

# WATER SCARCITY?

California Faces Water Rationing

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**California Faces Water Rationing, Governor Proclaims Drought Emergency**  
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SACRAMENTO, California, February 27, 2009 (ENS) - Parched California is a step closer to mandatory water rationing today as Governor Arnold Schwarzenegger proclaimed a state of emergency and ordered all government agencies to implement the state's emergency plan and provide help for people, communities and businesses impacted by the third consecutive year of drought.

"This drought is having a devastating impact on our people, our communities, our economy and our environment - making today's action absolutely necessary," Governor Schwarzenegger said. "This is a crisis, just as severe as an earthquake or raging wildfire, and we must treat it with the same urgency by upgrading California's water infrastructure to ensure a clean and reliable water supply for our growing state."

The governor's order directs that by March 30, the Department of Water Resources will provide an updated report on the state's drought conditions and water availability.

If the emergency conditions have not eased, the governor said he could start mandatory water rationing and mandatory reductions in water use.

Schwarzenegger said he could order reopening of major reservoirs in the state to minimize impacts of the drought. He also could provide additional regulatory relief or permit streamlining as allowed under the Emergency Services Act.

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**San Diego County Mandatory Water Restrictions**  
sanidiego.about.com/od/government/est/water\_tips.htm - Cached  
Mandatory water restrictions from the San Diego County Water Authority

**Water | City of San Diego**  
www.sandiego.gov/water - Cached  
City of San Diego Public Utilities - Water maintainz and operates water lines... Permanent Water Usage Restrictions Still in Place; New Watering Times ...  
Water & Sewer Bill Rates - Important Phone Numbers - General Information

**Water Emergency Information and Resources | Water - City of San Diego**  
www.sandiego.gov/water/emergency/drought/ - Cached  
Droughts are cyclical and San Diego imports up to 85% of its water from ...  
[View more results from sanidiego.gov](#)

**Water restrictions lifted in San Diego - SignOnSanDiego.com**  
www.signonsandiego.com/news/.../water\_restrictions\_lifted\_san\_diego... - Cached  
May 24, 2011 - The San Diego City Council on Tuesday lifted water restrictions that took effect in 2009 but residents still aren't supposed to "waste" ...

**Mandatory San Diego Water Restrictions Now In Effect - San Diego...**  
www.10news.com/news/1960653-detail.html - Cached  
May 26, 2009 - SAN DIEGO - Mandatory water-use restrictions go into effect Monday in San Diego following the City Council's recent declaration of a 1-level ...

**Rain Won't Change San Diego Water Restrictions | KPRC.com**  
www.kprc.org | News | 2011 | March | 29th - Cached  
Mar 22, 2011 - Recent rains and a healthy water supply across the state will not cause city officials to lift restrictions in water consumption.

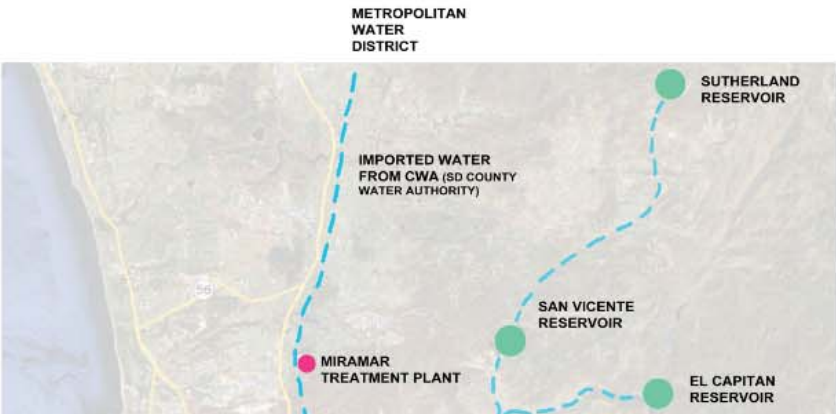
**Easing Water Restrictions | NBC San Diego**  
www.nbcсандiego.com - Easing Water Restrictions - 10281124.html - Cached  
Apr 20, 2011 - News that emergency rationing is ending was followed by a caution not to go

sanidiego.about.com/od/government/est/water\_tips.htm

3:48 PM 7/10/2011



# ARE WE HEARING THE WHOLE STORY?







**CALIFORNIA STATEWIDE  
FRESH WATER SUPPLY SYSTEM**



**PRIMARY WATER DISTRIBUTION  
SAN DIEGO REGION**

IMAGINE  
MORE

# MORE IMAGINE









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# WATER INDEPENDENT DEVELOPMENT



SCIENTISTS

HOW IT WORKS

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grow where water flows



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At H2O Futures, we're committed to providing the highest quality water treatment solutions for your business. Our products are designed to be effective, efficient, and easy to use. We offer a wide range of services to help you manage your water resources and protect your investment. Contact us today to learn more about our Freshwater Works® solutions.

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## FRESHWATER WORKS®

*grow clean water onsite*

Remove contaminants from stormwater, runoff and/or wastewater, for use in irrigation, toilets, air conditioners and even drinking. Unlike mechanical treatment processes, our systems are organic, dynamic, self-organizing, and resilient, so they can adapt to changing effluent quality better than mechanical/chemical systems.



FRESHWATER INFLUENT

REUSE

NATURAL TREATMENT

Pipe stormwater, gray water and/or wastewater into a decentralized water remediation system, adapted to meet local health & water quality standards.

Effluent moves through aerated treatment biota. The system exploits sunlight, oxygen, bacteria, algae, plants, snails & fish that work symbiotically to purify the water. Aeration & mixing in the tanks keeps nutrients in suspension.

Effluent flows to a lined marsh, where valuable accumulated nutrients grow landscape, food or other economically productive biomass, avoiding the environmental & economic inefficiency of conventional, centralized water treatment. Enhanced degradation results in fewer solids than conventional systems.

Residual nutrients are exported as infrequently as once or twice a year, potentially for financial gain.

Water, treated to a tertiary level or better, leaves the marsh for storage.

Solar-powered or bio-fuel pumps transport the resultant clean water, entirely safe for reuse in irrigation, interior uses like toilets, planters, air conditioning, & groundwater recharge.

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## SALTWATER WORKS®

*seawater-irrigated landscape without desal*

At near-shore sites, untreated seawater achieves ornamental landscape and biofuel production, leaving fresh water supplies for drinking. This methodology greens otherwise non-arable land. Its lush vegetation reduces dissolved solids and contaminants, as it captures atmospheric carbon and deposits it in the soil.



### CONVEYANCE

#### SALTWATER CAPTURE

Solar, wind or biofuel-operated pumps convey salt water from onshore wells, ocean, bay, estuary, or other saline sources onto land. On shore, salt water moves into a series of ponds, fields or landscapes. Cultivating aquatic species makes the water nutrient-rich.

The nutrient-rich effluent then moves into production wetlands that hold halophytes (which grow in saltwater) & glycophytes (which grow in brackish water). Salt water irrigates species with commercial value, such as:

- Exquisite seawater-loving ornamental plants, some with stunning flowers.
- Delicious & nutritious food crops
- High oil-seed biofuel crops
- A regenerating wetland mitigation site

#### USE

This process helps clean seawater & sediments of contaminants, before returning it to groundwater or the source.

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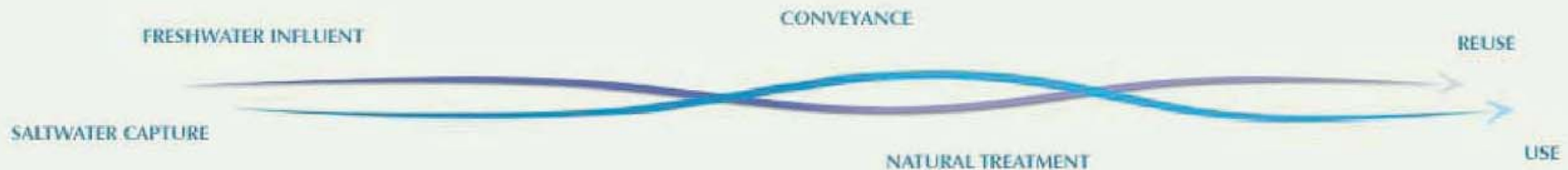
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## MIXEDWATER WORKS®

*greenscape without imported freshwater*

At near-shore sites, mix pure, untreated seawater with treated wastewater, stormwater and runoff, to expand and fertilize landscape, without relying on imported potable water for irrigation. This landscape diminishes dissolved solids in water and soil, broadens the plant palette for ornamental vegetation and can grow landscape, food or other economically productive biomass.

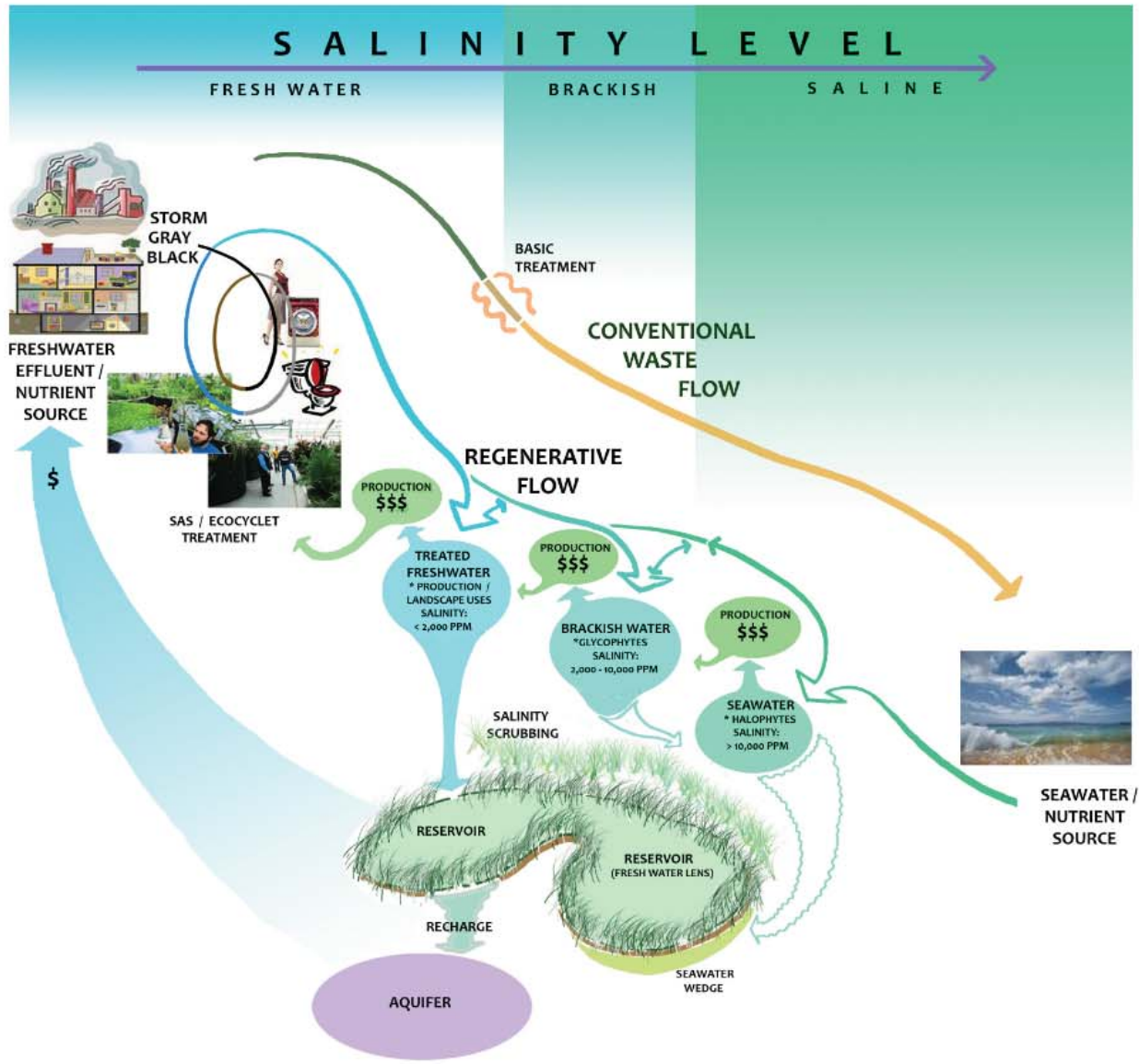


Employing the approaches described in Freshwater Works & Saltwater Works, mix two water sources:

- Wastewater & stormwater, treated to tertiary standards
- Seawater from ocean, on-shore wells or other saline water body.



This results in brackish water, an ideal medium for "glycophytes." These plants that thrive in lightly saline conditions diminish dissolved solids that may remain in the water and soil.



# INTEGRATED WATER FLOW

H2O FUTURES c 2010

COMMUNITY



"WATERHOODS"



# WATER WISE PARK

## [WATER INDEPENDENT PARK]



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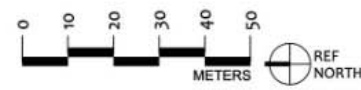
**GRAYWATER EFFLUENT SOURCE**

**STORMWATER RUN-OFF SOURCE**



PROPOSED PARK COMPONENTS

**CONCEPTUAL SITE PLAN  
WATERHOOD PARK**



**CONCEPTUAL WATERHOOD PARK**

PT. LOMA  
SAN DIEGO, CA



Environmental Architecture and Planning  
2845 HWY 72, STE. 1, SAN DIEGO, CA 92108  
619.225.2337 eap@eapinc.com

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With decades of experience, *H<sub>2</sub>O Futures* revolutionizes water availability. Our unique design approach and our proprietary methods leverage systems that have sustained ecologies on Earth for 3.5 billion years. They capture and clean existing wastewater, storm water, and/or seawater for reuse. Thus, land – whether urban or rural – becomes greener, more robust and more profitable.

## *We Create Water Abundance*

Seawater-irrigated crops & landscape  
Cleaner water  
Energy savings  
Carbon sequestration

Increased water security & supply  
Better water quality  
More habitat

Sustainable communities  
Scientific progress  
Citizen awareness & responsibility  
Tourism & commercialization

CREATING HIGH-VALUE, SITE-SPECIFIC, BIOMIMICKING GREENSCAPES of ANY DIMENSION

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## *We Create Water Abundance*

andscape

Increased water security & supply  
Better water quality  
More habitat

Citizen

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COMMENTS?  
QUESTIONS?  
CONCERNS?

NEXT STEPS