

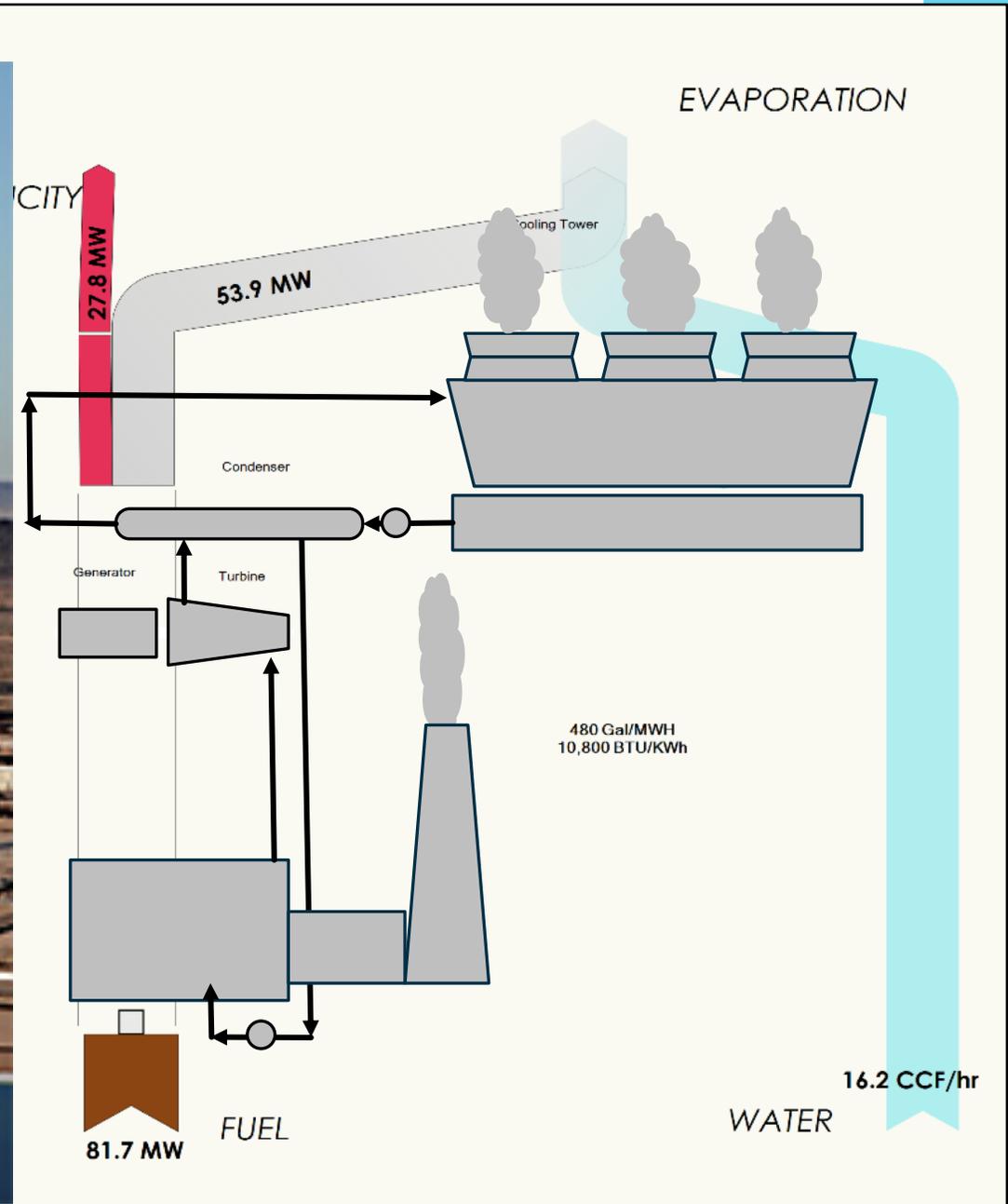


ARCHITECTS & ENGINEERS, INC

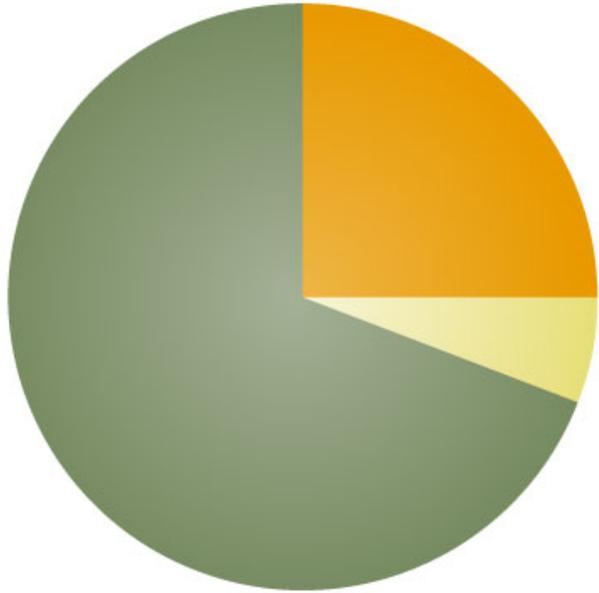


ENERGY – WATER – AIR CONDITIONING

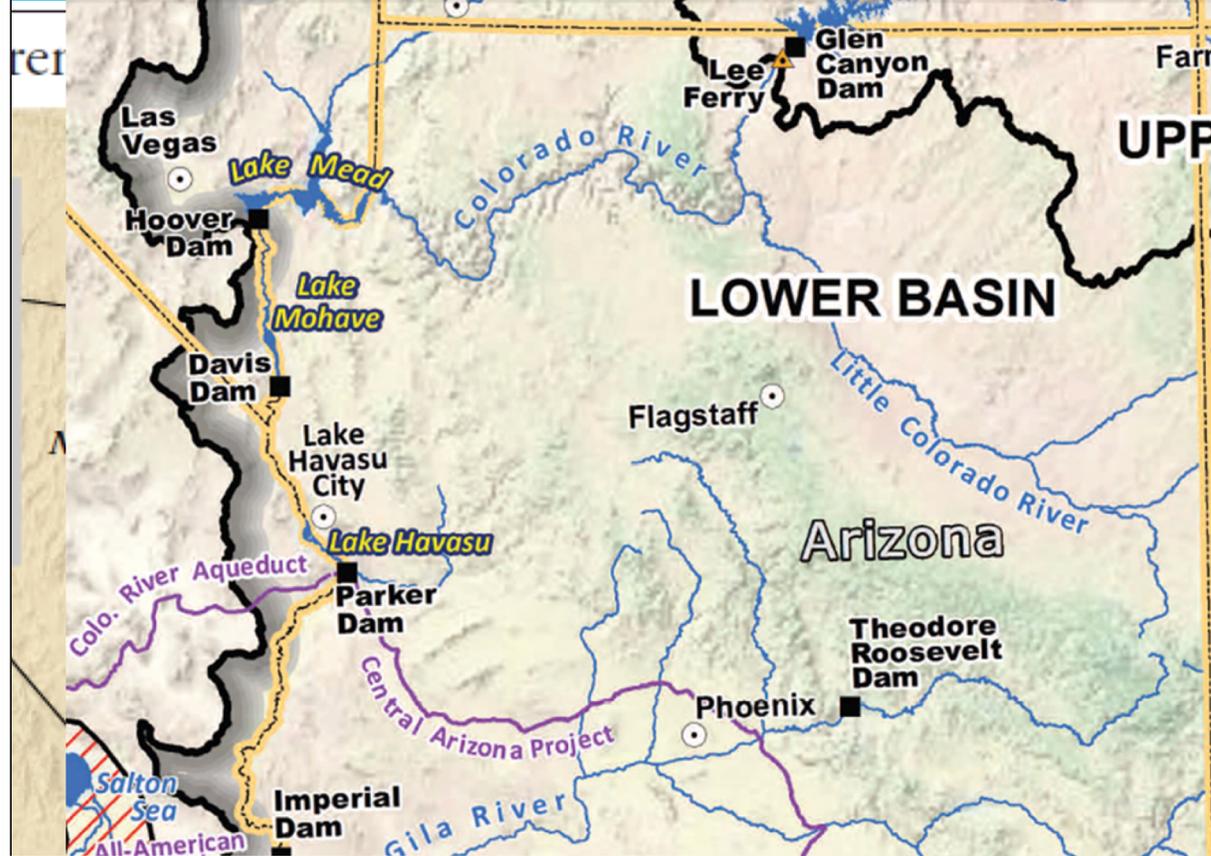
Henry Johnstone, P.E., President
GLHN Architects & Engineers, Inc.



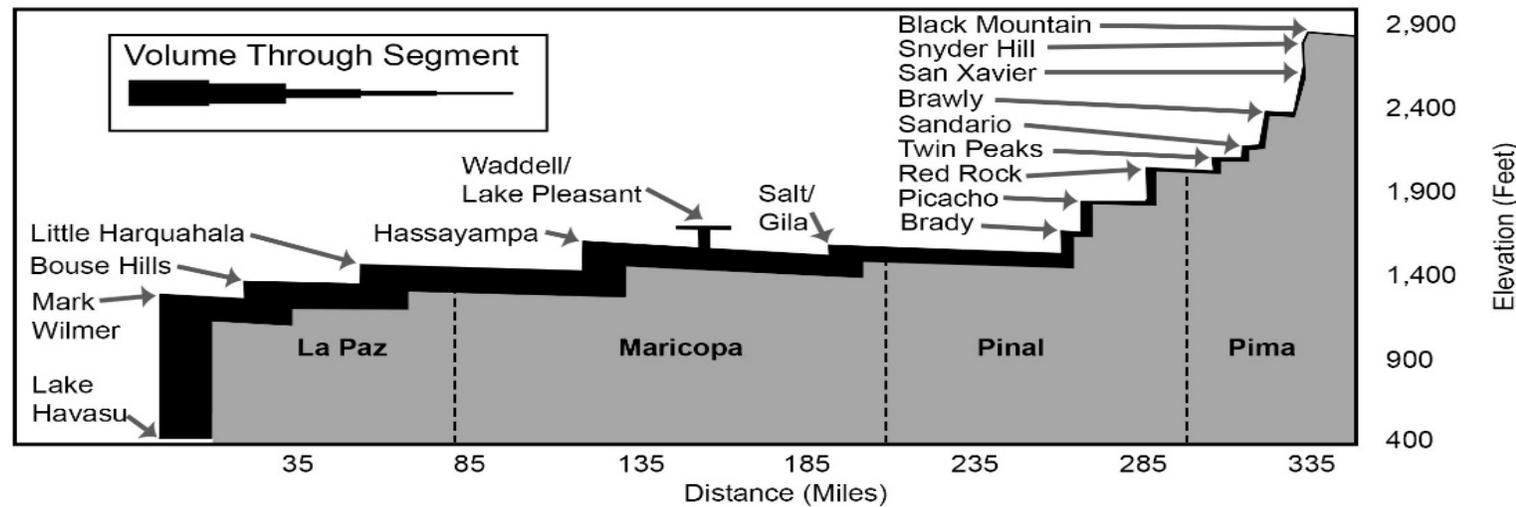
How do we use water?



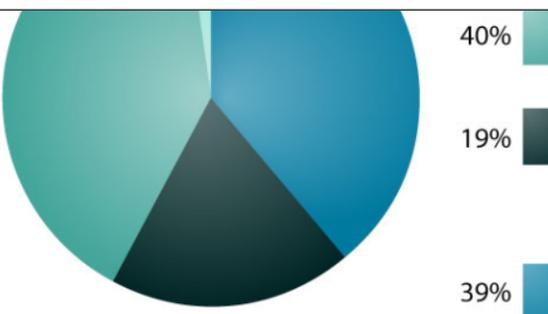
Values based on Arizona Depa
<http://www.azwater.gov/AzDWR/Pub>



CAP Elevation Profile



Boiler, Generator, Plant, State, PCA, 009 data (4/27/12). 2012.



Values based on Arizona Department of Water
<http://www.azwater.gov/AzDWR/PublicInforma>

Numbers from the Colorado

Evap Cooling

Air Cooled A/C

Water Cooled A/C

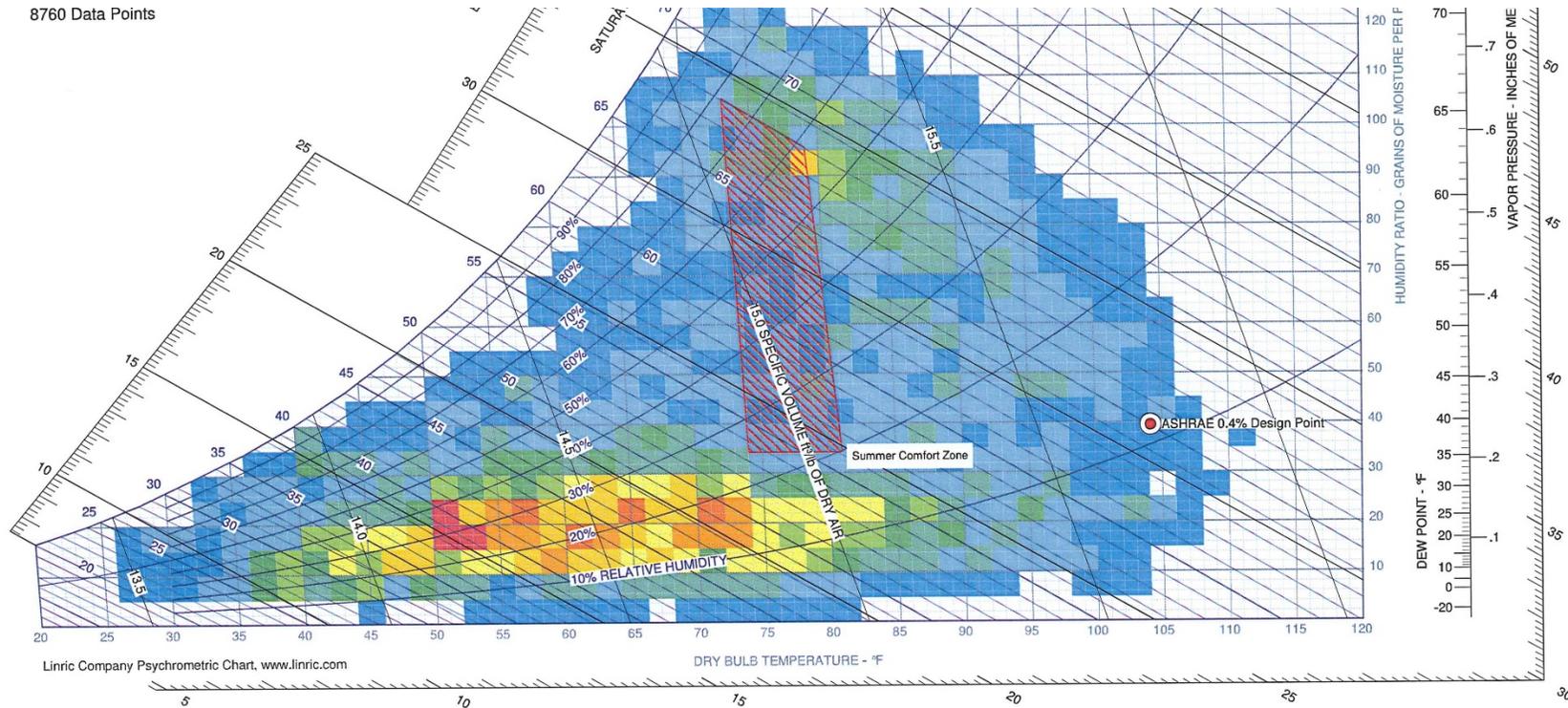
Water Use

| Site | Source | Total |
|------------------|-----------|-----------|
| | Gal/Tonhr | Gal/Tonhr |
| Evap Cooling | 1.5 | 1.57 |
| Air Cooled A/C | 0 | 0.40 |
| Water Cooled A/C | 2.0 | 2.26 |

Energy Use

| Source | |
|------------------|------|
| kW/Ton | |
| Evap Cooling | 0.15 |
| Air Cooled A/C | 0.90 |
| Water Cooled A/C | 0.60 |

8760 Data Points



Note: All data points are as reported by NOAA for Tucson International Airport.



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ENERGY WATER AIR CONDITIONING NEXUS

Opportunities

- Building energy and water efficiency
- Reclaimed water to cooling towers
- Solar PV, Air Cooled Chilling, Thermal Energy Storage

