

Water – increase supply or prioritize conservation?

Bay Planning Coalition - Energy and Water Nexus Summit
Oakland

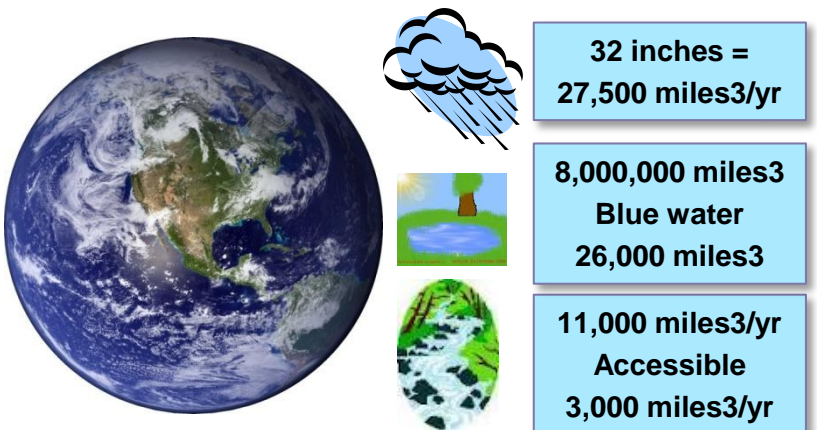
24th October 2012

Michael Norton MBE

Global Director of Municipal Water, AMEC Environment & Infrastructure
Professor Associate, Brunel University School of Design & Engineering



A big picture



Blue water withdrawals		
	Americas	Global
	16%	11%
	35%	19%
	49%	70%
Miles ³ /yr	198	963

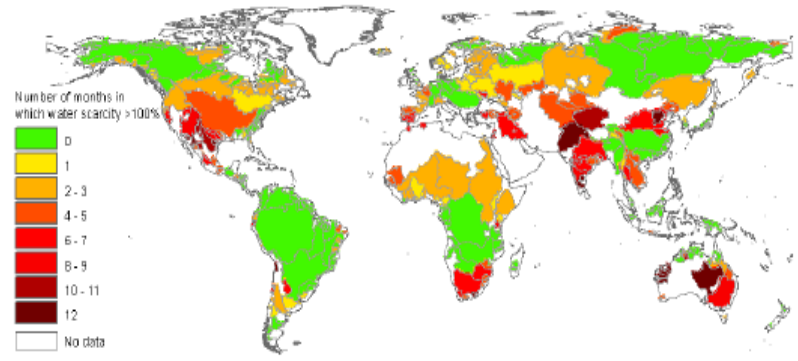
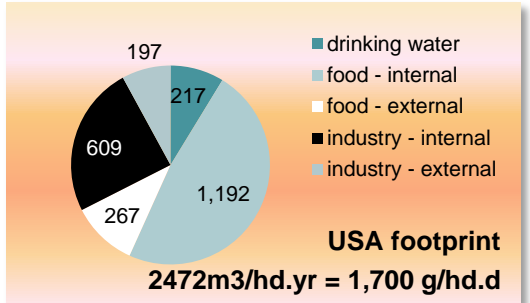
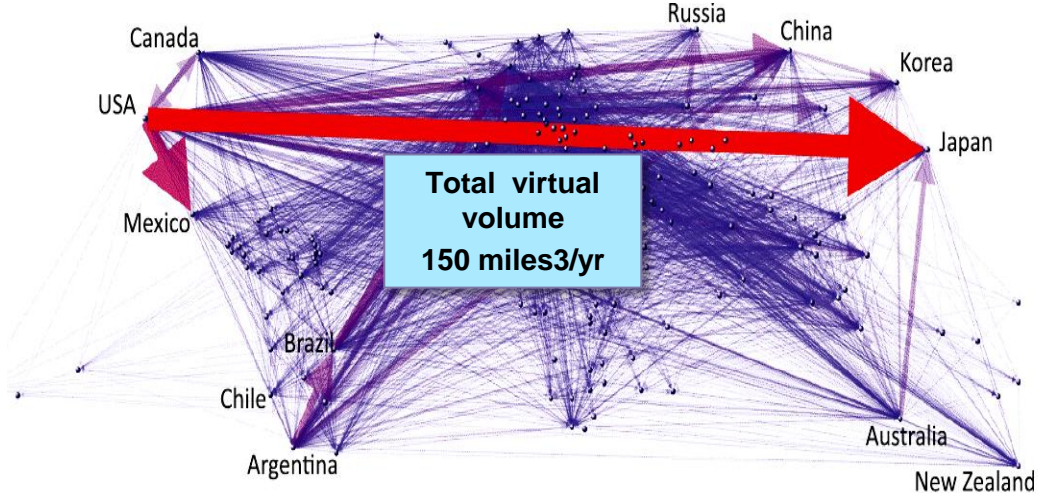


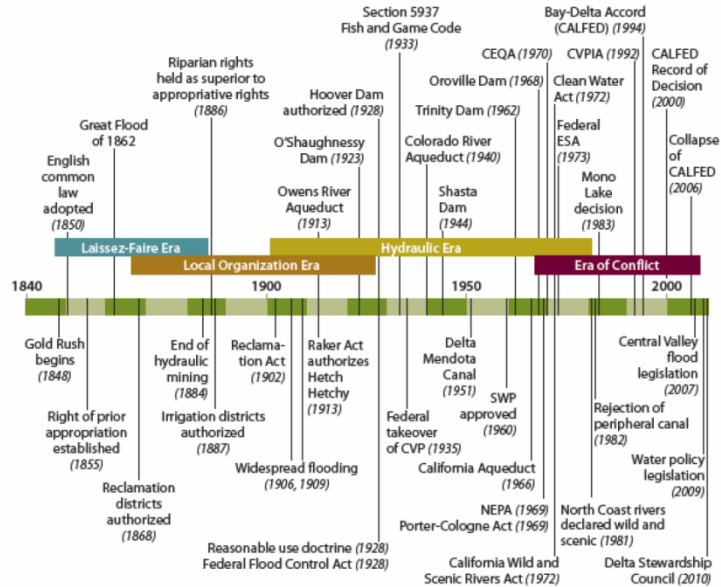
Figure 5. Number of months during the year in which water scarcity exceeds 100% for the world's major river basins. Period 1996-2005.



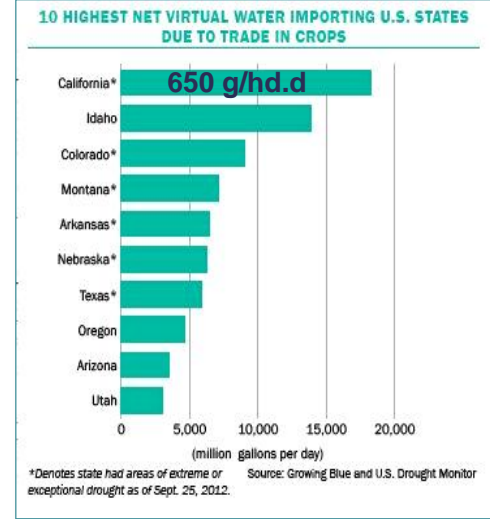
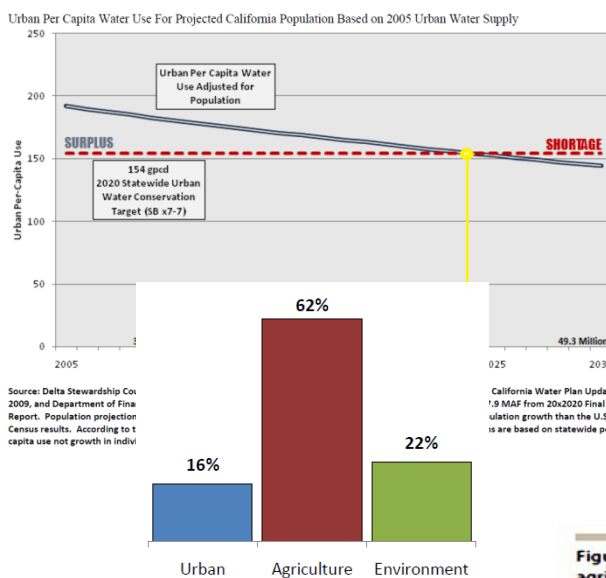
- At the planetary scale there is plenty of freshwater
- Local and regional scarcity can be resolved through virtual water flows

- BUT policy decisions are not yet being made on this basis
- AND trade barriers and protectionism might be obstacles

California and the Bay Area



WATER CONSERVATION IS ESSENTIAL BUT THE NEW 20% SAVINGS WILL BE USED UP BY 2024

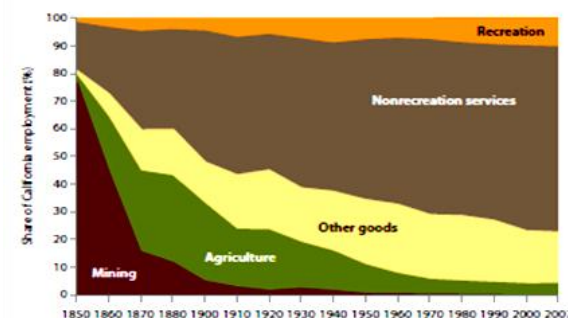


Source: Hanak, E., J. Lund, A. Dinar, B. Gray, R. Howitt, J. Mount, P. Moyle, and B. Thompson. 2011. *Managing California's Water: From Conflict to Reconciliation*. San Francisco, CA: Public Policy Institute of California.

- California has a complex water resource development timeline
- Projects like Hetch Hetchy deliver clean energy and clean water a very low cost
- Though agriculture is big water user, its importance to GDP has fallen
- Californians depend heavily on water elsewhere

- It looks like urban water conservation can't close the demand gap
- Which means that more storage/transfer/re-use will be needed
- The big question though is how much does the state want to be self-sufficient in food?

Figure 2. California's economy has become less dependent on agriculture, which uses more water than any other sector



SOURCE: Author calculations using US Census data (PUMS, 1950 industry basis).
 NOTE: "Agriculture" includes crop and livestock production and related manufacturing, as well as forestry (which never exceeded 0.2% of employment and now accounts for less than 0.1%). "Other goods" includes non-food manufacturing and construction. "Recreation" includes fisheries (which never exceeded 0.3% of employment and now account for less than 0.1%).

THANK YOU!

