

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



Urban Dam Project

Decentralizing Water
Supply and Management



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Decentralization

Water and the conservation of water is one of our nation's biggest challenges.

Problem areas:

- ❖ Condition of Infrastructure
- ❖ Supply challenges
- ❖ Water and Energy Efficiency Initiatives
- ❖ Wastewater Treatment Costs (\$\$ and Energy)

Decentralization

Possible Solutions:

- ❖ National Water Quality Standard and Green Plumbing and Mechanical Supplement
- ❖ Alternative Technologies (Sector Strategy - Industry Specific Needs)
- ❖ Urban Dam Project
- ❖ Increased Awareness and Education



A Brief History of *GreenPlumbers*



Population density of Australia in 1996

Stephen Lehtonen – Chairman/CEO



In addition to his role as CEO of Onni, Inc, Steve has been a plumbing industry leader for more than 30 years as an association executive, educator and lobbyist. He is currently CEO of Trade Select, an insurance management company. He is past president of the Construction Industry Legislative Conference and the Association Executives Council, and served as the first public member in history of the California Workers Compensation Inspections Rating Bureau.

B.A. History, University of California at Riverside
1972

Megan Lehtonen – President



For the past nine years Megan has developed, secured, and implemented Funds totaling over \$100 million dollars establishing Onni Inc. as a premiere boutique administration company. With specialties in marketing and organization, Megan runs the **GreenPlumbers** operations and directs the licensing and install programs of the company.

B.A. Journalism; Public Relations Cal Poly. San Luis Obispo 1997

GreenPlumbers[®] Training and Accreditation Program

GreenPlumbers Environmental Solutions

5 courses / 32 hours

GreenPlumbers® Accreditation Program



Comprehensive instruction on **Climate Care** including GHG emissions in home and business. Topics covered include:

- Hot water heating
- Energy consumption
- Heating appliances
- Cooling appliances
- Greenhouse gas abatement



Caring For Our Water by understanding the water cycle process and the new technologies and behaviors that contribute to increased conservation. Topics covered include:

- Water Efficient Products
- New Technology
- Reducing Household Water Consumption
- Storm Water runoff pollution and prevention
- Introduction to household water audits

GreenPlumbers® Accreditation Program



New **Solar Hot Water** technologies instruction including:

- Solar Hot Water Technology
- Rebate information
- Retro-fit sizing and installation
- New Technology



An overview of the dynamic technologies that will shape future conservation efforts, **Water Efficient Technology** includes:

- Recycled Water
- Rain Water
- Graywater
- Septic Tanks/Wastewater Treatment Systems
- Environmental/Public Health/Safety Regulations



Inspection Report Service is an overview of domestic and commercial water auditing, inspections and reporting, assessment and strategies, including:

- Water and Energy Audits
- Commercial / Industrial and Residential Buildings
- Creating a Master Plan for Future Improvements

What is an Urban Dam?

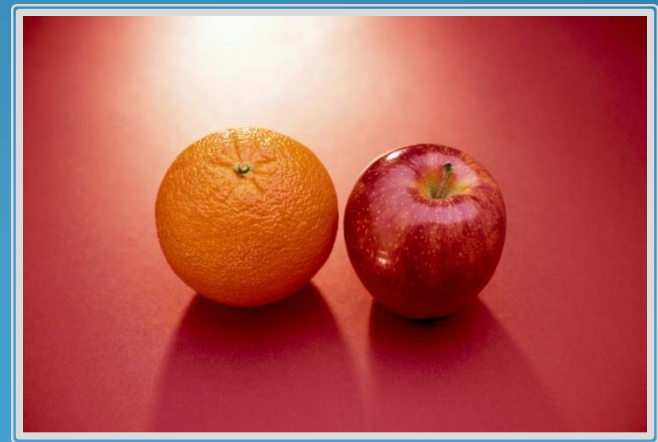


- Urban Dams serve to stop or slow the flow of the water in each home and business
- Urban Dams increase water conservation and help to reduce energy that would be spent treating the water

Low Hanging Fruit

“DON’T LOOK IN THE TREES WHEN THERE IS A WHOLE LOT OF GOOD FRUIT ON THE GROUND!”

CONSERVATION is the key



GreenPlumbers' Role

Conservation makes the most sense as the first line of defense against exhausting the resource.

GreenPlumbers' role is integral to the success of the Urban Dam Project. The GreenPlumber identifies the water and energy savings potential and provides the implementation of the three-phase plan.



AUDIT

INSTALL/
RETROFIT

ALTERNATIVE
TECHNOLOGIES

Phases of the Urban Dam Project

Phase 1: Audit – During the audit the GreenPlumber performs simple, inexpensive water saving measures (fix leaks – toilet, faucets)

Phase 2: Install/Retrofit – The GreenPlumber replaces water-wasting fixtures/appliances with high efficiency models to dam the flow of water through the home/building

Phase 3: New Alternative Technologies – The GreenPlumber assesses the site feasibility for alternative technologies such as rainwater, greywater, water re-use, on-site wastewater treatment systems and solar thermal technology. Action plan is developed.

Essential Relationships

Collaboration among local segments

GreenPlumber

Water Agency

Power Utility

End User/Consumer

Partnering with the local utilities, the plumber performs the GreenPlumber 50-pt audit and, where possible, immediately corrects problems and fixes leaks. Long range conservation goals are set and the consumer is an active participant in the decision-making process.



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CREATING SUSTAINABLE COMMUNITIES

50-Point Environmental Inspection Report

A licensed GreenPlumber™ can assist you in determining the most efficient products and appliances for your current and future needs. This environmental home inspection report will develop a staged plan for reducing your water and energy costs while also improving the environment for everyone.

Licensed GreenPlumbers™ have been trained in home heating and cooling appliances, water heating, solar hot water, water conservation, sustainability, and recycling, including rain water catchment, graywater and private sewage disposal systems.

Your GreenPlumber™ will also be able to assist in comparing the initial and operational costs of different appliances so you can make an informed choice that is not only cost effective but also environmentally responsible.

The GreenPlumbers™ 50-Point Environmental Inspection Report will help you work out, in detail, how much water you currently use around your home, and your GreenPlumber™ will be able to discuss various water saving and environmental options that can be individually customized for your household. Some of these options will also be eligible for manufacturer, utility or government rebates that your GreenPlumber™ can help you identify.

Please note that the water and energy calculations provided in this environmental inspection report and water audits are only an estimate of the amount of water and energy used in and around your home.

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No.



GreenPlumber™ 50 point environmental household inspection report

How to Use the GreenPlumbers™ Household Inspection Report

To calculate the household water use, simply check the amount which represents the number of times the occupant thinks they do each activity. At the end of each table add up all the ticked answers for the total for that area. Remember there are 4 sections to complete – Outside, Kitchen, Laundry and Bathroom.

Please note the values in each table have already been calculated for 365 days (1 year) water use.

All calculations are based on (water pressure X minutes of use for each activity X number of times per week X 52 weeks)

(Water audit calculations for the average household of 4 people will range from 220,000 – 330,000 gallons per year)

Example for a typical family of four:

Circle the correct amount of water for each activity

Then transfer totals of the checked boxes to the totals area

Finally add these values together to get a subtotal for the section.

10 minutes per watering	<input type="checkbox"/> 14500	<input type="checkbox"/> 57600	<input checked="" type="checkbox"/> 120000	<input type="checkbox"/> 180000	<input type="checkbox"/> 360000
2 hours per watering	<input type="checkbox"/> 28800	<input type="checkbox"/> 115200	<input type="checkbox"/> 240000	<input type="checkbox"/> 360000	<input type="checkbox"/> 720000
C Watering garden and lawns by hose with sprinkler	Once a month	Once a week	Twice a week	Every second day	Every day
10 minutes per watering	<input type="checkbox"/> 1800	<input type="checkbox"/> 7000	<input type="checkbox"/> 15000	<input type="checkbox"/> 22000	<input type="checkbox"/> 45000
30 minutes per watering	<input type="checkbox"/> 5400	<input type="checkbox"/> 11000	<input checked="" type="checkbox"/> 45000	<input type="checkbox"/> 88000	<input type="checkbox"/> 135000
1 hour per watering	<input type="checkbox"/> 10800	<input type="checkbox"/> 22000	<input type="checkbox"/> 90000	<input type="checkbox"/> 132000	<input type="checkbox"/> 270000
2 hours per watering	<input type="checkbox"/> 21600	<input type="checkbox"/> 44000	<input type="checkbox"/> 180000	<input type="checkbox"/> 264000	<input type="checkbox"/> 540000
4 people	<input type="checkbox"/> 1500	<input type="checkbox"/> 2800	<input type="checkbox"/> 7000	<input type="checkbox"/> 15000	<input type="checkbox"/> 26000
Total water volume	<input type="checkbox"/> 0	<input type="checkbox"/> 120000	<input type="checkbox"/> 22,000	<input type="checkbox"/> 0	<input type="checkbox"/> 0
Add up your answers from A-I for your total outdoor water use.	$0 + 120000 + 22,000 + 0 + 0 + 2100 + 0 + 2000 + 2800 = 148,900$				

Once you have completed the 4 separate tables – add up the 4 subtotals for the total gallons of water used per year.

GreenPlumber™ Outdoor water audit

Please average out water use for the whole year

A Watering garden and lawns with watering can (2 gal)	Once a month	Once a week	Twice a week	Every second day	Every day
5 buckets per watering	■ 120	■ 520	■ 1040	■ 1830	■ 3650
10 buckets per watering	■ 240	■ 1040	■ 2080	■ 3660	■ 7300
20 buckets per watering	■ 480	■ 2080	■ 4160	■ 7320	■ 14600
B Watering garden and lawn with hose (5 gpm average)	Once a month	Once a week	Twice a week	Every second day	Every day
10 minutes per watering	■ 600	■ 2600	■ 5200	■ 9150	■ 18250
30 minutes per watering	■ 1800	■ 7800	■ 15600	■ 27450	■ 54750
1 hour per watering	■ 3600	■ 15600	■ 31200	■ 54900	■ 109500
2 hours per watering	■ 7200	■ 31200	■ 62400	■ 109800	■ 219000
C Watering garden and lawn by hose w/sprinkler (4 gpm average)	Once a month	Once a week	Twice a week	Every second day	Every day
10 minutes per watering	■ 480	■ 2080	■ 4160	■ 7320	■ 14600
30 minutes per watering	■ 1440	■ 6240	■ 12480	■ 21960	■ 43800
1 hour per watering	■ 2880	■ 12480	■ 24960	■ 43920	■ 87600
2 hours per watering	■ 5760	■ 24960	■ 49920	■ 87840	■ 175200
D Watering garden and lawn w/fixed sprinkler system (8 gpm)	Once a month	Once a week	Twice a week	Every second day	Every day
10 minutes per watering	■ 960	■ 4160	■ 8320	■ 14640	■ 29200
30 minutes per watering	■ 2880	■ 12480	■ 24960	■ 43920	■ 87600
1 hour per watering	■ 5760	■ 24960	■ 49920	■ 87840	■ 175200
2 hours per watering	■ 11520	■ 49920	■ 99840	■ 175680	■ 350400
E Watering garden and lawns with drip system (1 gpm)	Once a month	Once a week	Twice a week	Every second day	Every day
2 hours per watering	■ 1440	■ 6240	■ 12480	■ 21960	■ 43800
3 hours per watering	■ 2160	■ 9360	■ 18720	■ 32940	■ 65700
4 hours per watering	■ 2880	■ 12480	■ 24960	■ 43920	■ 87600

GreenPlumber™ Bath & Toilet water audit

Please average out water use for the whole year

O Bathtubs 60" x 30" x 14" (30 gallons)		Once a week	Twice a week	Four times per week	Seven times per week	15 times per week
Less than quarter full		■ 390	■ 780	■ 1560	■ 2730	■ 5850
Quarter to half full		■ 780	■ 1560	■ 3120	■ 5460	■ 11700
Half to three-quarter full		■ 1170	■ 2340	■ 4680	■ 8190	■ 17550
More than three-quarter full		■ 1560	■ 3120	■ 6240	■ 10920	■ 23400
P Soaking Tub 60" x 42" x 20" (60 gallons)		Once a week	Twice a week	Four times per week	Seven times per week	15 times per week
Less than quarter full		■ 780	■ 1560	■ 3120	■ 5460	■ 11700
Quarter to half full		■ 1560	■ 3120	■ 6240	■ 10920	■ 23400
Half to three-quarter full		■ 2340	■ 4680	■ 9360	■ 16380	■ 35100
More than three-quarter full		■ 3120	■ 6240	■ 12480	■ 21840	■ 46800
Q Shower		Once a week	Seven times per week	10 times per week	20 times per week	30 times per week
5 gpm Head	3 minute shower	■ 780	■ 5475	■ 7800	■ 15600	■ 23400
	5 minute shower	■ 1300	■ 9100	■ 13000	■ 26000	■ 39000
	10 minute shower	■ 2600	■ 18250	■ 26000	■ 52000	■ 78000
	15 minute shower	■ 3900	■ 27300	■ 39000	■ 78000	■ 117000
2.5 gpm Head	3 minute shower	■ 390	■ 2730	■ 3900	■ 7800	■ 11700
	5 minute shower	■ 650	■ 4550	■ 6500	■ 13000	■ 19500
	10 minute shower	■ 1300	■ 9100	■ 13000	■ 16000	■ 39000
	15 minute shower	■ 1950	■ 13650	■ 19500	■ 39000	■ 58500
R Toilet (based on 6 flushes per day)		One person in the house	Two people in the house	Three people in the house	Four people in the house	Five people in the house
1.6/.8 gpf Dual Flush (2004 - ?)		■ 2340	■ 4680	■ 7020	■ 9360	■ 11700
1.28 GPF HET Single Flush (1993 - ?)		■ 2800	■ 5600	■ 8400	■ 11200	■ 14000
1.6 GPF Single Flush (1992 - 2014)		■ 3500	■ 7000	■ 10500	■ 14000	■ 17500
3.5 GPF Single Flush (1977 - 1992)		■ 7665	■ 15330	■ 23000	■ 30660	■ 38325
5 GPF Single Flush (prior to 1977)		■ 10950	■ 21900	■ 32850	■ 43800	■ 54750

Behavioral Change

MUST take place

for conservation to occur



Marketing Campaigns and Web-based and social media help to raise awareness and educate the consumer.

Behavior change occurs as a result of heightened awareness and consistent images and messages.

Screen shot of the *GreenPlumber's* widget:



←       →

Small Drips Sink Fiscal Ships
A showerhead leaking 10 drips per minute wastes enough water a year to run the dishwasher 60 times. [More.](#)

- [Add widget to your site](#)
- [Find a GreenPlumber](#)
- [Water rebates in your state](#)

WIDGET

Marketing The Urban Dam Project

Water Agency initiatives promote retrofits for water and energy savings.

Local ordinances prescribed by municipalities help to enforce conservation measures.

GreenPlumber's marketing campaigns give consistent imaging to the conservation message.

Water Audits allow the homeowner/property manager/facilities maintenance to actively participate in the Urban Dam Project.



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Appointment Time	Appointment Date	Technician Name	
Customer Address	City	State	Zip
Customer Name	Customer Signature		
E-mail	X		

Please fill out your e-mail address if you would like a statistical report detailing what your GreenPlumber did today to save water.

My footprint's getting smaller...



1-877-GPUSA01

YOUR LICENSED EXTENSION NUMBER HERE



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CREATING SUSTAINABLE COMMUNITIES

YOUR
LOGO
HERE

Estimated gallons saved per year:

_____  **GALLONS**

HET replaced: _____ with: _____ (qty: _____) ADA
(Brand/GPF) (Brand/GPF)

Showerhead replaced: _____ with: _____ (qty: _____)
(Brand/GPM) (Brand/GPM)

No. of aerators replaced: _____

Installed efficient water heater/tankless replaced: _____ with: _____

Repaired leaks: _____
(Details if applicable)

Faucet Flowrates: _____
(Bath) (Kitchen) (Laundry)

Installed pressure reducing valve: psi before _____ psi after _____

Washer: Front load Top load

Irrigation system quickcheck: _____
(i.e. modified, fixed leak, replaced head smart controller)

Other: _____
(i.e. solar, graywater, rainwater)



Calling a Licensed **GreenPlumber** for all of your plumbing needs not only fixes your problem, but prepares you for the future with simple and instant water and energy savings. You are now a part of the National Urban Dam Project - where your water savings will be compiled with other homeowners across the nation! This card will be submitted to **GreenPlumbers**, and the information provided may help your local Licensed **GreenPlumbing** company earn **GreenPlumber of the Year!**

Urban Dam Project As a Tool

- ❖ Long Term Strategy
- ❖ Target the end consumer
- ❖ Encourage Behavioral Changes
- ❖ Employs the newest, most efficient conservation technology

Urban Dam CASE STUDY

Program being run in Denver, Colorado

The residence (applies to single-family and multi-family) undergoes a home performance audit. The **GreenPlumbers** audit examines the water category and the energy that is attached to the water usage. The **GreenPlumber** completes the audit, fixes any immediate leaks or problems, notes any suggested upgrades or long term conservation strategies and leaves the homeowner with the information clearly outlined in a convenient audit booklet.

Urban Dam CASE STUDY

After the completed audit and findings documentation, the **GreenPlumber** installed:

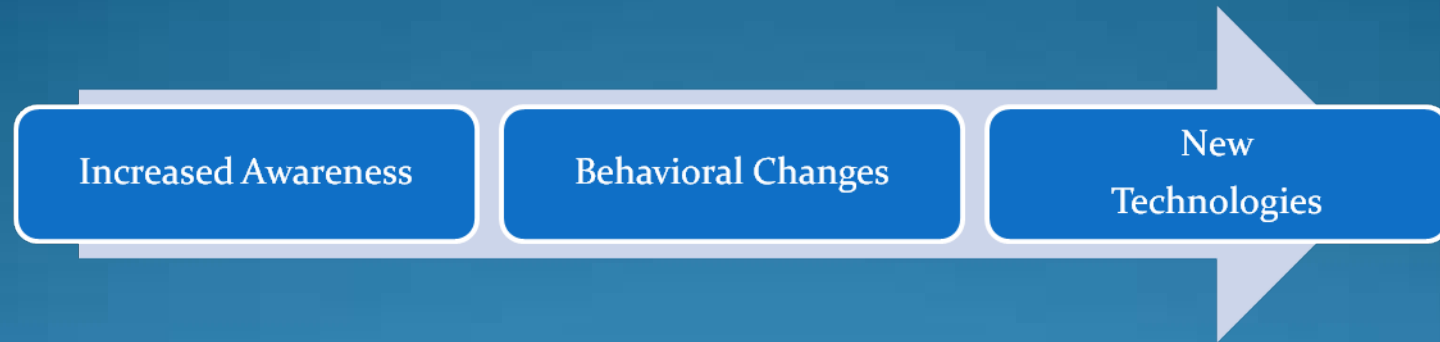
1 High Efficiency Toilet

2 Low Flow Showerheads

Low Flow Lavatory Faucet Aerators (typically a maximum of 3 aerators installed)

In the Denver pilot, **GreenPlumber** had cooperation with brand plumbing fixtures. Most manufacturers will participate with special retrofit pricing, if requested.

Urban Dam CASE STUDY



After the initial cost of the **GreenPlumbers** audit and retrofit, further conservation and ensuing cost savings would be realized by the consumer.

Due to the relatively short ROI resulting from reduced water and energy bills the consumer will benefit – the water agency will benefit – the power utility will benefit and ultimately the community will benefit as a result of this simple conservation model.

Urban Dam as a Community Strategy

Because the Urban Dam Project is basically a community driven program , it benefits everyone involved, as illustrated.

- ❖ Creates work for sidelined plumbers
- ❖ Reduces infrastructure costs for water purveyors and suppliers
- ❖ Reduces effluent to the treatment systems
- ❖ Reduce water and energy bills for homeowners/consumers
- ❖ Boosts the local economy by engaging capital within the community – (local contractors, local jobs, local benefits)

URBAN DAM



PROJECT

THANK YOU



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