public health alliance
of southern california
A Partnership for Healthy Places

California's Water Crisis: Leadership Opportunities for Environmental Health

Friday, June 19, 2015

9 am – 10 am

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Housekeeping

Recording and slides will be available at: http://phasocal.org/eh-leadership

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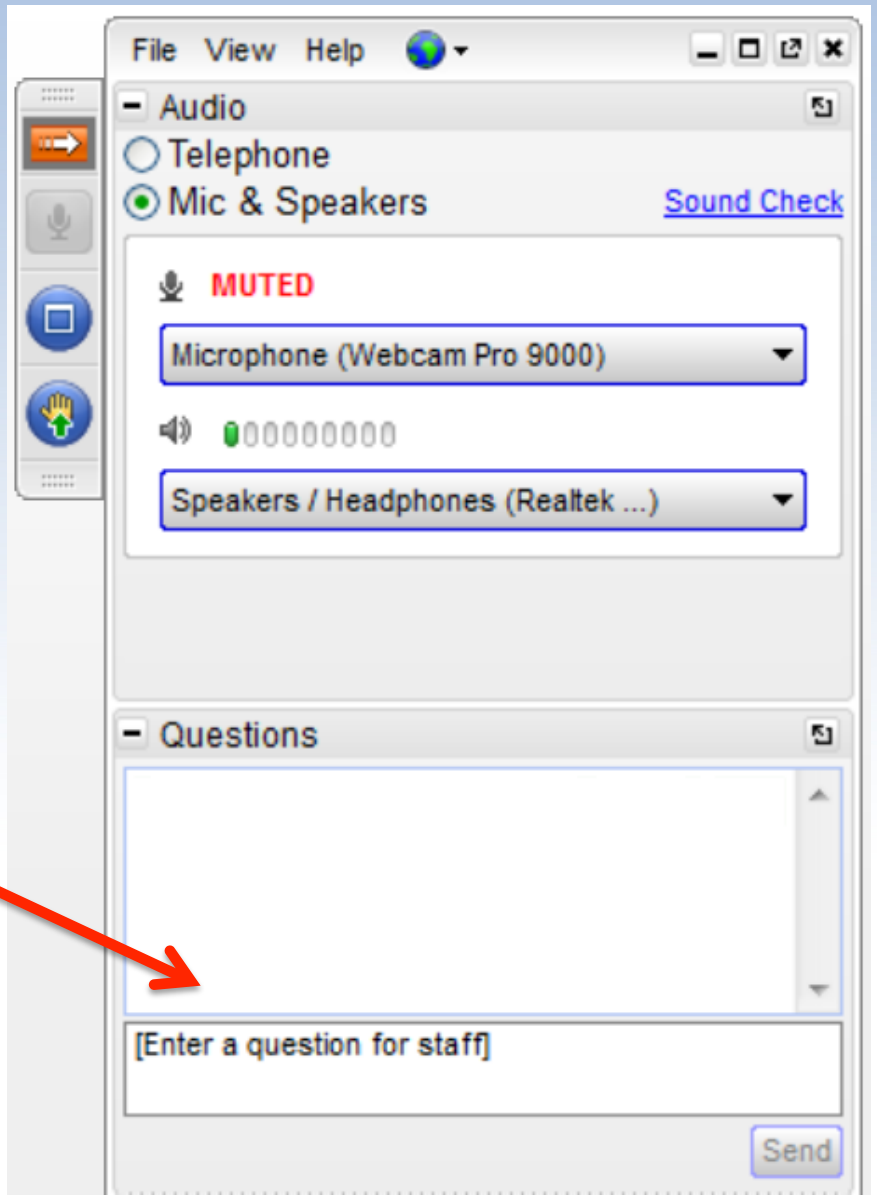

Public Health Alliance Vision

All Southern California communities are healthy, vibrant and sustainable places to live, work and play.

9 Local Health Departments:
- Orange
- Long Beach (City)
- Los Angeles
- Pasadena (City)
- Riverside
- Santa Barbara
- San Bernardino
- San Diego
- Ventura

Nearly

60%

of CA Population

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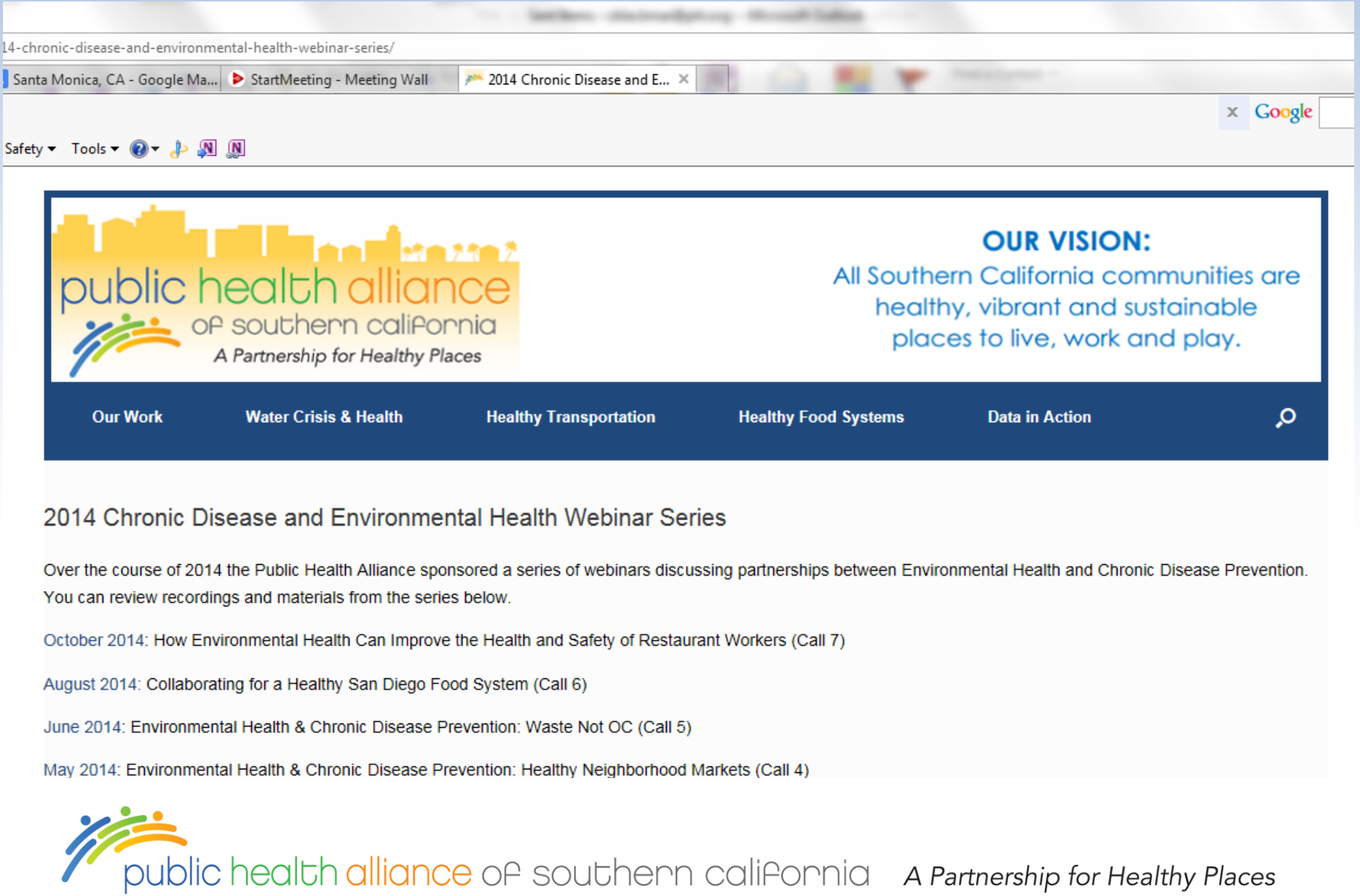
2014 EH + Alliance Webinar Series



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The Public Health Alliance of Southern California presents:

Water, Drought and Environmental Health

Practical Applications for Mitigating Public Health Impacts

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POLL #1

In what sector do you work?

- Public Health Leadership – Directors and Health Officers
- Environmental Health
- Food Policy Council
- Other governmental (please type answer into chat box)
- Other nongovernmental (please type answer into chat box)

POLL #2

What region are you from?

- Northern California
- Mountains
- Central Valley
- Central Coast
- Southern California

Today's Speakers:

The Public Health Alliance of Southern California would like to thank our presenters for participating in this webinar and sharing their expertise.

Angelo J. Bellomo
Director, Environmental Health Division
LA County Department of Public Health

Carlos Borja
Chief Environmental Health Specialist
LA County Department of Public Health

California's water crisis and environmental health

Webinar Series
Public Health Alliance of Southern California

June 19, 2015

Leadership Opportunities for Environmental Health

Angelo J Bellomo, REHS, QEP and Carlos Borja, REHS, MPH

County of Los Angeles Department of Public Health
Environmental Health Division

Session topics

- The case for EH leadership
- What is “alternative water?”
- EH case studies: development of alternative water systems
- Questions

The case for EH leadership

- Water is vital to maintaining good health; without it, health degrades rapidly
- Two parts to ensuring a safe water supply: ***protection*** & ***development***
- Resolving the water crisis requires effective communication with focus on public health
- Water crisis = sustainability crisis

The barriers

- Technological
- Regulatory
- Funding
- Institutional

EH leadership roles

- Communicate health implications of water crisis and urgency to act
- Promote development of “alternative water” systems with focus on public health

Alternate Water Systems

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH

WEBINAR JUNE 19TH 2015

Carlos Borja, R.E.H.S, M.P.H.

Chief Environmental Specialist

L.A. County Department of Public Health

Cross Connection & Water Pollution Control Program

Bureau of Environmental Protection

What is driving the development of AWS

- Environmental and Political Changes
- Environmental – "The Drought, the drought, the drought"
- Public perception and grass roots impetus
- Political changes – Water rights to existing, established imported and local water sources

Industry's Summons

- LID – Low Impact Development
- LEED – Leadership in Energy and Environmental Design
- SUSMP – Standard Urban Stormwater Mitigation Plan
- Going Green!

Public Health's Role

To protect public health

- Use of an alternate water can expose us to infectious agents
- Non-point sources of unknown water quality and chemical exposure
- Cross-connections to the drinking water supply

Defining Alternate Water Systems

- Rainwater Harvesting/Catchment
- Recycled Water (Title 22)
- Graywater\Greywater
- Treated Graywater
- Stormwater
- Urban run-off
- Industrial Sources\Reclaimed Water

Rainwater Harvesting/ Catchment

- Regulations are now available via CA UPC
- Onsite collection and use on same site
- Can result in very clean water source depending on the design

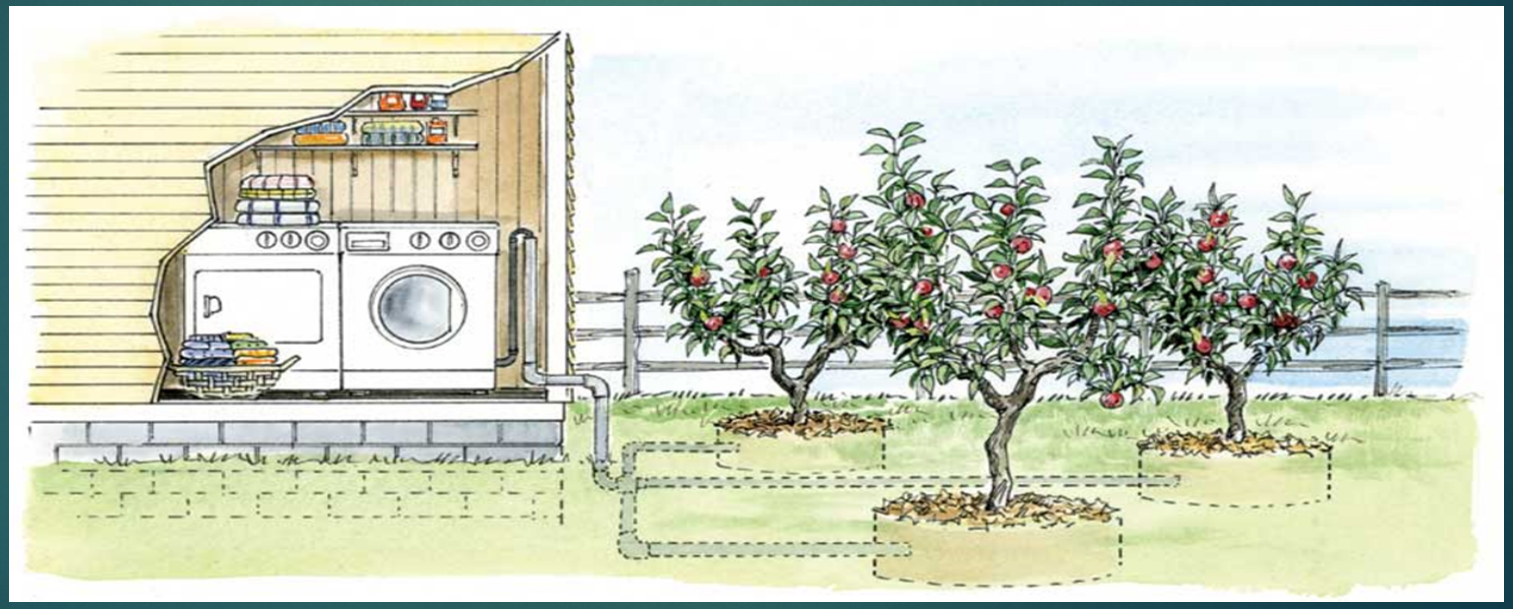
courtesy http://www.arcsa.org

Recycled Water

- Regulated, Title 22 of California Code of Regulations and California Plumbing Code
- Consistent water quality
- Reliability is high \ Availability is limited unless indirect potable reuse
- Currently used in all types of irrigation, urinal and toilet flushing as well as industrial applications

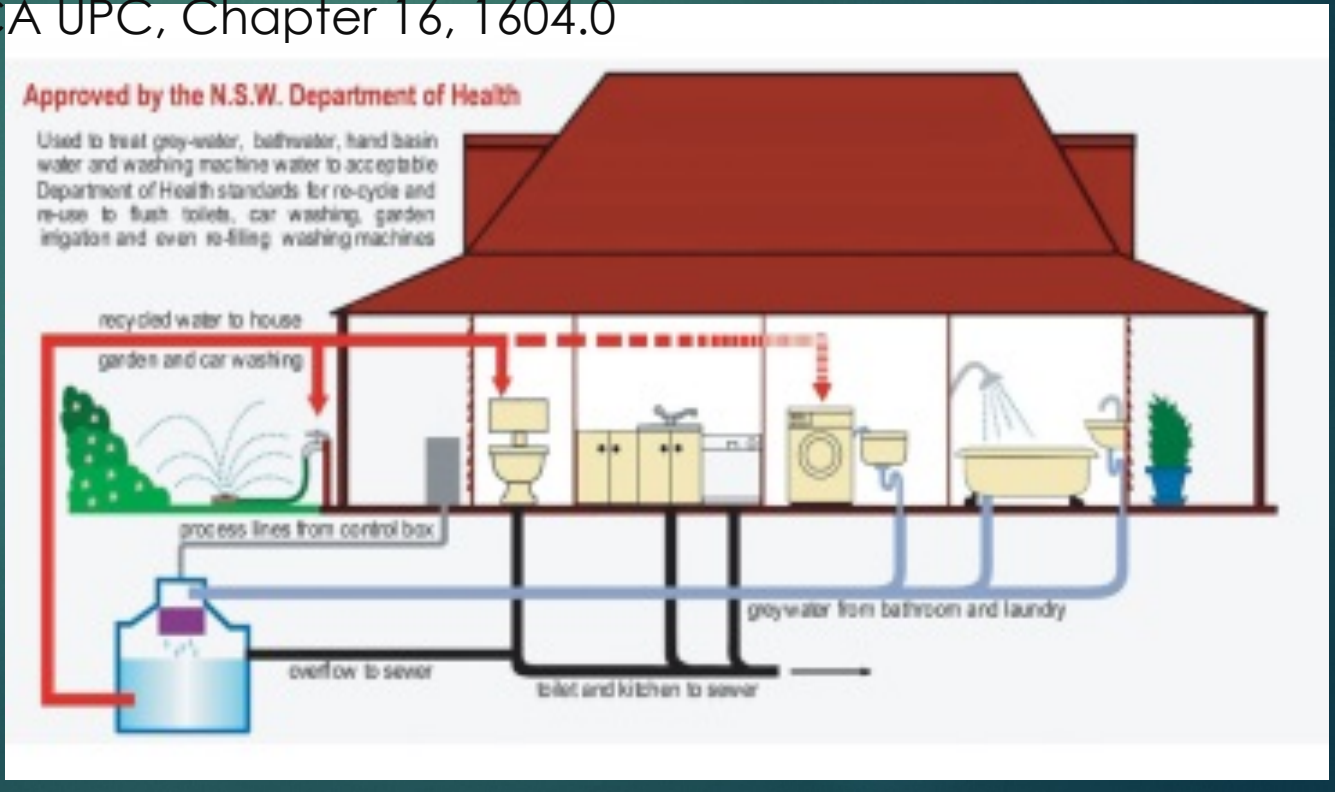
Graywater

- Also called greywater, gray water, etc.
- Distinguished from black water
- Typically comes from on-site usages such as lavatories, showers, laundries.
- Must have a sewer connection



Treated Graywater

- Onsite treatment of collected graywater
- Water quality standard include – NSF 350, 350-1, Title 22
- Water sources range from lavatories, showers, laundries to foundation drainage, condensate return, cooling tower blow down, swimming pool backwash, etc..
- Is part of the CA UPC, Chapter 16, 1604.0



Stormwater

- Point and non-point sources contribute to the source
- Water quality objectives focus on both biological loading and chemical contaminants
- Obviously from rain events – but different from rainwater catchment

Urban-Runoff

- Point and non-point sources contribute to the source
- Not from a rain event
- Water quality objectives focus on both biological loading and chemical contaminants, emphasis on chemicals

Industrial Water Sources

- Point sources contribute to the Industrial Sources
- Sources include cooling tower blow down, air conditioning condensate, foundation drainage, steam system condensate, fluid cooler discharge water, food steamer discharge water, industrial process water, etc.

LAC DPH Rainwater Harvesting Matrix

County of Los Angeles Public Health

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH

Guidelines for Harvesting Rainwater, Stormwater, & Urban Runoff for Outdoor Non-Potable Uses
September 2011

Tier I	On-site collection of rainwater in rain barrels for on-site use in gravity flow systems.

Requirements	Use	Minimum Water Quality Standard	Treatment Process
• Rain barrels must have a screened inflow opening, a spigot and/or hose bib, and an overflow pipe or equivalent. • Rain barrels shall be labeled to indicate non-potable water use only. • The system may not be connected to indoor/outdoor municipal potable plumbing, and shall not be pressurized or sprayed. • The system must be installed in accordance with the rain barrel manufacturer's installation instructions, and installation requirements of local agencies.	Landscape irrigation	Not applicable	Not applicable
	Car washing	Not applicable	Not applicable

LAC DPH Rainwater Harvesting Matrix

Tier 1

LAC DPH Rainwater Harvesting Matrix

Compton Creek Park Tier 2

LAC DPH Rainwater Harvesting Matrix

Tier 3

Tier 4

Potential Benefits

Promote the construction more AWS sites – Case Studies

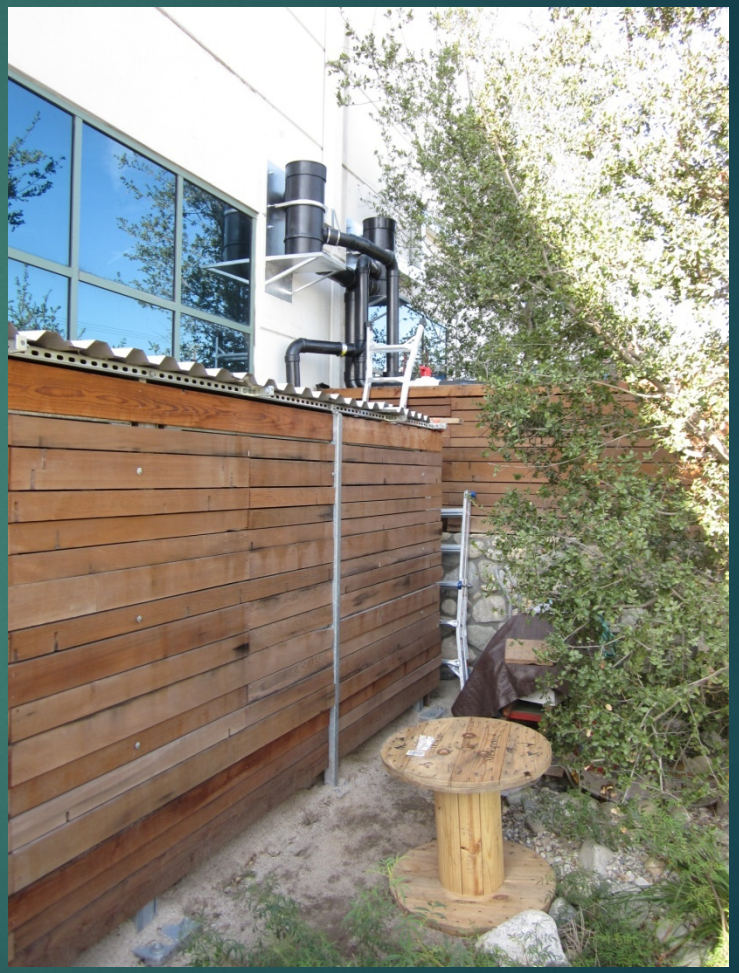
Prevent pollution and harm to aquatic ecosystems and human health

Conserve high-quality drinking water

Mitigate flooding

Case Study 1
Gateway Center – Industry, CA

- Tier 2
- Rainwater harvesting system
- 5000 gallon holding "tank" consisting of four bladders
- Rainwater flows from rooftops
- Passive filtration
- First flush diverter diverts first 1-2 minutes of rainfall; about 90% of the rainfall from an event will enter the tank
- Water used for sub-surface and bubbler landscape irrigation (pump-fed)



Penmar Stormwater Capture Project

- Phase I - Spring 2013 ($21 million)
- Phase II – 2014 (estimated - $2.8 million)
- Diverts stormwater into a 2.75 MG underground storage tank
- ~100 AFY wet and dry weather runoff for use at park and golf course

Case Study 3
Hilton Foundation | Agoura

A multi-sourced alternate water project

- Recycled Water
- Onsite rainwater catchment
- Well Water

Case Study 4
Hotel Bel- Air

- Treated Graywater for irrigation
- Intended Future Use – Toilet and Urinal Flushing
- Used as pilot project and sub-surface irrigation while under testing and waiting for an appropriate standard – NSF 350

Case Study 5
TreePeople
Coldwater Canyon Park

- Tier 2
- 250,000 gallon cistern, below grade
- Main water supplies to cistern come from parking lot and rooftop runoff
- Passive filtration via sand filters and permeable pipes
- No first flush diverter
- Rainwater used for sub-surface and bubbler landscape irrigation (pump-fed)

Case Study 6
Santa Monica Urban Runoff Recycling Facility (SMURRF)

- Tier 3
- 250,000 gallon raw water tank
- 250,000 gallon clean water tank
- Five-step treatment process: rotating drum screen, settling tank, dissolved air filtration, microfiltration (o.5 microns), UV disinfection
- SMURRF water is reused for landscape irrigation, indoor toilet flushing, industrial processing within 2.5 mile radius

Public Health Role

"The role of managing risks that arise from connecting various water sources has now significantly increased. The contribution of well-trained and competent plumbers cannot be overestimated. Poorly installed and maintained systems could easily deteriorate into disease proliferation conditions, similar to those seen before the advent of plumbing and all its protections."

- Shayne La Combre, "Australia's Water Crisis" *in Plumbing Standards* magazine

Questions?

CARLOS BORJA

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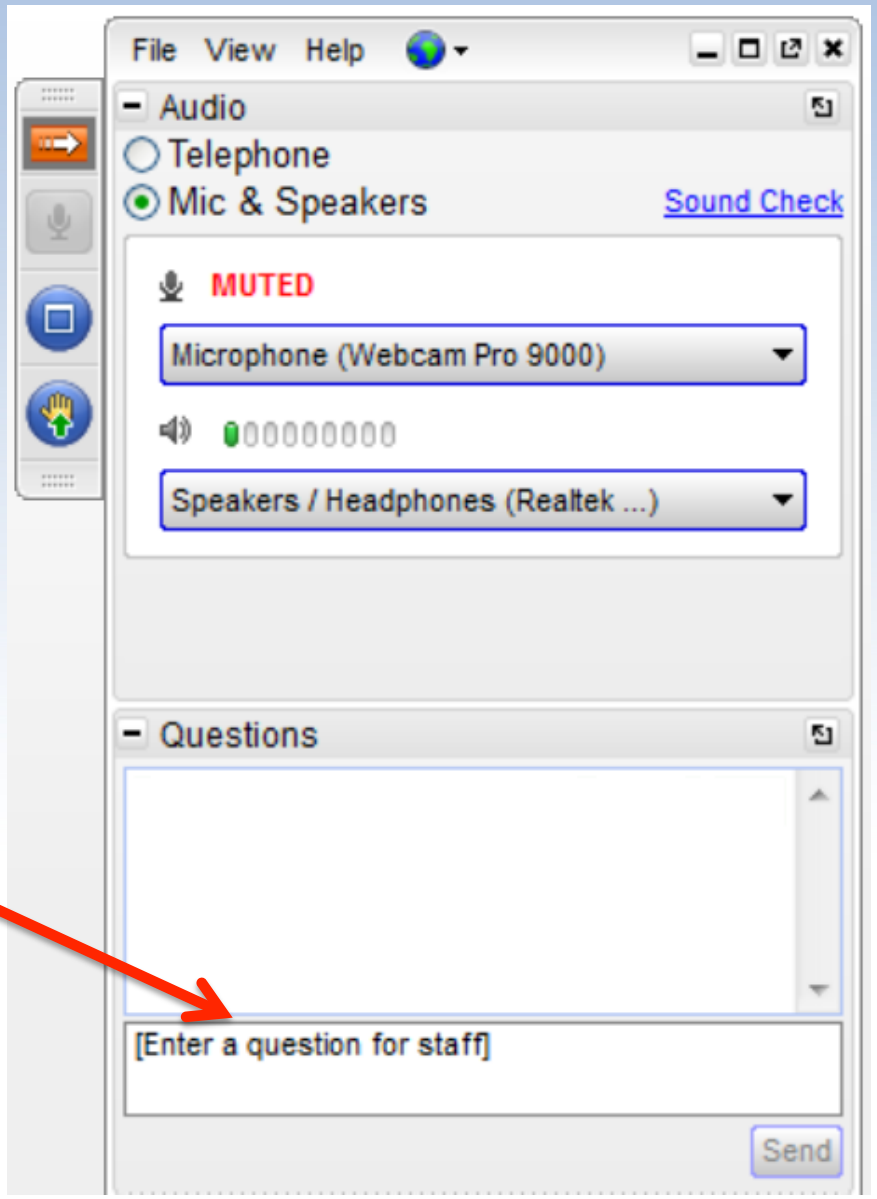
Q&A Features

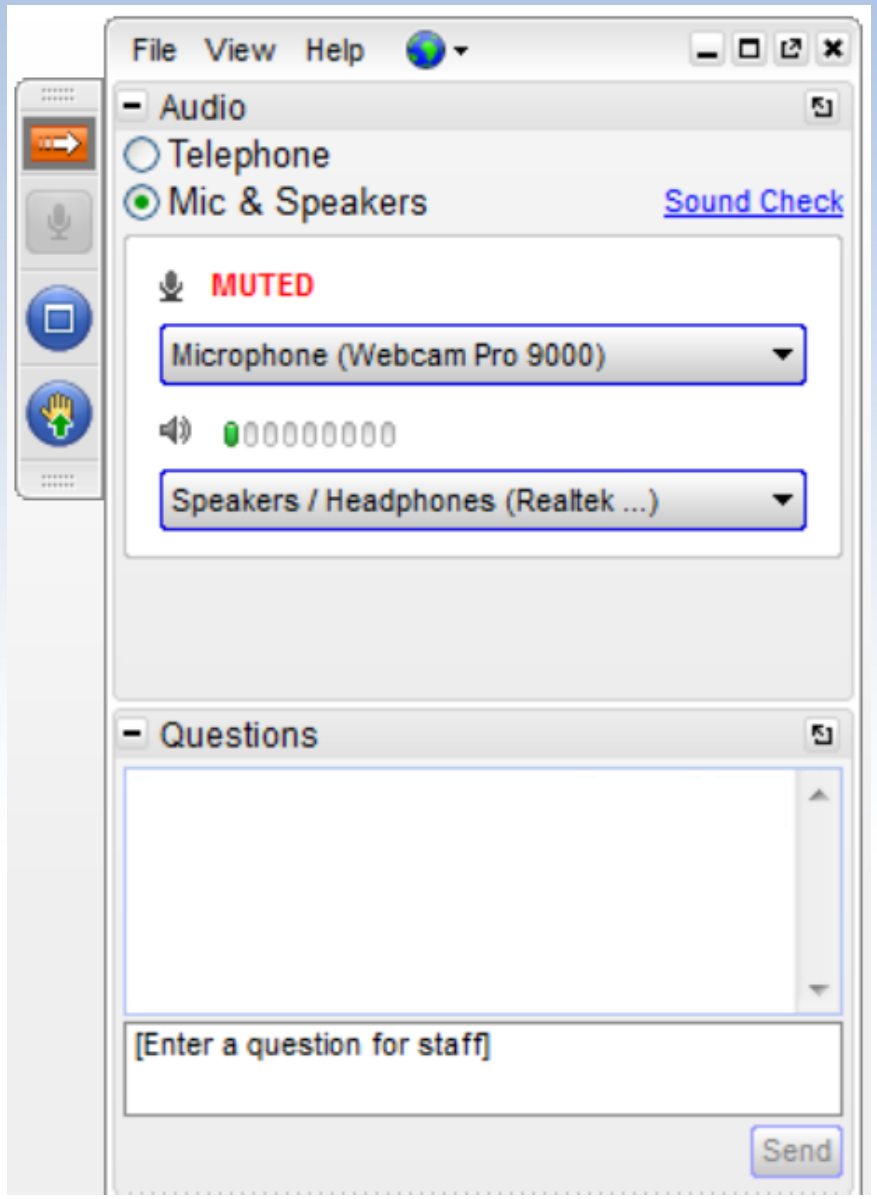
Ask questions by using the
Q&A Feature



Raise Hand Feature

We want to hear from you!

Join the discussion by using the **Raise Hand Feature**



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Thank you to our speakers!

Angelo J. Bellomo

Carlos Borja

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Water and Health Webinar Series

Water, Drought and Environmental Health

July 17 (9-10 am) **Regulating Rainwater and Stormwater Capture for Multiple Public Health Outcomes**

August 21 (9-10 am) **Water Reuse: Making the Most of What We Have While Protecting Public Health**

September 25 (9-10 am) **Leading Approaches in Solid Waste Management and Regulation**

October 16 (9-10 am) **Regulation and California's Tightening Drinking Water Standards: Where Do We Draw the Line?**

November 18 (12-1pm) **High Opportunity Levers for Water and Health: Resources, Policy, and Next Steps**

http://phasocal.org/water-initiative/webinar-series-environmental-health/

Water and Health Webinar Series

- Water Crisis Strategies for Public Health Leaders
- Water, Drought and Environmental Health
- Drought, Climate and the Food We Eat (Nutrition)

http://phasocal.org/water-initiative

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Thank you for joining the conversation!

The **recording** and **slides** will be available shortly at http://phasocal.org/eh-leadership

Questions?
Contact Katy Mamen
Water Initiative Coordinator
kmamen@phasocal.org
(707) 239-8879

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