

**CONCEPTUAL
MASTER WATER REPORT
FOR
AED NORTH
MASTER PLANNED COMMUNITY**

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WP# 184938

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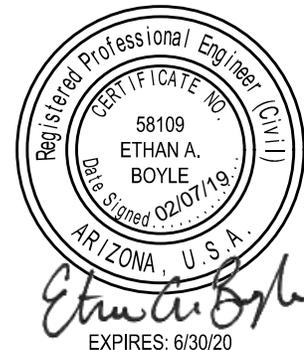


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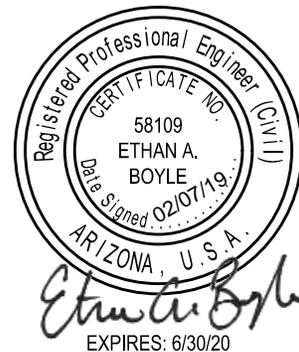
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1.0 INTRODUCTION

1.1 General Background and Project Location

AED North Master Planned Community (Site) is an approximate 1,656-acre project, with approximately 822 acres of developable land. Currently, 52 acres (Parcel J) are located within the city limits of Prescott. The remaining 770 acres of developable land is planned to be annexed into the City of Prescott. The Site is located east of the Prescott Regional Airport and north of the Highway 89A and Granite Dells Parkway interchange, and is located within Sections 17, 18, 19, 20, 29, 30, and 31, Township 15 North, Range 1 West, of the Gila and Salt River Meridian (refer to Exhibit 1 – *Vicinity Map*).

The current zoning of the Site is RCU-2A. The Site is planned to include a fire/police station, elementary school, middle school, mini-storage, RV storage, industrial, residential land uses, and natural open space. This Conceptual Master Water Report utilizes a land use plan prepared by Greey|Pickett, dated June 27, 2018, as shown in Appendix B.

This Conceptual Master Water Report has been prepared in accordance with Wood, Patel & Associates, Inc.'s (Wood/Patel) understanding of the City of Prescott's technical requirements for water distribution systems, as applicable for the Site.

1.2 Scope of the Conceptual Master Water Report

The purpose of this Conceptual Master Water Report is to determine water design flows, pipe sizes, and waterline locations, as required to provide water service to the proposed development at full build-out conditions. The required infrastructure identified includes water distribution system mains, and potential locations for booster pump stations and pressure-reducing valves.

A more detailed analysis of the water system for each parcel will need to be completed in order to size any booster pump stations or pressure-reducing valves. Grading of the Site could dictate the locations of such booster pumps and/or pressure-reducing valves.

1.3 Full Build-Out Condition

The design criteria utilized to determine water demands and pipe sizes for the Site are based on projected full build-out conditions. This report assumes the project will be constructed in one (1) phase.

2.0 DESIGN DOCUMENTATION

2.1 Design Criteria

For the purpose of this report, water demand design flows and pipe-sizing criteria utilized are based on Wood/Patel's understanding of the applicable water system design criteria listed in the *City of Prescott General Engineering Standards*, dated January 2016, and regionally-accepted criteria. Refer to Table 1 – *Water Distribution System Design Criteria* for detailed information regarding design criteria.

Fire flow requirements were modeled during the fire flow analysis of the Site. Residential land uses were modeled with a fire flow of 1,500 gallons per minute (gpm). Municipal, middle school, RV storage, and mini storage land uses were modeled with a minimum fire flow of 4,000 gpm. The existing infrastructure near the Site limits the available fire flow for the proposed elementary school adjacent to Parcel C. Based on the assumptions made within this model, the maximum fire flow available for the school is 3,350 gpm; if the future school requires additional fire flow, additional analysis will be required.

The infrastructure adjacent to the industrial land use in Parcel K, along with the proposed parallel 12-inch waterline along Centerforce Drive, can provide a maximum fire flow of approximately 3,000 gpm; therefore, if the land use requires additional fire flow, then adequate private fire storage will need to be provided onsite. If the fire flow is less than the assumed fire flow within this report, the proposed parallel waterline along Centerforce Drive should be re-evaluated.

2.2 Water Demand Design Flows

Water demand design flows for the Site were calculated using design criteria listed in Section 2.1 – *Design Criteria* and are summarized below. For detailed calculations, refer to Table 2 – *Water Demand Design Flows by Parcel* and Table 3 – *Water Demand Design Flows by Junction*.

	Average-Day Demand MGD (gpm)	Max-Day Demand MGD (gpm)	Peak-Hour Demand MGD (gpm)
Parcels A through K	0.44 (308)	0.80 (554)	1.44 (998)

3.0 EXISTING CONDITIONS

3.1 Topographic Conditions

The proposed Site is located along Granite Creek and north of Highway 89A. The Site is composed of ridges and valleys throughout, with slopes ranging from approximately 1% to 20%. The Site's developable land generally slopes south to north, with elevations ranging from approximately 5,105 feet above mean sea level (MSL) in the south, to 4,905 feet above MSL in the west.

3.2 Existing Offsite Water Storage

According to the *City of Prescott Zone 101 Pump Station and Zone Reservoir* (Carollo, 2012), and the *Technical Memorandum No. 1 North Airport Area Water and Wastewater Master Plan* (Carollo, February 2013), water is anticipated to be provided to the Site by the existing Zone 12 Reservoir and the existing 18-inch supply line from the Chino Pipeline along Pioneer Parkway. The existing ground storage tank by the airport, previously known as the Airpark Reservoir, has been converted to effluent water storage since the Zone 12 tank is operational, and, therefore, will not be used as a potable water source any longer. For the analysis and modeling within this conceptual master water report, the assumption was made the Site will be supplied solely by the Zone 12 Tank. The tank location and parameters are summarized below.

- Zone 12 Reservoir, located at 3755 Old Highway 89A, with a storage capacity of 3.25 million gallons.

3.3 Existing Pressure Zone Sources and Hydraulic Grade Lines

The Site falls within City of Prescott's Water Pressure Zones 114, 12, and 113. Pressure zone properties are summarized below.

Zone 114:

- Ground Elevation Range = 4,860 feet to 4,960 feet
- Assumed Static Hydraulic Grade Line (HGL) = 5,070 feet
- Pressure Source(s):
 - Zone 12 Tank (3755 Old Highway 89A)

Zone 12:

- Ground Elevation Range = 4,960 feet to 5,060 feet
- Static Hydraulic Grade Line (HGL) = 5,181 feet
- Pressure Source(s):
 - Zone 12 Tank (3755 Old Highway 89A)

Zone 113:

- Ground Elevation Range = 5,060 feet to 5,160 feet
- Assumed Static Hydraulic Grade Line (HGL) = 5,275 feet
- Pressure Source(s):
 - Proposed Zone 113 BPS-1 and BPS-2

3.4 Existing Offsite Water Infrastructure

Relevant existing water infrastructure adjacent to the Site includes the following:

Zone 12:

- 18-inch waterline along Centerpointe East Drive, between Granite Dells Parkway and Side Road. This waterline extends north along Side Road before crossing Highway 89, and running easterly along the north side of Highway 89. An existing stub is located near the northwest corner of Granite Dells Parkway and Highway 89.
- 18-inch waterline along the south side of Highway 89A, between Side Road and Highway 89.
- 12-inch waterline crossing Highway 89A directly east of the Highway 89/Highway 89A intersection.
- 8-inch waterline running east along Larry Caldwell Road, from Highway 89A to existing Airport Well #2 along Wilkinson Drive.
- 12-inch waterline located north along Wilkison Drive, from Airport Well #2 to Gulf Stream Drive, and extending along Lear Lane to Taxi Way and connecting to an 8-inch waterline along Intercal Way.
- 8-inch waterline along Intercal Way, from Melville Road to Corsair Avenue.
- 12-inch waterline located along Melville Road, with the 12-inch line ending near the vicinity of the water treatment facility.

- 12-inch waterline located along Corsair Avenue, between Melville and Avenger Roads.
- 8-inch waterline running easterly along Avenger Road, from Corsair Avenue to the Prescott Animal Hospital Equine Center.
- 8-inch waterline running easterly along Centerforce, from Corsair Avenue to the end of the cul-de-sac.

3.5 Existing Onsite Water Infrastructure

It is Wood/Patel's understanding there are currently no existing onsite waterlines located within the Site's limits.

4.0 HYDRAULIC MODEL

Bentley WaterCAD Version 10.01, a potable water transmission and distribution system numerical modeling program by Haestad Methods, was utilized to analyze the proposed potable water system. The City of Prescott provided information regarding the Zone 12 Tank, which has an elevation of 5,181 feet at normal operating levels. Thus, a hydraulic grade line (HGL) of 5,181 feet was used to simulate the water-supply pressure zone for Zone 12. The booster pumps for Zone 113 utilized a hydraulic grade line of 5,275 feet to simulate the water-supply pressure for Zone 113. Water demands and peaking factors, described in *City of Prescott General Engineering Standards Article 4*, were applied to the hydraulic model. Pipes were sized to accommodate modeled flow conditions.

4.1 Modeled Scenarios

The following primary modeling scenarios were selected to demonstrate compliance with City of Prescott requirements, and analyze the proposed water system:

- Average Daily Demand
- Maximum Daily Demand
- Peak Hour Demand
- Maximum Daily Demand plus Fire Flow

The hydraulic model utilizes the Hazen-Williams equation to calculate the head losses throughout the system during the modeled scenarios, based on City of Prescott's *General Engineering Standards, Table 4-2 – C-Factors*. Fire flow demands were analyzed with automatic sprinkler systems installed on all buildings, except residential. Refer to Table 1 – *Water Distribution System Design Criteria* for additional information regarding hydraulic modeling parameters and specific fire-flow demands for each building.

4.2 Hydraulic Modeling Assumptions

Based on correspondence with the City of Prescott and previously-approved water reports for the *Zone 101 Booster Pump Station* and *Airport Area Master Plan*, several assumptions were made regarding offsite water infrastructure. These assumptions are as follows:

- Per City of Prescott staff during the January 15, 2019 meeting, the existing 12-inch waterline along Melville Road can be extended across Granite Creek to the proposed Site, even though pressures in this waterline may be slightly above 120 psi. The current model shows this pipe segment having average daily pressures of approximately 126 psi; but this could change depending on the actual elevation of the proposed waterline beneath the wash.
- The proposed Zone 12 pressure zone will be able to connect to the existing water distribution system at two (2) locations. One connection to the 18-inch waterline along Granite Dells Parkway, and the other connection to the 12-inch waterline along Melville Road.
- The proposed Zone 114 pressure zone, west of Granite Creek, is proposed to connect to the two (2) 8-inch waterlines located in Avenger Road and Centerforce. The need for future pressure-reducing valves will be determined by the end user of Parcel K.
- The existing and future water demands south of Highway 89A were not accounted for within this report.
- The existing water demands of the commercial/industrial land uses along Corsair Avenue are unknown at this time, and were not included in the water system analysis.
- The existing 18-inch supply line from the Chino Pipeline, along Pioneer Parkway and PRV Pioneer #1, were not modeled within this report.
- Existing Airport Wells #2 and #3 were not modeled as water sources within this report.
- Future water demands north of the Site were not considered in the water analysis. However, 16-inch and 12-inch waterline stubs will be available for future properties to the north to connect to, as shown in Figure 2.1 of the *Zone 101 Pump Station and Zone 12 Reservoir Master Water Report*.

Refer to Exhibit 2 for the layout of existing waterlines adjacent to the Site.

4.3 Hydraulic Modeling Results

The hydraulic modeling results indicate the onsite system is capable of delivering average daily and maximum daily demands within the following onsite pressure ranges:

Hydraulic Model Scenario	Full Build-Out Pressure (psi)			
	Low	Node	High	Node
Average Day Demand	48	J12-C4	119	J114-A3
Max Daily Demand	47	J12-C4	119	J114-A3

AED North’s developable land has elevations ranging from 4,905 to 5,105 feet, based on the master plan. Hydraulic modeling results indicate the onsite system delivers maximum daily demands with pressures above the required 40 psi. In the future, Parcels A and K will need pressure-reducing valves (PRV) installed on the proposed 12-inch main lines entering their respective parcels or on the proposed buildings.

Two (2) booster pump stations are proposed in order to serve Zone 113. The first (BPS-1) is located between Parcels G and J. The second (BPS-2) is located east of Parcel E adjacent to the future infrastructure roadway. The booster pumps were modeled with a 1-point pump curve, with 1,500 gpm and 70 feet of head. Specific pump sizing will be determined with individual parcel basis of design reports in the future.

Individual home or building pressure-reducing valves will be required when static pressures exceed 80 psi at service locations.

Fire flow results for the model indicate available fire flows exceeding the required fire flows for all proposed land uses during max day demands, while maintaining residual pressures greater than 20 psi throughout the Site at full build-out conditions. Detailed hydraulic modeling results, calculations, and exhibits are provided in Appendix A and Exhibit 2.

5.0 GENERAL PLAN FOR ONSITE WATER DISTRIBUTION

5.1 Piping Layout

The existing water distribution system in the Site's surrounding area consists of various public waterlines ranging in diameter from 8 inches through 18 inches. The planned water distribution system for the Site consists of the addition of looped public waterlines ranging in diameter from 8 inches through 18 inches, using pipe materials per City of Prescott standards. Refer to Exhibit 2 – *Master Water Exhibit Full Build-Out*.

5.2 Water Sources

The Zone 12 Pressure Zone is currently served by one (1) tank. This tank is located at 3755 Old Highway 89A, which is within the Granite Dells Estates development. Water is supplied to Zone 12 through an 18-inch transmission line that runs along Granite Dells Parkway. A separate waterline from this tank is also routed to a booster pump station, which supplies water to Zone 101, located south of Highway 89A.

A second source supplies water to the Chino Pipeline, which supplies water to Zone 12 through Pioneer PRV #1 located near the intersection of Highway 89 and Highway 89A. This source was not modeled within this report.

5.3 Storage

Based on the *Airport Area Master Plan*, dated June 2009, the full build-out required storage for Zone 114 is 3.58 million gallons (MG), Zone 12 is 3.50 MG, and Zone 113 is 2.23 MG. Based on storage calculations, as shown on Table 5 – *Airport Area Storage Summary*, the volume required in the City of Prescott storage facilities for the AED North development is approximately 1.11 MG; and only the Zone 12 tank, which has a storage capacity of 3.25 MG, is currently supplying storage to Zones 114, 12, 113, 110, and 101.

The *Airport Area Master Plan* contemplated the existing Airpark Reservoir as a storage facility for Zone 12 along with the Intermediate Reservoir, which is to be constructed west of Willow Creek Road and north of Highway 89A. Additional reservoirs within Zone 101 and Zone 114 were also contemplated within the *Airport Area Master Plan*.

It is Wood/Patel's understanding the Airpark tank has been converted to an effluent tank and will no longer be utilized for potable water storage. Additionally, according to City of Prescott staff, the previously-planned Zone 101 Reservoir will no longer be constructed. Therefore, it is assumed the City of Prescott will construct the Intermediate Reservoir and the Zone 114 Reservoir when the airport area needs the additional storage capacity for emergency and fire flow storage. Future phasing of the Site and adjacent parcels may dictate the construction timing of these future reservoirs.

5.4 Booster Station

The HGL for the Zone 12 Reservoir is 5,181 feet, per the information provided by the City of Prescott. The proposed booster pumps, BPS-1 and BPS-2, will be designed to increase the HGL to 5,275 feet to meet water demands within Zone 113.

5.5 Water Pressure to Multi-Story Buildings

Based on full build-out hydraulic modeling results, maximum daily residual pressures within the Site are at or above 40 psi. Private individual booster pumps may be required to serve multi-story buildings, and should be evaluated on an individual basis.

6.0 CONCLUSIONS

The *Conceptual Master Water Report for AED North Master Planned Community* meets accepted standards and requirements, and will serve as a guide for development associated with the planned potable water systems of AED North. No critical issues were identified that would preclude the anticipated development as presented within this Conceptual Master Water Report.

The following are critical conclusions:

1. The Site is located within the existing Zone 114, Zone 12, and Zone 113 water pressure zones currently served by the City of Prescott. A static hydraulic grade line equal to 5,070 feet for Zone 114, 5,181 feet for Zone 12, and 5,275 feet for Zone 113, was utilized in this report.
2. For the purpose of this Conceptual Master Water Report, the full build-out conditions have been evaluated for the design of the water distribution system. It is anticipated waterline construction will be phased to correspond with development phasing, which was not evaluated within this report.
3. Onsite demands were established by City of Prescott criterion based on land uses and number of units shown on the Greey|Pickett Conceptual Plan, dated June 27, 2018.
4. A more detailed analysis of the water system, including phasing, will be provided in future analysis. As development progresses and densities change, each individual Basis of Design Water Report will need to present the portions of the improvements that must be built to serve the specific phase as approved by the City.
5. The approximate average daily water demand for the Site is 0.44 MGD at full build-out conditions, per Section 2.2 of this report.
6. A hydraulic model was utilized to analyze the proposed potable water system and size pipes for the water distribution system. Modeling results indicate pressures, fire flow, head loss, and velocity requirements meet the City of Prescott's design requirements.
7. Individual home pressure-reducing valves will be required when static pressure exceeds 80 psi at service locations.
8. The planned onsite water distribution system for AED North consists of looped public waterlines ranging in diameter from 8 inches through 18 inches.
9. Future booster pump stations to serve Zone 113, and pressure-reducing valves to serve Zone 114, will need to be re-evaluated within subsequent master plans and/or design reports.
10. This *Conceptual Master Water Report for AED North Master Planned Community* demonstrates the sufficiency of the proposed water distribution system to serve the Site, in accordance with City of Prescott's water standards.

7.0 REFERENCES

1. *City of Prescott General Engineering Standards*, City of Prescott, 2016.
2. *City of Prescott Zone 101 Pump Station and Zone 12 Reservoir*, Carollo, September 2012.
3. *Airport Area Master Plan*, Carollo, June 2009.
4. *Technical Memorandum No. 1 North Airport Area Water and Wastewater Master Plan*, Carollo, February 2013.
5. *Bentley WaterCAD Version 10.01.00.72 Update 1*, Haestad Methods, December 2017.

TABLE 1

WATER DISTRIBUTION SYSTEM DESIGN CRITERIA

TABLE 1 - WATER DISTRIBUTION SYSTEM DESIGN CRITERIA

Project: AED North
Location: Prescott, AZ
References: City of Prescott General Engineering Standards, 2016

Project Number: 184938
Project Engineer: Steven McKee, P.E.

RESIDENTIAL WATER DEMANDS							
LAND USE	AVERAGE DAILY DEMAND (ADD)		POPULATION DENSITY		UNIT DAILY WATER DEMAND		NOTES
	VALUE	UNITS		Persons/Dwelling Unit		GPD/DU	
Single Family Residential	96	gpcd	2.29		220		1.9

NON-RESIDENTIAL WATER DEMANDS			
LAND USE	AVERAGE DAILY DEMAND (ADD)		NOTES
	VALUE	UNITS	
School, Staff and Office	24	GPD/Person	
Elementary, Add	18	GPD/Student	
Middle and High, Add	24	GPD/Student	
With Gym & Showers, Add	6	GPD/Student	
With Cafeteria, Add	4	GPD/Student	
Recreational Vehicle, with no water and sewer connections	90	GPD/Vehicle Space	
Recreational Vehicle, with water and sewer connections	120	GPD/Vehicle Space	
Office Building	24	GPD/Employee	This criterion was used for the Mini Storage land use.
Municipal (Fire/Police Station)	54	GPD/Employee	
Industrial Facility	1,800	GPD/Acre	City of Prescott Criterion for Industrial Facilities is 42 GPD/Employee, however water uses can vary depending on the type of industrial facility. The exact industrial use is unknown at this time, therefore 1,800 GPD/Acre was utilized for this annexation masterplan. Future master plans will evaluate the ultimate industrial facility and the appropriate average day demand based on the actual industrial facility.
Open Space/Parks	810	GPD/Acre	Based on Prescott and Prescott Valley Regional Criteria

HAZEN-WILLIAMS C FACTORS		NOTES			
PIPE DIAMETER	C-FACTOR	CITY OF PRESCOTT GENERAL ENGINEERING STANDARDS, SECTION 4.7.5 A, 2016.			
6-INCH	90				
8-INCH	110				
10-INCH	115				
12-INCH	120				
14-INCH	120				
16-INCH OR GREATER	130				
DESCRIPTION		VALUE	UNITS	NOTES	
PEAKING FACTORS					
Max Day = Peaking Factor (PF) x ADD		1.8 X ADD	gpd	Note 2	
Peak Hour = Peaking Factor (PF) x MDD		1.8 X MDD	gpd	Note 3	
MODELED FIRE HYDRANT FLOW (MINIMUM)					
Residential		1,500	gpm	Note 4	
Industrial Transition (RV Storage & Mini Storage)		4,000	gpm	Note 5	
Municipal		4,000	gpm	Note 5	
Middle School		4,000	gpm	Note 5	
Elementary School		3,350	gpm	Note 10	
Industrial		3,000	gpm	Note 6	
Existing Wastewater Treatment Facility		3,000	gpm	Note 11	
HYDRAULICS					
Maximum and Minimum System Pressures					
Minimum Residual Pressure, Max Day + Fire Flow		20	psi	Note 7	
Minimum Residual Pressure (Average Day, Max Day, Peak Hour)		40	psi	Note 7	
Maximum Residual Pressure (All Scenarios)		120	psi	Note 7	
Maximum Velocity					
Maximum Velocity, Max Day (Pipes < 36-Inch Diameter)		5	ft/sec	Note 8	
Maximum Velocity, Max Day (Pipes ≥ 36-Inch Diameter)		6	ft/sec	Note 8	
Maximum Velocity, Max Day + Fire Flow		10	ft/sec	Note 8	
Maximum Head Loss					
Maximum Head Loss (Max Day Scenario & Pipes < 36 Inches)		2 to 7	ft/1000 ft	Note 8	
Maximum Head Loss (Max Day Scenario & Pipes ≥ 36 Inches)		1 to 2.5	ft/1000 ft	Note 8	

Notes:

- The per person residential demand was taken from Table 4-1, City of Prescott General Engineering Standards.
- Per City of Prescott General Engineering Standards, Section 4.5.2, 2016
- Per City of Prescott General Engineering Standards, Section 4.7.5 A1, 2016
- Per City of Prescott General Engineering Standards, fire flow for residential land uses may be reduced if square footage of the structure is less than 3,600 SF with approval of the City's Fire Marshal during final design.
- For final design, the fire flow requirement will be based on the square footage of the buildings. Conservatively, a maximum fire flow of 4,000 GPM was utilized in this report for the noted land uses.
- The total flow available from the existing infrastructure during the maximum day plus fire flow scenario for the Industrial Parcel (Parcel K) is approximately 3,000 GPM. If future development has a required maximum day plus fire flow greater than the aforementioned available fire flow, then onsite fire storage will need to be provided.
- Per City of Prescott General Engineering Standards, Section 4.7.7 B, 2016
- Per City of Prescott General Engineering Standards, Section 4.7.5 #2, 2016
- The required density of 2.29 Persons/DU was provided by the City of Prescott during a meeting held January 15, 2019.
- The total flow available from the existing infrastructure during the max day plus fire flow scenario is approximately 3,375 GPM and a fire flow of 3,350 GPM. Additional analysis may be required if the maximum day plus fire flow is greater than the aforementioned available fire flow.
- The existing available flow during the max day + fire flow scenario for the wastewater treatment facility is approximately 3,300 GPM, so the assumption was made that the fire flow available is 3,000 GPM.

TABLE 2

WATER DEMAND DESIGN FLOWS BY PARCEL

TABLE 2 - WATER DEMAND DESIGN FLOWS BY PARCEL

Project: AED North
Location: Prescott, AZ
References: City of Prescott General Engineering Standards, 2016

Project Number: 184938

ONSITE PRELIMINARY LAND USE AND DWELLING UNIT BREAKDOWN BY PARCEL

PARCEL	No. of DUs	Residential Acres	Density	Non-Residential Acres	Land Use	Floor Area (SQ. FT.)	Population Density or Acreage		Total Population or Acreage	Unit Daily Water Demand (GPD/DU, AC, or S.F.)		Avg Day Flow (GPD)	Total Avg Day Flow (GPD)
A	-	-	-	2.5	Municipal (Fire/Police Station)	10,000	-	-	20	54	GPD/Employee	1,080	39,260
	-	-	-	14.0	Middle School ¹	94,000	145	Building SF/ Student	650	34	GPD/Student	22,100	
	-	-	-	3.5	Open Space	-	-	-	65	24	GPD/Person	1,560	
	-	-	-	15.0	Mini-Storage	87,120	2	Persons/Acre of Storage Facilities	30	24	GPD/Employee	720	
	-	-	-	23.0	RV Storage	-	5	RV Parking Stalls/ Acre	115	120	GPD/Vehicle Space	13,800	
B	369	128	2.9	-	Residential	-	2.29	Persons/Dwelling Unit	845	220	GPD/DU	81,180	81,180
C	220	70	3.1	-	Residential	-	2.29	Persons/Dwelling Unit	504	220	GPD/DU	48,400	68,250
	-	-	-	6.0	Elementary School ²	61,000	122	Building SF/ Student	500	22	GPD/Student	11,000	
	-	-	-	9.0	Park	-	-	-	65	24	GPD/Person	1,560	
D	129	42	3.1	-	Residential	-	2.29	Persons/Dwelling Unit	295	220	GPD/DU	28,380	28,380
E	133	44	3.0	-	Residential	-	2.29	Persons/Dwelling Unit	305	220	GPD/DU	29,260	29,260
F	134	49	2.7	-	Residential	-	2.29	Persons/Dwelling Unit	307	220	GPD/DU	29,480	29,480
G	161	58	2.8	-	Residential	-	2.29	Persons/Dwelling Unit	369	220	GPD/DU	35,420	35,420
H	84	29	2.9	-	Residential	-	2.29	Persons/Dwelling Unit	192	220	GPD/DU	18,480	18,480
I	75	28	2.7	-	Residential	-	2.29	Persons/Dwelling Unit	172	220	GPD/DU	16,500	16,500
J ³	-	-	-	36.0	RV (40' X 60')	-	5	RV Parking Stalls/ Acre	180	120	GPD/Vehicle Space	21,600	21,600
	-	-	-	16.0	Open Space/ROW	-	-	-	-	-	-	-	-
K (West of NOS)	-	-	-	42.0	Industrial	365,000	-	-	42	1,800	GPD/Acre	75,600	75,600
Right-of-Way	-	-	-	207.0	Road Right-of-Way/ Open Space	-	-	-	-	-	-	-	-
AED North Totals	1,305	448		374		617,120			4,614	(Note 4)		443,410	443,410

Notes:

- Existing characteristics of the Granite Mountain Middle School and Prescott Mile High Middle School were utilized to determine an estimated size of the future middle school along with the projected students/staff. The average student to teacher ratio was 20 students per teacher, which results in approximately 33 teachers. The assumption was that additional staff would increase the amount of teachers/staff to 65 people for the middle school.
- Existing characteristics of Lincoln Elementary, Taylor Hicks Elementary, and Abia Judd Elementary Schools was utilized to determine an estimated size of the future elementary school along with the projected students/staff. The average student to teacher ratio was 14.5 students per teacher, which results in approximately 35 teachers. The assumption was that additional staff would increase the amount of teachers/staff to 65 people for the elementary school.
- Parcel J is already part of the City of Prescott, but the demand has been accounted for within the water model.
- The total population calculation doesn't include any population for the industrial parcel because of the unknown actual industrial use. Further analysis will be required when a specific industrial land user is planning development within Parcel K.

TABLE 3

WATER DEMAND DESIGN FLOWS BY JUNCTION

TABLE 4

PRESSURE ZONE 12 INFORMATION

TABLE 4 - PRESSURE ZONE 12 INFORMATION

Project: AED North
Location: Prescott, AZ

Project Number: 184938

References: *City of Prescott General Engineering Standards*. City of Prescott, 2016.
City of Prescott Zone 101 Pump Station and Zone 12 Reservoir. Carollo, September 2012.

Zone 12	
Tank	
Base Elevation	5170.50 ft
Overflow Elevation	5192.00 ft
Operating Elevations	
Normal Operating Level (Half Full)	5181.00 ft
High Water Level Elevation Operating	5191.00 ft
Low water level Elevation (Operation)	5176.00 ft
Low-Low water level (maintained)	5174.00 ft

Pressure Zone	Target Elevations		Hydraulic Grade Line (HGL)	Static Pressures at Normal Operating HGL	
	Low (ft)	High (ft)	(ft)	Low Elev (psi)	High Elev (psi)
Zone 12	4,960	5,060	5,181	96	52

TABLE 5

AIRPORT AREA STORAGE SUMMARY

TABLE 5 - AIRPORT AREA STORAGE SUMMARY

Project: AED North **Project Number:** 184938
Location: Prescott, AZ
References: Airport Area Master Plan, Carollo, June 2009.
 City of Prescott General Engineering Standards, 2016
 Zone 101 Pump Station and Zone 12 Reservoir Basis of Design Report, Carollo in Association with Lyon Engineering, September 2012

Pressure Zone	Full Buildout Storage Requirement by Zone ¹				
	114	12	113	110	101
Population	12,000	8,900	6,500		2,200
Diurnal Storage (Million Gallons)	1.02	1.15	0.47	0.09	0.27
Fire Flow Storage (Million Gallons)	2.05	1.77	1.52	1.80	0.89
Emergency Reserve Storage (Million Gallons)	0.51	0.58	0.24	0.05	0.14
Total Storage Requirement (MG)	3.58	3.50	2.23	1.94	1.30

Note:
 1) Full Buildout Storage Requirement by Zone taken from the Airport Area Master Plan, Table 7, Page 18, dated June 2009, by Carollo Engineers.

Reservoirs	Pressure Zone	Planned Storage Facilities by Buildout (Million Gallons) ²					Total Reservoir Volume Planned for Airport Area
		Storage Utilization by Pressure Zone					
		114	12	113	110	101	
Intermediate		0.50	1.00	1.00	2.00	--	4.50
Airpark		--	1.50	--	--	--	1.50
Zone 12		--	1.50	1.50	--	--	3.00
Zone 101		--	--	--	--	1.50	1.50
Zone 113		--	--	--	--	--	0.00
Zone 114		3.50	--	--	--	--	3.50
Total Planned Storage by Buildout (MG)		4.00	4.00	2.50	2.00	1.50	14.00

Note:
 2) Planned Storage Facilities by Buildout taken from the Airport Area Master Plan, Table 7, Page 18, dated June 2009, by Carollo Engineers.

AED North Storage Calculations for Storage Facilities to be Provided by the City of Prescott				
	114	12	113	Totals
Onsite Average Day Demand (GPD)	114,860	221,430	107,120	443,410
Onsite Max Day Demand by Zone (GPM)	143.8	276.6	133.9	554.3
Onsite Max Day Demand by Zone (GPD)	206,748	398,574	192,816	798,138
Onsite Population by Zone	880	2,645	1,089	4,614
#1: Operational Storage (20% of Max Day) (Gallons)	41,350	79,715	38,563	159,628
#2: American Insurance Association Equation with Population in thousands (GPM) ³	948	1,632	1,053	--
#2 Assuming Duration of 4 Hours (Gallons) ⁴	227,520	391,680	252,720	871,920
#3: Emergency Storage (10% of Max Day) (Gallons)	20,675	39,857	19,282	79,814
Total of #1 + #2 + #3 (Gallons)	289,545	511,252	310,565	1,111,362

City of Prescott Storage Facilities Required (Greater of #1+#2+#3 or Average Day Demand)				
COP Storage in Gallons Required	289,545	511,252	310,565	1,111,362
COP Storage in Million Gallons Required	0.29	0.51	0.31	1.11
Existing Storage Provided by City of Prescott Zone 12 Tank (MG) ⁵	0.25	1.50	1.50	3.25

Notes:
 3) The American Insurance Association equation is $G=1,020 * VP*(1-0.01VP)$, with G=Gallons per Minute and P=Population in Thousands.
 4) The minimum fire duration from the American Insurance Association was utilized for this report.
 5) The size of the existing Zone 12 Tank is 3.25 MG per Zone 101 Pump Station and Zone 12 Reservoir Basis of Design Report, dated September 2012.

APPENDIX A

**HYDRAULIC MODELING RESULTS
FULL BUILD-OUT**

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)

FlexTable: Reservoir Table

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
ZONE 12 TANK (OLD HWY)	5,181.00	Zone 12	308.0	5,181.00

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J113-G2	5,100.00	Zone 113	12.2	75.2	5,273.82
J113-F1	5,033.00	Zone 113	10.2	104.2	5,273.79
J113-E1	5,050.00	Zone 113	10.1	96.8	5,273.80
J113-E2	5,040.00	Zone 113	10.2	101.2	5,273.79
J113-G1	5,080.00	Zone 113	12.4	83.8	5,273.80
J113-F2	5,080.00	Zone 113	10.2	83.8	5,273.79
J113-J1	5,105.00	Zone 113	4.5	73.0	5,273.83
J113-J2	5,070.00	Zone 113	4.5	88.2	5,273.83
J113-E3	5,090.00	Zone 113	0.0	79.5	5,273.80
EXJ12-J1	5,060.00	Zone 12	0.0	52.2	5,180.64
J12-I1	4,965.00	Zone 12	0.0	93.3	5,180.55
J12-C4	5,070.00	Zone 12	13.8	47.8	5,180.49
J12-D3	5,063.00	Zone 12	0.0	50.8	5,180.47
J12-H3	4,965.00	Zone 12	0.0	93.2	5,180.51
J12-B3	5,035.00	Zone 12	18.8	62.9	5,180.48
J12-C2	5,030.00	Zone 12	0.0	65.1	5,180.48
J12-B4	5,058.00	Zone 12	18.8	53.0	5,180.48
J12-B5	5,055.00	Zone 12	0.0	54.3	5,180.48
J12-B2	4,960.00	Zone 12	18.8	95.4	5,180.49
J12-B1	4,980.00	Zone 12	0.0	86.7	5,180.50
J12-C1	5,058.00	Zone 12	16.8	53.0	5,180.48
J12-C3	5,012.00	Zone 12	16.8	72.9	5,180.47
J12-D1	5,055.00	Zone 12	0.0	54.3	5,180.47
J12-D2	5,042.00	Zone 12	19.7	59.9	5,180.47
J12-H1	4,945.00	Zone 12	0.0	101.9	5,180.54
J12-H2	4,960.00	Zone 12	12.8	95.4	5,180.53
J12-I2	4,995.00	Zone 12	11.5	80.3	5,180.53
J12-I3	5,095.00	Zone 12	0.0	77.4	5,273.83
J12-J3	5,040.00	Zone 12	6.0	60.8	5,180.57
J12-J2	4,970.00	Zone 12	0.0	91.1	5,180.57
J12-B6	5,050.00	Zone 12	0.0	56.5	5,180.48
J12-B7	4,890.00	Zone 12	0.0	125.7	5,180.47
EXJ12-2	4,955.00	Zone 12	0.0	97.5	5,180.46
EXJ12-MEL1	4,965.00	Zone 12	0.0	93.2	5,180.46
EXJ12-A6	4,950.00	Zone 12	0.0	99.7	5,180.44
EXJ12-A5	4,950.00	Zone 12	0.0	99.7	5,180.43
EXJ12-MEL2	4,963.00	Zone 12	0.0	94.1	5,180.44
EXJ12-5	4,985.00	Zone 12	0.0	84.7	5,180.73
EXJ12-4	5,040.00	Zone 12	0.0	60.9	5,180.72
EXJ12-MEL3	4,965.00	Zone 12	0.0	93.2	5,180.44
EXJ12-2	4,985.00	Zone 12	0.0	84.6	5,180.49
EXJ12-1	5,025.00	Zone 12	0.0	67.3	5,180.47
EXJ12-A7	4,966.00	Zone 12	0.0	92.8	5,180.44
EXJ12-3	5,030.00	Zone 12	0.0	65.2	5,180.72
EXJ12-6	4,978.00	Zone 12	0.0	87.6	5,180.46
EXJ12-7	4,968.00	Zone 12	0.0	91.9	5,180.46
J114-A1	4,930.00	Zone 114	10.1	108.4	5,180.54

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J114-A2	4,908.00	Zone 114	17.2	117.9	5,180.54
J114-A3	4,905.00	Zone 114	26.3	119.2	5,180.43
J114-A4	4,910.00	Zone 114	26.3	117.0	5,180.43
EXJ12-OHWY1	5,170.50	Zone 12 (J- EXP12-OHWY In Zone 101)	0.0	4.5	5,180.99

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)
FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P12-B6	8.0	Zone 12	4,142	110.0	2.4	0.02	0.000
P12-B4	8.0	Zone 12	2,800	110.0	8.8	0.06	0.004
P12-B2	8.0	Zone 12	336	110.0	27.6	0.18	0.032
P12-B3	8.0	Zone 12	680	110.0	19.5	0.12	0.017
P12-B8	8.0	Zone 12	3,478	110.0	-8.1	0.05	0.003
P12-C6	8.0	Zone 12	1,910	110.0	9.2	0.06	0.004
P12-C5	8.0	Zone 12	1,695	110.0	-9.2	0.06	0.004
P12-D2	8.0	Zone 12	1,942	110.0	0.6	0.00	0.000
P12-D4	8.0	Zone 12	2,027	110.0	-1.7	0.01	0.000
P12-D3	8.0	Zone 12	307	110.0	17.4	0.11	0.013
P12-H2	8.0	Zone 12	2,218	110.0	-13.2	0.08	0.008
P12-I5	8.0	Zone 12	450	110.0	-19.2	0.12	0.017
P12-I4	8.0	Zone 12	1,584	110.0	-6.9	0.04	0.002
P12-J3	8.0	Zone 12	899	110.0	-6.0	0.04	0.002
P113-F3	8.0	Zone 113	1,299	110.0	-1.8	0.01	0.000
P113-G2	8.0	Zone 113	1,857	110.0	16.7	0.11	0.013
P113-G4	8.0	Zone 113	2,501	110.0	14.2	0.09	0.009
P113-G3	8.0	Zone 113	388	110.0	18.6	0.12	0.016
P113-F1	8.0	Zone 113	2,442	110.0	4.0	0.03	0.001
P113-F2	8.0	Zone 113	2,078	110.0	-4.4	0.03	0.001
P113-E2	8.0	Zone 113	1,330	110.0	7.4	0.05	0.003
P113-E3	8.0	Zone 113	1,956	110.0	-4.6	0.03	0.001
P113-E4	8.0	Zone 113	1,182	110.0	-4.6	0.03	0.001
EXP12-MEL5	8.0	Zone 12	481	110.0	10.0	0.06	0.004
EXP12-CITY1	8.0	Zone 12	1,570	110.0	19.7	0.13	0.017
EXP12-MEL7	8.0	Zone 12	610	110.0	-19.3	0.12	0.016
EXP12-CITY3	8.0	Zone 12	5,833	110.0	30.6	0.20	0.039
EXP12-CITY6	8.0	Zone 12	2,308	110.0	10.9	0.07	0.006
P12-C3	12.0	Zone 12	187	120.0	35.3	0.10	0.005
P12-C4	12.0	Zone 12	1,842	120.0	9.2	0.03	0.001
P12-C1	12.0	Zone 12	2,007	120.0	40.2	0.11	0.008
P12-D1	12.0	Zone 12	1,559	120.0	22.8	0.06	0.003
P12-I2	12.0	Zone 12	916	120.0	-70.5	0.20	0.022
P113-J1	12.0	Zone 113	2,783	120.0	-4.5	0.01	0.000
P12-B10	12.0	Zone 12	3,763	120.0	22.0	0.06	0.002
P12-B11	12.0	Zone 12	3,368	120.0	22.0	0.06	0.003
P114-A1	12.0	Zone 114	1,281	120.0	38.1	0.11	0.007
P114-A2	12.0	Zone 114	1,800	120.0	28.0	0.08	0.004
P114-A3	12.0	Zone 114	551	120.0	10.8	0.03	0.000
P113-G5	12.0	Zone 12	625	120.0	43.2	0.12	0.009
EXP12-MEL2	12.0	Zone 12	528	120.0	22.0	0.06	0.002
P114-A6	12.0	Zone 114	2,029	120.0	33.3	0.09	0.006
EXP12-MEL4	12.0	Zone 12	510	120.0	0.4	0.00	0.000
EXP12-CITY2	12.0	Zone 12	4,171	120.0	30.6	0.09	0.005
P113-G6	12.0	Zone 113	335	120.0	-9.0	0.03	0.000
P-BPS1A	12.0	Zone 12	293	120.0	52.2	0.15	0.012

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)

FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-BPS1B	12.0	Zone 12	341	120.0	52.2	0.15	0.013
P-BPS-2A	12.0	Zone 12	232	120.0	22.1	0.06	0.002
P-BPS-2B	12.0	Zone 12	196	120.0	22.1	0.06	0.002
P114-A5	12.0	Zone 114	1,167	120.0	7.0	0.02	0.000
P114-A4	12.0	Zone 114	796	120.0	-19.3	0.05	0.002
EXP12-MEL6	12.0	Zone 12	982	120.0	-19.3	0.05	0.002
P12-A7	12.0	Zone 12	851	120.0	-23.3	0.07	0.002
EXP12-CITY4	12.0	Zone 12	710	120.0	30.6	0.09	0.004
EXP12-MEL8	12.0	Zone 12	337	120.0	22.0	0.06	0.003
EXP12-MEL3	12.0	Zone 12	2,555	120.0	32.9	0.09	0.005
EXP12-CITY7	12.0	Zone 12	495	120.0	-10.9	0.03	0.001
P12-B5	16.0	Zone 12	1,570	130.0	-29.6	0.05	0.001
P12-C2	16.0	Zone 12	1,498	130.0	86.0	0.14	0.007
P12-B7	16.0	Zone 12	214	130.0	-50.8	0.08	0.002
P12-B9	16.0	Zone 12	166	130.0	22.0	0.04	0.000
P12-B1	18.0	Zone 12	2,334	130.0	140.0	0.18	0.009
P12-I1	18.0	Zone 12	1,335	130.0	162.8	0.21	0.012
P12-H1	18.0	Zone 12	2,332	130.0	154.4	0.19	0.011
P12-J1	18.0	Zone 12	2,014	130.0	277.4	0.35	0.033
P12-J2	18.0	Zone 12	696	130.0	271.4	0.34	0.032
EXP12-OHWY1	18.0	Zone 12	203	130.0	-308.0	0.39	0.041
EXP12-OHWY2	18.0	Zone 12	6,721	130.0	308.0	0.39	0.040
EXP12-OHWY3	18.0	Zone 12	2,582	130.0	277.4	0.35	0.033
EXP12-CITY5	18.0	Zone 12	8,441	130.0	30.6	0.04	0.001

AED NORTH MASTER WATER REPORT
Active Scenario: Average Day Demand (Zone 12 Tank)

FlexTable: Pump Table

Label	Elevation (ft)	Pump Definition	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
BPS-1	5,060.00	ZONE 12 TO ZONE 113 NORTH	5,180.53	5,273.83	52.2	93.31
BPS-2	5,055.00	ZONE 12 TO ZONE 113 NORTH	5,180.47	5,273.80	22.1	93.33

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Reservoir Table

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
ZONE 12 TANK (OLD HWY)	5,181.00	Zone 12	554.4	5,181.00

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J113-G2	5,100.00	Zone 113	22.0	74.8	5,272.82
J113-F1	5,033.00	Zone 113	18.4	103.7	5,272.72
J113-E1	5,050.00	Zone 113	18.2	96.4	5,272.74
J113-E2	5,040.00	Zone 113	18.4	100.7	5,272.73
J113-G1	5,080.00	Zone 113	22.3	83.4	5,272.75
J113-F2	5,080.00	Zone 113	18.4	83.4	5,272.73
J113-J1	5,105.00	Zone 113	8.1	72.6	5,272.83
J113-J2	5,070.00	Zone 113	8.1	87.8	5,272.83
J113-E3	5,090.00	Zone 113	0.0	79.1	5,272.73
EXJ12-J1	5,060.00	Zone 12	0.0	51.9	5,179.93
J12-I1	4,965.00	Zone 12	0.0	92.9	5,179.67
J12-C4	5,070.00	Zone 12	24.8	47.4	5,179.48
J12-D3	5,063.00	Zone 12	0.0	50.4	5,179.42
J12-H3	4,965.00	Zone 12	0.0	92.8	5,179.55
J12-B3	5,035.00	Zone 12	33.8	62.5	5,179.45
J12-C2	5,030.00	Zone 12	0.0	64.7	5,179.45
J12-B4	5,058.00	Zone 12	33.8	52.5	5,179.45
J12-B5	5,055.00	Zone 12	0.0	53.8	5,179.45
J12-B2	4,960.00	Zone 12	33.8	95.0	5,179.48
J12-B1	4,980.00	Zone 12	0.0	86.3	5,179.51
J12-C1	5,058.00	Zone 12	30.2	52.5	5,179.45
J12-C3	5,012.00	Zone 12	30.2	72.4	5,179.42
J12-D1	5,055.00	Zone 12	0.0	53.8	5,179.44
J12-D2	5,042.00	Zone 12	35.5	59.5	5,179.42
J12-H1	4,945.00	Zone 12	0.0	101.5	5,179.62
J12-H2	4,960.00	Zone 12	23.0	95.0	5,179.60
J12-I2	4,995.00	Zone 12	20.7	79.9	5,179.61
J12-I3	5,095.00	Zone 12	0.0	76.9	5,272.83
J12-J3	5,040.00	Zone 12	10.8	60.5	5,179.73
J12-J2	4,970.00	Zone 12	0.0	90.7	5,179.74
J12-B6	5,050.00	Zone 12	0.0	56.0	5,179.45
J12-B7	4,890.00	Zone 12	0.0	125.2	5,179.42
EXJ12-2	4,955.00	Zone 12	0.0	97.1	5,179.39
EXJ12-MEL1	4,965.00	Zone 12	0.0	92.8	5,179.39
EXJ12-A6	4,950.00	Zone 12	0.0	99.2	5,179.34
EXJ12-A5	4,950.00	Zone 12	0.0	99.2	5,179.31
EXJ12-MEL2	4,963.00	Zone 12	0.0	93.6	5,179.35
EXJ12-5	4,985.00	Zone 12	0.0	84.4	5,180.18
EXJ12-4	5,040.00	Zone 12	0.0	60.6	5,180.17
EXJ12-MEL3	4,965.00	Zone 12	0.0	92.7	5,179.35
EXJ12-2	4,985.00	Zone 12	0.0	84.1	5,179.48
EXJ12-1	5,025.00	Zone 12	0.0	66.8	5,179.43
EXJ12-A7	4,966.00	Zone 12	0.0	92.3	5,179.34
EXJ12-3	5,030.00	Zone 12	0.0	65.0	5,180.16
EXJ12-6	4,978.00	Zone 12	0.0	87.1	5,179.39
EXJ12-7	4,968.00	Zone 12	0.0	91.5	5,179.39
J114-A1	4,930.00	Zone 114	18.2	108.0	5,179.65

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J114-A2	4,908.00	Zone 114	31.0	117.5	5,179.62
J114-A3	4,905.00	Zone 114	47.3	118.7	5,179.31
J114-A4	4,910.00	Zone 114	47.3	116.5	5,179.31
EXJ12-OHWY1	5,170.50	Zone 12 (J-EXP12-OHWY In Zone 101)	0.0	4.5	5,180.98

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P113-F3	8.0	Zone 113	1,299	110.0	-3.8	0.02	0.001
P113-G2	8.0	Zone 113	1,857	110.0	29.8	0.19	0.037
P113-G4	8.0	Zone 113	2,501	110.0	25.4	0.16	0.028
P113-G3	8.0	Zone 113	388	110.0	32.9	0.21	0.044
P113-F1	8.0	Zone 113	2,442	110.0	7.0	0.04	0.003
P113-F2	8.0	Zone 113	2,078	110.0	-7.6	0.05	0.003
P113-E2	8.0	Zone 113	1,330	110.0	13.6	0.09	0.008
P113-J1	12.0	Zone 113	2,783	120.0	-8.1	0.02	0.000
P113-E3	8.0	Zone 113	1,956	110.0	-8.6	0.05	0.003
P113-E4	8.0	Zone 113	1,182	110.0	-8.6	0.05	0.004
P113-G6	12.0	Zone 113	335	120.0	-16.2	0.05	0.001
P12-B1	18.0	Zone 12	2,334	130.0	252.5	0.32	0.027
P12-B5	16.0	Zone 12	1,570	130.0	-53.2	0.08	0.003
P12-B6	8.0	Zone 12	4,142	110.0	4.3	0.03	0.001
P12-C2	16.0	Zone 12	1,498	130.0	155.0	0.25	0.020
P12-B7	16.0	Zone 12	214	130.0	-91.4	0.15	0.007
P12-B4	8.0	Zone 12	2,800	110.0	16.0	0.10	0.012
P12-B2	8.0	Zone 12	336	110.0	49.8	0.32	0.096
P12-B3	8.0	Zone 12	680	110.0	35.2	0.22	0.051
P12-B8	8.0	Zone 12	3,478	110.0	-14.6	0.09	0.010
P12-C3	12.0	Zone 12	187	120.0	63.7	0.18	0.018
P12-C4	12.0	Zone 12	1,842	120.0	16.7	0.05	0.002
P12-C6	8.0	Zone 12	1,910	110.0	16.7	0.11	0.013
P12-C5	8.0	Zone 12	1,695	110.0	-16.7	0.11	0.013
P12-C1	12.0	Zone 12	2,007	120.0	72.6	0.21	0.023
P12-D1	12.0	Zone 12	1,559	120.0	41.2	0.12	0.008
P12-D2	8.0	Zone 12	1,942	110.0	0.9	0.01	0.000
P12-D4	8.0	Zone 12	2,027	110.0	-3.2	0.02	0.000
P12-D3	8.0	Zone 12	307	110.0	31.4	0.20	0.041
P12-I1	18.0	Zone 12	1,335	130.0	293.3	0.37	0.036
P12-H1	18.0	Zone 12	2,332	130.0	278.4	0.35	0.033
P12-H2	8.0	Zone 12	2,218	110.0	-23.9	0.15	0.025
P12-I5	8.0	Zone 12	450	110.0	-34.5	0.22	0.049
P12-I4	8.0	Zone 12	1,584	110.0	-12.5	0.08	0.007
P12-I2	12.0	Zone 12	916	120.0	-126.6	0.36	0.064
P12-J1	18.0	Zone 12	2,014	130.0	499.4	0.63	0.097
P12-J2	18.0	Zone 12	696	130.0	488.6	0.62	0.093
P12-J3	8.0	Zone 12	899	110.0	-10.8	0.07	0.005
P12-B9	16.0	Zone 12	166	130.0	39.6	0.06	0.003
P12-B10	12.0	Zone 12	3,763	120.0	39.6	0.11	0.007
P12-B11	12.0	Zone 12	3,368	120.0	39.6	0.11	0.007
EXP12-OHWY1	18.0	Zone 12	203	130.0	-554.4	0.70	0.118
P113-G5	12.0	Zone 12	625	120.0	77.2	0.22	0.026
EXP12-MEL2	12.0	Zone 12	528	120.0	39.6	0.11	0.007
EXP12-MEL5	8.0	Zone 12	481	110.0	18.0	0.11	0.014
EXP12-OHWY2	18.0	Zone 12	6,721	130.0	554.4	0.70	0.118

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
EXP12-OHWY3	18.0	Zone 12	2,582	130.0	499.4	0.63	0.097
EXP12-CITY5	18.0	Zone 12	8,441	130.0	55.0	0.07	0.002
EXP12-MEL4	12.0	Zone 12	510	120.0	0.7	0.00	0.000
EXP12-CITY2	12.0	Zone 12	4,171	120.0	55.0	0.16	0.014
EXP12-CITY1	8.0	Zone 12	1,570	110.0	35.4	0.23	0.051
P-BPS1A	12.0	Zone 12	293	120.0	93.4	0.26	0.035
P-BPS1B	12.0	Zone 12	341	120.0	93.4	0.26	0.036
P-BPS-2A	12.0	Zone 12	232	120.0	40.4	0.11	0.008
P-BPS-2B	12.0	Zone 12	196	120.0	40.4	0.11	0.007
EXP12-MEL7	8.0	Zone 12	610	110.0	-34.8	0.22	0.050
EXP12-MEL6	12.0	Zone 12	982	120.0	-34.8	0.10	0.005
P12-A7	12.0	Zone 12	851	120.0	-41.9	0.12	0.008
EXP12-CITY4	12.0	Zone 12	710	120.0	55.0	0.16	0.014
EXP12-CITY3	8.0	Zone 12	5,833	110.0	55.0	0.35	0.116
EXP12-CITY6	8.0	Zone 12	2,308	110.0	19.6	0.13	0.017
EXP12-MEL8	12.0	Zone 12	337	120.0	39.6	0.11	0.009
EXP12-MEL3	12.0	Zone 12	2,555	120.0	59.2	0.17	0.016
EXP12-CITY7	12.0	Zone 12	495	120.0	-19.6	0.06	0.002
P114-A1	12.0	Zone 114	1,281	120.0	68.6	0.19	0.021
P114-A2	12.0	Zone 114	1,800	120.0	50.5	0.14	0.011
P114-A3	12.0	Zone 114	551	120.0	19.5	0.06	0.003
P114-A6	12.0	Zone 114	2,029	120.0	59.9	0.17	0.016
P114-A5	12.0	Zone 114	1,167	120.0	12.6	0.04	0.001
P114-A4	12.0	Zone 114	796	120.0	-34.8	0.10	0.006

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day Demand (Zone 12 Tank)

FlexTable: Pump Table

Label	Elevation (ft)	Pump Definition	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
BPS-1	5,060.00	ZONE 12 TO ZONE 113 NORTH	5,179.60	5,272.85	93.4	93.24
BPS-2	5,055.00	ZONE 12 TO ZONE 113 NORTH	5,179.42	5,272.74	40.4	93.32

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day + FF (Zone 12 Tank)
Fire Flow Node FlexTable: Fire Flow Report

Label	Zone	Satisfies Fire Flow Constraints ?	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J113-G2	Zone 113	True	1,522.0	3,137.2	20.0	21.6	J113-J1	6.62	P-BPS1B
J113-F1	Zone 113	True	1,518.4	2,985.7	28.8	23.6	J113-F2	10.00	P113-G3
J113-E1	Zone 113	True	1,518.2	3,181.6	35.4	20.0	J113-E3	6.40	P-BPS-2B
J113-E2	Zone 113	True	1,518.4	3,125.4	29.0	20.0	J113-E3	7.71	P113-E2
J113-G1	Zone 113	True	1,522.3	2,955.0	20.0	24.5	J113-F2	6.92	P113-F3
J113-F2	Zone 113	True	1,518.4	2,641.9	26.7	36.3	J113-G1	10.00	P113-G3
J113-J1	Zone 113	True	1,508.1	2,396.8	20.0	42.5	J113-G2	6.82	P113-G6
J113-J2	Zone 113	True	1,508.1	3,026.2	35.1	20.0	J113-J1	8.61	P113-G6
J113-E3	Zone 113	True	1,500.0	2,398.5	20.0	55.7	J113-J1	8.81	P113-E4
EXJ12-J1	Zone 12	True	1,500.0	4,467.1	24.4	20.0	J12-C4	6.33	EXP12-OHWY2
J12-I1	Zone 12	True	1,500.0	3,918.1	65.4	20.0	J12-C4	5.64	EXP12-OHWY2
J12-C4	Zone 12	True	3,374.8	3,378.2	20.0	23.0	J12-D3	4.93	EXP12-OHWY2
J12-D3	Zone 12	True	1,500.0	2,385.6	20.0	29.7	J12-D1	5.40	P12-C1
J12-H3	Zone 12	True	1,500.0	3,555.3	65.4	20.0	J12-C4	5.18	EXP12-OHWY2
J12-B3	Zone 12	True	1,533.8	3,442.8	30.3	20.0	J12-C4	5.00	EXP12-OHWY2
J12-C2	Zone 12	True	1,500.0	3,361.1	20.0	20.2	J12-C4	8.39	P12-C3
J12-B4	Zone 12	True	1,533.8	3,419.8	22.4	20.0	J12-C4	4.97	EXP12-OHWY2
J12-B5	Zone 12	True	1,500.0	3,381.8	24.1	20.0	J12-C4	4.96	EXP12-OHWY2
J12-B2	Zone 12	True	1,533.8	2,292.3	64.7	34.1	J12-C4	10.00	P12-B2
J12-B1	Zone 12	True	1,500.0	1,996.9	67.2	36.5	J12-C4	10.00	P12-B2
J12-C1	Zone 12	True	1,530.2	3,410.6	21.0	20.0	J12-C4	8.81	P12-C3
J12-C3	Zone 12	True	1,530.2	3,236.6	20.0	22.2	J12-C4	7.10	P12-C6
J12-D1	Zone 12	True	1,500.0	2,732.2	23.4	20.0	J12-D3	6.21	P12-C1
J12-D2	Zone 12	True	1,535.5	2,813.1	22.5	20.0	J12-D3	9.71	P12-D3
J12-H1	Zone 12	True	1,500.0	3,792.1	74.1	20.0	J12-C4	5.48	EXP12-OHWY2
J12-H2	Zone 12	True	1,523.0	3,008.8	65.7	29.0	J12-C4	10.00	P12-I5
J12-I2	Zone 12	True	1,520.7	3,926.2	42.4	20.0	J12-C4	9.16	P12-I2
J12-I3	Zone 12	True	1,500.0	3,272.1	20.0	26.2	J12-C4	7.06	P-BPS1B
J12-J3	Zone 12	True	1,510.8	1,566.7	32.1	41.3	J12-C4	10.00	P12-J3

AED NORTH MASTER WATER REPORT
Active Scenario: Max Day + FF (Zone 12 Tank)
Fire Flow Node FlexTable: Fire Flow Report

Label	Zone	Satisfies Fire Flow Constraints ?	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J12-J2	Zone 12	True	1,500.0	4,039.2	63.3	20.0	J12-C4	5.79	EXP12-OHWY2
J12-B6	Zone 12	True	1,500.0	3,411.7	23.4	20.0	J12-C4	5.00	EXP12-OHWY2
J12-B7	Zone 12	True	3,000.0	3,121.9	73.2	20.0	EXJ12-1	7.16	P12-B10
EXJ12-2	Zone 12	True	1,500.0	2,622.3	46.5	20.0	EXJ12-1	5.66	P12-B11
EXJ12-MEL1	Zone 12	True	1,500.0	2,565.8	42.4	20.0	EXJ12-1	5.49	EXP12-MEL2
EXJ12-A6	Zone 12	True	1,500.0	2,459.1	40.4	20.0	EXJ12-1	5.17	EXP12-MEL2
EXJ12-A5	Zone 12	True	1,500.0	2,459.0	32.5	20.0	EXJ12-1	7.32	EXP12-MEL7
EXJ12-MEL2	Zone 12	True	1,500.0	2,459.2	37.0	20.0	EXJ12-1	5.17	EXP12-MEL2
EXJ12-5	Zone 12	True	1,500.0	5,000.0	59.6	22.5	J12-C4	7.00	EXP12-OHWY2
EXJ12-4	Zone 12	True	1,500.0	4,649.2	20.0	24.5	EXJ12-3	6.56	EXP12-OHWY2
EXJ12-MEL3	Zone 12	True	1,500.0	2,457.4	35.4	20.0	EXJ12-1	5.17	EXP12-MEL2
EXJ12-2	Zone 12	True	1,500.0	2,282.5	27.3	20.0	EXJ12-1	5.56	EXP12-CITY3
EXJ12-1	Zone 12	True	1,500.0	2,167.9	20.0	36.5	J12-C4	4.76	EXP12-CITY3
EXJ12-A7	Zone 12	True	1,500.0	2,458.2	31.2	20.0	EXJ12-1	5.34	EXP12-MEL6
EXJ12-3	Zone 12	True	1,500.0	3,983.0	25.4	29.4	J12-C4	10.00	EXP12-CITY4
EXJ12-6	Zone 12	True	1,500.0	2,508.6	35.6	20.0	EXJ12-1	5.95	EXP12-CITY7
EXJ12-7	Zone 12	True	1,500.0	2,531.9	41.3	20.0	EXJ12-1	5.39	EXP12-MEL2
J114-A1	Zone 114	True	4,018.2	5,018.2	54.6	72.9	J114-A2	8.39	P114-A1
J114-A2	Zone 114	True	4,031.0	5,031.0	67.6	63.1	J114-A1	9.91	P114-A3
J114-A3	Zone 114	True	3,047.3	3,166.8	20.5	20.0	J114-A4	7.09	EXP12-MEL7
J114-A4	Zone 114	True	3,047.3	3,095.0	20.0	26.6	J114-A3	8.24	EXP12-MEL7
EXJ12-OHWY1	Zone 12 (J-EXP12-OHWY In Zone 101)	False	0.0	0.0	4.5	4.5	EXJ12-OHWY1	0.70	EXP12-OHWY2

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Reservoir Table

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
ZONE 12 TANK (OLD HWY)	5,181.00	Zone 12	997.9	5,181.00

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J113-G2	5,100.00	Zone 113	39.5	73.5	5,269.81
J113-F1	5,033.00	Zone 113	33.0	102.3	5,269.54
J113-E1	5,050.00	Zone 113	32.7	95.0	5,269.58
J113-E2	5,040.00	Zone 113	33.0	99.3	5,269.55
J113-G1	5,080.00	Zone 113	40.2	82.0	5,269.61
J113-F2	5,080.00	Zone 113	33.0	82.0	5,269.56
J113-J1	5,105.00	Zone 113	14.6	71.3	5,269.85
J113-J2	5,070.00	Zone 113	14.6	86.5	5,269.86
J113-E3	5,090.00	Zone 113	0.0	77.7	5,269.57
EXJ12-J1	5,060.00	Zone 12	0.0	51.0	5,177.83
J12-I1	4,965.00	Zone 12	0.0	91.7	5,177.05
J12-C4	5,070.00	Zone 12	44.7	46.1	5,176.49
J12-D3	5,063.00	Zone 12	0.0	49.0	5,176.32
J12-H3	4,965.00	Zone 12	0.0	91.6	5,176.68
J12-B3	5,035.00	Zone 12	60.9	61.2	5,176.39
J12-C2	5,030.00	Zone 12	0.0	63.3	5,176.38
J12-B4	5,058.00	Zone 12	60.9	51.2	5,176.40
J12-B5	5,055.00	Zone 12	0.0	52.5	5,176.40
J12-B2	4,960.00	Zone 12	60.9	93.7	5,176.48
J12-B1	4,980.00	Zone 12	0.0	85.1	5,176.59
J12-C1	5,058.00	Zone 12	54.4	51.2	5,176.39
J12-C3	5,012.00	Zone 12	54.4	71.1	5,176.32
J12-D1	5,055.00	Zone 12	0.0	52.5	5,176.35
J12-D2	5,042.00	Zone 12	63.8	58.1	5,176.32
J12-H1	4,945.00	Zone 12	0.0	100.3	5,176.91
J12-H2	4,960.00	Zone 12	41.5	93.8	5,176.85
J12-I2	4,995.00	Zone 12	37.3	78.7	5,176.88
J12-I3	5,095.00	Zone 12	0.0	75.7	5,269.86
J12-J3	5,040.00	Zone 12	19.4	59.4	5,177.23
J12-J2	4,970.00	Zone 12	0.0	89.7	5,177.25
J12-B6	5,050.00	Zone 12	0.0	54.7	5,176.38
J12-B7	4,890.00	Zone 12	0.0	123.9	5,176.30
EXJ12-2	4,955.00	Zone 12	0.0	95.7	5,176.23
EXJ12-MEL1	4,965.00	Zone 12	0.0	91.4	5,176.21
EXJ12-A6	4,950.00	Zone 12	0.0	97.8	5,176.07
EXJ12-A5	4,950.00	Zone 12	0.0	97.8	5,175.98
EXJ12-MEL2	4,963.00	Zone 12	0.0	92.2	5,176.09
EXJ12-5	4,985.00	Zone 12	0.0	83.8	5,178.57
EXJ12-4	5,040.00	Zone 12	0.0	59.9	5,178.53
EXJ12-MEL3	4,965.00	Zone 12	0.0	91.3	5,176.09
EXJ12-2	4,985.00	Zone 12	0.0	82.9	5,176.50
EXJ12-1	5,025.00	Zone 12	0.0	65.5	5,176.33
EXJ12-A7	4,966.00	Zone 12	0.0	90.9	5,176.07
EXJ12-3	5,030.00	Zone 12	0.0	64.3	5,178.50
EXJ12-6	4,978.00	Zone 12	0.0	85.8	5,176.21
EXJ12-7	4,968.00	Zone 12	0.0	90.1	5,176.21
J114-A1	4,930.00	Zone 114	32.7	106.9	5,176.98

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Junction Table

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J114-A2	4,908.00	Zone 114	55.7	116.3	5,176.91
J114-A3	4,905.00	Zone 114	85.2	117.2	5,175.97
J114-A4	4,910.00	Zone 114	85.2	115.1	5,175.97
EXJ12-OHWY1	5,170.50	Zone 12 (J- EXP12-OHWY In Zone 101)	0.0	4.5	5,180.93

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P113-F3	8.0	Zone 113	1,299	110.0	-7.9	0.05	0.003
P113-G2	8.0	Zone 113	1,857	110.0	53.1	0.34	0.109
P113-G4	8.0	Zone 113	2,501	110.0	45.3	0.29	0.081
P113-G3	8.0	Zone 113	388	110.0	58.2	0.37	0.128
P113-F1	8.0	Zone 113	2,442	110.0	12.0	0.08	0.007
P113-F2	8.0	Zone 113	2,078	110.0	-13.1	0.08	0.008
P113-E2	8.0	Zone 113	1,330	110.0	25.1	0.16	0.027
P113-J1	12.0	Zone 113	2,783	120.0	-14.6	0.04	0.001
P113-E3	8.0	Zone 113	1,956	110.0	-15.8	0.10	0.011
P113-E4	8.0	Zone 113	1,182	110.0	-15.8	0.10	0.012
P113-G6	12.0	Zone 113	335	120.0	-29.2	0.08	0.004
P12-B1	18.0	Zone 12	2,334	130.0	455.4	0.57	0.082
P12-B5	16.0	Zone 12	1,570	130.0	-95.7	0.15	0.008
P12-B6	8.0	Zone 12	4,142	110.0	7.7	0.05	0.003
P12-C2	16.0	Zone 12	1,498	130.0	279.3	0.45	0.059
P12-B7	16.0	Zone 12	214	130.0	-164.3	0.26	0.021
P12-B4	8.0	Zone 12	2,800	110.0	28.8	0.18	0.035
P12-B2	8.0	Zone 12	336	110.0	89.7	0.57	0.286
P12-B3	8.0	Zone 12	680	110.0	63.4	0.40	0.151
P12-B8	8.0	Zone 12	3,478	110.0	-26.3	0.17	0.029
P12-C3	12.0	Zone 12	187	120.0	115.0	0.33	0.052
P12-C4	12.0	Zone 12	1,842	120.0	30.3	0.09	0.005
P12-C6	8.0	Zone 12	1,910	110.0	30.3	0.19	0.038
P12-C5	8.0	Zone 12	1,695	110.0	-30.3	0.19	0.038
P12-C1	12.0	Zone 12	2,007	120.0	131.4	0.37	0.069
P12-D1	12.0	Zone 12	1,559	120.0	74.7	0.21	0.024
P12-D2	8.0	Zone 12	1,942	110.0	1.0	0.01	0.000
P12-D4	8.0	Zone 12	2,027	110.0	-6.1	0.04	0.002
P12-D3	8.0	Zone 12	307	110.0	56.7	0.36	0.122
P12-I1	18.0	Zone 12	1,335	130.0	528.6	0.67	0.108
P12-H1	18.0	Zone 12	2,332	130.0	501.9	0.63	0.098
P12-H2	8.0	Zone 12	2,218	110.0	-43.2	0.28	0.074
P12-I5	8.0	Zone 12	450	110.0	-61.9	0.39	0.144
P12-I4	8.0	Zone 12	1,584	110.0	-22.8	0.15	0.023
P12-I2	12.0	Zone 12	916	120.0	-227.2	0.64	0.189
P12-J1	18.0	Zone 12	2,014	130.0	898.8	1.13	0.289
P12-J2	18.0	Zone 12	696	130.0	879.4	1.11	0.277
P12-J3	8.0	Zone 12	899	110.0	-19.4	0.12	0.017
P12-B9	16.0	Zone 12	166	130.0	71.3	0.11	0.006
P12-B10	12.0	Zone 12	3,763	120.0	71.3	0.20	0.022
P12-B11	12.0	Zone 12	3,368	120.0	71.3	0.20	0.022
EXP12-OHWY1	18.0	Zone 12	203	130.0	-997.9	1.26	0.351
P113-G5	12.0	Zone 12	625	120.0	137.9	0.39	0.075
EXP12-MEL2	12.0	Zone 12	528	120.0	71.3	0.20	0.022
EXP12-MEL5	8.0	Zone 12	481	110.0	32.4	0.21	0.044
EXP12-OHWY2	18.0	Zone 12	6,721	130.0	997.9	1.26	0.350

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Pipe Table

Label	Diameter (in)	Zone	Length (Scaled) (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
EXP12-OHWY3	18.0	Zone 12	2,582	130.0	898.8	1.13	0.289
EXP12-CITY5	18.0	Zone 12	8,441	130.0	99.1	0.12	0.005
EXP12-MEL4	12.0	Zone 12	510	120.0	1.2	0.00	0.000
EXP12-CITY2	12.0	Zone 12	4,171	120.0	99.1	0.28	0.041
EXP12-CITY1	8.0	Zone 12	1,570	110.0	63.8	0.41	0.152
P-BPS1A	12.0	Zone 12	293	120.0	167.1	0.47	0.107
P-BPS1B	12.0	Zone 12	341	120.0	167.1	0.47	0.106
P-BPS-2A	12.0	Zone 12	232	120.0	73.6	0.21	0.023
P-BPS-2B	12.0	Zone 12	196	120.0	73.6	0.21	0.025
EXP12-MEL7	8.0	Zone 12	610	110.0	-62.6	0.40	0.147
EXP12-MEL6	12.0	Zone 12	982	120.0	-62.6	0.18	0.017
P12-A7	12.0	Zone 12	851	120.0	-75.5	0.21	0.025
EXP12-CITY4	12.0	Zone 12	710	120.0	99.1	0.28	0.041
EXP12-CITY3	8.0	Zone 12	5,833	110.0	99.1	0.63	0.344
EXP12-CITY6	8.0	Zone 12	2,308	110.0	35.3	0.23	0.051
EXP12-MEL8	12.0	Zone 12	337	120.0	71.3	0.20	0.022
EXP12-MEL3	12.0	Zone 12	2,555	120.0	106.6	0.30	0.046
EXP12-CITY7	12.0	Zone 12	495	120.0	-35.3	0.10	0.006
P114-A1	12.0	Zone 114	1,281	120.0	123.7	0.35	0.061
P114-A2	12.0	Zone 114	1,800	120.0	90.9	0.26	0.034
P114-A3	12.0	Zone 114	551	120.0	35.2	0.10	0.006
P114-A6	12.0	Zone 114	2,029	120.0	107.9	0.31	0.048
P114-A5	12.0	Zone 114	1,167	120.0	22.6	0.06	0.003
P114-A4	12.0	Zone 114	796	120.0	-62.6	0.18	0.017

AED NORTH MASTER WATER REPORT
Active Scenario: Peak Hour Demand (Zone 12 Tank)

FlexTable: Pump Table

Label	Elevation (ft)	Pump Definition	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
BPS-1	5,060.00	ZONE 12 TO ZONE 113 NORTH	5,176.85	5,269.89	167.1	93.04
BPS-2	5,055.00	ZONE 12 TO ZONE 113 NORTH	5,176.31	5,269.59	73.6	93.28

APPENDIX B

**AED NORTH
CONCEPTUAL SITE PLAN**

AIRPORT IMPACT
PER GENERAL PLAN

513 Ac.

NOS
338 Ac.

IG
42 Ac.

IT
38 Ac.

Municipal:
Police & Fire,
School

MU 20 Ac.

Mini-Storage
RV Storage

Airport Impact:	513 Ac.	
Industrial General:	42 Ac.	
Industrial Transition:	38 Ac.	
Mixed Use:	20 Ac.	
Manufactured Home:	670 Ac.	1,500 Units
Natural Open Space:	338 Ac.	

MH FLOATING

670 Ac.

School/Park
15 Ac.

AED North: +/- 1,621 Acres

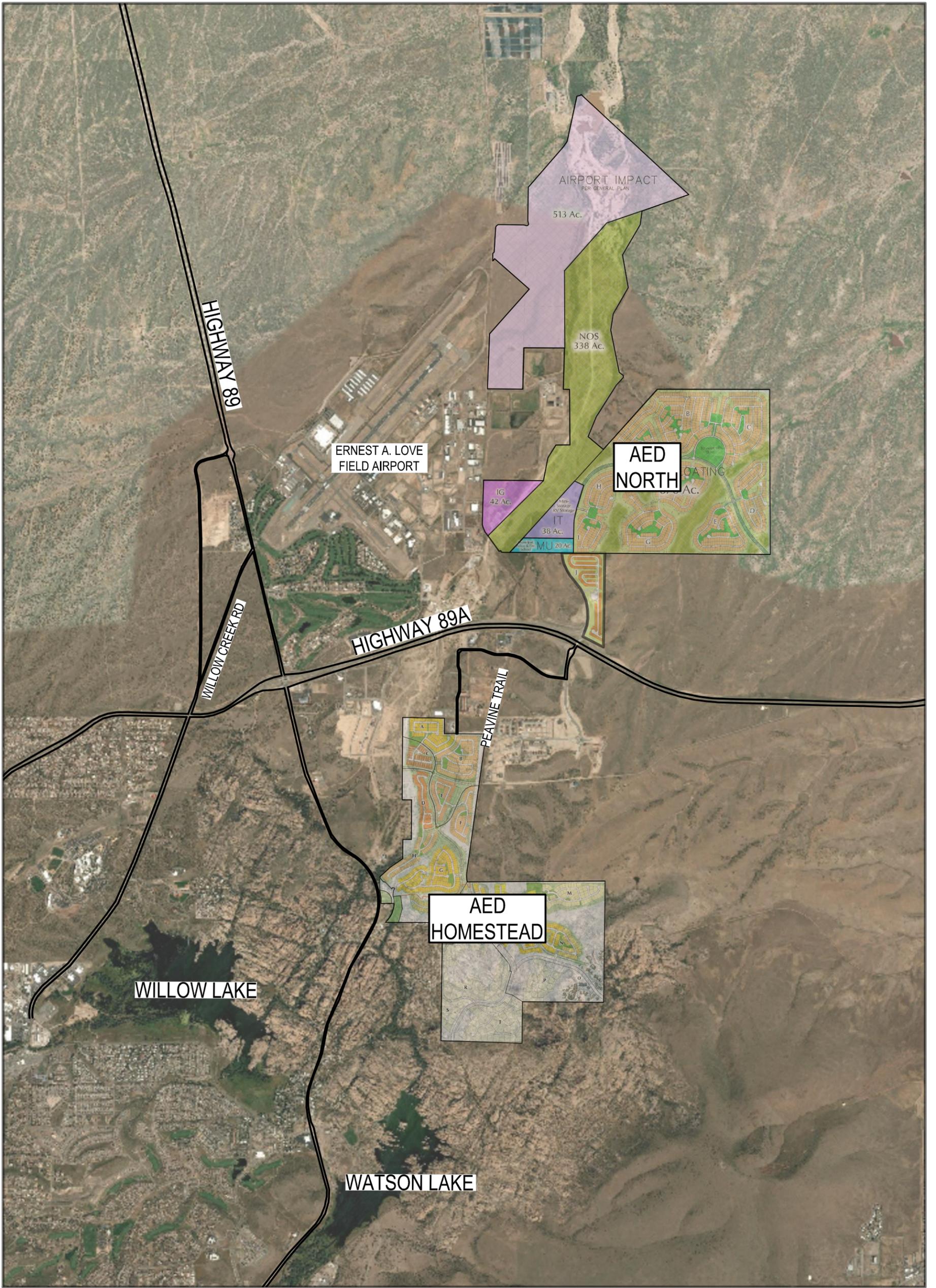
SR 89A

June 27, 2018

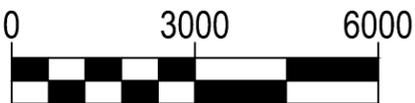


EXHIBIT 1

VICINITY MAP



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Horz. 1 in. = 3000 ft.

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AED PRESCOTT NORTH

**EXHIBIT 1
VICINITY MAP**

DATE:
2/5/19

SCALE:
1" = 3000'

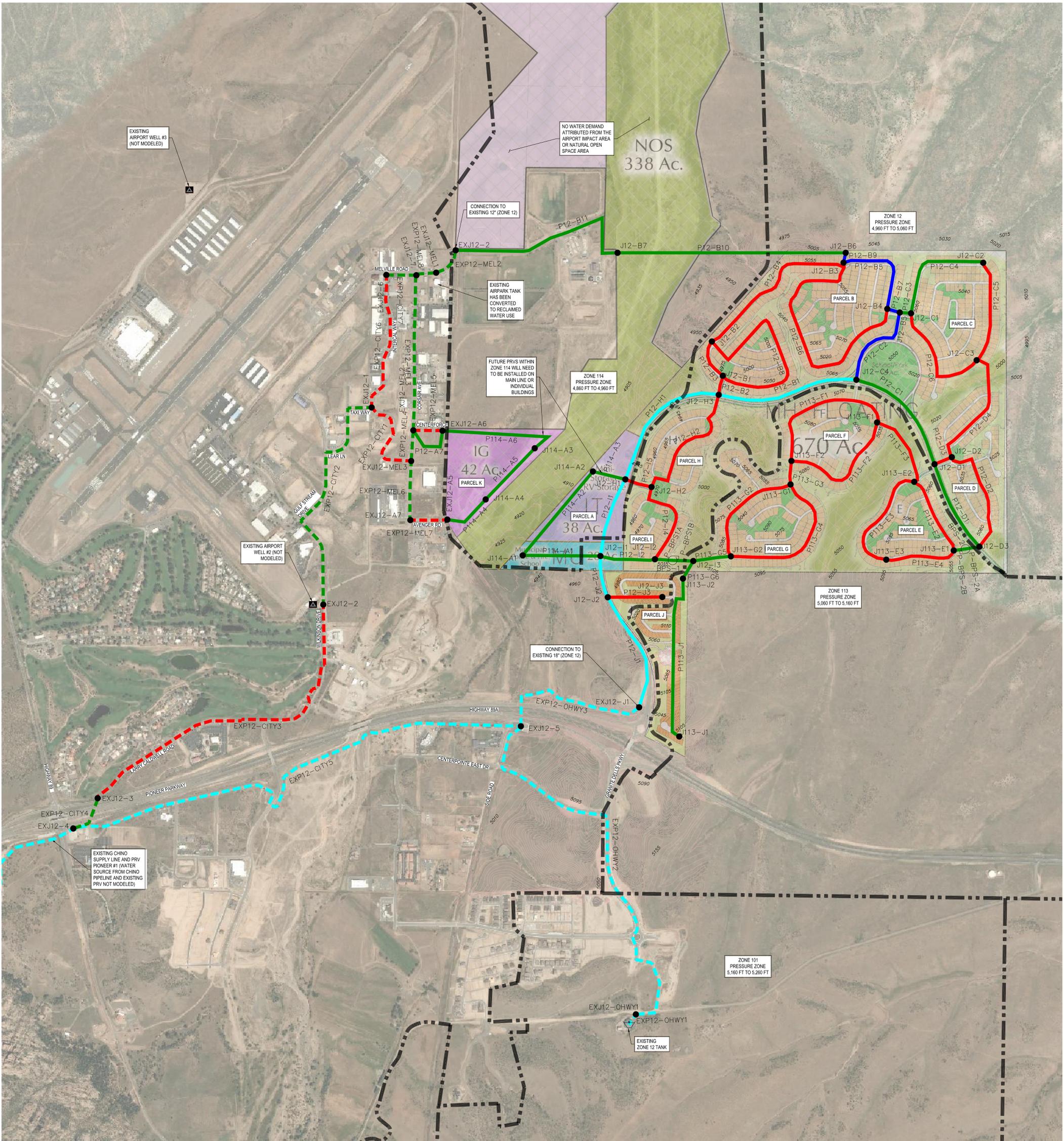
JOB NO.:
184938

DESIGN: JD
DRAWN: JE

SHEET
1 OF 1

EXHIBIT 2

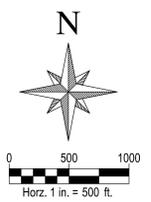
**MASTER WATER EXHIBIT
– FULL BUILD-OUT**



LEGEND

PIPE DIAMETER	EXISTING	PLANNED	SYMBOL	DESCRIPTION
8-INCHES	Red dashed line	Red solid line	Circle with dot	JUNCTION NODE
12-INCHES	Green dashed line	Green solid line	Circle with 'W'	WATER SOURCE
16-INCHES	Blue dashed line	Blue solid line	Circle with 'B'	BOOSTER PUMP STATION
18-INCHES	Cyan dashed line	Cyan solid line	Circle with 'PZ-XXX'	PROPOSED PIPE
PRESSURE ZONE BOUNDARY	Black dashed line	-	Circle with 'EXPZ-XXX'	EXISTING PIPE
EXISTING MAJOR CONTOUR	Black dashed line	-	Circle with 'JZ-XXX'	JUNCTION NODE (PROPOSED)
EXISTING WELL SITE	Black square	-	Circle with 'EXZ-XXX'	JUNCTION NODE (EXISTING)
			Circle with 'Z'	Z NOTATES PRESSURE ZONE

NOTES:
1. INFRASTRUCTURE SIZES AND LOCATIONS ARE CONCEPTUAL AND SUBJECT TO CHANGE.



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AED NORTH		
MASTER WATER EXHIBIT		
DATE 2-7-2019	SCALE 1" = 500'	SHEET 1 OF 1
JOB NO. 184938	DESIGN SM	CHECK EB
	DRAWN SM	

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