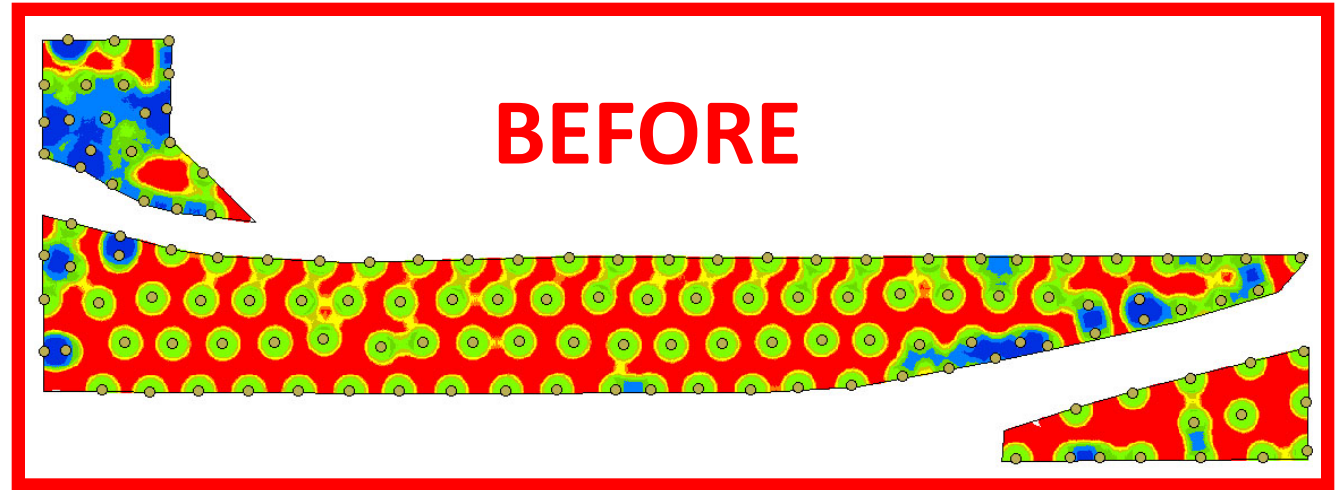
As-built to Analysis (1)

GIS based Water Management using GPS (summary)

Design to Installation & As-built

As-built to Analysis

Flagger Measures Pressure /Throw, etc.

GPS Instrument Measures Head Location

Information Layering

Efficiency Analysis

GPS Equipment

Aerial Photo
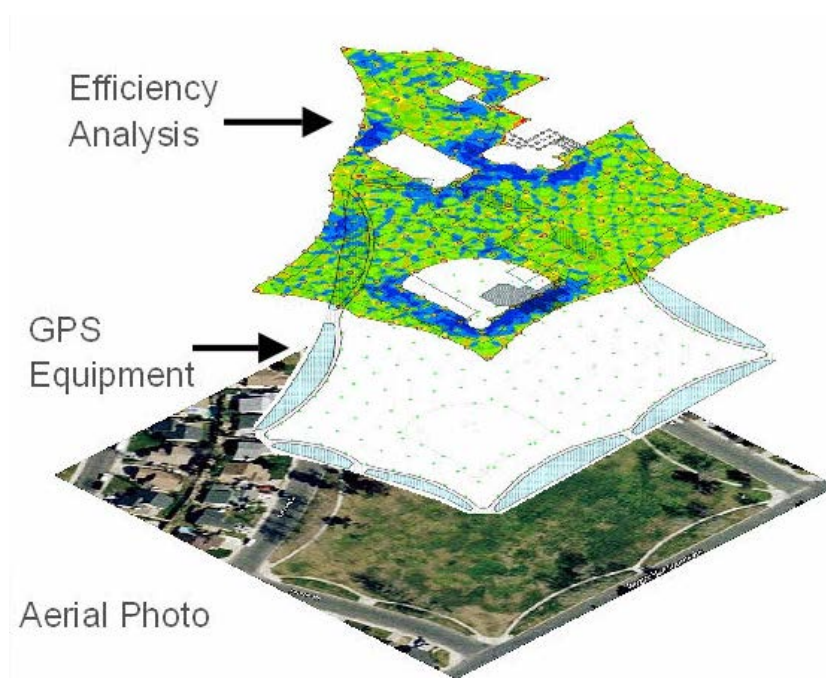
An Example of Layering
of Site Specific Data

Design / As-built Drives Operation

Cloud Based Control
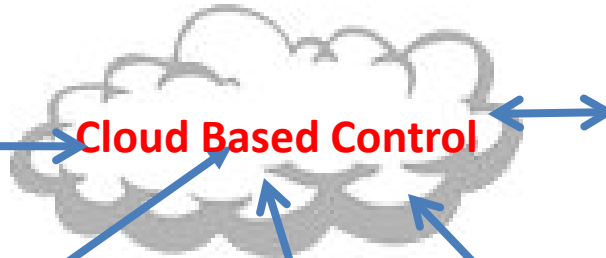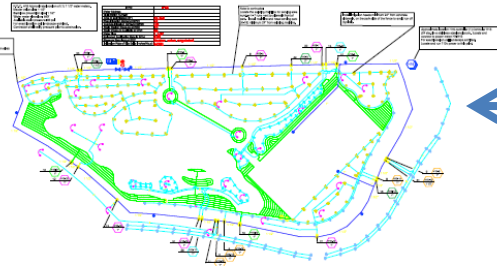
Site information
Records and System History
Event logging
Etc.

Any tablet, phone, ipad, …
FIELD PERSONNEL

Any computer connect to web or network - ANYWHERE
(MANAGEMENT PERSONNEL)

Visual Control Platform - 1

Daily Consumption vs Water Budget

Daily history and event logging and alerts

System Status

System wide control such as rain-off

System Wide LEVEL

Visual Control Platform - 2

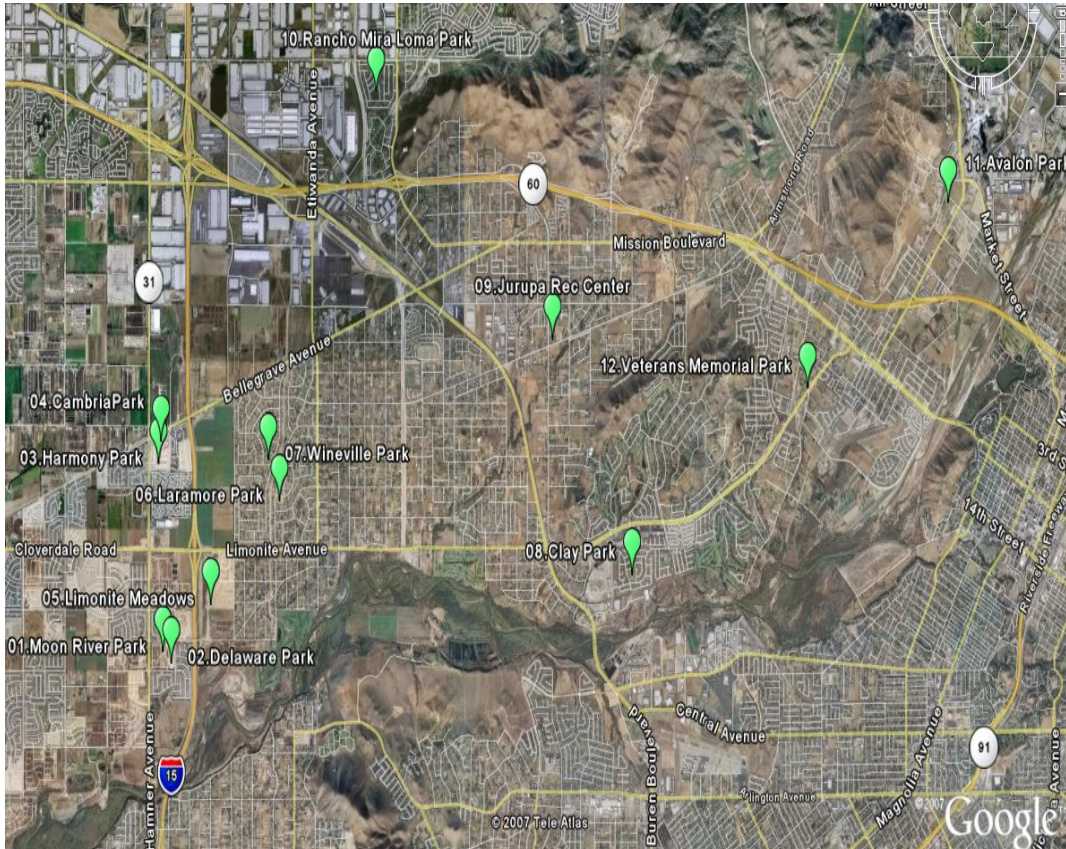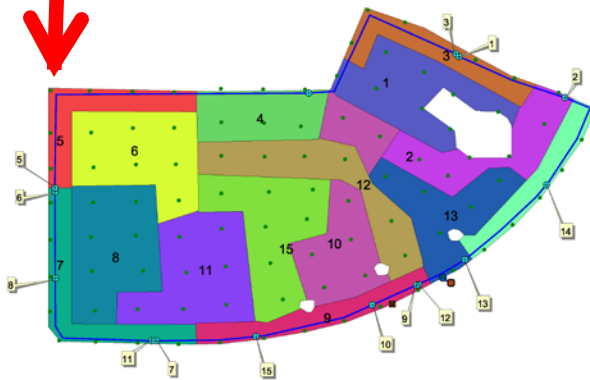07 WinevillePark - Station Map

Site LEVEL

Run valves by clicking on map

Controller Programming

Site History

Special Event Programming

Access from

Field using phone, tablet, ipad, …
Or
Computer on Web or Network

Visual Control Platform - 3

07.WinevillePark - Station Map

Legend

V#4

4-1

4-2

4-3

4-2

4-2

4-2
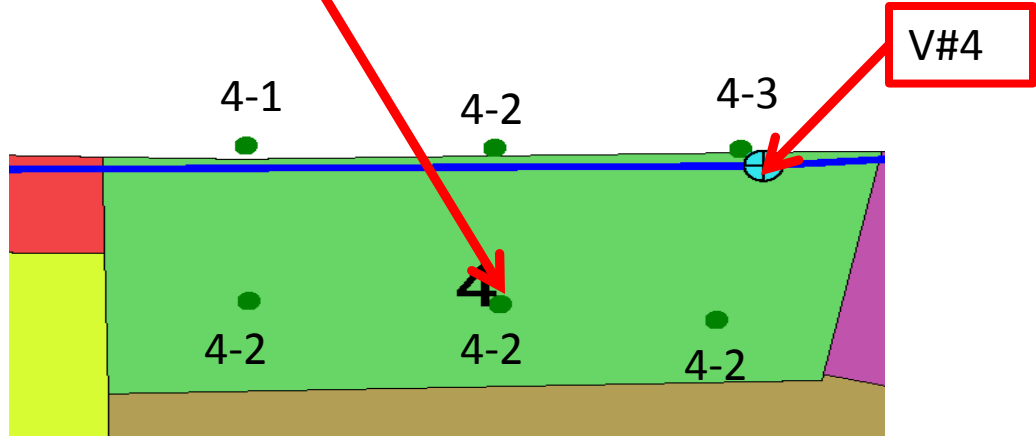
Valve LEVEL

Equipment Installed Records

Maintenance Logging

Modifications recorded into VCP

Access to Inventory Stock Database

Visual Control Platform - concept

- ## Graphic Interface - project site data and controller functions

- ## New "smart system" operation
  - ### Water Distribution Analysis
    - drives smart controller operation
  - ### Interactive data layers
  - ### data base runs
    - controller functions
    - with site relevant information

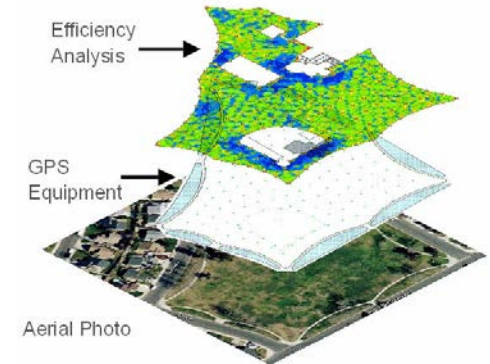# Visual Control Platform – application Driven Site Map Using GPS

- Data base drives controller operation
  - Using site relevant data
  - Drives controller operation
    - From the cloud instead of the field
    - Accurately controls water consumption

- Electronic blueprint
  - connects to a layered data base
  - Organizes project data
  - Documents all design and operational data

Question, Discussions …

Efficiency Analysis

GPS Equipment

Aerial Photo

07.WinevillePark - Station Map

Legend