

Texas Desal 2015
INNOVATION & RELIABILITY
PRESENTED BY RWL WATER



Sept 30–Oct 1 | Radisson Hotel & Suites Austin–Downtown

Texas Desal 2015 INNOVATION & RELIABILITY

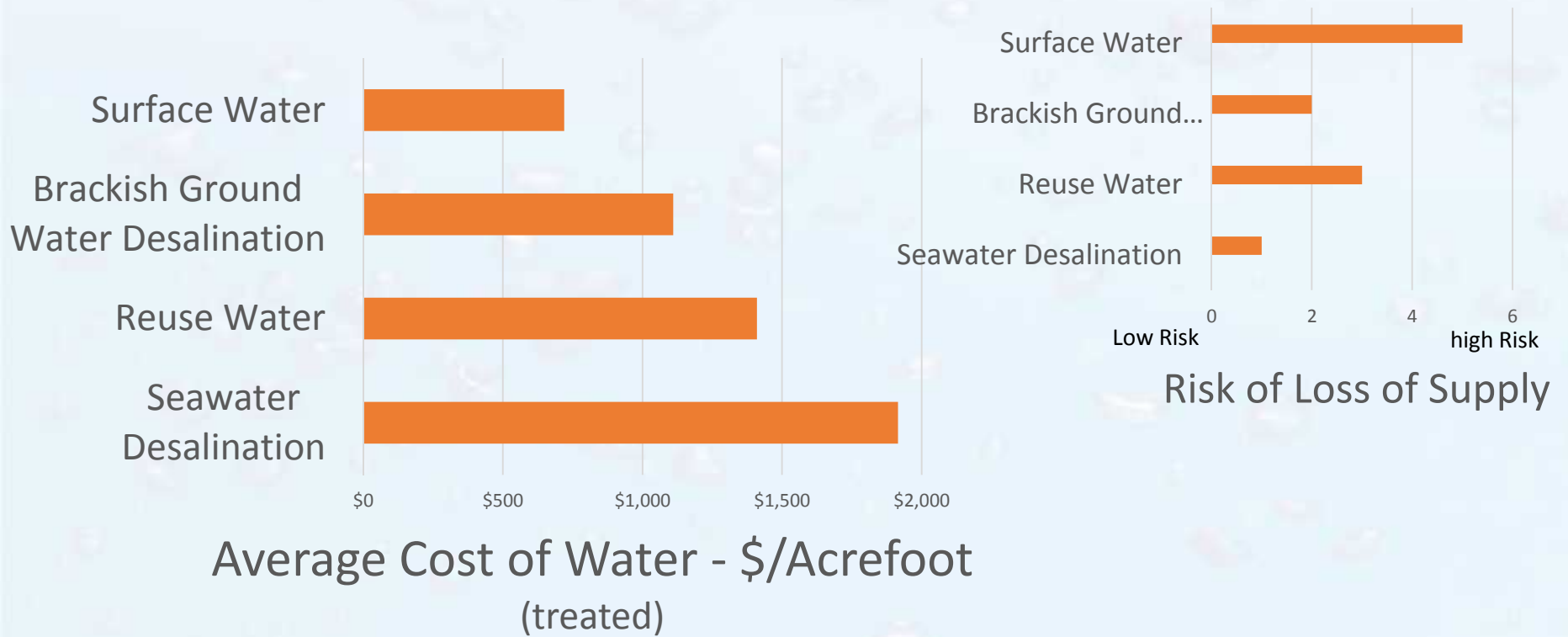
September 30 – October 1
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Dispelling the Myths of
Seawater Desalination

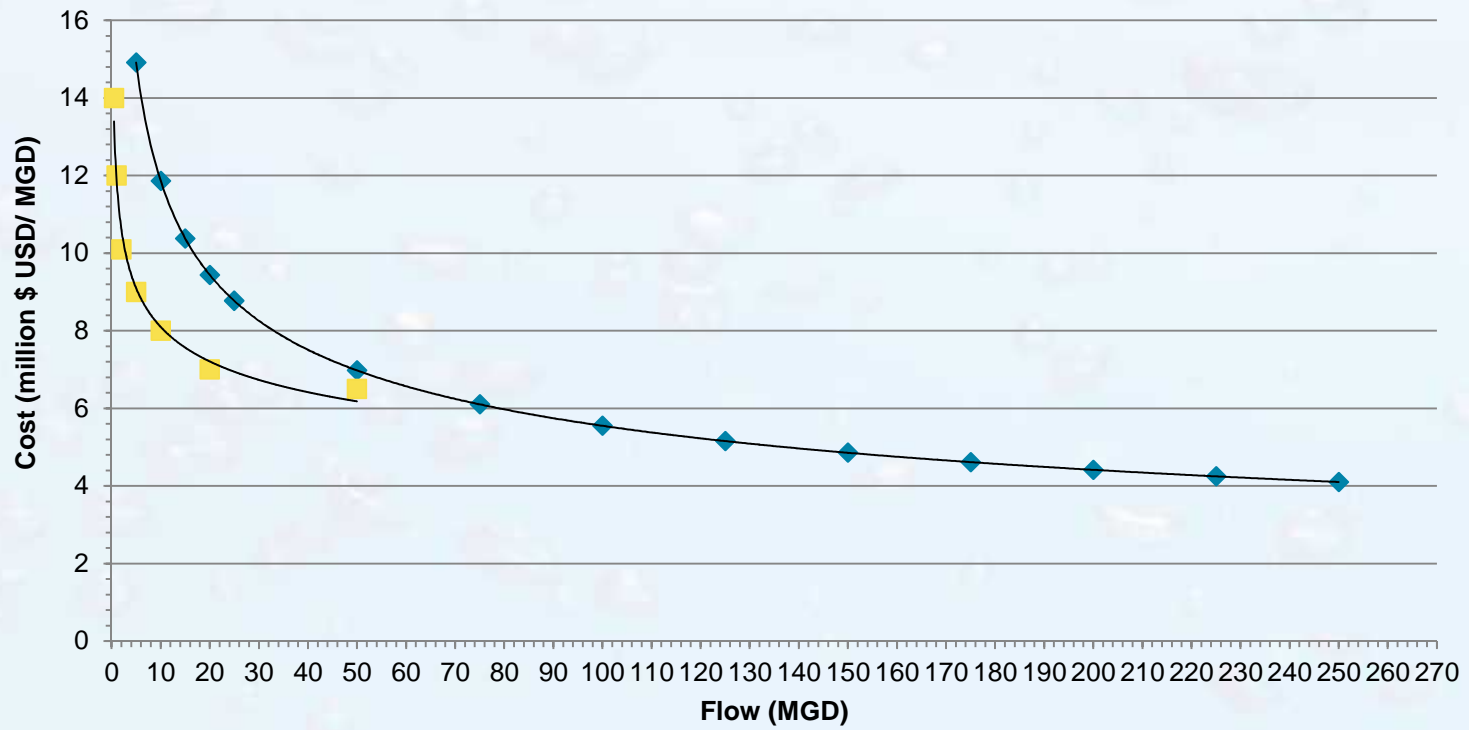


BUILDING A BETTER WORLD

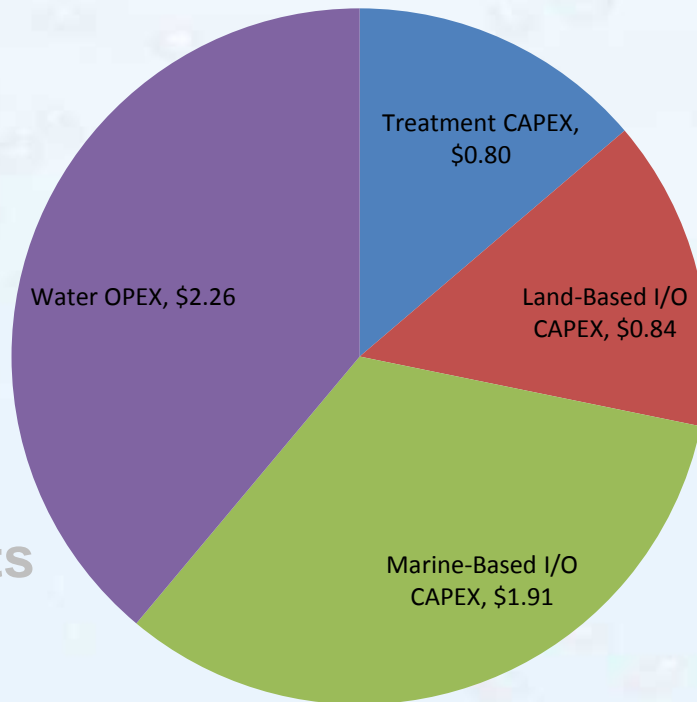
Cost of Water versus Reliability



Seawater Desalination CAPEX



Produced Cost of Water



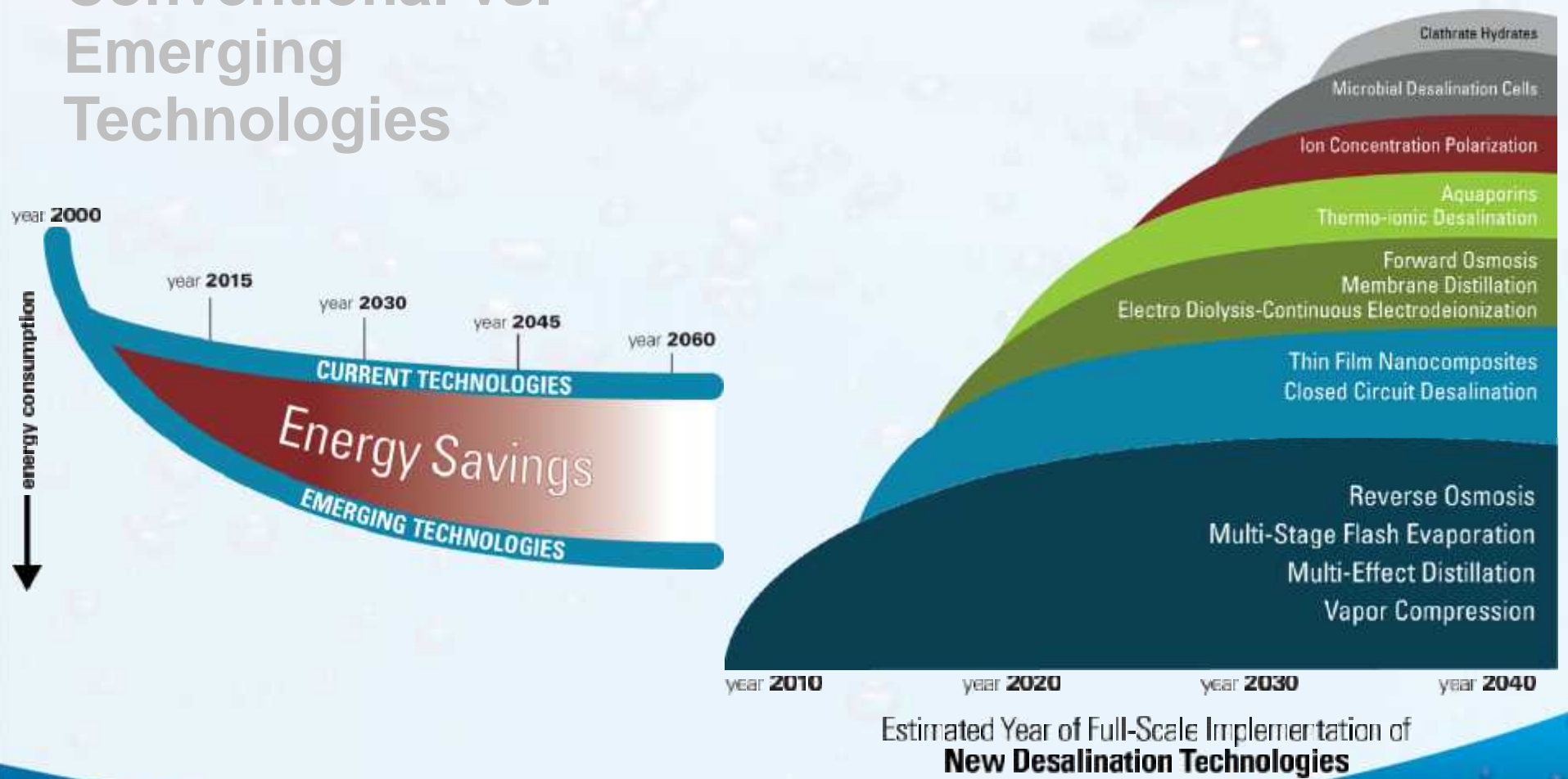
Distribution of Cost Components

- 100 MGD
- Cost of Water with \$0.10/KWh

**(\$5.50 to 6.50 per kgal)
(\$1800-2000 per acrefoot)**



Conventional vs. Emerging Technologies



Seawater Permitting

Federal Permits

- *United States Army Corps of Engineers*
- *U.S. Environmental Protection Agency*
- *U.S. Coast Guard*
- *Bureau of Ocean Energy Management - Marine Minerals Management*
- *U.S. Fish and Wildlife Service*
- *National Marine Fisheries Service*
- *Federal Emergency Management Agency*
- *Federal Energy Regulatory Commission*

State Permits - Texas Commission on Environmental Quality

- *Texas Pollutant Discharge Elimination System*
- *Air Permit*
- *Texas General Land Office*
- *Texas Historical Commission*
- *Texas Railroad Commission*
- *Texas Parks and Wildlife Department*
- *Texas Parks and Wildlife Commission*
- *Texas Department of Transportation*

Regional, Local, and Other Permits

Texas State legislature HB2031

- Permit without a contested case hearing
- Beds and Banks for transport

HB 4097 Seawater Desal and ERCOT

- Study infrastructure in support of desalination
- Demand response opportunities
- Industrial purpose desalination

HB 655 ASR

- Facilitates ASR permitting and guidance
- Benefit to storing regional grid water

Texas supports solutions to the problems of drought – by enabling legislation, while still maintaining environmental protection.



Seawater Desalination Enabled by Texas Legislature

Texas State legislature HB2031:

- Establishes Chapter 18 of the Texas Water Code for desalinated seawater from Gulf of Mexico
- Requires contested case hearings for intake or outfall within 3 miles of the Texas coast
- Authorizes TCEQ to issue a permit for an intake without a contested case hearing if the intake satisfies two conditions
 - More than 3 miles out from the Texas coastline
 - Water quality at the intake is greater than 20,000 ppm TDS, based on consecutive monthly measurements over a 12 month period
- Authorizes TCEQ to issue a permit for an outfall without a contested case hearing if the outfall is more than 3 miles from the Texas coast
- Authorizes the use of beds and banks for the transport of desalinated water that meets the discharge standards for the stream.

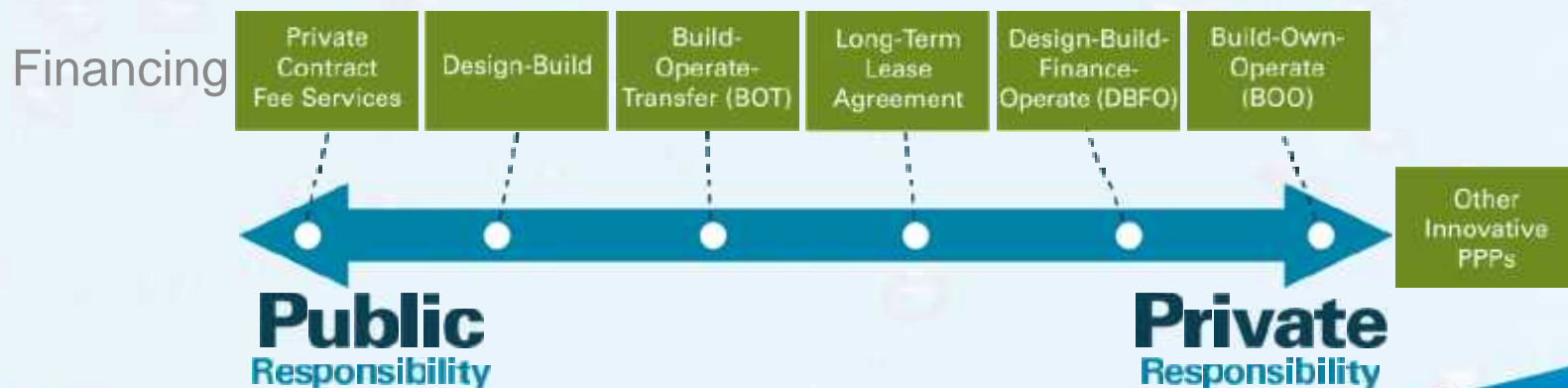


Seawater Desalination Project Implementation

How Long does it take to get a project online?

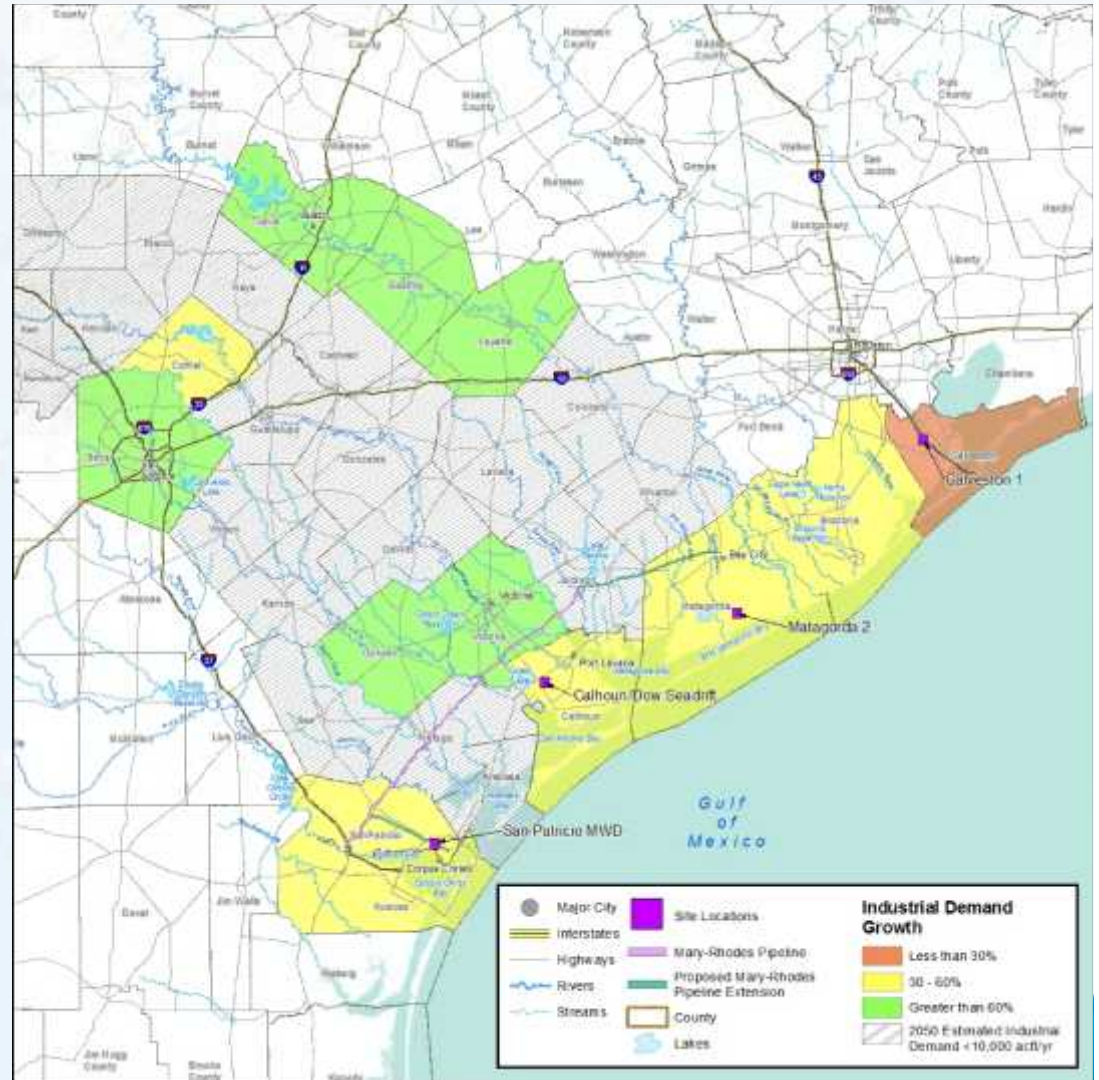
From Concept to Customers – to Capacity – to Conveyance

- Monterey Peninsula Water Supply Project – 2014 through 2019 (projected) – 10 MGD
- Carlsbad Desal – 2005 through 2015 – 50 MGD
- Tampa Bay Desal – 2000 – 2007 – 25 MGD



Service Area Drives Conveyance and Project Cost

Industrial Water
Demands



Distributed Benefits Result in Shared Costs

- Serving regional industrial demands
- Creating a new regional water resource for transfer along the coast.
- A supplement to existing surface water supplies to offset upstream demands

