

# This presentation premiered at WaterSmart Innovations

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# Innovations in Providing ET Data throughout California

Fiona Sanchez, Irvine Ranch Water District

Carlos Ortega, Enterprise Information Systems

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# Overview

- Project Background and Rationale
- Objectives
- Collaborative Effort
- Potential Applications
- Live Demo

# Outdoor Water Use in California

- California Water Plan Update 2005
  - 8.7 MAF urban use
  - 2.9 MAF for irrigation (parks, landscape)
  - 2.3 MAF residential landscape
  - 400,000 – 600,000 AF/yr **potential water savings** through improved landscape management, hardware, design improvements



# ET-Based Applications

- Weather-based irrigation controllers
  - IRWD studies have shown water savings and runoff reduction benefits from weather-based (ET) controllers
- Landscape water budgets
  - 30% reduction in irrigation use in IRWD's service area
- Agricultural water management



# Weather-Based Controller Requirements

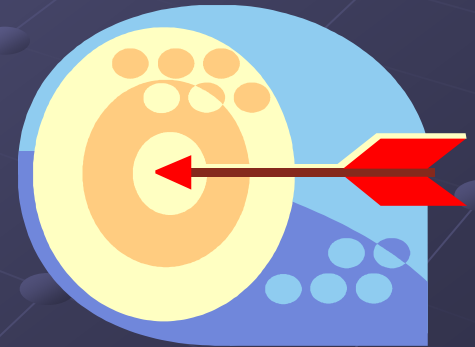
- Expansion of weather-based irrigation controller market:
  - Weather-based irrigation control required for all new controllers in California by 2012 (AB 1881)
  - Increase of 5-15% technology adoption - savings of 10,000 to 40,000 AF per year

# ET Data Sources

- Existing ET data sources – spatial gaps, access, reliability, quality assurance
  - CIMIS (California Irrigation Management Information System) – 120 ground stations for California
  - Private weather stations – maintenance?
  - Cost and land availability to add stations

# Project Objectives

- Stakeholder involvement in development process
- Provide a reliable, statewide, quality-controlled data source
- Support and accelerate adoption of ET-based products and applications



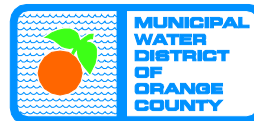


# Stakeholder Participation

- California Department of Water Resources, CIMIS
- University of California at Davis (CStars)
- California Water Agencies
- Irrigation Manufacturers



METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA



# Data Sources

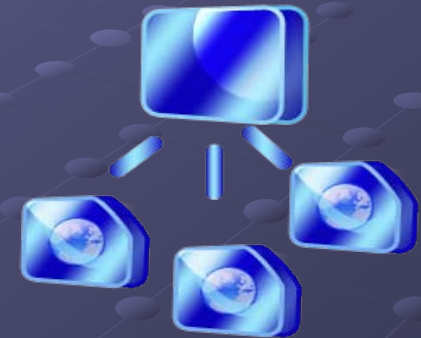
- DWR (CIMIS system)
- DWR (Spatial CIMIS system)
- Weather.com  
(real-time weather data)
- Open for TBD  
data providers



# Data Integration

- Developed through a joint effort by:

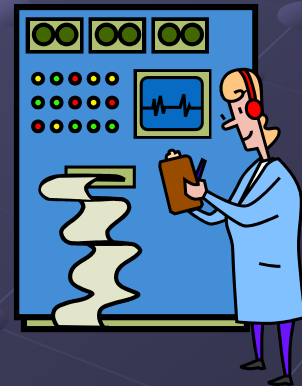
- U.C. Davis CStars,
- Department of Water Resources
- and the CIMIS program



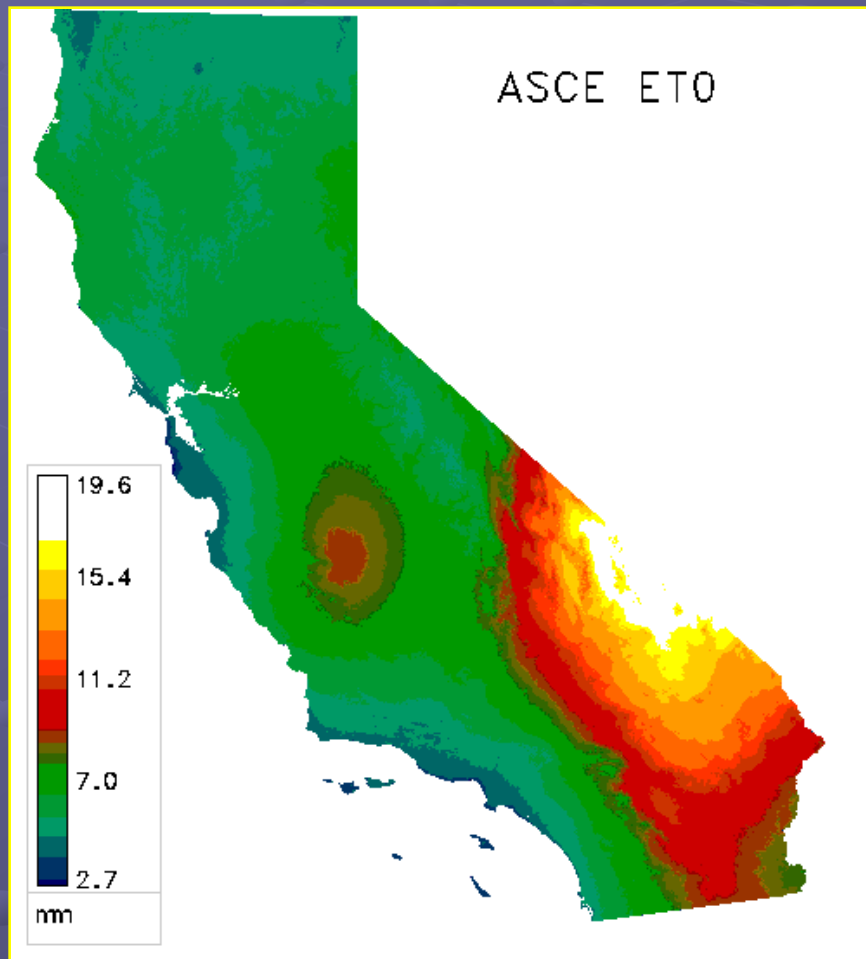
- Daily ETo Maps of CA produced utilizing a combination of satellite imagery and ground based data set interpolation models

# Data Quality, Reliability

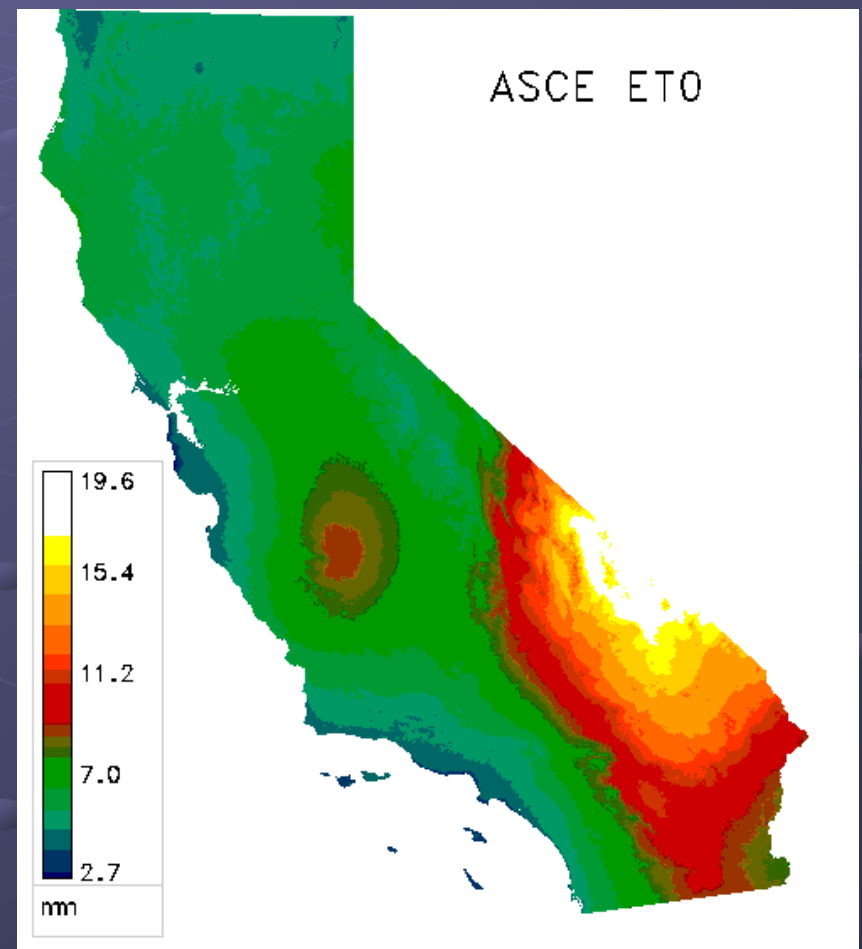
- Based on extensive data interpolation modeling by DWR/U.C. Davis
- Statewide Data – **2 Km<sup>2</sup> resolution**
- Quality control by CIMIS program based on developed models and standards
- Standardized format ET-XML
- **Free**



# June 5, 2004

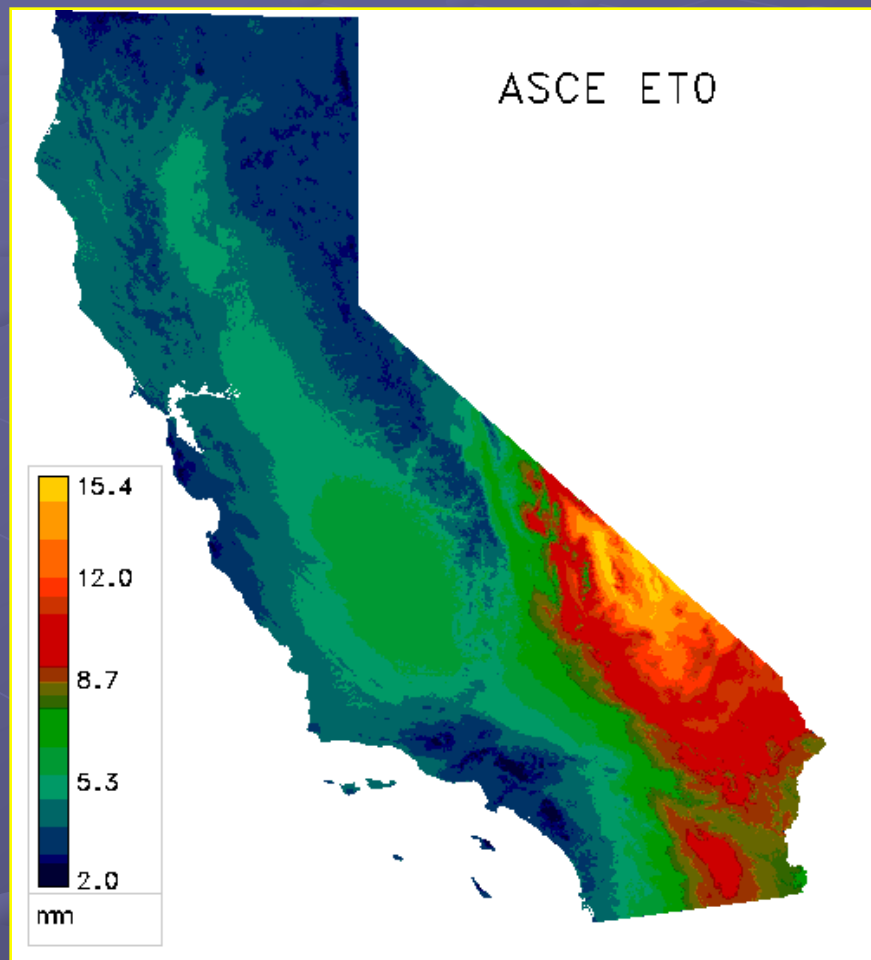


# June 6, 2004

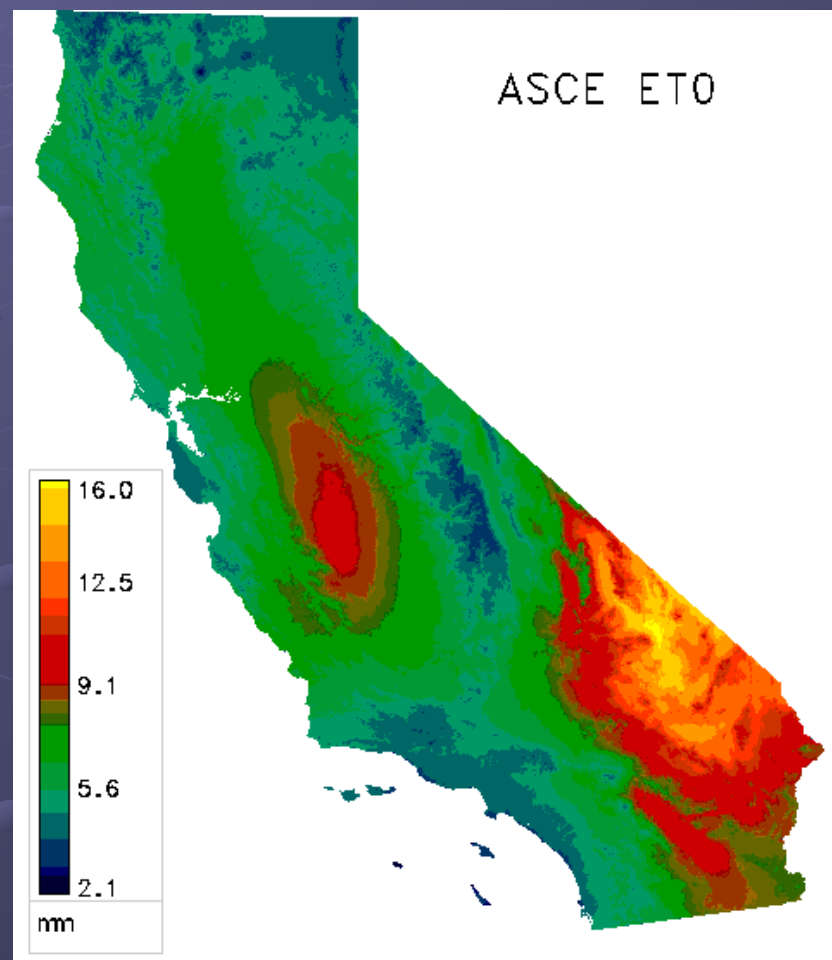




# June 7, 2004

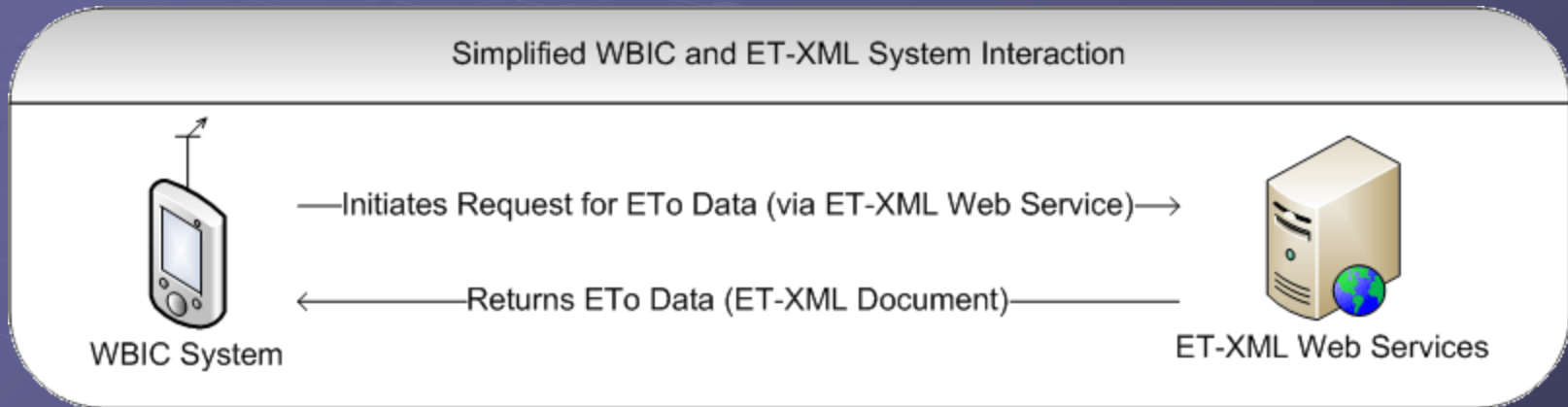


# June 8, 2004



# Applications and Demo

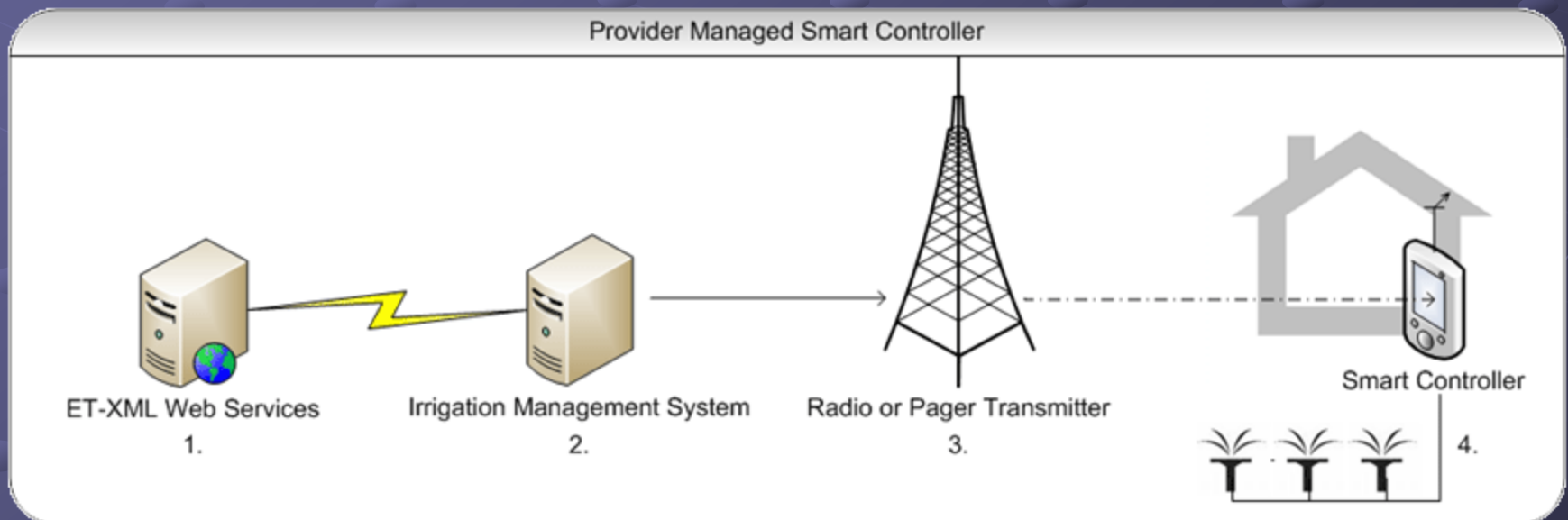
# Weather-Based Irrigation Controller



- WBIC system needs ETo data to calculate irrigation schedule
- ET-XML system provides ET-XML web services to satisfy request, with results returned in the standard ET-XML format

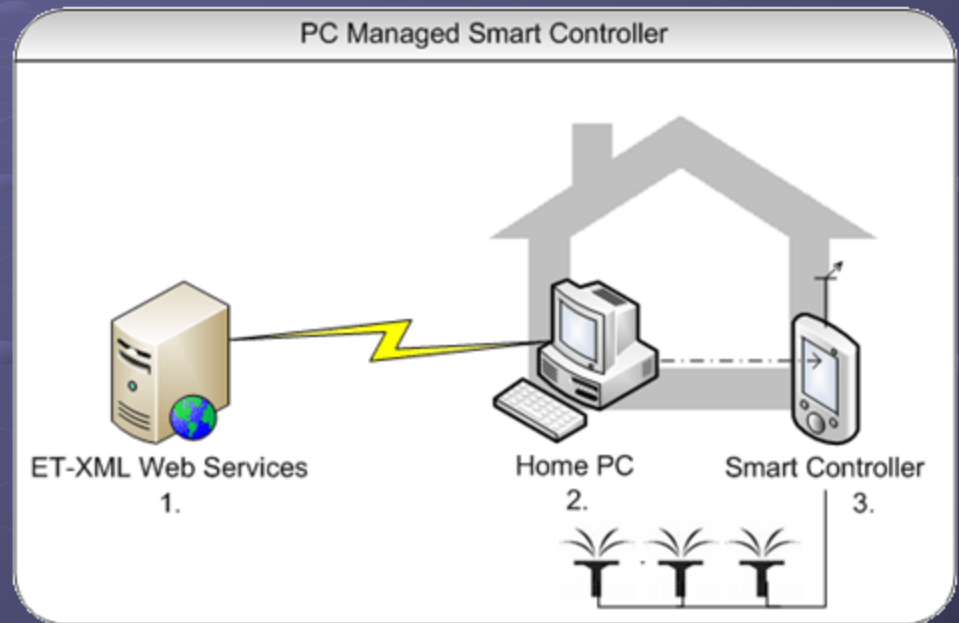
# Provider Managed Scenario

- Irrigation Management System transmits calculated irrigation schedule to the WBIC device
- Typically accomplished using pager or radio



# PC Managed Scenario

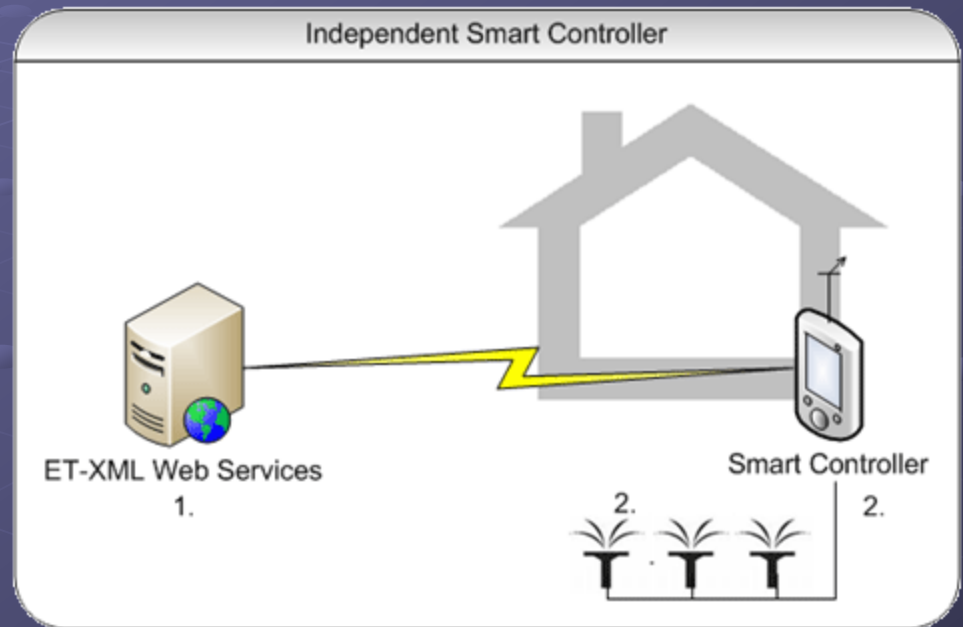
- PC obtains ETo data
- PC calculates irrigation schedule
- PC transmits irrigation schedule to WBIC device





# Independently Managed Scenario

- WBIC device obtains ETo data
- WBIC calculates its own irrigation schedule
- The WBIC device may be connected via modem (phone line), Internet cable, Wi-Fi, etc.



# System Features

- ET-XML
- CIMIS/Spatial CIMIS
  - Zip Code
  - Search by Coordinate
  - Search by Address
  - Customized Polygon



# Demo

Sample Address: Lucas Valley Rd and Skywalker  
Sample Coords: (33.667441,-117.767079)

# Questions ?

Fiona Sanchez  
(949) 453-5325  
[sanchezf@irwd.com](mailto:sanchezf@irwd.com)

Carlos Ortega  
(916) 207-5838  
[cortega@einfosys.org](mailto:cortega@einfosys.org)