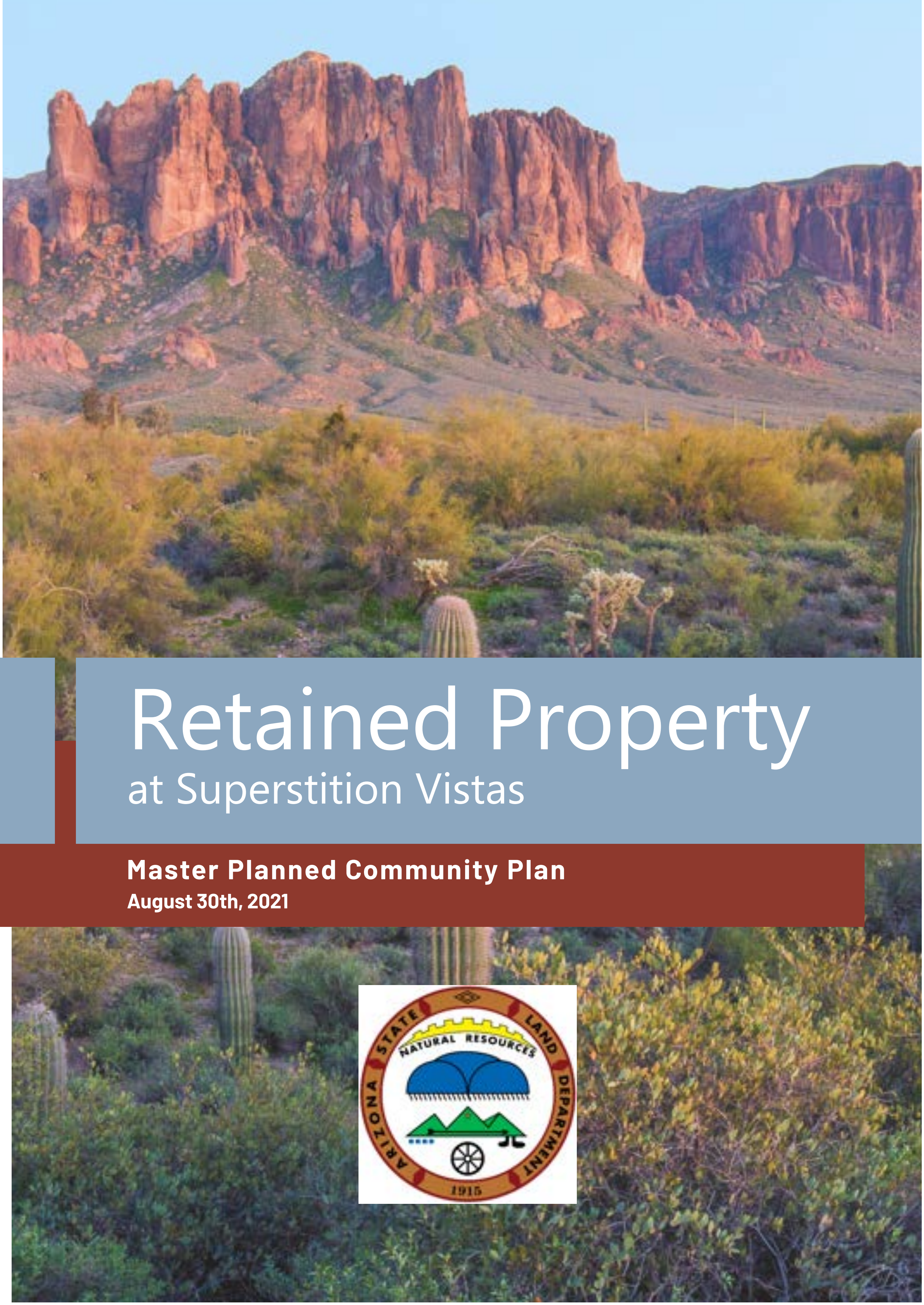
Objection of the ITAA, Inc. AMRC, Access Fund, Center for Biological Diversity, Earthworks, and Sierra Club – Grand Canyon to the Resolution Copper Project Final Environmental Impact Statement and Draft Record of Decision (August 4, 2025)

ATTACHMENTS
PART 4



Retained Property

at Superstition Vistas

Master Planned Community Plan

August 30th, 2021

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1. Introduction

1.1 Summary

Located in north central Pinal County is an approximate 275 square mile area of property commonly referred to as "Superstition Vistas." Superstition Vistas is the largest contiguous parcel of land near a metropolitan area that is held in trust by the Arizona State Land Department (the "State Land Department").

Within the larger land area described, the State Land Department has identified approximately 8,090 acres (the "Site") of property for initial planning and entitlement efforts, which includes a portion of property north of Elliot Avenue outside of the Superstition Vistas, as shown on **Exhibit 1.1.1: Site** and **Exhibit 1.1.2: Site location within Superstition Vistas**. The Site is made up of two parcels, the first is approximately 2,783 acres of land auctioned by the State Land Department on November 4, 2020 for which D.R. Horton was the winning bidder (the "Auction Property"), as shown on **Exhibit 1.1.3: Auction Property**. The second parcel consists of approximately 5,307 acres, which is being retained by the State Land Department for future disposition (the "Retained Property"), as shown on **Exhibit 1.1.4: Retained Property**. At the time of the auction, the Auction Property and portions of the Retained Property were situated in an unincorporated area of Pinal County. As the successful bidder at the auction, D.R. Horton accepted the responsibility to request annexation of the Auction Property and the Retained Property into the municipal limits of the City of Apache Junction, an Arizona municipal corporation (the "City" or "Apache Junction"). The annexation application was filed with the Pinal County Recorder on December 22, 2020.

This request seeks Master Planned Community zoning for the 5,307 acres of Retained Property. The application is accompanied by this Master Planned Community Plan (henceforth referred to as the “MPC” or “MPC Plan”). The MPC contains the criteria by which the City will administer and regulate the zoning and development of the Retained Property. The MPC includes a Land Use Budget for residential and non-residential uses. The land use density and gross floor area set forth in the Land Use Budget are supported by the accompanying master plans for water, wastewater, non-potable water, transportation, and drainage (hereinafter referred to as “Infrastructure Master Plans”, **Section 3.4.4: Infrastructure Master Plans**).

This MPC will guide the planning and design of the Retained Property. The MPC aligns with the City’s General Plan goals and policies.

1.2 Applicant

The Arizona State Land Department shall be the Applicant for the Retained Property.

1.3 Authority

This MPC zoning is enacted pursuant to the City of Apache Junction Land Development Code and is in conformance with the City’s 2020-2050 Legendary Landscapes and Lifestyles General Plan (the "General Plan").

1.4 Vision

The Retained Property is in an optimal location for future development, immediately adjacent to existing neighborhoods, within proximity to major transportation corridors including the State Route 24 alignment, employment, and commercial services. The Retained Property also benefits from exceptional views of the Superstition Mountain range to the northeast and San Tan Mountain range to the southwest.

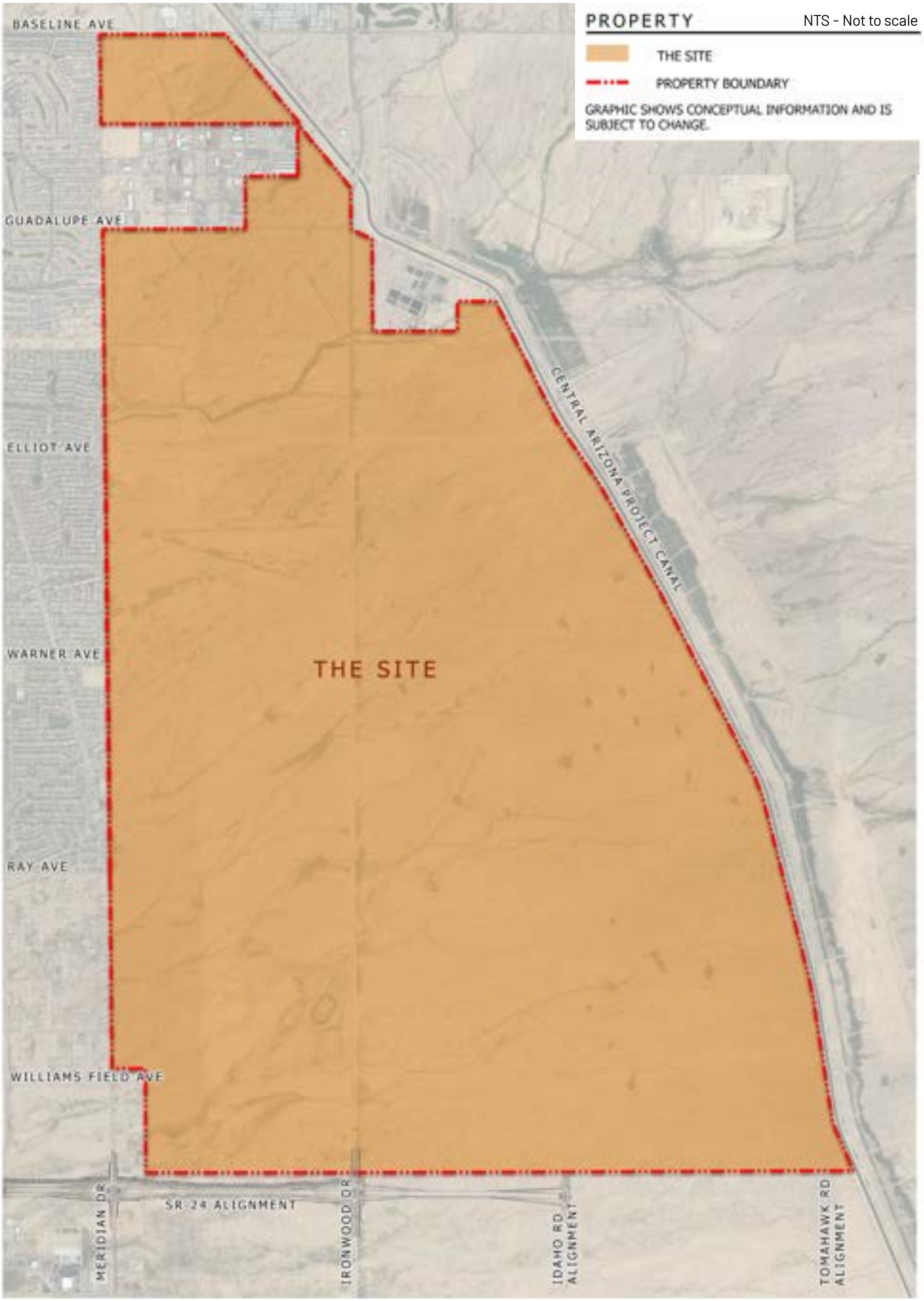
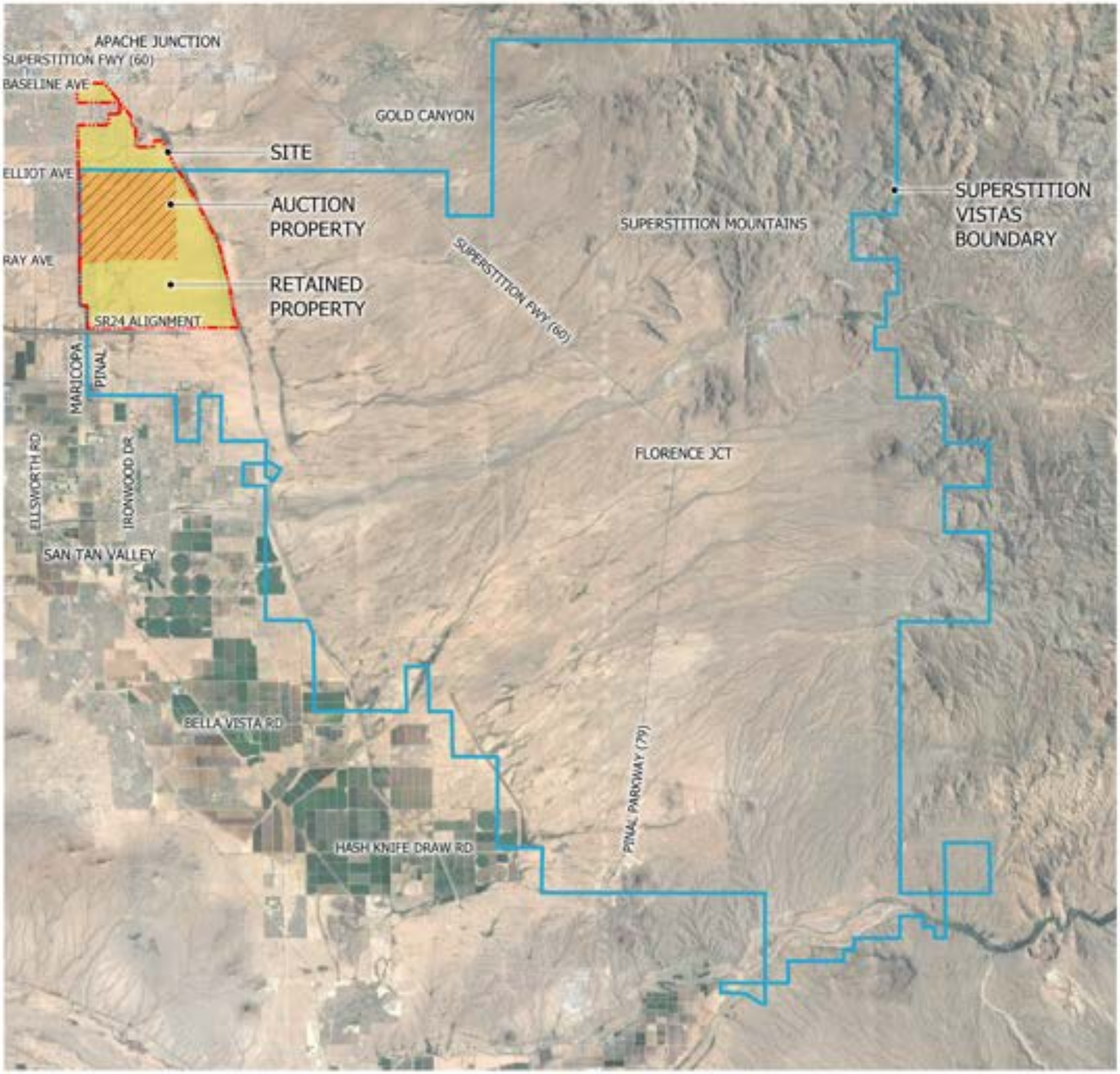


Exhibit 1.1.1: Site

N



SOURCE: ARIZONA STATE LAND DEPARTMENT
-SUPERSTITION VISTAS CONCEPTUAL PLAN

BOUNDARIES NTS - Not to scale

- SUPERSTITION VISTAS BOUNDARY
- SITE
- AUCTION PROPERTY
- RETAINED PROPERTY

GRAPHIC SHOWS CONCEPTUAL INFORMATION AND IS SUBJECT TO CHANGE.

Exhibit 1.1.2: Site Location within Superstition Vistas

N

Exhibit 1.1.3: Auction Property

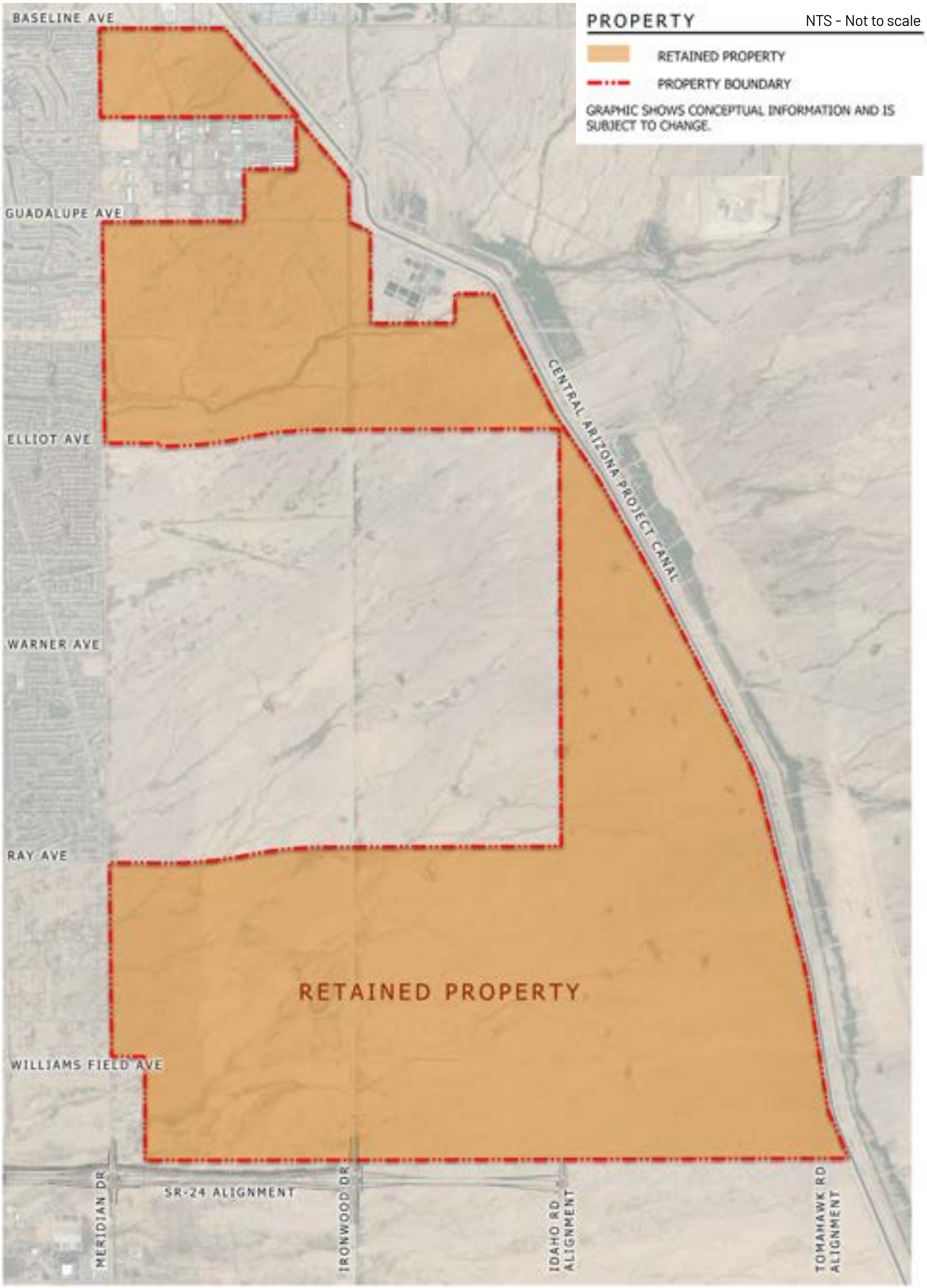


Exhibit 1.1.4: Retained Property

The MPC for the Retained Property is comprised of a blend of land uses including residential, commercial, and other non-residential uses, allocated via the Land Use Budget to each of the six (6) development units (the "Development Unit(s)"). As the State Land Department auctions property, more detailed Development Unit Plans will be prepared for each Development Unit that will address the entire Development Unit and further detail the location of permitted uses and demonstrate conformance with the Infrastructure Master Plans. The Development Unit Plan process allows development to respond to market conditions and provides for a more creative and innovative approach to each Development Unit's specific master planning. This process ensures a diversity in residential and non-residential uses, resulting in a cohesive and sustainable mixed-use, mixed-density master planned community with supporting employment and commercial services.

The development of the Retained Property is an opportunity to craft a healthy, vibrant, and sustainable community. This will be achieved by recognizing the uniqueness and natural beauty of the area. The open space and connecting trails will weave throughout the Retained Property connecting the varying land uses and creating opportunities for recreation. Residents, employees, and visitors alike will enjoy the ability to easily connect and to experience open space and natural beauty while surrounded by mountain views.

1.5 Purpose

The purpose of this MPC Plan is to provide base level entitlements for the Retained Property. This includes establishment of a Land Use Budget for each Development Unit as well and parameters for future Development Unit Plans. The MPC zoning provides for the flexible development of residential and non-residential uses. The regulatory framework outlines a creative approach to the planning of communities and neighborhoods in order to provide for an efficient, aesthetic, and desirable development as the State Land Department disposes of property through future auctions.

1.6 Conformance with General Plan

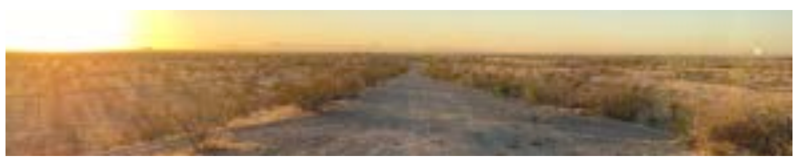
1.6.1 Vision

"Apache Junction is a diverse community of natural beauty and heritage that offers prosperity, compassion, and forward thinking to its residents, businesses, and visitors" (City of Apache Junction General Plan 2050, Community Vision & Mission, Page iii).

The mission for the City's General Plan is to preserve the history and character that makes Apache Junction an exceptional city, while investing in quality of life and planned improvements that will serve Apache Junction and its residents.

1.6.2 Role of General Plan and Relationship to Retained Property

The General Plan consists of goals, policies, and principles that guide land use, future growth, and development within Apache Junction. The General Plan Land Use Map has designated the Retained Property as "Master Planned Community" (max 20 du/ac) as shown on **Exhibit 1.6.2: Existing General Plan Map.** This area was designated as Master Planned Community to provide general guidance for the development of vacant State Trust Land. The Master Planned Community designation ensures that a variety of uses are planned and developed in a comprehensive manner to facilitate a high quality of life and vibrant local community.

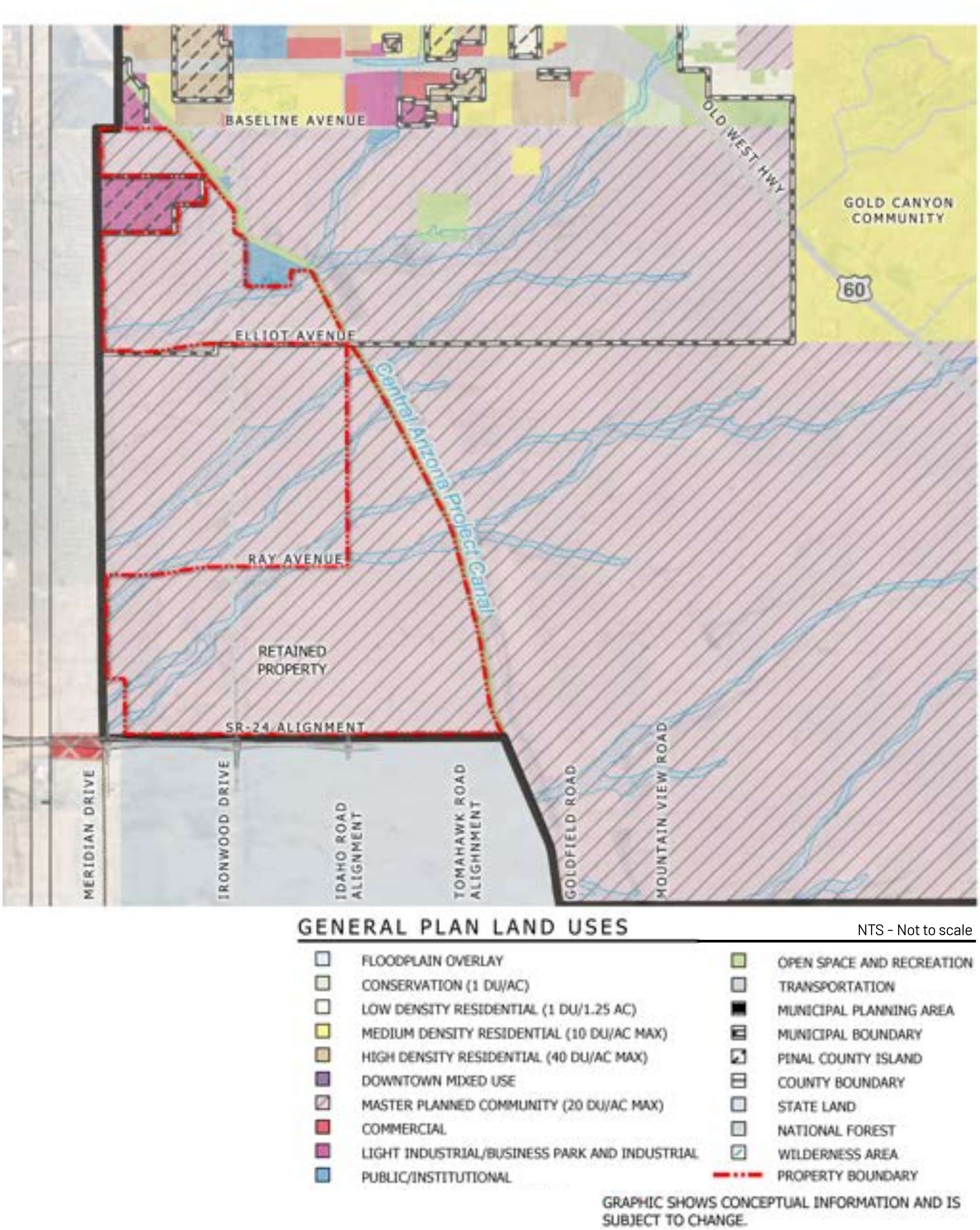



Exhibit 1.6.2: Existing General Plan Map

ENVIRONMENTAL PLANNING

GOAL 1.1: PROTECT THE PLANNING AREA'S UNIQUE ENVIRONMENTAL ASSETS AND QUALITY OF LIFE

Policy: *Encourage developers and property owners to preserve the environment by:*

- ***a.*** *Leaving areas of sensitive lands in their natural state*
- ***b.*** *Clustering residential units where appropriate (new developers would receive a density bonus for employing this approach)*
- ***c.*** *Prohibiting new development within floodways*

Policy: *Carefully integrate changes to drainage in a master stormwater plan that recognizes existing drainage and wash patterns, discharge locations and storm water flows.*

Policy: *Emphasize non-structural flood control techniques where feasible. Choose and foster flood control methods that retain beneficial functions and maintain natural flooding and riparian vegetation while minimizing damage to private property.*

Policy: *Encourage creative design for storm water harvesting and detention ponds to reduce increased storm water flows and provide an opportunity to channel storm rainwater to native Sonoran Desert plant material.*

RESPONSE

Where they exist, sensitive land areas shall be properly mitigated to maintain their natural features and environmental value. Comprehensive planning efforts will be utilized to locate complementary land uses in proximity to one another and allow for adequate transitions to more intense land uses. The drainage influences within and outside the property will be reviewed and mitigated per the Infrastructure Master Plans to allow for development outside of floodways as well as study opportunities to utilize drainage for environmental benefits.

ENVIRONMENTAL PLANNING CONTINUED

GOAL 1.2: PROTECT DARK SKIES IN APACHE JUNCTION

Policy: *Update the dark sky ordinance that includes a standard to encourage residential, commercial and industrial property owners to install lighting only for safety, security and utility purposes to minimize light pollution of neighboring properties.*

RESPONSE

Development within the Retained Property will implement Dark Sky lighting principles in accordance with IDA standards through future Development Unit planning to minimize light pollution

GOAL 1.3: ENCOURAGE LOW IMPACT DEVELOPMENT PRACTICES TO MITIGATE THE NEGATIVE IMPACTS OF URBANIZATION

Policy: *Incorporate LID into the city's design standards and describe detailed methods about how to incorporate these practices*

Policy: *Educate the community about the benefits and necessity of LID practices.*

RESPONSE

Through future Development Unit planning, where appropriate, the Retained Property shall incorporate low impact development practices for stormwater management as described in **Section 3.5.18 Stormwater and Drainage**.

ENVIRONMENTAL PLANNING CONTINUED

GOAL 1.4: CONSERVE EXISTING HABITAT, RECREATE HABITAT WHERE IT HAS BEEN DESTROYED AND PROVIDE NEW HABITATS WHERE APPROPRIATE

Policy: *Conserve corridors along significant ephemeral washes to preserve habitat with the greatest value for wildlife. Include the floodway, floodplain and an appropriate upland buffer to allow a transition to urbanized areas.*

Policy: *Promote planting and maintenance of indigenous vegetation along washes, the Central Arizona Project ("CAP") Canal and other public spaces to enhance use by native wildlife.*

RESPONSE

The Retained Property is bounded by the Central Arizona Project canal and Vineyard Flood Retarding Structure ("FRS") on its eastern boundary. Due to this condition, all the existing wash corridors have been cut off from upstream flows. Drainage which has been impacted by the FRS through the Retained Property will be addressed as described within the Master Drainage Plan. The drainage corridors will be landscaped with a native and transitional desert palette in varying character forms to blend with the aesthetics of the communities they traverse. The Siphon Draw corridor will be preserved within the Retained Property.

GOAL 1.5: PRESERVE THE VARIETY OF ANIMAL AND PLANT SPECIES IN APACHE JUNCTION

Policy: *Educate citizens and encourage awareness regarding the preservation of habitats and species existing within the city.*

RESPONSE

The Retained Property, through future Development Unit planning, will salvage and preserve certain native tree and cacti plant materials and explore opportunities to provide interpretive signage at recreation areas regarding wildlife and plant habitats.

ENVIRONMENTAL PLANNING CONTINUED

GOAL 1.6: SUPPORT SUSTAINABLE BUILDING PRACTICES THAT REDUCE THE IMPACT ON ENVIRONMENTAL QUALITY, RESOURCE USE AND HUMAN HEALTH

Policy: *Update the green building ordinance and implement a program to promote green building principles and practices.*

RESPONSE

Energy Star, a program run by the U.S. Environmental Protection Agency and U.S. Department of Energy that promotes energy efficiency, will be implemented within all residential development. Additionally, the use of low water use plumbing fixtures which meet current building codes will be utilized within all residential development.

GOAL 1.7: PROTECT AND ENHANCE AIR QUALITY AND PUBLIC HEALTH

Policy: *Enforce regulations that reduce particulate air pollutants by:*
a. Continuing to participate with Maricopa Association of Governments ("MAG"), Central Arizona of Governments ("CAG") and Pinal County to implement regional air quality planning and implementation,

Policy: *Reduce emissions of greenhouse gases through programs and policies such as the possible conversion of the city's fleet to clean alternative fuels or electric vehicles.*

Policy: *Implement a no-idling ordinance that prohibits unmanned vehicles from idling for more than five minutes.*

RESPONSE

Proposed development within the Retained Property shall follow governing agency requirements regarding pollution and dust control.

ENVIRONMENTAL PLANNING CONTINUED

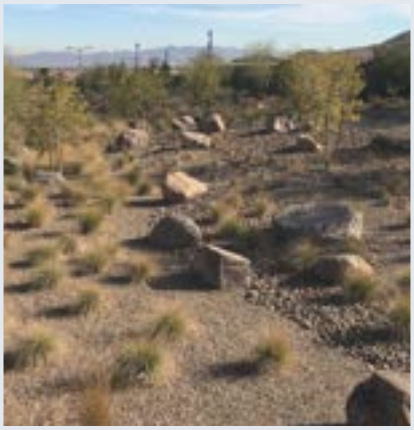
GOAL 1.8: REDUCE THE AMOUNT OF SOLID WASTE AND MINIMIZE ILLEGAL DUMPING VIA AN INTEGRATED SOLID WASTE MANAGEMENT SYSTEM

Policy: *Require residents to subscribe to weekly solid waste and recycling collection. The recycling program should include standard recyclables (glass, plastic, etc.) and green waste (grass clippings, weeds, etc.).*

Policy: *Phase out Free Dump Week by 2025. Policy: Create an environmental leadership institute similar to the Citizen Leadership Institute ("CLI") to educate the residents on solid waste, pest management, green buildings, LID, solar power, dark skies, xeriscape and raingardens.*

RESPONSE

Proposed development within the Retained Property shall follow the City of Apache Junction requirements for solid waste and recycling.



RECREATION AND OPEN SPACE

GOAL 2.1: DEVELOP A SYSTEM OF PARKS, TRAILS AND OPEN SPACE TO MEET THE RECREATIONAL AND HEALTH NEEDS OF APACHE JUNCTION RESIDENTS AND VISITORS

Policy: *Encourage and facilitate public participation in planning and expanding the parks and trail system through various means, including regularly scheduled parks and recreation commission meetings.*

Policy: *Consider development of community sponsored facilities such as: off-leash dog parks, expansion of pickleball courts, open space expansion, archaeological parks on BLM land, landfill park conversion, bicycle motocross ("BMX") and other bicycle facilities.*

Policy: *Coordinate with developers to incorporate potential sites for parks, trails, open space and other recreational facilities in their development master plans. Continue to require residential developers to construct neighborhood parks and place operation and maintenance responsibilities on HOAs.*

Policy: *Coordinate with other public and private groups to promote joint acquisition, use and public/private participation in the development of new parks and trails and recreational facilities.*

Policy: *Update and reintroduce the parks and recreation master plan for review and eventual approval by the parks and recreation commission and the city council.*

RESPONSE

The MPC (or subsequent development agreements) includes criteria by which the need for trails, parks and open space will be determined as a part of future Development Unit Plans. The exact location and amount of trails, parks and open space will be determined during the Development Unit Plan process. A minimum amount of open space required in each Development Unit has been established in **Exhibit 3.4.1.1: Land Use Budget Table.**

NEIGHBORHOOD PRESERVATION, REVITALIZATION, AND HOUSING

GOAL 3.2: DIVERSIFY HOUSING STOCK AND NEIGHBORHOODS BY INCORPORATING A VARIETY OF HOUSING TYPES AND ASSOCIATED VALUES TO ALLOW FOR A DIVERSE DEMOGRAPHIC OF RESIDENTS

Policy: *Create a policy for the development of quality workforce housing by utilizing available federal, state, regional and local resources and programs to encourage first-time homebuyers and by providing incentives to encourage the development of affordable housing.*

Policy: *Encourage the development of public-private ventures developing low income housing with local, state and federal funds in order to promote a quality rental market.*

RESPONSE

The Retained Property allows for a broad range of housing opportunities, in location, style and size. The variety in housing options will allow residents of varying income levels and ages to have an abundance of housing choices based on market demand and desired lifestyle.

GOAL 3.3: MAINTAIN AND ATTRACT A QUALITY HOUSING STOCK IN CONDITION, DESIGN, AND CONSTRUCTION STANDARDS

Policy: *Develop design guidelines and standards such as energy efficient "green" designs for all new housing construction.*

Policy: *Strengthen and implement housing quality standards for existing housing units by promoting the city's owner-occupied housing rehabilitation program, and enforcing the property maintenance code to include standards of care requiring trash removal, landscape requirements, and sewer hook-ups.*

RESPONSE

The Development Unit plans will provide design parameters for housing types which will guide the design, quality and ultimately construction of housing.

NEIGHBORHOOD PRESERVATION, REVITALIZATION, AND HOUSING

GOAL 3.4: INCORPORATE SUSTAINABLE PRACTICES IN ALL HOUSING DEVELOPMENT

Policy: *Maintain the natural environment, views and access to greenspace by establishing connectivity and walkability between existing neighborhoods and commercial areas while ensuring connectivity to the south and future development.*

Policy: *Encourage infill, redevelopment, and higher density housing within downtown while preserving low density housing development in areas designated on land use map.*

RESPONSE

The proposed development plan employs a design approach based on connecting residents to the outdoors with a series of trails and recreation features. These areas will provide opportunities for walking, running, biking, enjoyment of mountain views, and other activities, thus benefitting the City's overall public health by promoting an active lifestyle.

The Retained Property includes a range of residential densities, which will be located based on well thought out criteria established within future Development Unit planning providing for diverse neighborhoods.




ECONOMIC DEVELOPMENT

GOAL 5.1: ATTRACT ALL TYPES OF QUALITY PRIVATE INVESTMENT THAT WILL ADD VALUE AND BRING DIVERSIFICATION TO CURRENT AND FUTURE RESIDENTS OF APACHE JUNCTION AS A GREAT PLACE TO LIVE, WORK AND PLAY

Policy: *Strategically identify infill opportunity sites that can accommodate office, industrial, entertainment, retail, and housing and mitigate barriers to development.*

Policy: *Consider incentives or economic development agreements to close the gap on hard to redevelop properties that have been underutilized or have sat vacant.*

Policy: *Consider alternative zoning or overlay districts for idle infill parcels or redevelopment areas that may inspire a higher and better use based in current market realities.*

Policy: *Encourage the protection and expansion of the land designated in the general plan specifically for employment and ensure they are preserved along transportation corridors or in prime business cluster locations that will maximize the impact and economic potential for those businesses and employment centers. Discourage any uses that bring little or no value to the community (such as RV Parks, RV storage, mini-storage lots and seasonal residential units).*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 gross acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the SR-24 on is south end, the overall Site is well placed for future development. The Retained Property is approximately 5,307 acres in area. The scale of the property affords for a significant range of proposed land uses. As proposed, a blend of non-residential and residential land uses is planned providing for potential economic development, regional growth of employment growth of the general population.

ECONOMIC DEVELOPMENT CONTINUED

GOAL 5.2: ALIGN RESOURCES AND PRIORITIES TO ENHANCE EXPANSION AND ATTRACTION OF THE CITY'S TARGETED INDUSTRIES (BUSINESS SERVICES; STANDARD AND ADVANCED MANUFACTURING; REGIONAL AND CORPORATE CENTERS; MEDICAL INSTITUTIONS AND/OR ASSOCIATED SATELLITE OPERATIONS; MINING SUPPORT FACILITIES; RESORT/ TOURIST ORIENTED DEVELOPMENT; EXPANDED RETAIL OPPORTUNITIES, HIGH-DENSITY RESIDENTIAL)

Policy: *Collaborate and engage with Arizona Commerce Authority, Greater Phoenix Economic Council, Phoenix-East Valley Partnership, Arizona Office of Tourism, the local Chamber of Commerce, neighboring municipalities, and other regional economic development organizations to align business supply and demand opportunities, enhance competitiveness of the state and region, and bring additional prospect activity and quality job growth to Apache Junction.*

Policy: *Identify and strategize infrastructure gaps or opportunities with utility providers or districts to enhance shovel-readiness of key locations with maximum opportunity to bring additional economic development benefits to the city and to those providers.*

Policy: *Assess the adequacy of current services to existing employment areas to aid in business retention efforts.*

Policy: *Develop an infrastructure improvement recommendation for key potential and existing employment areas.*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the SR-24 on its south end, the overall site is well placed for future development.

Future development of the Retained Property will attract new industries to the region by providing entitled land in prime locations with access to regional transportation corridors and a wide array of residential, commercial, office and mixed uses.

ECONOMIC DEVELOPMENT CONTINUED

GOAL 5.4: ENHANCE THE IMAGE AND ELEVATE AWARENESS OF APACHE JUNCTION AND ALL IT HAS TO OFFER

Policy: *Utilizing the identified targeted industries, create a more robust marketing campaign that would seek to pique the interest of development that would help bring more diversity and living-wage jobs to the market by showing the strengths and niche potential unique to Apache Junction. As new sites targeting employment come online, actively promote and recruit through industry specific forums.*

Policy: *Collaborate efforts focused on visitor services and tourism marketing with local organizations and/or regional visitor bureaus to promote quality of life and business opportunity assets unique to Apache Junction.*

Policy: *Consider ways to engage and support area tourist attractions that will elevate awareness and increase visitor traffic in the city.*

Policy: *Identify local assets that are attractive to visitor psychographic profiles with strong spend potential that are currently not well represented in the market. Add unique tourism demand generators as appropriate that will be attractive to that more diverse visitor profile.*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the SR-24 on is south end, the overall site is well placed for future development.

Future development of the Retained Property will attract new industries to the region by providing entitled land in prime locations with access to regional transportation corridors and a wide array of residential, commercial, office and mixed uses. Additionally, the new parks, trails, open spaces, and other planned uses within the Auction Property and the Retained Property will provide amenities that are attractive to visitors to the City.

ECONOMIC DEVELOPMENT CONTINUED

GOAL 5.5: MAKE ROOM FOR ALL BY MAINTAINING THE VERY UNIQUE CHARACTERISTICS AND RICH HISTORY OF APACHE JUNCTION'S EXISTING DEVELOPMENT PATTERNS AND LIFESTYLE PREFERENCES, WHILE RECOGNIZING NEW GROWTH IN LARGE SWATHS OF STATE LAND WILL COME WITH VASTLY DIFFERENT PREFERENCES FOR DEVELOPMENT

Policy: *The likelihood of "one community, feeling like two different places" should be embraced not be avoided. Marketing efforts need to help overcome perceptions that Apache Junction is a small town and simply wants more of what currently exists.*

Policy: *Actively gather insight and data from the development community not active in Apache Junction and assess if there are gaps preventing them from investing in the community, or if there is an opportunity to share additional information to help with a site selection decision.*

RESPONSE

Future development will provide opportunities for a variety of uses and character areas. The Development Unit plans will accommodate the flexibility needed for future development and establish a more creative approach to community and neighborhood planning.

PUBLIC SAFETY, SERVICES, AND FACILITIES

GOAL 6.1: CONTINUE TO PROVIDE EXCELLENT POLICE AND FIRE SERVICES

Policy: *Raise professional standards and seek state accreditation through the ACOP.*

Policy: *Develop and expand police resources at a rate to keep pace with growth in terms of facilities, personnel, equipment, technologies and other resources.*

Policy: *Improve/lower 911 emergency call response times for police, fire and other emergency services personnel.*

RESPONSE

The Retained Property will support City police service through development fees, the reservation of a police and evidence yard site of up to 10 acres, and the City's collected construction, property, and sales tax revenues from development on the Retained Property. Fire district facilities will be funded by the fire district's property tax. These contributions support the growth of police and fire services as well as the quality of life of the residents of the City.

GOAL 6.2: CONTINUE TO PROVIDE ADEQUATE PUBLIC FACILITIES

Policy: *Provide adequate public facilities and services concurrent with new development while maintaining or improving existing service levels for existing development.*

Policy: *Continue to require new development to provide its fair share of required services and infrastructure in a timely manner (see Chapter 10 - Cost of Development Element).*

Policy: *Develop minimum acceptable standards for the provision of community services and infrastructure.*

Policy: *Develop and/or maintain community facilities that encourage and promote opportunities for the interaction and communication between citizens of all ages, cultures and incomes.*

RESPONSE

The Retained Property will provide for substantial infrastructure improvements as the Property develops. Improvements to offsite public facilities included in the City's development fee structure will receive funding through development fees, construction taxes and sales taxes. Where future Development Unit planning includes improvements that are part of the development fee calculation, the future developer will receive development fee reimbursement for improvements that are completed as specified in the Development Agreement. Additionally, future Development Units may fund and construct certain necessary improvements within the Retained Property through one or more Community Facilities Districts ("CFDs").

PUBLIC SAFETY, SERVICES, AND FACILITIES CONTINUED

GOAL 6.3: CONTINUE TO PROVIDE FOR STORMWATER MANAGEMENT

Policy: *Update the 2002 City of Apache Junction Stormwater Master Plan.*

Policy: *Work with the Flood Control District of Maricopa County, Pinal County and Federal Emergency Management Agency ("FEMA") on stormwater management.*

Policy: *Promote the joint use of detention basins for flood control, groundwater recharge and recreational activities.*

RESPONSE

Future Development Unit planning shall provide direction on the use of retention basins for flood control, groundwater recharge through various methods including the use of drywells to percolate storm water into the aquifer, and recreational areas which may be implemented as part of the Retained Property development.

GOAL 6.4: COMPREHENSIVE COMMUNITY PLANNING

Policy: *Encourage new development to provide up-to-date technology, such as fiber optics and wireless internet connections, throughout the development.*

Policy: *Require the inclusion of Salt River Project, water, sewer and other public/private utility facilities and line routes on development plan submittals.*

Policy: *Evaluate the implications of allowing areas affected by existing or proposed overhead electrical facilities to organize improvement districts for facility undergrounding.*

Policy: *Provide adequate space to accommodate community utilities, services, and facilities as development occurs.*

RESPONSE

The Retained Property will provide for substantial infrastructure improvements as the Property develops. Opportunities will be considered to provide backbone infrastructure for future technologies. Utility corridors will be maintained and/or established for water, sewer, power, or other public/private utilities. New electrical services 12Kv or less will be served through undergrounded electrical lines.

PUBLIC SAFETY, SERVICES, AND FACILITIES CONTINUED

GOAL 6.5: SUPPORT CULTURAL FACILITIES

Policy: *Ensure that the library system and multi-generational center continues its role as a major cultural resource for the community.*

Policy: *Continue to provide funding for the library and parks through development fees.*

Policy: *Develop and support art programs, including public art and other cultural activities.*

Policy: *Support public and private partnerships to promote arts and culture.*

RESPONSE

The Retained Property, through future Development Unit planning, will support the City's parks and library facilities through either direct contributions for libraries or by development fees, one or more CFD's, construction taxes and sales taxes. These facilities are valuable assets to the greater community providing for essential social and knowledge-based activities.

PUBLIC SAFETY, SERVICES, AND FACILITIES CONTINUED

GOAL 6.6: SUPPORT EDUCATIONAL FACILITIES

Policy: *Promote and support the expansion and enhancement of CAC's Superstition Mountain Campus.*

Policy: *Actively coordinate with AJUSD, CAC, charter schools and private entities on the planning and construction of new and rehabilitated schools in concert with redevelopment, revitalization and development activities.*

Policy: *Request that developers of large residential projects meet with the respective school district and that the district provide the city with projected enrollment and timing impacts such that this information can be included in planning commission and city council staff reports.*

Policy: *Encourage developers to provide for multiple housing choices for all citizens and discourage the creation of more age-restricted development.*

Policy: *Promote sound site planning principles in locating safe, secure school sites.*

Policy: *Encourage the connection of schools to surrounding residences through sidewalks, bicycle paths and trail systems.*

Policy: *Create joint development opportunities to co-locate schools and parks, as well as selected sites for swimming pools and satellite library facilities.*

Policy: *Negotiate intergovernmental agreements for joint use of facilities where and when appropriate.*

RESPONSE

The Retained Property allows for a broad range of housing opportunities, in location, style and size. Future applicants for each Development Unit will coordinate with the Apache Junction Unified School District to evaluate the impacts of development on current school capacities. Where additional school sites are warranted because of student generation, well thought out criteria established within the MPC will be utilized to locate schools at the most appropriate locations.

CIRCULATION

GOAL 7.1: IDENTIFY AND PRIORITIZE TRANSPORTATION PROJECTS

Policy: *Finalize the 10-year transportation capital improvement projects ("CIP)" plan.*

Policy: *Adhere to the adopted Active Transportation Plan:*

a. Plan, design and construct in accordance with recommended lanes and street classification.
b. Planning, design and construction shall include recommended active transportation amenities.
c. Acquire necessary right-of-way to accommodate active transportation amenities. Policy: Coordinate with adjacent municipalities and counties to address regional transportation issues and planning programs.

Policy: *Preserve, protect and acquire transportation corridors from federal patented easements ("FPEs"), washes, powerlines and CAP canals.*

RESPONSE

The Retained Property will provide for substantial street infrastructure improvements as the Property develops. Each Development Unit will reserve the opportunity to propose and finance infrastructure improvements through one or more CFDs or through other regional funding solutions.

GOAL 7.2: IMPLEMENT THE ACTIVE TRANSPORTATION PLAN

Policy: *Prioritize the active transportation network. Compare this priority list to the 10-year transportation CIP. Expand, when possible, any transportation CIP projects to close small gaps or complete an active transportation trail.*

Policy: *Pursue all public or private funding options.*

Policy: *Expand maintenance projects to include trails and paths*

RESPONSE

The Retained Property will provide for substantial street infrastructure improvements as the Property develops. Each Development Unit will reserve the opportunity to propose and finance infrastructure improvements through one or more CFDs or through other regional funding solutions. Each Development Unit will provide a Traffic Impact Analysis which will provide more specific information regarding the planned transportation network for that Development Unit.

CIRCULATION CONTINUED

GOAL 7.3: PROMOTE REGIONAL TRANSPORTATION PLANNING

Policy: *Coordinate with adjacent municipalities and counties to address regional transportation issues.*

Policy: *Promote and be an involved partner in all regional transportation planning programs.*

RESPONSE

The Retained Property will coordinate all future development recommendations within the context of local and regional transportation planning with adjacent municipalities and counties. The Retained Property will propose and finance infrastructure improvements through one or more CFDs or through other regional funding solutions.

GOAL 7.4: PROMOTE INTELLIGENT TRANSPORTATION SYSTEMS AND TECHNOLOGY ADVANCEMENTS

Policy: *Promote solar powered electronic vehicle charging stations in existing and new development.*

Policy: *Stay up-to-date on changing technologies and how those technologies can impact existing transportation systems and laws.*

RESPONSE

Future Development Unit planning will provide for opportunities for future developers to employ best available technological practices.

AJ1H_2O RESOURCE ELEMENT

GOAL 8.1: ADVANCE WATER QUALITY AND QUANTITY

Policy: *Develop and maintain physically and legally available water supplies of sufficient capacity and quality to satisfy demands of current and future water users.*

Policy: *Investigate creative partnerships for the supply and delivery of water to existing and new development in Apache Junction.*

Policy: *Participate in processes to develop alternative regulations to facilitate the acquisition, development and use of necessary water supplies.*

Policy: *Encourage the use of scientific/technical studies to reduce negative impacts of the development of new water sources on existing water facilities.*

Policy: *Maintain a reliable water supply in order to enhance the security and economic sustainability of Apache Junction.*

Policy: *Develop a regional approach to water resource utilization that promotes future growth and sustainability.*

Policy: *Evaluate the costs and benefits of merging AzWC and AJWD into one municipal water service provider.*

Policy: *Evaluate the costs and benefits of merging SMCFD (sewer district) and AJWD into a water and wastewater city utility department.*

RESPONSE

The Retained Property, through development of Infrastructure Master Plans, will evaluate connections to the water and wastewater services within the City. Future Development Unit planning will demonstrate conformance to the Infrastructure Master Plans.

AJ1$H_2$0 RESOURCE ELEMENT CONTINUED

GOAL 8.2: STRENGTHEN WATER CONSERVATION

Policy: *Develop and/or participate in existing public education efforts regarding the incorporation of water harvesting, xeriscape and other water conservation measures into new developments, redevelopment areas and city projects.*

Policy: *Promote development that conserves water through the type of LID provisions of recharge and use of renewable water supplies.*

Policy: *Conserve the use of both groundwater and renewable water supplies.*

Policy: *Require compliance with ADWR programs, rules and regulations for new developments and city projects.*

Policy: *Require compliance with water conservation guidelines set by the ADWR, for all users, including those outside of the AMAs.*

Policy: *Update the 2002 Stormwater Masterplan. Consider stormwater as a renewable water supply.*

Policy: *Adopt LID Standards and incorporate them into the land development code for water quality and managing stormwater as a source of water for landscape irrigation.*

Policy: *Evaluate the cost/benefit analysis of a stormwater utility to carry out the Stormwater Pollution Prevention Plan ("SWPPP") and the 2002 Stormwater Masterplan.*

RESPONSE

The Retained Property, through the Infrastructure Master Plans and future Development Unit planning, evaluates the use and management of treated wastewater or "non-potable water" within the Non-Potable Water Infrastructure Master Plan. Best practices for the use of non-potable water for irrigation of landscape materials, groundwater recharge, construction water or other planned uses may be incorporated where non-potable water is available. Proposed development will follow ADWR requirements for low water-use plant materials. Where appropriate, the Retained Property shall incorporate low impact development practices for stormwater management as described in **Section 3.5.18 Stormwater and Drainage.**

GROWTH AREA

GOAL 9.1: INCREASE THE CITY'S FINANCIAL SUSTAINABILITY

Policy: *Develop into a shopping and entertainment destination for the region.*

Policy: *Capture greater shares of the year-round and seasonal resident expenditures.*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the SR-24 on is south end, the overall site is well placed for future development.

The Retained Property has frontage along the State Route 24 alignment on the southern portion of the Site. This area is planned for the more intense, regional, employment and other non-residential uses as well as residential uses, which support the goals of the City.

GOAL 9.4: SUPPORT SUSTAINABLE GROWTH

Policy: *Encourage the use of "green building practices" for developers/builders.*

Policy: *Require the use of low impact development practices for all new development.*

Policy: *Conserve for future generations permanent open space to connect the natural resources that are the essence of what defines the city.*

RESPONSE

Each Development Unit plan for the Retained Property will provide opportunities for future developers to employ sustainable building practices, and where appropriate, shall incorporate low impact development practices for stormwater management as described in **Section 3.5.18 Stormwater and Drainage**.

COST OF DEVELOPMENT, CAPITAL IMPROVEMENTS

GOAL 10.1: CONSIDER ALTERNATE FINANCIAL MECHANISMS

Policy: *Explore the possibility of implementing a minor property tax to diversify funding and accelerate city-initiated improvements such as public safety, parks, streets and the expansion of other municipal services.*

RESPONSE

The Retained Property, through future Development Unit planning, will provide funding through various methods including the formation of one or more CFDs, development fees, construction taxes and sales taxes to support the growth of police service, parks, and infrastructure to support the quality of life for the residents of Apache Junction.

GOAL 10.2: MAINTAIN OR ENHANCE PUBLIC SERVICE LEVELS

Policy: *Public services/facilities should be available concurrently with development demand.*

RESPONSE

The Retained Property, through future Development Unit planning, will provide funding through various methods including the formation of one or more CFDs, development fees, construction taxes and sales taxes to support the growth of police service, parks, and infrastructure to support the quality of life for the residents of Apache Junction.

COST OF DEVELOPMENT, CAPITAL IMPROVEMENTS CONTINUED

GOAL 10.5: ENSURE THAT NEW DEVELOPMENT PAYS ITS FAIR AND PROPORTIONAL SHARE OF THE COST OF ADDITIONAL PUBLIC FACILITY AND SERVICE NEEDS THAT IT GENERATES

Policy: *Continue to recover, through development fees, the costs of police, roads, parks and libraries associated with new development.*

Policy: *When practical and feasible, encourage the formation of CFDs, or improvement districts, to upgrade or construct city streets and sidewalks in developed or developing areas.*

Policy: *Conduct a periodic review with peer governments of the city's tax and fee structure to ensure economic development competitiveness including a construction sales tax.*

RESPONSE

The Retained Property, through future Development Unit planning, will provide funding through various methods including the formation of one or more CFDs, development fees, construction taxes and sales taxes to support the growth of police service, parks, and infrastructure to support the quality of life for the residents of Apache Junction.

COST OF DEVELOPMENT, CAPITAL IMPROVEMENTS CONTINUED

GOAL 10.6: RELATE INFRASTRUCTURE INVESTMENT AND LAND USE DECISIONS TO MUNICIPAL ECONOMIC SUSTAINABILITY

Policy: *Recognize long term municipal revenue implications of land use decisions. Support desired levels of public services and fiscal stability by promoting revenue generating land uses.*

Policy: *Conduct fiscal impact analysis for major developments or annexation proposals.*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the Arizona State Route 24 alignment on is south end, the overall site is well placed for future development.

The Retained Property has frontage along the planned future extension of Arizona State Route 24 alignment on the southern portion of the site. This area is planned for the more intense, regional, employment and other non-residential uses as well as residential uses, which support the goals of the City as it relates to economic development and regional growth of employment and general population.

In addition, a fiscal impact analysis is provided as part of the application for MPC zoning.

LAND USE

GOAL 11.1: BE CONSIDERATE OF THE RURAL CHARACTER OF THE CITY

Policy: *Preserve mountain views through the limitation of multi-story buildings outside the downtown core and master planned area.*

Policy: *Require active open space in all new residential developments.*

RESPONSE

The Retained Property, through future Development Unit planning, places more intense uses near the future major transportation corridor to the south. The larger, central land area is primarily comprised of residential land uses with low building profiles. Future development will highlight mountain views.

LAND USE CONTINUED

GOAL 11.2: PROVIDE A BALANCE OF USES THROUGHOUT THE COMMUNITY

Policy: *Allow for the future development of regional shopping centers.*

Policy: *Provide incentives for desired uses.*

Policy: *Attract employment uses to the U.S. 60 corridor.*

Policy: *Discourage any additional manufactured home/recreational vehicle parks and mini-storage within the city*

RESPONSE

The Auction Property and the Retained Property together total approximately 8,090 acres in area. The area spans nearly six miles north to south and nearly four miles east to west. With the US-60 Superstition Freeway on its north end and the Arizona State Route 24 alignment on is south end, the overall site is well placed for future development.

The Retained Property has frontage along the State Route 24 alignment on the southern portion of the site. This area is planned for the more intense, regional, employment and other non-residential uses as well as residential uses, which support the goals of the City as it relates to economic development and regional growth of employment and general population.

GOAL 11.4: ENCOURAGE AND PROMOTE SUSTAINABLE LAND USE DEVELOPMENT

Policy: *Encourage use of green building standards.*

Policy: *Zoning regulations should include sustainable development standards.*

Policy: *Utilize city resources to promote sustainable awareness.*

RESPONSE

The future Development Unit plans will provide for opportunities for future developers to employ sustainable building practices and land use specific development standards.

LAND USE CONTINUED

GOAL 11.5: PROVIDE EQUAL PROTECTION OF EXISTING AGGREGATE AND RESIDENTIAL DEVELOPMENT

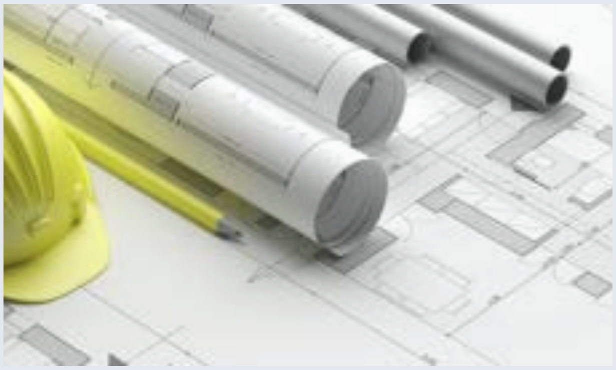
Policy: *Discourage new residential zoning adjacent to where existing or future aggregate operations are planned.*

Policy: *Discourage aggregate operations near or adjacent to residential development, schools or planned/existing city parks.*

Policy: *Promote aggregate operations to be located adjacent to industrial uses.*

RESPONSE

The Retained Property, through future Development Unit plans, will propose land uses and associated development standards for each Development Unit. Proposed land uses will be appropriately distributed throughout the land areas and required to be compatible and complementary uses.



INTERGOVERNMENTAL COOPERATION

GOAL 12.1: PROTECT THE IRREPLACEABLE LEGENDARY LANDSCAPES AND LIFESTYLE OF THE CITY AND REGION

Policy: *The city, federal, state, county and adjacent cities have an imperative and obligation to protect the Superstition region for future generations and shall ensure that the regions natural landscapes are not lost to irresponsible growth.*

Policy: *The city will lead by example by requiring development to leave the lightest foot print possible on the landscape.*

Policy: *The city will convene regional partners to define the metrics and agree to a regional compact for the protection of the resources that define the region and the quality of life for area residents.*

RESPONSE

The Retained Property's request for MPC zoning recognizes the importance of providing a foundation for quality and responsible development that addresses quality of life through prosperity, health, and environment. These elements contribute to the well-being of future residents and ultimately the viability of the project and region. Future Development Unit plans provide opportunities for future developers to employ sustainable building practices and land use specific development standards.

INTERGOVERNMENTAL COOPERATION CONTINUED

GOAL 12.2: FOSTER THE 3 C's OF INTERGOVERNMENTAL COOPERATION (COLLABORATION, COMMUNICATION AND COLLEGIALITY)

Policy: *The city will work proactively to avoid conflict on matters pertaining to regional issues and build interpersonal relationships that promote communication and cooperation.*

Policy: *Put residents first by sharing public resources, services and facilities that serve residents across jurisdictional boundaries.*

Policy: *Grow the City of Apache Junction in a way that benefits the region while conserving the quality of life of existing residents, visitors and businesses.*

Policy: *Encourage planning in Pinal County that promotes the eventual elimination of county islands, logical extensions of public utilities and roadways, services delivery and directs growth to existing municipalities.*

Policy: *The city will not permit connection to water and sewer utilities without annexation to the city.*

RESPONSE

The Retained Property is an asset to the City. As a part of an overall larger land area, the range of proposed land uses will create a very diverse and vibrant region within the City.

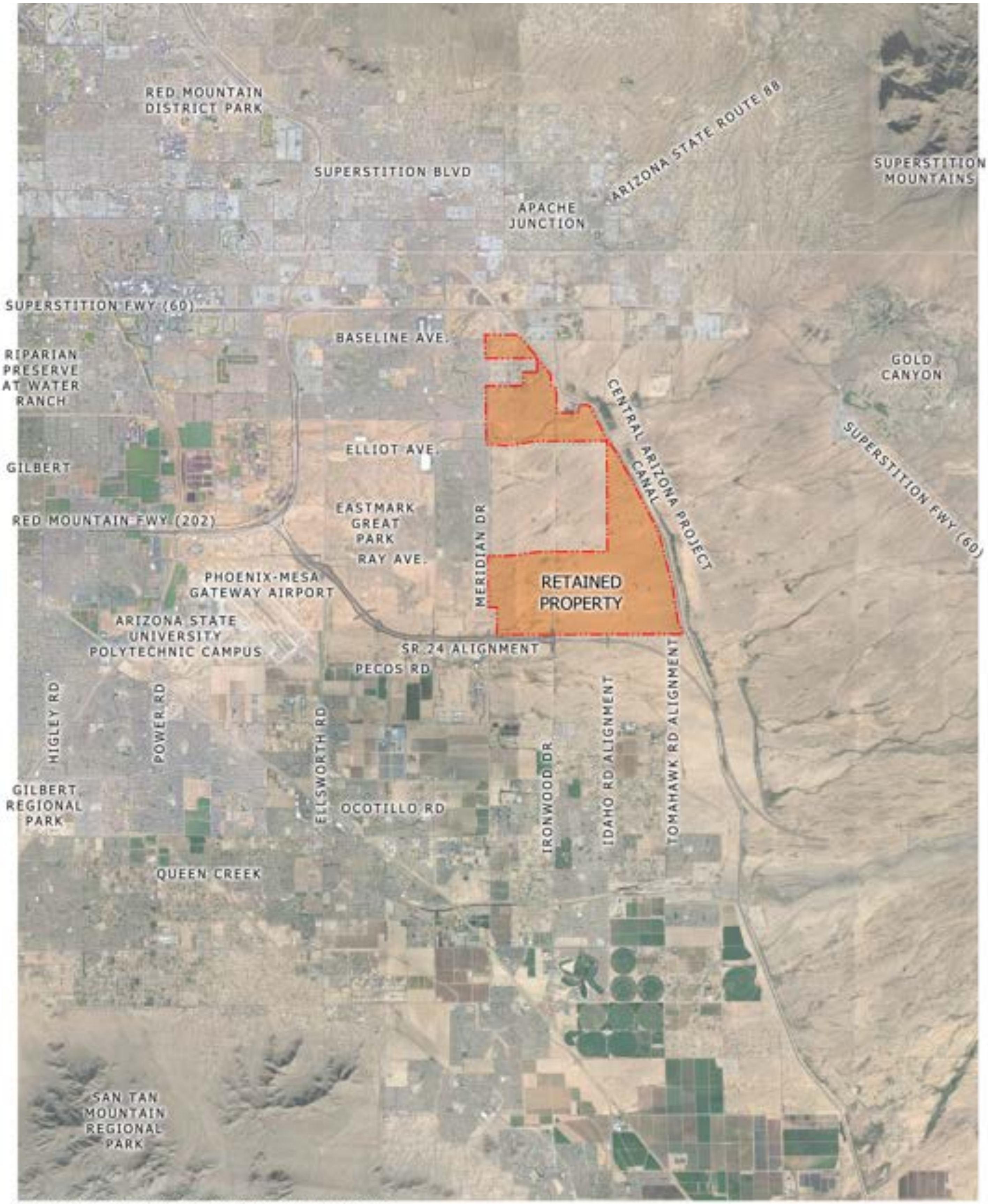
Once the Retained Property has been annexed into the City it will, pursuant to the MPC Plan and future Development Unit planning, provide a location for new residential and non-residential development including opportunities for economic development and regional growth of employment.

2. Site Conditions and Location

2.1 Regional Description

The Retained Property is approximately 5,307 gross acres of land located in the most southern portion of the City and most western portion of the larger Superstition Vistas master plan. The Retained Property is bounded to the north by Baseline Avenue, to the south by the State Route 24 corridor, to the west by Meridian Drive, and to the east by the Central Arizona Project Canal, as shown on **Exhibit 2.1.1: Regional Vicinity Map**. The Retained Property is currently undeveloped with no habitable structures located on-site. It is primarily surrounded by undeveloped land, with the exception of existing single-family residences located west of Meridian Drive and industrial uses north of Baseline Avenue. The northern portion of the Retained Property surrounds an existing land area comprised of industrial uses, east of Meridian Drive and north of Guadalupe Avenue to the Houston Avenue road alignment.

The Retained Property is approximately eight miles from the Superstition Mountains, which are situated northeast of the Site providing outstanding mountain views. The Retained Property is positioned near several major transportation corridors with the US 60 Superstition Freeway to the north, Arizona State Route 202 to the west, Arizona State Route 88 to the northeast, and the State Route 24 corridor to the south. Destinations such as Arizona State University's Polytechnic Campus, Phoenix-Mesa Gateway Airport, regional parks and recreation destinations, and numerous entertainment uses are all within 15 miles of the Site, as shown on **Exhibit 2.1.1: Regional Vicinity Map** and **Exhibit 2.1.2: Context Map**.

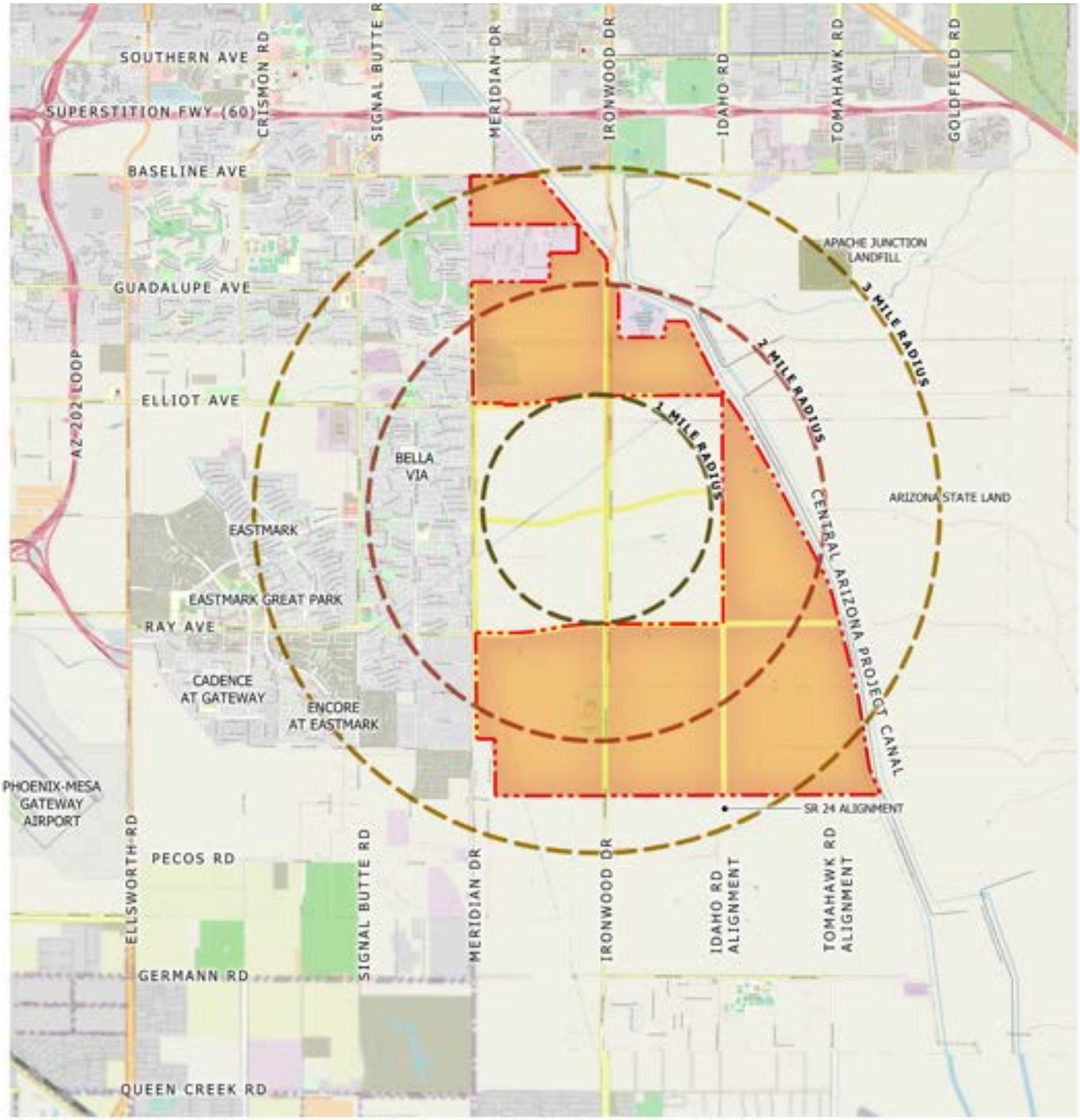


GRAPHIC SHOWS CONCEPTUAL INFORMATION AND IS SUBJECT TO CHANGE.

NTS - Not to scale

Exhibit 2.1.1: Regional Vicinity Map

N



SOURCE: PINAL COUNTY ASSESSOR PARCEL VIEWER OPEN STREET MAP

LEGEND

NTS - Not to scale

PROPERTY BOUNDARY

RETAINED PROPERTY

ROADS

GRAPHIC SHOWS CONCEPTUAL INFORMATION AND IS SUBJECT TO CHANGE.

Exhibit 2.1.2: Context Map

N

2.2 Existing Site Conditions

The Retained Property is currently undeveloped land.

An existing perpetual right-of-way for Pinal County exists along the Ray Avenue and Ironwood Drive alignments through the Site. Along Meridian Drive, right-of-way exists west of the section line in the City of Mesa; however, right-of-way dedications have not yet been established along the east side of Meridian Avenue. Right-of-way required for Meridian Avenue will be dedicated as part of this MPC as described within the Infrastructure Master Plans.

Along Elliot Avenue, a City of Mesa waterline easement was dedicated which routes from the intersection of Elliot Avenue and Meridian Drive to the Central Arizona Project canal, located on the east side of the Retained Property. Within Section 18, the waterline alignment realigns from the Elliot Avenue (Elliot Road in the City of Mesa) section line within the City of Mesa back to follow the north line of Section 18 prior to Ironwood Drive, as shown on **Exhibit 2.2.1: Section Map**.

A concrete irrigation ditch known as the "Powerline Floodway Channel" bisects the Auction Property and a portion of the Retained Property. This channel and perpetual right-of-way for the Flood Control District of Maricopa County ("FCDMC") is the principal outlet for the Powerline flood retarding structure ("FRS") and Vineyard FRS and will be required to remain protected in place on the Auction Property and the Retained Property. A portion of the Retained Property is traversed by existing electric transmission lines that will remain in place. Grazing activities currently occur on the Retained Property and will continue until such time development is to occur, as shown on **Exhibit 2.2.2: Existing Site Conditions Map**.

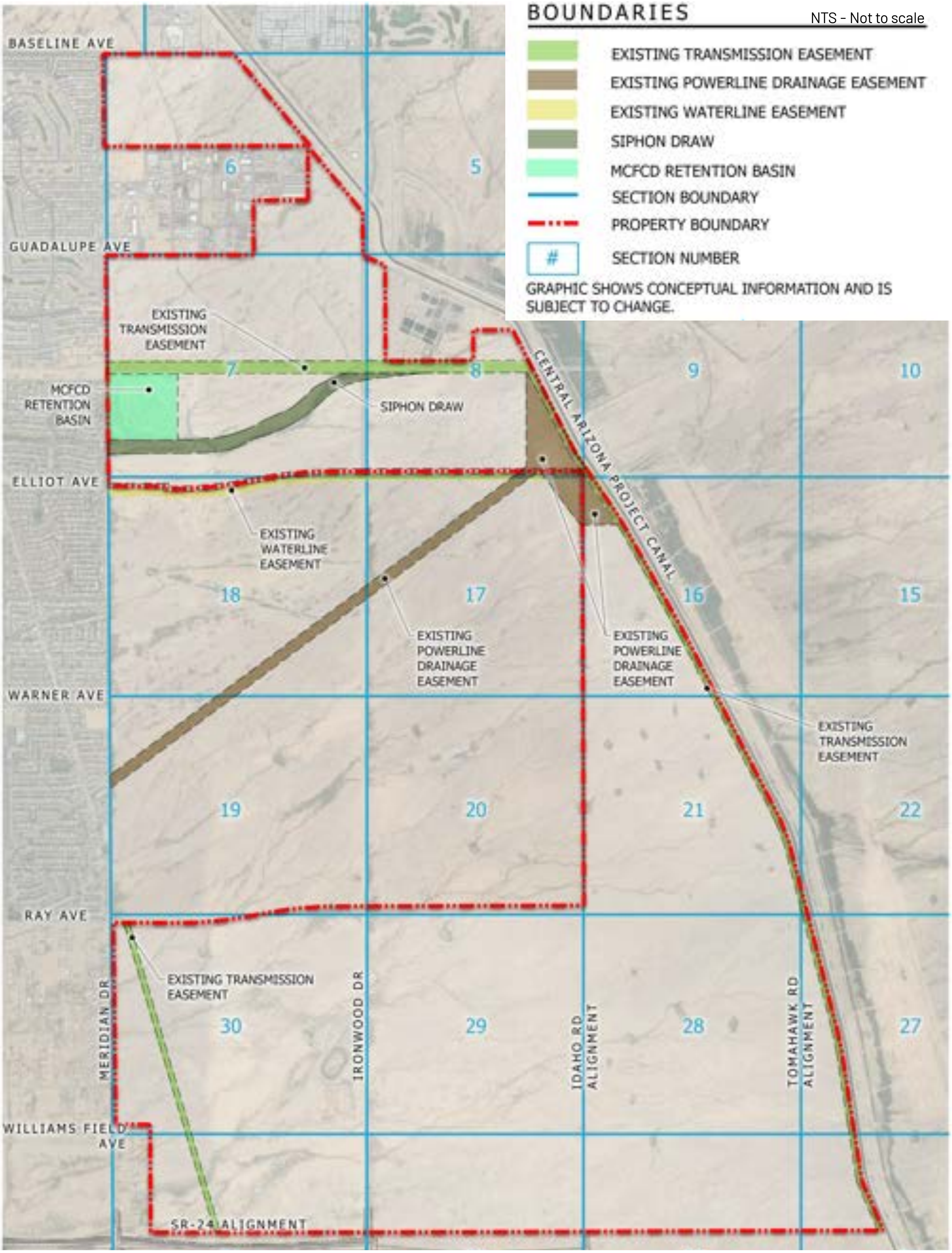


Exhibit 2.2.1: Section Map

N

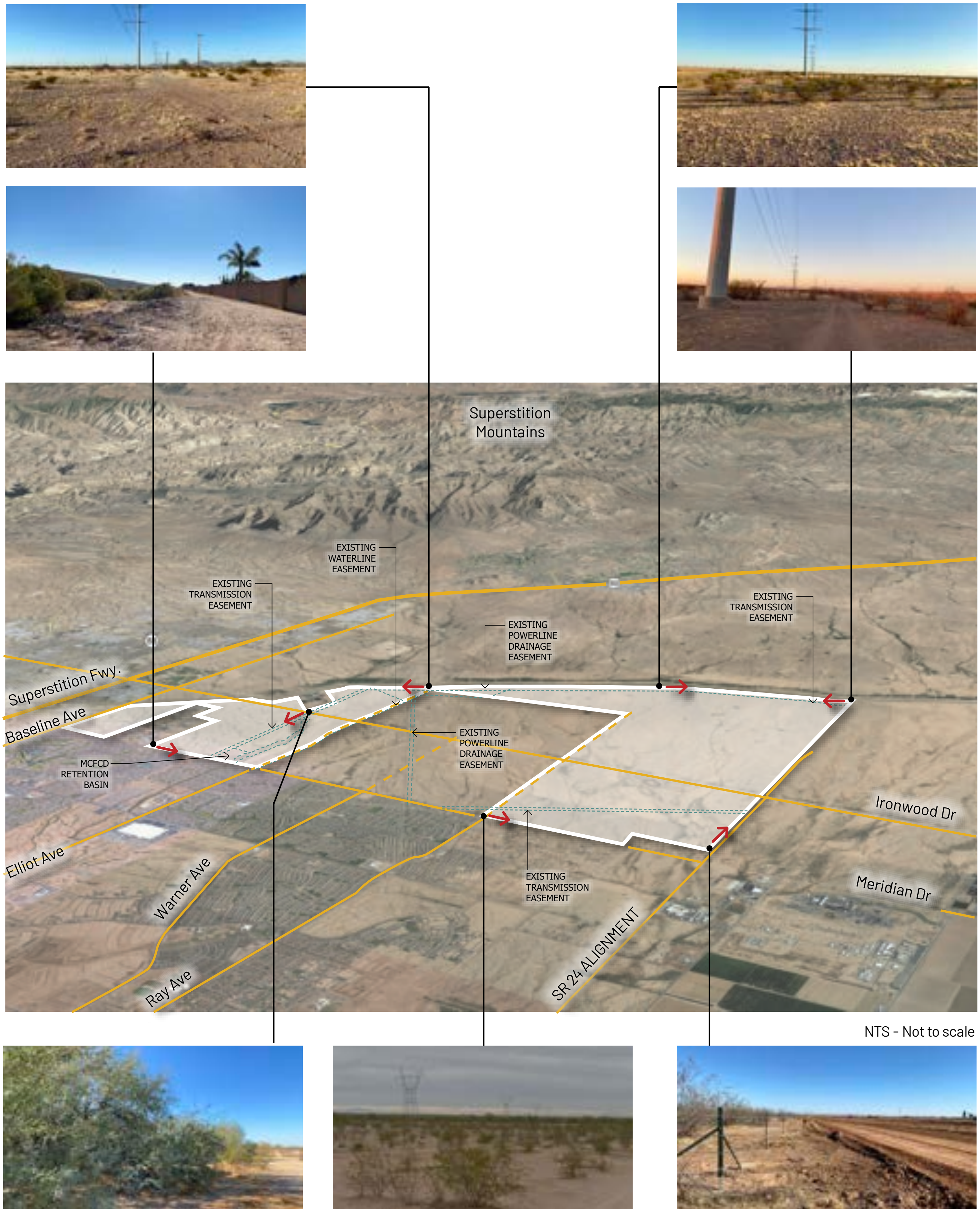


Exhibit 2.2.2: Existing Site Conditions Map

2.3 Existing and Proposed Entitlements

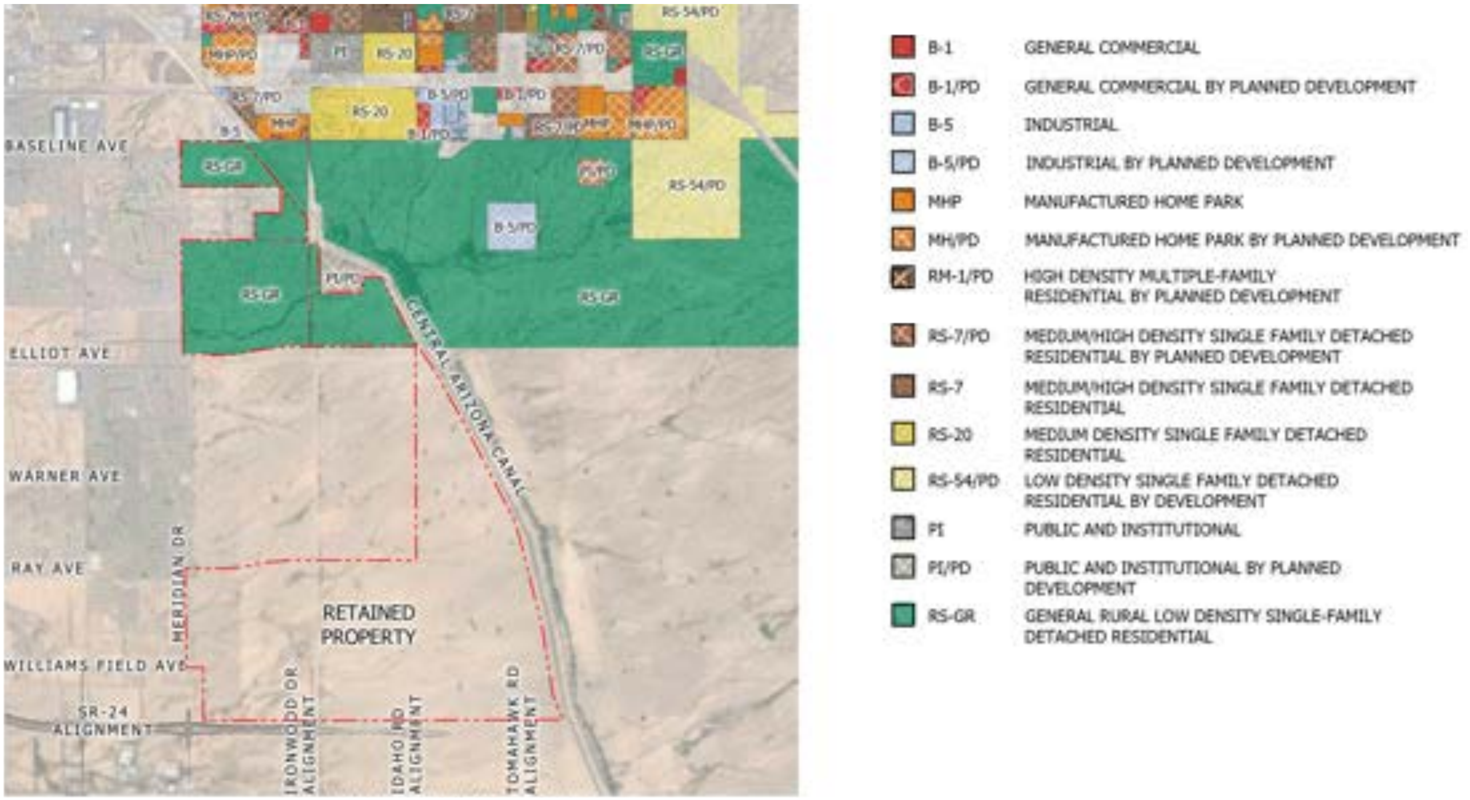
2.3.1 Existing Entitlements

A portion of the Retained Property in Section 6, 7, and 8 is currently within the corporate limits of the City of Apache Junction and is zoned RS-GR. The remainder of the Retained Property will be annexed into the City of Apache Junction and initially zoned RS-GR, which will then be immediately replaced with the MPC zoning district contemplated in this application. Those portions of Sections 6, 7 and 8 that are within the Retained Property area will also be rezoned from RS-GR to MPC at the same time.

2.3.2 Proposed Entitlements

This Applicant is requesting to rezone approximately 5,307 acres of property, the Retained Property, from RS-GR zoning to MPC zoning, as shown on **Exhibit 2.3.2: Existing and Proposed Zoning Map**. The MPC zoning was developed to accommodate master-planned areas of significant scale that will not develop in a single phase but instead will develop over the course of several years in an integrated manner. The MPC zoning provides the flexibility needed to manage development through various market cycles and ever-changing consumer demands.

This MPC Plan seeks to permit a wide variety of residential and non-residential land uses to ensure that the Retained Property is positioned to accommodate future development. As the property develops and as the State Land Department plans for disposition of land within the Retained Property, this MPC may be amended based on the provisions described within **Section 3.2: Amendments** to respond to market conditions or demands.



EXISTING ZONING

SOURCE: APACHE JUNCTION ZONING DISTRICTS
https://gis.apachejunctionaz.gov/portal/apps/webappviewer/index.html?id=051abe6845f64b53b7afd690c55c618e

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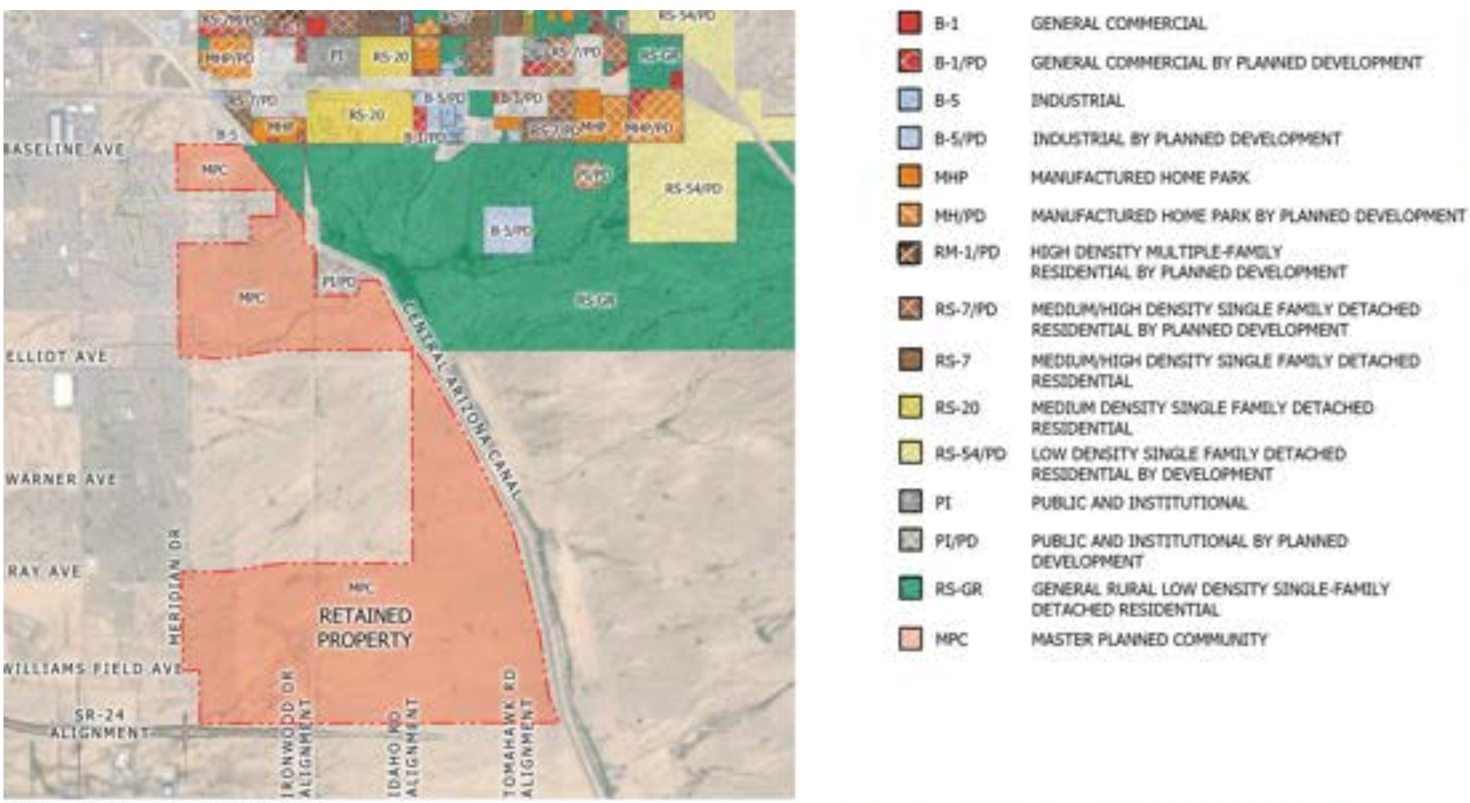


PROPOSED ZONING

SOURCE: APACHE JUNCTION ZONING DISTRICTS
https://gis.apachejunctionaz.gov/portal/apps/webappviewer/index.html?id=051abe6845f64b53b7afd690c55c618e

NTS - Not to scale

Exhibit 2.3.2: Existing and Proposed Zoning Map

3. Regulatory Framework

3.1 Purpose of the Request

The MPC zoning district is to be adopted in conformance with ARS 9-462 et. seq. and the requirements of the ordinances of the City. The MPC Plan is the vehicle for implementation of the City's master planned community zoning goals and establishes a planning and review process that handles the overall development of the Retained Property as the first level of planning. The second level of planning is the Development Unit Plan. Development Unit Plans shall be prepared by the initial winning bidder of future land dispositions by the State Land Department in each Development Unit.

Subsequently, preliminary subdivision plats and site plans will be prepared, submitted, and approved as the third level of planning, before building permits are issued and development occurs within a Development Unit on the Retained Property. The following outlines the sequence and hierarchy of the three levels of Planning:

3.1.1 Master Planned Community Plan

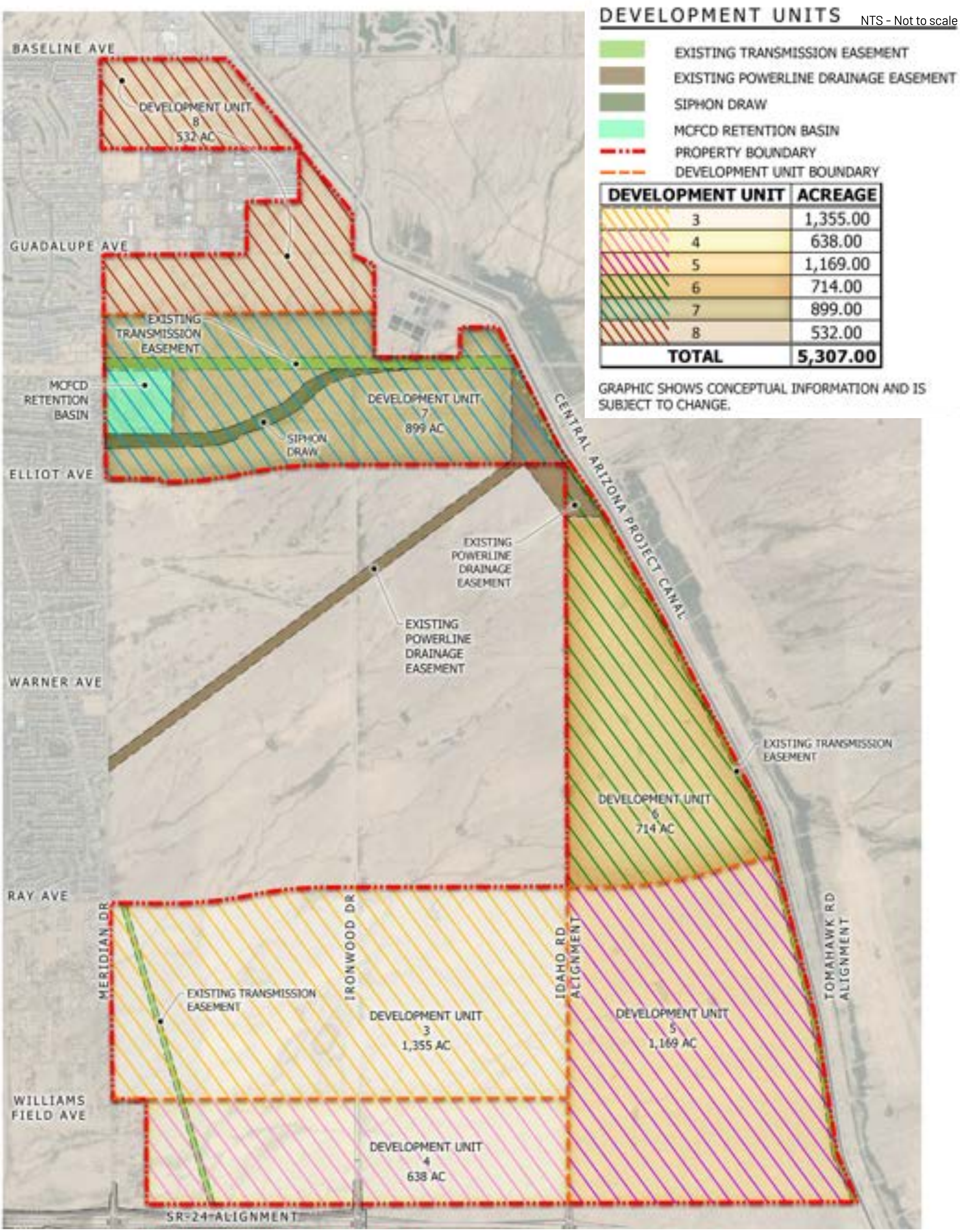
The MPC Plan is the first level of planning and sets forth the baseline entitlements for the development of the Retained Property. The MPC Plan establishes a land use budget, defines development units ("DUs"), permitted uses, and provides the broad vision and character for subsequent Development Unit Plans. The MPC Plan also includes, for convenience and by reference only, overall Infrastructure Master Plans that provide for appropriate infrastructure to accommodate the proposed density and intensity of permitted land uses on the Retained Property. The MPC Plan regulatory framework allows for the implementation of the Development Unit Plan level planning, which allows future developers to adapt criteria to accommodate the then current market and surrounding conditions. See **Section 3.4: Master Planned Community Plan**. Future Development Unit Plans will, at the time of submittal, include Development Standards and Design Guidelines that shall replace all zoning ordinance development standards and design guidelines as well as any future modifications or new development standards or design guidelines.

3.1.2 Development Unit Plan

The Development Unit Plan ("DUP") provides the second and more detailed level of planning demonstrating conformance to the MPC Plan. The Retained Property is divided into six (6) DUs, as shown on **Exhibit 3.1.2: Development Unit Map**. The DUP identifies the approximate amount of acreage for each land use. The Land Use budget allocates development intensities to each of the DUs. Also see **Section 3.5: Development Unit Plan Framework**.

3.1.3 Site Plans and Subdivision Plats

The most detailed level of planning and development review occurs with the approval of a site plan and/or a preliminary subdivision plat. This level of planning provides site-specific details for individual parcels and will identify land uses permitted within the site plan and/or preliminary subdivision plat. Site plans shall be submitted and approved as set forth in the Apache Junction City Code in effect at the time of adoption of the MPC. A preliminary subdivision plat or site plan must demonstrate compliance with the MPC Plan and the applicable Development Unit Plan. Unless otherwise modified by the MPC Plan, the City's subdivision standards are applicable to the development of the Retained Property. Preliminary subdivision plats shall be submitted to the Subdivision Committee and processed in accordance with the City Code in effect at the time of adoption of the MPC. Final subdivision plats must be submitted for review and approval by the City Council.



DEVELOPMENT UNIT	ACREAGE
3	1,355.00
4	638.00
5	1,169.00
6	714.00
7	899.00
8	532.00
TOTAL	5,307.00

3.1.3.1 Pre-Application Conference

A pre-application conference will be required prior to the submittal of a preliminary subdivision plat within a Development Unit. In addition to those items required under the City Code for a pre-application conference, the following materials shall be provided at a conceptual design level to demonstrate conformance with the MPC Plan and Development Unit Plan:

1. Conceptual subdivision plan showing street and lot layout
2. Conceptual path and trail circulation plan
3. Conceptual open space plan showing preliminary open space and parks hierarchy
4. Conceptual wall plan
5. Conceptual landscape character zones
6. Conceptual street tree program
7. Conceptual lighting zones
8. Conceptual signage plan (sign type locations only as required within **Section 3.5.14 Signage Plans**)

A pre-application conference shall be scheduled by the Development Services Director or designee within five (5) days of submittal and be held with the applicant no later than thirty (30) days from the date of submittal. A submittal for preliminary subdivision plat may be made after the pre-application conference is held.

3.1.3.2 Preliminary Subdivision Plat Submittal

In addition to those items required under the City Code for a preliminary subdivision plat, subject to the modifications within the MPC Plan and Development Unit Plan, the following materials shall be provided to demonstrate conformance with the MPC Plan and Development Unit Plan:

1. Allocation of density within development unit with the use of the Land Use Budget Tracking Table in conformance with **Section 3.4.1 Land Use Budget**.
2. Designation of residential and non-residential uses in conformance with Section **3.4.3 Permitted Uses** and **Section 3.5.7 Permitted Uses Development Categories**.
3. Street network including layout and geometry in conformance with the Master Transportation Plan and **Section 3.5.2 Transportation Framework Plan**.
4. Designation of park types, locations, and sizes as well as proposed programming in conformance with **Section 3.5.9 Open Space and Parks Framework Plan**.
5. Provide calculations of proposed open space as described in **Section 3.5.9(b)**.
6. Identify the location, size, and type of surface for each proposed path or trail within the subdivision plat area in conformance with **Section 3.5.10 Path and Trail Framework Plan**.
7. Identify the proposed landscape zones as well as the proposed palette of plant materials for each zone. Provide symbolized tree locations within landscape areas and proposed street tree program in conformance with **Section 3.5.11 Landscape Framework Plan**.
8. Identify the location, size, and type of proposed public facilities within the subdivision plat area in conformance with **Section 3.5.12 Public Facilities Framework Plan**.
9. Designation of lighting zones including light fixture types and locations per **Section 3.5.13 Lighting Plans**.
10. Designation of signage known signage locations and types within the proposed subdivision plat area in conformance with **Section 3.5.14 Signage Plans**. Where signage is not known, signage can be submitted at a later date following the requirements within **Section 3.5.14 Signage Plans.**
11. Designation of wall locations and types including elevations and materials in conformance with Section **3.5.15 Walls**.
12. Drainage report or narrative as a part of the stormwater management criteria described within **Section 3.5.18 Stormwater and Drainage**.

Preliminary subdivision plat review and approval shall follow the City Code for MPC Districts.

3.2 Amendments

Amendments to this MPC Plan may be necessary from time to time and may be requested by the State Land Department, a winning bidder of an auction, or an owner of land located within the Retained Property. So long as the State Land Department owns any portion of the Retained Property, amendments requested by a property owner, other than the State Land Department, shall provide documentation that such request has been approved by the State Land Department.

The criteria stated below shall determine whether a proposed amendment constitutes a Major Amendment or Minor Amendment (as each is defined below) to the MPC Plan. Once it has been determined that an amendment is a Major Amendment, such amendment request shall be processed in the same manner as an amendment to the MPC district under the Apache Junction City Code Volume II Land Development Code Chapter 1-16-6 and the City Council shall be acting in a legislative capacity when deciding whether to approve a Major Amendment request, approve such a request with conditions of approval, or to deny such a request .

a. **Major Amendments: An amendment to this MPC plan will be deemed a "Major Amendment" only if it involves any one of the following:**

    1. A change in the overall MPC Plan boundary, other than those modifications required due to errors or adjustments for engineering reasons.
    2. A change to the permitted uses in the MPC Plan.
    3. An increase in the total number of approved units or non-residential gross floor area of the overall MPC Plan (see **Major Land Use Budget Transfer 3.4.1.b**).
    4. An increase or decrease of more than thirty percent (30%) of the gross area of a Development Unit from that approved in the MPC Plan.

b. **Minor Amendments: Proposed amendments to the MPC plan that are not Major Amendments shall be considered "Minor Amendments". Minor Amendments shall follow an administrative approval process that will simply be to verify whether the requested amendment is not a Major Amendment and is consistent with the purposes and intent of the MPC Plan but may have stipulations or conditions of approval thereto to insure that the Minor Amendment is consistent with the purposes and intent of the MPC Plan.**

    1. Minor Amendment Approval Process

        i. The Development Services Director shall consider each Minor Amendment request within twenty-one (21) calendar days after the date the then-current landowner has provided documentation substantiating the amendment request, including, until such time the State Land Department no longer owns any portion of the Retained Property, documentation that the State Land Department has approved the Minor Amendment request. The Development Services Director shall either approve, approve with conditions, or deny the Minor Amendment and shall forward their decision to the then-current landowner.

2. Minor Amendment Appeals, Modifications and Administrative Changes

   i. A decision of the Development Services Director to deny a Minor Amendment request or approve a Minor Amendment request with stipulations or conditions of approval may be appealed to the City Council by the then-current landowner within fifteen (15) calendar days of receiving notice the decision.

   ii. The City Council shall be acting in an administrative capacity when reviewing an appeal from the decision of the Development Services Director and shall be limited to determining whether to reverse the decision of the Development Services Director and approve the Minor Amendment, modify the stipulations or conditions of approval made by the Development Services Director, or confirm the decision of the Development Services Director. The City Council shall meet to consider an appeal of decision of the Development Services Director within thirty (30) calendar days of receipt of the notice of appeal. If the City Council denies the appeal, the then-current landowner may: (a) file a request for a Major Amendment to the MPC in accordance with the Apache Junction City Code Volume II Land Development Code Chapter 1-16-6; or (b) contest, in a court of competent jurisdiction, the Council's decision regarding whether the Minor Amendment is consistent with the purposes and intent of the MPC Plan.

3. Infrastructure Master Plans

   i. Any modifications made to the Infrastructure Master Plans shall be deemed a Minor Amendment unless required to be updated as a result of a Major Amendment as described in **Section 3.2: Amendments**.

c. Annual Report

   1. The State Land Department shall provide an "Annual Report" to the City Council no later than July 1 of each year. The Annual Report shall provide a summary update on the status of development within the Retained Property.

3.3 Interpretations

The Development Services Director shall administratively review and approve clarifications and interpretations not otherwise addressed in the MPC Plan.

3.4 Master Planned Community Plan

3.4.1 Land Use Budget

The Land Use Budget sets forth the maximum number of residential units, non-residential gross floor area and minimum open space area, based on gross area, for the Retained Property as a whole, as shown on **Exhibit 3.4.1.1: Land Use Budget Table** and as shown on the conceptual land use plan **Exhibit 3.4.1.2 Conceptual Land Use Plan.** The intensity and density amounts have been initially allocated for the overall Retained Property and between the Development Units, but such allocation is subject to designation at the time of site plan and/or preliminary subdivision plat approval and dependent on several conditions including drainage, topography, pedestrian and vehicular circulation. Open space area shall be measured and accounted for within each Development Unit as stated in the Land Use Budget. Subdivision plats (preliminary and final) or site plan submittals which, when calculated in aggregate within a Development Unit, may not exceed the maximum residential units or non-residential gross floor area and must meet the minimum open space area established by the Land Use Budget.

a. **Land Use Budget Transfers:**

   i. In order to allow for creativity in design and to be able to provide the flexibility to respond to market conditions for a project of this size, scope and complexity, the State Land Department or a future owner or developer of land located within the Retained Property may transfer intensity and density from one DU to another DU so long as the maximum intensity and density for the Retained Property as a whole is not exceeded. Transfers requested by a property owner other than the State Land Department shall provide documentation that notice of such request has been provided to and approved in writing by the State Land Department's authorized representative. Any proposed transfer shall demonstrate that the transfer will not overburden the transportation system or utility infrastructure.

   ii. A transfer of residential units and non-residential gross floor area between DUs will be documented by modifying the Land Use Budget to reflect the increase and decrease of intensity and density for each DU that is part of the transfer.

   iii. Land Use Budget transfers shall be either major or minor pursuant to the criteria specified below.

b. Major Land Use Budget Transfers:

   i. A transfer request that exceeds the maximum permitted residential units or non-residential gross floor area as described within the Land Use Budget is a Major Land Use Budget Transfer.

   ii. A Major Land Use Budget Transfer shall be processed as a Major Amendment to the MPC district, and shall be processed as such, pursuant to the Apache Junction City Code in effect at the time of adoption of the MPC.

c. Minor Land Use Budget Transfers:

   i. All other budget transfer requests that are not Major Land Use Budget Transfers shall be Minor Land Use Budget Transfers.

   ii. A transfer request shall include brief description of the request as well as a revised Land Use Budget showing the requested transfer of residential units or non-residential gross floor area.

   iii. If the transfer request is a Minor Land Use Budget Transfer, based on the criteria specified above, the Development Services Director may administratively act on the amendment to the Land Use Budget and attach related administrative conditions of approval thereto.

d. Density, Intensity and Open Space Tracking:

   i. The Land Use Budget Tracking Table is utilized to track the progress of development within Development Units. Site plan or preliminary subdivision plat applications shall submit a Land Use Budget Tracking Table to the City with the application materials, as shown on **Exhibit 3.4.1.3: Land Use Budget Tracking Table.**

   ii. The Land Use Budget Tracking Table shall include the following information:

      1. The Development Unit identification stating the maximum residential units and non-residential gross floor area permitted from the Land Use Budget, as shown on **Exhibit 3.4.1.1: Land Use Budget Table**.

      2. Residential units and non-residential gross floor area as well as open space area for any existing subdivision or site plan within the same Development Unit that have been approved or submitted to the City.

      3. Where there are existing subdivisions or site plans within the same Development Unit, calculations for the remaining residential units and non-residential gross floor area, as well as the open space area required before minimum open space area is reached, within the Development Unit. Calculations shall be provided for the quantity of residential units and non-residential gross floor area remaining before the permitted maximum residential units or non-residential gross floor areas are reached.

4. Proposed residential units and/or non-residential gross floor area and open space area for each preliminary subdivision plat or site plan.

5. Totals of the proposed residential units and/or non-residential gross floor area and open space area for each preliminary subdivision plat or site plan.

6. Based on the proposed subdivision plat or site plan, calculations for the remaining residential units and/or non-residential gross floor area, and the residential units and/or non-residential gross floor area remaining before the permitted maximum residential units or non-residential gross floor areas are reached.

The completed Land Use Budget Tracking Table must be filed with the City at the time of preliminary subdivision plat or site plan submittal.

Land Use Budget							
Description	**Development Unit 3**	**Development Unit 4**	**Development Unit 5**	**Development Unit 6**	**Development Unit 7**	**Development Unit 8**	**Retained Property Total**
Gross Acreage	1,355 AC.	638 AC.	1,169 AC.	714 AC.	899 AC.	532 AC.	5,307 AC.
Minimum Required Open Space (15%)	203 AC.	96 AC.	175 AC.	107 AC.	135 AC.	80 AC.	796 AC.
Units	6,400 D.U. [3]	2,730 D.U. [4]	3,790 D.U.	2,170 D.U.	1,340 D.U.	0 D.U.	16,430 D.U. [1]
Maximum Density Transfer In (30%)	1,920 D.U.	820 D.U.	1,140 D.U.	650 D.U.	400 D.U.	810 D.U.	
Units With Maximum Transfer In	8,320 D.U.	3,550 D.U.	4,930 D.U.	2,820 D.U.	1,740 D.U.	810 D.U.	
Maximum Density Transfer Out (30%)	1,920 D.U.	820 D.U.	1,140 D.U.	650 D.U.	400 D.U.	0 D.U.	
Units With Maximum Transfer Out	4,480 D.U.	1,910 D.U.	2,650 D.U.	1,520 D.U.	940 D.U.	0 D.U.	
Non-Residential Gross Floor Area	0 S.F.	2,733,600 S.F.	195,300 S.F.	0 S.F.	2,295,600 S.F.	4,332,100 S.F.	9,556,600 S.F. [2]
Maximum Non-Residential Gross Floor Area Transfer In	217,800 S.F.	790,100 S.F.	58,600 S.F.	54,450 S.F.	688,700 S.F.	1,299,600 S.F.	
Non-Residential Gross Floor Area With Maximum Transfer In	217,800 S.F.	3,523,700 S.F.	253,900 S.F.	54,450 S.F.	2,984,300 S.F.	5,631,700 S.F.	
Maximum Non-Residential Gross Floor Area Transfer Out	0 S.F.	790,100 S.F.	58,600 S.F.	54,450 S.F.	688,700 S.F.	1,299,600 S.F.	
Non-Residential Gross Floor Area With Maximum Transfer Out	0 S.F.	1,943,500 S.F.	136,700 S.F.	0 S.F.	1,606,900 S.F.	3,032,500 S.F.	
1. Maximum combined number of units allowed within Development Units 3-8							
2. Maximum combined non-residential gross floor area allowed within Development Units 3-8							
3. Of the 6,400 DU permitted, up to 3,200 DU shall be permitted to be developed at 8+ DU/AC.							
4. Of the 2,730 DU permitted, up to 2,730 DU shall be permitted to be developed at 8+ DU/AC.							

Exhibit 3.4.1.1: Land Use Budget Table

Land Use Budget							
Description	Development Unit 3	Development Unit 4	Development Unit 5	Development Unit 6	Development Unit 7	Development Unit 8	Retained Property Total
Gross Acreage	1,355 AC.	638 AC.	1,169 AC.	714 AC.	899 AC.	532 AC.	5,307 AC.
Minimum Required Open Space (15%)	203 AC.	96 AC.	175 AC.	107 AC.	135 AC.	80 AC.	796 AC.
Units	6,400 D.U. [3]	2,730 D.U. [4]	3,790 D.U.	2,170 D.U.	1,340 D.U.	0 D.U.	16,430 D.U. [1]
Non-Residential Gross Floor Area	0 S.F.	2,733,600 S.F.	195,300 S.F.	0 S.F.	2,295,600 S.F.	4,332,100 S.F.	9,556,600 S.F. [2]

1. Maximum combined number of units allowed within Development Units 3-8
2. Maximum combined non-residential gross floor area allowed within Development Units 3-8
3. Of the 6,400 DU permitted, up to 3,200 DU shall be permitted to be developed at 8+ DU/AC.
4. Of the 2,730 DU permitted, up to 2,730 DU shall be permitted to be developed at 8+ DU/AC.

*GRAPHIC SHOWS CONCEPTUAL INFORMATION AND IS SUBJECT TO CHANGE.

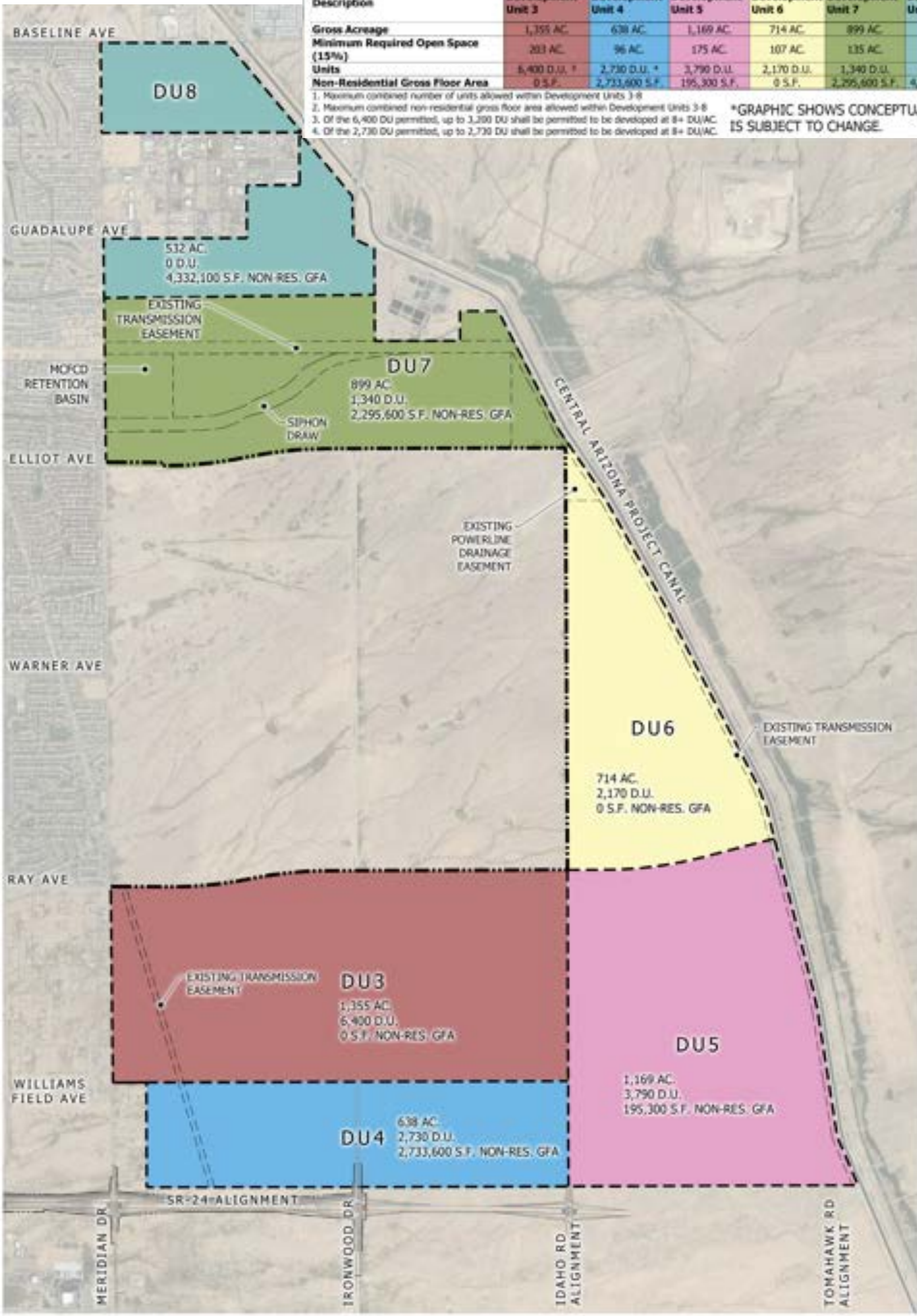


Exhibit 3.4.1.2: Conceptual Land Use Plan

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Land Use Budget Tracking (Example)				
Approved Development Unit Totals				
Development Unit	**Gross Acreage**	**Minimum Required Open Space (15%)**	**Units**	**Non-Residential Gross Floor Area**
3	1,355.00 Ac	203.00 Ac	6,400	0 SF
Existing Allocation				
Existing Parcels	**Gross Acreage**	**Open Space**	**Units**	**Non-Residential Gross Floor Area**
1	10.00 Ac	1.50 Ac	39	0 SF
2	10.00 Ac	1.50 Ac	39	0 SF
3	10.00 Ac	1.50 Ac	39	0 SF
4	10.00 Ac	1.50 Ac	39	0 SF
Existing Total Allocation	40.00 Ac	6.00 Ac	156	0 SF
Existing Total Allocation Remaining	1,315.00 Ac	197.00 Ac	6,244	0 SF
Proposed Allocation				
Proposed Parcels	**Gross Acreage**	**Open Space**	**Units**	**Non-Residential Gross Floor Area**
5	10.00 Ac	1.50 Ac	39	0 SF
6	10.00 Ac	1.50 Ac	39	0 SF
Proposed Allocation	20.00 Ac	3.00 Ac	78	0 SF
Proposed Total Allocation	60.00 Ac	9.00 Ac	234	0 SF
Proposed Allocation Remaining	1,295.00 Ac	194.00 Ac	6,166	0 SF

Exhibit 3.4.1.3: Land Use Budget Tracking Table

3.4.2 Development Units

The Retained Property is approximately 5,307 gross acres in overall area. The land area is divided into six (6) Development Units which are generally configured at logical boundaries along primary roadways, drainage areas or land use transitions, as shown on **Exhibit 3.1.2: Development Unit Map**. Within each Development Unit, a maximum residential unit count and non-residential gross floor area as well as minimum open space area is included within **Section 3.4.1: Land Use Budget** and supported by the Infrastructure Master Plans.

As development is planned within a Development Unit, the ability to phase improvements will be required. Development Units shall allow for non-sequential phased improvements providing flexibility in defining where development will occur. A Development Unit may propose development in any location within the boundaries of the Development Unit so long as it leads to a logical development plan where improvements proposed allow for residential or non-residential development. Within a Development Unit, certain parcels may be held out for future development subject to marketability and/or site feasibility. Completion of construction of a particular residential or non-residential development is not required to commence construction of another residential or non-residential development within a Development Unit.

The aggregate of all final subdivision plats or site plan submittals within a Development Unit may not exceed the maximum residential units or non-residential gross floor area established by the most current amended version of the Land Use Budget, as shown on **Exhibit 3.4.1.1: Land Use Budget Table.**

Until the final build-out of a Development Unit, the applications for cumulative final subdivision plats or site plan submittals in each Development Unit shall not utilize all the available residential units or non-residential gross floor area for an entire Development Unit and thereby leave potentially undevelopable portions of the Retained Property.

3.4.3 Permitted Uses

The Retained Property will be comprised of both residential uses and non-residential uses. The proposed use for residential or non-residential shall be identified at the time of preliminary subdivision plat or site plan submittal. This section provides a list of permitted uses within the Retained Property. Requirements for architecture, landscape, screening and location of permitted uses as well as their associated development categories and development standards shall be defined within the Development Unit Plan as described in **Section 3.5.7 Permitted Uses Development Categories**.

3.4.4 Infrastructure Master Plans

Master reports for infrastructure have been developed for the Site which support the Land Use Budget as shown on **Exhibit 3.4.1.1: Land Use Budget Table**. They provide an overview of the community-wide infrastructure plans for the Retained Property.

As the Retained Property develops, the One Water and other sustainability goals of the City will be considered by the Apache Junction Water Utilities Community Facilities District ("WUCFD"), the Superstition Mountains Community Facilities District No. 1 ("SMCFD"), and other Retained Property stakeholders in an effort to effectively manage the available water resources for the Site and surrounding areas. Opportunities to offset potable water use may include an integrated approach to water supply by using one or more sources such as potable water, non-potable reuse, potable reuse, wastewater, stormwater and others.

As development phases are identified, a "Basis of Design Report" shall be prepared as further described in **Section 3.5 Development Unit Plan Framework**. A Basis of Design Report is a supplemental narrative report to the proposed improvement plans for a development phase that outlines the design criteria and calculations utilized to size and describe the proposed facilities and its components. The Basis of Design Report references design standards set forth within the Infrastructure Master Plans and contains the information that the design is based upon. Basis of Design Reports are required for submittal by the Arizona Department of Environmental Quality for their review and issuance of the approval to construct permit for all water and sewer facilities being constructed within a development phase.

3.4.5 Utilities

3.4.5.1 Electric

Electric service for the Retained Property is anticipated to be provided by Salt River Project (SRP).

3.4.5.2 Telephone and Cable

Cox Communications, AT&T, and Lumen (Century Link) can offer cable television, digital telephone, and broadband data service to the Retained Property.

3.4.5.3 Natural Gas

The Retained Property is within the service area of Southwest Gas Corporation.

3.4.5.4 Solid Waste Disposal

The residential areas of the Retained Property will be served by the City of Apache Junction or its designee for solid waste disposal. Non-Residential areas will be served by contracting with the City or private solid waste disposal companies.

3.4.5.5 Sewer

The Retained Property will be served by the Superstition Mountains Community Facilities District.

3.4.5.6 Water

The Retained Property will be served by the Apache Junction Water Utilities Community Facilities District and a portion will be served by the Arizona Water Company.

3.4.6 Maintenance of Streets and Common Areas

3.4.6.1 Homeowner's Association

Criteria for maintenance of public and private improvements shall be established within the Development Unit Plan. This may include the formation of one or more Homeowner's Associations ("HOA") within a Development Unit.

3.5 Development Unit Plan Framework

As the State Land Department auctions property within the Retained Property, future developers shall be required to prepare Development Unit Plans. The Development Unit Plans includes a series of exhibits with supporting narratives, which generally describe the location of residential and non-residential uses, vehicular and pedestrian connections, parks and open space, landscape character as well as establish an overall aesthetic character for the Development Unit. The following materials, as described hereafter, shall be a part of the Development Unit Plans.

The Development Unit Plan shall address an entire Development Unit based on the auction in which the property was acquired, including any Development Unit boundary adjustments thereof (and after processing any Minor Amendment or Major Amendment, as the case may be, required pursuant to **Section 3.2**), and shall be reviewed and approved by the Development Services Director prior to the submittal of a preliminary subdivision plat or site plan within the identified Development Unit. The actual quantity of Development Unit Plans required shall be based on the auction(s) of property units within the Retained Property by the State Land Department.

Each Development Unit based on the auction in which the property was acquired, shall prepare a Fiscal Impact Analysis to accompany the first submittal of the Development Unit Plan.

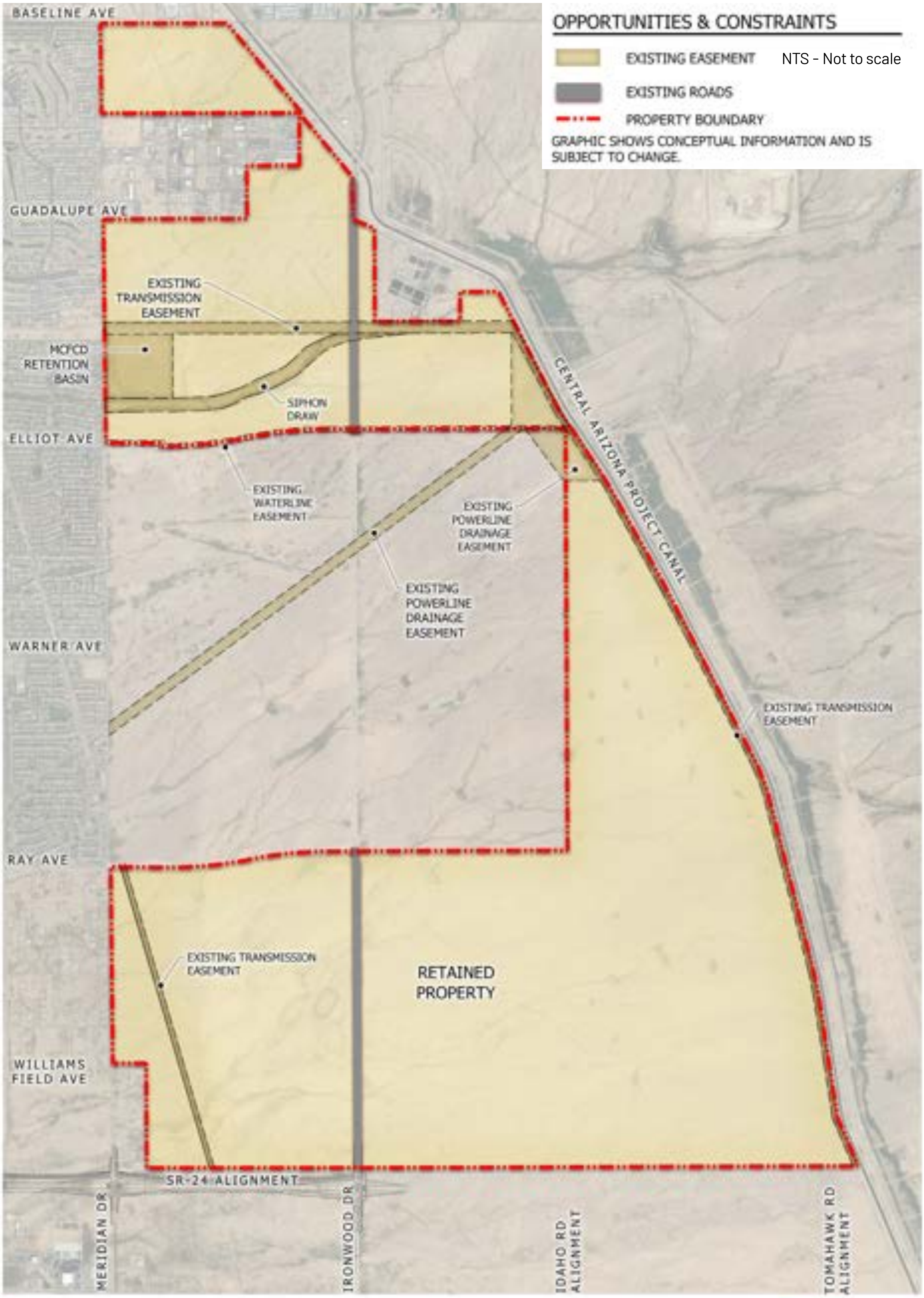

Exhibit 3.5.1: Opportunities and Constraints Plan

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3.5.1 Opportunities and Constraints Plan

The “Development Unit Opportunities and Constraints Plan” identifies the areas of unconstrained development potential on the Retained Property and areas where development will consider methods to minimize impacts of existing site constraints to proposed development. See **Exhibit 3.5.1: Opportunities and Constraints Plan.**

3.5.2 Transportation Framework Plan

The “Development Unit Transportation Framework Plan” illustrates the primary street network for each Development Unit. The proposed primary public street network includes arterial and collector classification roadways where proposed right-of-way dedications will be required, as shown on **Exhibit 3.5.2: Transportation Framework Plan**. To provide for flexibility in the planning and development of each Development Unit, a series of alternative street sections may be included within each Development Unit Plan.

Each Development Unit shall provide a Traffic Impact Analysis, which demonstrates the proposed improvements are in conformance with the Master Transportation Plan and shall address any increases or decreases in traffic volumes from other Development Units and within the proposed Development Unit which may occur as development progresses and residential units and non-residential gross floor area changes.

Final street network layout and geometry are to be determined at the time of preliminary subdivision plat or site plan submittal.

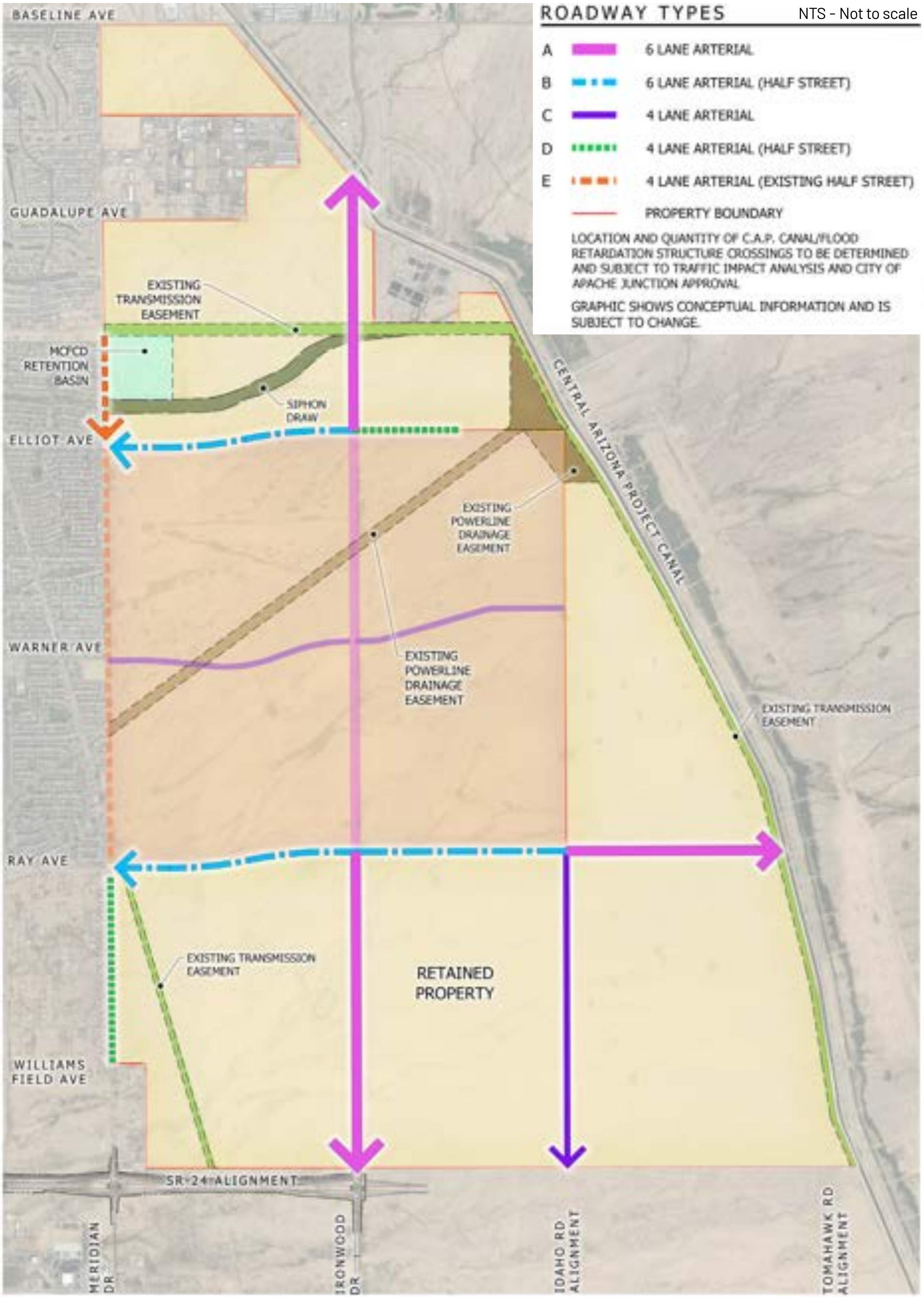

Exhibit 3.5.2: Transportation Framework Plan

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3.5.3 Drainage Plans

Each Development Unit shall prepare a "Mass Grading and Drainage Plan" for each development phase that shall demonstrate conformance to the Master Drainage Plan. A Development Unit Mass Grading and Drainage Plan should address any increase or decrease in runoff from upstream or downstream Development Units or within the proposed development phase that may occur as development progresses and residential unit density and non-residential gross floor area intensity changes. The following components should be included on the Development Unit Mass Grading and Drainage Plan:

a. Design report which demonstrates conformance to the Master Drainage Plan.
b. Maps which show the watersheds draining onto or through the development phase with the estimated peak flows for flood events as described within the Master Drainage Plan.
c. Within the proposed development phase, provide estimated peak flows and volumes of run-off exiting the property for both the developed and undeveloped conditions.
d. Location and estimated size of major drainage facilities such as channels, detention basins or retention basins.
e. Proposed phasing of the drainage system, if required, for the development phase.
f. Each development phase shall adhere to the 100 year/2 hour storm requirements.

3.5.4 Potable Water Basis of Design Report

Each Development Unit shall prepare a "Potable Water Basis of Design Report" for each development phase that shall demonstrate conformance with the Master Water Plan. A Potable Water Basis of Design Report should address any increase or decrease in water demand from other Development Units or within the proposed development phase that may occur as development progresses and residential unit density and non-residential gross floor area intensity changes. Each Potable Water Basis of Design Report shall include the following:

a. Design report which demonstrates conformance to the Master Water Plan.

b. Potable water plan which includes the size, location, and type of required potable water system components including on-site and offsite infrastructure, pump stations and storage facilities (if required) to service the development phase in both the interim condition and full buildout.

c. Calculations necessary to substantiate the proposed infrastructure sizes, types, and capacities of the proposed potable water system including updated demand factors that reflect actual usage.

d. Proposed phasing of the potable water system, if required, for the development phase.

e. Well sites are required for redundancy. Future purchasers of the Retained Property will dedicate property not to exceed one-half (.5) acres in area for each well site not to exceed the frequency of one (1) well site per one (1) square mile, at the time of development.

f. A future parcel for a surface water plant is currently planned to be located within DU 6 as described within the Master Water Plan. The location is subject to change based on future potable water plan studies. The identification of the property for a surface water plant assumes that AJWD will purchase the property at such time it is deemed necessary to construct.

3.5.5 Wastewater Basis of Design Report

Each Development Unit shall prepare a "Wastewater Basis of Design Report" for each development phase that shall demonstrate conformance with the Wastewater Infrastructure Master Plan. A Wastewater Basis of Design Report should address any increase or decrease in wastewater flow from other Development Units or within the proposed development phase that may occur as development progresses and residential unit density and non-residential gross floor area intensity changes. Each Wastewater Basis of Design Report shall include the following:

a. Design report which demonstrates conformance to the Wastewater Infrastructure Master Plan.

b. Wastewater Plan which includes the size, location and type of required wastewater collection system components including on-site and offsite infrastructure, lift stations, transmission lines and, treatment system elements required to service the development phase in both the interim condition and full buildout.

c. Calculations necessary to substantiate the proposed infrastructure capacities, sizes, types, and capacities of the proposed wastewater system.

d. Proposed phasing of the wastewater system, if required, for the development phase.

e. Future parcel(s) for a recharge site(s) may be required within Development Units. Location of a site shall be determined based on the amount of wastewater produced within a particular Development Unit. Any such wastewater recharge site shall not to exceed ten (10) acres in area and should be located in undevelopable areas near the non-potable water main distribution network. The identification of the property within developable areas assumes that SMCFD will purchase the property at such time it is deemed necessary to construct. The use of drywells will be required within the recharge site(s) to increase the percolation rates.

3.5.6 Non-Potable Water Basis of Design Report

Each Development Unit shall prepare a "Non-Potable Basis of Design Report" for each development phase that shall demonstrate conformance with the Non-Potable Water Infrastructure Master Plan. A Non-Potable Water Basis of Design Report should address any increase or decrease in water demand from other Development Units or within the proposed development phase that may occur as development progresses and residential unit density and non-residential gross floor area intensity changes. Each Non-Potable Water Basis of Design Report shall include the following:

a. Design report which demonstrates conformance to the Non-Potable Water Infrastructure Master Plan.

b. Non-Potable Water Plan which includes the size, location, and type of required non-potable water system components including on-site and offsite infrastructure, pump stations and storage facilities (if required) to service the development phase in both the interim condition and full buildout.

c. Calculations necessary to substantiate the proposed infrastructure sizes, types, and capacities of the proposed non-potable water system.

d. Proposed phasing of the non-potable water system, if required, for the development phase.

3.5.7 Permitted Uses Development Categories

Each Development Unit Plan shall provide criteria for the location of land use classifications as well as their associated development categories. For instance, residential use classifications typically include Low-Density, Medium-Density and High-Density. The criteria should establish a density range for each residential use classification and include specific development categories by which each use is implemented through development standards. Specific regulated uses within each of the residential use categories shall also be established. The City land use classifications, uses and development categories may be utilized as a basis for establishing the required criteria, or custom land use classifications, uses and development categories may be established based on the desired development result.

Similarly, for non-residential land uses, such as Commercial, Mixed-Use, Employment, Industrial or other non-residential uses, criteria shall be established for the use and implementation of each land use category. Development standards including architecture, landscape and screening for each land use category as well as regulatory use criteria shall be established for each Development Unit Plan. The City land use classifications, uses and development standards may be utilized as a basis for establishing the required criteria, or custom land use classifications, uses and development standards may be established based on the desired development result.

Residential Permitted Uses	
Above Ground Utilities	Multi-Family Residential Housing
Accessory Dwelling Unit	Non-Commercial Agriculture and Grazing
Accessory Structures (except cargo cont.)	Nursing Home / Hospice
Adult Care Home	Personal Caretaker Unit
Alternate (non-solar) Energy Technologies	Public/Private Schools K to 12
Assisted Living Facility	Recreational (Indoor and Outdoor)
Boarding House	Religious Institutions
Cargo Containers[1]	School Dormitory
Child Care Homes	Single-Family Detached Conventional Housing
Civic Uses and Structures	Single-Family Attached Housing
Day Care Center	Solar Panels
Day Care Home	Subdivision and HOA Activities
Detached Garages	Swimming Pools and Sports Courts
Equestrian Activities (private)	Telecom Facilities
Foster Home or Foster Group Home	Temp. Living Quarters During Construction
Group Care Homes	Temporary Uses and Structures
Home Occupations	
Live / Work Unit	
Mixed Use Commercial and Multi-Family	
Model Homes	

1. Cargo containers shall be limited to ancillary uses such as architectural features or as a primary components in creative modular designs.

Exhibit 3.5.7.1: Residential Permitted Uses

Non-Residential Permitted Uses	
Agriculture	**Automotive Continued**
Animal Sales/ Service (Domestic Pet)	Gasoline & Alternative Fuel Station
Field Crops, Orchards	Marine Fuel Facility
Greenhouse	Recreational Vehicle Storage
Kennel	Roadside Stand
Nurseries/ Garden Centers	Tire Sales, Repair and Mounting
Stable	Truck Stop, including wash
Automotive	
Auto Sound System Installation, Auto Glass Tinting & Repair, & similar uses	
Auto Auction	
Auto Body Repair & Painting Facilities	
Auto Impound	
Auto Parking Lot or Parking Structure as Principal Use	
Auto Parts and Accessory Store	
Auto Rental	
Auto Washing/ Detail	
Automobile Diagnostic and/or Service Establishment	
Automobile Sales	
Automobile Service	
Automobile Towing & Impound Facilities	
Automobile, Boat, RV, or Motorcycle, Outdoor Sales and Rental	
Automobile, RV, & Boat Storage Facility	
Automotive Repair Facilities	
Boat & RV Repair	
Car Wash	
Car/ Truck Maintenance	
Emissions Testing Facility	

Exhibit 3.5.8.1: Non-Residential Permitted Uses

Non-Residential Permitted Uses

Civic
Art Gallery
Bus Shelter
Bus Terminals / Park and Ride Facilities
Cemeteries/ Mausoleums
Clubs/ Lodges
Commercial Recreation
Community Center
Conference/ Convention/ Exhibition Center
Cultural Institutions
Fire Station
Fountain or Public Art
Government Offices
Library
Live Theater
Movie Theater (more than one screen)
Museum
Non-profit Social services
Nursing or Convalescent Home, Long Term Care Facility
Open Space
Outdoor Auditorium
Parking Structure
Parks, Recreation, Playground
Passenger Terminal
Police Station
Public & Public Utility Buildings, Structures, Uses, Facilities and Equipment
Public Buildings
Public Maintenance Facility
Religious Institutions & similar places of worship

Civic Continued
Seasonal Art Festival
Special Events
Sports Stadium
Substance Abuse Detoxification & Treatment Centers
Surface Parking Lot
Water Production and Storage
Water Reclamation Facility
Education
College
Elementary School/ Middle School
High School
Other - Childcare Center
Trade School
Public/Private Schools, Educational Institutions, Business, Technical or Vocational excluding Colleges Universities
Entertainment
Dancing, Theatrical or Music Studio
Golf Courses, incl. golf clubs and maintenance
Health and Exercise Center
Indoor Recreation/Entertainment including Bowling Alleys, Game Rooms, Video Arcades, Ice & Roller Skating Rinks, Shooting Ranges, Pool & Dance Halls, Bingo Halls, & similar uses (excluding Adult Uses) & Taverns, Bars & Lounges
Recreation and Social Clubs
Tennis, Racquet Clubs, Miniature Golf & similar uses
Wedding and Reception Center

Exhibit 3.5.8.1: Non-Residential Permitted Uses Cont.

Non-Residential Permitted Uses
Industrial & Manufacturing
Aviation uses such as Aircraft Repair, Aircraft Sales & Air Charter Services
Bulk Fuel Sales and Storage
Call center
Cement & Asphaltic Concrete Batch Plants
Commercial Laundry & Dying Plant
Cremation Facility
Data Center
Day Labor Hiring Centers
Electric Power Generating Plants, Solar Panel Energy Production, Transformer Stations & Sub-stations, Gas Pumping Plants
Electric Substation
Environmental Remediation Facility
Essential Public Service or Utility Installation
Freight/ Truck Terminals/ Depots
Hatcheries
Heavy Industrial Facility
Indoor Storage/ Mini Storage/ Warehouse
Laboratory Facility
Light Industrial Facility
Machine Shops
Manufacturing of lumber & wood products, primary metal industries, fabricating metal products, machinery, & transportation equipment excluding ore reduction & smelting, production or refining of petroleum, gas or hydrocarbons
Manufacturing, Fabrication & Processing of Goods
Mini-storage warehouses, RV, Boat & trailer storage
Motion Picture Studio, Television Pictures, Commercial Still Photography
Moving company storage & transfer facility

Industrial & Manufacturing Continued
Moving truck, trailer & equipment rental
Outdoor storage
Parcel delivery service
Printing and publishing facilities
Railroad shops & similar heavy service facilities
Recycling collection facility
Recycling Collection Point
Recycling Facilities
Remote Mail Service
Research laboratories
School bus parking and maintenance
Transit Terminals
Wholesaling, warehousing, distributing, repair, rental & servicing of any commodity excluding live animals, explosives & storage of flammable liquids & gases
Wireless Communication Facilities/ Cellular Tower
Wood Preserving by pressure impregnation, Rubber or Oil Reclaiming
Lodging
Bed & Breakfast (up to 6 Rooms)
Inn (up to 12 rooms)
Hotel (no room limit)/ Resort

Exhibit 3.5.8.1: Non-Residential Permitted Uses Cont.

Non-Residential Permitted Uses

Medical
Ambulance Service Facility
Emergency Medical Care Facility
Hospitals
Medical, Dental, Optician or Health offices including Clinics and Laboratories
Veterinary Hospital
Veterinary Offices and Clinics, excluding animal boarding

Office
Business Services
Professional, Administrative or Business Offices
Research & Development

Personal Services
Animal Shelter
Appliance Repair
Auction Houses and Estate Sales
Boarding Kennels
Blueprint Shop
Cabinet and Carpentry Shop
Custom Dressmaking, Furrier, Millinery or Tailor Shop
Dry Cleaning and Laundry Establishment
Employment Agencies, not including Day Labor Hiring Centers
Laundromat, self-service
Locksmith
Messenger Delivery Service
Tattoo & Body Piercing Studio
Palm Readers, Phrenologists, Fortune Tellers and Astrologers
Tanning salon, Nail Salon, Barber Shop, Beauty parlor & similar uses
Pest Control Service

Personal Services Continued
Pet Grooming Shop
Photographic Developing and Printing
Photographic Studio
Radio and Television Sales and Service
Recording Studio
Shoe Sales and Service, Clothing Alteration
Sightseeing Tour Companies
Ticket and Travel Agency
Watch and Clock Repair Shop

Retail
Art Gallery
Antiques, Crafts, and Collectibles Sales
Appliance, Furniture, & Household Equipment Sales and Rentals
Artist Studio
Bait and Tackle Shops
Bank/ Financial Institutions
Breweries and Distillers
Book, Stationery & Greeting Card Store
Building Materials/ Big Box
Candy and Ice Cream Store
Carpet and Floor Covering Store
Catering Establishment
Coffee Shop
Commercial Entertainment
Commercial Parking
Copy Center
Delicatessen and Catering Establishment
Department Store
Donation Center

Exhibit 3.5.8.1: Non-Residential Permitted Uses Cont.

Non-Residential Permitted Uses

Retail Continued
Drive Through
Equipment Sales, Rental and Storage Yard
Farmers Markets
Florist
Food & Beverage Sales
Food & Beverage Vendor Cart
Funeral Parlor/ Home
Gift, Novelty and Souvenir Shop
Hardware Store with outdoor storage
Hobby, Stamp and Coin Shop
Home Improvement Store
Liquor Selling Establishment
Live Entertainment
Monument Sales and Engraving Shop
Newsstand
Office Supply & Machine Sales & Service
Open-Market Building
Outdoor Dining Areas
Outdoor Display
Outdoor Entertainment
Outdoor Sales and Display Area
Personal Services
Pet Shop
Plant Nursery, Retail
Plant Nursery, Wholesale
Plumbing, Heating & Air-conditioning Sales and Service
Push Cart / Kiosk
Restaurant, fast-food (drive-thru)
Restaurant, fast-food

Retail Continued
Restaurants and Cafeterias
Retail
Retail Decorative Rock Sales
Retail Liquor Store
Retail Sales of Lumber & Building Materials
Retail Sales of Merchandise, Indoor
Sales & Storage of grain, feed, seed, fertilizer, farm & garden supplies
Street Performers
Tavern, Bar, Lounge or Establishment that sells alcoholic beverages for consumption on premise, excluding restaurants
Upholstery Shop
Video Rental Store
Water and Ice Store
Wholesale Produce Storage or Market
Wholesale sales of finished goods

Exhibit 3.5.8.1: Non-Residential Permitted Uses Cont.

3.5.8 Non-Residential Intensity Plans

"Development Unit Non-Residential Intensity Plans" conceptually locate areas of proposed non-residential gross floor area against the background of each of the Development Unit's proposed land use classifications. The specific proposed non-residential gross floor area will be provided through future site plan submittals. The information is intended to provide context for understanding the distribution of land uses through a Development Unit.

3.5.9 Open Space and Parks Framework Plans

"Development Unit Open Space and Parks Framework Plans" provide information related to the network of open space and parks within each Development Unit in the Retained Property. A hierarchy of parks shall be established providing for a range of program and scale complementing the planned uses within each Development Unit. Minimum open space requirements for each Development Unit have been established within **Exhibit 3.4.1.1 Land Use Budget Table**.

Parks within a Development Unit may range in character, size, and location depending on their intended use. Parks may be located within neighborhoods, adjacent to open spaces, or other non-residential land uses. Parks should be main features within their proposed location and support the recreation needs of their users. Trails should provide clear access to parks and connections to adjacent land uses.

"Open Space" areas shall be defined as those areas within a development that are either improved or unimproved and are intended for the common use of residents. Open Space shall be comprised of active and passive areas with improvements which are appropriate for their intended users.

"Active Open Space" shall be defined as those areas designated for recreation activities, play areas, open play fields, court games, or those areas which include program such as picnic tables, benches, interpretive signage, trails or pathways or other recreation type activities.

"Passive Open Space" shall be defined as those Open Space areas which do not include Active Open Space.

Development Unit Open Space and Parks Framework Plans shall provide the following information:

a. **Parks**

   i. Parks shall be located within each Development Unit within a ten (10) minute walk of residential units. Size, type, and quantity of parks shall be determined at the time of preliminary subdivision plat submittal. The approximate size and location of any park that is planned to be over eight (8) acres in area shall be shown at the time of the Development Unit Plan submittal. Parks should be an integral feature within a Development Units overall open space.

   ii. Parks shall not be required for non-residential uses. Multi-family use area park requirements shall be satisfied through common open space provided within the multi-family parcel.

   iii. Park guidelines for each Development Unit shall be provided to establish proposed development requirements within a particular Development Unit.

   iv. Within parks greater than five (5) acres in area, turf areas which exceed two and one-half (2 ½) acres of aggregate area shall be designed to be irrigated within non-potable water.

b. **Open Space**

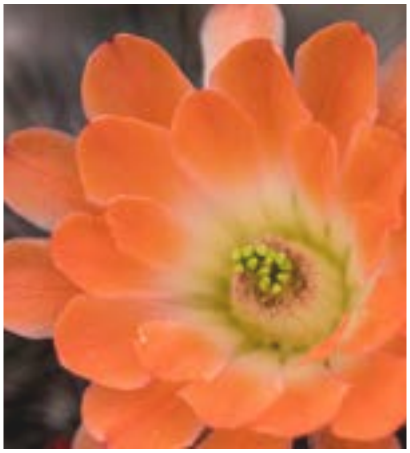
   i. Residential Common Open Space: Common open space shall be a minimum of fifteen percent (15%) of the gross site area. This may include landscaped common area, public or private, or any areas maintained by an HOA within public right-of-way (excluding medians), setbacks, drainage areas, trail corridors, landscape easements, parks or other natural area or other open space areas created as a part of residential development. Open Space requirements for residential development shall be met in aggregate for each Development Unit as a whole. Individual subdivision plats (preliminary or final) are not required to meet the minimum Open Space percentage. Open space shall be calculated within a Development Unit with each preliminary subdivision plat or site plan submittal to ensure the minimum overall area is met as required within **Section 3.4.1: Land Use Budget**.

1. Residential Common Open Space: of the required Open Space for residential development within a Development Unit, twenty (20%) of the area shall be Active Open Space. Retention and/or detention areas shall meet the Active Open Space requirements so long as an area of no less than ten thousand (10,000) square feet is available for recreation activities. Active Open Space requirements for residential development shall be met in aggregate for each Development Unit as a whole. Individual subdivision plats are not required to meet the minimum Active Open Space percentage.

ii. Multi-Family Common Open Space: common open space shall be a minimum of fifteen percent (15%) of the gross site area of the particular multi-family development site. This may include landscaped areas within public right-of-way (excluding medians), setbacks, parking islands, drainage areas, trail corridors, landscape easements, or other natural area or open space area created as a part of the multi-family development. An enclosed climate-controlled community facility of at least eight hundred (800) square feet for developments of one hundred (100) units or more is required. Each individual site plan, including any proposed phasing, shall meet the required common open space area, in aggregate for the entire proposed site.

iii. Commercial Common Open Space: common open space shall be a minimum of fifteen percent (15%) of the gross site area. This may include landscaped areas within public right-of-way (excluding medians), setbacks, parking islands, drainage areas, trail corridors, landscape easements, or other natural area or open space area created as a part of a commercial development. Each individual site plan, including any proposed phasing, shall meet the required open space area, in aggregate for the entire proposed site.

iv. Open space guidelines shall be provided to establish proposed development requirements within a Development Unit.



3.5.10 Path and Trail Framework Plans

Paths and trails within a Development Unit may include pedestrian paths, bike paths or other multi-purpose trails. The paths and trails may be located adjacent to proposed street networks or in open space areas. Surface materials may include native soil, stabilized decomposed granite, concrete, asphalt or other suitable surface materials, which support the intended path or trail use. The Development Unit "Path and Trail Framework Plans" shall conceptually locate, at a minimum, the paths and trails described hereafter associated with primary roadways, collector roadways and the existing electric transmission easement.

As the location of parks and open space are defined within a Development Unit through the subdivision plat or site plan process, a "Path and Trail Circulation Plan" for each subdivision plat or site plan shall be created and submitted as a part of the proposed phase of development. The Path and Trail Circulation Plans should demonstrate connectivity between the external trails network on the primary roadways, collector roads or other primary level trails, to the more localized neighborhood level based on proposed street networks and open space areas. The paths and trails should provide safe and convenient access to the neighborhoods and parks. All proposed trails and pathway surfaces and materials shall be identified on the plan. Each submitted Path and Trail Circulation Plan shall include the following:

a. **Primary Roadway Trails**

    i. The "Primary Roadway Trails" are certain identified primary roads which border and bisect the Retained Property. Meridian Drive, Ironwood Drive, Idaho Road, Tomahawk Road, Williams Field Avenue, Ray Avenue, Warner Avenue, Elliot Avenue, Guadalupe Avenue, and Baseline Avenue comprise the primary roads.

    ii. The Primary Roadway Trails are planned to have concrete paved trails that are separated from the curb to allow for landscape areas buffering the vehicular environment from the pedestrian environment. Path and trail locations and minimum width of the concrete shall be shown on the proposed street sections. The trails provide circulation around the Retained Property allowing for regional connections as well as internal community connections.

    iii. Primary Roadway Trails will also serve as the main bike circulation route through the use of on-street bike lanes. The bike lanes will connect to the Collector Road Trails (defined below) with other on-street bike lanes or proposed bike paths.

b. Collector Roadway Trails

i. The "Collector Road Trails" are roadway trails, which connect to the primary roadway network providing for intermediate level connections within the Development Units.

ii. The Collector Road Trails are planned to be either concrete paved, decomposed granite surfaces or asphalt, separated from the curb to allow for a landscape area. The varying trails surfacing allows for a range of recreation activities from walking & jogging to biking or skating. Path and Trail locations and minimum widths shall be shown on the proposed street sections.

iii. Collector Road Trails, dependent on the proposed street condition, provide for on-street bike lanes. The bike lanes will connect to the Primary Roadway Trails allowing for greater distances to be traveled on a comprehensive network of bike lanes.

c. Neighborhood Trails

i. The Neighborhood Trails are all other paths or trails within the community. These trails may include street adjacent trails, attached or detached from the curb, paths or trails connecting open space areas or leading to amenity areas, or access to the primary and collector roadway paths or trails or other defined trails networks.

ii. The Neighborhood Trails are planned to be either concrete paved or decomposed granite surfaces. The varying trails surfacing allows for a range of recreation activities from walking & jogging to biking or skating. Path and Trail locations for the varying street adjacent conditions and minimum widths shall be shown on the proposed street sections.

iii. Neighborhood Trails should be depicted on the Path and Trail Circulation Plan.

d. Transmission Easement Trail

i. There are two (2) locations for the "Transmission Easement Trail". The first is located on the southwest portion of the Retained Property and the second is located on the northern portion of the Retained Property. The southwestern Transmission Easement Trail begins within the Auction Property and is planned to continue south and east through the Retained Property as the remainder of the Site is developed. The northern Transmission Easement Trail follows an east – west alignment north of the Siphon Draw connecting Meridian Drive to the CAP Canal.

ii. Each Transmission Easement Trail is planned to be a ten-foot (10') wide multi-purpose path, which meanders within the overall easement corridor. Where feasible, access to the trail should be included as a part of the Path and Trail Circulation Plan. This trail is intended to serve as a minor connector between the Primary Roadway Trails and the internal community trails network.

iii. The trail is proposed within an easement that may have certain restrictions related to proposed uses, structures, surface materials and landscape materials or other improvements. The proposed trail shall be coordinated with the respective agency for specific permitted uses and proposed improvements. Where agency requirements limit uses and improvements, area outside the easement shall be defined for the proposed trail corridor.

e. Siphon Draw Trail

i. The "Siphon Draw Trail" is located on the northern portion of the Retained Property. The segment of the trail follows an east – west alignment south of the northern Transmission Easement Trail where it ultimately meets the easement on the eastern portion of the property.

ii. The Siphon Draw Trail is planned to be a ten-foot (10') wide multi-purpose path, which may be placed above water flow limits within the corridor or outside the corridor, dependent on engineering requirements. Where feasible, access to the trail should be included as a part of the Path and Trail Circulation Plan. This trail is intended to serve as a minor connector between the Primary Roadway Trails and the internal community trails network. Where the Siphon Draw Trail and northern Transmission Easement Trail meet, only one (1) trail is required to be constructed.

iii. The trail is proposed within an easement that may have certain restrictions related to proposed uses, structures, surface materials and landscape materials or other improvements. The proposed trail shall be coordinated with the respective agency for specific permitted uses and proposed improvements. Where agency requirements limit uses and improvements, area outside the easement shall be defined for the proposed trail corridor.

f. Central Arizona Project ("CAP") Trail

   i. The CAP canal follows the eastern property line of the Retained Property. A recreational trail is planned to be constructed on the east side of the CAP canal at a future date. There are two (2) locations for the "Transmission Easement Trail". Since the CAP trail corridor has not yet been defined, nor is the final location determined, two (2) options for development of trails have been listed below. Only one (1) of the options listed below shall apply to the Retained Property.

   ii. Where the CAP Trail is located on the east side of the CAP canal generally located between the CAP canal security fence and its canal property boundary line, any development that occurs within the Retained Property shall provide connections to the CAP Trail at a roadway crossing or other planned CAP canal crossing. The trail is planned to be a ten-foot (10') wide multi-purpose path, which shall connect to the CAP Trail within the overall easement corridor. Where feasible, access to the trail should be included as a part of the Path and Trail Circulation Plan. This trail is intended to serve as a minor connector between the Primary Roadway Trails and the internal community trails network. The trail is proposed within an easement that may have certain restrictions related to proposed uses, structures, surface materials and landscape materials or other improvements. The proposed trail shall be coordinated with the respective agency for specific permitted uses and proposed improvements. Where agency requirements limit uses and improvements, area outside the easement shall be defined for the proposed trail corridor.

   iii. Where the CAP Trail is located outside the property of the CAP on the east side of the canal, a trail shall be constructed on the west side of the canal within the transmission easement. The trail shall be contiguous and be constructed with each phase of development within a Development Unit where adjacency to the transmission easement occurs. The trail is planned to be a ten-foot (10') wide multi-purpose path, which meanders within the overall easement corridor. Where feasible, access to the trail should be included as a part of the Path and Trail Circulation Plan. This trail is intended to serve as a minor connector between the Primary Roadway Trails and the internal community trails network. The trail is proposed within an easement that may have certain restrictions related to proposed uses, structures, surface materials and landscape materials or other improvements. The proposed trail shall be coordinated with the respective agency for specific permitted uses and proposed improvements. Where agency requirements limit uses and improvements, an area outside the easement shall be defined for the proposed trail corridor.

g. Requirements for trails design, cross sections and proposed materials shall be a part of each Path and Trail Circulation Plan.

3.5.11 Landscape Framework Plans

"Development Unit Landscape Framework Plan" provide criteria for landscape design within each Development Unit, envisioned through specific landscape character zones. Each landscape character zone provides general guiding principles, which influence the ultimate design of the Development Unit landscape. The proposed landscape character of each Development Unit may vary, offering a variety of aesthetics throughout the Retained Property. Development Unit Landscape Framework Plans shall include the following:

a. Proposed landscape zones within a Development Unit based on a hierarchy of character areas. This may include streetscapes, parks, focal areas, drainageways, transition zones or other types of landscape zones.

b. Conceptual plant materials palette to be included within the landscape zones, public right of way or other areas within a Development Unit.

c. Proposed landscape standards within a Development Unit.

d. A narrative describing the proposed landscape theme within a Development Unit based on the landscape zones proposed and their intended uses.

Within each landscape character zone, the following parameters shall be followed:

a. Plant materials within public right-of-way and common areas shall be compliant with the current edition of the ADWR Phoenix Active Management Area Low-Water-Use/ Drought-Tolerant Plant List.

b. Trees with thorns shall be planted a minimum of six feet (6') from a pedestrian path or trail, measured from the edge of the pedestrian surface to the tree trunk.

c. Any other plant materials with thorns shall be planted a minimum of three feet (3') from a pedestrian walkway or path, measured from the edge of the pedestrian surface to the mature size of the plant material.

d. Turf plays an important role in creating inviting and usable destination points and open spaces. Turf shall be selectively used in ways that will promote recreation activities and social interaction, while being conscientious of water use.

e. “Recreation Areas” shall be defined as those areas planned for recreation activities within a community, open space, paseo or other landscape area. A Recreation Area shall be a minimum of fifty (50) feet average width and a length no greater than one thousand three hundred twenty (1,320) feet in length. Recreation Areas shall be defined on a subdivision plat and turf calculations provided.

f. Turf within Recreation Areas shall be calculated as described hereafter:

    i. Turf within a “Recreation Area” shall be calculated in aggregate for an entire Recreation Area. Turf which exceeds two and one-half (2 ½) acres of aggregate area within a Recreation Area shall be irrigated with non-potable water.

g. No turf shall be planted within the public right-of-way.

3.5.12 Public Facilities Framework Plan

A Development Unit Public Facilities Framework Plan provides documentation and organization of key public facilities that will support the Development Unit, and when appropriate, the entire Retained Property. The Development Unit Public Facilities Plan shall show the conceptual location, size and type of any proposed public facility planned within a Development Unit. The Public Facilities Framework Plan is made up of Schools, Police, Fire, other Emergency Services or other Public Facilities. The Public Facilities Framework Plan should include the following:

a. Conceptual symbolized location of each proposed facility including a legend which describes the facility and the estimate land area the facility will occupy.

b. Conceptual primary vehicular access to the Public Facility.

c. Final public facilities location(s) and size(s) to be determined at the time of preliminary subdivision plat or site plan submittal.

3.5.13 Lighting Plans

Each "Development Unit Lighting Plans" shall define the use and intensity of lighting allowed through the use of lighting zones in each Development Unit. The zones shall be established based on land use criteria as well as roadway hierarchy. The result will provide the Retained Property with a balance between safety and aesthetics by regulating the quantity and quality of nighttime illumination. Development Unit Lighting Plans shall include the following:

a. Lighting standards which enforce the City's recognition of the International Dark-Sky Association, the Illuminating Engineering Society of North America ("IESNA"), and the International Energy Conservation Code ("IECC").

b. Establishment of lighting zones and development of criteria which will guide the placement, intensity, shielding and scale of the lighting proposed for specific uses within a Development Unit.

c. Subsequent submittals of subdivision plats or site plans shall include "Lighting Plans" which graphically depict the lighting standards established within the Development Unit Lighting Plan for each Development Unit.

3.5.14 Signage Plans

"Development Unit Signage Plans" establish criteria for project signage in each Development Unit that defines the character of that Development Unit, creates a sense of place, and provides wayfinding for vehicular and pedestrian destinations. The signage within a Development Unit should also reinforce the overarching vision and identity of the Development Unit, as well as promote a high-quality aesthetic. While signage character and aesthetics will differ from Development Unit to Development Unit, the continuity in appearance shall be achieved through establishing a level of quality and finish to be executed in all applications. Development Unit Signage Plans shall include the following:

a. Conceptual symbolized locations of types of proposed signage, including a legend, within the Development Unit.

b. The hierarchy of signage proposed within a Development Unit including size (both in land area and height) and signage area.

c. Narrative describing the proposed signage character and theme within a Development Unit.

d. Design guidelines for the proposed signage hierarchy including criteria for location of hierarchy of signage and where certain signage types will be prohibited or required.

e. Signage shall comply with Dark Sky recommendations except within Development Unit 4. Signage lighting standards within Development Unit 4 shall be specifically defined at the time of the Development Unit Plan.

3.5.15 Walls

A Development Unit shall include a wall and fence hierarchy to provide variety of forms and materials as well as provide for continuity within a Development Unit. Walls and fencing will be used throughout a Development Unit to establish community identity, provide protection from roadway and other noise, and allow privacy and security in residential areas. The use of walls and fences accentuates neighborhood features in addition to screening streets and adjacent uses.

Materials for walls constructed within a Development Unit should complement the character of the community and architecture. Walls shall be constructed of masonry, brick, block, painted block, stone, stucco, steel, board form concrete, concrete, split-face, single-score or patterned integrally colored block or similar enhancement. Development Unit Plans shall include criteria for walls and fences including:

a. The hierarchy of Walls proposed within a Development Unit including potential location, height and materials.
b. Narrative describing the proposed wall character and theme within a Development Unit.
c. Design guidelines and criteria for location and materials of the proposed hierarchy of Walls.

3.5.16 Architecture

"Development Unit Architecture" focuses on the quality of the architecture planned within a Development Unit. Each Development Unit, based on proposed land uses, will retain the ability to establish several unique characters and themes. This may include areas within a Development Unit that are more urban in character with a mix of uses, employment, commercial services, parks, residential neighborhoods, and other types of architectural features planned within a Development Unit. The objective of the Development Unit Architecture is to establish design guidelines that will provide for a variety of aesthetic and character while maintaining a level of quality and finish.

Architectural design review for architectural development within the Retained Property shall follow the requirements as stated within **Section 6.5D Architectural Review of the Development Agreemen**t.

Development Unit Architecture submittals shall include the following:

a. Narrative to include the range of architecture styles to be proposed within a Development Unit for all the proposed land uses (such as mixed-use, commercial, employment, residential, etc.).

b. Design guidelines for architecture for residential uses including, but not limited to, diversity, elevations, equipment screening, windows, entrances, porches, courtyards, terraces, columns, chimneys, garages, driveways, exterior materials, lighting, colors, and other unique features.

c. Design guidelines for architecture for non-residential uses including, but not limited to, diversity, elevations, equipment screening, windows, entrances, parking screening, courtyards, terraces, columns, driveways, exterior materials, lighting, colors, and other unique features.

3.5.17 Development Standards and Design Guidelines

"Development Standards and Design Guidelines" for each Development Unit shall provide criteria for site planning, lot design, architecture plotting, and other specific design parameters required to plan and develop a quality master planned community. Proposed Development Standards and Design Guidelines within a Development Unit shall replace all City zoning ordinance development standards and design guidelines, as well as any future modifications or new development standards or design guidelines adopted by the City. Development Unit Development Standards and Design Guidelines shall provide the following:

a. Development standards for residential product types based on the proposed land use and development categories. Criteria shall be developed for density, plotting, lot size or area, setbacks, building height, lot coverage, or other product specific features.

b. Development standards for non-residential product types based on the proposed land use and development categories. Criteria shall be developed for density (where applicable), plotting, lot size or area, setbacks, building height, lot coverage, or other product specific features.

c. Development standards for street design including proposed street sections and geometry criteria, lot design, block configuration, open space criteria, street diversity standards, utility design, mailbox criteria or other specific site design criteria proposed within a Development Unit.

d. Development standards for parking for various uses proposed within a Development Unit.

3.5.18 Stormwater and Drainage

The Retained Property plans to employ various methods of managing stormwater within the Development Units. Where a Development Unit plans to provide flexible, creative design solutions which support the design of neighborhoods, parks, and other uses, specific criteria for stormwater management may be established. The criteria stated hereafter shall be considered preliminary and are meant to establish a baseline set of parameters for managing stormwater and providing options for low impact development ("LID"). Development Units may propose alternative or additional methods for managing stormwater or options for LID within the Development Unit Plan.

3.5.18.1 Temporary Drainage Easements

Where temporary drainage easements exist, easements may be automatically extinguished up the submittal of a permanent location. Language regarding the automatic extinguishment of temporary drainage easements shall be included on the final plat, where applicable.

3.5.18.2 Alternative Stormwater Management

The purpose of including these methods of LID is to provide approaches to alternate stormwater management, design, and planning in the Development Units. Utilizing LID practices can reduce the amount of runoff and stormwater conveyed into the stormwater conveyance systems of the Property. Pollutants can be filtered naturally through LID installations. Additionally, implementation of LID practices can result in the beneficial use of stormwater as a supplemental source of landscape irrigation. Benefits of incorporating LID are:

- mitigating localized flooding.
- harvesting stormwater to offset potable water use for outdoor use.
- providing water to surrounding landscapes.
- reducing non-point source pollutant loads and erosion.
- increasing rainfall and runoff infiltration into soils.
- recharging groundwater.
- preserving and improving natural wildlife and habitat.
- beautifying surrounding streetscape.
- reducing heat-island effect.
- improving the health of the local watershed.

The LID options described herein and referenced within the "Greater Phoenix Metro Green Infrastructure Handbook, Low-Impact Development Detail for Alternative Stormwater Management (Reference 24)" shall be considered conceptual by both their design, construction, and implementation. Alternative methods of design, construction and implementation may be proposed which meet the design and engineering requirements of the Property. These alternative methods shall be considered equal where overall design intent is generally achieved with the proposed alternative method and final design and construction details included in the final improvement plans.

Certain LID options may be implemented at a major infrastructure level versus the more granular site plan or subdivision plat level. Due to this circumstance and the variables associated with the scale of proposed improvements at the site plan or subdivision plat level, where LID is proposed within a subdivision plat or site plan submittal, the requirements to implement LID shall have been met for that phase of development as shown within the subdivision plat or site plan submittal.

A drainage report shall be provided with the preliminary subdivision plat or site plan submittal including any preliminary details or sections describing the proposed LID option to be incorporated into the final design.

Where LID options have been designed and constructed or designed and planned to be implemented within the Development Unit and a subdivision plat or site plan benefit from the constructed or proposed LID option, the preliminary subdivision plat or site plan shall provide a narrative at the time of submittal describing how the LID option within the Development Unit supports LID within the proposed preliminary subdivision plat or site plan.

Final Improvement Plans:

The final improvement plans shall include the design and construction details for proposed LID options based on the concepts proposed within the preliminary subdivision plat or site plan drainage report or narrative.

Each Development Unit shall be required to implement LID options. A list of potential LID options has been included below. Other LID options may be proposed by the project design team that provide similar design intent. The potential LID options include:

- Curb Openings.
- Sediment Traps.
- Stormwater Harvesting Basin.
- Vegetated Rock Bioswale.
- Bioretention Systems.
- Curb Extensions.
- Dual Chamber Dry Wells.

a. Curb Openings

Curb openings convey runoff into and out of LID features, such as swales or bioretention areas. This LID treatment can be built as part of new construction and can be used in almost any situation.

i. Applicability

The clear openings are typically two (2) feet wide. Curb openings are regularly used to convey flows from parking lots and streets into stormwater capture areas and LID facilities. They are the most common LID practice. For safety purposes, roadway design speeds, clear zone offsets, and the type of curb opening must be considered during the curb opening selection process.

- Metal grate curb openings can be designed to meet ADA standards while accommodating water flows and pedestrian traffic.
- Curb openings are useful in areas where the runoff source is not separated from a LID feature by a pedestrian path.
- Curb openings are relatively easy to maintain.

ii. Design Considerations

- By themselves, curb openings are not a LID treatment.
- The curb openings should be at least twenty-four inches (24") wide to prevent clogging.
- When the curb cut is angled, it should have chamfered sides at forty-five (45) degrees, which is the maximum angle that can be achieved with typical concrete saws.
- The floor of the curb opening should slope toward the stormwater or LID element.
- A minimum two-inch (2") grade drop should be provided between the floor of the curb opening and the finished grade of stormwater element to allow positive drainage.
- The curb opening must be sized allow the design flow to pass without causing ponding in the adjacent roadway travel lane.
- The back slope of curb opening inlet should be armored to prevent erosion if a sediment trap is not also installed.

b. Sediment Traps

Sediment traps should be installed at curb openings and/or inlets that receive concentrated stormwater flows. A sediment trap provides a collection point for sediment and other debris before runoff enters a stormwater capture or LID facility. Sediment traps facilitate individual component and system maintenance.

i. Applicability

Sediment traps are applicable to areas with concentrated runoff flowing into a stormwater capture or LID facility. Traps are generally used as an accessory to another LID element or storage basin. Sediment traps:

- Reduce sedimentation of adjacent basins and LID features.
- Reduce erosion and disperse energy.
- Reduce maintenance efforts because the concrete debris pad facilitates easy removal of sediment and debris.
- Improve the overall LID system function and life cycle/longevity.

ii. Design Considerations

- The debris pad of the sediment trap should be as flat as possible to aid in the removal of debris. A 3-inch concrete lip should be constructed on three sides to reduce maintenance and encourage sediment deposition.
- The flow path length-to-width ratio should be 3 to 1 or less because a higher flow path length to width ratio increases fine sediment removal.
- The sediment trap flow path and debris pad can be built as a single unit from poured concrete or from precast units.
- A riprap bottom is not recommended because they are difficult to clean. Riprap or appropriately sized rock should be used to armor the sediment trap side slopes.
- The optimal sediment trap design would be long enough so that the hydraulic jump occurs within the feature.
- Sediment traps can have adjacent landscaping or can have grasses within the concentrated flow portion of the facility.

c. Stormwater Harvesting Basin

Stormwater harvesting basins, also known as rain gardens, are shallow vegetated earthen depressions that collect stormwater and cleanse it prior to the water percolating into the subsurface. These differ from typical retention basins in that they provide subsurface storage within the constructed facility. An infiltration trench is designed in the center of the storage area so that surface water is infiltrated within thirty-six (36) hours, or per local municipality requirements. Generally, harvesting basins are utilized in onsite planning for stormwater detention. They can be constructed at any size and for various developments, including residential, commercial, or industrial land uses. Harvesting basins should be built adjacent to impervious areas like parking lots and recreational areas such as sport courts. When there is adequate ROW, basins may also be incorporated as roadway enhancements. Harvesting basins are typically landscaped. Due to lower rainfall amounts and a more arid climate within the Sonoran Desert region, reliance solely on harvesting basins may not be a viable option for sustained plant health.

i. Applicability

- Harvesting basins may accomplish a portion of the onsite detention requirements, if designed and maintained with that intent.
- Harvesting basins should be built immediately adjacent to localized runoff sources/impervious areas (e.g., parking areas, driveways, and rooftops) in lieu of constructing a large, centralized on-site basin.
- Harvesting basins can be retrofitted into sites with or without existing drainage features, are compatible features when adjacent to parking and roadways, easily fit within natural areas, and can be used to achieve drainage volume credit in some municipalities, if designed and approved to meet those requirements.
- Harvesting basins are relatively simple to build, relatively easy to maintain, and scalable in size.
- Harvesting basins can be multifunctional, providing wildlife habitat and creating a "softer" aesthetic for streets and roads by incorporating additional landscaping and vegetation.
- Harvesting basins enhance stormwater infiltration, potentially improving water quality.
- Harvesting basins can reduce the reliance on potable water sources for landscaping irrigation for other portions of the project area, depending on the landscape design and the volume and pattern of stormwater collection.
- Harvesting basins create planting conditions that encourage enhanced vegetation growth that yields cooling properties for adjacent land areas and the Phoenix Metropolitan Area heat island phenomenon.

ii. Design Considerations

- There may be a need to design the basin with an underdrain or overflow drain option if the soils have low infiltration rates or if the anticipated capture volume exceeds the holding capacity of the basin and the infiltration trench. Please refer to the municipality requirements for storage and infiltration tables to determine the design volume and percolation rates of underground systems. The overflow outlet should be located at the downstream end of a drainage basin. Subterranean outlets associated with the underdrain must connect to an appropriate downstream drainage facility, LID element, and/ or underground stormwater collection system.

- The first flush rainfall (one-half inch (0.5")) can be used to determine the design stormwater volume in accordance with the local standards. The allowable surface storage of a harvesting basin should be 9-12 inches with a recommended freeboard of three inches (3"). Stormwater harvesting basins should drain surface ponding in less than thirty-six (36) hours in accordance with the local standards for vector control purposes. The underground runoff volume should percolate within seventy-two (72) hours, so the feature remains effective during the monsoon.

- Stormwater harvesting basins may accept distributed flow along some or all perimeter sides from areas like parking lots or landscape areas. If the basin slope can be designed to be flatter than 3 to 1, the basin sides accepting the distributed flow may be of vegetated earthen construction. Slopes steeper than 3 to 1 should be rock-lined based on the engineering analysis.

- When the stormwater harvesting basin is located next to a travel lane, the Engineer must refer to the AASHTO Roadway Design Book for clear zone requirements (Reference 14).

- The underground work will likely require a special inspection during construction.

- For steep slopes and inlets where flow is concentrated, scuppers or riprap spillways should be designed to prevent erosion.

- Harvesting basins should be located as close to the runoff sources as possible and be distributed throughout a project instead of relying on one large basin to capture the flows.

- To facilitate revegetation, soil fertility testing should be conducted on exposed soils to determine what nutrients/amendments may be needed to foster vegetation growth. Imported soils are not encouraged.

- Because of their association with new or existing development, basin sides are typically landscaped to improve the aesthetics of the element, to match an existing landscape character, and/or to reduce potential erosion on the side slopes. The landscaping treatment can range from a native, drought-tolerant palette to a more ornamental landscaping approach commensurate with urban development. Soil building materials such as organic mulch, biota, and fertilizers may be incorporated into the planting area to improve vegetative success; the need for these can be identified through soil fertility testing and by specifically defining the landscaping objectives and performance expectations.
- Plant selections should consider the location of the plants within the basin and their potential frequency of inundation or for damage. In general, installed plantings (not native seeding) will require some degree of supplemental watering to get the plants established. Watering is typically accomplished through an underground irrigation system whose volume may be reduced over time and/or abandoned once the plants have been established, depending on the success of the landscape installation and the volume and pattern of stormwater collection.

d. Vegetated or Rock Bioswales

Vegetated/rock swales are open, shallow channels that may have trees, grasses, and other low-lying vegetation covering the swale bottom and side slopes, with pervious surface plating materials such as decomposed granite, larger rock, and/or mulch. Vegetated or rock bioswales are designed to slow the flow of runoff to downstream discharge points through various optional methods such as a meandering layout, roughened surfaces, plants, and check dams. Vegetated bioswales should encourage and accommodate additional landscaping within the feature. When landscaped, vegetated swales may provide additional pollutant removal through infiltration and vegetation uptake. Bioswales can provide water harvesting opportunities, depending on the site conditions and their hydraulic requirements. When properly designed, swales may allow percolation of cleansed storm water into the ground. Depending on the location, the preferred vegetation may be limited to grasses and forbs and/ or arid-adapted species that are drought-tolerant and don't require irrigation after establishment. Other locations may consider a different plant palette that is also drought tolerant but that requires limited irrigation. In all cases, care must be taken when selecting plant materials used in the bottom of bioswales; these plants must also be able to accommodate occasional inundation, as they may be in water until infiltration has occurred.

i. Applicability

Rock bioswales are usually placed inline within a storm drain system and are intended to slow down and infiltrate runoff. Specifically, swales:

- Slow the water which minimizes and decreases runoff, reduces erosion, and allows filtration (cleansing) of stormwater.
- Provide a method of water harvesting that promotes plant growth, thereby reducing the reliance on potable water for landscape irrigation; they also capture pollutants in stormwater.
- Produce planting conditions that encourage enhanced vegetation growth, providing cooling for adjacent land areas and helping to reduce the Phoenix Metropolitan Area heat island phenomenon. The aesthetics of the swales are enhanced when landscaped.
- Are relatively simple to build, cost-effective, and relatively easy to maintain.
- Can become tiered/stepped features for detaining stormwater where longitudinal grades are steep.

ii. Design Considerations

- Prevention of erosion of in-situ soils should be paramount during the design. Rock, vegetation, and/or organic mulches can be used to stabilize the surface.
- Subterranean outlets associated with the underdrain must connect to an appropriate downstream drainage facility, LID element, and/ or underground stormwater collection system.
- By building obstruction structures perpendicular to the flows (i.e., check dams and weirs), flow velocities are reduced, and infiltration is improved.
- Side slopes of bioswales should not be steeper than 3 to 1 for safety, erosion, and maintenance purposes. If located adjacent to sidewalks or parking lots, a two-foot (2') level shelf must be created along those elements as a recovery area. Swale bottom widths should be less than eight feet (8') if meandering is desired.
- The bioswale can be designed as a trapezoid. The flow depth and limiting velocity should be recommended as part of the design report. If the velocity is less than one foot per second (1 fps), scour and sediment transport of fine materials will be reduced. The longitudinal slope can be reduced by either increasing the longitudinal length or by meandering the flow path.
- May require rock covering, more robust soil cover, or soil amendments to counter the erosion potential for areas with steeper slopes.
- Sediment traps should be used where concentrated runoff enters the bioswale to dissipate flow velocities and to uniformly distribute flows across the channel. Flow spreaders may also be incorporated into the improvements.
- Energy dissipation should be designed at the toes of each vertical drop if energy dissipators, check dams, or similar structures are used.
- When landscaped, the design objective is typically to improve the aesthetics of the swale and/or to match the existing landscape character of the surrounding lands. The landscaping treatment can range from a native, drought-tolerant palette to a more ornamental landscaping approach commensurate with the surrounding character. Soil building materials such as organic mulch, biota, and fertilizers may be incorporated into the planting area to improve vegetative success; the need for these can be identified through soil fertility testing and by specifically defining the landscaping performance expectations. Plant selections need to consider the location of the plants within the bioswale and their potential frequency for inundation, damage, or flow blockage. In general, installed plantings (not native seeding) require supplemental watering to get the plants established. Watering is typically accomplished through an underground irrigation system whose volume may be reduced over time and/ or abandoned once the plants have been established, depending on the success of the landscape installation and the volume and pattern of stormwater collection.

e. Bioretention Systems

Bioretention is a treatment process that removes pollutants from stormwater through an engineered soil media. Bioretention systems may either allow percolation into the subsoil or may have an underdrain that directs infiltrated stormwater to a downstream drainage system. These differ from stormwater harvesting basins and rain gardens because they are generally deeper, and their main purpose is to capture pollutants and to provide a medium to infiltrate stormwater. Like stormwater harvesting basins, bioretention systems can be constructed within roadway ROWs or areas of limited ROW.

i. Applicability

Bioretention systems are applicable to residential, commercial, and industrial sites and along roadways where stormwater volume reduction by infiltration or improved water quality is desired. Bioretention may be particularly well-suited to urban locations with highly impervious sites where space is limited because they can provide higher infiltration rates.

- This facility is an active water purification system, thereby improving water quality.
- The increased open space of a bioretention area can be multifunctional, providing wildlife habitat and creating a "softer" aesthetic for streets and roads by incorporating additional landscaping and vegetation.
- Bioretention creates planting conditions that encourage enhanced vegetation growth that can help cool adjacent land areas and reduce the Phoenix Metropolitan Area heat island phenomenon.
- Bioretention can reduce the reliance on potable water sources for landscaping irrigation for other portions of the project area, depending on the landscape design and the volume and pattern of stormwater collection.
- Bioretention provides a drainage option from traditional drainage approaches, particularly for space-constrained, highly urbanized environments.
- Bioretention reduces vector concerns due to limiting ponding.

ii. Design Considerations

- Bioretention systems are relatively simple to build and relatively easy to maintain.
- If the side slopes where the inflow will occur are steeper than 3 to 1, they should be rock-lined.

- Bioretention areas should have a sediment trap at the inlet to collect the concentrated flow to prevent clogging, thereby prolonging the effective lifespan of the facility.

- If underdrains are used, they should be a minimum of 6 inches in diameter so that they can be cleaned without being damaged. A vertical clean-out pipe is an optional item. PVC and HDPE pipes used as underdrains should conform to ASTM D3034 and AASTHO 252M, respectively.

- The underdrain should be placed parallel to the bottom of the bioretention collector and backfilled and bedded with six inches (6") of washed ASTM No. 57 or approved equal aggregate drain rock, which should encase at least one foot (1') around the sides and top of the underdrain.

- Subterranean outlets associated with the underdrain must connect to an appropriate downstream drainage facility, LID element, and/or underground stormwater collection system.

- The BSM should be minimum of thirty-six inches (36") to forty-two inches (42"), depending on the design to accommodate a forty-eight-inch (48") box tree planting. The recommended depth for a bioretention system in a desert environment to remove pollutants was developed in the Pima County Low Impact Development and Green Infrastructure Guidance Manual (Reference 1).

- The runoff volume can be calculated from first flush design storm one-half inch (0.5") based on the drainage area. The recommended ponding depth for a bioretention system should be nine inches (9") to twelve inches (12"), with three inches (3") of freeboard from an overflow structure to the berm or the lowest adjacent finished grade surrounding the system. The system should drain ponded water within thirty-six (36) hours to prevent any vector-control issues. The underground runoff should drain within seventy-two (72) hours so that the facility remains effective during the monsoon. An overflow structure or dedicated outlet should be included with the design so that larger storms have an outfall.

- The bioretention system should be sized using the first flush design. The minimum required area for the bioretention system with an underdrain can be calculated using this equation from the Pima County LID Manual.

- Bioretention systems are typically landscaped. The design objective is typically to improve the aesthetics of the bioretention area and/or to install plant materials that will thrive in BSM and within the inundation characteristics of the element. Soil-building materials such as organic mulch, biota, and fertilizers may be incorporated into the prepared soil to improve vegetative success; the need for these can be identified through soil fertility testing and by specifically defining the landscaping objectives and performance expectations. In the Sonoran Desert, the landscaping treatment will usually be limited to a select list of plants. Irrespective of these plants' ability to thrive in an artificial environment, they will require some degree of supplemental watering to get the plants established and periodically during dry periods to maintain their viability.
- Watering is typically accomplished through an underground irrigation system whose volume may be reduced over time and/or abandoned once the plants have been established, depending on the success of the landscape installation and the volume and pattern of stormwater collection.

f. Curb Extensions

Curb extensions are generally placed in locations where a new curb is built out into a travel or parking lane to create an opportunity for the bioretention of street runoff and a space for trees. Curb extensions (also known as chicanes) may have sloped or vertical sides. In most cases, curb extensions will be designed as online (flow-through) elements. Curb extensions are typically landscaped.

i. Applicability

This LID element can be used along low-speed roadways, driveways, and parking lots. This LID element can also function well in urban streetscapes as a traffic-calming measure.

- Curb extensions are easy to retrofit into an existing area.
- The increased open space of the curb extension can create a "softer" aesthetic for streets and roads by incorporating additional landscaping and vegetation.
- The curb extension landscaping creates planting conditions that encourage enhanced vegetation growth that helps cool adjacent land areas and reduce the Phoenix Metropolitan Area heat island phenomenon.
- Curb extensions provide additional stormwater storage capacity as compared to conventional landscape planters.

ii. Design Considerations

- Minimum soil depth should be twelve inches (12") to eighteen inches (18") to facilitate storage capacity and to be beneficial for vegetation. If trees are required, the landscape architect should recommend the minimum depth. The opening must be designed to collect the roadway flow width for the first flush design storm one-half inch (0.5") without causing ponding.
- Minimum planter width should be thirty inches (30"), but any geometric shape can be built. The minimum width is dictated by the width of a small excavator or backhoe.
- Curb extensions should be designed carefully not to be in conflict with dry utilities.
- Curb extensions are typically designed with curb outlets allowing flow back onto the roadway so they act as a flow-through system.
- If used, underdrains must be connected to a downstream conveyance facility or additional LID element with a positive outlet for extra drainage.

- Curb extensions are typically landscaped. The design objective is typically to improve the aesthetics of the streetscape, to provide shade and landscaping for comfort, and/or to install plant materials that will thrive in the BSM and within the inundation characteristics of the element. Soil-building materials such as organic mulch, biota, and fertilizers may be incorporated into the BSM to improve vegetative success; the need for these can be identified through soil fertility testing and by specifically defining the landscaping objectives and performance expectations. In the Sonoran Desert, the landscaping treatment will usually be limited to a select list of plants. Irrespective of these plants' ability to thrive in an artificial environment, they will require some degree of supplemental watering to get the plants established and periodically during dry periods to maintain their viability. Watering is typically accomplished through an underground irrigation system whose volume may be reduced over time and/or abandoned once the plants have been established, depending on the success of the landscape installation and the volume and pattern of stormwater collection.

3.5.19 Supplementary Provisions

The development of the Retained Property is anticipated to occur over a period of many years and possibly multiple economic cycles. Significant infrastructure improvements are planned which will occur over an extended time frame to support the development. As the State Land Department auctions property within the Retained Property, future developers may propose modifications to Chapter 2 of the City Code which allow more flexible permitting and construction processes necessary to develop a large-scale master-planned community. The following shall be included within a Development Unit Plan regarding supplementary provisions:

a. Proposed modifications to Chapter 2 of the City Code which supports the development of a Development Unit.

b. Proposed processes for plan approvals and permitting where the modifications support the development of the Development Unit.

c. Any other proposed modifications or processes which support the development of a Development Unit.

3.5.20 Submittal and Approval

Each "Development Unit Plan" shall be prepared in a document format inclusive of all items stated herein with narrative materials and supporting graphics or other materials required to support development within a Development Unit.

a. Submittal:

    i. A Development Unit Plan shall be submitted for a pre-application conference as defined within the City Code.

    ii. A pre-application conference shall be scheduled by the Development Services Director or designee within five (5) days of submittal and be held with the applicant no later than thirty (30) days from the date of submittal.

    iii. Submittal requirements specific to number of copies to be provided or digital materials required shall be defined by the Development Services Director.

    iv. There shall be a minimum of two (2) formal submittals of the Development Unit Plan where Staff reviews the submittal within a thirty (30) day review period for each submittal.

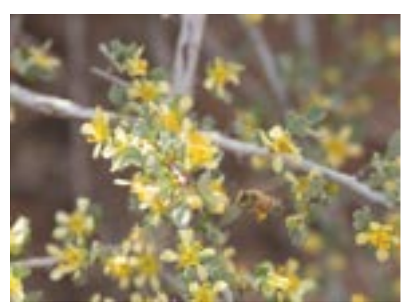
b. Approval:

i. The Development Services Director's or designee's evaluation and approval of the Development Unit Plan shall be based on the following objective criteria: (a) whether the submittal is complete and contains or addresses all of the plans and reports required pursuant to **Section 3.4.4** and **Sections 3.5.1** through **3.5.19; (b)** whether the submittal is consistent with the permitted uses and land use budget specified in **Sections 3.4.1** through **3.4.3** for the particular Development Unit submitted for plan approval; and (c) whether any supplementary provisions submitted pursuant to **Section 3.5.19** are consistent with the purposes and intent of the MPC Plan as a whole. The Development Services Director may propose stipulations or conditions related to the approval of the Development Unit Plan that are consistent with the purposes and intent of the MPC Plan. After the completion of the review process specified in subsection (a), the Development Service Director shall either approve, approve with conditions, or deny the Development Unit Plan and shall forward such decision to the then-current landowner.

ii. In the event the Development Services Director denies a Development Unit Plan submittal or approves such a submittal with stipulations or conditions of approval that are unacceptable to the then-current landowner, then such then-current landowner may, at the then-landowners election: (a) resubmit a revised Development Unit Plan; or (b) contest the Development Services Director's decision by filing an action in a court of competent jurisdiction contending that the Development Services Director has not acted in accordance with the objective criteria specified in **Section 3.5.20.b.ii** or has otherwise exceeded his limits of authority under the MPC Plan.

4. Conclusion

The Applicant is requesting Master Planned Community zoning and an associated Master Planned Community Plan for the 5,307-acre Retained Property. The Retained Property is in a prime location for development as it is adjacent to existing residential, and near employment uses, commercial services, and existing and future transportation corridors. The Master Planned Community zoning and associated Master Planned Community Plan are intended to allow for adaptable development and the ability to provide the flexibility needed to manage various market cycles and the ever-changing consumer demands of a large-scale master planned site.



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MASTER WATER PLAN

FOR

SUPERSTITION VISTAS

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September 2021
HW Project No. 1635

MASTER WATER PLAN
FOR
SUPERSTITION VISTAS

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1.0 EXECUTIVE SUMMARY

Superstition Vistas is a proposed 8,090-acre planned development (Site) located west of the Central Arizona Project (CAP) canal, east of Meridian Road, north of the Frye Road alignment (future SR-24 alignment) and south of Baseline Road in Pinal County, Arizona. It is comprised of eight (8) Development Units and will consist of various uses ranging from residential to industrial development. Of this overall assemblage, Development Units 1 & 2 (Auction Property, or "Property") is a proposed 2,783 acre master planned community located west of the Idaho Road alignment, east of Meridian Road, north of the Ray Road alignment, and south of the Elliot Road alignment. The Auction Property will consist of approximately 10,940 residential units. The Auction Property will also contain approximately 466 acres of non-residential use, comprised of commercial properties, neighborhood open space, and community open space.

The scope of this Master Water Plan will detail the water infrastructure needed to serve the Auction Property and will provide a regional framework for the anticipated infrastructure needed for the surrounding area around Development Units 1 & 2 totaling approximately 5,307 acres (Retained Property). The Retained Property is located within Pinal County and will be annexed into the City of Apache Junction.

Given the timing and scale of the development for the overall project, this Master Water Plan is organized into evaluations specific to the Auction Property and Site. Since the timing of the Auction Property is immediate, the level of analysis for the Auction Property is specific with corresponding recommendations for improvements. For the Retained Property, the evaluation is focused on establishing the primary water infrastructure network for future development. For both scenarios, water demands for Superstition Vistas have been estimated based on the proposed land uses established by the Client and design criteria as approved by the Apache Junction Water District (AJWD, or "District"). The scope of this plan also includes evaluation of water supply, transmission main facilities, treatment, storage, pumping and distribution facilities.

The intent of this Master Plan is to be used as the basis for final design as each Development Unit proceeds to development. The size and scale of both the Auction Property and Site are such that individual unit or parcel water reports are to be prepared to confirm the intensity and land use as the basis for final water demands, and substantiate the scope of water infrastructure needed. There may be instances where this Master Plan may need to be amended to update the various elements contained in this Plan. These amendments may range from updating the demand factors that reflect actual rates to revised locations of primary water infrastructure to corroborate with the most current District Water Master Plan at that respective time.

2.0 INTRODUCTION

2.1 Background and Project Location

Superstition Vistas is a proposed 8,090-acre planned development (Site) located west of the Central Arizona Project (CAP) canal, east of Meridian Road, north of the Frye Road alignment (future SR-24 alignment) and south of Baseline Road in Pinal County, Arizona. Superstition Vistas will be annexed into the City of Apache Junction. It is comprised of eight (8) Development Units (DU) and will consist of various uses ranging from residential to industrial development. Of this overall assemblage, Development Units 1 & 2 (Auction Property, or "Property") is a proposed 2,783 acre master planned community located west of the Idaho Road alignment, east of Meridian Road, north of the Ray Road alignment, and south of the Elliot Road alignment, in Sections 17, 18, 19, 20, and a portion of 30 of Township 1 South, Range 8 East of the Gila and Salt River Meridian.

The portion of Superstition Vistas outside Development Units 1 & 2 (Retained Property) totals approximately 5,307 acres and is currently located within Pinal County. The entire Site will be annexed into the City of Apache Junction, Arizona. The Retained Property includes Sections 7, 28, 29, and portions of Sections 6, 8, 16, 21, 27, 30, 31, 32, 33, and 34 of Township 1 South, Range 8 East of the Gila and Salt River Meridian.

Figure 1 in Appendix A provides a vicinity map for the Project.

2.2 General Description

Superstition Vistas Development Units 1 & 2 will consist of approximately 10,940 residential units, as well as approximately 466 acres of non-residential use, including commercial use, neighborhood open space, and community open space. Based on proposed land uses within the Auction Property and preliminary land uses within the Retained Property area, the Site is planned to have a total of approximately 27,370 single-family residential units at build-out, as well as 2,394 acres of non-residential use, comprised of commercial properties, neighborhood open space, community open space, schools, business parks, and industrial properties.

Development Units 1 & 2 are located within the Apache Junction Water District (AJWD) service area and are situated within a single pressure zone. The majority of the Retained Property is also within the same pressure zone within the AJWD service area. However, portions of DU 7 & 8 (within Sections 6 and 7 bounded by Meridian Road, Baseline Road, the Ironwood Road alignment, and the Elliot Road alignment) are within Arizona Water Company's service area.

2.3 Purpose of Report

The purpose of this Master Water Plan is to detail the water infrastructure needed to serve the Auction Property and provide a regional framework for the anticipated infrastructure needed for the remainder of the Site. This Master Plan identifies and evaluates the proposed water infrastructure and distribution system required to serve the Auction Property based on the current land use plan and the design criteria as approved by the AJWD. In addition, the water infrastructure needed to serve the

Retained Property is identified on a conceptual level. A Development Unit exhibit is provided in Figure 2 in Appendix A.

This Master Plan identifies the projected water demands for the Auction Property and Site for average day, maximum day, peak hour, and maximum day plus fire flow conditions. It also discusses the water supply, storage, booster pumping station, and treatment facilities required to serve both the Auction Property and the Retained Property, and presents results from hydraulic models of the proposed water infrastructure. The demand calculations presented in this Master Plan are based on the current land uses planned for the Auction Property and the preliminary conceptual land uses identified for the Retained Property. In addition, after connection of the 500th equivalent dwelling unit ("EDU") constructed, the District shall analyze the average flows for one year to determine the actual flows used per EDU, and shall use such actual flows (plus or minus 20%, depending on environmental conditions) to calculate future capacity and infrastructure required. The water analysis presented in this Master Plan is based on the City of Apache Junction *Engineering Design Guidelines and Policies* (City of Apache Junction) and general design criteria as agreed upon by the AJWD.

The intent of this Master Plan is to be used as the basis for final design as each Development Unit proceeds to development. The size and scale of both the Auction Property and Retained Property are such that individual unit or parcel water reports are to be prepared to confirm the intensity and land use as the basis for final water demands, and substantiate the scope of water infrastructure needed. There may be instances where this Master Plan needs to be amended to update the various elements contained in this Plan. These amendments may range from updating the demand factors that reflect actual rates to revised locations of primary water infrastructure to corroborate with the most current City General Plan and Water Master Plan at that respective time. At no point should the demands go below 360 gallons per day per EDU.

2.4 Existing Conditions

The Auction Property and Retained Property sites generally consist of undeveloped desert land that generally slopes toward the southwest at a rate of approximately 0.5%. The CAP canal borders the Retained Property to the east. In addition, there is existing residential development bordering the Project to the west and north. There are also multiple existing utility easements that intersect the Property and Retained Property areas. An existing drainage easement for the Powerline Channel extends from the CAP canal, just north of the northeast corner of Development Unit 2, to the southwest, crossing Meridian Road between Warner Road and Ray Road. In addition, an existing electrical transmission easement extends to the southeast near the southwest corner of Development Unit 1. A separate electrical transmission easement extends east-west through the Retained Property in Development Unit 7. See Figure 1 in Appendix A for the Vicinity Map and Figure 2 in Appendix A for the Development Unit Exhibit, which shows the easements crossing the Auction Property and Retained Property areas.

2.5 Previous Studies

In November 2019, Kimley-Horn & Associates, Inc. (KHA) prepared the *Infrastructure*

Assessment Study ASLD 8500. The KHA study identified preliminary design standards and preliminary concepts for extending water, wastewater, roadway, and drainage infrastructure to serve Superstition Vistas at buildout. Elements of this study served as the basis of this Plan, however, it should be noted that the demands identified in the KHA study are different from what is established in this Plan due to revised demand criteria and land use designations.

In addition to the KHA efforts, Carollo has been recently engaged by AJWD to develop the AJWD Master Plan for the area south of Baseline Road. The purpose of the AJWD Master Plan is to provide information to developers to help them understand the master plan for AJWD and how AJWD operates and plans. The first part of this work resulted in concepts for potential distribution and transmission main networks for a large portion of the AJWD service area, including the Auction Property and Retained Property areas, as well as other future development west of the CAP canal. This initial Carollo effort was reviewed by HILGARTWILSON and was used to help coordinate and corroborate HILGARTWILSON's efforts. Exhibits showing Carollo's conceptual distribution and transmission main networks are included in Appendix E of this Master Plan for reference.

This Master Plan provides an updated analysis for water infrastructure needed to serve the Superstition Vistas development with design/demand factors as approved by the AJWD.

3.0 DESIGN CRITERIA

3.1 Water System Design Criteria

The proposed water system infrastructure for the Auction Property and the regional framework for the infrastructure to serve the Retained Property have been prepared and evaluated consistent with the design criteria as approved by the AJWD. The criteria are summarized below in Table 1 and supplement the City's other design criteria as identified in the City's *Engineering Design Guidelines and Policies* (City of Apache Junction). In developing this Master Plan, HILGARTWILSON worked with AJWD staff to develop the criteria identified in Table 1, which is to be used for sizing of master-planned water infrastructure for the Property and Retained Property areas. In addition, the demand criteria will be used to help procure and establish both rights and physical water availability to the Auction Property and Retained Property. Since these latter elements (water rights and physical availability) are interrelated to AJWD's overall water portfolio, which is inclusive of, but not limited to, effluent recharge credits, implementation of reuse of effluent to offset demands, actual customer demands, it is expected that the scale and intensity of these demand factors may be reevaluated and amended from time to time during the development of both Projects.

A full summary of AJWD water system design criteria identified for the Superstition Vistas development is shown in Table B.6 in Appendix B. Table B.6 also notes relative design requirements of other municipalities and water providers for reference.

Table 1: Water System Design Criteria			
Land Use		Value	Unit
Average Day Demands			
	Single Family Low Density Residential (1-2 DU/ac)	592	gpd/DU
	Single Family Med Density Residential (2-10 DU/ac)	555	gpd/DU
	Single Family High Density Residential (10+ DU/ac)	370	gpd/DU
	Multi-Family Residential	315	gpd/DU
	Commercial	2,000	gpad
	Office / Business Park	2,000	gpad
	School	5,000	gpad
	Malls/Retail	0.5	gpd/sq. ft.
	Industrial	2,000	gpad
	Hotel/Motel	150	gpd/room
	Turf/Irrigation	4,400	gpad
	Xeriscape/Low Water Use Irrigation	1,000	gpad
Peaking Factors			
	Maximum Day Demand = 2.0 x Average Day Demand		
	Peak Hour Demand = 1.7 x Maximum Day Demand		
Fire Flow[2]			
	Residential	1,500	gpm for 2 hours
	Commercial	4,000	gpm for 4 hours
	Industrial	4,000	gpm for 4 hours
	School	4,000	gpm for 4 hours
	Office/Business	4,000	gpm for 4 hours
Minimum Pipe Sizes			
	Looped Water Main	8	inch
	Water Main in Collector Streets	12	inch
	Water Main in Arterial Streets	16	inch
System Hydraulics			
	Minimum Pressure - Average Day, Max Day, Peak Hour	50	psi
	Minimum Pressure - Maximum Day plus Fire Flow	20	psi
	Maximum Velocity (Peak Hour Demand)	5	fps
	Maximum Velocity (Max Day + Fire Flow)	10	fps
	Maximum Head Loss (Peak Hour)	10	ft/1,000 ft
	Hazen Williams 'C' Factor	120	

Notes:
1. Design criteria are based on factors agreed upon by the AJWD for the master planning of the Auction Property and Retained Property.
2. Fire flows shown are for planning purposes. All parcel phases will be required to meet the International Fire Code (IFC) 2015 Appendix B fire flow requirements.
3. A full summary of AJWD water system design criteria is provided in Table B.6 in Appendix B.

4.0 WATER DEMANDS

4.1 Land Use

Superstition Vistas Development Units 1 & 2 will consist of approximately 10,940 single-family residential units, as well as approximately 466 acres of non-residential use, comprised of commercial development, neighborhood open space, and community open space. Preliminary conceptual land uses have also been identified for the Retained Property area (Development Units 3-8). Table 2 below summarizes the current projected land uses that have been identified for master planning purposes. Table B.5 in Appendix B shows more detail for the land uses allocated for each Development Unit within Superstition Vistas, and the allocations that were used in developing this Master Plan. For reference, Figure 2 in Appendix A shows the anticipated boundaries for each of the Development Units.

Table 2: Land Use Summary

Dev. Unit	Gross Area (ac)	Neighborhood Open Space (ac)	Industrial (ac)	Commercial (ac)	School	Community Open Space (ac)	SFR (Med Density) (DU)
1	1,375	138	0	20	0	83	5,470
2	1,408	135	0	20	0	70	5,470
3	1,355	136	0	0	60	81	6,400
4	638	64	0	240	0	38	2,730
5	1,169	117	0	20	60	70	3,790
6	714	71	0	0	0	43	2,170
7	899	90	100	110	0	54	1,340
8	532	53	400	90	0	32	0
Total:	**8,090**	**803**	**500**	**500**	**120**	**406**	**27,370**

Notes:
1. Residential, Industrial, Commercial, and School land uses are derived from the latest density and intensity projections for Development Units 1-8. There are currently not any site plans for Sections 17, 18, and 20. Projections for Development Units 3-8 are assumed for master planning purposes.
2. Based on information from the Developer, DU 2 is anticipated to contain 135 acres of Neighborhood Open Space and 70 acres of Community Open Space.
3. For all Development Units (not including DU 2), 10% of gross area is assumed to be Neighborhood Open Space and 6% of gross area is assumed to be Community Open Space.
4. See Table B.5 (Overall Property Density Allocation) in Appendix B for detailed land use summary.

4.2 Water Demand Calculations

Anticipated water demands for the Auction Property and Retained Property have been calculated in accordance with the design criteria listed in Table 1. The projected water demands are summarized in Table 3 below and detailed water demand calculations are provided in Table B.1.1 in Appendix B. The Project area and the majority of the Retained Property area are within the AJWD service area, with exception of approximately 1,076 acres within Development Units 7 and 8 that are located within AZWC's service area. Table 3 includes a breakdown of water demands by water service provider. This table represents a conservative scenario that assumes that all irrigation demands for DUs 1-8 will be supplied by the proposed potable water system. These demands were utilized for infrastructure sizing to help establish this scenario.

Table 3: Water Demand Calculations Summary (Including Irrigation) – Superstition Vistas				
Development Unit	Xeriscape / Turf Irrigation Demand (gpm)[5]	Average Day Demand (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)
Apache Junction Water District Service Area				
1	419	2,555	4,691	7,681
2	386	2,522	4,658	7,648
Erie Lift Station	0	1.4	1.4	1.4
Subtotal – Dev. Units 1 & 2 (incl. Irrigation)	***805***	***5,078***	***9,350***	***15,331***
3	413	3,088	5,763	9,508
4	194	1,580	2,965	4,905
5	356	2,053	3,750	6,125
6	218	1,054	1,890	3,061
7 (334 acres)	102	402	702	1,123
8 (21 acres)	6	34	62	101
Subtotal - AJWD Service Area (incl. Irrigation)	***2,094***	***13,289***	***24,483***	***40,154***
Arizona Water Company Service Area				
7 (565 acres)	172	680	1,188	1,899
8 (511 acres)	156	808	1,461	2,375
Subtotal - AZWC Service Area (incl. Irrigation)	***328***	***1,489***	***2,649***	***4,274***
GRAND TOTAL (incl. Irrigation)	**2,422**	**14,778**	**27,132**	**44,428**

Notes:
1. Residential, Industrial, Commercial, and School demands are calculated using land uses derived from the latest density and intensity projections for Development Units 1-8.
2. The demands shown in Table 3 represent a conceptual demand for the future development.
3. Irrigation demands are not peaked, as these are anticipated to remain constant. Community Open Space is assumed to be 70% Turf and 30% Xeriscape. Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape. See Table B.1.1 in Appendix B for detailed demand calculations.
4. A commercial demand for 1 acre of 2,000 gpd (1.4 gpm) will be needed to serve the proposed Erie Lift Station (ELS), located at the southeast corner of Meridian Road and Erie Street. This demand is not peaked.
5. Table 3 above assumes that all irrigation demands will be supplied by the potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). Therefore, potable water demand shown in Table 3 may be reduced. See Table 4 for reduced water demands offset by the proposed non-potable water system in DUs 1, 2, 3, 5, and 6.

In contrast to the above table, Table 4 assumes that irrigation demands throughout the Site will be supplemented by the proposed non-potable water system. More specifically, irrigation demands in DUs 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road) are anticipated to be supplied by a separate proposed non-potable water system, as referenced in the *Master Non-Potable Water Plan for Superstition Vistas* (Wood, Patel & Associates, Inc., 2021). To illustrate how the non-potable water system could offset irrigation demands from the proposed potable water system, revised demands are provided in Table 4. Both demand scenarios are provided to outline the potential minimum and maximum demands anticipated to be supplied by the proposed potable water system. This table shows demands for the development with the assumption that irrigation demands in DUs 2, 3, 5, 6, and a portion of 1 (north of Warner Road) are offset by a separate non-potable water system. Detailed calculations for this demand scenario are provided in Table B.1.2 in Appendix B.

Table 4: Water Demand Calculations Summary (Offset Irrigation) – Superstition Vistas				
Development Unit	Xeriscape / Turf Irrigation Demand (gpm)[5]	Average Day Demand (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)
Apache Junction Water District Service Area				
1	246	2,382	4,518	7,509
2	0	2,136	4,272	7,262
Erie Lift Station	0	1.4	1.4	1.4
Subtotal – Dev. Units 1 & 2 (incl. Irrigation)	***246***	***4,520***	***8,792***	***14,773***
3	0	2,675	5,350	9,095
4	194	1,580	2,965	4,905
5	0	1,697	3,394	5,769
6	0	836	1,673	2,844
7 (334 acres)	102	402	702	1,123
8 (21 acres)	6	34	62	101
Subtotal - AJWD Service Area (incl. Irrigation)	***549***	***11,744***	***23,938***	***38,609***
Arizona Water Company Service Area				
7 (565 acres)	172	680	1,188	1,899
8 (511 acres)	156	808	1,461	2,375
Subtotal - AZWC Service Area (incl. Irrigation)	***328***	***1,489***	***2,649***	***4,274***
GRAND TOTAL (incl. Irrigation)	**877**	**13,233**	**25,587**	**42,883**

Notes:
1. Residential, Industrial, Commercial, and School demands are calculated using land uses derived from the latest density and intensity projections for Development Units 1-8.
2. The demands shown in Table 3 represent a conceptual demand for the future development.
3. Irrigation demands are not peaked, as these are anticipated to remain constant. Community Open Space is assumed to be 70% Turf and 30% Xeriscape. Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape. See Table B.1.2 in Appendix B for detailed demand calculations.
4. A commercial demand for 1 acre of 2,000 gpd (1.4 gpm) will be needed to serve the proposed Erie Lift Station (ELS), located at the southeast corner of Meridian Road and Erie Street. This demand is not peaked.
5. This table assumes that irrigation demands in DU 4, 7, 8, and a portion of DU 1 (south of Warner Road) will be supplied by the potable water system. This table assumes that a non-potable water system will fully offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). For calculation purposes, approximately 41% of DU 1's irrigation demand is assumed to be offset by the non-potable system.

5.0 WATER SYSTEM INFRASTRUCTURE

5.1 Existing Water System

The AJWD owns and operates an existing surface water treatment facility, the Superstition Area Water Plant (SAWP), which is located north of the CAP canal and west of Ironwood Road. The SAWP has a current surface water treatment capacity of 2.0 million gallons per day (MGD), with a planned build-out capacity of 10.0 MGD. The plant is currently operating at approximately 1.5 MGD. AJWD staff have indicated that 6.0 MGD of the plant's build-out capacity is allocated to the Auction Property and Retained Property, and that the remaining 2.0 MGD of treatment capacity is being reserved for future development within the City and may or may not be available for use by the Auction Property. Additional water demands beyond the 6.0 MGD currently reserved for the Auction Property and any portion of the remaining 2.0 MGD capacity that the City decides to allocate to the Project from the SAWP, will need to be sourced from a separate interim source and future distribution facility (herein referred to as Water Treatment Facility 2 and conceptually located along the CAP canal). The source of additional water supply may be from a future water treatment facility; direct potable reuse at the existing SAWP; and/or from groundwater wells on an interim basis. It is anticipated that the Water Treatment Facility 2 will be developed after the Auction Property as a part of the Retained Property. The AJWD currently has two wells, Well 5 and Well 6, which each have a capacity of 0.7 MGD, but per AJWD staff are currently reserved for back-up purposes. Well 5 is located near the intersection of 16th Avenue and Delaware Drive and Well 6 is located near Baseline Road and Winchester Road. These groundwater wells are used during annual CAP canal maintenance and for emergencies as they arise.

Figure 4 in Appendix A shows a conceptual layout and sizing for infrastructure needed to serve the Site at full buildout. As there is not currently any existing water infrastructure in place to serve the Auction Property or Retained Property areas, additional surface water treatment facilities and/or wells, along with transmission mains, storage facilities, booster pump stations, and distribution water mains will be required to extend water service to the development.

5.2 Proposed Water System Improvements

As noted previously, the purpose of this Master Water Plan is to detail the water infrastructure needed to serve the Auction Property and provide a regional framework for the anticipated infrastructure needed for the Retained Property. The proposed water system infrastructure for serving the Auction Property is shown in Figure 3 in Appendix A. The proposed water system has been designed to function as a stand-alone system for serving the Auction Property, as well as an integrated part of the build-out water system to serve both the Auction Property and Retained Property once the area is fully developed. The conceptual water system infrastructure that will be required to serve the Retained Property at full build-out is shown in Figure 4 in Appendix A. Based on existing topography across the Site, the entire portion of the development within the AJWD service area will be served by a single pressure zone.

As shown in Figure 3 in Appendix A, the proposed water system for serving the Project is comprised of 12-inch, 16-inch, and 24-inch water distribution mains located within the arterial streets, 12-inch mains within the collector streets, and looped 8-inch mains within the local streets within the individual parcels.

Water supply for the first phases of the Auction Property will be provided by a proposed 30-inch transmission main that will convey treated water from the AJWD SAWP facility, located north of the CAP canal and west of Ironwood Road, south to a proposed water storage and booster pumping facility (referred to herein as Water Campus 1), which is conceptually located west of Ironwood Road, between Elliot Road and Warner Road. The SAWP has a current treatment capacity of 2.0 MGD and can adequately meet current demands in the system but will need to be expanded to serve the Auction Property. This expansion will consist of the addition of treatment trains and pumping capacity at the plant to increase the plant's current capacity, with each new treatment train sized to provide an additional 2.0 MGD of treatment capacity.

Once the treatment capacity that has been allocated to the Auction Property and Retained Property from the SAWP has been reached, another source of supply will need to be developed. If limited to the current allocation of 6.0 MGD from the SAWP and none of the excess 2.0 MGD capacity is made available for use by the Auction Property, an additional supply of approximately 7.46 MGD will be required to meet the projected maximum day demand of 13.46 MGD for Development Units 1 & 2. Initially, as an interim solution, groundwater wells will be developed to supply any remaining demands needed for the Auction Property. Groundwater wells will be used on an interim basis until a future second water treatment facility (Water Treatment Facility 2) is constructed. This second facility, anticipated to be located along Ray Road, just west of the CAP canal, will supplement the SAWP and Water Campus 1 for sourcing, storing, and conveying water to the Auction Property and Retained Property and will be developed when the property along Ray Road becomes available.

AJWD is currently independent of groundwater sources and has stated an ultimate goal of continuing to use renewable resources to serve future customers. Of AJWD's total current water rights portfolio, approximately one-third of their available rights are from a groundwater allocation. Given the scale of the overall Auction Property, the development of new groundwater production wells is anticipated to be needed as an interim condition source. The approach will allow an immediate path to augment current water production to enable development of the Auction Property and to utilize the current allocation of groundwater rights. In the long term, wells may be used as an emergency potable water source to recover groundwater recharge credits. The development of a well (or series of wells, as may be needed depending on actual production) will enable water system planning to continue to plan for and site a second surface water treatment plant, which is planned to be developed once the Retained Property is developed. Additional detail and discussion are provided in Section 6.0.

The anticipated location of a future second water treatment plant is along the Ray Road alignment, near the CAP canal. This alignment is a logical location, effectively bridging the Auction Property boundary to the southern development areas of the Retained Property along the proposed regional transportation corridor. It is anticipated that Water Treatment Facility 2 will provide for supply, storage, and pumping capacities that will benefit both the Auction Property and Retained Property. Proposed infrastructure and distribution mains are identified in Figures 3-6 in Appendix A.

To meet additional future demands within the southern areas of the Retained Property area as it builds out, a third water storage/distribution facility (Water Campus 3) will be constructed. Conceptually, Water Campus 3 will be located near the intersection of the Williams Field Road and Ironwood Road alignments. Final locations and sizing for Water Treatment Facility 2 and Water Campus 3 will be determined at the time of final design.

The following sections discuss the water supply, treatment, storage, and booster pumping requirements for serving the Auction Property and Retained Property at buildout. These improvements may be phased with the phasing of development within the community to ensure each phase has adequate water service without having to construct the entire water system at the time the first parcels are developed. Pipe sizes identified in this Master Plan have been determined using demand factors that have been agreed upon by the AJWD. These factors are used for sizing infrastructure on a master-planning level. As the Site is built out, water campus, treatment, transmission main sizing, and distribution main sizing may be refined based on actual water usage.

5.3 Water Supply - Wells

While water supply for Superstition Vistas will primarily be provided by treated CAP surface water, AJWD staff has indicated that the existing wells are to provide supply redundancy for the AJWD system. Furthermore, additional water supply may be needed beyond the reserved capacity at the SAWP facility to meet the demands of the Auction Property at buildout, which will be initially provided by groundwater wells if additional surface water treatment is unavailable. Wells may be used as an interim source until the construction of Water Treatment Facility 2 is completed with the Retained Property. In the long term, these interim wells are to be used during emergency scenarios or while the CAP canal undergoes maintenance, which results in dry-ups every 2 to 3 years. These dry-ups can typically range from at least one week to a month in duration. A hydrogeological analysis has not yet been completed for the Site to determine preferred well locations, flow rates, and water quality, but is proposed to identify potential well locations. Once a hydrogeologic study is completed, an anticipated well capacity can be determined. If one or more wells are constructed within the Auction Property, transmission mains will also be installed to convey water from the wells to Water Campus 1, where the raw water will be treated, stored, and pumped out to distribution. The specific treatment required for the groundwater will depend on the contaminant levels identified during groundwater sampling as the wells are developed. The final locations and number of future wells will be determined as the Auction Property is built-out. It is anticipated that a future well site will be proposed near a future irrigation lake in DU 2 to fill the lake during interim conditions.

As discussed in Section 5.2, additional water supply from groundwater wells may be required to meet the maximum day demands of the Auction Property at buildout until the future Water Treatment Facility 2 is developed. The Auction Property will require up to 7.46 MGD (5,183 gpm if pumping 24 hours per day) to meet the Auction Property’s maximum day demand at buildout. If used, groundwater wells may be proposed at Water Campus 1, Water Treatment Facility 2, and potentially at the proposed lake site within Development Unit 2, as well as at other locations within the

Project as identified by a well siting study. Water from the wells would be routed to Water Campus 1 for treatment, storage, and pumping to distribution. The demand used to determine required well capacity assumes that all irrigation demands will be provided by the potable water system. Demand and required well capacity may be reduced if the non-potable water system offsets irrigation demands in DU 2, 3, 5, 6, and 1 (north of Warner Road).

5.4 Treatment & Transmission Main

The initial water supply for the Auction Property will be from the AJWD SAWP facility, located west of Ironwood Road on the north side of the CAP canal. The existing facility has a constructed capacity of 2.0 MGD, with potential to expand in 2.0 MGD increments up to a total capacity of 10.0 MGD at buildout. To meet demands as the Auction Property area develops, the SAWP facility will need to be expanded. Once the Retained Property develops, Water Treatment Facility 2 will be constructed along the CAP canal near Ray Road (for surface water supply and treatment)). If groundwater wells are used to supplement the surface water supply or to provide system redundancy, groundwater treatment will be needed. The type of treatment needed will depend on final water quality results as the wells are drilled and tested. It is anticipated that Water Campus 1 will contain groundwater treatment.

To provide the initial supply for the Auction Property, a 30-inch transmission main will be constructed along Ironwood Road and will convey treated surface water from the SAWP facility south to Water Campus 1 located along Ironwood Road between Elliot Road and Warner Road. This 30-inch transmission main is anticipated to convey 6.0 MGD at a velocity of 1.89 fps. The main is also sufficiently sized to convey 8.0 MGD if available from the SAWP facility, for a velocity of 2.52 fps. Transmission main calculations are provided in Table B.2 in Appendix B. The 30-inch transmission main within Ironwood Road will extend to the south to the intersection of Ray Road and Ironwood Road.

As the Retained Property develops, the capacity at Water Treatment Facility 2 will increase and ultimately, a future transmission main will be constructed to convey water to the proposed Water Campus 3 to serve the southern portion of the Retained Property at buildout. Based on preliminary sizing, it is anticipated that a 36-inch transmission main will be developed to convey a flow of approximately 15.36 MGD of treated water from Water Treatment Facility 2 to the intersection of Ray Road and Ironwood Road at build-out. Conceptually, this 36-inch transmission main will extend from Water Treatment Facility 2 west along Ray Road, then south as a 30-inch transmission main along Ironwood Road to the proposed Water Campus 3 site. The final alignment and sizing for this future transmission main will depend on the location of Water Campus 3 and other factors. In addition, demand calculations used to size this transmission main assume that irrigation demands for all DUs will be supplied by the proposed potable water system. Demand and transmission main sizing may be reduced if the non-potable water system offsets irrigation demands in DUs 2, 3, 5, 6, and a portion of 1. Preliminary sizing calculations for this future transmission main are included in Table B.2 in Appendix B and may be refined as the Retained Property area develops.

Rights-of-way are available for the offsite transmission main alignment along Ironwood Road. Additional rights-of-way may be required in areas so that all utilities can fit. If additional easements or rights-of-way are required, they will need to be acquired from State Land for the offsite transmission mains and for Water Treatment Facility 2, should those facilities be located outside the Auction Property area. An easement will be required along Ironwood Road north of the Auction Property to allow for the installation of the 30-inch transmission main between the SAWP and the Project. Other required easements or rights-of-way may include those for future water campus locations and distribution/transmission main alignments.

The proposed distribution and transmission mains will be located in standard alignments throughout the overall Site. Where reasonable, water and sewer mains will be installed on opposite sides of the roadway, and will consider other wet and dry utilities. There may be instances where non-standard alignments may be needed to reflect development timing and sequencing. The exact locations and alignments of water and sewer infrastructure within each alignment will be determined during future reports.

5.5 Storage

The criteria agreed upon by the AJWD requires sufficient storage to be provided to meet 40 percent of the maximum day demand plus fire flow. Table 5 below summarizes the storage capacity needed to serve Superstition Vistas at various phases of development. It is anticipated that this total storage requirement for the Auction Property at build-out will be provided at Water Campus 1 (6.4 MG). Water Campus 1 will need to be sized to potentially contain all 6.4 MG of storage needed to serve the Auction Property. If the area of Retained Property for Water Treatment Facility 2 is acquired, then storage can be installed at Water Treatment Facility 2 to serve the Auction Property. However, Water Campus 1 will still be required to be sized for all 6.4 MG of storage.

At full build-out, the Auction Property and Retained Property will require a total of 17.0 MG of storage capacity for the portions of the community in the AJWD service area. Conceptual sizing to meet this build-out storage capacity is shown in Table B.3 in Appendix B and includes 6.4 MG of storage at Water Campus 1, 4.7 MG of storage at Water Treatment Facility 2, and 5.9 MG of storage at Water Campus 3. As each phase of the Site is developed, actual water usage should be monitored and the storage requirement be refined based on actual water usage to minimize the potential for oversized water facilities. These storage requirements assume that irrigation demands will be supplied by the proposed potable water system. It is anticipated that a non-potable water system will supply irrigation demands for DUs 2, 3, 5, 6, and a portion of 1. Therefore, storage requirements for the Auction Property may be reduced. Storage capacity calculations for Superstition Vistas are provided in Table B.3 in Appendix B and required storage at buildout is summarized in Table 5 below.

Table 5: Storage Capacity Summary		
Total Required Storage at Build-Out (gpm)		
Auction Property (Build-Out)	AJWD Service Area (Auction Property & Retained Property)	Entire Site[1]
6.4 MG	17.0 MG	18.6 MG
Notes: 1. Entire Site includes AJWD service area and current Arizona Water Company service area.		

5.6 Booster Pumps

The design criteria agreed upon by the AJWD indicate that sufficient booster pumping capacity shall be provided to meet the greater of the maximum day demand plus fire flow demand or the peak hour demand with the largest pump out of service. A booster pump station is proposed at Water Campus 1 to meet the Auction Property's booster pumping requirement of 15,331 gpm. Table 6 below shows the total pumping capacity required for the Auction Property at buildout, and for the Auction Property and Retained Property areas within AJWD's service area at buildout. Detailed pump capacity calculations are provided in Table B.4 in Appendix B. As the Project is built out, it is anticipated that the buildout pumping capacity requirement will be met by the combined capacities of pumps at Water Campus 1. At buildout of the Auction Property and Retained Property, the pumping capacity will be provided by a combination of pumping capacities at Water Campus 1, Water Treatment Facility 2, and Water Campus 3. These booster pumping requirements assume that irrigation demands will be supplied by the proposed potable water system. It is anticipated that a non-potable water system will supply irrigation demands for DUs 2, 3, 5, 6, and a portion of 1. Therefore, booster pumping requirements for the Auction Property may be reduced.

Table 6: Booster Pump Summary		
Required Pumping Capacity (gpm)		
Auction Property (Build-Out)[1]	AJWD Service Area (Auction Property & Retained Property)[1]	All of Site[1, 2]
15,331	40,154	44,428
Notes: 1. Peak hour demand is controlling scenario. 2. Total area includes AJWD service area and current Arizona Water Company service area within the Site.		

5.7 Water Improvements Phasing

It is anticipated that Auction Property and Retained Property will be developed in several phases, with the initial phase anticipated to be within Development Unit 1 & Development Unit 2. The water mains, wells, treatment, storage, and pumping facilities required to serve each phase will similarly be constructed in phases as required to serve each phase of development. For any given phase, the offsite water infrastructure required to serve that phase will be constructed at the same time the phase is developed. Furthermore, the water mains that are installed will be sized for build-out conditions and will meet the required fire flows for the area that is developed.

The size and scale of the Auction Property and Retained Property are such that individual unit or parcel reports will be prepared as each unit or parcel is developed to confirm the intensity and land use as the basis for final water demands, and to substantiate the scope of water infrastructure needed for the given unit or parcel. Infrastructure sizing will be phased and expanded over time to meet the demands within the Site area as it develops. It is also anticipated that storage and pumping capacity at Water Campus 1 will be expanded in phases as the SAWP capacity increases. Phasing will similarly apply to storage, treatment, and pumping facilities.

Residential dwelling units within the Auction Property are anticipated to be developed in phases, with an estimated combined 2,350 homes to be constructed in Development Units 1 & 2 by the end of 2023. Table 7 below summarizes an anticipated development schedule for the Auction Property. Table 7 assumes that irrigation demands within the Auction Property are fully offset by a non-potable water system. Detailed development schedules for the Auction Parcel are also provided in Tables B.8.1 and B.8.2 in Appendix B. Table B.8.1 summarizes a development schedule with the assumption that irrigation demands are offset by the non-potable water system and Table B.8.2 summarizes a development schedule with the assumption that irrigation demands within the Auction Property are to be supplied by the potable water system.

Table 7: Auction Property Development Schedule

Year	Construction Activity	Source
2021	Begin grading/ infrastructure improvements	SAWP
2022	Infrastructure construction/ begin home construction	SAWP
2023	2,350 homes	SAWP (2.6 MGD Max Day)
2024	3,805 homes	SAWP (4.2 MGD Max Day)
2025	5,165 homes	SAWP (5.7 MGD Max Day)
2026	6,880 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (1.7 MGD Max Day)
2027	8,450 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (3.5 MGD Max Day)
2028	9.580 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (4.8 MGD Max Day)
2029	10,080 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (5.3 MGD Max Day)
2030	10,545 homes, 35 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (5.8 MGD Max Day)
2031	10,940 homes, 40 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (6.3 MGD Max Day)

Notes:
1. This table does not include irrigation demands for the Auction Property.
2. Construction Activity totals are cumulative.
3. Detailed calculations and development schedule assumptions are provided in Tables B.8.1 and B.8.2 in Appendix B.

5.8 Assured Water Supply & Water Rights

The AJWD ("Apache Junction Water Company", DWR 86-002025.0001) is included in the Arizona Department of Water Resources (ADWR) *List of Municipal Water Providers Designated as having an Assured or Adequate Water Supply as of February, 19, 2020*. The current designation of assured water supply from ADWR and a summary of water rights is included in Appendix D for reference. Although the AJWD is included on the current list of designated providers, additional water supply and water rights will be required to serve the Auction Property and Retained Property at build-out.

The AJWD 2019 paper water portfolio includes a variety of sources that equate to approximately 7,393 acre-ft/year. These sources and their associated volumes are summarized in Table 8 below and were provided by AJWD staff.

Table 8: AJWD 2019 Paper Water Portfolio Summary	
AJWD Paper Water Rights	
Source	**Value (acre-ft/year)**
CAP	2,919
Gila River Indian Community (GRIC) Lease	1,000
Non-Indian Agriculture (NIA)	817
Groundwater	2,372
Long-Term Storage Credits (LTSC)	285
Total:	**7,393**

Per discussions with AJWD staff, the AJWD currently has 1,919 acre-ft/year of committed water and 2,893 acre-ft/year of water rights reserved for existing and future customers within the AJWD service area. Additionally, the AJWD has issued Commitment to Serve letters for three other individual communities within AJWD's service area, with a commitment of 350 acre-ft/year to serve 564 lots. As of mid-2020, the existing customers in the AJWD use 2,400 acre-ft/year. AJWD has indicated that they are currently working on acquiring additional water rights to meet the demands of the Auction Property and Retained Property. AJWD currently has enough paper water rights to get the Auction Property started, however, it is anticipated that additional water rights will be acquired in the future. Table 9 below summarizes the AJWD 2020 water use and the volume of water ordered for 2021.

Table 9: AJWD Water Use & Water Ordered		
Source	**2020 Water Use (acre-ft/year)**	**2021 Water Ordered (acre-ft/year)**
SAWP	1,485	1,545
Mesa Water Interconnect	15	24
Groundwater Storage Facility (GSF)	900	1,000
Total:	**2,400**	**2,569**

The demand criteria utilized in this master plan incorporate components needed to account for potable water consumption for both domestic and fire protection needs and infrastructure sizing. While this is typical for municipal providers, it should be noted that the criteria utilized herein is more conservative than other more established municipal providers. An important distinction is that these demand criteria do not necessarily correlate to actual water rights needed to continue to support the District designation boundary. As the Site develops, actual demands should be monitored in concert with annual reporting requirements, and amended as needed. This should be done to appropriately size the needed infrastructure and establish additional water rights as needed for the District.

5.9 Wet Water Availability

The SAWP currently operates at approximately 1.5 MGD and has a current capacity of 2.0 MGD. The plant has a planned future buildout capacity of 10.0 MGD. Based on initial discussions with AJWD, a total of 6.0 MGD of the buildout capacity is allocated for the Auction Property and Retained Property, and an additional 2.0 MGD of capacity at buildout is available for general development in the City. Once the Auction Property's demands reach the allocated capacity at the SAWP (6.0 MGD plus any portion of the 2.0 MGD of excess capacity that the City allocates to the Auction Property in the future), additional wet water supply will need to be developed to meet the projected demands of the Auction Property and the Retained Property. However, it may be possible for additional water to be supplied by the SAWP, based on timing of development and availability. To minimize the volume of treated water needed to serve the Auction Property and Retained Property, the projected irrigation demands in DU 2, 3, 5, 6, and a portion of 1 may be served by reclaimed water from the Guadalupe Wastewater Treatment facility that is operated by the Superstition Mountains Community Facilities District No. 1 (SMCFD).

6.0 ADDITIONAL GROUNDWATER SUPPLY

6.1 Groundwater Wells

As discussed earlier in this Master Plan, once the Auction Property's maximum day demand reaches the allocated supply available from the SAWP, additional water supply and treatment facilities will need to be developed. A future second surface water sourcing facility and water campus (Water Treatment Facility 2) are preliminarily planned along the Ray Road alignment near the CAP canal as a part of the Retained Area development. However, water supply may be provided in the interim by drilling and equipping one or more wells within the Auction Property area. Wells would be located as identified in a future well siting study and would convey water through transmission mains to Water Campus 1 for treatment, storage, and distribution. Treatment requirements for the groundwater will be determined once the wells are drilled and tested.

Assuming 6.0 MGD would be distributed by Water Campus 1, the wells would need to supply the Auction Property's remaining buildout maximum day demand of 7.46 MGD (5,183 gpm). Well capacity calculations to meet this demand are provided in Table B.7 in Appendix B. As shown, when pumping 24 hours per day, the wells would need a capacity of 5,183 gpm. When pumping 18 hours per day, the wells would need a capacity of 6,911 gpm. As the area develops and actual demands are known, the required well capacity may be revisited and updated to better reflect the actual maximum day demand.

7.0 ONE WATER & SUSTAINABILITY GOALS

As the Auction Property and Retained Property areas develop, the One Water and/or other sustainability goals of the City, the AJWD, the SMCFD, and other Project stakeholders will be considered in an effort to effectively manage the available water resources for the community and surrounding areas. Opportunities to offset potable water use may include an integrated approach to water supply by using one or more sources such as potable water, non-potable reuse, potable reuse, wastewater, stormwater, and others. AJWD is currently under contract with a consultant to further develop One Water goals. Further discussions will be held with the Project stakeholders as the Auction Property and Retained Property areas develop to optimize water management considerations and solutions.

7.1 Direct & Indirect Potable Reuse

It is a goal of AJWD to implement direct and indirect potable water reuse (DPR & IPR) into its water system capabilities to conserve water and support One Water goals. As the Superstition Vistas development progresses, this system will be evaluated further to determine the feasibility of DPR & IPR capabilities.

8.0 HYDRAULIC MODEL AND RESULTS

8.1 Design Methodology

The proposed conceptual water system for Superstition Vistas was modeled using WaterCAD Connect Edition by Bentley Systems, Inc. Two models were prepared for this evaluation. The first represents the Auction Property at buildout (see Figure 3 in Appendix A). The second model represents the Site (i.e., both the Auction Property and Retained Property) at buildout (see Figure 4 in Appendix A). Both models include Water Campus 1. The model for the Site at buildout also includes Water Treatment Facility 2 and Water Campus 3 for improved distribution within the Retained Property area. The Arizona Water Company (AWC) service area in Sections 6 and 7 of the Retained Property are also modeled in the second model with a separate reservoir and distribution piping from that used for the AJWD service area. The model results for the AWC service area are included only for reference. Model scenarios utilized demands with the assumption that irrigation demands would be supplied by the potable water system, as shown in Table 3 and Table B.1.1 in Appendix B, to simulate conservative demand factors.

Each model includes five scenarios: average day, maximum day, peak hour, residual fire flow during maximum day conditions, and available fire flow during maximum day conditions. A residual fire flow analysis applies the applicable fire flow to each corresponding junction in the system to confirm the system’s ability to meet the minimum pressure and maximum velocity requirements while providing the required fire flow during maximum day conditions. The available fire flow analysis estimates the maximum flow available at each junction while maintaining the minimum allowable residual pressure throughout the proposed system during maximum day conditions.

8.2 Auction Property Model

The proposed conceptual water system layout for the Auction Property at buildout is shown in Figure 3 of Appendix A. The hydraulic model uses one reservoir, R-1, to represent Water Campus 1. The static head reservoir for R-1 is set to a hydraulic grade line (HGL) of 1,710-feet to provide the appropriate minimum pressure as required by the AJWD (50 psi) during peak hour conditions.

Junctions are distributed along arterial and collector streets throughout the Auction Property based on conceptual land use plans and the demands for Development Units 1 & 2 were distributed to provide an accurate representation of anticipated pressures and flows throughout the modeled system. Irrigation demands were distributed evenly among the 12-inch mains in the collectors. Residential and irrigation demands were also applied to junctions J-39, J-46, and J-53. A fire flow requirement of 4,000 gpm is applied to junctions within arterial streets. Generally, water mains within proposed arterial streets are at least 16 inches in diameter and water mains within collector streets are generally 12 inches in diameter. However, a 12-inch main is proposed along Meridian Road along the western Auction Property boundary since no development is planned to be served by AJWD west of Meridian Road. As shown in Figure 3, a few arterial streets will have 24-inch mains to keep velocities generally below 5 fps. If the non-potable water system offsets irrigation demands within the Auction Property, it is not anticipated that any 24-inch mains would be able to be reduced to 16-inch mains within the Auction Property. Internal local streets and some collectors will have 8-inch looped water mains. It is anticipated that additional 8-inch loops will be developed along the other local streets within the community as it develops. A 12-inch main extends to the south along Meridian Road from the southwest corner of the Auction Property to serve the proposed Erie Lift Station, located near the intersection of Erie Street and Meridian Road. A residential fire flow is applied to J-205 and J-ELS, since there is not anticipated to be any additional development served by this extended 12-inch main during the Auction Property's development.

Detailed hydraulic model results for the proposed water system for the Auction Property at buildout are provided in Appendix C. Table 10 below summarizes the results. As shown in Table 10, all pressures remain between 61.3 psi and 108.8 psi for the average day, maximum day, and peak hour scenarios. Velocities and head losses for all pipes generally remain below their respective maximum allowable limits (5 fps and 10 ft/1,000 ft, respectively). Two pipes have velocities that slightly exceed 5 fps during peak hour conditions. However, it is anticipated that actual demands for the system will be lower than those identified in Table B.1.1, resulting in lower velocities than are shown in the model. The fire flow analysis results show that the proposed system can adequately provide the required 1,500 gpm of fire flow to residential areas and 4,000 gpm of fire flow to commercial/industrial/school areas during maximum day conditions, while maintaining a residual pressure of at least 20 psi and a maximum velocity of less than 10 feet per second.

Table 10: Hydraulic Model Results Summary – Auction Property

	Average Day		Maximum Day		Peak Hour	
	Value	Location	Value	Location	Value	Location
Minimum Pressure (psi)	66.3	J-15	64.7	J-15	61.3	J-15
Maximum Pressure (psi)	108.8	J-ELS	106.5	J-ELS	101.5	J-ELS
Maximum Velocity (fps)[2]	1.92	P-133	3.53	P-133	5.79	P-133
Maximum Headloss (ft/1,000 ft of pipe)	0.921	P-27	2.840	P-27	7.080	P-27
Residual Fire Flow Analysis (at Maximum Day)						
		Value	Location		Fire Flow Location and Flow	
Minimum Residual Pressure (psi)		58.4	J-15		J-15 @ 4,000 gpm	
Maximum Velocity (fps)		7.10	P-34		J-39 @ 1,500 gpm	
Available Fire Flow Analysis (at Maximum Day)						
			Value		Location	
Minimum Available Fire Flow – Residential (gpm)			2,207		J-39	
Minimum Available Fire Flow – Commercial/Industrial/School (gpm)			7,088		J-41	

Notes:
1. Full hydraulic model results can be seen in Appendix C.
2. Pipe velocity only exceeds 5 fps in two pipes during peak hour conditions. It is anticipated that actual demands will be lower and system velocities will not exceed 5 fps.
3. Any structure experiencing pressures greater than 80 psi shall have an individual PRV.

8.3 Site Model

The proposed conceptual water system layout for the Site, including both the Auction Property and Retained Property areas, at buildout is shown in Figure 4 in Appendix A. The primary purpose of this model is to demonstrate that the infrastructure improvements proposed for the Auction Property can support the conceptual future infrastructure within the Retained Property area and to establish the primary water infrastructure network for future development in the Retained Property area. The model includes three static head reservoirs (R-1, R-2, and R-3) placed at the proposed water campus locations. These reservoirs represent Water Campus 1, Water Treatment Facility 2, and Water Campus 3, respectively. The water main alignments and sizing for the Auction Property area remain the same as shown in the Site model. In the Retained Property area, infrastructure is placed along arterial and collector streets to provide a conceptual representation of the future system at buildout.

A site plan has not yet been developed for the Retained Property area. Therefore, the demands identified for each individual Development Unit in the Retained Property area are split evenly among junctions within the given Development Unit. Commercial and industrial demands for the Retained Property are distributed along adjacent arterial streets for Development Units 3 through 8 and the static head reservoirs are set to an HGL of 1,710-feet. Flow control valves are set at reservoirs R-2 and R-3 to limit flows to the peak hour pumping capacities of Water Treatment Facility 2 and Water Campus 3; 10,410 gpm and 14,413 MGD, respectively. These flows are representative of the conceptual pumping capacities that will be at Water Treatment Facility 2 and Water Campus 3. A fourth reservoir is placed near the intersection of

Baseline Road and Meridian Road to simulate a separate water source for the AWC service area. This reservoir is set to an HGL of 1,720-feet to produce sufficient pressures for the AWC service area.

As shown in Table 11, all pressures throughout the modeled area remain between 57.4 psi and 110.5 psi for the average day, maximum day, and peak hour scenarios. Velocities and head losses for all pipes generally remain below their respective maximum allowable limits, with only one pipe having a velocity that slightly exceeds 5 fps during peak hour conditions. However, it is anticipated that actual demands for the system will be lower than those identified in Table B.1.1, resulting in lower velocities than are shown in the model. In addition, if the non-potable system offsets irrigation demands within the Retained Property, it is anticipated that some downsizing of certain 24-inch mains may be possible within the arterial streets of the Retained Property. The fire flow analysis results show that the proposed system can adequately provide the required 1,500 gpm of fire flow to residential areas and 4,000 gpm of fire flow to commercial/industrial areas during maximum day conditions, while maintaining a residual pressure of at least 20 psi and a maximum velocity of less than 10 feet per second.

Table 11: Hydraulic Model Results Summary– Site

	Average Day		Maximum Day		Peak Hour	
	Value	Location	Value	Location	Value	Location
Minimum Pressure (psi)	63.0	J-223	62.2	J-223	57.4	J-223
Maximum Pressure (psi)	110.5	J-204	109.4	J-204	103.5	J-204
Maximum Velocity (fps)	1.40	P-134	2.56	P-134	5.24	P-133
Maximum Headloss (ft/1,000 ft of pipe)	0.720	P-27	2.222	P-27	6.545	P-27

Residual Fire Flow Analysis (at Maximum Day)

	Value	Location	Fire Flow Location and Flow
Minimum Residual Pressure (psi)	40.0	J-232	J-232 @ 4,000 gpm
Maximum Velocity (fps)	7.58	P-240	J-219 @ 4,000 gpm

Available Fire Flow Analysis (at Maximum Day)

	Value	Location
Minimum Available Fire Flow – Residential (gpm)	2,145	J-39
Minimum Available Fire Flow – Commercial/Industrial/School (gpm)	5,458	J-219

Notes:
1. Model results summary in Table 11 does not include results from the Arizona Water Company service area.
2. Pipe velocity only exceeds 5 fps during peak hour conditions. It is anticipated that actual demands will be lower and actual system velocities will not exceed 5 fps.
3. Any structure experiencing pressures greater than 80 psi shall have an individual PRV.
4. Full hydraulic model results can be seen in Appendix C.

9.0 CONCLUSIONS

The proposed water system discussed in this Master Water Plan will adequately serve the Superstition Vistas development. This report has determined that:

- Based on the approved AJWD demand factors, preliminary land uses, the average day, maximum day and peak hour demands for the Auction Property are 7,312,250 gpd (5,078 gpm), 13,463,950 gpd (9,350 gpm) and 22,076,330 gpd (15,331 gpm), respectively. These demand factors assume that all irrigation demands will be supplied by the potable water system. Anticipated potable water demands may be reduced if the proposed non-potable water system offsets irrigation demands within DU 2 and a portion of DU 1.

- Based on the approved AJWD demand factors, preliminary land uses, the average day, maximum day and peak hour demands for the portions of the Site (Auction Property and Retained Property) within the AJWD service area are 19,136,153 gpd (13,289 gpm), 35,255,193 gpd (24,483 gpm) and 57,821,849 gpd (40,154 gpm), respectively. These demand factors assume that all irrigation demands will be supplied by the potable water system. Anticipated potable water demands may be reduced if the proposed non-potable water system offsets irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1.
- The demands identified within this Water Master Plan are used primarily for infrastructure and facility sizing. These demands are not intended to outline the amount of legal water rights and/or resources that will need to be obtained as the Auction Property develops into the future. It is anticipated that actual system demands will be lower than those identified within this Water Master Plan and a separate water resources analysis should be completed to determine actual water rights to be acquired for the Auction Property as the Property develops.
- The hydraulic model shows the Auction Property can be adequately served by the proposed system of 8-inch to 24-inch looped water mains. In addition, model results show that the distribution system infrastructure proposed for the Auction Property integrates well into the future system development in the Retained Property at full buildout.
- Water for the Auction Property will initially be supplied by the AJWD SAWP through a 30-inch transmission main along Ironwood Road. A future second water treatment facility is proposed as part of the Retained Property development. In the interim, groundwater wells will be used to supply the remaining demands for the Auction Property until Water Treatment Facility 2 is active. A third water campus is proposed to meet the full buildout demands within the Retained Property area.
- Superstition Vistas Retained Property is situated within a single pressure zone of Apache Junction Water District's water system. Sections 6 and 7 within the Retained Property are within the AWC service area.
- The proposed water system for Superstition Vistas is anticipated to consist of transmission mains, treatment facilities, storage facilities, booster pumping facilities, and water distribution mains.
- The proposed system can provide the required fire flow (1,500 gpm for residential areas and 4,000 for commercial/industrial/school/office areas) during maximum day conditions while maintaining a residual pressure of at least 20 psi, as required by the AJWD.
- It is anticipated that procurement of additional paper and wet water supply will be needed as the Auction Property and Retained Property develop. Potential options for obtaining additional water may include groundwater, surface water, DPR and IPR, and others.

- Groundwater wells used to supply water for the Auction Property in the interim will be used as emergency and backup water sources in the long-term.
- The intent of this Master Plan was to establish the basis for future final design as each Development Unit proceeds to development. The size and scale of both the Auction Property and Retained Property are such that individual unit or parcel water reports are to be prepared to confirm the intensity and land use as the basis for final water demands, and substantiate the scope of water infrastructure needed.
- This Master Plan may need to be amended in the future to update the various elements contained in this Plan. These amendments may range from updating the demand factors that reflect actual rates to revised locations of primary water infrastructure to corroborate with the most current District Water Master Plan at that respective time.

10.0 REFERENCES

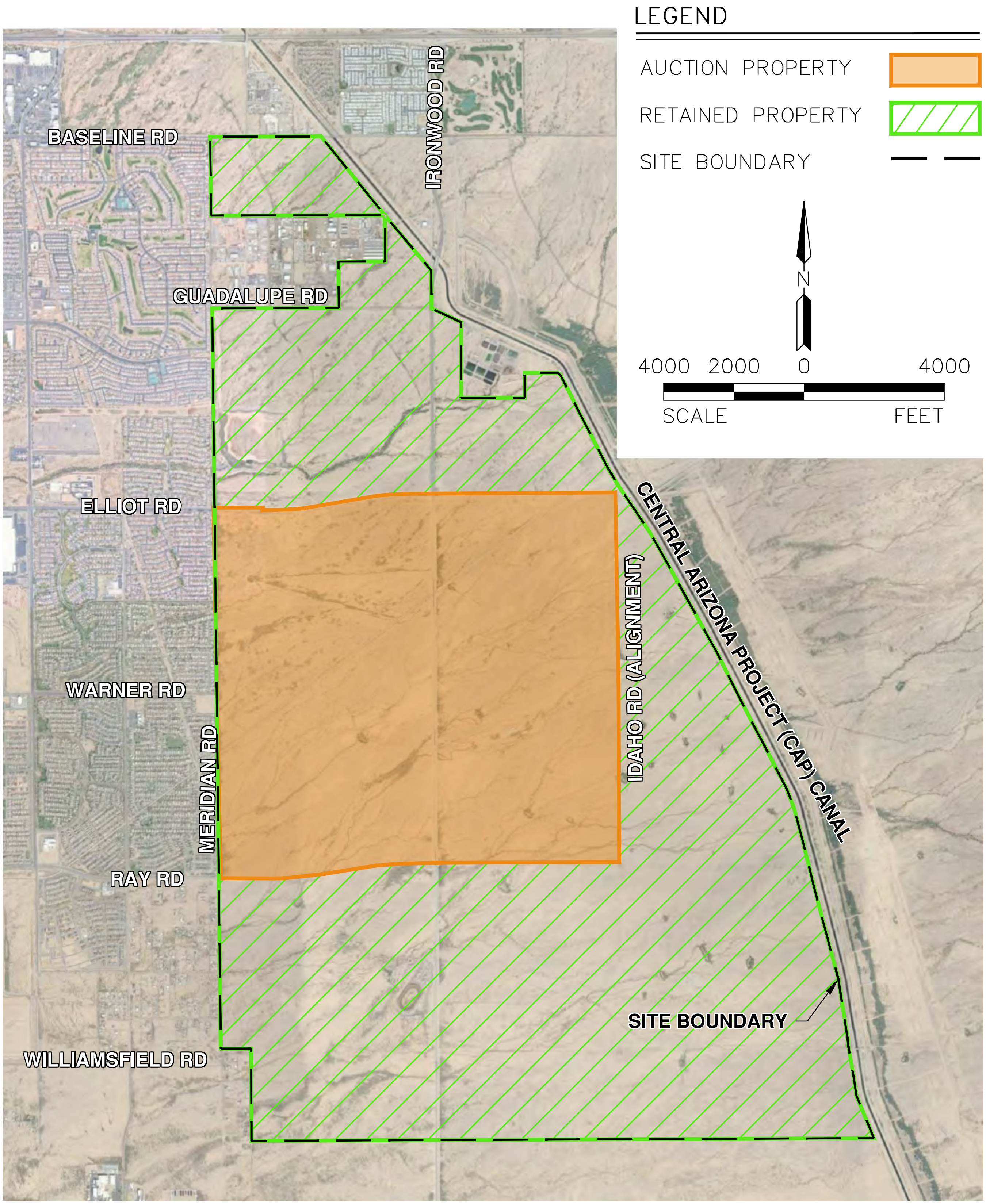
Arizona Department of Water Resources (2020). *List of Municipal Water Providers Designated as Having an Assured or Adequate Water Supply as of February 19, 2020.* February 2020, Phoenix, AZ.

Kimley-Horn & Associates, Inc. (2019). *Infrastructure Assessment Study ASLD 8500.* November 2019, Mesa, AZ.

Wood, Patel & Associates, Inc. (2021). *Master Non-Potable Water Plan for Superstition Vistas.* April 2021, Phoenix, AZ.

APPENDIX A
FIGURES

1. SUPERSTITION VISTAS VICINITY MAP
2. SUPERSTITION VISTAS DEVELOPMENT UNIT EXHIBIT
3. SUPERSTITION VISTAS WATER SYSTEM IMPROVEMENTS (AUCTION PROPERTY)
4. SUPERSTITION VISTAS WATER SYSTEM IMPROVEMENTS (SITE)



PROJ.NO.:	1635.02
DATE:	APR 2021
SCALE:	1" = 4,000'
DRAWN BY:	SL
CHECKED BY:	AT

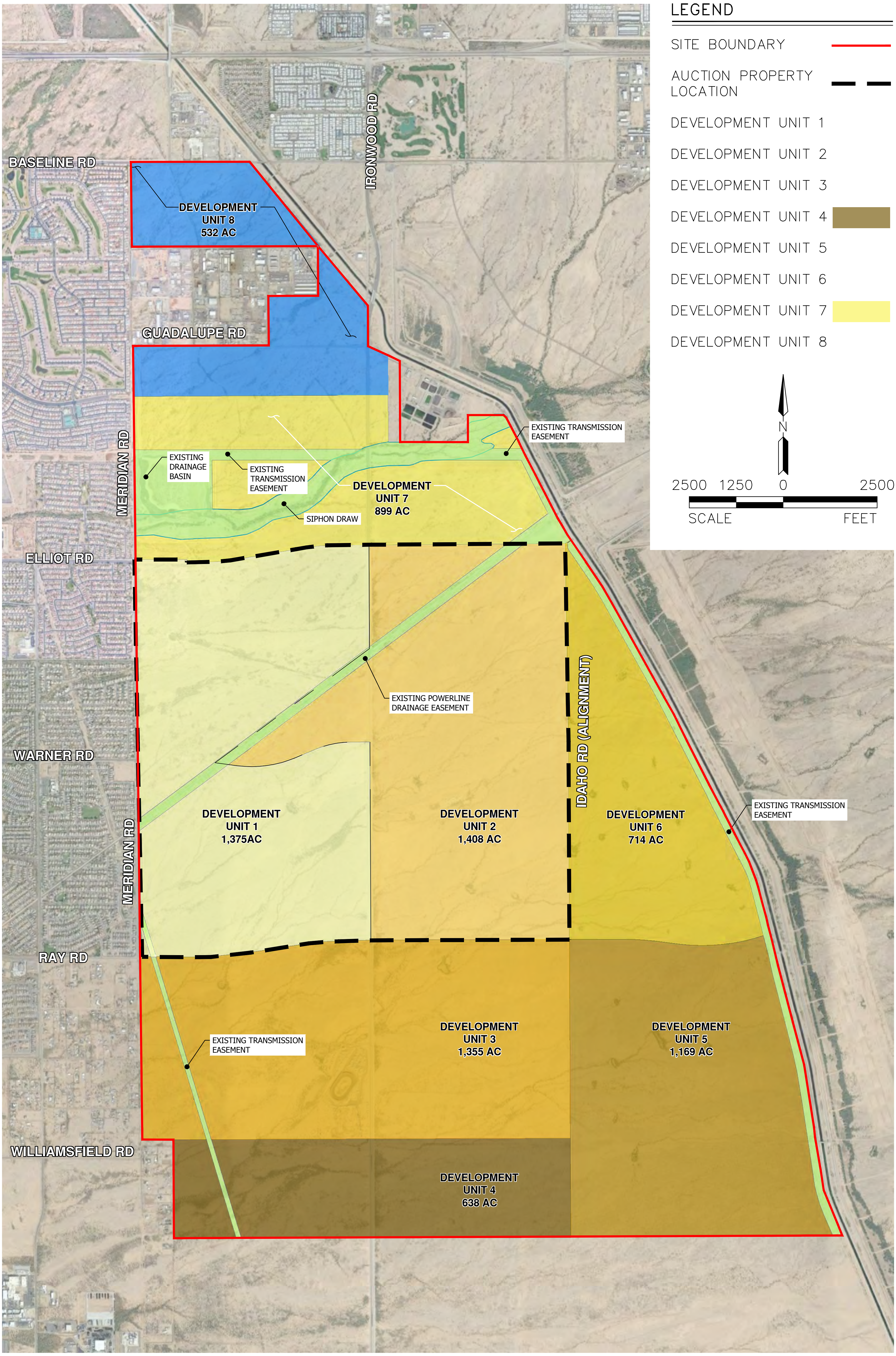
SUPERSTITION VISTAS

APACHE JUNCTION, ARIZONA

FIG 1: VICINITY MAP

HILGARTWILSON
2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436

U:\1600\1635\1635.02 DR Horton\REPORTS\DRAINAGE\Exhibit\1635 FIG 1 – Vicinity Map.dwg 4/15/2021 4:10 PM



U:\1600\1635\1635.02 DR Horton\REPORTS\WATER\Exhibits\1635 FIG 2 - Development Unit Exhibit.dwg 4/15/2021 2:42 PM

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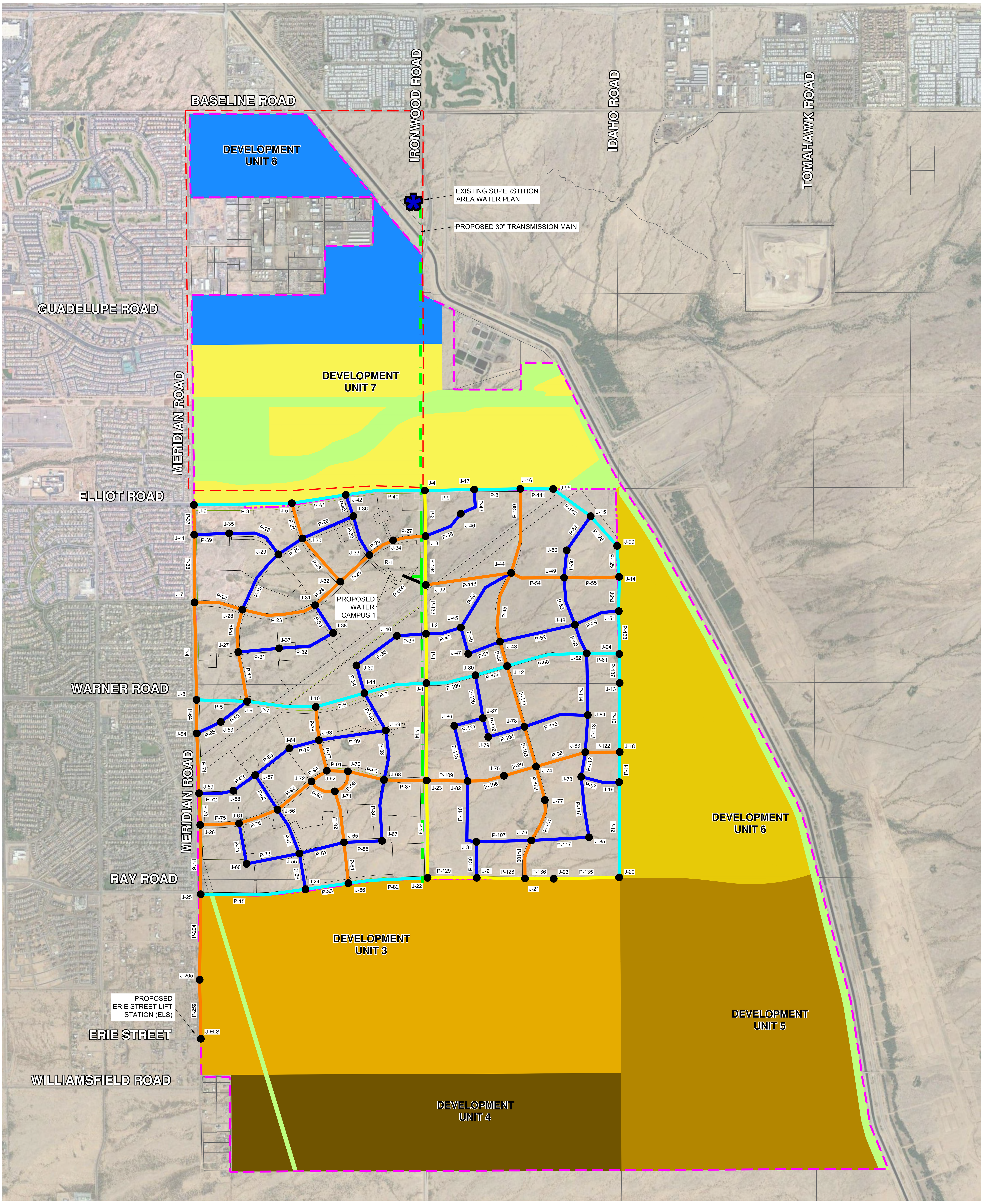
DATE:	APR 2021
SCALE:	1" = 2,500'
DRAWN BY:	SL
CHECKED BY:	MI

SUPERSTITION VISTAS

APACHE JUNCTION, ARIZONA

FIG 2: DEVELOPMENT UNIT EXHIBIT

HILGARTWILSON
2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436



LEGEND

AUCTION PROPERTY BOUNDARY	
SITE BOUNDARY	
AZ WATER COMPANY SERVICE AREA (WITHIN RETAINED PROPERTY)	
PROPOSED WATER MAIN	
PROPOSED TRANSMISSION MAIN	
JUNCTION	
RESERVOIR	
EXISTING SURFACE WATER TREATMENT FACILITY	

PIPE DIAMETER (IN)

=	8.0
=	12.0
=	16.0
=	24.0

NOT FOR CONSTRUCTION
JULY 2021

N

1200 600 0 1200 2400
SCALE: 1" = 1200'

HILGARTWILSON

PROJ NO.:	1635
DATE:	JUL 2021
SCALE:	1"=1,200'
DRAWN:	AP
DESIGNED:	HW
APPROVED:	KP

SHT. OF
DWG. NO.

SUPERSTITION VISTAS

ELLIOT ROAD & MERIDIAN ROAD
PINAL COUNTY, ARIZONA

FIG 3: WATER SYSTEM IMPROVEMENTS – AUCTION PROPERTY

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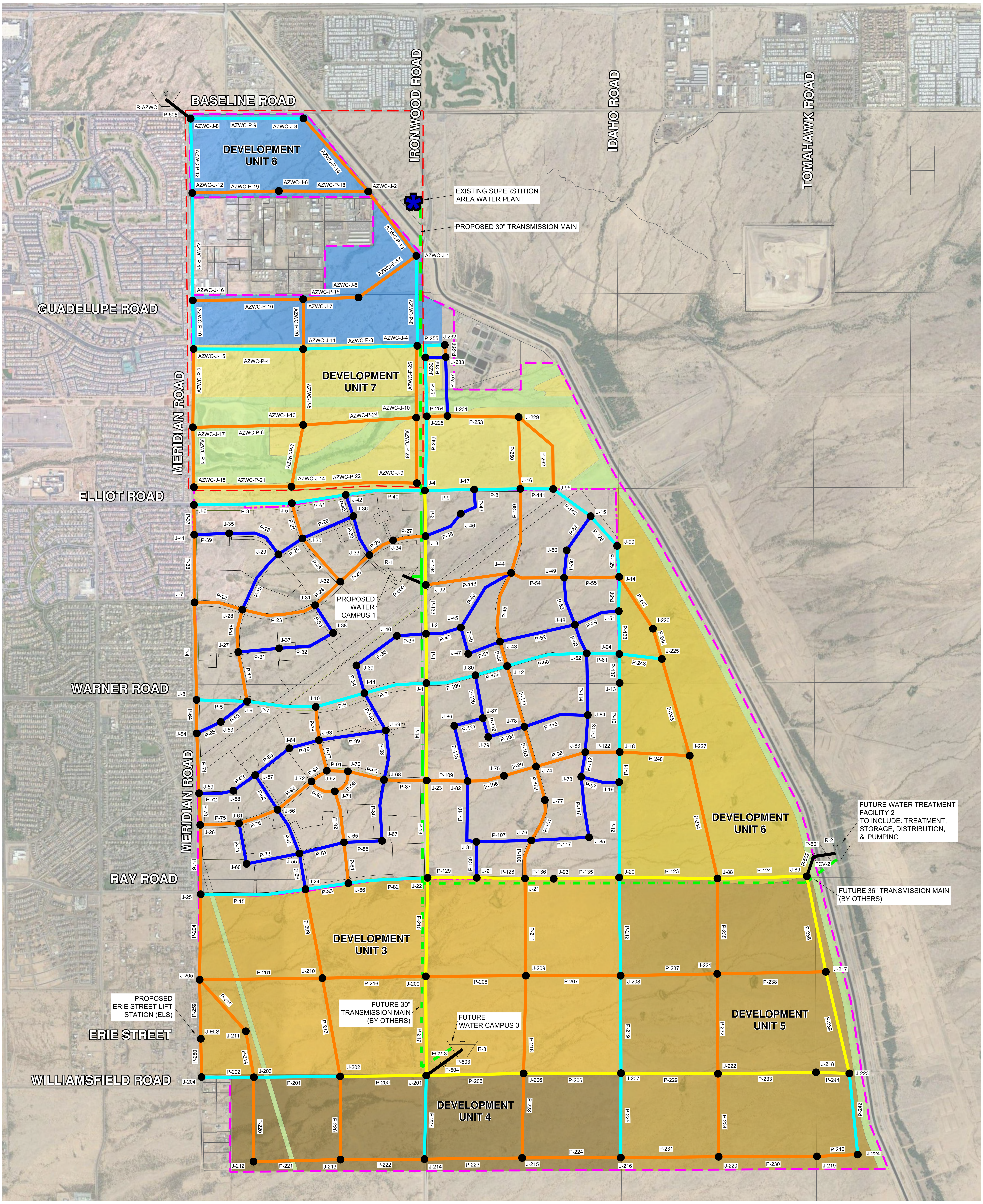
REV.:



LEGEND

AUCTION PROPERTY BOUNDARY	
SITE BOUNDARY	
AZ WATER COMPANY SERVICE AREA (WITHIN RETAINED PROPERTY)	
PROPOSED WATER MAIN	
PROPOSED TRANSMISSION MAIN	
FUTURE TRANSMISSION MAIN (BY OTHERS)	
JUNCTION	
RESERVOIR	
EXISTING SURFACE WATER TREATMENT FACILITY	

PIPE DIAMETER (IN)

(blue)	= 8.0
(orange)	= 12.0
(cyan)	= 16.0
(yellow)	= 24.0

NOT FOR CONSTRUCTION
JULY 2021

N

1200 600 0 1200 2400
SCALE: 1" = 1200'

HILGARTWILSON

PROJ NO.: 1635
DATE: JUL 2021
SCALE: 1"=1,200'
DRAWN: AP
DESIGNED: HW
APPROVED: KP

DWG. NO.
SHT. OF

SUPERSTITION VISTAS

ELLIOT ROAD & MERIDIAN ROAD
PINAL COUNTY, ARIZONA

FIG 4: WATER SYSTEM IMPROVEMENTS – SITE

HILGARTWILSON
ENGINEER | PLAN | SURVEY | MANAGE
2141 E. HIGHLAND AVE., STE. 250
PHOENIX, AZ 85016
P: 602.490.0535 / F: 602.368.2436
www.hilgartwilson.com

REV.:

APPENDIX B
SUPERSTITION VISTAS WATER SYSTEM CALCULATIONS & TABLES

TABLE B.1.1: SUPERSTITION VISTAS WATER DEMAND CALCULATIONS
TABLE B.1.2: SUPERSTITION VISTAS WATER DEMAND CALCULATIONS (OFFSET IRRIGATION)
TABLE B.2: SUPERSTITION VISTAS TRANSMISSION MAIN SIZING CALCULATIONS
TABLE B.3: SUPERSTITION VISTAS STORAGE REQUIREMENT CALCULATIONS
TABLE B.4: SUPERSTITION VISTAS BOOSTER PUMP CALCULATIONS
TABLE B.5: SUPERSTITION VISTAS OVERALL PROPERTY DENSITY ALLOCATION
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TABLE B.7: WELL CAPACITY CALCULATIONS
TABLE B.8.1: AUCTION PROPERTY DEVELOPMENT SCHEDULE (NO IRRIGATION)
TABLE B.8.2: AUCTION PROPERTY DEVELOPMENT SCHEDULE (INCLUDING IRRIGATION)

Table B.1.1 - Water Demand Calculations

Superstition Vistas

Pinal County, Arizona

April 2021

HILGARTWILSON
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Development Unit	Gross Area (ac)	Neighborhood Open Space (ac)	Commercial Area (ac)	Industrial Area (ac)	School (ac)	Community Open Space (ac)	SFR (Medium Density) (DU)	Xeriscape/Turf Demand[7]		Average Day Demand		Maximum Day Demand		Peak Hour Demand	
								(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)
Apache Junction Water District Service Area															
1	1,375	138	20	0	0	83	5,470	603,350	419	3,679,200	2,555	6,755,050	4,691	11,061,240	7,681
2	1,408	135	20	0	0	70	5,470	555,200	386	3,631,050	2,522	6,706,900	4,658	11,013,090	7,648
Erie Lift Station	-	-	-	-	-	-	-	-	-	2,000	1.4	2,000	1.4	2,000	1.4
Development Unit 1 & 2 Subtotal:	**2,783**	**273**	**40**	**0**	**0**	**153**	**10,940**	**1,158,550**	**805**	**7,312,250**	**5,078**	**13,463,950**	**9,350**	**22,076,330**	**15,331**
3	1,355	136	0	0	60	81	6,400	594,574	413	4,446,574	3,088	8,298,574	5,763	13,691,374	9,508
4	638	64	240	0	0	38	2,730	279,954	194	2,275,104	1,580	4,270,254	2,965	7,063,464	4,905
5	1,169	117	20	0	60	70	3,790	512,957	356	2,956,407	2,053	5,399,857	3,750	8,820,687	6,125
6	714	71	0	0	0	43	2,170	313,303	218	1,517,653	1,054	2,722,003	1,890	4,408,093	3,061
7 (334 acres)	334	33	41	37	0	20	498	146,559	102	578,949	402	1,011,339	702	1,616,685	1,123
8 (21 acres)	21	2	4	16	0	1	0	9,215	6	49,215	34	89,215	62	145,215	101
Retained Property (AJWD) Subtotal:	**4,231**	**423**	**305**	**53**	**120**	**254**	**15,588**	**1,856,563**	**1,289**	**11,823,903**	**8,211**	**21,791,243**	**15,133**	**35,745,519**	**24,823**
AJWD SERVICE AREA TOTAL:	***7,014***	***696***	***345***	***53***	***120***	***406***	***26,528***	***3,015,113***	***2,094***	***19,136,153***	***13,289***	***35,255,193***	***24,483***	***57,821,849***	***40,154***
Arizona Water Company Service Area															
7 (565 acres)	565	57	69	63	0	34	842	247,922	172	979,232	680	1,710,542	1,188	2,734,376	1,899
8 (511 acres)	511	51	86	384	0	31	0	224,227	156	1,164,227	808	2,104,227	1,461	3,420,227	2,375
AZWC SERVICE AREA TOTAL:	***1,076***	***108***	***155***	***447***	***0***	***65***	***842***	***472,149***	***328***	***2,143,459***	***1,489***	***3,814,769***	***2,649***	***6,154,603***	***4,274***
SITE GRAND TOTAL:	***8,090***	***803***	***500***	***500***	***120***	***471***	***27,370***	***3,487,262***	***2,422***	***21,279,612***	***14,778***	***39,069,962***	***27,132***	***63,976,452***	***44,428***

Notes:

Demand Factors (based on AJWD values):

Single-Family (Low Density, 1-2 DU/Acre):	592 gpd/DU
Single-Family (Medium Density, 2-10 DU/Acre):	555 gpd/DU
Single-Family (High Density, 10+ DU/Acre):	370 gpd/DU
Multi-Family Residential:	315.0 gpd/DU
School:	5,000 gpad
Commercial:	2,000 gpad
Industrial:	2,000 gpad
Malls/Retail:	0.5 gpd/sq. ft.
Office/Business:	2,000 gpad
Hotel/Motel:	150 gpd/room
Turf/Irrigation:	4,400 gpad
Xeriscape/Low Water Use Irrigation:	1,000 gpad

Peaking Factors:

Maximum Day	Average Day x	2.0
Peak Hour	Maximum Day x	1.7

Fire Flow:

Residential:	1,500 gpm
Commercial:	4,000 gpm
Industrial:	4,000 gpm

Notes:

1. DU 2 is anticipated contain 135 acres of Neighborhood Open Space and 70 acres of Community Open Space, according to the Developer.
2. For all Development Units (not including DU 2), 10% of gross area is assumed to be Neighborhood Open Space and 6% of gross area is assumed to be Community Open Space. Neighborhood & Community Open Space demands are not peaked as these demands are anticipated to remain constant.
3. Area for Community Open Space is assumed to be 70% Turf and 30% Xeriscape.
4. Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape.
5. Unit demands are based on factors as agreed upon by Apache Junction Water District and are used for infrastructure sizing.
6. A commercial demand for 1 acre of 2,000 gpd (1.4 gpm) is assumed to be needed to serve the proposed Erie Lift Station (ELS), located at the southeast corner of Meridian Road and Erie Street. A peaking factor is not applied to this demand.
7. The demand table assumes that all irrigation demands will be supplied by the potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). Therefore, potable water demand shown in the table above may be reduced.

Table B.1.2 - Water Demand Calculations (Offset Irrigation)

Superstition Vistas

Pinal County, Arizona

April 2021

Development Unit	Gross Area (ac)	Neighborhood Open Space (ac)	Commercial Area (ac)	Industrial Area (ac)	School (ac)	Community Open Space (ac)	SFR (Medium Density) (DU)	Xeriscape/Turf Demand[7]		Average Day Demand		Maximum Day Demand		Peak Hour Demand	
								(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)
Apache Junction Water District Service Area															
1	1,375	138	20	0	0	83	5,470	354,912	246	3,430,762	2,382	6,506,612	4,518	10,812,802	7,509
2	1,408	135	20	0	0	70	5,470	0	0	3,075,850	2,136	6,151,700	4,272	10,457,890	7,262
Erie Lift Station	-	-	-	-	-	-	-	-	-	2,000	1.4	2,000	1.4	2,000	1.4
Development Unit 1 & 2 Subtotal:	**2,783**	**273**	**40**	**0**	**0**	**153**	**10,940**	**354,912**	**246**	**6,508,612**	**4,520**	**12,660,312**	**8,792**	**21,272,692**	**14,773**
3	1,355	136	0	0	60	81	6,400	0	0	3,852,000	2,675	7,704,000	5,350	13,096,800	9,095
4	638	64	240	0	0	38	2,730	279,954	194	2,275,104	1,580	4,270,254	2,965	7,063,464	4,905
5	1,169	117	20	0	60	70	3,790	0	0	2,443,450	1,697	4,886,900	3,394	8,307,730	5,769
6	714	71	0	0	0	43	2,170	0	0	1,204,350	836	2,408,700	1,673	4,094,790	2,844
7 (334 acres)	334	33	41	37	0	20	498	146,559	102	578,949	402	1,011,339	702	1,616,685	1,123
8 (21 acres)	21	2	4	16	0	1	0	9,215	6	49,215	34	89,215	62	145,215	101
Retained Property (AJWD) Subtotal:	**4,231**	**423**	**305**	**53**	**120**	**254**	**15,588**	**435,728**	**303**	**10,403,068**	**7,224**	**20,370,408**	**14,146**	**34,324,684**	**23,837**
AJWD SERVICE AREA TOTAL:	***7,014***	***696***	***345***	***53***	***120***	***406***	***26,528***	***790,640***	***549***	***16,911,680***	***11,744***	***33,030,720***	***22,938***	***55,597,376***	***38,609***
Arizona Water Company Service Area															
7 (565 acres)	565	57	69	63	0	34	842	247,922	172	979,232	680	1,710,542	1,188	2,734,376	1,899
8 (511 acres)	511	51	86	384	0	31	0	224,227	156	1,164,227	808	2,104,227	1,461	3,420,227	2,375
AZWC SERVICE AREA TOTAL:	***1,076***	***108***	***155***	***447***	***0***	***65***	***842***	***472,149***	***328***	***2,143,459***	***1,489***	***3,814,769***	***2,649***	***6,154,603***	***4,274***
SITE GRAND TOTAL:	***8,090***	***803***	***500***	***500***	***120***	***471***	***27,370***	***1,262,789***	***877***	***19,055,139***	***13,233***	***36,845,489***	***25,587***	***61,751,979***	***42,883***

Notes:

Demand Factors (based on AJWD values):

Single-Family (Low Density, 1-2 DU/Acre):	592	gpd/DU
Single-Family (Medium Density, 2-10 DU/Acre):	555	gpd/DU
Single-Family (High Density, 10+ DU/Acre):	370	gpd/DU
Multi-Family Residential:	315.0	gpd/DU
School:	5,000	gpad
Commercial:	2,000	gpad
Industrial:	2,000	gpad
Malls/Retail:	0.5	gpd/sq. ft.
Office/Business:	2,000	gpad
Hotel/Motel:	150	gpd/room
Turf/Irrigation:	4,400	gpad
Xeriscape/Low Water Use Irrigation:	1,000	gpad

Peaking Factors:

Maximum Day	Average Day x	2.0
Peak Hour	Maximum Day x	1.7

Fire Flow:

Residential:	1,500	gpm
Commercial:	4,000	gpm
Industrial:	4,000	gpm

Notes:

1. DU 2 is anticipated contain 135 acres of Neighborhood Open Space and 70 acres of Community Open Space, according to the Developer.
2. For all Development Units (not including DU 2), 10% of gross area is assumed to be Neighborhood Open Space and 6% of gross area is assumed to be Community Open Space. Neighborhood Open Space demands are not peaked as these demands are anticipated to remain constant.
3. Area for Community Open Space is assumed to be 70% Turf and 30% Xeriscape.
4. Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape.
5. Unit demands are based on factors as agreed upon by Apache Junction Water District and are used for infrastructure sizing.
6. A commercial demand for 1 acre of 2,000 gpd (1.4 gpm) is assumed to be needed to serve the proposed Erie Lift Station (ELS), located at the southeast corner of Meridian Road and Erie Street. A peaking factor is not applied to this demand.
7. The demand table assumes that all irrigation demands in DU 4, 7, 8, and a portion of DU 1 (south of Warner Road) will be supplied by the potable water system. This table assumes that a non-potable water system will fully offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). For calculation purposes, approximately 41% of DU 1's irrigation demand is assumed to be offset by the non-potable system.

Table B.2 - Transmission Main Sizing Calculations

Superstition Vistas

Pinal County, Arizona

July 2021

AJWD SAWP Facility to Water Campus 1 (2 MGD)		
Diameter	30	in
Flowrate	1,389	gpd (2 MGD)
Velocity	0.63	fps
Headloss	0.062	ft/1,000 ft

AJWD SAWP Facility to Water Campus 1 (4 MGD)		
Diameter	30	in
Flowrate	2,778	gpm (4 MGD)
Velocity	1.26	fps
Headloss	0.225	ft/1000 ft

AJWD SAWP Facility to Water Campus 1 (6 MGD)		
Diameter	30	in
Flowrate	4,167	gpm (6 MGD)
Velocity	1.89	fps
Headloss	0.477	ft/1000 ft

Water Treatment Facility 2 to Ironwood Road & Ray Road (15.36 MGD)		
Diameter	36	in
Flowrate	10,669	gpm (15.36 MGD)
Velocity	3.36	fps
Headloss	1.119	ft/1000 ft

AJWD SAWP Facility to Water Campus 1 (8 MGD)		
Diameter	30	in
Flowrate	5,556	gpm (6 MGD)
Velocity	2.52	fps
Headloss	0.812	ft/1000 ft

Ironwood Road & Ray Road to Water Campus 3 (15.36 MGD)		
Diameter	30	in
Flowrate	10,669	gpm (15.36 MGD)
Velocity	4.84	fps
Headloss	2.718	ft/1000 ft

Note:

1) Conceptual transmission pipeline sizes are based on maintaining velocities below 5 fps and headloss below 10 feet per 1,000 feet
2) 30" transmission main sized to convey 2 MGD, 4 MGD, 6 MGD, and 8 MGD as pumping capacity increases at the existing AJWD CAP facility.
3) Water Treatment Facility 2 to Ironwood Road & Ray Road, to Water Campus 3 transmission mains sized to convey maximum day demand output from Water Campus 3 for Site Build-Out conditions.
4) Demand calculations used for sizing assume that irrigation demands for DUs 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road) will be supplied by the proposed potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1. Therefore, demand and transmission main size from Water Campus 2 to Water Campus 3 shown in table above may be reduced.

Table B.3 - Storage Requirement Calculations

Superstition Vistas

Pinal County, Arizona
July 2021

Calculated By: AP
Checked By: MI

STORAGE CAPACITY

Storage Requirements[1]:

Storage shall be sized by using the following criteria:

1) 40% of Maximum Day demand + Fire Flow

	Phase(s):	Auction Property (Build-Out)	AJWD Service Area (Auction Property & Retained Property)	All of Site[6]
Requirement 1:				
	Maximum Day Demand (gallons):	13,463,950	35,255,193	39,069,962
	40% of Maximum Day Demand (gallons):	5,385,580	14,102,077	15,627,985
	Commercial/Industrial Fire Flow (4,000 gpm for 4 hrs, gallons)[2]:	960,000	2,880,000	2,880,000
	Total Storage (gallons):	***6,345,580***	***16,982,077***	***18,507,985***
Total Storage Required:	**Storage Required:**	**6,345,580**	**16,982,077**	**18,507,985**
	Storage to be Provided:	**6,400,000**	**17,000,000**	**18,600,000**

	Phase(s):	Auction Property (Build-Out)	AJWD Service Area (Auction Property & Retained Property)
Storage by Water Campus:	**Water Campus 1:**	6,400,000	6,400,000
	Water Treatment Facility 2:	-	4,700,000
	Water Campus 3:	-	5,900,000
	Total Storage:	6,400,000	17,000,000

Notes:

1) Storage requirements based on design criteria as agreed upon by the Apache Junction Water District.

2) A commercial/industrial fire flow storage of 960,000 MG will be required at all water campuses. It is anticipated that within the AJWD service area, Water Campus 1, Water Treatment Facility 2, and Water Campus 3 will contain a combined fire flow storage of 2,880,000 gal.

3) It is anticipated that the storage at proposed Water Campus 1 will meet the minimum storage required for all of Development Unit 1 & 2. Water Campus 1 will be required to space plan for at least 6.4 MG of available storage.

4) It is anticipated that the storage at proposed Water Campus 1, Water Treatment Facility 2, and Water Campus 3 will combine to meet the minimum storage required for all of AJWD's service area (Auction Property and Retained Property). The calculations shown above assume that Water Treatment Facility 2 will account for storage needed to serve the approximate areas of DU 5 & 6 and portions of DU 7 & 8 in AJWD's service area. Water Campus 3 will account for the storage needed to serve the approximate areas of DU 3 & 4.

5) Storage to be provided is rounded up to 100,000 gallons.

6) Total Site area includes AJWD service area and current Arizona Water Company service area.

7) Storage calculations shown in table above assume that all irrigation demands will be provided by the potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). Therefore demand and required storage capacity shown in table above may be reduced.

Table B.4 - Booster Pump Calculations

Superstition Vistas

Pinal County, Arizona

July 2021

HILGARTWILSON
ENGINEER | PLAN | SURVEY | MANAGE

Calculated By: AP

Checked By: MI

PUMPING CAPACITY

Booster Pump Requirements:

Shall meet or exceed the greater of:

Peak Hour Demand OR

Maximum Day Demand + Fire Flow

	Phase(s):	Auction Property (Build-Out)	AJWD Service Area (Auction Property & Retained Property)	All of Site[1]
Peak Hour Demand:				
	Peak Hour Demand (gpm):	15,331	40,154	44,428
	Firm Pumping Capacity (gpm):	15,331	40,154	44,428
Maximum Day Demand + Fire Flow:				
	Maximum Day Demand (gpm):	9,350	24,483	27,132
	Fire Flow (gpm):	4,000	4,000	4,000
	Firm Pumping Capacity (gpm):	13,350	28,483	31,132
	Firm Pumping Capacity:	**15,331**	**40,154**	**44,428**

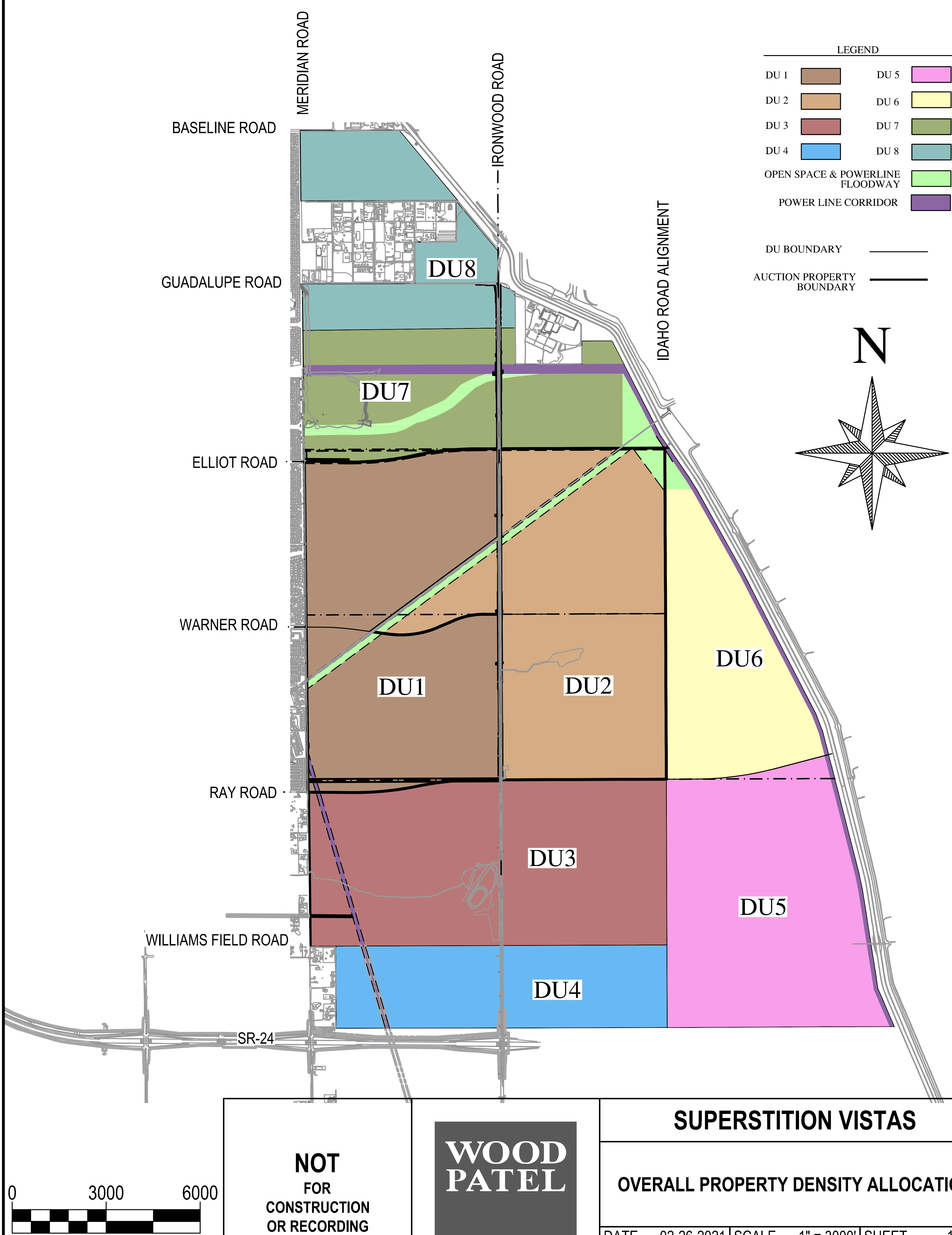
	Phase(s):	Auction Property (Build-Out)	AJWD Service Area (Auction Property & Retained Property)
Pumping Capacity by Water Campus:	**Water Campus 1:**	**15,331**	**15,331**
	Water Treatment Facility 2:	-	**10,410**
	Water Campus 3:	-	**14,413**
	Total Firm Pumping Capacity:	**15,331**	**40,154**

Notes:

1) Total Site area includes AJWD service area and current Arizona Water Company service area.
2) Booster pump calculations shown in table above assume that all irrigation demands will be provided by the potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). Therefore demand and required booster pump capacity shown in table above may be reduced.

TABLE B.5: OVERALL PROPERTY DENSITY ALLOCATION

		Residential							Non-Residential												
Description	Gross Acreage	Acres (AC.)	Units (D.U.)	Density (D.U./AC.)	Maximum Density Transfer In (D.U.)	Units with Maximum Transfer In (D.U.)	Maxium Density Transfer Out (D.U.)	Units with Maximum Transfer Out (D.U.)	Floor Area (S.F.)	Maximum Floor Area Transfer In (S.F.)	Floor Area With Maximum Transfer In (S.F.)	Maximum Floor Area Transfer Out (S.F.)	Floor Area With Maximum Transfer Out (S.F.)	F.A.R.	Commercial/ Retail/Resturant/ Office (AC.)	Industrial (AC.)	Civic/ School (AC.)	Regional Open Space	Power Line Corridor Easement (AC.)	Powerline Floodway Channel (AC.)	Total Area Non-reside ntial (AC.)
Development Unit 1	1375	1,335	**5,470**	**4.10**	1640	7,110	1640	3,830	221,700	66,500	288,200	66,500	155,200	0.25	20	-	-	-	3	17	40
Development Unit 2	1408	1,275	**5,470**	**4.29**	1640	7,110	1640	3,830	221,700	66,500	288,200	66,500	155,200	0.25	20	-	-	36	-	77	133
Development Unit 3	1355	1,280	**6,400**	**5.00**	1920	8,320	1920	4,480	-	-	-	-	-	-	-	-	60		15	-	75
Development Unit 4	638	390	**2,730**	**7.00**	820	3,550	820	1,910	2,733,600	790,100	3,523,700	790,100	1,943,500	0.26	240	-	-		8	-	248
Development Unit 5	1169	1,010	**3,790**	**3.75**	1140	4,930	1140	2,650	195,300	58,600	253,900	58,600	136,700	0.22	20	-	60	52	27	-	159
Development Unit 6	714	668	**2,170**	**3.25**	650	2,820	650	1,520	-	-	-	-	-	0.00	-	-		-	33	13	46
Development Unit 7	899	520	**1,340**	**2.58**	400	1,740	400	940	2,295,600	688,700	2,984,300	688,700	1,606,900	0.25	110	100	-	53	79	37	379
Development Unit 8	532	-	**-**	**-**	810	810	-	-	4,332,100	1,299,600	5,631,700	1,299,600	3,032,500	0.20	90	400	-	42	-	-	532
Total	8,090	6,478	**27,370**	**4.28**	9,020	36,390	8,210	19,160	10,000,000	2,970,000	12,970,000	2,970,000	7,030,000		500	500	120	183	165	144	1612



NOT
FOR
CONSTRUCTION
OR RECORDING

WOOD PATEL

SUPERSTITION VISTAS

OVERALL PROPERTY DENSITY ALLOCATION

DATE	02-26-2021	SCALE	1" = 3000'	SHEET	1 OF 1
JOB NO.	205166	DESIGN	DM	DRAWN	LL

Z:\2020\205166\Dwg\Exhibits\Overall Property Density Allocation.dwg

Table B.6 - AJWD Water System Design Criteria

Superstition Vistas

Pinal County, Arizona

March 2021

Criterion Category	Units	Eastmark	Mesa[1]	Phoenix[2]	Gilbert[3]	Buckeye[4]	Queen Creek[5]	Apache Junction[6]	HILGARTWILSON / AJWD Recommended Population Value	HILGARTWILSON / AJWD Recommended Values
RESIDENTIAL WATER DEMANDS										
Single Family (Low Density, 1-2 DU/Acre)	gpd/DU	470-490	470-490	360	550-1,600 gpad	362	200 gpcpd (3.2 Persons/DU)[A]	440 gpcpd (maximum day demand)[B]	3.2 Persons/DU	**185 gpcpd (592 gpd/DU)**
Single Family (Medium Density, 2-10 DU/Acre)	gpd/DU	254-420	254-420	360	1,450-1,790 gpad	362	-	440 gpcpd (maximum day demand)[B]	3.0 Persons/DU	**185 gpcpd (555 gpd/DU)**
Single Family (High Density, 10+ DU/Acre)	gpd/DU	154-194	154-194	360	1,370-3,100 gpad	283	125 gpcpd (3.2 Persons/DU)[A]	440 gpcpd (maximum day demand)[B]	2.0 Persons/DU	**185 gpcpd (370 gpd/DU)**
Multi-Family Residential	gpd/DU	-	-	240	-	-	110 gpcpd (2.0 Persons/DU)	-	1.7 Persons/DU	**185 gpcpd (315 gpd/DU)**
NON-RESIDENTIAL WATER DEMANDS										
Commercial	Varies	80 gpd/person	0.2 gpd/sq. ft. (retail), 0.4 gpd/sq. ft. (high rise)	0.125 gpd/sq. ft.	1,010 gpad, 1,325 gpad (regional)	130 gppd (specific use), 2,009 gpad (master planning)	1,700 gpad	240 gpcpd	30 Persons/Acre	**2,000 gpad**
Office	Varies	80 gpd/person	0.4 gpd/sq. ft.	0.115 gpd/sq. ft.	-	-	-	-	30 Persons/Acre	**2,000 gpad**
Industrial	Varies	-	1,500 gpad	0.065 gpd/sq.ft.	690 gpad	240 gppd (specific use), 2,009 gpad (master planning)	-	130 gpcpd	20 Persons/Acre	**2,000 gpad**
School	Varies	40 gpd/person[C]	60 gpd/person	25 gal/student	920-1,460 gpad	75 gal/student (no lunch/shower), 125 gal/student (with lunch/shower), 5,000 gpad (master planning)	-	75 gal/student (no lunch/shower), 125 gal/student (with lunch/shower)	200 Students & Staff/Acre (Elementary School), 100 Students & Staff/Acre (Middle/High School)	**5,000 gpad**
Malls/Retail	Varies	80 gpd/person	0.2 gpd/sq. ft.	0.125 gpd/sq. ft.	-	0.5 gal/sq. ft.	-	1.5 gal/sq. ft.	30 Persons/Acre	**0.5 gpd/sq. ft.**
Turf/Landscaping/Open Space	gpad	4,400 gpad (turf), 800 gpad (low water use landscaping)	4,400 gpad	4,374 gpad (general landscaping), 1,339 gpad (public right-of-way)	0 gpad	4,325 gpad (turf), 1,786 gpad (developed open space)	-	-	-	**4,400 gpad (turf), 1,000 gpad (developed open space)**
Hotel/Motel	gpd/room	150 gpd/room	150 gpd/room	140 gal/room (no restaurant), 200 gal/room (restaurant)	-	200 gal/room	-	200 gal/room	2.5 Persons/room	**150 gpd/room**
Tech Industrial	-	-	-	-	-	-	-	-	-	**-**
HYDRAULIC MODEL CRITERIA										
PEAKING FACTORS										
Maximum Day	x Ave Day Demand	2.0	2.0	-	1.55	1.8	1.8	-	-	**2.0 x Average Day Demand**
Peak Hour	x Ave Day Demand	3.0	3.0	1.7	1.8-2.4 x Maximum Day Demand	3.0	3.0	1.7	-	**1.7 x Maximum Day Demand**
MODELED FIRE HYDRANT FLOW (MINIMUMS)										
Residential	gpm	1,500	1,500 (City of Mesa Fire Code)	1,000	1,000	1,500	-	-	-	**1,500**
Commercial	gpm	4,000	3,000 (City of Mesa Fire Code)	3,000	3,500	4,000	-	-	-	**4,000 (commercial), 4,000 (industrial)**
ON-SITE HYDRAULICS										
Minimum Residual Pressure (Peak Hour)	psi	40	40	50	40	50	40	60	-	**50**
Minimum Residual Pressure (Max Day + Fire Flow)	psi	20	20	25	20	20	20	-	-	**20**
Maximum Velocity (Peak Hour Demand)	fps	5	5	5	5 (maximum day), 7 (peak hour)	5	-	5	-	**5**
Maximum Velocity (Max Day + FF)	fps	10	10	10	10	10	-	-	-	**10**
Maximum Head Loss (Peak Hour)	ft/1,000 ft	10	-	6.06 (16-in pipe), 4.66 (20-in pipe)	-	6.17 (12-in pipe), 6.06 (16-in pipe)	-	10	-	**10**
Minimum Looped Pipe Diameter	in	8	8	6	8	8	8	8	-	**8**
Pipe Material	-	-	-	-	-	-	-	Class 350 DIP	-	**DIP**
Hazen-Williams 'C' Factor	-	120	130	120	-	110 (Ductile Iron), 130 (PVC)	-	-	-	**120**
Minimum Storage Requirement	-	-	-	-	-	-	-	-	-	**40% of maximum day demand plus fire flow**
Minimum Pumping Requirement	-	-	-	-	-	-	-	-	-	**Larger of the following: maximum day demand plus fire flow, or, peak hour demand**

Notes:

In developing the Master Water Plan for Superstition Vistas, HILGARTWILSON worked with AJWD to develop highlighted water criteria for the sizing of master-planned water infrastructure.

Sources:

1) *City of Mesa Engineering & Design Standards* (2019)
2) *City of Phoenix Design Standards Manual for Water and Wastewater Systems* (2017)
3) *Town of Gilbert Public Works & Engineering Standards* (2019)
4) *City of Buckeye Engineering Design Standards* (2020)
5) *Design and Construction Standards Manual for Water, Wastewater, and Irrigation Systems for Town of Queen Creek, Arizona* (2013)
6) *Apache Junction Engineering Design Guidelines and Policies*

Abbreviations:

gpd = gallons per day	in = inch
gpm = gallons per minute	FF = fire flow
DU = dwelling unit	ft = feet
gpad = gallons per acre per day	fps = feet per second
gpcpd = gallons per capita per day	sf = square feet

Footnotes:

A) Densities for high and low density single-family residential units are not provided in the *Design and Construction Standards Manual for Water, Wastewater, and Irrigation Systems for Town of Queen Creek, Arizona* (2013).

B) The population density for less than 5 DU/acre is 3.2 persons/DU, and 2.0 persons/DU for population densities of 5 DU/acre or more.

C) Population densities of 200 persons/acre and 100 persons/acre are assumed for elementary schools and middle schools, respectively.

Table B.7 - Well Capacity Calculations

Superstition Vistas

Pinal County, Arizona
July 2021

Calculated By: AP
Checked By: MI

WELL CAPACITY

Maximum Day Demand for Auction Property:	9,350	gpm
	13,463,950	gpd

<u>Well Requirements:</u>

Wells shall be sized to provide capacity for the following:

1) Maximum Day Demand and;

2) Redundancy to meet Maximum Day Demand with largest well out of service.

Requirement:

Phase(s):	**Auction Property**
Maximum Day Demand (gpm)	9,350
6 MGD Demand Supplied By SAWP (gpm)	4,167
Remaining Maximum Day Demand (gpm, not including 6 MGD from SAWP):	5,183
24 Hour Firm Well Capacity Required (gpm):	5,183
18 Hour Firm Well Capacity Required (gpm):	**6,911**

<u>Notes:</u>

1) Wells are anticipated to run for 18 hours a day and, therefore, must provide the equivalent of a 24-hour period.

2) Well capacity shown in table above only includes maximum day demand for Auction Property, assuming that 6 MGD is already supplied by SAWP.

3) Calculations for demand shown in table above assume that all irrigation demands will be provided by the potable water system. It is anticipated that a non-potable water system will offset irrigation demands within DU 2, 3, 5, 6, and a portion of DU 1 (north of Warner Road). Therefore demand and required well capacity shown in table above may be reduced.

Table B.8.1 - Auction Property Development Schedule (No Irrigation)
Superstition Vistas
Pinal County, Arizona
July 2021

HILGARTWILSON
ENGINEER | PLAN | SURVEY | MANAGE

Year	Construction Activity	Source	Storage Requirement	Irrigated Areas (ac)[2]		Xeriscape/Turf Demand		Average Day Demand		Maximum Day Demand		Peak Hour Demand	
			MG	Neighborhood Open Space	Community Open Space	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)
2021	Begin grading / infrastructure improvements	SAWP	-	-	-	-	-	-	-	-	-	-	-
2022	Infrastructure construction / begin home construction	SAWP	-	-	-	-	-	-	-	-	-	-	-
2023	2,350 homes	SAWP (2.6 MGD Max Day)	1.2	59	33	0	0	1,304,250	905.7	2,608,500	1,811.5	4,434,450	3,079.5
2024	3,805 homes	SAWP (4.2 MGD Max Day)	1.9	95	53	0	0	2,111,775	1,466.5	4,223,550	2,933.0	7,180,035	4,986.1
2025	5,165 homes	SAWP (5.7 MGD Max Day)	2.5	129	72	0	0	2,866,575	1,990.7	5,733,150	3,981.4	9,746,355	6,768.3
2026	6,880 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (1.7 MGD Max Day)	4.0	171	96	0	0	3,859,400	2,680.1	7,718,800	5,360.3	13,121,960	9,112.5
2027	8,450 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (3.5 MGD Max Day)	4.7	210	118	0	0	4,730,750	3,285.2	9,461,500	6,570.5	16,084,550	11,169.8
2028	9,580 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (4.8 MGD Max Day)	5.3	239	134	0	0	5,376,900	3,734.0	10,753,800	7,467.9	18,281,460	12,695.5
2029	10,080 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (5.3 MGD Max Day)	5.5	251	141	0	0	5,654,400	3,926.7	11,308,800	7,853.3	19,224,960	13,350.7
2030	10,545 homes, 35 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (5.8 MGD Max Day)	5.7	263	147	0	0	5,922,475	4,112.8	11,844,950	8,225.7	20,136,415	13,983.6
2031	10,940 homes, 40 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (6.3 MGD Max Day)	5.9	273	153	0	0	6,151,700	4,272.0	12,303,400	8,544.0	20,915,780	14,524.8

Notes:
1) Unit demands are based on factors as agreed upon by Apache Junction Water District and are used for infrastructure sizing.
2) Neighborhood Open Space and Community Open Space scaled by number of residential units.
3) Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape.
4) Community Open Space is assumed to be 70% Turf and 30% Xeriscape.
5) Average Day, Maximum Day, and Peak Hour demands shown in table above do not include irrigation demands.
6) Total demands listed in table above do not include 2,000 gpd demand for Erie Lift Station.
7) The table above assumes that irrigation demands within the Auction Property will be supplied by the non-potable water system.
8) The table above assumes that 6.0 MGD would be available for the Auction Property from the SAWP. Additional water supply from the SAWP may be available for the Auction Property.
9) Construction Activity totals are cumulative.

Demand Factors:

Single-Family (Medium Density) Residential:	555	gpd/DU
Commercial:	2,000	gpad
Turf/Irrigation:	4,400	gpad
Xeriscape/Low Water Use Irrigation:	1,000	gpad

Peaking Factors:

Maximum Day Demand:	2	x Average Day Demand
Peak Hour Demand:	1.7	x Maximum Day Demand

Abbreviations:
SAWP: Superstition Area Water Plant

Table B.8.2 - Auction Property Development Schedule (Including Irrigation)
Superstition Vistas
Pinal County, Arizona
July 2021

HILGARTWILSON
ENGINEER | PLAN | SURVEY | MANAGE

Year	Construction Activity	Source	Storage Requirement	Irrigated Areas (ac)[2]		Xeriscape/Turf Demand		Average Day Demand		Maximum Day Demand		Peak Hour Demand	
			MG	Neighborhood Open Space	Community Open Space	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)
2021	Begin grading / infrastructure improvements	SAWP	-	-	-	-	-	-	-	-	-	-	-
2022	Infrastructure construction / begin home construction	SAWP	-	-	-	-	-	-	-	-	-	-	-
2023	2,350 homes	SAWP (2.9 MGD Max Day)	1.3	59	33	248,866	173	1,553,116	1,078.6	2,857,366	1,984.3	4,683,316	3,252.3
2024	3,805 homes	SAWP (4.6 MGD Max Day)	2.0	95	53	402,951	280	2,514,726	1,746.3	4,626,501	3,212.8	7,582,986	5,266.0
2025	5,165 homes	SAWP (6.0 MGD Max Day), Well(s) (0.3 MGD Max Day)	2.7	129	72	546,975	380	3,413,550	2,370.5	6,280,125	4,361.2	10,293,330	7,148.1
2026	6,880 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (2.4 MGD Max Day)	4.3	171	96	728,595	506	4,587,995	3,186.1	8,447,395	5,866.2	13,850,555	9,618.4
2027	8,450 homes, 20.5 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (4.4 MGD Max Day)	5.1	210	118	894,858	621	5,625,608	3,906.7	10,356,358	7,191.9	16,979,408	11,791.3
2028	9,580 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (5.8 MGD Max Day)	5.7	239	134	1,014,526	705	6,391,426	4,438.5	11,768,326	8,172.4	19,295,986	13,400.0
2029	10,080 homes, 30 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (6.4 MGD Max Day)	5.9	251	141	1,067,476	741	6,721,876	4,668.0	12,376,276	8,594.6	20,292,436	14,092.0
2030	10,545 homes, 35 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (7.0 MGD Max Day)	6.1	263	147	1,116,719	775	7,039,194	4,888.3	12,961,669	9,001.2	21,253,134	14,759.1
2031	10,940 homes, 40 AC commercial	SAWP (6.0 MGD Max Day), Well(s) (7.5 MGD Max Day)	6.4	273	153	1,158,550	805	7,310,250	5,076.6	13,461,950	9,348.6	22,074,330	15,329.4

Notes:
1) Unit demands are based on factors as agreed upon by Apache Junction Water District and are used for infrastructure sizing.
2) Neighborhood Open Space and Community Open Space scaled by number of residential units. This assumes that DU 1 and 2 are fully irrigated by the potable water system.
3) Neighborhood Open Space is assumed to be 40% Turf and 60% Xeriscape.
4) Community Open Space is assumed to be 70% Turf and 30% Xeriscape.
5) Average Day, Maximum Day, and Peak Hour demands shown in table above include irrigation demands. Irrigation demands are not peaked, as these are anticipated to remain constant.
6) Total demands listed in table above do not include 2,000 gpd demand for Erie Lift Station.
7) The table above assumes that irrigation demands within the Auction Property will be supplied by the potable water system.
8) The table above assumes that 6.0 MGD would be available for the Auction Property from the SAWP. Additional water supply from the SAWP may be available for the Auction Property.
9) Construction Activity totals are cumulative.

Demand Factors:

Single-Family (Medium Density) Residential:	555	gpd/DU
Commercial:	2,000	gpad
Turf/Irrigation:	4,400	gpad
Xeriscape/Low Water Use Irrigation:	1,000	gpad

Peaking Factors:

Maximum Day Demand:	2	x Average Day Demand
Peak Hour Demand:	1.7	x Maximum Day Demand

Abbreviations:
SAWP: Superstition Area Water Plant

APPENDIX C
SUPERSTITION VISTAS WATER HYDRAULIC MODELING RESULTS
(AUCTION PROPERTY AND SITE MODELS)

AVERAGE DAY DEMAND RESULTS
MAXIMUM DAY DEMAND RESULTS
PEAK HOUR DEMAND RESULTS
MAXIMUM DAY + FIRE FLOW RESULTS (AVAILABLE)
MAXIMUM DAY + FIRE FLOW RESULTS (RESIDUAL)

AUCTION PROPERTY
HYDRAULIC MODELING RESULTS

AUCTION PROPERTY
AVERAGE DAY DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,518.46	0	1,708.47	82.2
J-2	1,524.42	0	1,709.16	79.9
J-3	1,534.31	0	1,709.55	75.8
J-4	1,536.36	14	1,709.36	74.8
J-5	1,511.94	0	1,708.41	85.0
J-6	1,496.19	0	1,708.27	91.8
J-7	1,487.97	0	1,707.79	95.1
J-8	1,482.10	0	1,707.65	97.6
J-9	1,489.31	0	1,707.66	94.5
J-10	1,498.18	0	1,707.71	90.7
J-11	1,505.45	0	1,707.95	87.6
J-12	1,528.22	0	1,708.17	77.9
J-13	1,541.89	0	1,708.04	71.9
J-14	1,551.18	0	1,708.22	67.9
J-15	1,555.10	192	1,708.30	66.3
J-16	1,547.57	0	1,708.64	69.7
J-17	1,539.63	0	1,708.96	73.3
J-18	1,536.04	0	1,707.86	74.3
J-19	1,531.88	0	1,707.86	76.1
J-20	1,525.85	0	1,707.85	78.7
J-21	1,509.31	0	1,707.85	85.9
J-22	1,500.29	14	1,707.87	89.8
J-23	1,507.70	0	1,708.01	86.7
J-24	1,478.32	0	1,707.52	99.2
J-25	1,468.56	0	1,707.49	103.4
J-26	1,470.59	0	1,707.41	102.5
J-27	1,491.65	149	1,707.66	93.5
J-28	1,494.43	149	1,707.73	92.3
J-29	1,504.84	0	1,708.07	87.9
J-30	1,509.95	149	1,708.16	85.8
J-31	1,506.31	149	1,707.80	87.2
J-32	1,510.99	149	1,708.04	85.3
J-33	1,517.93	149	1,708.35	82.4
J-34	1,523.42	149	1,708.73	80.2
J-35	1,500.26	0	1,708.10	89.9
J-36	1,519.89	0	1,708.43	81.6
J-37	1,497.84	0	1,707.71	90.8
J-38	1,508.75	0	1,707.77	86.1
J-39	1,509.06	192	1,707.89	86.0
J-40	1,519.34	0	1,708.69	81.9
J-41	1,493.31	0	1,708.11	92.9
J-42	1,520.78	0	1,708.71	81.3
J-43	1,528.04	192	1,708.20	77.9
J-44	1,539.15	192	1,708.49	73.3
J-45	1,525.42	0	1,708.63	79.3
J-46	1,536.25	192	1,708.89	74.7
J-47	1,523.18	0	1,708.44	80.2
J-48	1,543.23	0	1,708.18	71.4
J-49	1,544.66	192	1,708.23	70.8

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-50	1,550.01	0	1,708.26	68.5
J-51	1,551.30	0	1,708.18	67.9
J-52	1,541.61	0	1,708.12	72.0
J-53	1,482.08	149	1,707.45	97.5
J-54	1,476.49	0	1,707.54	100.0
J-55	1,480.56	0	1,707.34	98.1
J-56	1,481.69	149	1,707.24	97.6
J-57	1,483.32	0	1,707.36	96.9
J-58	1,478.32	0	1,707.39	99.1
J-59	1,473.68	0	1,707.44	101.1
J-60	1,475.18	0	1,707.29	100.4
J-61	1,474.72	149	1,707.26	100.6
J-62	1,493.15	149	1,707.25	92.6
J-63	1,494.82	149	1,707.39	92.0
J-64	1,489.78	0	1,707.37	94.1
J-65	1,486.52	149	1,707.33	95.5
J-66	1,484.90	0	1,707.56	96.3
J-67	1,492.33	0	1,707.38	93.0
J-68	1,498.85	149	1,707.46	90.3
J-69	1,504.49	0	1,707.57	87.9
J-70	1,496.77	149	1,707.25	91.1
J-71	1,492.39	149	1,707.24	93.0
J-72	1,489.15	149	1,707.24	94.4
J-73	1,526.88	0	1,707.72	78.2
J-74	1,522.81	192	1,707.59	79.9
J-75	1,517.39	192	1,707.59	82.3
J-76	1,513.14	192	1,707.63	84.1
J-77	1,518.58	192	1,707.57	81.8
J-78	1,525.14	192	1,707.71	79.0
J-79	1,521.50	0	1,707.82	80.6
J-80	1,521.52	0	1,708.26	80.8
J-81	1,507.88	0	1,707.73	86.5
J-82	1,511.68	192	1,707.69	84.8
J-83	1,530.12	192	1,707.68	76.8
J-84	1,534.97	0	1,707.77	74.8
J-85	1,520.43	0	1,707.67	81.0
J-86	1,512.42	0	1,707.81	84.5
J-87	1,519.02	0	1,707.87	81.7
J-90	1,553.44	0	1,708.26	67.0
J-91	1,501.89	0	1,707.86	89.1
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,707.85	84.0
J-94	1,544.69	28	1,708.11	70.7
J-95	1,552.90	0	1,708.50	67.3
J-205	1,458.56	0	1,707.49	107.7
J-ELS	1,456.01	1	1,707.49	108.8

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-1	1,337	24.0	120	J-1	J-2	2,420	1.72	0.516
P-2	1,236	24.0	120	J-3	J-4	1,258	0.89	0.154
P-3	2,654	16.0	120	J-5	J-6	237	0.38	0.050
P-4	2,643	12.0	120	J-7	J-8	113	0.32	0.052
P-5	1,373	16.0	120	J-8	J-9	73	0.12	0.006
P-6	1,371	16.0	120	J-10	J-11	472	0.75	0.181
P-7	1,867	16.0	120	J-9	J-10	154	0.25	0.023
P-7	1,712	16.0	120	J-11	J-1	625	1.00	0.303
P-8	1,252	16.0	120	J-16	J-17	568	0.91	0.254
P-9	1,335	16.0	120	J-17	J-4	618	0.99	0.297
P-10	1,872	16.0	120	J-13	J-18	331	0.53	0.094
P-11	817	16.0	120	J-18	J-19	101	0.16	0.010
P-12	2,582	16.0	120	J-19	J-20	36	0.06	0.002
P-13	2,636	24.0	120	J-22	J-23	699	0.50	0.052
P-14	2,640	24.0	120	J-23	J-1	1,355	0.96	0.176
P-15	2,850	16.0	120	J-24	J-25	105	0.17	0.011
P-16	1,880	12.0	120	J-25	J-26	103	0.29	0.044
P-17	1,357	12.0	120	J-9	J-27	6	0.02	0.000
P-18	1,167	12.0	120	J-27	J-28	122	0.35	0.060
P-19	1,813	8.0	120	J-28	J-29	78	0.50	0.187
P-20	781	8.0	120	J-29	J-30	58	0.37	0.109
P-21	997	12.0	120	J-30	J-5	265	0.75	0.251
P-22	1,324	12.0	120	J-7	J-28	104	0.30	0.044
P-23	2,040	12.0	120	J-28	J-31	89	0.25	0.033
P-24	935	12.0	120	J-31	J-32	270	0.77	0.261
P-25	1,071	12.0	120	J-32	J-33	284	0.81	0.285
P-26	757	12.0	120	J-33	J-34	386	1.09	0.504
P-27	888	12.0	120	J-34	J-3	534	1.52	0.921
P-28	1,587	8.0	120	J-29	J-35	20	0.13	0.015
P-29	1,506	8.0	120	J-30	J-36	77	0.49	0.184
P-30	1,149	8.0	120	J-36	J-33	47	0.30	0.073
P-31	1,110	8.0	120	J-27	J-37	33	0.21	0.038
P-32	1,560	8.0	120	J-37	J-38	33	0.21	0.039
P-33	895	8.0	120	J-38	J-31	33	0.21	0.038
P-34	783	8.0	120	J-11	J-39	47	0.30	0.074
P-35	1,356	8.0	120	J-39	J-40	145	0.92	0.590
P-36	792	8.0	120	J-40	J-2	145	0.92	0.590
P-37	807	12.0	120	J-6	J-41	237	0.67	0.204
P-38	1,833	12.0	120	J-41	J-7	217	0.62	0.173
P-39	949	8.0	120	J-35	J-41	20	0.13	0.015
P-40	2,155	16.0	120	J-4	J-42	625	1.00	0.303
P-41	1,477	16.0	120	J-42	J-5	502	0.80	0.202
P-42	614	8.0	120	J-36	J-42	124	0.79	0.442
P-43	1,556	12.0	120	J-32	J-30	135	0.38	0.072
P-44	689	12.0	120	J-12	J-43	90	0.25	0.034
P-45	1,946	12.0	120	J-43	J-44	202	0.57	0.153
P-46	2,073	8.0	120	J-44	J-45	45	0.29	0.068
P-47	969	8.0	120	J-45	J-2	139	0.88	0.546

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-48	1,168	8.0	120	J-3	J-46	142	0.90	0.567
P-49	911	8.0	120	J-46	J-17	50	0.32	0.083
P-50	742	8.0	120	J-45	J-47	94	0.60	0.263
P-51	921	8.0	120	J-47	J-43	94	0.60	0.263
P-52	2,082	8.0	120	J-43	J-48	15	0.09	0.009
P-53	1,325	8.0	120	J-48	J-49	34	0.22	0.040
P-54	1,465	12.0	120	J-49	J-44	220	0.62	0.178
P-55	1,495	12.0	120	J-49	J-14	28	0.08	0.004
P-56	743	8.0	120	J-49	J-50	34	0.21	0.040
P-57	1,129	8.0	120	J-50	J-15	34	0.21	0.040
P-58	931	16.0	120	J-51	J-14	242	0.39	0.052
P-59	1,264	8.0	120	J-48	J-51	5	0.03	0.001
P-60	2,202	16.0	120	J-12	J-52	151	0.24	0.022
P-61	885	16.0	120	J-52	J-94	112	0.18	0.012
P-62	840	8.0	120	J-48	J-52	44	0.28	0.064
P-63	906	8.0	120	J-9	J-53	88	0.56	0.234
P-64	910	12.0	120	J-54	J-8	186	0.53	0.130
P-65	721	8.0	120	J-53	J-54	61	0.39	0.119
P-66	983	8.0	120	J-24	J-55	79	0.50	0.190
P-67	1,333	8.0	120	J-55	J-56	46	0.30	0.071
P-68	1,116	8.0	120	J-56	J-57	57	0.36	0.104
P-69	729	8.0	120	J-57	J-58	37	0.24	0.048
P-70	857	12.0	120	J-26	J-59	88	0.25	0.032
P-71	1,622	12.0	120	J-59	J-54	125	0.35	0.062
P-72	936	8.0	120	J-58	J-59	37	0.24	0.048
P-73	1,459	8.0	120	J-55	J-60	28	0.18	0.028
P-74	1,114	8.0	120	J-60	J-61	28	0.18	0.028
P-75	1,054	12.0	120	J-61	J-26	191	0.54	0.137
P-76	1,140	12.0	120	J-61	J-56	70	0.20	0.021
P-77	855	12.0	120	J-62	J-63	206	0.58	0.157
P-78	905	12.0	120	J-63	J-10	318	0.90	0.353
P-79	831	8.0	120	J-63	J-64	20	0.13	0.015
P-80	1,177	8.0	120	J-64	J-57	20	0.13	0.015
P-81	1,245	8.0	120	J-55	J-65	5	0.03	0.001
P-82	2,151	16.0	120	J-22	J-66	419	0.67	0.144
P-83	1,176	16.0	120	J-66	J-24	183	0.29	0.031
P-84	1,113	12.0	120	J-65	J-66	236	0.67	0.202
P-85	1,034	8.0	120	J-65	J-67	37	0.23	0.046
P-86	1,662	8.0	120	J-67	J-68	37	0.23	0.046
P-87	1,161	12.0	120	J-68	J-23	372	1.06	0.471
P-88	1,359	8.0	120	J-68	J-69	50	0.32	0.082
P-89	1,832	8.0	120	J-69	J-63	56	0.35	0.100
P-90	1,005	12.0	120	J-68	J-70	237	0.67	0.204
P-91	573	12.0	120	J-70	J-62	27	0.08	0.004
P-92	1,409	12.0	120	J-65	J-71	128	0.36	0.065
P-93	1,201	12.0	120	J-56	J-72	24	0.07	0.003
P-94	503	12.0	120	J-72	J-62	84	0.24	0.030
P-95	736	12.0	120	J-71	J-72	40	0.11	0.008

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-96	718	12.0	120	J-71	J-70	61	0.17	0.016
P-97	1,047	8.0	120	J-19	J-73	65	0.41	0.133
P-98	1,393	12.0	120	J-83	J-74	128	0.36	0.066
P-99	903	12.0	120	J-74	J-75	29	0.08	0.004
P-100	1,063	12.0	120	J-21	J-76	238	0.67	0.205
P-101	1,185	12.0	120	J-76	J-77	116	0.33	0.054
P-102	939	12.0	120	J-77	J-74	76	0.22	0.025
P-103	1,124	12.0	120	J-74	J-78	169	0.48	0.109
P-104	1,019	8.0	120	J-78	J-79	56	0.36	0.103
P-105	1,354	16.0	120	J-1	J-80	440	0.70	0.158
P-106	894	16.0	120	J-80	J-12	335	0.53	0.096
P-107	1,486	8.0	120	J-76	J-81	43	0.27	0.062
P-108	1,004	12.0	120	J-75	J-82	163	0.46	0.102
P-109	1,106	12.0	120	J-82	J-23	284	0.80	0.285
P-110	1,868	8.0	120	J-81	J-82	22	0.14	0.019
P-111	1,711	12.0	120	J-78	J-12	274	0.78	0.267
P-112	675	8.0	120	J-73	J-83	38	0.24	0.049
P-113	1,008	8.0	120	J-83	J-84	52	0.33	0.089
P-114	1,673	8.0	120	J-84	J-52	83	0.53	0.209
P-115	1,776	8.0	120	J-78	J-84	31	0.19	0.033
P-116	1,656	8.0	120	J-73	J-85	27	0.17	0.026
P-117	1,568	8.0	120	J-85	J-76	27	0.17	0.026
P-118	1,542	8.0	120	J-82	J-86	49	0.31	0.078
P-119	532	8.0	120	J-79	J-87	56	0.36	0.103
P-120	1,177	8.0	120	J-87	J-80	105	0.67	0.325
P-121	801	8.0	120	J-86	J-87	49	0.31	0.078
P-122	931	12.0	120	J-83	J-18	230	0.65	0.194
P-125	839	16.0	120	J-14	J-90	214	0.34	0.042
P-126	1,077	16.0	120	J-90	J-15	214	0.34	0.042
P-128	1,309	24.0	120	J-21	J-91	201	0.14	0.005
P-129	1,332	24.0	120	J-91	J-22	267	0.19	0.009
P-130	974	8.0	120	J-81	J-91	65	0.42	0.136
P-133	1,322	24.0	120	J-2	J-92	2,703	1.92	0.634
P-134	1,322	24.0	120	J-92	J-3	1,934	1.37	0.341
P-135	1,774	24.0	120	J-20	J-93	36	0.03	0.000
P-136	778	24.0	120	J-93	J-21	36	0.03	0.000
P-137	786	16.0	120	J-13	J-94	331	0.53	0.094
P-138	1,159	16.0	120	J-94	J-51	247	0.39	0.054
P-139	2,314	12.0	120	J-44	J-16	128	0.36	0.066
P-140	1,166	8.0	120	J-11	J-69	105	0.67	0.328
P-141	890	16.0	120	J-95	J-16	440	0.70	0.158
P-142	1,256	16.0	120	J-15	J-95	440	0.70	0.158
P-143	2,336	12.0	120	J-44	J-92	441	1.25	0.645
P-204	2,317	12.0	120	J-205	J-25	1	0.00	0.000
P-259	1,600	12.0	120	J-ELS	J-205	1	0.00	0.000
P-500	679	48.0	120	R-1	J-92	5,078	0.90	0.071

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	5,078	1,710.00

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MAXIMUM DAY DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,518.46	0	1,705.27	80.8
J-2	1,524.42	0	1,707.40	79.2
J-3	1,534.31	0	1,708.60	75.4
J-4	1,536.36	28	1,708.02	74.3
J-5	1,511.94	0	1,705.08	83.6
J-6	1,496.19	0	1,704.67	90.2
J-7	1,487.97	0	1,703.18	93.1
J-8	1,482.10	0	1,702.75	95.5
J-9	1,489.31	0	1,702.78	92.4
J-10	1,498.18	0	1,702.91	88.6
J-11	1,505.45	0	1,703.67	85.8
J-12	1,528.22	0	1,704.33	76.2
J-13	1,541.89	0	1,703.92	70.1
J-14	1,551.18	0	1,704.49	66.3
J-15	1,555.10	354	1,704.74	64.7
J-16	1,547.57	0	1,705.79	68.5
J-17	1,539.63	0	1,706.78	72.3
J-18	1,536.04	0	1,703.38	72.4
J-19	1,531.88	0	1,703.35	74.2
J-20	1,525.85	0	1,703.34	76.8
J-21	1,509.31	0	1,703.34	83.9
J-22	1,500.29	28	1,703.40	87.9
J-23	1,507.70	0	1,703.82	84.9
J-24	1,478.32	0	1,702.34	96.9
J-25	1,468.56	0	1,702.24	101.1
J-26	1,470.59	0	1,701.99	100.1
J-27	1,491.65	273	1,702.78	91.3
J-28	1,494.43	273	1,703.00	90.2
J-29	1,504.84	0	1,704.05	86.2
J-30	1,509.95	273	1,704.31	84.1
J-31	1,506.31	273	1,703.21	85.2
J-32	1,510.99	273	1,703.96	83.5
J-33	1,517.93	273	1,704.91	80.9
J-34	1,523.42	273	1,706.08	79.0
J-35	1,500.26	0	1,704.12	88.2
J-36	1,519.89	0	1,705.16	80.2
J-37	1,497.84	0	1,702.91	88.7
J-38	1,508.75	0	1,703.10	84.1
J-39	1,509.06	354	1,703.48	84.1
J-40	1,519.34	0	1,705.96	80.7
J-41	1,493.31	0	1,704.16	91.2
J-42	1,520.78	0	1,706.00	80.1
J-43	1,528.04	354	1,704.40	76.3
J-44	1,539.15	354	1,705.32	71.9
J-45	1,525.42	0	1,705.76	78.0
J-46	1,536.25	354	1,706.55	73.7
J-47	1,523.18	0	1,705.15	78.7
J-48	1,543.23	0	1,704.35	69.7
J-49	1,544.66	354	1,704.51	69.2

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-50	1,550.01	0	1,704.60	66.9
J-51	1,551.30	0	1,704.34	66.2
J-52	1,541.61	0	1,704.18	70.3
J-53	1,482.08	273	1,702.13	95.2
J-54	1,476.49	0	1,702.39	97.7
J-55	1,480.56	0	1,701.76	95.7
J-56	1,481.69	273	1,701.47	95.1
J-57	1,483.32	0	1,701.83	94.5
J-58	1,478.32	0	1,701.94	96.8
J-59	1,473.68	0	1,702.08	98.8
J-60	1,475.18	0	1,701.64	98.0
J-61	1,474.72	273	1,701.55	98.1
J-62	1,493.15	273	1,701.51	90.1
J-63	1,494.82	273	1,701.92	89.6
J-64	1,489.78	0	1,701.89	91.8
J-65	1,486.52	273	1,701.76	93.1
J-66	1,484.90	0	1,702.45	94.1
J-67	1,492.33	0	1,701.91	90.7
J-68	1,498.85	273	1,702.14	88.0
J-69	1,504.49	0	1,702.49	85.7
J-70	1,496.77	273	1,701.51	88.6
J-71	1,492.39	273	1,701.48	90.5
J-72	1,489.15	273	1,701.46	91.9
J-73	1,526.88	0	1,702.92	76.2
J-74	1,522.81	354	1,702.53	77.8
J-75	1,517.39	354	1,702.52	80.1
J-76	1,513.14	354	1,702.66	82.0
J-77	1,518.58	354	1,702.46	79.6
J-78	1,525.14	354	1,702.91	76.9
J-79	1,521.50	0	1,703.24	78.6
J-80	1,521.52	0	1,704.60	79.2
J-81	1,507.88	0	1,702.95	84.4
J-82	1,511.68	354	1,702.84	82.7
J-83	1,530.12	354	1,702.82	74.7
J-84	1,534.97	0	1,703.10	72.7
J-85	1,520.43	0	1,702.79	78.9
J-86	1,512.42	0	1,703.21	82.5
J-87	1,519.02	0	1,703.41	79.8
J-90	1,553.44	0	1,704.60	65.4
J-91	1,501.89	0	1,703.36	87.2
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,703.34	82.1
J-94	1,544.69	56	1,704.14	69.0
J-95	1,552.90	0	1,705.36	66.0
J-205	1,458.56	0	1,702.24	105.4
J-ELS	1,456.01	1	1,702.24	106.5

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-1	1,337	24.0	120	J-1	J-2	4,456	3.16	1.599
P-2	1,236	24.0	120	J-3	J-4	2,317	1.64	0.476
P-3	2,654	16.0	120	J-5	J-6	435	0.69	0.155
P-4	2,643	12.0	120	J-7	J-8	208	0.59	0.160
P-5	1,373	16.0	120	J-8	J-9	133	0.21	0.017
P-6	1,371	16.0	120	J-10	J-11	866	1.38	0.554
P-7	1,867	16.0	120	J-9	J-10	281	0.45	0.069
P-7	1,712	16.0	120	J-11	J-1	1,147	1.83	0.933
P-8	1,252	16.0	120	J-16	J-17	1,048	1.67	0.789
P-9	1,335	16.0	120	J-17	J-4	1,141	1.82	0.924
P-10	1,872	16.0	120	J-13	J-18	608	0.97	0.288
P-11	817	16.0	120	J-18	J-19	183	0.29	0.031
P-12	2,582	16.0	120	J-19	J-20	64	0.10	0.004
P-13	2,636	24.0	120	J-22	J-23	1,289	0.91	0.161
P-14	2,640	24.0	120	J-23	J-1	2,495	1.77	0.546
P-15	2,850	16.0	120	J-24	J-25	190	0.30	0.033
P-16	1,880	12.0	120	J-25	J-26	189	0.54	0.134
P-17	1,357	12.0	120	J-9	J-27	14	0.04	0.001
P-18	1,167	12.0	120	J-27	J-28	225	0.64	0.186
P-19	1,813	8.0	120	J-28	J-29	143	0.91	0.578
P-20	781	8.0	120	J-29	J-30	107	0.68	0.337
P-21	997	12.0	120	J-30	J-5	486	1.38	0.774
P-22	1,324	12.0	120	J-7	J-28	191	0.54	0.137
P-23	2,040	12.0	120	J-28	J-31	164	0.46	0.103
P-24	935	12.0	120	J-31	J-32	498	1.41	0.807
P-25	1,071	12.0	120	J-32	J-33	522	1.48	0.881
P-26	757	12.0	120	J-33	J-34	709	2.01	1.554
P-27	888	12.0	120	J-34	J-3	981	2.78	2.840
P-28	1,587	8.0	120	J-29	J-35	36	0.23	0.045
P-29	1,506	8.0	120	J-30	J-36	142	0.90	0.567
P-30	1,149	8.0	120	J-36	J-33	86	0.55	0.224
P-31	1,110	8.0	120	J-27	J-37	61	0.39	0.120
P-32	1,560	8.0	120	J-37	J-38	61	0.39	0.120
P-33	895	8.0	120	J-38	J-31	61	0.39	0.120
P-34	783	8.0	120	J-11	J-39	88	0.56	0.235
P-35	1,356	8.0	120	J-39	J-40	266	1.70	1.825
P-36	792	8.0	120	J-40	J-2	266	1.70	1.825
P-37	807	12.0	120	J-6	J-41	435	1.23	0.629
P-38	1,833	12.0	120	J-41	J-7	399	1.13	0.536
P-39	949	8.0	120	J-35	J-41	36	0.23	0.045
P-40	2,155	16.0	120	J-4	J-42	1,149	1.83	0.936
P-41	1,477	16.0	120	J-42	J-5	921	1.47	0.622
P-42	614	8.0	120	J-36	J-42	227	1.45	1.362
P-43	1,556	12.0	120	J-32	J-30	248	0.70	0.223
P-44	689	12.0	120	J-12	J-43	164	0.47	0.103
P-45	1,946	12.0	120	J-43	J-44	373	1.06	0.473
P-46	2,073	8.0	120	J-44	J-45	83	0.53	0.212
P-47	969	8.0	120	J-45	J-2	256	1.63	1.695

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-48	1,168	8.0	120	J-3	J-46	261	1.67	1.762
P-49	911	8.0	120	J-46	J-17	93	0.59	0.260
P-50	742	8.0	120	J-45	J-47	173	1.10	0.818
P-51	921	8.0	120	J-47	J-43	173	1.10	0.818
P-52	2,082	8.0	120	J-43	J-48	27	0.17	0.027
P-53	1,325	8.0	120	J-48	J-49	62	0.40	0.124
P-54	1,465	12.0	120	J-49	J-44	406	1.15	0.554
P-55	1,495	12.0	120	J-49	J-14	52	0.15	0.012
P-56	743	8.0	120	J-49	J-50	62	0.40	0.123
P-57	1,129	8.0	120	J-50	J-15	62	0.40	0.123
P-58	931	16.0	120	J-51	J-14	446	0.71	0.163
P-59	1,264	8.0	120	J-48	J-51	10	0.06	0.004
P-60	2,202	16.0	120	J-12	J-52	280	0.45	0.068
P-61	885	16.0	120	J-52	J-94	207	0.33	0.039
P-62	840	8.0	120	J-48	J-52	80	0.51	0.198
P-63	906	8.0	120	J-9	J-53	161	1.03	0.720
P-64	910	12.0	120	J-54	J-8	341	0.97	0.401
P-65	721	8.0	120	J-53	J-54	112	0.71	0.365
P-66	983	8.0	120	J-24	J-55	144	0.92	0.584
P-67	1,333	8.0	120	J-55	J-56	85	0.54	0.219
P-68	1,116	8.0	120	J-56	J-57	104	0.67	0.322
P-69	729	8.0	120	J-57	J-58	68	0.44	0.147
P-70	857	12.0	120	J-26	J-59	161	0.46	0.100
P-71	1,622	12.0	120	J-59	J-54	230	0.65	0.193
P-72	936	8.0	120	J-58	J-59	68	0.44	0.147
P-73	1,459	8.0	120	J-55	J-60	51	0.32	0.084
P-74	1,114	8.0	120	J-60	J-61	51	0.32	0.085
P-75	1,054	12.0	120	J-61	J-26	350	0.99	0.421
P-76	1,140	12.0	120	J-61	J-56	128	0.36	0.065
P-77	855	12.0	120	J-62	J-63	378	1.07	0.485
P-78	905	12.0	120	J-63	J-10	585	1.66	1.088
P-79	831	8.0	120	J-63	J-64	36	0.23	0.045
P-80	1,177	8.0	120	J-64	J-57	36	0.23	0.045
P-81	1,245	8.0	120	J-55	J-65	9	0.05	0.003
P-82	2,151	16.0	120	J-22	J-66	765	1.22	0.441
P-83	1,176	16.0	120	J-66	J-24	334	0.53	0.095
P-84	1,113	12.0	120	J-65	J-66	431	1.22	0.620
P-85	1,034	8.0	120	J-65	J-67	67	0.43	0.142
P-86	1,662	8.0	120	J-67	J-68	67	0.43	0.142
P-87	1,161	12.0	120	J-68	J-23	682	1.93	1.447
P-88	1,359	8.0	120	J-68	J-69	92	0.58	0.253
P-89	1,832	8.0	120	J-69	J-63	102	0.65	0.308
P-90	1,005	12.0	120	J-68	J-70	434	1.23	0.626
P-91	573	12.0	120	J-70	J-62	50	0.14	0.011
P-92	1,409	12.0	120	J-65	J-71	234	0.66	0.200
P-93	1,201	12.0	120	J-56	J-72	45	0.13	0.009
P-94	503	12.0	120	J-72	J-62	155	0.44	0.093
P-95	736	12.0	120	J-71	J-72	73	0.21	0.023

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-96	718	12.0	120	J-71	J-70	111	0.32	0.050
P-97	1,047	8.0	120	J-19	J-73	119	0.76	0.413
P-98	1,393	12.0	120	J-83	J-74	237	0.67	0.204
P-99	903	12.0	120	J-74	J-75	53	0.15	0.013
P-100	1,063	12.0	120	J-21	J-76	439	1.24	0.639
P-101	1,185	12.0	120	J-76	J-77	214	0.61	0.169
P-102	939	12.0	120	J-77	J-74	140	0.40	0.077
P-103	1,124	12.0	120	J-74	J-78	311	0.88	0.338
P-104	1,019	8.0	120	J-78	J-79	104	0.66	0.319
P-105	1,354	16.0	120	J-1	J-80	813	1.30	0.494
P-106	894	16.0	120	J-80	J-12	620	0.99	0.299
P-107	1,486	8.0	120	J-76	J-81	79	0.51	0.194
P-108	1,004	12.0	120	J-75	J-82	301	0.85	0.318
P-109	1,106	12.0	120	J-82	J-23	524	1.49	0.888
P-110	1,868	8.0	120	J-81	J-82	41	0.26	0.058
P-111	1,711	12.0	120	J-78	J-12	505	1.43	0.828
P-112	675	8.0	120	J-73	J-83	70	0.45	0.153
P-113	1,008	8.0	120	J-83	J-84	96	0.61	0.275
P-114	1,673	8.0	120	J-84	J-52	152	0.97	0.648
P-115	1,776	8.0	120	J-78	J-84	56	0.36	0.103
P-116	1,656	8.0	120	J-73	J-85	49	0.32	0.081
P-117	1,568	8.0	120	J-85	J-76	49	0.32	0.081
P-118	1,542	8.0	120	J-82	J-86	89	0.57	0.242
P-119	532	8.0	120	J-79	J-87	104	0.66	0.320
P-120	1,177	8.0	120	J-87	J-80	193	1.23	1.009
P-121	801	8.0	120	J-86	J-87	89	0.57	0.242
P-122	931	12.0	120	J-83	J-18	425	1.21	0.603
P-125	839	16.0	120	J-14	J-90	395	0.63	0.129
P-126	1,077	16.0	120	J-90	J-15	395	0.63	0.130
P-128	1,309	24.0	120	J-21	J-91	375	0.27	0.016
P-129	1,332	24.0	120	J-91	J-22	496	0.35	0.027
P-130	974	8.0	120	J-81	J-91	121	0.77	0.423
P-133	1,322	24.0	120	J-2	J-92	4,978	3.53	1.963
P-134	1,322	24.0	120	J-92	J-3	3,560	2.52	1.055
P-135	1,774	24.0	120	J-20	J-93	64	0.05	0.001
P-136	778	24.0	120	J-93	J-21	64	0.05	0.001
P-137	786	16.0	120	J-13	J-94	608	0.97	0.288
P-138	1,159	16.0	120	J-94	J-51	456	0.73	0.169
P-139	2,314	12.0	120	J-44	J-16	237	0.67	0.204
P-140	1,166	8.0	120	J-11	J-69	194	1.24	1.012
P-141	890	16.0	120	J-95	J-16	811	1.29	0.491
P-142	1,256	16.0	120	J-15	J-95	811	1.29	0.491
P-143	2,336	12.0	120	J-44	J-92	813	2.31	2.002
P-204	2,317	12.0	120	J-205	J-25	1	0.00	0.000
P-259	1,600	12.0	120	J-ELS	J-205	1	0.00	0.000
P-500	679	48.0	120	R-1	J-92	9,350	1.66	0.214

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	9,350	1,710.00

AUCTION PROPERTY
PEAK HOUR DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,518.46	0	1,698.17	77.8
J-2	1,524.42	0	1,703.51	77.5
J-3	1,534.31	0	1,706.51	74.5
J-4	1,536.36	47	1,705.04	73.0
J-5	1,511.94	0	1,697.72	80.4
J-6	1,496.19	0	1,696.69	86.7
J-7	1,487.97	0	1,692.98	88.7
J-8	1,482.10	0	1,691.92	90.8
J-9	1,489.31	0	1,691.98	87.7
J-10	1,498.18	0	1,692.30	84.0
J-11	1,505.45	0	1,694.19	81.7
J-12	1,528.22	0	1,695.82	72.5
J-13	1,541.89	0	1,694.79	66.2
J-14	1,551.18	0	1,696.23	62.8
J-15	1,555.10	581	1,696.85	61.3
J-16	1,547.57	0	1,699.48	65.7
J-17	1,539.63	0	1,701.95	70.2
J-18	1,536.04	0	1,693.45	68.1
J-19	1,531.88	0	1,693.39	69.9
J-20	1,525.85	0	1,693.36	72.5
J-21	1,509.31	0	1,693.36	79.6
J-22	1,500.29	47	1,693.50	83.6
J-23	1,507.70	0	1,694.57	80.8
J-24	1,478.32	0	1,690.87	92.0
J-25	1,468.56	0	1,690.64	96.1
J-26	1,470.59	0	1,690.01	94.9
J-27	1,491.65	446	1,691.98	86.7
J-28	1,494.43	446	1,692.52	85.7
J-29	1,504.84	0	1,695.14	82.3
J-30	1,509.95	446	1,695.80	80.4
J-31	1,506.31	446	1,693.05	80.8
J-32	1,510.99	446	1,694.93	79.6
J-33	1,517.93	446	1,697.29	77.6
J-34	1,523.42	446	1,700.22	76.5
J-35	1,500.26	0	1,695.32	84.4
J-36	1,519.89	0	1,697.93	77.0
J-37	1,497.84	0	1,692.31	84.1
J-38	1,508.75	0	1,692.78	79.6
J-39	1,509.06	581	1,693.72	79.9
J-40	1,519.34	0	1,699.91	78.1
J-41	1,493.31	0	1,695.43	87.4
J-42	1,520.78	0	1,700.01	77.5
J-43	1,528.04	581	1,696.00	72.7
J-44	1,539.15	581	1,698.30	68.9
J-45	1,525.42	0	1,699.40	75.3
J-46	1,536.25	581	1,701.36	71.4
J-47	1,523.18	0	1,697.88	75.6
J-48	1,543.23	0	1,695.86	66.0
J-49	1,544.66	581	1,696.27	65.6

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-50	1,550.01	0	1,696.50	63.4
J-51	1,551.30	0	1,695.85	62.5
J-52	1,541.61	0	1,695.45	66.6
J-53	1,482.08	446	1,690.35	90.1
J-54	1,476.49	0	1,691.01	92.8
J-55	1,480.56	0	1,689.44	90.4
J-56	1,481.69	446	1,688.72	89.6
J-57	1,483.32	0	1,689.61	89.3
J-58	1,478.32	0	1,689.88	91.5
J-59	1,473.68	0	1,690.22	93.7
J-60	1,475.18	0	1,689.14	92.6
J-61	1,474.72	446	1,688.90	92.7
J-62	1,493.15	446	1,688.81	84.7
J-63	1,494.82	446	1,689.84	84.4
J-64	1,489.78	0	1,689.75	86.5
J-65	1,486.52	446	1,689.43	87.8
J-66	1,484.90	0	1,691.15	89.2
J-67	1,492.33	0	1,689.80	85.4
J-68	1,498.85	446	1,690.39	82.9
J-69	1,504.49	0	1,691.25	80.8
J-70	1,496.77	446	1,688.82	83.1
J-71	1,492.39	446	1,688.73	84.9
J-72	1,489.15	446	1,688.69	86.3
J-73	1,526.88	0	1,692.31	71.6
J-74	1,522.81	581	1,691.33	72.9
J-75	1,517.39	581	1,691.31	75.2
J-76	1,513.14	581	1,691.65	77.2
J-77	1,518.58	581	1,691.15	74.7
J-78	1,525.14	581	1,692.28	72.3
J-79	1,521.50	0	1,693.10	74.2
J-80	1,521.52	0	1,696.49	75.7
J-81	1,507.88	0	1,692.38	79.8
J-82	1,511.68	581	1,692.11	78.1
J-83	1,530.12	581	1,692.05	70.1
J-84	1,534.97	0	1,692.74	68.3
J-85	1,520.43	0	1,691.97	74.2
J-86	1,512.42	0	1,693.04	78.1
J-87	1,519.02	0	1,693.52	75.5
J-90	1,553.44	0	1,696.50	61.9
J-91	1,501.89	0	1,693.41	82.9
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,693.36	77.7
J-94	1,544.69	94	1,695.36	65.2
J-95	1,552.90	0	1,698.39	62.9
J-205	1,458.56	0	1,690.64	100.4
J-ELS	1,456.01	1	1,690.64	101.5

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-1	1,337	24.0	120	J-1	J-2	7,306	5.18	3.995
P-2	1,236	24.0	120	J-3	J-4	3,800	2.69	1.191
P-3	2,654	16.0	120	J-5	J-6	713	1.14	0.387
P-4	2,643	12.0	120	J-7	J-8	341	0.97	0.400
P-5	1,373	16.0	120	J-8	J-9	219	0.35	0.043
P-6	1,371	16.0	120	J-10	J-11	1,416	2.26	1.379
P-7	1,867	16.0	120	J-9	J-10	458	0.73	0.171
P-7	1,712	16.0	120	J-11	J-1	1,878	3.00	2.326
P-8	1,252	16.0	120	J-16	J-17	1,719	2.74	1.975
P-9	1,335	16.0	120	J-17	J-4	1,872	2.99	2.311
P-10	1,872	16.0	120	J-13	J-18	995	1.59	0.717
P-11	817	16.0	120	J-18	J-19	297	0.47	0.077
P-12	2,582	16.0	120	J-19	J-20	101	0.16	0.010
P-13	2,636	24.0	120	J-22	J-23	2,116	1.50	0.403
P-14	2,640	24.0	120	J-23	J-1	4,092	2.90	1.365
P-15	2,850	16.0	120	J-24	J-25	310	0.49	0.083
P-16	1,880	12.0	120	J-25	J-26	308	0.88	0.333
P-17	1,357	12.0	120	J-9	J-27	24	0.07	0.003
P-18	1,167	12.0	120	J-27	J-28	369	1.05	0.465
P-19	1,813	8.0	120	J-28	J-29	234	1.50	1.443
P-20	781	8.0	120	J-29	J-30	175	1.12	0.842
P-21	997	12.0	120	J-30	J-5	796	2.26	1.929
P-22	1,324	12.0	120	J-7	J-28	313	0.89	0.342
P-23	2,040	12.0	120	J-28	J-31	269	0.76	0.257
P-24	935	12.0	120	J-31	J-32	816	2.31	2.015
P-25	1,071	12.0	120	J-32	J-33	855	2.43	2.199
P-26	757	12.0	120	J-33	J-34	1,161	3.29	3.877
P-27	888	12.0	120	J-34	J-3	1,607	4.56	7.080
P-28	1,587	8.0	120	J-29	J-35	59	0.38	0.113
P-29	1,506	8.0	120	J-30	J-36	232	1.48	1.414
P-30	1,149	8.0	120	J-36	J-33	140	0.89	0.556
P-31	1,110	8.0	120	J-27	J-37	101	0.64	0.299
P-32	1,560	8.0	120	J-37	J-38	101	0.64	0.299
P-33	895	8.0	120	J-38	J-31	101	0.64	0.299
P-34	783	8.0	120	J-11	J-39	145	0.92	0.592
P-35	1,356	8.0	120	J-39	J-40	436	2.78	4.556
P-36	792	8.0	120	J-40	J-2	436	2.78	4.556
P-37	807	12.0	120	J-6	J-41	713	2.02	1.570
P-38	1,833	12.0	120	J-41	J-7	654	1.85	1.337
P-39	949	8.0	120	J-35	J-41	59	0.38	0.113
P-40	2,155	16.0	120	J-4	J-42	1,881	3.00	2.333
P-41	1,477	16.0	120	J-42	J-5	1,509	2.41	1.552
P-42	614	8.0	120	J-36	J-42	372	2.37	3.393
P-43	1,556	12.0	120	J-32	J-30	407	1.15	0.556
P-44	689	12.0	120	J-12	J-43	268	0.76	0.257
P-45	1,946	12.0	120	J-43	J-44	611	1.73	1.182
P-46	2,073	8.0	120	J-44	J-45	137	0.87	0.531
P-47	969	8.0	120	J-45	J-2	420	2.68	4.242

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-48	1,168	8.0	120	J-3	J-46	428	2.73	4.410
P-49	911	8.0	120	J-46	J-17	153	0.97	0.651
P-50	742	8.0	120	J-45	J-47	283	1.81	2.045
P-51	921	8.0	120	J-47	J-43	283	1.81	2.045
P-52	2,082	8.0	120	J-43	J-48	45	0.29	0.068
P-53	1,325	8.0	120	J-48	J-49	102	0.65	0.310
P-54	1,465	12.0	120	J-49	J-44	666	1.89	1.385
P-55	1,495	12.0	120	J-49	J-14	84	0.24	0.030
P-56	743	8.0	120	J-49	J-50	102	0.65	0.307
P-57	1,129	8.0	120	J-50	J-15	102	0.65	0.307
P-58	931	16.0	120	J-51	J-14	732	1.17	0.406
P-59	1,264	8.0	120	J-48	J-51	16	0.10	0.010
P-60	2,202	16.0	120	J-12	J-52	460	0.73	0.172
P-61	885	16.0	120	J-52	J-94	342	0.55	0.099
P-62	840	8.0	120	J-48	J-52	131	0.84	0.493
P-63	906	8.0	120	J-9	J-53	264	1.68	1.795
P-64	910	12.0	120	J-54	J-8	559	1.59	1.002
P-65	721	8.0	120	J-53	J-54	183	1.17	0.908
P-66	983	8.0	120	J-24	J-55	235	1.50	1.453
P-67	1,333	8.0	120	J-55	J-56	139	0.88	0.544
P-68	1,116	8.0	120	J-56	J-57	171	1.09	0.804
P-69	729	8.0	120	J-57	J-58	112	0.71	0.366
P-70	857	12.0	120	J-26	J-59	265	0.75	0.251
P-71	1,622	12.0	120	J-59	J-54	377	1.07	0.482
P-72	936	8.0	120	J-58	J-59	112	0.71	0.366
P-73	1,459	8.0	120	J-55	J-60	83	0.53	0.210
P-74	1,114	8.0	120	J-60	J-61	83	0.53	0.210
P-75	1,054	12.0	120	J-61	J-26	573	1.63	1.050
P-76	1,140	12.0	120	J-61	J-56	210	0.60	0.163
P-77	855	12.0	120	J-62	J-63	619	1.76	1.210
P-78	905	12.0	120	J-63	J-10	958	2.72	2.714
P-79	831	8.0	120	J-63	J-64	59	0.38	0.112
P-80	1,177	8.0	120	J-64	J-57	59	0.38	0.113
P-81	1,245	8.0	120	J-55	J-65	14	0.09	0.008
P-82	2,151	16.0	120	J-22	J-66	1,251	2.00	1.096
P-83	1,176	16.0	120	J-66	J-24	545	0.87	0.235
P-84	1,113	12.0	120	J-65	J-66	706	2.00	1.541
P-85	1,034	8.0	120	J-65	J-67	110	0.70	0.354
P-86	1,662	8.0	120	J-67	J-68	110	0.70	0.354
P-87	1,161	12.0	120	J-68	J-23	1,116	3.16	3.600
P-88	1,359	8.0	120	J-68	J-69	150	0.96	0.632
P-89	1,832	8.0	120	J-69	J-63	167	1.06	0.768
P-90	1,005	12.0	120	J-68	J-70	710	2.01	1.557
P-91	573	12.0	120	J-70	J-62	81	0.23	0.028
P-92	1,409	12.0	120	J-65	J-71	383	1.09	0.498
P-93	1,201	12.0	120	J-56	J-72	73	0.21	0.023
P-94	503	12.0	120	J-72	J-62	254	0.72	0.232
P-95	736	12.0	120	J-71	J-72	119	0.34	0.057

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-96	718	12.0	120	J-71	J-70	182	0.52	0.126
P-97	1,047	8.0	120	J-19	J-73	196	1.25	1.035
P-98	1,393	12.0	120	J-83	J-74	389	1.10	0.511
P-99	903	12.0	120	J-74	J-75	87	0.25	0.032
P-100	1,063	12.0	120	J-21	J-76	721	2.04	1.602
P-101	1,185	12.0	120	J-76	J-77	351	1.00	0.423
P-102	939	12.0	120	J-77	J-74	230	0.65	0.193
P-103	1,124	12.0	120	J-74	J-78	509	1.45	0.843
P-104	1,019	8.0	120	J-78	J-79	170	1.09	0.800
P-105	1,354	16.0	120	J-1	J-80	1,336	2.13	1.238
P-106	894	16.0	120	J-80	J-12	1,019	1.63	0.749
P-107	1,486	8.0	120	J-76	J-81	130	0.83	0.487
P-108	1,004	12.0	120	J-75	J-82	494	1.40	0.796
P-109	1,106	12.0	120	J-82	J-23	860	2.44	2.225
P-110	1,868	8.0	120	J-81	J-82	68	0.43	0.146
P-111	1,711	12.0	120	J-78	J-12	828	2.35	2.071
P-112	675	8.0	120	J-73	J-83	115	0.73	0.385
P-113	1,008	8.0	120	J-83	J-84	157	1.00	0.687
P-114	1,673	8.0	120	J-84	J-52	249	1.59	1.618
P-115	1,776	8.0	120	J-78	J-84	92	0.59	0.257
P-116	1,656	8.0	120	J-73	J-85	81	0.52	0.202
P-117	1,568	8.0	120	J-85	J-76	81	0.52	0.202
P-118	1,542	8.0	120	J-82	J-86	147	0.94	0.605
P-119	532	8.0	120	J-79	J-87	170	1.09	0.800
P-120	1,177	8.0	120	J-87	J-80	317	2.02	2.524
P-121	801	8.0	120	J-86	J-87	147	0.94	0.605
P-122	931	12.0	120	J-83	J-18	698	1.98	1.509
P-125	839	16.0	120	J-14	J-90	648	1.03	0.324
P-126	1,077	16.0	120	J-90	J-15	648	1.03	0.324
P-128	1,309	24.0	120	J-21	J-91	619	0.44	0.041
P-129	1,332	24.0	120	J-91	J-22	818	0.58	0.069
P-130	974	8.0	120	J-81	J-91	199	1.27	1.061
P-133	1,322	24.0	120	J-2	J-92	8,162	5.79	4.904
P-134	1,322	24.0	120	J-92	J-3	5,836	4.14	2.635
P-135	1,774	24.0	120	J-20	J-93	101	0.07	0.001
P-136	778	24.0	120	J-93	J-21	101	0.07	0.001
P-137	786	16.0	120	J-13	J-94	995	1.59	0.717
P-138	1,159	16.0	120	J-94	J-51	748	1.19	0.423
P-139	2,314	12.0	120	J-44	J-16	389	1.10	0.511
P-140	1,166	8.0	120	J-11	J-69	317	2.02	2.522
P-141	890	16.0	120	J-95	J-16	1,330	2.12	1.228
P-142	1,256	16.0	120	J-15	J-95	1,330	2.12	1.228
P-143	2,336	12.0	120	J-44	J-92	1,333	3.78	5.006
P-204	2,317	12.0	120	J-205	J-25	1	0.00	0.000
P-259	1,600	12.0	120	J-ELS	J-205	1	0.00	0.000
P-500	679	48.0	120	R-1	J-92	15,331	2.72	0.547

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	15,331	1,710.00

AUCTION PROPERTY
MAXIMUM DAY + FIRE FLOW RESULTS (RESIDUAL)
MAXIMUM DAY + FIRE FLOW RESULTS (AVAILABLE)

Fire Flow Node FlexTable: Fire Flow Report

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-1	0	4,000	4,000	4,000	4,000	78.1	63.0	J-15	78.1	63.0	P-133	5.51	True
J-2	0	4,000	4,000	4,000	4,000	77.4	63.7	J-15	77.4	63.7	P-133	5.83	True
J-3	0	4,000	4,000	4,000	4,000	73.9	64.0	J-15	73.9	64.0	P-134	4.91	True
J-4	28	4,000	4,028	4,000	4,028	72.1	63.6	J-15	72.1	63.6	P-134	4.68	True
J-5	0	4,000	4,000	4,000	4,000	76.1	63.5	J-15	76.1	63.5	P-27	4.94	True
J-6	0	4,000	4,000	4,000	4,000	78.9	63.5	J-15	78.9	63.5	P-27	4.94	True
J-7	0	4,000	4,000	4,000	4,000	82.4	63.4	J-15	82.4	63.4	P-133	4.84	True
J-8	0	4,000	4,000	4,000	4,000	86.8	63.2	J-15	86.8	63.2	P-133	5.06	True
J-9	0	4,000	4,000	4,000	4,000	84.8	63.2	J-15	84.8	63.2	P-133	5.09	True
J-10	0	4,000	4,000	4,000	4,000	82.3	63.1	J-15	82.3	63.1	P-133	5.21	True
J-11	0	4,000	4,000	4,000	4,000	80.2	63.1	J-15	80.2	63.1	P-133	5.30	True
J-12	0	4,000	4,000	4,000	4,000	71.6	61.9	J-15	71.6	61.9	P-133	5.23	True
J-13	0	4,000	4,000	4,000	4,000	64.1	61.6	J-15	64.1	61.6	P-133	5.20	True
J-14	0	4,000	4,000	4,000	4,000	60.5	60.1	J-15	60.5	60.1	P-133	5.02	True
J-15	354	4,000	4,354	4,000	4,354	58.4	60.0	J-90	58.4	60.0	P-133	4.92	True
J-16	0	4,000	4,000	4,000	4,000	63.7	60.8	J-15	63.7	60.8	P-133	4.75	True
J-17	0	4,000	4,000	4,000	4,000	68.3	61.9	J-15	68.3	61.9	P-9	4.80	True
J-18	0	4,000	4,000	4,000	4,000	66.2	62.1	J-15	66.2	62.1	P-133	5.28	True
J-19	0	4,000	4,000	4,000	4,000	67.6	62.3	J-15	67.6	62.3	P-133	5.30	True
J-20	0	4,000	4,000	4,000	4,000	71.0	62.5	J-15	71.0	62.5	P-133	5.34	True
J-21	0	4,000	4,000	4,000	4,000	78.8	62.6	J-15	78.8	62.6	P-133	5.35	True
J-22	28	4,000	4,028	4,000	4,028	83.3	62.7	J-15	83.3	62.7	P-133	5.37	True
J-23	0	4,000	4,000	4,000	4,000	80.8	62.8	J-15	80.8	62.8	P-133	5.41	True
J-24	0	4,000	4,000	4,000	4,000	87.5	62.9	J-15	87.5	62.9	P-133	5.31	True
J-25	0	4,000	4,000	4,000	4,000	87.8	62.9	J-15	87.8	62.9	P-133	5.29	True
J-26	0	4,000	4,000	4,000	4,000	88.4	63.0	J-15	88.4	63.0	P-133	5.26	True
J-27	273	1,500	1,773	1,500	1,773	88.3	64.2	J-15	88.3	64.2	P-133	4.06	True
J-28	273	1,500	1,773	1,500	1,773	87.5	64.3	J-15	87.5	64.3	P-133	4.04	True
J-29	0	1,500	1,500	1,500	1,500	80.5	64.3	J-15	80.5	64.3	P-20	4.52	True
J-30	273	4,000	4,273	4,000	4,273	74.2	63.5	J-15	74.2	63.5	P-21	5.47	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-31	273	1,500	1,773	1,500	1,773	82.1	64.3	J-15	82.1	64.3	P-133	3.99	True
J-32	273	1,500	1,773	1,500	1,773	80.8	64.3	J-15	80.8	64.3	P-133	3.94	True
J-33	273	1,500	1,773	1,500	1,773	78.3	64.4	J-15	78.3	64.4	P-27	4.29	True
J-34	273	1,500	1,773	1,500	1,773	76.5	64.4	J-15	76.5	64.4	P-27	4.99	True
J-35	0	1,500	1,500	1,500	1,500	79.0	64.3	J-15	79.0	64.3	P-39	5.60	True
J-36	0	1,500	1,500	1,500	1,500	76.0	64.3	J-15	76.0	64.3	P-42	4.60	True
J-37	0	1,500	1,500	1,500	1,500	77.7	64.3	J-15	77.7	64.3	P-31	5.74	True
J-38	0	1,500	1,500	1,500	1,500	73.9	64.3	J-15	73.9	64.3	P-33	6.14	True
J-39	354	1,500	1,854	1,500	1,854	74.0	64.3	J-15	74.0	64.3	P-34	7.10	True
J-40	0	1,500	1,500	1,500	1,500	72.2	64.3	J-15	72.2	64.3	P-36	7.03	True
J-41	0	4,000	4,000	4,000	4,000	78.7	63.5	J-15	78.7	63.5	P-37	5.80	True
J-42	0	4,000	4,000	4,000	4,000	74.0	63.5	J-15	74.0	63.5	P-40	4.98	True
J-43	354	1,500	1,854	1,500	1,854	74.5	63.7	J-15	74.5	63.7	P-133	4.13	True
J-44	354	1,500	1,854	1,500	1,854	70.3	63.7	J-15	70.3	63.7	P-133	4.04	True
J-45	0	1,500	1,500	1,500	1,500	73.6	63.9	J-15	73.6	63.9	P-47	4.56	True
J-46	354	1,500	1,854	1,500	1,854	65.3	64.2	J-15	65.3	64.2	P-49	6.05	True
J-47	0	1,500	1,500	1,500	1,500	72.3	63.8	J-15	72.3	63.8	P-50	4.90	True
J-48	0	1,500	1,500	1,500	1,500	66.5	63.5	J-15	66.5	63.5	P-133	4.12	True
J-49	354	1,500	1,854	1,500	1,854	67.0	63.4	J-15	67.0	63.4	P-133	4.07	True
J-50	0	1,500	1,500	1,500	1,500	60.4	63.2	J-15	60.4	63.2	P-56	5.25	True
J-51	0	4,000	4,000	4,000	4,000	60.5	60.7	J-15	60.5	60.7	P-133	5.07	True
J-52	0	4,000	4,000	4,000	4,000	64.9	61.5	J-15	64.9	61.5	P-133	5.18	True
J-53	273	1,500	1,773	1,500	1,773	87.3	64.2	J-15	87.3	64.2	P-65	5.88	True
J-54	0	4,000	4,000	4,000	4,000	86.0	63.2	J-15	86.0	63.2	P-64	6.16	True
J-55	0	1,500	1,500	1,500	1,500	91.4	64.1	J-15	91.4	64.1	P-133	4.19	True
J-56	273	1,500	1,773	1,500	1,773	91.9	64.1	J-15	91.9	64.1	P-133	4.18	True
J-57	0	1,500	1,500	1,500	1,500	88.4	64.1	J-15	88.4	64.1	P-133	4.18	True
J-58	0	1,500	1,500	1,500	1,500	88.8	64.1	J-15	88.8	64.1	P-72	5.00	True
J-59	0	4,000	4,000	4,000	4,000	86.2	63.0	J-15	86.2	63.0	P-133	5.23	True
J-60	0	1,500	1,500	1,500	1,500	88.2	64.1	J-15	88.2	64.1	P-74	5.14	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-61	273	1,500	1,773	1,500	1,773	94.7	64.1	J-15	94.7	64.1	P-133	4.18	True
J-62	273	1,500	1,773	1,500	1,773	87.4	64.1	J-15	87.4	64.1	P-133	4.19	True
J-63	273	1,500	1,773	1,500	1,773	87.0	64.2	J-15	87.0	64.2	P-133	4.18	True
J-64	0	1,500	1,500	1,500	1,500	83.6	64.2	J-15	83.6	64.2	P-79	5.56	True
J-65	273	1,500	1,773	1,500	1,773	90.3	64.1	J-15	90.3	64.1	P-133	4.19	True
J-66	0	4,000	4,000	4,000	4,000	86.5	62.9	J-15	86.5	62.9	P-133	5.32	True
J-67	0	1,500	1,500	1,500	1,500	81.5	64.1	J-15	81.5	64.1	P-85	5.33	True
J-68	273	1,500	1,773	1,500	1,773	85.4	64.1	J-15	85.4	64.1	P-133	4.20	True
J-69	0	1,500	1,500	1,500	1,500	80.4	64.2	J-15	80.4	64.2	P-133	4.19	True
J-70	273	1,500	1,773	1,500	1,773	85.9	64.1	J-15	85.9	64.1	P-133	4.19	True
J-71	273	1,500	1,773	1,500	1,773	87.6	64.1	J-15	87.6	64.1	P-133	4.19	True
J-72	273	1,500	1,773	1,500	1,773	89.0	64.1	J-15	89.0	64.1	P-133	4.19	True
J-73	0	1,500	1,500	1,500	1,500	71.5	63.9	J-15	71.5	63.9	P-133	4.20	True
J-74	354	1,500	1,854	1,500	1,854	75.4	63.9	J-15	75.4	63.9	P-133	4.20	True
J-75	354	1,500	1,854	1,500	1,854	77.1	64.0	J-15	77.1	64.0	P-133	4.21	True
J-76	354	1,500	1,854	1,500	1,854	79.3	64.0	J-15	79.3	64.0	P-133	4.21	True
J-77	354	1,500	1,854	1,500	1,854	76.4	64.0	J-15	76.4	64.0	P-133	4.21	True
J-78	354	1,500	1,854	1,500	1,854	74.5	63.9	J-15	74.5	63.9	P-133	4.20	True
J-79	0	1,500	1,500	1,500	1,500	71.7	63.9	J-15	71.7	63.9	P-119	5.07	True
J-80	0	4,000	4,000	4,000	4,000	74.7	62.2	J-15	74.7	62.2	P-133	5.30	True
J-81	0	1,500	1,500	1,500	1,500	79.3	64.0	J-15	79.3	64.0	P-133	4.21	True
J-82	354	1,500	1,854	1,500	1,854	80.2	64.0	J-15	80.2	64.0	P-133	4.22	True
J-83	354	4,000	4,354	4,000	4,354	66.1	62.3	J-15	66.1	62.3	P-122	5.51	True
J-84	0	1,500	1,500	1,500	1,500	67.6	63.9	J-15	67.6	63.9	P-133	4.19	True
J-85	0	1,500	1,500	1,500	1,500	67.8	64.0	J-15	67.8	64.0	P-117	4.94	True
J-86	0	1,500	1,500	1,500	1,500	73.8	64.0	J-15	73.8	64.0	P-121	5.30	True
J-87	0	1,500	1,500	1,500	1,500	74.3	63.9	J-15	74.3	63.9	P-133	4.20	True
J-90	0	4,000	4,000	4,000	4,000	59.0	59.4	J-15	59.0	59.4	P-133	4.97	True
J-91	0	4,000	4,000	4,000	4,000	82.3	62.6	J-15	82.3	62.6	P-133	5.36	True
J-92	0	4,000	4,000	4,000	4,000	78.2	64.7	J-15	78.2	64.7	P-133	3.53	True

Fire Flow Node FlexTable: Fire Flow Report

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-93	0	4,000	4,000	4,000	4,000	76.7	62.6	J-15	76.7	62.6	P-133	5.35	True
J-94	56	4,000	4,056	4,000	4,056	63.8	61.4	J-15	63.8	61.4	P-133	5.16	True
J-95	0	4,000	4,000	4,000	4,000	60.2	59.7	J-15	60.2	59.7	P-133	4.84	True
J-205	0	1,500	1,500	1,500	1,500	96.0	64.1	J-15	96.0	64.1	P-204	4.26	True
J-ELS	1	1,500	1,501	1,500	1,501	92.8	64.1	J-15	92.8	64.1	P-259	4.26	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-1	0	4,000	4,000	10,000	10,000	78.1	63.0	J-15	72.3	59.4	P-133	8.40	True
J-2	0	4,000	4,000	10,000	10,000	77.4	63.7	J-15	73.8	61.4	P-133	9.11	True
J-3	0	4,000	4,000	10,000	10,000	73.9	64.0	J-15	70.8	62.0	P-134	8.05	True
J-4	28	4,000	4,028	10,000	10,028	72.1	63.6	J-15	67.6	60.5	P-134	7.45	True
J-5	0	4,000	4,000	10,000	10,000	76.1	63.5	J-15	51.8	59.0	P-41	9.12	True
J-6	0	4,000	4,000	9,617	9,617	78.9	63.5	J-15	41.8	53.6	P-37	10.00	True
J-7	0	4,000	4,000	9,514	9,514	82.4	63.4	J-15	48.8	61.0	P-22	10.00	True
J-8	0	4,000	4,000	10,000	10,000	86.8	63.2	J-15	59.8	60.2	P-5	8.49	True
J-9	0	4,000	4,000	10,000	10,000	84.8	63.2	J-15	62.9	60.2	P-7	8.00	True
J-10	0	4,000	4,000	10,000	10,000	82.3	63.1	J-15	64.9	59.9	P-6	7.98	True
J-11	0	4,000	4,000	10,000	10,000	80.2	63.1	J-15	65.3	59.7	P-7	9.28	True
J-12	0	4,000	4,000	10,000	10,000	71.6	61.9	J-15	59.5	55.4	P-133	7.79	True
J-13	0	4,000	4,000	10,000	10,000	64.1	61.6	J-15	45.7	51.6	P-137	9.82	True
J-14	0	4,000	4,000	10,000	10,000	60.5	60.1	J-15	42.5	44.2	P-58	7.23	True
J-15	354	4,000	4,354	10,000	10,354	58.4	60.0	J-90	38.0	43.9	P-141	8.27	True
J-16	0	4,000	4,000	10,000	10,000	63.7	60.8	J-15	48.9	48.4	P-8	8.62	True
J-17	0	4,000	4,000	10,000	10,000	68.3	61.9	J-15	56.2	54.7	P-9	9.80	True
J-18	0	4,000	4,000	10,000	10,000	66.2	62.1	J-15	48.0	52.7	P-133	7.86	True
J-19	0	4,000	4,000	10,000	10,000	67.6	62.3	J-15	47.9	51.4	P-11	8.18	True
J-20	0	4,000	4,000	10,000	10,000	71.0	62.5	J-15	55.3	57.8	P-133	8.08	True
J-21	0	4,000	4,000	10,000	10,000	78.8	62.6	J-15	65.8	58.1	P-133	8.11	True
J-22	28	4,000	4,028	10,000	10,028	83.3	62.7	J-15	72.5	58.6	P-133	8.15	True
J-23	0	4,000	4,000	10,000	10,000	80.8	62.8	J-15	71.9	58.9	P-133	8.20	True
J-24	0	4,000	4,000	9,427	9,427	87.5	62.9	J-15	61.4	59.6	P-83	10.00	True
J-25	0	4,000	4,000	9,365	9,365	87.8	62.9	J-15	48.1	52.4	P-16	10.00	True
J-26	0	4,000	4,000	9,387	9,387	88.4	63.0	J-15	54.5	59.9	P-70	10.00	True
J-27	273	1,500	1,773	7,162	7,434	88.3	64.2	J-15	59.8	62.0	P-17	10.00	True
J-28	273	1,500	1,773	10,000	10,273	87.5	64.3	J-15	45.1	53.1	P-22	9.79	True
J-29	0	1,500	1,500	3,389	3,389	80.5	64.3	J-15	64.3	63.7	P-20	10.00	True
J-30	273	4,000	4,273	7,788	8,060	74.2	63.5	J-15	55.7	62.1	P-21	10.00	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-31	273	1,500	1,773	6,355	6,627	82.1	64.3	J-15	57.3	59.9	P-24	10.00	True
J-32	273	1,500	1,773	8,616	8,889	80.8	64.3	J-15	49.1	57.2	P-25	10.00	True
J-33	273	1,500	1,773	6,301	6,574	78.3	64.4	J-15	60.4	62.9	P-27	10.00	True
J-34	273	1,500	1,773	4,841	5,114	76.5	64.4	J-15	67.0	63.5	P-27	10.00	True
J-35	0	1,500	1,500	2,676	2,676	79.0	64.3	J-15	63.3	63.9	P-39	10.00	True
J-36	0	1,500	1,500	3,533	3,533	76.0	64.3	J-15	63.4	63.7	P-42	10.00	True
J-37	0	1,500	1,500	2,607	2,607	77.7	64.3	J-15	60.0	63.9	P-31	10.00	True
J-38	0	1,500	1,500	2,450	2,450	73.9	64.3	J-15	60.2	64.0	P-33	10.00	True
J-39	354	1,500	1,854	2,207	2,561	74.0	64.3	J-15	65.6	64.0	P-34	10.00	True
J-40	0	1,500	1,500	2,265	2,265	72.2	64.3	J-15	63.9	64.1	P-36	10.00	True
J-41	0	4,000	4,000	7,088	7,088	78.7	63.5	J-15	59.0	62.1	P-37	10.00	True
J-42	0	4,000	4,000	9,680	9,680	74.0	63.5	J-15	56.1	60.9	P-40	10.00	True
J-43	354	1,500	1,854	6,767	7,121	74.5	63.7	J-15	59.9	59.0	P-44	10.00	True
J-44	354	1,500	1,854	10,000	10,354	70.3	63.7	J-15	49.7	54.4	P-143	8.80	True
J-45	0	1,500	1,500	3,606	3,606	73.6	63.9	J-15	57.2	62.6	P-47	10.00	True
J-46	354	1,500	1,854	2,649	3,003	65.3	64.2	J-15	52.9	63.7	P-49	10.00	True
J-47	0	1,500	1,500	3,077	3,077	72.3	63.8	J-15	55.8	62.8	P-51	10.00	True
J-48	0	1,500	1,500	5,032	5,032	66.5	63.5	J-15	46.3	59.9	P-62	10.00	True
J-49	354	1,500	1,854	8,577	8,931	67.0	63.4	J-15	40.2	44.7	P-54	10.00	True
J-50	0	1,500	1,500	2,850	2,850	60.4	63.2	J-15	47.4	61.6	P-56	10.00	True
J-51	0	4,000	4,000	10,000	10,000	60.5	60.7	J-15	42.9	47.3	P-138	7.82	True
J-52	0	4,000	4,000	10,000	10,000	64.9	61.5	J-15	49.2	51.7	P-133	7.60	True
J-53	273	1,500	1,773	2,728	3,001	87.3	64.2	J-15	75.1	63.7	P-65	10.00	True
J-54	0	1,500	1,500	6,700	6,700	94.9	64.2	J-15	71.2	61.9	P-64	10.00	True
J-55	0	1,500	1,500	5,074	5,074	91.4	64.1	J-15	65.5	62.4	P-66	10.00	True
J-56	273	1,500	1,773	8,165	8,438	91.9	64.1	J-15	58.2	60.7	P-93	10.00	True
J-57	0	1,500	1,500	4,043	4,043	88.4	64.1	J-15	62.4	63.0	P-68	10.00	True
J-58	0	1,500	1,500	3,014	3,014	88.8	64.1	J-15	70.9	63.5	P-72	10.00	True
J-59	0	4,000	4,000	7,636	7,636	86.2	63.0	J-15	63.1	61.1	P-70	10.00	True
J-60	0	1,500	1,500	2,904	2,904	88.2	64.1	J-15	67.7	63.5	P-74	10.00	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-61	273	1,500	1,773	7,365	7,638	94.7	64.1	J-15	61.6	61.2	P-75	10.00	True
J-62	273	1,500	1,773	9,236	9,508	87.4	64.1	J-15	57.0	60.0	P-77	10.00	True
J-63	273	1,500	1,773	7,149	7,421	87.0	64.2	J-15	67.6	61.4	P-78	10.00	True
J-64	0	1,500	1,500	2,695	2,695	83.6	64.2	J-15	69.7	63.6	P-79	10.00	True
J-65	273	1,500	1,773	7,784	8,057	90.3	64.1	J-15	63.0	60.8	P-84	10.00	True
J-66	0	4,000	4,000	10,000	10,000	86.5	62.9	J-15	64.3	59.2	P-82	9.40	True
J-67	0	1,500	1,500	2,799	2,799	81.5	64.1	J-15	63.8	63.5	P-85	10.00	True
J-68	273	1,500	1,773	7,010	7,282	85.4	64.1	J-15	66.7	61.3	P-87	10.00	True
J-69	0	1,500	1,500	4,102	4,102	80.4	64.2	J-15	57.2	63.0	P-140	10.00	True
J-70	273	1,500	1,773	9,338	9,611	85.9	64.1	J-15	54.1	59.9	P-90	10.00	True
J-71	273	1,500	1,773	9,543	9,816	87.6	64.1	J-15	52.2	59.7	P-96	10.00	True
J-72	273	1,500	1,773	8,513	8,786	89.0	64.1	J-15	60.5	60.4	P-94	10.00	True
J-73	0	1,500	1,500	3,545	3,545	71.5	63.9	J-15	56.6	62.6	P-112	10.00	True
J-74	354	1,500	1,854	10,000	10,354	75.4	63.9	J-15	46.3	53.0	P-103	8.48	True
J-75	354	1,500	1,854	6,302	6,656	77.1	64.0	J-15	56.1	60.9	P-99	10.00	True
J-76	354	1,500	1,854	6,737	7,091	79.3	64.0	J-15	59.8	60.6	P-100	10.00	True
J-77	354	1,500	1,854	6,078	6,432	76.4	64.0	J-15	55.5	61.0	P-102	10.00	True
J-78	354	1,500	1,854	8,732	9,086	74.5	63.9	J-15	45.4	57.5	P-111	10.00	True
J-79	0	1,500	1,500	3,027	3,027	71.7	63.9	J-15	55.4	63.0	P-119	10.00	True
J-80	0	4,000	4,000	10,000	10,000	74.7	62.2	J-15	62.4	56.8	P-105	8.69	True
J-81	0	1,500	1,500	3,830	3,830	79.3	64.0	J-15	60.0	62.7	P-130	10.00	True
J-82	354	1,500	1,854	6,706	7,060	80.2	64.0	J-15	61.8	60.8	P-109	10.00	True
J-83	354	4,000	4,354	7,903	8,257	66.1	62.3	J-15	50.4	58.1	P-122	10.00	True
J-84	0	1,500	1,500	3,989	3,989	67.6	63.9	J-15	45.8	62.1	P-113	10.00	True
J-85	0	1,500	1,500	3,015	3,015	67.8	64.0	J-15	41.0	63.1	P-117	10.00	True
J-86	0	1,500	1,500	2,874	2,874	73.8	64.0	J-15	55.2	63.1	P-121	10.00	True
J-87	0	1,500	1,500	3,871	3,871	74.3	63.9	J-15	52.1	58.8	P-120	10.00	True
J-90	0	4,000	4,000	10,000	10,000	59.0	59.4	J-15	38.6	43.4	P-125	8.72	True
J-91	0	4,000	4,000	10,000	10,000	82.3	62.6	J-15	70.3	58.3	P-133	8.13	True
J-92	0	4,000	4,000	10,000	10,000	78.2	64.7	J-15	78.2	64.7	P-133	3.53	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-93	0	4,000	4,000	10,000	10,000	76.7	62.6	J-15	62.8	57.9	P-133	8.10	True
J-94	56	4,000	4,056	10,000	10,056	63.8	61.4	J-15	49.0	49.7	P-133	7.52	True
J-95	0	4,000	4,000	9,916	9,916	60.2	59.7	J-15	41.8	45.2	P-141	10.00	True
J-205	0	1,500	1,500	3,524	3,524	96.0	64.1	J-15	64.1	63.2	P-204	10.00	True
J-ELS	1	1,500	1,501	3,524	3,525	92.8	64.1	J-15	44.3	63.2	P-259	10.00	True

SITE
HYDRAULIC MODELING RESULTS

SITE
AVERAGE DAY DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
AZWC-J-1	1,565.65	96	1,717.17	65.6
AZWC-J-2	1,566.00	0	1,718.48	66.0
AZWC-J-3	1,562.39	96	1,719.53	68.0
AZWC-J-4	1,549.27	192	1,717.00	72.6
AZWC-J-5	1,549.29	14	1,717.15	72.6
AZWC-J-6	1,550.00	14	1,718.56	72.9
AZWC-J-7	1,540.00	14	1,717.14	76.6
AZWC-J-8	1,540.19	96	1,720.00	77.8
AZWC-J-9	1,532.76	74	1,716.86	79.7
AZWC-J-10	1,532.13	96	1,716.88	79.9
AZWC-J-11	1,530.66	192	1,717.00	80.6
AZWC-J-12	1,530.39	96	1,718.65	81.5
AZWC-J-13	1,516.54	55	1,716.89	86.7
AZWC-J-14	1,511.49	55	1,716.86	88.9
AZWC-J-15	1,510.00	192	1,717.09	89.6
AZWC-J-16	1,510.00	96	1,717.38	89.7
AZWC-J-17	1,498.95	55	1,716.90	94.3
AZWC-J-18	1,496.42	55	1,716.87	95.4
J-1	1,518.46	0	1,709.23	82.5
J-2	1,524.42	0	1,709.57	80.1
J-3	1,534.31	0	1,709.53	75.8
J-4	1,536.36	28	1,709.31	74.8
J-5	1,511.94	0	1,708.70	85.1
J-6	1,496.19	0	1,708.63	91.9
J-7	1,487.97	0	1,708.40	95.4
J-8	1,482.10	0	1,708.39	97.9
J-9	1,489.31	0	1,708.40	94.8
J-10	1,498.18	0	1,708.49	91.0
J-11	1,505.45	0	1,708.73	87.9
J-12	1,528.22	0	1,708.84	78.1
J-13	1,541.89	0	1,708.75	72.2
J-14	1,551.18	0	1,708.75	68.2
J-15	1,555.10	192	1,708.77	66.5
J-16	1,547.57	14	1,708.94	69.8
J-17	1,539.63	0	1,709.09	73.3
J-18	1,536.04	0	1,708.77	74.7
J-19	1,531.88	0	1,708.85	76.6
J-20	1,525.85	0	1,709.19	79.3
J-21	1,509.31	0	1,709.16	86.5
J-22	1,500.29	14	1,709.17	90.4
J-23	1,507.70	0	1,709.15	87.2
J-24	1,478.32	0	1,708.73	99.7
J-25	1,468.56	0	1,708.66	103.9
J-26	1,470.59	0	1,708.37	102.9
J-27	1,491.65	149	1,708.33	93.7
J-28	1,494.43	149	1,708.34	92.5
J-29	1,504.84	0	1,708.49	88.1
J-30	1,509.95	149	1,708.52	85.9

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-31	1,506.31	149	1,708.34	87.4
J-32	1,510.99	149	1,708.44	85.4
J-33	1,517.93	149	1,708.62	82.5
J-34	1,523.42	149	1,708.89	80.2
J-35	1,500.26	0	1,708.53	90.1
J-36	1,519.89	0	1,708.69	81.7
J-37	1,497.84	0	1,708.33	91.1
J-38	1,508.75	0	1,708.34	86.4
J-39	1,509.06	192	1,708.62	86.3
J-40	1,519.34	0	1,709.22	82.2
J-41	1,493.31	0	1,708.55	93.1
J-42	1,520.78	0	1,708.89	81.4
J-43	1,528.04	192	1,708.83	78.2
J-44	1,539.15	192	1,708.92	73.5
J-45	1,525.42	0	1,709.11	79.5
J-46	1,536.25	192	1,708.98	74.7
J-47	1,523.18	0	1,708.99	80.4
J-48	1,543.23	0	1,708.76	71.6
J-49	1,544.66	192	1,708.75	71.0
J-50	1,550.01	0	1,708.76	68.7
J-51	1,551.30	0	1,708.75	68.1
J-52	1,541.61	0	1,708.76	72.3
J-53	1,482.08	149	1,708.24	97.8
J-54	1,476.49	0	1,708.37	100.3
J-55	1,480.56	0	1,708.41	98.6
J-56	1,481.69	149	1,708.23	98.0
J-57	1,483.32	0	1,708.30	97.3
J-58	1,478.32	0	1,708.33	99.5
J-59	1,473.68	0	1,708.37	101.5
J-60	1,475.18	0	1,708.32	100.9
J-61	1,474.72	149	1,708.25	101.0
J-62	1,493.15	149	1,708.24	93.1
J-63	1,494.82	149	1,708.30	92.4
J-64	1,489.78	0	1,708.30	94.5
J-65	1,486.52	149	1,708.41	96.0
J-66	1,484.90	0	1,708.77	96.9
J-67	1,492.33	0	1,708.44	93.5
J-68	1,498.85	149	1,708.49	90.7
J-69	1,504.49	0	1,708.51	88.3
J-70	1,496.77	149	1,708.25	91.5
J-71	1,492.39	149	1,708.24	93.4
J-72	1,489.15	149	1,708.23	94.8
J-73	1,526.88	0	1,708.73	78.7
J-74	1,522.81	192	1,708.57	80.4
J-75	1,517.39	192	1,708.57	82.7
J-76	1,513.14	192	1,708.74	84.6
J-77	1,518.58	192	1,708.57	82.2
J-78	1,525.14	192	1,708.60	79.4

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-79	1,521.50	0	1,708.71	81.0
J-80	1,521.52	0	1,708.97	81.1
J-81	1,507.88	0	1,708.87	87.0
J-82	1,511.68	192	1,708.73	85.3
J-83	1,530.12	192	1,708.63	77.2
J-84	1,534.97	0	1,708.65	75.1
J-85	1,520.43	0	1,708.73	81.5
J-86	1,512.42	0	1,708.75	84.9
J-87	1,519.02	0	1,708.76	82.1
J-88	1,543.79	211	1,709.44	71.7
J-89	1,561.51	211	1,710.00	64.2
J-90	1,553.44	0	1,708.76	67.2
J-91	1,501.89	0	1,709.16	89.7
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,709.17	84.6
J-94	1,544.69	28	1,708.75	71.0
J-95	1,552.90	0	1,708.89	67.5
J-200	1,496.00	309	1,709.37	92.3
J-201	1,488.00	489	1,710.00	96.0
J-202	1,470.66	489	1,709.47	103.3
J-203	1,458.00	489	1,708.73	108.5
J-204	1,453.24	0	1,708.72	110.5
J-205	1,458.56	0	1,708.68	108.2
J-206	1,496.31	489	1,709.32	92.2
J-207	1,517.23	496	1,709.09	83.0
J-208	1,519.99	316	1,709.09	81.8
J-209	1,504.30	309	1,709.12	88.6
J-210	1,475.66	309	1,708.81	100.9
J-211	1,463.36	309	1,708.56	106.1
J-212	1,454.56	125	1,708.82	110.0
J-213	1,466.18	125	1,709.25	105.2
J-214	1,480.99	125	1,709.56	98.9
J-215	1,494.36	125	1,709.24	93.0
J-216	1,510.97	180	1,709.01	85.7
J-217	1,559.60	253	1,709.43	64.8
J-218	1,554.84	253	1,709.08	66.7
J-219	1,549.95	253	1,708.67	68.7
J-220	1,529.45	253	1,708.77	77.6
J-221	1,536.00	253	1,709.11	74.9
J-222	1,536.00	260	1,709.07	74.9
J-223	1,563.53	260	1,709.10	63.0
J-224	1,560.58	253	1,708.79	64.1
J-225	1,550.03	211	1,708.69	68.6
J-226	1,551.62	211	1,708.66	67.9
J-227	1,546.70	211	1,708.75	70.1
J-228	1,534.99	113	1,709.02	75.3
J-229	1,550.60	73	1,708.92	68.5
J-230	1,544.78	113	1,708.98	71.0

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-231	1,539.83	73	1,708.98	73.2
J-232	1,550.00	34	1,708.98	68.8
J-233	1,547.13	0	1,708.98	70.0
J-ELS	1,456.01	1	1,708.70	109.3

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
AZWC-P-1	1,622	12.0	120	AZWC-J-18	AZWC-J-17	70	0.20	0.022
AZWC-P-2	2,123	12.0	120	AZWC-J-17	AZWC-J-15	152	0.43	0.090
AZWC-P-3	3,095	16.0	120	AZWC-J-4	AZWC-J-11	34	0.05	0.001
AZWC-P-4	2,970	16.0	120	AZWC-J-11	AZWC-J-15	179	0.29	0.030
AZWC-P-5	2,054	12.0	120	AZWC-J-13	AZWC-J-11	116	0.33	0.054
AZWC-P-6	2,990	12.0	120	AZWC-J-17	AZWC-J-13	27	0.08	0.004
AZWC-P-7	1,705	12.0	120	AZWC-J-14	AZWC-J-13	60	0.17	0.016
AZWC-P-8	2,436	16.0	120	AZWC-J-4	AZWC-J-1	282	0.45	0.069
AZWC-P-9	3,055	16.0	120	AZWC-J-8	AZWC-J-3	434	0.69	0.155
AZWC-P-10	1,316	16.0	120	AZWC-J-15	AZWC-J-16	523	0.84	0.218
AZWC-P-11	2,912	16.0	120	AZWC-J-16	AZWC-J-12	762	1.22	0.438
AZWC-P-12	2,013	16.0	120	AZWC-J-12	AZWC-J-8	958	1.53	0.669
AZWC-P-13	2,178	12.0	120	AZWC-J-1	AZWC-J-2	425	1.21	0.603
AZWC-P-14	2,649	12.0	120	AZWC-J-2	AZWC-J-3	339	0.96	0.396
AZWC-P-15	1,502	12.0	120	AZWC-J-5	AZWC-J-7	33	0.09	0.005
AZWC-P-16	2,991	12.0	120	AZWC-J-16	AZWC-J-7	143	0.41	0.080
AZWC-P-17	1,931	12.0	120	AZWC-J-5	AZWC-J-1	47	0.13	0.010
AZWC-P-18	2,422	12.0	120	AZWC-J-6	AZWC-J-2	86	0.24	0.031
AZWC-P-19	2,346	12.0	120	AZWC-J-6	AZWC-J-12	100	0.28	0.042
AZWC-P-20	1,354	12.0	120	AZWC-J-11	AZWC-J-7	162	0.46	0.101
AZWC-P-21	2,644	12.0	120	AZWC-J-18	AZWC-J-14	15	0.04	0.001
AZWC-P-22	3,404	12.0	120	AZWC-J-14	AZWC-J-9	20	0.06	0.002
AZWC-P-23	1,779	12.0	120	AZWC-J-9	AZWC-J-10	54	0.15	0.013
AZWC-P-24	3,067	12.0	120	AZWC-J-10	AZWC-J-13	27	0.08	0.004
AZWC-P-25	1,946	12.0	120	AZWC-J-10	AZWC-J-4	123	0.35	0.061
P-1	1,337	24.0	120	J-1	J-2	1,639	1.16	0.251
P-2	1,236	24.0	120	J-3	J-4	1,378	0.98	0.182
P-3	2,654	16.0	120	J-5	J-6	165	0.26	0.026
P-4	2,643	12.0	120	J-7	J-8	29	0.08	0.004
P-5	1,373	16.0	120	J-8	J-9	49	0.08	0.003
P-6	1,371	16.0	120	J-10	J-11	468	0.75	0.177
P-7	1,867	16.0	120	J-9	J-10	232	0.37	0.049
P-7	1,712	16.0	120	J-11	J-1	614	0.98	0.294
P-8	1,252	16.0	120	J-16	J-17	379	0.60	0.120
P-9	1,335	16.0	120	J-17	J-4	442	0.71	0.160
P-10	1,872	16.0	120	J-13	J-18	92	0.15	0.009
P-11	817	16.0	120	J-18	J-19	341	0.54	0.098
P-12	2,582	16.0	120	J-19	J-20	401	0.64	0.133
P-13	2,636	24.0	120	J-22	J-23	215	0.15	0.006
P-14	2,640	24.0	120	J-23	J-1	529	0.38	0.031
P-15	2,850	16.0	120	J-24	J-25	163	0.26	0.025
P-16	1,880	12.0	120	J-25	J-26	202	0.57	0.152
P-17	1,357	12.0	120	J-9	J-27	110	0.31	0.049
P-18	1,167	12.0	120	J-27	J-28	32	0.09	0.005
P-19	1,813	8.0	120	J-28	J-29	52	0.33	0.088
P-20	781	8.0	120	J-29	J-30	28	0.18	0.028
P-21	997	12.0	120	J-30	J-5	224	0.64	0.184

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-22	1,324	12.0	120	J-7	J-28	113	0.32	0.051
P-23	2,040	12.0	120	J-28	J-31	16	0.05	0.001
P-24	935	12.0	120	J-31	J-32	172	0.49	0.113
P-25	1,071	12.0	120	J-32	J-33	213	0.60	0.168
P-26	757	12.0	120	J-33	J-34	319	0.91	0.355
P-27	888	12.0	120	J-34	J-3	468	1.33	0.720
P-28	1,587	8.0	120	J-29	J-35	24	0.15	0.021
P-29	1,506	8.0	120	J-30	J-36	60	0.39	0.117
P-30	1,149	8.0	120	J-36	J-33	43	0.27	0.061
P-31	1,110	8.0	120	J-27	J-37	7	0.05	0.002
P-32	1,560	8.0	120	J-37	J-38	7	0.05	0.002
P-33	895	8.0	120	J-38	J-31	7	0.05	0.002
P-34	783	8.0	120	J-11	J-39	68	0.43	0.146
P-35	1,356	8.0	120	J-39	J-40	124	0.79	0.443
P-36	792	8.0	120	J-40	J-2	124	0.79	0.443
P-37	807	12.0	120	J-6	J-41	165	0.47	0.105
P-38	1,833	12.0	120	J-41	J-7	142	0.40	0.079
P-39	949	8.0	120	J-35	J-41	24	0.15	0.021
P-40	2,155	16.0	120	J-4	J-42	492	0.79	0.195
P-41	1,477	16.0	120	J-42	J-5	389	0.62	0.126
P-42	614	8.0	120	J-36	J-42	103	0.66	0.314
P-43	1,556	12.0	120	J-32	J-30	108	0.31	0.047
P-44	689	12.0	120	J-12	J-43	43	0.12	0.008
P-45	1,946	12.0	120	J-43	J-44	105	0.30	0.045
P-46	2,073	8.0	120	J-44	J-45	54	0.34	0.094
P-47	969	8.0	120	J-45	J-2	128	0.82	0.469
P-48	1,168	8.0	120	J-3	J-46	129	0.82	0.475
P-49	911	8.0	120	J-46	J-17	63	0.40	0.128
P-50	742	8.0	120	J-45	J-47	74	0.47	0.171
P-51	921	8.0	120	J-47	J-43	74	0.47	0.171
P-52	2,082	8.0	120	J-43	J-48	30	0.19	0.032
P-53	1,325	8.0	120	J-48	J-49	16	0.10	0.010
P-54	1,465	12.0	120	J-49	J-44	173	0.49	0.114
P-55	1,495	12.0	120	J-49	J-14	15	0.04	0.001
P-56	743	8.0	120	J-49	J-50	18	0.11	0.012
P-57	1,129	8.0	120	J-50	J-15	18	0.11	0.012
P-58	931	16.0	120	J-51	J-14	14	0.02	0.000
P-59	1,264	8.0	120	J-48	J-51	17	0.11	0.012
P-60	2,202	16.0	120	J-12	J-52	188	0.30	0.033
P-61	885	16.0	120	J-52	J-94	139	0.22	0.019
P-62	840	8.0	120	J-48	J-52	3	0.02	0.000
P-63	906	8.0	120	J-9	J-53	74	0.47	0.169
P-64	910	12.0	120	J-54	J-8	78	0.22	0.026
P-65	721	8.0	120	J-53	J-54	75	0.48	0.175
P-66	983	8.0	120	J-24	J-55	105	0.67	0.324
P-67	1,333	8.0	120	J-55	J-56	65	0.41	0.134
P-68	1,116	8.0	120	J-56	J-57	42	0.26	0.058

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-69	729	8.0	120	J-57	J-58	35	0.22	0.042
P-70	857	12.0	120	J-26	J-59	31	0.09	0.005
P-71	1,622	12.0	120	J-59	J-54	3	0.01	0.000
P-72	936	8.0	120	J-58	J-59	35	0.22	0.042
P-73	1,459	8.0	120	J-55	J-60	43	0.27	0.061
P-74	1,114	8.0	120	J-60	J-61	43	0.27	0.061
P-75	1,054	12.0	120	J-61	J-26	171	0.48	0.112
P-76	1,140	12.0	120	J-61	J-56	65	0.18	0.019
P-77	855	12.0	120	J-62	J-63	139	0.39	0.076
P-78	905	12.0	120	J-63	J-10	236	0.67	0.202
P-79	831	8.0	120	J-63	J-64	7	0.04	0.002
P-80	1,177	8.0	120	J-64	J-57	7	0.04	0.002
P-81	1,245	8.0	120	J-55	J-65	3	0.02	0.000
P-82	2,151	16.0	120	J-22	J-66	480	0.77	0.186
P-83	1,176	16.0	120	J-66	J-24	179	0.29	0.030
P-84	1,113	12.0	120	J-65	J-66	301	0.85	0.318
P-85	1,034	8.0	120	J-65	J-67	28	0.18	0.028
P-86	1,662	8.0	120	J-67	J-68	28	0.18	0.028
P-87	1,161	12.0	120	J-68	J-23	413	1.17	0.571
P-88	1,359	8.0	120	J-68	J-69	20	0.13	0.015
P-89	1,832	8.0	120	J-69	J-63	59	0.38	0.112
P-90	1,005	12.0	120	J-68	J-70	256	0.73	0.236
P-91	573	12.0	120	J-70	J-62	69	0.20	0.021
P-92	1,409	12.0	120	J-65	J-71	177	0.50	0.119
P-93	1,201	12.0	120	J-56	J-72	23	0.06	0.003
P-94	503	12.0	120	J-72	J-62	59	0.17	0.016
P-95	736	12.0	120	J-71	J-72	67	0.19	0.020
P-96	718	12.0	120	J-71	J-70	39	0.11	0.007
P-97	1,047	8.0	120	J-19	J-73	60	0.38	0.117
P-98	1,393	12.0	120	J-83	J-74	99	0.28	0.040
P-99	903	12.0	120	J-74	J-75	13	0.04	0.001
P-100	1,063	12.0	120	J-21	J-76	340	0.96	0.398
P-101	1,185	12.0	120	J-76	J-77	192	0.55	0.139
P-102	939	12.0	120	J-77	J-74	0	0.00	0.000
P-103	1,124	12.0	120	J-74	J-78	80	0.23	0.027
P-104	1,019	8.0	120	J-78	J-79	56	0.36	0.102
P-105	1,354	16.0	120	J-1	J-80	495	0.79	0.197
P-106	894	16.0	120	J-80	J-12	421	0.67	0.145
P-107	1,486	8.0	120	J-76	J-81	52	0.33	0.090
P-108	1,004	12.0	120	J-75	J-82	205	0.58	0.157
P-109	1,106	12.0	120	J-82	J-23	331	0.94	0.379
P-110	1,868	8.0	120	J-81	J-82	48	0.30	0.075
P-111	1,711	12.0	120	J-78	J-12	190	0.54	0.136
P-112	675	8.0	120	J-73	J-83	68	0.44	0.147
P-113	1,008	8.0	120	J-83	J-84	21	0.13	0.016
P-114	1,673	8.0	120	J-84	J-52	46	0.29	0.071
P-115	1,776	8.0	120	J-78	J-84	25	0.16	0.024

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-116	1,656	8.0	120	J-73	J-85	8	0.05	0.003
P-117	1,568	8.0	120	J-85	J-76	8	0.05	0.003
P-118	1,542	8.0	120	J-82	J-86	19	0.12	0.013
P-119	532	8.0	120	J-79	J-87	56	0.36	0.102
P-120	1,177	8.0	120	J-87	J-80	75	0.48	0.173
P-121	801	8.0	120	J-86	J-87	19	0.12	0.013
P-122	931	12.0	120	J-83	J-18	201	0.57	0.151
P-123	2,664	24.0	120	J-20	J-88	946	0.67	0.091
P-124	2,422	24.0	120	J-88	J-89	1,574	1.12	0.233
P-125	839	16.0	120	J-14	J-90	115	0.18	0.013
P-126	1,077	16.0	120	J-90	J-15	115	0.18	0.013
P-128	1,309	24.0	120	J-21	J-91	64	0.05	0.001
P-129	1,332	24.0	120	J-91	J-22	164	0.12	0.003
P-130	974	8.0	120	J-81	J-91	100	0.64	0.298
P-133	1,322	24.0	120	J-2	J-92	1,891	1.34	0.327
P-134	1,322	24.0	120	J-92	J-3	1,974	1.40	0.354
P-135	1,774	24.0	120	J-20	J-93	336	0.24	0.013
P-136	778	24.0	120	J-93	J-21	336	0.24	0.013
P-137	786	16.0	120	J-13	J-94	92	0.15	0.009
P-138	1,159	16.0	120	J-94	J-51	31	0.05	0.001
P-139	2,314	12.0	120	J-44	J-16	48	0.14	0.011
P-140	1,166	8.0	120	J-11	J-69	79	0.50	0.190
P-141	890	16.0	120	J-95	J-16	268	0.43	0.063
P-142	1,256	16.0	120	J-15	J-95	324	0.52	0.090
P-143	2,336	12.0	120	J-44	J-92	369	1.05	0.463
P-200	2,335	24.0	120	J-201	J-202	1,550	1.10	0.226
P-201	2,336	16.0	120	J-202	J-203	641	1.02	0.318
P-202	1,418	16.0	120	J-203	J-204	64	0.10	0.004
P-204	2,317	12.0	120	J-205	J-25	39	0.11	0.007
P-205	2,640	24.0	120	J-201	J-206	1,657	1.18	0.256
P-206	2,639	24.0	120	J-206	J-207	934	0.66	0.088
P-207	2,567	12.0	120	J-208	J-209	49	0.14	0.011
P-208	2,713	12.0	120	J-209	J-200	157	0.44	0.095
P-209	2,452	12.0	120	J-210	J-24	88	0.25	0.033
P-210	2,672	24.0	120	J-22	J-200	873	0.62	0.078
P-211	2,633	12.0	120	J-209	J-21	61	0.17	0.016
P-212	2,662	16.0	120	J-208	J-20	208	0.33	0.040
P-213	2,706	12.0	120	J-202	J-210	261	0.74	0.244
P-214	1,265	12.0	120	J-203	J-211	186	0.53	0.131
P-215	1,876	12.0	120	J-211	J-205	122	0.35	0.060
P-216	2,801	12.0	120	J-200	J-210	235	0.67	0.201
P-217	2,687	24.0	120	J-200	J-201	1,573	1.12	0.232
P-218	2,651	12.0	120	J-206	J-209	141	0.40	0.078
P-219	2,641	16.0	120	J-207	J-208	16	0.03	0.000
P-220	2,285	12.0	120	J-203	J-212	99	0.28	0.040
P-221	2,358	12.0	120	J-212	J-213	223	0.63	0.183
P-222	2,276	12.0	120	J-213	J-214	189	0.54	0.135

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-223	2,646	12.0	120	J-214	J-215	178	0.51	0.120
P-224	2,674	12.0	120	J-215	J-216	147	0.42	0.084
P-225	2,288	16.0	120	J-216	J-207	188	0.30	0.033
P-226	2,254	12.0	120	J-213	J-202	159	0.45	0.097
P-227	2,266	16.0	120	J-214	J-201	492	0.78	0.195
P-228	2,289	12.0	120	J-206	J-215	93	0.27	0.036
P-229	2,627	24.0	120	J-222	J-207	233	0.17	0.007
P-230	2,665	12.0	120	J-219	J-220	92	0.26	0.035
P-231	2,652	12.0	120	J-220	J-216	155	0.44	0.093
P-232	2,707	12.0	120	J-221	J-222	56	0.16	0.014
P-233	2,657	24.0	120	J-218	J-222	161	0.11	0.003
P-234	2,252	12.0	120	J-220	J-222	190	0.54	0.135
P-235	2,583	12.0	120	J-221	J-88	183	0.52	0.126
P-236	2,638	24.0	120	J-89	J-217	1,510	1.07	0.216
P-237	2,620	12.0	120	J-208	J-221	42	0.12	0.008
P-238	2,942	12.0	120	J-221	J-217	169	0.48	0.109
P-239	2,825	24.0	120	J-217	J-223	1,088	0.77	0.118
P-240	1,107	12.0	120	J-224	J-219	162	0.46	0.101
P-241	903	24.0	120	J-223	J-218	414	0.29	0.020
P-242	2,212	16.0	120	J-223	J-224	415	0.66	0.142
P-243	1,160	16.0	120	J-225	J-94	234	0.37	0.049
P-244	3,411	12.0	120	J-88	J-227	235	0.67	0.201
P-245	2,726	12.0	120	J-227	J-225	72	0.20	0.022
P-246	855	12.0	120	J-225	J-226	95	0.27	0.038
P-247	1,678	12.0	120	J-226	J-14	116	0.33	0.054
P-248	1,900	12.0	120	J-18	J-227	47	0.13	0.010
P-249	2,011	16.0	120	J-4	J-228	415	0.66	0.142
P-250	1,945	12.0	120	J-16	J-229	49	0.14	0.011
P-251	1,597	16.0	120	J-228	J-230	157	0.25	0.024
P-253	1,930	12.0	120	J-229	J-231	81	0.23	0.028
P-254	558	12.0	120	J-231	J-228	144	0.41	0.082
P-255	842	16.0	120	J-230	J-232	37	0.06	0.002
P-256	552	8.0	120	J-230	J-233	7	0.05	0.003
P-257	1,595	8.0	120	J-233	J-231	10	0.06	0.004
P-258	330	12.0	120	J-232	J-233	2	0.01	0.000
P-259	1,600	12.0	120	J-ELS	J-205	63	0.18	0.017
P-260	1,038	12.0	120	J-204	J-ELS	64	0.18	0.018
P-261	3,327	12.0	120	J-210	J-205	99	0.28	0.041
P-262	2,378	12.0	120	J-95	J-229	57	0.16	0.014
P-500	679	48.0	120	R-1	J-92	4,234	0.75	0.048
P-501	600	48.0	120	R-2	FCV-2	3,295	0.58	0.024
P-502	566	48.0	120	FCV-2	J-89	3,295	0.58	0.049
P-503	604	48.0	120	R-3	FCV-3	5,760	1.02	0.098
P-504	604	48.0	120	FCV-3	J-201	5,760	1.02	0.073
P-505	861	48.0	120	R-AZWC	AZWC-J-8	1,489	0.26	0.012

Label	Elevation (ft)	Diameter (Valve) (in)	Flow Setting (Initial) (gpm)	Minor Loss Coefficient (Local)	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
FCV-2	1,561.51	48.0	10,410	0.0000000	3,295	1,710.00	1,710.00	0.00
FCV-3	1,488.00	48.0	14,413	0.0000000	5,760	1,710.00	1,710.00	0.00

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	4,234	1,710.00
R-2	1,710.00	3,295	1,710.00
R-3	1,710.00	5,760	1,710.00
R-AZWC	1,720.00	1,489	1,720.00

SITE
MAXIMUM DAY DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
AZWC-J-1	1,565.65	177	1,711.85	63.3
AZWC-J-2	1,566.00	0	1,715.63	64.7
AZWC-J-3	1,562.39	177	1,718.62	67.6
AZWC-J-4	1,549.27	351	1,711.35	70.1
AZWC-J-5	1,549.29	14	1,711.80	70.3
AZWC-J-6	1,550.00	14	1,715.86	71.8
AZWC-J-7	1,540.00	14	1,711.78	74.3
AZWC-J-8	1,540.19	177	1,720.00	77.8
AZWC-J-9	1,532.76	130	1,710.97	77.1
AZWC-J-10	1,532.13	173	1,711.03	77.4
AZWC-J-11	1,530.66	351	1,711.37	78.2
AZWC-J-12	1,530.39	177	1,716.12	80.4
AZWC-J-13	1,516.54	91	1,711.07	84.2
AZWC-J-14	1,511.49	91	1,711.00	86.3
AZWC-J-15	1,510.00	351	1,711.62	87.2
AZWC-J-16	1,510.00	177	1,712.44	87.6
AZWC-J-17	1,498.95	91	1,711.10	91.8
AZWC-J-18	1,496.42	91	1,711.01	92.8
J-1	1,518.46	0	1,707.63	81.8
J-2	1,524.42	0	1,708.66	79.7
J-3	1,534.31	0	1,708.57	75.4
J-4	1,536.36	56	1,707.88	74.2
J-5	1,511.94	0	1,706.00	84.0
J-6	1,496.19	0	1,705.79	90.7
J-7	1,487.97	0	1,705.07	93.9
J-8	1,482.10	0	1,705.03	96.5
J-9	1,489.31	0	1,705.05	93.3
J-10	1,498.18	0	1,705.32	89.6
J-11	1,505.45	0	1,706.07	86.8
J-12	1,528.22	0	1,706.42	77.1
J-13	1,541.89	0	1,706.18	71.1
J-14	1,551.18	0	1,706.16	67.1
J-15	1,555.10	354	1,706.24	65.4
J-16	1,547.57	28	1,706.77	68.9
J-17	1,539.63	0	1,707.23	72.5
J-18	1,536.04	0	1,706.22	73.6
J-19	1,531.88	0	1,706.46	75.5
J-20	1,525.85	0	1,707.51	78.6
J-21	1,509.31	0	1,707.40	85.7
J-22	1,500.29	28	1,707.42	89.6
J-23	1,507.70	0	1,707.37	86.4
J-24	1,478.32	0	1,706.05	98.5
J-25	1,468.56	0	1,705.82	102.7
J-26	1,470.59	0	1,704.97	101.4
J-27	1,491.65	273	1,704.85	92.2
J-28	1,494.43	273	1,704.86	91.0
J-29	1,504.84	0	1,705.36	86.8
J-30	1,509.95	273	1,705.43	84.6

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-31	1,506.31	273	1,704.87	85.9
J-32	1,510.99	273	1,705.20	84.0
J-33	1,517.93	273	1,705.76	81.3
J-34	1,523.42	273	1,706.59	79.2
J-35	1,500.26	0	1,705.46	88.8
J-36	1,519.89	0	1,705.98	80.5
J-37	1,497.84	0	1,704.85	89.6
J-38	1,508.75	0	1,704.87	84.8
J-39	1,509.06	354	1,705.72	85.1
J-40	1,519.34	0	1,707.58	81.4
J-41	1,493.31	0	1,705.52	91.8
J-42	1,520.78	0	1,706.58	80.4
J-43	1,528.04	354	1,706.40	77.2
J-44	1,539.15	354	1,706.68	72.5
J-45	1,525.42	0	1,707.27	78.7
J-46	1,536.25	354	1,706.86	73.8
J-47	1,523.18	0	1,706.89	79.5
J-48	1,543.23	0	1,706.20	70.5
J-49	1,544.66	354	1,706.17	69.9
J-50	1,550.01	0	1,706.20	67.6
J-51	1,551.30	0	1,706.16	67.0
J-52	1,541.61	0	1,706.20	71.2
J-53	1,482.08	273	1,704.57	96.3
J-54	1,476.49	0	1,704.96	98.8
J-55	1,480.56	0	1,705.08	97.1
J-56	1,481.69	273	1,704.54	96.4
J-57	1,483.32	0	1,704.74	95.8
J-58	1,478.32	0	1,704.84	98.0
J-59	1,473.68	0	1,704.96	100.1
J-60	1,475.18	0	1,704.81	99.4
J-61	1,474.72	273	1,704.60	99.5
J-62	1,493.15	273	1,704.56	91.5
J-63	1,494.82	273	1,704.76	90.8
J-64	1,489.78	0	1,704.75	93.0
J-65	1,486.52	273	1,705.09	94.6
J-66	1,484.90	0	1,706.17	95.7
J-67	1,492.33	0	1,705.18	92.1
J-68	1,498.85	273	1,705.32	89.3
J-69	1,504.49	0	1,705.39	86.9
J-70	1,496.77	273	1,704.59	89.9
J-71	1,492.39	273	1,704.58	91.8
J-72	1,489.15	273	1,704.53	93.2
J-73	1,526.88	0	1,706.08	77.5
J-74	1,522.81	354	1,705.59	79.1
J-75	1,517.39	354	1,705.60	81.4
J-76	1,513.14	354	1,706.10	83.5
J-77	1,518.58	354	1,705.59	80.9
J-78	1,525.14	354	1,705.69	78.1

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-79	1,521.50	0	1,706.01	79.8
J-80	1,521.52	0	1,706.81	80.2
J-81	1,507.88	0	1,706.51	85.9
J-82	1,511.68	354	1,706.08	84.1
J-83	1,530.12	354	1,705.77	76.0
J-84	1,534.97	0	1,705.83	73.9
J-85	1,520.43	0	1,706.09	80.3
J-86	1,512.42	0	1,706.14	83.8
J-87	1,519.02	0	1,706.18	81.0
J-88	1,543.79	378	1,708.26	71.2
J-89	1,561.51	378	1,710.00	64.2
J-90	1,553.44	0	1,706.20	66.1
J-91	1,501.89	0	1,707.40	88.9
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,707.43	83.8
J-94	1,544.69	56	1,706.16	69.9
J-95	1,552.90	0	1,706.60	66.5
J-200	1,496.00	576	1,708.06	91.7
J-201	1,488.00	917	1,710.00	96.0
J-202	1,470.66	917	1,708.34	102.8
J-203	1,458.00	917	1,706.01	107.3
J-204	1,453.24	0	1,705.99	109.4
J-205	1,458.56	0	1,705.86	107.0
J-206	1,496.31	917	1,707.89	91.5
J-207	1,517.23	931	1,707.17	82.2
J-208	1,519.99	590	1,707.17	81.0
J-209	1,504.30	576	1,707.25	87.8
J-210	1,475.66	576	1,706.29	99.8
J-211	1,463.36	576	1,705.49	104.8
J-212	1,454.56	230	1,706.30	108.9
J-213	1,466.18	230	1,707.66	104.5
J-214	1,480.99	230	1,708.62	98.5
J-215	1,494.36	230	1,707.63	92.3
J-216	1,510.97	341	1,706.93	84.8
J-217	1,559.60	462	1,708.24	64.3
J-218	1,554.84	462	1,707.15	65.9
J-219	1,549.95	462	1,705.91	67.5
J-220	1,529.45	462	1,706.19	76.5
J-221	1,536.00	462	1,707.24	74.1
J-222	1,536.00	476	1,707.12	74.0
J-223	1,563.53	476	1,707.21	62.2
J-224	1,560.58	462	1,706.25	63.0
J-225	1,550.03	378	1,705.99	67.5
J-226	1,551.62	378	1,705.89	66.7
J-227	1,546.70	378	1,706.17	69.0
J-228	1,534.99	201	1,707.04	74.4
J-229	1,550.60	121	1,706.72	67.5
J-230	1,544.78	201	1,706.93	70.2

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-231	1,539.83	121	1,706.91	72.3
J-232	1,550.00	62	1,706.93	67.9
J-233	1,547.13	0	1,706.93	69.1
J-ELS	1,456.01	1	1,705.94	108.1

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
AZWC-P-1	1,622	12.0	120	AZWC-J-18	AZWC-J-17	120	0.34	0.058
AZWC-P-2	2,123	12.0	120	AZWC-J-17	AZWC-J-15	260	0.74	0.243
AZWC-P-3	3,095	16.0	120	AZWC-J-4	AZWC-J-11	60	0.10	0.004
AZWC-P-4	2,970	16.0	120	AZWC-J-11	AZWC-J-15	314	0.50	0.085
AZWC-P-5	2,054	12.0	120	AZWC-J-13	AZWC-J-11	196	0.56	0.144
AZWC-P-6	2,990	12.0	120	AZWC-J-17	AZWC-J-13	49	0.14	0.011
AZWC-P-7	1,705	12.0	120	AZWC-J-14	AZWC-J-13	102	0.29	0.043
AZWC-P-8	2,436	16.0	120	AZWC-J-4	AZWC-J-1	502	0.80	0.202
AZWC-P-9	3,055	16.0	120	AZWC-J-8	AZWC-J-3	774	1.24	0.451
AZWC-P-10	1,316	16.0	120	AZWC-J-15	AZWC-J-16	925	1.48	0.626
AZWC-P-11	2,912	16.0	120	AZWC-J-16	AZWC-J-12	1,350	2.15	1.262
AZWC-P-12	2,013	16.0	120	AZWC-J-12	AZWC-J-8	1,698	2.71	1.929
AZWC-P-13	2,178	12.0	120	AZWC-J-1	AZWC-J-2	753	2.14	1.737
AZWC-P-14	2,649	12.0	120	AZWC-J-2	AZWC-J-3	597	1.69	1.130
AZWC-P-15	1,502	12.0	120	AZWC-J-5	AZWC-J-7	59	0.17	0.016
AZWC-P-16	2,991	12.0	120	AZWC-J-16	AZWC-J-7	248	0.70	0.222
AZWC-P-17	1,931	12.0	120	AZWC-J-5	AZWC-J-1	74	0.21	0.023
AZWC-P-18	2,422	12.0	120	AZWC-J-6	AZWC-J-2	156	0.44	0.094
AZWC-P-19	2,346	12.0	120	AZWC-J-6	AZWC-J-12	170	0.48	0.111
AZWC-P-20	1,354	12.0	120	AZWC-J-11	AZWC-J-7	293	0.83	0.303
AZWC-P-21	2,644	12.0	120	AZWC-J-18	AZWC-J-14	29	0.08	0.004
AZWC-P-22	3,404	12.0	120	AZWC-J-14	AZWC-J-9	40	0.11	0.007
AZWC-P-23	1,779	12.0	120	AZWC-J-9	AZWC-J-10	90	0.26	0.034
AZWC-P-24	3,067	12.0	120	AZWC-J-10	AZWC-J-13	52	0.15	0.012
AZWC-P-25	1,946	12.0	120	AZWC-J-10	AZWC-J-4	211	0.60	0.165
P-1	1,337	24.0	120	J-1	J-2	3,015	2.14	0.776
P-2	1,236	24.0	120	J-3	J-4	2,516	1.78	0.555
P-3	2,654	16.0	120	J-5	J-6	305	0.49	0.080
P-4	2,643	12.0	120	J-7	J-8	57	0.16	0.014
P-5	1,373	16.0	120	J-8	J-9	91	0.15	0.009
P-6	1,371	16.0	120	J-10	J-11	859	1.37	0.547
P-7	1,867	16.0	120	J-9	J-10	426	0.68	0.149
P-7	1,712	16.0	120	J-11	J-1	1,130	1.80	0.907
P-8	1,252	16.0	120	J-16	J-17	691	1.10	0.365
P-9	1,335	16.0	120	J-17	J-4	809	1.29	0.489
P-10	1,872	16.0	120	J-13	J-18	162	0.26	0.025
P-11	817	16.0	120	J-18	J-19	618	0.99	0.297
P-12	2,582	16.0	120	J-19	J-20	730	1.16	0.404
P-13	2,636	24.0	120	J-22	J-23	386	0.27	0.017
P-14	2,640	24.0	120	J-23	J-1	981	0.70	0.097
P-15	2,850	16.0	120	J-24	J-25	305	0.49	0.080
P-16	1,880	12.0	120	J-25	J-26	366	1.04	0.456
P-17	1,357	12.0	120	J-9	J-27	199	0.56	0.147
P-18	1,167	12.0	120	J-27	J-28	60	0.17	0.016
P-19	1,813	8.0	120	J-28	J-29	96	0.61	0.275
P-20	781	8.0	120	J-29	J-30	52	0.33	0.090
P-21	997	12.0	120	J-30	J-5	412	1.17	0.569

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-22	1,324	12.0	120	J-7	J-28	205	0.58	0.157
P-23	2,040	12.0	120	J-28	J-31	31	0.09	0.005
P-24	935	12.0	120	J-31	J-32	318	0.90	0.353
P-25	1,071	12.0	120	J-32	J-33	393	1.11	0.521
P-26	757	12.0	120	J-33	J-34	587	1.67	1.096
P-27	888	12.0	120	J-34	J-3	860	2.44	2.222
P-28	1,587	8.0	120	J-29	J-35	43	0.28	0.063
P-29	1,506	8.0	120	J-30	J-36	111	0.71	0.363
P-30	1,149	8.0	120	J-36	J-33	78	0.50	0.189
P-31	1,110	8.0	120	J-27	J-37	14	0.09	0.008
P-32	1,560	8.0	120	J-37	J-38	14	0.09	0.008
P-33	895	8.0	120	J-38	J-31	14	0.09	0.008
P-34	783	8.0	120	J-11	J-39	126	0.80	0.456
P-35	1,356	8.0	120	J-39	J-40	228	1.46	1.372
P-36	792	8.0	120	J-40	J-2	228	1.46	1.372
P-37	807	12.0	120	J-6	J-41	305	0.87	0.327
P-38	1,833	12.0	120	J-41	J-7	262	0.74	0.246
P-39	949	8.0	120	J-35	J-41	43	0.28	0.063
P-40	2,155	16.0	120	J-4	J-42	907	1.45	0.604
P-41	1,477	16.0	120	J-42	J-5	717	1.14	0.391
P-42	614	8.0	120	J-36	J-42	190	1.21	0.974
P-43	1,556	12.0	120	J-32	J-30	198	0.56	0.147
P-44	689	12.0	120	J-12	J-43	76	0.21	0.025
P-45	1,946	12.0	120	J-43	J-44	196	0.56	0.144
P-46	2,073	8.0	120	J-44	J-45	98	0.62	0.286
P-47	969	8.0	120	J-45	J-2	234	1.49	1.434
P-48	1,168	8.0	120	J-3	J-46	236	1.51	1.461
P-49	911	8.0	120	J-46	J-17	118	0.75	0.404
P-50	742	8.0	120	J-45	J-47	136	0.87	0.525
P-51	921	8.0	120	J-47	J-43	136	0.87	0.525
P-52	2,082	8.0	120	J-43	J-48	54	0.34	0.095
P-53	1,325	8.0	120	J-48	J-49	28	0.18	0.028
P-54	1,465	12.0	120	J-49	J-44	318	0.90	0.352
P-55	1,495	12.0	120	J-49	J-14	27	0.08	0.003
P-56	743	8.0	120	J-49	J-50	35	0.22	0.040
P-57	1,129	8.0	120	J-50	J-15	35	0.22	0.040
P-58	931	16.0	120	J-51	J-14	33	0.05	0.001
P-59	1,264	8.0	120	J-48	J-51	31	0.20	0.034
P-60	2,202	16.0	120	J-12	J-52	339	0.54	0.097
P-61	885	16.0	120	J-52	J-94	248	0.40	0.055
P-62	840	8.0	120	J-48	J-52	4	0.03	0.001
P-63	906	8.0	120	J-9	J-53	136	0.87	0.524
P-64	910	12.0	120	J-54	J-8	148	0.42	0.085
P-65	721	8.0	120	J-53	J-54	137	0.87	0.534
P-66	983	8.0	120	J-24	J-55	191	1.22	0.984
P-67	1,333	8.0	120	J-55	J-56	119	0.76	0.409
P-68	1,116	8.0	120	J-56	J-57	76	0.49	0.181

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-69	729	8.0	120	J-57	J-58	63	0.40	0.128
P-70	857	12.0	120	J-26	J-59	52	0.15	0.012
P-71	1,622	12.0	120	J-59	J-54	11	0.03	0.001
P-72	936	8.0	120	J-58	J-59	63	0.40	0.127
P-73	1,459	8.0	120	J-55	J-60	78	0.50	0.187
P-74	1,114	8.0	120	J-60	J-61	78	0.50	0.187
P-75	1,054	12.0	120	J-61	J-26	313	0.89	0.343
P-76	1,140	12.0	120	J-61	J-56	118	0.34	0.056
P-77	855	12.0	120	J-62	J-63	256	0.73	0.236
P-78	905	12.0	120	J-63	J-10	434	1.23	0.626
P-79	831	8.0	120	J-63	J-64	13	0.08	0.007
P-80	1,177	8.0	120	J-64	J-57	13	0.08	0.007
P-81	1,245	8.0	120	J-55	J-65	6	0.04	0.001
P-82	2,151	16.0	120	J-22	J-66	888	1.42	0.581
P-83	1,176	16.0	120	J-66	J-24	338	0.54	0.097
P-84	1,113	12.0	120	J-65	J-66	550	1.56	0.970
P-85	1,034	8.0	120	J-65	J-67	52	0.33	0.088
P-86	1,662	8.0	120	J-67	J-68	52	0.33	0.088
P-87	1,161	12.0	120	J-68	J-23	759	2.15	1.763
P-88	1,359	8.0	120	J-68	J-69	36	0.23	0.046
P-89	1,832	8.0	120	J-69	J-63	108	0.69	0.344
P-90	1,005	12.0	120	J-68	J-70	471	1.34	0.728
P-91	573	12.0	120	J-70	J-62	126	0.36	0.063
P-92	1,409	12.0	120	J-65	J-71	323	0.92	0.363
P-93	1,201	12.0	120	J-56	J-72	41	0.12	0.008
P-94	503	12.0	120	J-72	J-62	109	0.31	0.049
P-95	736	12.0	120	J-71	J-72	123	0.35	0.061
P-96	718	12.0	120	J-71	J-70	72	0.21	0.023
P-97	1,047	8.0	120	J-19	J-73	112	0.72	0.369
P-98	1,393	12.0	120	J-83	J-74	185	0.53	0.129
P-99	903	12.0	120	J-74	J-75	22	0.06	0.002
P-100	1,063	12.0	120	J-21	J-76	623	1.77	1.223
P-101	1,185	12.0	120	J-76	J-77	352	1.00	0.426
P-102	939	12.0	120	J-77	J-74	2	0.00	0.000
P-103	1,124	12.0	120	J-74	J-78	149	0.42	0.086
P-104	1,019	8.0	120	J-78	J-79	103	0.66	0.314
P-105	1,354	16.0	120	J-1	J-80	904	1.44	0.601
P-106	894	16.0	120	J-80	J-12	766	1.22	0.442
P-107	1,486	8.0	120	J-76	J-81	96	0.61	0.277
P-108	1,004	12.0	120	J-75	J-82	376	1.07	0.480
P-109	1,106	12.0	120	J-82	J-23	608	1.72	1.169
P-110	1,868	8.0	120	J-81	J-82	87	0.56	0.231
P-111	1,711	12.0	120	J-78	J-12	352	1.00	0.425
P-112	675	8.0	120	J-73	J-83	125	0.80	0.450
P-113	1,008	8.0	120	J-83	J-84	38	0.25	0.051
P-114	1,673	8.0	120	J-84	J-52	86	0.55	0.226
P-115	1,776	8.0	120	J-78	J-84	48	0.30	0.076

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-116	1,656	8.0	120	J-73	J-85	13	0.08	0.006
P-117	1,568	8.0	120	J-85	J-76	13	0.08	0.006
P-118	1,542	8.0	120	J-82	J-86	35	0.22	0.043
P-119	532	8.0	120	J-79	J-87	103	0.66	0.314
P-120	1,177	8.0	120	J-87	J-80	138	0.88	0.540
P-121	801	8.0	120	J-86	J-87	35	0.22	0.043
P-122	931	12.0	120	J-83	J-18	376	1.07	0.480
P-123	2,664	24.0	120	J-20	J-88	1,748	1.24	0.282
P-124	2,422	24.0	120	J-88	J-89	2,892	2.05	0.718
P-125	839	16.0	120	J-14	J-90	214	0.34	0.042
P-126	1,077	16.0	120	J-90	J-15	214	0.34	0.041
P-128	1,309	24.0	120	J-21	J-91	114	0.08	0.002
P-129	1,332	24.0	120	J-91	J-22	298	0.21	0.011
P-130	974	8.0	120	J-81	J-91	183	1.17	0.915
P-133	1,322	24.0	120	J-2	J-92	3,477	2.47	1.010
P-134	1,322	24.0	120	J-92	J-3	3,611	2.56	1.083
P-135	1,774	24.0	120	J-20	J-93	626	0.44	0.042
P-136	778	24.0	120	J-93	J-21	626	0.44	0.042
P-137	786	16.0	120	J-13	J-94	162	0.26	0.025
P-138	1,159	16.0	120	J-94	J-51	64	0.10	0.004
P-139	2,314	12.0	120	J-44	J-16	95	0.27	0.038
P-140	1,166	8.0	120	J-11	J-69	144	0.92	0.589
P-141	890	16.0	120	J-95	J-16	490	0.78	0.193
P-142	1,256	16.0	120	J-15	J-95	603	0.96	0.284
P-143	2,336	12.0	120	J-44	J-92	675	1.91	1.420
P-200	2,335	24.0	120	J-201	J-202	2,878	2.04	0.712
P-201	2,336	16.0	120	J-202	J-203	1,188	1.90	0.996
P-202	1,418	16.0	120	J-203	J-204	111	0.18	0.012
P-204	2,317	12.0	120	J-205	J-25	61	0.17	0.016
P-205	2,640	24.0	120	J-201	J-206	3,063	2.17	0.798
P-206	2,639	24.0	120	J-206	J-207	1,715	1.22	0.273
P-207	2,567	12.0	120	J-208	J-209	89	0.25	0.033
P-208	2,713	12.0	120	J-209	J-200	290	0.82	0.296
P-209	2,452	12.0	120	J-210	J-24	157	0.45	0.095
P-210	2,672	24.0	120	J-22	J-200	1,599	1.13	0.240
P-211	2,633	12.0	120	J-209	J-21	118	0.33	0.056
P-212	2,662	16.0	120	J-208	J-20	392	0.63	0.128
P-213	2,706	12.0	120	J-202	J-210	481	1.36	0.757
P-214	1,265	12.0	120	J-203	J-211	344	0.98	0.408
P-215	1,876	12.0	120	J-211	J-205	232	0.66	0.197
P-216	2,801	12.0	120	J-200	J-210	436	1.24	0.632
P-217	2,687	24.0	120	J-200	J-201	2,901	2.06	0.722
P-218	2,651	12.0	120	J-206	J-209	259	0.73	0.240
P-219	2,641	16.0	120	J-207	J-208	27	0.04	0.001
P-220	2,285	12.0	120	J-203	J-212	184	0.52	0.128
P-221	2,358	12.0	120	J-212	J-213	414	1.17	0.574
P-222	2,276	12.0	120	J-213	J-214	351	1.00	0.424

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-223	2,646	12.0	120	J-214	J-215	328	0.93	0.374
P-224	2,674	12.0	120	J-215	J-216	271	0.77	0.262
P-225	2,288	16.0	120	J-216	J-207	351	0.56	0.104
P-226	2,254	12.0	120	J-213	J-202	292	0.83	0.302
P-227	2,266	16.0	120	J-214	J-201	910	1.45	0.608
P-228	2,289	12.0	120	J-206	J-215	172	0.49	0.113
P-229	2,627	24.0	120	J-222	J-207	406	0.29	0.019
P-230	2,665	12.0	120	J-219	J-220	166	0.47	0.105
P-231	2,652	12.0	120	J-220	J-216	281	0.80	0.280
P-232	2,707	12.0	120	J-221	J-222	105	0.30	0.045
P-233	2,657	24.0	120	J-218	J-222	312	0.22	0.012
P-234	2,252	12.0	120	J-220	J-222	347	0.98	0.413
P-235	2,583	12.0	120	J-221	J-88	338	0.96	0.394
P-236	2,638	24.0	120	J-89	J-217	2,780	1.97	0.667
P-237	2,620	12.0	120	J-208	J-221	82	0.23	0.029
P-238	2,942	12.0	120	J-221	J-217	311	0.88	0.339
P-239	2,825	24.0	120	J-217	J-223	2,007	1.42	0.365
P-240	1,107	12.0	120	J-224	J-219	296	0.84	0.308
P-241	903	24.0	120	J-223	J-218	774	0.55	0.062
P-242	2,212	16.0	120	J-223	J-224	758	1.21	0.433
P-243	1,160	16.0	120	J-225	J-94	419	0.67	0.144
P-244	3,411	12.0	120	J-88	J-227	429	1.22	0.612
P-245	2,726	12.0	120	J-227	J-225	130	0.37	0.067
P-246	855	12.0	120	J-225	J-226	170	0.48	0.111
P-247	1,678	12.0	120	J-226	J-14	208	0.59	0.160
P-248	1,900	12.0	120	J-18	J-227	79	0.22	0.027
P-249	2,011	16.0	120	J-4	J-228	743	1.19	0.418
P-250	1,945	12.0	120	J-16	J-229	77	0.22	0.025
P-251	1,597	16.0	120	J-228	J-230	282	0.45	0.069
P-253	1,930	12.0	120	J-229	J-231	157	0.45	0.096
P-254	558	12.0	120	J-231	J-228	260	0.74	0.243
P-255	842	16.0	120	J-230	J-232	67	0.11	0.005
P-256	552	8.0	120	J-230	J-233	14	0.09	0.008
P-257	1,595	8.0	120	J-233	J-231	19	0.12	0.013
P-258	330	12.0	120	J-232	J-233	5	0.01	0.000
P-259	1,600	12.0	120	J-ELS	J-205	109	0.31	0.049
P-260	1,038	12.0	120	J-204	J-ELS	111	0.31	0.050
P-261	3,327	12.0	120	J-210	J-205	184	0.52	0.127
P-262	2,378	12.0	120	J-95	J-229	113	0.32	0.052
P-500	679	48.0	120	R-1	J-92	7,763	1.38	0.143
P-501	600	48.0	120	R-2	FCV-2	6,050	1.07	0.098
P-502	566	48.0	120	FCV-2	J-89	6,050	1.07	0.098
P-503	604	48.0	120	R-3	FCV-3	10,669	1.89	0.269
P-504	604	48.0	120	FCV-3	J-201	10,669	1.89	0.293
P-505	861	48.0	120	R-AZWC	AZWC-J-8	2,649	0.47	0.024

Label	Elevation (ft)	Diameter (Valve) (in)	Flow Setting (Initial) (gpm)	Minor Loss Coefficient (Local)	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
FCV-2	1,561.51	48.0	10,410	0.0000000	6,050	1,710.00	1,710.00	0.00
FCV-3	1,488.00	48.0	14,413	0.0000000	10,669	1,710.00	1,710.00	0.00

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	7,763	1,710.00
R-2	1,710.00	6,050	1,710.00
R-3	1,710.00	10,669	1,710.00
R-AZWC	1,720.00	2,649	1,720.00

SITE
PEAK HOUR DEMAND RESULTS

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
AZWC-J-1	1,565.65	292	1,700.32	58.3
AZWC-J-2	1,566.00	0	1,709.46	62.1
AZWC-J-3	1,562.39	292	1,716.66	66.7
AZWC-J-4	1,549.27	573	1,699.13	64.8
AZWC-J-5	1,549.29	14	1,700.23	65.3
AZWC-J-6	1,550.00	14	1,710.02	69.2
AZWC-J-7	1,540.00	14	1,700.17	69.3
AZWC-J-8	1,540.19	292	1,720.00	77.8
AZWC-J-9	1,532.76	207	1,698.24	71.6
AZWC-J-10	1,532.13	281	1,698.38	71.9
AZWC-J-11	1,530.66	573	1,699.16	72.9
AZWC-J-12	1,530.39	292	1,710.62	78.0
AZWC-J-13	1,516.54	142	1,698.48	78.7
AZWC-J-14	1,511.49	142	1,698.31	80.8
AZWC-J-15	1,510.00	573	1,699.76	82.1
AZWC-J-16	1,510.00	292	1,701.75	83.0
AZWC-J-17	1,498.95	142	1,698.56	86.4
AZWC-J-18	1,496.42	142	1,698.34	87.4
J-1	1,518.46	0	1,700.26	78.7
J-2	1,524.42	0	1,704.61	78.0
J-3	1,534.31	0	1,705.57	74.1
J-4	1,536.36	96	1,703.40	72.3
J-5	1,511.94	0	1,697.50	80.3
J-6	1,496.19	0	1,696.73	86.8
J-7	1,487.97	0	1,693.99	89.1
J-8	1,482.10	0	1,693.41	91.4
J-9	1,489.31	0	1,693.47	88.3
J-10	1,498.18	0	1,694.04	84.7
J-11	1,505.45	0	1,696.08	82.5
J-12	1,528.22	0	1,697.27	73.1
J-13	1,541.89	0	1,696.38	66.8
J-14	1,551.18	0	1,696.69	63.0
J-15	1,555.10	581	1,697.28	61.5
J-16	1,547.57	48	1,699.44	65.7
J-17	1,539.63	0	1,701.16	69.9
J-18	1,536.04	0	1,696.33	69.4
J-19	1,531.88	0	1,696.61	71.3
J-20	1,525.85	0	1,698.06	74.5
J-21	1,509.31	0	1,697.77	81.5
J-22	1,500.29	47	1,697.81	85.5
J-23	1,507.70	0	1,698.07	82.4
J-24	1,478.32	0	1,693.74	93.2
J-25	1,468.56	0	1,693.01	97.1
J-26	1,470.59	0	1,692.24	95.9
J-27	1,491.65	446	1,693.35	87.3
J-28	1,494.43	446	1,693.57	86.2
J-29	1,504.84	0	1,695.46	82.5
J-30	1,509.95	446	1,695.86	80.4

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-31	1,506.31	446	1,693.81	81.1
J-32	1,510.99	446	1,695.17	79.7
J-33	1,517.93	446	1,697.12	77.5
J-34	1,523.42	446	1,699.75	76.3
J-35	1,500.26	0	1,695.65	84.5
J-36	1,519.89	0	1,697.63	76.9
J-37	1,497.84	0	1,693.49	84.7
J-38	1,508.75	0	1,693.69	80.0
J-39	1,509.06	581	1,695.51	80.7
J-40	1,519.34	0	1,701.25	78.7
J-41	1,493.31	0	1,695.77	87.6
J-42	1,520.78	0	1,699.34	77.3
J-43	1,528.04	581	1,697.29	73.2
J-44	1,539.15	581	1,698.82	69.1
J-45	1,525.42	0	1,700.33	75.7
J-46	1,536.25	581	1,700.53	71.1
J-47	1,523.18	0	1,698.97	76.1
J-48	1,543.23	0	1,696.73	66.4
J-49	1,544.66	581	1,696.80	65.8
J-50	1,550.01	0	1,696.99	63.6
J-51	1,551.30	0	1,696.58	62.9
J-52	1,541.61	0	1,696.60	67.1
J-53	1,482.08	446	1,692.01	90.8
J-54	1,476.49	0	1,692.76	93.6
J-55	1,480.56	0	1,692.14	91.5
J-56	1,481.69	446	1,691.18	90.6
J-57	1,483.32	0	1,691.87	90.2
J-58	1,478.32	0	1,692.07	92.5
J-59	1,473.68	0	1,692.34	94.6
J-60	1,475.18	0	1,691.67	93.7
J-61	1,474.72	446	1,691.31	93.7
J-62	1,493.15	446	1,691.27	85.7
J-63	1,494.82	446	1,692.05	85.3
J-64	1,489.78	0	1,691.98	87.5
J-65	1,486.52	446	1,692.15	89.0
J-66	1,484.90	0	1,694.26	90.6
J-67	1,492.33	0	1,692.53	86.6
J-68	1,498.85	446	1,693.15	84.1
J-69	1,504.49	0	1,693.63	81.8
J-70	1,496.77	446	1,691.32	84.2
J-71	1,492.39	446	1,691.24	86.0
J-72	1,489.15	446	1,691.17	87.4
J-73	1,526.88	0	1,695.45	72.9
J-74	1,522.81	581	1,694.36	74.2
J-75	1,517.39	581	1,694.36	76.6
J-76	1,513.14	581	1,695.26	78.8
J-77	1,518.58	581	1,694.33	76.0
J-78	1,525.14	581	1,694.83	73.4

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-79	1,521.50	0	1,695.62	75.3
J-80	1,521.52	0	1,698.21	76.4
J-81	1,507.88	0	1,696.09	81.4
J-82	1,511.68	581	1,695.33	79.5
J-83	1,530.12	581	1,694.97	71.3
J-84	1,534.97	0	1,695.21	69.3
J-85	1,520.43	0	1,695.35	75.7
J-86	1,512.42	0	1,695.79	79.3
J-87	1,519.02	0	1,696.03	76.6
J-88	1,543.79	612	1,700.05	67.6
J-89	1,561.51	612	1,704.55	61.9
J-90	1,553.44	0	1,696.95	62.1
J-91	1,501.89	0	1,697.78	84.8
J-92	1,529.36	0	1,710.00	78.2
J-93	1,513.70	0	1,697.86	79.7
J-94	1,544.69	94	1,696.40	65.6
J-95	1,552.90	0	1,698.76	63.1
J-200	1,496.00	951	1,698.12	87.4
J-201	1,488.00	1,517	1,700.44	91.9
J-202	1,470.66	1,517	1,696.99	97.9
J-203	1,458.00	1,517	1,692.45	101.4
J-204	1,453.24	0	1,692.47	103.5
J-205	1,458.56	0	1,692.59	101.3
J-206	1,496.31	1,517	1,696.83	86.8
J-207	1,517.23	1,540	1,695.83	77.3
J-208	1,519.99	974	1,696.12	76.2
J-209	1,504.30	951	1,696.31	83.1
J-210	1,475.66	951	1,693.77	94.4
J-211	1,463.36	951	1,691.38	98.7
J-212	1,454.56	377	1,692.87	103.1
J-213	1,466.18	377	1,695.55	99.2
J-214	1,480.99	377	1,697.66	93.7
J-215	1,494.36	377	1,696.12	87.3
J-216	1,510.97	566	1,695.07	79.7
J-217	1,559.60	754	1,699.39	60.5
J-218	1,554.84	754	1,696.02	61.1
J-219	1,549.95	754	1,692.86	61.8
J-220	1,529.45	754	1,693.45	71.0
J-221	1,536.00	754	1,696.50	69.4
J-222	1,536.00	777	1,695.82	69.1
J-223	1,563.53	777	1,696.25	57.4
J-224	1,560.58	754	1,693.79	57.6
J-225	1,550.03	612	1,695.97	63.1
J-226	1,551.62	612	1,695.82	62.4
J-227	1,546.70	612	1,696.17	64.7
J-228	1,534.99	324	1,700.92	71.8
J-229	1,550.60	189	1,699.40	64.4
J-230	1,544.78	324	1,700.62	67.4

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-231	1,539.83	189	1,700.42	69.5
J-232	1,550.00	101	1,700.60	65.2
J-233	1,547.13	0	1,700.60	66.4
J-ELS	1,456.01	1	1,692.51	102.3

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
AZWC-P-1	1,622	12.0	120	AZWC-J-18	AZWC-J-17	190	0.54	0.136
AZWC-P-2	2,123	12.0	120	AZWC-J-17	AZWC-J-15	412	1.17	0.568
AZWC-P-3	3,095	16.0	120	AZWC-J-4	AZWC-J-11	98	0.16	0.010
AZWC-P-4	2,970	16.0	120	AZWC-J-11	AZWC-J-15	502	0.80	0.202
AZWC-P-5	2,054	12.0	120	AZWC-J-13	AZWC-J-11	309	0.88	0.334
AZWC-P-6	2,990	12.0	120	AZWC-J-17	AZWC-J-13	80	0.23	0.027
AZWC-P-7	1,705	12.0	120	AZWC-J-14	AZWC-J-13	160	0.45	0.099
AZWC-P-8	2,436	16.0	120	AZWC-J-4	AZWC-J-1	810	1.29	0.490
AZWC-P-9	3,055	16.0	120	AZWC-J-8	AZWC-J-3	1,250	1.99	1.094
AZWC-P-10	1,316	16.0	120	AZWC-J-15	AZWC-J-16	1,487	2.37	1.509
AZWC-P-11	2,912	16.0	120	AZWC-J-16	AZWC-J-12	2,173	3.47	3.048
AZWC-P-12	2,013	16.0	120	AZWC-J-12	AZWC-J-8	2,733	4.36	4.659
AZWC-P-13	2,178	12.0	120	AZWC-J-1	AZWC-J-2	1,212	3.44	4.195
AZWC-P-14	2,649	12.0	120	AZWC-J-2	AZWC-J-3	958	2.72	2.716
AZWC-P-15	1,502	12.0	120	AZWC-J-5	AZWC-J-7	96	0.27	0.038
AZWC-P-16	2,991	12.0	120	AZWC-J-16	AZWC-J-7	395	1.12	0.527
AZWC-P-17	1,931	12.0	120	AZWC-J-5	AZWC-J-1	110	0.31	0.049
AZWC-P-18	2,422	12.0	120	AZWC-J-6	AZWC-J-2	254	0.72	0.231
AZWC-P-19	2,346	12.0	120	AZWC-J-6	AZWC-J-12	268	0.76	0.256
AZWC-P-20	1,354	12.0	120	AZWC-J-11	AZWC-J-7	477	1.35	0.746
AZWC-P-21	2,644	12.0	120	AZWC-J-18	AZWC-J-14	48	0.14	0.011
AZWC-P-22	3,404	12.0	120	AZWC-J-14	AZWC-J-9	67	0.19	0.020
AZWC-P-23	1,779	12.0	120	AZWC-J-9	AZWC-J-10	140	0.40	0.077
AZWC-P-24	3,067	12.0	120	AZWC-J-10	AZWC-J-13	87	0.25	0.032
AZWC-P-25	1,946	12.0	120	AZWC-J-10	AZWC-J-4	335	0.95	0.387
P-1	1,337	24.0	120	J-1	J-2	6,539	4.64	3.253
P-2	1,236	24.0	120	J-3	J-4	4,680	3.32	1.751
P-3	2,654	16.0	120	J-5	J-6	612	0.98	0.291
P-4	2,643	12.0	120	J-7	J-8	247	0.70	0.220
P-5	1,373	16.0	120	J-8	J-9	220	0.35	0.044
P-6	1,371	16.0	120	J-10	J-11	1,477	2.36	1.492
P-7	1,867	16.0	120	J-9	J-10	624	1.00	0.302
P-7	1,712	16.0	120	J-11	J-1	1,927	3.07	2.439
P-8	1,252	16.0	120	J-16	J-17	1,416	2.26	1.379
P-9	1,335	16.0	120	J-17	J-4	1,574	2.51	1.677
P-10	1,872	16.0	120	J-13	J-18	167	0.27	0.026
P-11	817	16.0	120	J-18	J-19	668	1.07	0.343
P-12	2,582	16.0	120	J-19	J-20	871	1.39	0.561
P-13	2,636	24.0	120	J-22	J-23	992	0.70	0.099
P-14	2,640	24.0	120	J-23	J-1	3,123	2.22	0.828
P-15	2,850	16.0	120	J-24	J-25	570	0.91	0.256
P-16	1,880	12.0	120	J-25	J-26	346	0.98	0.412
P-17	1,357	12.0	120	J-9	J-27	154	0.44	0.092
P-18	1,167	12.0	120	J-27	J-28	228	0.65	0.191
P-19	1,813	8.0	120	J-28	J-29	197	1.26	1.042
P-20	781	8.0	120	J-29	J-30	135	0.86	0.516
P-21	997	12.0	120	J-30	J-5	730	2.07	1.643

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-22	1,324	12.0	120	J-7	J-28	303	0.86	0.321
P-23	2,040	12.0	120	J-28	J-31	175	0.50	0.117
P-24	935	12.0	120	J-31	J-32	685	1.94	1.460
P-25	1,071	12.0	120	J-32	J-33	772	2.19	1.821
P-26	757	12.0	120	J-33	J-34	1,094	3.10	3.474
P-27	888	12.0	120	J-34	J-3	1,541	4.37	6.545
P-28	1,587	8.0	120	J-29	J-35	62	0.40	0.123
P-29	1,506	8.0	120	J-30	J-36	210	1.34	1.177
P-30	1,149	8.0	120	J-36	J-33	124	0.79	0.444
P-31	1,110	8.0	120	J-27	J-37	64	0.41	0.129
P-32	1,560	8.0	120	J-37	J-38	64	0.41	0.129
P-33	895	8.0	120	J-38	J-31	64	0.41	0.129
P-34	783	8.0	120	J-11	J-39	162	1.03	0.727
P-35	1,356	8.0	120	J-39	J-40	419	2.68	4.233
P-36	792	8.0	120	J-40	J-2	419	2.68	4.233
P-37	807	12.0	120	J-6	J-41	612	1.73	1.183
P-38	1,833	12.0	120	J-41	J-7	549	1.56	0.970
P-39	949	8.0	120	J-35	J-41	62	0.40	0.123
P-40	2,155	16.0	120	J-4	J-42	1,676	2.67	1.884
P-41	1,477	16.0	120	J-42	J-5	1,342	2.14	1.248
P-42	614	8.0	120	J-36	J-42	334	2.13	2.781
P-43	1,556	12.0	120	J-32	J-30	360	1.02	0.442
P-44	689	12.0	120	J-12	J-43	82	0.23	0.029
P-45	1,946	12.0	120	J-43	J-44	491	1.39	0.787
P-46	2,073	8.0	120	J-44	J-45	162	1.03	0.729
P-47	969	8.0	120	J-45	J-2	429	2.74	4.411
P-48	1,168	8.0	120	J-3	J-46	423	2.70	4.310
P-49	911	8.0	120	J-46	J-17	158	1.01	0.693
P-50	742	8.0	120	J-45	J-47	267	1.70	1.830
P-51	921	8.0	120	J-47	J-43	267	1.70	1.830
P-52	2,082	8.0	120	J-43	J-48	94	0.60	0.267
P-53	1,325	8.0	120	J-48	J-49	39	0.25	0.051
P-54	1,465	12.0	120	J-49	J-44	664	1.88	1.378
P-55	1,495	12.0	120	J-49	J-14	137	0.39	0.073
P-56	743	8.0	120	J-49	J-50	92	0.59	0.255
P-57	1,129	8.0	120	J-50	J-15	92	0.59	0.255
P-58	931	16.0	120	J-51	J-14	373	0.60	0.117
P-59	1,264	8.0	120	J-48	J-51	61	0.39	0.119
P-60	2,202	16.0	120	J-12	J-52	627	1.00	0.305
P-61	885	16.0	120	J-52	J-94	525	0.84	0.219
P-62	840	8.0	120	J-48	J-52	72	0.46	0.161
P-63	906	8.0	120	J-9	J-53	249	1.59	1.619
P-64	910	12.0	120	J-54	J-8	467	1.33	0.718
P-65	721	8.0	120	J-53	J-54	197	1.26	1.044
P-66	983	8.0	120	J-24	J-55	250	1.60	1.629
P-67	1,333	8.0	120	J-55	J-56	161	1.03	0.723
P-68	1,116	8.0	120	J-56	J-57	149	0.95	0.622

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-69	729	8.0	120	J-57	J-58	96	0.62	0.279
P-70	857	12.0	120	J-26	J-59	174	0.49	0.115
P-71	1,622	12.0	120	J-59	J-54	270	0.77	0.261
P-72	936	8.0	120	J-58	J-59	96	0.62	0.279
P-73	1,459	8.0	120	J-55	J-60	104	0.66	0.321
P-74	1,114	8.0	120	J-60	J-61	104	0.66	0.321
P-75	1,054	12.0	120	J-61	J-26	520	1.48	0.876
P-76	1,140	12.0	120	J-61	J-56	178	0.50	0.120
P-77	855	12.0	120	J-62	J-63	532	1.51	0.914
P-78	905	12.0	120	J-63	J-10	853	2.42	2.192
P-79	831	8.0	120	J-63	J-64	52	0.33	0.090
P-80	1,177	8.0	120	J-64	J-57	52	0.33	0.090
P-81	1,245	8.0	120	J-55	J-65	15	0.10	0.009
P-82	2,151	16.0	120	J-22	J-66	1,559	2.49	1.648
P-83	1,176	16.0	120	J-66	J-24	769	1.23	0.445
P-84	1,113	12.0	120	J-65	J-66	790	2.24	1.900
P-85	1,034	8.0	120	J-65	J-67	112	0.72	0.369
P-86	1,662	8.0	120	J-67	J-68	112	0.72	0.369
P-87	1,161	12.0	120	J-68	J-23	1,219	3.46	4.242
P-88	1,359	8.0	120	J-68	J-69	110	0.70	0.355
P-89	1,832	8.0	120	J-69	J-63	177	1.13	0.861
P-90	1,005	12.0	120	J-68	J-70	770	2.19	1.814
P-91	573	12.0	120	J-70	J-62	153	0.44	0.091
P-92	1,409	12.0	120	J-65	J-71	441	1.25	0.644
P-93	1,201	12.0	120	J-56	J-72	42	0.12	0.008
P-94	503	12.0	120	J-72	J-62	239	0.68	0.208
P-95	736	12.0	120	J-71	J-72	165	0.47	0.105
P-96	718	12.0	120	J-71	J-70	171	0.48	0.111
P-97	1,047	8.0	120	J-19	J-73	203	1.30	1.108
P-98	1,393	12.0	120	J-83	J-74	356	1.01	0.435
P-99	903	12.0	120	J-74	J-75	32	0.09	0.005
P-100	1,063	12.0	120	J-21	J-76	888	2.52	2.360
P-101	1,185	12.0	120	J-76	J-77	490	1.39	0.784
P-102	939	12.0	120	J-77	J-74	91	0.26	0.035
P-103	1,124	12.0	120	J-74	J-78	348	0.99	0.415
P-104	1,019	8.0	120	J-78	J-79	168	1.07	0.775
P-105	1,354	16.0	120	J-1	J-80	1,489	2.38	1.513
P-106	894	16.0	120	J-80	J-12	1,221	1.95	1.048
P-107	1,486	8.0	120	J-76	J-81	140	0.90	0.559
P-108	1,004	12.0	120	J-75	J-82	549	1.56	0.969
P-109	1,106	12.0	120	J-82	J-23	912	2.59	2.478
P-110	1,868	8.0	120	J-81	J-82	118	0.75	0.406
P-111	1,711	12.0	120	J-78	J-12	677	1.92	1.427
P-112	675	8.0	120	J-73	J-83	161	1.03	0.719
P-113	1,008	8.0	120	J-83	J-84	90	0.57	0.243
P-114	1,673	8.0	120	J-84	J-52	174	1.11	0.828
P-115	1,776	8.0	120	J-78	J-84	84	0.54	0.216

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-116	1,656	8.0	120	J-73	J-85	42	0.27	0.061
P-117	1,568	8.0	120	J-85	J-76	42	0.27	0.061
P-118	1,542	8.0	120	J-82	J-86	100	0.64	0.299
P-119	532	8.0	120	J-79	J-87	168	1.07	0.775
P-120	1,177	8.0	120	J-87	J-80	268	1.71	1.847
P-121	801	8.0	120	J-86	J-87	100	0.64	0.299
P-122	931	12.0	120	J-83	J-18	687	1.95	1.466
P-123	2,664	24.0	120	J-20	J-88	2,954	2.10	0.747
P-124	2,422	24.0	120	J-88	J-89	4,829	3.42	1.856
P-125	839	16.0	120	J-14	J-90	629	1.00	0.306
P-126	1,077	16.0	120	J-90	J-15	629	1.00	0.306
P-128	1,309	24.0	120	J-21	J-91	215	0.15	0.006
P-129	1,332	24.0	120	J-91	J-22	473	0.34	0.025
P-130	974	8.0	120	J-81	J-91	259	1.65	1.731
P-133	1,322	24.0	120	J-2	J-92	7,387	5.24	4.077
P-134	1,322	24.0	120	J-92	J-3	6,644	4.71	3.350
P-135	1,774	24.0	120	J-20	J-93	1,079	0.77	0.116
P-136	778	24.0	120	J-93	J-21	1,079	0.77	0.116
P-137	786	16.0	120	J-13	J-94	167	0.27	0.026
P-138	1,159	16.0	120	J-94	J-51	434	0.69	0.154
P-139	2,314	12.0	120	J-44	J-16	273	0.78	0.266
P-140	1,166	8.0	120	J-11	J-69	287	1.83	2.103
P-141	890	16.0	120	J-95	J-16	1,027	1.64	0.761
P-142	1,256	16.0	120	J-15	J-95	1,302	2.08	1.180
P-143	2,336	12.0	120	J-44	J-92	1,301	3.69	4.783
P-200	2,335	24.0	120	J-201	J-202	4,273	3.03	1.479
P-201	2,336	16.0	120	J-202	J-203	1,703	2.72	1.942
P-202	1,418	16.0	120	J-203	J-204	103	0.16	0.011
P-204	2,317	12.0	120	J-205	J-25	224	0.64	0.184
P-205	2,640	24.0	120	J-201	J-206	4,096	2.91	1.368
P-206	2,639	24.0	120	J-206	J-207	2,050	1.45	0.380
P-207	2,567	12.0	120	J-208	J-209	136	0.39	0.073
P-208	2,713	12.0	120	J-209	J-200	449	1.27	0.668
P-209	2,452	12.0	120	J-210	J-24	51	0.15	0.012
P-210	2,672	24.0	120	J-22	J-200	1,087	0.77	0.117
P-211	2,633	12.0	120	J-209	J-21	406	1.15	0.553
P-212	2,662	16.0	120	J-208	J-20	1,004	1.60	0.729
P-213	2,706	12.0	120	J-202	J-210	614	1.74	1.189
P-214	1,265	12.0	120	J-203	J-211	511	1.45	0.848
P-215	1,876	12.0	120	J-211	J-205	440	1.25	0.642
P-216	2,801	12.0	120	J-200	J-210	709	2.01	1.553
P-217	2,687	24.0	120	J-200	J-201	3,196	2.27	0.864
P-218	2,651	12.0	120	J-206	J-209	232	0.66	0.197
P-219	2,641	16.0	120	J-207	J-208	362	0.58	0.110
P-220	2,285	12.0	120	J-203	J-212	222	0.63	0.180
P-221	2,358	12.0	120	J-212	J-213	599	1.70	1.137
P-222	2,276	12.0	120	J-213	J-214	537	1.52	0.928

Label	Length (Scaled) (ft)	Diameter (in)	Hazen-Williams C	Start Node	Stop Node	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-223	2,646	12.0	120	J-214	J-215	417	1.18	0.582
P-224	2,674	12.0	120	J-215	J-216	337	0.96	0.392
P-225	2,288	16.0	120	J-216	J-207	657	1.05	0.332
P-226	2,254	12.0	120	J-213	J-202	439	1.25	0.641
P-227	2,266	16.0	120	J-214	J-201	1,331	2.12	1.229
P-228	2,289	12.0	120	J-206	J-215	297	0.84	0.311
P-229	2,627	24.0	120	J-222	J-207	215	0.15	0.006
P-230	2,665	12.0	120	J-219	J-220	247	0.70	0.221
P-231	2,652	12.0	120	J-220	J-216	428	1.21	0.610
P-232	2,707	12.0	120	J-221	J-222	266	0.75	0.253
P-233	2,657	24.0	120	J-218	J-222	870	0.62	0.078
P-234	2,252	12.0	120	J-220	J-222	573	1.63	1.049
P-235	2,583	12.0	120	J-221	J-88	664	1.88	1.375
P-236	2,638	24.0	120	J-89	J-217	4,969	3.52	1.956
P-237	2,620	12.0	120	J-208	J-221	197	0.56	0.144
P-238	2,942	12.0	120	J-221	J-217	553	1.57	0.981
P-239	2,825	24.0	120	J-217	J-223	3,662	2.60	1.112
P-240	1,107	12.0	120	J-224	J-219	507	1.44	0.834
P-241	903	24.0	120	J-223	J-218	1,624	1.15	0.247
P-242	2,212	16.0	120	J-223	J-224	1,260	2.01	1.111
P-243	1,160	16.0	120	J-225	J-94	697	1.11	0.371
P-244	3,411	12.0	120	J-88	J-227	599	1.70	1.138
P-245	2,726	12.0	120	J-227	J-225	135	0.38	0.072
P-246	855	12.0	120	J-225	J-226	220	0.62	0.178
P-247	1,678	12.0	120	J-226	J-14	392	1.11	0.519
P-248	1,900	12.0	120	J-18	J-227	148	0.42	0.086
P-249	2,011	16.0	120	J-4	J-228	1,334	2.13	1.235
P-250	1,945	12.0	120	J-16	J-229	67	0.19	0.020
P-251	1,597	16.0	120	J-228	J-230	485	0.77	0.189
P-253	1,930	12.0	120	J-229	J-231	396	1.12	0.529
P-254	558	12.0	120	J-231	J-228	525	1.49	0.893
P-255	842	16.0	120	J-230	J-232	132	0.21	0.017
P-256	552	8.0	120	J-230	J-233	28	0.18	0.029
P-257	1,595	8.0	120	J-233	J-231	59	0.38	0.113
P-258	330	12.0	120	J-232	J-233	31	0.09	0.005
P-259	1,600	12.0	120	J-ELS	J-205	104	0.30	0.045
P-260	1,038	12.0	120	J-204	J-ELS	103	0.29	0.043
P-261	3,327	12.0	120	J-210	J-205	320	0.91	0.356
P-262	2,378	12.0	120	J-95	J-229	275	0.78	0.268
P-500	679	48.0	120	R-1	J-92	15,331	2.72	0.547
P-501	600	48.0	120	R-2	FCV-2	10,410	1.85	0.269
P-502	566	48.0	120	FCV-2	J-89	10,410	1.85	0.269
P-503	604	48.0	120	R-3	FCV-3	14,413	2.56	0.488
P-504	604	48.0	120	FCV-3	J-201	14,413	2.56	0.488
P-505	861	48.0	120	R-AZWC	AZWC-J-8	4,274	0.76	0.049

Label	Elevation (ft)	Diameter (Valve) (in)	Flow Setting (Initial) (gpm)	Minor Loss Coefficient (Local)	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
FCV-2	1,561.51	48.0	10,410	0.0000000	10,410	1,710.00	1,704.55	5.45
FCV-3	1,488.00	48.0	14,413	0.0000000	14,413	1,710.00	1,700.45	9.55

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,710.00	15,331	1,710.00
R-2	1,710.00	10,410	1,710.00
R-3	1,710.00	14,413	1,710.00
R-AZWC	1,720.00	4,274	1,720.00

SITE
MAXIMUM DAY + FIRE FLOW RESULTS (RESIDUAL)
MAXIMUM DAY + FIRE FLOW RESULTS (AVAILABLE)

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
AZWC-J-1	177	4,000	4,177	4,000	4,177	39.9	47.9	AZWC-J-4	39.9	47.9	AZWC-P-12	7.23	True
AZWC-J-2	0	4,000	4,000	4,000	4,000	48.3	49.5	AZWC-J-1	48.3	49.5	AZWC-P-12	6.63	True
AZWC-J-3	177	4,000	4,177	4,000	4,177	58.2	58.0	AZWC-J-2	58.2	58.0	AZWC-P-9	5.67	True
AZWC-J-4	351	4,000	4,351	4,000	4,351	45.5	41.7	AZWC-J-1	45.5	41.7	AZWC-P-12	7.28	True
AZWC-J-5	14	4,000	4,014	4,000	4,014	40.0	41.4	AZWC-J-1	40.0	41.4	AZWC-P-12	7.28	True
AZWC-J-6	14	4,000	4,014	4,000	4,014	50.3	52.3	AZWC-J-2	50.3	52.3	AZWC-P-12	7.06	True
AZWC-J-7	14	4,000	4,014	4,000	4,014	48.7	42.4	AZWC-J-1	48.7	42.4	AZWC-P-12	7.31	True
AZWC-J-8	177	4,000	4,177	4,000	4,177	77.8	62.2	J-223	77.8	62.2	AZWC-P-12	2.71	True
AZWC-J-9	130	4,000	4,130	4,000	4,130	35.7	42.7	AZWC-J-1	35.7	42.7	AZWC-P-12	7.31	True
AZWC-J-10	173	4,000	4,173	4,000	4,173	44.9	42.5	AZWC-J-1	44.9	42.5	AZWC-P-12	7.31	True
AZWC-J-11	351	4,000	4,351	4,000	4,351	54.6	42.5	AZWC-J-1	54.6	42.5	AZWC-P-12	7.31	True
AZWC-J-12	177	4,000	4,177	4,000	4,177	70.6	54.3	AZWC-J-1	70.6	54.3	AZWC-P-12	7.64	True
AZWC-J-13	91	4,000	4,091	4,000	4,091	54.6	42.7	AZWC-J-1	54.6	42.7	AZWC-P-12	7.32	True
AZWC-J-14	91	4,000	4,091	4,000	4,091	51.2	42.8	AZWC-J-1	51.2	42.8	AZWC-P-12	7.32	True
AZWC-J-15	351	4,000	4,351	4,000	4,351	64.8	43.7	AZWC-J-1	64.8	43.7	AZWC-P-12	7.35	True
AZWC-J-16	177	4,000	4,177	4,000	4,177	67.6	45.2	AZWC-J-1	67.6	45.2	AZWC-P-12	7.39	True
AZWC-J-17	91	4,000	4,091	4,000	4,091	59.9	43.1	AZWC-J-1	59.9	43.1	AZWC-P-12	7.33	True
AZWC-J-18	91	4,000	4,091	4,000	4,091	53.4	42.9	AZWC-J-1	53.4	42.9	AZWC-P-12	7.32	True
J-1	0	4,000	4,000	4,000	4,000	80.7	62.0	J-223	80.7	62.0	P-133	3.60	True
J-2	0	4,000	4,000	4,000	4,000	78.7	62.0	J-223	78.7	62.0	P-133	4.20	True
J-3	0	4,000	4,000	4,000	4,000	74.1	62.1	J-223	74.1	62.1	P-134	4.68	True
J-4	56	4,000	4,056	4,000	4,056	72.5	62.1	J-223	72.5	62.1	P-134	4.32	True
J-5	0	4,000	4,000	4,000	4,000	77.1	62.1	J-223	77.1	62.1	P-27	4.57	True
J-6	0	4,000	4,000	4,000	4,000	80.1	62.1	J-223	80.1	62.1	P-27	4.61	True
J-7	0	4,000	4,000	4,000	4,000	84.1	62.0	J-223	84.1	62.0	P-27	4.31	True
J-8	0	4,000	4,000	4,000	4,000	89.3	62.0	J-223	89.3	62.0	P-27	3.80	True
J-9	0	4,000	4,000	4,000	4,000	87.4	62.0	J-223	87.4	62.0	P-27	3.76	True
J-10	0	4,000	4,000	4,000	4,000	85.2	62.0	J-223	85.2	62.0	P-7	3.84	True
J-11	0	4,000	4,000	4,000	4,000	83.0	62.0	J-223	83.0	62.0	P-7	4.52	True
J-12	0	4,000	4,000	4,000	4,000	74.3	62.0	J-223	74.3	62.0	P-105	3.35	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-13	0	4,000	4,000	4,000	4,000	67.1	62.0	J-223	67.1	62.0	P-137	3.58	True
J-14	0	4,000	4,000	4,000	4,000	63.1	62.0	J-223	63.1	62.0	P-134	3.31	True
J-15	354	4,000	4,354	4,000	4,354	60.7	62.0	J-223	60.7	62.0	P-142	3.68	True
J-16	28	4,000	4,028	4,000	4,028	65.5	62.0	J-223	65.5	62.0	P-134	3.71	True
J-17	0	4,000	4,000	4,000	4,000	69.3	62.1	J-223	69.3	62.1	P-9	3.99	True
J-18	0	4,000	4,000	4,000	4,000	70.4	61.9	J-223	70.4	61.9	P-133	3.08	True
J-19	0	4,000	4,000	4,000	4,000	72.1	61.9	J-223	72.1	61.9	P-12	3.36	True
J-20	0	4,000	4,000	4,000	4,000	77.5	61.8	J-223	77.5	61.8	P-133	2.96	True
J-21	0	4,000	4,000	4,000	4,000	84.5	61.8	J-223	84.5	61.8	P-133	3.05	True
J-22	28	4,000	4,028	4,000	4,028	88.6	61.9	J-223	88.6	61.9	P-133	3.14	True
J-23	0	4,000	4,000	4,000	4,000	85.0	62.0	J-223	85.0	62.0	P-133	3.35	True
J-24	0	4,000	4,000	4,000	4,000	94.4	62.0	J-223	94.4	62.0	P-82	3.52	True
J-25	0	4,000	4,000	4,000	4,000	96.6	62.0	J-223	96.6	62.0	P-87	3.33	True
J-26	0	4,000	4,000	4,000	4,000	93.3	62.0	J-223	93.3	62.0	P-16	4.50	True
J-27	273	1,500	1,773	1,500	1,773	89.5	62.1	J-223	89.5	62.1	P-27	3.09	True
J-28	273	1,500	1,773	1,500	1,773	88.7	62.1	J-223	88.7	62.1	P-27	3.16	True
J-29	0	1,500	1,500	1,500	1,500	81.4	62.1	J-223	81.4	62.1	P-20	4.42	True
J-30	273	4,000	4,273	4,000	4,273	75.3	62.1	J-223	75.3	62.1	P-21	5.46	True
J-31	273	1,500	1,773	1,500	1,773	83.0	62.1	J-223	83.0	62.1	P-27	3.35	True
J-32	273	1,500	1,773	1,500	1,773	81.7	62.1	J-223	81.7	62.1	P-27	3.51	True
J-33	273	1,500	1,773	1,500	1,773	79.0	62.1	J-223	79.0	62.1	P-27	3.93	True
J-34	273	1,500	1,773	1,500	1,773	77.1	62.1	J-223	77.1	62.1	P-27	4.51	True
J-35	0	1,500	1,500	1,500	1,500	79.9	62.1	J-223	79.9	62.1	P-39	5.62	True
J-36	0	1,500	1,500	1,500	1,500	76.6	62.1	J-223	76.6	62.1	P-42	4.48	True
J-37	0	1,500	1,500	1,500	1,500	78.9	62.1	J-223	78.9	62.1	P-31	5.76	True
J-38	0	1,500	1,500	1,500	1,500	74.9	62.1	J-223	74.9	62.1	P-33	6.10	True
J-39	354	1,500	1,854	1,500	1,854	75.3	62.1	J-223	75.3	62.1	P-34	7.22	True
J-40	0	1,500	1,500	1,500	1,500	73.3	62.1	J-223	73.3	62.1	P-36	6.91	True
J-41	0	4,000	4,000	4,000	4,000	80.0	62.0	J-223	80.0	62.0	P-37	5.64	True
J-42	0	4,000	4,000	4,000	4,000	74.8	62.1	J-223	74.8	62.1	P-40	4.67	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-43	354	1,500	1,854	1,500	1,854	75.8	62.1	J-223	75.8	62.1	P-134	2.79	True
J-44	354	1,500	1,854	1,500	1,854	71.4	62.1	J-223	71.4	62.1	P-134	2.83	True
J-45	0	1,500	1,500	1,500	1,500	74.6	62.1	J-223	74.6	62.1	P-47	4.45	True
J-46	354	1,500	1,854	1,500	1,854	65.5	62.1	J-223	65.5	62.1	P-49	6.14	True
J-47	0	1,500	1,500	1,500	1,500	73.4	62.1	J-223	73.4	62.1	P-50	4.81	True
J-48	0	1,500	1,500	1,500	1,500	67.8	62.1	J-223	67.8	62.1	P-62	2.99	True
J-49	354	1,500	1,854	1,500	1,854	68.2	62.1	J-223	68.2	62.1	P-134	2.84	True
J-50	0	1,500	1,500	1,500	1,500	61.6	62.1	J-223	61.6	62.1	P-56	5.24	True
J-51	0	4,000	4,000	4,000	4,000	62.9	62.0	J-223	62.9	62.0	P-134	3.26	True
J-52	0	4,000	4,000	4,000	4,000	67.6	62.0	J-223	67.6	62.0	P-134	3.18	True
J-53	273	1,500	1,773	1,500	1,773	88.9	62.1	J-223	88.9	62.1	P-65	5.93	True
J-54	0	4,000	4,000	4,000	4,000	89.0	62.0	J-223	89.0	62.0	P-64	5.85	True
J-55	0	1,500	1,500	1,500	1,500	93.9	62.1	J-223	93.9	62.1	P-66	3.46	True
J-56	273	1,500	1,773	1,500	1,773	94.2	62.1	J-223	94.2	62.1	P-87	2.95	True
J-57	0	1,500	1,500	1,500	1,500	90.5	62.1	J-223	90.5	62.1	P-68	3.66	True
J-58	0	1,500	1,500	1,500	1,500	91.0	62.1	J-223	91.0	62.1	P-72	5.00	True
J-59	0	4,000	4,000	4,000	4,000	90.3	62.0	J-223	90.3	62.0	P-70	5.63	True
J-60	0	1,500	1,500	1,500	1,500	90.6	62.1	J-223	90.6	62.1	P-74	5.11	True
J-61	273	1,500	1,773	1,500	1,773	97.0	62.1	J-223	97.0	62.1	P-87	2.87	True
J-62	273	1,500	1,773	1,500	1,773	89.6	62.1	J-223	89.6	62.1	P-87	3.09	True
J-63	273	1,500	1,773	1,500	1,773	89.0	62.1	J-223	89.0	62.1	P-87	2.99	True
J-64	0	1,500	1,500	1,500	1,500	85.6	62.1	J-223	85.6	62.1	P-79	5.54	True
J-65	273	1,500	1,773	1,500	1,773	92.7	62.1	J-223	92.7	62.1	P-84	3.01	True
J-66	0	4,000	4,000	4,000	4,000	92.1	62.0	J-223	92.1	62.0	P-82	3.91	True
J-67	0	1,500	1,500	1,500	1,500	83.8	62.1	J-223	83.8	62.1	P-85	5.35	True
J-68	273	1,500	1,773	1,500	1,773	87.6	62.1	J-223	87.6	62.1	P-87	3.61	True
J-69	0	1,500	1,500	1,500	1,500	82.3	62.1	J-223	82.3	62.1	P-140	3.79	True
J-70	273	1,500	1,773	1,500	1,773	88.0	62.1	J-223	88.0	62.1	P-87	3.16	True
J-71	273	1,500	1,773	1,500	1,773	89.8	62.1	J-223	89.8	62.1	P-87	3.10	True
J-72	273	1,500	1,773	1,500	1,773	91.2	62.1	J-223	91.2	62.1	P-87	3.08	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-73	0	1,500	1,500	1,500	1,500	73.7	62.1	J-223	73.7	62.1	P-112	4.08	True
J-74	354	1,500	1,854	1,500	1,854	77.6	62.1	J-223	77.6	62.1	P-133	2.73	True
J-75	354	1,500	1,854	1,500	1,854	79.3	62.1	J-223	79.3	62.1	P-109	2.92	True
J-76	354	1,500	1,854	1,500	1,854	81.8	62.1	J-223	81.8	62.1	P-100	3.46	True
J-77	354	1,500	1,854	1,500	1,854	78.7	62.1	J-223	78.7	62.1	P-100	2.92	True
J-78	354	1,500	1,854	1,500	1,854	76.4	62.1	J-223	76.4	62.1	P-134	2.73	True
J-79	0	1,500	1,500	1,500	1,500	73.6	62.1	J-223	73.6	62.1	P-119	5.03	True
J-80	0	4,000	4,000	4,000	4,000	77.4	62.0	J-223	77.4	62.0	P-105	4.05	True
J-81	0	1,500	1,500	1,500	1,500	81.9	62.1	J-223	81.9	62.1	P-130	4.23	True
J-82	354	1,500	1,854	1,500	1,854	82.4	62.1	J-223	82.4	62.1	P-109	3.39	True
J-83	354	4,000	4,354	4,000	4,354	70.0	61.9	J-223	70.0	61.9	P-122	5.56	True
J-84	0	1,500	1,500	1,500	1,500	69.5	62.1	J-223	69.5	62.1	P-113	3.73	True
J-85	0	1,500	1,500	1,500	1,500	70.1	62.1	J-223	70.1	62.1	P-117	4.97	True
J-86	0	1,500	1,500	1,500	1,500	75.7	62.1	J-223	75.7	62.1	P-121	5.23	True
J-87	0	1,500	1,500	1,500	1,500	76.2	62.1	J-223	76.2	62.1	P-120	3.98	True
J-88	378	4,000	4,378	4,000	4,378	70.2	61.8	J-223	70.2	61.8	P-124	3.24	True
J-89	378	4,000	4,378	4,000	4,378	64.2	62.2	J-223	64.2	62.2	AZWC-P-12	2.71	True
J-90	0	4,000	4,000	4,000	4,000	61.5	61.7	J-15	61.5	61.7	P-125	3.55	True
J-91	0	4,000	4,000	4,000	4,000	87.7	61.9	J-223	87.7	61.9	P-133	3.09	True
J-92	0	4,000	4,000	4,000	4,000	78.2	62.2	J-223	78.2	62.2	AZWC-P-12	2.71	True
J-93	0	4,000	4,000	4,000	4,000	82.6	61.8	J-223	82.6	61.8	P-133	3.02	True
J-94	56	4,000	4,056	4,000	4,056	66.6	62.0	J-223	66.6	62.0	P-134	3.20	True
J-95	0	4,000	4,000	4,000	4,000	62.5	62.0	J-223	62.5	62.0	P-134	3.61	True
J-200	576	4,000	4,576	4,000	4,576	90.8	61.9	J-223	90.8	61.9	P-217	3.14	True
J-201	917	4,000	4,917	4,000	4,917	95.9	62.1	J-223	95.9	62.1	AZWC-P-12	2.71	True
J-202	917	4,000	4,917	4,000	4,917	101.0	62.1	J-223	101.0	62.1	P-200	4.02	True
J-203	917	4,000	4,917	4,000	4,917	101.2	62.1	J-223	101.2	62.1	P-201	4.89	True
J-204	0	4,000	4,000	4,000	4,000	100.6	62.1	J-223	100.6	62.1	P-201	4.70	True
J-205	0	4,000	4,000	4,000	4,000	99.8	62.0	J-223	99.8	62.0	P-201	3.94	True
J-206	917	4,000	4,917	4,000	4,917	90.3	61.4	J-223	90.3	61.4	P-205	3.48	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-207	931	4,000	4,931	4,000	4,931	80.6	60.9	J-223	80.6	60.9	P-205	3.15	True
J-208	590	4,000	4,590	4,000	4,590	78.3	61.4	J-223	78.3	61.4	P-205	2.87	True
J-209	576	4,000	4,576	4,000	4,576	83.0	61.7	J-223	83.0	61.7	P-208	3.33	True
J-210	576	4,000	4,576	4,000	4,576	94.1	62.0	J-223	94.1	62.0	P-213	3.78	True
J-211	576	4,000	4,576	4,000	4,576	90.9	62.0	J-223	90.9	62.0	P-214	7.19	True
J-212	230	1,500	1,730	1,500	1,730	105.7	62.1	J-223	105.7	62.1	AZWC-P-12	2.71	True
J-213	230	1,500	1,730	1,500	1,730	102.5	62.1	J-223	102.5	62.1	AZWC-P-12	2.71	True
J-214	230	1,500	1,730	1,500	1,730	97.4	62.1	J-223	97.4	62.1	AZWC-P-12	2.71	True
J-215	230	1,500	1,730	1,500	1,730	90.7	61.9	J-223	90.7	61.9	AZWC-P-12	2.71	True
J-216	341	4,000	4,341	4,000	4,341	79.5	61.0	J-223	79.5	61.0	P-225	4.07	True
J-217	462	4,000	4,462	4,000	4,462	62.8	61.0	J-223	62.8	61.0	P-236	3.56	True
J-218	462	4,000	4,462	4,000	4,462	63.8	60.2	J-223	63.8	60.2	P-236	3.12	True
J-219	462	4,000	4,462	4,000	4,462	52.1	56.1	J-224	52.1	56.1	P-240	7.51	True
J-220	462	4,000	4,462	4,000	4,462	66.5	59.5	J-224	66.5	59.5	P-234	5.22	True
J-221	462	4,000	4,462	4,000	4,462	69.2	61.2	J-223	69.2	61.2	P-235	3.50	True
J-222	476	4,000	4,476	4,000	4,476	72.1	60.6	J-223	72.1	60.6	P-205	3.03	True
J-223	476	4,000	4,476	4,000	4,476	60.1	61.1	J-224	60.1	61.1	P-236	3.17	True
J-224	462	4,000	4,462	4,000	4,462	53.8	59.2	J-219	53.8	59.2	P-242	5.91	True
J-225	378	1,500	1,878	1,500	1,878	66.1	62.1	J-223	66.1	62.1	P-134	2.80	True
J-226	378	1,500	1,878	1,500	1,878	64.4	62.1	J-223	64.4	62.1	P-246	2.94	True
J-227	378	1,500	1,878	1,500	1,878	67.2	62.1	J-223	67.2	62.1	P-134	2.76	True
J-228	201	4,000	4,201	4,000	4,201	67.3	60.8	J-232	67.3	60.8	P-249	5.37	True
J-229	121	4,000	4,121	4,000	4,121	59.8	62.0	J-223	59.8	62.0	P-250	4.24	True
J-230	201	4,000	4,201	4,000	4,201	57.6	55.4	J-232	57.6	55.4	P-251	5.85	True
J-231	121	1,500	1,621	1,500	1,621	70.3	62.1	J-223	70.3	62.1	P-134	3.12	True
J-232	62	4,000	4,062	4,000	4,062	53.7	55.4	J-233	53.7	55.4	P-251	5.74	True
J-233	0	1,500	1,500	1,500	1,500	66.0	62.1	J-223	66.0	62.1	P-134	3.15	True
J-ELS	1	4,000	4,001	4,000	4,001	96.1	62.0	J-223	96.1	62.0	P-260	5.97	True

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AZWC-J-1	177	4,000	4,177	6,061	6,238	39.9	47.9	AZWC-J-4	20.0	29.6	AZWC-P-12	9.54	True
AZWC-J-2	0	4,000	4,000	7,475	7,475	48.3	49.5	AZWC-J-1	21.6	29.8	AZWC-P-12	10.00	True
AZWC-J-3	177	4,000	4,177	7,936	8,113	58.2	58.0	AZWC-J-2	39.5	48.5	AZWC-P-9	10.00	True
AZWC-J-4	351	4,000	4,351	6,378	6,729	45.5	41.7	AZWC-J-1	20.8	20.6	AZWC-P-12	10.00	True
AZWC-J-5	14	4,000	4,014	5,530	5,544	40.0	41.4	AZWC-J-1	20.0	28.6	AZWC-P-12	9.03	True
AZWC-J-6	14	4,000	4,014	6,487	6,501	50.3	52.3	AZWC-J-2	24.3	40.6	AZWC-P-19	10.00	True
AZWC-J-7	14	4,000	4,014	6,340	6,354	48.7	42.4	AZWC-J-1	22.6	22.7	AZWC-P-12	10.00	True
AZWC-J-8	177	4,000	4,177	10,000	10,177	77.8	62.2	J-223	77.8	62.2	AZWC-P-12	2.71	True
AZWC-J-9	130	4,000	4,130	4,899	5,029	35.7	42.7	AZWC-J-1	20.0	35.8	AZWC-P-23	8.35	True
AZWC-J-10	173	4,000	4,173	5,790	5,963	44.9	42.5	AZWC-J-1	20.0	22.9	AZWC-P-12	9.37	True
AZWC-J-11	351	4,000	4,351	6,340	6,690	54.6	42.5	AZWC-J-1	31.8	22.8	AZWC-P-12	10.00	True
AZWC-J-12	177	4,000	4,177	5,919	6,096	70.6	54.3	AZWC-J-1	63.2	47.5	AZWC-P-12	10.00	True
AZWC-J-13	91	4,000	4,091	6,329	6,420	54.6	42.7	AZWC-J-1	24.6	22.3	AZWC-P-12	10.00	True
AZWC-J-14	91	4,000	4,091	6,009	6,100	51.2	42.8	AZWC-J-1	20.0	20.4	AZWC-P-12	9.63	True
AZWC-J-15	351	4,000	4,351	6,286	6,637	64.8	43.7	AZWC-J-1	43.7	25.9	AZWC-P-12	10.00	True
AZWC-J-16	177	4,000	4,177	6,236	6,413	67.6	45.2	AZWC-J-1	49.6	28.9	AZWC-P-12	10.00	True
AZWC-J-17	91	4,000	4,091	6,315	6,406	59.9	43.1	AZWC-J-1	27.2	24.2	AZWC-P-12	10.00	True
AZWC-J-18	91	4,000	4,091	5,879	5,970	53.4	42.9	AZWC-J-1	20.0	27.3	AZWC-P-1	9.76	True
J-1	0	4,000	4,000	10,000	10,000	80.7	62.0	J-223	78.4	61.7	P-133	5.28	True
J-2	0	4,000	4,000	10,000	10,000	78.7	62.0	J-223	77.0	61.8	P-133	6.35	True
J-3	0	4,000	4,000	10,000	10,000	74.1	62.1	J-223	71.4	62.0	P-134	7.58	True
J-4	56	4,000	4,056	10,000	10,056	72.5	62.1	J-223	68.4	62.0	P-134	6.98	True
J-5	0	4,000	4,000	10,000	10,000	77.1	62.1	J-223	53.9	61.3	P-41	8.97	True
J-6	0	4,000	4,000	9,506	9,506	80.1	62.1	J-223	45.0	56.8	P-37	10.00	True
J-7	0	4,000	4,000	9,545	9,545	84.1	62.0	J-223	52.0	61.9	P-22	10.00	True
J-8	0	4,000	4,000	10,000	10,000	89.3	62.0	J-223	65.5	61.8	P-5	8.49	True
J-9	0	4,000	4,000	10,000	10,000	87.4	62.0	J-223	68.6	61.8	P-7	8.29	True
J-10	0	4,000	4,000	10,000	10,000	85.2	62.0	J-223	71.5	61.8	P-6	7.87	True
J-11	0	4,000	4,000	10,000	10,000	83.0	62.0	J-223	71.6	61.8	P-7	9.15	True
J-12	0	4,000	4,000	10,000	10,000	74.3	62.0	J-223	65.7	60.7	P-106	6.84	True

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J-13	0	4,000	4,000	10,000	10,000	67.1	62.0	J-223	54.1	56.8	P-137	9.24	True
J-14	0	4,000	4,000	10,000	10,000	63.1	62.0	J-223	50.8	52.0	P-58	6.11	True
J-15	354	4,000	4,354	10,000	10,354	60.7	62.0	J-223	45.2	51.2	P-142	8.24	True
J-16	28	4,000	4,028	10,000	10,028	65.5	62.0	J-223	54.7	54.5	P-8	6.91	True
J-17	0	4,000	4,000	10,000	10,000	69.3	62.1	J-223	58.6	58.8	P-9	8.82	True
J-18	0	4,000	4,000	10,000	10,000	70.4	61.9	J-223	60.4	59.6	P-11	6.18	True
J-19	0	4,000	4,000	10,000	10,000	72.1	61.9	J-223	60.7	60.8	P-11	7.56	True
J-20	0	4,000	4,000	10,000	10,000	77.5	61.8	J-223	74.9	61.3	P-124	4.04	True
J-21	0	4,000	4,000	10,000	10,000	84.5	61.8	J-223	81.5	61.4	P-133	3.93	True
J-22	28	4,000	4,028	10,000	10,028	88.6	61.9	J-223	86.1	61.4	P-133	4.22	True
J-23	0	4,000	4,000	10,000	10,000	85.0	62.0	J-223	82.1	61.7	P-133	4.66	True
J-24	0	4,000	4,000	10,000	10,000	94.4	62.0	J-223	80.8	61.4	P-83	7.60	True
J-25	0	4,000	4,000	10,000	10,000	96.6	62.0	J-223	74.8	61.3	P-15	7.60	True
J-26	0	4,000	4,000	9,698	9,698	93.3	62.0	J-223	66.2	61.7	P-16	10.00	True
J-27	273	1,500	1,773	6,987	7,260	89.5	62.1	J-223	64.1	61.9	P-17	10.00	True
J-28	273	1,500	1,773	10,000	10,273	88.7	62.1	J-223	48.5	56.3	P-22	9.83	True
J-29	0	1,500	1,500	3,411	3,411	81.4	62.1	J-223	65.2	62.1	P-20	10.00	True
J-30	273	4,000	4,273	7,800	8,073	75.3	62.1	J-223	57.5	61.9	P-21	10.00	True
J-31	273	1,500	1,773	6,471	6,744	83.0	62.1	J-223	58.2	61.2	P-24	10.00	True
J-32	273	1,500	1,773	8,790	9,063	81.7	62.1	J-223	49.9	58.6	P-25	10.00	True
J-33	273	1,500	1,773	6,462	6,735	79.0	62.1	J-223	60.7	62.0	P-27	10.00	True
J-34	273	1,500	1,773	4,977	5,249	77.1	62.1	J-223	67.2	62.1	P-27	10.00	True
J-35	0	1,500	1,500	2,675	2,675	79.9	62.1	J-223	64.3	62.1	P-39	10.00	True
J-36	0	1,500	1,500	3,545	3,545	76.6	62.1	J-223	64.2	62.1	P-42	10.00	True
J-37	0	1,500	1,500	2,600	2,600	78.9	62.1	J-223	61.5	62.1	P-31	10.00	True
J-38	0	1,500	1,500	2,460	2,460	74.9	62.1	J-223	61.3	62.1	P-33	10.00	True
J-39	354	1,500	1,854	2,182	2,536	75.3	62.1	J-223	67.5	62.1	P-34	10.00	True
J-40	0	1,500	1,500	2,289	2,289	73.3	62.1	J-223	64.8	62.1	P-36	10.00	True
J-41	0	4,000	4,000	7,189	7,189	80.0	62.0	J-223	60.2	62.0	P-37	10.00	True
J-42	0	4,000	4,000	9,906	9,906	74.8	62.1	J-223	57.0	61.9	P-40	10.00	True

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J-43	354	1,500	1,854	6,572	6,926	75.8	62.1	J-223	64.0	61.9	P-44	10.00	True
J-44	354	1,500	1,854	10,000	10,354	71.4	62.1	J-223	53.4	58.9	P-143	8.06	True
J-45	0	1,500	1,500	3,640	3,640	74.6	62.1	J-223	58.4	62.0	P-47	10.00	True
J-46	354	1,500	1,854	2,625	2,979	65.5	62.1	J-223	53.6	62.1	P-49	10.00	True
J-47	0	1,500	1,500	3,058	3,058	73.4	62.1	J-223	57.6	62.0	P-51	10.00	True
J-48	0	1,500	1,500	4,999	4,999	67.8	62.1	J-223	49.4	61.9	P-62	10.00	True
J-49	354	1,500	1,854	8,844	9,198	68.2	62.1	J-223	43.4	48.5	P-54	10.00	True
J-50	0	1,500	1,500	2,852	2,852	61.6	62.1	J-223	49.1	62.0	P-56	10.00	True
J-51	0	4,000	4,000	10,000	10,000	62.9	62.0	J-223	49.7	54.3	P-138	7.63	True
J-52	0	4,000	4,000	10,000	10,000	67.6	62.0	J-223	56.4	57.4	P-61	7.51	True
J-53	273	1,500	1,773	2,716	2,989	88.9	62.1	J-223	77.4	62.1	P-65	10.00	True
J-54	0	1,500	1,500	6,935	6,935	96.6	62.1	J-223	74.6	61.9	P-64	10.00	True
J-55	0	1,500	1,500	4,911	4,911	93.9	62.1	J-223	73.4	62.0	P-66	10.00	True
J-56	273	1,500	1,773	8,395	8,667	94.2	62.1	J-223	66.1	61.8	P-93	10.00	True
J-57	0	1,500	1,500	4,027	4,027	90.5	62.1	J-223	66.7	62.0	P-68	10.00	True
J-58	0	1,500	1,500	3,015	3,015	91.0	62.1	J-223	74.2	62.0	P-72	10.00	True
J-59	0	4,000	4,000	7,149	7,149	90.3	62.0	J-223	74.3	61.9	P-70	10.00	True
J-60	0	1,500	1,500	2,912	2,912	90.6	62.1	J-223	71.2	62.0	P-74	10.00	True
J-61	273	1,500	1,773	7,245	7,517	97.0	62.1	J-223	71.4	61.9	P-75	10.00	True
J-62	273	1,500	1,773	9,754	10,027	89.6	62.1	J-223	63.7	61.8	P-77	10.00	True
J-63	273	1,500	1,773	7,534	7,807	89.0	62.1	J-223	71.8	61.9	P-78	10.00	True
J-64	0	1,500	1,500	2,702	2,702	85.6	62.1	J-223	72.4	62.0	P-79	10.00	True
J-65	273	1,500	1,773	7,353	7,626	92.7	62.1	J-223	74.8	61.8	P-84	10.00	True
J-66	0	4,000	4,000	10,000	10,000	92.1	62.0	J-223	80.6	61.4	P-82	8.02	True
J-67	0	1,500	1,500	2,790	2,790	83.8	62.1	J-223	67.2	62.0	P-85	10.00	True
J-68	273	1,500	1,773	6,987	7,259	87.6	62.1	J-223	73.4	61.8	P-87	10.00	True
J-69	0	1,500	1,500	4,150	4,150	82.3	62.1	J-223	60.0	62.0	P-140	10.00	True
J-70	273	1,500	1,773	9,365	9,638	88.0	62.1	J-223	63.4	61.8	P-90	10.00	True
J-71	273	1,500	1,773	9,811	10,083	89.8	62.1	J-223	61.0	61.7	P-96	10.00	True
J-72	273	1,500	1,773	8,756	9,028	91.2	62.1	J-223	68.1	61.8	P-94	10.00	True

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J-73	0	1,500	1,500	3,562	3,562	73.7	62.1	J-223	60.3	61.9	P-112	10.00	True
J-74	354	1,500	1,854	10,000	10,354	77.6	62.1	J-223	55.8	61.6	P-98	8.15	True
J-75	354	1,500	1,854	6,344	6,698	79.3	62.1	J-223	61.8	61.8	P-99	10.00	True
J-76	354	1,500	1,854	6,453	6,807	81.8	62.1	J-223	68.6	61.7	P-100	10.00	True
J-77	354	1,500	1,854	6,224	6,578	78.7	62.1	J-223	61.0	61.8	P-102	10.00	True
J-78	354	1,500	1,854	8,598	8,952	76.4	62.1	J-223	53.0	61.7	P-103	10.00	True
J-79	0	1,500	1,500	3,035	3,035	73.6	62.1	J-223	58.0	62.0	P-119	10.00	True
J-80	0	4,000	4,000	10,000	10,000	77.4	62.0	J-223	68.6	61.7	P-105	8.65	True
J-81	0	1,500	1,500	3,781	3,781	81.9	62.1	J-223	65.0	61.9	P-130	10.00	True
J-82	354	1,500	1,854	6,622	6,976	82.4	62.1	J-223	68.6	61.8	P-109	10.00	True
J-83	354	4,000	4,354	7,744	8,098	70.0	61.9	J-223	58.7	61.7	P-122	10.00	True
J-84	0	1,500	1,500	3,961	3,961	69.5	62.1	J-223	49.4	61.9	P-113	10.00	True
J-85	0	1,500	1,500	3,006	3,006	70.1	62.1	J-223	44.7	62.0	P-117	10.00	True
J-86	0	1,500	1,500	2,890	2,890	75.7	62.1	J-223	57.7	62.0	P-121	10.00	True
J-87	0	1,500	1,500	3,915	3,915	76.2	62.1	J-223	54.7	61.6	P-120	10.00	True
J-88	378	4,000	4,378	10,000	10,378	70.2	61.8	J-223	67.5	60.9	P-124	4.76	True
J-89	378	4,000	4,378	10,000	10,378	64.2	62.2	J-223	60.7	59.7	P-205	3.42	True
J-90	0	4,000	4,000	10,000	10,000	61.5	61.7	J-15	46.1	50.5	P-125	9.03	True
J-91	0	4,000	4,000	10,000	10,000	87.7	61.9	J-223	84.7	61.4	P-133	4.07	True
J-92	0	4,000	4,000	10,000	10,000	78.2	62.2	J-223	78.2	62.2	P-500	3.15	True
J-93	0	4,000	4,000	10,000	10,000	82.6	61.8	J-223	79.5	61.4	P-133	3.86	True
J-94	56	4,000	4,056	10,000	10,056	66.6	62.0	J-223	57.1	55.1	P-61	5.51	True
J-95	0	4,000	4,000	10,000	10,000	62.5	62.0	J-223	49.3	52.3	P-141	8.20	True
J-200	576	4,000	4,576	10,000	10,576	90.8	61.9	J-223	87.5	61.0	P-217	4.42	True
J-201	917	4,000	4,917	10,000	10,917	95.9	62.1	J-223	92.6	60.4	P-133	3.78	True
J-202	917	4,000	4,917	10,000	10,917	101.0	62.1	J-223	94.0	60.5	P-200	6.71	True
J-203	917	4,000	4,917	10,000	10,917	101.2	62.1	J-223	80.3	60.7	P-201	9.79	True
J-204	0	4,000	4,000	8,668	8,668	100.6	62.1	J-223	76.7	61.1	P-202	10.00	True
J-205	0	1,500	1,500	10,000	10,000	105.2	62.1	J-223	73.2	60.9	P-204	8.77	True
J-206	917	4,000	4,917	10,000	10,917	90.3	61.4	J-223	86.0	58.9	P-205	5.12	True

Label	Demand (gpm)	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)	Satisfies Fire Flow Constraints?
J-207	931	4,000	4,931	10,000	10,931	80.6	60.9	J-223	75.7	57.6	P-205	4.51	True
J-208	590	4,000	4,590	10,000	10,590	78.3	61.4	J-223	69.4	59.7	P-212	6.08	True
J-209	576	4,000	4,576	10,000	10,576	83.0	61.7	J-223	65.1	60.4	P-211	7.57	True
J-210	576	4,000	4,576	10,000	10,576	94.1	62.0	J-223	72.8	61.0	P-216	8.18	True
J-211	576	4,000	4,576	5,790	6,366	90.9	62.0	J-223	79.4	61.9	P-214	10.00	True
J-212	230	1,500	1,730	6,647	6,877	105.7	62.1	J-223	70.5	61.5	P-220	10.00	True
J-213	230	1,500	1,730	8,830	9,060	102.5	62.1	J-223	70.3	60.8	P-226	10.00	True
J-214	230	1,500	1,730	10,000	10,230	97.4	62.1	J-223	76.6	60.1	P-227	9.53	True
J-215	230	1,500	1,730	9,431	9,661	90.7	61.9	J-223	58.8	59.4	P-228	10.00	True
J-216	341	4,000	4,341	10,000	10,341	79.5	61.0	J-223	60.3	56.8	P-225	9.46	True
J-217	462	4,000	4,462	10,000	10,462	62.8	61.0	J-223	57.5	56.2	P-236	5.61	True
J-218	462	4,000	4,462	10,000	10,462	63.8	60.2	J-223	57.0	54.1	P-236	4.83	True
J-219	462	4,000	4,462	5,481	5,942	52.1	56.1	J-224	42.0	51.9	P-240	10.00	True
J-220	462	4,000	4,462	8,362	8,824	66.5	59.5	J-224	43.3	49.4	P-234	10.00	True
J-221	462	4,000	4,462	10,000	10,462	69.2	61.2	J-223	50.7	58.6	P-235	7.91	True
J-222	476	4,000	4,476	10,000	10,476	72.1	60.6	J-223	66.1	55.9	P-236	4.53	True
J-223	476	4,000	4,476	10,000	10,476	60.1	61.1	J-224	53.5	54.7	P-236	4.94	True
J-224	462	4,000	4,462	7,427	7,889	53.8	59.2	J-219	38.5	46.5	P-242	10.00	True
J-225	378	1,500	1,878	9,625	10,003	66.1	62.1	J-223	46.4	48.7	P-243	10.00	True
J-226	378	1,500	1,878	5,865	6,243	64.4	62.1	J-223	48.2	60.1	P-246	10.00	True
J-227	378	1,500	1,878	8,787	9,165	67.2	62.1	J-223	38.2	59.6	P-248	10.00	True
J-228	201	4,000	4,201	8,041	8,243	67.3	60.8	J-232	52.1	45.6	P-249	10.00	True
J-229	121	4,000	4,121	9,663	9,785	59.8	62.0	J-223	32.6	56.9	P-250	10.00	True
J-230	201	4,000	4,201	7,027	7,229	57.6	55.4	J-232	37.7	35.6	P-251	10.00	True
J-231	121	1,500	1,621	6,508	6,629	70.3	62.1	J-223	51.8	54.2	P-254	10.00	True
J-232	62	4,000	4,062	7,173	7,235	53.7	55.4	J-233	29.3	32.1	P-251	10.00	True
J-233	0	1,500	1,500	5,823	5,823	66.0	62.1	J-223	39.4	42.5	P-258	10.00	True
J-ELS	1	1,500	1,501	6,722	6,723	105.6	62.1	J-223	78.6	61.7	P-260	10.00	True

APPENDIX D
DESIGNATION OF ASSURED WATER SUPPLY

JANICE K. BREWER
Governor

HERBERT R. GUENTHER
Director

ARIZONA DEPARTMENT OF WATER RESOURCES

3550 North Central Avenue, Second Floor
PHOENIX, ARIZONA 85012-2105
(602) 771-8500

September 29, 2010

Via Certified Mail
7004 2510 0000 8660 1031

Water Utilities Community Facility District
George Hoffman
District Manager
PO Box 4768
Apache Junction, AZ 85278-4768

**Re: Designation of Assured Water Supply (DWR No. 86-002025.0001)
Water Utilities Community Facility District**

Dear Mr. Hoffman:

I am pleased to inform you that the Arizona Department of Water Resources has approved the Modification of the Water Utilities Community Facilities District's ("WUCFD") Designation of Assured Water Supply. We have enclosed the formal Decision and Order. The Decision and Order includes an itemization of the WUCFD's responsibilities in maintaining the Designation.

WUCFD's status as a designated water provider demonstrates that the WUCFD is taking a long-term perspective in managing water resources. The WUCFD's commitment to sound water management represents a major contribution to the State's water management goal of achieving safe-yield in the Phoenix Active Management Area.

If you have any questions regarding these documents, please contact Scott Miller at (602) 771-8604.

Sincerely,

Sandra Fabritz Whitney

Sandra Fabritz Whitney
Assistant Director

cc: Via electronic mail:
Frank Blanco, WUCFD
Robin King, Arizona Department of Real Estate
J. Scott Miller, Manager, Groundwater Permitting and Wells

DEPARTMENT OF WATER RESOURCES

BEFORE THE DIRECTOR

IN THE MATTER OF THE APPLICATION OF APACHE JUNCTION WATER UTILITIES COMMUNITY FACILITIES DISTRICT FOR A DESIGNATION AS HAVING AN ASSURED WATER SUPPLY	**AWS No. 2010-014** **DECISION AND ORDER** **No. 86-002025.0001**

I. INTRODUCTION

On September 29, 2008 the Department of Water Resources ("Department") received an application from Apache Junction Water Utilities Community Facilities District ("WUCFD") requesting that the Department modify WUCFD's designation of assured water supply pursuant to A.R.S. § 45-576 *et seq.* and A.A.C. R12-15-701 *et seq.* On July 15, 2010 and July 22, 2010, the Department gave public notice of the application pursuant to A.R.S. § 45-578. One objection to the application was filed with the Department.

After receiving WUCFD's application to modify its designation of assured water supply, the Department reviewed relevant information regarding the modification request, including: 1) hydrologic information and other information on file with the Department for the proposed groundwater supply, 2) information regarding WUCFD's consistency with the management plan and the management goal of the Phoenix Active Management Area ("Phoenix AMA"); 3) information regarding WUCFD's financial capability to construct the necessary delivery system, treatment works and storage facilities; and 4) the issues raised by the objection to the application. Based on that information, the Department makes the following Findings of Fact, Conclusions of Law and Order of Designation and Conditions of Designation:

II. FINDINGS OF FACT

A. General

1. WUCFD is a community facilities district established under A.R.S. § 48-701 *et.seq.*
2. WUCFD has the legal authority to deliver water to its customers located within its service area.
3. WUCFD currently serves water through its municipal distribution system to its customers.
4. On February 1, 2005 WUCFD was designated as having an assured water supply in Decision and Order AWS 2005-003, No. 26-400989.0000.

B. Water Demands

5. WUCFD's current demand as of calendar year 2008 is 1,843.29 acre-feet per year ("current demand").
6. WUCFD's committed demand as of calendar year 2008 is 43.04 acre-feet per year ("committed demand").
7. WUCFD's projected demand in 2025 is 1,675.71 acre-feet per year ("2025 projected demand"). The 2025 projected demand does not include the current demand or the committed demand, but does include the demand at build-out of plats reasonably projected to be approved through calendar year 2025.
8. WUCFD's annual estimated water demand in 2025, which is the sum of its current demand, committed demand, and 2025 projected demand, is 3,562.04 acre-feet per year ("2025 annual estimated water demand").

C. Physical Availability of Groundwater and Stored Water Recovered Outside the Area of Impact

9. WUCFD has demonstrated that after withdrawing 276,900 acre-feet, or an average of 2,769 acre-feet per year over 100 years, of groundwater and stored water recovered outside the area of impact (*see* Finding of Fact No. 28), the depth-to-static water level within WUCFD's service area is not expected to exceed 1,000 feet below land surface. For purposes of this Decision and Order, that volume includes the following:

a. 39,126.18 acre-feet, or an average of 391.26 acre-feet per year over 100 years, of future and existing long-term storage credits to be recovered outside the area of impact. See Finding of Fact No. 28.

b. 584 acre-feet, or an average of 5.84 acre-feet per year over 100 years, of groundwater that WUCFD may use to supplement its CAP water supplies, pursuant to A.A.C. R12-15-717(D)(2). See Finding of Fact No. 30.

c. 237,190 acre-feet, or an average of 2,371.9 acre-feet per year over 100 years, of groundwater to meet annual demands. See Finding of Fact No. 20.

D. Groundwater

10. WUCFD has demonstrated that it has wells of sufficient capacity to withdraw at least 2,899.75 acre-feet per year of groundwater for 100 years.

11. WUCFD has the right to withdraw and deliver groundwater to its customers pursuant to service area right No. 56-002025.

12. As of the date of this Decision and Order, WUCFD's current groundwater allowance is 463.02 acre-feet, or an average of 4.63 acre-feet per year over 100 years, pursuant to A.A.C. R12-15-724(A)(2).

13. Pursuant to A.A.C. R12-15-724(A)(4), the Director shall add a volume for incidental recharge to WUCFD's groundwater allowance for each calendar year, based upon its total water use from any source in the previous calendar year.

14. Based on its reported water use within its service area for calendar year 2008, WUCFD's incidental recharge volume for calendar year 2009 is 80.54 acre-feet.

15. If WUCFD delivers 3,383 acre-feet per year of water for use within its service area in calendar year 2024, its incidental recharge volume for calendar year 2025 will be 135.32 acre-feet ("2025 incidental recharge volume").

16. The sum of WUCFD's current groundwater allowance and 2025 incidental recharge volume is 139.95 acre-feet per year. This volume of groundwater will be consistent with the management goal each year for 100 years.

17. WUCFD is a member service area of the Central Arizona Groundwater Replenishment District (CAGRD). The Member Service Area Agreement between WUCFD and the CAGRD (Agreement) does not limit the volume of excess groundwater, as defined in the

Agreement.

18. The Director has made a determination, which has not expired, that the most recent CAGRD Plan of Operation is consistent with the management goal of the Phoenix AMA.

19. As of the date of this decision and order, the CAGRD is in compliance with its groundwater replenishment obligation for the Phoenix AMA.

20. WUCFD has demonstrated that an average of 2,371.9 acre-feet per year of groundwater to meet annual demands will be physically, continuously and legally available for 100 years and consistent with the management goal of the Phoenix AMA.

21. In addition to the groundwater supplies described in Finding of Fact No. 20, WUCFD has demonstrated that 584 acre-feet, or an average of 5.84 acre-feet per year over 100 years, of groundwater will be physically, continuously and legally available to supplement its CAP water supplies, pursuant to A.A.C. R12-15-717(D)(2). See Finding of Fact No. 30.

E. Storage and Recovery

22. WUCFD holds Water Storage Permit No. 73-545695.7000, which allows storage of a maximum volume of 20,000 acre-feet per year of CAP water at the RWCD Groundwater Savings Facility.

23. WUCFD holds Recovery Well Permit No. 74-576703.0001, which allow recovery of a total of 2,899.75 acre-feet per year outside the area of impact of storage.

F. Long-Term Storage Credits

24. As of December 31, 2008, WUCFD holds 24,286.18 acre-feet of long-term storage credits.

25. On January 17, 2006, WUCFD and the Superstition Mountains Community Facilities District ("SMCFD") entered into an intergovernmental agreement ("IGA") for the sale and purchase of long term storage credits to be earned by SMCFD at Underground Storage Facility No. 71-584469.0000.

26. The term of the agreement expires on December 31, 2015.

27. Pursuant to the IGA, WUCFD may purchase 14,840 acre-feet of long-term storage credits during the term of the IGA.

28. WUCFD has demonstrated that up to 39,126.18 acre-feet, or an average of 391.26 of long-term storage credits to be recovered outside the area of impact will be physically, continuously and legally available for 100 years, for purposes of this Decision and Order.

G. CAP Water: Physical, Continuous and Legal Availability

i. WUCFD M&I CAP Water Allocation

29. WUCFD holds a long-term, non-declining municipal and industrial ("M&I") subcontract for CAP water with the Central Arizona Water Conservation District for 2,919 acre-feet per year.

ii. Continuous Availability of CAP Water

30. The volume of groundwater and stored water to be recovered outside the area of impact of storage described in Finding of Fact No. 9 includes 584 acre-feet, or an average of 5.84 acre-feet per year over 100 years, of groundwater that WUCFD may use to supplement its CAP water supplies, pursuant to A.A.C. R12-15-717(D)(2).

iii. Treatment Facilities

31. Pursuant to an agreement between WUCFD and the City of Mesa ("Mesa") dated March 17, 2006, WUCFD has treatment capacity to treat up to a total of 2,919 acre-feet per year of CAP water at Mesa's Brown Road CAP Water Treatment Plant until March 17, 2016.

32. According to WUCFD's 5 year (2010 – 2014) Water System Capital Improvements Plan, a Water Treatment Plant with a treatment capacity of approximately 1,232 acre feet per year will be built to treat WUCFD's CAP allocation.

iv. Summary

33. The total volume of CAP Water is 2,919 which includes WUCFD's CAP M&I allocation. WUCFD has demonstrated that 1,232 acre-feet per year of CAP water to be treated and delivered without storage is physically, continuously and legally available for 100 years.

H. Consistency with the Management Plan

34. WUCFD is currently regulated as a large municipal provider under the Municipal Conservation Program in the Third Management Plan for the Phoenix AMA ("Management Plan"). As of the date the application was filed, WUCFD has not been found to be out of compliance with the Management Plan.

I. Water Quality

35. WUCFD is regulated by the Arizona Department of Environmental Quality as a public water system pursuant to A.R.S. § 49-351, *et seq.*

J. Financial Capability

36. WUCFD's five-year capital improvement plan provides for the creation of a water treatment facility to treat 1,232 acre-feet per year of CAP water
37. WUCFD has constructed the remaining delivery system and storage facilities necessary to satisfy its 2025 annual estimated water demand.

III. CONCLUSIONS OF LAW

Having reviewed the Findings of Fact, the Department makes the following Conclusions of Law:

1. For purposes of this Decision and Order, WUCFD has demonstrated that 2,371.9 acre-feet per year of groundwater, 391.26 acre-feet per year of long-term storage credits to be recovered outside the area of impact, and 1,232 acre-feet per year of CAP water to be treated and delivered without storage, will be physically, continuously and legally available for at least 100 years and will be consistent with the management goal. A.A.C. R12-15-716, R12-15-717, R12-15-718, R12-15-722. The sum of these volumes, 3,995.16 acre-feet per year, exceeds the 2025 annual estimated water demand of 3,562.04 acre-feet per year. *See* Attachment A to this Decision and Order.
2. WUCFD has also demonstrated that 584 acre-feet, or an average of 5.84 acre-feet per year over 100 years, of groundwater will be physically, continuously and legally available to supplement its CAP water supplies. A.A.C. R12-15-717(D)(2). See

Attachment A to this Decision and Order.

3. For purposes of A.A.C. R12-15-716(B)(3)(c)(ii), the volume of WUCFD's 2025 annual estimated water demand that will be met with groundwater and stored water recovered outside the area of impact is 276,900 acre-feet, or an average of 2,769 acre-feet per year over 100 years. See Attachment A to this Decision and Order.
4. In accordance with A.A.C. R12-15-722, WUCFD has demonstrated that its projected use of groundwater is consistent with the management goal of the Phoenix AMA.
5. The water supply served by WUCFD will be of adequate quality pursuant to A.A.C. R12-15-719.
6. In accordance with A.A.C. R12-15-721, WUCFD meets the standard established for determining consistency with the Management Plan for the Phoenix AMA.
7. WUCFD has satisfied the financial capability criteria prescribed in A.A.C. R12-15-720.
8. WUCFD has satisfied all the requirements for a designation of an assured water supply.

IV. ORDER OF DESIGNATION AND CONDITIONS OF DESIGNATION

Having reviewed the Findings of Fact and Conclusions of Law, the Department hereby issues this Decision and Order designating WUCFD as having an assured water supply, subject to the following conditions:

1. The Director's determination that an assured water supply exists for WUCFD is based on its analysis of the water supplies pledged by WUCFD. Nothing in this Decision and Order limits or reduces WUCFD's legal authority to use any water supply in any year.
2. The Director reserves the right under A.A.C. R12-15-711(C) to periodically review and modify the designation for good cause as conditions warrant.
3. Pursuant to A.A.C. R12-15-711(F), the Director may, at any time revoke this designation if the findings of fact or the conclusions of law upon which the designation is based change or are invalid, or if an assured water supply no longer exists.
4. WUCFD shall submit an application to modify this decision and order designating WUCFD as having an assured water supply to increase the term of the designation when the sum of WUCFD current demand, committed demand and two years of

projected demand exceeds 3,562.04 acre-feet per year, or by December 31, 2023, whichever is earlier.

5. Pursuant to A.A.C. R12-15-719, WUCFD shall satisfy any state water quality requirements established for its proposed use after the date of this designation.

6. WUCFD shall annually provide to the Department the following information for the previous calendar year in the manner prescribed in A.A.C. R12-15-711(A):
   a. An estimate of the demand of platted, undeveloped lots located in WUCFD's service area.
   b. An estimate of the projected demand at build-out for customers with which WUCFD has entered into a notice of intent to serve agreement in the preceding calendar year.
   c. A report regarding WUCFD's compliance with water quality requirements.
   d. The depth-to-static water level of all wells from which WUCFD withdrew water during the previous calendar year.
   e. Any other information requested by the Director to determine whether WUCFD continues to meet all the requirements necessary to maintain this designation of assured water supply.

IT IS HEREBY ORDERED THAT WUCFD BE DESIGNATED AS HAVING AN ASSURED WATER SUPPLY UNTIL DECEMBER 31, 2025.

DATED this 29th day of September, 2010.

Herbert R. Guenther
Director
Arizona Department of Water Resources

A copy of the foregoing
Decision and Order mailed
by certified mail this 29TH day
of SEPTEMBER, 2010, to:

WUCFD
George Hoffman
District Manager
PO Box 4768
Apache Junction, AZ 85278-4768

Certified Mail No.:
7004 2510 0000 8660 1031

Sent by: MICHELLE MORENO

A copy of the foregoing sent by
electronic mail this 29TH day
of SEPTEMBER, 2010, to:

WUCFD
Frank Blanco
PO Box 4768
Apache Junction, AZ 85278-4768

Cliff Neal
CAGRD
23636 N 7th St
Phoenix, AZ 85024

Robin King
Arizona Department of Real Estate
2910 N. 44th Street
WUCFD, AZ 85018

J. Scott Miller
ADWR
3550 North Central Avenue
WUCFD, AZ 85012

Source	Approved (af/yr)	Capacity	Legal Authority	Comments
Total Groundwater to Meet Annual Demands	**2,371.9**	Physical availability of groundwater and stored water recovered outside the area of impact (AOI) = 2,769 af/yr Groundwater Well Capacity = 2,899.75 af/yr	Service Area Right No. 56-002520.0000 Groundwater allowance: A.A.C. R12-15-724(A)(2): 2009 Groundwater Allowance 4.63 af/yr Incidental Recharge: A.A.C. R12-15-724(A)(4): 2019 water use times IR factor of 4.00% (3,383 x 0.04 = 135.32) Total Groundwater Allowance for 2020: 139.95 af/yr	Total Groundwater to meet annual demands include: 2,769 physically available • minus 391.26 af/yr of long-term storage credits to be recovered outside the area of impact ("AOI") • minus 5.84 af/yr of groundwater to supplement CAP water supplies =2,371.9 af/yr.
Total Existing Long Term Storage Credits	**391.26**	Recovery Well Permit No: 74-576703.0001 Recovery Well Capacity =2,899.75 af/yr Recharge Storage Permit Capacity = 20,000 af/yr Physical availability of groundwater + stored water recovered outside AOI = 2,769 af/yr	Long Term Storage Account No: 70- 441152 Water Storage Permit No: 73-545695.7000	2008 balance of 39,126.18 af divided by 100 years.

Source	Approved (af/yr)	Capacity	Legal Authority	Comments
Total CAP water – M&I subcontract	**1,232**	Treatment capacity pursuant to CIP = 1,232 af/yr	M&I Subcontract No: 07-XX-30-W0494	M&I Subcontract is 2,919 af/yr
Total 2025 Supplies	**3,995.16**			
Total 2025 Demand	**3,562.04**			

* Note: Abbreviations are consistent with those identified in Decision and Order No. 86-002025.0001

APPENDIX E

CAROLLO WATER STUDY – DISTRIBUTION & TRANSMISSION MAIN EXHIBITS

carollo

Figure 3 State Lands Area Water Distribution System

carollo

Figure 2 State Lands Area Water Treatment and Transmission System

WOOD PATEL

NON-POTABLE WATER INFRASTRUCTURE MASTER PLAN FOR SUPERSTITION VISTAS

September 7, 2021
WP# 205166

Registered Professional Engineer (Civil)
CERTIFICATE NO.
53408
DANIEL W.
MATTHEWS
Date Signed 09/07/21
ARIZONA, U.S.A.

EXPIRES 06/30/24

PREPARED FOR THE D.R. HORTON AND BROOKFIELD RESIDENTIAL DEVELOPMENT TEAM

D·R·HORTON America's Builder

Brookfield Residential

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DWM/km/bl/bp

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EXECUTIVE SUMMARY

This Non-Potable Infrastructure Master Plan for Superstition Vistas was prepared to support the development of Superstition Vistas Site, which includes approximately 8,090 acres, and is more-specifically described in Section 1.1.1. The Site is located within Pinal County and is currently being prepared for annexation into the City of Apache Junction (City). The Site is divided into eight (8) development units (DUs); The non-potable water system has been strategically planned for initial service of the southern area of the Site including DU 1, DU 2, DU 3, DU 5, and DU 6 and allows for a future separate northern system to serve DU 7 and DU 8 once land sales and planning occur. DU 4 is not contemplated for service as it is planned for high density commercial area with minimal planned open space.

Currently, the City does not provide wastewater collection or treatment, nor does it distribute non-potable water. The City is the Central Arizona Governments (CAG) designated management agency assigned to own, operate, and maintain a wastewater collection and treatment system within the City of Apache Junction. The City has delegated wastewater collection and treatment to the Superstition Mountains Community Facility District No. 1. It is our understanding, the City and SMCFD have prepared a consistency review package for submittal to CAG and the Arizona Department of Environmental Quality (ADEQ) to expand the SMCFD service area to incorporate the Site being annexed. Additionally, SMCFD plans to add additional treatment process to meet Class A+ water quality standards for reclaimed water to be used for the non-potable water system for the Site. It is our understanding that minimal upgrades are required at the Wastewater Treatment Facility (WWTF) which already provides nitrogen removal for Class A+ water, and could likely be installed prior to the irrigation demand. In the event the upgrades trail the demands, groundwater wells will be developed in strategic locations and tie into the non-potable transmission mains to provide the irrigation demands to the Site. The wells will also provide primary backup redundancy for the potable and non-potable systems. The Apache Junction Water Utilities Community Facilities District (AJWD) will provide construction water which will siphon from the CAP canal to a temporary pond at the northeast corner of Section 17.

Most of the Site is owned by the Arizona State Land Department (ASLD). ASLD intends to sell their land holdings over time, consistent with their primary mission to manage land sales of state public lands to fund Arizona Programs. Presumably, once the properties are divided and sold, they will be developed for various uses. A portion of the Site owned by ASLD was auctioned on November 4, 2020. The Auction Property included approximately 2,783 acres, described in this report as development units DU 1 and DU 2. Additionally, perpetual right-of-way was included in the sale, to be located later, for the development of infrastructure to serve the Auction Property. D.R. Horton was the winning bidder at the auction, and has since entered into a teaming agreement with co-developer Brookfield Residential.

Together, D.R. Horton and Brookfield Residential, in partnership with ASLD, (Development Team) plan to develop the Auction Property as the first phase of developed land in the Superstition Vistas Site. The Auction Property is required to plan, design, and install the necessary infrastructure to serve the development. The Development Team has retained Wood, Patel & Associates, Inc. (WOODPATEL) to prepare this Non-Potable Water Infrastructure Master Plan and work with the public stakeholders in creating a reliable non-potable system, consistent with ADEQ requirements, to serve the future DUs within the Site.

The non-potable water infrastructure will be beneficial to all stakeholders. The reuse of treated effluent will: reduce the burden on SMCFD to utilize the excess of treated water, reduce the demand on the potable water treatment and distribution systems, reduce the need for acquisition of additional water resources, and provide an economical source of irrigation water.

The estimated unit non-potable water demands for irrigation account for water lost through soil infiltration, evaporation, and plant transpiration. The rate of irrigation application has been determined using standardized evapotranspiration (ET_o) values for various weather stations throughout the state from the Arizona Meteorological Network (AZMET) provided within the "*Converting Reference Evapotranspiration into Turn Water use",* authored by Paul Brown and Dave Kopec, University of Arizona, February 2004, and "*Harvesting Rainwater for Landscape use"* authored by Patricia Waterfall, University of Arizona, 2006. The turf ET_o value for the month of October was increased to account for additional water use during the over-seeding period of the turf in the community parks. The irrigation demands for the month of October provide the peak use and were utilized to size the non-potable infrastructure throughout the Site. The non-potable irrigation demands will be conveyed through pressurized lines from the existing WWTF to onsite lakes or storage tanks, which will serve each individual development unit's irrigation system. Refer to the attached plan within Exhibit 1 – *Vicinity Map*, and Exhibit 2 – *Full Build-out Master Non-Potable Water Exhibit*.

1.0 INTRODUCTION

1.1 General Background and Project Location

1.1.1 Project Location

The Superstition Vistas Site is anticipated to include approximately 8,090 acres to be annexed into the City of Apache Junction (City). The Site is planned as a mixed-use development that will include medium-density single-family residential, commercial mixed-use, office, industrial, and open spaces and may include multi-family and school if a market demand is present at the time of development. Refer to Table 1 – *Planned Open Space and Non-Potable Water Demand Calculations* (within Appendix A) for planned open space in DU 1, DU 2, DU 3, DU 5, and DU 6. In the future, a separate non-potable water system could be planned for DU 7 and DU 8 if developers have a need for service and additional non-potable water is available. As more detailed planning is developed, it is anticipated to be incorporated into this report with future updates.

The Site is divided into eight (8) development units (DUs) to help organize the planning effort for the large area. Refer to Exhibit 1 – *Vicinity Map* for development unit locations. The first phase of development will be within DU 1 and DU 2 (Auction Property). DU 1 and DU 2 were auctioned and sold by ASLD to the Development Team, and are planned to primarily include approximately 10,940 medium-density residential units, approximately 450,000 square feet of commercial mixed use on 40 acres, and neighborhood and community open space. More detailed planning for the Auction Property has been prepared and is reflected within this report.

This Master Non-Potable Water Report has been prepared in accordance with Wood, Patel & Associates, Inc.'s (WOODPATEL) understanding of the Apache Junction Water Utilities Community Facilities District (AJWD) Superstition Mountains Community Facility District No. 1 (SMCFD), Central Arizona Governments (CAG), and Arizona Department of Environmental Quality (ADEQ) technical requirements for non-potable water distribution systems, as applicable for Superstition Vistas.

The Site is located within Sections 6, 7, 8, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, and 34 of Township 1 South, Range 8 East of the Gila and Salt River Meridian. The Auction Property consists of approximately 2,783 acres in Sections 17, 18, 19, 20, and a small portion of Section 30. The Site is bounded on the north by Baseline Avenue, on the south by the future State Route 24 (SR-24) alignment west of Ironwood Drive and Frye Avenue alignment, on the west by the Meridian Road alignment and McKenzie Road, and to the east by the Central Arizona Project Canal (refer to Exhibit 1). The existing industrial land use bordered by Houston Avenue on the north, Guadalupe Avenue on the south, Meridian Road to the west, and Delaware Drive along with the CAP Canal on the east, and the existing WWTF are not a part of the Site, but may also be planned in the future north system service area.

1.2 Scope of Non-Potable Water Infrastructure Master Plan

The intent of this Non-Potable Water Infrastructure Master Plan for Superstition Vistas is to establish design criteria, determine non-potable water design demands based on estimated irrigation requirements, and present the non-potable water infrastructure necessary to serve portions of the Site during the initial phase and the full-buildout condition of the southern non-potable system. The southern system is planned to include backup wells, dedicated lake or storage tank fill waterlines, backflow device, valves and meters, and other system components to fill the lakes and tanks proposed within each development unit. Water from the lakes or storage tanks will be utilized to irrigate the open space in designated areas within each development unit.

SMCFD plans to upgrade their treatment process to provide Class A+ reclaimed water before July 2022, which can be utilized for the Site. Groundwater wells will be utilized if the reclaimed water system from the treatment plant needs to undergo maintenance and repairs.

If non-potable water is contemplated for future development units DU 7 and DU 8; then a separate non-potable water system will need to be planned to serve these development units. As development occurs within each development unit, Basis of Design (BOD) reports will provide a more-detailed analysis as described in section 1.5. Each BOD report will address changes in the development units and adjacent development units, which may occur as development progresses and land use changes. Updates to the Non-Potable Water Infrastructure Master Plan may be needed if significant changes are made to the land uses and assumptions utilized to prepare this report. Additionally, design criteria may need to be re-evaluated if actual irrigation demands varies from what is estimated within this report.

1.3 Study Area and Development Units

Development Units 1 and 2 were the first two development units within Superstition Vistas auctioned by the Arizona State Land Department (ASLD). These development units will primarily be single-family residential, with other land designated as commercial, and community open space land uses. If there is a market demand for school and multi-family uses at the time of development some single-family use areas may be replaced. DU 1 and DU 2 are projected to be constructed concurrently; however, phasing within each development unit will occur.

Development Units 3 through 8 are currently owned by ASLD. At this time, it is unknown when these parcels will be auctioned; but it is anticipated they will be auctioned prior to the SMCFD future Planning Area east of the CAP canal.

1.4 Construction Phasing

This Plan presents the full-buildout conditions of the Site. It is anticipated the reclaimed water construction will be phased to correspond with the development unit plans. A phasing plan will be presented in each BOD Report to show the improvements that must be constructed with each development to meet the non-potable water demands for the development unit. Where required to serve additional DU’s within the Site, pipe sizes across the Auction Property will be upsized according to this Plan, to convey the overall full build-out demands.

1.5 Basis of Design Reports for Specific Individual Developments

Individual BOD reports are required for each individual development within the Site to ensure compliance with this Master Non-Potable Water Report, and to identify variations in land use, non-potable water demands, and non-potable water infrastructure needed to serve the parcel. The reports will include detailed design information corresponding to improvement plans that will be prepared for construction.

2.0 EXISTING CONDITIONS

2.1 Existing Land Use and Topographic Conditions

The predeveloped Site consists of mostly undeveloped desert land that is being leased to a cattle operation for grazing and raising livestock. Multiple livestock ponds have been constructed along wash corridors. Portions of Ironwood Drive and Meridian Road have been constructed, but will need additional improvements to reach full widths. An existing model airplane runway facility located on the Auction Property will be removed. An existing dirt racetrack and motopark are located just south of the Auction Property.

Siphon Draw Wash extends east to west across DU 7, north of the Elliot Avenue alignment, from the SMCFD WWTF to Meridian Road. This wash flows through a temporary detention basin located northeast of Elliot Avenue and Meridian Road on the Site.

A concrete channel, known as the Powerline Floodway Channel, bisects the Site diagonally through Sections 17, 18, and 19. The Powerline Floodway Channel is the primary outlet for the FRS structures to the east, and secondarily, to convey overland flow from the area west of the FRS to the EMF. Careful consideration of proposed non-potable water alignments has been taken to minimize the non-potable water crossings of the channel. Additionally, easements previously dedicated to the Flood Control District of Maricopa County (FCDMC) for the maintenance, access, and potential future channel improvements, as well as buffer zone for the FRS spillway at the Elliot Avenue alignment, encumber portions of the Auction Property and Retained Property.

Several power line corridor easements exist onsite for high-voltage overhead facilities. Along the eastern boundary of Development Units 5, 6, and 7, an approximate 130-foot-wide powerline corridor extends from the southern boundary to the existing south end of the SMCFD WWTF. An approximate 300-foot-wide powerline corridor extends across Development Unit 7 from Meridian Road to the CAP canal. Actual easement width has not been confirmed through a record easement document search. An approximate 125-foot-wide powerline corridor extends southeasterly across Development Units 1, 3, and 4, from approximately Shelly Avenue and Meridian Road to the future alignment of the SR-24.

The land generally slopes in a southwesterly direction at approximately 0.50 to 1.0 percent. The peak elevation within the Site is approximately 1,572 feet above mean sea level (MSL), located slightly southwest of the intersection of Ironwood Drive and the CAP canal. The lowest elevation within the Site is approximately 1,452 feet MSL, located near the intersection of Frye Avenue and McKenzie Road.

There are no existing reclaimed water facilities within the project limits. Currently, treated effluent is recharged by a facility at the WWTF. Excess effluent beyond the recharge facility capacity is discharged to Siphon Draw.

3.0 SYSTEM DESIGN

3.1 System Overview

The non-potable water system is being planned as one component of the One Water program in Apache Junction. The One Water program is currently being developed by the City of Apache Junction AJWD, and SMCFD. The goal of the program is to create a sustainable and reliable plan to meet current and future water need within the City. Reuse of treated effluent for landscape irrigation through a non-potable delivery system for a portion of Superstition Vistas Site is the focus of this plan. Other future components may include expansion of this master planned system, groundwater recharge, and direct potable reuse.

The system is planned to include the construction of new groundwater wells strategically located that will provide the initial water source for the system, if needed. Concurrently as the development units are constructed, a non-potable transmission main will be constructed from the WWTF to the various storage lakes and tanks. The storage facilities will supply irrigation water to the local irrigation systems. The WWTF currently does not treat effluent to Class A+ requirements necessary to meet State Standards for irrigation within residential communities and schools. Once upgrades are made to the WWTF to Class A+ requirements the non-potable system will be supplied by treated effluent from WWTF. The wells will be used as back up to the non-potable delivery system to add redundancy when non-potable water cannot be delivered by the WWTF. In the future an extension of the non-potable delivery system will be constructed north of the WWTF to the Superstition Area Water Plant. The connection will allow AJWD to supplement effluent with Raw CAP water if the need arises and would also allow for delivery to SAWP for direct reuse. The extension line size will be determined in the future and is not required to serve the Auction Property.

A Groundwater Recharge Facility (GRF) is planned for the northeast corner of Section 17 within DU 2. A 6-inch delivery line will be extended along the Elliott Avenue alignment to provide non-potable delivery to the GRF. The line will only deliver effluent to the recharge facility, after the non-potable water system demands are met and there is excess effluent available from the Wastewater Treatment Facility. Delivery to the GRF would be during daytime hours after the non-potable storage tanks at the WWTF are filled, therefore the non-potable distribution lines would not need to be upsized. If additional effluent is generated by the WWTF that is not fully utilized, injection wells may also be constructed for recharge.

Initially the 6-inch delivery line will be utilized for potable water service to the Auction Property construction trailer site and will only be available for non-potable delivery to the GRF after it is disconnected from the potable system once the trailer site is no longer needed.

3.2 Turf and Low-Water Use Areas

Landscape areas are based on land use assumptions, as shown in Table 1 within Appendix A. Open Space areas have been divided into two (2) categories, neighborhood open space and community open space. Neighborhood open space includes local parks, neighborhood parks, sub-division open space and trails, and street landscaping. Community open space includes community/district parks and regional parks. Please refer to the "*Master Planned Community"* (MPC) for further details. Additionally, landscape areas have been divided into two (2) water demand categories; including turf and low-water use areas. Neighborhood open space assumed 40% turf and 60% low-water use area. Community open space assumes 70% turf and 30% low-water use area.

The development units are anticipated to have a portion of neighborhood open space and community open space. Actual community park land uses and programming may vary from the conceptual acreages and water category distribution presented within this plan. Any significant changes will be identified in future updates to this Non-Potable Water Infrastructure Master Plan and Basis of Design Reports. The system will be designed to adequately serve the planned uses. The economic feasibility of increasing the capacity and extending the non-potable water system to irrigate other areas will be evaluated as development progresses, if excess treated effluent is available.

3.3 Unit Water Demands for Irrigation

The amount of water lost through soil infiltration, evaporation, and plant transpiration will be replaced through irrigation. The rate of irrigation application has been determined using standardized evapotranspiration (ET_o) values for various weather stations throughout the state from the Arizona Meteorological Network (AZMET). The irrigation rate is determined by multiplying published ET_o values by an appropriate crop coefficient (K_c). Refer to Table 2 – *Non-Potable Water Use and Application Rates,* located within Appendix A, for the selected crop coefficients and calculated irrigation application rates. The turf ET_o value for the month of October was increased to account for additional water use during the turf over-seeding period of the parks.

3.4 Lake Evaporation

Lake evaporation must be considered when determining non-potable water demands. On average, the City of Apache Junction and surrounding area experiences a pan evaporation rate of 7.9 inches per month, which describes the decrease in the water surface elevation of a standard 4-foot-diameter pan over a given month. Pan evaporation rates utilized within this report were taken from "*The Western Region Climate Center (Mesa Station), from 1896-2005."* To determine the evaporation rate for a lake, the pan evaporation rate is adjusted by multiplying the monthly rate by a factor of 0.8. Refer to Table 2 for monthly lake evaporation rates.

3.5 Delivery of Non-Potable Water

The non-potable water system delivery presented in this plan is based on the following design conditions:

- Irrigation will occur seven (7) days per week
- Interim-condition demands and backup service will be satisfied by:
  - Groundwater wells strategically placed based location and hydrogeological conditions that will connect to the non-potable delivery system on or near the proposed water campus.
  - Optional CAP delivery if preferred by AJWD

- Under the Full Build-out Non-Potable Water System Condition, the WWTF will supply non-potable water to the park lakes owned and maintained by the City of Apache Junction during a 15-hour/day period.

During maintenance and repair of the non-potable water system, the fill times for the community park lakes will differ based upon the values shown within Tables 3 through 8 (within Appendix A). The assumption within this report is groundwater wells will be drilled to fill each lake or storage tank. The well pumping window needed to keep the lake full each day is shown within Appendix A. The number of wells required for each phase of development will depend upon the actual production rates of installed wells and actual irrigation demand once the design is complete. Pump windows may be extended beyond what is shown within this report as wells are developed.

3.6 Pipe Flow Velocities

Non-potable water pipes are sized with an approximate maximum flow velocity of 5 feet per second (fps) to minimize head losses and water hammer.

3.7 Non-Potable Water Storage

Non-potable water systems must provide sufficient operational storage to accommodate fluctuations in supply and demand. The biggest fluctuations are anticipated to occur during October, when the community parks typically overseed the turf areas. During the overseeding period, non-potable water demands may be significantly increased. The proposed lakes will provide storage for irrigation demands. The WWTF will need to provide storage for treated effluent that is produced throughout the day, to meet the non-potable demands that will mostly occur during irrigation hours at night.

There is anticipated to be overlap of non-potable water production and use during the early night and early morning hours where treated effluent will supply the non-potable distribution system. It is assumed, approximately 4 hours of the 15-hour non-potable lake delivery window would not need storage. Because the DU irrigation systems will have onsite storage through lakes or storage tanks, we have anticipated the storage need at the WWTF to be 75% of the daily system irrigation peak demand to account for the 4-hour overlap. The total irrigation demand during the peak demand month of October is estimated to be 4.44 million gallons. Therefore, the total required storage of non-potable water at the WWTF is estimated to be 3.33 million gallons to serve the planned facilities outlined in this plan. Storage at the WWTF is planned to include surface or buried tanks to work with the WWTF site elevations and final location of the tanks so they function with a gravity fill line. Tank locations and elevations will be determined during design. Refer to Section 6.1 for the development schedule for the Auction Property and the corresponding WWTF storage requirement.

3.8 Non-Potable Water Pump Stations

3.8.1 Park Irrigation Pump Stations

Non-potable water pump stations will be located within each community park containing a storage lake or tank. The pump stations will be utilized to pressurize the non-potable water irrigation systems from the storage facility to the landscape open spaces.

3.8.2 WWTF Pump Station

A non-potable water booster station will be required to operate the delivery system to the DU storage facilities. The transmission line has been sized with a pressure zone hydraulics grade line elevation of 1,655 and operating pressures between 20 and 58 pounds per square inch (PSI). The booster station should be planned for construction concurrently with upgrades to the treatment to Class A+. This will allow for reduced impact on the potable system, a revenue source to pay for facility upgrades, and a sustainable reuse of the treated effluent, consistent with the City's One Water program.

3.9 Initial Supply and Emergency Supply

During initial development of the Site, and prior to wastewater treatment upgrades, groundwater wells will provide non-potable water to the storage facilities. If preferred by AJWD, raw CAP water may be delivered as an alternative however is not currently contemplated in this plan and would require additional transmission line extension to the SAWP. After wastewater treatment updates have been completed at the SMCFD WWTF, the groundwater wells will serve as backup to the reclaimed water supply from the treatment plant. These wells will pump the non-potable distribution system. The wells will likely utilize a separate lake fill line and valves to keep lake level draw down to a minimum, if the non-potable delivery from WWTF is not meeting the demands. The lake fill delivery windows will be extended as needed to fill the lakes.

3.10 Pipe Materials

The non-potable system is planned for operating pressures ranging from 20 psi to 58 psi. Pipe materials shall be selected when actual system pressures are determined with final design. The preferred pipe material for the reclaimed water system is C-909 for mains 12-inches and smaller. If required, ductile iron may be used for pipe sizes 16-inch and larger. Regardless of pipe material, the exterior color shall be purple to identify the system as reclaimed.

4.0 IRRIGATION DEMANDS AND NON-POTABLE WATER SUPPLY

4.1 Irrigation Demands

Tables 3 through 7 within Appendix A present the irrigation design demands for the full build-out of each development unit where non-potable water is planned. These demands are calculated using the landscape areas and unit demands outlined in Sections 3.1, 3.2, and 3.3 of this report. The initial phase of development within DU1 and DU 2 has an estimated peak landscape demand of approximately 1.31 million gallons a day (MGD). The full build-out of the Site has an estimated peak landscape demand of approximately 4.44 MGD.

4.2 Non-Potable Water Supply (Full Build-Out System Condition)

The Site will be supplied non-potable water primarily from reclaimed water from the SMCFD WWTF. The total estimated average day wastewater flows from the Auction Property and Site are 2.9 MGD and 8.7 MGD, respectively. The non-potable water demand for the Auction Property and Site are 1.31 MGD and 4.44 MGD, respectively. Therefore, the treated effluent from the Auction Property and Retained Property has sufficient capacity to meet the reclaimed water demand of the Auction Property and Retained Property. The lakes will provide backup storage during outages for their respective facility; however, the back up non-potable groundwater production wells will be the supply.

The capacity of the future non-potable wells is unknown currently. Within this report, an estimate of 900 gallons per minute (GPM) was utilized to be in line with the existing groundwater wells west of the Site, which currently produce approximately 700-1300 gpm. The assumed production rate adequately supplies non-potable water for the modeled scenario with minimal daily drawdown in the park lakes, as shown in Table 3 through 7. Depending on the actual capacity of the future non-potable well for each lake, additional non-potable wells may be required of the developer to provide adequate flow during the initial stage of development or backup to the reclaimed water from the SMCFD WWTF.

5.0 HYDRAULIC MODEL

WaterCAD Version 8i by Haestad Methods was utilized to analyze the proposed non-potable water system. Pipes were sized to allow an approximate maximum flow velocity of around 5 fps to minimize head losses and water hammer within the distribution system. A hydraulic model was created to analyze the flow of non-potable water delivered from the SMCFD WWTF. The non-potable water system is comprised of pipes ranging from 6 to 24 inches in diameter.

The alignment of the planned non-potable transmission main from the SMCFD WWTF to the future storage facilities is based on conceptual land use planning for the Auction Property and Retained Property. The main will extend from the SMCFD WWTF in a southerly direction along Ironwood Drive to the intersection Warner Avenue. It will then extend east along Warner Avenue and then south along a planned collector roadway through DU 2 to Ray Avenue. When future development units are auctioned by state land, the transmission main will extend west along Ray Avenue to serve the west portion of DU 3. Additionally, the transmission main will extend east along Ray Avenue to serve DU 5, DU 6, and the east portion of DU 3.

As future parcels are sold by ASLD, Development Units 3, 5, and 6 will extend the non-potable waterlines at such time to serve their respective development units. Refer to Exhibit 2 – *Full Build-Out Master Non-Potable Water Exhibit*. The hydraulic model assumes conservative lake surface elevations for the Site. These elevations result in the non-potable water system having pressures above 20 psi. The lake elevation assumptions are listed in the following table:

Development Unit	Assumed Lake Elevation in WaterCAD (feet MSL)
Development Unit 1 (Storage Tank)	1510
Development Unit 2 (Phase 1)	1512
Development Unit 2 (Phase 2)	1530
Development Unit 2 (Phase 3)	1540
Development Unit 3 (East)	1520
Development Unit 3 (West)	1500
Development Unit 5	1550
Development Unit 6	1555

The hydraulic modeling results indicate the system can deliver flows to the community parks lakes during normal operations, with point-of-connection pressures of approximately 31 to 42 psi for DU 2, 32 and 47 psi for DU 3, 21 psi for DU 5, and 20 psi for DU 6. Pipe velocities are within acceptable ranges for modeled conditions of flow. Refer to Appendix B – *Full Build-Out Hydraulic Modeling Results* for additional information.

5.1 Storage Lakes

The park lakes will provide storage for the irrigation systems to irrigate the designated landscape open space within portions of DU 2, DU 3, DU 5, and DU 6. The assumption within this report is the daily park lake drawdown was to be no more than 1 foot in October. This results in the preliminary lake sizes as follows:

Location	Lake Size (Acres)
Development Unit 2 (Phase 1)	1
Development Unit 2 (Phase 2)	2.5
Development Unit 2 (Phase 3)	1
Development Unit 3 (East)	2
Development Unit 3 (West)	2
Development Unit 5	4
Development Unit 6	2

As more detailed planning is available, and land uses are adjusted in the future, the actual lake size within each development unit can change, and should be reflected in the individual development unit basis of design report.

5.2 Non-Potable Water Pump Station

5.2.1 Irrigation Pump Stations

The pump stations should be sized to provide peak irrigation flows with the largest pump out of service while maintaining required residual pressures. In addition, the pump station should include a series of variable frequency drive (VFD) pumps to accommodate phasing, seasonal variations in irrigation water demands, and low-flow conditions.

5.2.2 Filtration

Since surface water storage will be utilized, it is recommended that lake water be filtered at the park lake pump stations with automatic backflush systems prior to entering the irrigation systems. The filters should be configured to remove particles large enough to clog the downstream irrigation system, and discharge the waste flow into the sewer collection system.

5.3 Non-Potable Water Piping

5.3.1 Superstition Vistas Non-Potable Water Transmission Main

As previously discussed, water from the SMCFD WWTF will be conveyed to the non-potable water service area through a non-potable water transmission main with pipe sizes as shown on Exhibit 2.

5.3.2 Non-Potable Water Lake Fill Lines

The non-potable lake fill waterlines will connect to the non-potable transmission main. The size of each lake fill line will be determined during the design of each development unit, and will be included as part of the individual BOD reports. The lake fill waterlines should be sized to convey flows during a 15-hour delivery window described herein. Refer to Table 8 - *Non-Potable Water Lake Fill Line Sizing* for preliminary estimates of lake fill line sizing.

5.3.3 Valves

All valves are recommended to be underground resilient wedge gate valves. The recommended main valve spacing for 12-inch mains and smaller is a maximum of 600 feet, and 1,000-foot maximum spacing for 16-inch and larger mains.

5.3.4 Separation from Water and Sewer Lines

Non-potable waterlines shall be treated as reclaimed waterlines for the purpose of maintaining minimum separation between water and sewer lines, in accordance with the Arizona Administrative Code. When a non-potable water main is adjacent to or crosses a potable water main, the non-potable water main shall be considered a pressure or force main sewer and comply with Maricopa Association of Governments (MAG) Standard Detail No. 404 for separation and/or protection. When a non-potable water main is adjacent to or crosses a gravity pressure or force main sewer, the non-potable water main shall be considered a potable water main and comply with MAG Standard Detail 404 for separation and/or protection.

5.3.5 Depth of Cover

In addition to the separation described above, it is recommended that non-potable waterlines be installed at a depth below existing or planned water mains to minimize conflicts associated with potable water service connections.

5.4 Non-Potable Water Wells

The planned non-potable groundwater production wells will be strategically located based on hydrogeological conditions and accessibility and will connect to the transmission main. Additionally, the wells may also be utilized as back up wells for the potable water system. It is anticipated the well would be used (except for routine maintenance) for the initial stage of development, and as a backup supply in the event of long-term maintenance. Adequate levels in the respective lakes should be kept with no more than 2 feet of drawdown occurring between filling the lakes.

6.0 PLANNING CONSIDERATIONS

6.1 Development Schedule

Based on current market conditions, the development team is estimating constructing a combined 2,350 homes by the end of 2023 within DU 1 and DU 2. The development schedule within Figure 1 is preliminary and subject to change based on market conditions. This rapid growth will need to be planned for within the non-potable storage and distribution facilities to keep pace with market conditions. Figure 1 is an anticipated development schedule with infrastructure requirements. The storage volume planned at the WWTF is 75% of the average day demand.

FIGURE 1

Auction Property Development Schedule

Year	Construction Activity	Estimated Auction Property Non-Potable Demand (MGD)	WWTF Storage Requirement (MG)
2021	Begin grading and infrastructure improvements	2 MGD Construction[1]	0 MG[2]
2022	Infrastructure construction and begin home construction	2 MGD Construction[1]	0 MG[2]
2023	2,350 homes	0.37 MGD Irrigation 2 MGD Construction	0.28 MG
2024	3,805 homes	0.80 MGD Irrigation 2 MGD Construction	0.60 MG
2025	5,165 homes	0.89 MGD Irrigation 2 MGD Construction	0.67 MG
2026	6,880 homes 20.5 AC commercial	0.89 MGD Irrigation 2 MGD Construction	0.67 MG
2027	8,450 homes 20.5 AC commercial	1.31 MGD Irrigation 2 MGD Construction	1.00 MG
2028	9,580 homes 30 AC commercial	1.31 MGD Irrigation 2 MGD Construction	1.00 MG
2029	10,080 homes 30 AC commercial	1.31 MGD Irrigation 2 MGD Construction	1.00 MG
2030	10,545 homes 35 AC commercial	1.31 MGD Irrigation 2 MGD Construction	1.00 MG
2031	10,940 homes 40 AC commercial	1.31 MGD Irrigation	1.00 MG

(1) Construction water may be supplemented with CAP water or groundwater if non-potable water is not available.

(2) Construction water will be stored in a temporary pond on the Auction Property and can be filled as needed throughout the day.

6.2 System Ownership and Management

It is anticipated treated effluent from the WWTF will be metered prior to distribution for the non-potable system. Details between AJWD and SMCFD have not been finalized as to the location of the meter and which entity will own and maintain components of the system. SMCFD has provided an effluent delivery guarantee to the non-potable system, in exchange for compensation for the treated effluent within the development agreement. The non-potable storage facility will be located at the WWTF. Service lines will be metered to track customer non-potable water use. It is anticipated the treated effluent water rate will be reduced from the potable water rate to incentivize use over potable water.

6.3 Irrigation Schedules

During normal operations, the irrigation systems will be supplied by the storage facilities and pump stations, allowing for flexible irrigation schedules. It is anticipated irrigation will occur during night-time hours, as to not interfere with the facilities' daily activities, and to reduce evaporation.

6.4 Non-Potable Water Component Identification

Non-potable water components should be labeled, tagged, or otherwise identified to indicate they convey non-potable water. These components include, but are not limited to, distribution mains, transmission mains, valves, appurtenances, and pump stations. Signage indicating irrigation water is non-potable should also be provided.

6.5 Non-Potable Water Meters

Non-potable water meters are recommended at the lake fill lines near the air-gap discharge points and at the non-potable wells. Magnetic-type (Mag) meters are required by AJWD. These meters are suitable for use with non-potable water, and can include radio-read features if required by the AJWD.

6.6 System Controls and Operation

A separate non-potable SCADA system built on Rockwell Factory Talk software will be designed to control tank levels, lake levels, wells, booster pumps, flow control, flow values from non-potable pumps. Superstition Vistas will work with the AJWD to design and construct a control system that provides AJWD the ability to monitor and control the non-potable water system in accordance with ADEQ requirements.

7.0 CONCLUSIONS

The *Master Non-Potable Water Report for Superstition Vistas* meets accepted standards for non-potable water systems, and serves as a guide for construction documents associated with the proposed system. No critical issues were identified. The following conclusions are provided:

1. Non-potable water delivered from the SMCFD WWTF by AJWD will be the primary source of non-potable water during the full build-out system condition. The non-potable water will be conveyed to the Site through a pressurized transmission non-potable waterline.

2. As part of the initial stage of development and during a WWTF facility outage, water from the non-potable groundwater production backup wells may be delivered to the lakes through the non-potable system and lake fill lines.

3. Two (2) categories of landscaping have been identified, including low-water use and turf. Low-water use areas have a peak daily demand of 1,336 gallons per day per acre (gpd/acre) in the month of June, and turf areas have a peak daily demand of 9,840 gpd/acre in the month of October.

4. The park lakes and tanks will provide storage and backup in the event of a SMCFD WWTF outage. The primary back-up non-potable water supply will be from the proposed non-potable backup wells.

5. As part of the full build-out system condition, the park lakes will be filled from the planned non-potable water transmission main. Within certain DU's the designated open space may be irrigated by the storage facility and pump systems.

6. The full build-out system condition will provide irrigation water supply within the defined design criteria throughout the non-potable water system, according to hydraulic modeling results.

7. This report demonstrates the proposed non-potable water distribution system is adequate to serve the proposed Site during the initial state and full build-out, as outlined in the tables within Appendix A.

APPENDIX A – FULL BUILD-OUT NON-POTABLE WATER CALCULATIONS

Table 1 – Planned Open Space and Non-Potable Water Demand Calculations

TABLE 1

PLANNED OPEN SPACE AND NON-POTABLE WATER DEMAND CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

Planned Non-Potable Service Area						
Location	**Gross Area in Service Area (AC)**	**Neighborhood Open Space 40% Turf & 60% Xeriscape (AC)**	**Community Open Space 70% Turf & 30% Xeriscape (AC)**	**Total Planned Open Space (AC)**	**Total Average Daily Total Water Demand (mgd)**	**Total Peak Daily Total Water Demand (mgd)[4]**
Development Unit 1[(1)]	1,375	0	11.3	**11.3**	**0.05**	**0.09**
Development Unit 2[(1)]	1,408	135	70	**205**	**0.65**	**1.22**
Development Unit 3[(2)]	1,355	136	82	**218**	**0.70**	**1.31**
Development Unit 5[(2)]	1,169	117	71	**188**	**0.61**	**1.13**
Development Unit 6[(2)]	714	72	43	**115**	**0.37**	**0.69**
Total	**6,021**	**460**	**277**	**737.3**	**2.38**	**4.44**

Notes
1) DU 1 and DU 2 Open Space Area estimates were provided by the developer.
2) Since Development Units 3, 5, and 6 have not been planned; it was assumed 10% of the gross area would be Neighborhood Open Space and 6% of the gross area would be Community Open Space.
3) See Tables 3 through 6 for detailed calculations for each development unit.
4) The Peak Daily Total was assumed to be during the month of October during overseeding of the turf areas.

Table 2 – Non-Potable Water Use and Application Rates

TABLE 2
NON-POTABLE WATER USE AND APPLICATION RATES

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

Irrigation Requirements, Turf

	K_c	
Bermuda Grass (June-Sept) Average	0.80	*Source: Converting Reference Evapotranspiration into Turf Water Use, The University of Arizona*
Overseeded Rye Grass (Oct-May) Average	0.83	*Cooperative Extension, Turf Irrigation Management Series, Dated 2/2014*

MONTH	ET_o[1] (in/month)	K_c[2] --	ET_T[3] (in/month)	Daily Demand (ac-ft/day/acre)	Daily Demand (gpd/acre)
January	2.38	0.78	1.86	0.0052	1,694
February	2.87	0.79	2.27	0.0063	2,053
March	4.66	0.86	4.01	0.0111	3,617
April	6.38	0.89	5.68	0.0158	5,148
May	8.71	0.85	7.40	0.0206	6,712
June	9.39	0.78	7.32	0.0203	6,614
July	9.02	0.78	7.04	0.0196	6,386
August	8.28	0.82	6.79	0.0189	6,158
September	6.60	0.83	5.48	0.0152	4,953
October	**13.09**	**0.83**	**10.86**	**0.0302**	**9,840**
November	2.75	0.83	2.28	0.0063	2,053
December	2.24	0.80	1.79	0.0050	1,629
Average:	**6.36**	**0.82**	**5.23**	**0.0145**	**4,738**

Notes:
1) ET_o=Historical Record of Reference Evapotranspiration, *Appendix J - Inches of Average Monthly Evapotranspiration for Chandler, Harvesting Rainwater for Landscape Use, Cooperative Extension, The University of Arizona, Revised 2006.*
2) K_c=Crop Coefficient, *Figure 2 and 4 of Converting Reference Evapotranspiration into Turf Water Use, University of Arizona Cooperative Extension, Dated 2/2014.*
3) ET_T=Actual Turf Water Use, $ET_T = ET_o \times K_c$
4) The October ET_o was adjusted for overseeding on the Park Turf areas.

Irrigation Requirements, Low-Water Use

	K_c	
Low-Water Use	0.26	*Source: Table 6 - "Plant Water Use"- Harvesting Rainwater for Landscape Use*
Percentage of Canopy Coverage (P)	60%	*Assumed Value*

MONTH	ET_o[5] (in/month)	K_c --	P --	ET_T[6] (in/month)	Demand (ac-ft/day/acre)	Demand (gpd/acre)
January	2.38	0.26	60%	0.37	0.0010	326
February	2.87	0.26	60%	0.45	0.0013	424
March	4.66	0.26	60%	0.73	0.0020	652
April	6.38	0.26	60%	1.00	0.0028	912
May	8.71	0.26	60%	1.36	0.0038	1,238
June	**9.39**	**0.26**	**60%**	**1.46**	**0.0041**	**1,336**
July	9.02	0.26	60%	1.41	0.0039	1,271
August	8.28	0.26	60%	1.29	0.0036	1,173
September	6.60	0.26	60%	1.03	0.0029	945
October	4.59	0.26	60%	0.72	0.0020	652
November	2.75	0.26	60%	0.43	0.0012	391
December	2.24	0.26	60%	0.35	0.0010	326
Average:	**5.66**			**0.88**	**0.0025**	**804**

Notes:
5) ET_o=Historical Record of Reference Evapotranspiration, *Appendix J - Inches of Average Monthly Evapotranspiration for Chandler, Harvesting Rainwater for Landscape Use, Cooperative Extension, The University of Arizona, Revised 2006* .
6) ET_T=Actual Turf Water Use, $ET_T = ET_o \times K_c \times P$

TABLE 2

NON-POTABLE WATER USE AND APPLICATION RATES

Project: Superstition Vistas

Location: Apache Junction, AZ

Project Number: 205166

Lake Evaporation

Monthly Mean Lake Evaporation Rates

Adjustment Factor[8] = 0.8

Month	Monthly Average Pan Evaporation (in/month)[7]	Adjusted Monthly Pan Evaporation (in/month) [(9)]	Adjusted Daily Pan Evaporation (gpd/acre)
January	3.03	2.42	2,190
February	4.02	3.22	2,914
March	6.11	4.89	4,426
April	8.64	6.91	6,254
May	11.33	9.06	8,200
June	12.67	10.14	9,178
July	**13.1**	10.48	**9,485**
August	11.87	9.50	8,598
September	9.69	7.75	7,014
October	6.81	5.45	4,933
November	4.15	3.32	3,005
December	2.96	2.37	2,145
Average	**7.87**	**6.29**	**5,695**

Notes:

7) The Monthly Average Pan Evaporation Rates are from The Western Regional Climate Center (Mesa Station) from 1896-2005, https://wrcc.dri.edu/Climate/comp_table_show.php?stype=pan_evap_avg

8) The Adjustment Factor accounts for the difference between the pan evaporation measurement and shallow lake evaporation.

9) The *Adjusted Monthly Pan Evaporation* is equal to the *Monthly Average Pan Evaporation* multiplied by the *Adjustment Factor*.

Average Annual Water Use

5.23	Acre-Ft Per Acre Turf
0.88	Acre-Ft Per Acre Low-Water Use
6.29	Acre-Ft Per Acre Lake Evaporation

Table 3 – DU 1 Non-Potable Water Calculations

TABLE 3
DU 1 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 1 Neighborhood Open Space	0	0	acres (A1)	Assumes turf and is overseeded in October.
		0	acres (B1)	Assumes Xeriscape
DU 1 Community Open Space	11.3	7.9	acres (A2)	Assumes turf and is overseeded in October.
		3.4	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 1 Community Lake Area (I)	N/A	Acres	DU 1 proposes to utilize a buried storage tank rather than a lake.
Height of Vertical Lake Wall (M):	N/A	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	N/A	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- There is no lake planned within DU 1.
- Backup storage will be provided by a tank.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 1							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	1.27	0.11	N/A	1.38	0.14	1.52	0.02	N/A
February	0.0063	0.0013	28	1.39	0.12	N/A	1.51	0.15	1.66	0.02	N/A
March	0.0111	0.0020	31	2.72	0.21	N/A	2.93	0.29	3.22	0.03	N/A
April	0.0158	0.0028	30	3.74	0.29	N/A	4.03	0.40	4.43	0.05	N/A
May	0.0206	0.0038	31	5.04	0.40	N/A	5.44	0.54	5.98	0.06	N/A
June	0.0203	0.0041	30	4.81	0.42	N/A	5.23	0.52	5.75	0.06	N/A
July	0.0196	0.0039	31	4.80	0.41	N/A	5.21	0.52	5.73	0.06	N/A
August	0.0189	0.0036	31	4.63	0.38	N/A	5.01	0.50	5.51	0.06	N/A
September	0.0152	0.0029	30	3.60	0.30	N/A	3.90	0.39	4.29	0.05	N/A
October	0.0302	0.0020	31	7.40	0.21	N/A	7.61	0.76	**8.37**	**0.09**	**N/A**
November	0.0063	0.0012	30	1.49	0.12	N/A	1.61	0.16	1.77	0.02	N/A
December	0.0050	0.0010	31	1.22	0.11	N/A	1.33	0.13	1.46	0.02	N/A
			DU 1 ANNUAL TOTAL:	**42.11**	**3.08**	N/A	45.19	**4.50**	**49.69**	**0.05**	

NON-POTABLE BACKUP WELL FOR STORAGE TANK FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
	Assumed Lake Fill Rate	Backup Well Pumping Window (AT)	Monthly Storage Fill Volume from Well[11] (AU)	Daily Storage Fill Volume from Well[12] (AV)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW)	Park Monthly Water Use During Initial Phase[8] (AS)	Park Daily Water Use During Initial Phase[14] (AX)	Total Volume Required for Drawdown Period[15] (AY)		
Month	(gpm)	(hours)	(ac-ft/month)	(ac-ft/day)	(ac-ft)	(ac-ft/month)	(ac-ft/day)	(ac-ft)	(gal)	
October	900	24	123.30	3.98	3.98	8.37	0.27	0.27	87,974	Initially Refill Storage Tank Daily from Well

Notes:

1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.

Table 4A – DU 2 Phase 1 Non-Potable Water Calculations

TABLE 4A

DU 2 PHASE 1 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 2 Phase 1 Neighborhood Open Space	51	20.4	acres (A1)	Assumes turf and is overseeded in October.
		30.6	acres (B1)	Assumes Xeriscape
DU 2 Phase 1 Community Open Space	16	11.2	acres (A2)	Assumes turf and is overseeded in October.
		4.8	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 2 Phase 1 Community Lake Area (I)	1	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 2 PHASE 1							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	5.09	1.10	0.21	6.40	0.64	7.04	0.07	0.23
February	0.0063	0.0013	28	5.57	1.29	0.25	7.11	0.71	7.82	0.09	0.28
March	0.0111	0.0020	31	10.87	2.19	0.42	13.48	1.35	14.83	0.16	0.48
April	0.0158	0.0028	30	14.98	2.97	0.58	18.53	1.85	20.38	0.22	0.68
May	0.0206	0.0038	31	20.18	4.17	0.78	25.13	2.51	27.64	0.29	0.89
June	0.0203	0.0041	30	19.24	4.35	0.85	24.44	2.44	26.88	0.29	0.90
July	0.0196	0.0039	31	19.20	4.28	0.90	24.38	2.44	26.82	0.28	0.87
August	0.0189	0.0036	31	18.51	3.95	0.82	23.28	2.33	25.61	0.27	0.83
September	0.0152	0.0029	30	14.41	3.08	0.65	18.14	1.81	19.95	0.22	0.67
October	0.0302	0.0020	31	29.58	2.19	0.47	32.24	3.22	**35.46**	**0.37**	**1.14**
November	0.0063	0.0012	30	5.97	1.27	0.28	7.52	0.75	8.27	0.09	0.28
December	0.0050	0.0010	31	4.90	1.10	0.20	6.20	0.62	6.82	0.07	0.22
DU 2 PHASE 1 ANNUAL TOTAL:				**168.50**	**31.94**	**6.41**	**206.85**	**20.67**	**227.52**	**0.20**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	24	123.30	3.98	3.98	35.46	1.14	1.14	0.00	Initially Refill Lake Daily from Well

Notes:
1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 4B – DU 2 Phase 2 Non-Potable Water Calculations

TABLE 4B
DU 2 PHASE 2 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 2 Phase 2 Neighborhood Open Space	42	16.8	acres (A1)	Assumes turf and is overseeded in October.
		25.2	acres (B1)	Assumes Xeriscape
DU 2 Phase 2 Community Open Space	27	18.9	acres (A2)	Assumes turf and is overseeded in October.
		8.1	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 2 Phase 2 Community Lake Area (I)	2.5	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 2 PHASE 2							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	5.75	1.03	0.52	7.30	0.73	8.03	0.08	0.10
February	0.0063	0.0013	28	6.30	1.21	0.63	8.14	0.81	8.95	0.10	0.13
March	0.0111	0.0020	31	12.28	2.06	1.05	15.39	1.54	16.93	0.18	0.22
April	0.0158	0.0028	30	16.92	2.80	1.44	21.16	2.12	23.28	0.25	0.31
May	0.0206	0.0038	31	22.80	3.92	1.95	28.67	2.87	31.54	0.33	0.41
June	0.0203	0.0041	30	21.74	4.10	2.11	27.95	2.80	30.75	0.33	0.41
July	0.0196	0.0039	31	21.69	4.03	2.26	27.98	2.80	30.78	0.32	0.40
August	0.0189	0.0036	31	20.92	3.72	2.05	26.69	2.67	29.36	0.31	0.38
September	0.0152	0.0029	30	16.28	2.90	1.61	20.79	2.08	22.87	0.25	0.30
October	0.0302	0.0020	31	33.42	2.06	1.17	36.65	3.67	**40.32**	**0.42**	**0.52**
November	0.0063	0.0012	30	6.75	1.20	0.69	8.64	0.86	9.50	0.10	0.13
December	0.0050	0.0010	31	5.53	1.03	0.51	7.07	0.71	7.78	0.08	0.10
DU 2 PHASE 2 ANNUAL TOTAL:				**190.38**	**30.06**	**15.99**	**236.43**	**23.66**	**260.09**	**0.23**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	24	123.30	3.98	3.98	40.32	1.30	1.30	0.00	Initially Refill Lake Daily from Well

Notes:
1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 4C – DU 2 Phase 3 Non-Potable Water Calculations

TABLE 4C
DU 2 PHASE 3 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 2 Phase 3 Neighborhood Open Space	42	16.8	acres (A1)	Assumes turf and is overseeded in October.
		25.2	acres (B1)	Assumes Xeriscape
DU 2 Phase 3 Community Open Space	27	18.9	acres (A2)	Assumes turf and is overseeded in October.
		8.1	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 2 Phase 3 Community Lake Area (I)	1	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 2 PHASE 3							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	5.75	1.03	0.21	6.99	0.70	7.69	0.08	0.25
February	0.0063	0.0013	28	6.30	1.21	0.25	7.76	0.78	8.54	0.10	0.31
March	0.0111	0.0020	31	12.28	2.06	0.42	14.76	1.48	16.24	0.17	0.52
April	0.0158	0.0028	30	16.92	2.80	0.58	20.30	2.03	22.33	0.24	0.74
May	0.0206	0.0038	31	22.80	3.92	0.78	27.50	2.75	30.25	0.32	0.98
June	0.0203	0.0041	30	21.74	4.10	0.85	26.69	2.67	29.36	0.32	0.98
July	0.0196	0.0039	31	21.69	4.03	0.90	26.62	2.66	29.28	0.31	0.94
August	0.0189	0.0036	31	20.92	3.72	0.82	25.46	2.55	28.01	0.29	0.90
September	0.0152	0.0029	30	16.28	2.90	0.65	19.83	1.98	21.81	0.24	0.73
October	0.0302	0.0020	31	33.42	2.06	0.47	35.95	3.60	**39.55**	**0.42**	**1.28**
November	0.0063	0.0012	30	6.75	1.20	0.28	8.23	0.82	9.05	0.10	0.30
December	0.0050	0.0010	31	5.53	1.03	0.20	6.76	0.68	7.44	0.08	0.24
DU 2 PHASE 3 ANNUAL TOTAL:				**190.38**	**30.06**	**6.41**	**226.85**	**22.70**	**249.55**	**0.22**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	24	123.30	3.98	3.98	39.55	1.28	1.28	0.00	Initially Refill Lake Daily from Well

Notes:

1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 5A – DU 3A Non-Potable Water Calculations

TABLE 5A

DU 3A NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 3 Phase A Neighborhood Open Space	64	25.6	acres (A1)	Assumes turf and is overseeded in October.
		38.4	acres (B1)	Assumes Xeriscape
DU 3 Phase A Community Open Space	39	27.3	acres (A2)	Assumes turf and is overseeded in October.
		11.7	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 3 Phase A Community Lake Area (I)	2	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 3							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	8.53	1.55	0.42	10.50	1.05	11.55	0.12	0.19
February	0.0063	0.0013	28	9.33	1.82	0.50	11.65	1.17	12.82	0.15	0.23
March	0.0111	0.0020	31	18.20	3.11	0.84	22.15	2.22	24.37	0.26	0.39
April	0.0158	0.0028	30	25.07	4.21	1.15	30.43	3.04	33.47	0.36	0.56
May	0.0206	0.0038	31	33.78	5.90	1.56	41.24	4.12	45.36	0.48	0.73
June	0.0203	0.0041	30	32.22	6.16	1.69	40.07	4.01	44.08	0.48	0.73
July	0.0196	0.0039	31	32.14	6.06	1.80	40.00	4.00	44.00	0.46	0.71
August	0.0189	0.0036	31	30.99	5.59	1.64	38.22	3.82	42.04	0.44	0.68
September	0.0152	0.0029	30	24.12	4.36	1.29	29.77	2.98	32.75	0.36	0.55
October	0.0302	0.0020	31	49.52	3.11	0.94	53.57	5.36	**58.93**	**0.62**	**0.95**
November	0.0063	0.0012	30	10.00	1.80	0.55	12.35	1.24	13.59	0.15	0.23
December	0.0050	0.0010	31	8.20	1.55	0.41	10.16	1.02	11.18	0.12	0.18
DU 3A ANNUAL TOTAL:				**282.10**	**45.22**	**12.79**	**340.11**	**34.03**	**374.14**	**0.33**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					**Park Lake Drawdown Calculations**				**Notes**
Month	**Assumed Lake Fill Rate (gpm)**	**Backup Well Pumping Window (AT) (hours)**	**Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)**	**Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)**	**Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)**	**Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)**	**Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)**	**Total Volume Required for Drawdown Period[15] (AY) (ac-ft)**	**Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)**	
October	900	12	61.65	1.99	1.99	58.93	1.90	1.90	0.00	Initially Refill Lake Daily from Well

Notes:

1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 5B – DU 3B Non-Potable Water Calculations

TABLE 5B

DU 3B NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 3 Phase B Neighborhood Open Space	72	28.8	acres (A1)	Assumes turf and is overseeded in October.
		43.2	acres (B1)	Assumes Xeriscape
DU 3 Phase B Community Open Space	43	30.1	acres (A2)	Assumes turf and is overseeded in October.
		12.9	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 3 Phase B Community Lake Area (I)	2	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE							
				DU 3							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	9.49	1.74	0.42	11.65	1.17	12.82	0.13	0.21
February	0.0063	0.0013	28	10.39	2.04	0.50	12.93	1.29	14.22	0.17	0.25
March	0.0111	0.0020	31	20.27	3.48	0.84	24.59	2.46	27.05	0.28	0.44
April	0.0158	0.0028	30	27.92	4.71	1.15	33.78	3.38	37.16	0.40	0.62
May	0.0206	0.0038	31	37.61	6.61	1.56	45.78	4.58	50.36	0.53	0.81
June	0.0203	0.0041	30	35.87	6.90	1.69	44.46	4.45	48.91	0.53	0.82
July	0.0196	0.0039	31	35.79	6.78	1.80	44.37	4.44	48.81	0.51	0.79
August	0.0189	0.0036	31	34.51	6.26	1.64	42.41	4.24	46.65	0.49	0.75
September	0.0152	0.0029	30	26.86	4.88	1.29	33.03	3.30	36.33	0.39	0.61
October	0.0302	0.0020	31	55.14	3.48	0.94	59.56	5.96	**65.52**	**0.69**	**1.06**
November	0.0063	0.0012	30	11.13	2.02	0.55	13.70	1.37	15.07	0.16	0.25
December	0.0050	0.0010	31	9.13	1.74	0.41	11.28	1.13	12.41	0.13	0.20
DU 3B ANNUAL TOTAL:				**314.11**	**50.64**	**12.79**	**377.54**	**37.77**	**415.31**	**0.37**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	15	77.07	2.49	2.49	65.52	2.11	2.11	0.00	Initially Refill Lake Daily from Well

Notes:

1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 6 – DU 5 Non-Potable Water Calculations

TABLE 6
DU 5 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 5 Neighborhood Open Space	117	46.8	acres (A1)	Assumes turf and is overseeded in October.
		70.2	acres (B1)	Assumes Xeriscape
DU 5 Community Open Space	71	49.7	acres (A2)	Assumes turf and is overseeded in October.
		21.3	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 5 Community Lake Area (I)	4	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE DU 5							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	15.56	2.84	0.83	19.23	1.92	21.15	0.22	0.17
February	0.0063	0.0013	28	17.02	3.33	1.00	21.35	2.14	23.49	0.27	0.21
March	0.0111	0.0020	31	33.21	5.67	1.68	40.56	4.06	44.62	0.47	0.36
April	0.0158	0.0028	30	45.74	7.69	2.30	55.73	5.57	61.30	0.67	0.51
May	0.0206	0.0038	31	61.62	10.78	3.12	75.52	7.55	83.07	0.87	0.67
June	0.0203	0.0041	30	58.77	11.25	3.38	73.40	7.34	80.74	0.88	0.67
July	0.0196	0.0039	31	58.63	11.06	3.61	73.30	7.33	80.63	0.85	0.65
August	0.0189	0.0036	31	56.54	10.21	3.27	70.02	7.00	77.02	0.81	0.62
September	0.0152	0.0029	30	44.00	7.96	2.58	54.54	5.45	59.99	0.65	0.50
October	0.0302	0.0020	31	90.34	5.67	1.88	97.89	9.79	**107.68**	**1.13**	**0.87**
November	0.0063	0.0012	30	18.24	3.29	1.11	22.64	2.26	24.90	0.27	0.21
December	0.0050	0.0010	31	14.96	2.84	0.82	18.62	1.86	20.48	0.22	0.17
			DU 5 ANNUAL TOTAL:	**514.63**	**82.59**	**25.58**	**622.80**	**62.27**	**685.07**	**0.61**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	21	107.89	3.48	3.48	107.68	3.47	3.47	0.00	Initially Refill Lake Daily from Well

Notes:
1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 7 – DU 6 Non-Potable Water Calculations

TABLE 7
DU 6 NON-POTABLE WATER CALCULATIONS

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

DESIGN PARAMETERS

	Acres	Value	Units	
DU 6 Neighborhood Open Space	72	28.8	acres (A1)	Assumes turf and is overseeded in October.
		43.2	acres (B1)	Assumes Xeriscape
DU 6 Community Open Space	43	30.1	acres (A2)	Assumes turf and is overseeded in October.
		12.9	acres (B2)	Assumes Xeriscape

	Value	Units	
DU 6 Community Lake Area (I)	2	Acres	Lake is modeled for design purposes. Actual lake size may vary and will be determined during final design.
Height of Vertical Lake Wall (M):	1.5	feet	
Horizontal Distance Between Lake Wall and 3:1 Sideslope (N):	8	feet	
Drawdown Period (O):	1	days	Modeled duration during turf overseeding period.

CALCULATION ASSUMPTIONS

- Lakes were considered rectangular with a length to width ratio of 10:3.
- Lakes have a 1.5 foot vertical wall followed by an 8 ft horizontal shelf and 3:1 slope for the remaining lake depth.
- October was used as the worst case month due to overseeding of the parks.
- A non-potable groundwater well will provide supply during the initial phase and serve as the primary backup supply in the future.
- The backup well is assumed to have a pumping rate of 900 gpm.

NON-POTABLE MONTHLY WATER USE

				WATER USE DU 6							
Month	Turf Daily Water Use[1] (P) (ac-ft/day/acre)	Low Water Use Daily Water Use[2] (Q) (ac-ft/day/acre)	Days/Month (R)	Turf Daily Water Use[3] (S) (ac-ft)	Low Water Use Daily Water Use[4] (T) (ac-ft)	Evap.[5] (U) (ac-ft)	Subtotal[6] (V) (ac-ft)	Contingency[7] 10% (W) (ac-ft)	Monthly Total[8] (X) (ac-ft)	Daily Total[9] (Y) (mgd)	Daily Park Lake Drawdown[10] (Z) (ft)
January	0.0052	0.0010	31	9.49	1.74	0.42	11.65	1.17	12.82	0.13	0.21
February	0.0063	0.0013	28	10.39	2.04	0.50	12.93	1.29	14.22	0.17	0.25
March	0.0111	0.0020	31	20.27	3.48	0.84	24.59	2.46	27.05	0.28	0.44
April	0.0158	0.0028	30	27.92	4.71	1.15	33.78	3.38	37.16	0.40	0.62
May	0.0206	0.0038	31	37.61	6.61	1.56	45.78	4.58	50.36	0.53	0.81
June	0.0203	0.0041	30	35.87	6.90	1.69	44.46	4.45	48.91	0.53	0.82
July	0.0196	0.0039	31	35.79	6.78	1.80	44.37	4.44	48.81	0.51	0.79
August	0.0189	0.0036	31	34.51	6.26	1.64	42.41	4.24	46.65	0.49	0.75
September	0.0152	0.0029	30	26.86	4.88	1.29	33.03	3.30	36.33	0.39	0.61
October	0.0302	0.0020	31	55.14	3.48	0.94	59.56	5.96	**65.52**	**0.69**	**1.06**
November	0.0063	0.0012	30	11.13	2.02	0.55	13.70	1.37	15.07	0.16	0.25
December	0.0050	0.0010	31	9.13	1.74	0.41	11.28	1.13	12.41	0.13	0.20
			DU 6 ANNUAL TOTAL:	**314.11**	**50.64**	**12.79**	**377.54**	**37.77**	**415.31**	**0.37**	

NON-POTABLE BACKUP WELL FOR PARK LAKE FILL AND DRAWDOWN CALCULATIONS DURING INITIAL PHASE										
	Non-Potable Backup Well Supply Calculations					Park Lake Drawdown Calculations				Notes
Month	Assumed Lake Fill Rate (gpm)	Backup Well Pumping Window (AT) (hours)	Monthly Lake Fill Volume from Well[11] (AU) (ac-ft/month)	Daily Lake Fill Volume from Well[12] (AV) (ac-ft/day)	Total Backup Volume Provided During Initial Phase[13] for Drawdown Period (AW) (ac-ft)	Park Monthly Water Use During Initial Phase[8] (AS) (ac-ft/month)	Park Daily Water Use During Initial Phase[14] (AX) (ac-ft/day)	Total Volume Required for Drawdown Period[15] (AY) (ac-ft)	Lake Drawdown During Initial Phase[16] (AZ)[17] (ft)	
October	900	13	66.79	2.15	2.15	65.52	2.11	2.11	0.00	Initially Refill Lake Daily from Well

Notes:
1) Turf daily water use (P) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
2) Low water use daily water use (Q) per acre calculation shown on "non-potable water use and application rates" spreadsheet.
3) S = (A1+A2) x P x R
4) T = (B1+B2) x Q x R
5) U = I x Daily Pan Evaporation Rate (From non-potable water use and application rates spreadsheet)(gpd/ac) x (R) / 7.48 (gal/ft3) / 43,560 (ft2/ac)
6) V = S + T + U
7) W = V x 10%
8) X = V + W
9) Y =((X / R)*(43,560 sq. ft/ac)*(7.48 gal/cu. ft.))/1,000,000 gal
10) Z = (X / R) / I
11) AU = (R x AT x 60 min/hr x 900 gallons/min) / (7.48 gallons/ft^3) / (43,560 ft^2/acre)
12) AV = AU / R
13) AW = AV x O
14) AX = AS / R
15) AY = AX x O
16) AZ = (AY - AW) / (I), if < 0 then 0. Represents total lake drawdown over the 1-day October overseeding period for the well pumping rate shown.
17) If the total volume required for the drawdown period is less than the total backup volume provided; no drawdown will occur.

Table 8 – Non-Potable Water Lake Fill Line Sizing

TABLE 8
NON-POTABLE WATER LAKE & STORAGE TANK FILL LINE SIZING

Project: Superstition Vistas
Location: Apache Junction, AZ
Project Number: 205166

Lake & Storage Tank Fill Line Delivery Rates from Wastewater Treatment Plant

Peak Instantaneous Flow over Delivery Window

Description	DU 1	DU 2 (Phase 1)	DU 2 (Phase 2)	DU 2 (Phase 3)	DU 3A	DU 3B	DU 5	DU 6	Total
Total Peak Daily Total Water Demand (October) (GPD)	90,000	370,000	420,000	420,000	620,000	690,000	1,130,000	690,000	4,430,000
Delivery Window (hrs):	15	15	15	15	15	15	15	15	
Peak Delivery Rate (gpm):	100	411	467	467	689	767	1,256	767	4,924

Storage Tank Fill Line DU 1

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	100	gpm	15-hour delivery of non-potable water through DU 1.
Peak Delivery Rate (cfs):	0.22	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	6	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	1.12	ft/s	

Lake Fill Line DU 2 (Phase 1)

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	411	gpm	15-hour delivery of non-potable water through DU 2 (Phase 1).
Peak Delivery Rate (cfs):	0.92	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	8	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	2.64	ft/s	

Lake Fill Line DU 2 (Phase 2)

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	467	gpm	15-hour delivery of non-potable water through DU 2 (Phase 2).
Peak Delivery Rate (cfs):	1.04	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	8	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	2.98	ft/s	

Lake Fill Line DU 2 (Phase 3)

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	467	gpm	15-hour delivery of non-potable water through DU 2 (Phase 3).
Peak Delivery Rate (cfs):	1.04	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	8	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	2.98	ft/s	

Lake Fill Line DU 3A

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	689	gpm	15-hour delivery of non-potable water through DU 3.
Peak Delivery Rate (cfs):	1.54	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	8	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	4.41	ft/s	

Lake Fill Line DU 3B

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	767	gpm	15-hour delivery of non-potable water through DU 3.
Peak Delivery Rate (cfs):	1.71	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	12	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	2.18	ft/s	

Lake Fill Line DU 5

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	1,256	gpm	15-hour delivery of non-potable water to DU 5.
Peak Delivery Rate (cfs):	2.80	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	12	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	3.57	ft/s	

Lake Fill Line DU 6

Description	Value	Units	Notes
Peak Delivery Rate (gpm):	767	gpm	15-hour delivery of non-potable water to DU 6
Peak Delivery Rate (cfs):	1.71	cfs	
Fill Line Nominal Diameter, CAP Gravity Line to North Great Park Lake:	12	in	<=Nominal Fill Line Pipe Diameter
Fill Line Velocity:	2.18	ft/s	

APPENDIX B – FULL BUILD-OUT HYDRAULIC MODELING RESULTS

Superstition Vistas Non-Potable Water
FlexTable: Reservoir Table
Active Scenario: Non-Potable-Month of October-15hr Fill Window

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
SMCFD WWTF	1,655.00	Non-Potable	4,935	1,655.00

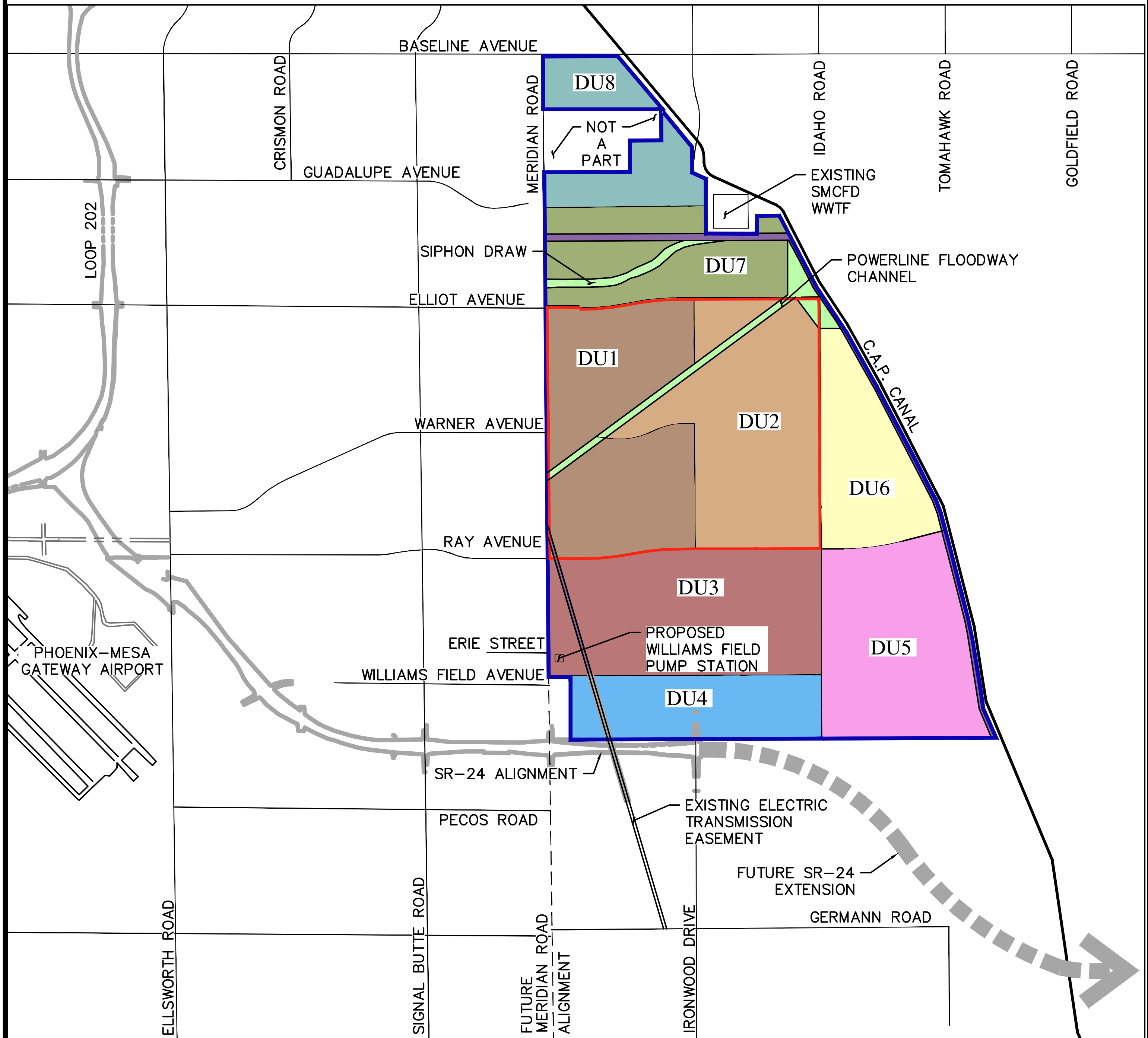
Superstition Vistas Non-Potable Water
FlexTable: Junction Table
Active Scenario: Non-Potable-Month of October-15hr Fill Window

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-1	1,540.00	Non-Potable	0	49	1,653.91
J-23	1,510.00	Non-Potable	0	52	1,630.80
J-DU1	1,529.00	Non-Potable	0	51	1,647.09
J-DU1-POC	1,510.00	Non-Potable	100	58	1,644.17
J-DU2	1,514.00	Non-Potable	0	55	1,640.84
J-DU2-4A	1,512.00	Non-Potable	411	52	1,631.61
J-DU2-4B	1,530.00	Non-Potable	478	46	1,637.11
J-DU2-4C	1,540.00	Non-Potable	467	37	1,625.02
J-DU3-POCA	1,520.00	Non-Potable	689	43	1,618.71
J-DU3-POCB	1,500.00	Non-Potable	767	55	1,625.99
J-DU5-POC	1,550.00	Non-Potable	1,256	33	1,625.17
J-DU6-POC	1,555.00	Non-Potable	767	32	1,627.84
J-DU6B	1,555.00	Non-Potable	0	32	1,629.27

Superstition Vistas Non-Potable Water
FlexTable: Pipe Table
Active Scenario: Non-Potable-Month of October-15hr Fill Window

Label	Diameter (in)	Zone	Length (ft)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)
P-1	24.0	Non-Potable	654	4,935	3.50	1.67
P-2	24.0	Non-Potable	4,098	4,935	3.50	1.67
P-3	24.0	Non-Potable	3,894	4,835	3.43	1.60
P-4	24.0	Non-Potable	2,330	4,835	3.43	1.60
P-5	8.0	Non-Potable	2,709	-467	2.98	4.46
P-6	24.0	Non-Potable	5,122	3,890	2.76	1.07
P-7	24.0	Non-Potable	935	3,479	2.47	0.87
P-8	24.0	Non-Potable	2,788	2,712	1.92	0.55
P-9	8.0	Non-Potable	1,152	689	4.40	9.16
P-10	12.0	Non-Potable	1,061	1,256	3.56	3.87
P-11	12.0	Non-Potable	918	-767	2.18	1.55
P-12	12.0	Non-Potable	3,099	767	2.18	1.55
P-13	6.0	Non-Potable	2,793	100	1.13	1.04

EXHIBIT 1 – VICINITY MAP



TOWNSHIP 1 SOUTH, RANGE 8 EAST OF THE GILA AND SALT RIVER MERIDIAN, PINAL COUNTY, ARIZONA

LEGEND

ON-SITE DEVELOPMENT UNITS

DU 1, DU 2, DU 3, DU 4, DU 5, DU 6, DU 7, DU 8

OPEN SPACE & POWERLINE FLOODWAY

POWER LINE CORRIDOR

BOUNDARY

PLANNING AREA BOUNDARY

AUCTION PROPERTY BOUNDARY

N

0 3000 6000

Horz. 1 in. =6000 ft.

WOOD PATEL

EXHIBIT 1- VICINITY MAP

SUPERSTITION VISTAS APACHE JUNCTION, ARIZONA

JOB NO.	205166	SCALE	1"=6000'	SHEET	1 OF 1

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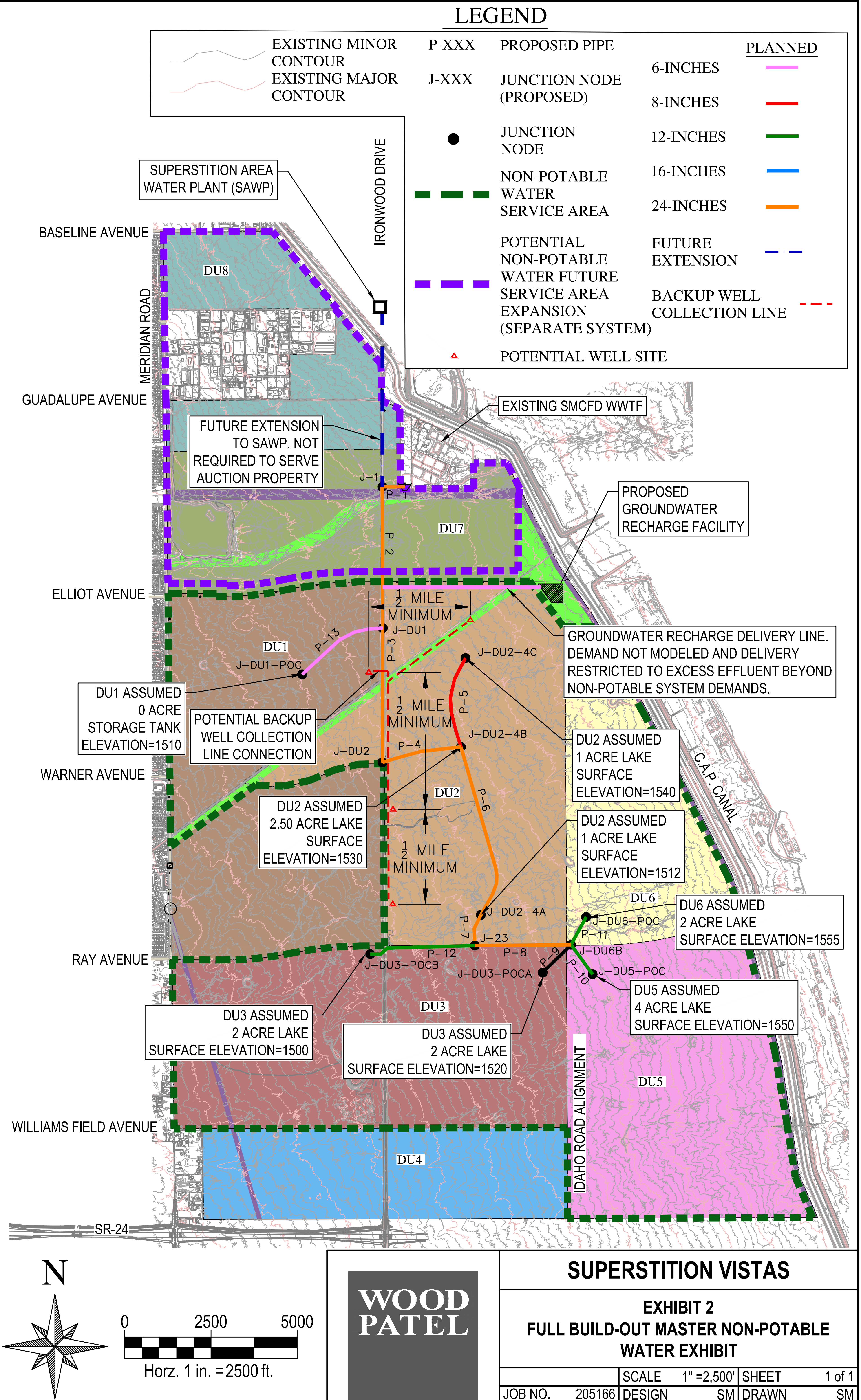
EXHIBIT 2 – FULL BUILD-OUT MASTER NON-POTABLE WATER EXHIBIT



WOOD PATEL

SUPERSTITION VISTAS

EXHIBIT 2
FULL BUILD-OUT MASTER NON-POTABLE WATER EXHIBIT

		SCALE	1" =2,500'	SHEET	1 of 1
JOB NO.	205166	DESIGN	SM	DRAWN	SM

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From the Phoenix Business Journal:
https://www.bizjournals.com/phoenix/news/2025/01/10/lennar-buys-lots-brookfield-blossom-rock.html

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Residential Real Estate

Homebuilder Lennar buys more lots at giant Blossom Rock community; more builders on tap

Construction is underway on amenities at Blossom Rock, including the Dutch Clubhouse and Pool, which is projected to be completed by the end of August.

BROOKFIELD RESIDENTIAL

By Angela Gonzales – Senior Reporter, Phoenix Business Journal
Jan 10, 2025

Listen to this article 6 min

Miami-based Lennar Corp. (NYSE: LEN) paid $49 million for more vacant land at Blossom Rock at Superstition Vistas, a 1,400-acre master-planned community in the far East Valley being developed by Canada-based Brookfield Residential.

Lennar paid Brookfield $37.34 million for 121.88 acres of vacant land and another $11.55 million for 120 lots at Blossom Rock, closing on Dec. 19 and Dec. 23, according to Tempe-based real estate database Vizzda LLC.

Nathan & Associates Inc.'s Nate Nathan, David Mullard and Casey Christensen negotiated those transactions.

These are in addition to the 154 lots Lennar bought at Blossom Rock in June 2023, when it was the first homebuilder to close on land at the new master-planned community.

The most recent acquisitions will bring the total number of Lennar homes to 851 at Blossom Rock, said Jeff Gunderson, senior vice president of land operations for Lennar.

Lennar is building three different product lines ranging between 1,200 and 2,500 square feet, he said.

These are the type of homes Lennar is building at Blossom Rock.

MARK SKALNY

"We would hope to be involved in future phases as well," he said. "We're taking it as it comes to the market."

Of the most recent lots purchased, 120 of them are within Phase II at Blossom Rock, while the 121.88 acres are within Blossom Rock 8, a raw piece of land where Lennar will develop its own infrastructure, Gunderson said.

Back on Nov. 4, 2020, D.R. Horton was the winning bidder in an Arizona State Land Department auction, paying $245.5 million for 2,738 acres. Brookfield entered into a purchase agreement with D.R. Horton in a joint development agreement, where Brookfield obtained the rights to 50% of the property. Each is responsible for developing about 1,400 acres, with D.R. Horton planning to build 5,000 homes on its portion, called Radiance at Superstition Vistas.

Brookfield, which has its headquarters in Calgary, Alberta, bought 691 partially finished lots from D.R. Horton Inc. (NYSE: DHI) for $10.41 million on Dec. 19, according to Vizzda. The 120 lots were then turned around and sold to Lennar.

D.R. Horton holds the participation contract with the state land department, said Eric Tune, senior vice president of development for Brookfield Residential.

"Through our partnership with D.R. Horton, we acquire land from D.R. Horton then we sell to builders," he said. "Those are lots for Phase II and are going to our existing builders to fill their pipeline."

In addition to Lennar's 120 lots at Phase II, Brookfield Residential is under contract to purchase 82 lots, he said.

"The remaining lots will be offered to builders over the next few months," Tune said.

So far, 171 homes have sold at Blossom Rock and 80 have closed, Tune said.

Of those, Lennar has sold 82 homes and closed on 52 homes, which means people are living in those homes, Gunderson said.

Other homebuilders working at Blossom Rock

In addition to Lennar and Brookfield Residential, three other homebuilders were selected in August 2023 to build a total of 554 homes in the first phase of the development. They are Houston-based David Weekley Homes, Atlanta-based PulteGroup Inc. (NYSE: PHM), Nevada-based Tri Pointe Homes Inc. (NYSE: TPH)

Brookfield and D.R. Horton also teamed up to develop offsite infrastructure for a nonpotable water system, where water will be stored in one of the three lakes being built within the master-planned community to irrigate neighborhood parks, street landscaping and open spaces.

Painted Sky Park – the first of three community parks to be developed at Blossom Rock – is completed and filled with nonpotable water.

This 16.5-acre community park is owned by the city of Apache Junction, offering a catch-and-release fishing lake, central plaza, playgrounds, dog park, restrooms and shaded ramadas. It also features game courts with bocce ball, table tennis, cornhole and outdoor chess.

The first of three community parks, Painted Sky Park is a 16.5-acre community park owned by the city of Apache Junction.

BROOKFIELD RESIDENTIAL

The first phase of the water treatment plant is compete, Tune said.

"The remaining expansion will be completed at the end of 2025," he said.

Other amenities under construction within Phase I at Blossom Rock include The Dutch Clubhouse and Pool, which is projected to be completed by the end of August.

Five neighborhood parks also have been developed, each one designed to be less than two blocks away from every home, Tune said.

Amenities in Phase II include additional neighborhood parks that have not started construction, he said.

Gunderson said the spectacular views of the Superstition Mountains, the amenities within Blossom Rock and proximity to employment is what attracted Lennar to the community.

"The lifestyle it offers is fantastic," Gunderson said.

"This is the next large master-planned community as basically a follow-up to Eastmark, which is sold out, and Cadence, which is sold out," he said. "At this point, it's a proven master-planned community in a great location with great access to transportation and close to employment centers."
