

# This presentation premiered at WaterSmart Innovations

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**Eugene Water & Electric Board**

**RAINWATER CATCHMENT (HARVESTING) IN OREGON**

**Eugene Water & Electric Board**

# **Rainwater Harvesting in Oregon**

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# Water Management Services (WMS)

- Water Conservation
  - Program development
  - Program implementation
- Cross Connection Control
  - Backflow Protection: A water quality program to prevent contamination of the distribution system originating from customer piping

# Rainwater Harvesting: The Perfect WMS Intersection

- Promoted as a water conservation measure by LEED and other green build advocates
- Alternate source used at any premise is listed as high risk for distribution system contamination by the State of Oregon

# Rainwater Harvesting Defined

- A rainwater harvesting system collects water from a roof piped to a storage tank where it is then used either inside or outside a building. Designs range from a simple rain barrel at the bottom of a downspout for watering a garden to extensive cistern systems that can provide a substantial amount of the water someone uses. (Oregon Building Codes Division)

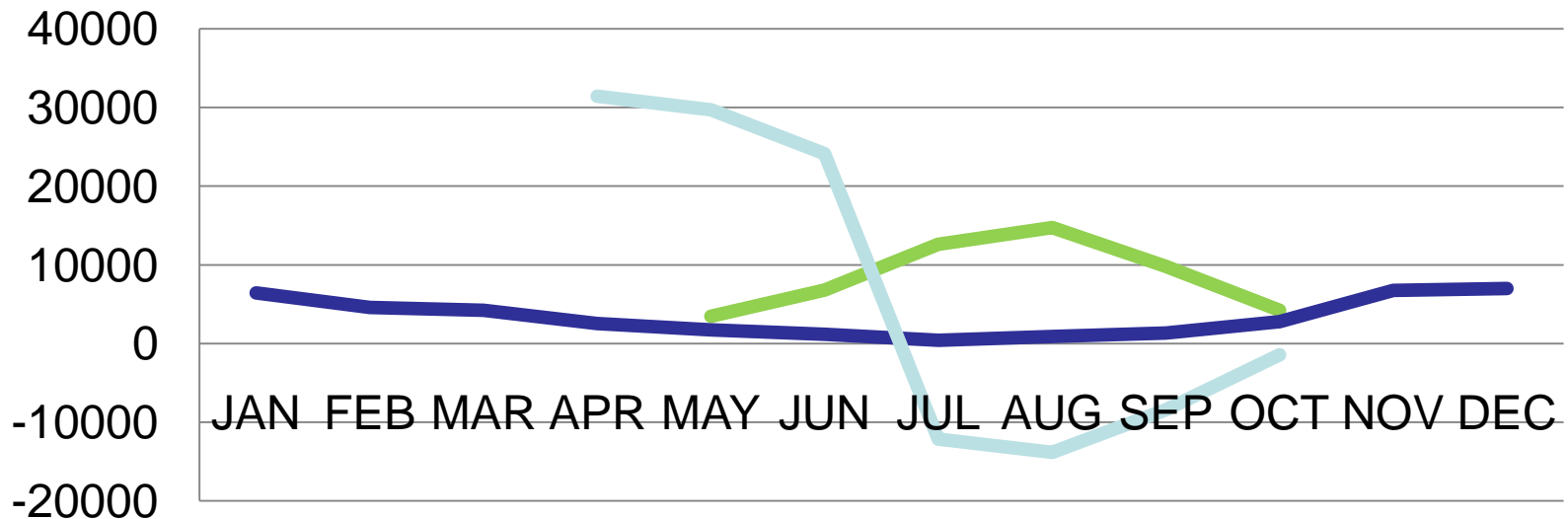
# Oregon Precipitation & ET

- NW
  - Portland
  - Eugene
- SW
  - Medford
  - Ashland
- E
  - Bend



# Barrels of Fun, Just Add Rain!

## Eugene NOAA potential rain harvest



— Gal needed for 1/2 2007 avg lot size for 100% efficient outdoor water use

— Gal harvested 1300 sqft roof area (Nov- April)

— Use of total harvested gal if water method is 100% efficient



# We Want Free Money!

- Many Oregon utilities base conservation incentives on the deferred cost of new capacity in July & August
- Based on harvest potential and use (shown on previous slide), no new capacity will be deferred
- No basis for conservation incentive
  - Have you ever been told your methodology for calculating incentive was too rational?

# We Will Do It Anyway!

- “People don’t use cost/benefit analysis to decide, they just want it.”
  - Early adopters
  - Promoted by green build community
- Since they will do it anyway the utility’s job becomes helping customers do what they want legally and safely
  - Examine other demand management opportunities

# Legally & Safely: Jurisdiction

- Oregon Administrative Rules (utilities)
  - Division 86
  - Cross Connection Rules
- Oregon Plumbing Specialty Code (OPSC)
  - Building Codes Division Green Initiative
  - IAPMO based plumbing code

# OAR Division 86: Conservation

- (6) *...population greater than 7,500... specific activities with 5-year benchmarks...or documentation showing that implementation...is neither feasible nor appropriate*
- (b) *Technical and financial assistance...*
- (e) *Water reuse, recycling, and non-potable water opportunities*

# OAR Cross Connection: Safety

- Required to control actual or potential
- TABLE 32: PREMISES REQUIRING ISOLATION BY AN APPROVED AIR GAP OR REDUCED PRESSURE PRINCIPLE TYPE OF ASSEMBLY
- 20. Premises with an auxiliary water supply that is connected to a potable water supply

# OPSC

- Appendix M - Rainwater Harvesting Systems Alternate Method Approval
  - April 2008 Residential
  - June 2008 Commercial
- Plumbing code in Oregon does not have jurisdiction if rainwater harvesting is used for irrigation unless supplemented by the domestic water supply or greater than 5000 gallons capacity

# Oregon Smart Guide

- Design guide for rainwater harvesting systems intended for potable and non-potable uses
  - Storage capacity for intended use
  - Hardware installation
  - Cross connection control mentioned in passing “it should never be connected with another drinking water supply without a reduced-pressure principle backflow preventer.” (pg 14 of 16)

# Other demand management opportunities

- Green building focuses on managing seasonal peak
- Water utilities also must manage peak hour demand
  - 5 to 7 AM, MWF throughout irrigation season
  - Rainwater harvesting systems present a unique experimental opportunity



# “Big Mac” Rainwater Harvesting System

- Recall McD’s Big Mac advertisement  
“two all-beef patties... Got it!”
- “Big Mac” rainwater harvesting system with the potential to manage peak hour:
  - Air-gapped float valve
  - Trickle fill
  - With a timer set to fill “off-peak”
  - Got it?

# Two Eugene “Big Mac” Demonstration Installations

- Need to determine feasibility
- In cooperation with the City of Eugene we are installing two “Big Mac” rainwater harvesting systems
  - Community garden site
  - Water Wise Demonstration Garden site

# Incentives Informed by Demos

- Early adopters
  - Are going to do it anyway
  - Community minded, if informed of public benefit of a “Big Mac” system they may be attracted by an incentive
  - Cross connection issues resolved in an indirect yet effective manner

# Rainwater Harvesting in Oregon Summary

- Water Conservation
  - No seasonal peak management potential
  - Likely to be a peak hour management tool
- Cross Connection Control
  - Should be a customer education component
  - Should network with other trusted educators to get the word out

# Questions?

Thank you for your time!

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Rely on us.

