

Huntington Beach Desalination Project

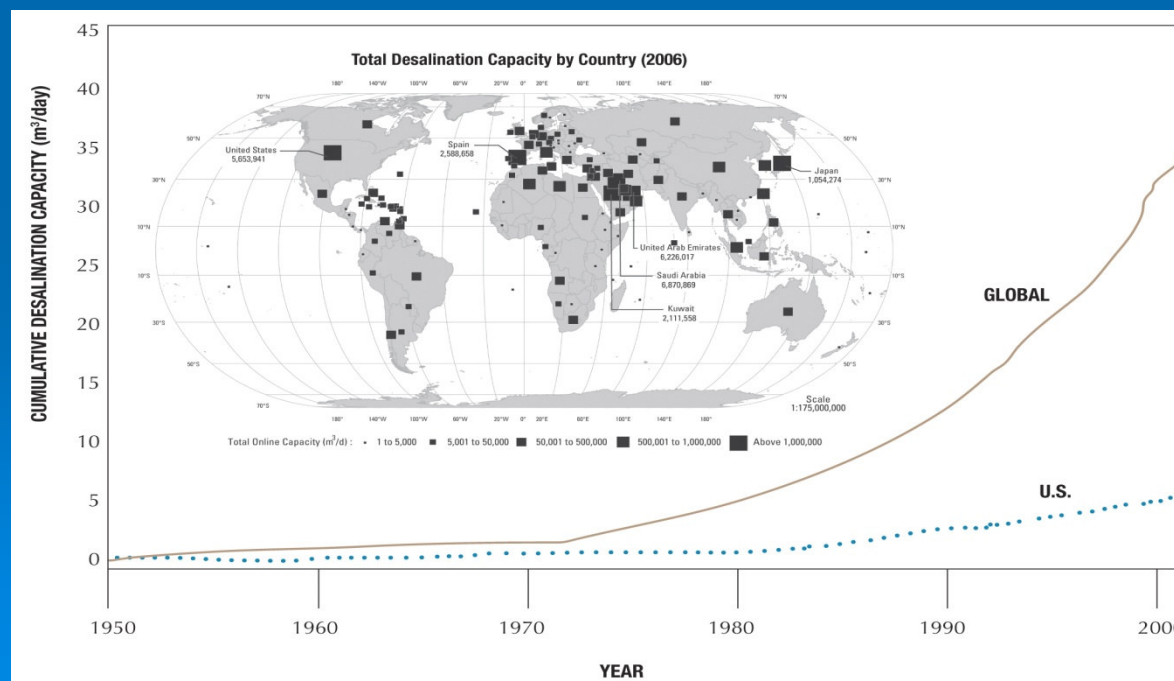
*A New Source of High Quality Water
For Orange County*

Orange County Water Summit
May 14, 2010

Desalination Worldwide

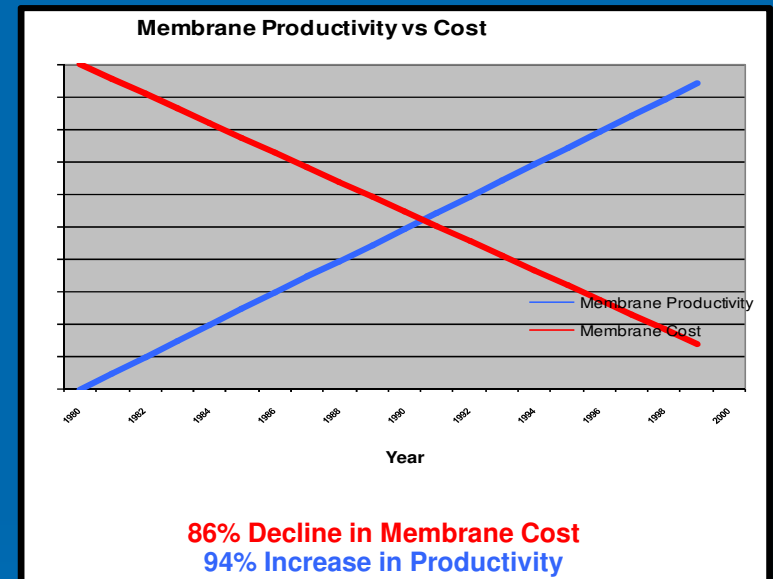
➤ Mature Technology

- **8,200** RO Plants Operating Worldwide
- **9.8** Billion Gallons Per Day of drinking water



Desalinated Water Is Now Cost Competitive

- Desal Technology Costs Dropping
- Use of existing infrastructure
- Increased production efficiency
- Imported water costs rising
 - 14% increase in January 2009:
 - \$579/AF (Tier One)
 - \$695/AF (Tier Two)
 - 19.7% increase in Sept. 2009:
 - \$701/AF (Tier One)
 - \$781/AF (Tier Two)
 - 15% increase April 2010
- Desal cost dropping



California Counting On Desalination

- State Water Plan – Over 300,000 AF/Year of seawater desalination in development today
- Approximately 20 seawater desalination projects in various stages of development
- MWD – planning on 150,000 AF/Year of desalination by 2020
- At least two Orange Counter desalters – Dana Point and Huntington Beach

Huntington Beach Desalination Facility

Location:	<i>Orange County - City of Huntington Beach</i>
Size:	<i>56,000 Acre Feet (50 MGD)</i>
Technology:	<i>Reverse Osmosis Membrane Filtration using existing seawater circulating water intake and discharge piping infrastructure</i>
Estimated Cost:	<i>\$350 Million; EPC Contractor team selected</i>
Water Supply Interest:	<i>100% capacity under consideration</i>
Schedule:	<i>On-Line 2014</i>



Huntington Beach Power Station without Desal Project



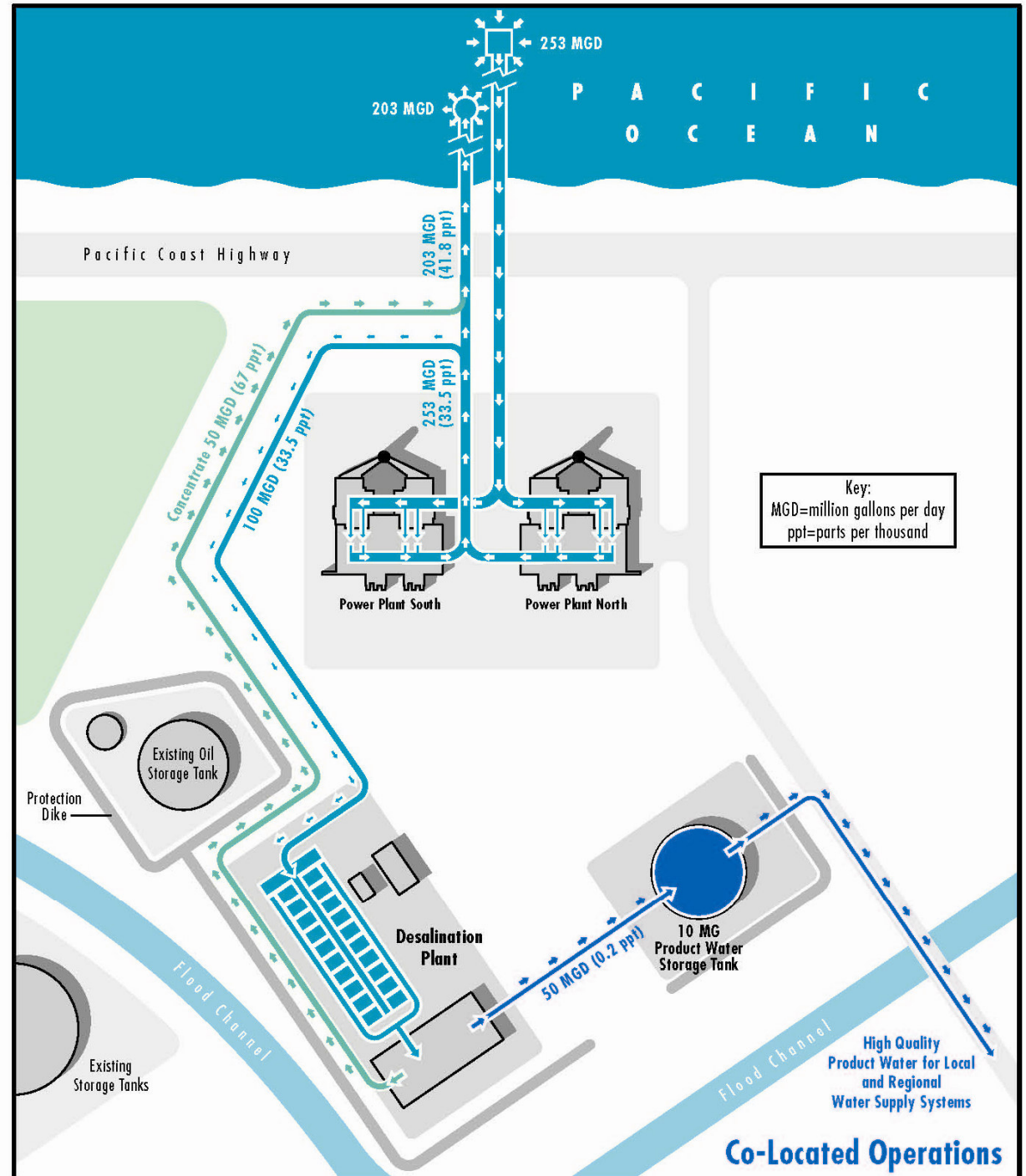
Huntington Beach Desalination Facility



Flow Schematic

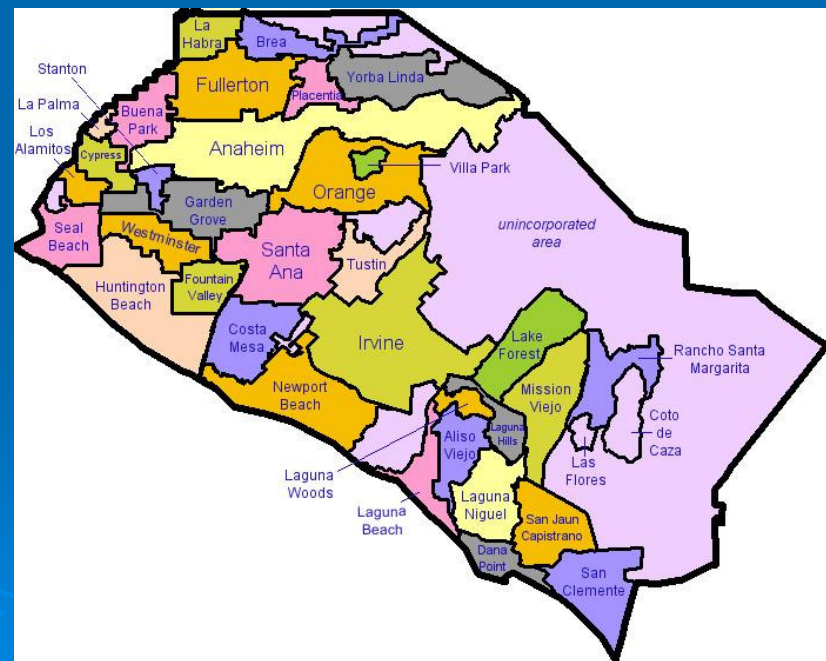
Re-using seawater that has already been used for industrial purposes

2 gallons of seawater = 1 gallon of drinking water



Regional Benefits

- 50% of OC water is imported
- Replace imported water – Diversify supplies
- Approximately 8 Percent of Orange County Demand
- Drought-Proof Source
- High Water Quality
- No Significant Environmental Impacts



Working with Cities / Water Agencies

AGENCY

ACRE FEET

Municipal Water District of OC	20,000
El Toro Water District	3,000
Irvine Ranch Water District	6,000
Laguna Beach County Water District	1,000
Moulton Niguel Water District	4,000
Santa Margarita Water District	5,000
South Coast Water District	3,000
Trabuco Canyon Water District	750
Golden State Water Company	5,000
City of Newport Beach	8,000
City of Fullerton	2,500
City of Santa Ana	3,000
City of Huntington Beach	3,360
City of Fountain Valley	2,500
City of Garden Grove	10,000
City of Anaheim	3,000

Pending LOI:

City of Seal Beach
City of Westminster
Mesa Consolidated Water District
Orange County Water District

TOTAL

80,110 Acre Feet

Water Supply Diversity

- Imported Water
- Water Conservation
- Water Storage
- Recycled Water
- Seawater Desalination

