

Citizen Rate Review Committee

Water and Water Resources



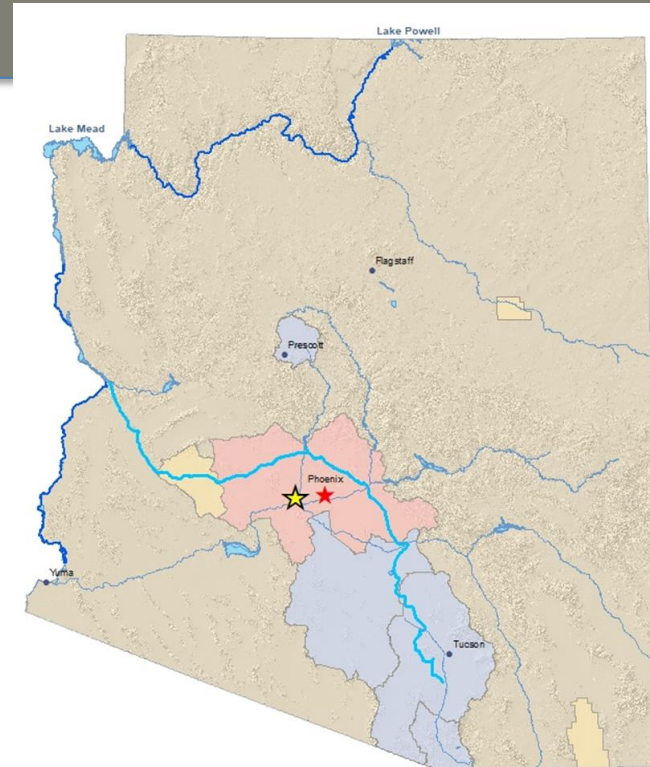


Water Resources

Water Management in Arizona



- ▶ Surface Water Code (1919)
 - “Prior Appropriation”
- ▶ Colorado River Compact (1922)
 - Arizona signs 1944
- ▶ Groundwater Management Code (1980)
 - Established ADWR
 - Established AMAs and INAs
 - Limits groundwater use
 - Established Safe Yield goal by 2025
 - Required new development to prove 100-yr supply

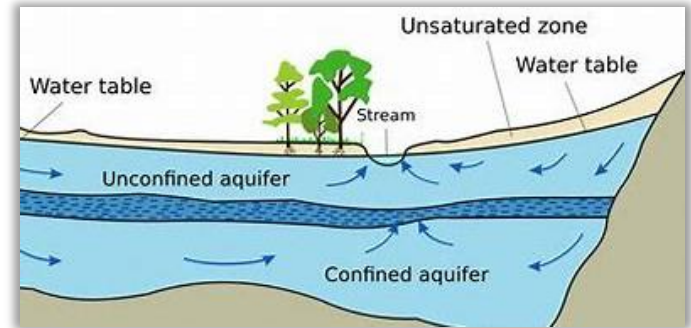


Arizona's Water Supply



Supplies

- ▶ Colorado River 38% (2.8 MAF)
- ▶ Other surface water 18%
 - ▶ Salt, Verde, Gila
- ▶ Groundwater 41%
- ▶ Effluent 3%



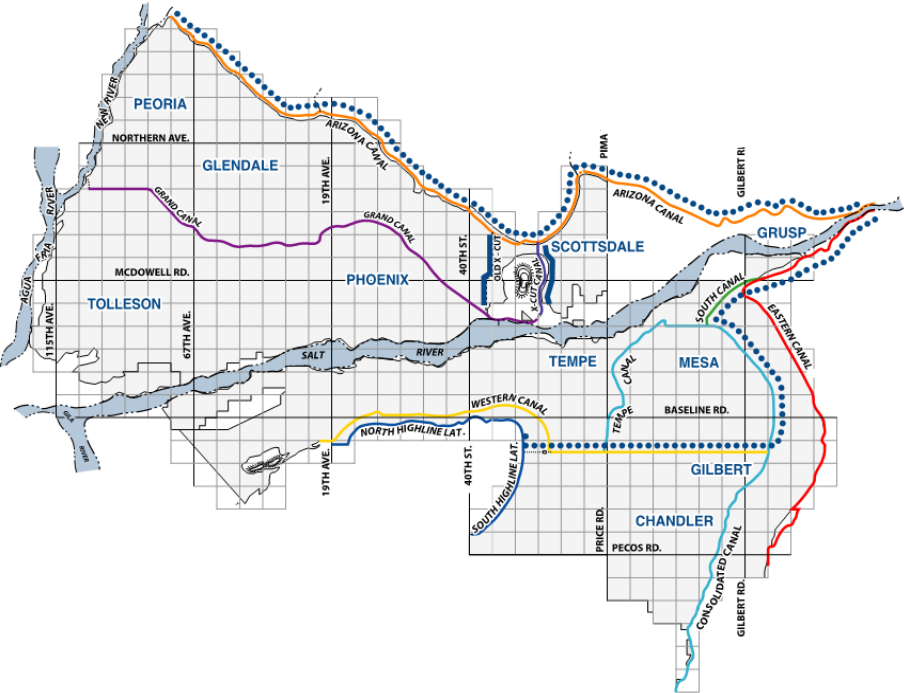
Surface Water Supplies – Phoenix AMA



CAP



SRP



Goodyear – Groundwater Management Code



DESIGNATION OF ASSURED WATER SUPPLY

Renewed every 15 years

- ▶ Physically, Legally, and Continuously Available
- ▶ Financial Capability
- ▶ Water Quality
- ▶ Consistent with the goal of the AMA – Renewable Supplies, i.e. surface water
- ▶ Consistent with the Management Plan:
 - Conservation Requirements
 - Gallons per Capita per Day (GPCD)
 - Lost & Unaccounted (L&U)

L&U %	Annual	3-Yr Avg
2018	7.8	8.25
2019	9.3	8.5
GPCD	Residential	Total
2018	85	167/213
2019	83	

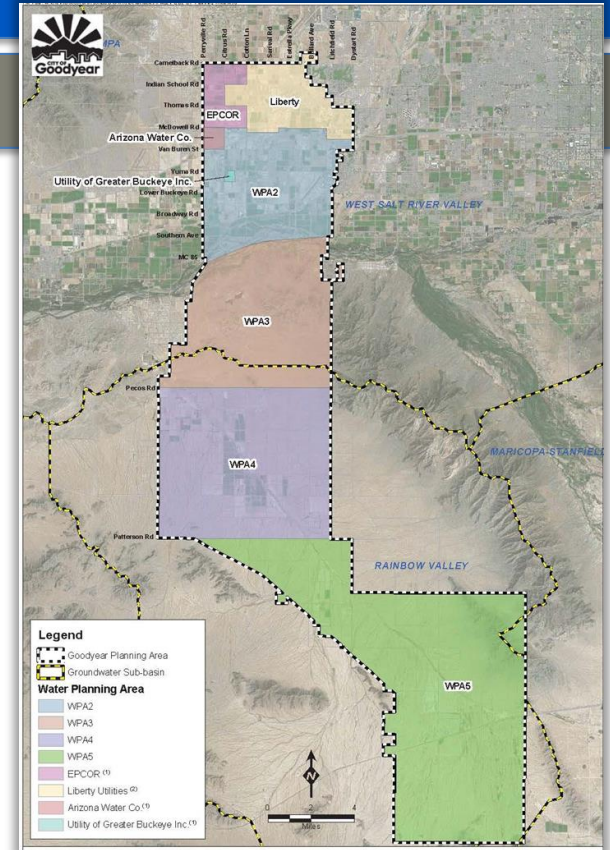
Planning



**Table 2.9 Buildout Water Demand Projections
2016 Integrated Water Master Plan
City of Goodyear**

Water Planning Area	Water Demand Projections (AFY) ⁽¹⁾				
	Entitlement Level				
	1	2	3	4	Total
WPA 2	21,153	1,441	1,088	7,563	31,245
WPA 3	13,312	458	367	2,786	16,924
WPA 4	6,584	25,822	7,566	9,170	49,142
WPA 5	1,609	19,353	5,827	11,106	37,896
Total	42,659	47,074	14,849	30,625	135,208
Entitlement Levels 1 - 2	89,733				
Entitlement Levels 1 - 3	104,582				
Entitlement Levels 1 - 4	135,208				

48,169 AF

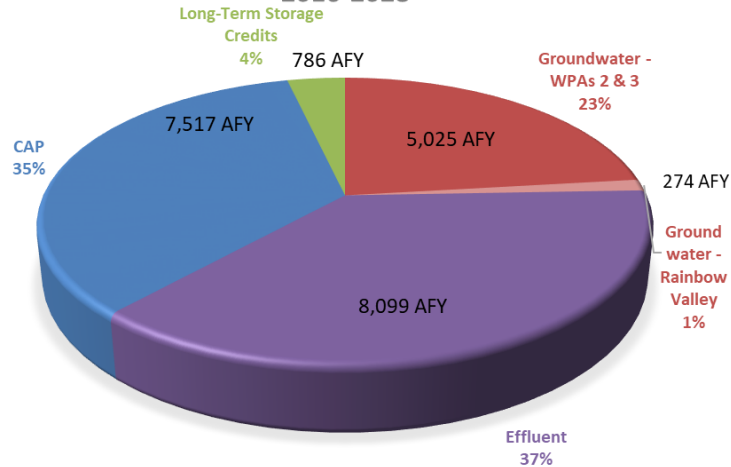


Water Supply

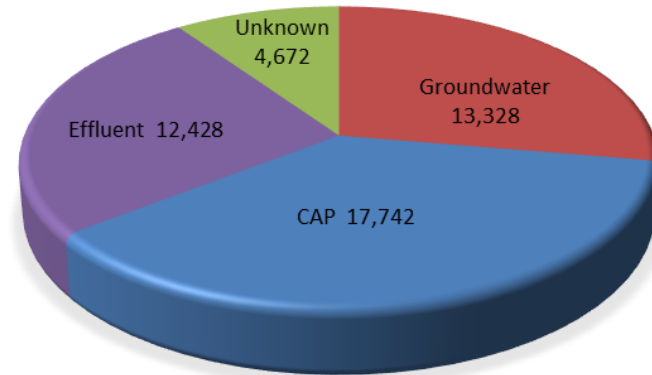


PLANNING AREAS 2 AND 3

WATER PORTFOLIO - 18,622 AFY
DESIGNATION OF ASSURED WATER SUPPLY
2016-2028



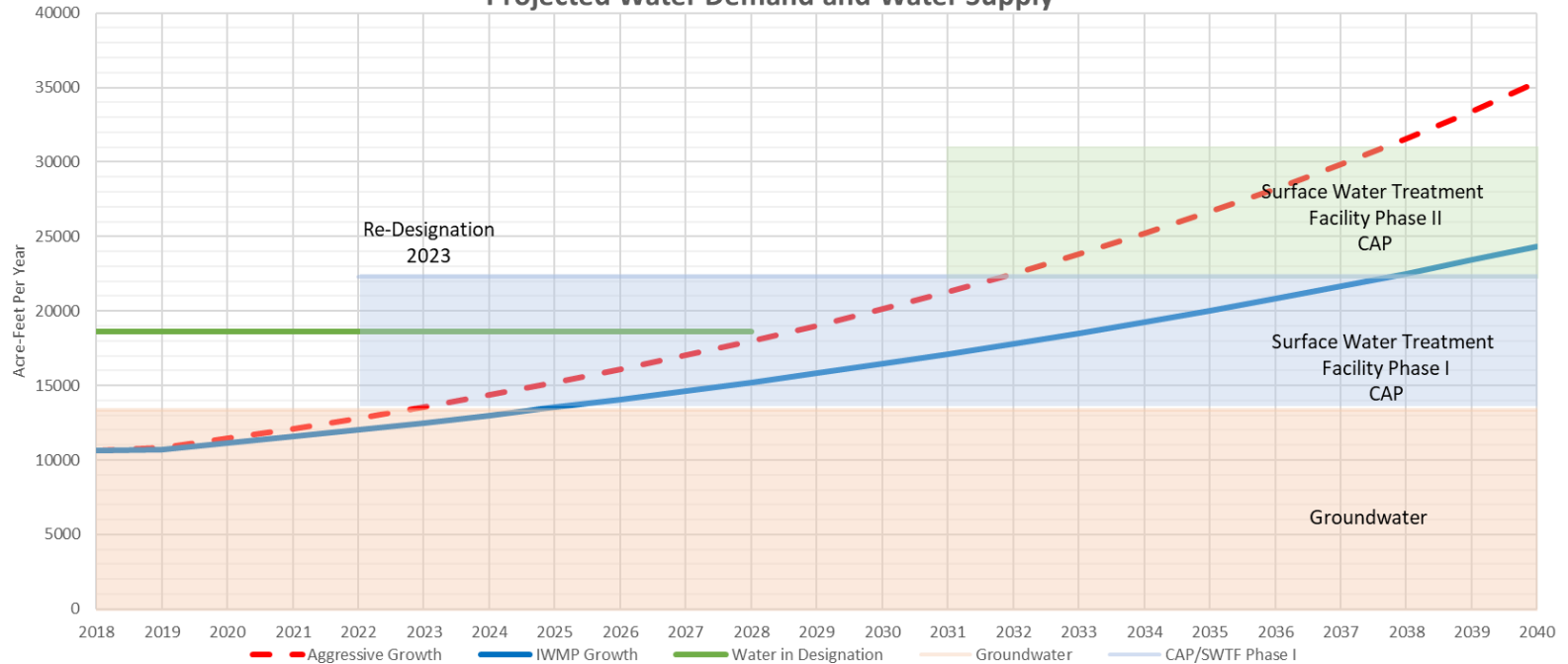
WET WATER PORTFOLIO
BUILDOUT WPAs 2 AND 3 - 48,170 AFY IWMP
ESTIMATE



Projected Demands & Supply



Projected Water Demand and Water Supply



Ensuring a 100-Year Supply



- ▶ Building the surface water treatment facility
 - Partnership with SRP
- ▶ Committed to beneficial use of effluent – Recharge and Recovery
- ▶ IWMP – build out water budget based on land use
- ▶ Manage Demands
 - Established a Water Conservation Committee
 - Revising landscape guidelines
 - Water conservation inverted block structure
 - AMI
 - Hired a Conservation Coordinator
 - Smart Controller Pilot Program
 - Education and Outreach
- ▶ Rainbow Valley Policy

Challenges Ahead



- ▶ Water Supplies for Rainbow Valley
- ▶ Water Quality
- ▶ Costs of Water/Costs of Replenishment
- ▶ Climate Change
- ▶ Shortages on the Colorado River
- ▶ Smart Growth



CAP Costs per AF

	2020	2021	2022	2023	2024	2025	2026
Municipal and Industrial Subcontract	\$ 155	\$ 160	\$ 165	\$ 171	\$ 182	\$ 188	\$ 191
Capital Charges	\$ 56	\$ 53	\$ 50	\$ 69	\$ 70	\$ 68	\$ 66
Total	\$ 211	\$ 213	\$ 215	\$ 240	\$ 252	\$ 256	\$ 257
Recharge	\$ 13	\$ 13	\$ 13	\$ 13	\$ 14	\$ 14	\$ 15
Grand Total	\$ 224	\$ 226	\$ 228	\$ 253	\$ 266	\$ 270	\$ 272

Goodyear Water



TAKE AWAYS

- Water is managed in Arizona
- Assurance of Water Supply Requirement/Cost of Water
- Goodyear's water quality is naturally poor.
- It's difficult to locate a well in Goodyear
- Goodyear is not a part of the Salt River Project's service area
- Goodyear is not close to the CAP canal
- Goodyear is partially within the Buckeye Waterlogged Area
- Goodyear's aquifer is naturally limited due to surrounding mountains



Water

Agenda



SAFETY • RELIABILITY • IMPROVEMENT

- Water Service Area
- Water System Infrastructure
- Critical Projects
- Operational Goals and Strategies
- Capital Goals and Strategies
- Risk and Resilience

Utility Operations



SAFETY • RELIABILITY • IMPROVEMENT

Water: What you pay for

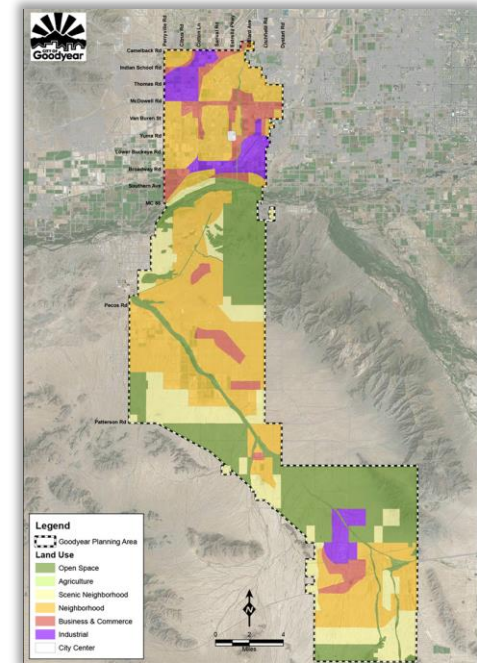
https://www.youtube.com/watch?v=dq9Yg_jlsUc

Water Service Area



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Liberty and EPCOR serve north of the interstate
- ▶ Approximately 20,000 service connections
 - Single-family 18,881
 - Multi-family 40
 - Non-residential 495
- ▶ Serving a population of approximately 60,000
- ▶ Build-out population 718,280



Water Service Area



SAFETY • RELIABILITY • IMPROVEMENT

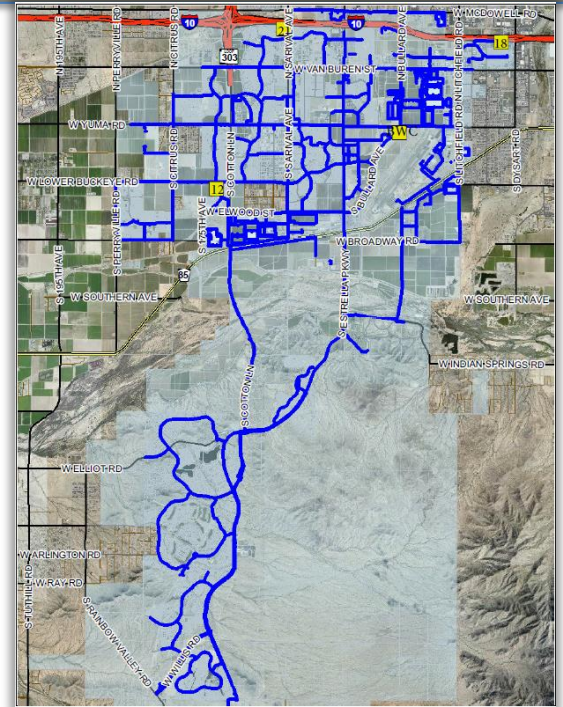
- ▶ Produced 9,524 acre feet in CY 2019
 - Single-family 55.4%
 - Multi-family 1.7%
 - Non-residential 34.4%
 - Lost and unaccounted water 8.5%

Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ 12 Wells
 - 2 are leased from Adaman Irrigation District
- ▶ Four Groundwater Treatment Facilities
 - Bullard Water Campus – Reverse Osmosis
 - Site 12 – Reverse Osmosis and Adsorption
 - Site 18 – Adsorption
 - Site 21 – Adsorption



Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT



Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT



Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT



Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT



Water System Infrastructure



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Current System Capacity 14.1 MGD
 - Average day demand 11.7 MGD (June 2020)
 - 3 new wells under construction

- ▶ Potable Water Storage
 - 11 Reservoirs
 - 16 MG

Critical Projects



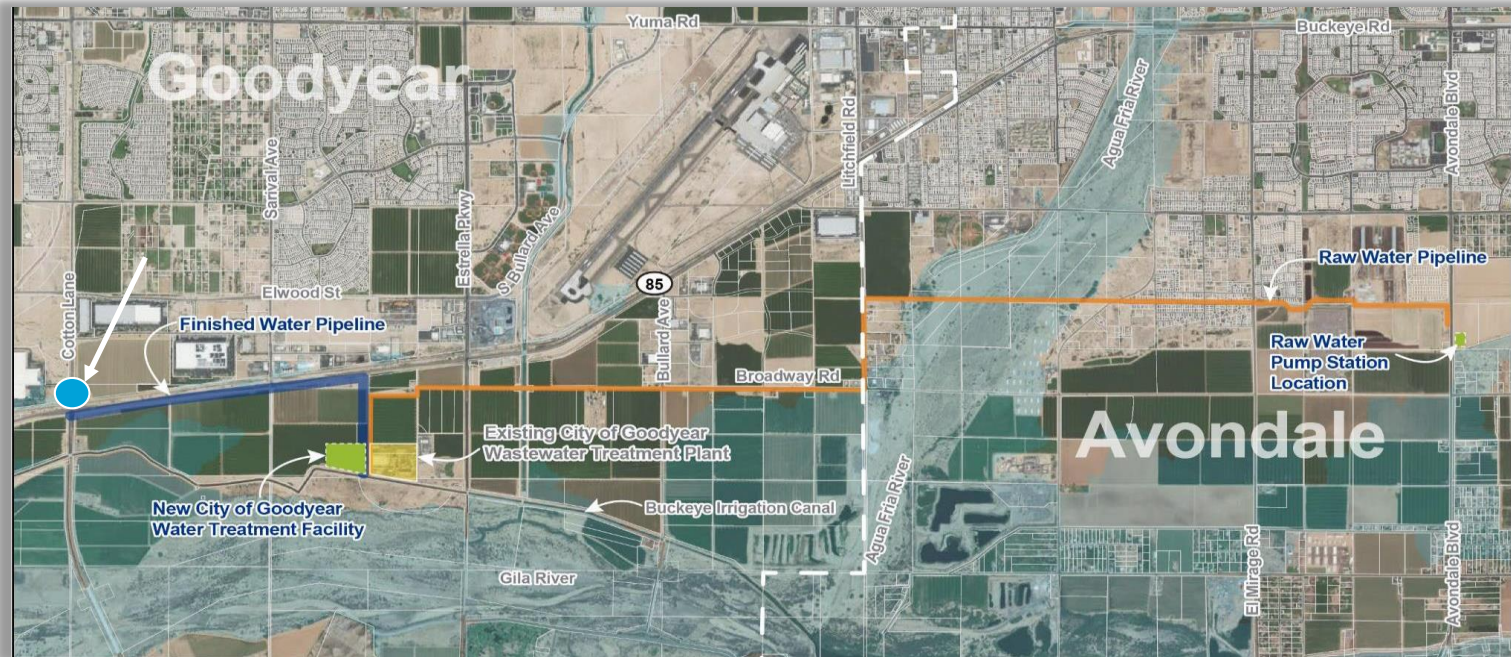
SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Well 24
 - July 2020 completion
 - 3 MGD
- ▶ Adaman Well 3
 - August 2020 completion
 - 1.2 MGD
- ▶ Well 26
 - December 2020 completion
 - 1.2 MGD
- ▶ Surface Water Treatment Facility
 - December 2021 completion
 - 8 MGD
- ▶ Historic Goodyear Waterlines
- ▶ Meter Replacement
- ▶ Nitrate Treatment at Site 18
- ▶ Trihalomethane Mitigation
 - Sites 13 and 23
- ▶ Asset Management

Surface Water Treatment Facility



SAFETY • RELIABILITY • IMPROVEMENT



Surface Water Treatment Facility



SAFETY • RELIABILITY • IMPROVEMENT



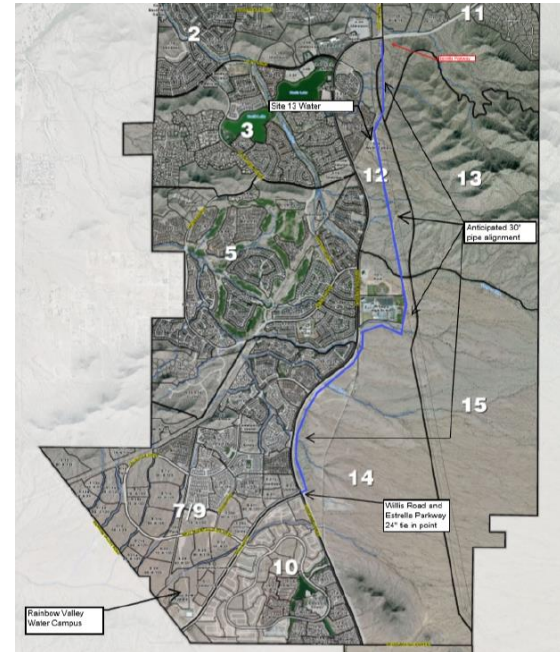
Raw Water Pump Station Facility

Surface Water Treatment Facility



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ 30" waterline
- ▶ Fiber
- ▶ Sites 13 and 23



Operational Goals and Strategies



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Conjunctive operation of surface and groundwater facilities
- ▶ Remote connectivity of all water sites (SCADA)
- ▶ Increase security
- ▶ Regulatory compliance
- ▶ Customer satisfaction
- ▶ Preventative vs. reactive maintenance

Capital Goals and Strategies



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Recognize of 100% of surface water supplies
- ▶ Average demand vs. capacity not to exceed 60%
- ▶ Reduce lost and unaccounted water
- ▶ Maintain fire flows
- ▶ Support development

Risk and Resilience



SAFETY • RELIABILITY • IMPROVEMENT

- ▶ Evaluate vulnerabilities, threats, and consequences
 - Includes:
 - Natural hazards, pandemic, and malevolent acts
 - Resilience of water facility infrastructure
 - Monitoring practices
 - Financial systems
 - Chemical storage and handling
 - Operation and maintenance
- ▶ Update Emergency Response Plan
- ▶ Continuity of Operations Plan (COOP)

Utility Operations



TAKE AWAYS

- Mission
- New system
- Asset management
- Complex operations
- Resiliency

A large, circular sculpture made of metal rings and plastic bottles, viewed from a low angle looking up against a blue sky. The sculpture consists of several concentric metal rings, each covered in a dense layer of small, clear and blue plastic bottles. The bottles are arranged in a way that creates a textured, almost crystalline appearance. The central opening of the sculpture is a large, dark blue circle. The overall composition is symmetrical and radial.

Questions