CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATER MASTER PLAN

APRIL 2024

WATERWORKS ENGINEERS

Michael W. Jermaine
Registered Professional Engineer (Civil)
CERTIFICATE NO.
65228
MICHAEL W.
JERMAINE
Date Signed 04/09/24
ARIZONA U.S.A

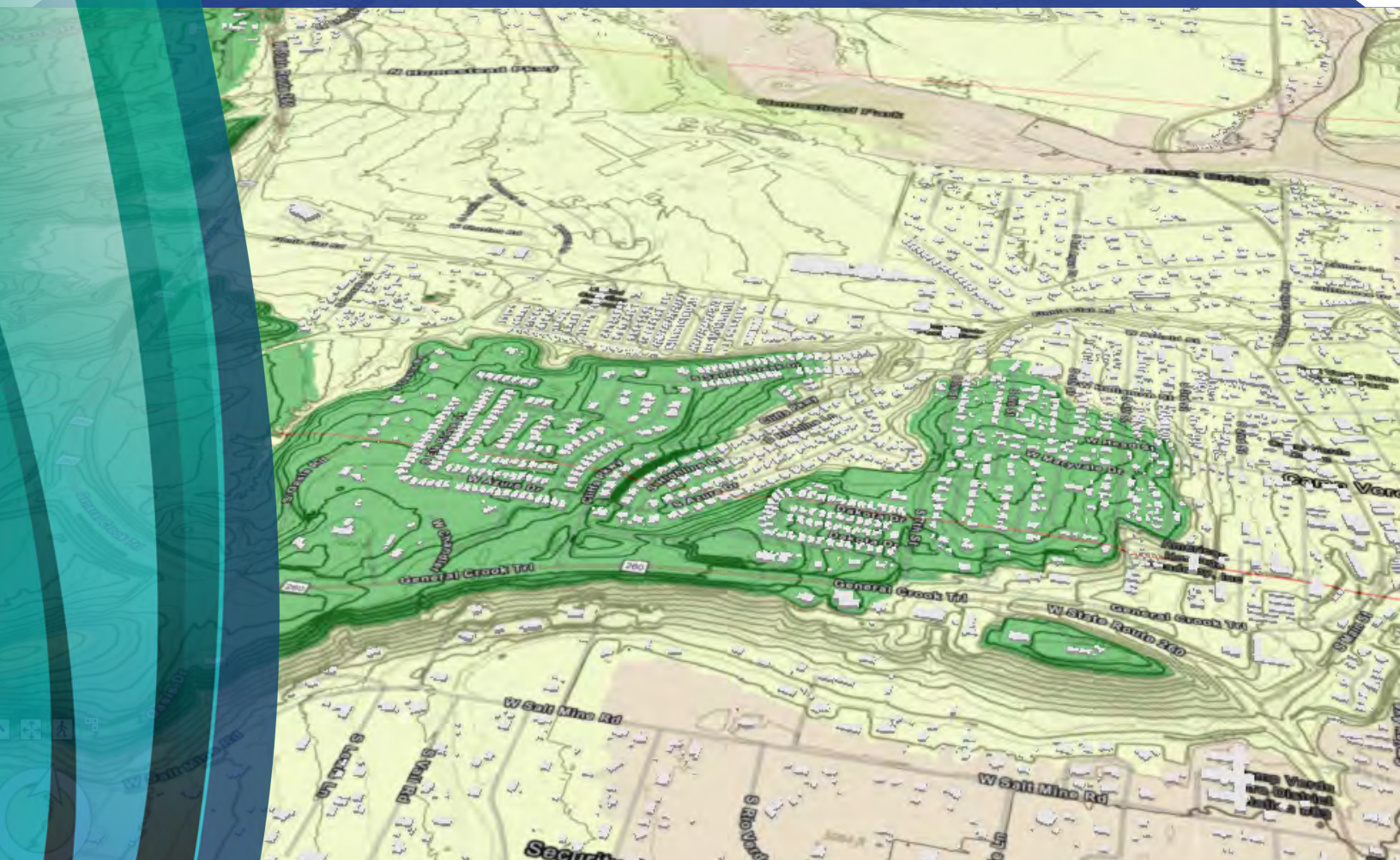


Table of Contents

List of Tables

List of Figures

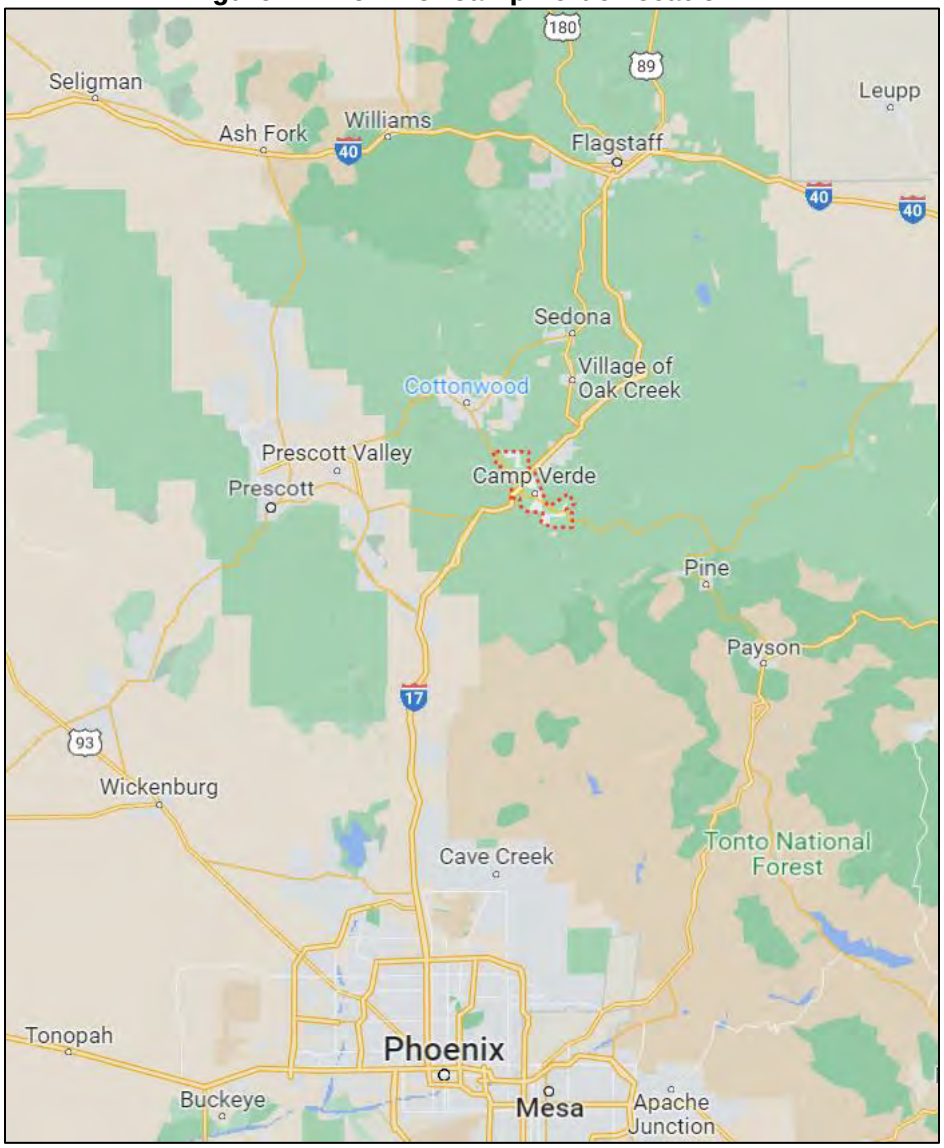
Appendices

SECTION 1. Introduction

1.1 Background

The Town of Camp Verde (Town or TOCV) is located in the Verde Valley and straddles eighteen miles of the Verde River, in Yavapai County, Arizona. The Town was settled in 1865 and has a population of 12,147 people[1]. Elevation ranges from 3,000 to 3,600 feet above sea level. Nearby cities are Prescott to the West, Cottonwood to the Northwest and Sedona to the Northeast. The Town of Camp Verde encompasses approximately 42.6 square miles. TOCV and surrounding communities in central Arizona are shown on Figure 1-1.

Figure 1-1 Town of Camp Verde Location[2]



[1] 2020 US Census, [2]Google

SECTION 2. Existing Water Infrastructure

2.1 System Overview

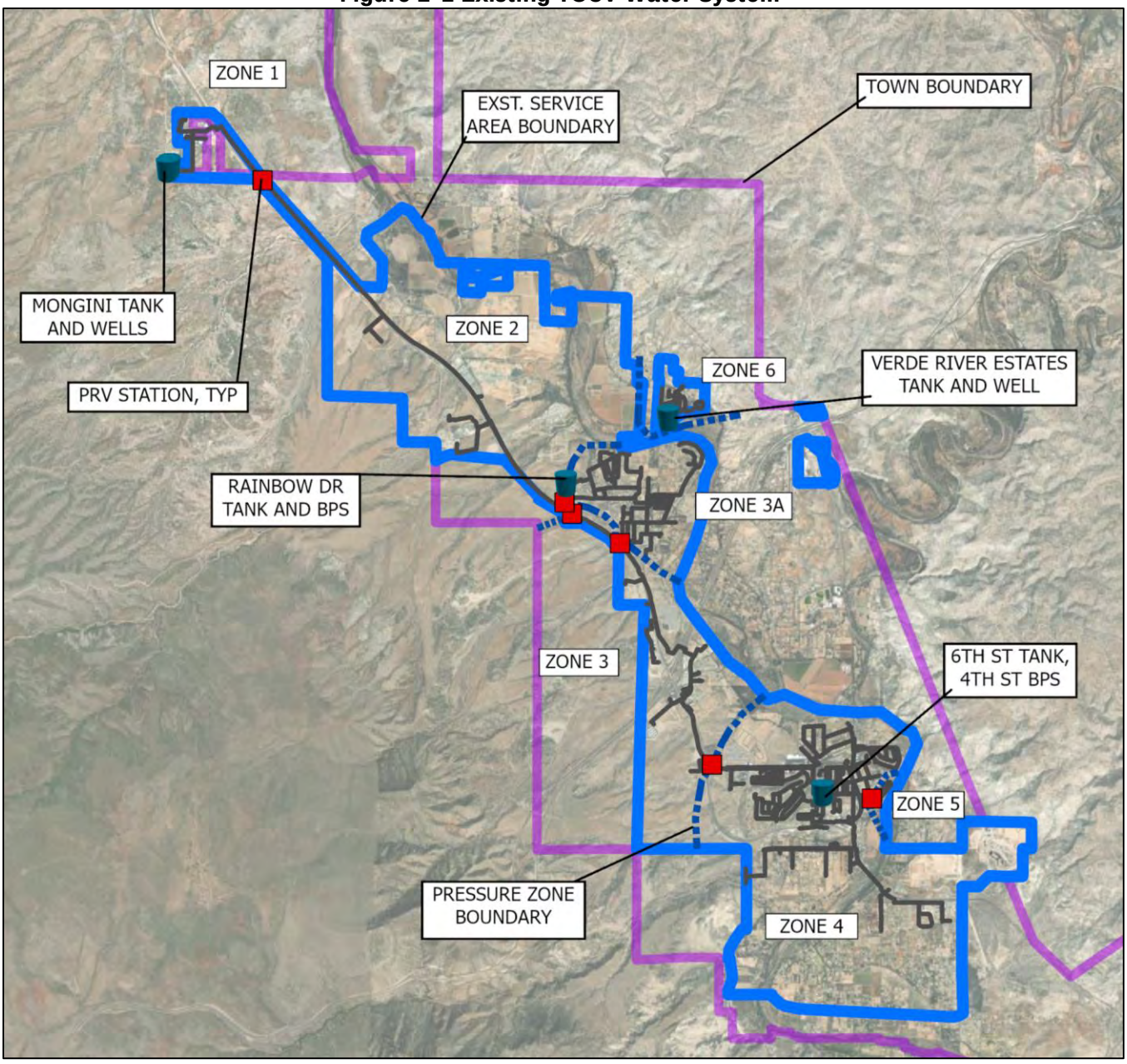
The TOCV water system supplies groundwater from three (3) active wells to customers. A single, 12-inch water main extends approximately 9 miles from the northern wellsite location to the downtown area south of Interstate 17. Water is delivered to customers via 60 miles of distribution mains, ranging in size from two to twelve inches in diameter. The distribution system covers an elevation range of approximately 500 feet, with the highest elevation (3,557' above sea level) in the northern part of the system. In addition to the three active wells, major water system components include six water storage tanks with a total volume of 4.2 MG, two booster pump stations (BPS), three hydropneumatic tanks, and six pressure reducing stations. The existing facilities are summarized in Table 2-1.

Table 2-1 Existing Facilities

Facility Name	Well Capacity, gpm	Treatment Facility	Tank Size, MG	Booster Pump Station Flow, gpm	Hydropneumatic Tank	Backup Generator
Mongini	560 575	Arsenic	1.3 2.7	None	None	Existing
Verde River Estates	65	Arsenic	0.01 (Raw) 0.01	20	Yes	None
Rainbow Drive	None	None	0.211	1,625	Yes	None
Town Site	None	None	0.719	1,055	Yes	None
High View (In Process)	***275***	***None***	***TBD***	***TBD***	***Yes***	***Yes***

Most customers in the TOCV system are supplied by gravity from the Mongini Tanks during typical conditions. The single 12-inch water main along Hwy 260 connects the Mongini Tanks to the vast majority of the TOCV customers to the south. The single main means there is limited looping and redundancy in most of the system and limited fire flow available to customers only a short distance away from Hwy 260. Fire flow is limited to most customers because the high pressures created by the elevation change from the Mongini Tanks to customers are overcome by the head loss due to friction during high flows. However, there is some local redundancy in the Rainbow Drive and downtown areas due to the use of the Rainbow Drive and Town Site storage and pumping systems. The existing TOCV water system layout is shown in Figure 2-1. A more detailed figure is provided in the Appendix.

Figure 2-1 Existing TOCV Water System



There are currently discussions underway for the future installation of a storage tank and booster pump station near the Verde Commercial Development, which is along HWY 260 just south of I-17. This facility will provide fire flow and additional redundancy to Zone 3, which includes the Verde Commercial Development, and Zone 4, which includes the downtown area. It is anticipated the storage tank will store up to 1 million gallons and the booster pump station will be capable of providing up to 2,000 gpm of fire flow.

2.2 Groundwater Wells

The TOCV water system includes three active wells, and one currently planned well. Two existing wells, Mongini 2 and Mongini 3, supply the majority of the system with water and are both located near the Mongini Tanks. These wells typically operate in a duty/standby configuration to avoid impacting the groundwater level. Due to this limitation, the capacities of these two wells are not additive when evaluating the available water supply for the distribution system.

There is also an existing well in the Verde River Estates (VRE) area, or Zone 6. This well is not hydraulically connected to the larger portion of the TOCV distribution system.

A well was drilled for the High View development in February 2022 and is currently being tested and will be equipped in the near future. This well will supply existing demands and the new High View development, pending well testing results.

The active and in process wells are listed in Table 2-2.

Table 2-2 Active Wells

Well Name	ADWR ID No.	Drill Date	Casing Depth, ft	Casing Diameter, in	Well Pump Yield, gpm
Mongini 2	55-573009	May -1999	563	12	560
Mongini 3	55-210369	Oct-2006	699	14	575
Verde River Estates	55-605031	May-1961	52	6	65
High View (In Process)	55-927542	Feb-2022	482	8	275

Some of the inactive wells are listed in Table 2-3. It is understood that the inactive wells are in various states of disrepair and are unlikely to be rehabilitated for use in the future.

Table 2-3 Inactive Wells

Well Name	ADWR ID No.	Drill Date	Casing Depth, ft	Casing Diameter, in	Pump Yield, gpm
Afton Lane 1	55-605026	Jan-1974	33	12	120
Afton Lane 2	55-519944	Jan-1988	42	8	120
Afton Lane 3	55-543661	May-1994	34	10	90
Fort River Caves	55-605032	May-1987	99	6	90
Mongini 1	55-534876	Jan-1993	500	8	274
Park Verde Estates	55-605029	May-1971	45	8	80
Horseshoe Bend	55-605028	Aug-1987	208	6	150
Security Acres	55-605027	Aug-1987	208	6	120

2.3 Groundwater Quality

The TOCV publishes annual Water Quality Reports that are available on the Town's website. The Water Quality Report contains the most recent results for regulated testing. The frequency of sample collection is determined by state and federal regulations and based on many different parameters such as type of water source, number of people served, as well as past and current analyses of the contaminant to be tested. Sample frequency can range between one month and three years. The Town is also required to test for unregulated contaminants. The data generated by these tests is used by the EPA to evaluate and prioritize contaminants on the Drinking Water Contaminant Candidate List. Regulated and unregulated contaminants will appear in this report if they are found during testing. Homes are also sampled and tested for lead. The primary drinking water standards tested are shown in Table 2-4

Table 2-4 Primary Drinking Water Standards

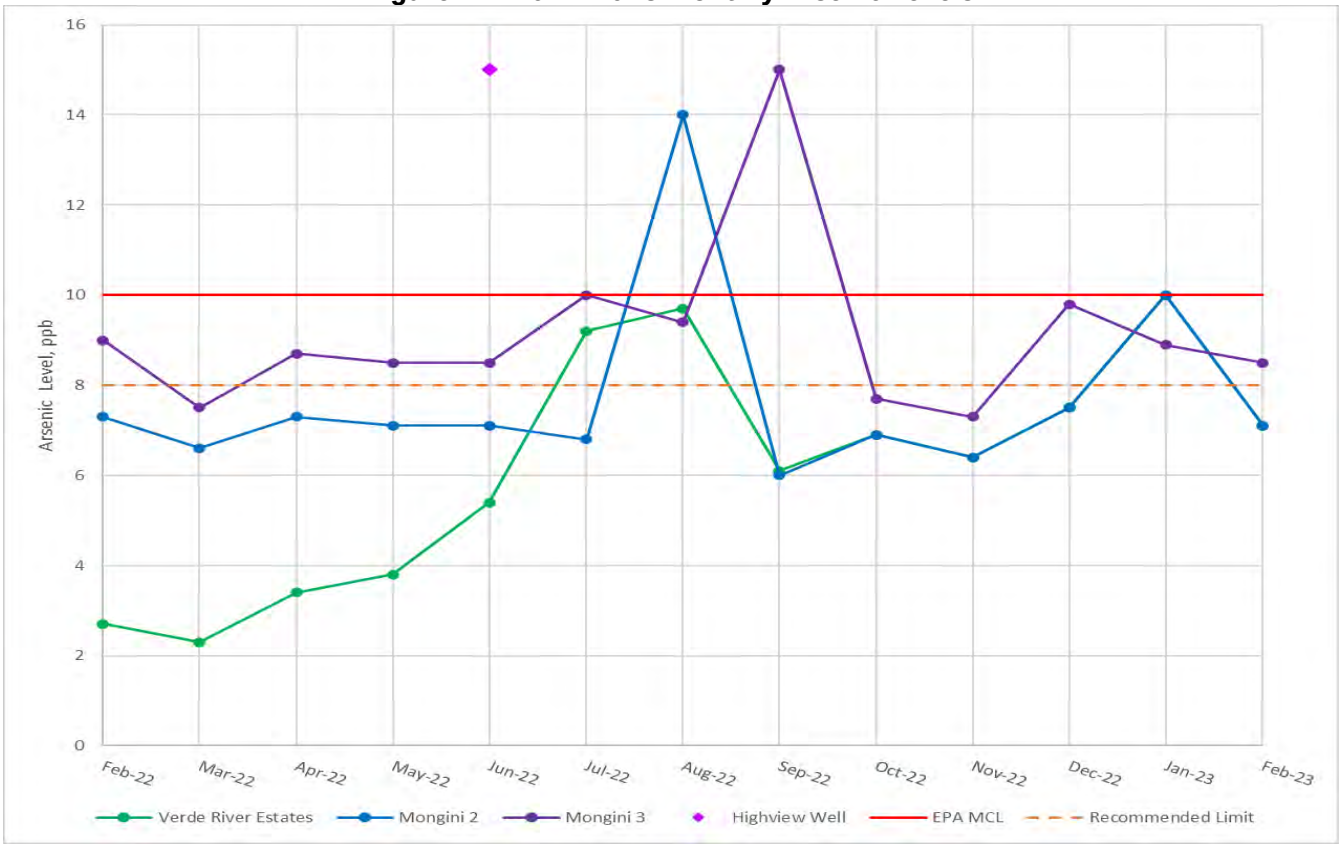
Micriobiological
Total Coliform Bacteria
Disinfectants
Chlorine
Disinfection By-Products
Haloacetic Acids
Total Trihalomethanes
Lead & Copper
Copper
Lead
Radionuclides
Combined Radium 226 & 228
Alpha Emitters
Inorganics
Arsenic
Barium
Chromium
Fluoride
Nitrate
Sodium

Table 2-5 presents the arsenic levels from 2022 and 2023 at the Mongini and VRE Wells. The Environmental Protection Agency (EPA) limit for arsenic in drinking water is 10 ppb. Samples measured at or above this limit are shown in bold. The new High View Well has only been sampled once, and the measured arsenic concentration was at 15 ppb, which above the EPA limit, meaning treatment will be required. Figure 2-2 shows this same data in a graph format.

Table 2-5 Monthly Arsenic Levels 2022-2023

Sample Date	Parts per Billion (ppb)		
	VRE	Mongini 2	Mongini 3
Feb-22	2.7	7.3	9.0
Mar-22	2.3	6.6	7.5
Apr-22	3.4	7.3	8.7
May-22	3.8	7.1	8.5
Jun-22	5.4	7.1	8.5
Jul-22	9.2	6.8	**10.0**
Aug-22	9.7	**14.0**	9.4
Sep-22	6.1	6.0	**15.0**
Oct-22	6.9	6.9	7.7
Nov-22	6.4	6.4	7.3
Dec-22	7.5	7.5	9.8
Jan-23	**10.0**	**10.0**	8.9
Feb-23	7.1	7.1	8.5
Average	5.3	8.0	9.1

Figure 2-2 2022-2023 Monthly Arsenic Levels



2.4 Treatment Facilities

There are currently treatment facilities located at the Mongini and Verde River Estates sites. However, these facilities use older equipment and are inadequate for current and future needs. The existing treatment equipment at both locations will be replaced in the future through the Arizona Department of Environmental Quality (ADEQ) Technical Assistance Program for Small Water Systems. Through this program, the Final Basis of Design Report has been completed for the Mongini site and the Draft Basis of Design Report has been completed for the VRE site. Due to the frequency of high arsenic levels found at the existing sites, it is anticipated that all new groundwater wells will be required to be equipped with arsenic removal equipment.

2.4.1 Mongini Water System Arsenic Treatment Facility

In June 2023, NCS Engineers completed the Final Basis of Design Report for the Mongini Water System Arsenic Treatment Facility (ATF), along with an engineering cost estimate. According to the design report, the new treatment facility system will be sized for 1,200 gpm; the treated water will be blended with untreated groundwater at a 3:1 ratio for a total production capacity of 1,200 gpm of blended water.

Chlorine will be added upstream of ATF to oxidize As(III) to As(V). Currently sodium hypochlorite is generated on-site by a MIOX system that uses sodium chloride brine (salt + water) through an electrolytic cell to make sodium hypochlorite. The existing MIOX system is a Dual SAL 80 System (20 lbs/day Free Available Chlorine (FAC)) and has many obsolete components. The existing system will be replaced with a new MIOX 30-V (nominally a 30 lbs/day system but capable of providing 15 to 60 lbs/day of chlorine at 0.45%).

Final design of the Mongini ATF is expected in March, 2024. TOCV is expected to bid the project for construction in 2024, once the Water Infrastructure Finance Authority of Arizona (WIFA) loan approval process has been completed.

2.4.1.1 VRE Water System Arsenic Treatment Facility

In June 2023, a draft Basis of Design Report for the VRE Water System ATF was provided with an engineering cost estimate. The existing ATF, ATF building, and MIOX system will be replaced with a new ATF, a new MIOX system, and a new ATF building. The new treatment facility is sized for 50 gpm. Due to high arsenic levels at the site, the full flow will be treated without blending. Final design is expected in March of 2024. TOCV is expected to bid the project for construction in 2024, once the Water Infrastructure Finance Authority of Arizona (WIFA) loan approval process has been completed.

2.4.1.2 High View at Boulder Creek Arsenic Treatment Facility

The new High View well has elevated arsenic levels as depicted in Figure 2-2. It is anticipated that an ATF will be required and will be designed and constructed in support of the development. The treatment technology and system sizing will be determined in the future.

2.5 Storage Tanks

The storage tanks currently used in the TOCV water system are listed in Table 2-6. The tanks are above-ground, welded steel tanks with a useful life expectancy of approximately 50 years with regular cleaning, inspections, and recoating.

Table 2-6 TOCV Existing Storage Tank Data

Tank Name	Tank Size, MG	Usable Volume, MG	Base Elevation	Diameter, ft	Height, ft	Use	Installed Year
Mongini 1	1.3	1.0	3,556	80	35	Finished Water	1997
Mongini 2	2.7	2.3	3,556	120	32	Finished Water	2001
VRE 1	0.01	0.01	3,168	11	16.5	Raw Water	Before 1984
VRE 2	0.01	0.01	-3,168	10	16.5	Finished Water	Before 1984
Rainbow Dr	0.211	0.206	3,260	33.5	32	Finished Water	1976

Tank Name	Tank Size, MG	Usable Volume, MG	Base Elevation	Diameter, ft	Height, ft	Use	Installed Year
Townsite/6th St	0.719	0.656	3,209	55	41	Finished Water	1975
Total Storage (MG)		**4.2**					

2.6 Hydropneumatic Tanks

There are three hydropneumatic tanks in the distribution system. These tanks are located at booster pump stations. The characteristics of each tank are shown in Table 2-7.

Table 2-7 TOCV Existing Hydropneumatic Tank Data

Site	Tank Diameter, ft	Tank Length, ft	Capacity, gal
4th Street BPS	12	45	38,000
Rainbow Dr BPS	6	24.5	5,000
Verde River Estates	4.5	18	2,000

2.7 Booster Pump Stations

The booster pump stations within the TOCV water system are summarized in Table 2-8 through Table 2-9. The Rainbow Drive booster pump station is part of a "dump and pump" system that pumps water into the Rainbow Dr area (Zone 3A). The 4th Street booster pump station is part of a "dump and pump" system that serves the downtown area. In these systems, the storage tank fills during periods of low demand and the pumps turn on during periods of high demand.

Table 2-8 TOCV Rainbow Dr. BPS

Station	Pump No.	Pump Brand	Model	Approximate Flow, gpm	Impeller Diameter	Motor Size,HP
Rainbow Dr	1	Crane Deming	4358	175	2"	7.5
	2	Crane Deming	4211	350	7-3/4"	20
	3	Berkeley	B3ZPLS-B54114	550	8"	30
	4	Berkeley	B3ZPLS-B54114	550	8"	30

Table 2-9 TOCV 4th St BPS

Station	Pump No.	Pump Brand	Model	Approximate Flow, gpm	Impeller Diameter	Motor Size,HP
4th St	1	Crane Deming	4358	175	2"	7.5
	2	Goulds	3656	380	6-3/8"	15
	3	Goulds	3656	500	7-1/16"	30

Table 2-10 TOCV VRE Pump Station

Station	Pump No.	Pump Brand	Model	Approximate Flow, gpm	Impeller Diameter	Motor Size,HP
Verde River Estates	1	Goulds	1BF1J1A0	10	Unknown	5
	2	Goulds	1BF1J1A0	10	Unknown	5
	3	Goulds	1BF1J1A0	10	Unknown	5

2.8 Pressure Reducing Valves

The PRVs in the TOCV water system are listed in Table 2-11. These valves are also shown in Figure 2-1. The valves act as the boundaries between the pressure zones.

Table 2-11 TOCV Pressure Reducing Valves

Location	Size (inches)	Pressure Setpoint (psig)
S.R. 260 #1	12	80
S.R. 260 #2	12	80
Verde West Dr	6	60
Park Verde Rd	6	60
Finnie Flat Rd	12	85
Tres Rios Rd No. 1	2	60
Tres Rios Rd No. 2	2	65
Afton Lane	2	60

2.9 Water Mains

The water mains within the distribution system is comprised of a wide variety of materials and range in diameter from 2 to 12 inches, as shown in Table 2-12. The most common pipe materials are Ductile Iron Pipe (DIP) and Polyvinyl chloride (PVC). Pipe materials are known to include PVC, DIP, Asbestos Concrete (AC), Galvanized Steel (G), Cast Iron (CI), and steel. A figure in Appendix C shows the sizes of the existing pipes throughout the distribution system.

Table 2-12 Existing Pipe Sizes and Installed Lengths

Size (in)	Total Length (ft)
2	18,474
4	38,922
6	94,650
8	59,721
10	2,281
12	68,034

The hydraulic distribution model discussed in SECTION 5 indicates that pipe velocities are less than 5 fps for existing non-fire flow demand conditions.

2.10 Pressure Zones

The TOCV distribution system is currently comprised of seven pressure zones. Pressure zones are shown in Figure 2-1. A schematic of the pressure zones is shown in Figure 2-3. Zone 1 through Zone 5 are hydraulically connected and generally serve the area west of the Verde River along HWY 260, between Coury Drive to the north and Boyles Way to the South. Zone 6 is a stand-alone pressure zone east of the Verde River that serves the Verde River Estates (VRE) area.

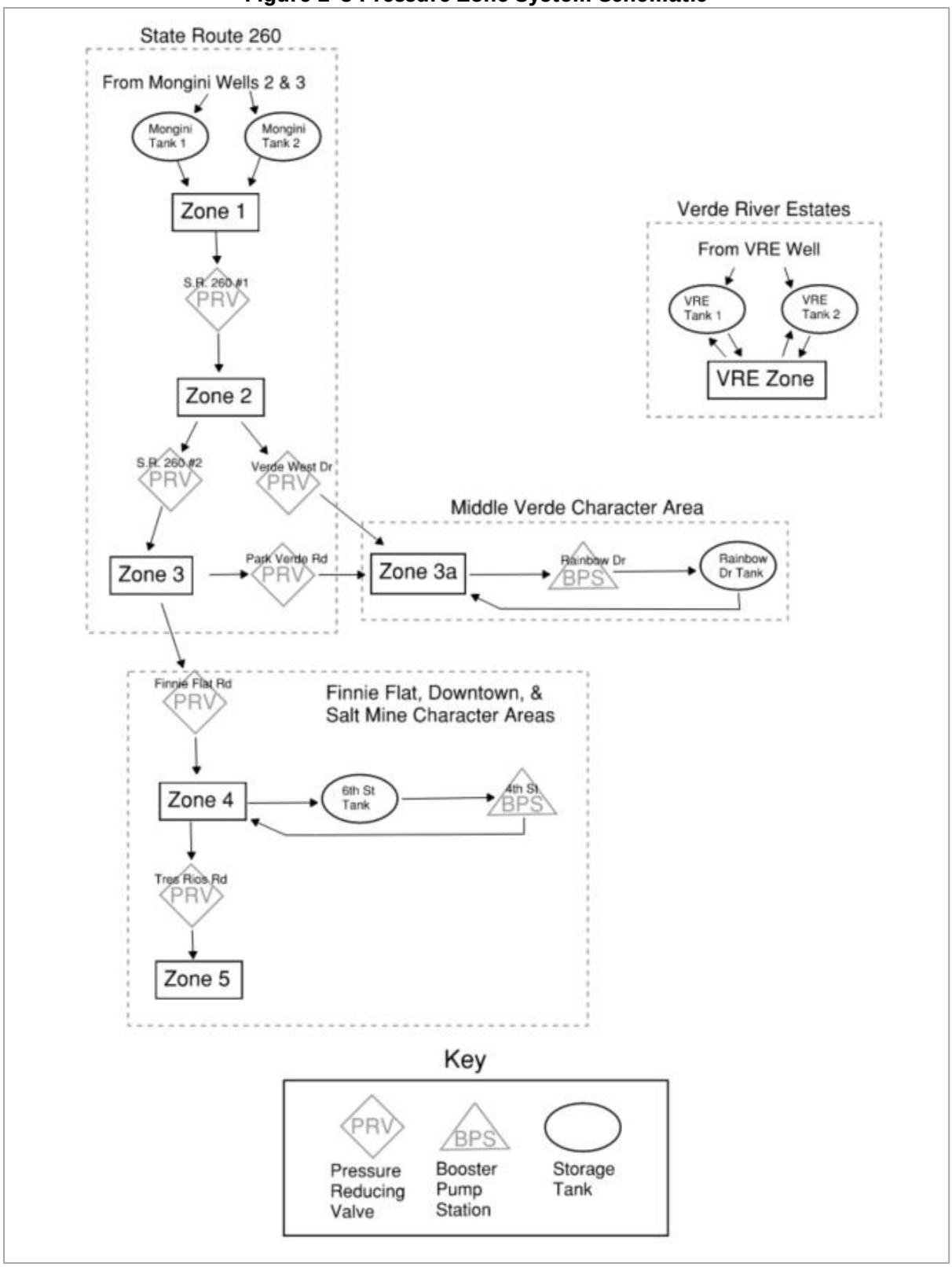
The pressure zone schematic (Figure 2-3) demonstrates the interconnection of the water system and major facilities of the TOCV. The Rainbow Dr BPS serves Zone 3a and the 4th St BPS serves Zone 4. PRVs regulate the pressure of water conveyed between pressure Zones 1 through 5. Pressure Zones 1, 2, and 3 run along HWY 260. Pressure Zone 3a (Rainbow Dr) is located in the northern residential area while Pressure Zones 4 and 5 are in the southern residential area.

The approximate elevation range of customers in each pressure zone is shown in Table 2-13. However, some customers may be higher or lower than the depicted range. It is important to note the hydraulic grade line may vary depending on the system demand and the location in the distribution system.

Table 2-13 Pressure Zones by Elevation and Hydraulic Grade Line

Pressure Zone	Zone Elevation Range, ft	Customer Elevation Range, ft	Typical Hydraulic Grade Line, ft	Minimum Customer Pressure, psig	Maximum Customer Pressure, psig
1	3,557-3,331	3,412–3,394	3,576	72	80
2	3,334-3,244	3,334–3,245	3,505	73	113
3	3,233-3,109	3,229–3,190	3,412	79	130
3A (Rainbow Drive)	3,250-3,112	3,250-3,112	3,396	62	121
4	3,237-3,075	3,237-3,075	3,330	44	115
5	3,097-3,078	3,097-3,078	3,240	62	70
6 (VRE)	3,170-3,119	3,160-3,121	3,228	26	47

Figure 2-3 Pressure Zone System Schematic

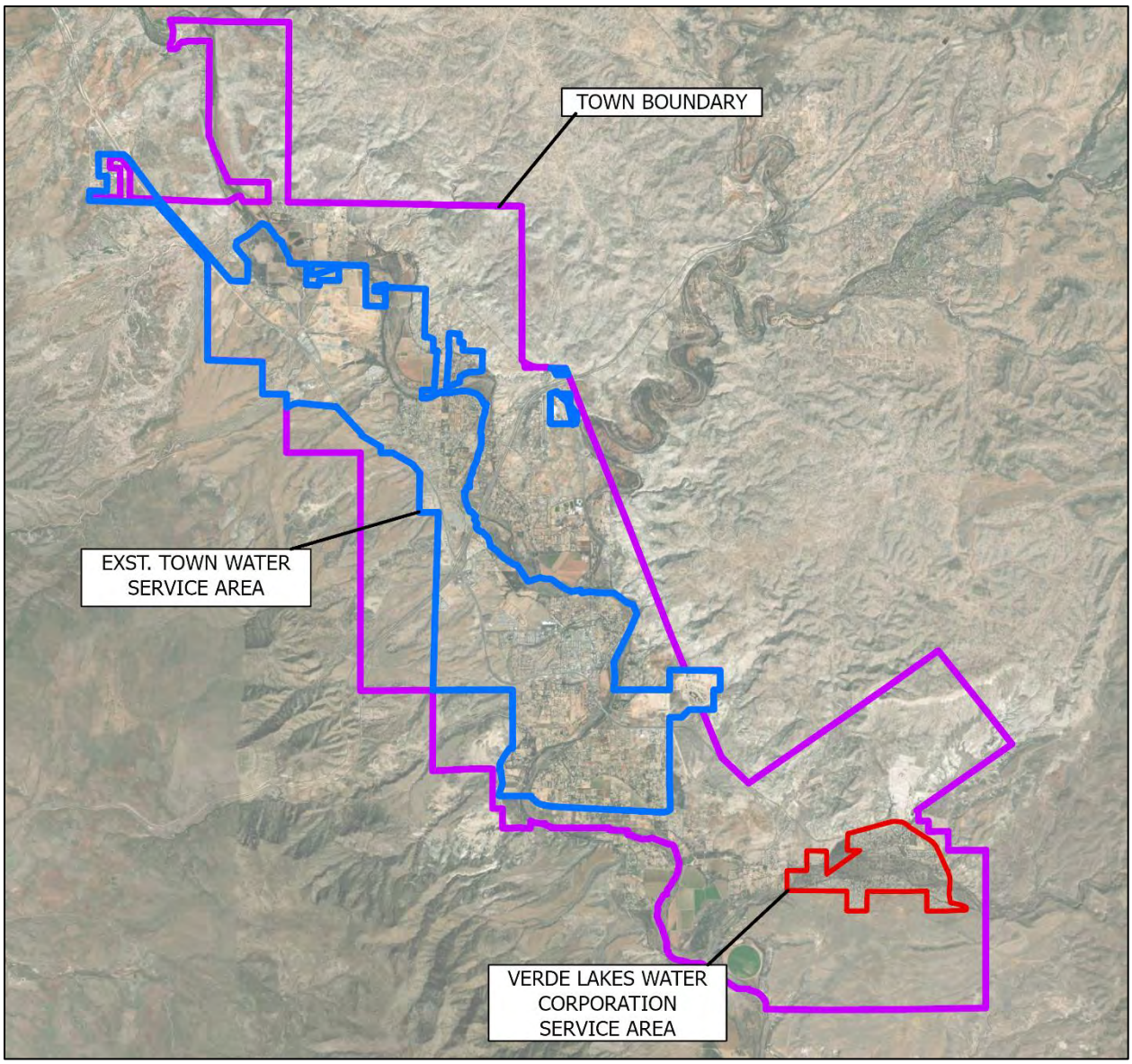


SECTION 3. Planning

3.1 Existing Service Area

The existing service area is shown in Figure 3-1. The service area is an approximate, unofficial boundary that includes all current customers in the Town of Camp Verde, portions of the Yavapai-Apache Nation (YAN), and areas the Town is currently expected to serve. The service area is generally bound by the Verde River to the north and east, National Forest land to the west, and Quarterhorse Lane and Old Church Road to the south and southeast. The YAN communities are served by connections to the TOCV water system but maintain their own water distribution infrastructure.

Figure 3-1 Existing TOCV Service Area and Town Boundary

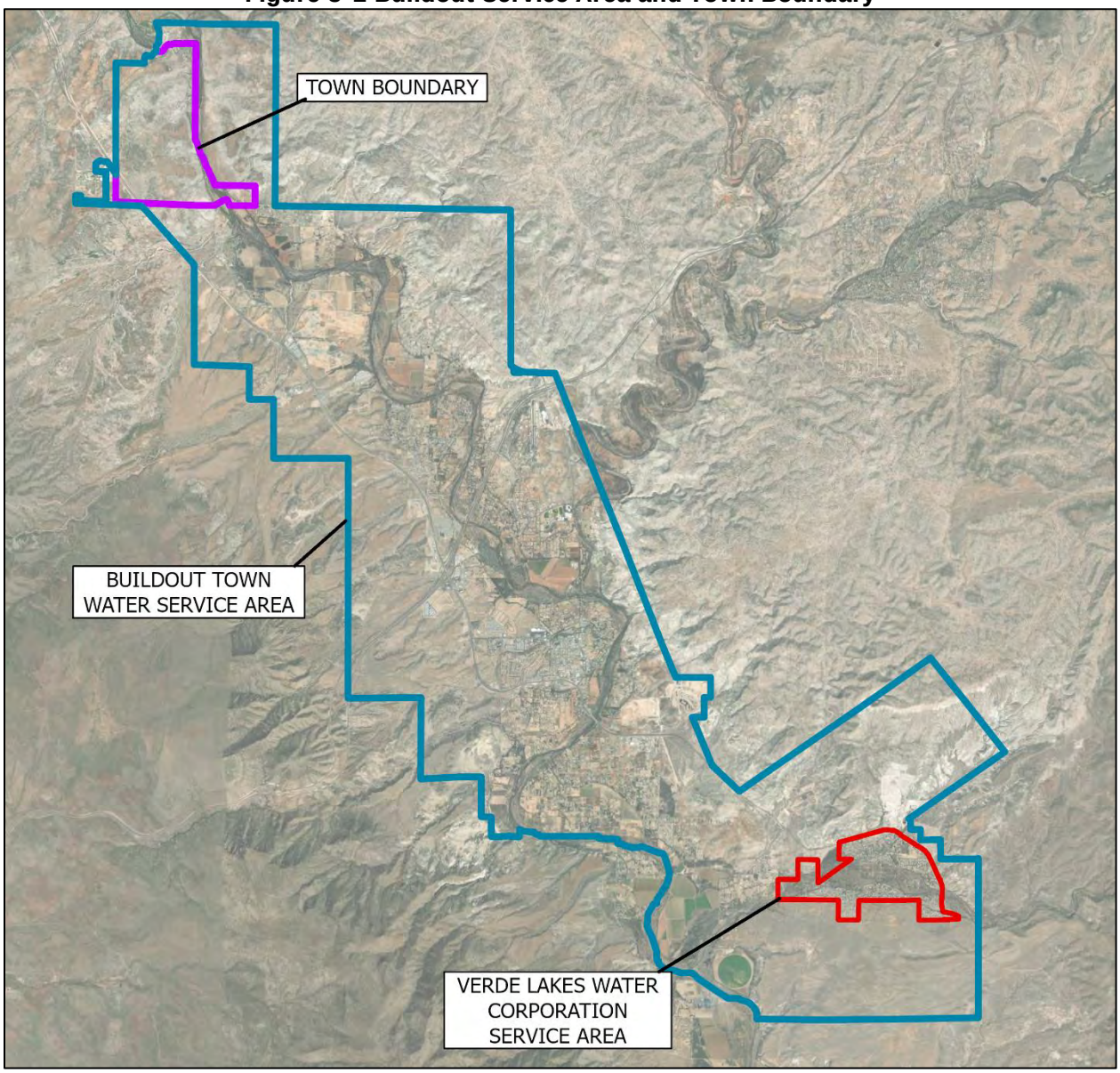


3.2 Buildout Service Area

At buildout the Town is anticipated to serve water to all areas within the Town boundary, plus approximately 1,300 acres outside the Town boundary just north of the Mongini Tanks, but not including approximately 870 acres served by the Verde Lakes Water Corporation. Therefore, at buildout, the Town is anticipated to serve areas east of the Verde River that are currently not served by the Town. Approximately 10,000 acres of land owned by the US Forest Service are within the assumed service area but are unlikely to develop in the future. It is anticipated the

YAN communities will continue to be served by and connected to the Town distribution system, but will maintain the water infrastructure within their own boundaries.

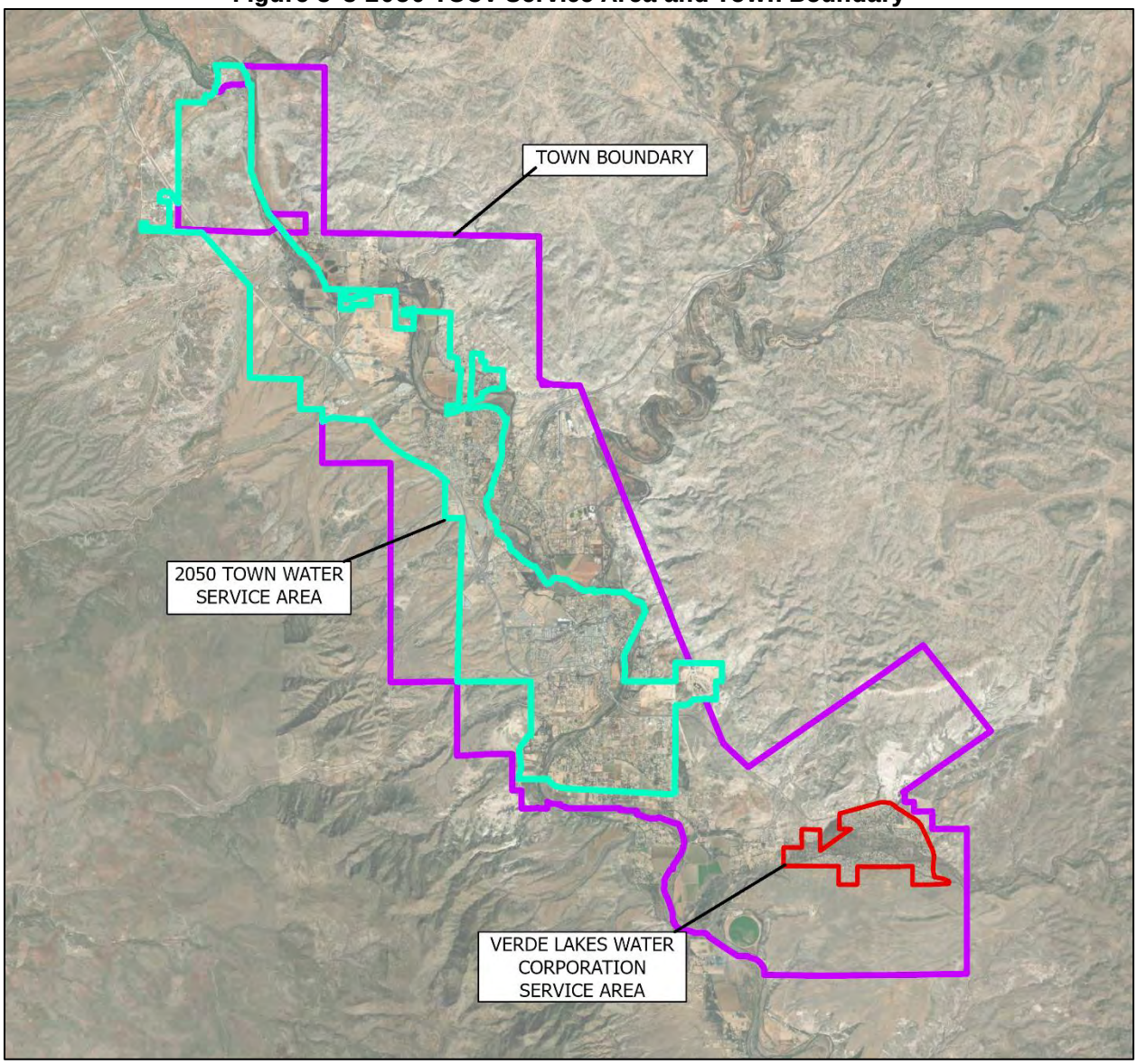
Figure 3-2 Buildout Service Area and Town Boundary



3.3 2050 Service Area

For the purposes of this master plan, the Buildout condition for the distribution system is likely too far in the future to be of any practical value for planning purposes. Therefore, it was determined the planning horizon would be 2050. The 2050 service area is similar to the existing service area but enlarged to include new YAN parcels transferred from the US Forest Service and approximately 1,300 acres of land outside the Town boundary north of the Mongini Tanks. The anticipated 2050 service area is shown with the Town boundary in Figure 3-3.

Figure 3-3 2050 TOCV Service Area and Town Boundary



3.4 Population Projections

Population projections for the TOCV were provided by the Arizona Office of Economic Opportunity (OEO). The OEO provided an interim "medium-series" projected growth rate for the Town. The OEO will update the growth rate in the future. The 2022 population of 12,430 is predicted to increase to 14,021 people in 2050, according to the current medium-series projections.

High and low growth rate projections were developed based on historic trends, since these are not currently available from the OEO. A 1% growth rate was also considered because it

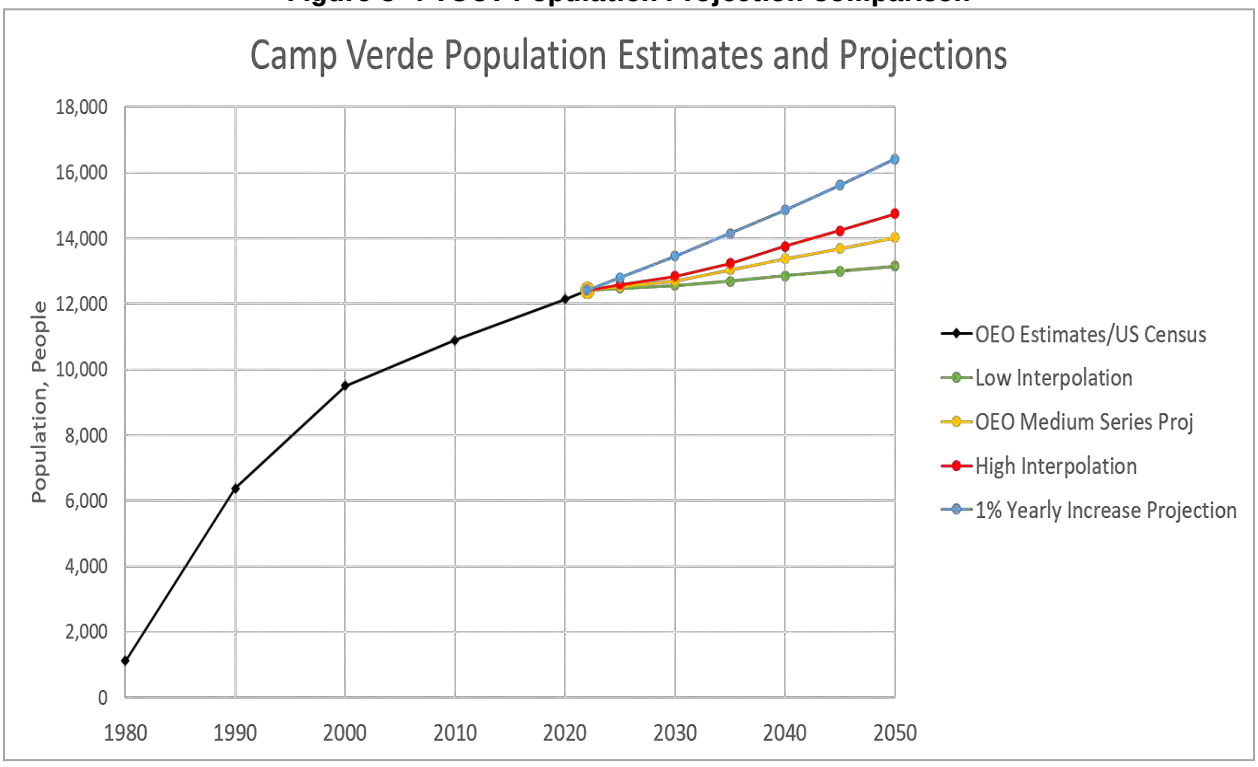
approximately matches the known growth rate for the past two decades, according to Town officials. Table 3-1 summarizes the high, medium, low and 1% population projections for TOCV.

Table 3-1 OEO Population Projections for the Town of Camp Verde

Year	Low Projection		Medium Projection		High Projection		1% Projection
	Population, people	Annualized Growth Rate, %	Population, people	Annualized Growth Rate, %	Population, people	Annualized Growth Rate, %	Population, people
2022	12,430	-	12,430	-	12,430	-	12,430
2025	12,484	0.14%	12,538	0.29%	12,592	0.43%	12,807
2030	12,567	0.13%	12,706	0.27%	12,846	0.40%	13,460
2035	12,694	0.20%	13,046	0.53%	13,238	0.60%	14,146
2040	12,857	0.26%	13,383	0.51%	13,753	0.77%	14,868
2045	13,004	0.23%	13,690	0.45%	14,228	0.68%	15,627
2050	13,160	0.24%	14,021	0.48%	14,747	0.72%	16,424

Figure 3-4 depicts the population projections for low, medium, high and 1% growth.

Figure 3-4 TOCV Population Projection Comparison



SECTION 4. Water Demand Analysis

4.1 Existing System Water Demands

The TOCV water system provided approximately 253 million gallons (including water loss) to customers from June 2022 to May 2023, or approximately 693,000 gallons per day. Figure 4-1 shows the monthly water demand based on the meter readings and water sold within TOCV for the years 2022 and 2023.

Figure 4-1 Existing Metered Water Demand within the System

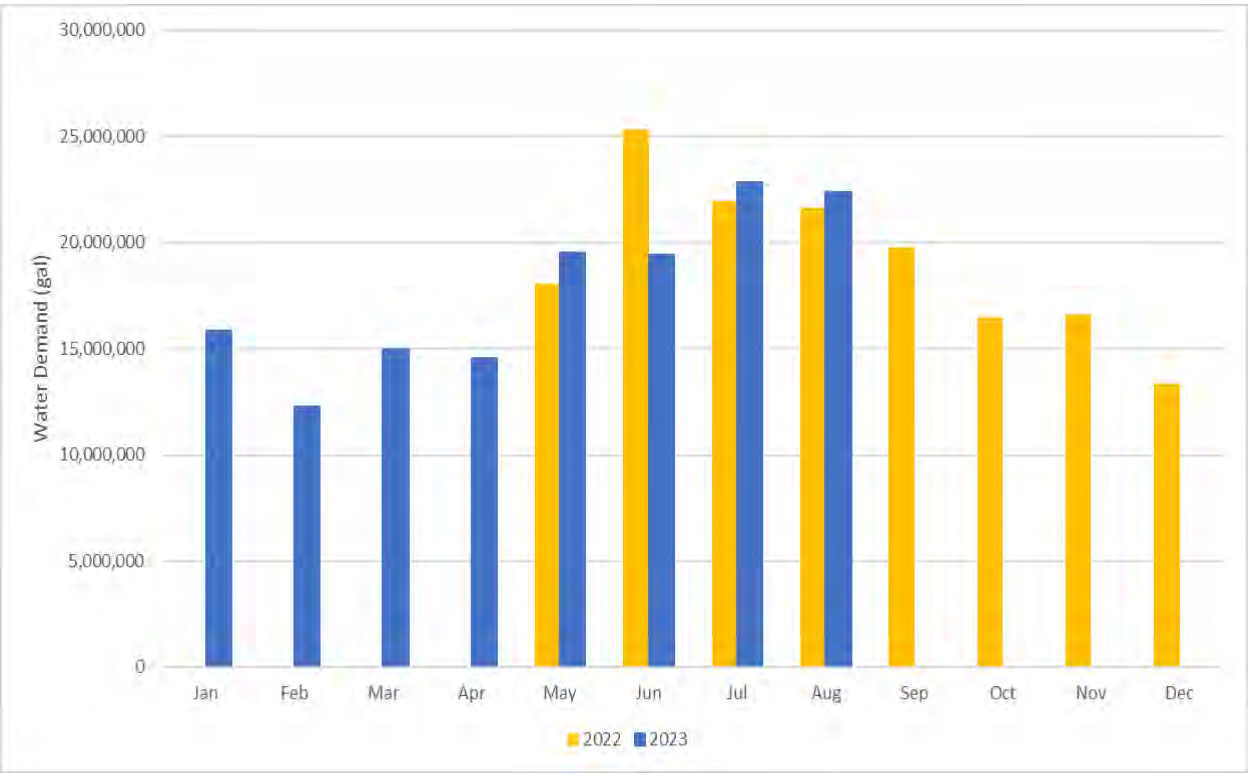
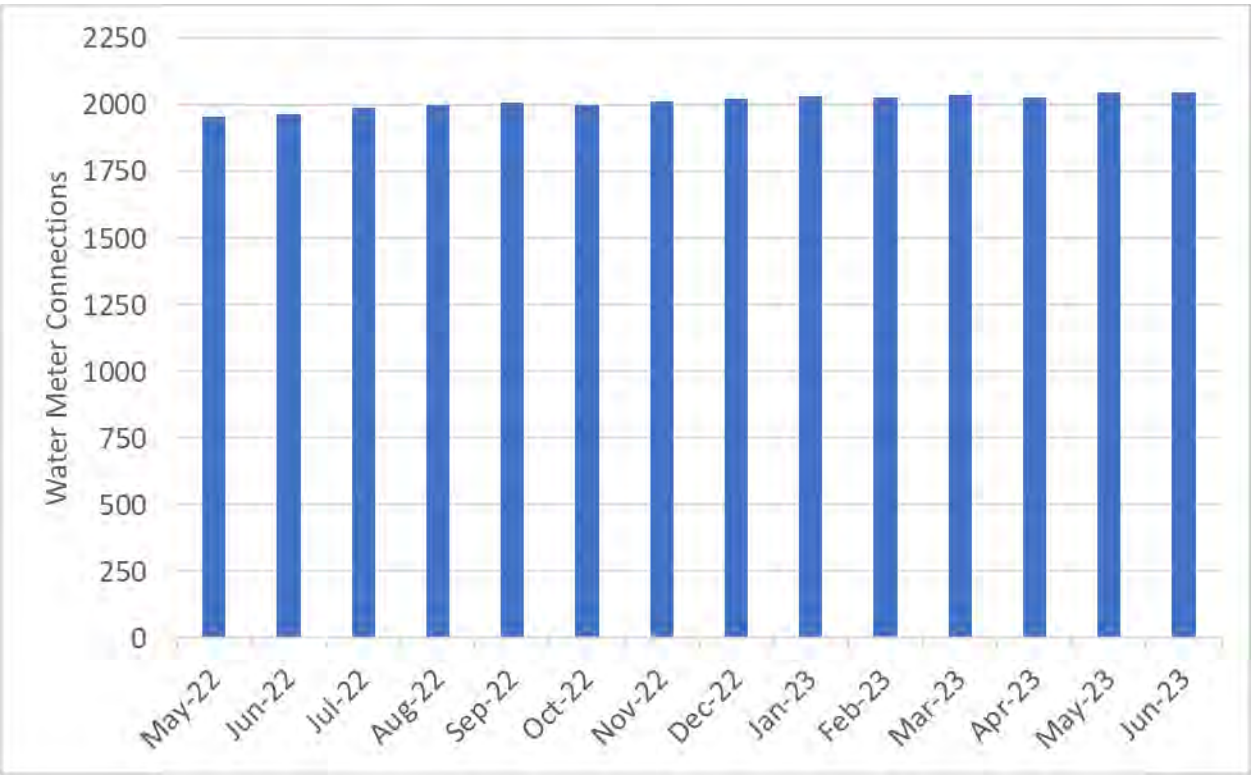


Figure 4-2 shows the number of active water meters in the TOCV system over 14 months during 2022 and 2023. As shown on the figure, the number of accounts fluctuates slightly each month, but the general trend is a gradual increase. The system averaged 2,028 connections from May 2022 through June 2023.

Figure 4-2 Water Meters in Service, 2022-2023



4.2 Water Use by Billing Type

Figure 4-3 shows June 2023 water use per billing type. As shown in the graph, most of the demand is from residential use, followed by commercial use, and the Yavapai Apache Nation.

Figure 4-3 June 2023 Water Use per Billing Type

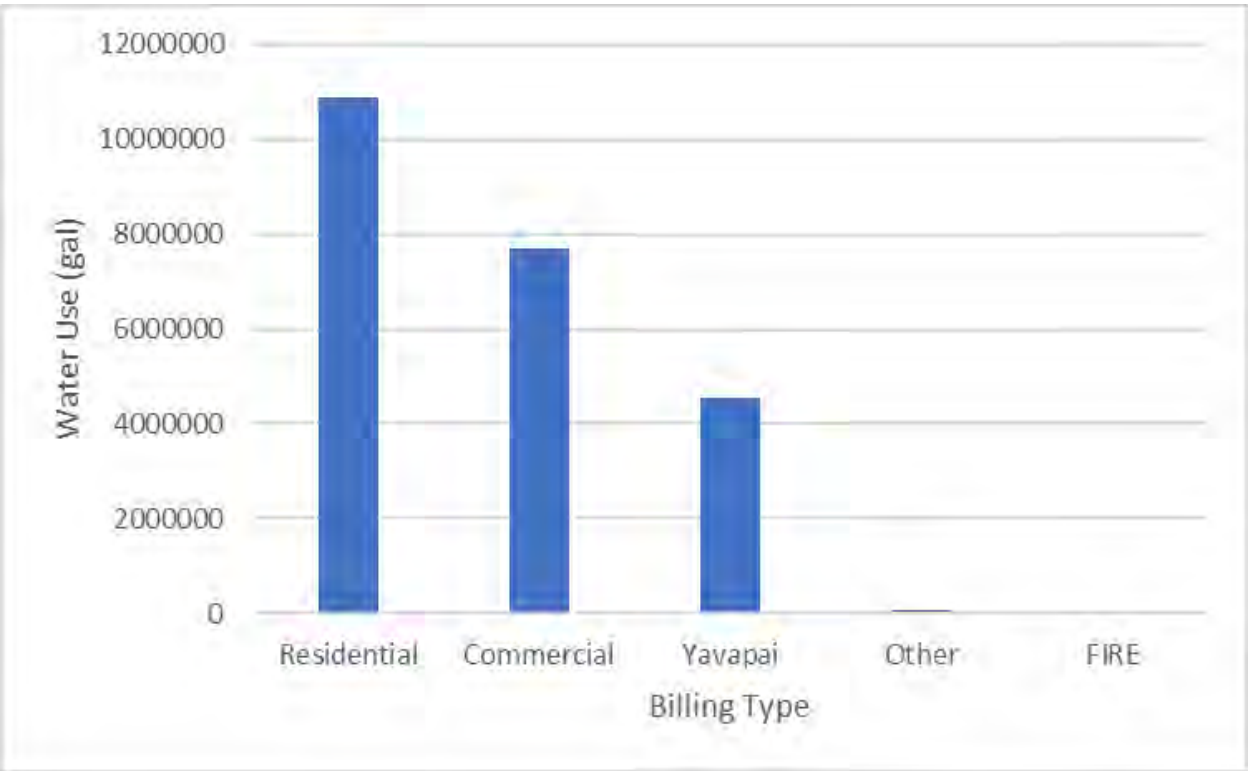


Table 4-1 shows the June 2023 water use per "active" water meter by service type. A water meter was considered active when demand was registered during the month.

Table 4-1 June 2023 Water Use per Billing Type

Service Type	June Use, gallons	Active Meters	June 2023 Daily Use per Active Meter, gallons
Residential	10,892,000	1,439	252
Commercial	7,716,000	215	1,200
Yavapai Apache Nation	4,559,900	4	38,000
Other	70,400	11	213
Fire	100	1	3
Total	23,238,400	1,670	13,915 (avg.)

4.3 Residential Water Use

2017-2021 US Census data estimates there are 2.74 persons per dwelling unit in Camp Verde. Using this estimate, the water use was determined to be 92 gallons per capita per day (gpdc). However, for planning purposes, the water use is assumed to be 100 gpdc.

Table 4-2 Residential Water Use

Parameter, Unit	Value
Gallons per Day per Residential Meter, gpd	252
Persons per Dwelling Unit, ppdu	2.74
Gallons per Capita per Day, gpcd	92

Based on 2.74 people per dwelling unit, it is calculated that approximately 3,950 residents in the Town are connected to the Town's water system. However, the actual number may be higher because some of these connections are for multifamily housing units, which may include several dwellings. For planning purposes, it is assumed all future residents in the Town will be connected to the water system.

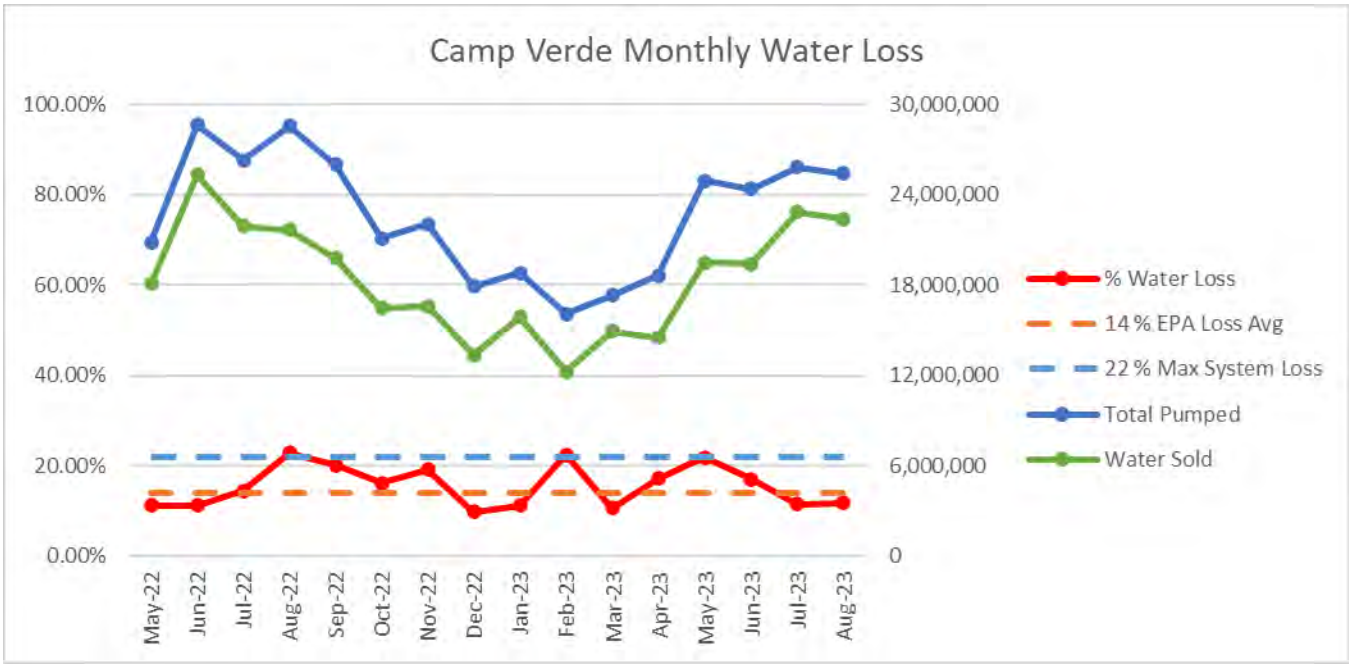
4.4 Water Loss

The EPA states that 14% of pumped water is typically unaccounted for in water distribution systems. The unaccounted-for water may be due to authorized but unmetered consumption (use in treatment processes, flushing, hydrant testing and maintenance, fire department training), real losses (leakage), apparent losses (faulty meters, poor calculations), or non-revenue use (theft).

Figure 4-4 compares the water meter and well production data to determine the monthly percent water loss. The data indicates that average water loss is approximately 16% which exceeds TOCV's water loss goal of 10%. The water loss goal was determined by the TOCV, based on industry standards.

It is understood TOCV experiences losses from Fire District Training, fire hydrant flushing, and maintenance. Water loss can be mitigated by replacing aging and leaking infrastructure, replacing and calibrating well flow meters, upgrading customer water meters, and limiting unmetered consumption as much as possible. The Town was recently award WIFA Water Conservation Grant funds and will be implementing 5 projects to address water loss in the current system.

Figure 4-4 TOCV Monthly Water Loss



4.5 Existing Water Demand and Peaking Factors

The following peaking factors were used to estimate the water demand based on the latest TOCV design criteria. TOCV design criteria for the Water System are included in Appendix A.

Table 4-3 Peaking Factors

Criteria	Peaking Factor	Demand, gpm	Demand, gpd
Average Day Demand	N/A	480	691,000
Maximum Day Demand	2	960	1,380,000
Peak Hour Demand	3	1,440	2,074,000

4.6 Groundwater Pumping

Figure 4-5 depicts the combined monthly groundwater pumping for Mongini Wells 2 & 3 in 2022 and 2023. As mentioned, these two wells supply most of the water system. The black horizontal line represents the maximum system production capacity of 940,000 gallons per day for 30 days according to Town staff. This can only be achieved when one well operates constantly and both wells operate together intermittently. The red horizontal line represents the production capacity with the largest well out of service, which is achieved when only Mongini 2 runs constantly. ADEQ Bulletin 10 requires the production capacity to be with the largest well out of service. The horizontal blue line represents the historical average month pumping.

Figure 4-5 Mongini Wells Combined Monthly Pumping, 2022-2023

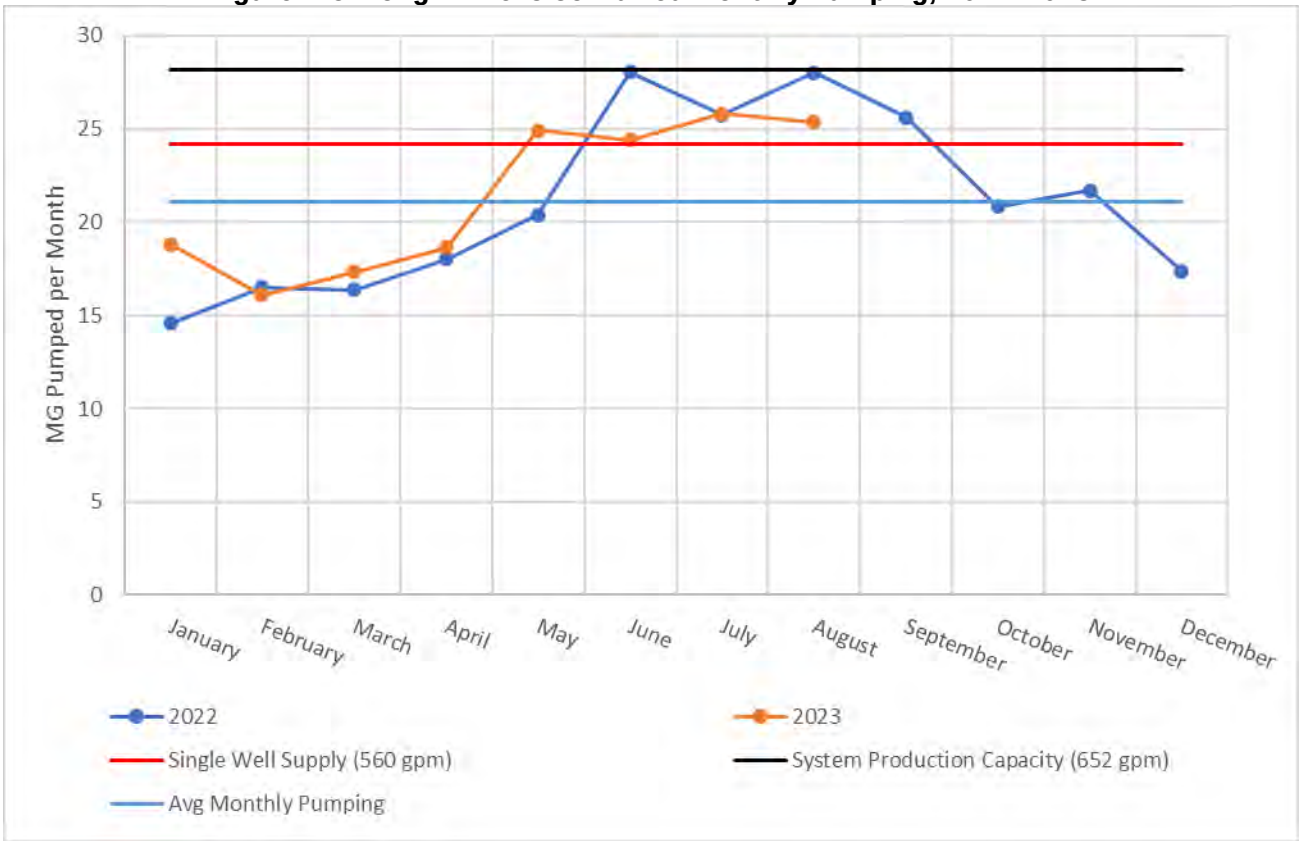


Table 4-4 presents a summary of the combined groundwater pumping at the Mongini Wells 2 and 3 in 2022.

Table 4-4 Combined Groundwater Pumping at Mongini Wells, 2022

Parameter	Total Pumping, gal	Total Pumping, acre-ft
Minimum Month (January)	14,576,700	45
Average Month	21,103,792	65
Maximum Month (June)	28,044,000	86
Total 2022 Usage	253,254,500	777

As is summarized in Table 4-4, demand within the system fluctuates by season. Demand increases to 25% above average month during peak summer and decreases by 30% in the winter.

4.7 Existing Pumping Capacity vs. Existing Maximum Day Demand

The Arizona Department of Environmental Quality (ADEQ) Bulletin 10 requires a Public Water System in Arizona to have sufficient source capacity for the anticipated Maximum Day Demand (MDD) while the largest well is out of service. Mongini Well 2 has a capacity of 560 gpm and Mongini Well 3 has a capacity of 575 gpm. Since there are no other sources of water for this portion of the distribution system, the allowable MDD is 560 gpm. However, the actual MDD is 960 gpm, which exceeds the allowable MDD by 400 gpm. Since MDD cannot be supplied with the largest well out of service, a new well capable of providing the additional 400 gpm +15% buffer (460 gpm) will need to be drilled and outfitted for TOCV to meet ADEQ's MDD requirement. Table 4-5 summarizes this calculation. The currently planned High View Well is anticipated to make up some of this shortfall.

Table 4-5 Future Well Sizing

Parameter, Unit	Value
Maximum Day Demand, gpm	560
Peaking Factor, PF	2
Average Day Demand, gpm	480
ADD x PF, gpm	960
Delta, gpm	-400
New Well Required, gpm	460

4.8 Buildout Water Demand Projections

The Buildout Water Demand for the TOCV water system service area was estimated based on land use, current Yavapai County zoning data, and ownership data. The various Yavapai County zoning classifications were consolidated to a Land Use Type, and water use was assigned to each Land Use Type on a gallons per day per acre basis, as shown in Table 4-6. A figure showing the assumed land uses throughout the service area is included in the Appendix.

For the purposes of this analysis, it was assumed that the YAN areas are the equivalent to a mix of low density residential and commercial development (75% low density residential, 25% commercial). The noted state land parcels on the figure are assumed to develop with the equivalent of medium density residential as they are likely to be planned developments. The State Use type is specific to a small yard owned by the State. The US Forest Service (Town) land use is specific to a 40-acre parcel the Town will acquire from the US Forest Service.

Table 4-6 Water Demand by Land Use Factors

Land Use Type	Assumed Lot Size (Acres)	Dwellings per Acre, Units	Use per Dwelling, gpd	gpd/acre
Commercial	-	-	-	1,200
Low Density Residential	1.25	0.80	274	219
Medium Density Residential	0.2	5.00	274	1,370

Land Use Type	Assumed Lot Size (Acres)	Dwellings per Acre, Units	Use per Dwelling, gpd	gpd/acre
Open Space	-	-	-	0
PAD	-	-	-	2,760
ROW	-	-	-	0
Rural Residential	3	0.33	274	91
State Use	-	-	-	219
State Land Department	-	-	-	1,370
US Forest Service	-	-	-	0
US Forest Service (Town)	-	-	-	219
YAN (Current Service Area)	-	-	-	464
YAN (Future, Land Swap)	-	-	-	464

The Buildout Water Demand by Land Use was applied to the current land use in the buildout service area. U.S. Forest Service Land is included in the analysis but has not water use. The Verde Lakes Water Corporation service area is also excluded from the analysis. The buildout water demands by land use are shown in Table 4-7.

Table 4-7 Buildout Water Demand by Land Use

Land Use Type	Acres	gpd/acre	gpd	ac-ft/yr
Commercial	1,675	1,200	2,010,441	2,252
Low Density Residential	3,080	219	675,174	756
Medium Density Residential	2,656	1,370	3,638,519	4,076
Open Space	114	0	0	0
PAD	161	2,760	444,478	498
ROW	1,278	0	0	0
Rural Residential	5,007	91	457,278	512
State Use	9	219	1,910	2
State Land Department	1,054	1,370	1,444,556	1,618
US Forest Service	10,192	0	0	0
US Forest Service (Town)	40	219	8,763	10
YAN (Current Service Area)	1,713	464	794,677	890
YAN (Future, Land Swap)	2,053	464	952,438	1,067
Total:	**29,032**	**-**	**10,428,234**	**11,681**

4.9 2050 Water Demand Projections

The Buildout demand condition for the distribution system is likely too far in the future to be of any practical value for planning purposes. Therefore, it was determined the planning horizon would be 2050. The water demand in 2050 was projected based on anticipated population growth and the current ratio of existing commercial to residential demands.

The 2050 demand projections analysis assumes the following:

- All future residents will be connected to TOCV's water system.
- Existing residents who live within the Service Area but are not currently connected to TOCV's Distribution System will be connected in the future.
- Commercial water demand will increase proportionally to the future residential water demand based on the June 2023 levels shown in Table 4-1.

Table 4-8 summarizes the 2050 projected demands.

Table 4-8 2050 Projected Demand Summary

Parameter, Unit	Value
New Residential Demand, gpd	1,247,400
New Commercial Demand, gpd	883,670
Total New Demand, gpd	2,131,070
Total Existing Water Demand, gpd	684,932
Total 2050 Average Day Projected Demand, gpd	2,816,002
Total 2050 Maximum Day Projected Demand, gpd	5,632,004

4.10 Planned Developments

Several developments are currently anticipated in the next few years. It is understood the owner/developers are actively in discussions with Town about the development and providing water service. Table 4-9 presents a summary of planned developments and expected timelines. The demand from these developments is included in the 2050 demand projections discussed in Section 4.9.

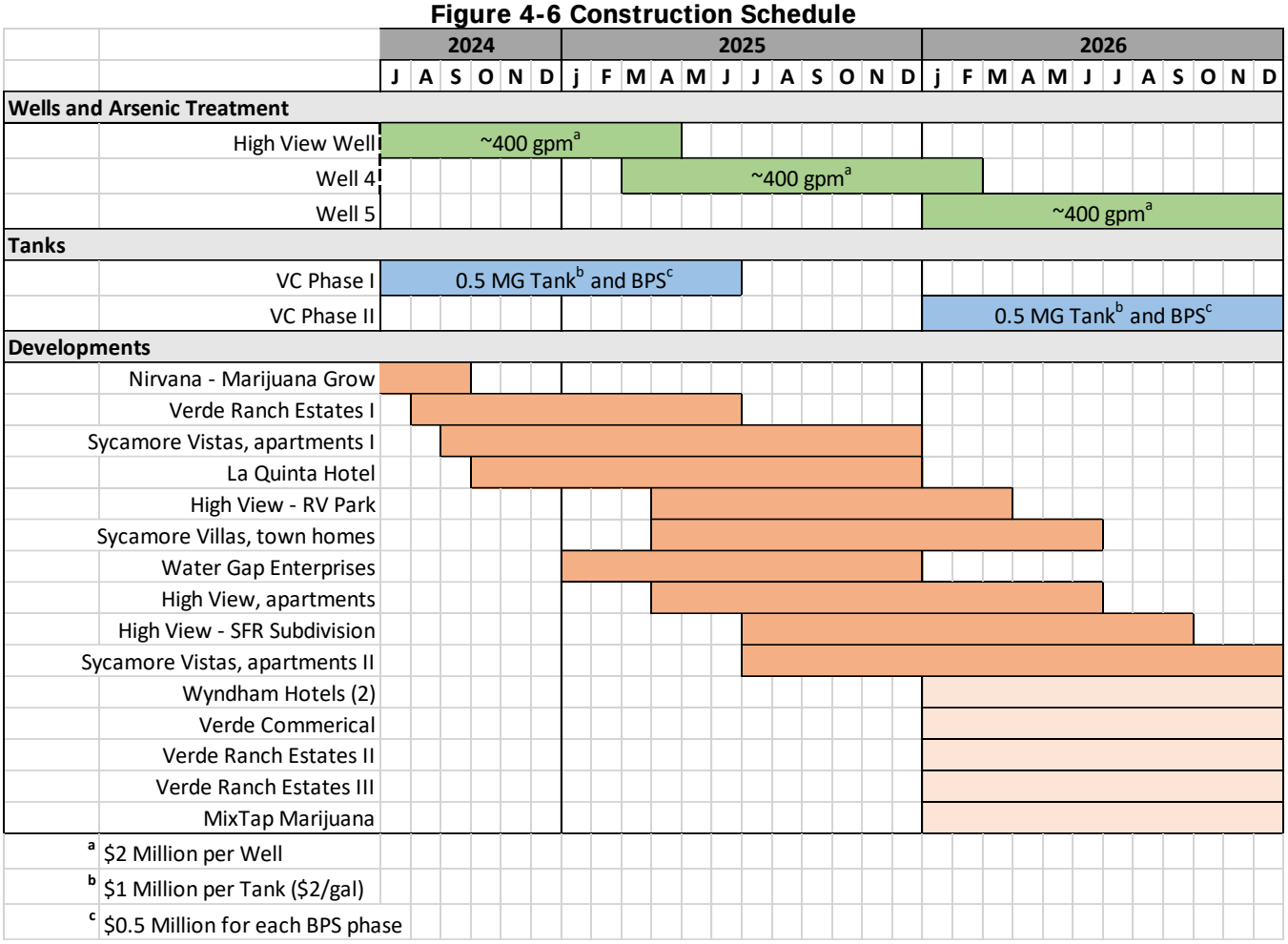
Table 4-9 Future Developments

Timeline, months	Development Name	Approximate Size	Approximate Average Day Demand, gpd	Maximum Day Demand, gpd
-	Meat Processing Plant	0.24 Acres	1,000	2,000
-	Frametech	-	-	-
3 or less	Nirvana – Marijuana Grow	3.11 Acres	200	400
6-12	Verde Ranch Estates I	60 Dwelling Units	26,820	53,640
9-18	Sycamore Vistas, Apartments I	80 Dwelling Units	35,760	71,520

Timeline, months	Development Name	Approximate Size	Approximate Average Day Demand, gpd	Maximum Day Demand, gpd
18	La Quinta Hotel	74 Hotel Rooms, 2 Acres	14,240	28,480
18-21	High View – RV Park	260 Dwelling Units	72,020	144,040
18-24	Sycamore Villas, Town Homes	160 Dwelling Units	71,520	143,040
12-18	Water Gap Enterprises	8.32 Acres	19,062	38,125
18-24	High View, Apartments	260 Dwelling Units	116,220	232,440
21-27	High View – SFR Subdivision	250-500 Dwelling Units	356,250	712,500
24-36	Sycamore Vistas, Apartments II	80 Dwelling Units	35,760	71,520
36+	Windham Hotels (2)	81 Units and 101 Units	33,580	67,160
36+	Verde Commercial	33.48 Acres	33,480	66,960
36+	Verde Ranch Estates II	60 Dwelling Units	26,820	53,640
36+	Verde Ranch Estates III	60 Dwelling Units	26,820	53,640
36+	Mixtap Marijuana	5 Acres	20,000	40,000
		Total:	**888,552**	**1,777,105**

In addition to the new well required to meet existing MDD (as presented in Table 4-5), the new developments shown in Table 4-9 will require a minimum of three new wells, additional storage tanks, booster pump stations, and arsenic treatment facilities depending on water quality. The owners of these developments are expected to fund these new facilities, or portions of new facilities based on their anticipated water use. The anticipated schedule through 2026 is depicted in Figure 4-6.

Figure 4-6 Construction Schedule



SECTION 5. Model Development

5.1 Modeling Software Selection

WaterGems for GIS Pro water modeling software distributed by Bentley, Inc. was used to model the water distribution system. Scenarios were developed for Average Day Demand, Maximum Day Demand, and Maximum Day Demand plus Fire Flow for existing and 2050 conditions. A Hazen-Williams coefficient of 130 was assumed for the entire pipe network.

5.2 GIS Database and Model Development

TOCV provided PDFs of quartersection maps of the existing distribution system. Water Works Engineers used these PDFs as a basis for developing a new GIS database of the water distribution system. This GIS database was then used as the basis for the hydraulic distribution model. Model development included adding and removing pipes, storage tanks, and booster pump stations. Water demands were placed throughout the distribution system based on billing

data and addresses provided by TOCV. The placement of the 10 largest users were manually verified. They are not listed here due to privacy concerns.

To determine Maximum Day Demands in the model, Average Day Demands were multiplied by a factor of 2. To determine Peak Hour Demands, the Average Day Demands were multiplied by a factor of 3. Available Fire Flow was determined using a built-in tool that systematically determines the Available Fire Flow based on system pressures throughout the distribution system. This analysis was applied to the Maximum Day Demands to develop a Max Day plus Available Fire Flow scenario. The projected 2050 demands were incorporated into the future condition scenarios, along with the known upcoming developments.

5.3 Model Calibration

The model was calibrated utilizing fire hydrant flow tests and other field data provided by the Town, shown in Appendix B. The model is sufficient for use in master planning.

5.4 Model Scenarios

As mentioned above, the following scenarios were simulated in the model.

1) Existing system – Average Day Demand
2) Existing – Maximum Day Demand
3) Existing – Maximum Day Demand + Available Fire Flow
4) Existing – Peak Hour Demand
5) 2050 – Average Day Demand
6) 2050 – Maximum Day Demand
7) 2050 – Maximum Day Demand + Available Fire Flow
8) 2050 – Peak Hour Demand

Figures presenting the model results for the scenarios are provided in Appendix C.

5.5 Future Conditions

The future conditions scenarios incorporate the projected 2050 demands discussed in Section 4.9 and the improvements discussed in SECTION 6 and SECTION 7. New storage, treatment, and pumping facilities have been located throughout the distribution system, typically close to areas with anticipated developments. New backbone water mains were modeled in those areas as well. Though, the design and installation of new pipe in support of new developments is generally the developer's responsibility. The model does not include smaller, local distribution mains that will be needed to support individual customers in a new development. Pipes have been sized to limit velocities to less than 5 feet per second (fps) in all demand scenarios, excluding fire flow scenarios.

The model includes the future facilities discussed in Section 6.1. These are placed throughout the distribution system near areas of future demand. The actual placement of these facilities will be determined in the future as they are required.

Some of the PRV Stations have also been adjusted to lower the system pressures as discussed in Section 6.2. This is only possible with the addition of new pumping and production facilities within the distribution system. The adjustment of the PRV settings must be done in coordination with the construction of new facilities.

SECTION 6. 2050 Water Infrastructure

6.1 Future Facilities

Improvements to existing facilities and future facilities are summarized in Table 6-1. The planned improvements are shown in bold italics. The individual improvements are described in general terms in the subsequent sections. In the future all facilities will be provided with new electrical backup generators with 24-hour fuel tanks.

Table 6-1 Existing and Future Facilities

Facility Name	Well Capacity, gpm	Treatment	Tank Size, MG	Booster Pump Station Flow, gpm	Hydopneumatic Tank	Backup Generator
Mongini	560 575	***New Arsenic***	1.3 2.7	None	None	***Replace existing***
Verde River Estates	~~65~~ ***65*** ***65***	***New Arsenic***	0.01 (Raw) 0.01 ***0.05***	20	Yes	***New Generator***
Rainbow Drive	None	None	0.21	1,625	Yes	***New Generator***
Town Site	None	None	0.72	1,055	Yes	***New Generator***
Plant 3 (High View, In Process)	***275***	***None***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Verde Commercial	***None***	***None***	***0.5 0.5***	***600 PH 2,000 FF***	***Yes***	***Yes***
Plant 4	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 5	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 6	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 7	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 8	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 9	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***
Plant 10	***400***	***Arsenic***	***0.25***	***600 PH 1,000 FF***	***Yes***	***Yes***

6.1.1 Future Wells

The projected system wide max day demand is 5.63 MGD in the year 2050. This means an additional 4.3 MGD of water supply, or 13.2 acre-feet per day, will be required to meet future demands. This demand growth includes the planned developments discussed in Section 4.10.

Table 6-2 2050 Well Requirements

Parameter, Unit	Value
New Required Well Capacity (Maximum Day), gpd	4,262,141
Assumed Well Capacity, gpd	576,000
Well Capacity, gpm	400
Required New Wells*	7

*The additional 4.3 MGD accounts for projected new demands only. The number of required new wells does not include the 400 gpm well that is currently planned to meet existing MDD. This assume each well is 400 gpm and may be adjusted depending on actual well capacities.

6.1.1.1 Verde River Estates

The VRE is not hydraulically connected to the rest of the distribution system and is currently only supplied by a single well. The Verde River Estates will require a new backup well in the future. In addition to the future well, another well will be needed to the replace the existing well. The new well should be installed outside the Verde River zone of influence.

6.1.2 Future Storage Tanks

The following requirements were used to evaluate storage tank capacity throughout the system based on the latest design criteria for the TOCV. TOCV design criteria for the Water System are included in Appendix A.

Table 6-3 2050 Storage Tank Requirements

Criteria	Storage Requirement	Gallons per Day, gpd
Equalization Storage	20% of Maximum Day Demand	1,126,401
Emergency Storage	10% of Maximum Day Demand	563,200
Fire Flow Storage*	Fire Flow x Duration (3,000 gpm x 3 hours)	540,000
	Total:	2,229,601

* 3,000 gpm for 3 hours for fire flow storage

Based on the population projection and water demand, total storage required for the combined system is 2.2 MG in the year 2050. As discussed in Section 2.5 there is approximately 4.2 MG of existing storage in the system. Therefore, there is currently sufficient storage capacity for the 2050 conditions on a systemwide basis, including 3,000 gpm fire flow, per the requirement shown above.

However, even though there may be sufficient fire storage volume on a systemwide basis, virtually all of the existing storage is located at the Mongini Tanks, far from the existing demand and areas likely to need fire flow. As discussed, the distance and related friction loss limits available fire flow from the tanks. Furthermore, since there is no looping or parallel pipes throughout most of the distribution system, a broken pipe anywhere between the Mongini Tanks and the customers to the south will stop water delivery south of the break until it is repaired. Currently, there is only ½ day of storage in the downtown area and this cannot be pumped west of the PRV station near Oasis Road.

For these reasons, additional storage should be installed and appropriately sized for each new well, booster pump, and fire flow, and placed throughout the distribution system. The planned Verde Commercial facility and the 6th Street (Town) storage facility will provide up to 1.6 million gallons of storage in the area south of I-17. The minimum recommended size for any new storage tank is 250,000 gallons. Assuming 7 new wells are installed as discussed in Section 6.1, a minimum of 1,750,000 gallons of new storage capacity will be installed by 2050.

6.1.2.1 Verde River Estates

The VRE will require a new future 50,000-gallon storage tank. An ideally sized storage tank, large enough for 30% of MDD and Fire Flow (1,500 gpm x 180 min), would be approximately 300,000 gallons. A tank this size is too large for the normal usage and would result in extended water age.

6.1.3 Future Booster Stations

New booster pump stations are required to pump water from storage tanks to the distribution system at system pressures and provide fire flow. Sufficient pumping (and gravity storage capacity) is required to provide the larger of Peak Hour or Maximum Day plus Fire Flow Demand. The minimum Peak Hour booster station capacity is assumed to be 600 gpm, and the max day capacity is assumed to be 400 gpm (equal to the well capacity).

Additional capacity for fire flow should also be added; 1,000 gpm of fire flow is the minimum recommended amount from an individual booster pump station. Additional flow may be needed from a particular booster station based on local conditions and the fire flow requirements of a particular area, which may be as high as 3,000 gpm. Future developments may be required to supplement fire flow in excess of 1,500 gpm, which is generally the maximum that can be provided by the existing distribution system.

TOCV will review designs by developers and facilitate discussions for cost-share possibilities in order to determine the best plan of action.

6.2 Future Pressure Reducing Valves

New pressure zones are not planned at this time, therefore new PRV stations will not be required. However, it is anticipated the existing valve stations will be rehabilitated with new valves and the pressure set points will be adjusted to lower the pressures in the downstream zones. The

new set points must be coordinated with the installation of new pump stations placed throughout the distribution system to maintain appropriate pressure and provide fire flow.

All customers with pressures greater than 80 psi should have individual PRVS, per the Universal Plumbing Code (UPC).

Table 6-4 2050 PRV Adjustments

Location	Pressure Setpoint, psi	Downstream Zone	Downstream HGL, ft
S.R. 260 #1	60	Zone 2	3,467
S.R. 260 #2	60	Zone 3	3,367
Verde West Dr	40	Zone 3A	3,345
Park Verde Rd	40	Zone 3A	3,345

6.3 Water Main Improvements

It is recommended that aging infrastructure and small diameter pipes be systematically replaced over the next 25 years. For this analysis, it is assumed that piping 50 years old or older will be replaced immediately, and then the remaining piping will be systematically replaced as it ages. The replacement program will focus on replacing existing cast iron, galvanized, poly, and PVC piping while leaving the existing asbestos concrete and ductile iron pipe in place. In addition to replacing the aging piping, it is also recommended that small diameter piping 6-inches in diameter or less should be upsized to 8-inches, which will enable fire hydrants to be installed on dead end lines. Of the total existing 272,000 ft of piping (2-12inch), approximately 138,000 ft has been identified for replacement over the next 25 years. Refer to SECTION 7 of the Capitol Improvements Plan (CIP) for more detail.

New water mains required for new developments should provide at least two connections to the existing distribution system. In particular, two connections should be made to the 12" main along HWY 260 whenever possible. These new connections will help to reduce friction losses and increase the overall reliability of the distribution system. New water mains required for developments are typically the responsibility of the developer. For this reason, new water mains shown on figures depicting 2050 conditions are assumed to be the responsibility of developers and are not included as items in the capital improvement plan.

It is anticipated that new water mains installed within the new YAN communities will be owned by the YAN. This is similar to the existing conditions where TOCV owns water mains connecting to the YAN communities, but not within the communities. For this reason, new water mains are not shown within any of the future "Future YAN" areas on figures in the Appendix.

SECTION 7. Capital Improvement Plan

The Capital Improvement Plan (CIP) outlines projects required to meet future water demand within the Town of Camp Verde water system. The CIP is packaged into recommended projects for 2023 through 2050 based on current needs and future development.

The following cost estimates shown in Table 7-2vare for construction related costs and do not include land/ROW acquisitions (if needed), permitting, or internal Town costs for the subject projects. Many of the following projects and costs are driven by and funded by developers, others will be these projects will utilize grants and loans for funding sources. Costs associated with developer driven projects may be listed here and are the developer's responsibility. Projects assumed to receive funding from WIFA grants have been noted with an asterisk (*) in the ID column. As discussed, approximately 138,000 ft of piping has been identified for replacement over the next 25 years. The annual pipe replacement cost is averaged over the years. The costs are presented in both 2023 dollars and in future dollars assuming a 3% inflation rate.

7.1 Funding

TOCV has performed and approved a recent rate study and is provided in Appendix D. Funding needs to take place for operation, maintenance, and upgrades to the water system. Funding will be a combination of Utilities Rates, Impact Fees, and Capacity Fees. Based on the 2023 TOCV water production facility costs the impact fee is $4,000 per single family home (SFH). Table 7-1 shows the approved 2024 impact fee per meter size, the impact fees for Cave Creek, AZ and Clarkdale, AZ, two similar sized communities are shown for comparison..

Table 7-1 Impact Fees

Meter Size, in	Approved 2024	2022	2021
Location	Camp Verde	Cave Creek	Clarkdale
0.625 / 0.75	$4,000	$ 7,183	$3,697
1	$8,277	$ 11,996	$7,431
1.5	$15,504	$23,920	$13,612
2	$23,958	$38,286	$21,229
3	$46,767	$76,644	$41,358

Table 7-2 Camp Verde CIP Improvements

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2025	1	Water Systems Arsenic Treatment (1/2)	Begin project. The Town has been monitoring arsenic levels monthly. The arsenic levels have been increasing and treatment is required in all Town water systems. Repaint Mongini Tank 2. Project completed in 2026.	**$0**	**$0**	**$0**	**$2,000,000**	**$2,000,000**
2025	2	Water Main Replacement Project (1/5)	Begin project. This project will replace approximately 25,000 linear feet of aged, small undersized water mains with new 8-inch diameter water mains and 15 new fire hydrants. The project will enhance water quality by looping the systems and increase fire flows. Finnie Flat & Verde Mobile Village area, Park Verde Estates area, and Fort River Caves area. Project completed in 2029.	**$0**	**$1,500,000**	**$0**	**$0**	**$1,500,000**
2025	3*	Northbound Highway 260 Production Wells Construct High View Water Plant, (Water Plant #3), (1/3)	Begin project. The Town needs at least two additional well sites to increase water production. Town staff have been working with the High View PAD development to develop the existing 8-inch well site, construct a storage tank facility and to install arsenic treatment. Staff is recommending design and development of an additional new 18-inch diameter well and arsenic treatment for this site. Project completed in 2028.	**$0**	**$225,000**	**$1,250,000**	**$0**	**$1,475,000**
2025	4	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$232,500**	**$0**	**$232,500**
2025	5	Verde Commercial Tank and Pump Station (1/2)	Begin project. Site Design. There is only a half day of storage at the Town site should the water line break from our Mongini well site. Town staff has been working on a development agreement with the Verde Commercial Developer to acquire 0.9 acre parcel to develop a 500,000 gallon storage facility and pump station for the area. The developer would donate the site and construct the needed pump station, backup generator, and provide the water main to the new facility. The Town would design and construct a storage tank. Project completed in 2026.	**$0**	**$200,000**	**$700,000**	**$0**	**$900,000**
2025	6	ADWR Adequate Water Supply Study (1/2)	Begin project. The Arizona Department of Water Resources (ADWR) requires the Town to update our Adequate Water Supply by 2026. Project completed in 2026.	**$100,000**	**$0**	**$0**	**$0**	**$100,000**
2025	7	New Mongini Replacement Well (1/2)	Begin project. The Town needs at least two additional well sites to increase water production. Town staff is recommending drilling a replacement well at the Mongini site and abandoning Well #1, which is not usable. The project will design, install a new 18-inch diameter well and require an additional 200 Amp electrical service. The project will create redundancy for the well pumping at this site.	**$1,000,000**	**$0**	**$0**	**$0**	**$1,000,000**

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2025	8	Backhoe- Extend-a-Hoe-4X4- Enclosed Cab	Replacing aging Backhoe. Staff maintains 65 miles of distribution main along Hwy 260, pipe depths and steep terrains are beyond the capability of present backhoe. When Town purchased the Water Co., we did not get the backhoe that had these capabilities.	**$180,000**	**$0**	**$0**	**$0**	**$180,000**
2025	9	Hydro Vac Trailer	Provide a safer work environment while locating and working around other utilities, especially power and natural gas. Also cutting man hours and other equipment needs. Reducing road closures and making for shorter water outages.	**$80,000**	**$0**	**$0**	**$0**	**$80,000**
2025	10	¾ or 1 Ton Pickup Truck with Crane	The Water Division needs a pickup truck with utility beds for two new Water Operators. The new crew members will bring the Water Division staff up to 4 water operators.	**$150,000**	**$0**	**$0**	**$0**	**$150,000**
2025	11	NVerde River Estates: New Well and Storage Tanks (1/3)	Begin project. The existing well pumps 53 GPM and is located within the subflow zone of the Verde River, within the floodway. The Town would like to purchase additional land near the Verde River Estates Treatment site on APN 403-18-100B. The land acquisition should occur in FY25. The new well could be drilled in FY27 and final site design and construction in FY28.	**$150,000**	**$0**	**$0**	**$0**	**$150,000**
			2025 Subtotals:	**$1,660,000**	**$1,925,000**	**$2,182,500**	**$2,000,000**	**$7,767,500**
2026	1	Verde Commercial Tank and Pump Station (2/2)	Complete project. Tank Construction. Town staff has been working on a development agreement with the Verde Commercial Developer to acquire 0.9 acre parcel to develop a 500,000 gallon storage facility and pump station for the area. The developer would donate the site and construct the needed pump station, backup generator, and provide the water main to the new facility. The Town would design and construct a storage tank.	**$0**	**$600,000**	**$600,000**	**$0**	**$1,200,000**
2026	2	Water Main Replacement Project (2/5)	This project will replace approximately 25,000 linear feet of aged, small undersized water mains with new 8-inch diameter water mains and 15 new fire hydrants. The project will enhance water quality by looping the systems and increase fire flows. Finnie Flat & Verde Mobile Village area, Park Verde Estates area, and Fort River Caves area. Project completed in 2029.	**$0**	**$1,600,000**	**$0**	**$0**	**$1,600,000**
2026	3	ADWR Adequate Water Supply Study (2/2)	Complete Project. The Arizona Department of Water Resources (ADWR) requires the Town to update our Adequate Water Supply by 2026. Project completed in 2026.	**$50,000**	**$0**	**$0**	**$0**	**$50,000**
2026	4	New Mongini Replacement Well (Part 2/2)	Complete project. The Town needs at least two additional well sites to increase water production. Town staff is recommending drilling a replacement well at the Mongini site and abandoning Well #1, which is not usable. The project will design, install a new 18-inch diameter well and require an additional 200 Amp electrical service. The project will create redundancy for the well pumping at this site.	**$1,000,000**	**$0**	**$0**	**$0**	**$1,000,000**

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2026	5	Water Systems Arsenic Treatments (2/2)	Complete project. The Town has been monitoring arsenic levels monthly. The arsenic levels have been increasing and treatment is required in all Town water systems.	**$0**	**$1,600,000**	**$0**	**$0**	**$1,600,000**
			2026 Subtotals:	**$1,050,000**	**$3,800,000**	**$600,000**	**$0**	**$5,450,000**
2027		Water Main Replacement Project (3/5)	This project will replace approximately 25,000 linear feet of aged, small undersized water mains with new 8-inch diameter water mains and 15 new fire hydrants. The project will enhance water quality by looping the systems and increase fire flows. Finnie Flat & Verde Mobile Village area, Park Verde Estates area, and Fort River Caves area. Project completed in 2029.	**$0**	**$437,091**	**$218,545**	**$0**	**$655,636**
2027	1*	State Route 260 Culvert - Water Main	Provide isolation valves and reroute 1,000LF of pipe around culvert. Upsize pipe from 12" diameter to 16" diameter.	**$159,811**	**$479,434**	**$0**	**$0**	**$639,245**
2027	2	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$508,118**	**$0**	**$508,118**
2027	3	PRV Station Upgrades	Install new 12" PRV and required pipe modifications at Stat Route 260 #1 and #2	**$491,727**	**$0**	**$0**	**$0**	**$491,727**
2027	4	New Generator at 4th Street Pump Station	New Generator	**$87,418**	**$0**	**$0**	**$0**	**$87,418**
2027	5	New Generator at Rainbow Street Pump Station	New Generator	**$87,418**	**$0**	**$0**	**$0**	**$87,418**
2027	6	Northbound Highway 260 Production Wells Construct High View Water Plant, (Water Plant #3), (2/3)	Continue project.the Town needs at least two additional well sites to increase water production. Town staff have been working with the High View PAD development to develop the existing 8-inch well site, construct a storage tank facility and to install arsenic treatment. Staff is recommending design and development of an additional new 18-inch diameter well and arsenic treatment for this site. Project completed in 2028.	**$0**	**$1,500,000**	**$1,500,000**	**$0**	**$3,000,000**
2027	7	New Verde River Estates: New Well and Storage Tanks (2/3)	Continue project. The existing well pumps 53 GPM and is located within the subflow zone of the Verde River, within the floodway. The Town would like to purchase additional land near the Verde River Estates Treatment site on APN 403-18-100B. The land acquisition should occur in FY25. The new well could be drilled in FY27 and final site design and construction in FY28.	**$218,545**	**$0**	**$0**	**$0**	**$218,545**
			2026 Subtotals:	**$1,044,920**	**$1,979,434**	**$2,008,118**	**$0**	**$5,032,472**
2028	1	Water Main Replacement Project (4/5)	This project will replace approximately 25,000 linear feet of aged, small undersized water mains with new 8-inch diameter water mains and 15 new fire hydrants. The project will enhance water quality by looping the systems and increase fire flows. Finnie Flat & Verde Mobile Village area, Park Verde Estates area, and Fort River Caves area. Project completed in 2029.	**$500,000**	**$0**	**$250,000**	**$0**	**$750,000**
2028	2	PRV Station Upgrades	Install new 6" PRV and required pipe modifications at Verde West Dr.	**$393,928**	**$0**	**$0**	**$0**	**$393,928**

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2028	3	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$523,362**	**$0**	**$523,362**
2028	4	SCADA Upgrades	Upgrade existing SCADA systems to improve continuous monitoring of system.	**$168,826**	**$0**	**$0**	**$0**	**$168,826**
2028	5	Construct Water Plant #4	Provide new well, treatment, storage, booster pump station, associated system piping and upgrades, and electrical in support of new developments	**$0**	**$0**	**$5,627,544**	**$0**	**$5,627,544**
2028	6	Northbound Highway 260 Production Wells Construct High View Water Plant, (Water Plant #3), (3/3)	Continue project.the Town needs at least two additional well sites to increase water production. Town staff have been working with the High View PAD development to develop the existing 8-inch well site, construct a storage tank facility and to install arsenic treatment. Staff is recommending design and development of an additional new 18-inch diameter well and arsenic treatment for this site. Project completed in 2028.	**$0**	**$1,500,000**	**$1,500,000**	**$0**	**$3,000,000**
2028	7	New Verde River Estates: New Well and Storage Tanks (3/3)	Complete project. The existing well pumps 53 GPM and is located within the subflow zone of the Verde River, within the floodway. The Town would like to purchase additional land near the Verde River Estates Treatment site on APN 403-18-100B. The land acquisition should occur in FY25. The new well could be drilled in FY27 and final site design and construction in FY28.	**$281,377**	**$0**	**$0**	**$0**	**$281,377**
			2028 Subtotals:	**$844,132**	**$1,500,000**	**$7,650,906**	**$0**	**$9,995,037**
2029	1	Water Main Replacement Project (4/5)	This project will replace approximately 25,000 linear feet of aged, small undersized water mains with new 8-inch diameter water mains and 15 new fire hydrants. The project will enhance water quality by looping the systems and increase fire flows. Finnie Flat & Verde Mobile Village area, Park Verde Estates area, and Fort River Caves area. Project completed in 2029.	**$695,564**	**$0**	**$347,782**	**$0**	**$1,043,347**
2029	2	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$539,062**	**$0**	**$539,062**
2029	3	PRV Station Upgrades	Install new 6" PRV and required pipe modifications at Park Verde Rd.	**$463,710**	**$0**	**$0**	**$0**	**$463,710**
			2029 Subtotals:	**$1,159,274**	**$0**	**$886,845**	**$0**	**$2,046,119**
2030	1	Construct New Water Plant #5	Install new well, treatment, storage, booster pump station, hydropneumatic tank, generator, associated piping, and electrical equipment.	**$0**	**$0**	**$5,970,261**	**$0**	**$5,970,261**
2030	2	BPS Upgrades	6th Street BPS Rehab and VFD improvements	**$597,026**	**$0**	**$0**	**$0**	**$597,026**
2030	3	Replace Piping	Upsize existing 4" & 6" diameter pipe with 8" diameter pipe. Replace existing aging piping ~50 years old or older (This task focuses on Cast Iron, Galvanized, Poly, and PVC piping. It is assumed that any unknown pipe materials identified in the model are being replaced under this task).	**$3,940,373**	**$0**	**$0**	**$0**	**$3,940,373**
2030	4	PRV Station Upgrades	Install new 6" PRV and required pipe modifications at Tres Rios	**$537,324**	**$0**	**$0**	**$0**	**$537,324**

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2030	5	PRV Station Upgrades	Install new 12" PRV and required pipe modifications Finnie Flat Rd	**$358,216**	**$0**	**$0**	**$0**	**$358,216**
2030	6	New Piping	Install new water mains in support of developments and growth.	**$277,617**	**$0**	**$832,851**	**$0**	**$1,110,469**
			2030 Subtotals:	**$5,710,555**	**$0**	**$6,803,113**	**$0**	**$12,513,668**
2035	1	Construct New Water Plant #6	Install new well, treatment, storage, booster pump station, hydropneumatic tank, generator, associated piping, and electrical equipment.	**$0**	**$0**	**$6,921,169**	**$0**	**$6,921,169**
2035	2	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$3,218,344**	**$0**	**$3,218,344**
2035	3	Replace Piping	Upsize existing 4" & 6" diameter pipe with 8" diameter pipe. Replace existing aging piping ~50 years old or older (This task focuses on Cast Iron, Galvanized, Poly, and PVC piping).	**$4,567,972**	**$0**	**$0**	**$0**	**$4,567,972**
2035	4	SCADA Upgrades	Upgrade existing SCADA systems to improve continuous monitoring of system.	**$207,635**	**$0**	**$0**	**$0**	**$207,635**
			2035 Subtotals:	**$4,775,607**	**$0**	**$10,139,513**	**$0**	**$14,915,120**
2040	1	Construct New Water Plant #7	Provide new well, treatment, storage, booster pump station, associated system piping and upgrades, and electrical in support of new developments	**$0**	**$0**	**$8,023,532**	**$0**	**$8,023,532**
2040	2	Second Storage Tank at Verde Commercial	Add second 500,000 gallon storage tank at the Verded Commmercial Site.	**$0**	**$641,883**	**$641,883**	**$0**	**$1,283,765**
2040	3	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$3,730,942**	**$0**	**$3,730,942**
2040	4	Replace Piping	Upsize existing 4" & 6" diameter pipe with 8" diameter pipe. Replace existing aging piping ~50 years old or older (This task focuses on Cast Iron, Galvanized, Poly, and PVC piping).	**$5,295,531**	**$0**	**$0**	**$0**	**$5,295,531**
2040	5	SCADA Upgrades	Upgrade existing SCADA systems to improve continuous monitoring of system.	**$240,706**	**$0**	**$0**	**$0**	**$240,706**
2040	6	Redundant VRE Well	Drill and equip new redundant well servicing Verde River Estates. Install new 50K gal Tank	**$0**	**$641,883**	**$0**	**$0**	**$641,883**
			2040 Subtotals:	**$5,536,237**	**$1,283,765**	**$12,396,357**	**$0**	**$19,216,360**
2045	1	Construct New Water Plant #8	Provide new well, treatment, storage, booster pump station, associated system piping and upgrades, and electrical in support of new developments	**$0**	**$0**	**$9,301,473**	**$0**	**$9,301,473**
2045	2	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$4,325,185**	**$0**	**$4,325,185**
2045	3	Replace Piping	Upsize existing 4" & 6" diameter pipe with 8" diameter pipe. Replace existing aging piping ~50 years old or older (This task focuses on Cast Iron, Galvanized, Poly, and PVC piping).	**$6,138,972**	**$0**	**$0**	**$0**	**$6,138,972**
2045	4	SCADA Upgrades	Upgrade existing SCADA systems to improve continuous monitoring of system.	**$279,044**	**$0**	**$0**	**$0**	**$279,044**
			2045 Subtotals:	**$6,418,016**	**$0**	**$13,626,658**	**$0**	**$20,044,674**

Year	ID	Project	Description	Estimated Construction Cost / Cost Sharing				Total Project Cost
				Town	WIFA Grant or Loan	Developer	Congressional Grant	
2050	1	Construct New Water Plant #9	Provide new well, treatment, storage, booster pump station, associated system piping and upgrades, and electrical in support of new developments	**$0**	**$0**	**$10,782,956**	**$0**	**$10,782,956**
2050	2	New Piping	Install new water mains in support of developments and growth.	**$0**	**$0**	**$5,014,075**	**$0**	**$5,014,075**
2050	3	Replace Piping	Upsize existing 4" & 6" diameter pipe with 8" diameter pipe. Replace existing aging piping ~50 years old or older (This task focuses on Cast Iron, Galvanized, Poly, and PVC piping).	**$7,116,751**	**$0**	**$0**	**$0**	**$7,116,751**
2050	4	SCADA Upgrades	Upgrade existing SCADA systems to improve continuous monitoring of system.	**$323,489**	**$0**	**$0**	**$0**	**$323,489**
			2050 Subtotals:	**$7,440,240**	**$0**	**$15,797,031**	**$0**	**$23,237,271**
			Grand Totals:	**$35,638,981**	**$10,488,199**	**$72,091,040**	**$2,000,000**	**$120,218,221**

SECTION 8. References

The following references were used to prepare this master plan:

1. Town of Camp Verde 2016 General Plan
2. Town of Camp Verde Water Use Reports 2023.
3. Town of Camp Verde Water Production Data 2022-2023
4. Town of Camp Verde Mongini Water System Aresnic Removal System Final Basis of Design Report, NCS Engineers, June 2023.
5. Town of Camp Verde Verde River Estates Water System Aresnic Removal System Draft Basis of Design Report, NCS Engineers, June 2023.
6. Town of Cave Creek Pending Development Chart, June 2023
7. High View Well Pump Installation Report, Feb 2022.
8. High View Development Water Report, SBL Engineering, April 2023.

Appendix A Town of Camp Verde Design Criteria

Jurisdiction			City of Phoenix*	City of Peoria*	Arizona American Water*	City of Goodyear*	AWWA Distribution Handbook*	AWWA Manuals*	City of Surprise*	Town of Camp Verde Recommended
Peaking Factors		**Max Day Demand/Average Day Demand**	2	1.6	1.8	1.7	1.5-3.5	-	2	2
		Peak Hour Demand/Average Day Demand	3.4	3.2	3	2.89	2.0-7.0	-	3	3
Wells/Production Facility		**Production Capacity**	1.1 x Maximum Day	1.1 x Maximum Day	Maximum Day	Maximum Day	Maximum Day	-	Maximum Day Demand	Maximum Day Demand
		Firm Capacity	-	-	Must meet Maximum Day Demand with largest well out of service	-	Must meet Maximum Day Demand with largest well out of service	-	-	Must meet Maximum Day Demand with largest well out of service
Storage Facility		**Equalization Storage**	Minimum of 20% of Max Day Flow	20% of Max Day Demand	30% of Max Day Demand	EQ = (Peak Hour Demand - Max Day Demand) x 6 hours	25% of Max Day Demand	10-15% of Average Demand	20% of Max Day Demand	20% of Max Day Demand
		Fire Storage	Fire Flow x Duration	$G = 1{,}020\ (P)^{1/2}\ (1\text{-}0.01\ P^{1/2})$	Fire Flow x Duration	Fire Flow x Duration	Fire Flow x Duration	Flow Duration x Fire Flow (M31)	Fire Flow x Duration	Fire Flow x Duration
		Emergency Storage	10% Max Day Flow	10% Max Day Demand	10% Max Day Demand	Larger of 2 x EQ or EQ + Fire Flow	Dependent on the Owner	Refer M19	10% Max Day Demand	10% Max Day Demand
Pipe Sizing	**Distribution (WSF to End User)**	**Velocity**	< 5 ft/s	</= 5 ft/s for pipes < 36 inches diameter	< 10 ft/s	< 10 ft/s	-	< 5 ft/s	< 5 ft/s	< 5 ft/s
		Headloss	< 10 ft/1,000 ft	2 to 7 ft/1,000 ft	< 10 ft/1,000 ft	2 to 3 ft/1,000 ft	-	< 6 ft/1,000 ft	< 10 ft/1,000 ft	< 10 ft/1,000 ft
		Design Criteria	Max Day + Fire Flow	Larger of Maximum Day Demand + Fire Flow or Peak Hour Demand	-	Peak Hour	-	Max Day + Fire Flow	Larger of Peak Hour demand or Max Day + Fire Flow	Larger of Peak Hour demand or Max Day + Fire Flow
	Fire Flow Condition	**Velocity (during Max Day + Fire Flow)**	< 10 ft/s	< 10 ft/s	-	-	-	-		
	Transmission (Wells to WSF)	**Velocity**	< 5 ft/s	</= 6 ft/s for pipes < 36 inches diameter	> 2 ft/s and < 6 ft/s	< 10 ft/s	-	< 5 ft/s	< 5 ft/s	< 5 ft/s
		Headloss	< 6 ft/1,000 ft	1 to 2.5 ft/1,000 ft	< 10 ft/1,000 ft	2 to 3 ft/1,000 ft	-	< 2 ft/1,000 ft	< 2 ft/1,000 ft	< 2 ft/1,000 ft
		Design Criteria	Max Day + Fire Flow	Larger of Maximum Day Demand + Fire Flow or Peak Hour Demand	-	Peak Hour	-	Peak Hour or Max Storage replenishment rate	Max Day	Max Day
Fire Flow		**Single Family Residential**	1,000 gpm	1,000 - 1,500 gpm for 2 hours	1,500 gpm for 2 hours	1,000 gpm for 3 hours	500 - 2,000 gpm	-	2,000 gpm for 2 hours	1,000 gpm for 2 hours***/ 2,000 gpm for 2 hours
		Multi Family Residential	1,500 gpm	1,500 - 2,500 gpm for 2 hours			1,500 - 3,000 gpm	-		
		Commercial	3,000 gpm	3,000 - 8,000 gpm for 3-4 hours	3,000 gpm for 3 hours	3,500 gpm for 4 hours	2,500-5,000 gpm	-	3,000 gpm for 3 hours	1,500 gpm for 3 hours***/ 3,000 gpm for 3 hours
		Industrial	5,000 gpm	4,000 - 10,000 gpm for 4 hours			3,500-10,000 gpm	-		
Fire Hydrant		**Fire Hydrant Spacing**								400 ft**
		Clear Space around Hydrant								3 ft
System Pressure		**Maximum Pressure**	100 psi	100 psi at peak hour demand	90 psi	100 psi	65-75 psi service	-	100 psi	100 psi
		Max Day/Peak Hour Conditions	Between 50 psi and 100 psi	Between 50 and 100 psi with minimum 40 psi service pressure	40 psi minimum (for max day)	50 psi minimum	25-35 psi minimum	-	40-100 psi	40-100 psi
		Fire Flow Conditions	25 psi minimum	20 psi minimum at max day + fire flow	20 psi minimum at max day + fire flow	20 psi minimum	20 psi minimum	-	20 psi	20 psi
Booster Station		**With Storage**	Design for Max Day	Maximum Day Demand + 10%	Larger of Peak Hour Demand or Maximum Day Demand + Fire Flow	Peak Hour	-	Constant Speed Pumps, Must meet all extreme and average flow conditions	Larger of Peak Hour Demand or Maximum Day Demand + Fire Flow	Larger of Peak Hour Demand or Maximum Day Demand + Fire Flow
		Without Storage	Design for Peak Hour or Max Day + Fire Flow	Larger of Peak Hour Demand or Maximum Day Demand + Fire Flow + 10%			-	Variable speed pumps, must meet all extreme and average flow conditions		
		Firm Capacity	Largest Pump Out of Service	Largest Pump Out of Service	Largest Pump Out of Service	Largest Pump Out of Service	-	Largest Pump Out of Service	Largest Pump Out of Service	Largest Pump Out of Service
Fire Hydrants										Dry-Barrel Per MAG Std Dtl 360-2

* Based on City of Surprise - Integrated Water Master Plan - Water Infrastructure (Updated July 2009)

** Confirm with Fire Department based on amount of hose on typical apparatus.

***Reduction allowed per plumbing/fire code based on sprinkled structure.

Appendix B Fire Flow Test Reports

HYDRANT FLOW TEST SUMMARY REPORT

STATEWIDE SERVICE & INSTALLATION
8544 E. Eastridge Dr. Prescott Valley, AZ 86314
Ph. (928)772-8008, Fax. (928)772-1104
ROC # 211758, 211759, 211761
www.BWFireSecurity.com

LOCATION: 340 N Goswick Way
Camp Verde, AZ 86322

DATE: 10/14/2020
TIME: 1:30:00 PM

Static Hydrant Number: 1
Elevation: 3179

Flowing Hydrant Number: 1
Elevation: 3179

Dist. Between Hydrants: N/A

Diameter of Main: 8"

Type of Supply: public

Outlet Diameter: 2.5

Number flowing: 1
Coeff. of Discharge: 0.8

Static Pressure: 92

Residual Pressure: 59

Pitot Reading: 46

Flow: 1011.6 gpm

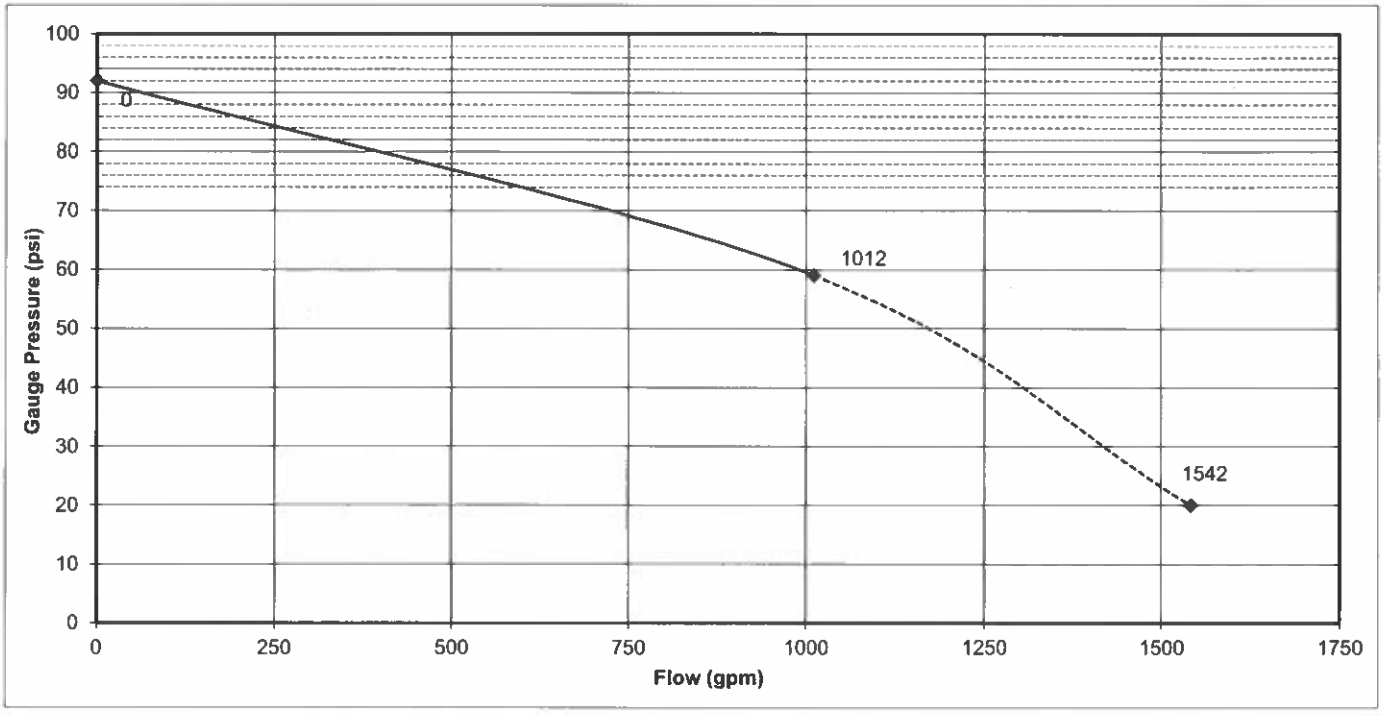
Pump Present: no

Tank Present: no

Static pressure of	92	psi @	0	gpm
Residual pressure of	59	psi @	1011.6	gpm
Available flow @	20	psi --	1541.6	gpm

Flow at 20 psi: 1541.6 gpm

GRAPH:



HYDRANT FLOW TEST SUMMARY REPORT

NOTES:

1. Flowing hydrant is assumed to be on a circulating main or downstream of the pressure test hydrant on a dead-end system.
2. Flow analysis assumes a gravity flow system with no distribution pumps and having no demand, other than the test flow.
3. The distance between hydrants, elevations & main diameters are approximate and for information only.

B&W Rep: Joe Wilson

Witness: Ken Krebbs

Witness Signature:

FLOW TEST SUMMARY:

PROJECT LOCATION: AULTMAN PARKWAY
DATE OF FLOW TEST: 3-2-2022
TIME OF FLOW TEST: 1.00 PM
CONDUCTED BY: BLAKE GRANT w ALL WEST FIRE & SECURITY
WITNESSED BY: RICH JEWELL w CAMP VERDE WATER SYSTEM
STATIC: 107 PSI
RESIDUAL: 72.6
FLOW: 1,190 GPM
FLOW @ 20 PSI: 1,958
OUTLET SIZE: 2.5
COEFFICIENT OF DISCHARGE: 0.9

Date of test: 3-2-22
Time of test: 1.00
Re:
Location of test: Flow : Hayfield draw & Old 279
Stat Res : Infront of John Brannes Propane on 260

Static Pressure	107 PSI
Residual Pressure	72.6 PSI
Pilot	50 PSI
Flow	1,190 GPM
Outlet Size	2.5 INCHES

Flow test was performed by: All West Fire Protection Systems, LLC.

Company Representative Signature

Blake Grant
(Please Print Name)

The results of the flow test were witnessed first-hand at the time and date referenced above by:

Signature of

Rich Jewell
(Please Print Name)

Date: 3/2/22.

ALL WEST
FIRE & SECURITY

WWW.ALLWESTFIRE.COM

2957 Hwy 89, Suite B, Prescott, AZ 86301 • Phone: 928-776-7861
Email: hq@allwestfire.com • ROC252546 ROC332329

ALL WEST
FIRE & SECURITY

WWW.ALLWESTFIRE.COM

RESIDUAL HYDRANT:(3725 W OLD 279)HYDRANT OFF MAIN ON HWY 260

FLOW HYDRANT: (OLD 279 & HWY 260) HAYFIELD DRAW

2957 Hwy 89, Suite B, Prescott, AZ 86301 • Phone: 928-776-7861
Email: hq@allwestfire.com • ROC252546 ROC332329

3725 Old Highway 279

PUMP CALCULATIONS FOR MODEL

STATIC:

- 0 GPM
- 110 PSI (254.10 FT)

RESIDUAL

- 750 GPM
- 50 PSI (115.50 FT)

DESIGN POINT:

$Qo = Qt * [(Ps-Po)/(Ps-Pr)]^{0.54}$

WHERE: Qo=FLOW AVAILABLE AT CHOSEN PRESSURE (GPM)
Qt=RESIDUAL FLOW (GPM)
Ps=STATIC PRESSURE (PSI)
Po=CHOSEN PRESSURE (PSI)
Pt=RESIDUAL PRESSURE (PSI)

CHOOSE 75 PSI

$Qo = 750 * [(110-75)/(110-50)]^{0.54}$

$Qo = 561$ GPM

FOR PUMP MODEL IN WATERCAD:

SHUTOFF:

- 0 GPM
- 110 PSI (254.10 FT)

DESIGN:

- 561 GPM
- 75 PSI (173.25 FT)

MAX OPERATING:

- 750 GPM
- 50 PSI (115.50 FT)

3535 Sharp Shooter Way

PUMP CALCULATIONS FOR MODEL

STATIC:

- 0 GPM
- 85 PSI (196.35 FT)

RESIDUAL

- 919 GPM
- 40 PSI (92.4 FT)

DESIGN POINT:

$Qo = Qt * [(Ps-Po)/(Ps-Pr)]^{0.54}$

WHERE: Qo=FLOW AVAILABLE AT CHOSEN PRESSURE (GPM)
Qt=RESIDUAL FLOW (GPM)
Ps=STATIC PRESSURE (PSI)
Po=CHOSEN PRESSURE (PSI)
Pt=RESIDUAL PRESSURE (PSI)

CHOOSE 60 PSI

$Qo = 919 * [(85-60)/(85-40)]^{0.54}$

$Qo = 669$ GPM

FOR PUMP MODEL IN WATERCAD:

SHUTOFF:

- 0 GPM
- 85 PSI (196.35 FT)

DESIGN:

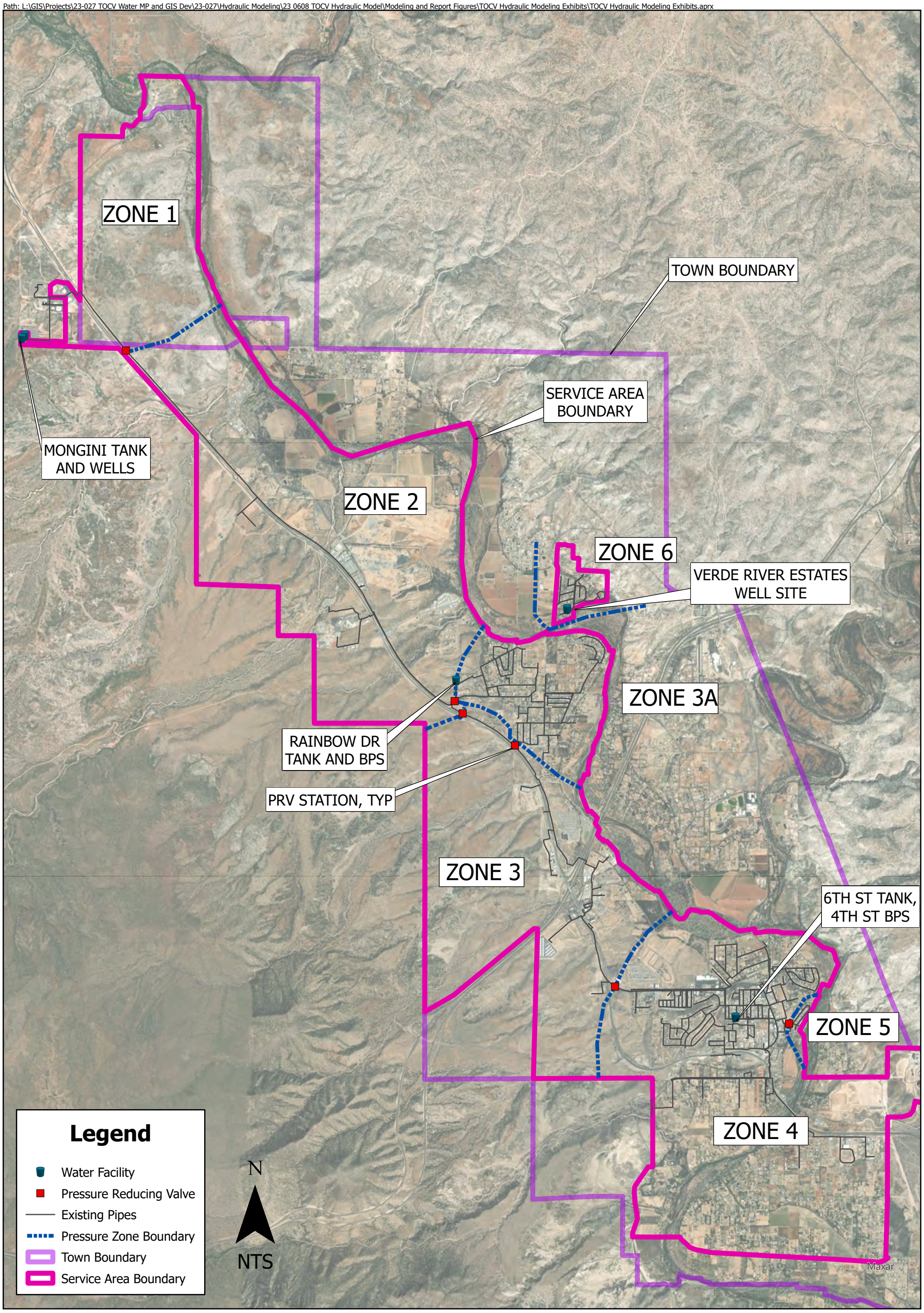
- 669 GPM
- 60 PSI (138.6 FT)

MAX OPERATING:

- 919 GPM
- 40 PSI (92.4 FT)

Appendix C Figures and Model Results

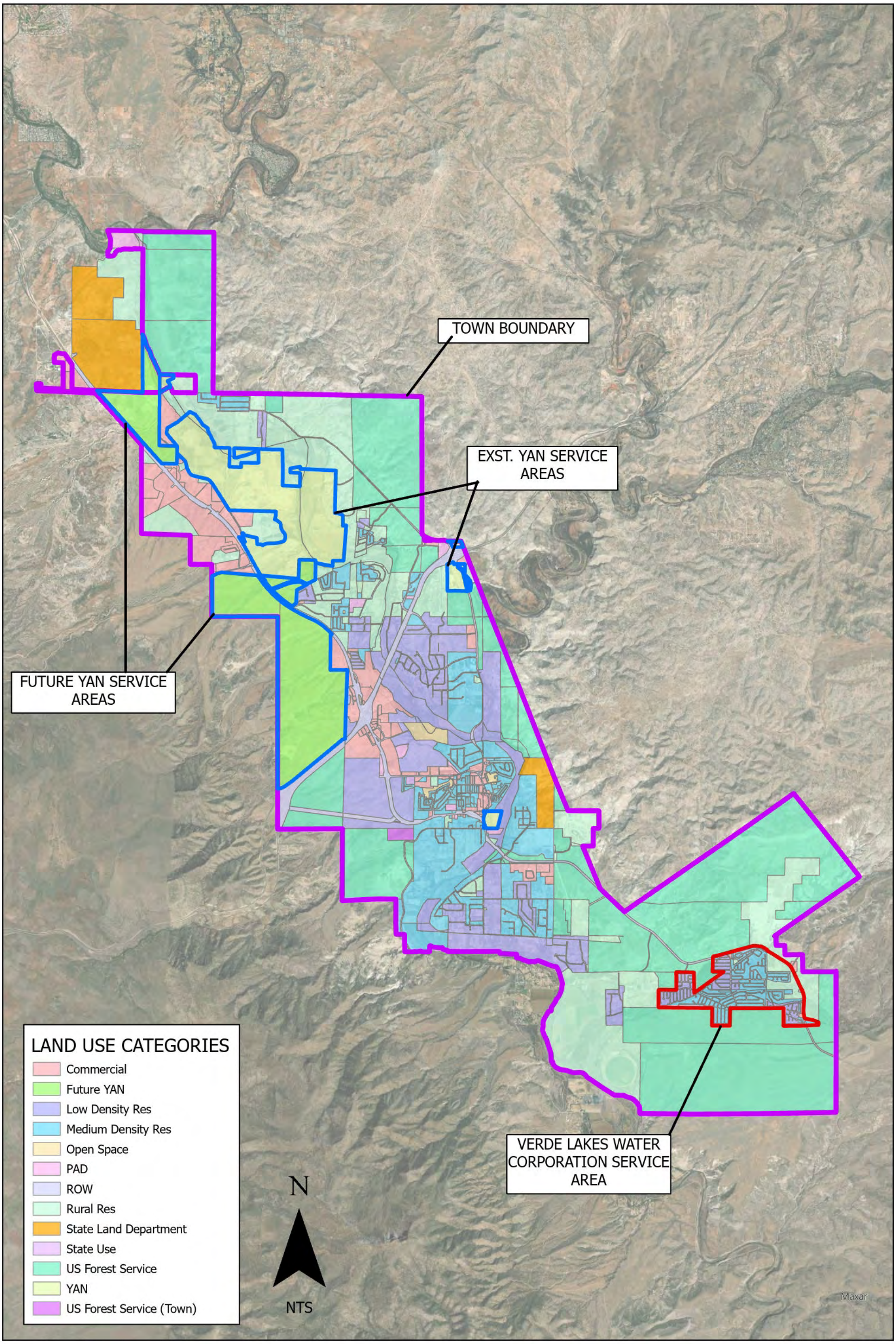
Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx



EXISTING SYSTEM LAYOUT
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

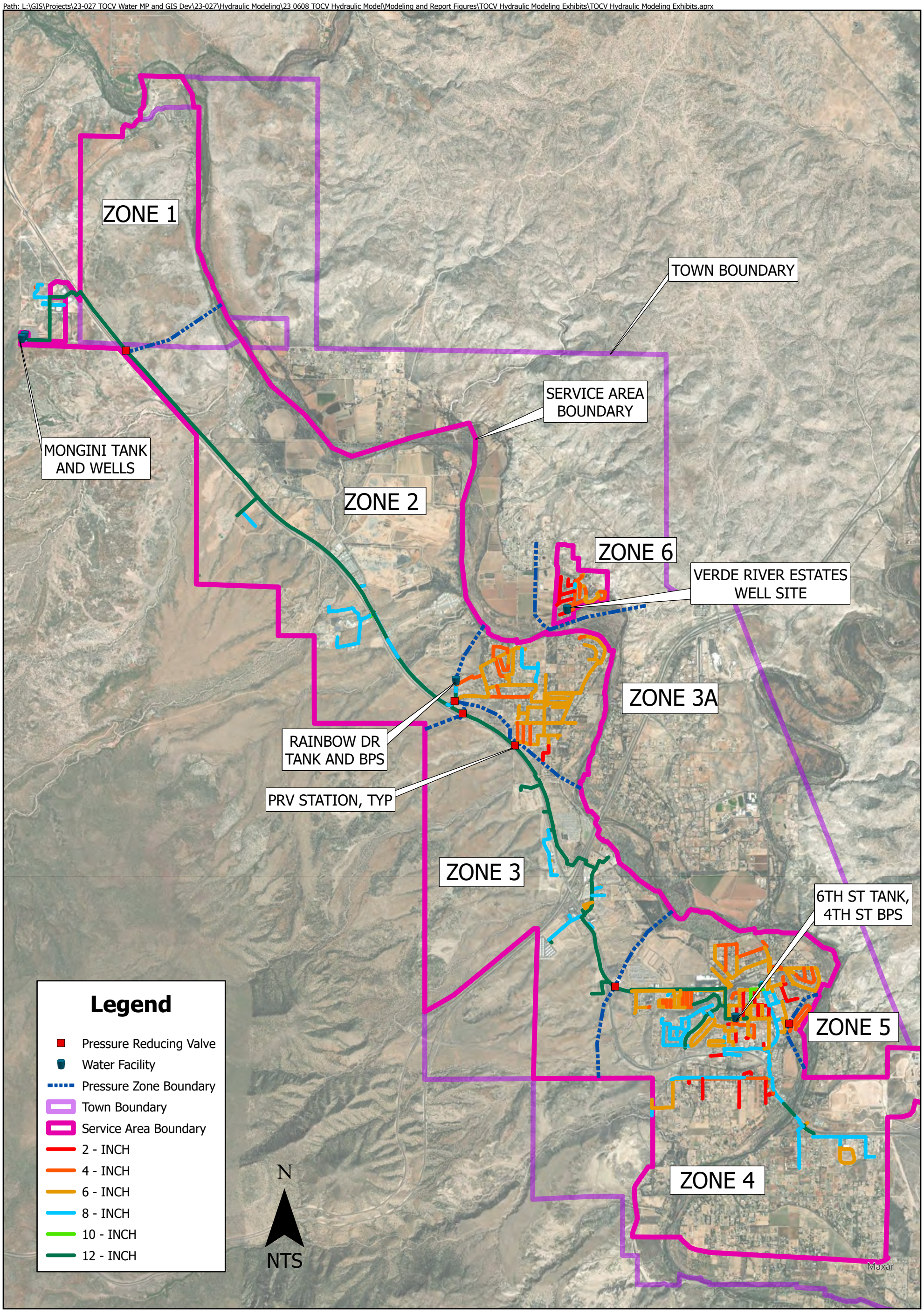


CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

LAND USE MAP
CAMP VERDE MASTER PLAN
CAMP VERDE, AZ
MARCH 2024

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

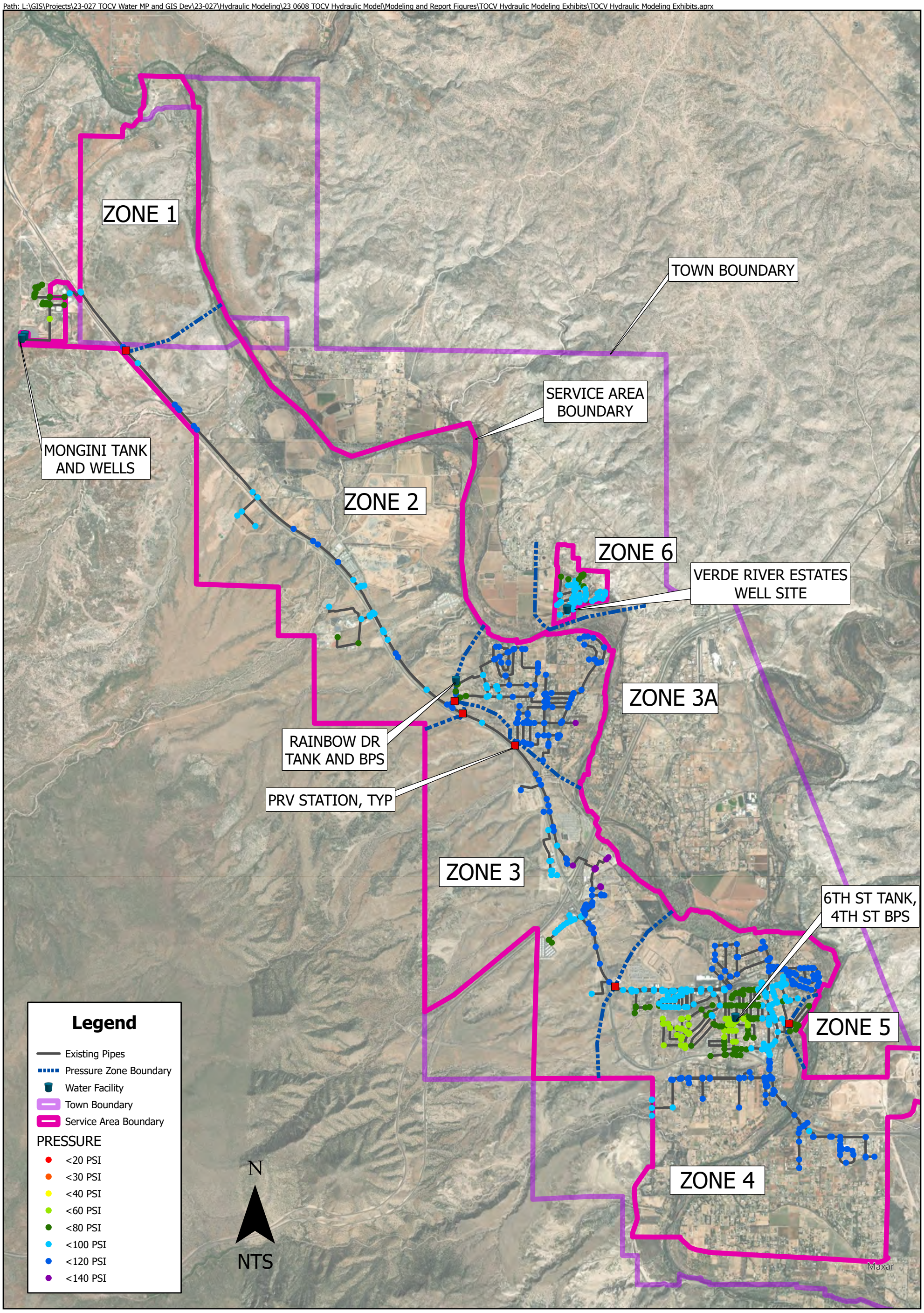


EXISTING PIPE DIAMETER
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

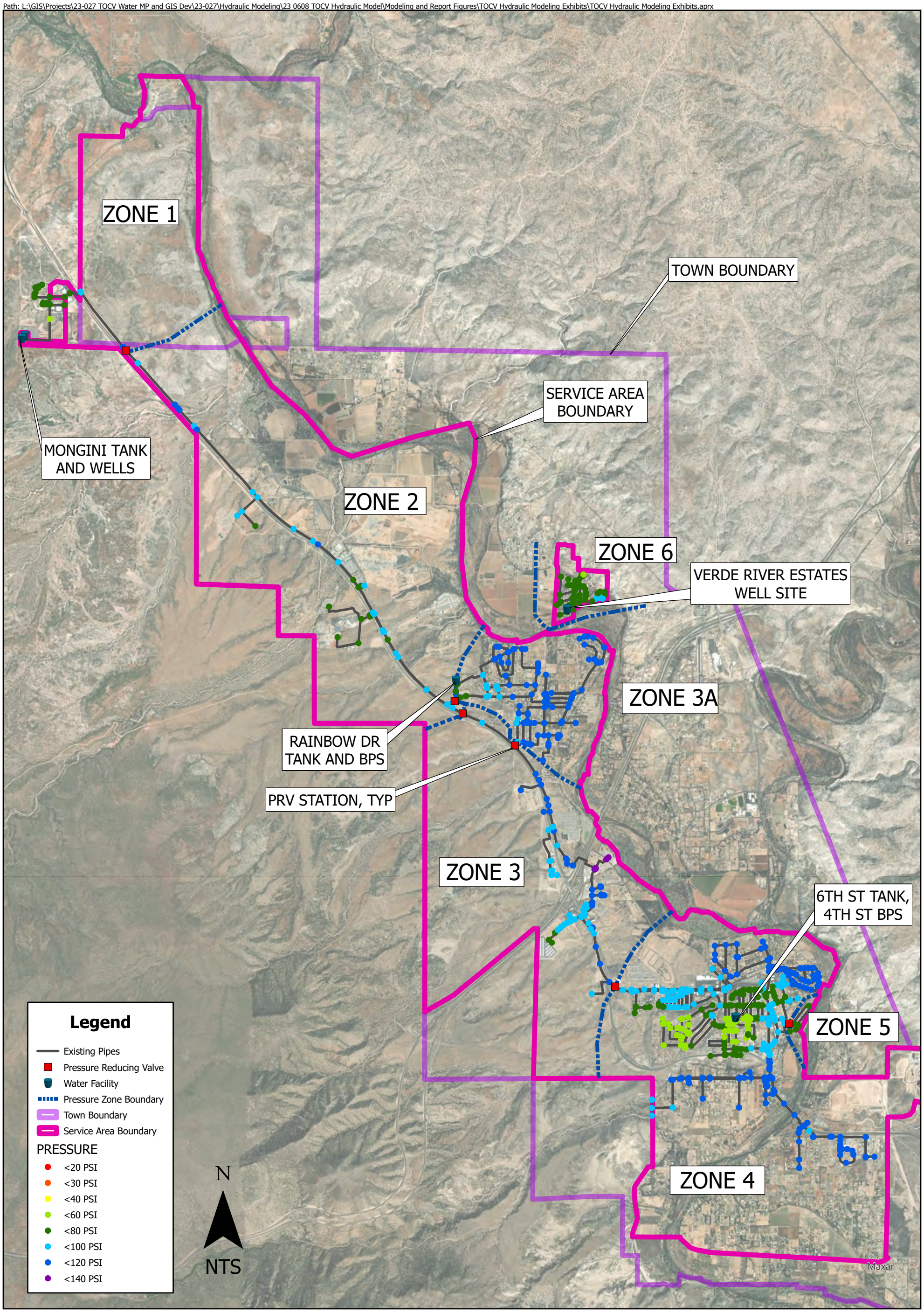


EXISTING AVERAGE DAY DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

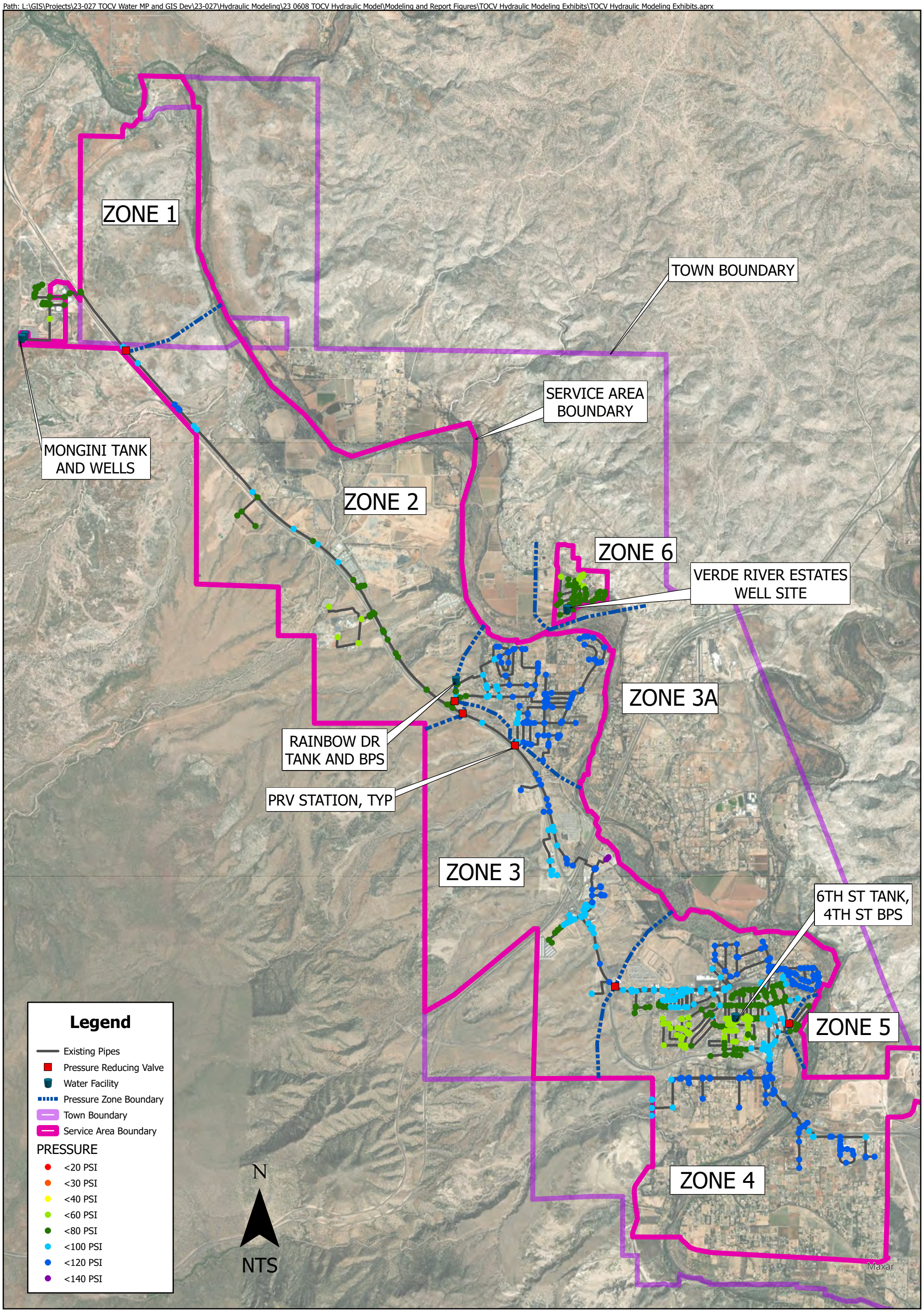


EXISTING MAX DAY DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx



EXISTING PEAK HOUR DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

ZONE 1

TOWN BOUNDARY

SERVICE AREA BOUNDARY

MONGINI TANK AND WELLS

ZONE 2

ZONE 6

VERDE RIVER ESTATES WELL SITE

ZONE 3A

RAINBOW DR TANK AND BPS

PRV STATION, TYP

ZONE 3

6TH ST TANK, 4TH ST BPS

ZONE 5

ZONE 4

Legend

- Existing Pipes
- Pressure Reducing Valve
- Water Facility
- Pressure Zone Boundary
- Town Boundary
- Service Area Boundary

Existing Fire Flow

- 0 - 499 gpm
- 500 - 999 gpm
- 1000 - 1,499 gpm
- 1,500 - 1,999 gpm
- 2,000 - 2,499 gpm
- 2,500 - 2,999 gpm
- > 3,000 gpm

N

NTS

NOTE: RESULTS INDICATE FIRE FLOW AVAILABLE THROUGH EXISTING WATER MAINS 4 INCHES AND LARGER WHILE MAINTAINING 20 PSI TO ALL CUSTOMERS. NO VELOCITY CONSTRAINT CONSIDERED FOR EXISITNG PIPES.

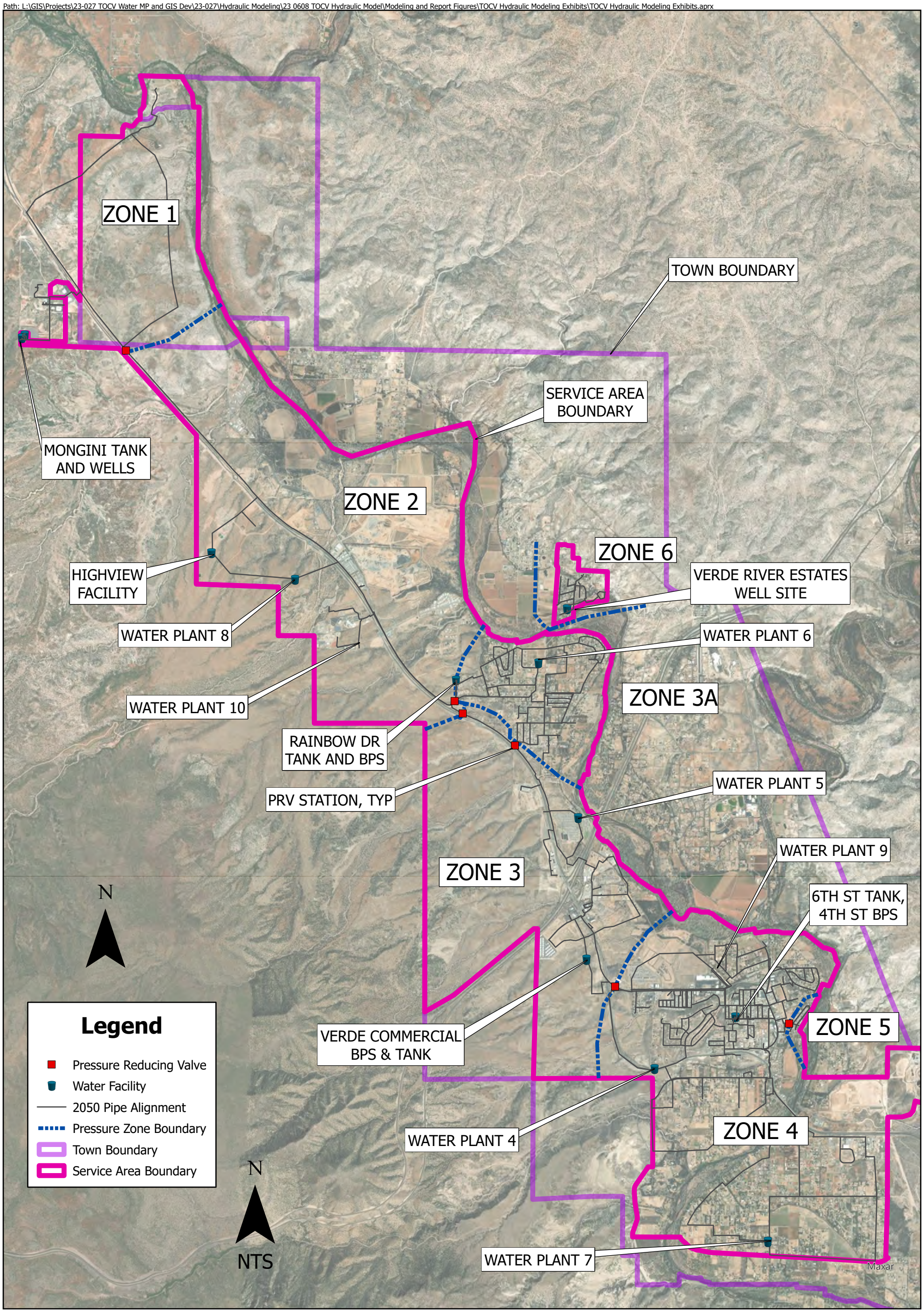
Maxar

EXISTING AVAILABLE FIRE FLOW
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

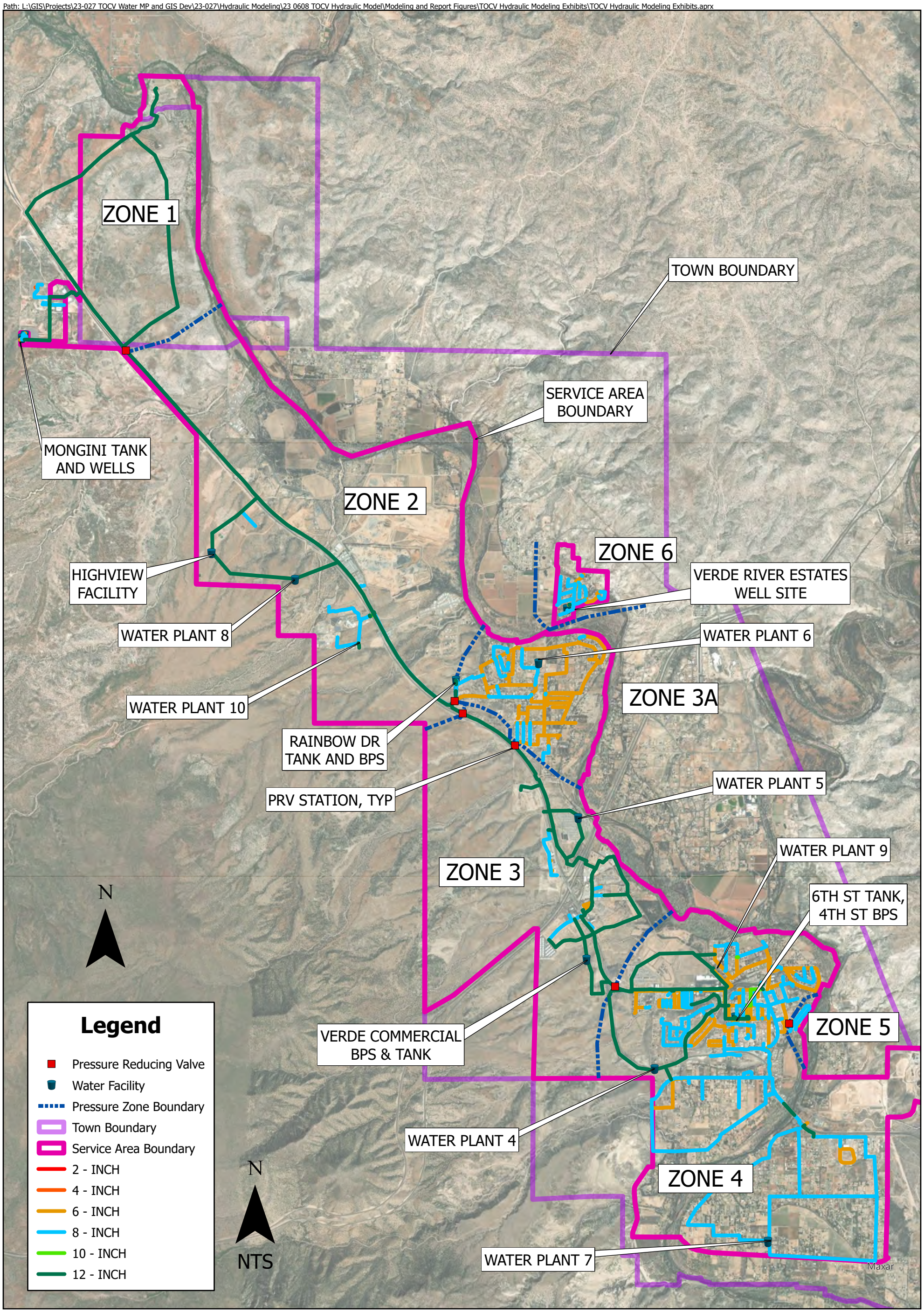


2050 DISTRIBUTION SYSTEM LAYOUT
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

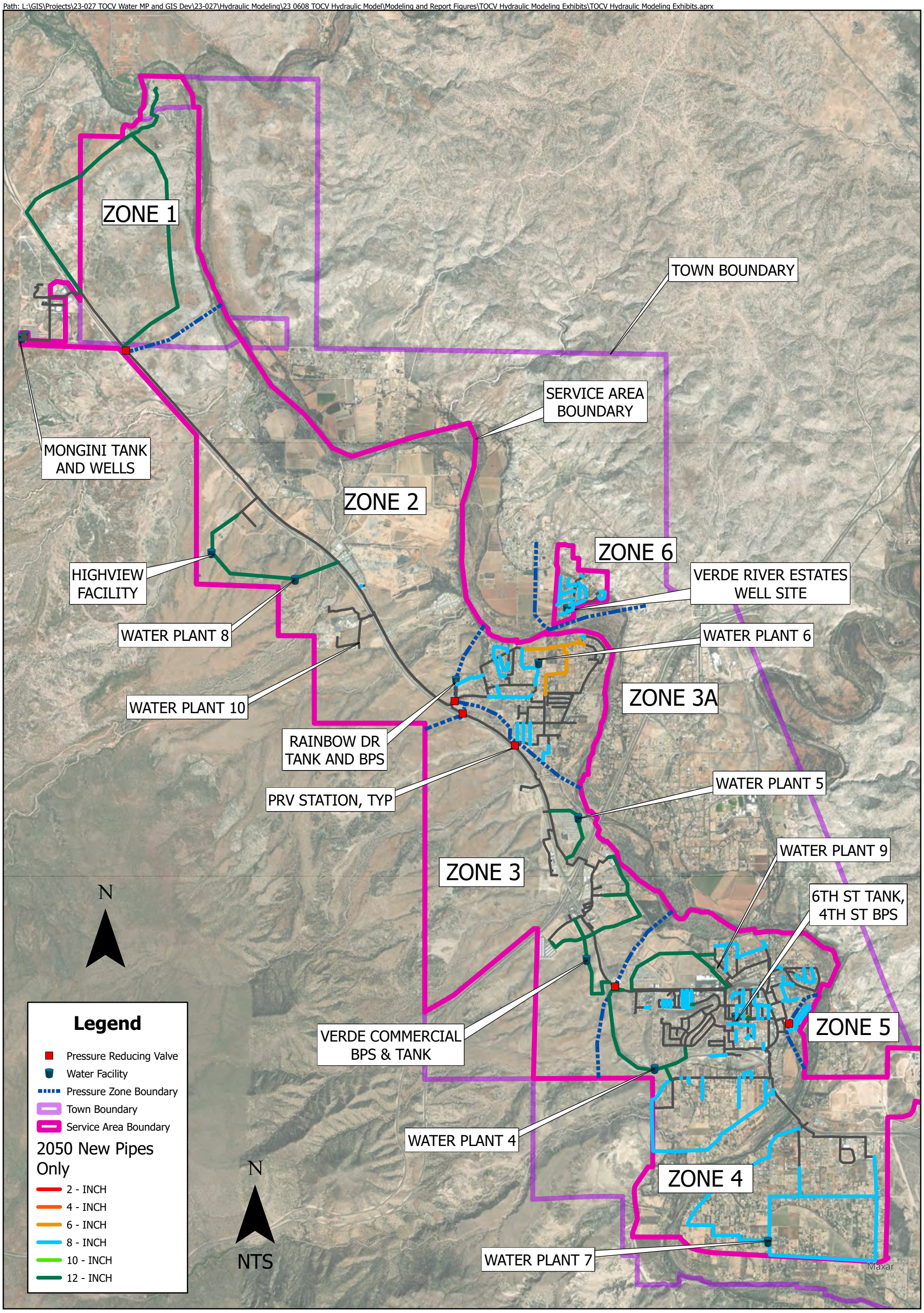


2050 PIPE DIAMETER
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

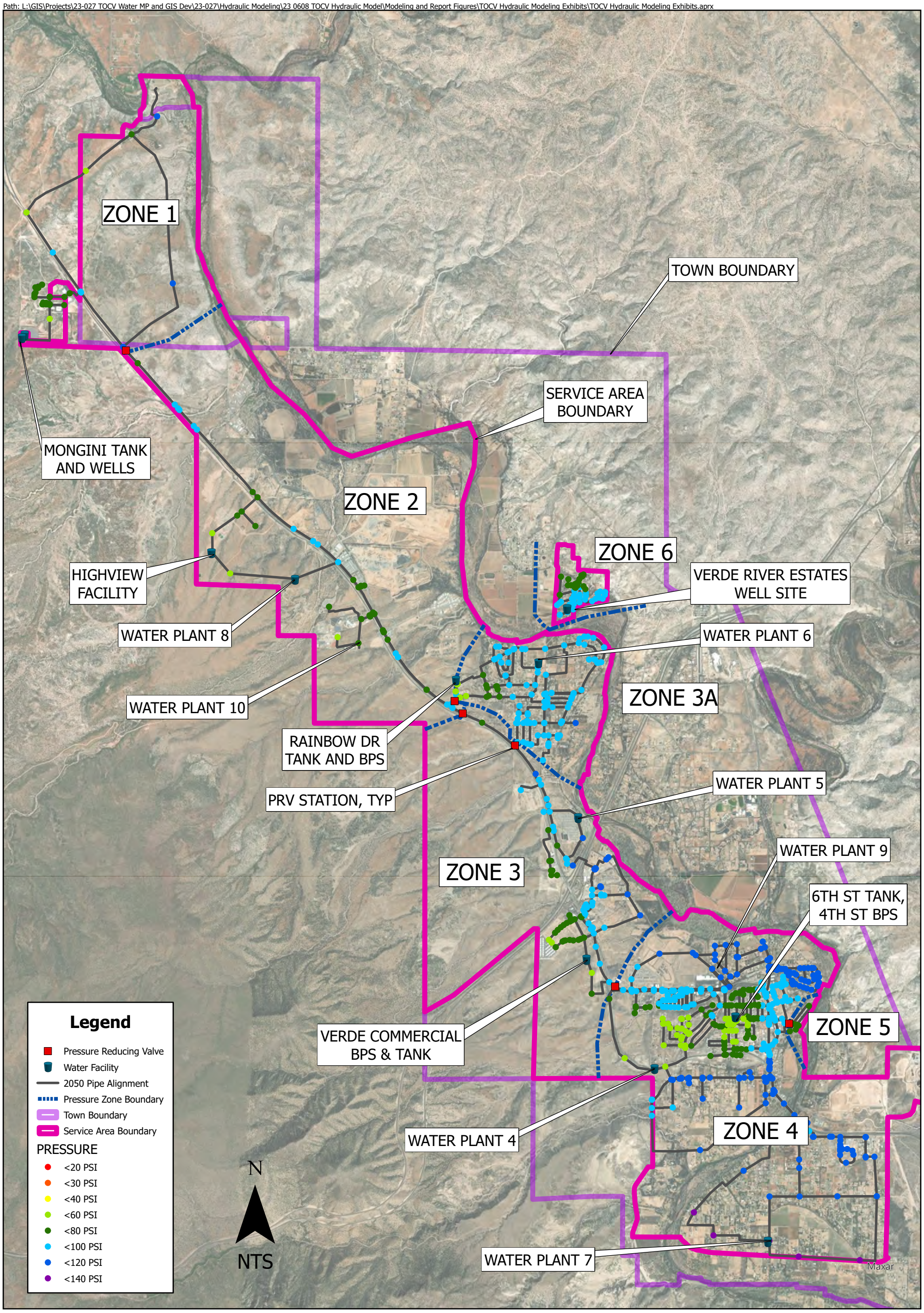


2050 NEW AND REPLACED PIPES ONLY
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

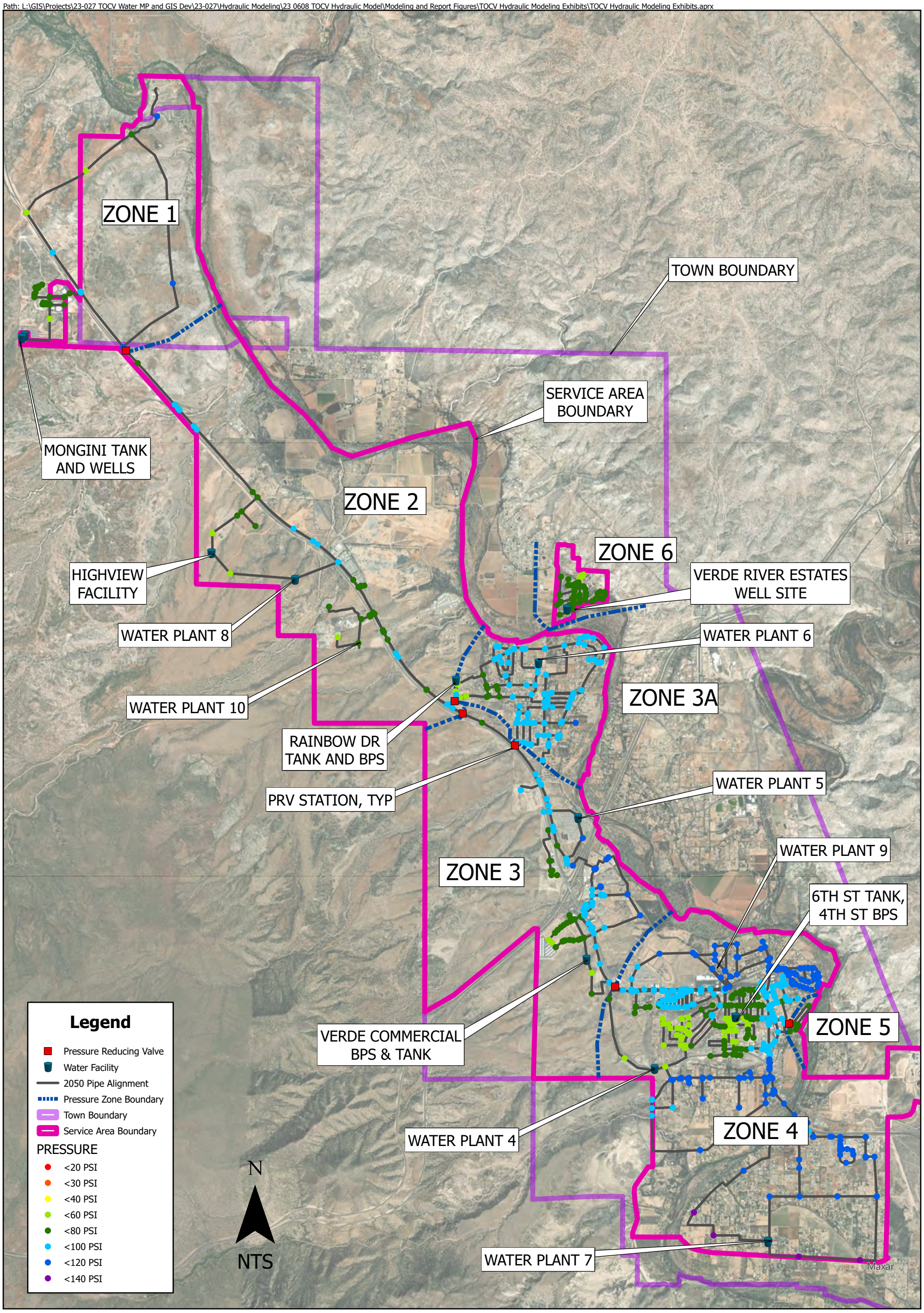


2050 AVERAGE DAY DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

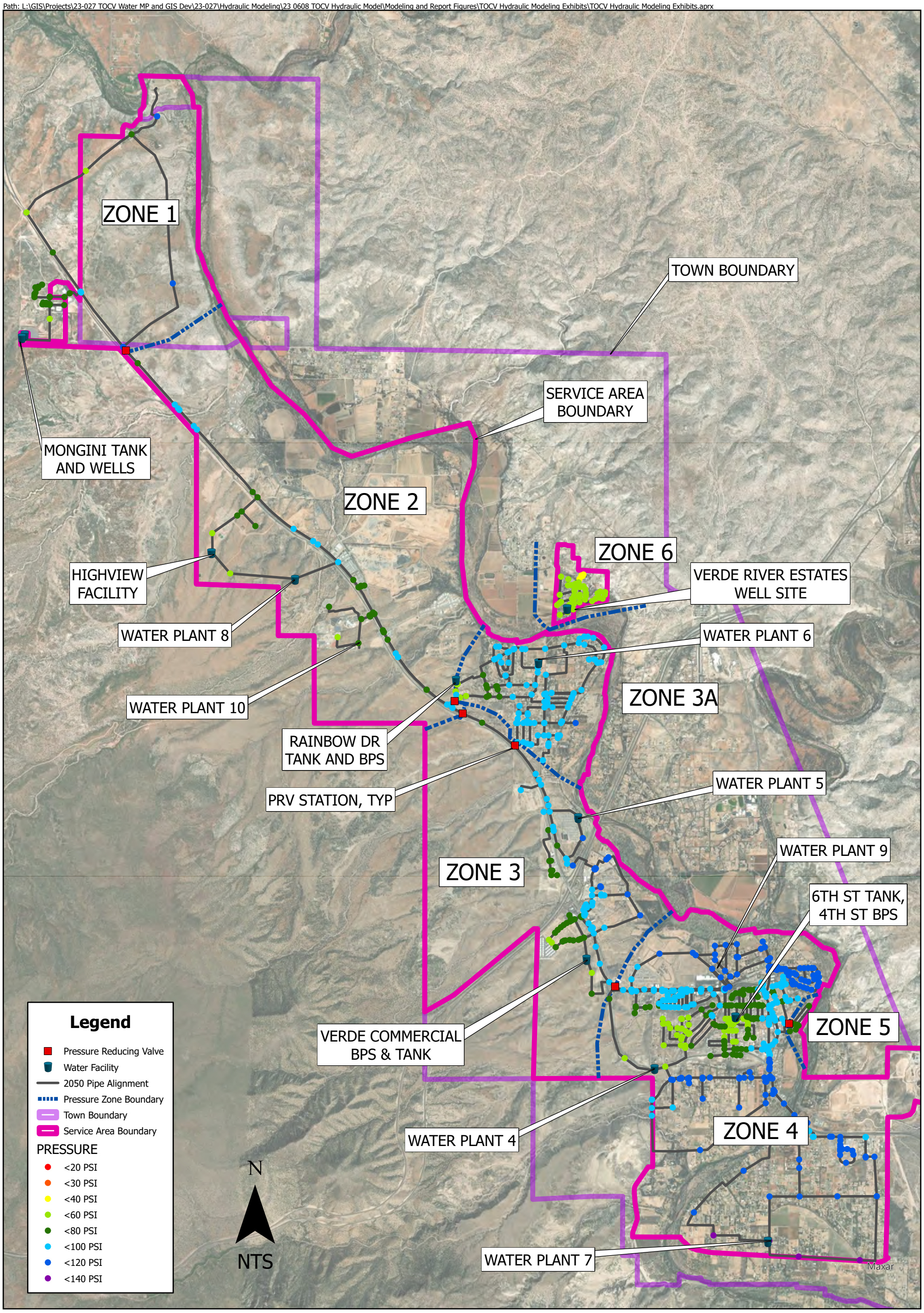


2050 MAX DAY DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx

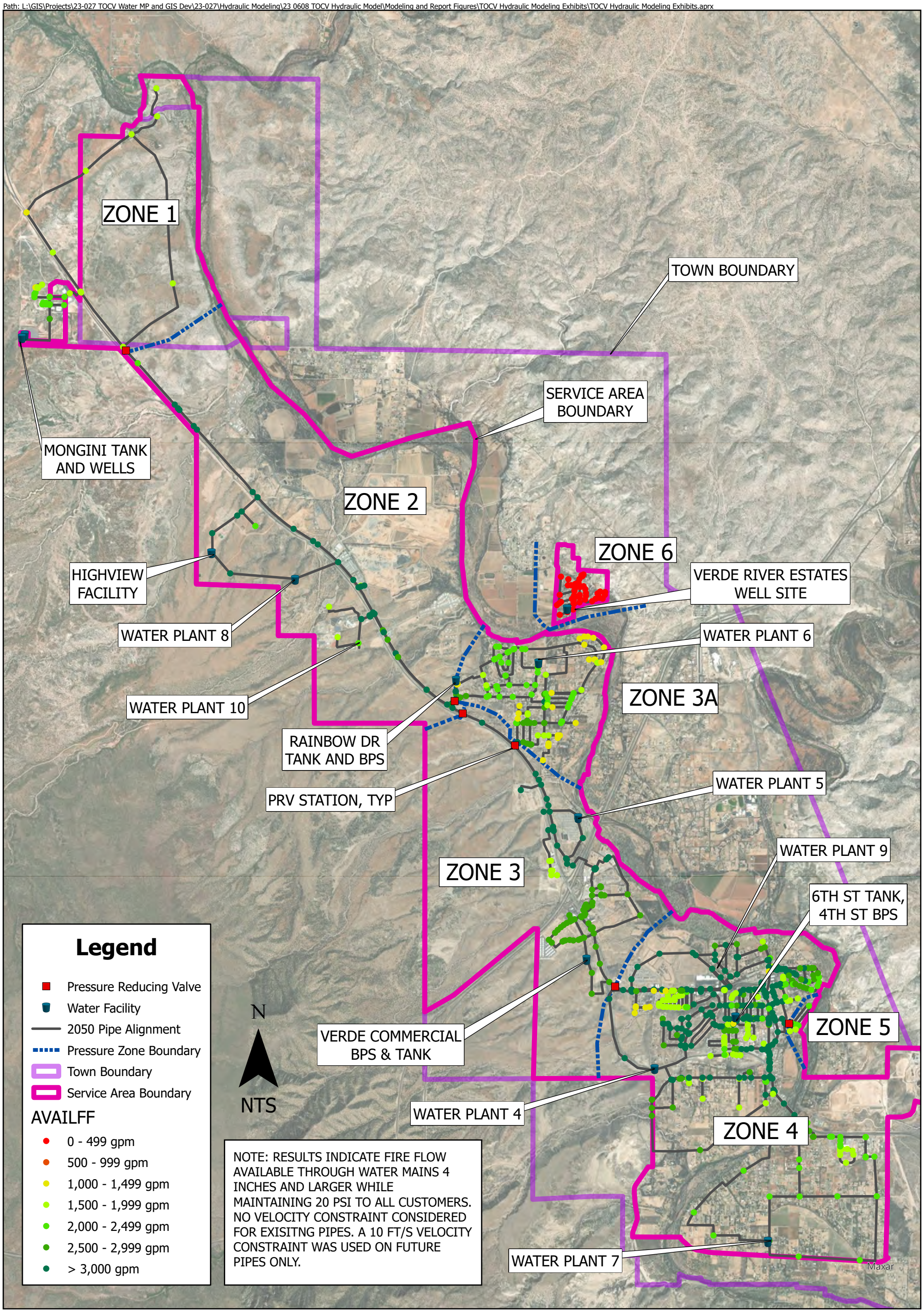


2050 PEAK HOUR DISTRIBUTION PRESSURE
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Path: L:\GIS\Projects\23-027 TOCV Water MP and GIS Dev\23-027\Hydraulic Modeling\23 0608 TOCV Hydraulic Model\Modeling and Report Figures\TOCV Hydraulic Modeling Exhibits\TOCV Hydraulic Modeling Exhibits.aprx



2050 AVAILABLE FIRE FLOW
TOWN OF CAMP VERDE WATER MASTER PLAN
CAMP VERDE, AZ

CAMP VERDE
THE CENTER OF IT ALL — ARIZONA

WATERWORKS ENGINEERS

Appendix D Rate Study

RESOLUTION 2023-1122

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CAMP VERDE, YAVAPAI COUNTY, ARIZONA, ADOPTING FEES FOR TOWN WATER AND WASTEWATER SERVICES FOR FISCAL YEARS 2023-2024, 2024-2025, 2025-2026, 2026-2027 & 2027-2028; AND SUPERSEDING RESOLUTION 2018-1001

WHEREAS, the Town Council is authorized to set fees for use of public facilities; and

WHEREAS, appropriate departments have submitted to Council recommended fees for services to the public as set forth in the 2023 Town of Camp Verde Water and Wastewater Rate Study and Long-Term Financial Plan ("Study") as specifically listed in the attached Table ES-12 (alternative Table ES-9 for Status Quo) for Water and Wastewater services and incorporated herein by reference.

NOW THEREFORE THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CAMP VERDE RESOLVE TO ADOPT THE FOLLOWING FEE SCHEDULES:

1. *Water and Wastewater Fees:* Fees for Water and Wastewater services as set forth in the "Study" tables ES-12 are hereby adopted with the first residential and commercial increase effective January 1, 2024. Subsequently, rates will increase on January 1st of each year in 2025, 2026, 2027 and 2028 as per the above referenced tables in the Study.
2. The Study was posted on the Town's website at least thirty days prior to any hearing on the rates.
3. The Town Council reserves the right to adjust rates on an annual basis if the economic conditions set forth in the Study change.
4. *Prior Resolutions and Fee Schedules:* The Water and Wastewater user fees in any prior Town fee schedule are hereby replaced.

PASSED AND APPROVED by majority vote of the Common Council at the regular meeting of November 1, 2023:

PASSED AND ADOPTED:

Dee Jenkins 11/8/23

Mayor – Dee Jenkins Date

Attest:

Cindy Pemberton 11/8/23

Town Clerk – Cindy Pemberton Date

Approved as to Form:

11-1-23

Town Attorney – Trish Stuhan Date

Proposed Water Rate Plan – Scenario II – Conservation

A second potential rate design proposed for the Town's water utility involves the development of a conservation-based rate. Under this rate plan, the Town would create two new inverted block volume tiers, for a total of 4 tiers. The purpose would be to further encourage conservation while to the best extent possible limit the impact of rate adjustments on low volume ratepayers. Under this scenario, wastewater rate adjustments are the same as those presented in Scenario I.

Table ES-12 summarizes the water and wastewater rate recommendations for the five-year period 2024 – 2028 under the Conservation Scenario.

Table ES-12

TOWN OF CAMP VERDE

Water and Wastewater Rates

Scenario: 2023 08 02 -- Scenario II -- Conservation

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates -- Conservation							
Monthly Minimum Charge							
5/8" & 3/4"		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00
1"		50.00	58.00	67.30	73.35	75.55	77.80
2"		175.00	203.00	235.50	256.70	264.40	272.35
3"		185.00	214.60	248.95	271.35	279.50	287.90
4"		225.00	261.00	302.75	330.00	339.90	350.10
6"		350.00	406.00	470.95	513.35	528.75	544.60
8"		600.00	696.00	807.35	880.00	906.40	933.60
Volume Rate Per 1,000 Gal							
1	5,000	3.35	3.35	3.90	4.25	4.40	4.55
5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35
10,001	50,000	3.35	5.50	6.40	7.00	7.20	7.40
50,001	Above	5.70	7.00	8.10	8.85	9.10	9.35
Rate per Fixture Unit							
Residential		$ 2.90	$ 3.45	$ 4.10	$ 4.75	$ 4.85	$ 4.95
Non-Residential		4.51	5.35	6.35	7.35	7.50	7.65

Residential Wastewater Rates are to have a maximum fee of $85 per month.

Table ES-11 calculates the average impact on monthly wastewater bills of the proposed rate design at various fixture levels. This rate design assumes that the Town stays with the same method they are currently charging for wastewater service. The results of the analysis are included in **Appendix A.**

Table ES-9

TOWN OF CAMP VERDE

Water and Wastewater Rates

Scenario: 2023 08 02 – Scenario I – Status Quo

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates							
Monthly Minimum Charge							
	5/8" & 3/4"	$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00
	1"	50.00	58.00	67.30	73.35	75.55	77.80
	2"	175.00	203.00	235.50	256.70	264.40	272.35
	3"	185.00	214.60	248.95	271.35	279.50	287.90
	4"	225.00	261.00	302.75	330.00	339.90	350.10
	6"	350.00	406.00	470.95	513.35	528.75	544.60
	8"	600.00	696.00	807.35	880.00	906.40	933.60
Volume Rate Per 1,000 Gal -- Status Quo							
1	50,000	3.35	3.90	4.50	4.90	5.05	5.20
50,001	Above	5.70	6.60	7.65	8.35	8.60	8.85
Wastewater Rates							
Rates Per Fixture Unit							
	Residential	$ 2.90	$ 3.45	$ 4.10	$ 4.75	$ 4.85	$ 4.95
	Non-Residential	4.51	5.35	6.35	7.35	7.50	7.65

Residential Wastewater Rates are to have a maximum fee of $85 per month.

TOWN OF CAMP VERDE

NOTICE OF INTENT – PROPOSED INCREASE
WATER AND WASTEWATER RATES, FEES, OR SERVICE CHARGES

Pursuant to A.R.S. § 9-511.01, the Town of Camp Verde provides Notice of Intent to adopt utility rate adjustments as outlined in the Town's Water and Wastewater Rate Study/Analysis prepared by Economists.com (the "Report"). The increased water/wastewater rates, rate components, fees, or services charges are generally related to capital investments.

This Notice of Intent is scheduled to be heard by the Town Council at its meeting on August 16th, 2023 at 6:30 p.m. The Town Council will also hold a public hearing at least sixty days after adoption of the notice of intent on November 1st, 2023, at 6:00 p.m., in which the public may comment on the rates, fees, or service charges. The Camp Verde Town Council will consider adoption of the new rates by resolution after the public hearing on November 1st, 2023. All meetings will be held at 473 S. Main Street, Suite 106, Camp Verde, Arizona.

A copy of this Notice of Intent will be posted on the Town's website with a copy of the Report, data supporting changes to the Town's rates, and cash flow projections at least thirty days prior to the public hearing.

IF APPROVED BY COUNCIL, THE RATES WILL BECOME EFFECTIVE ON JANUARY 1ST, 2024 AND ANNUALLY ADJUST THEREAFTER FOR THE NEXT 3 YEARS WITHOUT FURTHER ACTION OF COUNCIL AS SPECIFIED IN THE FEE SCHEDULE.

A copy of the Report, data supporting changes to the Town's rates, and cash flow projections may be reviewed at the office of the Town Clerk of the Town of Camp Verde, at 473 S. Main St. during normal office hours, Monday through Thursday, 7:00 a.m. – 5:00 p.m. and Friday, 7:00 a.m. – 11:00 a.m.

Persons wishing to comment on the proposed changes may do so, in writing, prior to the meeting listed above or may testify in person at the meeting. The Town Council may adopt any of the water and wastewater rates, fees, or service charges at its meeting.

Dated this 16th day of August, 2023.

TOWN OF CAMP VERDE

Cindy Pemberton

Cindy Pemberton, Town Clerk

DATE POSTED ON TOWN WEBSITE: 8-23-2023 2023.

Town of Camp Verde

2023 Water and Wastewater Rate Study and Long-Term Financial Plan

August 2023 -- FINAL

Economists.com
5500 Democracy Drive, Suite 130 • Plano, Texas 75024 • Tel 972.378.6588 • Fax 972.378.6988 • www.economists.com

TOWN OF CAMP VERDE, ARIZONA
2023 WATER AND WASTEWATER RATE STUDY
TABLE OF CONTENTS

Appendix

Acknowledgements

Throughout the course of this rate study, Town employees expended considerable time and effort in aiding the project team. These employees included Michael Showers, Jeff Low, and Barbara Goodrich. The project team owes a debt of gratitude to the hard work, dedication, and professionalism of these individuals, without whom this project would not have been successfully completed.

The project team has relied upon the extensive data supplied by the Town. Thus, the veracity of the study is principally reliant upon the accuracy of this financial and customer data. Every effort has been made by the project team to validate the information contained herein prior to the preparation of the final study documents. This report presents no assurance or guarantee that the forecast contained herein will be consistent with actual results or performances. These represent forecasts based on a series of assumptions about future behavior and are not guarantees. Any changes in assumptions or actual events may result in significant revisions to the forecast and its conclusions. The cash flow projections and debt service coverage calculations are not intended to present overall financial positions, results of operations, and/or cash flows for the periods indicated, in conformity with guidelines for presentation of a forecast established by the American Institute of Certified Public Accountants.

Executive Summary

Background

In early 2023, the Town of Camp Verde, Arizona ("the Town") engaged economists.com to complete a Water and Wastewater Rate Study and Long-Tern Financial Plan. The Town identified numerous objectives for this study, including but not limited to the following:

- A comprehensive analysis and evaluation of the water and wastewater systems' current cost of service and revenue requirements.
- A forecast of operating expenses over the next decade, taking into consideration salient factors such as cost of water and wastewater treatment, inflation, system growth, and increases in staffing levels.
- An estimate of current and forecast accounts, volumes, and billing units for the ten-year forecast period.
- A thorough assessment, review, and update of the water and wastewater system's known capital improvement needs, as well as a determination of the need for funding capital requirements through the issuance of long-term debt.
- An evaluation of the current water and wastewater rate structures and revenue recovered versus the revenue requirement, both overall and for each customer class.
- The development of a rate structure that would recover the Town's cost of service, ensure equitable, just, and reasonable treatment of identified customer classes, and maintain critical financial ratios.

The analysis and recommendation presented in this study achieve all the objectives outlined.

Water and Wastewater Rate Comparison

Table ES-1 compares the Town's monthly water and wastewater charges to several cities or utilities located in Arizona. A billing volume of 5,000 gallons of water and 5,000 gallons of wastewater was applied for the residential

comparison, as it represents typical usage levels for an average household on the Town's system. Camp Verde wastewater comparison assumes 18 wastewater fixture units.

The rate and customer cost data are based on published rates and ordinances posted by each municipality in their rate ordinance. These rates do not include sales tax, activation or other charges beyond the monthly base and volume charges. Additionally, where appropriate, certain cities that charge for service based on cubic feet of water have had their rates converted to an equivalent charge per 1,000 gallons. The table reveals that the Town's rates are a little higher than the sample average.

Table ES-1

TOWN OF CAMP VERDE

MONTHLY RESIDENTIAL CHARGES -- 5,000 GALLONS WATER AND WASTEWATER; 5/8" Meter

	Water	Wastewater	Total
Camp Verde	**$ 40.50**	**$ 52.20**	**$ 92.70**
Prescott	41.24	54.97	$ 96.21
Prescott Valley	25.05	27.77	52.82
Cottonwood	40.45	48.75	89.20
Clarkdale	55.12	54.00	109.12
Jerome	41.05	52.67	93.72
Sedona	61.11	61.11	122.22
Chino Valley	32.11	60.00	92.11
Flagstaff	41.26	26.75	68.01
Winslow	29.57	38.88	68.45
Kingman	20.66	56.10	76.76
Page	18.83	31.96	50.79
Payson	60.78	52.20	112.98
Sample Average			86.55

Source: WIFA Rate Dashboard

Water and Wastewater Customers and Volumes – Test Year & Ten-Year Forecast

Most of the water and wastewater accounts served by the Town are residential accounts. Table ES-2 presents total water connections (customers) by customer class for the test year and forecast period. As demonstrated, overall water accounts are forecast to increase from 2,028 in the test year to 2,226 in FY 2033. Table ES-3 presents total wastewater connections by customer class for the test year and the projection period. Similarly, wastewater accounts are forecast to increase from 1,092 in the test year to 2,120 in FY 2033. The addition of these new connections will result in both non-recurring connection fees and increasing monthly water and wastewater revenues.

Table ES-2

TOWN OF CAMP VERDE

FORECAST TOTAL CUSTOMERS

	WATER Customer Classes						
	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Fire	Total
WATER Total Customers							
2020	1,561	294	5	-	3	37	**1,900**
2021	1,634	270	5	-	2	37	**1,948**
2022	1,720	233	5	-	3	37	**1,998**
2024	1,740	243	5	-	3	37	**2,028**
2025	1,760	245	5	-	3	37	**2,050**
2026	1,780	247	5	-	3	37	**2,072**
2027	1,800	249	5	-	3	37	**2,094**
2028	1,820	251	5	-	3	37	**2,116**
2029	1,840	253	5	-	3	37	**2,138**
2030	1,860	255	5	-	3	37	**2,160**
2031	1,880	257	5	-	3	37	**2,182**
2032	1,900	259	5	-	3	37	**2,204**
2033	1,920	261	5	-	3	37	**2,226**
WATER Annual New Customers							
2021	73	(24)	-	-	(1)		**48**
2022	86	(37)	-	-	1	-	**50**
2024	20	10	-	-	-	-	**30**
2025	20	2	-	-	-	-	**22**
2026	20	2	-	-	-	-	**22**
2027	20	2	-	-	-	-	**22**
2028	20	2	-	-	-	-	**22**
2029	20	2	-	-	-	-	**22**
2030	20	2	-	-	-	-	**22**
2031	20	2	-	-	-	-	**22**
2032	20	2	-	-	-	-	**22**
2033	20	2	-	-	-	-	**22**

Table ES-3

TOWN OF CAMP VERDE

FORECAST TOTAL CUSTOMERS

WASTEWATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Total
WASTEWATER Total Customers						
2021	726	165	1	-		**892**
2022	901	169	1	-		**1,071**
2024	921	170	1	-	-	**1,092**
2025	971	172	1	-	-	**1,144**
2026	1,021	174	1	-	-	**1,196**
2027	1,151	176	1	-	-	**1,328**
2028	1,281	178	1	-	-	**1,460**
2029	1,411	180	1	-	-	**1,592**
2030	1,541	182	1	-	-	**1,724**
2031	1,671	184	1	-	-	**1,856**
2032	1,801	186	1	-	-	**1,988**
2033	1,931	188	1	-	-	**2,120**
WASTEWATER Annual New Customers						
2022	175	4	-	-	-	**179**
2024	20	1	-	-	-	**21**
2025	50	2	-	-	-	**52**
2026	50	2	-	-	-	**52**
2027	130	2	-	-	-	**132**
2028	130	2	-	-	-	**132**
2029	130	2	-	-	-	**132**
2030	130	2	-	-	-	**132**
2031	130	2	-	-	-	**132**
2032	130	2	-	-	-	**132**
2033	130	2	-	-	-	**132**

The Town's water and wastewater volumes are presented in Table ES-4 and Table ES-5. Detailed calculations of consumption billing units are presented in Section II of this report and in the rate model presented in Appendix A.

Table ES-4

TOWN OF CAMP VERDE

FORECAST BILLED CONSUMPTION

WATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Fire	Total
	WATER Annual Consumption						
2021	89,667,800	74,958,700	15,056,600	-	-	-	**179,683,100**
2022	92,658,500	79,494,800	30,648,000	-	96,500	-	**202,897,800**
2024	93,735,924	79,823,291	30,648,000	-	96,500	-	**204,303,715**
2025	94,813,349	80,480,273	30,648,000	-	96,500	-	**206,038,122**
2026	95,890,773	81,137,255	30,648,000	-	96,500	-	**207,772,528**
2027	96,968,198	81,794,236	30,648,000	-	96,500	-	**209,506,934**
2028	98,045,622	82,451,218	30,648,000	-	96,500	-	**211,241,340**
2029	99,123,047	83,108,200	30,648,000	-	96,500	-	**212,975,747**
2030	100,200,471	83,765,182	30,648,000	-	96,500	-	**214,710,153**
2031	101,277,895	84,422,164	30,648,000	-	96,500	-	**216,444,559**
2032	102,355,320	85,079,145	30,648,000	-	96,500	-	**218,178,965**
2033	103,432,744	85,736,127	30,648,000	-	96,500	-	**219,913,371**

Table ES-5

TOWN OF CAMP VERDE

FORECAST WASTEWATER BILLING UNITS

WASTEWATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Total
	WASTEWATER Billing Units					
2021	39,724,200	42,330,000	3,798,100	-	-	**85,852,300**
2022	45,896,200	41,143,000	4,092,200	-	-	**91,131,400**
2024	45,896,200	41,143,000	4,092,200	-	-	**91,131,400**
2025	48,387,850	41,627,035	4,092,200	-	-	**94,107,086**
2026	50,879,501	42,111,071	4,092,200	-	-	**97,082,771**
2027	57,357,792	42,595,106	4,092,200	-	-	**104,045,098**
2028	63,836,083	43,079,141	4,092,200	-	-	**111,007,424**
2029	70,314,374	43,563,176	4,092,200	-	-	**117,969,750**
2030	76,792,665	44,047,212	4,092,200	-	-	**124,932,076**
2031	83,270,956	44,531,247	4,092,200	-	-	**131,894,403**
2032	89,749,247	45,015,282	4,092,200	-	-	**138,856,729**
2033	96,227,538	45,499,318	4,092,200	-	-	**145,819,055**

Water and Wastewater Capital Improvement Plan

One of the most critical components of a utility's revenue requirement and rate plan is the forecast Capital Improvements required to repair and maintain the system. Like most municipalities, Camp Verde maintains an extensive and detailed Capital Improvement Plan. Minor capital improvements are contained in the Town's budget and are funded annually. Major capital improvements have historically been funded primarily through operating revenue, although certain projects have been funded by debt issued by the Town.

Town staff and the project team worked together to develop the Town's forecast capital improvements needs in FY 2024 - 2033. The forecast CIP is summarized in Table ES-6. As the table reveals, the Town is forecast to invest $24,050,429 in total capital improvements in the next ten years.

Table ES-6

TOWN OF CAMP VERDE
CAPITAL IMPROVEMENT PLAN PROJECTS
ASSIGNED FUNDING THROUGH AVAILABLE RESOURCES
SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

		Total
WATER		
Water Treatment		
Design/Construction Mongini Well Arsenic Removal	$	2,300,000
Verde River Estates Arsenic Removal Program		700,000
		3,000,000
Water Distribution		
Water Master Plan		183,200
SCADA/Communication Tower Relocation		68,720
2024 Water Main Replacement Program		5,060,000
Additional Well Pump Station		2,000,000
Additional 2M Gallons Storage Facilities		1,500,000
Well Storage Arsenic Pump Station No. 1		2,000,000
Total		12,911,920
Total Water CIP		**15,911,920**
WASTEWATER		
Wastewater Treatment		
Treatment Plan Admin Office	$	-
Plant Blower Building Addition		207,259
WWTP Control Panel Upgrade		206,250
Admin Building		200,000
Highway 260 Sewer Extension		2,000,000
WWTP Equalization Basin		4,000,000
Total WW Treatment		6,613,509
Wastewater Collection		
Wastewater Master Plan		250,000
Sewer Lines -- Black Bridge Loop Area		575,000
Lift Station at Rezzonico Park		700,000
Total WW Collection		1,525,000
Total Wastewater CIP		**8,138,509**
Total Water and Wastewater CIP		**24,050,429**

The CIP is forecast to be funded through a combination of Water and Wastewaters Long-Term Debt Issuance.

It should be noted that if the Town materially revises its CIP, the rate plan may be subject to potentially significant revision.

Table ES-7 illustrates the annual forecast of long-term debt issuances required to fund CIP projects.

Table ES-7

TOWN OF CAMP VERDE

WATER/WASTEWATER FUTURE BOND ISSUES

	Water	Wastewater	Total
FY 2024	$ 10,000,000	$ 3,000,000	$ 13,000,000
FY 2025	-	-	-
FY 2026	2,500,000	1,000,000	3,500,000
FY 2027	-	-	-
FY 2028	1,000,000	-	1,000,000
FY 2029	-	3,500,000	3,500,000
FY 2030	2,500,000	-	2,500,000
FY 2031	-	-	-
FY 2032	-	-	-
FY 2033	-	-	-
Total	**$ 16,000,000**	**$ 7,500,000**	**$ 23,500,000**

Water and Wastewater Test Year and Forecast Net Revenue Requirement

Table ES-8 presents the Town's forecast Net Revenue Requirement for the ten-year period FY 2024 through FY 2033. The table reveals that the total revenue requirement to be raised from rates is expected to increase from $3,235,239 in FY 2024 to $6,256,4115 in FY 2033. Detailed calculations are presented in the rate model contained in Appendix A of this report.

Table ES-8

TOWN OF CAMP VERDE

CURRENT AND FORECAST NET REVENUE REQUIREMENT

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

	Operating Expenses	Capital Outlays	Debt Service	Transfers & Contingencies	Total Cost of Service	Less Non-Rate Revenues	Net Revenue Requirement
WATER Revenue Requirement							
2024	$ 977,355	$ 192,500	$ 447,417	$ 68,800	$ 1,686,072	$ 223,220	**$ 1,462,852**
2025	1,047,520	7,500	1,021,697	72,928	2,149,645	223,220	**1,926,425**
2026	1,115,831	7,500	1,021,695	75,845	2,220,871	223,220	**1,997,651**
2027	1,185,217	7,500	1,173,382	78,120	2,444,219	223,220	**2,220,999**
2028	1,259,623	7,500	1,173,382	80,464	2,520,969	223,220	**2,297,749**
2029	1,339,459	7,500	1,234,059	82,878	2,663,896	223,220	**2,440,676**
2030	1,425,169	7,500	1,234,056	85,364	2,752,090	223,220	**2,528,870**
2031	1,517,238	7,500	1,385,740	87,925	2,998,403	223,220	**2,775,183**
2032	1,616,191	7,500	1,385,722	90,563	3,099,976	223,220	**2,876,756**
2033	1,722,603	7,500	1,385,722	93,280	3,209,105	223,220	**2,985,885**
WASTEWATER Revenue Requirement							
2024	$ 1,858,635	$ 241,000	$ 134,242	$ 82,730	$ 2,316,607	$ 544,220	**$ 1,772,387**
2025	1,984,275	100,000	306,527	87,694	2,478,496	544,220	**1,934,276**
2026	2,098,138	100,000	306,525	91,202	2,595,865	544,220	**2,051,645**
2027	2,208,093	100,000	367,200	93,938	2,769,230	544,220	**2,225,010**
2028	2,324,618	100,000	367,200	96,756	2,888,574	544,220	**2,344,354**
2029	2,448,169	100,000	367,200	99,658	3,015,027	544,220	**2,470,807**
2030	2,579,235	100,000	579,559	102,648	3,361,442	544,220	**2,817,222**
2031	2,718,345	100,000	579,561	105,728	3,503,633	544,220	**2,959,413**
2032	2,866,068	100,000	579,558	108,899	3,654,525	544,220	**3,110,305**
2033	3,023,021	100,000	579,559	112,166	3,814,746	544,220	**3,270,526**
TOTAL Revenue Requirement							
2024	$ 2,835,990	$ 433,500	$ 581,659	$ 151,530	$ 4,002,679	$ 767,440	**$ 3,235,239**
2025	3,031,795	107,500	1,328,223	160,622	4,628,140	767,440	**3,860,700**
2026	3,213,970	107,500	1,328,219	167,047	4,816,736	767,440	**4,049,296**
2027	3,393,309	107,500	1,540,581	172,058	5,213,449	767,440	**4,446,009**
2028	3,584,241	107,500	1,540,581	177,220	5,409,542	767,440	**4,642,102**
2029	3,787,628	107,500	1,601,258	182,536	5,678,923	767,440	**4,911,483**
2030	4,004,404	107,500	1,813,615	188,013	6,113,532	767,440	**5,346,092**
2031	4,235,583	107,500	1,965,301	193,653	6,502,036	767,440	**5,734,596**
2032	4,482,260	107,500	1,965,280	199,462	6,754,502	767,440	**5,987,062**
2033	4,745,624	107,500	1,965,281	205,446	7,023,851	767,440	**6,256,411**

Water and Wastewater Rate Design Scenario I – Status Quo

The status quo rate design maintains the existing rate structure for water and wastewater; and introduces necessary percentage adjustments. It includes higher initial adjustments required wastewater in FY 2024 through FY 2026 to recover its cost of service.

Table ES-9 summarizes the water and wastewater rate recommendations for the five-year period 2024 - 2028. The table reveals that the proposed wastewater rate increases are higher in the years 2024 – 2026.

Table ES-10 calculates the average impact on monthly water bills of the proposed rate design at various usage levels. The average residential monthly water usage in the Town is approximately 4,500 gallons. The results of the analysis are included in Appendix A.

Table ES-11 calculates the average impact on monthly wastewater bills of the proposed rate design at various fixture levels. This rate design assumes that the Town stays with the same method they are currently charging for wastewater service. The results of the analysis are included in Appendix A.

Table ES-9

TOWN OF CAMP VERDE

1 Water and Wastewater Rates

Scenario: 2023 08 02 -- Scenario I -- Status Quo

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates							
Monthly Minimum Charge							
	5/8" & 3/4"	$ 23.75	**$ 27.55**	**$ 31.95**	$ 34.85	$ 35.90	$ 37.00
	1"	50.00	**58.00**	**67.30**	73.35	75.55	77.80
	2"	175.00	**203.00**	**235.50**	256.70	264.40	272.35
	3"	185.00	**214.60**	**248.95**	271.35	279.50	287.90
	4"	225.00	**261.00**	**302.75**	330.00	339.90	350.10
	6"	350.00	**406.00**	**470.95**	513.35	528.75	544.60
	8"	600.00	**696.00**	**807.35**	880.00	906.40	933.60
Volume Rate Per 1,000 Gal -- Status Quo							
1	50,000	3.35	**3.90**	**4.50**	4.90	5.05	5.20
50,001	Above	5.70	**6.60**	**7.65**	8.35	8.60	8.85
Wastewater Rates							
Rates Per Fixture Unit							
	Residential	$ 2.90	**$ 3.45**	**$ 4.10**	$ 4.75	$ 4.85	$ 4.95
	Non-Residential	4.51	**5.35**	**6.35**	7.35	7.50	7.65

Table ES-10

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Charge -- Status Quo							
Meter = 5/8							
5,000 Gal	Total	$ 40.50	$ 47.05	$ 54.45	$ 59.35	$ 61.15	$ 63.00
	Increase -- $		**6.55**	**7.40**	**4.90**	**1.80**	**1.85**
	Increase -- %		16.2%	15.7%	9.0%	3.0%	3.0%
10,000 Gal	Total	57.25	66.55	76.95	83.85	86.40	89.00
	Increase -- $		**9.30**	**10.40**	**6.90**	**2.55**	**2.60**
	Increase -- %		16.2%	15.6%	9.0%	3.0%	3.0%
20,000 Gal	Total	90.75	105.55	121.95	132.85	136.90	141.00
	Increase -- $		14.80	16.40	10.90	4.05	4.10
	Increase -- %		16.3%	15.5%	8.9%	3.0%	3.0%
Meter = 2"							
50,000	Total	342.50	398.00	460.50	501.70	516.90	532.35
	Increase -- $		**55.50**	**62.50**	**41.20**	**15.20**	**15.45**
	Increase -- %		16.2%	15.7%	8.9%	3.0%	3.0%
100,000	Total	627.50	728.00	843.00	919.20	946.90	974.85
	Increase -- $		**100.50**	**115.00**	**76.20**	**27.70**	**27.95**
	Increase -- %		16.0%	15.8%	9.0%	3.0%	3.0%

Table ES-11

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Wastewater Charge -- Status Quo							
Residential Fixture Units							
12	Total	$ 34.80	$ 41.40	$ 49.20	$ 57.00	$ 58.20	$ 59.40
	Increase -- $		6.60	**7.80**	7.80	1.20	1.20
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
18	Total	52.20	62.10	73.80	85.50	87.30	89.10
	Increase -- $		9.90	**11.70**	11.70	1.80	1.80
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
32	Total	92.80	110.40	131.20	152.00	155.20	158.40
	Increase -- $		17.60	**20.80**	20.80	3.20	3.20
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
40	Total	116.00	138.00	164.00	190.00	194.00	198.00
	Increase -- $		22.00	**26.00**	26.00	4.00	4.00
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
Commercial Fixture Units							
34	Total	$ 153.34	$ 181.90	$ 215.90	$ 249.90	$ 255.00	$ 260.10
	Increase -- $		28.56	**34.00**	34.00	5.10	5.10
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%
70	Total	$ 315.70	$ 374.50	$ 444.50	$ 514.50	$ 525.00	$ 535.50
	Increase -- $		58.80	**70.00**	70.00	10.50	10.50
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%
120	Total	541.20	642.00	762.00	882.00	900.00	918.00
	Increase -- $		100.80	**120.00**	120.00	18.00	18.00
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%

Proposed Water Rate Plan – Scenario II – Conservation

A second potential rate design proposed for the Town's water utility involves the development of a conservation-based rate. Under this rate plan, the Town would create two new inverted block volume tiers, for a total of 4 tiers. The purpose would be to further encourage conservation while to the best extent possible limit the impact of rate adjustments on low volume ratepayers. Under this scenario, wastewater rate adjustments are the same as those presented in Scenario I.

Table ES-12 summarizes the water and wastewater rate recommendations for the five-year period 2024 – 2028 under the Conservation Scenario.

Table ES-13 calculates the average impact on monthly water bills of the proposed rate design at various usage levels. The average residential monthly water usage in the Town is approximately 4,500 gallons.

Table ES-12

TOWN OF CAMP VERDE

Water and Wastewater Rates

Scenario: 2023 08 02 -- Scenario II -- Conservation

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates -- Conservation							
Monthly Minimum Charge							
	5/8" & 3/4"	$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00
	1"	50.00	58.00	67.30	73.35	75.55	77.80
	2"	175.00	203.00	235.50	256.70	264.40	272.35
	3"	185.00	214.60	248.95	271.35	279.50	287.90
	4"	225.00	261.00	302.75	330.00	339.90	350.10
	6"	350.00	406.00	470.95	513.35	528.75	544.60
	8"	600.00	696.00	807.35	880.00	906.40	933.60
Volume Rate Per 1,000 Gal							
1	5,000	3.35	3.35	3.90	4.25	4.40	4.55
5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35
10,001	50,000	3.35	5.50	6.40	7.00	7.20	7.40
50,001	Above	5.70	7.00	8.10	8.85	9.10	9.35
Wastewater Rates							
Rate per Fixture Unit							
	Residential	$ 2.90	$ 3.45	$ 4.10	$ 4.75	$ 4.85	$ 4.95
	Non-Residential	4.51	5.35	6.35	7.35	7.50	7.65

Table ES-13

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Charge -- Conservation							
Meter = 5/8							
5,000 Gal	Total	$ 40.50	$ 44.30	$ 51.45	$ 56.10	$ 57.90	$ 59.75
	Increase -- $		**3.80**	**7.15**	**4.65**	**1.80**	**1.85**
10,000 Gal	Total	57.25	64.30	74.70	81.35	83.90	86.50
	Increase -- $		**7.05**	**10.40**	**6.65**	**2.55**	**2.60**
Meter = 2"							
50,000	Total	342.50	459.75	534.25	583.20	600.40	617.85
	Increase -- $		**117.25**	**74.50**	**48.95**	**17.20**	**17.45**
100,000	Total	627.50	809.75	939.25	1,025.70	1,055.40	1,085.35
	Increase -- $		**182.25**	**129.50**	**86.45**	**29.70**	**29.95**

It should be noted that the project team analyzed the potential impact of converting wastewater charges to volume based. However, the Town is still in the process of reconciling water accounts to wastewater accounts, and the data available as of the time of this report completion was not sufficiently reliable to allow for a volume-based rate to be implemented. This is not unexpected, given the significant challenges faced by the Town in integrating the water and wastewater billing systems.

The project team believes that at some point in the future it would be appropriate for the Town to implement a volume-based wastewater rate. However, such a rate depends on a high degree of quality and reliability in the volume-based data.

SECTION I

Introduction

Background

In early 2023, the Town of Camp Verde, Arizona ("the Town") engaged economists.com to conduct a Water and Wastewater Rate Study and Long-Term Financial Plan. The Town identified numerous objectives for this study, including but not limited to the following:

- A comprehensive analysis and evaluation of the water and wastewater systems' current cost of service and revenue requirements
- A forecast of operating expenses over the next decade, taking into consideration salient factors such as cost of water and wastewater treatment, inflation, system growth, and increases in staffing levels
- An estimate of current and forecast accounts, volumes, and billing units for the ten-year forecast period
- A thorough assessment, review, and update of the water and wastewater system's known capital improvement needs, as well as a determination of the need for funding capital requirements through the issuance of long-term debt
- An evaluation of the current water and wastewater rate structures and revenue recovered versus the revenue requirement, both overall and for each customer class
- The development of a rate structure that would recover the Town's cost of service, ensure equitable, just, and reasonable treatment of identified customer classes, and maintain critical financial ratios

The analysis and recommendations presented in this study achieve all the objectives outlined.

In conjunction with Town staff, the project team evaluated alternative rate structures, which would enable the Town to achieve these objectives while continuing to provide ratepayers with a superior quality of municipal water and wastewater service.

Report Organization

This report is organized into the following sections:

Section I – Introduction - outlines objectives and scope of this rate study and long-term financial plan. Also presents the Town's current rate structure and a comparison of the Town's water and wastewater charges with other Arizona cities.

Section II – Water and Wastewater Test Year and Forecast Volumes – analyzes the Town's customer base, total accounts and current volumes of treated water and wastewater. This section presents totals for the current year and a forecast ten-years into the future.

Section III – Water and Wastewater Test Year and Forecast Revenue Requirement – outlines the process of analyzing the Town's current water and wastewater utility cost structure. The total current or "test year" revenue requirements are developed, and costs are functionalized. Using the test year as a basis, costs are forecast for a ten-year period.

Section IV – Water and Wastewater Rate Design – Presents the final rate recommendation for the Town, which would enable it to meet its revenue requirements over the next decade. Also presents an analysis of the impact of the rate scenario on each defined customer class.

Appendix A – Water and Wastewater Rate Model

Water and Wastewater Current Rates

Table I-1 summarizes the Town's current water and wastewater rate structure.

Table I-1

TOWN OF CAMP VERDE

CURRENT WATER AND WASTEWATER RATES

WATER Rates			Wastewater Rates		
Monthly Charge					
5/8" & 3/4"		$ 23.75	**Residential**		
1"		50.00	Minimum Charge	$	-
2"		175.00	Fixture Charge per Unit		2.90
3"		185.00			
4"		225.00			
6"		350.00			
8"		600.00	**Commercial**		
			Minimum Charge	$	-
Volume Rate (per 1,000 Gallons)			Fixture Charge per Unit		4.51
1	50,000	3.35			
50,001	Above	5.70			

The monthly service charge for all water accounts includes a monthly minimum charge based on the size and type of meter serving the customer. Water connections with 5/8" meter sizes are currently charged a minimum charge of $23.75 per month. Customers with a larger meter size are assessed a larger minimum charge based on their respective meter size.

All Town customers are charged a rate dependent on their meter size and volume usage. The Town customers are billed based on a two-tier inclining block rate with rates per 1,000 gallons increasing for each usage tier. This rate structure encourages water conservation.

Table I-1 reflects the rate charged to water customers by meter size and volume rates for each tier and to wastewater by number of fixtures.

Water and Wastewater Rate Comparison

Table I-2 compares Camp Verde's monthly water and wastewater average bills to several cities and towns located in Arizona. The average residential user in the Town consumes approximately 4,500 gallons monthly. Volumes of 5,000 gallons water and 5,000 gallons wastewater were used for the comparison as they represent typical usage levels for an average household in Camp Verde. Camp Verde wastewater comparison assumes 18 wastewater fixture units.

The rate data is based on published rates and ordinances posted by each municipality on their websites. These rates do not include sales tax, activation or other charges beyond the monthly base and volume charges. Additionally, where appropriate, certain cities that charge for service based on cubic feet of water have had their rates converted to an equivalent charge per 1,000 gallons. The comparison reveals that the Town's rates are a little higher than the sample average. For 5,000 gallons of water usage and 5,000 gallons of wastewater service, a residential ratepayer in Camp Verde pays approximately $92.70 (not including taxes).

Table I-2

TOWN OF CAMP VERDE

MONTHLY RESIDENTIAL CHARGES -- 5,000 GALLONS WATER AND WASTEWATER; 5/8" Meter

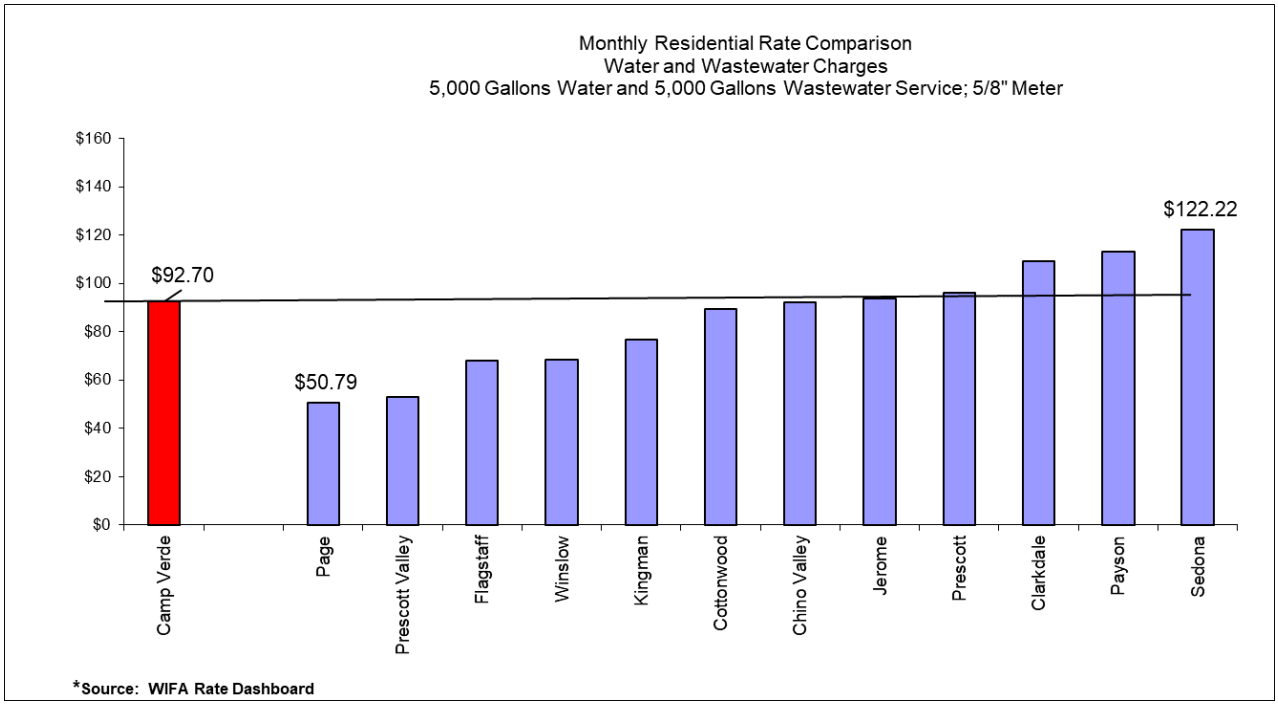
	Water	Wastewater	Total
Camp Verde	**$ 40.50**	**$ 52.20**	**$ 92.70**
Prescott	41.24	54.97	$ 96.21
Prescott Valley	25.05	27.77	52.82
Cottonwood	40.45	48.75	89.20
Clarkdale	55.12	54.00	109.12
Jerome	41.05	52.67	93.72
Sedona	61.11	61.11	122.22
Chino Valley	32.11	60.00	92.11
Flagstaff	41.26	26.75	68.01
Winslow	29.57	38.88	68.45
Kingman	20.66	56.10	76.76
Page	18.83	31.96	50.79
Payson	60.78	52.20	112.98
Sample Average			86.55

Source: WIFA Rate Dashboard

This type of comparison may have the unintended effect of discriminating against communities who choose to finance system expansions through current rates or revenue bonds, which are included in rates, as opposed to those who utilize general obligation bonds, which are funded through taxes. All else being equal, a Town that primarily or exclusively uses general obligation bonds will have a lower water rate per 1,000 gallons but a higher tax rate.

With these caveats in mind, Chart I-3 presents a graphic comparison of residential water and wastewater monthly charges for 5,000 gallons.

Chart I-3



SECTION II

Water and Wastewater Test Year and Forecast Volumes

To accurately forecast future revenues and expenses, it is necessary to examine current water and wastewater utility conditions. The first step in developing cost of service rates is to analyze patterns of usage, both for the system as a whole and for specified customer classes.

For the Town of Camp Verde, water consumption records maintained by the Town were reviewed for a three-year period dating back to 2020. These records provided information on the monthly water volumes distributed system-wide by account type as well as the number of accounts by meter size for each month and the associated revenues.

According to standard utility ratemaking methodology, to allocate revenue requirements equitably among system users, customers must be classified into relatively homogeneous groups with similar usage characteristics or service demands. Costs are then allocated to the customer classes in proportion to the usage characteristics of each class. For the water system, costs are typically allocated to customers based on their average and peak water demands. For the wastewater system, costs are allocated to customers based on their estimated wastewater flows, and in some cases, based on wastewater strengths.

After thoroughly examining volume and customer data, the project team made no revisions to the Town's rate classifications. The project team finds these customer class distinctions to be reasonable and appropriate for the Town of Camp Verde, meeting the criteria of homogenous groups with similar usage patterns.

In this section, the Town's functional customer classes and test year usage patterns will be thoroughly analyzed. A ten-year projection of customers and usage will also be presented. These forecasts, along with the revenue requirements, will form the basis of the rate design recommendations.

Water and Wastewater Customers and Meters – Test Year & Ten-Year Forecast

The Town's water and wastewater customers are categorized by customer class and are listed in Table II-1. The Town has provided the project team with account data for all months from January 2020 through December 2022. The project team has used the December 2022 data as the basis for the test year.

The table lists all water and wastewater accounts by customer class managed by the Town of Camp Verde. Wastewater also lists the number of fixture units since the Town currently charges wastewater by number of fixtures. As of December 2022, the Town maintained 2,028 water accounts and 1,092 wastewater accounts.

Table II-2 details the growth projections used by the project team for the Town's water customers beginning in the Test Year and continuing through Fiscal Year 2033.

Table II-1

TOWN OF CAMP VERDE

RATE MODEL CUSTOMER CLASS

WATER Accounts		WASTEWATER Accounts	
Residential Inside	1,740	Residential Inside	921
Non-Res Inside	243	Non-Res Inside	170
Yavapai	5	Yavapai	1
Residential Outside	-	Residential Outside	-
Non-Res Outside	3		
Fire	37		
Total	**2,028**	**Total**	**1,092**

Fixture Units

Residential	
Total	29,216
Per Connection	32
Commercial	
Total	5,714
Per Connection	34

Table II-2

TOWN OF CAMP VERDE

FORECAST TOTAL CUSTOMERS

	WATER Customer Classes						
	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Fire	Total
WATER Total Customers							
2020	1,561	294	5	-	3	37	**1,900**
2021	1,634	270	5	-	2	37	**1,948**
2022	1,720	233	5	-	3	37	**1,998**
2024	1,740	243	5	-	3	37	**2,028**
2025	1,760	245	5	-	3	37	**2,050**
2026	1,780	247	5	-	3	37	**2,072**
2027	1,800	249	5	-	3	37	**2,094**
2028	1,820	251	5	-	3	37	**2,116**
2029	1,840	253	5	-	3	37	**2,138**
2030	1,860	255	5	-	3	37	**2,160**
2031	1,880	257	5	-	3	37	**2,182**
2032	1,900	259	5	-	3	37	**2,204**
2033	1,920	261	5	-	3	37	**2,226**
WATER Annual New Customers							
2021	73	(24)	-	-	(1)		**48**
2022	86	(37)	-	-	1	-	**50**
2024	20	10	-	-	-	-	**30**
2025	20	2	-	-	-	-	**22**
2026	20	2	-	-	-	-	**22**
2027	20	2	-	-	-	-	**22**
2028	20	2	-	-	-	-	**22**
2029	20	2	-	-	-	-	**22**
2030	20	2	-	-	-	-	**22**
2031	20	2	-	-	-	-	**22**
2032	20	2	-	-	-	-	**22**
2033	20	2	-	-	-	-	**22**

Table II-2 reveals that water accounts are forecast to increase an average of 22 new accounts annually through the study period. This translates to an increase in water accounts from 2,028 in the test year to 2,226 in FY 2033, an average annual increase of 1.09%. This overall growth is illustrated further in Chart II-3.

Chart II-3

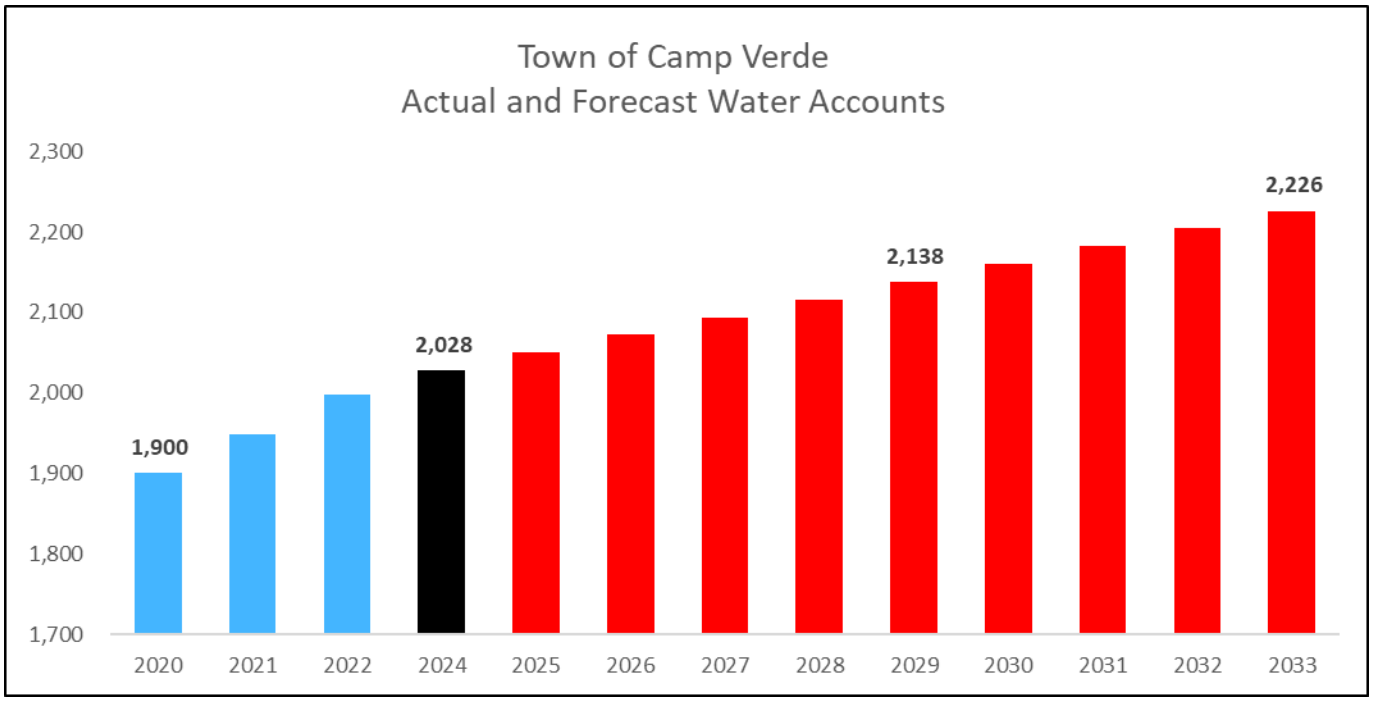


Table II-4 presents the project team's ten-year forecast of wastewater account growth. It reveals that the wastewater customer base is forecast to increase by an average of 114 accounts per year for the forecast period. Wastewater accounts are forecast to increase from 1,092 in the test year to 2,120 in FY 2033, for an average annual increase of 7.65%.

Table II-4

TOWN OF CAMP VERDE

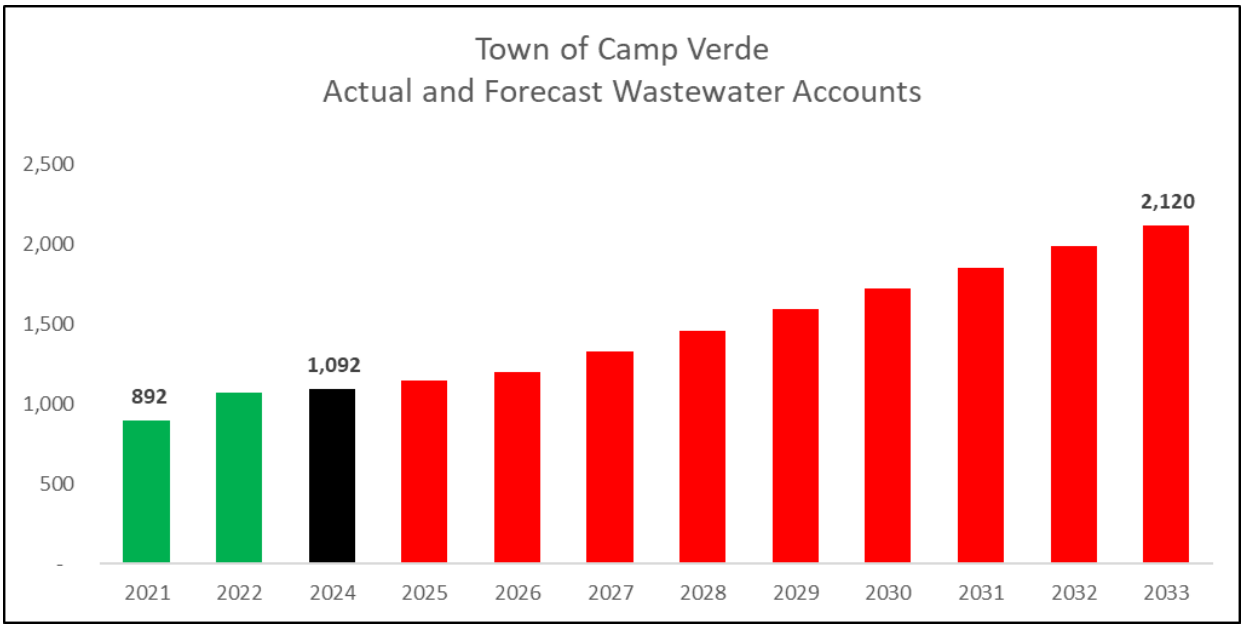
FORECAST TOTAL CUSTOMERS

WASTEWATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Total
WASTEWATER Total Customers						
2021	726	165	1	-		**892**
2022	901	169	1	-		**1,071**
2024	921	170	1	-	-	**1,092**
2025	971	172	1	-	-	**1,144**
2026	1,021	174	1	-	-	**1,196**
2027	1,151	176	1	-	-	**1,328**
2028	1,281	178	1	-	-	**1,460**
2029	1,411	180	1	-	-	**1,592**
2030	1,541	182	1	-	-	**1,724**
2031	1,671	184	1	-	-	**1,856**
2032	1,801	186	1	-	-	**1,988**
2033	1,931	188	1	-	-	**2,120**
WASTEWATER Annual New Customers						
2022	175	4	-	-	-	**179**
2024	20	1	-	-	-	**21**
2025	50	2	-	-	-	**52**
2026	50	2	-	-	-	**52**
2027	130	2	-	-	-	**132**
2028	130	2	-	-	-	**132**
2029	130	2	-	-	-	**132**
2030	130	2	-	-	-	**132**
2031	130	2	-	-	-	**132**
2032	130	2	-	-	-	**132**
2033	130	2	-	-	-	**132**

Chart II-5 illustrates the overall growth of wastewater accounts.

Chart II-5



Water Billed Consumption – Ten-Year Forecast

Table II-6 and Chart II-7 present the project team's ten-year forecast of water consumption in gallons for the Town. Consistent with the growth of accounts presented above, the project team has tracked the increase in consumption for the customer classes impacted and grouped the other classes for which growth is not projected.

Despite account growth, consumption levels often decrease when rainfall levels are higher since a portion of water consumption is used for irrigation. Factors such as account growth, existing rate structure and rainfall totals each exercise various degrees of influence over the ultimate level of water consumption. Therefore, the development of the test year for the volume forecast requires that each of these factors be analyzed.

The project team's forecast is based on the following factors:

- Camp Verde's account growth is forecast to continue to increase by approximately 1.09% per year. Projections contained in this report include adjustments based on the impacts of normal customer growth and no drought restrictions and designed to forecast usage under normal conditions.

Table II-6

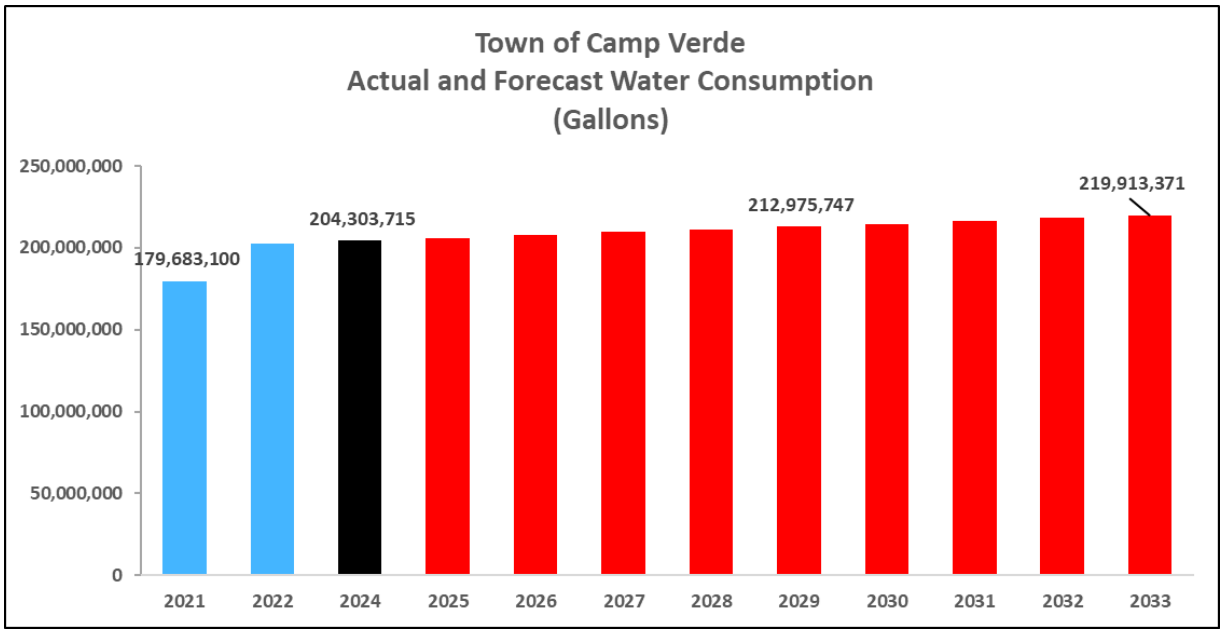
TOWN OF CAMP VERDE

FORECAST BILLED CONSUMPTION

WATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Fire	Total
	WATER Annual Consumption						
2021	89,667,800	74,958,700	15,056,600	-	-	-	**179,683,100**
2022	92,658,500	79,494,800	30,648,000	-	96,500	-	**202,897,800**
2024	93,735,924	79,823,291	30,648,000	-	96,500	-	**204,303,715**
2025	94,813,349	80,480,273	30,648,000	-	96,500	-	**206,038,122**
2026	95,890,773	81,137,255	30,648,000	-	96,500	-	**207,772,528**
2027	96,968,198	81,794,236	30,648,000	-	96,500	-	**209,506,934**
2028	98,045,622	82,451,218	30,648,000	-	96,500	-	**211,241,340**
2029	99,123,047	83,108,200	30,648,000	-	96,500	-	**212,975,747**
2030	100,200,471	83,765,182	30,648,000	-	96,500	-	**214,710,153**
2031	101,277,895	84,422,164	30,648,000	-	96,500	-	**216,444,559**
2032	102,355,320	85,079,145	30,648,000	-	96,500	-	**218,178,965**
2033	103,432,744	85,736,127	30,648,000	-	96,500	-	**219,913,371**

Chart II-7



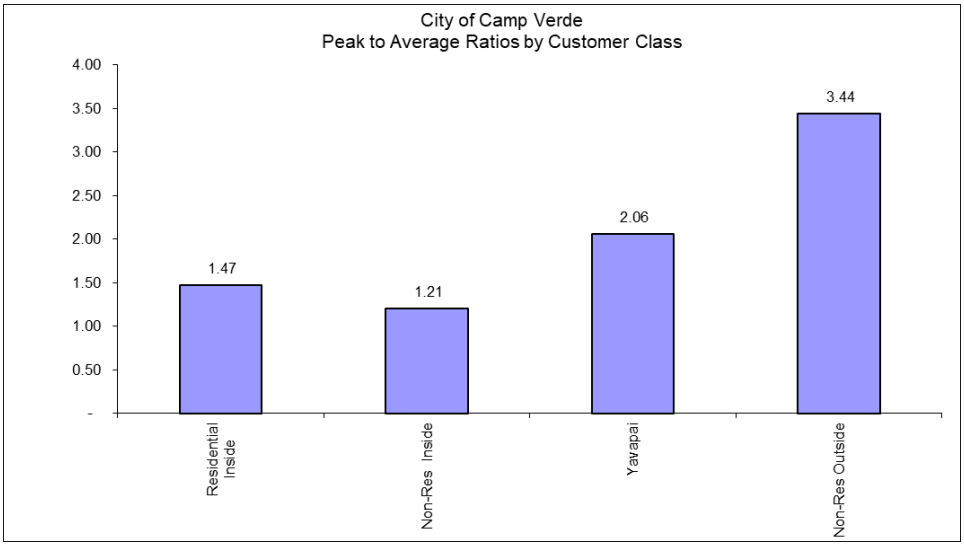
Peaking Factors

The cost of providing water to customers depends not only on the amount of water each class uses, but also on how that usage occurs over time. The maximum-day peaking requirements of a water utility's customers are an important influence on the utility's costs. Because water utilities attempt to meet all the demands of their customers, water systems are sized to meet customers' peak requirements. Therefore, during off-peak periods, there are costs associated with the unused capacity of the system. Ratemaking guidelines direct that these costs must be allocated to customers in proportion to the contribution of each customer class to the system peak. Thus, it is necessary to determine the peak rate of use relative to the average rate of use for each class. This ratio is called a *Peaking Factor*.

The calculation of peaking factors for individual classes relies on available pumping and consumption information as well as professional judgment. If customer meters could record daily flow rates for each customer, more refined information could be obtained on peaking factors. This is not feasible because of the enormous cost that would be imposed on the utility. Therefore, it is accepted practice in the water industry to develop peaking factor estimates based on standard formulas using system peak day information and monthly customer class use records. This is a conservative methodology, since customer class peaking factors based on peak months will inevitably be lower than the system-wide peaking factor, which is based on the peak day.

Based on AWWA guidelines, the customer class peaking factors calculated in this study are for non-coincidental peaks. The peaking factors developed for this analysis are based on actual monthly water consumption by customer class for the recent twelve-month period, January 2022 – December 2022. The calculations of the monthly peaking factors by meter size are shown in Chart II-8. The combined peak day to average ratio used in the rate model is 1.46.

Chart II-8



Wastewater Flows – Test Year and Forecast

The forecast for billing units is derived using anticipated growth in accounts as depicted in Table II-4. The results of the forecast are presented in Table II-9.

Two points are notable about this table. First, many water accounts do not return wastewater to the system, particularly if they are using a septic system. Second, wastewater usage is not subject to the significant fluctuations experienced by water accounts. This is because the water volume fluctuation is due to outdoor usage that is not returned to the wastewater system.

Table II-9

TOWN OF CAMP VERDE

FORECAST WASTEWATER BILLING UNITS

WASTEWATER Customer Classes

	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Total
	WASTEWATER Billing Units					
2021	39,724,200	42,330,000	3,798,100	-	-	**85,852,300**
2022	45,896,200	41,143,000	4,092,200	-	-	**91,131,400**
2024	45,896,200	41,143,000	4,092,200	-	-	**91,131,400**
2025	48,387,850	41,627,035	4,092,200	-	-	**94,107,086**
2026	50,879,501	42,111,071	4,092,200	-	-	**97,082,771**
2027	57,357,792	42,595,106	4,092,200	-	-	**104,045,098**
2028	63,836,083	43,079,141	4,092,200	-	-	**111,007,424**
2029	70,314,374	43,563,176	4,092,200	-	-	**117,969,750**
2030	76,792,665	44,047,212	4,092,200	-	-	**124,932,076**
2031	83,270,956	44,531,247	4,092,200	-	-	**131,894,403**
2032	89,749,247	45,015,282	4,092,200	-	-	**138,856,729**
2033	96,227,538	45,499,318	4,092,200	-	-	**145,819,055**

SECTION III

Water & Wastewater Forecast Revenue Requirement

In this section of the rate study and long-term financial plan, the Town of Camp Verde's test year and a 10-year forecast water and wastewater utility revenue requirements are developed. As noted in Section I, the test year consists of the Town's current fiscal year, July 1, 2023, through June 30, 2024.

The estimates presented in this section are based on the Town's Council-adopted budget for FY 2024, as well as a forecast of the Town's future capital improvements.

The calculation of a revenue requirement differs from a utility's budget in that it represents only that amount that must be raised through the Town's user rates. This means that non-rate revenue (such as connection fees, late payment charges and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

As is typical for publicly owned utilities, Camp Verde's system revenue requirements were developed using the cash basis of ratemaking. Under the cash basis, as defined by the AWWA Manual M-1, system revenue requirements consist of cash expenditures and other financial commitments (such as debt service coverage or reserves) that must be met through system operating revenues and other revenue sources.

The following specific items are included in the Town's revenue requirements raised from rates:

O&M expenses

Operating Transfers

Capital Outlays Funded from Rates

Debt service -- Current

Debt Service – Forecast

All data used in the development of the revenue requirements was obtained from the financial statements, budgets and other information provided by Town staff.

Operating Expenses – Test Year

Table III-1 summarizes the test year FY 2024 Operating Costs by departmental category for water and wastewater for the Town.

Table III-1

TOWN OF CAMP VERDE

TEST YEAR OPERATING EXPENSES

SCENARIO:	2023 06 27 -- Scenario I -- Status Quo	2024 Budget
Budget Code		
WATER OPERATING EXPENDITURES & CAPITAL OUTLAYS		
P	Personnel	$ 630,155
SU	Supplies	110,000
MR	Maintenance & Repairs	146,400
A	Administrative Expense	90,800
	SUB-TOTAL	**$ 977,355**
WASTEWATER OPERATING EXPENDITURES		
P	Personnel	$ 882,895
SU	Supplies	297,860
MR	Maintenance & Repairs	534,080
A	Administrative Expense	143,800
	SUB-TOTAL	**$ 1,858,635**
Total Operating Expenses		**$ 2,835,990**

As shown in Table III-1, the Town's operating expenses (net of Transfers, Capital outlays and Debt Service) for its water utility are forecast to be $977,355 in the test year, and $1,858,635 for the wastewater utility. Table III-2 and Table III-3 present the FY 2024 operating budget, transfers, and capital outlays in detail allocated by functional category. These totals are derived from the Town's FY 2024 budget. Capital outlays and debt service are examined in detail separately later in this section.

Table III-2

TOWN OF CAMP VERDE

WATER Operating Expanses, Transfers and Capital Outlays

SCENARIO: **2023 06 27 -- Scenario I -- Status Quo**

		Water Budget Line Item				
		Net Budget	Supply/ Treatment	Distribution	Admin	Customer Billing
Expense Category Code						
	Operating & Maintenance					
P	Personnel	$ 630,155	$ 220,554	$ 220,554	$ 126,031	$ 63,016
SU	Supplies	110,000	60,000	50,000	-	-
MR	Maintenance & Repairs	146,400	69,450	69,450	7,500	-
A	Administrative Expense	90,800	5,150	5,150	67,550	12,950
	Total Operating & Maintenance	**977,355**	**355,154**	**345,154**	**201,081**	**75,966**
	Transfers	**68,800**	**-**	**-**	**68,800**	**-**
	Capital Outlays	**192,500**	**10,000**	**182,500**	**-**	**-**
	Total WATER Operating Expenses, Transfers and Capital Outlays	**1,238,655**	**365,154**	**527,654**	**269,881**	**75,966**

Table III-3

TOWN OF CAMP VERDE

WASTEWATER Operating Expanses, Transfers and Capital Outlays

SCENARIO: **2023 06 27 -- Scenario I -- Status Quo**

		Water Budget Line Item				
		Net Budget	Treatment	Collection	Admin	Customer Billing
Expense Category Code						
	Operating & Maintenance					
P	Personnel	$ 882,895	$ 308,313	$ 308,313	$ 178,179	$ 88,090
SU	Supplies	297,860	206,680	91,180	-	-
MR	Maintenance & Repairs	534,080	324,890	169,190	40,000	-
A	Administrative Expense	143,800	27,650	27,650	69,263	19,238
	Total Operating & Maintenance	**1,858,635**	**867,533**	**596,333**	**287,442**	**107,327**
	Transfers	**82,730**	**-**	**-**	**82,730**	**-**
	Capital Outlays	**241,000**	**241,000**	**-**	**-**	**-**
	Total WASTEWATER O&M Exp., Transfers and Capital Outlays	**2,182,365**	**1,108,533**	**596,333**	**370,172**	**107,327**

Operating Expenses and Capital Outlays – Ten Year Forecast

Table III-4 presents the water and wastewater utility operating expense and capital outlays forecast for the ten-year period FY 2024 – FY 2033. Details behind these calculations can be found in the rate model contained in Appendix A. This forecast is based on the following set of assumptions:

- For FY 2025 and FY 2026, the water and wastewater operating expenses are assumed to increase at a 6% and 4% rate of inflation accordingly, returning to 3.0% per year after 2026.
- In addition to anticipated inflationary increases, there are other factors that are considered when forecasting various expense items. One such factor is that certain expense categories are expected to increase at rates greater than the average inflation rate. Account growth and volume growth will also affect certain expense categories, and some of the expense items are vulnerable to a combination of these greater than average increases. Items that are affected by general inflation, premium escalation, and account growth are primarily energy related items such as gas and electric expenses, fuels, and lubricants.
- Certain personnel related expenses such as insurance are projected to increase at a higher rate annually.
- Certain water and wastewater expenses are forecast to increase at a rate which reflects both inflation and the growth of new accounts.

Table III-4

TOWN OF CAMP VERDE

FORECAST OPERATING EXPENSES AND CAPITAL OUTLAYS

SCENARIO:
2023 08 02 -- Scenario I -- Status Quo

	Water			Wastewater			Total Water & Wastewater		
	Operating Expense	Capital Outlays	Total	Operating Expense	Capital Outlays	Total	Operating Expense	Capital Outlays	Total
2024	$ 977,355	$ 192,500	**$ 1,169,855**	$ 1,858,635	$ 241,000	**$ 2,099,635**	**$ 2,835,990**	**$ 433,500**	**$ 3,269,490**
2025	1,047,520	7,500	**1,055,020**	1,984,275	100,000	**2,084,275**	**3,031,795**	**107,500**	**3,139,295**
2026	1,115,831	7,500	**1,123,331**	2,098,138	100,000	**2,198,138**	**3,213,970**	**107,500**	**3,321,470**
2027	1,185,217	7,500	**1,192,717**	2,208,093	100,000	**2,308,093**	**3,393,309**	**107,500**	**3,500,809**
2028	1,259,623	7,500	**1,267,123**	2,324,618	100,000	**2,424,618**	**3,584,241**	**107,500**	**3,691,741**
2029	1,339,459	7,500	**1,346,959**	2,448,169	100,000	**2,548,169**	**3,787,628**	**107,500**	**3,895,128**
2030	1,425,169	7,500	**1,432,669**	2,579,235	100,000	**2,679,235**	**4,004,404**	**107,500**	**4,111,904**
2031	1,517,238	7,500	**1,524,738**	2,718,345	100,000	**2,818,345**	**4,235,583**	**107,500**	**4,343,083**
2032	1,616,191	7,500	**1,623,691**	2,866,068	100,000	**2,966,068**	**4,482,260**	**107,500**	**4,589,760**
2033	1,722,603	7,500	**1,730,103**	3,023,021	100,000	**3,123,021**	**4,745,624**	**107,500**	**4,853,124**

Existing Debt Service

Like most utilities, the Town funds a portion of its capital requirements with its current system rates and fees. These capital outlays are typically for minor assets such as trucks and computers, as opposed to major capital expenditures such as treatment plants.

The Town currently maintains two series of bonds issued: WIFA Wastewater Improvements and WIFA Water Company Purchase.

Table III-5 presents debt service for the debt currently outstanding.

Table III-5

TOWN OF CAMP VERDE

CURRENT DEBT SERVICE

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Debt Service

	1 Series WIFA Wastewater Improvements	2 Series WIFA Water Company Purchase	Total Debt Service
WATER Debt Service			
2024	$ -	$ 447,417	**$ 447,417**
2025	-	447,418	**447,418**
2026	-	447,416	**447,416**
2027	-	447,418	**447,418**
2028	-	447,418	**447,418**
2029	-	447,421	**447,421**
2030	-	447,418	**447,418**
2031	-	447,417	**447,417**
2032	-	447,399	**447,399**
2033	-	447,399	**447,399**
WASTEWATER Debt Service			
2024	$ 134,242	$ -	**$ 134,242**
2025	134,243	-	**134,243**
2026	134,241	-	**134,241**
2027	134,242	-	**134,242**
2028	134,242	-	**134,242**
2029	134,242	-	**134,242**
2030	134,242	-	**134,242**
2031	134,244	-	**134,244**
2032	134,241	-	**134,241**
2033	134,242	-	**134,242**
TOTAL Debt Service			
2024	$ 134,242	$ 447,417	**$ 581,659**
2025	134,243	447,418	**581,661**
2026	134,241	447,416	**581,657**
2027	134,242	447,418	**581,660**
2028	134,242	447,418	**581,660**
2029	134,242	447,421	**581,663**
2030	134,242	447,418	**581,660**
2031	134,244	447,417	**581,661**
2032	134,241	447,399	**581,640**
2033	134,242	447,399	**581,641**

Capital Improvement Plan

Like most towns, Camp Verde maintains an extensive and detailed capital improvement program to repair, maintain and expand its water and wastewater system. Minor capital improvements are contained in the Town's budget. Major capital improvements are funded through a series of debt issued by the Town.

Town staff and the project team worked together to develop the Town's forecast capital improvements needs in FY 2024 – FY 2033. The forecast CIP is presented in Table III-6. As the table reveals, the Town is forecast to spend $24,050,429 in total capital improvements in the next ten years.

Table III-6

TOWN OF CAMP VERDE

CAPITAL IMPROVEMENT PLAN PROJECTS
ASSIGNED FUNDING THROUGH AVAILABLE RESOURCES

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

		Total
WATER		
Water Treatment		
Design/Construction Mongini Well Arsenic Removal	$	2,300,000
Verde River Estates Arsenic Removal Program		700,000
		3,000,000
Water Distribution		
Water Master Plan		183,200
SCADA/Communication Tower Relocation		68,720
2024 Water Main Replacement Program		5,060,000
Additional Well Pump Station		2,000,000
Additional 2M Gallons Storage Facilities		1,500,000
Well Storage Arsenic Pump Station No. 1		2,000,000
Total		12,911,920
Total Water CIP		**15,911,920**
WASTEWATER		
Wastewater Treatment		
Treatment Plan Admin Office	$	-
Plant Blower Building Addition		207,259
WWTP Control Panel Upgrade		206,250
Admin Building		200,000
Highway 260 Sewer Extension		2,000,000
WWTP Equalization Basin		4,000,000
Total WW Treatment		6,613,509
Wastewater Collection		
Wastewater Master Plan		250,000
Sewer Lines -- Black Bridge Loop Area		575,000
Lift Station at Rezzonico Park		700,000
Total WW Collection		1,525,000
Total Wastewater CIP		**8,138,509**
Total Water and Wastewater CIP		**24,050,429**

The Town is forecast to issue revenue bonds totaling $23,500,000 for the currently identified water and wastewater capital improvement projects ($16,000,000 in water-related debt and $7,500,000 in wastewater-related debt). Annual forecast debt issuances are presented in Table III-7.

Table III-7

TOWN OF CAMP VERDE
WATER/WASTEWATER FUTURE BOND ISSUES

	Water	Wastewater	Total
FY 2024	$ 10,000,000	$ 3,000,000	$ 13,000,000
FY 2025	-	-	-
FY 2026	2,500,000	1,000,000	3,500,000
FY 2027	-	-	-
FY 2028	1,000,000	-	1,000,000
FY 2029	-	3,500,000	3,500,000
FY 2030	2,500,000	-	2,500,000
FY 2031	-	-	-
FY 2032	-	-	-
FY 2033	-	-	-
Total	**$ 16,000,000**	**$ 7,500,000**	**$ 23,500,000**

Debt Service – Forecast

Table III-8 presents current and forecast debt service, assuming that the Town issues new water and wastewater debt in FY 2024-2033 to fund the CIP projects according to the schedule presented in Table III-7. It is projected that newly-issued bond will be repaid entirely with Utility System Revenues. Future revenue debt is assumed to have a 25-year term, 3.5% interest rate and level principal and interest payments.

These assumptions are preliminary in nature and subject to change. Should the Town Council choose to issue more or less revenue debt than assumed in this study, or should different finance terms be available at the time the debt is issued, then the rate plans contained in this study may require revision.

Table III-8

TOWN OF CAMP VERDE
CURRENT AND FORECAST DEBT SERVICE
SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

	Water		Wastewater		
Year	**Current**	**Forecast**	**Current**	**Forecast**	**Total**
2024	$ 447,417	$ -	$ 134,242	$ -	**$ 581,659**
2025	447,418	574,279	134,243	172,284	**1,328,223**
2026	447,416	574,279	134,241	172,284	**1,328,219**
2027	447,418	725,964	134,242	232,958	**1,540,581**
2028	447,418	725,964	134,242	232,958	**1,540,581**
2029	447,421	786,638	134,242	232,958	**1,601,258**
2030	447,418	786,638	134,242	445,317	**1,813,615**
2031	447,417	938,323	134,244	445,317	**1,965,301**
2032	447,399	938,323	134,241	445,317	**1,965,280**
2033	447,399	938,323	134,242	445,317	**1,965,281**

Non-Rate Revenues

Although sales revenues constitute most of the revenue received by the Town for water and wastewater service, a certain amount of revenue is accrued from non-rate sources. These revenues include other general revenues, surcharges, penalty charges, and miscellaneous revenues. These non-rate revenues are subtracted from the overall budget to determine the revenue requirement to be raised from rates. Non-rate revenues are presented in Table III-9.

Table III-9

TOWN OF CAMP VERDE

FORECAST NON-RATE REVENUES

SCENARIO:

2023 08 02 -- Scenario I -- Status Quo

	Water	Wastewater	Total Water & WW
2024	$ 223,220	$ 544,220	$ 767,440
2025	223,220	544,220	767,440
2026	223,220	544,220	767,440
2027	223,220	544,220	767,440
2028	223,220	544,220	767,440
2029	223,220	544,220	767,440
2030	223,220	544,220	767,440
2031	223,220	544,220	767,440
2032	223,220	544,220	767,440
2033	223,220	544,220	767,440

Net Revenue Requirement

Table III-10 presents the test year and ten-year forecast for the Town's net revenue requirement to be raised from rates. Detailed calculations are presented in the rate model contained in Appendix A of this report.

Table III-10

TOWN OF CAMP VERDE

CURRENT AND FORECAST NET REVENUE REQUIREMENT

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

	Operating Expenses	Capital Outlays	Debt Service	Transfers & Contingencies	Total Cost of Service	Less Non-Rate Revenues	Net Revenue Requirement
WATER Revenue Requirement							
2024	$ 977,355	$ 192,500	$ 447,417	$ 68,800	$ 1,686,072	$ 223,220	**$ 1,462,852**
2025	1,047,520	7,500	1,021,697	72,928	2,149,645	223,220	**1,926,425**
2026	1,115,831	7,500	1,021,695	75,845	2,220,871	223,220	**1,997,651**
2027	1,185,217	7,500	1,173,382	78,120	2,444,219	223,220	**2,220,999**
2028	1,259,623	7,500	1,173,382	80,464	2,520,969	223,220	**2,297,749**
2029	1,339,459	7,500	1,234,059	82,878	2,663,896	223,220	**2,440,676**
2030	1,425,169	7,500	1,234,056	85,364	2,752,090	223,220	**2,528,870**
2031	1,517,238	7,500	1,385,740	87,925	2,998,403	223,220	**2,775,183**
2032	1,616,191	7,500	1,385,722	90,563	3,099,976	223,220	**2,876,756**
2033	1,722,603	7,500	1,385,722	93,280	3,209,105	223,220	**2,985,885**
WASTEWATER Revenue Requirement							
2024	$ 1,858,635	$ 241,000	$ 134,242	$ 82,730	$ 2,316,607	$ 544,220	**$ 1,772,387**
2025	1,984,275	100,000	306,527	87,694	2,478,496	544,220	**1,934,276**
2026	2,098,138	100,000	306,525	91,202	2,595,865	544,220	**2,051,645**
2027	2,208,093	100,000	367,200	93,938	2,769,230	544,220	**2,225,010**
2028	2,324,618	100,000	367,200	96,756	2,888,574	544,220	**2,344,354**
2029	2,448,169	100,000	367,200	99,658	3,015,027	544,220	**2,470,807**
2030	2,579,235	100,000	579,559	102,648	3,361,442	544,220	**2,817,222**
2031	2,718,345	100,000	579,561	105,728	3,503,633	544,220	**2,959,413**
2032	2,866,068	100,000	579,558	108,899	3,654,525	544,220	**3,110,305**
2033	3,023,021	100,000	579,559	112,166	3,814,746	544,220	**3,270,526**
TOTAL Revenue Requirement							
2024	$ 2,835,990	$ 433,500	$ 581,659	$ 151,530	$ 4,002,679	$ 767,440	**$ 3,235,239**
2025	3,031,795	107,500	1,328,223	160,622	4,628,140	767,440	**3,860,700**
2026	3,213,970	107,500	1,328,219	167,047	4,816,736	767,440	**4,049,296**
2027	3,393,309	107,500	1,540,581	172,058	5,213,449	767,440	**4,446,009**
2028	3,584,241	107,500	1,540,581	177,220	5,409,542	767,440	**4,642,102**
2029	3,787,628	107,500	1,601,258	182,536	5,678,923	767,440	**4,911,483**
2030	4,004,404	107,500	1,813,615	188,013	6,113,532	767,440	**5,346,092**
2031	4,235,583	107,500	1,965,301	193,653	6,502,036	767,440	**5,734,596**
2032	4,482,260	107,500	1,965,280	199,462	6,754,502	767,440	**5,987,062**
2033	4,745,624	107,500	1,965,281	205,446	7,023,851	767,440	**6,256,411**

Water Utility Cost Functionalization

Once the total water and wastewater system costs have been identified, the next step in the rate development process is to isolate the costs associated with each system function. Some of these expenditures are a function of base water demand; others are based on the peak demands placed on the system. Certain costs are associated

with serving customers regardless of the volume of water use or wastewater discharge. The basic steps used to allocate the Town's water revenue requirements include the following:

1. Each system's costs (revenue requirements) are categorized by utility function (i.e., treatment, distribution, administrative, customer). This process is known as *functionalization*.
2. Functionalized costs are classified based on the service characteristics or the types of demand served by the utility (base and maximum day). This process is known as *classification.*
3. Costs by service characteristic are allocated to customer classes in proportion to the service demands demonstrated by each class.

This three-step process allows for the allocation of system costs in the same terms as customer classes. The approaches described in this section follow standard industry practices. Water system costs are allocated to the following functions:

Treatment – the process by which raw water is converted to potable water

Distribution – the lines that carry water to individual customers' properties

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and providing other services to customers

The project team allocated operating budget line-item expenses individually to system functions based on general guidelines, specific research, and input from Town staff. The results of the allocation process for the test year are presented in Table III-11. The rate model presented in Appendix A includes a detailed listing of the allocations by line item.

Table III-11

TOWN OF CAMP VERDE

TEST YEAR WATER COST FUNCTIONALIZATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Function		Revenue Requirement	Percent
Treatment	$	510,903	34.9%
Distribution		651,889	44.6%
Administration		234,151	16.0%
Customer		65,908	4.5%
Total		**1,462,852**	**100.0%**

Water Utility Cost Classification

The allocation of functionalized water system costs to service characteristics follows the base-extra capacity cost allocation method recommended by AWWA. Using this method, costs are segregated into the following categories:

Base costs – capital costs and O&M expenses associated with service to customers under average demand conditions. This category does not include any costs attributable to variations in water use resulting from peaks in demand. Base costs tend to vary directly with the total quantity of water used.

Maximum Day/Extra Capacity costs – costs attributable to facilities that are designed to meet peaking requirements. These costs include capital and operating charges for additional plant and system capacity beyond that required for average usage.

Customer Billing costs – costs associated with any aspect of customer service, including billing, accounting, and meter services. These costs are independent of the amount of water used and the size of the customer's meter and are not subject to peaking factors.

Limitations in the availability of information resulted in the decision not to attempt to allocate costs further to the maximum hour component.

According to AWWA Manual M-1 (p. 12), in the base-extra capacity method, care must be taken in separating costs between those devoted to base capacity and those devoted to extra capacity. Based on general industry standards, the Town's peak to average capacity factor is assumed to be 1.5. The peak to average factor is calculated by dividing the volume on the peak day of the year by the average daily volume. This means that facilities designed to meet maximum-day requirements, such as the treatment and distribution functions, are allocated 50.00% to base, and 50.00% to extra capacity.

All customer service-related costs are allocated 100% to customer billing. Administration costs are generally not directly assignable to individual classifications. Therefore, it is standard rate-making practice to allocate these costs on an indirect basis to service characteristics.

The rate model in Appendix A provides the detailed allocations of costs to service characteristics. The system-wide costs by service characteristic are shown in Table III-12. As with cost functionalization, these percentages are not expected to change significantly in the forecast period.

Table III-12

TOWN OF CAMP VERDE

TEST YEAR WATER COST CLASSIFICATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Function		2024 Revenue Requirement	Percent
Base	$	922,176	63.04%
Maximum Day		461,088	31.52%
Customer		79,588	5.44%
Total		**1,462,852**	**100.0%**

Water Utility Cost Allocation

Allocation of costs by service characteristic to customer classes is based on the proportionate use levels of each characteristic by each class. The water utility costs for Test Year 2024 by customer class are presented in Table

III-13. Total water utility costs by customer class for the entire term of the study are summarized in Table III-14. Overall cost calculations are presented in detail in the rate model contained in Appendix A.

Table III-13

TOWN OF CAMP VERDE

TEST YEAR WATER COST ALLOCATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Function	2024 Revenue Requirement	Percent
Residential Inside	$ 710,039	48.5%
Non-Res Inside	451,385	30.9%
Yavapai	298,263	20.4%
Residential Outside	-	0.0%
Non-Res Outside	1,712	0.1%
Fire	1,452	0.1%
Total	**1,462,852**	**100.0%**

Table III-14

TOWN OF CAMP VERDE

FORECAST WATER COST ALLOCATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Year	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Fire	Total
2024	$ 710,039	$ 451,385	$ 298,263	$ -	$ 1,712	$ 1,452	**$ 1,462,852**
2025	938,078	594,414	389,803	-	2,238	1,892	**1,926,425**
2026	975,855	616,379	401,173	-	2,303	1,941	**1,997,651**
2027	1,088,347	685,280	442,695	-	2,541	2,135	**2,220,999**
2028	1,129,406	708,948	454,598	-	2,610	2,186	**2,297,749**
2029	1,203,268	753,034	479,323	-	2,752	2,298	**2,440,676**
2030	1,250,432	780,233	493,017	-	2,831	2,357	**2,528,870**
2031	1,376,207	856,215	537,116	-	3,084	2,560	**2,775,183**
2032	1,430,645	887,541	552,769	-	3,174	2,628	**2,876,756**
2033	1,489,075	921,198	569,640	-	3,272	2,700	**2,985,885**

Wastewater Utility Cost Functionalization and Classification

Wastewater system costs are allocated to the following functions:

Treatment -- Volume – the costs associated with treating wastewater volume discharges

Treatment -- BOD – the costs associated with treating wastewater BOD discharges

Treatment -- TSS – the costs associated with treating wastewater suspended solids (TSS) discharges

Collection – the lines that transport wastewater from customers' properties to the wastewater treatment plant

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and other services to customers

As was the case for the water system, wastewater utility operating budget line-item expenses are allocated individually to functions. The results of the allocation process are presented in Table III-15. The rate model in Appendix A presents a detailed listing of the cost allocations by line item. As with the water utility, these percentages are not forecast to change significantly during the next ten years.

Table III-15

TOWN OF CAMP VERDE

TEST YEAR WASTEWATER COST FUNCTIONALIZATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Function		2024 Revenue Requirement	Percent
Treatment	$	848,115	47.9%
Collection		558,948	31.5%
Administration		283,210	16.0%
Customer		82,114	4.6%
Total		**1,772,387**	**100.0%**

Wastewater Utility Cost Allocation

Allocation of wastewater utility costs by service characteristic to customer classes is performed in the same manner as described for the water utility. The wastewater utility costs for Test Year 20234 by customer class are presented in Table III-16. Total wastewater utility costs by customer class are summarized in Table III-17. The rate model in Appendix A presents a detailed listing of the cost calculations by line item.

Table III-16

TOWN OF CAMP VERDE

TEST YEAR WASTEWATER COST ALLOCATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Function	2024 Revenue Requirement	Percent
Residential Inside	$ 925,828	52.2%
Non-Res Inside	771,270	43.5%
Yavapai	75,289	4.2%
Residential Outside	-	0.0%
Total	**1,772,387**	**100.0%**

Table III-17

TOWN OF CAMP VERDE

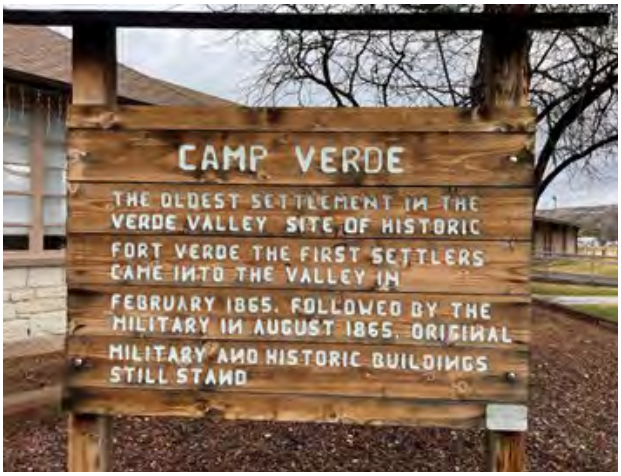
FORECAST WASTEWATER COST ALLOCATION

SCENARIO: 2023 08 02 -- Scenario I -- Status Quo

Year	Residential Inside	Non-Res Inside	Yavapai	Residential Outside	Non-Res Outside	Total
2024	$ 925,828	$ 771,270	$ 75,289	$ -	$ -	**$ 1,772,387**
2025	1,030,149	824,548	79,579	-	-	**1,934,276**
2026	1,112,812	857,063	81,770	-	-	**2,051,645**
2027	1,264,945	877,243	82,822	-	-	**2,225,010**
2028	1,387,264	875,348	81,742	-	-	**2,344,354**
2029	1,512,662	877,127	81,019	-	-	**2,470,807**
2030	1,772,636	957,027	87,559	-	-	**2,817,222**
2031	1,910,378	961,972	87,063	-	-	**2,959,413**
2032	2,053,400	970,049	86,856	-	-	**3,110,305**
2033	2,202,540	981,073	86,913	-	-	**3,270,526**

SECTION IV

Water and Wastewater Rate Design



Rate design involves determining charges for each class of customers that will generate a desired level of revenue. Over the course of the engagement, the project team has participated in numerous conversations and meetings with Town staff at which alternative rate plans were discussed. As a result of these conversations and work sessions, the project team has developed the alternative long-term rate plan presented in this section.

The plan is designed to allow the Town to recover sufficient revenues to meet all operating and capital obligations, including the debt service required to fund the Town's forecast capital improvements.

Proposed Rate Plan – Scenario I – Status Quo

The rate design proposed for the Town maintains the existing rate structure for water and wastewater; and introduces necessary percentage adjustments. It includes higher initial adjustments required wastewater in FY 2024 through FY 2026 to recover its cost of service. Some of the advantages of this scenario are:

- Consistent and easy to understand,
- Fair treatment of all customer classes,

Table IV-1 summarizes the water and wastewater rate recommendations for the five-year period 2024 - 2028. The table reveals that the proposed wastewater rate increases are higher in the years 2024 – 2026.

Table IV-2 calculates the average impact on monthly water bills of the proposed rate design at various usage levels. The average residential monthly water usage in the Town is approximately 4,500 gallons. The results of the analysis are included in Appendix A.

Table IV-3 calculates the average impact on monthly wastewater bills of the proposed rate design at various fixture levels. The results of the analysis are included in Appendix A.

Table IV-1

TOWN OF CAMP VERDE

1 Water and Wastewater Rates

Scenario: 2023 08 02 -- Scenario I -- Status Quo

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates							
Monthly Minimum Charge							
	5/8" & 3/4"	$ 23.75	**$ 27.55**	**$ 31.95**	$ 34.85	$ 35.90	$ 37.00
	1"	50.00	**58.00**	**67.30**	73.35	75.55	77.80
	2"	175.00	**203.00**	**235.50**	256.70	264.40	272.35
	3"	185.00	**214.60**	**248.95**	271.35	279.50	287.90
	4"	225.00	**261.00**	**302.75**	330.00	339.90	350.10
	6"	350.00	**406.00**	**470.95**	513.35	528.75	544.60
	8"	600.00	**696.00**	**807.35**	880.00	906.40	933.60
Volume Rate Per 1,000 Gal -- Status Quo							
1	50,000	3.35	**3.90**	**4.50**	4.90	5.05	5.20
50,001	Above	5.70	**6.60**	**7.65**	8.35	8.60	8.85
Wastewater Rates							
Rates Per Fixture Unit							
	Residential	$ 2.90	**$ 3.45**	**$ 4.10**	$ 4.75	$ 4.85	$ 4.95
	Non-Residential	4.51	**5.35**	**6.35**	7.35	7.50	7.65

Table IV-2

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Charge -- Status Quo							
Meter = 5/8							
5,000 Gal	Total	$ 40.50	$ 47.05	$ 54.45	$ 59.35	$ 61.15	$ 63.00
	Increase -- $		**6.55**	**7.40**	**4.90**	**1.80**	**1.85**
10,000 Gal	Total	57.25	66.55	76.95	83.85	86.40	89.00
	Increase -- $		**9.30**	**10.40**	**6.90**	**2.55**	**2.60**
20,000 Gal	Total	90.75	105.55	121.95	132.85	136.90	141.00
	Increase -- $		14.80	16.40	10.90	4.05	4.10
	Increase -- %		16.3%	15.5%	8.9%	3.0%	3.0%
Meter = 2"							
50,000	Total	342.50	398.00	460.50	501.70	516.90	532.35
	Increase -- $		**55.50**	**62.50**	**41.20**	**15.20**	**15.45**
100,000	Total	627.50	728.00	843.00	919.20	946.90	974.85
	Increase -- $		**100.50**	**115.00**	**76.20**	**27.70**	**27.95**
	Increase -- %		16.0%	15.8%	9.0%	3.0%	3.0%

Table IV-3

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Wastewater Charge -- Status Quo							
Residential Fixture Units							
12	Total	$ 34.80	$ 41.40	$ 49.20	$ 57.00	$ 58.20	$ 59.40
	Increase -- $		6.60	**7.80**	7.80	1.20	1.20
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
18	Total	52.20	62.10	73.80	85.50	87.30	89.10
	Increase -- $		9.90	**11.70**	11.70	1.80	1.80
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
32	Total	92.80	110.40	131.20	152.00	155.20	158.40
	Increase -- $		17.60	**20.80**	20.80	3.20	3.20
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
40	Total	116.00	138.00	164.00	190.00	194.00	198.00
	Increase -- $		22.00	**26.00**	26.00	4.00	4.00
	Increase -- %		19.0%	**18.8%**	15.9%	2.1%	2.1%
Commercial Fixture Units							
34	Total	$ 153.34	$ 181.90	$ 215.90	$ 249.90	$ 255.00	$ 260.10
	Increase -- $		28.56	**34.00**	34.00	5.10	5.10
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%
70	Total	$ 315.70	$ 374.50	$ 444.50	$ 514.50	$ 525.00	$ 535.50
	Increase -- $		58.80	**70.00**	70.00	10.50	10.50
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%
120	Total	541.20	642.00	762.00	882.00	900.00	918.00
	Increase -- $		100.80	**120.00**	120.00	18.00	18.00
	Increase -- %		18.6%	**18.7%**	15.7%	2.0%	2.0%

Proposed Water Rate Plan – Scenario II – Conservation

A second potential rate design proposed for the Town's water utility involves the development of a conservation-based rate. Under this rate plan, the Town would create two new inverted block volume tiers, for a total of 4 tiers. The purpose would be to further encourage conservation while to the best extent possible limit the impact of rate adjustments on low volume ratepayers. Under this scenario, wastewater rate adjustments are the same as those presented in Scenario I.

Table IV-4 summarizes the water and wastewater rate recommendations for the five-year period 2024 – 2028 under the Conservation Scenario.

Table IV-5 calculates the average impact on monthly water bills of the proposed rate design at various usage levels. The average residential monthly water usage in the Town is approximately 4,500 gallons.

Table IV-4

TOWN OF CAMP VERDE

Water and Wastewater Rates

Scenario: 2023 08 02 -- Scenario II -- Conservation

		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Rates -- Conservation							
Monthly Minimum Charge							
5/8" & 3/4"		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00
1"		50.00	58.00	67.30	73.35	75.55	77.80
2"		175.00	203.00	235.50	256.70	264.40	272.35
3"		185.00	214.60	248.95	271.35	279.50	287.90
4"		225.00	261.00	302.75	330.00	339.90	350.10
6"		350.00	406.00	470.95	513.35	528.75	544.60
8"		600.00	696.00	807.35	880.00	906.40	933.60
Volume Rate Per 1,000 Gal							
1	5,000	3.35	3.35	3.90	4.25	4.40	4.55
5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35
10,001	50,000	3.35	5.50	6.40	7.00	7.20	7.40
50,001	Above	5.70	7.00	8.10	8.85	9.10	9.35
Wastewater Rates							
Rate per Fixture Unit							
Residential		$ 2.90	$ 3.45	$ 4.10	$ 4.75	$ 4.85	$ 4.95
Non-Residential		4.51	5.35	6.35	7.35	7.50	7.65

Table IV-5

TOWN OF CAMP VERDE		IMPACT OF RATE PLAN ON MONTHLY CHARGES					
		Current	Effective Jan-24	Effective Jan-25	Effective Jan-26	Effective Jan-27	Effective Jan-28
Water Charge -- Conservation							
Meter = 5/8							
5,000 Gal	Total	$ 40.50	$ 44.30	$ 51.45	$ 56.10	$ 57.90	$ 59.75
	Increase -- $		**3.80**	**7.15**	**4.65**	**1.80**	**1.85**
10,000 Gal	Total	57.25	64.30	74.70	81.35	83.90	86.50
	Increase -- $		**7.05**	**10.40**	**6.65**	**2.55**	**2.60**
Meter = 2"							
50,000	Total	342.50	459.75	534.25	583.20	600.40	617.85
	Increase -- $		**117.25**	**74.50**	**48.95**	**17.20**	**17.45**
100,000	Total	627.50	809.75	939.25	1,025.70	1,055.40	1,085.35
	Increase -- $		**182.25**	**129.50**	**86.45**	**29.70**	**29.95**

Wastewater Volume-based Rate

It should be noted that the project team analyzed the potential impact of converting wastewater charges to volume based. However, the Town is still in the process of reconciling water accounts to wastewater accounts, and the data available as of the time of this report completion was not sufficiently reliable to allow for a volume-based rate to be implemented. This is not unexpected, given the significant challenges faced by the Town in integrating the water and wastewater billing systems.

The project team believes that at some point in the future it would be appropriate for the Town to implement a volume-based wastewater rate. However, such a rate depends on a high degree of quality and reliability in the volume-based data.

Notes on Rate Recommendations

The forecast and recommendations presented in this study represent a combination of the best information available from the Town and the project team's expertise. However, this forecast relies in part on assumptions about future events and events beyond the control of the project team (such as account growth rates within the Town). The forecast and recommendations contained in this study may be subject to revision if any of the following events occurs:

- Actual growth in accounts and consumed volumes is less than (or significantly greater than) forecast
- Capital improvement plan funding costs increase significantly due to the rising cost of materials or other factors
- An unforeseen event impacts the Town, such as an extended recession, natural catastrophe, or terrorist attack
- Town budget levels or priorities change significantly from those forecast in this study

It should be noted that none of these events are foreseen by the project team or the Town at this time.

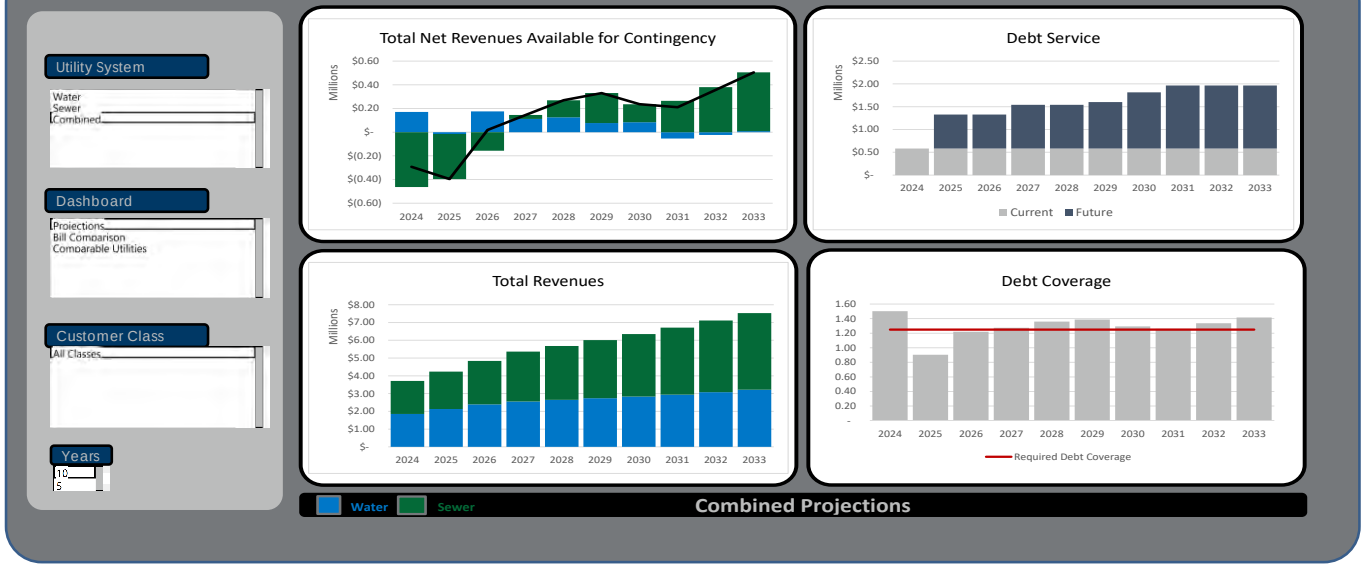
If any of these events occur, the Town may be compelled to consider further adjustments to its water and wastewater rates.

APPENDIX A

Town of Camp Verde

Ten Year Rate Analysis and Pro Forma

Fiscal Years 2024 - 2033



Future Debt Term 20

Water Future Bond Issues

	Proposed
2024	$ 10,000,000
2025	$ -
2026	$ 2,500,000
2027	$ -
2028	$ 1,000,000
2029	$ -
2030	$ 2,500,000
2031	$ -
2032	$ -
2033	$ -

Sewer Future Bond Issues

	Proposed
2024	$ 3,000,000
2025	$ -
2026	$ 1,000,000
2027	$ -
2028	$ -
2029	$ 3,500,000
2030	$ -
2031	$ -
2032	$ -
2033	$ -

		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water Rate Adjustments											
Meter Charge		16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%
Volume Charge		16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%
Sewer Rate Adjustments											
Base Charge		19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Volume Charge	Residential	19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
	Non-Residential	19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Water Summary
Scen: **2023 08 02 -- Scenario I -- Status Quo**

1 Water Monthly Rates and Charges

CITY Water Rate and Charges

W1 Residential Inside

Monthly Minimum Charge

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
5/8" & 3/4"	$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
1"	50.00	58.00	67.30	73.35	75.55	77.80	80.15	82.55	85.85	89.30	92.85
1 1/2"	-	-	-	-	-	-	-	-	-	-	-
2"	175.00	203.00	235.50	256.70	264.40	272.35	280.50	288.90	300.45	312.45	324.95
3"	185.00	214.60	248.95	271.35	279.50	287.90	296.55	305.45	317.65	330.35	343.55
4"	225.00	261.00	302.75	330.00	339.90	350.10	360.60	371.40	386.25	401.70	417.75
6"	350.00	406.00	470.95	513.35	528.75	544.60	560.95	577.80	600.90	624.95	649.95
8"	600.00	696.00	807.35	880.00	906.40	933.60	961.60	990.45	1,030.05	1,071.25	1,114.10

Volume Rate/1,000 Gal

1	50,000	3.35	3.90	4.50	4.90	5.05	5.20	5.35	5.50	5.70	5.95	6.20
50,001	Above	5.70	6.60	7.65	8.35	8.60	8.85	9.10	9.35	9.70	10.10	10.50

W2 Non-Res Inside

Monthly Minimum Charge

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
5/8" & 3/4"	$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
1"	50.00	58.00	67.30	73.35	75.55	77.80	80.15	82.55	85.85	89.30	92.85
1 1/2"	-	-	-	-	-	-	-	-	-	-	-
2"	175.00	203.00	235.50	256.70	264.40	272.35	280.50	288.90	300.45	312.45	324.95
3"	185.00	214.60	248.95	271.35	279.50	287.90	296.55	305.45	317.65	330.35	343.55
4"	225.00	261.00	302.75	330.00	339.90	350.10	360.60	371.40	386.25	401.70	417.75
6"	350.00	406.00	470.95	513.35	528.75	544.60	560.95	577.80	600.90	624.95	649.95
8"	600.00	696.00	807.35	880.00	906.40	933.60	961.60	990.45	1,030.05	1,071.25	1,114.10

Volume Rate/1,000 Gal

1	50,000	3.35	3.90	4.50	4.90	5.05	5.20	5.35	5.50	5.70	5.95	6.20
50,001	Above	5.70	6.60	7.65	8.35	8.60	8.85	9.10	9.35	9.70	10.10	10.50

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario I -- Status Quo***

			Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1	**Water and Wastewater Rates**												
	Water Rates -- Residential (All)												
	Monthly Minimum Charge --All Meters		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
	Volume Rate Per 1,000 Gal												
	1	50,000	3.35	3.90	4.50	4.90	5.05	5.20	5.35	5.50	5.70	5.95	6.20
	50,001	Above	5.70	6.60	7.65	8.35	8.60	8.85	9.10	9.35	9.70	10.10	10.50
	Water Rates -- Commercial												
	Monthly Minimum Charge -- 5/8"		$ 175.00	$ 203.00	$ 235.50	$ 256.70	$ 264.40	$ 272.35	$ 280.50	$ 288.90	$ 300.45	$ 312.45	$ 324.95
	Volume Rate Per 1,000 Gal												
	1	50,000	3.35	3.90	4.50	4.90	5.05	5.20	5.35	5.50	5.70	5.95	6.20
	50,001	Above	5.70	6.60	7.65	8.35	8.60	8.85	9.10	9.35	9.70	10.10	10.50
	Wastewater Rates - Residential												
	Monthly Minimum Charge		$ 53.50	$ 60.00	$ 71.40	$ 82.80	$ 84.45	$ 86.15	$ 87.85	$ 89.60	$ 91.40	$ 93.25	$ 95.10
	Volume Rate/1,000 Gal		8.50	9.25	11.00	12.75	13.00	13.25	13.50	13.75	14.05	14.35	14.65
	Wastewater Rates - Commercial												
	Monthly Minimum Charge		$ 53.50	$ 60.00	$ 71.40	$ 82.80	$ 84.45	$ 86.15	$ 87.85	$ 89.60	$ 91.40	$ 93.25	$ 95.10
	Volume Rate/1,000 Gal		8.50	9.25	11.00	12.75	13.00	13.25	13.50	13.75	14.05	14.35	14.65
2	**Residential Standard Monthly Bill -- 1" Meter**												
	5,000 Gal	Total	5/5 $ 136.50	$ 153.30	$ 180.85	$ 205.90	$ 210.60	$ 215.40	$ 220.20	$ 225.10	$ 230.95	$ 237.20	$ 243.50
	Water & WW	Increase -- $		16.80	27.55	25.05	4.70	4.80	4.80	4.90	5.85	6.25	6.30
		Increase -- %		12.3%	18.0%	13.9%	2.3%	2.3%	2.2%	2.2%	2.6%	2.7%	2.7%
	7,000 Gal	Total	7/5 143.20	161.10	189.85	215.70	220.70	225.80	230.90	236.10	242.35	249.10	255.90
	Water; 5K WW	Increase -- $		17.90	28.75	25.85	5.00	5.10	5.10	5.20	6.25	6.75	6.80
		Increase -- %		12.5%	17.8%	13.6%	2.3%	2.3%	2.3%	2.3%	2.6%	2.8%	2.7%
	15,000 Gal	Total	15/10 212.50	238.55	280.85	318.65	326.10	333.65	341.20	348.85	358.20	368.45	378.75
	Water; 10K W	Increase -- $		26.05	42.30	37.80	7.45	7.55	7.55	7.65	9.35	10.25	10.30
		Increase -- %		12.3%	17.7%	13.5%	2.3%	2.3%	2.3%	2.2%	2.7%	2.9%	2.8%
	Commercial Monthly Bill -- All Meters												
	25,000 Gal	Total	$ 524.75	$ 591.75	$ 694.40	$ 780.75	$ 800.10	$ 819.75	$ 839.60	$ 859.75	$ 885.60	$ 913.20	$ 941.30
	Water & WW	Increase -- $		67.00	102.65	86.35	19.35	19.65	19.85	20.15	25.85	27.60	28.10
		Increase -- %		12.8%	17.3%	12.4%	2.5%	2.5%	2.4%	2.4%	3.0%	3.1%	3.1%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario I -- Status Quo***

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
3	**Fund Balance, Revenues and Expenses**										
	Beginning of TY Fund Balance	$ -									
	TY Transfer/Use	-									
	Revised Beginning Fund Balance	**$ -**	**$ (293,075)**	**$ (688,891)**	**$ (670,048)**	**$ (525,217)**	**$ (256,030)**	**$ 74,117**	**$ 309,682**	**$ 520,362**	**$ 876,762**
	Revenues and Expenses										
	Water Rate Revenues	1,633,472	1,910,874	2,173,208	2,332,658	2,423,826	2,517,136	2,612,420	2,721,014	2,852,658	2,994,940
	WW Rate Revenues	1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
	Non-Rate Revenues	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
	Total Revenues	3,709,604	4,232,324	4,835,579	5,358,280	5,678,730	6,009,069	6,349,097	6,712,716	7,110,902	7,528,513
	Operating Expenses	2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
	Net Revenues for Transfers,Capital Outlays and Debt S	873,614	1,200,529	1,621,609	1,964,970	2,094,489	2,221,441	2,344,692	2,477,133	2,628,643	2,782,889
	Capital Outlays .	433,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500
	Net Revenues Available for Debt Service	440,114	1,093,029	1,514,109	1,857,470	1,986,989	2,113,941	2,237,192	2,369,633	2,521,143	2,675,389
	Current Debt Service	581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
	Future Debt Service	-	746,562	746,562	958,921	958,921	1,019,595	1,231,955	1,383,640	1,383,640	1,383,640
	Total Debt Service	581,659	1,328,223	1,328,219	1,540,581	1,540,581	1,601,258	1,813,615	1,965,301	1,965,280	1,965,281
	Net Revenues for Contingencies and Transfers	(141,545)	(235,194)	185,890	316,889	446,408	512,683	423,578	404,333	555,863	710,109
	Transfers										
	Total Contingencies & Transfers	151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
	Total Cost of Service	4,002,679	4,628,140	4,816,736	5,213,449	5,409,542	5,678,923	6,113,532	6,502,036	6,754,502	7,023,851
	Net Revenues	**(293,075)**	**(395,816)**	**18,843**	**144,831**	**269,188**	**330,146**	**235,565**	**210,680**	**356,400**	**504,662**
	Percent of COS	-7.3%	-8.6%	0.4%	2.8%	5.0%	5.8%	3.9%	3.2%	5.3%	7.2%
	Ending Water & Sewer Combined Fund Balance	**$ (293,075)**	**$ (688,891)**	**$ (670,048)**	**$ (525,217)**	**$ (256,030)**	**$ 74,117**	**$ 309,682**	**$ 520,362**	**$ 876,762**	**$ 1,381,424**
	Revenue Adequacy Tests										
	Total Exp (Budgetary Basis)	3,851,149	4,467,519	4,649,689	5,041,391	5,232,323	5,496,386	5,925,519	6,308,383	6,555,039	6,818,405
	Expenses per Day	10,551	12,240	12,739	13,812	14,335	15,059	16,234	17,283	17,959	18,681
	Working Capital as % of Tot Exp.	-8%	-15%	-14%	-10%	-5%	1%	5%	8%	13%	20%
	Number of Working Capital Days	(28)	(56)	(53)	(38)	(18)	5	19	30	49	74
	Debt Coverage (excludes Capital Outlays and G/F Trans Goal is 1.60 and Minimum is 1.20	1.50	0.90	1.22	1.28	1.36	1.39	1.29	1.26	1.34	1.42
	Water& WW Repair & Repl. Fund Balance	-	-	-	-	-	-	-	-	-	-

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario I -- Status Quo***

		Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
5	**Total Accounts**											
	Water Accounts											
	Total Accounts		2,028	2,050	2,072	2,094	2,116	2,138	2,160	2,182	2,204	2,226
	New Accounts		-	22	22	22	22	22	22	22	22	22
	Avg. Annual Growth Rate			1.08%	1.07%	1.06%	1.05%	1.04%	1.03%	1.02%	1.01%	1.00%
	Wastewater Accounts											
	Total Accounts		1,092	1,144	1,196	1,328	1,460	1,592	1,724	1,856	1,988	2,120
	New Accounts		-	52	52	132	132	132	132	132	132	132
	Avg. Annual Growth Rate			4.76%	4.55%	11.04%	9.94%	9.04%	8.29%	7.66%	7.11%	6.64%
6	**Annual Volume**											
	Water Volume											
	Residential Inside		93,735,924	94,813,349	95,890,773	96,968,198	98,045,622	99,123,047	100,200,471	101,277,895	102,355,320	103,432,744
	Non-Res Inside		79,823,291	80,480,273	81,137,255	81,794,236	82,451,218	83,108,200	83,765,182	84,422,164	85,079,145	85,736,127
	Yavapai		30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000
	Residential Outside		-	-	-	-	-	-	-	-	-	-
	Non-Res Outside		96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500
	Total System		204,303,715	206,038,122	207,772,528	209,506,934	211,241,340	212,975,747	214,710,153	216,444,559	218,178,965	219,913,371
	Wastewater Billing Units											
	Residential Inside		45,896,200	48,387,850	50,879,501	57,357,792	63,836,083	70,314,374	76,792,665	83,270,956	89,749,247	96,227,538
	Non-Res Inside		41,143,000	41,627,035	42,111,071	42,595,106	43,079,141	43,563,176	44,047,212	44,531,247	45,015,282	45,499,318
	Yavapai		4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200
	Residential Outside		-	-	-	-	-	-	-	-	-	-
	Non-Res Outside		-	-	-	-	-	-	-	-	-	-
	Total System		91,131,400	94,107,086	97,082,771	104,045,098	111,007,424	117,969,750	124,932,076	131,894,403	138,856,729	145,819,055

TOWN OF CAMP VERDE
FORECAST REVENUES, EXPENSES AND CASH FLOW

		Fiscal Year									
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	Scenario:	***2023 08 02 -- Scenario I -- Status Quo***									
1	**Fund Balance, Revenues and Expenses**										
2	**Revised Beginning Fund Balance**	$ 316,000	$ 22,925	$ (372,891)	$ (354,048)	$ (209,217)	$ 59,970	$ 390,117	$ 625,682	$ 836,362	$ 1,192,762
3	**Revenues and Cost of Service**										
4	**Revenues**										
5	Water Rate Revenues										
6	Residential Inside	$ 880,913	$ 1,033,326	$ 1,177,829	$ 1,267,197	$ 1,320,065	$ 1,374,438	$ 1,430,152	$ 1,493,416	$ 1,569,293	$ 1,651,283
7	Non-Res Inside	550,601	643,563	731,348	784,412	814,389	844,981	876,185	911,751	955,156	1,002,147
8	Yavapai	186,241	215,753	243,462	259,169	266,836	274,505	282,176	291,123	302,496	314,767
9	Residential Outside	-	-	-	-	-	-	-	-	-	-
10	Non-Res Outside	15,717	18,232	20,569	21,880	22,536	23,212	23,908	24,724	25,713	26,743
11	Total	1,633,472	1,910,874	2,173,208	2,332,658	2,423,826	2,517,136	2,612,420	2,721,014	2,852,658	2,994,940
12	Wastewater Rate Revenue										
13	Residential Inside	830,883	1,004,783	1,242,352	1,535,332	1,742,698	1,957,450	2,179,570	2,410,640	2,651,491	2,900,715
14	Non-Res Inside	441,283	507,853	603,948	669,554	690,433	711,674	733,260	756,092	780,540	805,402
15	Yavapai	36,526	41,374	48,630	53,295	54,332	55,370	56,407	57,530	58,773	60,015
16	Total	1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
17	Non-Rate Revenues	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
18	**Total Revenues**	**3,709,604**	**4,232,324**	**4,835,579**	**5,358,280**	**5,678,730**	**6,009,069**	**6,349,097**	**6,712,716**	**7,110,902**	**7,528,513**
19	**Cost of Service**										
20	Operating Expenses										
21	Personnel	1,513,050	1,605,420	1,704,036	1,809,397	1,922,045	2,042,547	2,171,517	2,309,623	2,457,590	2,616,209
22	Supplies	407,860	448,833	485,151	519,777	557,113	597,381	640,823	687,702	738,303	792,935
23	Maintenance & Repairs	680,480	726,402	760,865	789,325	818,820	849,388	881,067	913,898	947,924	983,188
24	Administrative Expense	234,600	251,140	263,918	274,810	286,263	298,313	310,998	324,360	338,442	353,293
25	Total	2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
26	**Net Revenues for Debt Service, Capital Outlays and Transfers**	**873,614**	**1,200,529**	**1,621,609**	**1,964,970**	**2,094,489**	**2,221,441**	**2,344,692**	**2,477,133**	**2,628,643**	**2,782,889**
27	**Debt Service**										
28	Current	581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
29	Future	-	746,562	746,562	958,921	958,921	1,019,595	1,231,955	1,383,640	1,383,640	1,383,640
30	Total	581,659	1,328,223	1,328,219	1,540,581	1,540,581	1,601,258	1,813,615	1,965,301	1,965,280	1,965,281
31	**Net Revenues for Capital Outlays and Transfers**	**291,955**	**(127,694)**	**293,390**	**424,389**	**553,908**	**620,183**	**531,078**	**511,833**	**663,363**	**817,609**
32	**Debt Coverage (20/21)**	**1.50**	**0.90**	**1.22**	**1.28**	**1.36**	**1.39**	**1.29**	**1.26**	**1.34**	**1.42**
33	Capital Outlays	433,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500
34	Transfers	151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
35	**Total Cost of Service**	**4,002,679**	**4,628,140**	**4,816,736**	**5,213,449**	**5,409,542**	**5,678,923**	**6,113,532**	**6,502,036**	**6,754,502**	**7,023,851**
36	**Net Revenues**	**(293,075)**	**(395,816)**	**18,843**	**144,831**	**269,188**	**330,146**	**235,565**	**210,680**	**356,400**	**504,662**
37	Percent of COS	-7.3%	-8.6%	0.4%	2.8%	5.0%	5.8%	3.9%	3.2%	5.3%	7.2%
38	**Ending Water Fund Balance**	**$ 22,925**	**$ (372,891)**	**$ (354,048)**	**$ (209,217)**	**$ 59,970**	**$ 390,117**	**$ 625,682**	**$ 836,362**	**$ 1,192,762**	**$ 1,697,424**
39	**Revenue Adequacy Tests**										
40	**Fund Balance as a percentage of revenues**	0.6%	-8.8%	-7.3%	-3.9%	1.1%	6.5%	9.9%	12.5%	16.8%	22.5%
41	One Day Operating Expenditures	$ 7,770	$ 8,306	$ 8,805	$ 9,297	$ 9,820	$ 10,377	$ 10,971	$ 11,604	$ 12,280	$ 13,002
42	**Days of Operating Expenditures**	**3**	**(45)**	**(40)**	**(23)**	**6**	**38**	**57**	**72**	**97**	**131**
43	**Required Rate Adjustments**										
44	**Percent Annual Rate Adjustment**	16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: 2023 08 02 -- Scenario I -- Status Quo

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1 WATER and WASTEWATER Utility Revenues and Expenses											
Beginning of TY Fund Balance	$ 316,000										
TY Transfer/Use	-										
Revised Beginning Fund Balance		**$ 316,000**	**$ 22,925**	**$ (372,891)**	**$ (354,048)**	**$ (209,217)**	**$ 59,970**	**$ 390,117**	**$ 625,682**	**$ 836,362**	**$ 1,192,762**
Revenues											
Water Rate Revenues		1,633,472	1,910,874	2,173,208	2,332,658	2,423,826	2,517,136	2,612,420	2,721,014	2,852,658	2,994,940
Wastewater Rate Reveues		1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
		2,942,164	3,464,884	4,068,139	4,590,840	4,911,290	5,241,629	5,581,657	5,945,276	6,343,462	6,761,073
Non-Rate Revenues		767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
Total Revenues		**3,709,604**	**4,232,324**	**4,835,579**	**5,358,280**	**5,678,730**	**6,009,069**	**6,349,097**	**6,712,716**	**7,110,902**	**7,528,513**
Cost of Service											
Operating Expenses:											
Personnel		1,513,050	1,605,420	1,704,036	1,809,397	1,922,045	2,042,547	2,171,517	2,309,623	2,457,590	2,616,209
Supplies		407,860	448,833	485,151	519,777	557,113	597,381	640,823	687,702	738,303	792,935
Maintenance & Repairs		680,480	726,402	760,865	789,325	818,820	849,388	881,067	913,898	947,924	983,188
Administrative Expense		234,600	251,140	263,918	274,810	286,263	298,313	310,998	324,360	338,442	353,293
Total		2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
Net Revenues for Debt Service, Capital Outlays and Transfers		873,614	1,200,529	1,621,609	1,964,970	2,094,489	2,221,441	2,344,692	2,477,133	2,628,643	2,782,889
Current Debt Service		581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
Future Debt Service		-	746,562	746,562	958,921	958,921	1,019,595	1,231,955	1,383,640	1,383,640	1,383,640
Total Debt Service		581,659	1,328,223	1,328,219	1,540,581	1,540,581	1,601,258	1,813,615	1,965,301	1,965,280	1,965,281
Net Revenues for Capital Outlays, Contingencies and Transfers		291,955	(127,694)	293,390	424,389	553,908	620,183	531,078	511,833	663,363	817,609
Capital Outlays .		433,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500	107,500
Transfers		151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
Total Cost of Service		**4,002,679**	**4,628,140**	**4,816,736**	**5,213,449**	**5,409,542**	**5,678,923**	**6,113,532**	**6,502,036**	**6,754,502**	**7,023,851**
Net Revenues		**(293,075)**	**(395,816)**	**18,843**	**144,831**	**269,188**	**330,146**	**235,565**	**210,680**	**356,400**	**504,662**
Percent of Revenues		-7.9%	-9.4%	0.4%	2.7%	4.7%	5.5%	3.7%	3.1%	5.0%	6.7%
Ending Water & WW Combined Fund Balance		**$ 22,925**	**$ (372,891)**	**$ (354,048)**	**$ (209,217)**	**$ 59,970**	**$ 390,117**	**$ 625,682**	**$ 836,362**	**$ 1,192,762**	**$ 1,697,424**
Revenue Adequacy Tests											
Total Expenses less Transfers		3,851,149	4,467,519	4,649,689	5,041,391	5,232,323	5,496,386	5,925,519	6,308,383	6,555,039	6,818,405
Expenses per Day		10,551	12,240	12,739	13,812	14,335	15,059	16,234	17,283	17,959	18,681
Working Capital as % of Tot Exp.		1%	-8%	-8%	-4%	1%	7%	11%	13%	18%	25%
Number of Working Capital Days		2	(30)	(28)	(15)	4	26	39	48	66	91
Debt Coverage (excludes Capital Outlays and G/F Transfers)		1.50	0.90	1.22	1.28	1.36	1.39	1.29	1.26	1.34	1.42

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: 2023 08 02 -- Scenario I -- Status Quo

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2 **WATER Utility Revenues and Expenses**											
Beginning of TY Fund Balance	$ -										
TY Transfer/Use	-										
Revised Beginning Fund Balance		**$ -**	**$ 170,620**	**$ 155,069**	**$ 330,627**	**$ 442,286**	**$ 568,363**	**$ 644,823**	**$ 728,374**	**$ 674,205**	**$ 650,107**
Revenues											
Water Rate Revenues			-	-	-	-	-	-	-	-	-
W.1 Residential Inside		880,913	1,033,326	1,177,829	1,267,197	1,320,065	1,374,438	1,430,152	1,493,416	1,569,293	1,651,283
W.2 Non-Res Inside		550,601	643,563	731,348	784,412	814,389	844,981	876,185	911,751	955,156	1,002,147
W.3 Yavapai		186,241	215,753	243,462	259,169	266,836	274,505	282,176	291,123	302,496	314,767
W.4 Residential Outside		-	-	-	-	-	-	-	-	-	-
W.5 Non-Res Outside		15,717	18,232	20,569	21,880	22,536	23,212	23,908	24,724	25,713	26,743
Sub-Total		1,633,472	1,910,874	2,173,208	2,332,658	2,423,826	2,517,136	2,612,420	2,721,014	2,852,658	2,994,940
Non-Rate Revenues		223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220
Total Revenues		**1,856,692**	**2,134,094**	**2,396,428**	**2,555,878**	**2,647,046**	**2,740,356**	**2,835,640**	**2,944,234**	**3,075,878**	**3,218,160**
Cost of Service											
Operating Expenses:											
Personnel		630,155	671,616	716,144	763,994	815,441	870,785	930,353	994,503	1,063,623	1,138,139
Supplies		110,000	123,034	135,143	147,082	160,066	174,186	189,539	206,233	224,385	244,119
Maintenance & Repairs		146,400	155,927	162,951	168,658	174,560	180,664	186,978	193,507	200,260	207,243
Administrative Expense		90,800	96,944	101,594	105,483	109,556	113,824	118,299	122,995	127,924	133,102
Total		977,355	1,047,520	1,115,831	1,185,217	1,259,623	1,339,459	1,425,169	1,517,238	1,616,191	1,722,603
Net Revenues for Debt Service, Capital Outlays and Transfers		879,337	1,086,574	1,280,597	1,370,661	1,387,423	1,400,897	1,410,471	1,426,996	1,459,687	1,495,557
Current Debt Service		447,417	447,418	447,416	447,418	447,418	447,421	447,418	447,417	447,399	447,399
Future Debt Service		-	574,279	574,279	725,964	725,964	786,638	786,638	938,323	938,323	938,323
Total Debt Service		447,417	1,021,697	1,021,695	1,173,382	1,173,382	1,234,059	1,234,056	1,385,740	1,385,722	1,385,722
Net Revenues for Capital Outlays, Contingencies and Transfers		431,920	64,877	258,902	197,279	214,042	166,838	176,415	41,256	73,965	109,835
Capital Outlays .		192,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Transfers		68,800	72,928	75,845	78,120	80,464	82,878	85,364	87,925	90,563	93,280
Total Cost of Service		**1,686,072**	**2,149,645**	**2,220,871**	**2,444,219**	**2,520,969**	**2,663,896**	**2,752,090**	**2,998,403**	**3,099,976**	**3,209,105**
Net Revenues		**170,620**	**(15,551)**	**175,557**	**111,659**	**126,078**	**76,460**	**83,551**	**(54,169)**	**(24,098)**	**9,055**
Percent of Revenues		9.2%	-0.7%	7.3%	4.4%	4.8%	2.8%	2.9%	-1.8%	-0.8%	0.3%
Scen I		220,178	286,621	132,098	178,181	(84,374)	6,187	104,076	61,411	48,427	30,965
Ending Water Fund Balance		**$ 170,620**	**$ 155,069**	**$ 330,627**	**$ 442,286**	**$ 568,363**	**$ 644,823**	**$ 728,374**	**$ 674,205**	**$ 650,107**	**$ 659,162**
Revenue Adequacy Tests											
Total Expenses less Transfers		1,617,272	2,076,717	2,145,026	2,366,098	2,440,505	2,581,018	2,666,725	2,910,478	3,009,413	3,115,825
Expenses per Day		4,431	5,690	5,877	6,482	6,686	7,071	7,306	7,974	8,245	8,537
Working Capital as % of Tot Exp.		11%	7%	15%	19%	23%	25%	27%	23%	22%	21%
Number of Working Capital Days		39	27	56	68	85	91	100	85	79	77
Debt Coverage (excludes Capital Outlays and G/F Transfers)		1.97	1.06	1.25	1.17	1.18	1.14	1.14	1.03	1.05	1.08

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: 2023 08 02 -- Scenario I -- Status Quo

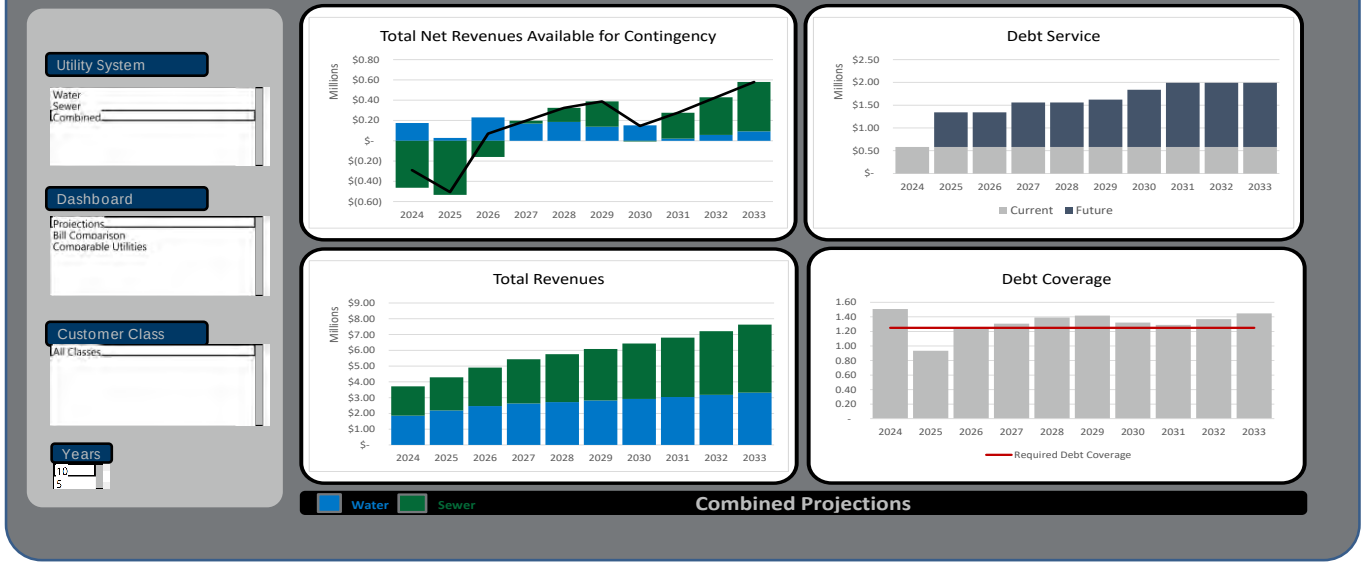
		Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
3	**WASTEWATER Utility Revenues and Expenses**											
	Beginning of TY Fund Balance	$ 316,000										
	TY Transfer/Use	-										
	Revised Beginning Fund Balance		**$ 316,000**	**$ (147,696)**	**$ (527,961)**	**$ (684,675)**	**$ (651,503)**	**$ (508,393)**	**$ (254,706)**	**$ (102,692)**	**$ 162,157**	**$ 542,656**
	Revenues											
	Wastewater Rate Revenues		-	-	-	-	-	-	-	-	-	-
	WW.1 Residential Inside		830,883	1,004,783	1,242,352	1,535,332	1,742,698	1,957,450	2,179,570	2,410,640	2,651,491	2,900,715
	WW.2 Non-Res Inside		441,283	507,853	603,948	669,554	690,433	711,674	733,260	756,092	780,540	805,402
	WW.5 Yavapai		36,526	41,374	48,630	53,295	54,332	55,370	56,407	57,530	58,773	60,015
	WW.6 Residential Outside		-	-	-	-	-	-	-	-	-	-
	WW.5 Non-Res Outside		-	-	-	-	-	-	-	-	-	-
	Total		1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
	Non-Rate Revenues		544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220
	Total Revenues		**1,852,911**	**2,098,230**	**2,439,151**	**2,802,402**	**3,031,684**	**3,268,713**	**3,513,457**	**3,768,482**	**4,035,024**	**4,310,353**
	Cost of Service											
	Operating Expenses:											
	Personnel		882,895	933,804	987,892	1,045,403	1,106,604	1,171,762	1,241,163	1,315,120	1,393,967	1,478,070
	Supplies		297,860	325,800	350,008	372,695	397,047	423,195	451,284	481,469	513,918	548,816
	Maintenance & Repairs		534,080	570,475	597,914	620,668	644,260	668,723	694,089	720,391	747,664	775,944
	Administrative Expense		143,800	154,197	162,325	169,327	176,707	184,489	192,699	201,365	210,518	220,191
	Total		1,858,635	1,984,275	2,098,138	2,208,093	2,324,618	2,448,169	2,579,235	2,718,345	2,866,068	3,023,021
	Net Revenues for Debt Service, Capital Outlays and Transfers		(5,724)	113,955	341,012	594,309	707,066	820,544	934,222	1,050,137	1,168,956	1,287,332
	Current Debt Service		134,242	134,243	134,241	134,242	134,242	134,242	134,242	134,244	134,241	134,242
	Future Debt Service		-	172,284	172,284	232,958	232,958	232,958	445,317	445,317	445,317	445,317
	Total Debt Service		134,242	306,527	306,525	367,200	367,200	367,200	579,559	579,561	579,558	579,559
	Net Revenues for Capital Outlays, Contingencies and Transfers		(139,966)	(192,572)	34,488	227,109	339,866	453,345	354,663	470,576	589,398	707,773
	Capital Outlays .		241,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
	Transfers		82,730	87,694	91,202	93,938	96,756	99,658	102,648	105,728	108,899	112,166
	Total Cost of Service		**2,316,607**	**2,478,496**	**2,595,865**	**2,769,230**	**2,888,574**	**3,015,027**	**3,361,442**	**3,503,633**	**3,654,525**	**3,814,746**
	Net Revenues		**(463,696)**	**(380,265)**	**(156,714)**	**33,172**	**143,110**	**253,686**	**152,015**	**264,849**	**380,499**	**495,607**
	Percent of Revenues		-25.0%	-18.1%	-6.4%	1.2%	4.7%	7.8%	4.3%	7.0%	9.4%	11.5%
	Ending Wastewater Fund Balance		**$ (147,696)**	**$ (527,961)**	**$ (684,675)**	**$ (651,503)**	**$ (508,393)**	**$ (254,706)**	**$ (102,692)**	**$ 162,157**	**$ 542,656**	**$ 1,038,262**
	Revenue Adequacy Tests											
	Total Expenses less Transfers		2,233,877	2,390,802	2,504,663	2,675,292	2,791,818	2,915,369	3,258,794	3,397,906	3,545,626	3,702,580
	Expenses per Day		6,120	6,550	6,862	7,330	7,649	7,987	8,928	9,309	9,714	10,144
	Working Capital as % of Tot Exp.		-7%	-22%	-27%	-24%	-18%	-9%	-3%	5%	15%	28%
	Number of Working Capital Days		(24)	(81)	(100)	(89)	(66)	(32)	(12)	17	56	102
	Debt Coverage (excludes Capital Outlays and G/F Transfers)		(0.04)	0.37	1.11	1.62	1.93	2.23	1.61	1.81	2.02	2.22

APPENDIX B

Town of Camp Verde

Ten Year Rate Analysis and Pro Forma

Fiscal Years 2024 - 2033



Future Debt Term 20

Water Future Bond Issues

	Proposed
2024	$ 10,000,000
2025	$ -
2026	$ 2,500,000
2027	$ -
2028	$ 1,000,000
2029	$ -
2030	$ 2,500,000
2031	$ -
2032	$ -
2033	$ -

Sewer Future Bond Issues

	Proposed
2024	$ 3,000,000
2025	$ -
2026	$ 1,000,000
2027	$ -
2028	$ -
2029	$ 3,500,000
2030	$ -
2031	$ -
2032	$ -
2033	$ -

		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Water Rate Adjustments											
Meter Charge		16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%
Volume Charge		16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%
Sewer Rate Adjustments											
Base Charge		19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Volume Charge	Residential	19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
	Non-Residential	19.00%	19.00%	16.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Water Summary
Scen: **2023 08 02 -- Scenario II -- Conservation**

1 Water Monthly Rates and Charges

CITY Water Rate and Charges

W1 Residential Inside

Monthly Minimum Charge

		Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
5/8" & 3/4"		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
1"		50.00	58.00	67.30	73.35	75.55	77.80	80.15	82.55	85.85	89.30	92.85
1 1/2"		-	-	-	-	-	-	-	-	-	-	-
2"		175.00	203.00	235.50	256.70	264.40	272.35	280.50	288.90	300.45	312.45	324.95
3"		185.00	214.60	248.95	271.35	279.50	287.90	296.55	305.45	317.65	330.35	343.55
4"		225.00	261.00	302.75	330.00	339.90	350.10	360.60	371.40	386.25	401.70	417.75
6"		350.00	406.00	470.95	513.35	528.75	544.60	560.95	577.80	600.90	624.95	649.95
8"		600.00	696.00	807.35	880.00	906.40	933.60	961.60	990.45	1,030.05	1,071.25	1,114.10

Volume Rate/1,000 Gal

1	5,000	3.35	3.35	3.90	4.25	4.40	4.55	4.70	4.85	5.05	5.25	5.45
5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35	5.50	5.65	5.90	6.15	6.40

W2 Non-Res Inside

Monthly Minimum Charge

5/8" & 3/4"		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
1"		50.00	58.00	67.30	73.35	75.55	77.80	80.15	82.55	85.85	89.30	92.85
1 1/2"		-	-	-	-	-	-	-	-	-	-	-
2"		175.00	203.00	235.50	256.70	264.40	272.35	280.50	288.90	300.45	312.45	324.95
3"		185.00	214.60	248.95	271.35	279.50	287.90	296.55	305.45	317.65	330.35	343.55
4"		225.00	261.00	302.75	330.00	339.90	350.10	360.60	371.40	386.25	401.70	417.75
6"		350.00	406.00	470.95	513.35	528.75	544.60	560.95	577.80	600.90	624.95	649.95
8"		600.00	696.00	807.35	880.00	906.40	933.60	961.60	990.45	1,030.05	1,071.25	1,114.10

Volume Rate/1,000 Gal

1	5,000	3.35	3.35	3.90	4.25	4.40	4.55	4.70	4.85	5.05	5.25	5.45
5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35	5.50	5.65	5.90	6.15	6.40

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario II -- Conservation***

			Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1	**Water and Wastewater Rates**												
	Water Rates -- Residential (All)												
	Monthly Minimum Charge --All Meters		$ 23.75	$ 27.55	$ 31.95	$ 34.85	$ 35.90	$ 37.00	$ 38.10	$ 39.25	$ 40.80	$ 42.45	$ 44.15
	Volume Rate Per 1,000 Gal												
	1	5,000	3.35	3.35	3.90	4.25	4.40	4.55	4.70	4.85	5.05	5.25	5.45
	5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35	5.50	5.65	5.90	6.15	6.40
	Water Rates -- Commercial												
	Monthly Minimum Charge -- 5/8"		$ 175.00	$ 203.00	$ 235.50	$ 256.70	$ 264.40	$ 272.35	$ 280.50	$ 288.90	$ 300.45	$ 312.45	$ 324.95
	Volume Rate Per 1,000 Gal												
	1	5,000	3.35	3.35	3.90	4.25	4.40	4.55	4.70	4.85	5.05	5.25	5.45
	5,001	10,000	3.35	4.00	4.65	5.05	5.20	5.35	5.50	5.65	5.90	6.15	6.40
	Wastewater Rates - Residential												
	Monthly Minimum Charge		$ 53.50	$ 60.00	$ 71.40	$ 82.80	$ 84.45	$ 86.15	$ 87.85	$ 89.60	$ 91.40	$ 93.25	$ 95.10
	Volume Rate/1,000 Gal		8.50	9.25	11.00	12.75	13.00	13.25	13.50	13.75	14.05	14.35	14.65
	Wastewater Rates - Commercial												
	Monthly Minimum Charge		$ 53.50	$ 60.00	$ 71.40	$ 82.80	$ 84.45	$ 86.15	$ 87.85	$ 89.60	$ 91.40	$ 93.25	$ 95.10
	Volume Rate/1,000 Gal		8.50	9.25	11.00	12.75	13.00	13.25	13.50	13.75	14.05	14.35	14.65
2	**Residential Standard Monthly Bill -- 1" Meter**												
	5,000 Gal	Total	5/5 $ 136.50	$ 150.55	$ 177.85	$ 202.65	$ 207.35	$ 212.15	$ 216.95	$ 221.85	$ 227.70	$ 233.70	$ 239.75
	Water & WW	Increase -- $		14.05	27.30	24.80	4.70	4.80	4.80	4.90	5.85	6.00	6.05
		Increase -- %		10.3%	18.1%	13.9%	2.3%	2.3%	2.3%	2.3%	2.6%	2.6%	2.6%
	7,000 Gal	Total	7/5 143.20	157.25	185.65	211.15	216.15	221.25	226.35	231.55	237.80	244.20	250.65
	Water; 5K WW	Increase -- $		14.05	28.40	25.50	5.00	5.10	5.10	5.20	6.25	6.40	6.45
		Increase -- %		9.8%	18.1%	13.7%	2.4%	2.4%	2.3%	2.3%	2.7%	2.7%	2.6%
	15,000 Gal	Total	15/10 212.50	230.30	271.85	308.90	316.35	323.90	331.45	339.10	348.45	357.95	367.50
	Water; 10K W	Increase -- $		17.80	41.55	37.05	7.45	7.55	7.55	7.65	9.35	9.50	9.55
		Increase -- %		8.4%	18.0%	13.6%	2.4%	2.4%	2.3%	2.3%	2.8%	2.7%	2.7%
	Commercial Monthly Bill -- All Meters												
	25,000 Gal	Total	$ 524.75	$ 578.00	$ 679.40	$ 764.50	$ 783.85	$ 803.50	$ 823.35	$ 843.50	$ 869.35	$ 895.70	$ 922.55
	Water & WW	Increase -- $		53.25	101.40	85.10	19.35	19.65	19.85	20.15	25.85	26.35	26.85
		Increase -- %		10.1%	17.5%	12.5%	2.5%	2.5%	2.5%	2.4%	3.1%	3.0%	3.0%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario II -- Conservation***

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
3	**Fund Balance, Revenues and Expenses**										
	Beginning of TY Fund Balance	$ -									
	TY Transfer/Use	-									
	Revised Beginning Fund Balance	**$ -**	**$ (289,321)**	**$ (794,998)**	**$ (724,723)**	**$ (526,906)**	**$ (202,317)**	**$ 185,641**	**$ 331,361**	**$ 607,979**	**$ 1,036,502**
	Revenues and Expenses										
	Water Rate Revenues	1,637,226	1,965,944	2,239,571	2,404,823	2,498,406	2,595,339	2,697,213	2,814,625	2,952,453	3,097,600
	WW Rate Revenues	1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
	Non-Rate Revenues	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
	Total Revenues	3,713,358	4,287,395	4,901,942	5,430,445	5,753,310	6,087,273	6,433,890	6,806,327	7,210,697	7,631,173
	Operating Expenses	2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
	Net Revenues for Transfers,Capital Outlays and Debt S	877,368	1,255,599	1,687,972	2,037,135	2,169,069	2,299,645	2,429,486	2,570,745	2,728,438	2,885,549
	Capital Outlays .	433,500	257,500	107,500	107,500	107,500	107,500	257,500	107,500	107,500	107,500
	Net Revenues Available for Debt Service	443,868	998,099	1,580,472	1,929,635	2,061,569	2,192,145	2,171,986	2,463,245	2,620,938	2,778,049
	Current Debt Service	581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
	Future Debt Service	-	761,494	761,494	978,100	978,100	1,039,987	1,256,594	1,411,312	1,411,312	1,411,312
	Total Debt Service	581,659	1,343,155	1,343,151	1,559,760	1,559,760	1,621,650	1,838,254	1,992,973	1,992,952	1,992,953
	Net Revenues for Contingencies and Transfers	(137,791)	(345,055)	237,322	369,876	501,809	570,494	333,732	470,271	627,985	785,095
	Transfers										
	Total Contingencies & Transfers	151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
	Total Cost of Service	4,002,679	4,793,072	4,831,667	5,232,627	5,428,721	5,699,315	6,288,171	6,529,709	6,782,174	7,051,524
	Net Revenues	**(289,321)**	**(505,677)**	**70,275**	**197,818**	**324,589**	**387,958**	**145,719**	**276,618**	**428,523**	**579,649**
	Percent of COS	-7.2%	-10.6%	1.5%	3.8%	6.0%	6.8%	2.3%	4.2%	6.3%	8.2%
	Ending Water & Sewer Combined Fund Balance	**$ (289,321)**	**$ (794,998)**	**$ (724,723)**	**$ (526,906)**	**$ (202,317)**	**$ 185,641**	**$ 331,361**	**$ 607,979**	**$ 1,036,502**	**$ 1,616,151**
	Revenue Adequacy Tests										
	Total Exp (Budgetary Basis)	3,851,149	4,632,450	4,664,620	5,060,569	5,251,501	5,516,778	6,100,158	6,336,056	6,582,712	6,846,077
	Expenses per Day	10,551	12,692	12,780	13,865	14,388	15,114	16,713	17,359	18,035	18,756
	Working Capital as % of Tot Exp.	-8%	-17%	-16%	-10%	-4%	3%	5%	10%	16%	24%
	Number of Working Capital Days	(27)	(63)	(57)	(38)	(14)	12	20	35	57	86
	Debt Coverage (excludes Capital Outlays and G/F Trans Goal is 1.60 and Minimum is 1.20	1.51	0.93	1.26	1.31	1.39	1.42	1.32	1.29	1.37	1.45
	Water& WW Repair & Repl. Fund Balance	-	-	-	-	-	-	-	-	-	-

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario II -- Conservation***

		Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
5	**Total Accounts**											
	Water Accounts											
	Total Accounts		2,028	2,050	2,072	2,094	2,116	2,138	2,160	2,182	2,204	2,226
	New Accounts		-	22	22	22	22	22	22	22	22	22
	Avg. Annual Growth Rate			1.08%	1.07%	1.06%	1.05%	1.04%	1.03%	1.02%	1.01%	1.00%
	Wastewater Accounts											
	Total Accounts		1,092	1,144	1,196	1,328	1,460	1,592	1,724	1,856	1,988	2,120
	New Accounts		-	52	52	132	132	132	132	132	132	132
	Avg. Annual Growth Rate			4.76%	4.55%	11.04%	9.94%	9.04%	8.29%	7.66%	7.11%	6.64%
6	**Annual Volume**											
	Water Volume											
	Residential Inside		93,735,924	94,813,349	95,890,773	96,968,198	98,045,622	99,123,047	100,200,471	101,277,895	102,355,320	103,432,744
	Non-Res Inside		79,823,291	80,480,273	81,137,255	81,794,236	82,451,218	83,108,200	83,765,182	84,422,164	85,079,145	85,736,127
	Yavapai		30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000	30,648,000
	Residential Outside		-	-	-	-	-	-	-	-	-	-
	Non-Res Outside		96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500	96,500
	Total System		204,303,715	206,038,122	207,772,528	209,506,934	211,241,340	212,975,747	214,710,153	216,444,559	218,178,965	219,913,371
	Wastewater Billing Units											
	Residential Inside		45,896,200	48,387,850	50,879,501	57,357,792	63,836,083	70,314,374	76,792,665	83,270,956	89,749,247	96,227,538
	Non-Res Inside		41,143,000	41,627,035	42,111,071	42,595,106	43,079,141	43,563,176	44,047,212	44,531,247	45,015,282	45,499,318
	Yavapai		4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200	4,092,200
	Residential Outside		-	-	-	-	-	-	-	-	-	-
	Non-Res Outside		-	-	-	-	-	-	-	-	-	-
	Total System		91,131,400	94,107,086	97,082,771	104,045,098	111,007,424	117,969,750	124,932,076	131,894,403	138,856,729	145,819,055

TOWN OF CAMP VERDE
FORECAST REVENUES, EXPENSES AND CASH FLOW

		Fiscal Year									
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	Scenario:	*2023 08 02 -- Scenario II -- Conservation*									
1	**Fund Balance, Revenues and Expenses**										
2	**Revised Beginning Fund Balance**	$ 316,000	$ 26,679	$ (478,998)	$ (408,723)	$ (210,906)	$ 113,683	$ 501,641	$ 647,361	$ 923,979	$ 1,352,502
3	**Revenues and Cost of Service**										
4	**Revenues**										
5	Water Rate Revenues										
6	Residential Inside	$ 878,960	$ 1,029,671	$ 1,175,771	$ 1,265,560	$ 1,319,146	$ 1,374,355	$ 1,431,384	$ 1,496,855	$ 1,573,771	$ 1,654,365
7	Non-Res Inside	575,712	709,021	807,178	866,070	898,352	931,968	967,907	1,009,434	1,058,067	1,109,567
8	Yavapai	166,722	208,844	235,853	251,098	258,152	265,578	273,781	283,368	294,649	306,662
9	Residential Outside	-	-	-	-	-	-	-	-	-	-
10	Non-Res Outside	15,832	18,408	20,770	22,094	22,756	23,438	24,141	24,968	25,967	27,006
11	Total	1,637,226	1,965,944	2,239,571	2,404,823	2,498,406	2,595,339	2,697,213	2,814,625	2,952,453	3,097,600
12	Wastewater Rate Revenue										
13	Residential Inside	830,883	1,004,783	1,242,352	1,535,332	1,742,698	1,957,450	2,179,570	2,410,640	2,651,491	2,900,715
14	Non-Res Inside	441,283	507,853	603,948	669,554	690,433	711,674	733,260	756,092	780,540	805,402
15	Yavapai	36,526	41,374	48,630	53,295	54,332	55,370	56,407	57,530	58,773	60,015
16	Total	1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
17	Non-Rate Revenues	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
18	**Total Revenues**	**3,713,358**	**4,287,395**	**4,901,942**	**5,430,445**	**5,753,310**	**6,087,273**	**6,433,890**	**6,806,327**	**7,210,697**	**7,631,173**
19	**Cost of Service**										
20	Operating Expenses										
21	Personnel	1,513,050	1,605,420	1,704,036	1,809,397	1,922,045	2,042,547	2,171,517	2,309,623	2,457,590	2,616,209
22	Supplies	407,860	448,833	485,151	519,777	557,113	597,381	640,823	687,702	738,303	792,935
23	Maintenance & Repairs	680,480	726,402	760,865	789,325	818,820	849,388	881,067	913,898	947,924	983,188
24	Administrative Expense	234,600	251,140	263,918	274,810	286,263	298,313	310,998	324,360	338,442	353,293
25	Total	2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
26	**Net Revenues for Debt Service, Capital Outlays and Transfers**	**877,368**	**1,255,599**	**1,687,972**	**2,037,135**	**2,169,069**	**2,299,645**	**2,429,486**	**2,570,745**	**2,728,438**	**2,885,549**
27	**Debt Service**										
28	Current	581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
29	Future	-	761,494	761,494	978,100	978,100	1,039,987	1,256,594	1,411,312	1,411,312	1,411,312
30	Total	581,659	1,343,155	1,343,151	1,559,760	1,559,760	1,621,650	1,838,254	1,992,973	1,992,952	1,992,953
31	**Net Revenues for Capital Outlays and Transfers**	**295,709**	**(87,555)**	**344,822**	**477,376**	**609,309**	**677,994**	**591,232**	**577,771**	**735,485**	**892,595**
32	**Debt Coverage (20/21)**	**1.51**	**0.93**	**1.26**	**1.31**	**1.39**	**1.42**	**1.32**	**1.29**	**1.37**	**1.45**
33	Capital Outlays	433,500	257,500	107,500	107,500	107,500	107,500	257,500	107,500	107,500	107,500
34	Transfers	151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
35	**Total Cost of Service**	**4,002,679**	**4,793,072**	**4,831,667**	**5,232,627**	**5,428,721**	**5,699,315**	**6,288,171**	**6,529,709**	**6,782,174**	**7,051,524**
36	**Net Revenues**	**(289,321)**	**(505,677)**	**70,275**	**197,818**	**324,589**	**387,958**	**145,719**	**276,618**	**428,523**	**579,649**
37	Percent of COS	-7.2%	-10.6%	1.5%	3.8%	6.0%	6.8%	2.3%	4.2%	6.3%	8.2%
38	**Ending Water Fund Balance**	**$ 26,679**	**$ (478,998)**	**$ (408,723)**	**$ (210,906)**	**$ 113,683**	**$ 501,641**	**$ 647,361**	**$ 923,979**	**$ 1,352,502**	**$ 1,932,151**
39	**Revenue Adequacy Tests**										
40	**Fund Balance as a percentage of revenues**	0.7%	-11.2%	-8.3%	-3.9%	2.0%	8.2%	10.1%	13.6%	18.8%	25.3%
41	One Day Operating Expenditures	$ 7,770	$ 8,306	$ 8,805	$ 9,297	$ 9,820	$ 10,377	$ 10,971	$ 11,604	$ 12,280	$ 13,002
42	**Days of Operating Expenditures**	**3**	**(58)**	**(46)**	**(23)**	**12**	**48**	**59**	**80**	**110**	**149**
43	**Required Rate Adjustments**										
44	**Percent Annual Rate Adjustment**	16.00%	16.00%	9.00%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2023 08 02 -- Scenario II -- Conservation***

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1 WATER and WASTEWATER Utility Revenues and Expenses											
Beginning of TY Fund Balance	$ 316,000										
TY Transfer/Use	-										
Revised Beginning Fund Balance		**$ 316,000**	**$ 26,679**	**$ (478,998)**	**$ (408,723)**	**$ (210,906)**	**$ 113,683**	**$ 501,641**	**$ 647,361**	**$ 923,979**	**$ 1,352,502**
Revenues											
Water Rate Revenues		1,637,226	1,965,944	2,239,571	2,404,823	2,498,406	2,595,339	2,697,213	2,814,625	2,952,453	3,097,600
Wastewater Rate Reveues		1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
		2,945,918	3,519,955	4,134,502	4,663,005	4,985,870	5,319,833	5,666,450	6,038,887	6,443,257	6,863,733
Non-Rate Revenues		767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440	767,440
Total Revenues		**3,713,358**	**4,287,395**	**4,901,942**	**5,430,445**	**5,753,310**	**6,087,273**	**6,433,890**	**6,806,327**	**7,210,697**	**7,631,173**
Cost of Service											
Operating Expenses:											
Personnel		1,513,050	1,605,420	1,704,036	1,809,397	1,922,045	2,042,547	2,171,517	2,309,623	2,457,590	2,616,209
Supplies		407,860	448,833	485,151	519,777	557,113	597,381	640,823	687,702	738,303	792,935
Maintenance & Repairs		680,480	726,402	760,865	789,325	818,820	849,388	881,067	913,898	947,924	983,188
Administrative Expense		234,600	251,140	263,918	274,810	286,263	298,313	310,998	324,360	338,442	353,293
Total		2,835,990	3,031,795	3,213,970	3,393,309	3,584,241	3,787,628	4,004,404	4,235,583	4,482,260	4,745,624
Net Revenues for Debt Service, Capital Outlays and Transfers		877,368	1,255,599	1,687,972	2,037,135	2,169,069	2,299,645	2,429,486	2,570,745	2,728,438	2,885,549
Current Debt Service		581,659	581,661	581,657	581,660	581,660	581,663	581,660	581,661	581,640	581,641
Future Debt Service		-	761,494	761,494	978,100	978,100	1,039,987	1,256,594	1,411,312	1,411,312	1,411,312
Total Debt Service		581,659	1,343,155	1,343,151	1,559,760	1,559,760	1,621,650	1,838,254	1,992,973	1,992,952	1,992,953
Net Revenues for Capital Outlays, Contingencies and Transfers		295,709	(87,555)	344,822	477,376	609,309	677,994	591,232	577,771	735,485	892,595
Capital Outlays .		433,500	257,500	107,500	107,500	107,500	107,500	257,500	107,500	107,500	107,500
Transfers		151,530	160,622	167,047	172,058	177,220	182,536	188,013	193,653	199,462	205,446
Total Cost of Service		**4,002,679**	**4,793,072**	**4,831,667**	**5,232,627**	**5,428,721**	**5,699,315**	**6,288,171**	**6,529,709**	**6,782,174**	**7,051,524**
Net Revenues		**(289,321)**	**(505,677)**	**70,275**	**197,818**	**324,589**	**387,958**	**145,719**	**276,618**	**428,523**	**579,649**
Percent of Revenues		-7.8%	-11.8%	1.4%	3.6%	5.6%	6.4%	2.3%	4.1%	5.9%	7.6%
Ending Water & WW Combined Fund Balance		**$ 26,679**	**$ (478,998)**	**$ (408,723)**	**$ (210,906)**	**$ 113,683**	**$ 501,641**	**$ 647,361**	**$ 923,979**	**$ 1,352,502**	**$ 1,932,151**
Revenue Adequacy Tests											
Total Expenses less Transfers		3,851,149	4,632,450	4,664,620	5,060,569	5,251,501	5,516,778	6,100,158	6,336,056	6,582,712	6,846,077
Expenses per Day		10,551	12,692	12,780	13,865	14,388	15,114	16,713	17,359	18,035	18,756
Working Capital as % of Tot Exp.		1%	-10%	-9%	-4%	2%	9%	11%	15%	21%	28%
Number of Working Capital Days		3	(38)	(32)	(15)	8	33	39	53	75	103
Debt Coverage (excludes Capital Outlays and G/F Transfers)		1.51	0.93	1.26	1.31	1.39	1.42	1.32	1.29	1.37	1.45

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: 2023 08 02 -- Scenario II -- Conservation

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2 **WATER Utility Revenues and Expenses**											
Beginning of TY Fund Balance	$ -										
TY Transfer/Use	-										
Revised Beginning Fund Balance		**$ -**	**$ 174,374**	**$ 202,408**	**$ 432,843**	**$ 602,148**	**$ 788,286**	**$ 927,216**	**$ 1,079,828**	**$ 1,100,503**	**$ 1,157,434**
Revenues											
Water Rate Revenues			-	-	-	-	-	-	-	-	-
W.1 Residential Inside		878,960	1,029,671	1,175,771	1,265,560	1,319,146	1,374,355	1,431,384	1,496,855	1,573,771	1,654,365
W.2 Non-Res Inside		575,712	709,021	807,178	866,070	898,352	931,968	967,907	1,009,434	1,058,067	1,109,567
W.3 Yavapai		166,722	208,844	235,853	251,098	258,152	265,578	273,781	283,368	294,649	306,662
W.4 Residential Outside		-	-	-	-	-	-	-	-	-	-
W.5 Non-Res Outside		15,832	18,408	20,770	22,094	22,756	23,438	24,141	24,968	25,967	27,006
Sub-Total		1,637,226	1,965,944	2,239,571	2,404,823	2,498,406	2,595,339	2,697,213	2,814,625	2,952,453	3,097,600
Non-Rate Revenues		223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220	223,220
Total Revenues		**1,860,446**	**2,189,164**	**2,462,791**	**2,628,043**	**2,721,626**	**2,818,559**	**2,920,433**	**3,037,845**	**3,175,673**	**3,320,820**
Cost of Service											
Operating Expenses:											
Personnel		630,155	671,616	716,144	763,994	815,441	870,785	930,353	994,503	1,063,623	1,138,139
Supplies		110,000	123,034	135,143	147,082	160,066	174,186	189,539	206,233	224,385	244,119
Maintenance & Repairs		146,400	155,927	162,951	168,658	174,560	180,664	186,978	193,507	200,260	207,243
Administrative Expense		90,800	96,944	101,594	105,483	109,556	113,824	118,299	122,995	127,924	133,102
Total		977,355	1,047,520	1,115,831	1,185,217	1,259,623	1,339,459	1,425,169	1,517,238	1,616,191	1,722,603
Net Revenues for Debt Service, Capital Outlays and Transfers		883,091	1,141,644	1,346,960	1,442,826	1,462,003	1,479,100	1,495,264	1,520,607	1,559,482	1,598,217
Current Debt Service		447,417	447,418	447,416	447,418	447,418	447,421	447,418	447,417	447,399	447,399
Future Debt Service		-	585,764	585,764	740,483	740,483	802,371	802,371	957,089	957,089	957,089
Total Debt Service		447,417	1,033,182	1,033,180	1,187,901	1,187,901	1,249,792	1,249,789	1,404,506	1,404,488	1,404,488
Net Revenues for Capital Outlays, Contingencies and Transfers		435,674	108,462	313,780	254,925	274,102	229,309	245,475	116,101	154,994	193,729
Capital Outlays .		192,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Transfers		68,800	72,928	75,845	78,120	80,464	82,878	85,364	87,925	90,563	93,280
Total Cost of Service		**1,686,072**	**2,161,130**	**2,232,357**	**2,458,738**	**2,535,488**	**2,679,629**	**2,767,822**	**3,017,170**	**3,118,743**	**3,227,871**
Net Revenues		**174,374**	**28,034**	**230,435**	**169,305**	**186,138**	**138,931**	**152,611**	**20,676**	**56,931**	**92,949**
Percent of Revenues		9.4%	1.3%	9.4%	6.4%	6.8%	4.9%	5.2%	0.7%	1.8%	2.8%
Scen I		220,178	286,621	132,098	178,181	(84,374)	6,187	104,076	61,411	48,427	30,965
Ending Water Fund Balance		**$ 174,374**	**$ 202,408**	**$ 432,843**	**$ 602,148**	**$ 788,286**	**$ 927,216**	**$ 1,079,828**	**$ 1,100,503**	**$ 1,157,434**	**$ 1,250,383**
Revenue Adequacy Tests											
Total Expenses less Transfers		1,617,272	2,088,202	2,156,512	2,380,618	2,455,024	2,596,751	2,682,458	2,929,244	3,028,180	3,134,591
Expenses per Day		4,431	5,721	5,908	6,522	6,726	7,114	7,349	8,025	8,296	8,588
Working Capital as % of Tot Exp.		11%	10%	20%	25%	32%	36%	40%	38%	38%	40%
Number of Working Capital Days		39	35	73	92	117	130	147	137	140	146
Debt Coverage (excludes Capital Outlays and G/F Transfers)		1.97	1.10	1.30	1.21	1.23	1.18	1.20	1.08	1.11	1.14

TOWN OF CAMP VERDE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: 2023 08 02 -- Scenario II -- Conservation

	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
3	**WASTEWATER Utility Revenues and Expenses**										
	Beginning of TY Fund Balance	$ 316,000									
	TY Transfer/Use	-									
	Revised Beginning Fund Balance	**$ 316,000**	**$ (147,696)**	**$ (681,407)**	**$ (841,566)**	**$ (813,053)**	**$ (674,602)**	**$ (425,575)**	**$ (432,467)**	**$ (176,524)**	**$ 195,068**
	Revenues										
	Wastewater Rate Revenues		-	-	-	-	-	-	-	-	-
	WW.1 Residential Inside	830,883	1,004,783	1,242,352	1,535,332	1,742,698	1,957,450	2,179,570	2,410,640	2,651,491	2,900,715
	WW.2 Non-Res Inside	441,283	507,853	603,948	669,554	690,433	711,674	733,260	756,092	780,540	805,402
	WW.5 Yavapai	36,526	41,374	48,630	53,295	54,332	55,370	56,407	57,530	58,773	60,015
	WW.6 Residential Outside	-	-	-	-	-	-	-	-	-	-
	WW.5 Non-Res Outside	-	-	-	-	-	-	-	-	-	-
	Total	1,308,691	1,554,010	1,894,931	2,258,182	2,487,464	2,724,493	2,969,237	3,224,262	3,490,804	3,766,133
	Non-Rate Revenues	544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220	544,220
	Total Revenues	**1,852,911**	**2,098,230**	**2,439,151**	**2,802,402**	**3,031,684**	**3,268,713**	**3,513,457**	**3,768,482**	**4,035,024**	**4,310,353**
	Cost of Service										
	Operating Expenses:										
	Personnel	882,895	933,804	987,892	1,045,403	1,106,604	1,171,762	1,241,163	1,315,120	1,393,967	1,478,070
	Supplies	297,860	325,800	350,008	372,695	397,047	423,195	451,284	481,469	513,918	548,816
	Maintenance & Repairs	534,080	570,475	597,914	620,668	644,260	668,723	694,089	720,391	747,664	775,944
	Administrative Expense	143,800	154,197	162,325	169,327	176,707	184,489	192,699	201,365	210,518	220,191
	Total	1,858,635	1,984,275	2,098,138	2,208,093	2,324,618	2,448,169	2,579,235	2,718,345	2,866,068	3,023,021
	Net Revenues for Debt Service, Capital Outlays and Transfers	(5,724)	113,955	341,012	594,309	707,066	820,544	934,222	1,050,137	1,168,956	1,287,332
	Current Debt Service	134,242	134,243	134,241	134,242	134,242	134,242	134,242	134,244	134,241	134,242
	Future Debt Service	-	175,729	175,729	237,617	237,617	237,617	454,223	454,223	454,223	454,223
	Total Debt Service	134,242	309,972	309,970	371,859	371,859	371,859	588,465	588,467	588,464	588,465
	Net Revenues for Capital Outlays, Contingencies and Transfers	(139,966)	(196,017)	31,042	222,450	335,207	448,686	345,756	461,670	580,492	698,867
	Capital Outlays .	241,000	250,000	100,000	100,000	100,000	100,000	250,000	100,000	100,000	100,000
	Transfers	82,730	87,694	91,202	93,938	96,756	99,658	102,648	105,728	108,899	112,166
	Total Cost of Service	**2,316,607**	**2,631,941**	**2,599,310**	**2,773,889**	**2,893,233**	**3,019,686**	**3,520,348**	**3,512,539**	**3,663,432**	**3,823,652**
	Net Revenues	**(463,696)**	**(533,711)**	**(160,159)**	**28,513**	**138,451**	**249,027**	**(6,892)**	**255,943**	**371,592**	**486,700**
	Percent of Revenues	-25.0%	-25.4%	-6.6%	1.0%	4.6%	7.6%	-0.2%	6.8%	9.2%	11.3%
	Ending Wastewater Fund Balance	**$ (147,696)**	**$ (681,407)**	**$ (841,566)**	**$ (813,053)**	**$ (674,602)**	**$ (425,575)**	**$ (432,467)**	**$ (176,524)**	**$ 195,068**	**$ 681,768**
	Revenue Adequacy Tests										
	Total Expenses less Transfers	2,233,877	2,544,248	2,508,109	2,679,952	2,796,477	2,920,028	3,417,700	3,406,812	3,554,532	3,711,486
	Expenses per Day	6,120	6,971	6,872	7,342	7,662	8,000	9,364	9,334	9,738	10,168
	Working Capital as % of Tot Exp.	-7%	-27%	-34%	-30%	-24%	-15%	-13%	-5%	5%	18%
	Number of Working Capital Days	(24)	(98)	(122)	(111)	(88)	(53)	(46)	(19)	20	67
	Debt Coverage (excludes Capital Outlays and G/F Transfers)	(0.04)	0.37	1.10	1.60	1.90	2.21	1.59	1.78	1.99	2.19