Declining Salt Marsh Habitat of Bird, Mouse

Partners in Water Recycling

San Jose/Santa Clara Water Pollution Control Plant Joint Powers Authority

- City of San Jose
- City of Santa Clara
- City of Milpitas
- West Valley Sanitation District (serving the cities of Campbell, Los Gatos, Saratoga and Monte Sereno)
- County Sanitation District 2-3
- Cupertino Sanitary District
- Burbank Sanitary District
- Sunol Sanitary District

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Implementing Agencies

- City of San Jose Public Works Department
- City of Santa Clara Public Works Department
- City of Milpitas Public Works Department
- Santa Clara Valley Water District

Water Retailers

- San Jose Water Company
- Milpitas Water Department
- Santa Clara Water Department
- San Jose Municipal Water Service
- Great Oaks Water Company

Regulatory and Funding Agencies

- SF Regional Water Quality Control Board
- State Water Resources Control Board
- US Bureau of Reclamation
- US Fish and Wildlife Service
- Santa Clara Valley Water District

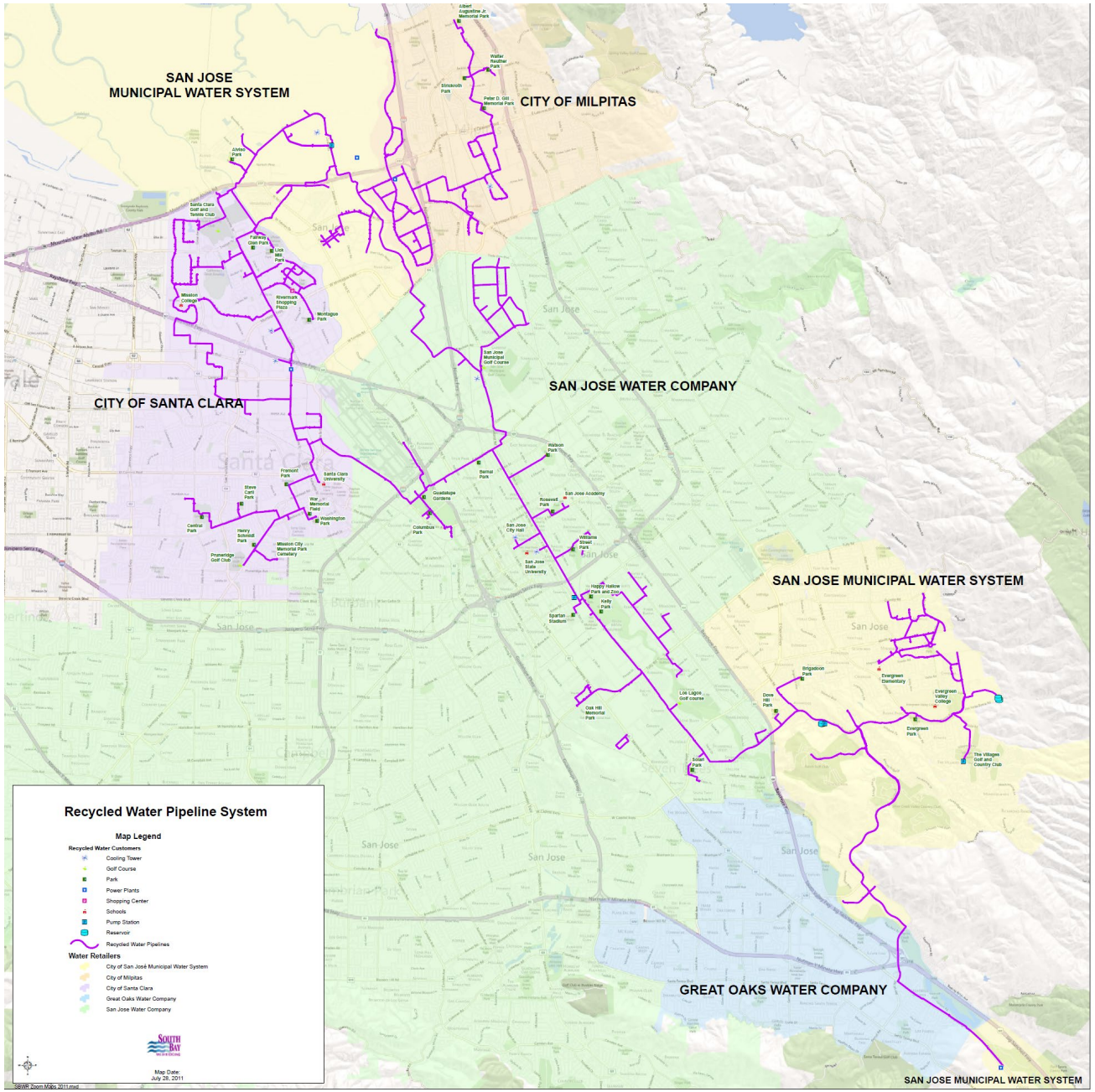
Communication between Water and Wastewater Agencies

Hydronics	Sewerian
Demand	Flow
Supply	Capacity
Critical Dry Year	Peak Flow
Water Banking, Water Transfers	Flow Equalization
Customers	Ratepayers
1000 acre-feet per year	1 MGD

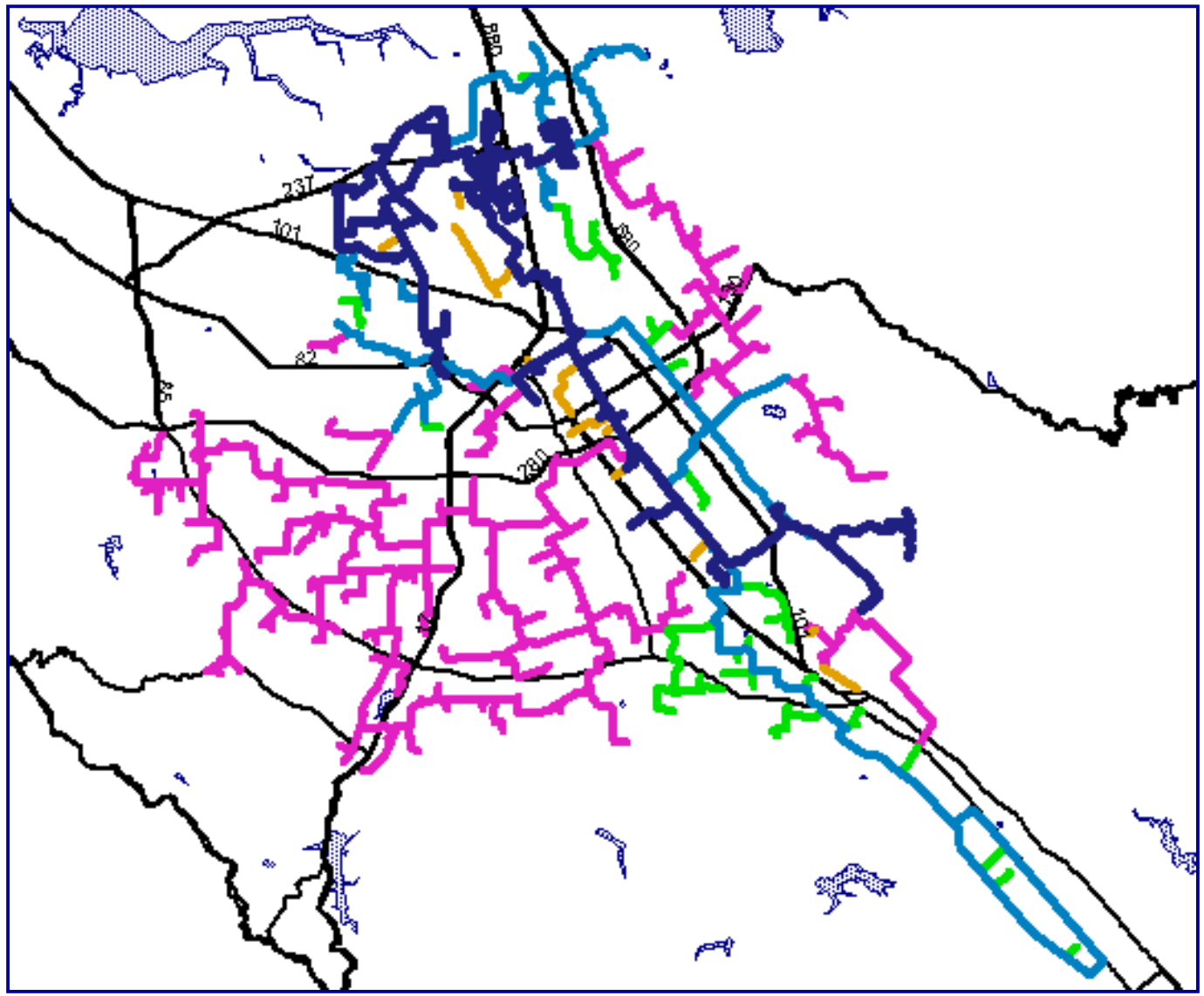
Agency Organization

Agency	Master Cost Allocation	In-Kind Services	Wholesaler-Retailer	Operation & Maintenance	Contribution or Rebate
City of San Jose	x	x	x	x	
City of Santa Clara	x	x	x	x	
City of Milpitas	x	x	x	x	
Tributary Agencies	x				
San Jose Water Co.			x		
SCVWD		x			x
USBR (25% Funding ±$40M)		x			x
SWWRCB (Loans ±$105M)		x			x

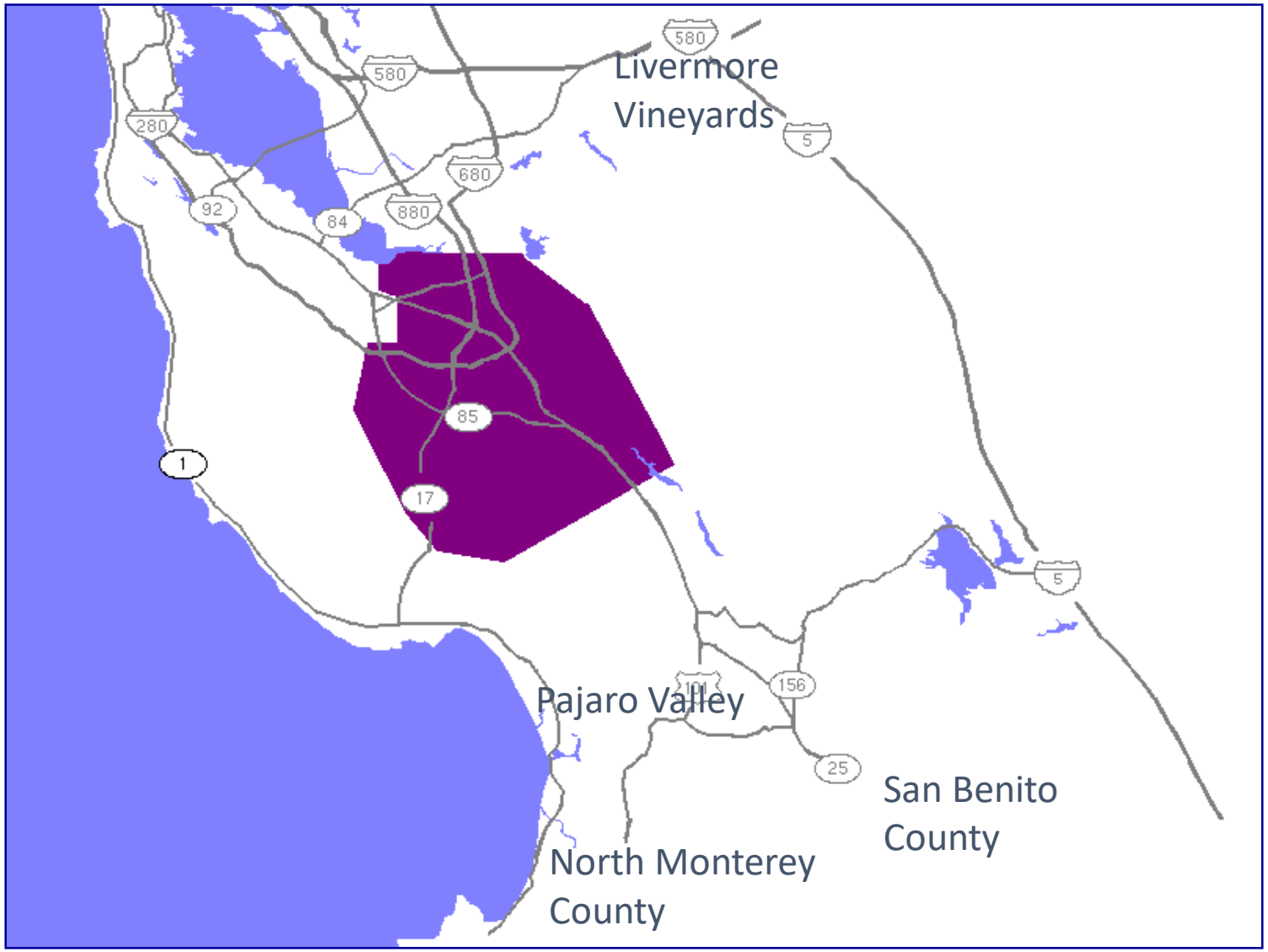
SBWR's recycled water system consists of over **150 miles** of pipeline, **five** pump stations, and **10 million gallons** of storage in reservoirs.



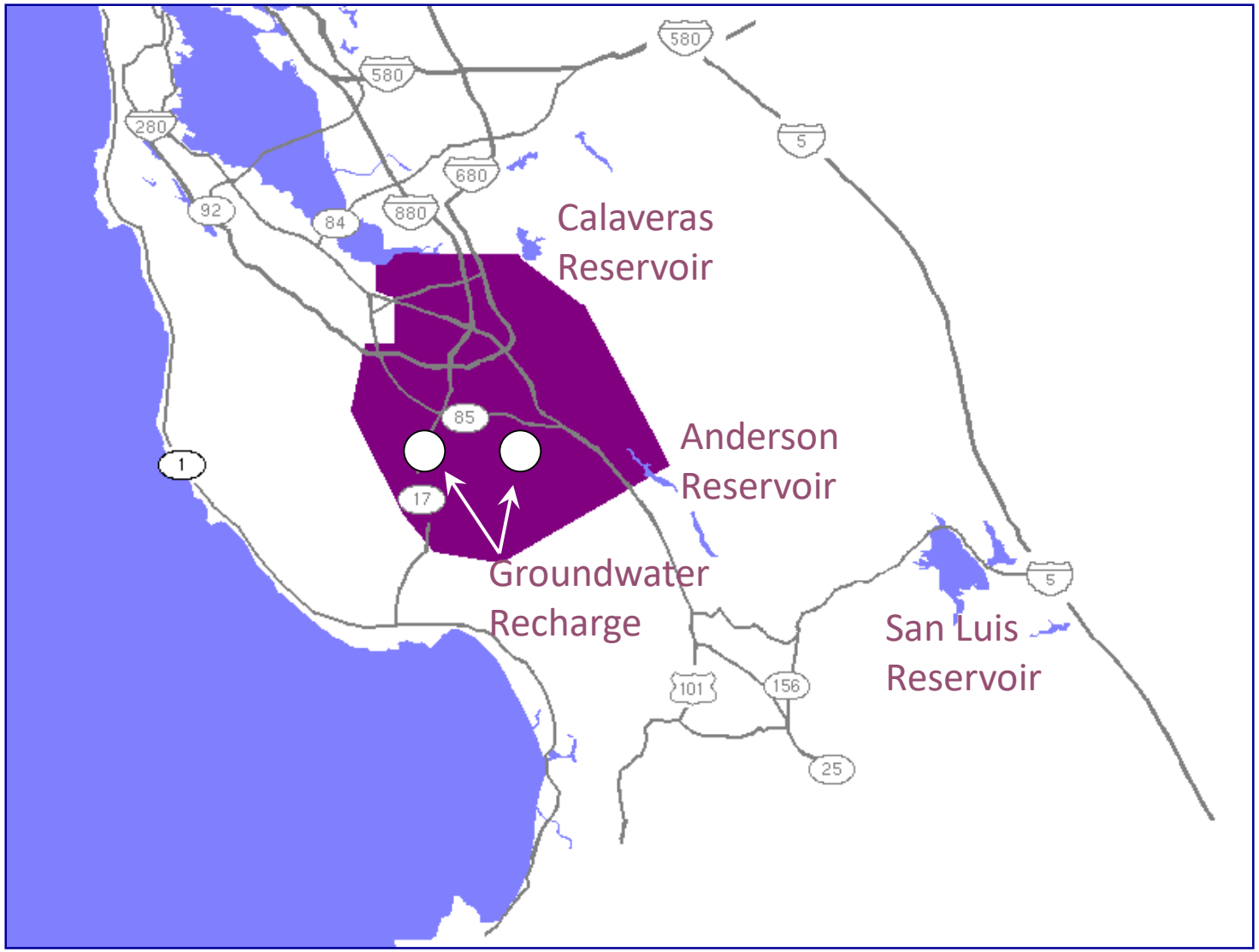
Expanded Urban Nonpotable



Export to Agricultural Markets



Indirect Potable Use



Long-Term Portfolio: Residential Export and Indirect Potable

Long-Term Portfolio: Agricultural Export

Historic Recycled Water Feasibility Analyses in Silicon Valley (1974-1995)

Study Year	Yield (AF/Yr)	Capital Cost ($)	Unit Cost ($/AF)	Decision
1974	100,000	±$100 million	$ 85(10)	No project
1974	700	$0.5 million	$ 50	No project
1978	14,000	$15 million	$ 80	No project
1980	2,000	$9 million	$ 320	No project
1989	10,000	$90 million	$ 640	Negotiate cost share
1995	10,000	$140 million	$ 990	SBWR

Cost of Sustainable Water Use=$2000-3000/AF

1. Water Supply

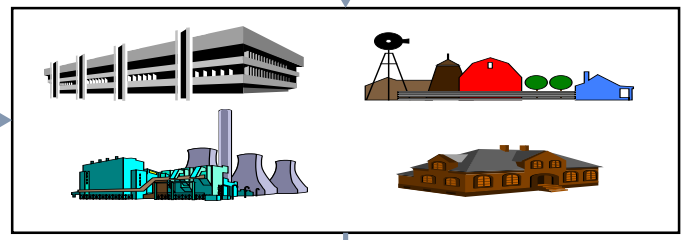
$200/AF (ca. 2000)

Water Treatment

$150/AF

2. Water Service

$300/AF



3. Sewer Collection

$150/AF

Wastewater Treatment

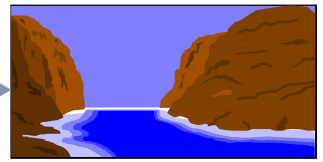
4. Wastewater Treatment

$300/AF

Muncipal Effluent Diversion and Reuse

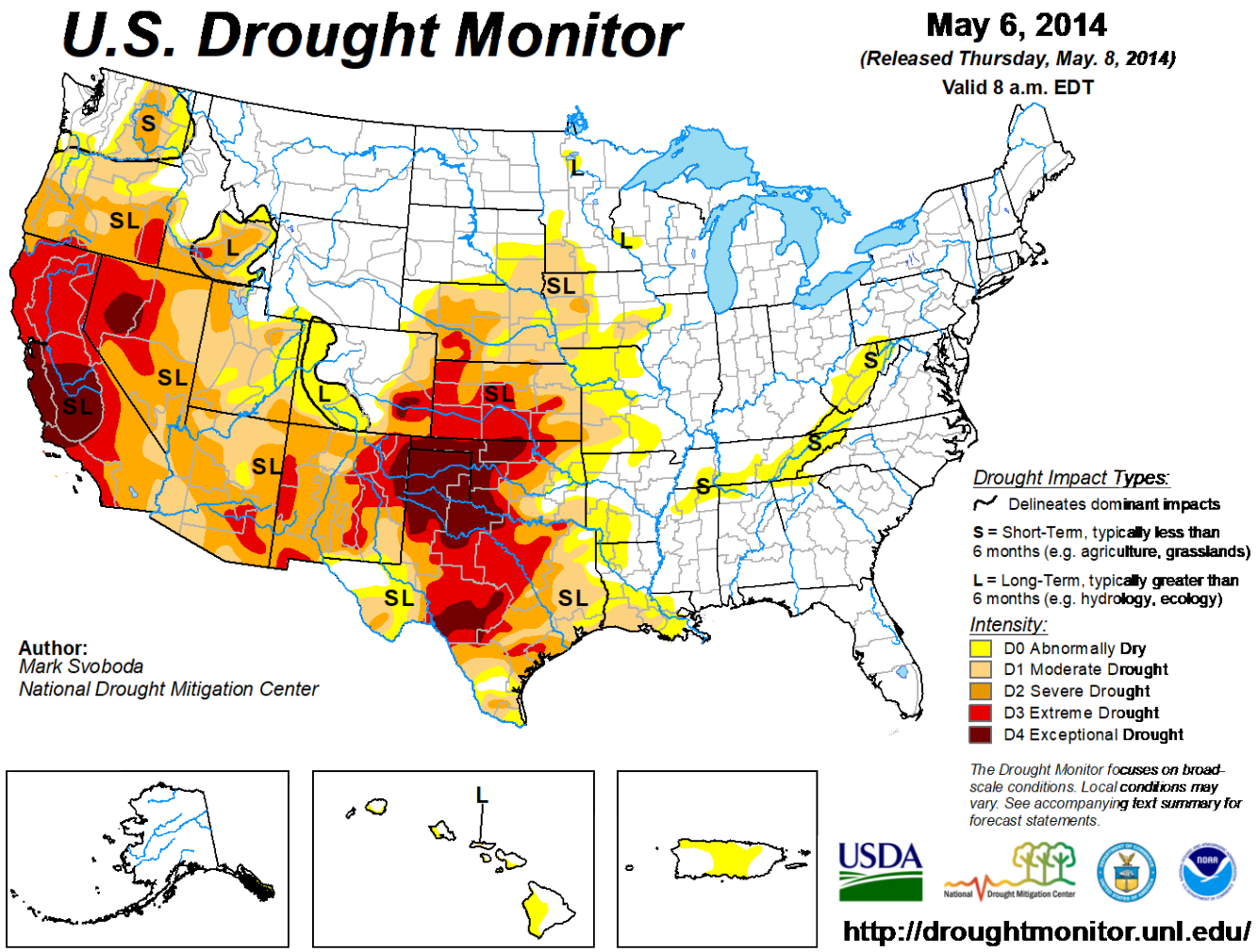
6. Water Reuse

$1000-2000/AF

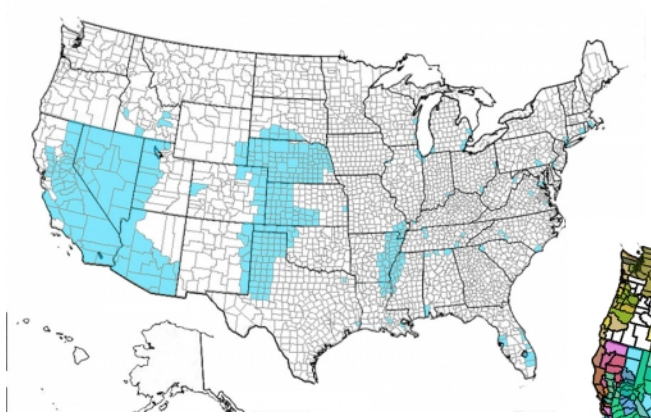


5. Effluent Discharge

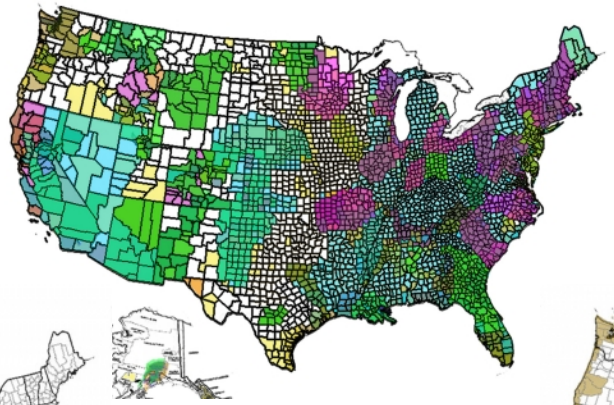
Climate change intensifies drought, reduces snowpack storage



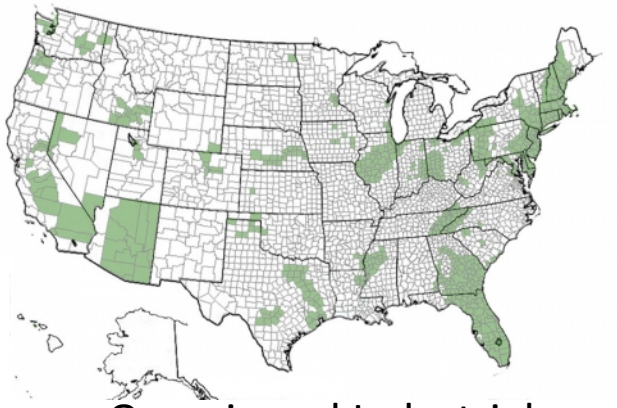
Growing Stressors on Traditional Water Supplies



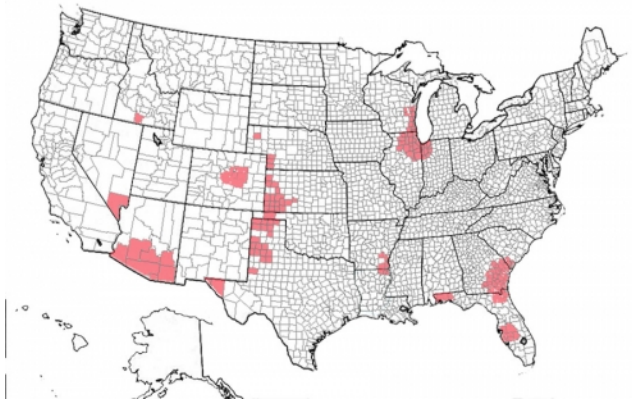
High Demand (>1.2BGD)



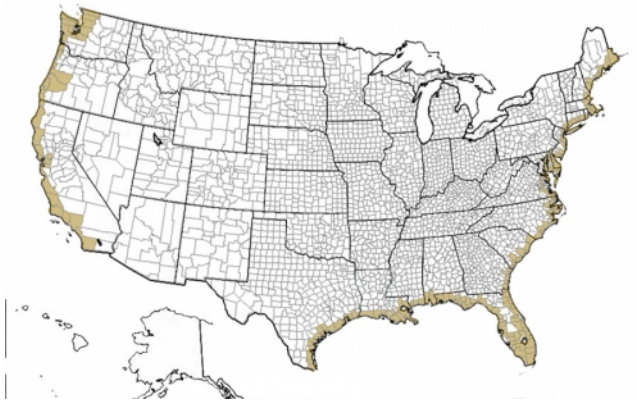
Integrated Water Problem Map



Organic and Industrial Toxins



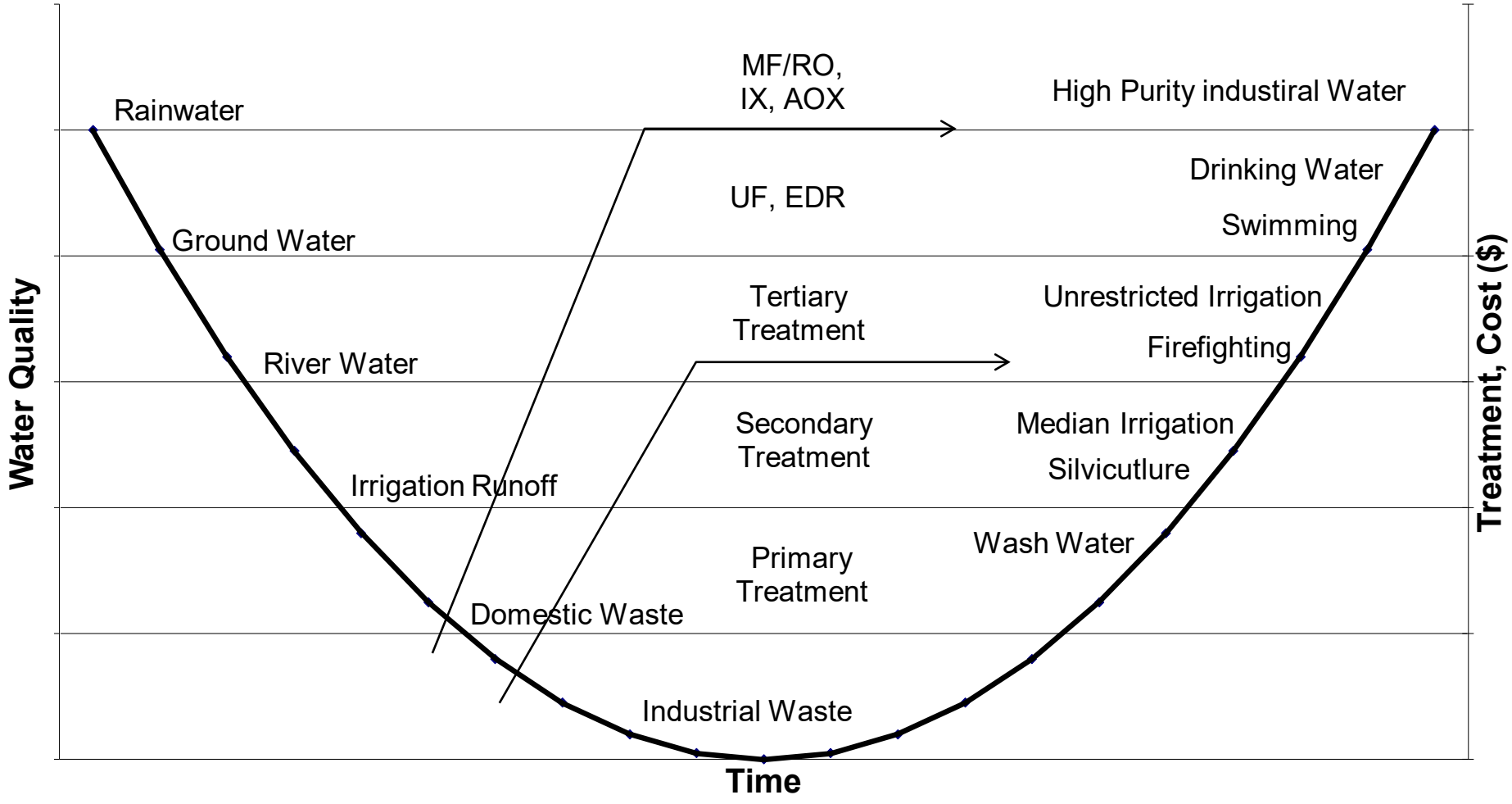
Aquifer Depletion



Saltwater Intrusion into Aquifer

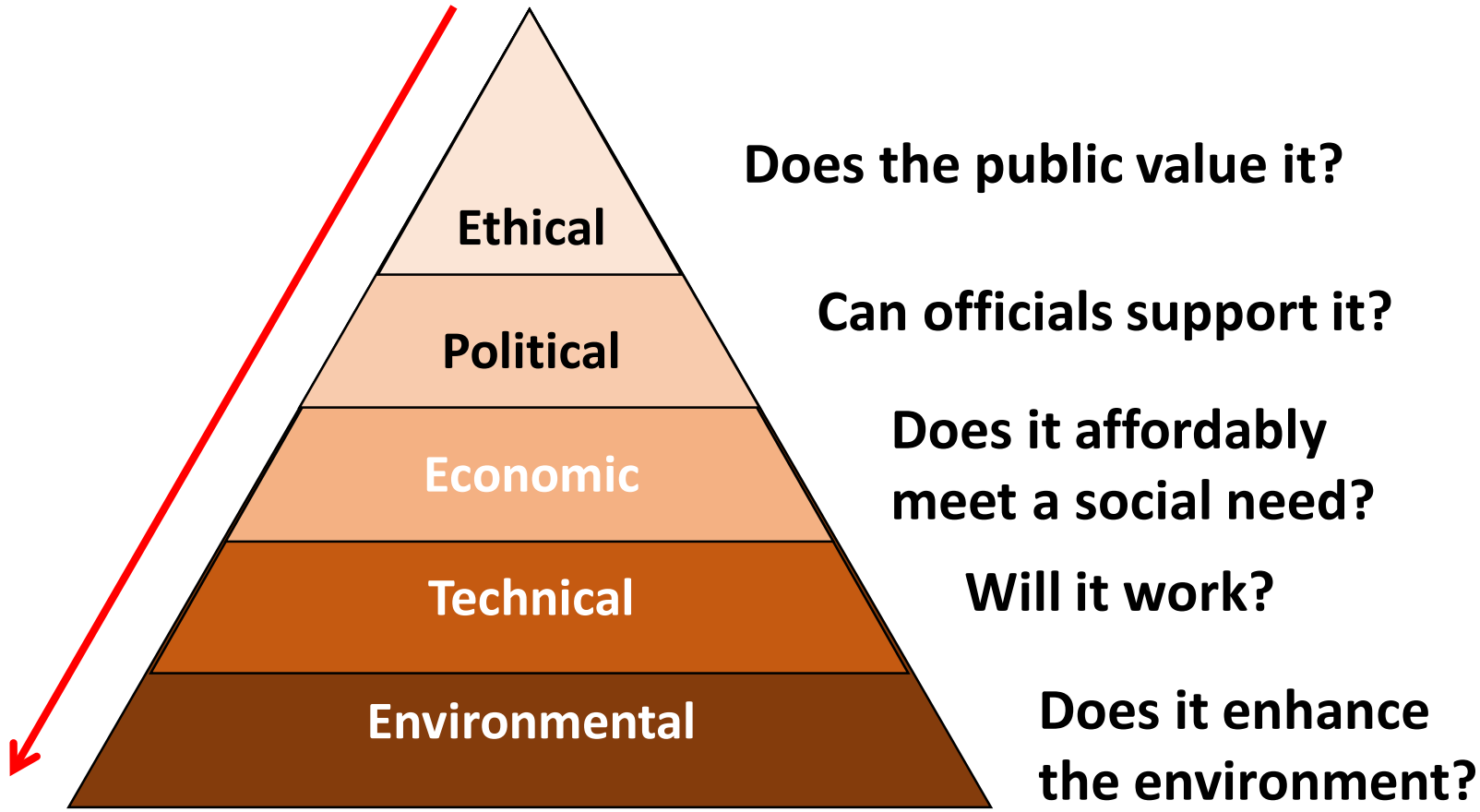
Source: U Illinois WaterCAMPWS (Center for Advanced Materials for the Purification of Water with Systems) referenced by Jay Garland, Ph.D, EPA Office of Research and Development in "Ecological Mimicry for Sustainable Design"

Treat impaired waters as needed for reuse



after Weber (1998)

A hierarchy of factors in deciding to reuse water



Towards a holistic view of cities

from Steven Kenway, "The Water-Energy Nexus and Urban Metabolism - Connections in Cities" *Urban Water Security Research Alliance Technical Report No. 100*