

So much information about Net Positive Energy – This is about Net Positive Water (NPW)
- NPW is not about water conservation – it has more layers and much bigger

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WHY

eBEWE LEED
MWELO Title 24
OneWaterCity
Greywater Ready
Water neutrality
Net Zero Water

Return on Investment - ROI

WHY
2030



Greta Thunberg

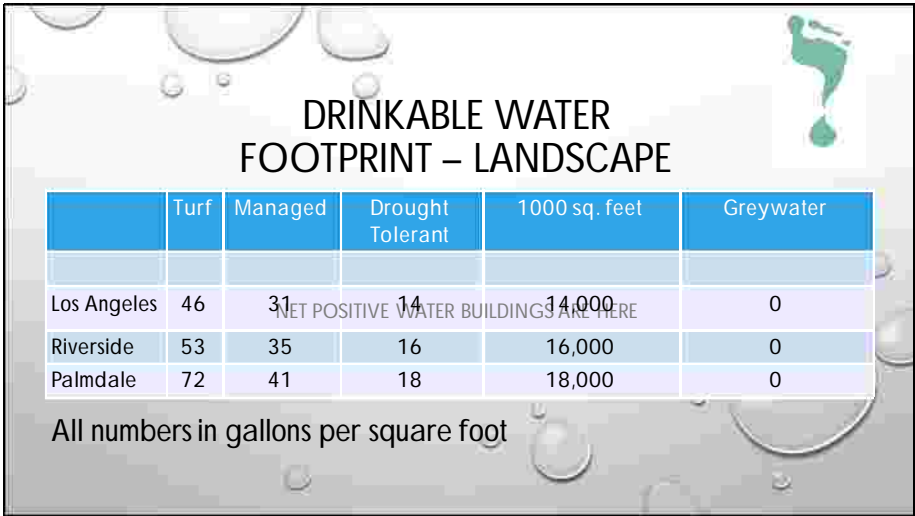
Social Environmental Family - ROI

Climate mitigation cost, plus the lives of
your children and grandchildren health
index = true cost analysis.

account for those human lives.

Greta Thunberg has brought something into focus for many of us.
The true long term cost analysis.

- My job today is to bring the business ROI and the Environmental ROI inline with each other.

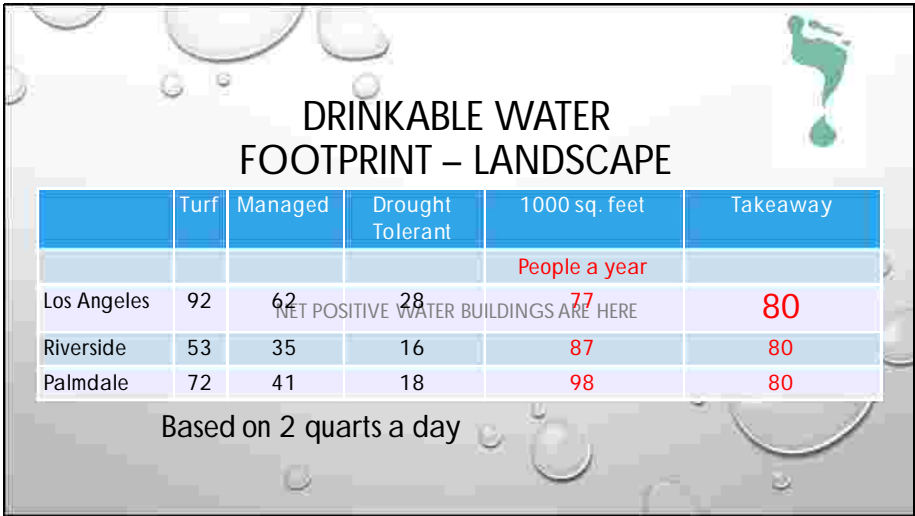


Water Footprint of Landscapes is MORE than we think – average backyard swimming pool is 16,000 gallons

One gallon – that jug of milk is one gallon

Take the energy to transport that gallon from the delta to the LA Basin 20% of all energy consumed in our State.

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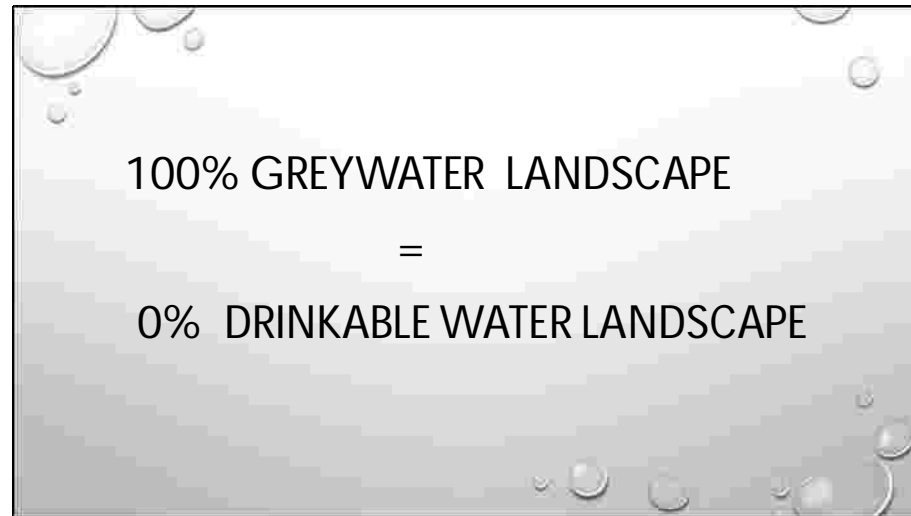
We do not think it can happen to us, but there is a reason for all the new rules and laws.
 eBeWe, Water Neutrality, AB 1668 and SB 606
 - This is what South Africa, Spain, North China, North India, Australia, Syria



10 parking spaces is equal to 1,000 square feet.
Count you steps for 10 parking spaces = 80 people survival water



Fast Food – 1,000 square feet of landscape
Go lush to off set carbon - Produce a lot of greywater



TAKE AWAY 1

- cut the energy to import that water
- cut the energy to clean the water, to dump in the ocean

HAVING WATER IS AN ENABLER

Enables GREEN buildings

- Reduces heat islands
- Sequesters carbon and pollution
- Naturally cools buildings



Having water is more; It is a enabler.

Water enables GREEN landscapes, that cool the air, sequester carbon, capture the pollution.

Green is so important as we have more extreme heat waves, increase rains to slow down and capture storm water
100 degrees - = 110 -115 in the sun, more on black top

ACTIONS TODAY FOR A BETTER TOMORROW



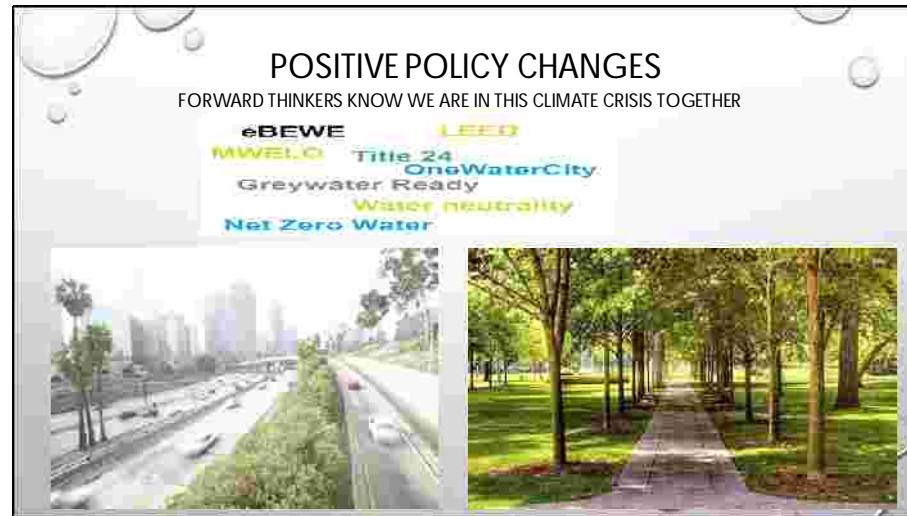
- SHADED BUILDING
- ON-SITE MULCHING AND COMPOSTING



What would you design when water was not limited???

More trees to shade the building and cut energy?

Cover a building in green second skin?



Policies ARE CHANGING - allowing for ALTERNATIVE water sources.
Buildings can and do over produce greywater – Next goal is to move this excess to feed parks, freeways,
Water has held everyone back from green health design for the last 7 yrs.


THE ECONOMICS

APARTMENT OR HOTEL (EXCESS TRANSFER)

	40 unit complex	300 unit complex
Water SAVED	2.3 million gallons	13.1 million gallons
Cost savings (sanitation)	\$ 15,000	\$ 87,000
Revenue (from buyer \$2 HCF)	\$ 6,000	\$ 35,000
Turf area (summer)	63,000 sq. feet (football field)	365,000 sq. feet (1 mile of freeway, park, or school field)

The economics, improving the bottom line budget: Avoiding cost and increase revenue
Allow for a private public partnership ----- a long terms profitable relationship can be formed.

GATES THAT NEED TO BE UNLOCKED



- A) Yuck factor
- B) Local district transfers – San Francisco is a positive model
- C) Legal liability – keeping the systems operationally perfect

2030 IS ONLY 11 YEARS AWAY

What are the Gates that slow progress:

The yuck factor of reusing water – this is all subsurface so no one every sees it, smells it or feels it.

The district transfer is important – need to move greywater in short distance

Legal Liability – what are the risk and how can they be mitigated



GREYWATER SOURCES

Bathroom sinks = 1.5 gallons per employee
Showers = 25 gallons per use
Laundry = 15 gallons per use

Condensation from Air Conditioners:

- 10 ton = 30 gallons a day
- 100 ton = 300 gallons a day

= 2,400 square feet of grass
= 4,800 square feet of drought tolerant landscape



Surprise – even if the current buildings have drought tolerant landscapes,
There is still opportunity to save more water – go 100% greywater.

2ND EXAMPLE – COMMERCIAL BUILDING & AIR CONDITIONER CONDENSATION

THE PATH

Stage 1a: Landscaping

Stage 1b: Trees and Lush

2 years

Stage 2: Toilet Flushing

5 years or less

Stage 3 : Drinking water (this is really **big**)



What an giant opportunity to redirect the water for positive uses.
Condensation is currently sent to the sewer.

BIG – INDEPENDENT WATER ISLANDS

Net zero water building

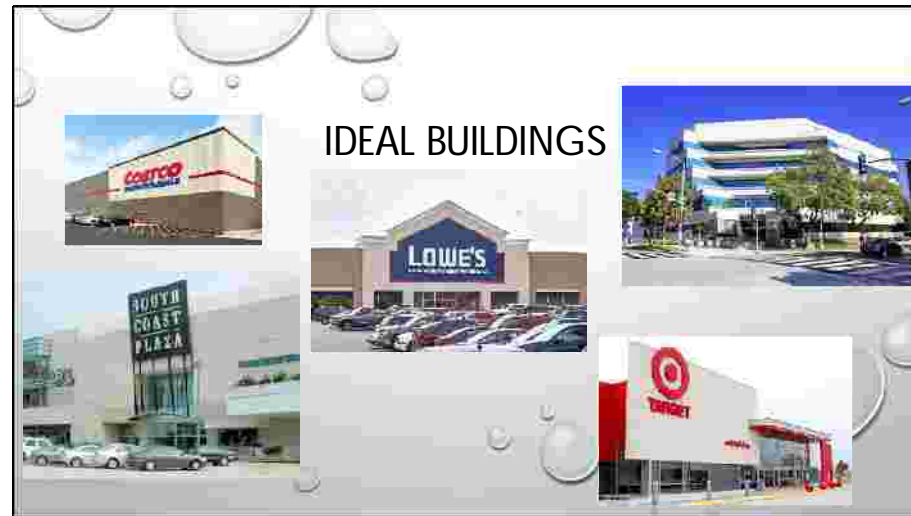
- Self sustainable (potable water) buildings
- Resilient buildings a.k.a. resilient cities
- Can supply emergency water supplies if our water supply is damaged (natural or man made)



Commercial building path to NZW..



Soon buildings could cut the cord to the municipal water source when needed
Stand alone as independent water producing islands



Here are examples of Net Positive – Water Islands – Water Banks
Resiliency to our cities – bacons during emergencies

ECONOMICS

COMMERCIAL OFFICE TOWER (CONDENSATION COLLECTION)

	5 story – 100 ton AHU per floor
Water PRODUCED	3.1 million gallons per year / 11,071 per day
Value	\$ 38,405
Estimated building needs	8,745 gallons a day
Excess water produced could irrigate	88,500 sq. feet (football field)

Office towers generate high volume of atmospheric water from the condensation.
Office tower economics.
Soon it will be easy to achieve Net Water Positive.



Net positive water buildings are more than water conservation – they are a path to sustainable healthy urban cities.

Greywater enable your designs for Mitigation, Adaptation and Resilience.

TOOLS – BUSINESS/ENVIRONMENT CASE

Grey4Green.Com/Commercial

Facilities Expo

- Slide Deck in PDF format
- Water: Work Sheet
- Tree: Carbon & Pollution Worksheet

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Tools to build a business case for management / investors and property owners.

-Be surprise how many companies are looking to go beyond the short term bottom line.

=Like to encourage is ask for the modification - sometimes the ROI will extended- but all your doing is asking, at we are at no already.