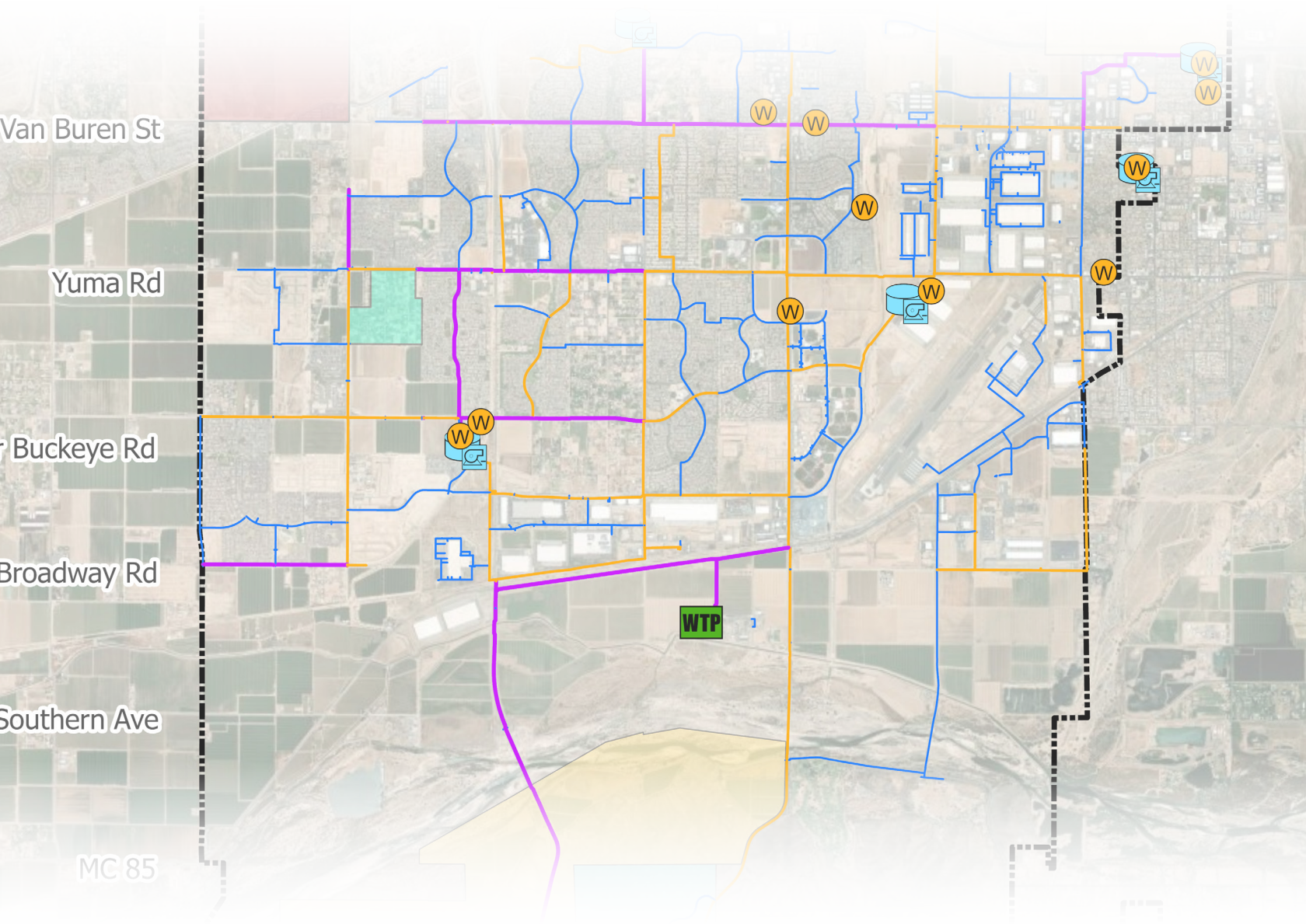


2024 Integrated Water Master Plan

DRAFT / October 2024



Goodyear's Integrated Water Master Plan is Driven by Rapid Growth, Water Resource Changes, and Rainbow Valley Strategies

The Purpose of Goodyear's Integrated Water Master Plan is to:

- ✓ Plan water resources for future development.
- ✓ Submit a modification to the City's Designation of Assured Water Supply.
- ✓ Establish a strategy for Rainbow Valley water supply and infrastructure.
- ✓ Plan water, wastewater, and reclaimed infrastructure.

This Executive Summary presents an overview of the 2024 Integrated Water Master Plan containing the following information:

- Updates to the Modified Designation of Assured Water Supply (MDAWS) application and groundwater availability in Rainbow Valley.
- Updates to the water, wastewater, reclaimed water flow projections.
- Water resource evaluations and strategies.
- Capital Improvement Plans for water, wastewater, and reclaimed water infrastructure.

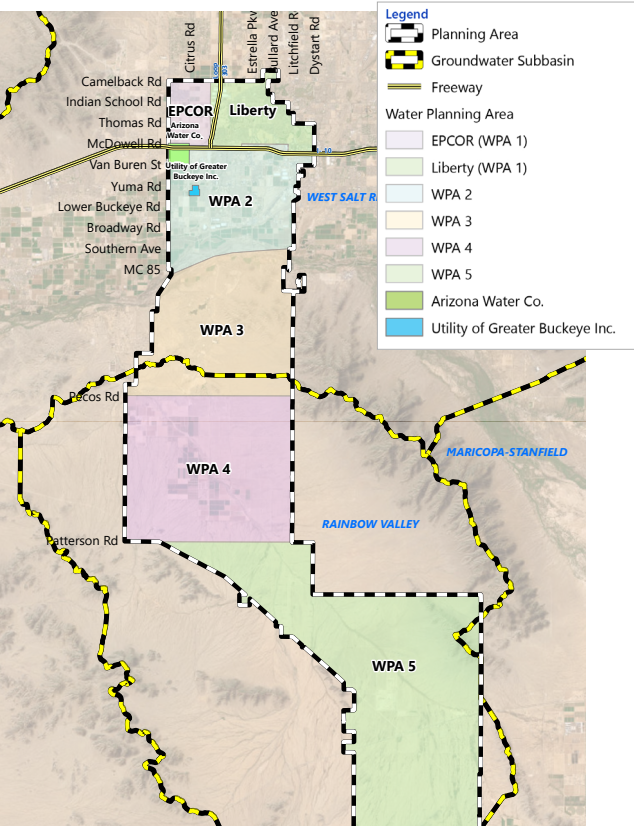
The MDAWS Application Process Identified Water Resources and Strategies to Quantify the Water Resources Goodyear needs for Continued Growth

The MDAWS application incorporated the following:

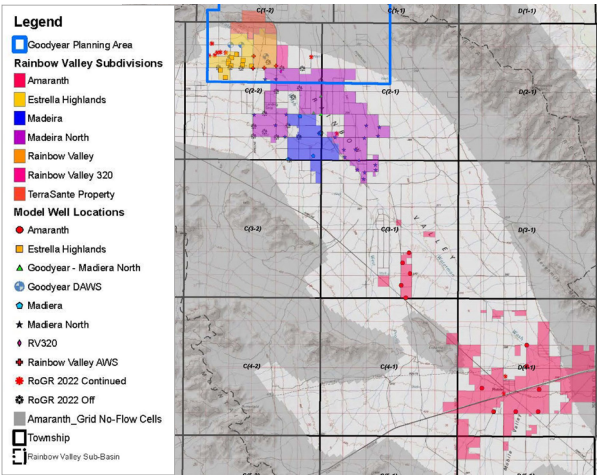
- Groundwater model that identified groundwater in Rainbow Valley for Goodyear.
- Central Arizona Project water resource delivered to Goodyear's surface water plant.
- West Salt River Valley groundwater allocation remains unchanged.

The following challenges are addressed in the MDAWS application:

- Groundwater would be taken from two groundwater basins operating under different rules.
- A legal mechanism does not exist to transfer groundwater rights held by developers to the City so the City can serve the developments as a designated provider.



The plan includes lands in WPA 2, WPA 3, and the northern portion of WPA 4 in the City's planning area that are expected to develop through 2040. The EPCOR portion of WPA 1 is included in the sewer plan. The Liberty service area in WPA 1 is planned by Liberty Utilities. WPA 5 may be included in future plans and could be served by a private utility.

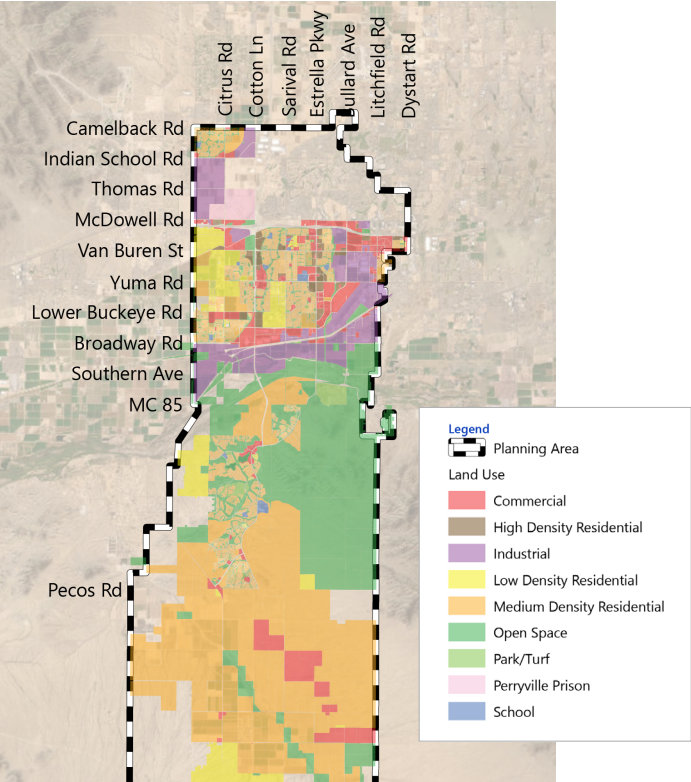


Groundwater modeling in the Rainbow Valley subbasin demonstrated the volume of groundwater available to the City for the MDAWS

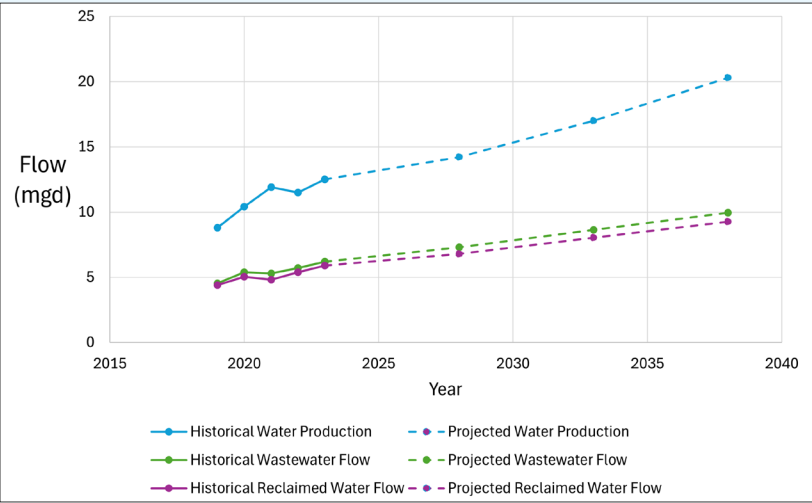
Flow Projections Predict the Timing and Location of Growth

Flow projections were established for Water Planning Areas 2 – 4 for growth through 2038:

- Aligns with the Goodyear General Plan 2035 population projections and land use.
- Uses customer billing data to represent current conservation levels and water use patterns.
- Includes planned developments in Rainbow Valley.
- Correlates water use to wastewater flows to reclaimed water availability.



Flow Projections were developed based on the Goodyear General Plan 2035 Land Use and Population Projections

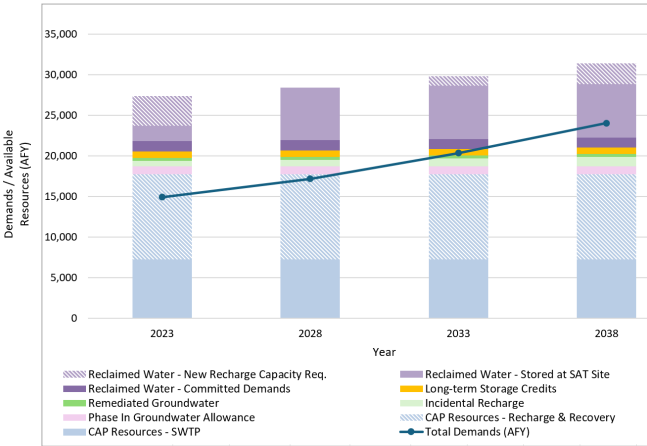
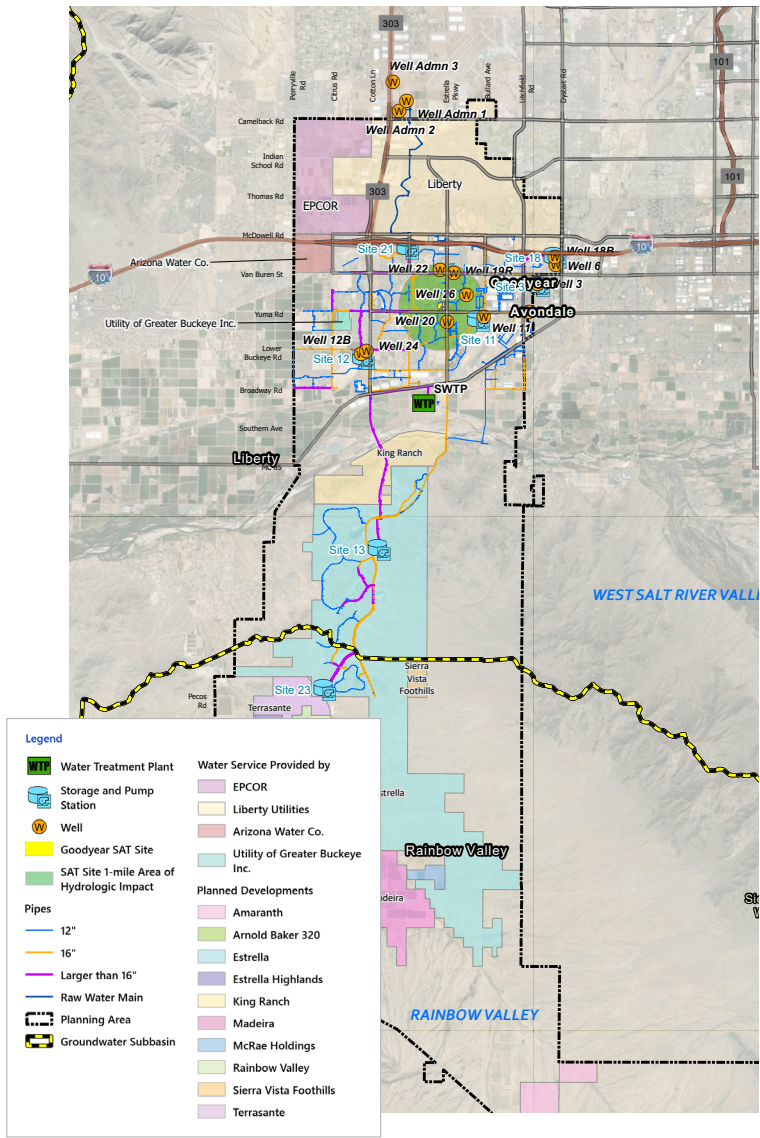


Projected Water Production, Wastewater, and Reclaimed Water Flow defines growth for infrastructure planning

Goodyear Water, Wastewater, and Reclaimed Water Flow Projections

	Historical Flows (mgd)					Projected Flows (mgd)		
	2019	2020	2021	2022	2023	2028	2033	2038
Water	8.8	10.4	11.9	11.5	12.5	14.2	17	20.3
Wastewater	4.5	5.4	5.3	5.7	6.2	7.3	8.6	10.0
Reclaimed Water	4.4	5.0	4.8	5.4	5.9	6.8	8.0	9.3

Water Resources

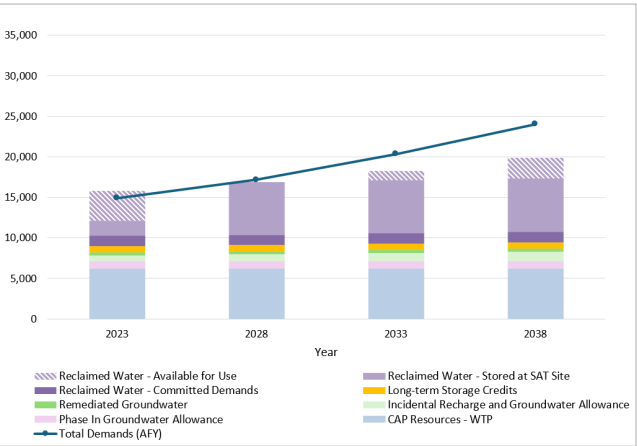


Supplies exceed projected water demands for normal demand conditions

Water resource recommendations include:

- Install a transmission main to fully utilize the Soil Acquirer Transfer (SAT) site recharge capacity.
- Structure development agreements so that the City owns the reclaimed water.
- Construct additional recharge capacity beyond 2033 to beneficially use reclaimed water.
- Purchase and recharge the full Central Arizona Project (CAP) water allocation until this allocation is needed for customers.
- Expand the surface water treatment plant prior to 2030 to fully utilize the City's CAP allocation.
- Recharge and recover CAP water within the area of hydrologic impact so that recovered CAP water is not counted against the City's groundwater physical availability.
- Seek opportunities to bank additional long-term storage credits to protect the City during times of drought when groundwater pumping exemptions are not available.
- Work with Arizona Division of Water Resources (ADWR) to find ways to transfer groundwater physical availability determinations held by a developer to the City's water resource portfolio.
- Develop quantitative water conservation targets for the City's water use restriction stages.
- Engage with Salt River Project (SRP) in discussions to obtain Bartlet Dam surface water.
- Pursue opportunities to purchase/lease water that flows in the Buckeye irrigation canal.

Water resources are planned for the land areas that are expected to develop in Goodyear



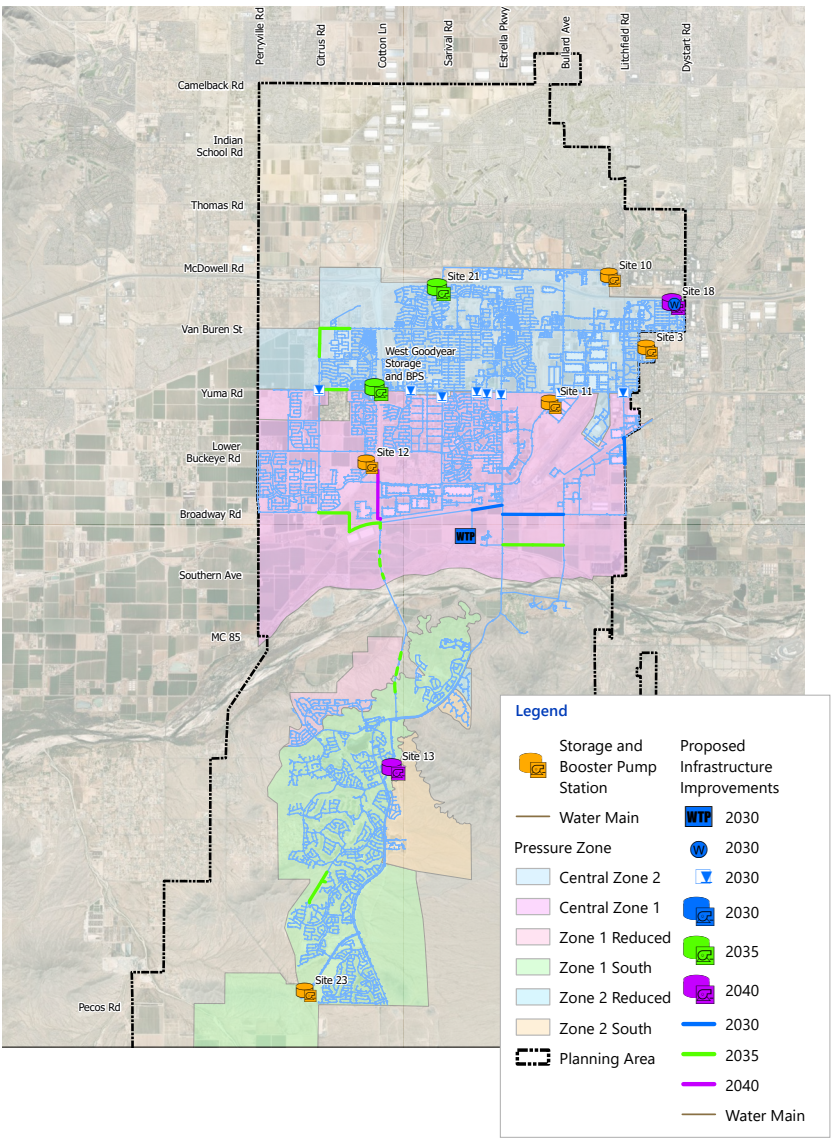
Additional water supplies are needed if CAP water supplies are cut by an extreme 65%

Water Infrastructure Plan

Water infrastructure plan recommendations include:

- Expand the Surface Water Treatment Plant to 16 mgd by 2030.
- Construct a new 2 MG storage tank at Site 18 by 2030.
- Install additional groundwater treatment capacity at Site 21 by 2030 to treat the full production capacity of the Adaman wells.
- Re-drill Well 18B by 2030.
- Construct a West Goodyear well, 2 MG storage tank, and booster station at Yuma Rd. and Cotton Lane to provide additional water supply, storage, and pumping capacity by 2035.
- Install PRV stations along the Yuma Rd. alignment to split the Central pressure zone to help manage pressures.
- Construct additional transmission mains in Central Goodyear to improve the ability to move water.
- Remove bottlenecks on the Cotton Lane transmission main.

Water Infrastructure Capital Project Locations



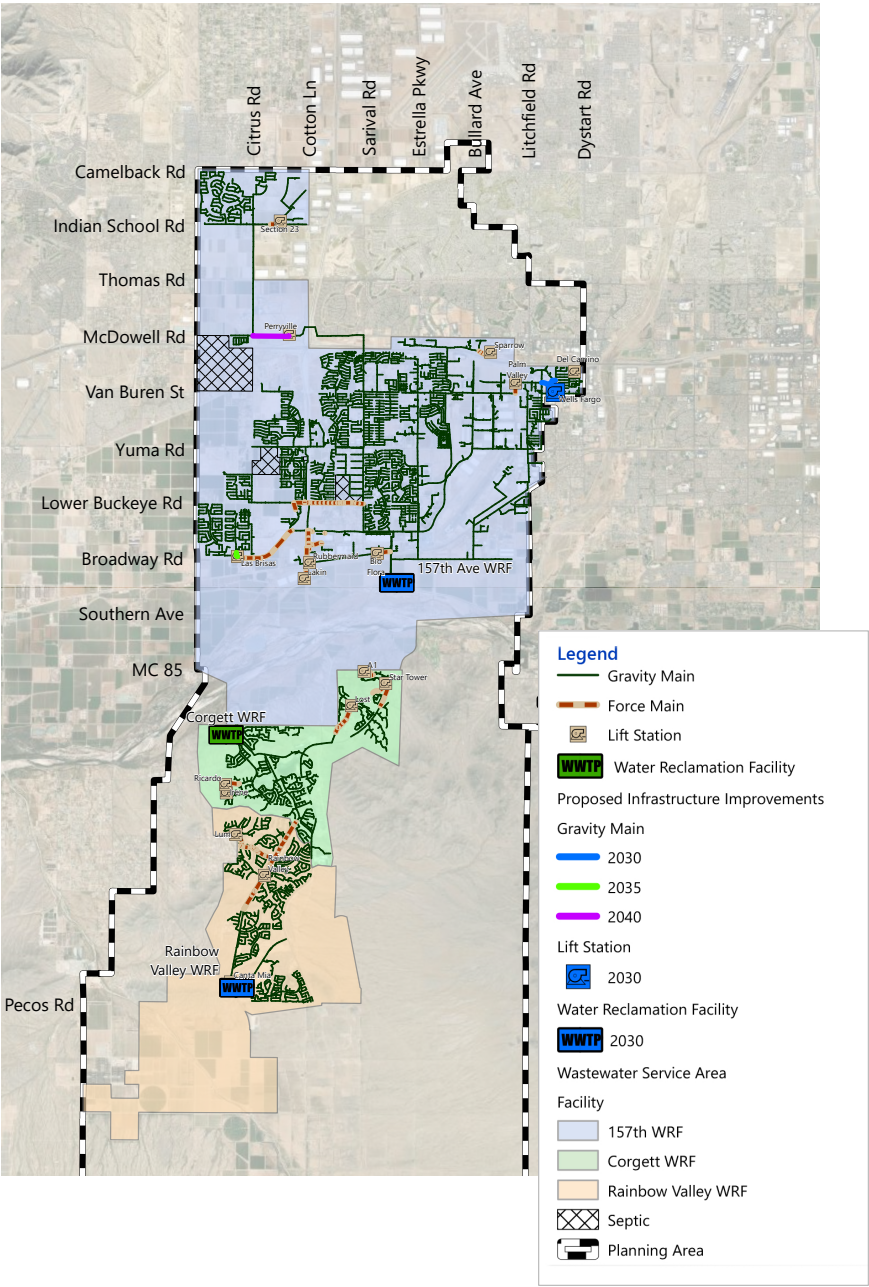
Water Infrastructure CIP Cost Summary

Facility Type	Planning Period Project Costs (\$)			Total Cost (\$)
	2030 (\$)	2035 (\$)	2040 (\$)	
Altitude Valve	0	496,000	0	496,000
PRV	0	7,064,000	0	7,064,000
Pump Station	3,500,000	8,827,000	5,467,000	17,794,000
Storage Tank	9,067,000	9,215,000	0	18,282,000
Water Main	10,397,000	28,246,000	5,727,000	44,370,000
Water Supply Purchase	0	17,000,000	0	17,000,000
Well + Groundwater Treatment	13,407,000	26,659,000	0	40,066,000
Surface Water Treatment Expansion	85,570,000	0	0	85,570,000
Total	121,941,000	97,507,000	11,194,000	230,642,000

Wastewater Infrastructure Plan

Wastewater infrastructure plan recommendations include:

- Upsize the gravity sewer downstream of the Wells Fargo lift station to handle increased flows.
- Expand the 157th Avenue Water Reclamation Facility to 9.5 mgd by 2030, then 12 mgd by 2040.
- Construct a 12-inch gravity sewer upstream from the Las Brisas lift station by 2035.
- Construct a parallel 18-inch gravity main along McDowell Road from Citrus Road to the Perryville prison by 2040.
- Expand the Rainbow Valley WRF to a capacity of 4 mgd by 2040.



Wastewater Infrastructure Capital Project Locations

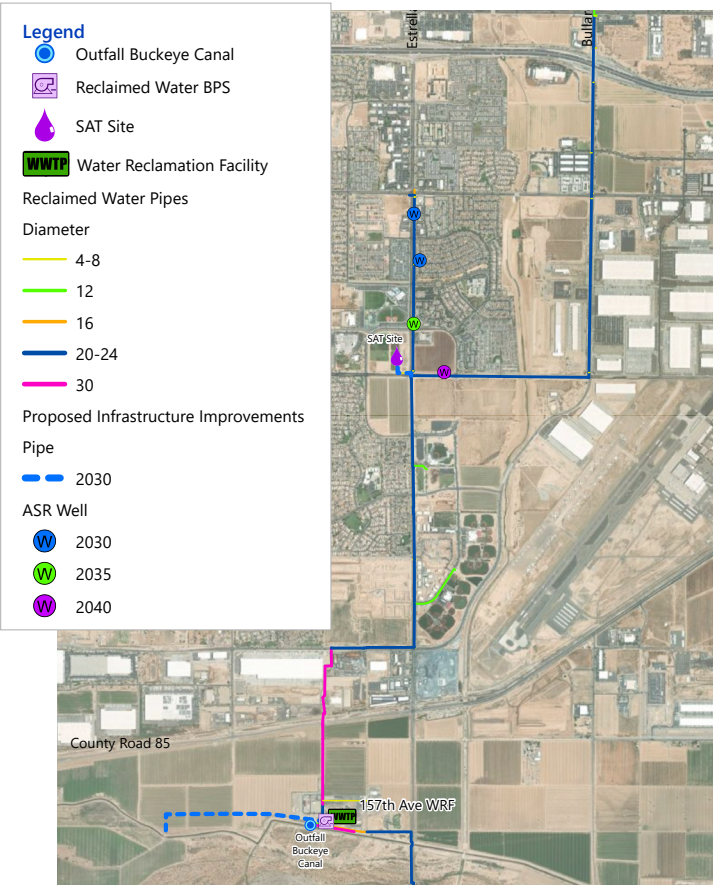
Wastewater Infrastructure CIP Cost Summary

Facility Type	Planning Period Project Costs (\$)			Total Cost (\$)
	2030 (\$)	2035 (\$)	2040 (\$)	
Gravity and Pressure Pipelines	8,224,000	250,000	2,842,000	11,316,000
Lift Station	6,851,000	0	0	6,851,000
WRF	256,000,000	0	83,000,000	339,000,000
Sewer Service Relocation	6,000,000	0	0	6,000,000
Total	277,075,000	250,000	85,842,000	363,167,000

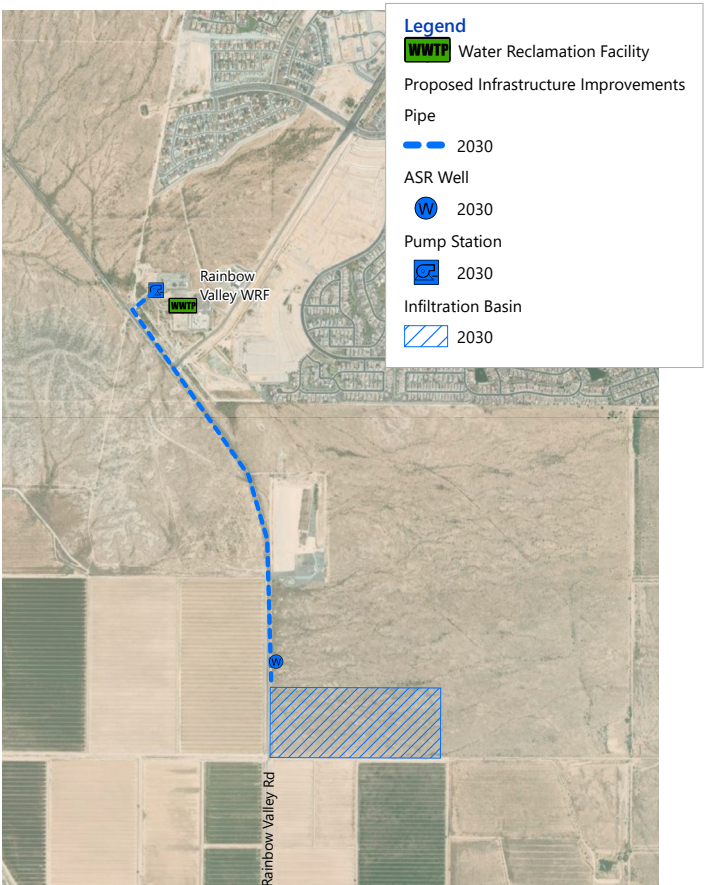
Reclaimed Water Infrastructure Plan

Reclaimed water infrastructure recommendations include:

- Expand the pipe capacity to the SAT site to 16 inches to fully use the capacity of the site by 2030.
- Construct two ASR wells in Central Goodyear to recharge reclaimed water from the 157th Avenue WRF by 2030.
- Construct the first phase (5 acres) of a spreading basin in Rainbow Valley by 2030, along with a pump station and reclaimed water line to recharge reclaimed water from the Rainbow Valley WRF.
- Construct the third ASR well in Central Goodyear by 2035.
- Construct the fourth ASR well in Central Goodyear by 2040.
- Expand the Rainbow Valley spreading basin to 30 acres and expand the reclaimed water pump station serving the spreading basin to 3 mgd.



Central Goodyear Reclaimed Water Infrastructure Project Locations



Rainbow Valley Reclaimed Water Infrastructure Project Locations

Reclaimed Water CIP Cost Summary

Facility Type	Planning Period Project Costs (\$)			Total Cost (\$)
	2030 (\$)	2035 (\$)	2040 (\$)	
Pipeline	17,356,000	0	0	17,356,000
Pump Station	3,361,000	0	6,497,000	9,858,000
ASR Wells	20,718,000	10,359,000	10,359,000	41,436,000
Spreading Basin	559,000	1,997,000	2,396,000	4,952,000
Total	41,994,000	12,356,000	19,252,000	73,602,000

We express appreciation to the following teams who have contributed to the success of this project through their time, insights, and expertise.

Water Services, Geographic Information Systems, Engineering, Finance,
Development Services

