



REIMAGINING THE
Cadillac Desert

THURSDAY, SEPT. 15, 2016

BEST BEST & KRIEGER LLP

21st Century Water
Outfitting the West for a Drier, Hotter, More Crowded Future

Laura Shenkar, Artemis Water Strategy

 **#BBKCadDesert**

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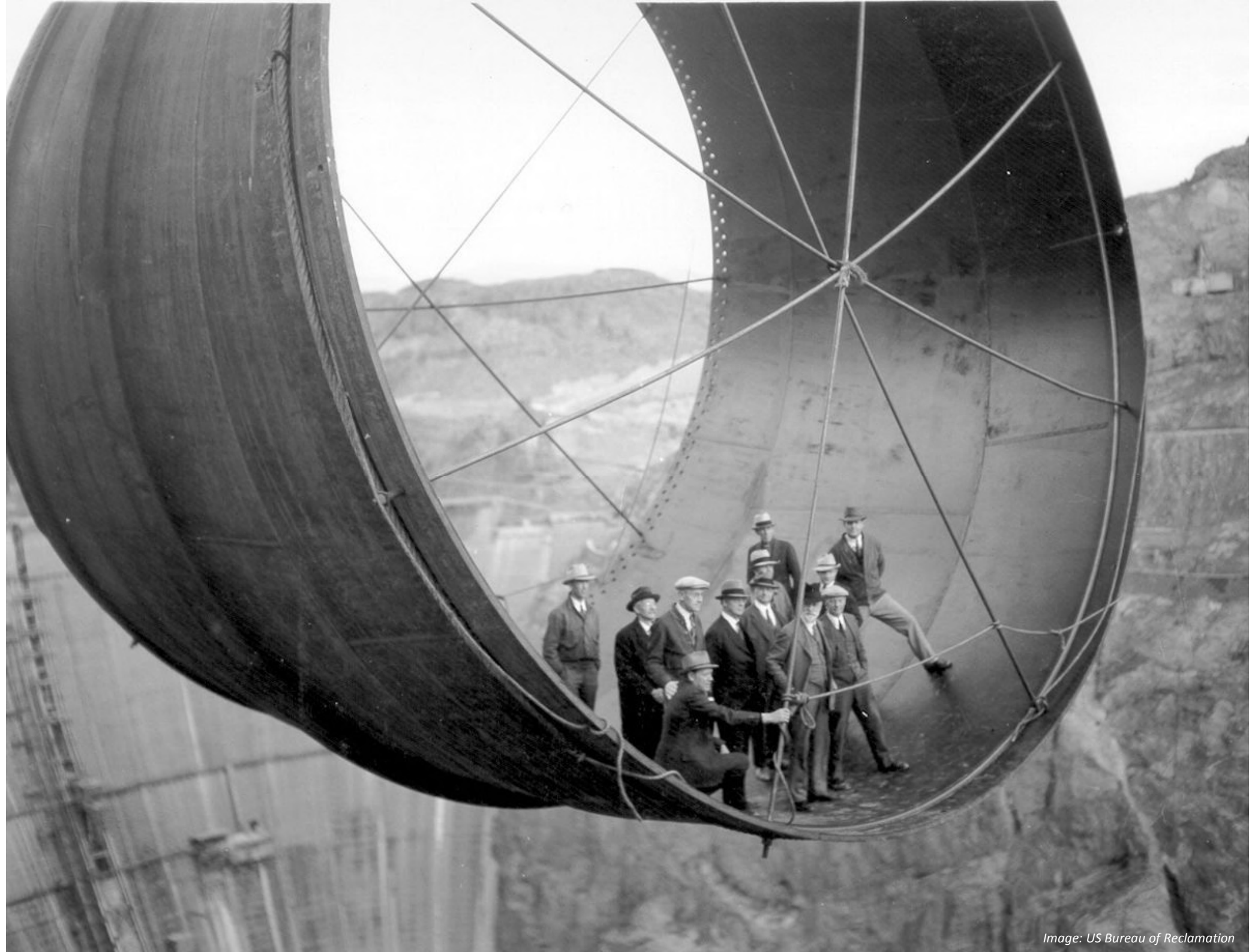


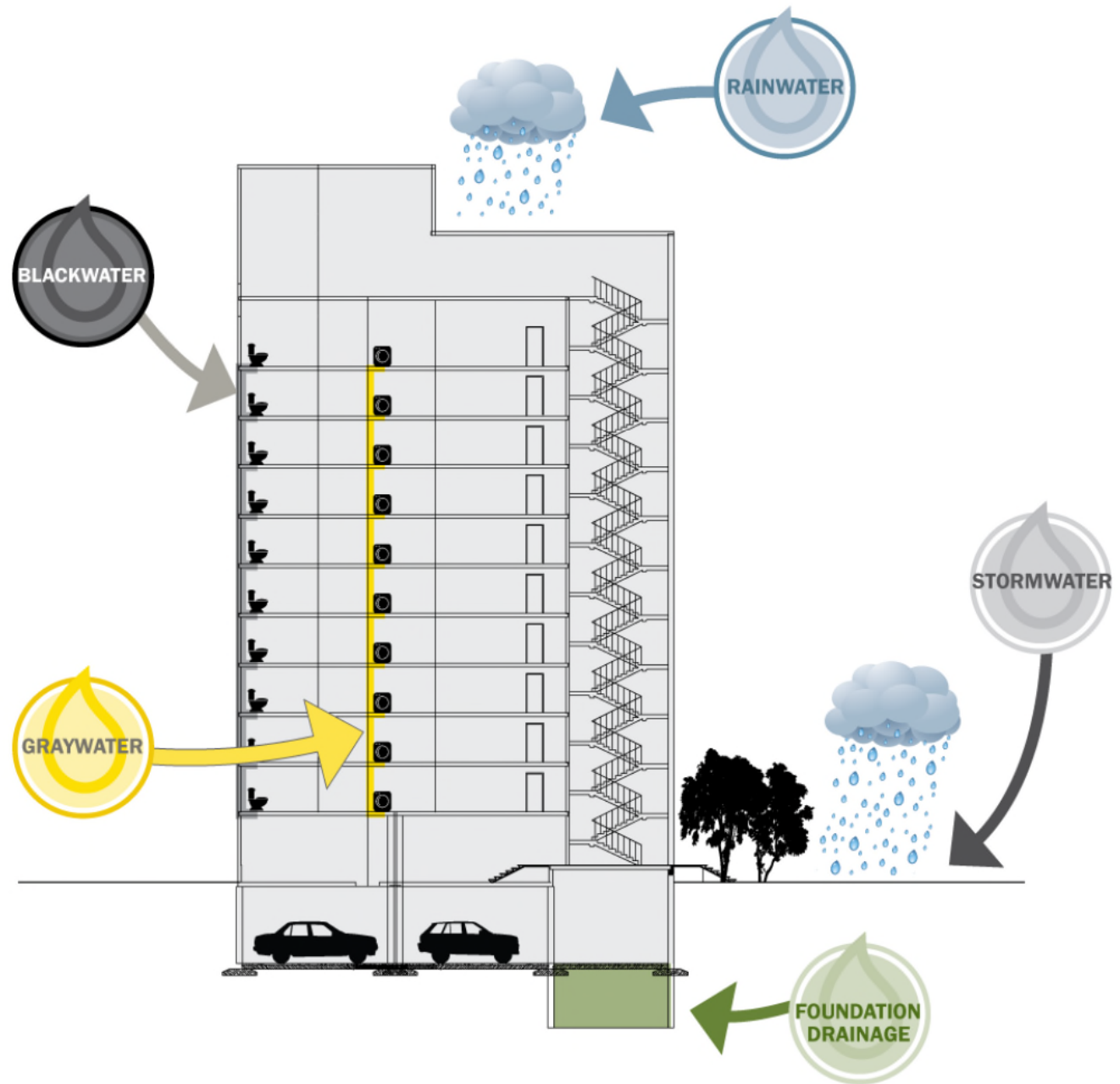
Image: US Bureau of Reclamation

Distributed Technology-Driven Water

Plug-and-Pay Mobility,
but No Eye-Popping Grandeur



Onsite Sources



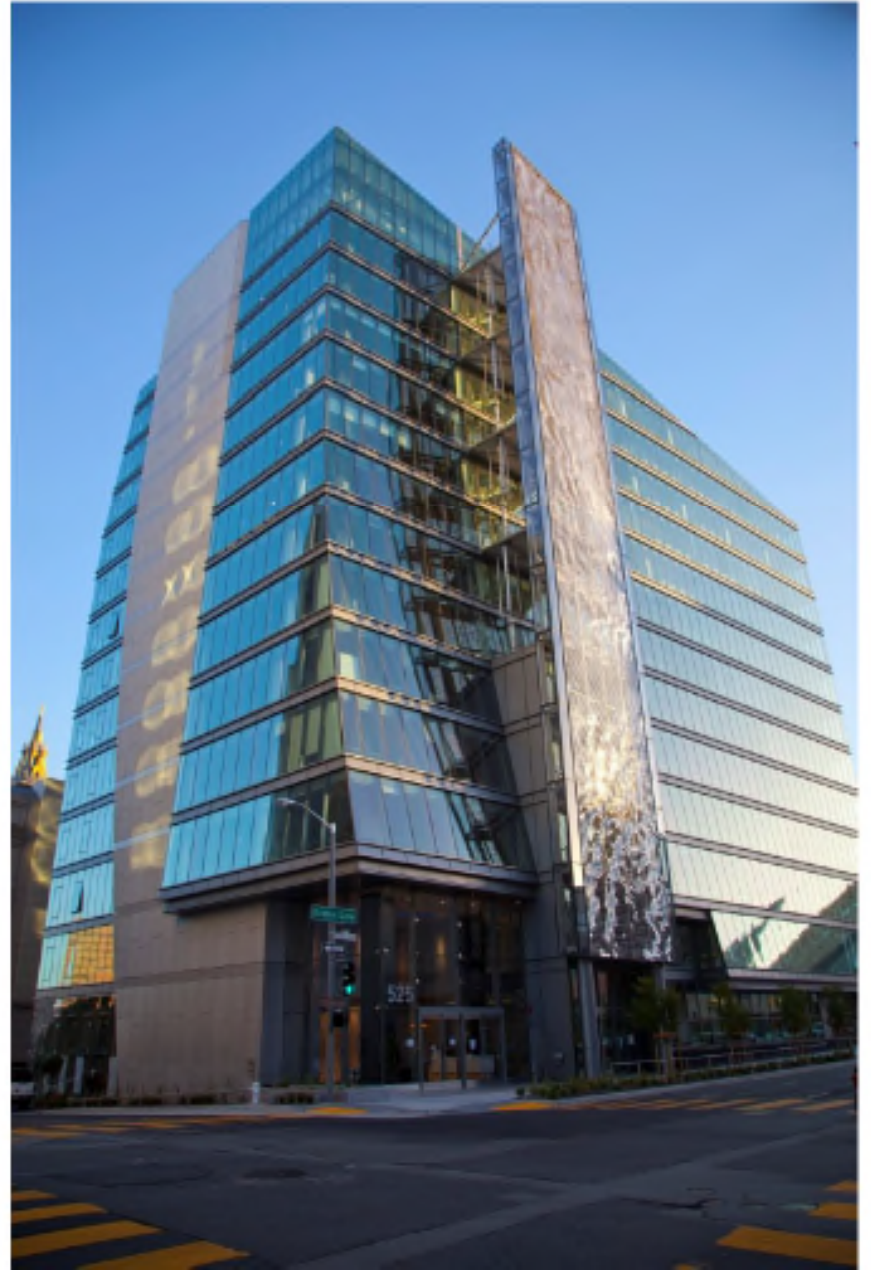
On-site Non-potable Water Use at Innovative SFPUC Headquarters

Rainwater Harvesting System

- 25,000 gallon cistern
- Reuse for irrigation
- 25 Micron Filtration
- UV (optional)

Reciprocating Wetland

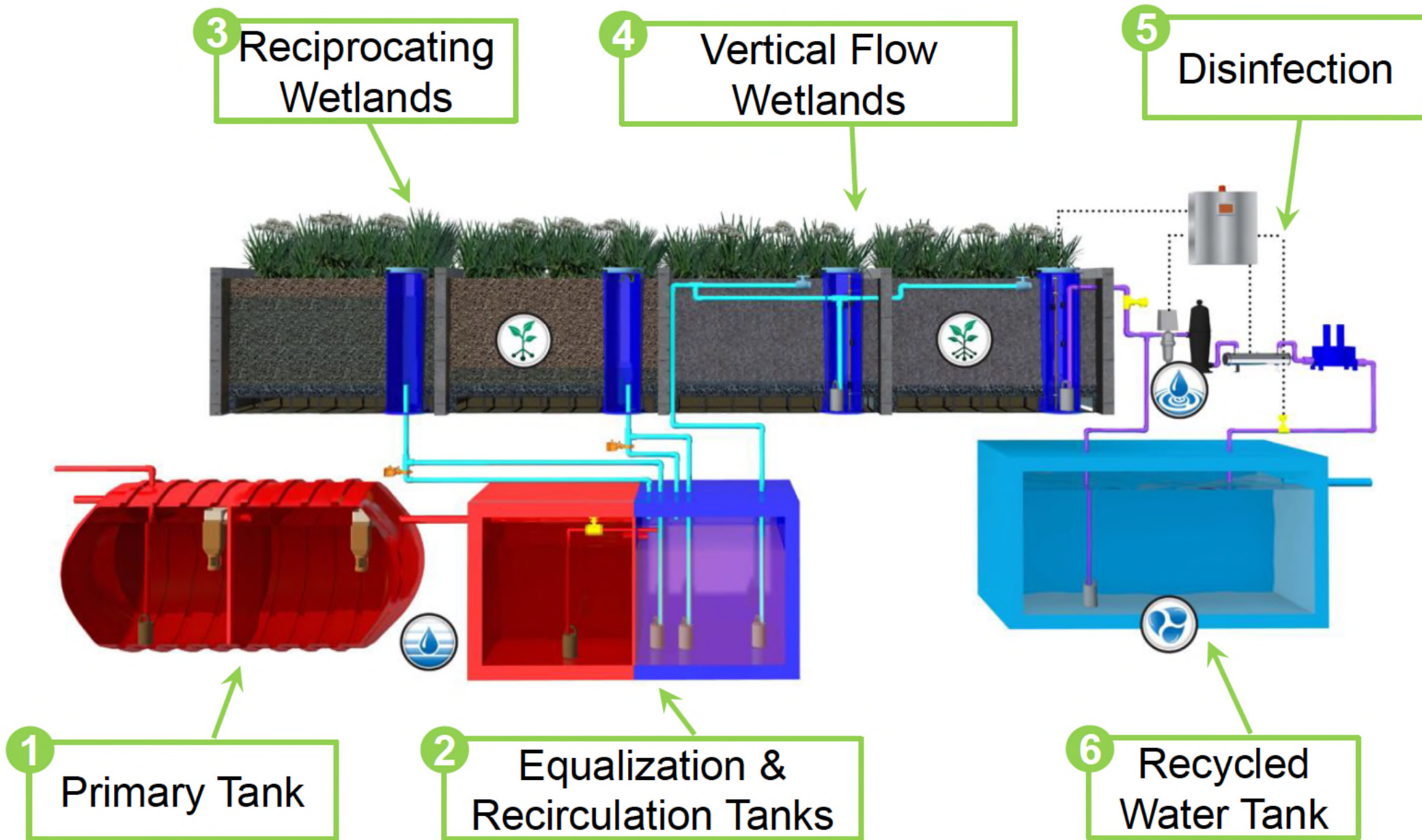
- Collects and treats building's wastewater
- Reuse for toilet flushing
- 5,000 gpd capacity



Distributed Water, Integrated into Buildings and Public Spaces



System Schematic



Distributed Water, Integrated into Buildings and Public Spaces



LIVING MACHINE® TECHNOLOGY AT SFPUC



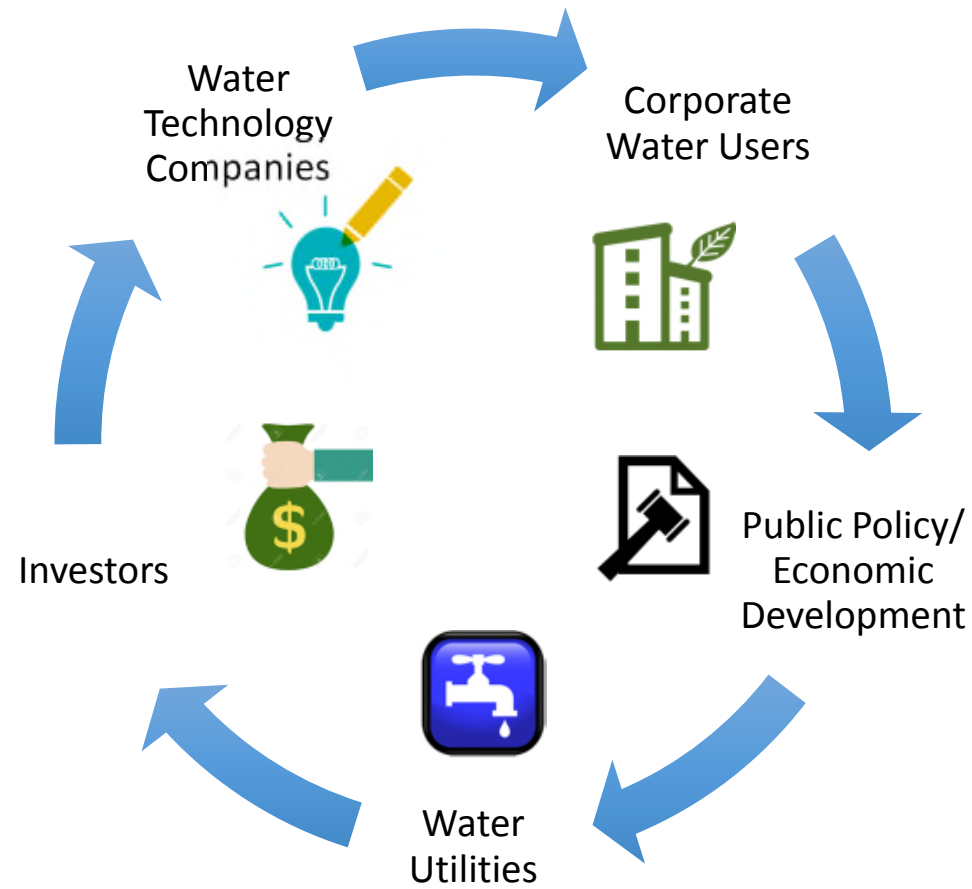
Living Machine Systems, L3C

1. Primary Tank
2. Stage 1 Wetland Cells
3. Stage 2 Wetland Cells
4. Reuse Tank
5. Rainwater Cistern

Water Tech's Emerging Vanguard



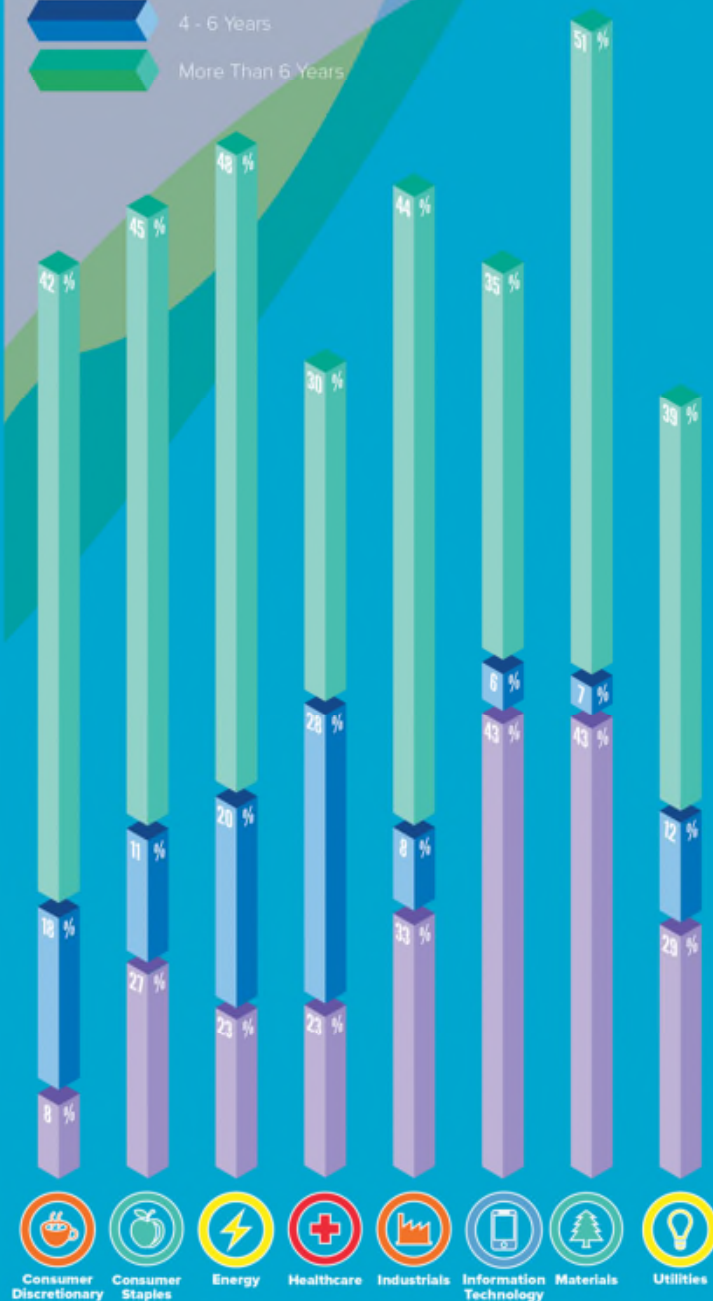
Stakeholders for 21st Century Water



Artemis Water Strategy: Stakeholder Client Base



EXPECTED TIMEFRAME FOR RISKS TO MATERIALISE (%OF RISKS REPORTED)



SECTORS MOST EXPOSED TO SUBSTANTIVE WATER RISK

56%

Consumer
Discretionary

65%

Energy

75%

Utilities

65%

Information
Tehnology

82%

Consumer
Staples

55%

Health Care

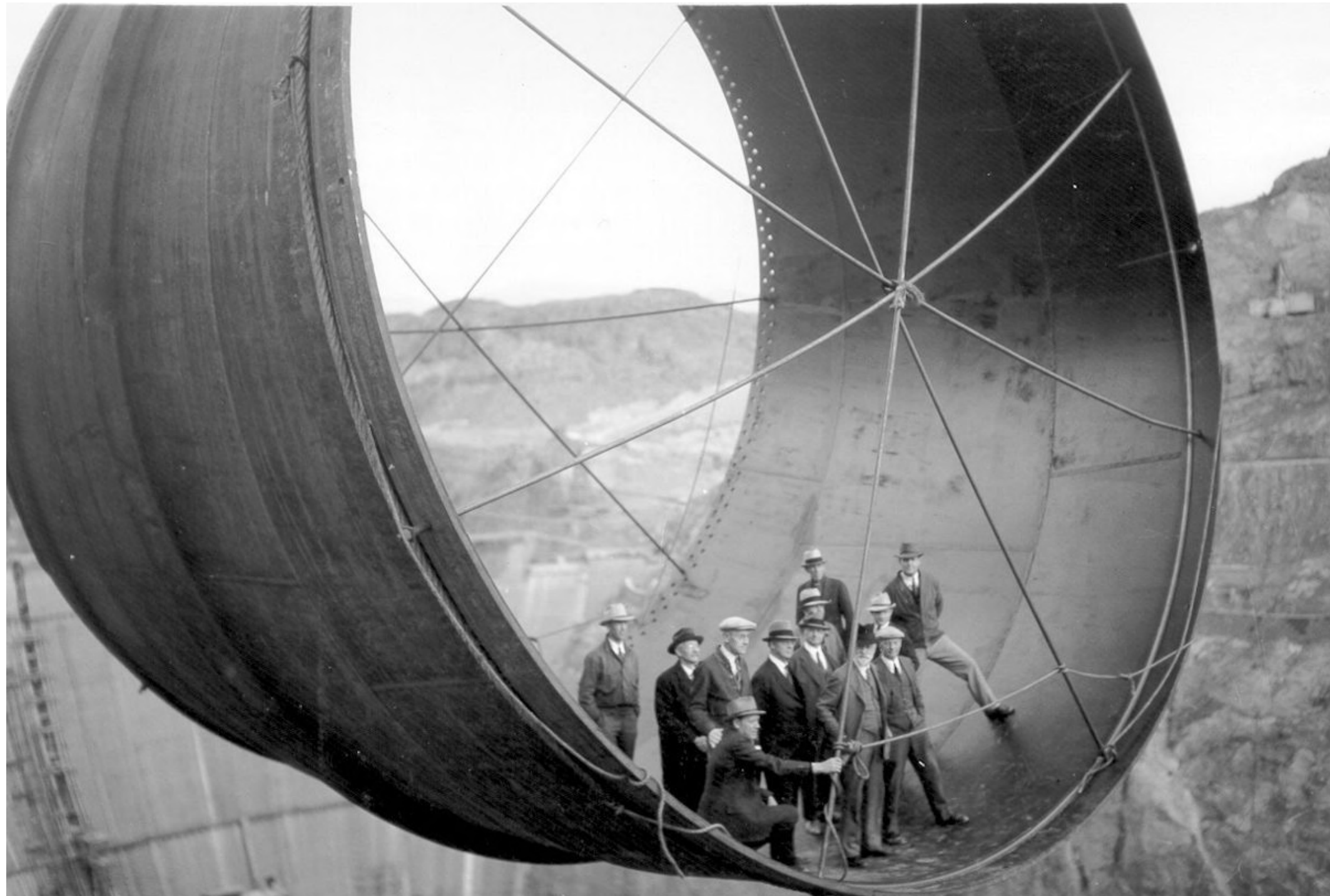
56%

Industrials

65%

Materials

Monument-Centered Water, circa 1931



Monument-Centered Water, circa 1931

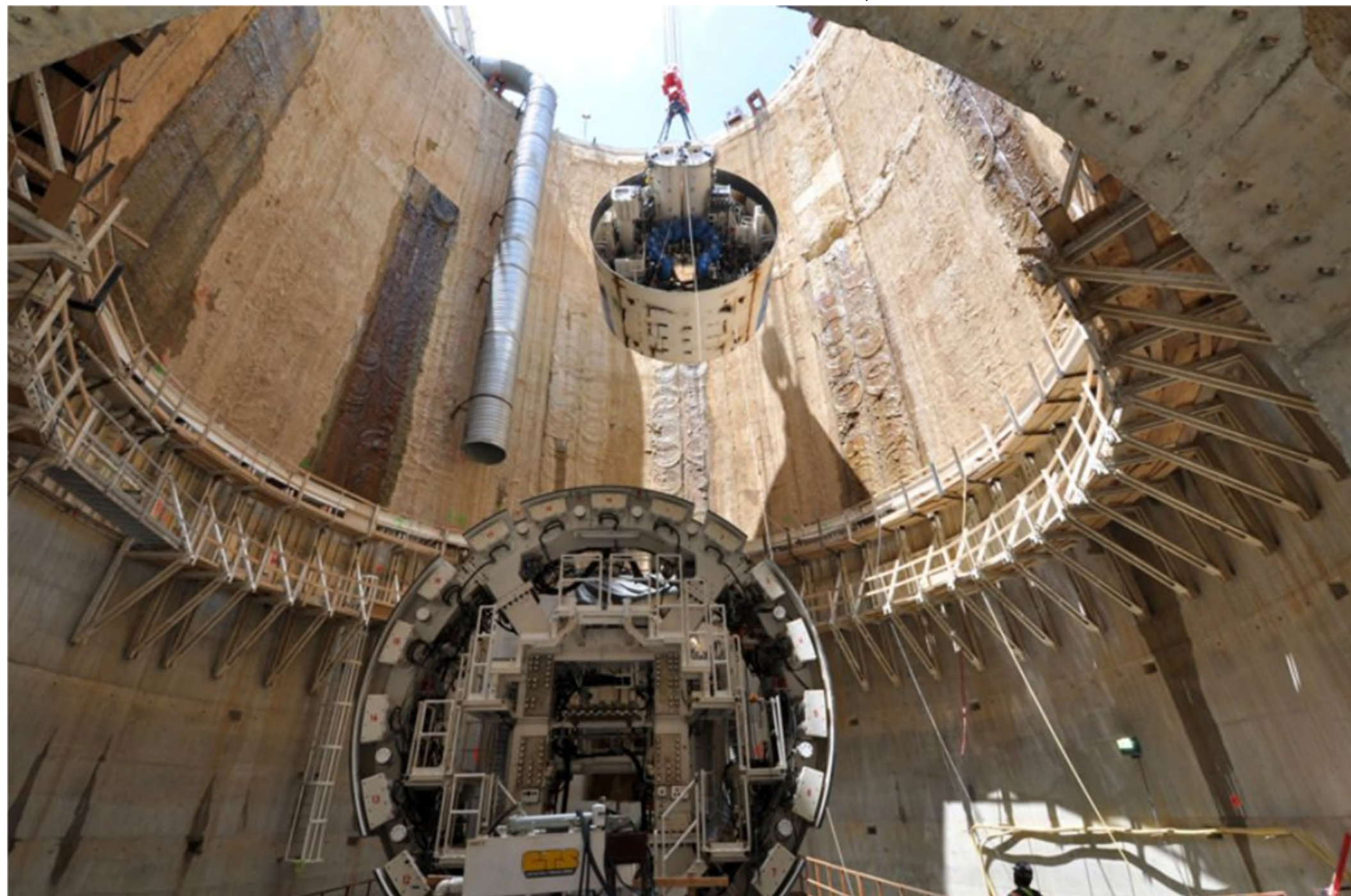


Monument-Centered Water, circa 2015

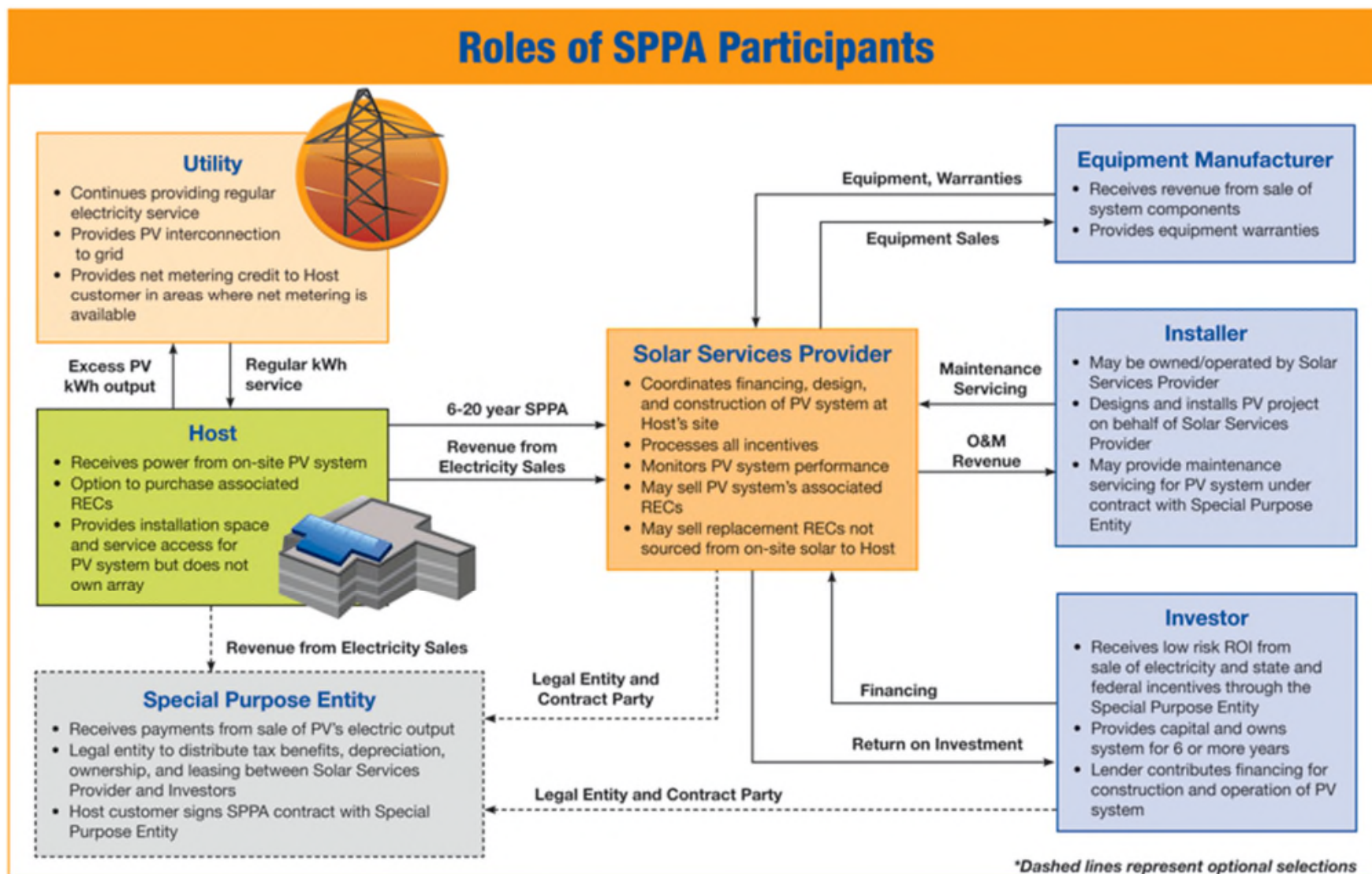


Image: DC Water

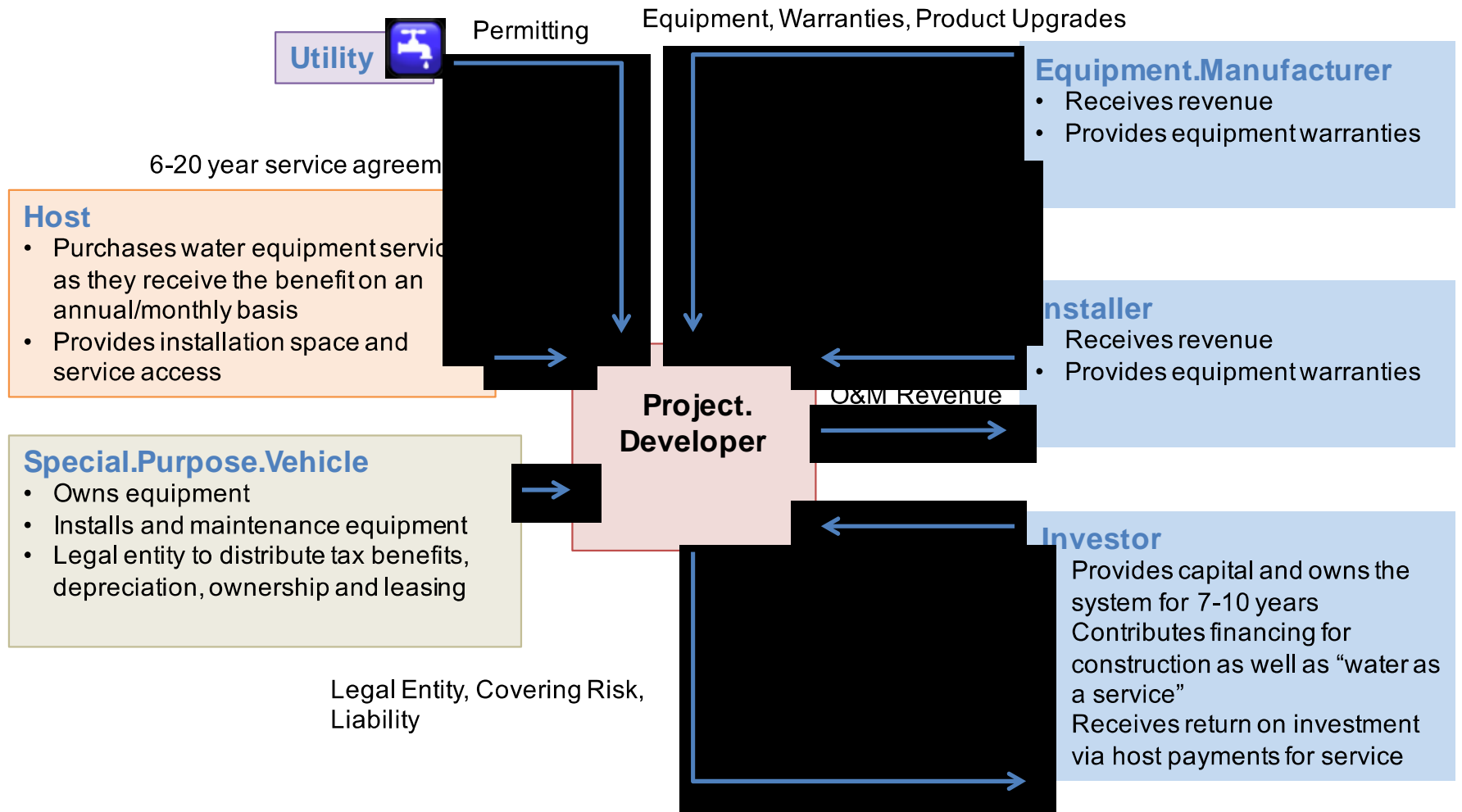
Monument-Centered Water, circa 2015



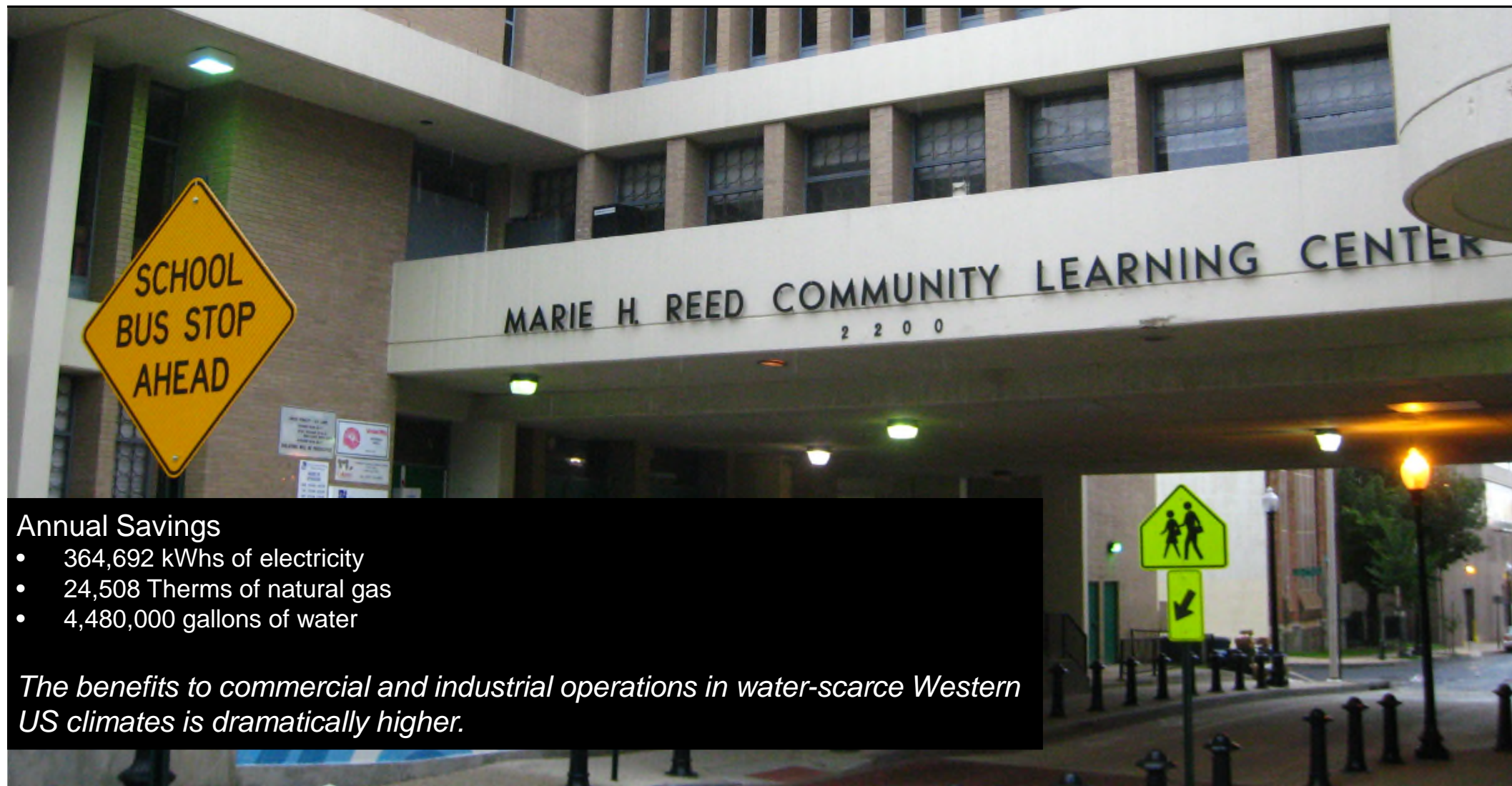
The Solar Power Purchase Agreement



Structure: Water IaaS Finance Facility



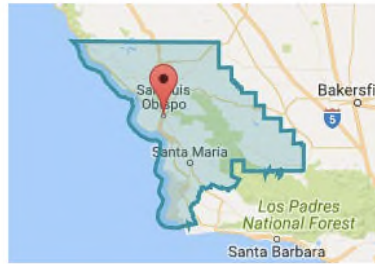
Water Infrastructure as a Service: Driving operational resilience and major savings in DC



Annual Savings

- 364,692 kWhs of electricity
- 24,508 Therms of natural gas
- 4,480,000 gallons of water

The benefits to commercial and industrial operations in water-scarce Western US climates is dramatically higher.



Good for the Economy
Good for the Environment
Good for Communities



Assembly District 35

Katcho Achadjian

The economic benefits of California's climate policies in-district to date:



\$1.9 Billion

Documented in-district investment in renewable energy,
energy efficiency, transportation and other climate projects



7,423 Jobs

in the local advanced energy economy



\$3.8 Million

Cap and Trade funds allocated to the district



7% of cap and trade funds

benefit disadvantaged communities



5,673 cars off the road

emission reduction equivalent

As of August 2016



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Howard Brewen, City of San Luis Obispo

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San Luis Obispo One Water

Utility Profile



SAN LUIS OBISPO WATER RESOURCE RECOVERY FACILITY

Area	13.2 square miles
Population served	Residential: 45,802 (does not include Cal Poly) Cal Poly: 38,000 (latter part of Sept. thru middle of June) Day Time Population: surges to 110,000
No. Water Treatment Plants	(1) capacity 16 MGD
No Wastewater Plants	(1) capacity 5.4 MGD, current upgrade will have a capacity of 16 MGD
Water Distribution System Wastewater Collection System	160 miles of pipeline, 15,000 meters 147 miles of pipeline, 7 lift stations
Sources of Water	(3) lakes/reservoirs, (4) ground wells, reuse

Capital Improvement 2015 - 20

	Distribution/Collection	Tanks/Lift Stations	Treatment Plants	Other
Water	\$ 12,057,000	\$ 7,147,500	\$ 940,000	\$ 486,000
Wastewater	\$ 6,251,000	\$ 5,575,000	\$ 82,341,000	\$ 1,051,100
Stormwater	\$ 2,705,637			
Whale Rock	\$ 677,000			\$ 142,800
Total	\$ 21,690,637	\$ 12,722,500	\$ 83,281,000	\$ 1,679,900

Water Utilities Look at the Triple Bottom Line

