

 UTAH DEPARTMENT of ENVIRONMENTAL QUALITY
DRINKING WATER

Planning for Water –
Division of Drinking Water's Perspective
Ying-Ying Macauley


 ENVIRONMENTAL QUALITY
DRINKING WATER

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What Are We Facing?

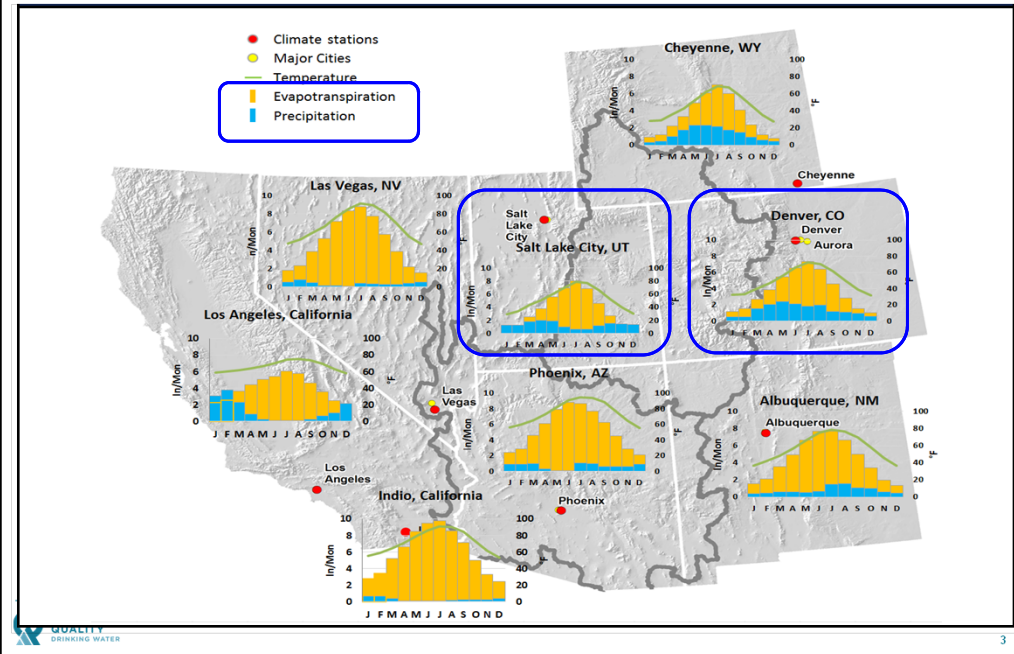


- GROWING POPULATION**
- INCREASED RISKS AND PUBLIC EXPECTATION**
- AGING INFRASTRUCTURE**

 ENVIRONMENTAL QUALITY
DRINKING WATER

Division of Drinking Water 2

Climate in Areas Receiving Colorado River Supply



Division of Drinking Water (DDW)

- Ensure a safe and reliable drinking water supply for all
- Regulate over 1,000 public water systems in Utah

Public Water System (PWS) Definition

- Serving **≥ 15 connections**
 - Contiguous development – under same ownership or control (regardless of phased construction or occupancy)

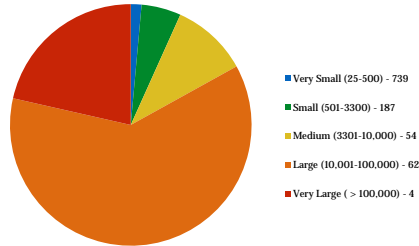
OR

- Serving **≥ 25 people** for 60 days a year
 - practically **8 connections**



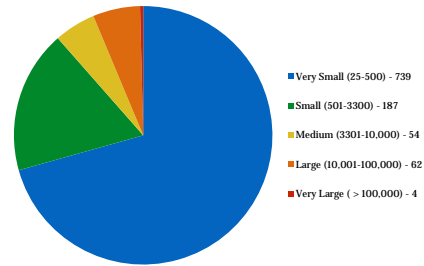
Public Water Systems in Utah

Population Served by Water System Size



83% of Utah's population are served by large & very large water systems

PWS Count by Water System Size



71% of Utah's PWS are very small systems that serve ≤ 500 people



How Do We Do It?

PWS Design & Construction Standards & Minimum Sizing Requirements

- Source Capacity
- Storage Volume
- Distribution System Sizing



PWS – Water Source Capacity

Average Annual Demand



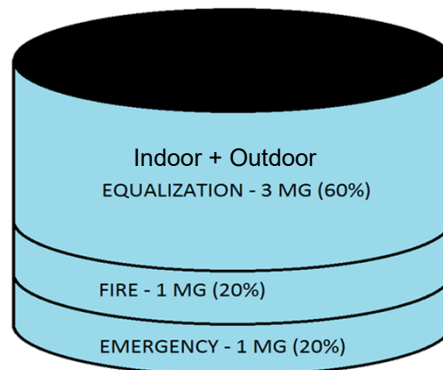
Peak Day Demand



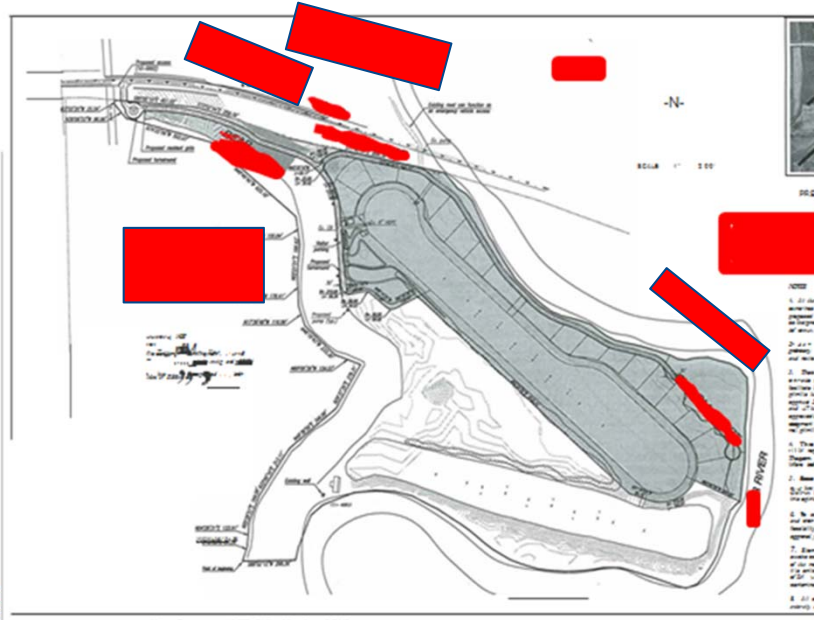
PWS – Water Storage Volume

- Sufficient to meet **one average day demand**
- Volume = **Indoor + Outdoor + Fire Suppression**

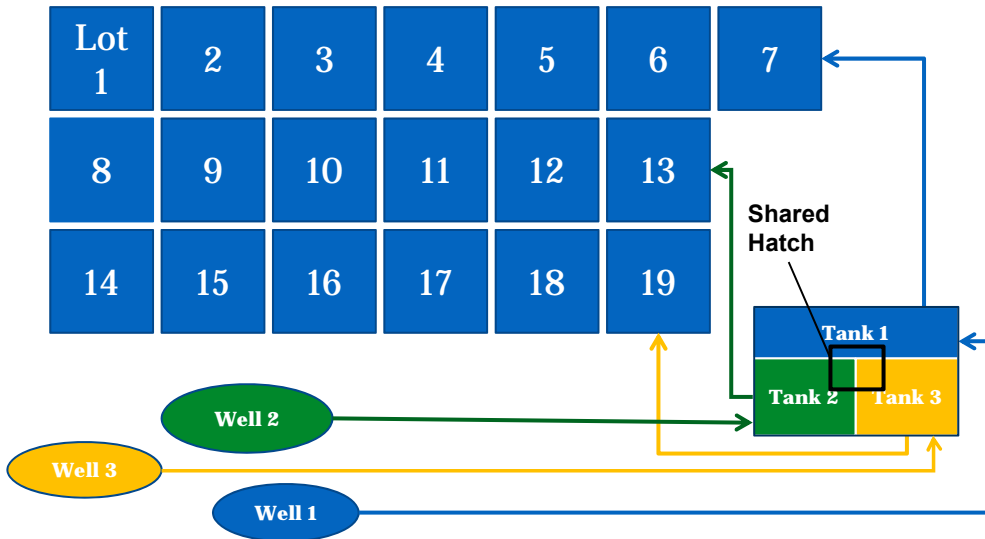
Example:
5-Million-Gallon
Water Storage Tank

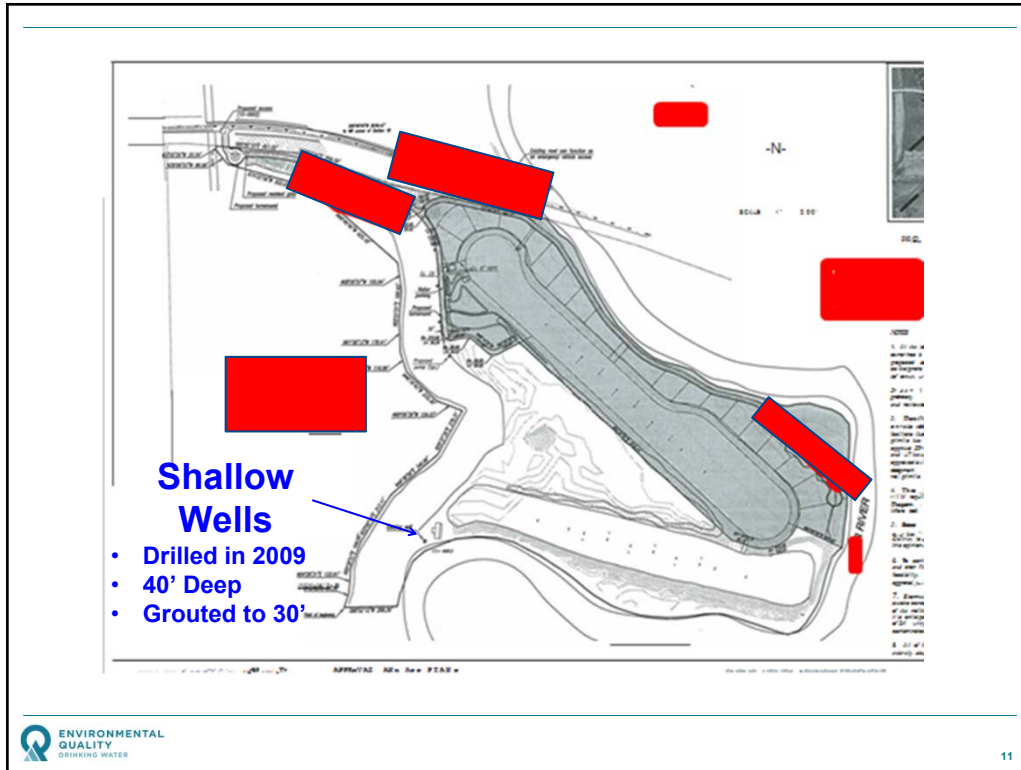


Example: "Platted Subdivision" Approved by County



"Platted Subdivision" Drinking Water Infrastructure





Submetered Properties – UAC R309-100-4(2)

- Examples
 - ✓ Subdivisions & Planned Unit Development (PUDs)
 - ✓ Industrial/Commercial Complex
 - ✓ Mobile Home Park
 - ✓ University or Hospital Campus
 - ✓ Military Facilities



Extensive Water Lines Beyond a Master Meter?

KSL.com News Sports Brandview TV Radio Live Weather 51°

Water main break leaves Millcreek homeowners uncertain who to blame for damages

By Ashton Goodell, KSL TV | Posted Feb 10th, 2018 @ 7:05pm

Developments & PUDs – Issues to Consider

<i>Issues</i>	Existing	New
1. Master meter allowed? Treated as PWS boundary?		
2. Design & construction standards?		
3. Hydraulic modeling & capacity assessment?		
4. Fire hydrant O & M? Fire truck access?		
5. Distribution system O&M, repair, replacement?		
6. Who pays for what?		
7. Drinking water sampling and monitoring?		
8. Cross connection control?		
9. Easement in place?		

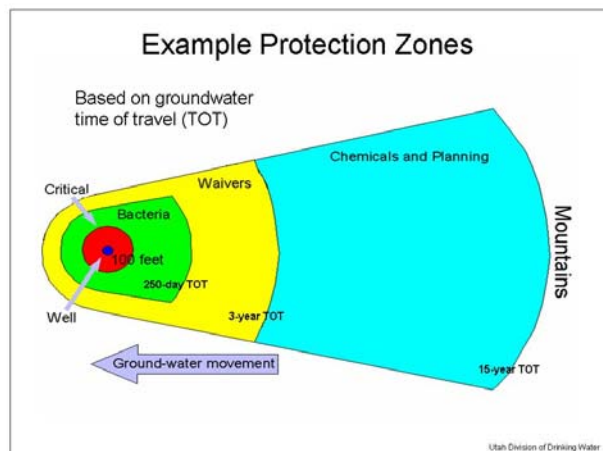
What If a New Development is a Prospective PWS?

- Before constructing the new development:
 - ✓ Design & construction of drinking water infrastructure
 - ✓ Source protection (example: well location)



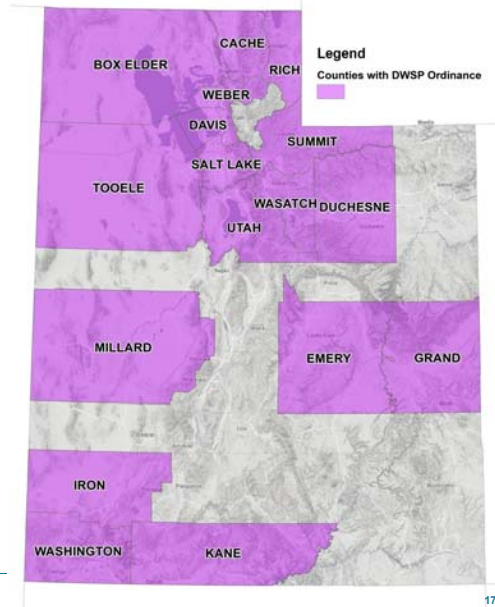
How Utah Implements Source Protection

All public water systems in Utah must complete drinking water source protection plans.



Drinking Water Source Protection Ordinances

- **Required for all 1st and 2nd class counties** by May 3, 2010 (Utah Code 19-4-113)
- **17 counties** have adopted some type of Drinking Water Source Protection ordinance



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What If a New Development is a Prospective PWS?

- Before constructing a new development:
 - ✓ Design & construction of drinking water infrastructure
 - ✓ Source protection (well site)
- After exceeding the PWS thresholds (≥ 8 connections or ≥ 25 people)
 - ✓ Monitoring, sampling and reporting to DDW
 - ✓ Certified water operator

Cape Town, South Africa (2018)

Population 3,776,000



Cape Town drought limits people to 13 gallons of water a day

PBS

Cape Town introduces 'world's first water police' after drought

The South African city has gone three years without significant rainfall and its six dams are running dangerously low.



Cape Town brings in 'water police' amid drought

Cape Town, South Africa (2018)

abc NEWS VIDEO LIVE SHOWS

'Day Zero': How drought, water mismanagement, politics led to crisis

By MORGAN WINSOR Apr 1, 2018, 6:04 AM ET

Share Tweet



The 2018 Residents of Cape Town collect water before sunrise to avoid long queues at a mountain river water collection point in Cape Town, South Africa, March 14, 2018.

Planning for Water

Water Systems

Division of Drinking Water (DDW)
Division of Water Quality (DWRi)
Division of Water Resources (DWRe)



Developers

Planners & Land Use Authority



Division of Drinking Water 21



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