

What is ab1881 Model Landscape Ordinance?

- State Law requiring cities to adopt 'model' Landscape Ordinance
- Landscapes "installed" after January 1st, 2010
- Requiring cities to meet or beat Ordinance
- Changes Irrigation Efficiency in new design, implementation and validation
- Civil and Criminal penalties allowed for noncompliance

How it Impacts Cities

- **Core Issue**
 - Up front water volume limit
 - Valve by valve analysis
 - City must permit all variation for life of project within the up front limit
- **Cities Impact**
 - Costs Go Up To Meet Ordinance Requirements
 - Water efficiency goes up but reflects only new development (1% or less)

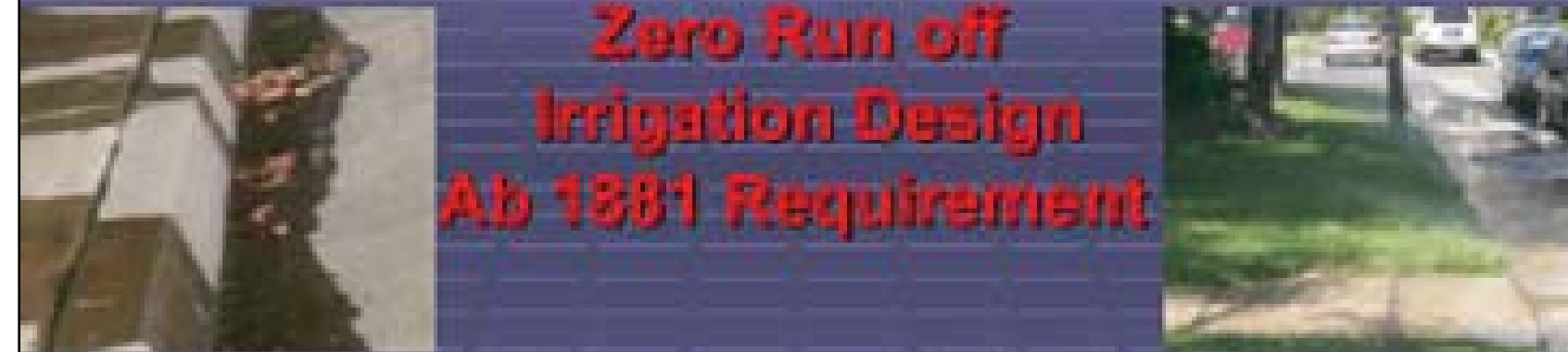
How it Impacts ...

- **City Planners** – Specific information and guidelines to issue permits
 - Preconstruction (modified by state law)
 - Preoccupancy requirements (new!)
- **Designers** – strict guidelines
 - Certified Designer Only (new)
 - Certified Contractor
 - Certified Equipment to manufacturer spec
 - Shift from Guidelines to Validation

How it Impacts...

- **Designers/Developers**
 - Limits their options
 - No deviation from **permit** for **life** of project
- **Environmental Groups**
 - Challenge city ordinance not meeting state
 - Challenge permits not meeting ordinance
 - All criminal and civil options are available to the extent of law (attorney fees may be losers responsibility)

Zero Run off Irrigation Design Ab 1881 Requirement



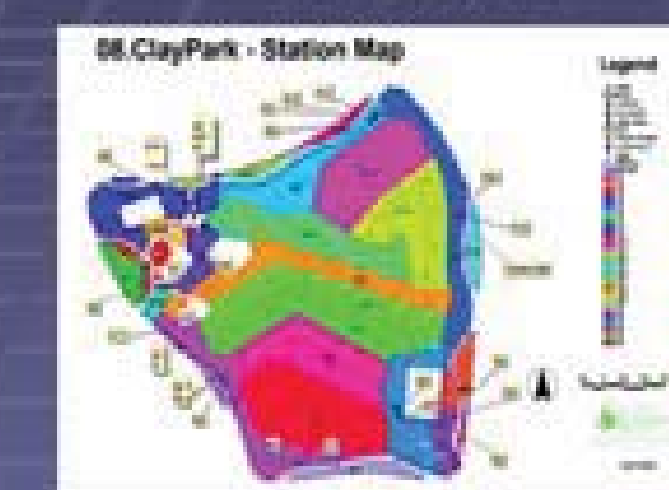
- No sprayhead, or rotor within 24" of any hardscape
- Only "Low Volume" surface flow or subsurface irrigation in all mulched areas (bush/shrubs/trees)
 - 60% of your area is low flow
 - All areas except turf or creeping groundcover must be mulched
- Slopes of 25% or greater must have precipitation rate less than 0.75 in/hr
- Soil grading to keep all stormwater on site

Ways Cities Meet Ordinance

- Hire Certified Irrigation Consultants
- **Plan Check & Validation Process:**
 - CAD Digital Documentation Only
 - Easy to work with Water Purveyor
 - Simplify process reduce total costs
 - GPS Technology validates Distribution Uniformity from CAD drawings

Water Budget Graphic Tools

Valve Map



Drought Map

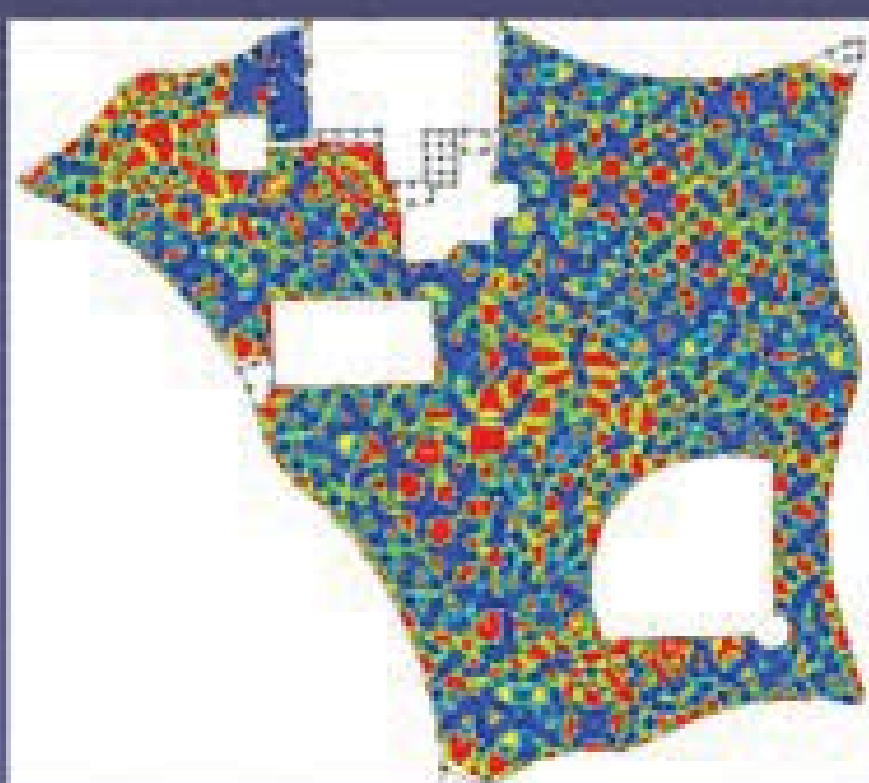


Ways Cities Meet Ordinance

- **Plan Check & Validation Process:**
 - CAD Plans can be electronically submitted
 - Sent Electronically to Certified Irrigation Designers
 - Plan is processed through software to validate Distribution Uniformity
 - Plan can be revised to meet AB 1881 standards

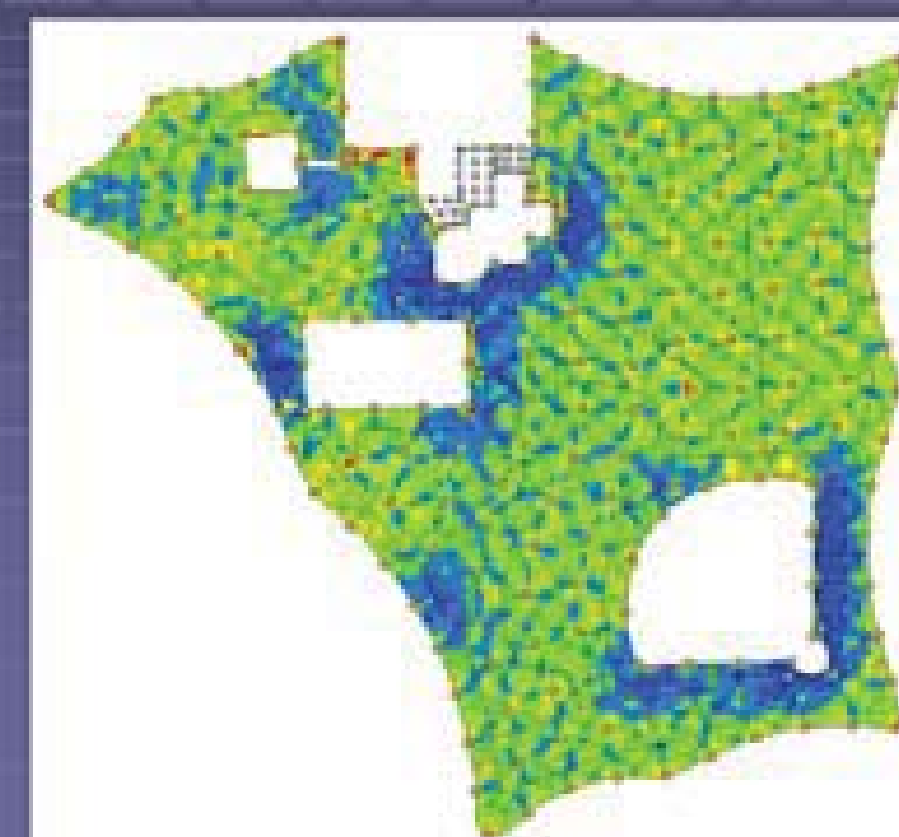
GreenWorld Electronic CAD Plan Check Sample: - Bad System Design

Distribution Uniformity - score 51.2



GreenWorld Electronic CAD Redesign: - Good System Design

Distribution Uniformity - score 81.7



GIS Irrigation System Plan Check Program

- Accurate measure of Volume Requirement
- Plan Check Process Cost is the same
- Forces all new design to Meets State Standards tests for Distribution Uniformity
- Easy to evaluate water budget and watering window tests.
- GIS data base is standard and fits into agency program
- **GIS information can pass right into ET controller**

Ways City Meet Ordinance

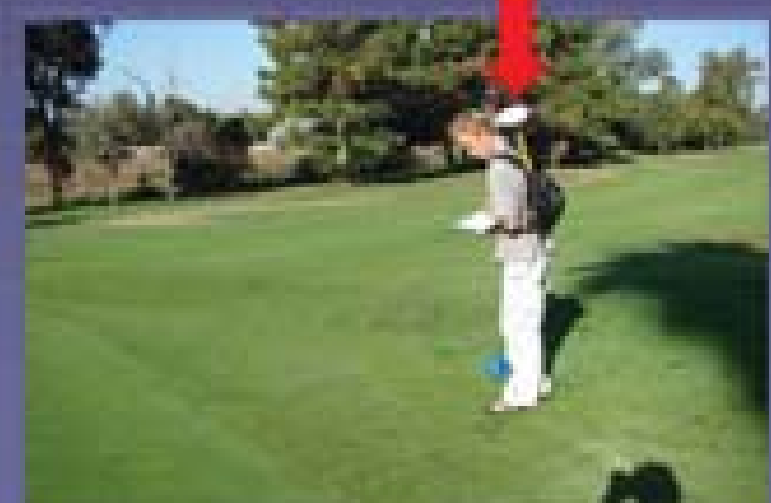
- **Field Validation Process:**
 - CAD creates GPS points for field validation
 - Easy to work with CAD drawing
 - Simplify process reduce costs
 - Technology has electronic validation for record tracking
 - Technology today can validate Distribution Uniformity and MAWA requirements
 - All participants can validate process before inspection
- **Challenges: Working with GPS**

GPS Water Audit

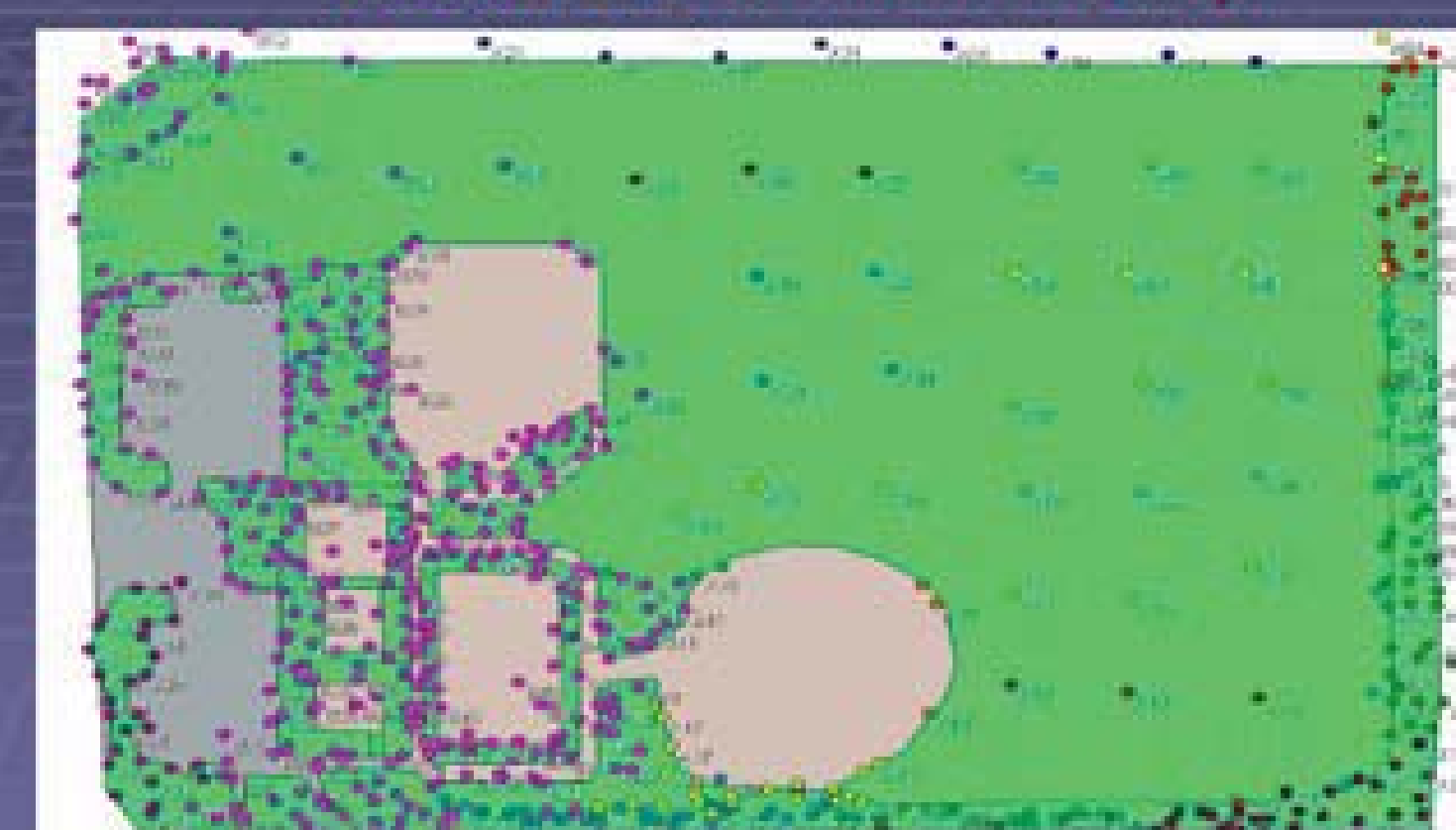


Flagger Measures Pressure /Throw, and standard water audit information

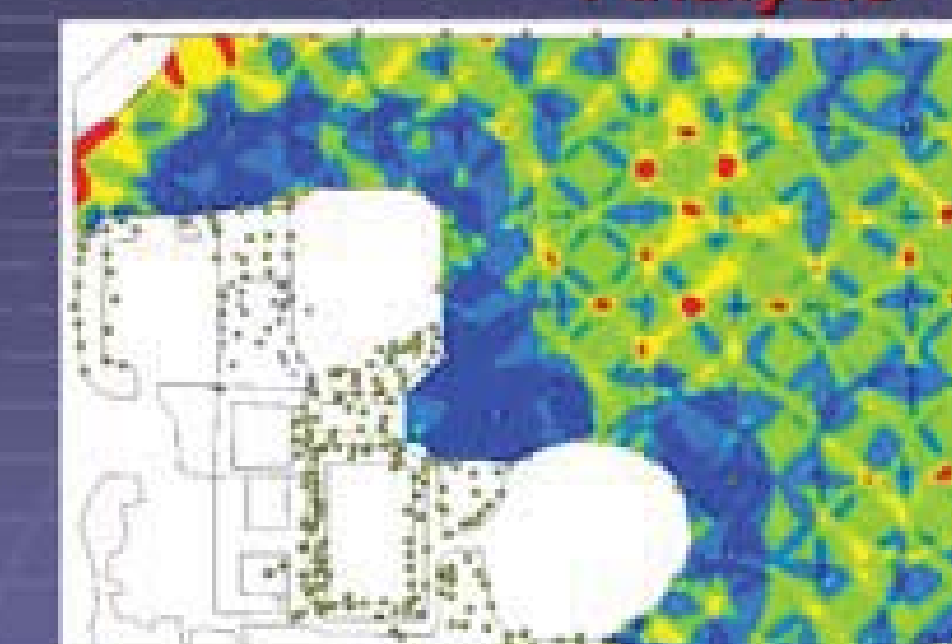
GPS Instrument Measures Head Location



GreenWorld GPS field Site Map



Distribution Uniformity Audit Analysis



Less Water

Average Water

More Water

- System Distribution Uniformity: 75.5%

Summary address AB 1881 solutions

- GPS/GIS CAD Electronic Process
 - Track design – plan validation– field verification – system management
- Reduce Planning & Inspection Costs through simplicity & technology
- Utilize Water Budget Process in rates and 5 year auditing