VENDORS AND INFORMATION BOOTHS

AGRITE

BIGGER BETTER CROPS

CENTRAL COAST AG WATER QUALITY COALITION

CERMETEK – AQUAMON

COMMUNITY WATER DIALOGUE

HORTAU SIMPLIFIED IRRIGATION

FARM BUREAU

IRRIGATION TRAINING AND RESEARCH CENTER CAL POLY

PG&E

PVWMA

RESOURCE CONSERVATION DISTRICTS - SANTA CRUZ AND MONTEREY

SIGNATURE RANCH TECHNOLOGIES

STOCKMAN'S WATER & ENERGY

STRAWBERRY COMMISSION

TM IRRIGATION

UCCE

USDA NATURAL RESOURCES CONSERVATION SERVICE

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2014 DROUGHT AND IRRIGATION CONSERVATION CONFERENCE

EVERY DROP COUNTS!

PRESENTED BY

Community Water Dialogue
"Dialogue to Action"

Pajaro Valley Water Management Agency

FARM BUREAU SANTA CRUZ COUNTY

RESOURCE CONSERVATION DISTRICT OF SANTA CRUZ COUNTY

APRIL 10, 2014

HARVEST HALL
SANTA CRUZ COUNTY FAIRGROUNDS
2601 EAST LAKE AVENUE, WATSONVILLE, CA 95076

AGENDA

8:30	Registration and Coffee
9:00	Welcome
9:10	"Understanding the Drought and Conservation Progress" Brian Lockwood, PVMWA
9:40	"Market Pressures for Water Conservation" Tamara Muruetagoiena, Driscoll's
10:00	Break and Vendor and Information Booths
10:20	Mini Presentation Round-Robin
	Growers choose from five concurrent sessions: See inside for Stations and Speakers.
12:00	Lunch and Vendor and Information Booths
1:30	Adjourn

MAIN SESSION PRESENTATIONS

UNDERSTANDING THE DROUGHT AND CONSERVATION PROGRESS

Groundwater overdraft and seawater intrusion are two major threats to the sustainability of the groundwater resources in the Pajaro Valley. Roughly 55,000 acre-feet per year of groundwater is extracted from the aquifers underlying the valley to meet agricultural, municipal, rural residential and commercial needs. The 27,000 irrigated acres in the valley produce over $800 million per year of mostly fruit, vegetable and flower crops. The water resource problems of the Pajaro Valley have been documented since the publication of Bulletin 5 in 1953.

The Pajaro Valley Water Management Agency (PVWMA) was formed by an act of state legislature in 1984 to "efficiently and economically manage existing and supplemental water supplies in order to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft." The PVWMA is implementing water supply projects describe in its Basin Management Plan to balance the basin and stop seawater intrusion. A managed aquifer recharge and recovery facility, water recycling facility and over 20 miles of water distribution pipeline are already operational. Staff and stakeholders recently worked to update the Basin Management Plan with a suite of projects and programs that balance the basin and stop seawater intrusion. Key components of the plan include: conservation (5,000 AFY), optimizing the use of existing supplies (3,000 AFY), and developing new supplies (4,100 AFY). Projects will be implemented in phases. If basin monitoring shows continued overdraft and/or seawater intrusion following the completion of each phase, additional projects identified in the BMP Update will be considered for implementation.

BRIAN LOCKWOOD, PVWMA

Brian Lockwood is the Senior Hydrologist at the Pajaro Valley Water Management Agency (www.pvwater.org). He leads the basin monitoring and water quality programs providing technical analysis, review, and oversight for projects related to managed aquifer recharge, seawater intrusion, groundwater quality, conjunctive use, hydrologic modeling, recycled water, groundwater production and conservation. Brian earned his B.S. and M.Sc. degrees from the University of California, Santa Cruz, and is a California Professional Geologist and Certified Hydrogeologist, with over 10 years of experience of surface and groundwater investigations.

MARKET PRESSURES FOR WATER CONSERVATION

This presentation will be giving an overview of the pressures coming from the market around Sustainability with a focus on Water Conservation. Companies are increasingly looking at their supply chain and demanding better use of resources and greater transparency. This trend is looking beyond food safety and organics, to focus on the overall environmental impacts of farming. The speaker will give examples of how retailers are demanding information, with specific examples and also how certification companies are creating programs tailored to comply with requirements around Sustainability and Water Management.

TAMARA MURUETAGOIENA, DRISCOLL'S

Tamara Muruetagoiena holds a Master in Forest Science from Yale University, MBA from UC Berkeley and a BA in Political Sciences from Washington State University. She spent five years working as an Agriculture and Environmental Policy Advisor in the European Union as European Parliament staff. Trained as an environmental scientist, Tamara worked for nine years for various universities such as Yale and Columbia as researcher and program manager in the US, Dominican Republic, France and Spain. She currently manages the Sustainability department at Driscoll's, working internationally implementing our sustainability strategy.

MINI PRESENTATION ROUND-ROBIN

GROWERS CHOOSE FROM FIVE CONCURRENT SESSIONS

	Station				
	1	2	3	4	5
10:30	Irrigation Scheduling - The Basics *	Soil Moisture Monitoring - Advanced *	DU and System Evaluations - Drip	Water Harvesting *	Salt Management
10:50	Irrigation Scheduling - Advanced *	Soil Moisture Monitoring - The Basics	DU and System Evaluations - Sprinkler	Maximizing infiltration and water holding capacity in your soil *	Water Use Tracking and Record Keeping
11:10	Irrigation Scheduling - The Basics	Soil Moisture Monitoring - Advanced	DU and System Evaluations - Sprinkler *	Water Harvesting	Water Use Tracking and Record keeping *
11:30	Irrigation Scheduling - Advanced	Soil Moisture Monitoring - The Basics *	DU and System Evaluations - Drip *	Maximizing infiltration and water holding capacity in your soil	Salt Management *

* Spanish interpretation available

ROUND ROBIN PRESENTATION DESCRIPTIONS

IRRIGATION SCHEDULING BASICS

MICHAEL CAHN, UCCE

This talk will cover the basic considerations in developing an irrigation schedule for crops: crop type and development stages, water availability, characteristics of the soil and irrigation system, soil and water salinity, and weather conditions.

IRRIGATION SCHEDULING ADVANCED

MICHAEL CAHN, UCCE

There are many tools that can assist growers in scheduling irrigations of their crops, including soil moisture monitoring, weather based approaches, and plant based methods. This talk will discuss some of the strengths and weaknesses of these different approaches and how to integrate them into existing farming operations.

SOIL MOISTURE MONITORING BASICS

BEN BURGOA, RCD MC

Soil moisture content can be directly determined by calculating the difference in the weight of a soil sample before and after drying in an oven. There are many indirect methods available for monitoring soil moisture. Indirect techniques measure the volume of water in the soil or the tension at which the water is held in the soil. This presentation will cover soil tension and soil moisture content and their units of measurement. It will also cover measurement methods and advantages and disadvantages for various measurement methods.

SOIL MOISTURE MONITORING ADVANCED

BEN BURGOA, RCD MC

Irrigation management is a practical application of soil moisture monitoring. Soil moisture-based optimized irrigation consists of keeping the soil within a target moisture range by replenishing the water required for plant uptake with irrigation water. This practice reduces the potential for soil water surplus and leaching of agrochemicals present in the soil. This presentation will describe the factors that affect soil moisture measurement and irrigation monitoring sensors and data logging.

DU AND SYSTEM EVALUATIONS – DRIP

TOM LOCKHART, UCCE

This presentation will describe a drip evaluation performed on two blocks. These blocks had different pressures. The DU was calculated. Then the irrigator adjusted the pressure so that they were the same in each block and the DU was re-calculated. The speaker will hand out a maintenance check-list for drip systems and be able to answer questions about this list.

DU AND SYSTEM EVALUATIONS – SPRINKLER

TOM LOCKHART, UCCE

This presentation will describe a sprinkler evaluation performed in a large vegetable field. It will show how the DU was calculated and then describe how the DU could be improved. The speaker will hand out a maintenance check-list for sprinkler systems and be able to answer questions about this list.

WATER HARVESTING

RICH CASALE, NRCS

Participants will learn how to capture storm water, irrigation tail water, direct rainfall, and other sources of water from farm fields, buildings, parking areas and other impervious surfaces to reuse for irrigation, wildlife, fire protection, and other uses on the farm. Information and guidance will be provided on different approaches and systems and how to get free planning, design and financial assistance for the installation of water harvesting systems. Additionally, there will be information provided on water treatment/purification systems so that harvested water in need of treatment can be reused.

SALT MANAGEMENT

STUART STYLES, ITRC CAL POLY

This presentation examines the motives, methods, and need for sprinklers to provide salinity management on berries. The ITRC project was designed to study the current practice and determine the conditions where growers can change these practices to conserve water by minimizing or eliminative sprinkler use. One of the primary problems with switching away from sprinklers was the potential for increased damage due to higher salinity. The results of the study showed that by minimizing sprinkler use, water is conserved, money is saved by pumping less water, and runoff is reduced. The presentation will focus on the key factors that influenced the successful transition away from traditional sprinkler use on berries.

MAXIMIZING INFILTRATION AND WATER HOLDING CAPACITY IN YOUR SOIL

KAREN LOWELL, NRCS

This presentation will discuss the value of vegetation to improve infiltration, increase water holding capacity, and reduce evaporative water loss in soils.

WATER USE TRACKING AND RECORD KEEPING

DAN JOHNSON, NRCS

We'll discuss why keeping track of how much and when you irrigate are two key pieces of the information needed to identify opportunities to conserve water. We'll also discuss equipment and methods as well has how to "do the math" to compare how much you apply to how much water the soil can hold. The discussion will include the use of record keeping tools and how automation can be used to collect and process data.

SPEAKER RESOURCES

BEN BURGOA, RCD MC

Ben Burgoa works for the Resource Conservation District of Monterey County. During his six years as an Associate Professor in the BioResource and Agricultural Engineering Department at Cal Poly in San Luis Obispo, Ben taught courses and performed research related to on-farm irrigation management and ways to improve the efficiency and reliability of irrigation water delivery systems. Ben's other experience includes design and evaluation of irrigation, pumping and distribution systems, and water management practices in field and greenhouse seed production; the study of runoff and leaching losses of pesticides and nutrients from soils; and measuring movement of contaminated sediments in watersheds during storm events.

MICHAEL CAHN, UCCE

Michael Cahn is an irrigation and water advisor for University of California, Cooperative Extension and is based in Monterey County. He also works in San Benito, Santa Clara, and Santa Cruz and San Mateo Counties. He received his B.S degree in Soil and Water Science from UC Davis, and Masters and Ph.D degrees from Cornell University. He has worked for UC Cooperative Extension since 1995, first as a vegetable and row crop advisor, and since 2001 in his current position. He conducts research and extension in the areas of irrigation technology and management of farm water quality.

RICH CASALE, NRCS

Rich Casale is the District Conservationist for the USDA Natural Resources Conservation Service (NRCS) serving Santa Cruz County. He has spent 40 years with NRCS in the Monterey Bay area using a "hand-on" approach to helping land users address natural resource issues on their farms, ranches and other lands and by coordinating planning and project implementation with conservation partners whenever possible.

DAN JOHNSON, NRCS

Dan Johnson is the State Water Management Engineer for the USDA Natural Resources Conservation Service (NRCS) and works in the agencies state office in Davis, CA. A registered Agricultural Engineer and a graduate of Cal Poly, San Luis Obispo, California, Dan is responsible for technical aspects of the agency's irrigation assistance to producers state wide.

TOM LOCKHART, UCCE

Thomas Lockhart, UCCE Staff Research Associate for Michael Cahn in Salinas. Tom has tested many drip irrigation systems for Distribution Uniformity (DU). The evaluations have included a report of recommendations to improve the DU and the efficiency of the system. Often the grower can save water and electricity if the recommendations are implemented.

KAREN LOWELL, NRCS

Karen Lowell, Ph.D. is an Agronomist with the USDA's Natural Resources Conservation Service and a California Certified Crop Advisor. She works with individual farmers, as well as a wide range of public and private partners supporting farmers as they manage conservation challenges in a complex production, market and regulatory climate.

DR. STUART W. STYLES

Stuart Styles is the director of the Cal Poly Irrigation Training and Research Center with a focus on strawberry transplant establishment with minimal sprinkler use.