Washington City
Where Dixie Begins

SECONDARY WATER IRRIGATION MASTER PLAN

Client **Washington City**

Date **December** 2024

ALLIANCE CONSULTING
A Planning and Engineering Firm
2303 N Coral Canyon Blvd #201
Washington, UT 84780

EXECUTIVE SUMMARY

INTRODUCTION

Washington City has retained Alliance Consulting to prepare a master plan for a city-operated secondary water irrigation system. The secondary water system will utilize water that has not been treated to drinking water standards. The purpose of this secondary water irrigation master plan is to evaluate the existing components of the secondary water system and identify the source, storage, and projects needed to connect the system and supply secondary pressurized irrigation water to the City's residents.

SYSTEM OVERVIEW

Washington City has required new developments to include the construction of secondary water distribution infrastructure since 2006. These secondary water lines have remained dry and will be connected once the city-wide secondary water transmission and storage infrastructure is constructed. Irrigation districts have been identified throughout the city to be utilized as part of the master planning for the city-wide secondary water irrigation system. The purpose of the districts is to break the City into smaller areas to identify critical areas that will be connected to the city-wide system initially and as development progresses. Pressure zones were developed for the city-wide system based on the culinary water pressure zone boundaries, with a target decrease of 10 psi compared to the culinary system, which was requested by the City to reduce the risk of contamination of the culinary system in the event a cross connection is made between the systems. More information on the proposed system can be found in ***Chapter 2*** of this report.

PROJECTED GROWTH AND IRRIGATION WATER USE

Growth projections for the City were established in the Culinary Water Master Plan by analyzing historical growth trends. The estimates of the Culinary Water Master Plan are incorporated into this report for comparison to the build-out based on existing residences and future projections based on information provided by Washington City. These projections have been used to estimate existing and future system water usage. Water usage for existing development was calculated based on analyzing metered usage data provided by the City. Water usage for future development accounts for recently implemented landscaping and water conservation ordinances issued by Washington City. More information on build-out projection and water use calculations can be found in ***Chapter 3*** of this report.

IRRIGATION WATER SUPPLY

The Washington City secondary water irrigation system will utilize secondary sources that are independent from culinary water demands. If the City utilizes culinary sources to supplement the secondary water system, the utilized source would be inventoried as a secondary water source. This report provides a description of the City's existing secondary irrigation sources, evaluates their ability to meet existing and future demands, and provides recommendations regarding the development of new sources. More information on secondary irrigation water sources can be found in ***Chapter 4*** of this report.

IRRIGATION WATER STORAGE

Storage facilities play a significant role in a water delivery system providing a buffer between water sources and the distribution system. The primary function of storage is to provide equalization for the system and provide flow to users when demand exceeds the capacity of sources. This report provides an evaluation of the secondary water storage requirements for Washington City under existing and future demand conditions. The results of this evaluation have been used to identify future storage improvements for the system. More information on secondary irrigation water storage requirements can be found in ***Chapter 5*** of this report.

IRRIGATION WATER TRANSMISSION AND DISTRIBUTION

Transmission and distribution infrastructure includes the following: transmission pipe lines, distribution pipe lines, pumping stations, and pressure reducing stations. Washington City's secondary irrigation transmission and distribution network has been evaluated under three build-out scenarios: Scenario 1 - connection of existing secondary water irrigation infrastructure, Scenario 2 - connection of existing infrastructure plus the future development that will have secondary water irrigation infrastructure installed per City code, Scenario 3 – full build-out of the city-wide system connecting all existing and future users. This report documents the results of the hydraulic modeling evaluation for the three build-out scenarios and provides recommendations for future transmission and distribution improvements for the secondary water irrigation system. More information on secondary irrigation water transmission and distribution requirements can be found in ***Chapter 6*** of this report.

IRRIGATION SYSTEM IMPROVEMENT PROJECTS

A construction cost estimate has been completed as part of this report which will aid the City in determining the feasibility of connecting specific areas of the City and help determine how system improvement projects will need to be phased. This report also describes initial projects that can be completed to begin connection and service of the secondary water irrigation system. More information on the initial system improvement projects and cost estimates is provided in ***Chapter 7*** of this report.

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CHAPTER 1: INTRODUCTION

Washington City has retained Alliance Consulting to prepare a master plan for a city-operated secondary water irrigation system. The secondary water system will utilize water that has not been treated to drinking water standards. Currently, most irrigation users within the City are connected to the culinary water system. There are components of the secondary water system that have been installed with recent development in anticipation of the City's secondary water irrigation system. The purpose of this secondary water irrigation master plan is to evaluate the existing components of the secondary water system and identify the projects needed to connect the system and supply secondary pressurized irrigation water to the City's residents. Additionally, this master study will include evaluation and recommendations for the future build-out of the system. This master plan has been developed using existing land use, existing water use data, land use plans, and population projections. If land use plans and growth projections change in the future, which they tend to, the assumptions made in future master planning efforts should be updated accordingly. In this sense, this master plan should function as a working document and should be updated frequently enough to maintain sufficient accuracy. ***Figure 1.1*** shows the anticipated service area for the Washington City irrigation system.

1.1 SCOPE OF SERVICES

The general scope of this project involved analysis and recommendations for the City's secondary water irrigation system and its requirements to meet the present and future irrigation water needs. As part of the Secondary Water Irrigation Master Plan, Alliance Consulting completed the following tasks.

- Collected information as needed to develop the secondary irrigation master plan, including GIS data, source production and water use data, and information related to the City's culinary water system.
- Evaluated outdoor irrigation usage for residential and non-residential development to estimate irrigation water use for future system users.
- Evaluated existing and future secondary water irrigation source capacities and compared them with existing and future demands.
- Evaluated the volume of storage needed to meet existing and future system demands.
- Developed a hydraulic model of the secondary water irrigation system under existing and projected future demand conditions.
- Identified system improvements needed to service the secondary water irrigation system, including new sources, storage facilities, pumping stations, transmission pipelines, and distribution piping.

- Developed an initial cost estimate for the overall system and initial projects to get services connected with cost estimates for each.

1.2 ACKNOWLEDGMENTS

The Alliance Consulting team wishes to thank the following individuals from Washington City for their cooperation and assistance in completing this report:

Blake Fonnesbeck:	Public Works Director
Lester Dalton:	Assistant Public Works Director
Dallan Wadsworth:	Water Superintendent

1.3 PROJECT STAFF

The project work was performed by the Alliance Consulting team members listed below. Team members' roles on the project are also listed. Questions may be addressed to Craig Coats, Project Manager at (435) 673-8060.

Deloss Hammon:	Principal Engineer
Craig Coats:	Project Manager
Joseph Williams:	Project Engineer

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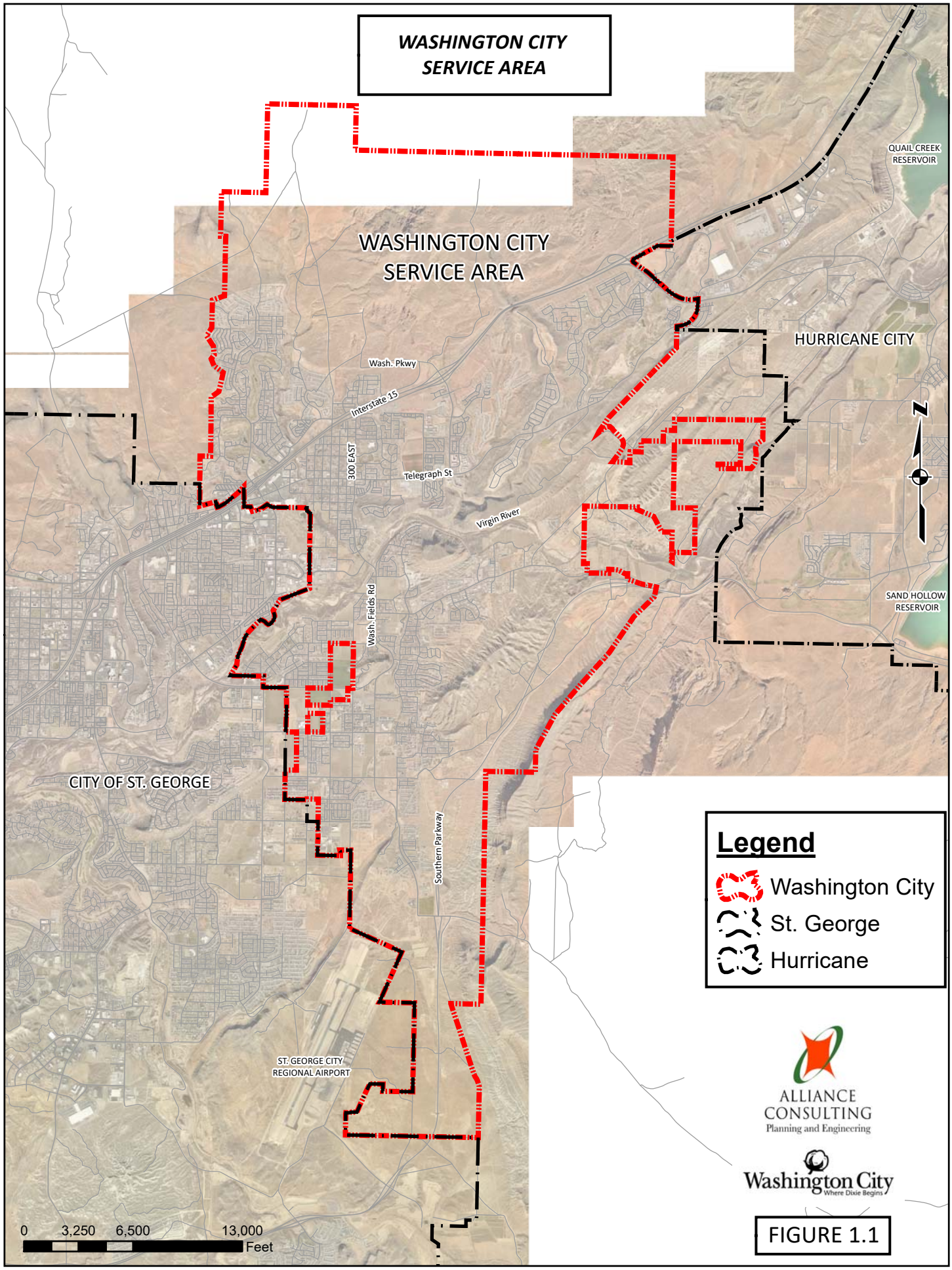
WASHINGTON CITY
SERVICE AREA
WASHINGTON CITY
SERVICE AREA
QUAIL CREEK
RESERVOIR
HURRICANE CITY
Wash. Pkwy
Interstate 15
300 EAST
Telegraph St
Virgin River
Wash. Fields Rd
SAND HOLLOW
RESERVOIR
CITY OF ST. GEORGE
Southern Parkway
ST. GEORGE CITY
REGIONAL AIRPORT
N
Legend
Washington City
St. George
Hurricane
0
3,250
6,500
13,000
Feet
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FIGURE 1.1

CHAPTER 2: SYSTEM OVERVIEW

Washington City, through ordinance, has required new developments to install secondary water irrigation distribution infrastructure alongside the culinary water system since 2006. These secondary water lines have remained dry while the culinary system has been utilized to meet irrigation demands until the secondary system is brought online at a future time.

There are large users within the City that already have separate secondary water systems including agricultural, municipal facilities, golf courses, and the Crimson Cliffs High School. Most of these users are expected to remain separate from the City's master secondary water irrigation system; however, some may potentially be incorporated into the City's system including Sullivan Park, the Washington City Community Center, the Baseball & Softball Complex, Cemetery, and Crimson Cliffs High School, except for the large ball fields which would remain a separate system. It should be noted that the City does not provide water to the golf courses or to agricultural users, and these users do not affect the City's water source inventory.

This chapter provides an overview of the proposed City Irrigation Districts to be utilized as part of the master planning for the city-wide secondary water irrigation system. Additionally, this chapter describes notable existing and future secondary water users throughout the City and provides an overview of existing water rights and infrastructure and proposes secondary water irrigation pressure zones that the new city-wide system will be based on.

2.1 IRRIGATION DISTRICTS

The Washington City secondary irrigation service area encompasses all the current Washington City boundary and is broken down into 14 irrigation districts as shown in ***Figure 2.1***. The purpose of these districts is to provide a means for breaking the City into areas to better identify and allow for capital facilities projects to move forward in the parts of the City that will have the most benefit from both a practicality and cost perspective, especially in the coming years during initial connection of the system.

District 1 – Green Springs West (GSW)

The Green Springs West District generally consists of the old Green Springs Master Community with communities straddling Green Springs Drive from I-15 north to the Red Cliffs Desert Reserve. The Green Springs Golf Course is within the district boundaries in addition to the Green Springs Community Park. The golf course is irrigated on a separate system. The communities in the northernmost portion of the district, consisting of an estimated 382 residential units, are newer and have dry secondary water irrigation lines already installed. Based on planning documents, the district is built out except for a couple commercial properties near I-15.

WASHINGTON CITY
IRRIGATION SERVICE DISTRICTS

1 GSW
2 GSN
3 GSE
4 DT
5 SH
6 CC
7 WFW
8 WD
9 SV
10 WFE
11 LV
12 WFS
13 SF
14 AIR

I-15
SR-9
TELEGRAPH
GREEN SPRINGS
VIRGIN RIVER
WASH. DAM RD
WASH. FIELDS RD
3000 E
GEORGE WASH. BLVD
SOUTHERN PKWY
FUTURE WARNER VALLEY LAKE

LEGEND

WASHINGTON CITY BOUNDARY

4 DISTRICT & BOUNDARY

District	Existing Irrigation Meters	Total Units	Total Platted % Metered
1	472	2354	20%
2	0	0	0%
3	709	1306	54%
4	172	2426	7%
5	291	2321	13%
6	184	1686	11%
7	427	1603	27%
8	129	489	26%
9	118	384	31%
10	561	1570	36%
11	274	408	67%
12	562	866	65%
13	688	707	97%
14	0	0	0%
Total	4,587	16,120	27%

GRAPHIC SCALE

4000 0 2000 4000 8000

(IN FEET)
1 inch = 4000 ft.
If Printed 11x17 use Half Scale

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FIGURE 2.1

District 2 – Green Springs North (GSN)

The Green Springs North district lies to the north of Washington Parkway on the north side of I-15 and extending north to the Red Cliffs Desert Reserve. The district includes the entirety of the Solenté Master Planned Community, a new development which will consist of an estimated 2,200 residential units. Secondary water irrigation distribution infrastructure will be installed for the development based on a separate irrigation master plan specific to the development, which was submitted with the Planned Community Development (PCD) application in October 2021.

District 3 – Green Springs East (GSE)

The Green Springs East District lies north of I-15 between, extending from I-15 on the south to Washington Parkway on the north and including the Main Street (north of I-15) and Buena Vista Blvd as major roadways. The district is predominantly built out regarding parcels designated as residential development. There are several commercial properties along I-15 and Buena Vista Blvd that remain undeveloped. The existing residential development largely consists of the Brio Planned Community which has dry secondary water irrigation lines already installed. There are an estimated 709 existing secondary irrigation services ready to be connected. The Boiler's Park is within the district boundaries.

District 4 – Downtown (DT)

The Downtown District consists of the oldest parts of Washington City between the Virgin River on the south and I-15 on the north. Major roadways through the district include Main Street, Telegraph Street, and 300 East. Parks within this district include Nisson Park, Veterans Park, and Dog Town Park. The Community Center, Baseball and Softball Complex, and Cemetery are within the district but are irrigated with a separate system utilizing existing secondary water sources. Most of the residences in the downtown area were constructed prior to the City requiring irrigation infrastructure with new development. There is a small community west of 300 East on the south end of the district which has dry secondary water irrigation lines already installed with an estimated 100 residential units ready to be connected to the system. Most of the undeveloped parcels in this district are commercial and industrial zoned areas in the Industrial Road area. There are some undeveloped residential parcels on the east side of the district.

District 5 – Sienna Hills (SH)

The Sienna Hills District consists of the area south of I-15 and north of Telegraph Street, with Washington Parkway as a major roadway running through the district. This district generally consists of the Sienna Hills Master Planned Community. Dry secondary water irrigation lines have been installed for most of the district and are ready to be connected. This includes approximately 265 existing residential irrigation services and some newer commercial development alongside I-15. Most of the undeveloped parcels within the district are zoned as commercial areas predominantly along I-15.

District 6 – Coral Canyon (CC)

The Coral Canyon District consists of the Washington Black Ridge and everything east of there within the City limits generally along Telegraph Street to SR-9. The district is predominantly the Coral Canyon Master Planned Community. Parks within the district include Highland Park and Heritage Park. The Coral Canyon Golf Course is within the district but will remain on its own irrigation system. There is an existing 8-inch main in a portion of Coral Canyon Blvd; however, most of the residences in the district were constructed before the City required the installation of separate irrigation lines. There are newer phases that do include dry secondary water irrigation distribution lines. These areas are generally atop the Washington Black Ridge and a few parcels along Telegraph Street. The north end of Washington Black Ridge consists of the Solis Development, which is currently under construction, containing a planned 193 residential units. Along Telegraph Street there are Mixed-Use PCDs consisting of an estimated 309 residential connections.

District 7 – Washington Fields West (WFW)

The Washington Fields West District consists of the area bound by the Virgin River on the north, Washington Fields Road on the east, George Washington Boulevard (3650 South) on the south, and the City of St. George on the West. This district predominantly consists of existing residential development, much of which has dry secondary water irrigation distribution lines ready to be connected. Pine View Park is also within the district boundaries. There are many undeveloped agricultural fields which are zoned as low-density residential development. Of the estimated 1,603 existing residences within the district, an estimated 427 (27%) already have dry secondary water irrigation infrastructure waiting to be connected. An estimated 1,089 additional residential units may potentially be added to the district at full build-out, which will also have secondary water distribution lines installed. This means a larger portion of the district will have lines ready to be connected without any additional lines added by the City to older developments within the district allowing for greater utilization of the secondary water system.

District 8 – Washington Dam (WD)

The Washington Dam District generally consists of the area north of Washington Dam Road and south of the Virgin River. This district consists of a mix of both residential and industrial users. There are an estimated 129 residences with dry distribution infrastructure and undeveloped parcels estimated to add an additional 475 residential units to the district. This would equate to irrigation distribution for an estimated 604 residential units. There is a total expected 964 residential units at full build-out, including older development within the district, meaning a sizable portion of the district can be serviced by the secondary water system without requiring installation of additional distribution infrastructure by the City.

District 9 – Sunrise Valley (SV)

The Sunrise Valley District includes the area north of the Virgin River and south of the Washington County Landfill. There is an estimated residential build-out of 798 residential units and 100 acres of commercial and industrial. Sunrise Valley Park is also within the district. Since the community is relatively new, all developments include the installation of secondary water irrigation distribution infrastructure. Irrigation within the community is currently serviced with isolated common space meters rather than one meter for each unit; however, for planning purposes, irrigation water demand is calculated based on ERU.

District 10 – Washington Fields East (WFE)

The Washington Fields East District includes the area east of Washington Fields Road between Washington Dam Road on the north and George Washington Boulevard (3650 South) on the south. The area extends east from the fields and up the lower hillsides of Washington Dome. The district includes the Majestic Fields, Rusted Hills, and Shooting Star areas. Shooting Star Park is within the district boundaries. The district has several newer developments totaling 561 residential units with dry secondary water irrigation distribution infrastructure.

District 11 – Long Valley (LV)

The Long Valley District is located on the east side of SR-7 just to the south of the Virgin River. Long Valley is a master-planned community with a planned 2,400 residential units, of which an estimated 768 have been constructed at the time this report was written. All units in Long Valley will have secondary water irrigation infrastructure with isolated common space meters rather than one meter for each unit; however, for planning purposes, irrigation water demand is calculated based on ERU.

District 12 – Washington Fields South (WFS)

The Washington Fields South District is located south of George Washington Boulevard (3650 South) and west of Washington Fields Road. The district extends south to the ridge below the St. George Regional Airport. The district has a total estimated 562 residential units with secondary water irrigation infrastructure in communities such as Treasure Valley. The Treasure Valley Community Park is within the district boundaries as are Crimson Cliffs High School and Middle School. The Crimson Cliffs school complex is currently irrigated with a separate secondary system and is not currently planned to be added to the city-wide system. An additional 648 residential units will be added at full build-out which equates to 1,210 of the total estimated 1,514 units having secondary water irrigation infrastructure at full build-out.

District 13 – Stucki Farms (SF)

The Stucki Farms District is located south of George Washington Boulevard (3650 South) and east of Washington Fields Road until past the ridge the St. George Regional Airport is situated on where the district lies on both the east and west sides of Washington Fields Road. The district extends south to the northeast corner of the airport property. SR-7 makes up the east boundary of the district's developable area. There are currently 707 residential units in the district, nearly all of which have secondary water irrigation distribution infrastructure. An estimated 2,088 future residential units are planned within the district in addition to commercial development and the Wheels Park, which will be located on the southwest corner of the George Washington Boulevard and SR-7 interchange.

District 14 – Airport (AIR)

The Airport District is located at the far south end of the existing City boundaries along SR-7 and adjacent to the St. George Regional Airport. The district is currently undeveloped but will consist entirely of commercial and industrial users. The district is estimated to have over 1,000 acres of developable area.

2.2 SECONDARY WATER IRRIGATION SYSTEM USERS

Although the service area covers the entire city, separate irrigation service is already provided to some large irrigation users, such as parks, golf courses, schools, and cemeteries. These separate systems may be connected to the City's master system on a case-by-case basis with the exception of the golf courses and agricultural users. New residential communities have been required to install secondary water irrigation lines with new development since 2006, so there are several areas with existing dry lines throughout the City. ***Figure 2.2*** displays the location of existing secondary irrigation distribution infrastructure awaiting connection to the city-wide system. The following is a summary description of the different users that currently utilize secondary water for irrigation.

Users with Existing Secondary Water Irrigation

There are several municipal, institutional, and private facilities that are currently serviced by secondary water irrigation on separate systems, and there is currently no plan to connect them to the city-wide system. These facilities are provided in ***Table 2.1***.

Table 2.1: Existing Users on Separate Secondary Water Irrigation System

Facility	District	Type
Green Springs Golf Course	1 (GSW)	Municipal
Washington City Community Center [1]	4 (DT)	Municipal
Sullivan Virgin River Soccer Park	4 (DT)	Municipal
Coral Canyon Golf Course	6 (CC)	Private (uses raw water purchased from City)
Crimson Cliffs High School (Large Fields)	12 (WFS)	Institutional (Private System)
Commercial Farmers [2]	Various	Commercial (Private Systems)

[1] Includes Community Center, Baseball and Softball Fields, and Cemetery

[2] Commercial farmers on separate systems include Turner Turf Farms, Red Desert Sod, among others.

EXISTING SECONDARY WATER IRRIGATION SYSTEM FACILITIES

I-15
SR-9
I-15
TELEGRAPH
GREEN SPRINGS
I-15
TELEGRAPH
VIRGIN RIVER
WASH. DAM RD
SOUTHERN PKWY
FUTURE WARNER VALLEY LAKE
3000 E
WASH. FIELDS RD
GEORGE WASH. BLVD
SOUTHERN PKWY
NORTH

GRAPHIC SCALE

4000 0 2000 4000 8000

(IN FEET)
1 inch = 4000 ft.
If Printed 11x17 use Half Scale

LEGEND

- WASHINGTON CITY BOUNDARY
- 10 IN IRR MAIN
- 8 IN IRR MAIN
- 6 IN IRR MAIN
- 4 IN IRR MAIN
- PRIVATE IRR. LINES (ST. GEORGE WASHINGTON CANAL COMPANY)

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FIGURE 2.2

Users to be Connected to the City-Wide Secondary Water Irrigation System

The following notable facilities, summarized in ***Table 2.2,*** are anticipated to be connected to the city-wide secondary water irrigation system. Most of these facilities do not have secondary water distribution infrastructure installed. The facilities that are adjacent to development with existing secondary water distribution infrastructure, or those that have infrastructure in place, have been noted in the table.

Table 2.2: Users to be Connected to the City-Wide Secondary Water Irrigation System

Facility	District	Type	Existing Distribution [1]
Green Springs Park	1 (GSW)	Municipal	Yes
The Boilers Park	3 (GSE)	Municipal	No
Nisson Park	4 (DT)	Municipal	No
Veterans Park	4 (DT)	Municipal	No
Dog Town Park	4 (DT)	Municipal	No
Washington Elementary School	4 (DT)	Institutional	No
Robert Covington Home Historic Site	4 (DT)	Institutional	No
Sienna Hills Park	5 (SH)	Municipal	Yes
Canyon Park	5 (SH)	Municipal	Yes
Highland Park	6 (CC)	Municipal	No
Heritage Park	6 (CC)	Municipal	No
Razor Ridge Park	6 (CC)	Municipal	No
Coral Canyon Elementary School	6 (CC)	Institutional	Yes
Pine View Park	7 (WFW)	Municipal	No
Riverside Elementary School	7 (WFW)	Institutional	No
Washington Fields Intermediate School	7 (WFW)	Institutional	No
Sunrise Valley Park	9 (SV)	Municipal	Yes
Shooting Star Park	10 (WFE)	Municipal	Yes
Horizon Elementary School	10 (WFE)	Institutional	No
Majestic Fields Elementary School	10 (WFE)	Institutional	No
Treasure Valley Park	12 (WFS)	Municipal	Yes
Wheels Park (Future)	13 (SF)	Municipal	Yes

[1] Indicates existing distribution system is installed or adjacent to the facility.

Private Commercial Facilities

There are several private commercial facilities that have been constructed since 2006 when Washington City began requiring secondary water irrigation lines as part of new development, and new commercial development is anticipated to have distribution lines installed; however, older existing commercial development without dry lines, such as commercial center areas at the I-15/Green Springs interchange and along Telegraph Street, are anticipated to have minimal water use compared to the number of existing residential units that would be connected to the system. Therefore, these properties were not accounted for as existing properties.

Private commercial farmers were not accounted for as these users are expected to remain on separate private irrigation systems serviced from non-City water sources. However, agricultural areas were assumed, based on the City general plan and zoning, to be developed as part of future build-out of the City and are, therefore, included in the full-build-out planning scenario presented in this study.

Residential Users

New residential developments have been constructed with secondary water irrigation lines for nearly two decades (2006 to present). This has allowed a sizable portion of the city, totaling approximately 27% of existing residents, to have the community distribution infrastructure in place and awaiting connection to a city-wide system which will include installation of main transmission lines between developments. Notably, new master planned communities since 2006 already include secondary water irrigation lines. The following areas and communities make up a majority of those with secondary water infrastructure:

- North Green Springs (Reserve, Washington Vista, etc.)
- Brio
- Sienna Hills (Arroyo, Paseos, etc.)
- Sunrise Valley (Red Waters, Riverbend, etc.)
- Long Valley (Labyrinth Point, Starr Springs, etc.)
- Washington Fields (Rusted Hills, Shooting Star, Treasure Valley, etc.)
- Stucki Farms (Homesteads, Warner Gateway, etc.)

It is assumed that all current and future residential development will eventually be connected to the City's secondary water irrigation system; however, priority will be placed on connecting existing dry lines, then future development, and ultimately areas developed prior to 2006.

2.3 SECONDARY WATER SUPPLY SOURCES AND WATER RIGHTS

The City's existing irrigation sources are a combination of City-owned wells and springs. ***Table 2.3*** provides a summary of the City's available supply sources with their water right diversion and annual right. A more detailed summary of the water rights is provided in ***Appendix A***. Although the City has these water rights, the values provided below do not indicate actual production from these sources. It should be noted that Table 2.3 does not include rights owned by the City but utilized for the Green Springs Golf Course as that will remain on a separate irrigation system. A key component of the City's initial Master Plan is to develop and utilize existing secondary water sources which will initially require the implementation of a funding mechanism to begin development of initial phases. Source evaluation and recommendations are provided in Chapter 4. Potential new sources are expected to predominantly be shares of water purchased from the Washington County Water Conservancy District (the District) with the potential for purchases from private users in addition to conversion of agricultural water rights from the St. George Washington Canal.

Table 2.3: Existing City Secondary Water Supply Sources

Water Right	Point of Diversion	Diversion Right		Annual Right (ac-ft)
		cfs	gpm	
81-131	Mill Creek	0.5	224.43	362.0[1]
81-207	Price Spring	0.0156	7.00	11.2941
81-222	Prisbey Spring	0.00668	3.00	4.8429
81-266	Mascrew, Iron Bush & Cottonwood Springs	0.0141	6.33	10.2081
81-710	Mill Creek (Tanner Ditch)	0.208	93.36	150.6[1]
81-713	Mill Creek/Caldwell Wash	0.66667[2]	299.24	482.6[1]
81-1150	Mill Creek (Tanner Ditch)	0.65	291.76	470.6[1]
81-1151	Mill Creek (Tanner Ditch)	0.03	13.47	21.7[1]
81-4076	Westover Spring & Sproul Spring	0.76	341.13	550.2[1]
81-4077	Westover Spring & Sproul Spring	0.07	31.42	50.6786
81-4078	Adair Spring & Warm Spring	0.09	40.40	65.1582
81-4079	Adair Spring & Warm Spring	2.7	1,211.92	1954.7[1]
--	Mill Crk. Water Users Assoc. (42.5 Shares)	0.7352	330	532.3[1]
	Total:	**6.44625**	**2,893.46**	**4,666.8820**

[1] Annual volume calculated assuming change to Municipal use with no change to diversion right. This is not a value provided on the current UDWR water right report.

[2] Water Right 81-713 has a total diversion right of 2 cfs, of which Washington City owns one third (1/3)

2.4 SECONDARY WATER IRRIGATION STORAGE FACILITIES

There are no existing storage facilities that will be connected to the City's secondary water system; however, there are a few that are utilized for separate systems such as the Green Springs Golf Course and the Community Center, Baseball & Softball Complex, and Cemetery that will remain a separate system serviced by an existing storage tank with existing City water resources from Well #1. These separate facilities may be utilized temporarily as part of the initial improvement project to bring services online but will otherwise be assumed to remain separate systems at system build-out.

The only existing pond that will be incorporated into the secondary water irrigation master plan is the Razor Ridge Park Pond. Storage facility recommendations for the new city-wide system are described in Chapter 5. ***Table 2.4*** provides a summary of existing storage facilities and their service areas. Other than the Razor Ridge Pond, these facilities are expected to remain separate from the city-wide system with the exception of the Community Center and cemetery system which will be expanded as part of initial improvements to bring services online. Additional information about the initial system improvement projects is provided in Chapter 7 of this report.

Table 2.4: Existing City Secondary Water Storage Facilities

Storage Facility	Service Area
Tank at Parks Department	Community Center, Baseball & Softball Complex, and Cemetery
Golf Course Pond	Green Springs Golf Course
Sullivan Pond	Sullivan Virgin River Soccer Park
Razor Ridge Park Pond	Future [1]

[1] Razor Ridge Pond is constructed but not currently utilized for irrigation service.

2.5 SECONDARY WATER IRRIGATION PIPING

The existing secondary water irrigation piping is shown previously in Figure 2.2 which consists of the secondary water irrigation distribution piping constructed for new developments since 2006. Currently, this infrastructure is dry and awaiting connecting transmission and supply lines from the city-wide system. An evaluation of the required improvements for the city-wide transmission and distribution system is provided in Chapter 6.

2.6 SECONDARY WATER IRRIGATION PUMP STATIONS

There are no existing secondary water irrigation pump stations except those associated with separate systems at Green Springs Golf Course and Sullivan Virgin River Soccer Park. Pump stations will be constructed as part of the city-wide system and will likely be necessary at each storage facility. An evaluation of required pumping stations is provided in Chapter 6 of this report.

2.7 SECONDARY WATER IRRIGATION SYSTEM PRESSURE ZONES

No city-wide secondary water irrigation pressure zones have been established prior to the development of this Master Plan. The new secondary water irrigation pressure zones are generally based on the established pressure zones for the City's culinary water system except for the irrigation pressure zones have a hydraulic grade line at approximately 20 feet less than the culinary system. The City requested establishment of the pressure zones in this manner to ensure the pressures in the secondary water system are generally around 10 psi less than the culinary water system to ensure a pressure differential in the event that a cross connection between the systems was to occur. With lower system pressures in the irrigation system for the same locations, the risk of cross-contamination between the systems is reduced.

Information on the existing culinary water system was obtained from the 2024 Culinary Water Master Plan prepared by Sunrise Engineering and from data provided by the City including PRV settings and elevations. There are a total of eight irrigation pressure zones considered in this master study. The proposed secondary water irrigation pressure zones are shown in ***Figure 2.3*** and summarized below in ***Table 2.5*** along with a comparison to the culinary water pressure zones. Pressure zone HGLs throughout the City are established by at least one or a combination of the following methods:

- The water surface elevation in a storage tank
- Pressure sustaining pump stations
- Pressure reducing valves (PRVs)

Table 2.5: Proposed Secondary Water Irrigation Pressure Zones

Pressure Zone	HGL (ft)	Culinary HGL (ft)	Difference (ft)	Maximum Elevation Serviced (ft)	Minimum Elevation Serviced (ft)
PZ #1	3,270	3,305	(35)	3,170	2,980
PZ #2	3,080	3,098	(18)	2,980	2,840
PZ #3	2,910	2,930	(20)	2,770	2,650
PZ #4	2,920	2,943	(23)	2,840	2,630
PZ #5	3,050	3,068	(18)	2,880	2,800
PZ #6	2,850	2,880	(30)	2,680	2,560
PZ #7	3,010	3,026	(16)	2,920	2,680
PZ #8	3,150	--	--	3,060	2,840

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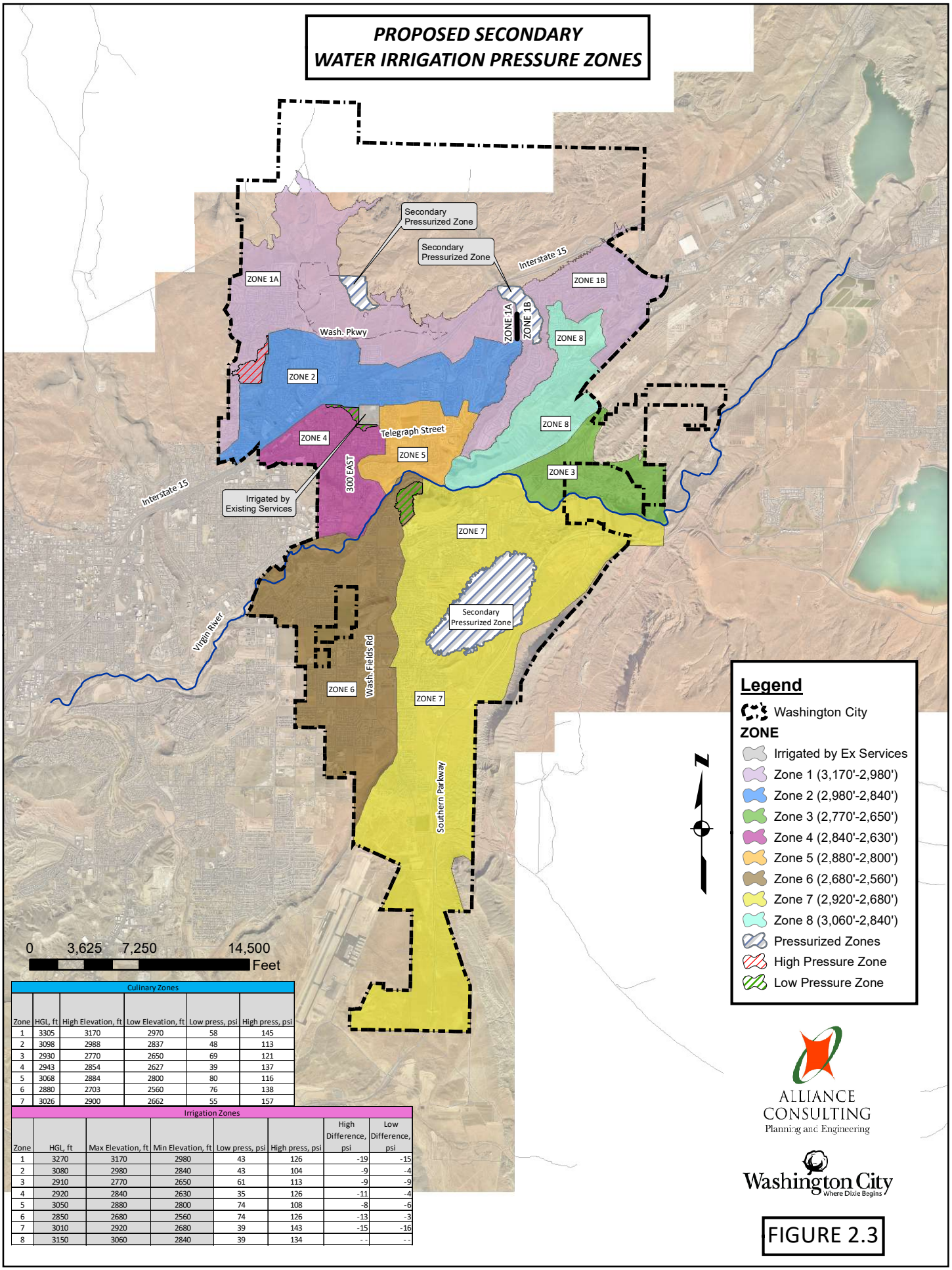
PROPOSED SECONDARY WATER IRRIGATION PRESSURE ZONES



Culinary Zones					
Zone	HGL, ft	High Elevation, ft	Low Elevation, ft	Low press, psi	High press, psi
1	3305	3170	2970	58	145
2	3098	2988	2837	48	113
3	2930	2770	2650	69	121
4	2943	2854	2627	39	137
5	3068	2884	2800	80	116
6	2880	2703	2560	76	138
7	3026	2900	2662	55	157

Irrigation Zones							
Zone	HGL, ft	Max Elevation, ft	Min Elevation, ft	Low press, psi	High press, psi	High Difference, psi	Low Difference, psi
1	3270	3170	2980	43	126	-19	-15
2	3080	2980	2840	43	104	-9	-4
3	2910	2770	2650	61	113	-9	-9
4	2920	2840	2630	35	126	-11	-4
5	3050	2880	2800	74	108	-8	-6
6	2850	2680	2560	74	126	-13	-3
7	3010	2920	2680	39	143	-15	-16
8	3150	3060	2840	39	134	- -	- -

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FIGURE 2.3

CHAPTER 3: POPULATION, GROWTH PROJECTIONS, AND WATER USE EVALUATION

The purpose of this chapter is to develop growth projections for the City by analyzing historical growth trends as well as reviewing population projections developed by local planning authorities. These projections have been used to estimate existing and future system water usage. Water usage for existing development was calculated based on analyzing metered usage data. Water usage for future development accounts for recently implemented landscaping and water conservation ordinances issued by Washington City.

3.1 PLANNING PERIOD

Population growth estimates will generally correspond with estimates provided in other Washington City planning documents such as the 2023 Culinary Water Master Plan Update which utilized a 20-year planning period from 2023 to 2042. Analysis of the system included multiple build-out scenarios and recommended projects along with general consideration for full build-out conditions within the existing City boundaries based on undeveloped parcels and City planning documents.

3.2 HISTORICAL POPULATION GROWTH TRENDS

Washington City has seen significant growth over the last decade. ***Table 3.1*** summarizes population growth for Washington City from the year 2016 to 2022 based on an analysis of number of connections, city planning documents, and census records.

Table 3.1: Historical Population Growth for Washington City

Year	Estimated Population	% Growth
2016	26,099	--
2017	27,401	4.99%
2018	29,411	7.34%
2019	31,058	5.60%
2020	33,678	8.44%
2021	38,015	12.88%
2022	40,594	6.78%

As shown in Table 3.1, there has been significant variability in the growth rate with growth in recent years surpassing what the City had anticipated; however, these growth rates are not expected to be sustained over a 20-year period. As part of the latest Culinary Water Master Plan, the City looked at the number of anticipated new connections to determine a reasonable growth rate for the foreseeable future and as the City is approaching full build-out.

Since the immediately foreseeable growth may not be sustainable long-term, the average annual growth rates were progressively decreased as the City nears full build-out. The growth rates utilized to determine future population are presented in ***Table 3.2***.

Table 3.2: Average Annual Growth Rate for Washington City

Period	% Growth
2023-2025 (first 3 years)	6.9
2026-2028 (second 3 years)	5.5
2029-2032 (next 4 years)	4.0
2033-2042 (last 10 years)	3.5

Based on the estimated growth rates presented in Table 3.2, the future population for each year can be projected with the following formula derived from the compound interest formula:

$$F = P(1 + i)$$

Where,

F = Future Population
P = Population of Previous Year
i = Projected Growth Rate

The resulting population projections for each year were then determined and are presented in ***Table 3.3***.

Table 3.3: Population and ERU Growth Projections

Year	% Growth	Estimated Population	ERU Connections
2022 (Current)	--	40,594	13,916
2023	6.9	43,395	14,876
2024	6.9	46,389	15,903
2025	6.9	49,590	17,000
2026	5.5	52,318	17,935
2027	5.5	55,195	18,921
2028	5.5	58,231	19,962
2029	4.0	60,560	20,761
2030	4.0	62,982	21,591
2031	4.0	65,502	22,455
2032	4.0	68,122	23,353
2033	3.5	70,506	24,170
2034	3.5	72,974	25,016
2035	3.5	75,528	25,892
2036	3.5	78,171	26,798
2037	3.5	80,907	27,736

Table 3.3: Population and ERU Growth Projections

Year	% Growth	Estimated Population	ERU Connections
2038	3.5	83,739	28,707
2039	3.5	86,670	29,711
2040	3.5	89,703	30,751
2041	3.5	92,843	31,827
2042	3.5	96,092	32,941

3.3 NUMBER OF CONNECTIONS UTILIZED FOR SYSTEM ANALYSIS

The estimated population and number of projected connections at full build-out is provided for information purposes related to the City's long-term planning and capital facilities; however, it is necessary to determine which parts of the City the existing unit counts are in addition to where future growth will occur in order to effectively analyze the system capacity and evaluate source and storage requirements to supply and operate the system. The existing residential connections for this purpose were determined by counting the existing services within each irrigation district. The future connections at full build-out were determined from city zoning and planning documents for each undeveloped parcel within the city limits. A full analysis is provided in ***Appendix B***.

3.4 EVALUATION OF EXISTING OUTDOOR WATER USE IN THE CITY

The demands for existing development were determined from metered usage provided by the City. Since the culinary water system currently provides irrigation service to the City, the values determined were compared to those utilized in the latest Washington City Culinary Water Master Plan.

Outdoor Average Day Demand

An average day demand for outdoor use was estimated based on metered data for several communities within Washington City. The data was provided by the City. To determine the average day use per ERU, the metered use was separated into quarters and the average was determined by taking the overall average for the 244-day irrigation season and subtracting the January use of 210 gpd/ERU to determine the outdoor usage. This assumption assumes all January use is indoor usage. The values utilized for each month are provided in ***Table 3.4*** and a full analysis of the metered data is provided in ***Appendix C***.

Table 3.4: Average Outdoor Demand for 244- Day Irrigation Season (March to October)

Month	GPD/ERU Monthly Total	GPD/ERU Monthly Outdoor [1]
March	219	9
April	598	388
May	598	388
June	598	388
July	754	544

Table 3.4: Average Outdoor Demand for 244- Day Irrigation Season (March to October)

Month	GPD/ERU Monthly Total	GPD/ERU Monthly Outdoor [1]
August	754	544
September	754	544
October	287	77

[1] Determined by subtracting January use of 210 GPD/ERU

Based on the data in Table 3.4, the outdoor average day demand can be assumed to be 312 gpd.

Existing Average Day Demand = 312 gpd/ERU

The latest Washington City Culinary Water Master Plan estimated an average day demand of 478.9 gpd/ERU and that approximately 60% of that was outdoor use. By comparison, the estimated outdoor percentage based on this study, which included detailed calculations and estimates from City water use data, is approximately 65% of the culinary system estimate. The outdoor percentage was determined by dividing the estimated 312 gpd/ERU outdoor average day demand by the 478.9 gpd/ERU total average day demand on the culinary water system. The average day demand is necessary for determining source capacity. All system sizing will be based on peak demands.

Outdoor Peak Day Demand

The outdoor peak day demand is important for sizing irrigation storage and supply capacities. The peak demand for outdoor use on existing development was calculated in a similar method to the average day demand. The total peak day was determined from metered usage to be highest for the month of July at 863 gpd/ERU. With the January demand of 210 gpd/ERU subtracted to obtain a demand of 653 gpd/ERU. Since these numbers are the best estimates, this number was rounded to 650 gpd/ERU for this study.

Existing Peak Day Demand = 650 gpd/ERU

The total indoor and outdoor peak day demand utilized in the 2024 Washington City Culinary Water Master Plan was 901.1 gpd/ERU. The 650 gpd/ERU utilized in this study is approximately 72% of the 901.1 total gpd/ERU on the culinary system, which is higher than the assumed 60% outdoor use in the 2024 Culinary Water Master Plan. Utilizing a more conservative number for the sizing of a separate irrigation system is preferred due to the effect system peaking will have compared to a system that provides both indoor and outdoor demand.

3.5 EVALUATION OF OUTDOOR WATER USE FOR FUTURE DEVELOPMENT

Evapotranspiration (ET) Demand

Recently, Washington City has implemented landscaping and water conservation ordinances that restrict allowable irrigated turf landscaping for residential users to 8% of the total lot area and not to exceed 1,500 square feet for a single residence. For non-residential users, irrigated turf will only be allowed on areas designated as active recreational areas and only up to 5,000 square feet per individual meter.

To account for this, the existing metered usage evaluated in previous sections of this report were no longer appropriate for future development. Instead, it was necessary to determine a demand per irrigated area based on evapotranspiration (ET) data. This data was obtained from Utah State University who collected the data for each month of the year. The ET- precipitation deficit data for a reference crop is presented in ***Table 3.5***. In addition to this data, USU provided plant factors to multiply by the reference crop data. For this study, it was assumed that landscaping would be either irrigated turf or desert landscaping which have plant factors of 0.8 and 0.3, respectively.

Table 3.5: Evapotranspiration (ET) Data for the St. George Area (March-October)

Month	ET-Precipitation Deficit (in)	ET-Precipitation Deficit (ft)	ET-Precipitation Deficit for Irrigated Turf, Plant Factor = 0.8 (ft)	ET-Precipitation Deficit for Desert Landscaping, Plant Factor = 0.3 (ft)
March	3.16	0.26	0.21	0.08
April	4.63	0.39	0.31	0.12
May	6.80	0.57	0.45	0.17
June	8.40	0.70	0.56	0.21
July	8.13	0.68	0.54	0.20
August	7.09	0.59	0.47	0.18
September	5.45	0.45	0.36	0.14
October	3.17	0.26	0.21	0.08
		Total (ac-ft):	**3.12**	**1.17**

The above values assume that an entire acre will be irrigated with the same type of landscaping. In reality, only a portion of a lot or acre will be irrigated, and it will typically be a mix of turf and desert landscaping. To utilize the data, it is necessary to relate the data to a demand per ERU or per acre. Due to the landscaping restrictions enacted by the City, the amount of irrigated turf for future development will be limited. Assumptions were made about the percentage of an area that would be landscaped with desert landscaping. ***Table 3.6*** provides a summary of the irrigated area for each type of user.

Table 3.6: Percent of Area Landscaped Based on User Type

User Type	Irrigated Turf (%)	Desert Landscaping (%)
Single-Family Residential	8	22
Multi-Family Residential [1]	8	22
Commercial/Industrial	--	10
Parks	80	15

[1] Multi-Family assumed to be the same as single-family when considering common areas landscaping

Future Average Day Demand

The average day demand for each user type was determined utilizing the information provided in Table 3.5 and Table 3.6 and the following equation:

$$Average\ Day = \frac{\left[\left(Total\ ET_{turf}\right) * (\%\ Turf) + \left(Total\ ET_{desert}\right) * (\%\ Desert\ Landsaping)\right]}{244}$$

The resulting average day demands for each user type are provided in ***Table 3.7***.

Table 3.7: Future Development Average Day Demands per Acre for Each User Type

User Type	Average Demand, ft/day	Average Demand, cu. ft./day	Average Demand, gpd
Residential	0.002	87.1	652 [1]
Commercial/Industrial	0.0005	21.8	163
Parks	0.011	479.2	3,585

[1] The residential demand per acre of development is converted to demand per ERU based on density. See Table 3.8.

For evaluation and planning purposes it is typically necessary to base residential demands on ERUs. For that purpose, unit densities were assumed for each land use type to determine the ERUs. The average day demand per ERU was then calculated based on those assumptions. A summary of this analysis is presented in ***Table 3.8***.

Table 3.8: Future Development Average Day Demands per ERU

Land Use	ERU/Acre	Average Day Demand/ERU (gpd)
Very Low Density	2	326
Low Density	3	217
Medium Density	5	130

Future Peak Day Demand

The peak day demand for future development was determined by utilizing the July ET data and irrigated area percentage presented previously in Table 3.5 and Table 3.6. The following equation was then utilized to determine the peak day demand in feet:

$$Peak\ Day = \frac{\left[\left(July\ ET_{turf}\right) * (\%\ Turf) + \left(July\ ET_{desert}\right) * (\%\ Desert\ Landsaping)\right]}{31}$$

The resulting peak day demands for each user type are provided in ***Table 3.9***.

Table 3.9: Future Development Peak Day Demands per Acre for Each User Type

User Type	Peak Demand, ft/day	Peak Demand, cu. ft./day	Peak Demand, gpd
Residential	0.003	123.8	926 [1]
Commercial/Industrial	0.0006	28.6	214
Parks	0.015	652.1	4,878

[1] The residential demand per acre of development is converted to demand per ERU based on density. See Table 3.10.

Similar to the average day demands, the above demand for residential use was utilized to determine the peak day demand per ERU for residential users. The results are presented in ***Table 3.10***.

Table 3.10: Future Development Peak Day Demands per ERU

Land Use	ERU/Acre	Peak Day Demand/ERU (gpd)
Very Low Density	2	463
Low Density	3	309
Medium Density	5	185

3.6 OUTDOOR WATER USE FOR PLANNED COMMUNITIES AND MIXED-USE DEVELOPMENT

The evapo-transpiration data provided in the previous sections for use in determining outdoor water demand future development is not applicable if the land use is not clearly defined. Much of the future development area within Washington City consists of parcels designated as Planned Unit Development (PUD) and Planned Community Development (PCD) which will include a mix of different land use types similar to the existing City. Some of these communities may consist of a mix of single-family residential, multi-family residential, commercial, open space, and future community parks; therefore, irrigation demands for these areas were based on the existing peak day use of 650 gpd/ERU. The number of ERUs were provided by Washington City based on approved planning documents. As these areas are developed, and specific land use is defined, there is an opportunity to reduce the demand if it can be shown that demand will be less based on final community design.

3.7 IRRIGATION DEMAND FOR CURRENT PARKS BASED ON EXISTING DATA

Water use data was recorded by the City between 2021 and 2023 and was provided for utilization in assigning irrigation demands for each of the existing parks throughout the City. The water usage is summarized in ***Table 3.11***. It should be noted that the values presented in the table are based on the recorded use, but areas for conservation are in the process of being implemented and can continue to be evaluated in the future.

Table 3.11: Recorded Water Usage for Existing Parks and Facilities

Park	Average Annual Demand (MG)	Peak Day Demand (gpd)
Green Springs	8.12	52,237
Sienna Hills	5.41	30,742
Shooting Star	4.57	24,710
Pine View	8.31	50,505
Treasure Valley	3.68	31,516
Highland	3.67	31,516
Heritage Park	3.28	23,000
Razor Ridge	1.04	12,645
Nisson	3.59	22,484
Veterans	4.72	22,774
Sullivan [1]	24.19	144,043
Dog Town	1.68	19,871
Sunrise Valley	3.68	27,419
Washington Community Center [1]	22.69	139,710

[1] Secondary water systems separate from city-wide system but potentially connected at build-out. Includes Baseball/Softball Complex and Cemetery

3.8 OUTDOOR PEAK INSTANTANEOUS DEMAND

Peak instantaneous demand is the highest demand the system sees over the course of the year. This demand scenario typically assumes that all users are watering at the same time of day during the peak day of the year. The sizing of distribution piping in the secondary water irrigation system is governed by the peak instantaneous demand. For this study, the peak instantaneous demand has been estimated to be equal to peak day demand multiplied by 3, assuming a simultaneous 8-hour watering period for all users throughout the City.

3.9 BUILD-OUT SCENARIOS

Evaluation of the Washington City Irrigation System included three build-out scenarios as described below:

- Scenario 1: Connection of residential units and communities that already have dry irrigation distribution infrastructure installed. Additionally, City parks are anticipated to be connected under this scenario.

- Scenario 2: Connection of the same existing system as Scenario 1 plus the addition of future undeveloped parcels which are required by ordinance to install secondary water irrigation distribution infrastructure.

- Scenario 3: Connection of all users within the City at full build-out. This scenario would include installation of distribution infrastructure in areas of the City that were constructed prior to new developments being required to install secondary water irrigation infrastructure.

3.10 AREAS WITH EXISTING SECONDARY IRRIGATION DISTRIBUTION LINES (SCENARIO 1)

The locations of the City that have distribution infrastructure in place waiting to be serviced by the secondary water irrigation system in addition to City Parks that will be connected to the system is displayed in ***Figure 3.1***. Currently, the system can service residential developments constructed since 2006 when the City began requiring separate irrigation distribution infrastructure with all new development. Currently, approximately 27% of the existing residences have irrigation distribution infrastructure installed. A breakdown of the ERUs per District is presented in ***Table 3.12*** in addition to other users assumed to be connected as part of this build-out scenario.

Table 3.12: Existing Users with Dry Irrigation Distribution Infrastructure and Parks

District	User	Units	
		ERU	Acre
1 (GSW)	Existing Residential	472	-
	Green Springs Park	-	6.8
2 (GSN)	n/a	-	-
3 (GSE)	Existing Residential	709	-
	Boilers Park	-	2.5
4 (DT)	Existing Residential	172	-
	Dog Town Park	-	6
	Nisson Park	-	3.1
	Veterans Park	-	1.7
	Community Center, Ball Fields, and Cemetery	-	25.2
	Sullivan Soccer Park	-	36.9
5 (SH)	Existing Residential	265	-
	Canyon Park	-	1.4
	Sienna Hills Park	-	4.8
	Existing Commercial	-	26.2
6 (CC)	Existing Residential	169	--
	Existing Commercial	-	14.7
	Razor Ridge Park	-	4.0
	Highland Park	-	7.2
	Heritage Park	-	11.9
7 (WFW)	Existing Residential	427	--
	Pine View Park	-	21.6
8 (WD)	Existing Residential	84	--

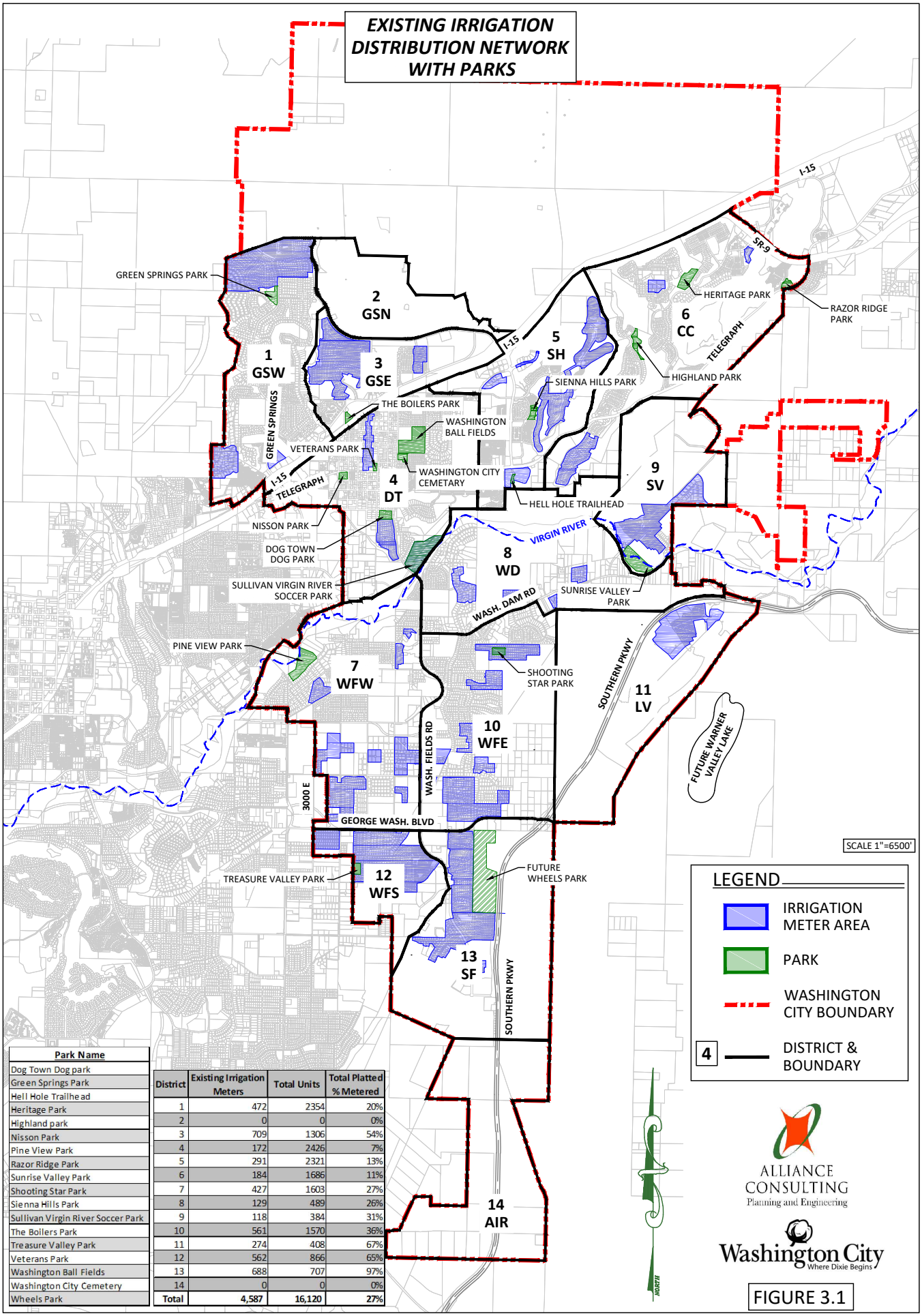
Table 3.12: Existing Users with Dry Irrigation Distribution Infrastructure and Parks

District	User	Units	
		ERU	Acre
	Existing Commercial	-	45.2
9 (SV)	Existing Residential	118	--
	Existing Commercial	-	37.4
	Sunrise Valley Park	-	20.8
10 (WFE)	Existing Residential	561	--
	Shooting Star Park	-	4.9
11 (LV)	Existing Residential	768	--
12 (WFS)	Existing Residential	562	--
	Treasure Valley Park	-	4.6
13 (SF)	Existing Residential	688	--
14 (AIR)	n/a	-	--

The average annual demands and peak day demands per ERU or acre, depending on land use type, as determined in earlier sections of this chapter have been utilized to determine demand for each district and are summarized in ***Table 3.13.*** These demands can be utilized for evaluation of source (based on average annual demand) and storage requirements (based on peak day demand) to connect the existing dry line network.

Table 3.13: Summary of Average Annual and Peak Day Demands for Existing Services (Scenario 1)

District	Average (gpd)	Annual (MG)	Annual (ac-ft)	Peak Day (gpd)	Peak Day (MG)	Peak Day (ac-ft)
1 (GSW)	180,543	44.1	135.2	361,562	0.36	1.1
2 (GSN)	-	-	-	-	-	-
3 (GSE)	221,208	54	165.6	464,807	0.46	1.4
4 (DT)	79,893	19.5	59.8	176,090	0.18	0.5
5 (SH)	86,951	21.2	65.1	228,187	0.23	0.7
6 (CC)	87,466	21.3	65.5	220,471	0.22	0.7
7 (WFW)	167,301	40.8	125.3	328,055	0.33	1.0
8 (WD)	33,576	8.2	25.1	93,523	0.09	0.3
9 (SV)	57,994	14.2	43.4	112,123	0.11	0.3
10 (WFE)	193,762	47.3	145.1	389,360	0.39	1.2
11 (LV)	85,488	20.9	64	178,100	0.18	0.5
12 (WFS)	190,426	46.5	142.6	396,816	0.40	1.2
13 (SF)	214,656	52.4	160.7	447,200	0.45	1.4
14 (AIR)	-	-	-	-	-	-
Total	**1,599,264**	**390**	**1,197**	**3,396,294**	**3.40**	**10.4**



Park Name
Dog Town Dog park
Green Springs Park
Hell Hole Trailhead
Heritage Park
Highland park
Nisson Park
Pine View Park
Razor Ridge Park
Sunrise Valley Park
Shooting Star Park
Sienna Hills Park
Sullivan Virgin River Soccer Park
The Boilers Park
Treasure Valley Park
Veterans Park
Washington Ball Fields
Washington City Cemetery
Wheels Park

District	Existing Irrigation Meters	Total Units	Total Platted % Metered
1	472	2354	20%
2	0	0	0%
3	709	1306	54%
4	172	2426	7%
5	291	2321	13%
6	184	1686	11%
7	427	1603	27%
8	129	489	26%
9	118	384	31%
10	561	1570	36%
11	274	408	67%
12	562	866	65%
13	688	707	97%
14	0	0	0%
Total	4,587	16,120	27%

3.11 FUTURE AREAS TO BE SERVICED BY SECONDARY WATER IRRIGATION (SCENARIO 2)

The Washington City developed and undeveloped areas are shown in ***Figure 3.2*** which was utilized to provide an estimate of the total number of ERUs that will be added in Washington City through build-out. ***Figure 3.3*** shows the undeveloped parcels which will have secondary irrigation lines alongside the existing irrigation distribution areas. In order to determine the total number of ERUs that will have access to secondary irrigation through build-out, a similar analysis was completed by evaluating the land use/zoning for the undeveloped areas of the City that will be serviced by the secondary irrigation system. ***Table 3.14*** provides a breakdown of the irrigation users and summary of the estimated number of ERUs that will be built in the undeveloped areas that fall within the proposed extent of the future secondary irrigation system.

Table 3.14: Existing Irrigation Distribution Connections with New Development and Parks (Scenario 2)

District	User	Units	
		ERU	Acre
1 (GSW)	Existing Residential	472	-
	Green Springs Park	-	6.8
	Future Commercial	-	20.9
2 (GSN)	Future Residential	2200	-
3 (GSE)	Existing Residential	709	-
	Boilers Park	-	2.5
	Future Residential	197	-
	Future Commercial	-	57.8
4 (DT)	Existing Residential	172	-
	Dog Town Park	-	6
	Nisson Park	-	3.1
	Veterans Park	-	1.7
	Community Center, Ball Fields, and Cemetery	-	25.2
	Sullivan Soccer Park	-	36.9
	Future Residential	909	-
	Future Commercial	-	48.3
5 (SH)	Existing Residential	265	-
	Canyon Park	-	1.4
	Sienna Hills Park	-	4.8
	Existing Commercial	-	26.2
	Future Residential	189	-
	Future Commercial	-	142.5
6 (CC)	Existing Residential	169	--
	Existing Commercial	-	14.7
	Razor Ridge Park	-	4.0
	Highland Park	-	7.2
	Heritage Park	-	11.9
	Future Residential	621	-

Table 3.14: Existing Irrigation Distribution Connections with New Development and Parks (Scenario 2)

District	User	Units	
		ERU	Acre
7 (WFW)	Existing Residential	427	-
	Pine View Park	-	21.6
	Future Residential	1089	-
	Future Commercial	-	15.4
8 (WD)	Existing Residential	84	-
	Existing Commercial	-	45.2
	Future Residential	475	-
	Future Commercial	-	14.8
9 (SV)	Existing Residential	118	-
	Existing Commercial	-	37.4
	Sunrise Valley Park	-	20.8
	Future Residential	296	-
	Future Commercial	-	63.5
10 (WFE)	Existing Residential	561	-
	Shooting Star Park	-	4.9
	Future Residential	748	-
	Future Commercial	-	82.4
11 (LV)	Existing Residential	768	-
	Future Residential	1632	-
12 (WFS)	Existing Residential	562	-
	Treasure Valley Park	-	4.6
	Future Residential	648	-
	Future Commercial	-	16.3
13 (SF)	Existing Residential	688	-
	Future Residential	2088	-
	Future Commercial	-	78.2
	Future Wheels Park	-	92.03
14 (AIR)	Future Commercial	-	1034.8

The average annual demands and peak day demands per ERU or acre, depending on land use type, as determined in earlier sections of this chapter have been utilized to determine demand for each district, with the additional added for future development demands, and are summarized in ***Table 3.15.*** These demands can be utilized for evaluation of source (based on average annual demand) and storage requirements (based on peak day demand) to connect the existing dry line network and future developments within the existing Washington City boundary.

Table 3.15: Summary of Average Annual and Peak Day Demands for Existing Services and New Development (Scenario 2)

District	Average (gpd)	Annual (MG)	Annual (ac-ft)	Peak Day (gpd)	Peak Day (MG)	Peak Day (ac-ft)
1 (GSW)	183,950	44.9	137.7	366,035	0.37	1.1
2 (GSN)	686,400	167.5	513.9	1,430,000	1.43	4.4
3 (GSE)	292,093	71.3	218.7	541,565	0.54	1.7
4 (DT)	371,374	90.6	278.1	480,979	0.48	1.5
5 (SH)	169,147	41.3	126.7	293,554	0.29	0.9
6 (CC)	281,218	68.6	210.6	574,831	0.57	1.8
7 (WFW)	509,579	124.3	381.6	743,197	0.74	2.3
8 (WD)	184,188	44.9	137.9	231,158	0.23	0.7
9 (SV)	160,697	39.2	120.3	283,702	0.28	0.9
10 (WFE)	440,569	107.5	329.9	624,310	0.62	1.9
11 (LV)	594,672	145.1	445.3	1,238,900	1.24	3.8
12 (WFS)	395,259	96.4	296.0	541,482	0.54	1.7
13 (SF)	1,208,786	294.9	905.1	2,270,057	2.27	7.0
14 (AIR)	168,672	41.2	126.3	221,447	0.22	0.7
Total	**5,646,604**	**1,378**	**4,228**	**9,841,217**	**9.84**	**30.2**

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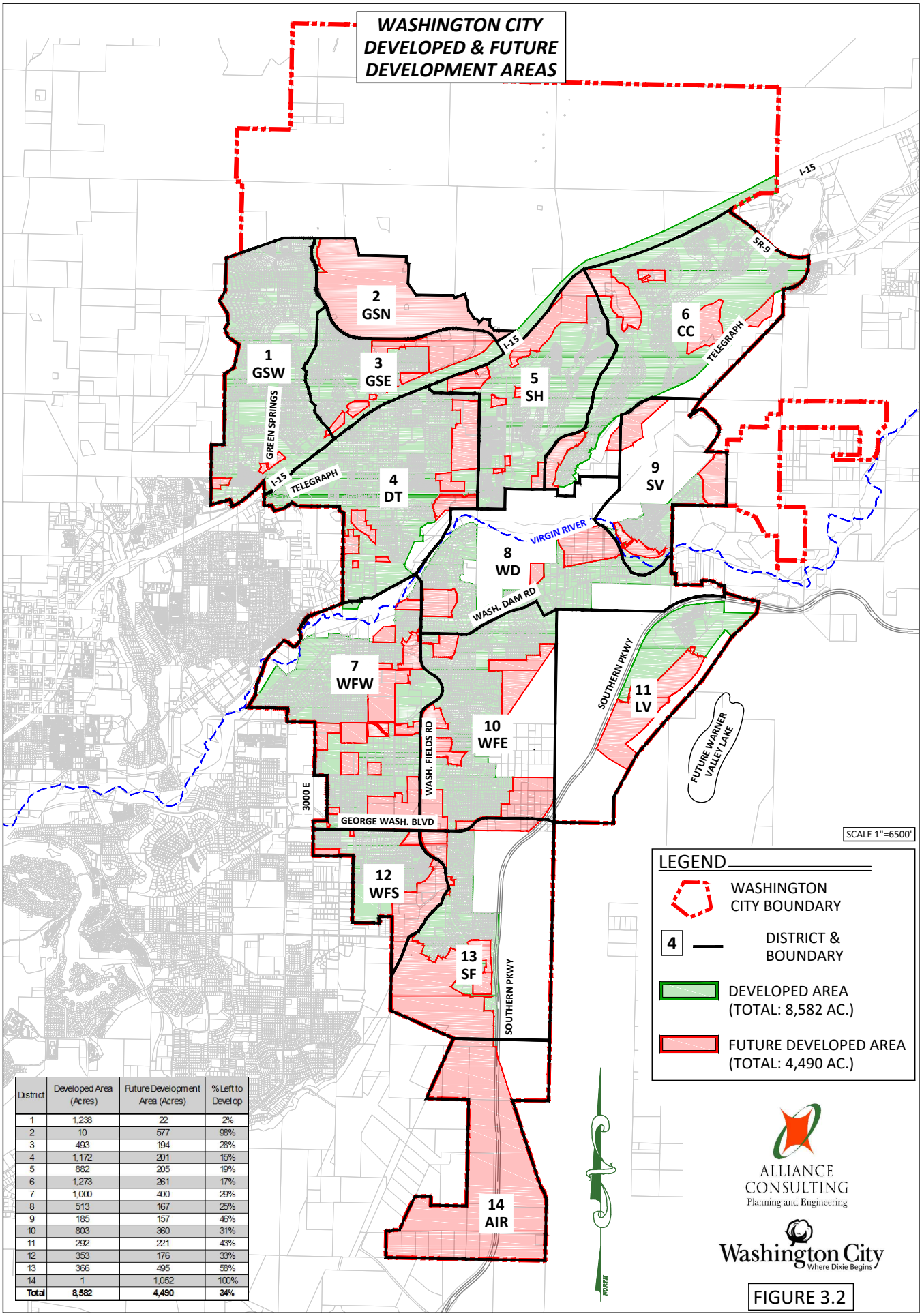

District	Developed Area (Acres)	Future Development Area (Acres)	% Left to Develop
1	1,238	22	2%
2	10	577	98%
3	493	194	28%
4	1,172	201	15%
5	882	205	19%
6	1,273	261	17%
7	1,000	400	29%
8	513	167	25%
9	185	157	46%
10	803	360	31%
11	292	221	43%
12	353	176	33%
13	366	495	58%
14	1	1,052	100%
Total	**8,582**	**4,490**	**34%**

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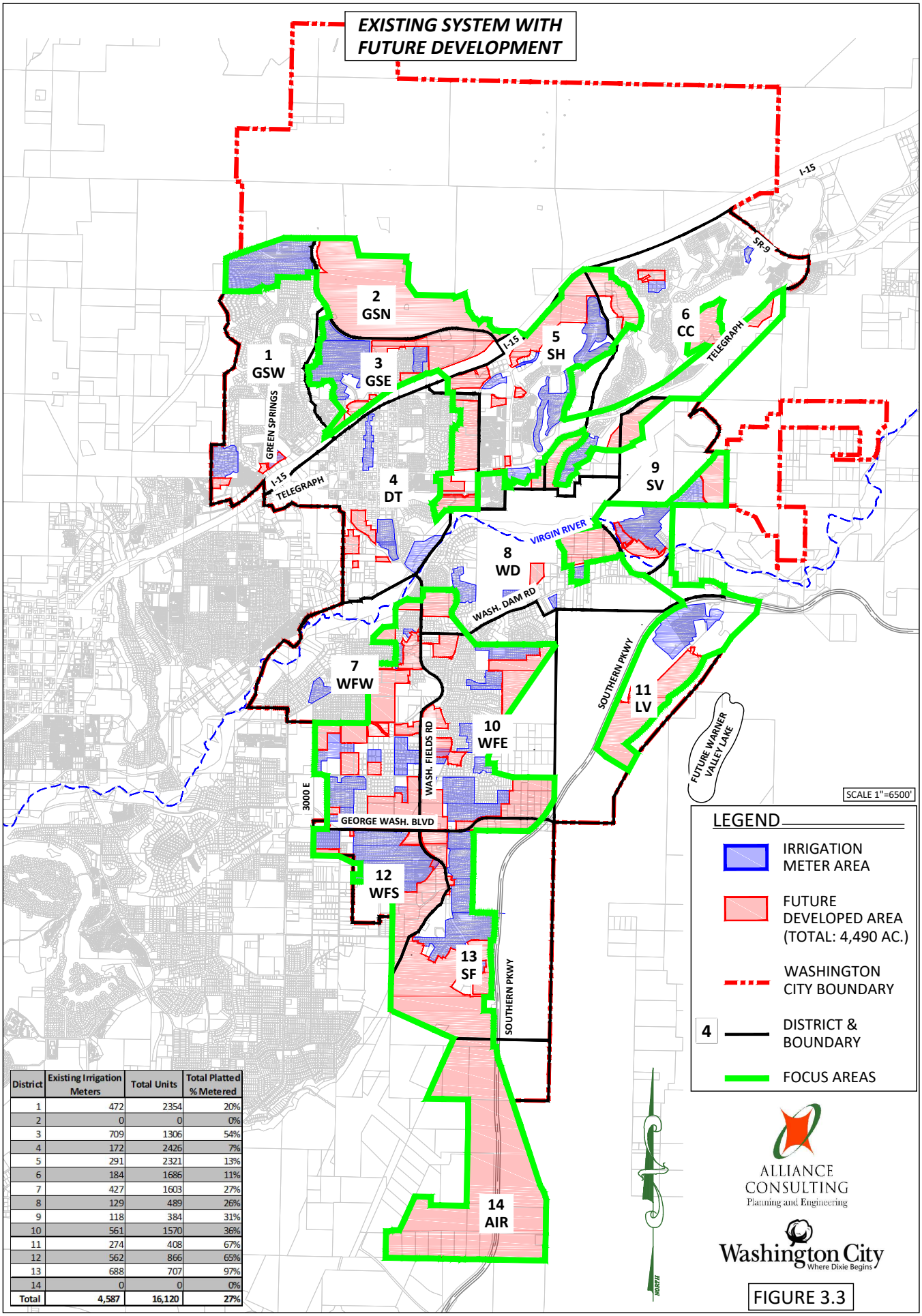
FIGURE 3.2



District	Existing Irrigation Meters	Total Units	Total Platted % Metered
1	472	2354	20%
2	0	0	0%
3	709	1306	54%
4	172	2426	7%
5	291	2321	13%
6	184	1686	11%
7	427	1603	27%
8	129	489	26%
9	118	384	31%
10	561	1570	36%
11	274	408	67%
12	562	866	65%
13	688	707	97%
14	0	0	0%
Total	4,587	16,120	27%

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FIGURE 3.3

3.12 PROJECTED SECONDARY IRRIGATION DEMAND AT BUILD-OUT (SCENARIO 3)

A breakdown of the irrigation users and summary of the estimated number of ERUs that will be built in the undeveloped areas is provided in ***Table 3.16***. The existing residential units now account for all residential units within Washington City including those that will be converted from culinary irrigation service to secondary irrigation service.

Table 3.16: Full Build-out Irrigation Users (Scenario 3)

District	User	Units	
		ERU	Acre
1 (GSW)	Existing Residential	2354	-
	Green Springs Park	-	6.8
	Future Commercial	-	20.9
2 (GSN)	Future Residential	2200	-
3 (GSE)	Existing Residential	1306	-
	Boilers Park	-	2.5
	Future Residential	197	-
	Future Commercial	-	57.8
4 (DT)	Existing Residential	2426	-
	Dog Town Park	-	6
	Nisson Park	-	3.1
	Veterans Park	-	1.7
	Community Center, Ball Fields, and Cemetery	-	25.2
	Sullivan Soccer Park	-	36.9
	Future Residential	909	-
	Future Commercial	-	48.3
5 (SH)	Existing Residential	2321	-
	Canyon Park	-	1.4
	Sienna Hills Park	-	4.8
	Existing Commercial	-	26.2
	Future Residential	189	-
	Future Commercial	-	142.5
6 (CC)	Existing Residential	1686	--
	Existing Commercial	-	14.7
	Razor Ridge Park	-	4.0
	Highland Park	-	7.2
	Heritage Park	-	11.9
	Future Residential	621	-
7 (WFW)	Existing Residential	1603	-
	Pine View Park	-	21.6
	Future Residential	1089	-
	Future Commercial	-	15.4

Table 3.16: Full Build-out Irrigation Users (Scenario 3)

District	User	Units	
		ERU	Acre
8 (WD)	Existing Residential	489	-
	Existing Commercial	-	45.2
	Future Residential	475	-
	Future Commercial	-	14.8
9 (SV)	Existing Residential	384	-
	Existing Commercial	-	37.4
	Sunrise Valley Park	-	20.8
	Future Residential	296	-
	Future Commercial	-	63.5
10 (WFE)	Existing Residential	1570	-
	Shooting Star Park	-	4.9
	Future Residential	748	-
	Future Commercial	-	82.4
11 (LV)	Existing Residential	768	-
	Future Residential	1632	-
12 (WFS)	Existing Residential	866	-
	Treasure Valley Park	-	4.6
	Future Residential	648	-
	Future Commercial	-	16.3
13 (SF)	Existing Residential	707	-
	Future Residential	2088	-
	Future Commercial	-	78.2
	Future Wheels Park	-	92.03
14 (AIR)	Future Commercial	-	1034.8

The average annual demands and peak day demands for full build-out of the existing Washington City boundaries have been determined for each district and are summarized in ***Table 3.17.*** This includes all development within the City that was constructed prior to the 2006 ordinance requiring installation of secondary water irrigation lines. These values can be utilized for evaluation of source (based on average annual demand) and storage (based on peak day demand) requirements at full build-out.

Table 3.17: Summary of Average Annual and Peak Day Demands for Full Buildout (Scenario 3)

District	Average (gpd)	Annual (MG)	Annual (ac-ft)	Peak Day (gpd)	Peak Day (MG)	Peak Day (ac-ft)
1 (GSW)	737,855	180.0	552.5	1,589,335	1.59	4.9
2 (GSN)	686,400	167.5	513.9	1,430,000	1.43	4.4
3 (GSE)	478,357	116.7	358.2	929,615	0.93	2.9
4 (DT)	1,048,393	255.8	785.0	1,946,079	1.95	6.0
5 (SH)	806,348	196.7	603.8	1,613,054	1.61	4.9
6 (CC)	719,784	175.6	538.9	1,551,131	1.55	4.8
7 (WFW)	494,846	205.5	630.8	1,507,597	1.51	4.6
8 (WD)	303,180	74.0	227.0	465,158	0.47	1.4
9 (SV)	222,511	54.3	166.6	456,602	0.46	1.4
10 (WFE)	736,647	179.7	551.6	1,280,160	1.28	3.9
11 (LV)	636,480	155.3	476.6	1,326,000	1.33	4.1
12 (WFS)	475,025	115.9	355.7	739,082	0.74	2.3
13 (SF)	1,214,714	296.4	909.5	2,282,407	2.28	7.0
14 (AIR)	168,672	41.2	126.3	221,447	0.22	0.7
Total	**8,602,852**	**2,215**	**6,796**	**17,337,667**	**17.34**	**53.2**

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CHAPTER 4: WATER SUPPLY AND SOURCE EVALUATION

Water supply sources are a critical component of the Washington City secondary water irrigation system as the intent will be to utilize secondary sources that are independent from culinary water demands. Maintaining reliable sources, recapturing under-utilized sources, and developing new source capacity, as necessary, are critical to the implementation of the system. The purpose of this chapter is to provide a description of the City's existing secondary irrigation sources, evaluate their ability to meet existing and future demands, and provide recommendations regarding the development of new sources.

4.1 BASIS OF REQUIRED IRRIGATION SOURCE CAPACITY

Utah Administrative Code (UAC) R309-510 requires that sources for a public water system be capable of physically and legally meeting water demands under two conditions:

1. The water system's source capacity shall be able to meet the anticipated peak day demand.
2. The source shall be able to meet the 244-day irrigation annual demand.

4.2 SUMMARY OF EXISTING SECONDARY WATER SOURCES

The Washington City water system receives water from a combination of surface water and groundwater sources. ***Figure 4.1*** provides an overall map of existing irrigation water sources and ***Figure 4.2*** provides an inventory of the Washington City water rights for the downtown area. Although Figure 4.1 provides an overall view of the City's water sources, the production capacities of the downtown spring sources are based on the measured wet water as opposed to the papered water rights presented previously in Table 2.3 of this report and summarized below for each water right district. The measured wet water flow rates are what the City currently has documented based on continuous measurements between 2022 and 2024. There is reason to believe that there is potential for additional wet water that was not recorded as part of the previous study, and further evaluation will be required to determine the exact amount available for irrigation use.

The total water rights also include 42.5 shares from the Mill Creek Water Users Association equating to 330 gpm and additional shares acquired with the Kirkland Pond acquisition. Wet water measurements are not available for the Mill Creek Shares and Kirkland Pond acquisition. For the purposes of this study the full amount is assumed to be available. A summary of the Washington City secondary water source capacity is provided in ***Table 4.1***. The annual capacity of each source was calculated based on the wet peak diversion over a one-year period and provided in million gallons (MG) and acre-feet (ac-ft).

Table 4.1: Existing Washington City Secondary Sources

Source (See Figure 4.2)	Peak Capacity, Papered (gpm)	Peak Capacity, Wet (gpm)	Annual Capacity (MG)	Annual Capacity (ac-ft)
District 1 Springs	155.6	60.8	31.96	98.1
District 2 Springs	233.3	91.2	47.93	147.1
District 3 Springs	450.8	125	65.70	201.6
District 4 Springs	450.8	125	65.70	201.6
District 5 Springs	350.6	98	51.51	158.1
District 6 Springs[1]	398.5	448.8	209.45	642.7
Mill Creek Water Users (42.5 Shares)	330	330[3]	173.45	532.3
Kirkland Pond [2]	523.7	523.7[3]	275.26	844.7
Total	**2893.4**	**1802.5**	**920.96**	**2826.1**

[1] The wet water measurements exceed the Washington City water rights; therefore, the papered value was used for total.
[2] Water rights obtained with the Kirkland Pond acquisition include 81-131 with 0.5 cfs and 81-713 with 2 cfs (City has 1/3)
[3] Wet water measurements for the Mill Creek Water Shares and Rights associated with Kirkland property acquisition were not available; it is assumed that these quantities are available for the purposes of this report.

The water rights obtained by the City as part of the Kirkland Pond property acquisition include two rights: 81-131 for a surface diversion of 0.5 cfs and 81-713 with a surface diversion of 2 cfs, of which Washington City owns one third (1/3). The Washington City share of the two water rights equates to 523.7 gpm as indicated in Table 4.1.

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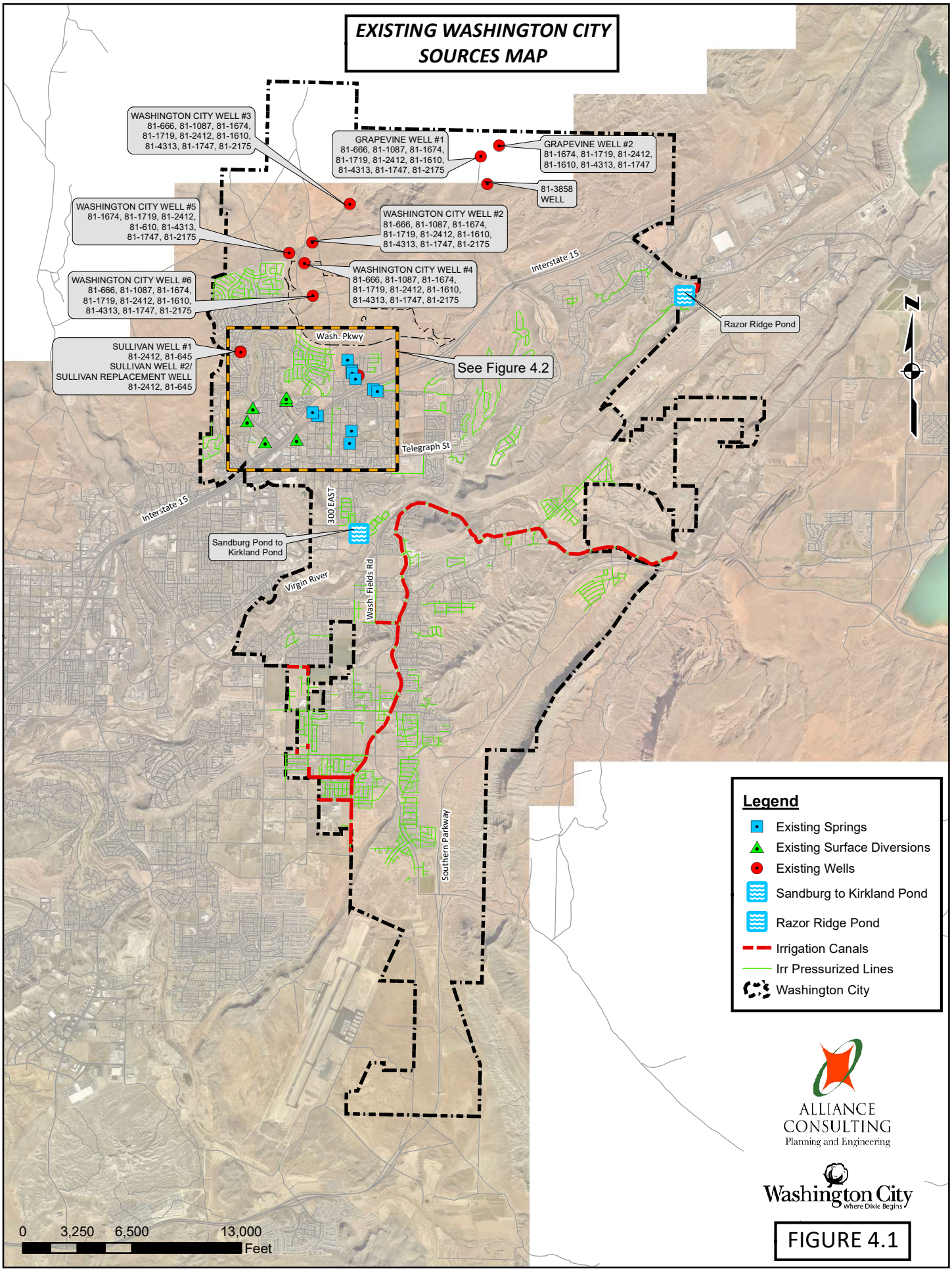
EXISTING WASHINGTON CITY SOURCES MAP
WASHINGTON CITY WELL #3 81-666, 81-1087, 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747, 81-2175
GRAPEVINE WELL #1 81-666, 81-1087, 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747, 81-2175
GRAPEVINE WELL #2 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747
81-3858 WELL
WASHINGTON CITY WELL #5 81-1674, 81-1719, 81-2412, 81-610, 81-4313, 81-1747, 81-2175
WASHINGTON CITY WELL #2 81-666, 81-1087, 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747, 81-2175
WASHINGTON CITY WELL #4 81-666, 81-1087, 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747, 81-2175
WASHINGTON CITY WELL #6 81-666, 81-1087, 81-1674, 81-1719, 81-2412, 81-1610, 81-4313, 81-1747, 81-2175
SULLIVAN WELL #1 81-2412, 81-645 SULLIVAN WELL #2/ SULLIVAN REPLACEMENT WELL 81-2412, 81-645
Wash. Pkwy
See Figure 4.2
Interstate 15
Razor Ridge Pond
Telegraph St
300 EAST
Sandburg Pond to Kirkland Pond
Virgin River
Wash. Fields Rd
Southern Parkway
N
Legend
Existing Springs
Existing Surface Diversions
Existing Wells
Sandburg to Kirkland Pond
Razor Ridge Pond
Irrigation Canals
Irr Pressurized Lines
Washington City
0 3,250 6,500 13,000 Feet
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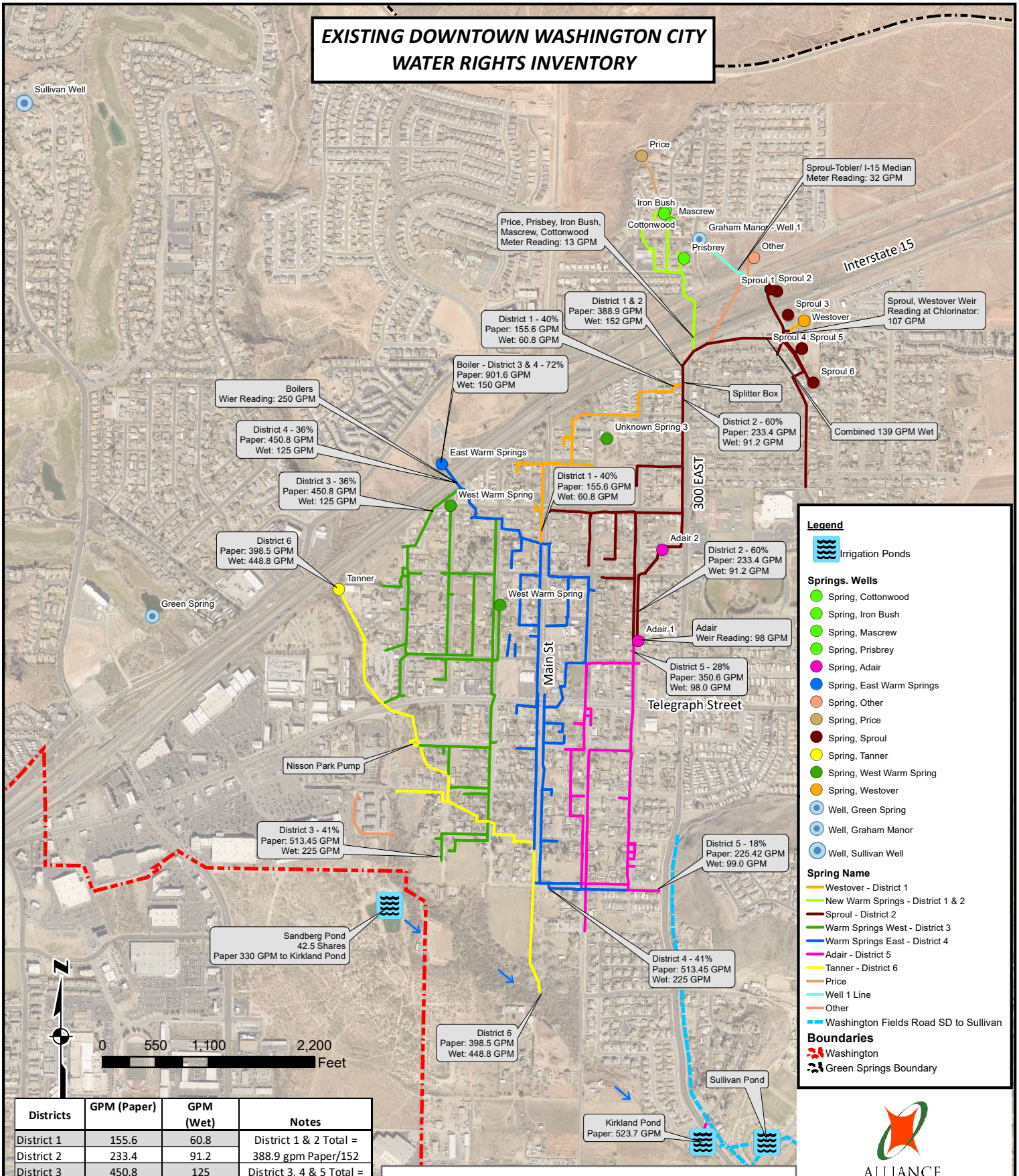
FIGURE 4.1

EXISTING DOWNTOWN WASHINGTON CITY WATER RIGHTS INVENTORY



Legend

Irrigation Ponds

Springs. Wells

- Spring, Cottonwood
- Spring, Iron Bush
- Spring, Mascrew
- Spring, Prisbrey
- Spring, Adair
- Spring, East Warm Springs
- Spring, Other
- Spring, Price
- Spring, Sproul
- Spring, Tanner
- Spring, West Warm Spring
- Spring, Westover
- Well, Green Spring
- Well, Graham Manor
- Well, Sullivan Well

Spring Name

- Westover - District 1
- New Warm Springs - District 1 & 2
- Sproul - District 2
- Warm Springs West - District 3
- Warm Springs East - District 4
- Adair - District 5
- Tanner - District 6
- Price
- Well 1 Line
- Other
- Washington Fields Road SD to Sullivan

Boundaries

- Washington
- Green Springs Boundary

Districts	GPM (Paper)	GPM (Wet)	Notes
District 1	155.6	60.8	District 1 & 2 Total =
District 2	233.4	91.2	388.9 gpm Paper/152
District 3	450.8	125	District 3, 4 & 5 Total =
District 4	450.8	125	1252.32 fpm Paper/
District 5	350.6	98	348 gpm Wet
District 6	398.5	448.8	
Total	**2039.7**	**948.8**	
Sandberg Pond	330.0	330.0	
Kirkland Pond	523.7	523.7	
Total	**853.7**	**853.7**	
Grand Total	**2893.4**	**1802.5**	

Note: The measured wet water flow rates are based on what the City currently has documented from limited studies performed and updated average values measured by the city generally from 2022 to 2024 for approximately 3 years.There is reason to believe that there is the potential for additional wet water that was not recorded as part of the previous study, and further evaluation will be required to determine the exact amount available for irrigation use. (It is unclear how much of the measured water is being utilized by current users)

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FIGURE 4.2

4.3 EXISTING SOURCE EVALUATION

As presented in Table 4.1, the existing secondary water sources have a peak capacity of 1,802.5 gpm. Based on the estimated peak day demand of 0.45 gpm per ERU (650 gpd per Chapter 3 converted to gpm), these existing sources, if developed, could provide irrigation service to approximately 4,005 residential units, which was determined by dividing the peak capacity of 1,802.5 gpm by the 0.45 gpm per ERU. Initial projects should be based on evaluating target areas to service, which will allow utilization of the existing resources while minimizing initial transmission infrastructure costs. This will be evaluated further in Chapter 6 of this report. The analysis of future developable parcels presented in Chapter 3 of this report indicated build-out ERUS for each of the three build-out scenarios. This equates to a source requirement for each build-out scenario as summarized in ***Table 4.2*** by irrigation district. Source capacity is provided in gallons per minute to determine required peak source production capacity and in million gallons or acre-feet to determine annual volume requirements for irrigation sources.

Table 4.2: Washington City Source Requirement Evaluation by District

District	Build-Out Scenario	Required Peak Demand (gpm)	Annual (MG)	Annual (ac-ft)
1 (GSW)	Scenario #1: Existing Distribution	251	44.1	135.2
	Scenario #2: Existing plus Future	254	44.9	137.7
	Scenario #3: Full Build-Out	1,104	180.0	552.5
2 (GSN)	Scenario #1: Existing Distribution	-	-	-
	Scenario #2: Existing plus Future	993	167.5	513.9
	Scenario #3: Full Build-Out	993	167.5	513.9
3 (GSE)	Scenario #1: Existing Distribution	323	54.0	165.6
	Scenario #2: Existing plus Future	376	71.3	218.7
	Scenario #3: Full Build-Out	646	116.7	358.2
4 (DT)	Scenario #1: Existing Distribution	122	19.5	59.8
	Scenario #2: Existing plus Future	334	90.6	278.1
	Scenario #3: Full Build-Out	1,351	255.8	785.0
5 (SH)	Scenario #1: Existing Distribution	158	21.2	65.1
	Scenario #2: Existing plus Future	204	41.3	126.7
	Scenario #3: Full Build-Out	1,120	196.7	603.8
6 (CC)	Scenario #1: Existing Distribution	153	21.3	65.5
	Scenario #2: Existing plus Future	399	68.6	210.6
	Scenario #3: Full Build-Out	1,077	175.6	538.9
7 (WFW)	Scenario #1: Existing Distribution	228	40.8	125.3
	Scenario #2: Existing plus Future	516	124.3	381.6
	Scenario #3: Full Build-Out	1,047	205.5	630.8
8 (WD)	Scenario #1: Existing Distribution	65	8.2	25.1
	Scenario #2: Existing plus Future	161	44.9	137.9

Table 4.2: Washington City Source Requirement Evaluation by District

District	Build-Out Scenario	Required Peak Demand (gpm)	Annual (MG)	Annual (ac-ft)
	Scenario #3: Full Build-Out	323	74.0	227.0
9 (SV)	Scenario #1: Existing Distribution	78	14.2	43.4
	Scenario #2: Existing plus Future	197	39.2	120.3
	Scenario #3: Full Build-Out	317	54.3	166.6
10 (WFE)	Scenario #1: Existing Distribution	270	47.3	145.1
	Scenario #2: Existing plus Future	434	107.5	329.9
	Scenario #3: Full Build-Out	889	179.7	551.6
11 (LV)	Scenario #1: Existing Distribution	124	20.9	64.0
	Scenario #2: Existing plus Future	860	145.1	445.3
	Scenario #3: Full Build-Out	921	155.3	476.6
12 (WFS)	Scenario #1: Existing Distribution	276	46.5	142.6
	Scenario #2: Existing plus Future	376	96.4	296.0
	Scenario #3: Full Build-Out	513	115.9	355.7
13 (SF)	Scenario #1: Existing Distribution	311	52.4	160.7
	Scenario #2: Existing plus Future	1,576	294.9	905.1
	Scenario #3: Full Build-Out	1,585	296.4	909.5
14 (AIR)	Scenario #1: Existing Distribution	-	-	-
	Scenario #2: Existing plus Future	154	41.2	126.3
	Scenario #3: Full Build-Out	154	41.2	126.3
Total	**Scenario #1: Existing Distribution**	**2,359**	**390**	**1,197**
	Scenario #2: Existing plus Future	**6,834**	**1,378**	**4,228**
	Scenario #3: Full Build-Out	**12,040**	**2,215**	**6,796**

Table 4.2 provides a basis for evaluating which district or combination of districts can be serviced with the existing source capacity. On paper, the existing water rights would adequately provide service to the existing distribution network as shown in Table 4.1. If only wet water is considered there would still be a considerable number of units and isolated areas that could be serviced, but capacity would not be adequate for connection of all existing dry line infrastructure. A summary of the expected irrigation demand compared to the current wet water measurements is provided in ***Table 4.3***.

Table 4.3: Comparison of Existing Water Rights to Demand

Build-Out Scenario	Current Papered Rights (gpm)	Current Wet Measurement (gpm) [1][2]	Demand (gpm)	Papered Right Difference (gpm)	Wet Water Difference (gpm)
Scenario #1	2,893.4	1,802.5	2,359	534.4	-556.5
Scenario #2	2,893.4	1,802.5	6,834	-3,940.6	-5,031.5
Scenario #3	2,893.4	1,802.5	12,040	-9,146.6	-10,237.5

[1] The Wet Water Measurements include the Mill Creek Water Users Shares and the Kirkland Property Water Rights assuming the full amount is available for use. These sources have not been measured. The measured wet water for the spring sources alone equates to 948.8 gpm.
[2] It is unclear how much of the current wet water is being utilized by existing residents; it is anticipated that the full amount will not be available downstream.

4.4 POTENTIAL IRRIGATION WATER SOURCES

Most the City's water rights consist of resources that can be utilized in their culinary water system. The City will need to obtain additional secondary water resources to meet projected build-out demands. There are two likely sources that the City could obtain additional water rights: raw water purchase from the Quail Creek Reservoir and rights from the St. George Washington Canal Company and other private rights. A map of these potential resources is provided in ***Figure 4.3***. An evaluation of how these potential resources, in addition to the existing sources described in the previous sections, can be developed is provided in the following section.

4.5 SOURCE DEVELOPMENT RECOMMENDATIONS

To provide water for the secondary system, existing sources will need to be developed and utilized, and new sources will need to be obtained for full build-out of the system. An overview of source improvement recommendations is shown in ***Figure 4.4*** and described in the following subsections.

Existing Source Development

To develop the existing sources, spring sources north of Telegraph will be rerouted to a usable ditch. A diversion will be required in Mill Creek to collect and store the unused water rights. The existing Kirkland Pond would be utilized for storing these sources. The pond will require expansion to meet the storage requirements. The objective will be to make the Kirkland Pond as large as possible as expansion of the storage capacity at this location would be more cost effective than if a new storage pond were to be constructed elsewhere. Additionally, the central location within the City will provide better flexibility as the system is expanded in the future. An evaluation of the required capacity of Kirkland Pond based on service area demand is provided in Chapter 5 of this report and initial expansion projects and phasing are described in Chapter 7. To summarize, the initial expansion phase would consist of expanding Kirkland Pond from its current capacity of 1.62 acre-feet to a capacity of 4 acre-feet, with considerations for a maximum 3-foot drawdown. Ultimately, a storage capacity of 12 acre-feet will be needed at this location. Refer to the later chapters for additional information.

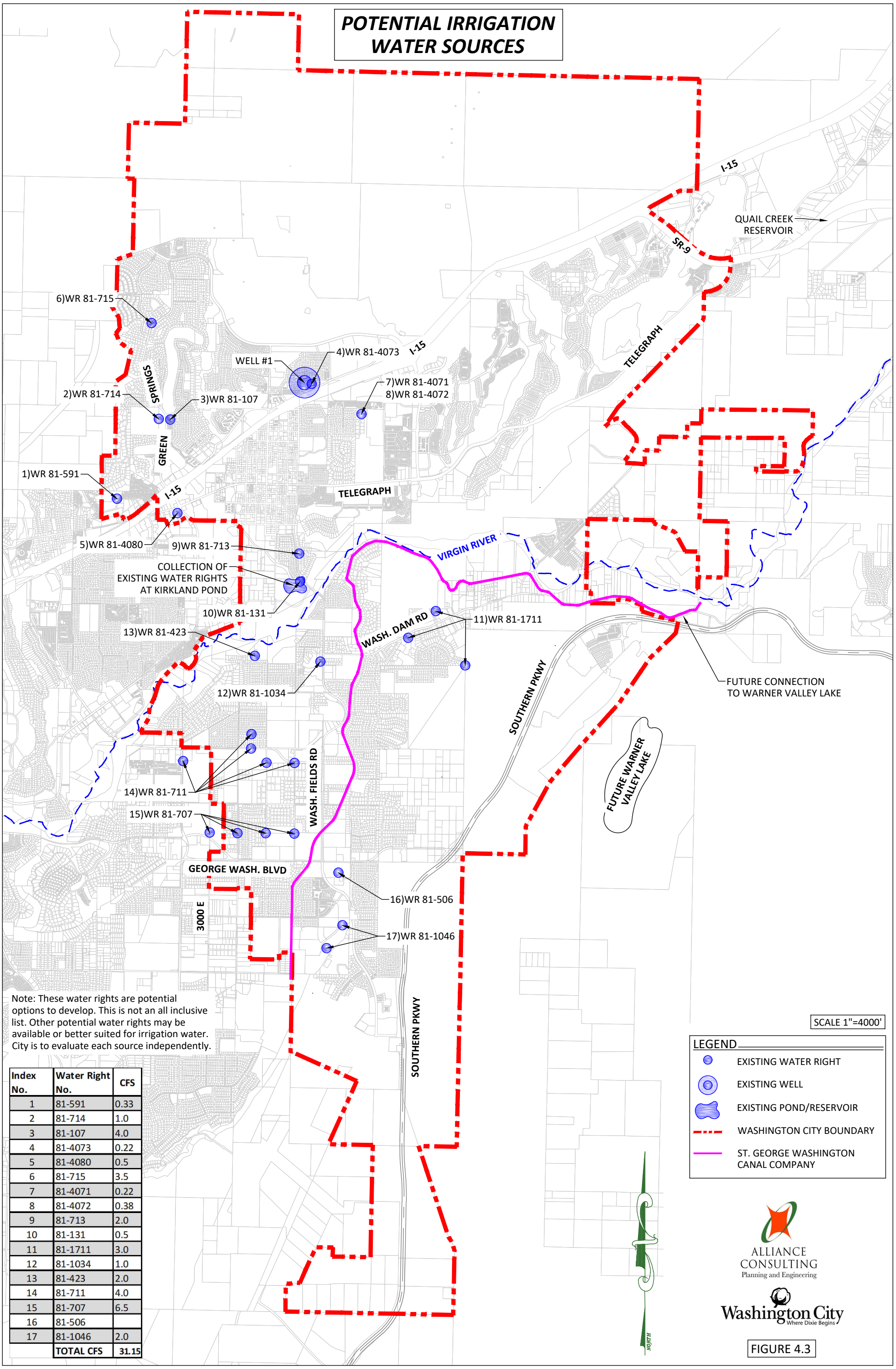
In addition to the downtown water rights previously described and shown in Figure 4.2, the City currently purchases raw water that is pumped from Quail Creek Reservoir to the Razor Ridge Park Pond and the Coral Canyon Golf Course. To improve this source, it is recommended that upgrades to transmission be implemented to increase the water source capacity. The Quail Creek Reservoir source will service all of District 6 (CC), consisting of the Coral Canyon master-planned community, and a portion of District 9 (SV). Additionally, the source will continue to provide water to the Coral Canyon Golf Course, which will continue to be serviced by a private system and is not evaluated in this report.

Development of New Sources:

New secondary water source will primarily be obtained from the St. George Washington Canal Company; however, other water rights may also be obtained. As shown in Figure 4.4, development of the canal source will be a multi-phased approach. Currently, the canal is receiving water directly from the Virgin River at the Washington Dam Diversion near the intersection of Washington Dam Road and Southern Parkway. Water is diverted into a 63-inch transmission line. Initially, the City would need to provide settling ponds and a mechanism for mixing the river water, which has a high TDS concentration, with better-quality water. The only location where this will initially be feasible will be Kirkland Pond where it can be blended with water from the spring and surface water resources. As such, it is recommended that only one connection be made to the canal at the Indian Knolls Settling Pond until the Washington County Water Conservancy District completes the Warner Valley Lake.

At full build-out, it is anticipated that this pipeline would be connected to the Warner Valley Lake which will provide gravity service to much of the southwest side of the City. It is recommended that the City have three connection points to the canal with PRV stations servicing Pressure Zone 6 and pumping stations servicing Pressure Zone 7. Refer to Figure 4.4 for additional information regarding the proposed locations for these connections. With the Warner Valley Lake completed, the Indian Knolls Settling Pond would no longer be needed. While the City service area on the north side of the Virgin River will initially utilize the City's spring sources, at full build-out it is expected that water from the canal source would be needed to supplement those sources. It is also recommended that additional groundwater sources be evaluated and improved. One such location is identified as Irrigation Well #1 on Figure 4.4, which currently services the Washington City Community Center, Cemetery, and Baseball & Softball Fields.

POTENTIAL IRRIGATION WATER SOURCES



Note: These water rights are potential options to develop. This is not an all inclusive list. Other potential water rights may be available or better suited for irrigation water. City is to evaluate each source independently.

Index No.	Water Right No.	CFS
1	81-591	0.33
2	81-714	1.0
3	81-107	4.0
4	81-4073	0.22
5	81-4080	0.5
6	81-715	3.5
7	81-4071	0.22
8	81-4072	0.38
9	81-713	2.0
10	81-131	0.5
11	81-1711	3.0
12	81-1034	1.0
13	81-423	2.0
14	81-711	4.0
15	81-707	6.5
16	81-506	
17	81-1046	2.0
	TOTAL CFS	31.15

SCALE 1"=4000'

LEGEND

- EXISTING WATER RIGHT
- EXISTING WELL
- EXISTING POND/RESERVOIR
- WASHINGTON CITY BOUNDARY
- ST. GEORGE WASHINGTON CANAL COMPANY

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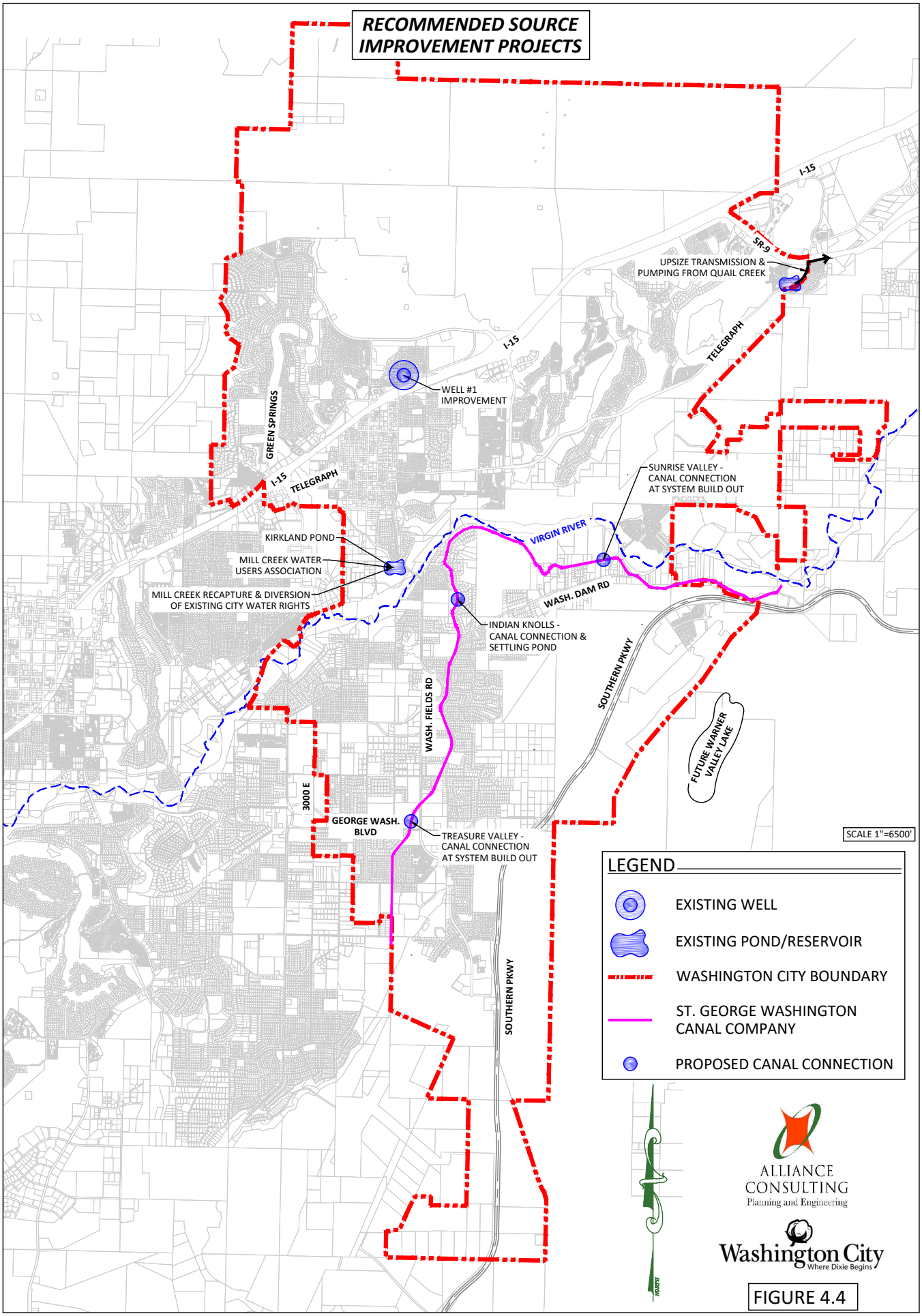
FIGURE 4.3


RECOMMENDED SOURCE IMPROVEMENT PROJECTS
I-15
SR-9
UPSIZE TRANSMISSION & PUMPING FROM QUAIL CREEK
TELEGRAPH
WELL #1 IMPROVEMENT
GREEN SPRINGS
SUNRISE VALLEY - CANAL CONNECTION AT SYSTEM BUILD OUT
VIRGIN RIVER
KIRKLAND POND
MILL CREEK WATER USERS ASSOCIATION
MILL CREEK RECAPTURE & DIVERSION OF EXISTING CITY WATER RIGHTS
WASH. DAM RD
INDIAN KNOLLS - CANAL CONNECTION & SETTLING POND
SOUTHERN PKWY
WASH. FIELDS RD
FUTURE WARNER VALLEY LAKE
3000 E
GEORGE WASH. BLVD
TREASURE VALLEY - CANAL CONNECTION AT SYSTEM BUILD OUT
SCALE 1"=6500'
LEGEND
EXISTING WELL
EXISTING POND/RESERVOIR
WASHINGTON CITY BOUNDARY
ST. GEORGE WASHINGTON CANAL COMPANY
PROPOSED CANAL CONNECTION
NORTH
ALLIANCE CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 4.4

CHAPTER 5: STORAGE EVALUATION

Storage facilities play a significant role in a water delivery system providing a buffer between water sources and the distribution system. The primary function of storage is to provide equalization for the system and provide flow to users when demand exceeds the capacity of sources. This chapter provides an evaluation of storage requirements for Washington City under existing and future demand conditions. The results of this evaluation have been used to identify future storage improvements for the system.

5.1 REQUIRED STORAGE VOLUME

Storage volume requirements for secondary water irrigation systems are not required to maintain emergency storage or fire flow storage and only need to account for the peak day demand on the system they are servicing. This will allow the storage facility to supply irrigation service on the peak day without requiring simultaneous supplementation from sources during operation.

5.2 EXISTING STORAGE FACILITIES

The City does not currently have any existing storage facilities connected to their system, however there are existing facilities that are part of separate systems such as the Green Springs Golf Course ponds servicing the golf course, the Sullivan Park Pond, and a water tank at the Park Department yard, servicing the Washington Community Center and Cemetery. Some of these facilities may eventually be connected and utilized in the overall system. The pond at Razor Ridge Park is not currently utilized for irrigation; however, as part of the new system, it is expected that 3 acre-feet would be available for irrigation use should it be connected to the system.

5.3 EVALUATION OF CURRENT AND FUTURE STORAGE FACILITY NEEDS

The City's storage facilities have been evaluated under existing and future demand conditions based on the estimated distribution of demand across the system. Based on the estimated distribution of demand in the different irrigation system districts, ***Table 5.1, Table 5.2,*** and ***Table 5.3*** provide a summary of the storage evaluation for the three build-out scenarios: the existing dry distribution system connections (Scenario 1), the existing connections plus future development (Scenario 2), and the system at full build-out (Scenario 3), respectively.

Table 5.1: Washington City Irrigation Storage Evaluation – Connection of Existing Distribution (Scenario 1)

Irrigation District	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
1 (GSW)	361,562	0.36	1.11
2 (GSN)	-	-	-

Table 5.1: Washington City Irrigation Storage Evaluation – Connection of Existing Distribution (Scenario 1)

Irrigation District	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
3 (GSE)	464,807	0.46	1.43
4 (DT)	176,090	0.18	0.54
5 (SH)	228,187	0.23	0.70
6 (CC)	220,471	0.22	0.68
7 (WFW)	328,055	0.33	1.01
8 (WD)	93,523	0.09	0.29
9 (SV)	112,123	0.11	0.34
10 (WFE)	389,360	0.39	1.19
11 (LV)	178,100	0.18	0.55
12 (WFS)	396,816	0.40	1.22
13 (SF)	447,200	0.45	1.37
14 (AIR)	-	-	-
Total	**-**	**3.40**	**10.42**

Table 5.2: Washington City Irrigation Storage Evaluation – Connection of Existing Distribution plus Future Development (Scenario 2)

Irrigation District	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
1 (GSW)	366,035	0.37	1.12
2 (GSN)	1,430,000	1.43	4.39
3 (GSE)	541,565	0.54	1.66
4 (DT)	480,979	0.48	1.48
5 (SH)	293,554	0.29	0.90
6 (CC)	574,831	0.57	1.76
7 (WFW)	743,197	0.74	2.28
8 (WD)	231,158	0.23	0.71
9 (SV)	283,702	0.28	0.87
10 (WFE)	624,310	0.62	1.92
11 (LV)	1,238,900	1.24	3.80
12 (WFS)	541,482	0.54	1.66
13 (SF)	2,270,057	2.27	6.97
14 (AIR)	221,447	0.22	0.68
Total	**-**	**9.84**	**30.20**

Table 5.3: Washington City Irrigation Storage Evaluation – Full Build-Out (Scenario 3)

Irrigation District	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
1 (GSW)	1,589,335	1.59	4.88
2 (GSN)	1,430,000	1.43	4.39
3 (GSE)	929,615	0.93	2.85
4 (DT)	1,946,079	1.95	5.97
5 (SH)	1,613,054	1.61	4.95
6 (CC)	1,551,131	1.55	4.76
7 (WFW)	1,507,597	1.51	4.63
8 (WD)	465,158	0.47	1.43
9 (SV)	456,602	0.46	1.40
10 (WFE)	1,280,160	1.28	3.93
11 (LV)	1,326,000	1.33	4.07
12 (WFS)	739,082	0.74	2.27
13 (SF)	2,282,407	2.28	7.00
14 (AIR)	221,447	0.22	0.68
Total	**-**	**17.34**	**53.20**

5.4 IRRIGATION STORAGE FACILITY DISCUSSION AND RECOMMENDATIONS

Tables 5.1 through 5.3 provided the overall storage requirements for each irrigation district; however, some of these districts will combine to utilize a single detention facility or a combination of multiple facilities. The following subsections provide the recommended facilities for each of the districts and the corresponding combined required storage for that facility based on servicing the existing distribution lines and servicing full build-out.

Existing Conditions

Dry line distribution has been installed for approximately 27% of the City and is awaiting connection to the system. Currently, no existing storage facilities are planned for utilization in the overall system except for Razor Ridge Park Pond which is not currently being utilized as irrigation storage. Existing Washington City storage facilities are shown in ***Figure 5.1***. The recommended storage projects to supply existing distribution connections are listed in ***Table 5.4*** with required initial volumes for each facility and are shown in ***Figure 5.2***.

Table 5.4: Washington City Irrigation Storage Evaluation – Storage Facilities for Existing Service

Storage Facility	Irrigation Districts	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
Solenté Water Tank & Pond	1 (GSW), 3 (GSE), 4 (DT), 5 (SH)	1,230,646	1.23	3.78
Razor Ridge Pond	6 (CC)	220,471	0.22	0.68
Sunrise Valley Pond	8 (WD), 9 (SV), 11 (LV)	336,985	0.34	1.03
Kirkland Pond	7 (WFW), 8 (WD), 12 (WFS)	771,633	0.77	2.37
Indian Knolls Pond	10 (WFE), 13 (SF)	836,560	0.84	2.57
Total	**-**	**-**	**3.40**	**10.42**

Future Conditions

At full build-out, it is anticipated that the Warner Valley Lake will be available to provide storage for the south half of the City consisting of everything south of the Virgin River and the Sunrise Valley development. Service from Warner Valley Lake will be provided through the St. George Washington Canal Company. This may also be utilized to supplement water resources north of the river by providing a connection to Kirkland Pond. At full build-out, the Indian Knolls and Sunrise Valley settling ponds would no longer be necessary. Razor Ridge Pond would not have the capacity to service its area at full build-out and will require transmission improvements to allow supplemental storage from Quail Creek Reservoir. The recommended storage facilities to supply the City at full build-out are listed in ***Table 5.5*** with the required volumes to service full build-out and are shown in ***Figure 5.3***.

Table 5.5: Washington City Irrigation Storage Evaluation – Full Build-Out

Storage Facility	Irrigation Districts	Peak Day Demand (gpd)	Required Storage (MG)	Required Storage (ac-ft)
Solente Water Tank[1]	1 (GSW), 2 (GSN), 3 (GSE), 4 (DT), 5 (SH)	1,000,000	1.00	3.07
Kirkland Pond[1]	1 (GSW), 2 (GSN), 3 (GSE), 4 (DT), 5 (SH)	3,900,000	3.91	12.00
Solente Pond[1]	1 (GSW), 2 (GSN), 3 (GSE), 4 (DT), 5 (SH)	2,608,083	2.61	7.97
Razor Ridge Pond/Quail Creek Reservoir	6 (CC) , 9 (SV)	1,779,432	1.78	5.46
Warner Valley Lake	7 (WFW), 8 (WD), 9 (SV), 10 (WFE), 11 (LV), 12 (WFS), 13 (SF), 14 (AIR)	8,050,152	8.05	24.70
Total	**-**	**-**	**17.34**	**53.20**

[1] At full build-out the Solente Tank, Solente Pond, and Kirkland Pond will combine to provide storage for the same service area. The total requirement for each storage facility is based on the planned 1 MG for the tank and 12 ac-ft for the fully expanded Kirkland Pond with the remainder stored at the Solente Pond.

Other Potential Storage Facilities

The following storage facilities that are currently servicing separate systems may be expanded to service other areas or connected to the city-wide system; however, the capacities of these facilities were not assumed or relied on in this report.

- Parks Department Tank
- Green Springs Golf Course Ponds
- Sullivan Park Pond

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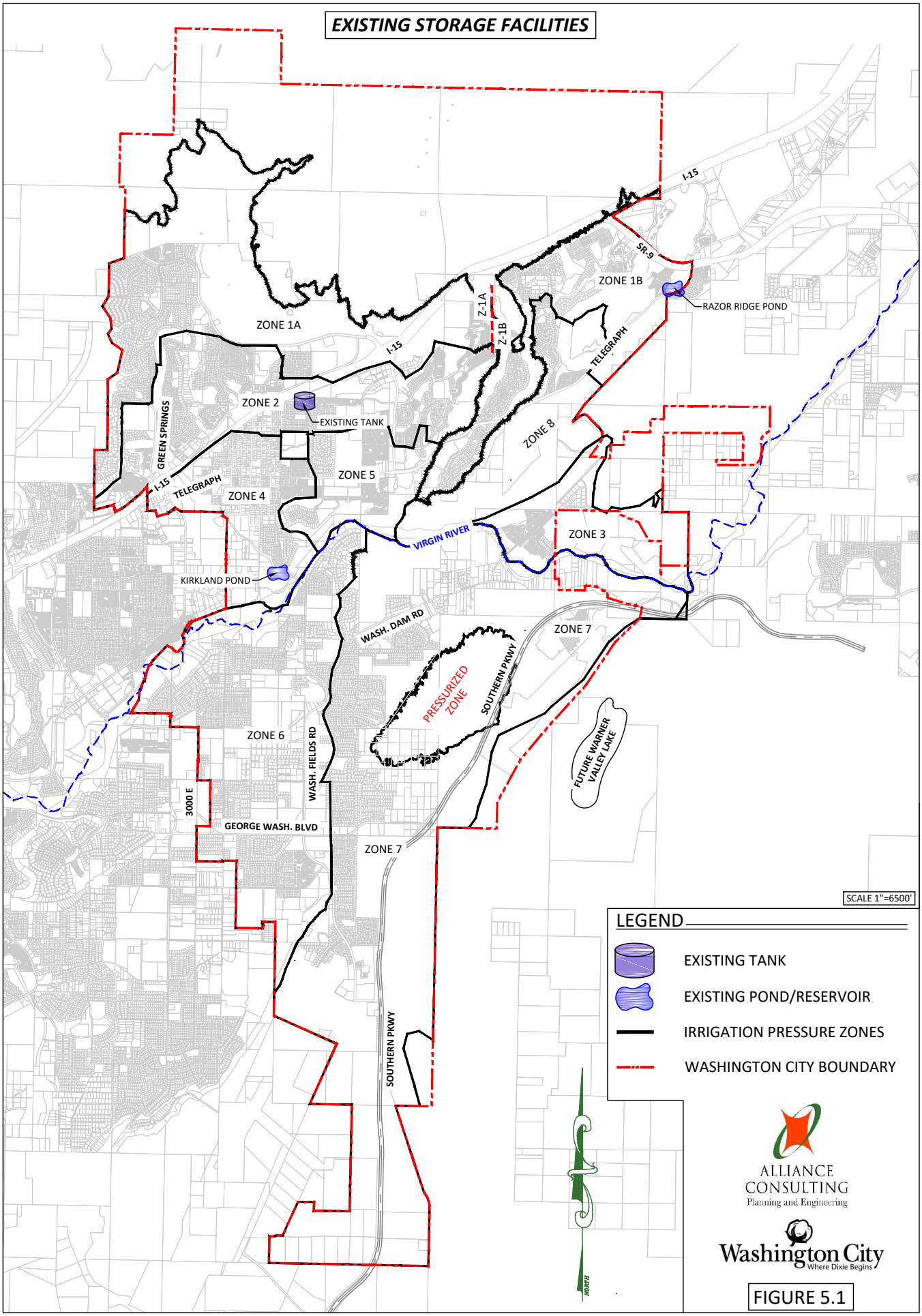
EXISTING STORAGE FACILITIES
ZONE 1A
ZONE 1B
ZONE 2
ZONE 3
ZONE 4
ZONE 5
ZONE 6
ZONE 7
ZONE 8
Z-1A
Z-1B
I-15
SR-9
TELEGRAPH
GREEN SPRINGS
EXISTING TANK
RAZOR RIDGE POND
KIRKLAND POND
VIRGIN RIVER
WASH. DAM RD
WASH. FIELDS RD
3000 E
GEORGE WASH. BLVD
SOUTHERN PKWY
PRESSURIZED ZONE
FUTURE WARNER VALLEY LAKE
SCALE 1"=6500'
LEGEND
EXISTING TANK
EXISTING POND/RESERVOIR
IRRIGATION PRESSURE ZONES
WASHINGTON CITY BOUNDARY
NORTH
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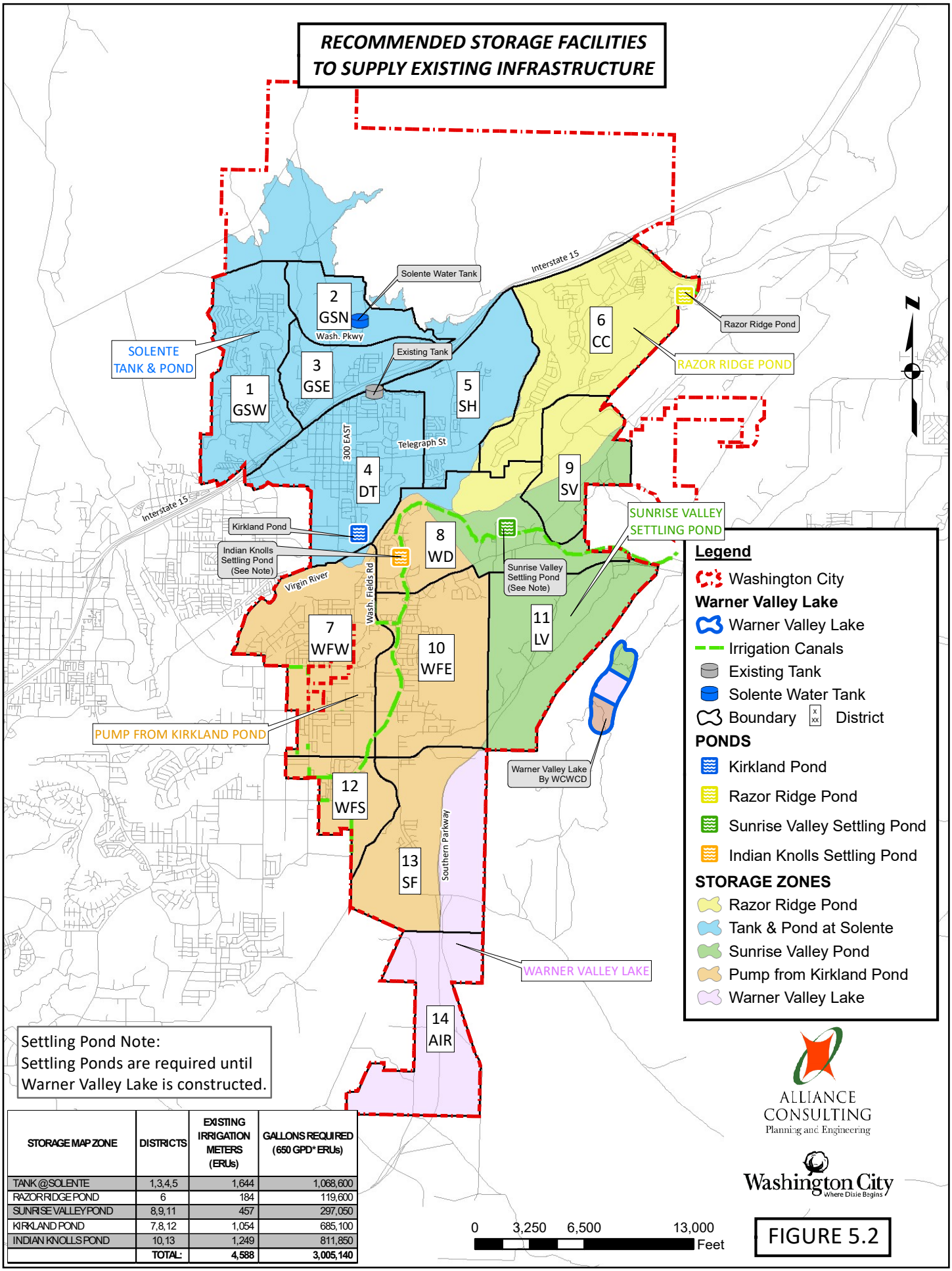
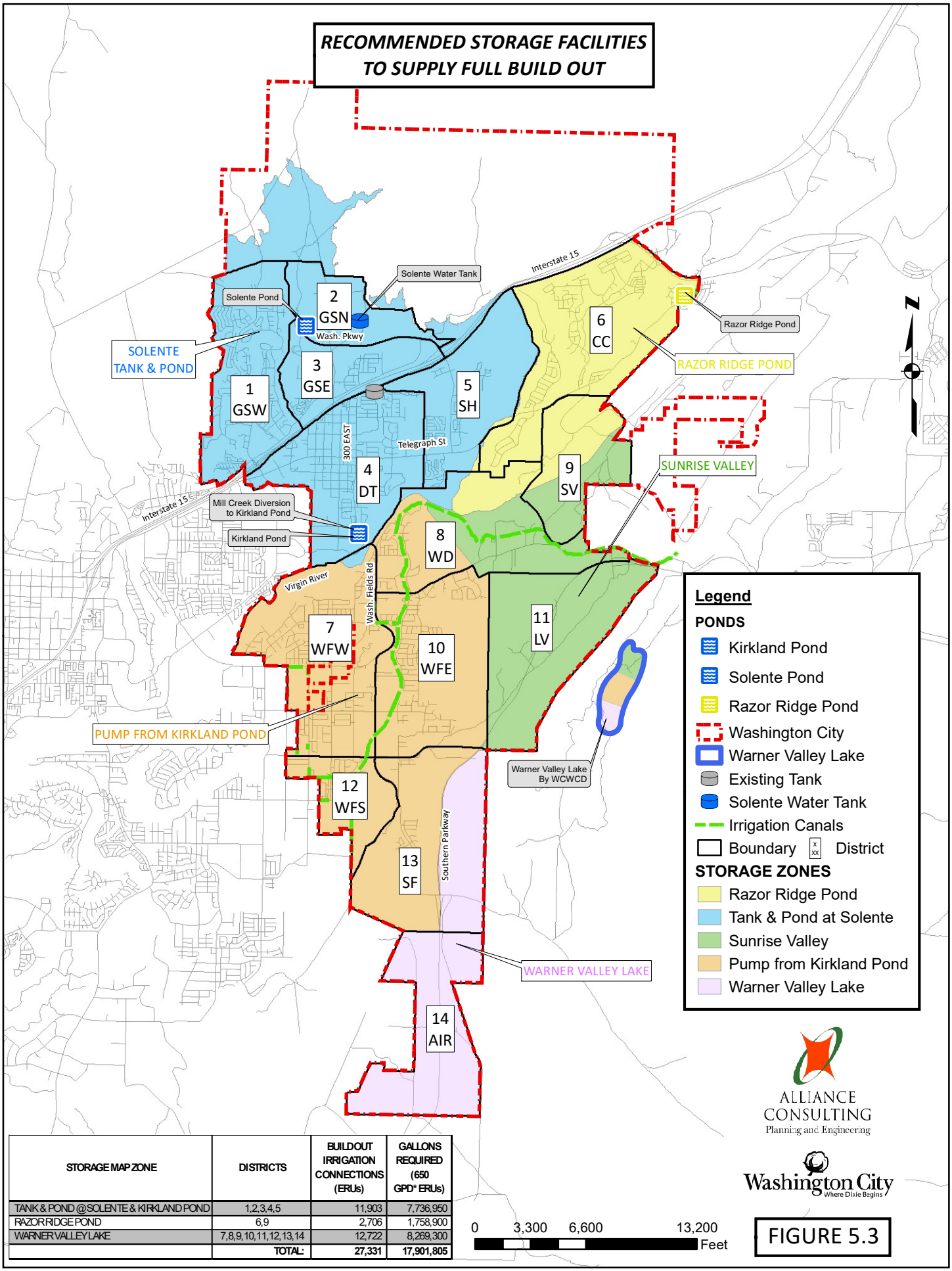
FIGURE 5.1



STORAGE MAP ZONE	DISTRICTS	EXISTING IRRIGATION METERS (ERUs)	GALLONS REQUIRED (650 GPD* ERUs)
TANK @SOLENTE	1,3,4,5	1,644	1,068,600
RAZOR RIDGE POND	6	184	119,600
SUNRISE VALLEY POND	8,9,11	457	297,050
KIRKLAND POND	7,8,12	1,054	685,100
INDIAN KNOLLS POND	10,13	1,249	811,850
	TOTAL:	4,588	3,005,140



STORAGE MAP ZONE	DISTRICTS	BUILDOUT IRRIGATION CONNECTIONS (ERUs)	GALLONS REQUIRED (650 GPD* ERUs)
TANK & POND @ SOLENTE & KIRKLAND POND	1,2,3,4,5	11,903	7,736,950
RAZOR RIDGE POND	6,9	2,706	1,758,900
WARNER VALLEY LAKE	7,8,9,10,11,12,13,14	12,722	8,269,300
	TOTAL:	27,331	17,901,805

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FIGURE 5.3

CHAPTER 6: TRANSMISSION AND DISTRIBUTION SYSTEM EVALUATION

For the purposes of this report, transmission and distribution infrastructure includes the following: transmission pipe lines, distribution pipe lines, pumping stations, and pressure reducing stations. Washington City's secondary irrigation transmission and distribution network has been evaluated under the three build-out scenarios previously described using a hydraulic computer model. This chapter documents the results of the hydraulic modeling evaluation and provides recommendations for future transmission and distribution improvements for the secondary water irrigation system.

6.1 SECONDARY WATER IRRIGATION HYDRAULIC MODEL

A hydraulic computer model was created to digitally represent the physical features and characteristics of the water system, including pipes, storage tanks, pumps, and pressure-reducing valves. Computer model output includes pressures at each model node, flow rate for each pipe in the water system, etc. Alliance Consulting developed a hydraulic computer model of the secondary water irrigation system using Open Flows WaterCAD by Bentley Systems.

The water demand estimates presented in Chapter 3 were distributed throughout the model at locations representative of the demand on the system. A full analysis of the water loads is provided in ***Appendix B***. The model is set up to run a "steady state" simulation, which provides an instantaneous snapshot of the system for a given demand scenario under steady state flow conditions. The steady state model does not track dynamic, time-dependent variables, such as the depth of water in a storage tank or diurnal variations in demand throughout the course of the day.

The model was set up as three separate systems representing each build-out scenario including connecting existing dry irrigation distribution infrastructure and parks (Scenario 1), adding future development which will also have irrigation distribution infrastructure installed (Scenario 2), and full build-out within the 2024 Washington City boundary (Scenario 3). The future conditions are based on the demand projections developed in Chapter 3 of this report, with demand being distributed in the models as a function of the land use and zoning designation of the undeveloped area.

6.2 MODEL ASSUMPTIONS

A few assumptions regarding the calibration of the model are:

- Pipe Roughness – Pipe roughness in the system was assigned a Hazen-Williams coefficient of 150 for PVC pipe.

- Pipe Size Data – Pipe diameters and locations in the model for the existing network were assigned based on the City's GIS data and through communication with the City.
- Node Elevation – Junction elevations in the model were assigned using a Digital Elevation Models (DEM) of the City that was created through Lidar survey data collected by Washington County.
- Storage Tank Elevations – Storage tanks have been set to ½ full for all model simulations.

6.3 PEAKING CHARACTERISTICS

Chapter 3 presents estimated peak day system demand on the secondary water irrigation system under each of the three build-out scenarios that were evaluated. It is also important to estimate the peak demand that occurs over the course of the peak day, known as peak hour or peak instantaneous demand. For this study, a peak hour factor (PHF) of 3 was utilized by multiplying it by the peak day demand assuming all irrigating would occur during an 8-hour timeframe during the peak day. By comparison, the PHF used for the Washington City culinary water system which currently services irrigation throughout the city is 2.33. Based on this, the PHF of 3 is a reasonable and conservative assumption.

6.4 MODEL SCENARIOS

The following three model simulation demand scenarios were evaluated for each of the three build-out scenarios resulting in a total of nine different scenarios:

1. Static Pressure – This scenario provides static pressure on the system when there is little irrigation demand, which represents the highest pressure that the system typically experiences.

2. Peak Day Demand – This scenario represents the average demand on the system during the peak water usage day of the year.

3. Peak Instantaneous Demand – This scenario represents the estimated peak demand on the system during the peak usage day. Peak instantaneous demand is estimated to be 3 times greater than peak day demand for all irrigation users on the Washington City system.

6.5 DISTRIBUTION SYSTEM EVALUATION CRITERIA

The criteria utilized in this study generally correspond with Utah Administrative Code R309-510, which establishes requirements for public drinking water systems but does not provide such requirements for a secondary water irrigation system. Per UAC R309-510, public drinking water systems are required to meet the following minimum pressure requirements:

- At least 30 psi during peak hour (instantaneous) demand
- At least 40 psi during peak day demand

Generally, these parameters were controlled through the establishment of the irrigation system pressure zones as described in Chapter 2 of this report. During high demand, it was necessary to adequately size transmission and distribution pipe line and pumping infrastructure to maintain the minimum and maximum pressures in each pressure zone. High pressure areas were identified in this report and with City personnel to ensure system users are aware of areas prone to higher pressures. In addition to maintaining the required pressure differentials in each pressure zone, pipe sizes were generally established to ensure flow velocities do not exceed 5 ft/s during peak day flow.

6.6 PIPE SIZING

Transmission and distribution pipe sizes were established based on hydraulic modeling simulations. The transmission layout was changed, or pipe sizes were adjusted upward or downward based on model simulation iterations. Generally, existing dry distribution pipe sizes were utilized where practical, however upsizing will be necessary along major transmission corridors. Numerous 4-inch diameter pipes have been installed throughout the city as part of major developments. These lines may be adequate for distribution networks within a community but are not suitable for transmission through the development. Going forward, Washington City will not allow any pipe sizes less than 8 inches diameter unless hydraulic modeling performed by a registered professional engineer proves otherwise. In no case will the City allow distribution pipe sizes to be less than 6 inches in diameter. Additional 4-inch pipes may need to be upsized as the system is brought online and a more detailed analysis of specific distribution networks is performed.

6.7 SYSTEM EVALUATION RESULTS

Connection of Existing System (Scenario 1)

The hydraulic computer model was used to simulate the requirements for connection of the existing system and parks under static pressure conditions, peak day demand, and peak instantaneous demand. Model results for these scenarios are discussed below with the following model output figures as a reference:

- ***Figure 6.1A***: Scenario 1 Pipes by Pressure Zone
- ***Figure 6.1B***: Scenario 1 Pipes by Pipe Size
- ***Figure 6.1C***: Scenario 1 Static Pressure
- ***Figure 6.1D***: Scenario 1 Peak Day Pressure
- ***Figure 6.1E***: Scenario 1 Peak Instantaneous Pressure

The system analysis was utilized to determine the most feasible layout to connect existing dry irrigation lines and City parks. Based on the hydraulic model iterations performed, this scenario would require transmission lines ranging between 6 inches and 16 inches in diameter as shown in Figure 6.1B. Each pressure zone will be serviced by a pressure sustaining pump station or gravity from a higher pressure zone. With this scenario, pumping stations with the capacities indicated in ***Table 6.1*** would be required at the storage facilities described in Chapter 5 of this report.

Table 6.1: Pump Station Description and Size Requirements for Build-Out Scenario 1

Pump Station Location	Pressure Zone	Districts	Required Pump Size to meet Peak Instantaneous Demand (HP)	Peak Instantaneous Pump Flow Demand (gpm)
Solenté Pond	Zone 1 - 3270	D1-GSW	40	748
Solenté Tank	Zone 1 - 3270	D3-GSE, D5-SH	25	562
Razor Ridge Pond	Zone 1 - 3270	D6-CC	25	459
Kirkland Pond	Zone 2 - 3080	D1-GSW, D3,GSE, D4-DT	450[1]	3,389
Kirkland Pond	Zone 4 - 2920	D4-DT	15	177
Kirkland Pond	Zone 6 - 2850	D7-WFW, D12-WFS	75	1,616
Indian Knolls Pond	Zone 7 - 3010	D8-WD(portion of), D10-WFE, D13-SF	150	1,701
Sunrise Valley Pond	Zone 7 - 3010	D8-WD(portion of), D11-LV	30	425
Sunrise Valley Pond	Zone 3 - 2910	D9-SV	15	234

[1] High-head pump required to fill Solenté storage facilities

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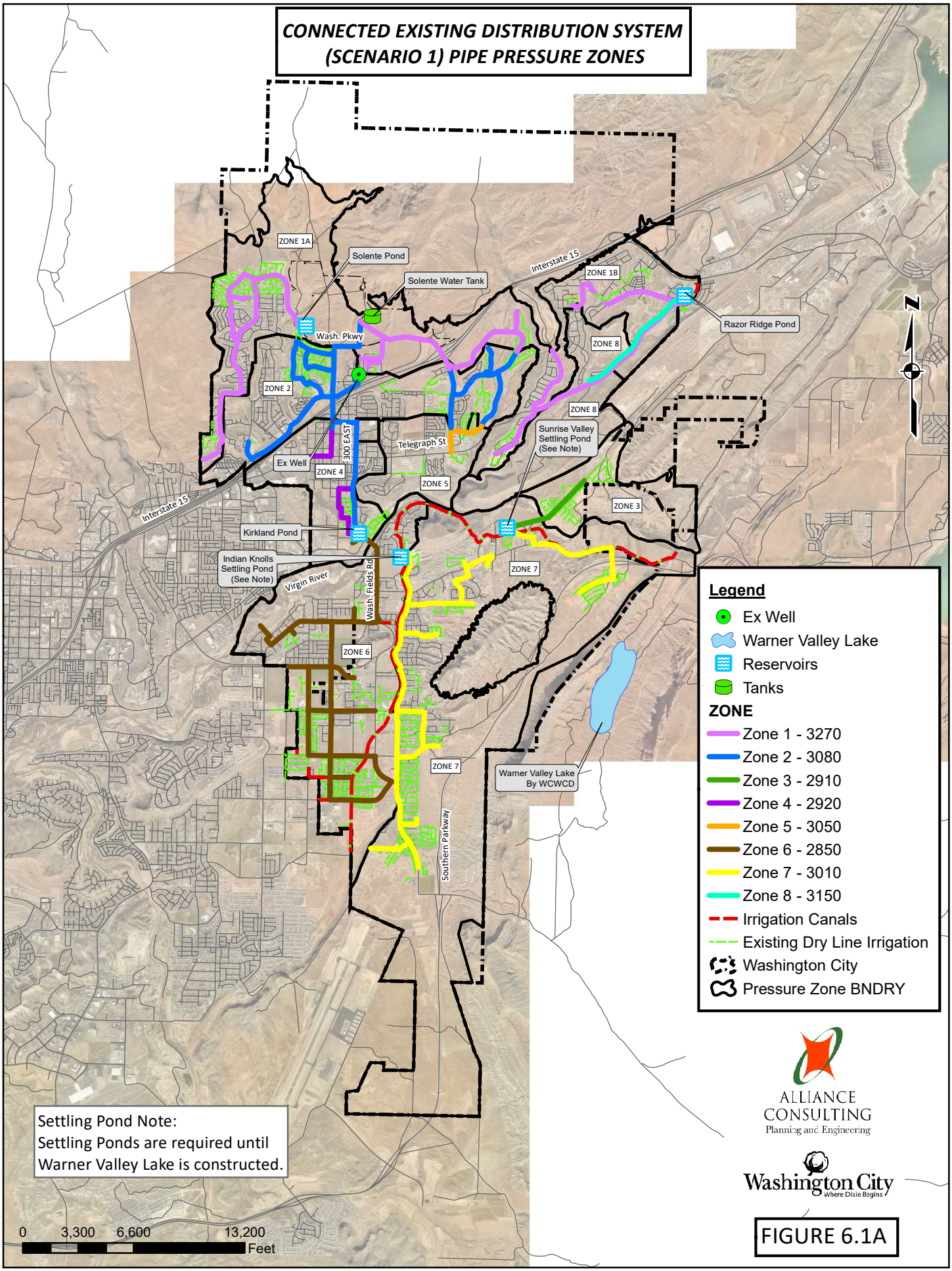
CONNECTED EXISTING DISTRIBUTION SYSTEM
(SCENARIO 1) PIPE PRESSURE ZONES
ZONE 1A
Solente Pond
Solente Water Tank
Interstate 15
ZONE 1B
Razor Ridge Pond
Wash. Pkwy
ZONE 8
ZONE 2
ZONE 8
Sunrise Valley Settling Pond (See Note)
300 EAST
Telegraph St
Ex Well
ZONE 4
ZONE 5
ZONE 3
Interstate 15
Kirkland Pond
Indian Knolls Settling Pond (See Note)
Virgin River
Wash. Fields Rd
ZONE 7
ZONE 6
ZONE 7
Warner Valley Lake By WCWCD
Southern Parkway
Legend
Ex Well
Warner Valley Lake
Reservoirs
Tanks
ZONE
Zone 1 - 3270
Zone 2 - 3080
Zone 3 - 2910
Zone 4 - 2920
Zone 5 - 3050
Zone 6 - 2850
Zone 7 - 3010
Zone 8 - 3150
Irrigation Canals
Existing Dry Line Irrigation
Washington City
Pressure Zone BNDRY
Settling Pond Note:
Settling Ponds are required until
Warner Valley Lake is constructed.
0
3,300
6,600
13,200
Feet
N
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FIGURE 6.1A

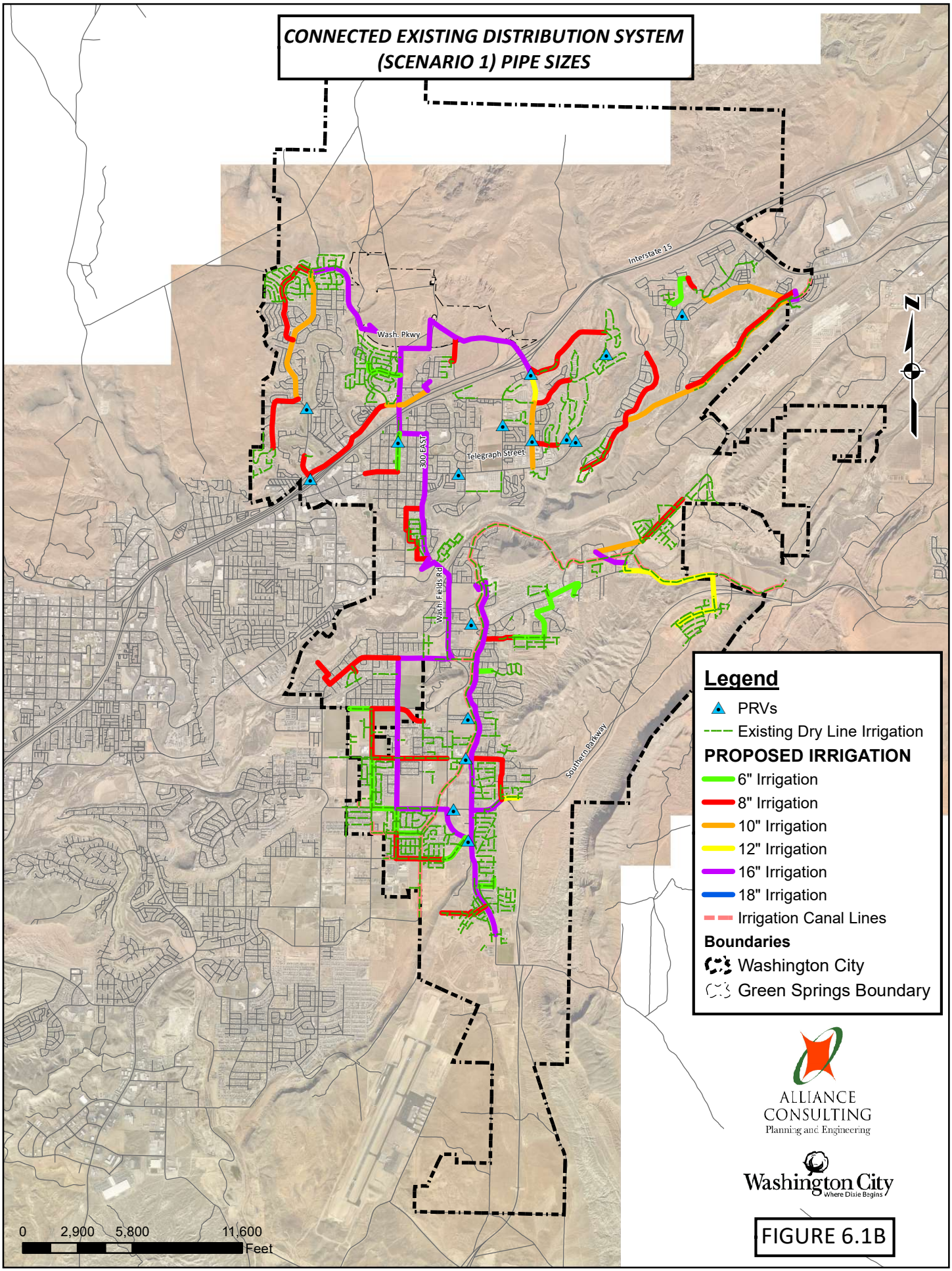
CONNECTED EXISTING DISTRIBUTION SYSTEM
(SCENARIO 1) PIPE SIZES
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Existing Dry Line Irrigation
PROPOSED IRRIGATION
6" Irrigation
8" Irrigation
10" Irrigation
12" Irrigation
16" Irrigation
18" Irrigation
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
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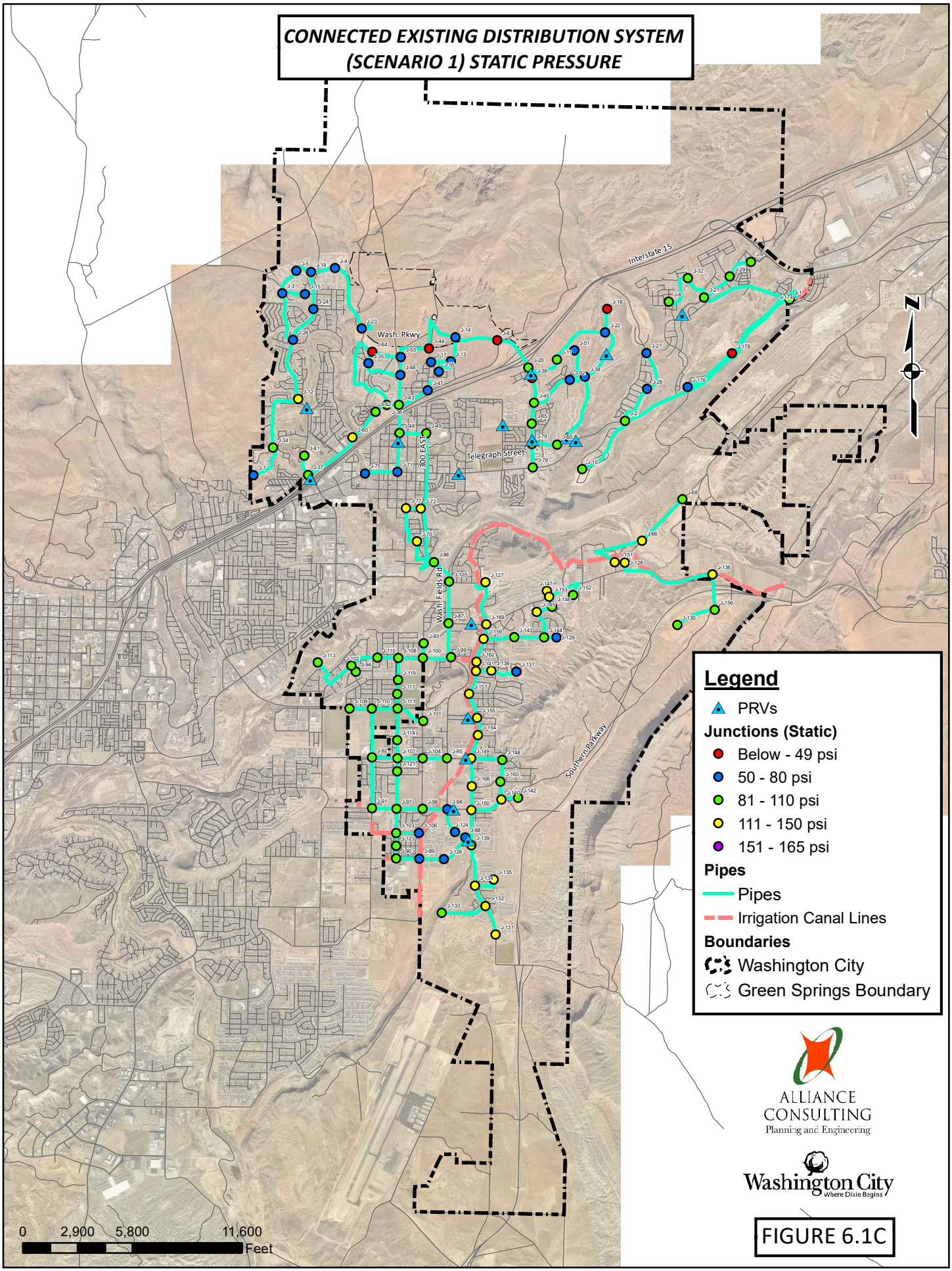
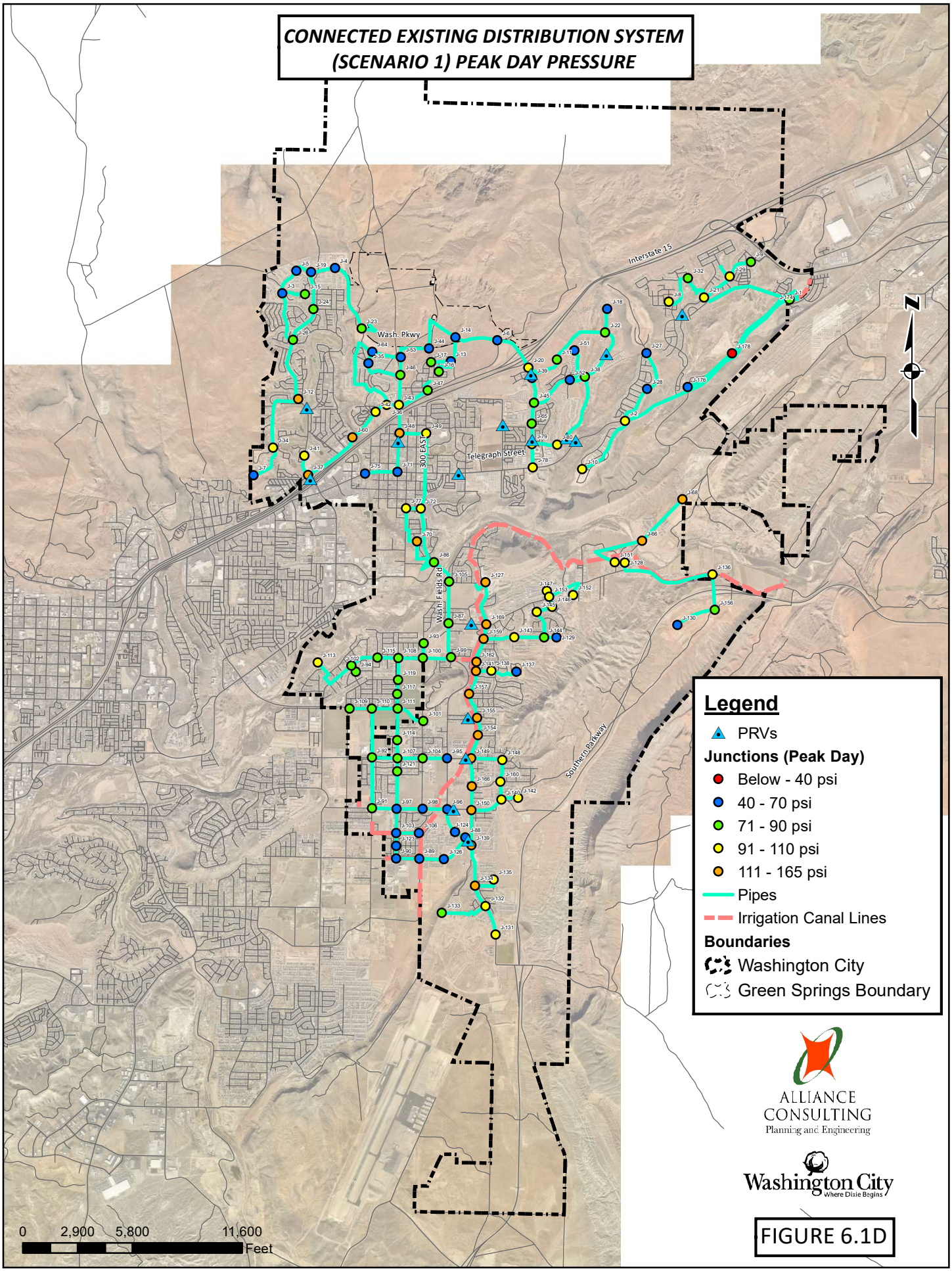
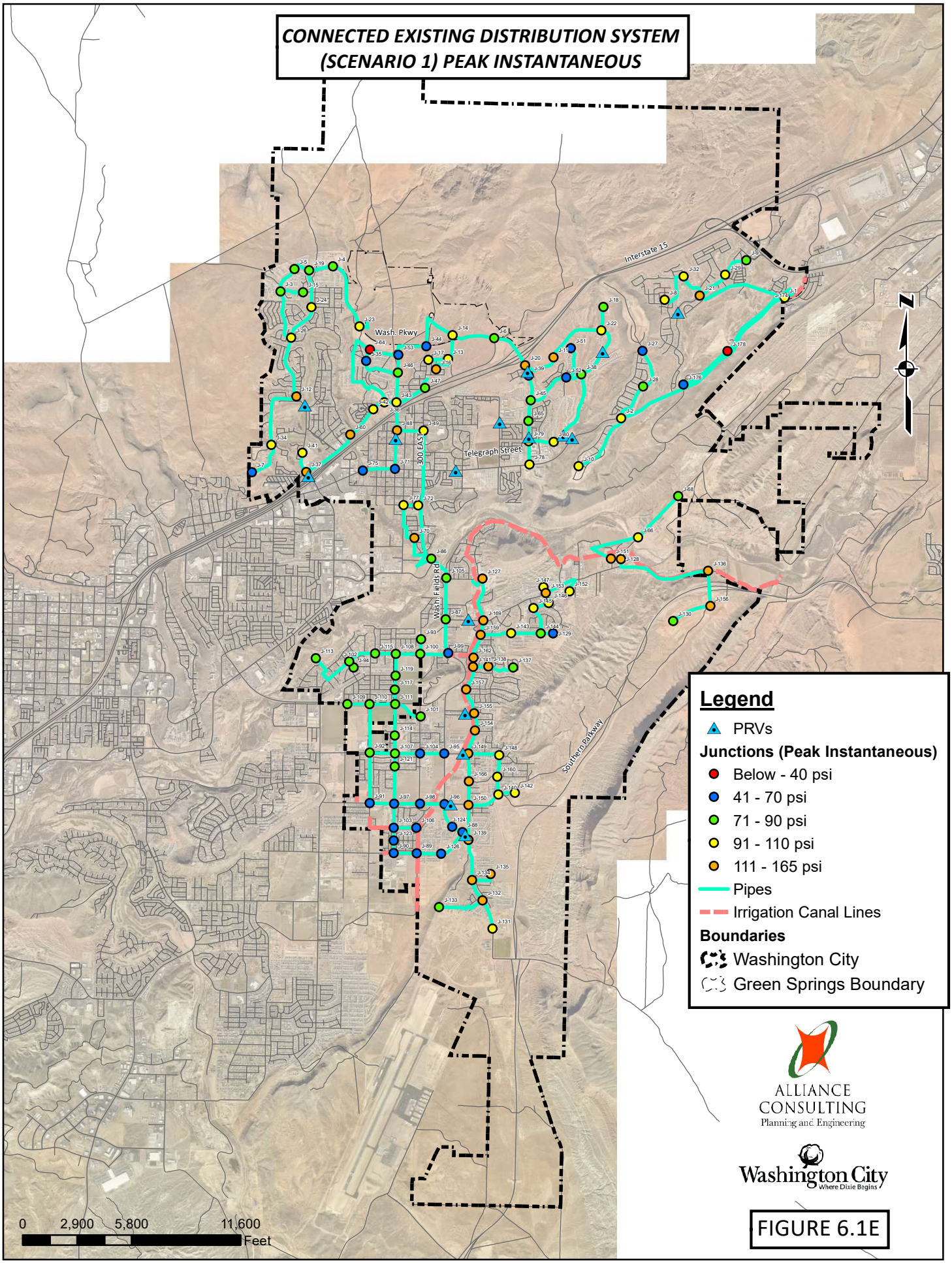
FIGURE 6.1B


CONNECTED EXISTING DISTRIBUTION SYSTEM
(SCENARIO 1) STATIC PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Static)
Below - 49 psi
50 - 80 psi
81 - 110 psi
111 - 150 psi
151 - 165 psi
Pipes
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.1C


CONNECTED EXISTING DISTRIBUTION SYSTEM
(SCENARIO 1) PEAK DAY PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Day)
Below - 40 psi
40 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.1D


CONNECTED EXISTING DISTRIBUTION SYSTEM
(SCENARIO 1) PEAK INSTANTANEOUS
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Instantaneous)
Below - 40 psi
41 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.1E

Connection of Existing System plus Future Development (Scenario 2)

The hydraulic computer model was used to simulate the requirements for connection of the existing system and parks plus future development connections under static pressure conditions, peak day demand, and peak instantaneous demand. Model results for these scenarios are discussed below with the following model output figures as a reference:

- ***Figure 6.2A***: Scenario 2 Pipes by Pressure Zone
- ***Figure 6.2B***: Scenario 2 Pipes by Pipe Size
- ***Figure 6.2C***: Scenario 2 Static Pressure
- ***Figure 6.2D***: Scenario 2 Peak Day Pressure
- ***Figure 6.2E***: Scenario 2 Peak Instantaneous Pressure

The system analysis was utilized to determine the most feasible layout to connect existing dry irrigation lines and City parks and connect future development parcels. Based on the hydraulic model iterations performed, this scenario would require transmission lines ranging between 6 inches and 16 inches in diameter as shown in Figure 6.2B. Each pressure zone will be serviced by a pressure sustaining pump station or gravity from a higher pressure zone. With this scenario, pumping stations with the capacities indicated in ***Table 6.2*** would be required at the storage facilities described in Chapter 5 of this report.

Table 6.2: Pump Station Description and Size Requirements for Build-Out Scenario 2

Pump Station Location	Pressure Zone	Districts	Required Pump Size to meet Peak Instantaneous Demand (HP)	Peak Instantaneous Pump Flow Demand (gpm)
Solenté Pond	Zone 1 - 3270	D1-GSW, D2-GSN	100	2,238
Solenté Water Tank	Zone 1 - 3270	D2-GSN, D3-GSE, D5-SH	75	2,935
Razor Ridge Pond	Zone 1 - 3270	D6-CC	50	1,001
Razor Ridge Pond	Zone 8 - 3150	D6-CC, D9-SV	5	497
Kirkland Pond	Zone 2 - 3080	D1-GSW, D3, GSE, D4-DT	450[1]	3,388
Kirkland Pond	Zone 4 - 2920	D4-DT	15	201
Indian Knolls Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	40	1,252
Treasure Valley Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	260	6,297
Sunrise Valley Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	65	1,894

Table 6.2: Pump Station Description and Size Requirements for Build-Out Scenario 2

Pump Station Location	Pressure Zone	Districts	Required Pump Size to meet Peak Instantaneous Demand (HP)	Peak Instantaneous Pump Flow Demand (gpm)
Sunrise Valley Canal Connection	Zone 3 - 2910	D9-SV	15	651

[1] High head pump required to fill Solenté storage facilities

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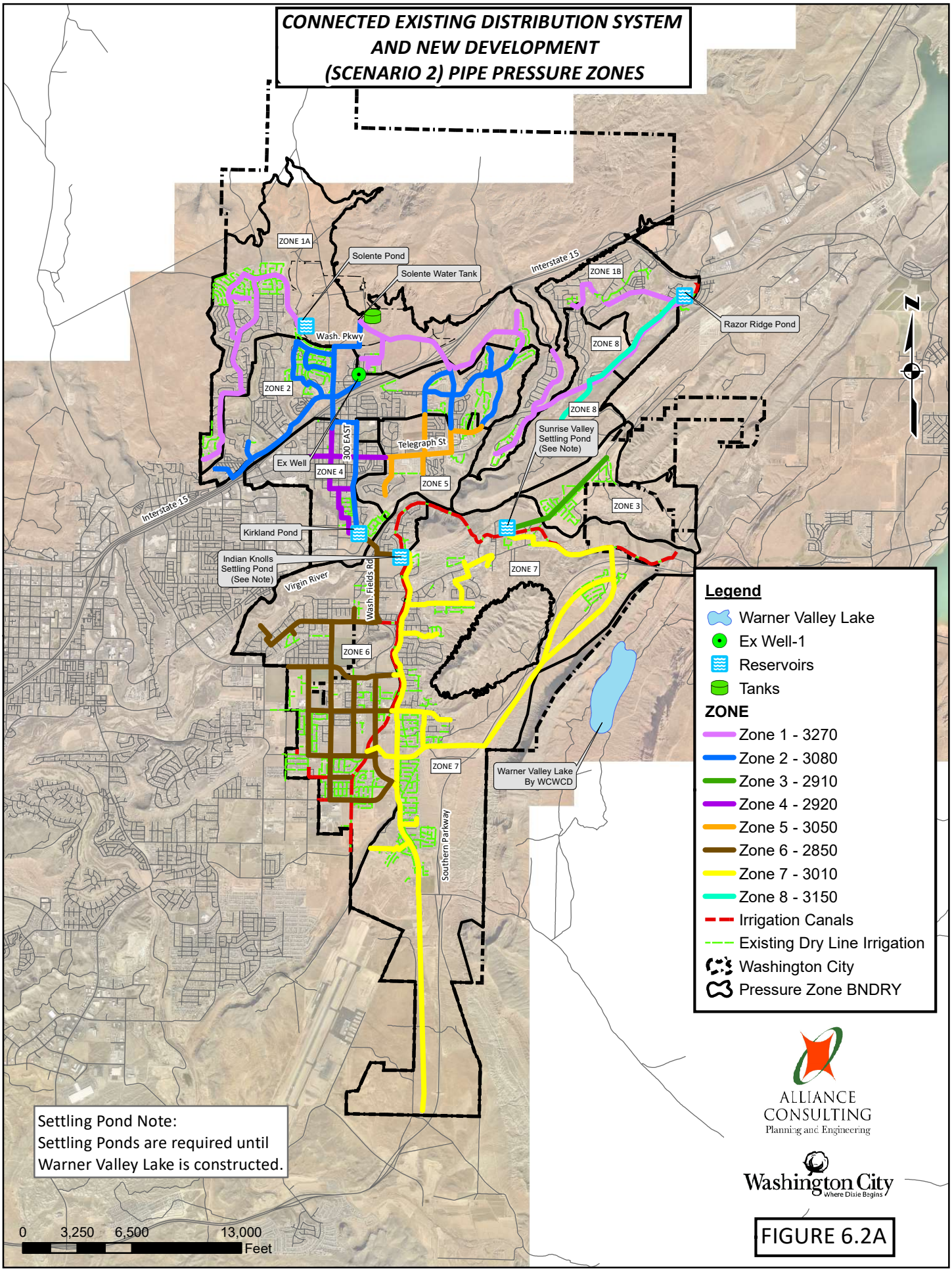
CONNECTED EXISTING DISTRIBUTION SYSTEM AND NEW DEVELOPMENT (SCENARIO 2) PIPE PRESSURE ZONES



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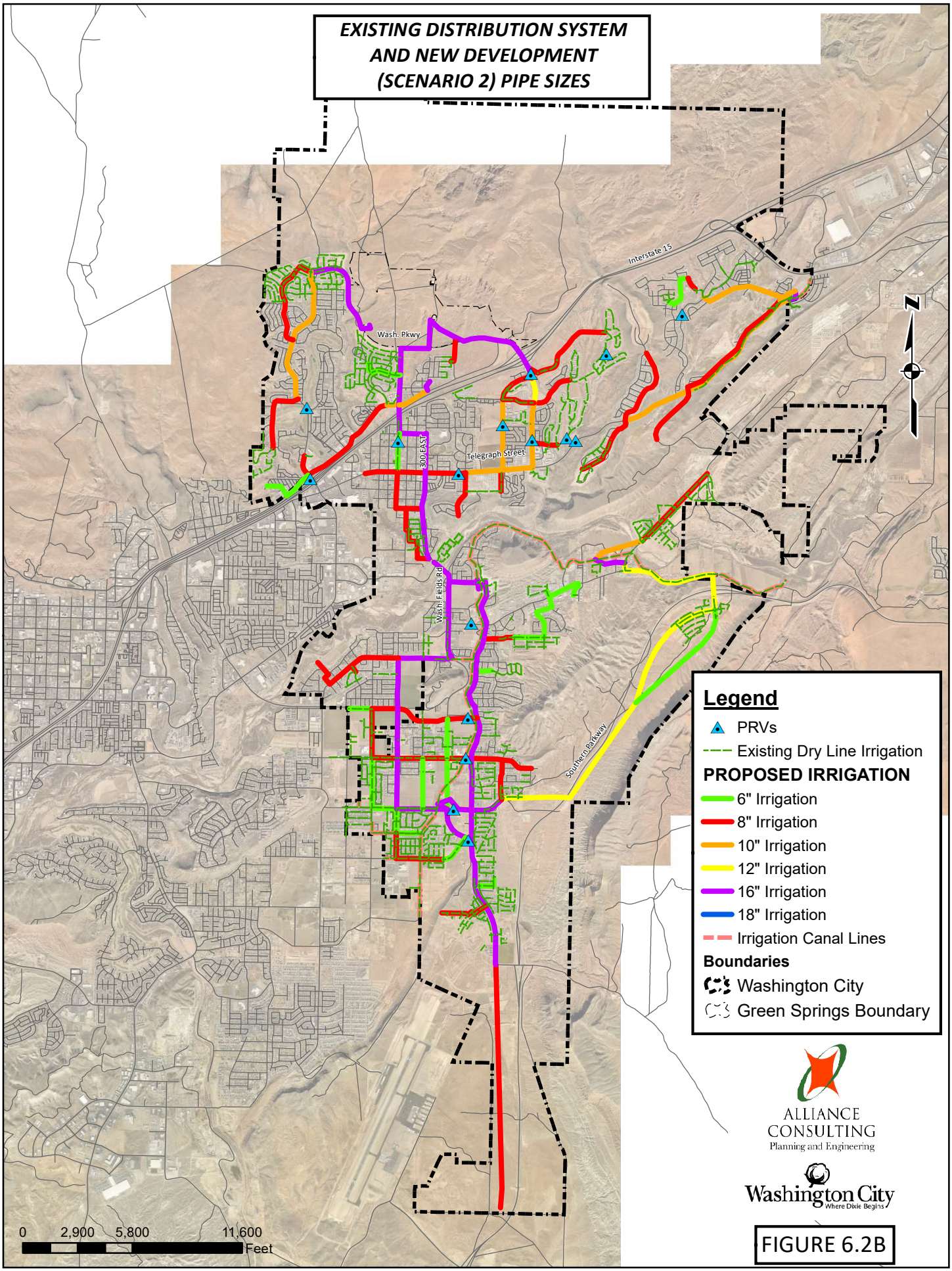
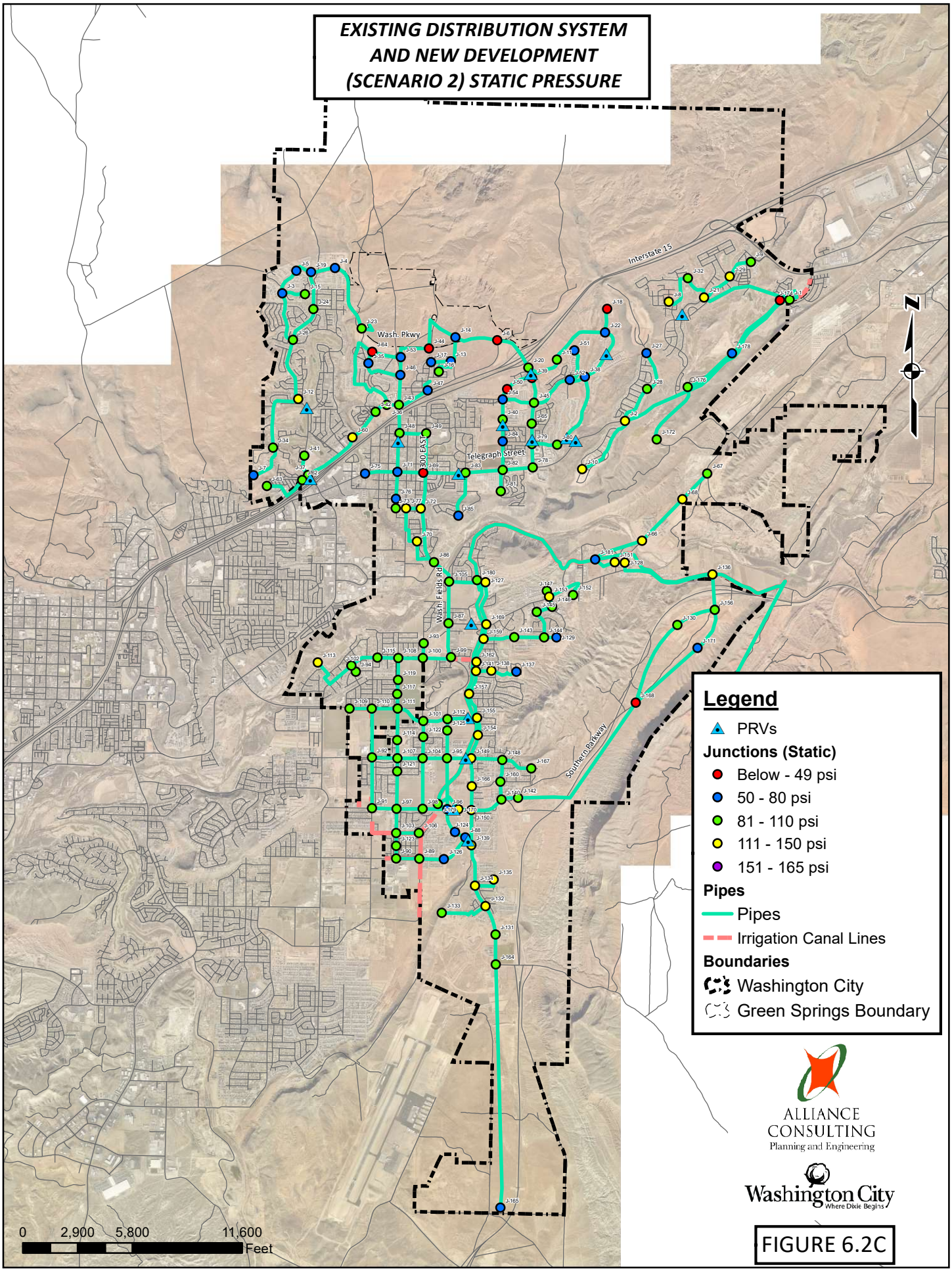
Washington City
Where Dixie Begins

FIGURE 6.2A


EXISTING DISTRIBUTION SYSTEM
AND NEW DEVELOPMENT
(SCENARIO 2) PIPE SIZES
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Existing Dry Line Irrigation
PROPOSED IRRIGATION
6" Irrigation
8" Irrigation
10" Irrigation
12" Irrigation
16" Irrigation
18" Irrigation
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.2B


EXISTING DISTRIBUTION SYSTEM
AND NEW DEVELOPMENT
(SCENARIO 2) STATIC PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Static)
Below - 49 psi
50 - 80 psi
81 - 110 psi
111 - 150 psi
151 - 165 psi
Pipes
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.2C

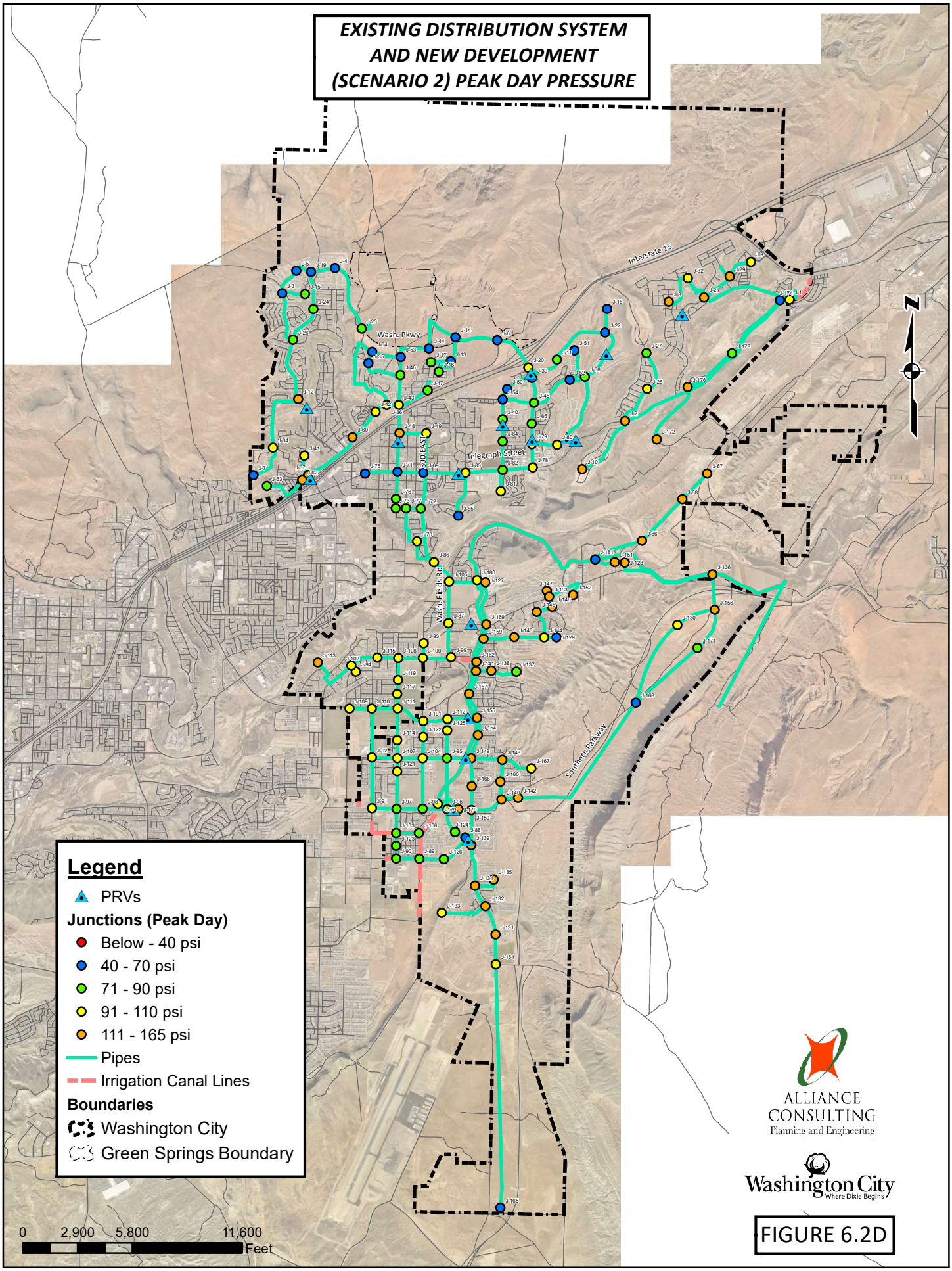
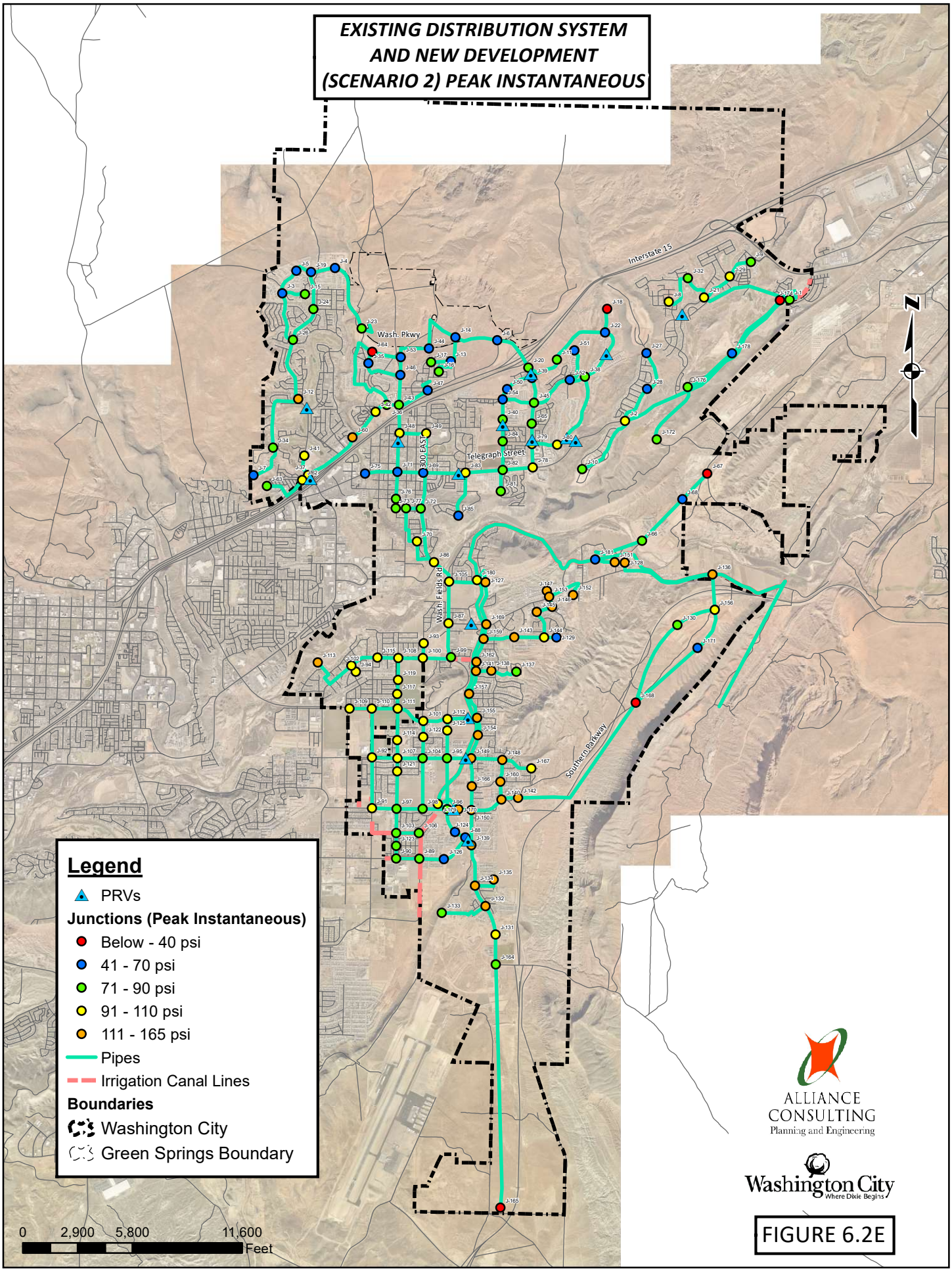

EXISTING DISTRIBUTION SYSTEM
AND NEW DEVELOPMENT
(SCENARIO 2) PEAK DAY PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Day)
Below - 40 psi
40 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins

FIGURE 6.2D


EXISTING DISTRIBUTION SYSTEM
AND NEW DEVELOPMENT
(SCENARIO 2) PEAK INSTANTANEOUS
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Instantaneous)
Below - 40 psi
41 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.2E

City-Wide Full Build-Out System (Scenario 3)

The hydraulic computer model was used to simulate the requirements for connection of the existing system and parks plus future development connections under static pressure conditions, peak day demand, and peak instantaneous demand. Model results for these scenarios are discussed below with the following model output figures as a reference:

- ***Figure 6.3A***: Scenario 3 Pipes by Pressure Zone
- ***Figure 6.3B***: Scenario 3 Pipes by Pipe Size
- ***Figure 6.3C***: Scenario 3 Static Pressure
- ***Figure 6.3D***: Scenario 3 Peak Day Pressure
- ***Figure 6.3E***: Scenario 3 Peak Instantaneous Pressure

The system analysis was utilized to determine the most feasible layout to connect existing dry irrigation lines and City parks and connect future development parcels. Based on the hydraulic model iterations performed, this scenario would require transmission lines ranging between 6 inches and 16 inches in diameter as shown in Figure 6.2B. Each pressure zone will be serviced by a pressure sustaining pump station or gravity from a higher pressure zone. With this scenario, pumping stations with the capacities indicated in ***Table 6.3*** would be required at the storage facilities described in Chapter 5 of this report.

Table 6.3: Pump Station Description and Size Requirements for Build-Out Scenario 3

Pump Station Location	Pressure Zone	Districts	Required Pump Size to meet Peak Instantaneous Demand (HP)	Peak Instantaneous Pump Flow Demand (gpm)
Solenté Pond	Zone 1 - 3270	D1-GSW, D2-GSN	360	4,982
Solenté Water Tank	Zone 1 - 3270	D2-GSN, D3-GSE, D5-SH	325	6,130
Razor Ridge Pond	Zone 1 - 3270	D6-CC	225	3,077
Razor Ridge Pond	Zone 8 - 3150	D6-CC, D9-SV	30	862
Kirkland Pond	Zone 2 - 3080	D1-GSW, D3,GSE, D4-DT	450[1]	3,600
Kirkland Pond	Zone 4 - 2920	D4-DT	15	229
Indian Knolls Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	90	2,477
Treasure Valley Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	300	6,926
Sunrise Valley Canal Connection	Zone 7 - 3010	D8-WD, D10-WFE, D11-LV, D13-SF, D14-AIR	80	2,092

Table 6.3: Pump Station Description and Size Requirements for Build-Out Scenario 3

Pump Station Location	Pressure Zone	Districts	Required Pump Size to meet Peak Instantaneous Demand (HP)	Peak Instantaneous Pump Flow Demand (gpm)
Sunrise Valley Canal Connection	Zone 3 - 2910	D9-SV	15	651

[1] High head pump required to fill Solenté storage facilities

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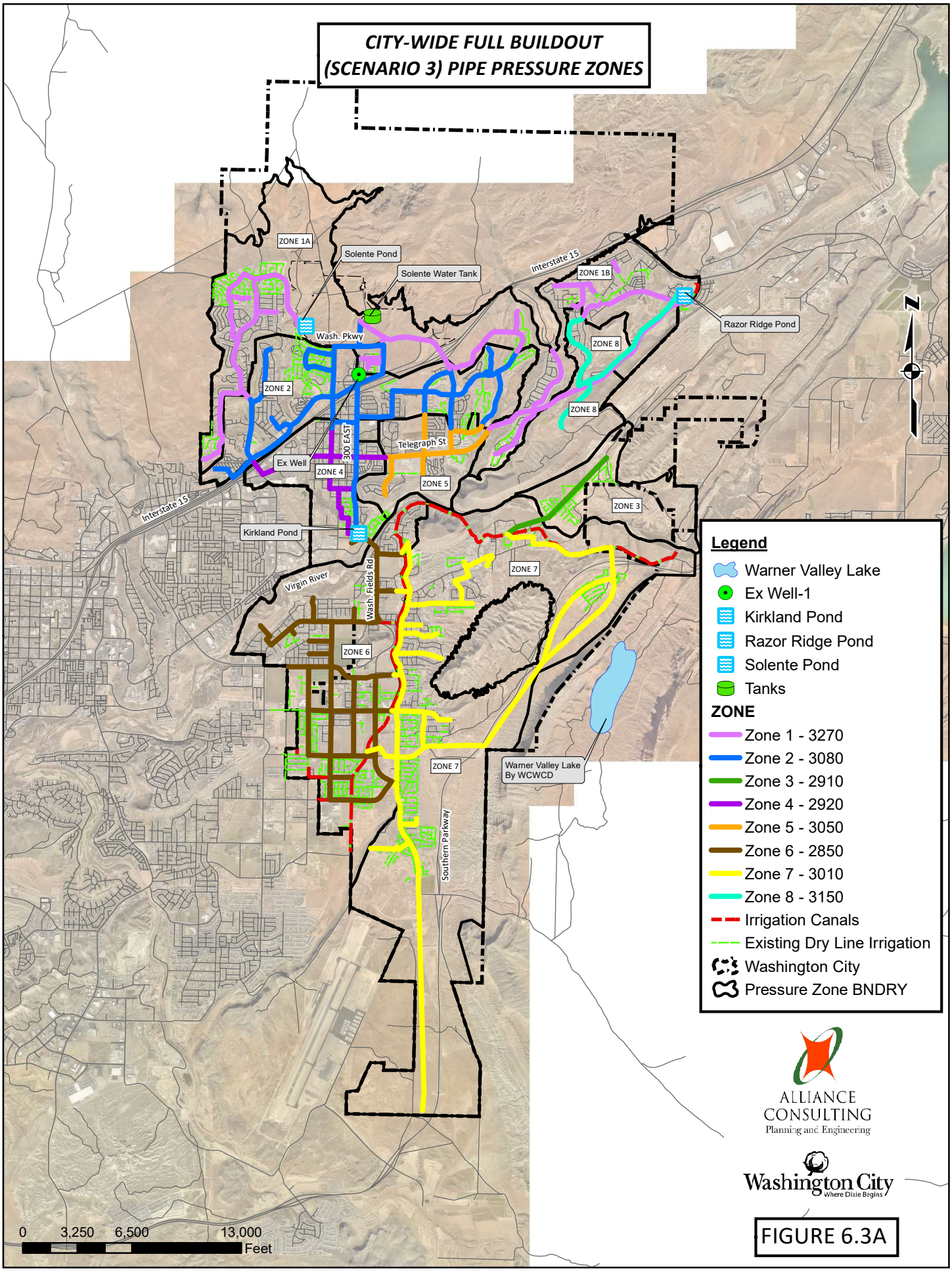
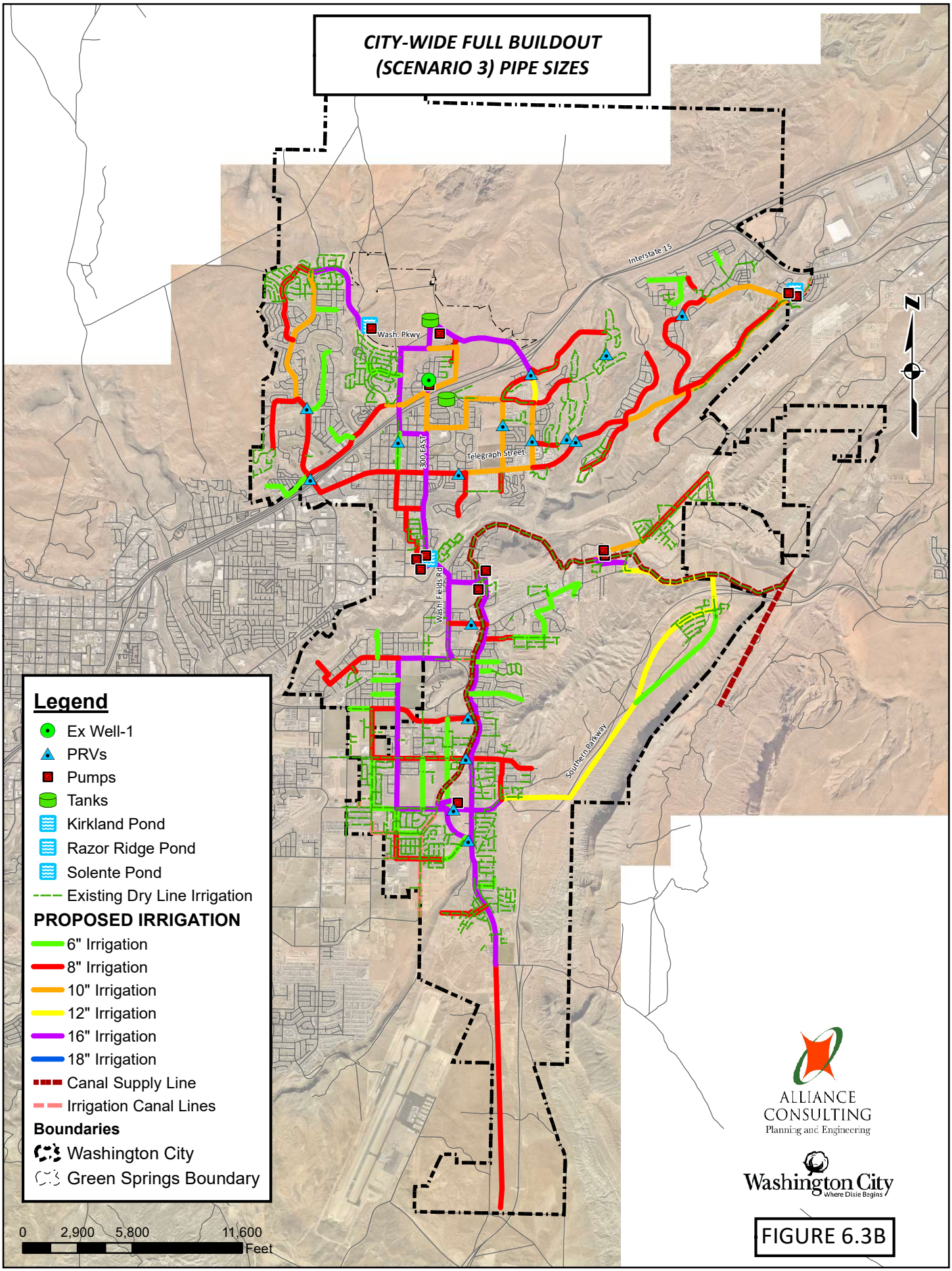
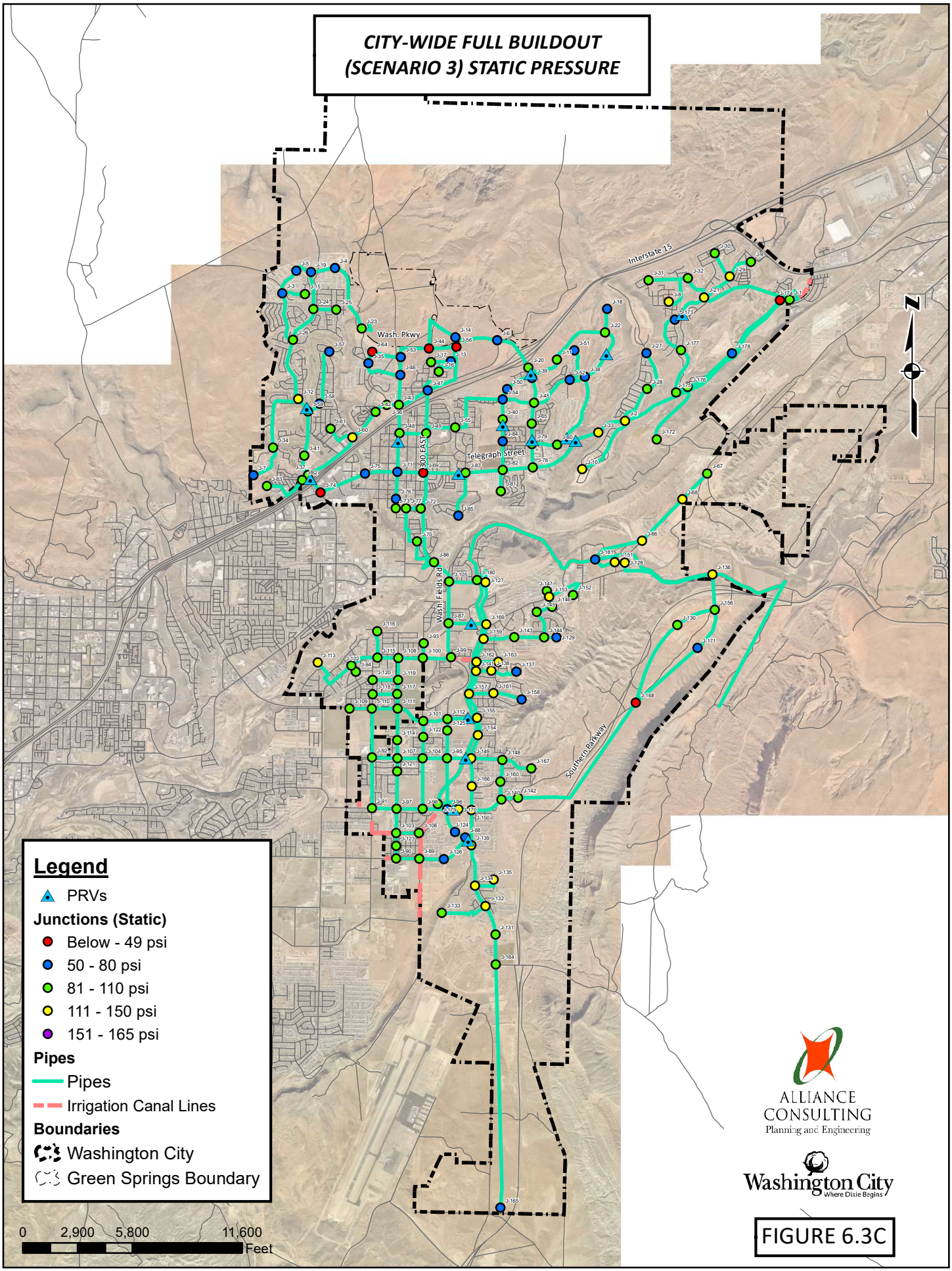
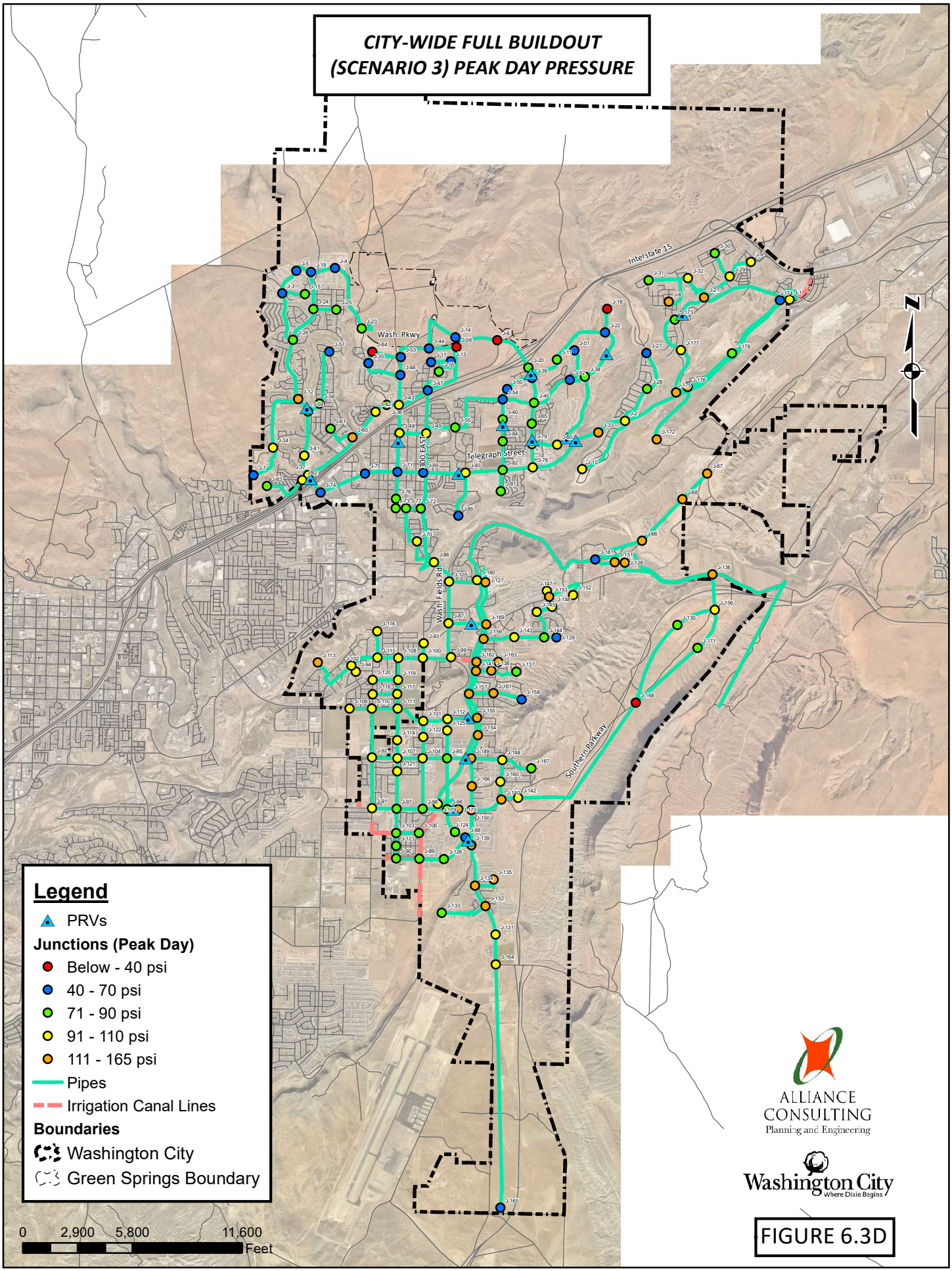

CITY-WIDE FULL BUILDOUT
(SCENARIO 3) PIPE PRESSURE ZONES
ZONE 1A
Solente Pond
Solente Water Tank
Interstate 15
ZONE 1B
Razor Ridge Pond
Wash. Pkwy
ZONE 2
ZONE 8
ZONE 8
300 EAST
Telegraph St
Ex Well
ZONE 4
ZONE 5
ZONE 3
Interstate 15
Kirkland Pond
Virgin River
Wash. Fields Rd
ZONE 7
ZONE 6
ZONE 7
Warner Valley Lake
By WCWCD
Southern Parkway
N
Legend
Warner Valley Lake
Ex Well-1
Kirkland Pond
Razor Ridge Pond
Solente Pond
Tanks
ZONE
Zone 1 - 3270
Zone 2 - 3080
Zone 3 - 2910
Zone 4 - 2920
Zone 5 - 3050
Zone 6 - 2850
Zone 7 - 3010
Zone 8 - 3150
Irrigation Canals
Existing Dry Line Irrigation
Washington City
Pressure Zone BNDRY
0
3,250
6,500
13,000
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.3A


CITY-WIDE FULL BUILDOUT
(SCENARIO 3) PIPE SIZES
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
Ex Well-1
PRVs
Pumps
Tanks
Kirkland Pond
Razor Ridge Pond
Solente Pond
Existing Dry Line Irrigation
PROPOSED IRRIGATION
6" Irrigation
8" Irrigation
10" Irrigation
12" Irrigation
16" Irrigation
18" Irrigation
Canal Supply Line
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE
CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.3B


CITY-WIDE FULL BUILDOUT
(SCENARIO 3) STATIC PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Static)
Below - 49 psi
50 - 80 psi
81 - 110 psi
111 - 150 psi
151 - 165 psi
Pipes
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.3C


CITY-WIDE FULL BUILDOUT
(SCENARIO 3) PEAK DAY PRESSURE
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Day)
Below - 40 psi
40 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins
FIGURE 6.3D

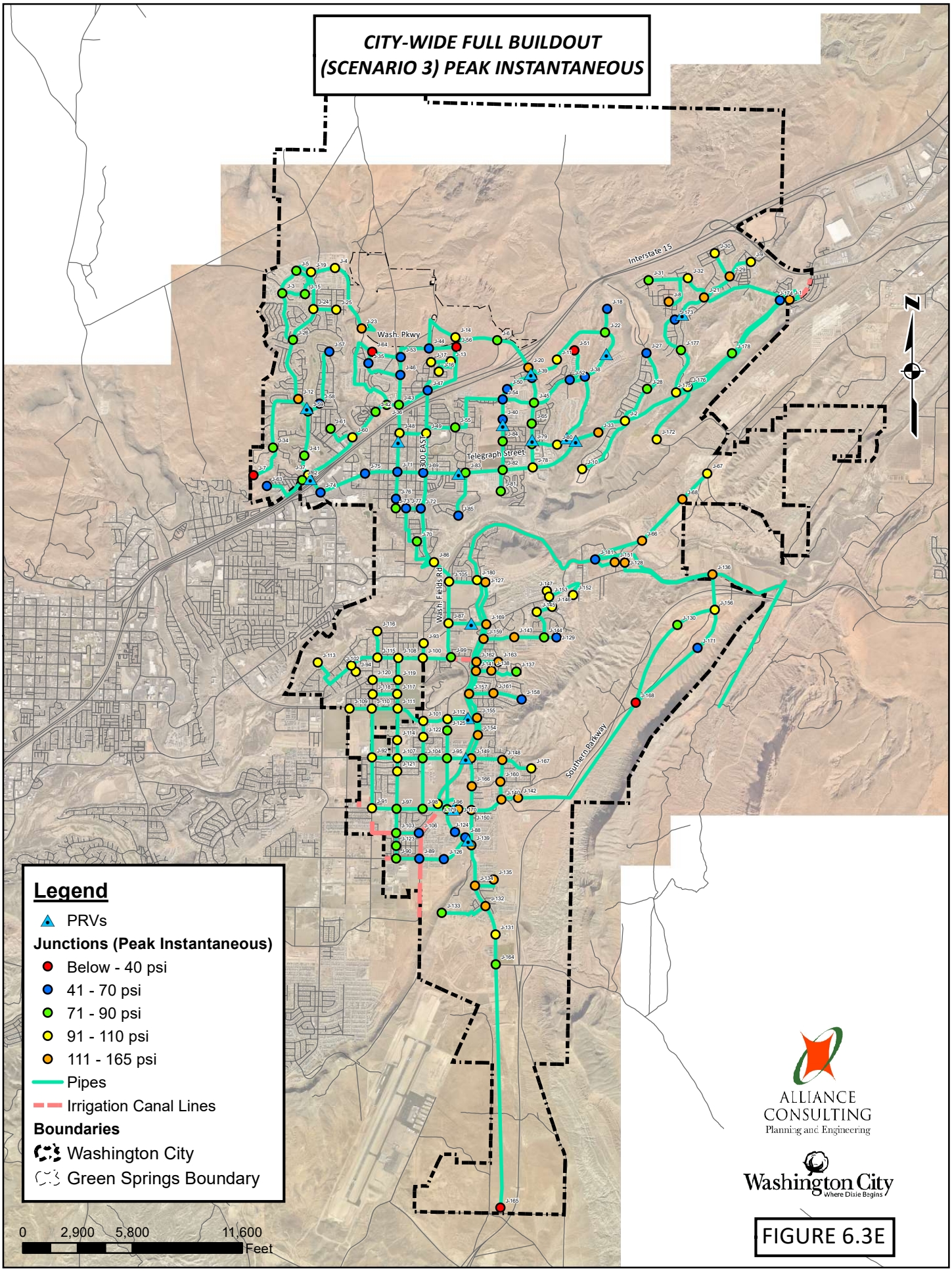

CITY-WIDE FULL BUILDOUT
(SCENARIO 3) PEAK INSTANTANEOUS
Interstate 15
Wash. Pkwy
300 EAST
Telegraph Street
Wash. Fields Rd
Southern Parkway
N
Legend
PRVs
Junctions (Peak Instantaneous)
Below - 40 psi
41 - 70 psi
71 - 90 psi
91 - 110 psi
111 - 165 psi
Pipes
Irrigation Canal Lines
Boundaries
Washington City
Green Springs Boundary
0
2,900
5,800
11,600
Feet
ALLIANCE CONSULTING
Planning and Engineering
Washington City
Where Dixie Begins

FIGURE 6.3E

CHAPTER 7: INITIAL COST ESTIMATES AND SYSTEM IMPROVEMENT PROJECTS

7.1 SYSTEM IMPROVEMENTS CONSTRUCTION COST ESTIMATE OVERVIEW

A system construction cost estimate has been completed by Alliance Consulting. This will aid the City in determining the feasibility of connecting specific areas of the City and help determine how the system improvement projects will need to be phased. Alliance Consulting, through coordination with the City, has developed initial projects that can be completed to begin connection and service of the secondary water irrigation system. The cost estimate for each initial project is provided in ***Table 7.1***. A detailed cost analysis is provided in ***Appendix D***. Although the projects are numbered 1 through 6, they are not necessarily in a particular order and can be phased differently as build-out of the system progresses.

Table 7.1: Irrigation System Improvement Cost Estimate (Cost Analysis Provided in Appendix D)

Phase	Description	Grand Total
Project 1A	300 East to Veterans Park	$ 788,808
Project 1B	Main Street Meter Connections	$ 339,604
Project 2A	Transmission from Well #1 to Brio	$ 2,037,777
Project 2B	Brio Meter Connections	$ 1,012,354
Project 3	Construction of Solenté Tank and Transmission to Tank	$ 8,040,570
Project 4A	Kirkland Pond Expansion, Pump Station, and Transmission to Solenté Tank	$ 10,616,174
Project 4B	Meter Connections for Hobble Creek Subdivision	$ 373,152
Project 5A	Transmission from Kirkland Pond to Pressure Zone #6	$ 5,359,679
Project 5B	Meter Connection for Existing Dry Distribution Infrastructure Washington Fields	$ 1,355,726
Project 6	Quail Creek Transmission Improvements to Razor Ridge & Razor Ridge Pump Station	$ 5,819,633

It should be noted that a full build-out scenario is **VERY HYPOTHETICAL** as the system would likely need to be constructed over multiple decades and assumptions are likely to change; however, the initial project estimates should provide the City with primary focus areas and aid them in determining project areas that are most feasible. Currently, based on the analysis in this report, connection of every residence in the City does not appear to be feasible in the near future and primary focus will be placed on connecting existing distribution infrastructure and expanding with future development. Full build-out of the irrigation system is recommended to be constructed with several projects over many years.

Figure 7.1 provides an overall map of the required city-wide system improvements. Ultimately, build-out of the system will include the construction or expansion of multiple irrigation storage ponds, construction of a 1-million-gallon water tank, seven pumping stations, which are generally constructed in conjunction with storage facilities, 16 pressure reducing valve stations, over 750,000 linear feet of transmission and distribution pipe, and all appurtenances associated with this construction (i.e., asphalt replacement, horizontal borings, and service connections).

7.2 INITIAL SYSTEM IMPROVEMENT PROJECTS

Alliance Consulting, through coordination with the City, has identified initial projects that can feasibly be completed to bring the secondary water irrigation system online. These projects are described in the following subsections. A cost analysis for each was provided in Table 7.1 with a detailed analysis provided in Appendix D. These projects are numbered for reporting purposes, but the order in which they are constructed may change.

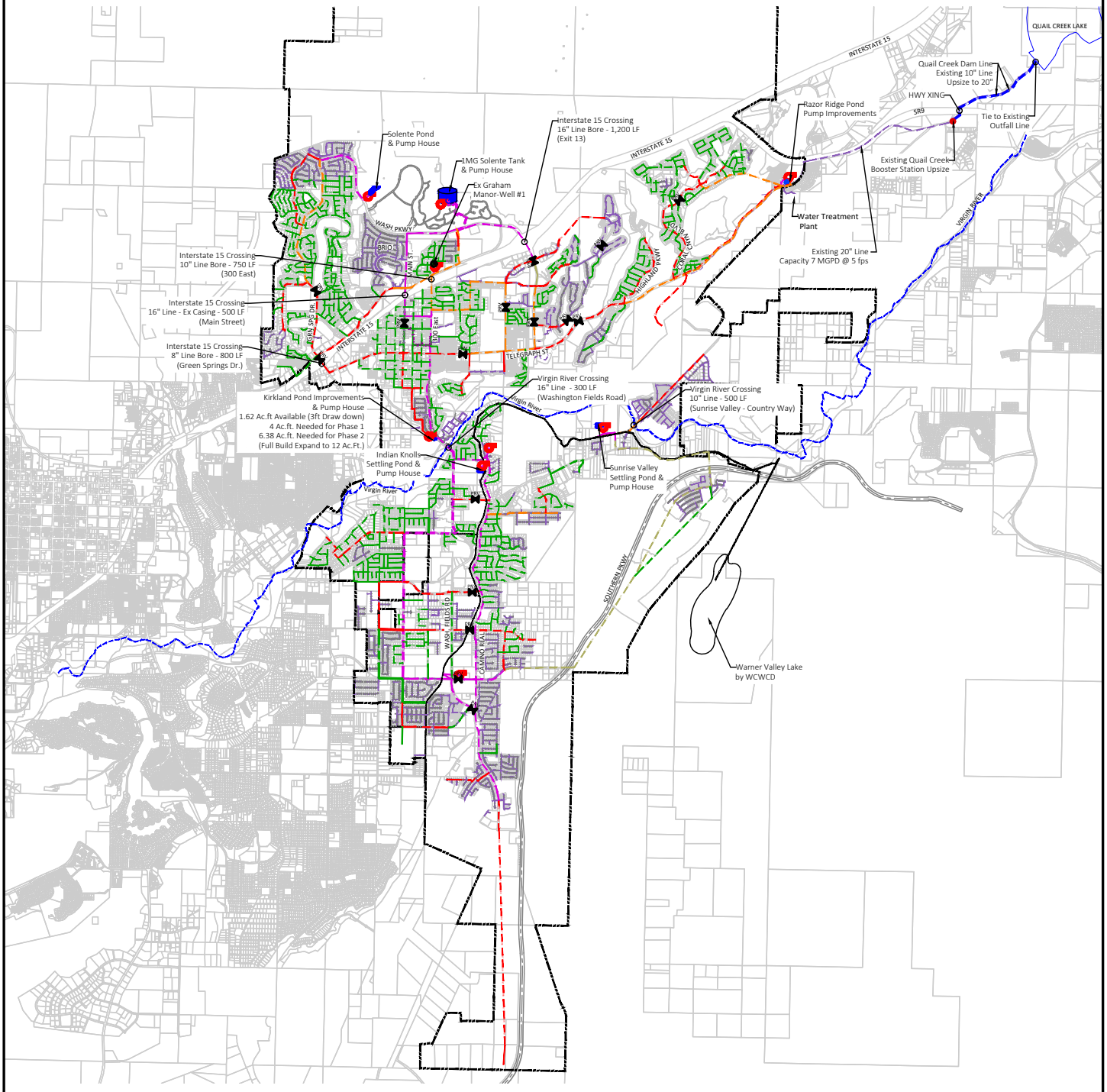
Project 1: Expansion of Washington City Community Center System

The first project will include expansion of the separate system that is already servicing the Washington City Community Center complex. The system is serviced by a water storage tank located at the Washington City Parks Department yard. As shown in ***Figure 7.2***, the expansion would include connecting to the existing irrigation line at the Community Center and extending a 6-inch line along 300 East, 100 North, 100 East, and 200 North, totaling 4,000 linear feet. The new line would connect to the existing 6-inch water line in Main Street providing service to 45 residential units. Additionally, the new line would provide service to Veterans Park and 48 additional residential units along the streets in which it will be installed. Pumping improvements will be necessary to provide adequate pressure for the system. Based on the analysis performed and described in the previous sections of this report, the total expanded system demand, including the Community Center, would be approximately 155 gpm for peak day, and 464 gpm for peak instantaneous. Demands were determined based on the peak day demand of 650 gpd/ERU and recorded water use provided by the City for Veterans Park and the Community Center. A minimum pump size of 7 horsepower would be required based on initial analysis.

Project 2: Connection of Irrigation Well #1 to Brio Distribution System

Project 2 will include developing Irrigation Well #1 and connecting it to the Brio subdivision distribution dry lines. As shown in ***Figure 7.3***, This will include installing 2,600 linear feet of 10-inch transmission line along Buena Vista Boulevard and 2,550 linear feet of 16-inch transmission line along Main Street. These line sizes were determined as part of the overall analysis described in previous sections of this report. The project would connect 627 residential units within Brio. Based on initial analysis an approximately 60-horsepower pump would be required at Well #1 to provide peak instantaneous pressure to the service area. The pump station would also need to have the temporary capabilities of sustaining system pressures during low demand. The pumping estimates are based on a pumping ground water level 100 feet below the ground surface. To confirm the pumping requirements and whether the well will have sufficient capacity, additional analysis will be necessary for the well site. The well may need to be redrilled to obtain the required capacity.

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- FULL BUILD OUT



LEGEND

- NEW 18" IRR LINE
- NEW 16" IRR LINE
- NEW 12" IRR LINE
- NEW 10" IRR LINE
- NEW 8" IRR LINE
- NEW 6" IRR LINE
- EXISTING DRY LINE IRR

- EXISTING WELL SITE
- NEW PUMP LOCATION
- NEW TANK LOCATION
- POND
- PRV NEW PRV LOCATIONS

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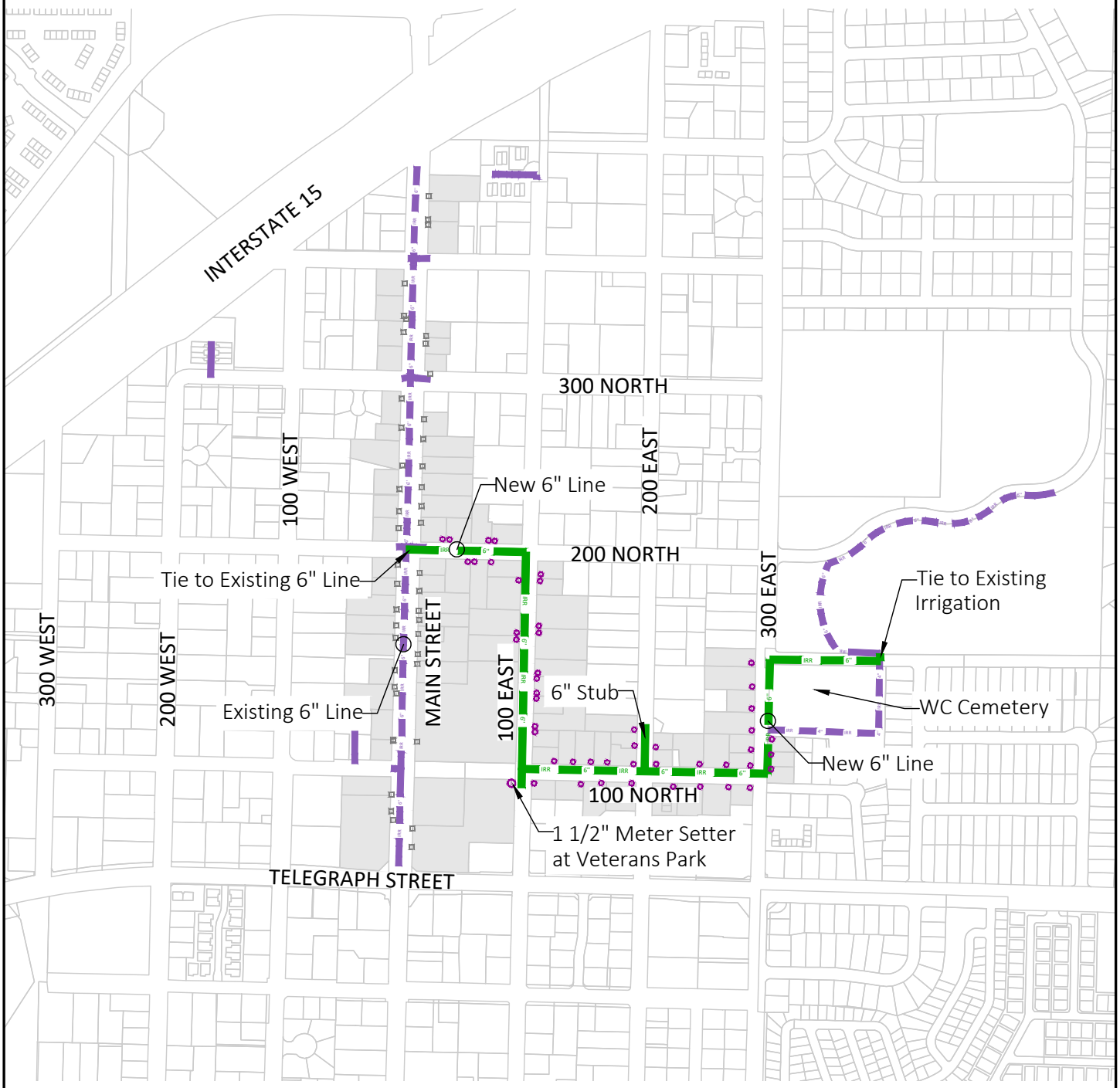
SCALE 1"=8000'

FIGURE 7.1

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO. 1



LEGEND

- NEW 6" IRR LINE - 4,000 LF
- EXISTING IRR LINE
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS

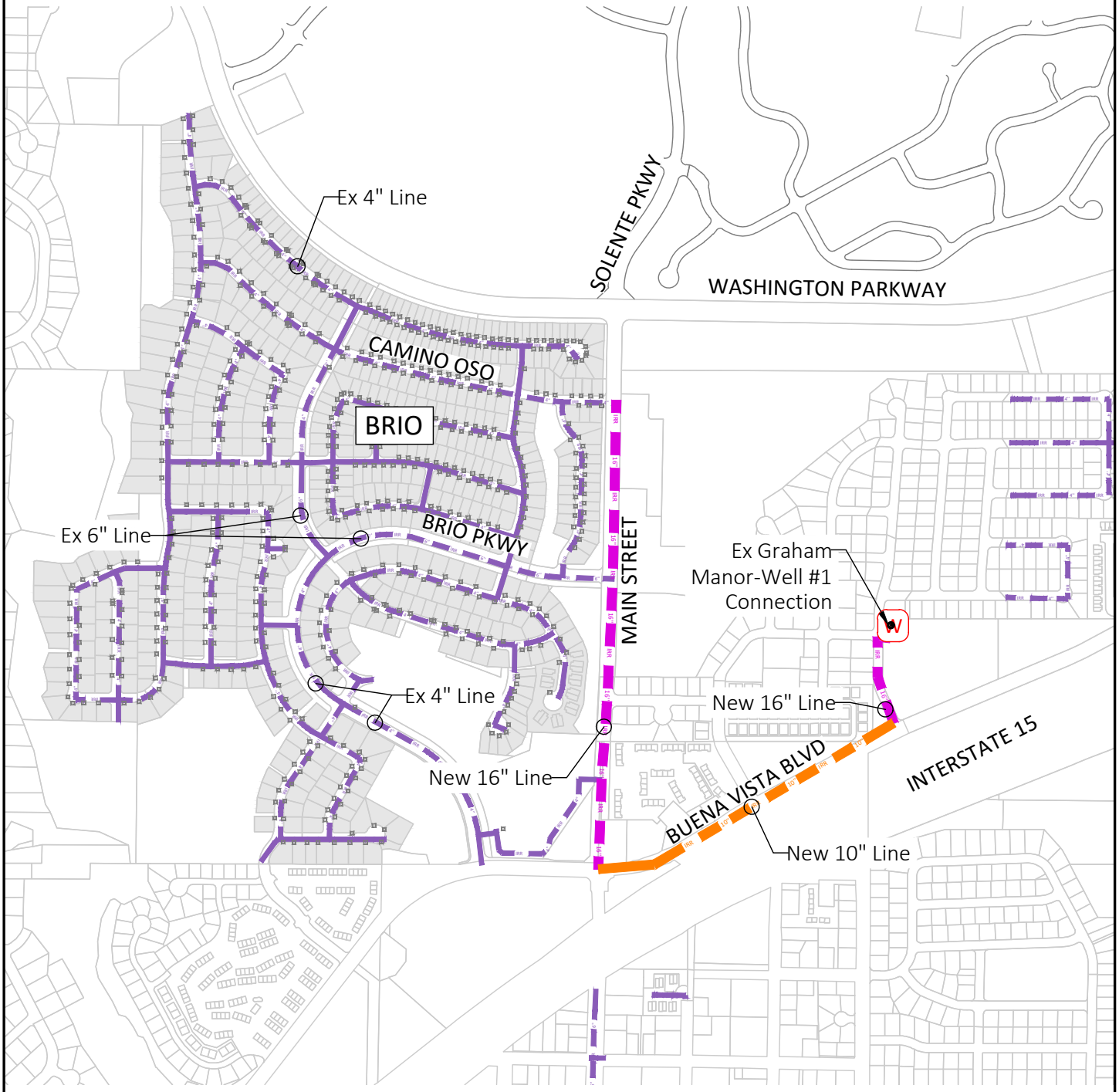
ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=600'

FIGURE 7.2

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.2



LEGEND

- NEW 16" IRR LINE - 3,150 LF
- NEW 10" IRR LINE - 2,000 LF
- EXISTING 6" IRR LINE
- EXISTING 4" IRR LINE
- W — EXISTING WELL SITE
- EXISTING IRRIGATION METER SERVICE BOX
- IRRIGATED PARCELS

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Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=800'

FIGURE 7.3

Project 3: Construction of Solenté Tank and Connecting Water Main

Project 3 will include construction of the 1-MG water tank at Solenté and extending the 16-inch main from Main Street where Project 2 ends, along Washington Parkway, and to the tank site. The total water transmission length is approximately 9,500 linear feet. For additional information, refer to ***Figure 7.4***. The tank site will also include a pumping station to service future connection to Pressure Zone 1. The pumping requirements for the pump station were described in Chapter 6 of this report. With completion of the tank connection, it is anticipated that the Well #1 pump described in Project 2 would then be able to fill the tank during off-peak hours. When no demand is on the system, it is anticipated that the pump would be able to fill the tank at a rate of 1,000 gpm. Further analysis of the capacity of Well #1 will be required, but it is anticipated that in addition to pump improvements, the well would need to be redrilled to obtain the additional capacity.

Project 4: Expansion of Kirkland Pond and Connection to Main Street System

Project 4 will include the expansion of Kirkland Pond to a capacity of 4 acre-feet, constructing a pump station with the pumping requirements per Chapter 6 of this report. The pump station will have multiple pressure zones providing service to the Brio system and filling of the Solenté Tank and a separate pressure zone servicing the adjacent dry distribution lines as part of the Hobble Creek subdivision. For additional information, refer to ***Figure 7.5***. The connection to the adjacent Hobble Creek subdivision would provide service to 114 residential units. The total 16-inch water main extending along 300 East from Kirkland Pond to the Buena Vista/Main Street System and Solenté Tank is 10,750 linear feet.

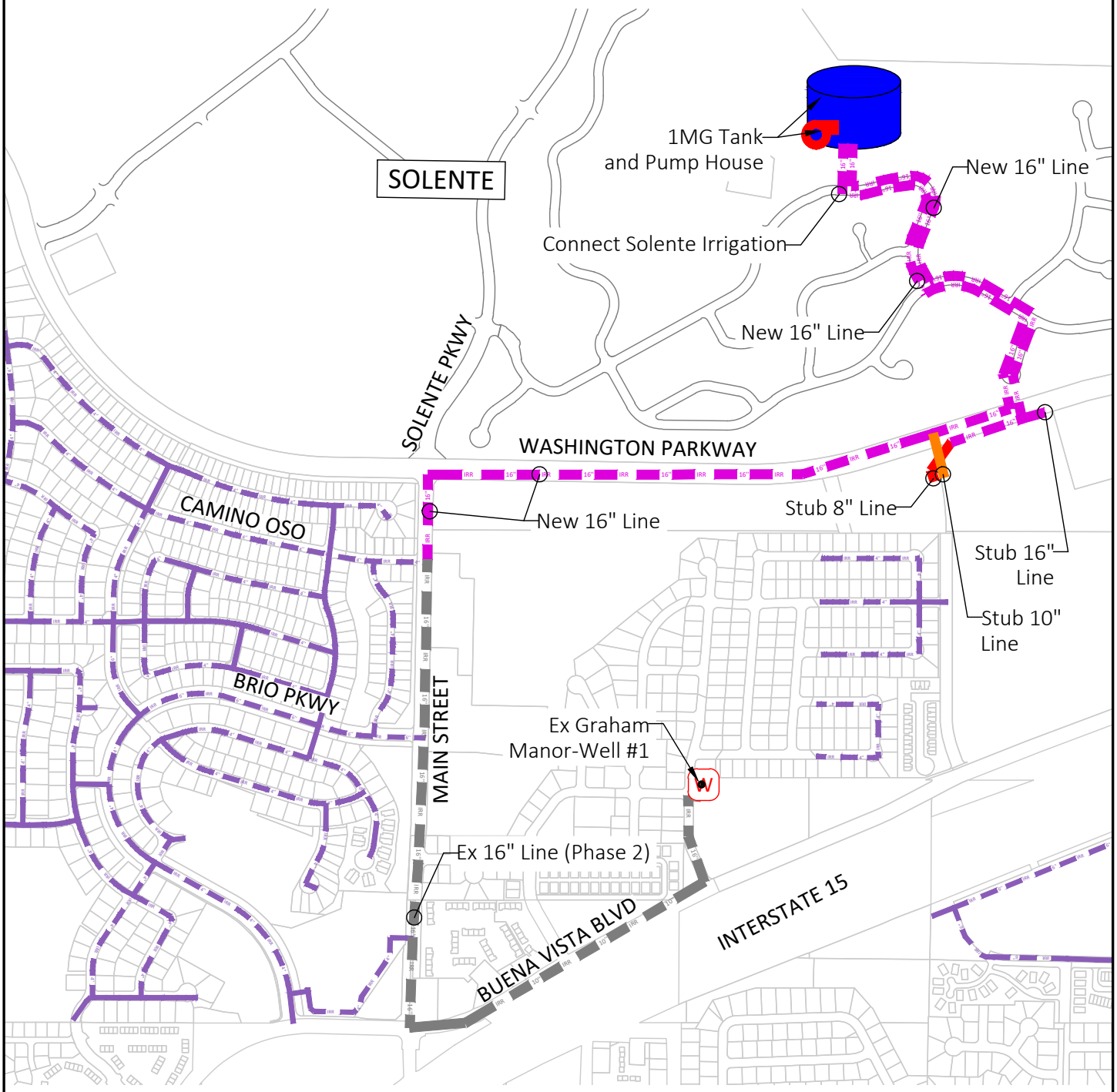
Project 5: Pressure Zone 6 Pump and Transmission from Kirkland Pond

Project 5 will include additional pumping capabilities at Kirkland Pond to service Pressure Zone 6. The pumping requirements are described in Chapter 6 of this report. This project would connect dry distribution lines for 809 residential units at the south end of Washington Fields as shown in ***Figure 7.6***. The project will include installation of 15,500 linear feet 16-inch irrigation main along Washington Fields Road, 2000 South, and 20 East in addition to 2,650 linear feet of 6-inch irrigation main.

Project 6: Quail Creek Transmission Improvements and Razor Ridge Pump Station

Project 6 will include upsizing the Quail Creek water transmission and booster station and construction of the pump station at Razor Ridge Pond to provide pressure to Pressure Zones 1B and 8. Quail Creek reservoir would serve as the primary storage while the Razor Ridge pump station will provide pressure to the two pressure zones. Pumping requirements at Razor Ridge are described in Chapter 6 of this report. Project improvements are shown in ***Figure 7.7***. The Quail Creek transmission will include upsizing 6,025 linear feet of 10-inch water main to 20 inches.

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.3



LEGEND

- NEW 16" IRR LINE - 9,500 LF
- NEW 10" IRR LINE - 250 LF
- NEW 8" IRR LINE - 250 LF
- EX 16" IRR LINE (PHASE 2)
- EX 8" IRR LINE (PHASE 2)
- EXISTING 4" IRR LINE
- EXISTING WELL SITE
- NEW PUMP LOCATION
- NEW TANK LOCATION

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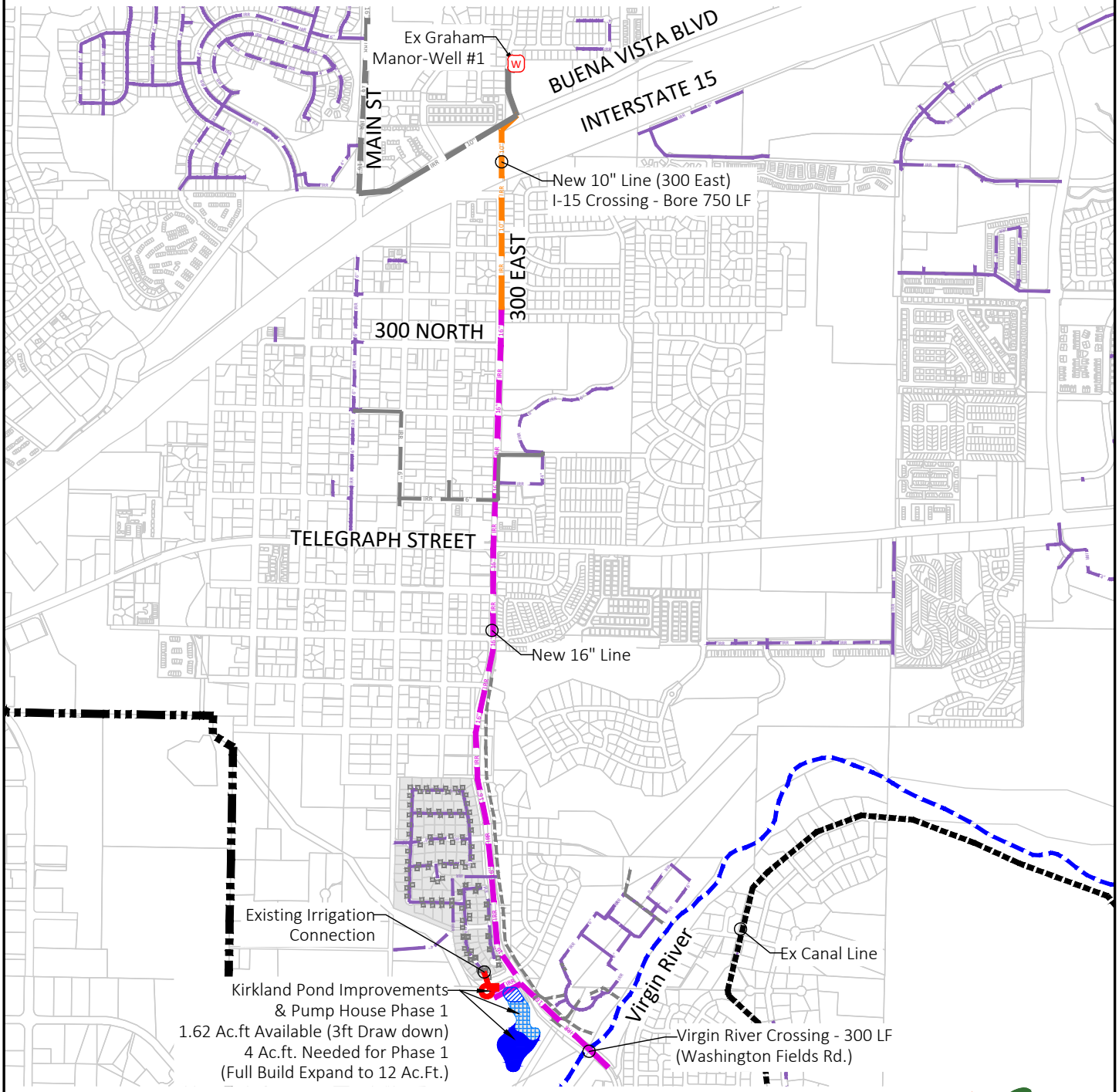
Washington City
Where Dixie Begins

SCALE 1"=800'

FIGURE 7.4

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.4



LEGEND

- NEW 16" IRR LINE - 8,750 LF
- NEW 10" IRR LINE - 2,050 LF
- NEW 8" IRR LINE - 250 LF
- EX IRR LINE (PHASE 1-3)
- EXISTING IRR LINE
- EXISTING CANAL LINE
- EXISTING WELL SITE
- NEW PUMP LOCATION
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS
- POND - EXISTING
- POND - PHASED EXPANSION
- POND - FULL BUILD OUT

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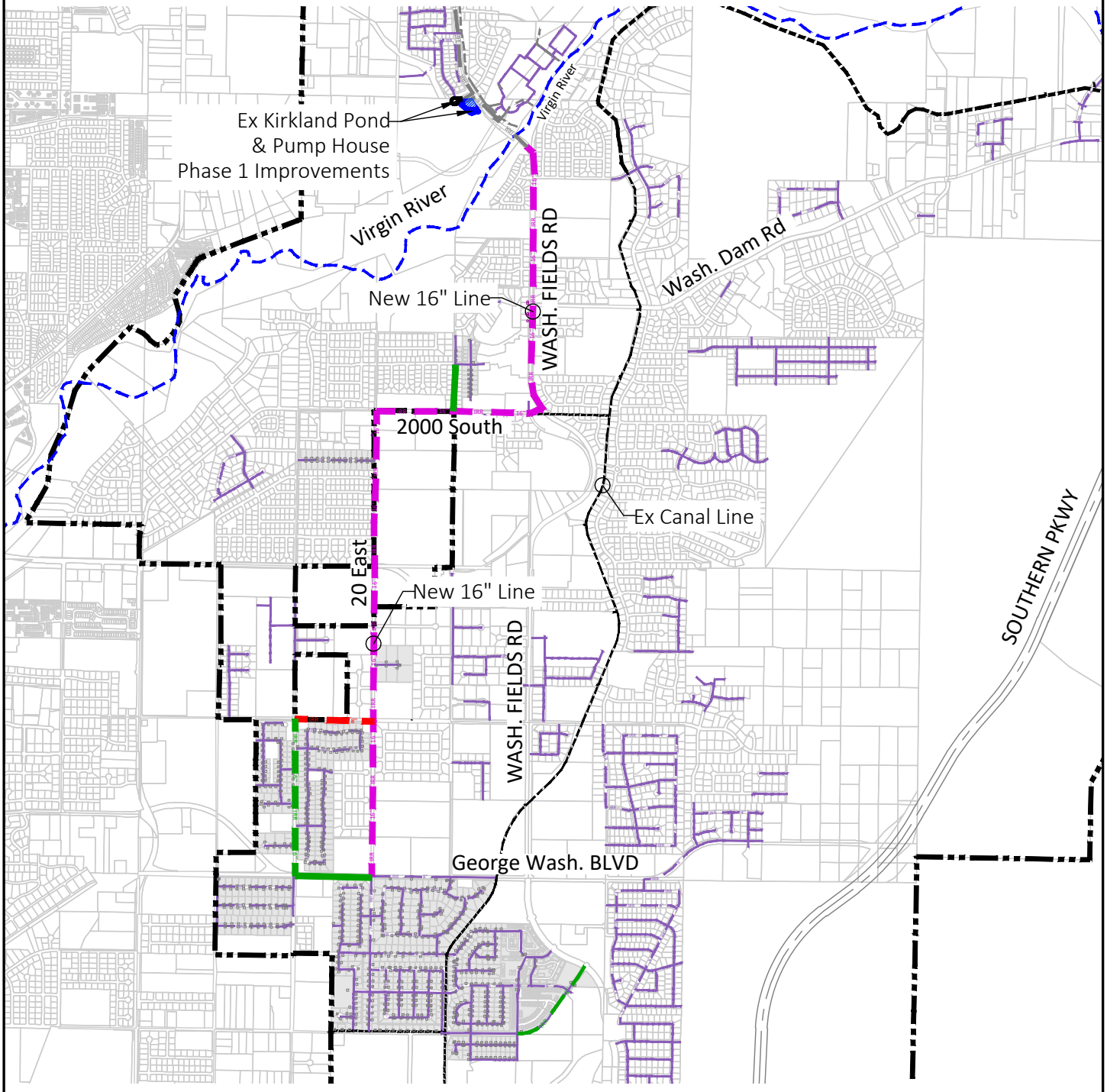
Washington City
Where Dixie Begins

SCALE 1"=1500'

FIGURE 7.5

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.5



LEGEND

- NEW 16" IRR LINE - 15,500 LF
- NEW 8" IRR LINE - 1,350 LF
- NEW 6" IRR LINE - 4,800 LF
- EX 16" IRR LINE (PHASE 4)
- EXISTING IRR LINE
- EXISTING CANAL LINE
- PUMP LOCATION
- POND
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS

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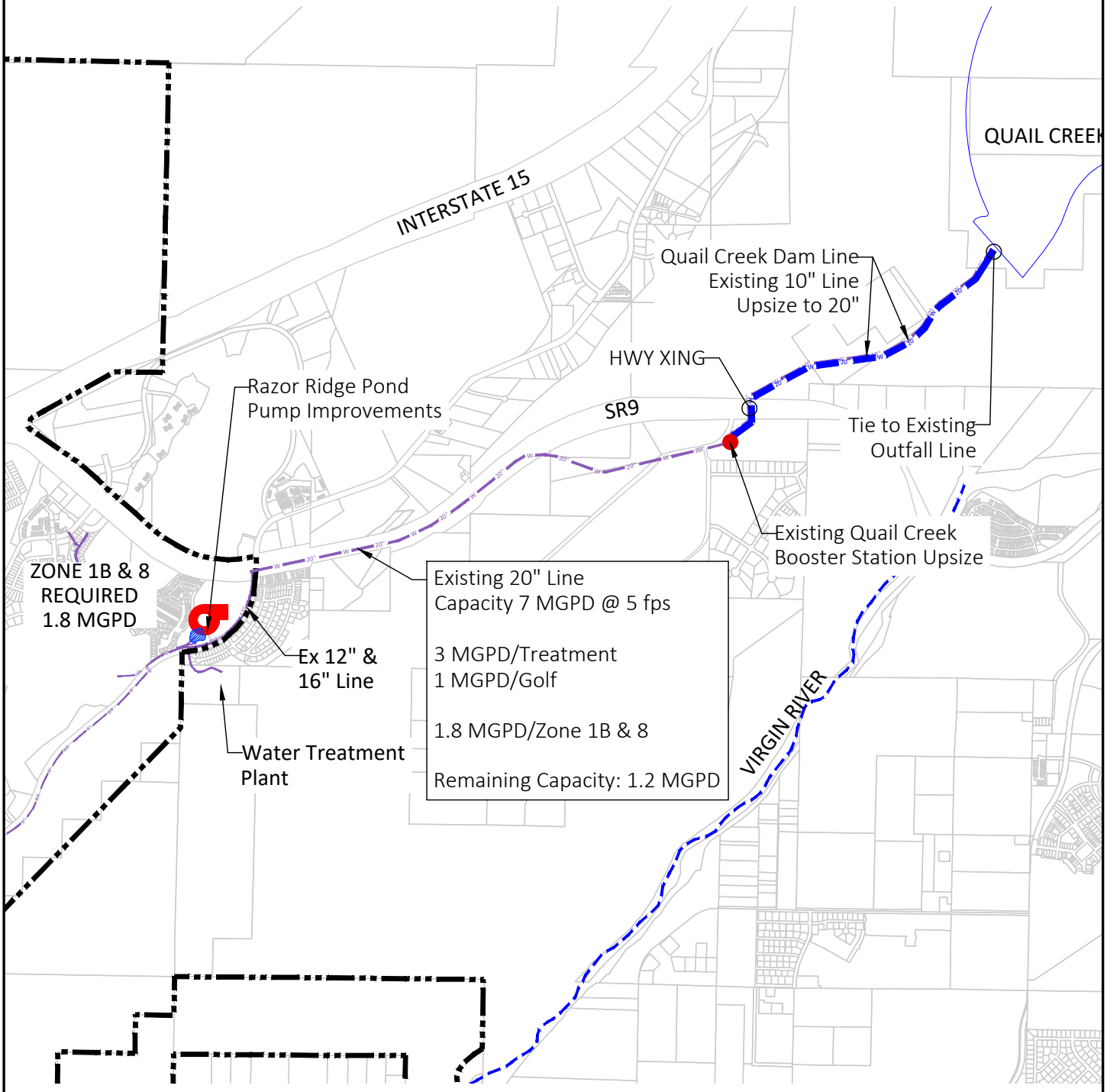
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=2500'

FIGURE 7.6

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.6



LEGEND

- NEW 20" WATER LINE
- EXISTING WATER LINE
- EXISTING IRR LINE
- PUMP LOCATION
- POND

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=2500'

FIGURE 7.7

REFERENCES

1. Washington City. *"Ordinance – Secondary Irrigation Water Distribution for New Development".* 2006

2. Sunrise Engineering. *"Washington City Culinary Water Master Plan Update, User Rate Analysis, Impact Fee Analysis, and Impact Fee Facilities Plan".* January 2024

3. Utah State University. *"Evapotranspiration and Precipitation Data for Calculating Irrigation Water Requirements in Utah."* 2023.

4. Kjelgren, Roger. Utah State University Department of Plans, Soils, and Climate. *"Simplified Landscape Irrigation Demand Estimation SLIDE Rules for Landscape Water Budgets and Allocations."* 2015.

5. Utah State Code R309-510 "*Facility Design and Operation: Minimum Sizing Requirements*". July 15, 2015

APPENDIX A: WATER RIGHT SUMMARY AND ANALYSIS

Washington City Corporation
Water Rights Inventory

Other Surface Water Springs									
Irrigation Districts 1 & 2									
Water Right No.	**Cert No.**	**Application No.**	**Beneficial Use**	**CFS**	**GPM (Paper)**	**Annual Diversion Ac-Ft**	**Irrigated Area Acres**	**Point of Diversion**	**Comments**
81-207	4991	A17909	0.0156 cfs municipal	0.0156	7.00	11.2941	--	Price Spring	Certificated 5/17/1955
81-222	8295	A19442	0.00668 cfs municipal	0.00668	3.00	4.8429	--	Prisbrey Spring	
		C/A: a-5549							Certificated 1/30/1969
81-266	8294	A22368	0.0141 cfs municipal	0.0141	6.33	10.2081	--	Mascrew, Iron Bush & Cottonwood Springs	
		C/A: a-5548							Certificated 1/30/1969
81-4076		Virgin River Decree Award No. 174	0.76 cfs 41.6 acres - irrigation	0.76	341.13	--	41.6	Westover Spring, Sproul Spring	Not included in total annual diversion since it is not currently a municipal right
81-4077		Virgin River Decree Award No. 174A(a)	0.07 cfs municipal	0.07	31.42	50.6786	--	Westover Spring, Sproul Spring	
			Total	**0.87**	**389**	**77.0237**			

Irrigation Districts 3, 4, & 5									
Water Right No.	**Cert No.**	**Application No.**	**Beneficial Use**	**CFS**	**GPM (Paper)**	**Annual Diversion Ac-Ft**	**Irrigated Area Acres**	**Point of Diversion**	**Comments**
81-4078		Virgin River Decree Award No. 174A(b)	0.09 cfs municipal	0.09	40.40	65.1582	--	Adair Spring, Warm Spring	
81-4079		Virgin River Decree Award No. 175	2.7 cfs 149.4 acres - irrigation	2.7	1211.92	--	149.4	Adair Spring, Warm Spring, unnamed spring	Not included in total annual diversion since it is not currently a municipal right. Proof due 7/31/32
		C/A: a48471							
			Total	**2.79**	**1252.32**	**65.1582**			

Washington City Corporation
Water Rights Inventory

Mill Creek-Park and other Irrigation (Tanner Ditch)									
Irrigation Districts 6									
Water Right No.	**Cert No.**	**Application No.**	**Beneficial Use**	**CFS**	**GPM**	**Annual Diversion Ac-Ft**	**Irrigated Area Acres**	**Point of Diversion**	**Comments**
81-710		Diligence Claim #894; part of Award 176	0.208 cfs	0.208	93.36	--	71.83	Mill Creek	Not included in total annual diversion since it is not currently a municipal right. Filed 3/24/1961
81-1150		Part of Virgin River Decree Award No. 176	0.65 cfs 35.5 acres - irrigation	0.65	291.76	--	35.5		Not included in total annual diversion since it is not currently a municipal right.
		C/A: a3592						Spring Area	changed point of diversion to spring area
81-1151		Virgin River Decree Award No. 176-A	0.03 cfs municipal	0.03	13.47	21.72			
		C/A: a3593						Spring Area	changed point of diversion to spring area
			Total	**0.888**	**399**	**21.72**			

Red text is calculated based on GPM into AF/Irr Year 365 Days

Mill Creek Water Users Assoc., Sandberg Pond, Kirkland Pond, Sullivan Park, etc.									
Water Right No.	**Cert No.**	**Application No.**	**Beneficial Use**	**CFS**	**GPM (Paper)**	**Annual Diversion Ac-Ft**	**Irrigated Area Acres**	**Point of Diversion**	**Comments**
81-131	2280	A11698	0.09 cfs 11.25 acres- irrigation	0.5	224.43	--	11.25	Mill Creek	Not included in total annual diversion since it is not currently a municipal right.
81-713		Diligence Claim #939	2 cfs (1/3 to City) 42.1 acres - irrigation 30 ELU Stock Water	0.6667	299.24	--	42.1	Caldwell Wash/Mill Creek	Not included in total annual diversion since it is not currently a municipal right. Washington City owns one third (1/3) of the total 2 cfs
--		Mill Creek Water Users Assoc. Shares (42.5 = 330 gpm)	--	0.74	330.00	--	--	Mill Creek	Not included in total annual diversion since it is not currently a municipal right.
			Total	**1.90**	**853.67**	**0**			

Washington City Corporation
Water Rights Inventory

Districts	GPM (Paper)	GPM (Wet)	Notes
District 1	155.6	60.8	District 1 & 2 Total = 388.9 gpm Paper/152 gpm Wet
District 2	233.4	91.2	
District 3	450.8	125	District 3, 4 & 5 Total = 1252.32 fpm Paper/ 348 gpm Wet
District 4	450.8	125	
District 5	350.6	98	
District 6	398.5	448.8	
Total	**2039.7**	**948.8**	

July Irrigation Use of 20,240 gal/month /31 day= 652.90 gpd /1440 = 0.45 gpm

Districts	GPM (Paper)/ 0.45 gpm	GPM (Wet)/ 0.45 gpm	Notes
Districts 1-6	4533	2108	Units to Be Irrigated

APPENDIX B: IRRIGATION DEMANDS AND LOADING ANALYSIS

Washington City Existing Irrigation Meter Connections

District	District Name	Neighborhoods OR Park	Type	Total Zone Existing Meters	Neighborhood Meter Percentage	Number of ERUs	Commercial Acres	Commercial Acres Percentage	Junction Node
1	Green Springs West (GSW)	Green Springs NW	Low Density	-	81%	382	-	-	J3,J4,J5
		Westgate Hills	Low Density	-	19%	90	-	-	J7
		Green Springs/Buena Vista	Com/Bus/Ind*	-	-	-	11.8	100%	J37,J41
			Total	**472**	100%	**472**	**11.8**	**100%**	**-**
2	Green Springs North (GSN)	N/A	-	-	-	-	-	-	-
3	Green Springs East (GSE)	Brio	Mixed Use PCD	-	90%	638	-	-	J35,J36,J46,J64
		Perry Landing	Medium Density	-	10%	71	-	-	J13,J16,J17
			Total	**709**	**100%**	**709**	**-**	-	**-**
4	Downtown (DT)	Main Street	Medium Density	-	42%	72	-	-	J48,J71
		Hobble Creek	Medium Density	-	58%	100	-	-	J70,J72
			Total	**172**	**100%**	**172**	**-**	**-**	**-**
5	Sienna Hills (SH)	Commerce Hospitality	Com/Bus/Ind*	-	-	-	20.4	78%	J39
		NE of Ridgepointe	Mixed Use PCD	-	12%	35	-		J78
		Paseos, Arroyo & Escondido at Sienna Hills	Mixed Use PCD	-	88%	256	-		J18,J38,J51,J80
		Grapevine Crossing	Com/Bus/Ind*	-	-	-	5.8	22%	J11
			Total	**291**	**100%**	**291**	**26.2**	**100%**	**-**
6	Coral Canyon (CC)	Estates at Burke Springs	Low Density	-	18%	33			J8
		Eighth at Coral Canyon	Com/Bus/Ind*	-	-	-	14.7	100%	J9
		Views at Coral Canyon	Low Density	-	82%	151	-	-	J10
			Total	**184**	**100%**	**184**	**14.7**	**100%**	**-**
7	Washington Fields West (WFW)	Heritage Cove	Low Density	-	5%	21	-	-	J87
		Heritage Place	Low Density	-	6%	26	-	-	J93
		Whitworth Estate	Low Density	-	6%	26	-	-	J119
		Red Field Estate	Low Density	-	11%	47	-	-	J94
		Carriage Lane	Low Density	-	16%	68	-	-	J95,J101
		Oak Grove Meadows	Low Density	-	16%	68	-	-	J109,J110
		Magnolia Grove Estates	Very Low Density	-	5%	21	-	-	J114
		Brookhaven Fields	Low Density	-	31%	132	-	-	J91,J92
		Stamsund Estates	Very Low Density	-	4%	17	-	-	J104
			Total	**427**	**100%**	**427**	-	-	**-**
8	Washington Dam Road (WD)	Indian Knolls	Very Low Density	-	69%	89	-	-	J127
		O K Corrals	Com/Bus/Ind*	-	-	-	37.4	83%	J147
		Frontier	Very Low Density	-	31%	40	-	-	J128
		Nuteam	Com/Bus/Ind*	-	-	-	7.7	17%	J152
			Total	**129**	**100%**	**129**	**45.2**	100%	**-**
9	Sunrise Valley (SV)	Sunrise Valley	Mixed Use PCD	-	100%	118	-	-	J66,J68
		Sunrise Valley Industrial	Com/Bus/Ind*	-	-	-	37.4	100%	J68
			Total	**118**	**100%**	**118**	**37.4**	100%	**-**
10	Washington Fields East (WFE)	Shooting Star	Low Density	-	19%	107	-	-	J129,J143
		Heights at Washington Bench	Low Density	-	11%	62	-	-	J137
		Chaparral Ridge	Low Density	-	8%	45	-	-	J154
		Majestic Fields	Low Density	-	14%	79	-	-	J95
		Majestic Sunset	Very Low Density	-	6%	34	-	-	J148
		Rusted Hills	Very Low Density	-	42%	236	-	-	J140,J142,J150,J160,J166
			Total	**561**	**100%**	**561**	-	-	**-**

District	District Name	Neighborhoods OR Park	Type	Total Zone Existing Meters	Neighborhood Meter Percentage	Number of ERUs	Commercial Acres	Commercial Acres Percentage	Junction Node
11	Long Valley	Labyrinth Point at Long Valley	Mixed Use PCD	-	100%	768	-	-	J130,J156
			Total	**274**	**100%**	**768**	-	-	**-**
12	Washington Fields South (WFS)	Cobblestone	Low Density	-	12%	67	-	-	J91
		Treasure Valley	Low Density	-	88%	495	-	-	J89,J90,J97,J98,J103,J106,J124,J126
			Total	**562**	**100%**	**562**	**-**	-	**-**
13	Stucki Farms (SF)	Warner Gateway	Medium Density		80%	550	-	-	J132,J134,J135,J139,J150
		Homesteads at Stucki Farms	Low Density		20%	138	-	-	J131,J132,J133
			Total	**688**	**100%**	**688**	**-**	-	**-**
14	Airport*	N/A	-	-	-	-	-	-	-

WASHINGTON CITY
UNDEVELOPED AREA ZONING
(EXHIBIT A)

1 GSW
2 GSN
3 GSE
4 DT
5 SH
6 CC
7 WFW
8 WD
9 SV
10 WFE
11 LV
12 WFS
13 SF
14 AIR

1A 1B 1C
2A
3A 3B 3C 3D 3E 3F 3G 3H 3I 3J 3K 3L
4A 4B 4C 4D 4E 4F 4G 4H 4I 4J 4K 4L
5A 5B 5C 5D 5E 5F 5G 5H 5I
6A 6B 6C 6D 6E
7A 7B 7C 7D 7E 7F 7G 7H 7I 7J 7K 7L 7M 7N 7O 7P 7Q 7R 7S
8A 8B 8C 8D 8E 8F 8G 8H
9A 9B 9C 9D
10A 10B 10C 10D 10E 10F 10G 10H 10I 10J 10K
11A
12A 12B 12C 12D 12E 12F
13A 13B 13C 13D 13E 13F
14A 14B 14C

I-15
SR-9
TELEGRAPH
GREEN SPRINGS
VIRGIN RIVER
WASH. DAM RD
WASH. FIELDS RD
3000 E
GEORGE WASH. BLVD
SOUTHERN PKWY
FUTURE WARNER VALLEY LAKE

LEGEND

- WASHINGTON CITY BOUNDARY
- 4 DISTRICT & BOUNDARY
- VERY LOW DENSITY
- LOW DENSITY
- MEDIUM DENSITY
- MEDIUM HIGH DENSITY
- MIXED USE PCD
- PUD
- PUD-C
- COM/BUS/IND
- CHURCH SITE

GRAPHIC SCALE

4000 0 2000 4000 8000

(IN FEET)
1 inch = 4000 ft.
If Printed 11x17 use Half Scale

NORTH

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Washington City Irrigation Data

Washington City Irrigation Water Load Calculations Build-Out Scenario 1 (Existing Meters)

1. Peak day demand of 650 gpd per ERU for existing residential connections is based on recorded usage on the Washington City Culinary Water System in the month of July, subtracted by the month of January recorded usage.

2. The number of current residential units in each district are based on a count of the existing culinary system connections.

3. Parcels designated as Planned Unit Development (PUD) and Planned Community Development (PCD) will include a mix of different land use types, open space, and community parks, similar to the existing City. Irrigation demands for these areas were based on the existing use of 650 gpd/ERU and number of ERUs were provided by Washington City based on approved planning documents.

4. Irrigation demands for remaining future development are based on evapo-transpiration (ET) and precipitation data compiled by Utah State University (USU) which shows that the St. George area has a precipitation deficit of 8.13-inches which equates to GPD per irrigated acre of 7,122. This value is then utilized in conjunction with the estimated irrigation acre percentage of total acreage for each land use and landscaping type to calculate the irrigation. Plant Factor ET values are provided by USU. It is assumed that landscaping in Washington City will consist of a combination of cold-season turf with a plant factor of 0.8 and desert landscaping with a plant factor of 0.3. The irrigation demand per acre was determined by the following equation: 7122 x Plant Factor x Percent Irrigated.

5. Irrigation demands for future single-family residential parcels designated as Medium Density, Low Density, and Very Low Density are based on the maximum 8% allowable turf per Washington City Landscaping and Water Conservation Ordinance. It is assumed an additional 22% will have desert landscaping for a total of 30% irrigated acreage. The resulting irrigation demand in gpd/acre was determined from the ET data described in Note 4 to be 926 gpd/acre (7122*0.8*8% + 7122*0.3*22%). Subsequently, based on unity density assumptions: Very Low Density = 463 gpd/ERU (2 ERU/ac.), Low Density = 309 gpd/ERU (3 ERU/ac.), and Medium Density = 185 gpd/ERU (5 ERU/ac.)

6. Irrigation demands for multi-family residential are estimated to be the same as single-family on a per acre basis, which is 926 gpd/acre. For most multi-family users, this will consist of common area landscaping instead of individual units.

7. Commercial and Industrial user irrigation demands are based on up to 10% of the total acreage being landscaped with desert landscaping. Most commercial users will not have turf landscaping per Washington City Landscaping and Water Conservation Ordinance which only allows irrigated lawn in Active Recreation Areas or Single-Family residences. Total irrigation demand per acre for Commercial and Industrial users equates to 214 gpd/acre (7122*10%*0.3).

8. Other non-residential users, such as church sites, are assumed to have the maximum allowable 5,000 square feet of irrigated turf per meter as part of an Active Recreation Area. This equates to 654 gpd (7122*0.8*(5000/43560)). Additionally, desert landscaping demand will be assumed similar to commercial at 214 gpd/acre. Total demand is estimated to be 214 gpd multiplied by acres plus a constant 654 gpd.

9. Irrigation demands for each park were obtained from Washington City metered data averaged over 3 years (2021-2023).

10. Irrigation demands for future parks were estimated based on the ET data compiled by USU and assuming 80% of park area will be landscaped with cold season turf and 15% with desert landscaping. Total irrigation demand per acre for future parks equates to 4,878 gpd/acre (7122*80%*0.8 + 7122*15%*0.3).

11. Peak hour demand scenarios based on all irrigation use for all users occurring during an 8-hour period (i.e., peaking factor of 3).

* Values were obtained from data provided by Washington City based on approved planning documents.

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
1	Green Springs West (GSW)	-	Existing Residential	-	-	472	650	306800	213.06	639.17	J3(27%),J4(27%),J5(27%),J7(19%)
		-	Ex. Com/Bus/Ind	11.8	214	-	-	2525	1.75	5.26	J37(50%),J41(50%)
		Green Springs	Park	-	-	-	-	52237	36.28	108.83	J15
2	Green Springs North (GSN)	-	-	-	-	-	-	-	-	-	-
3	Green Springs East (GSE)	-	Existing Residential	-	-	709	650	460850	320.03	960.10	J13(3%),J16(3%),J17(3%),J35(23%),J36(23%), J46(23%),J64(23%)
		Boilers	Park	-	-	-	-	3957	2.75	8.24	J42
4	Downtown (DT)	-	Existing Residential	-	-	172	650	111800	77.64	232.92	J48(21%),J70(29%),J71(21%),J72(29%)
		Dog Town	Park	-	-	-	-	19871	13.80	41.40	J72
		Nisson	Park	-	-	-	-	21645	15.03	45.09	J75
		Veterans	Park	-	-	-	-	22774	15.82	47.45	J71
5	Sienna Hills (SH)	-	Existing Residential	-	-	291	650	189150	131.35	394.06	J18(22%),J38(22%),J51(22%),J78(12%),J80(22%)
		Canyon	Park	-	-	-	-	495	0.34	1.03	J78
		Sienna Hills	Park	-	-	-	-	32935	22.87	68.61	J65
		-	Ex. Com/Bus/Ind	26.2	214	-	-	5607	3.89	11.68	J11(22%),J39(78%)
6	Coral Canyon (CC)	-	Existing Residential	-	-	184	650	119600	83.06	249.17	J8(18%),J10(82%)
		-	Ex. Com/Bus/Ind	14.7	214	-	-	3146	2.18	6.55	J9
		Razor Ridge	Park	-	-	-	-	8161	5.67	17.00	J1
		Highland	Park	-	-	-	-	31516	21.89	65.66	J27

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
		Heritage	Park	-	-	-	-	23000	15.97	47.92	J21
7	Washington Fields West (WFW)	-	Existing Residential	-	-	427	650	277550	192.74	578.23	J87(5%),J91(15%),J92(16%),J93(6%),J94(11%), J95(8%),J101(8%),J109(8%),J110(8%),J114(5%), J119(6%),J104(4%)
		Pine View	Park	-	-	-	-	50505	35.07	105.22	J113
8	Washington Dam Road (WD)	-	Existing Residential	-	-	129	650	83850	58.23	174.69	J127(69%),J128(31%)
		-	Ex. Com/Bus/Ind	45.2	214	-	-	9673	6.72	20.15	J147(83%),J152(17%)
9	Sunrise Valley (SV)	-	Existing Residential	-	-	118	650	76700	53.26	159.79	J66(50%),J68(50%)
		-	Ex. Com/Bus/Ind	37.4	214	-	-	8004	5.56	16.67	J68
		Sunrise Valley	Park	-	-	-	-	27419	19.04	57.12	J66
10	Washington Fields East (WFE)		Existing Residential	-	-	561	650	364650	253.23	759.69	J95(14%),J129(10%),J137(11%),J140(10%),J142(6%), J143(9%),J148(6%),J150(10%),J154(8%),J160(6%), J166(10%)
		Shooting Star	Park	-	-	-	-	24710	17.16	51.48	J143
11	Long Valley (LV)	-	Existing Residential	-	-	768	650	499200	346.67	1,040.00	J130(50%),J156(50%)
12	Washington Fields South (WFS)	-	Existing Residential	-	-	562	650	365300	253.68	761.04	J89,J90,J97,J98,J103, J106,J124,J126(11% EA 88% Total),J91(12%)
		Treasure Valley	Park	-	-	-	-	31516	21.89	65.66	J123
13	Stucki Farms (SF)	-	Existing Residential	-	-	688	650	447200	310.56	931.67	J131(6%),J132(23%),J133(7%),J134(16%),J135(16%), J139(16%),J150(16%)
14	Airport (AIR)	-	-	-	-	-	-	-	-	-	-
					Total:	**5,081**	**Total:**	**3,682,345**	**2,557**	**7,672**	

Washington City Irrigation Water Load Calculations Build-Out Scenario 2 (Existing Meters and Future Buildout)

1. Peak day demand of 650 gpd per ERU for existing residential connections is based on recorded usage on the Washington City Culinary Water System in the month of July, subtracted by the month of January recorded usage.

2. The number of current residential units in each district are based on a count of the existing culinary system connections.

3. Parcels designated as Planned Unit Development (PUD) and Planned Community Development (PCD) will include a mix of different land use types, open space, and community parks, similar to the existing City. Irrigation demands for these areas were based on the existing use of 650 gpd/ERU and number of ERUs were provided by Washington City based on approved planning documents.

4. Irrigation demands for remaining future development are based on evapo-transpiration (ET) and precipitation data compiled by Utah State University (USU) which shows that the St. George area has a precipitation deficit of 8.13-inches which equates to GPD per irrigated acre of 7,122. This value is then utilized in conjunction with the estimated irrigation acre percentage of total acreage for each land use and landscaping type to calculate the irrigation. Plant Factor ET values are provided by USU. It is assumed that landscaping in Washington City will consist of a combination of cold-season turf with a plant factor of 0.8 and desert landscaping with a plant factor of 0.3. The irrigation demand per acre was determined by the following equation: 7122 x Plant Factor x Percent Irrigated.

5. Irrigation demands for future single-family residential parcels designated as Medium Density, Low Density, and Very Low Density are based on the maximum 8% allowable turf per Washington City Landscaping and Water Conservation Ordinance. It is assumed an additional 22% will have desert landscaping for a total of 30% irrigated acreage. The resulting irrigation demand in gpd/acre was determined from the ET data described in Note 4 to be 926 gpd/acre (7122*0.8*8% + 7122*0.3*22%). Subsequently, based on unity density assumptions: Very Low Density = 463 gpd/ERU (2 ERU/ac.), Low Density = 309 gpd/ERU (3 ERU/ac.), and Medium Density = 185 gpd/ERU (5 ERU/ac.)

6. Irrigation demands for multi-family residential are estimated to be the same as single-family on a per acre basis, which is 926 gpd/acre. For most multi-family users, this will consist of common area landscaping instead of individual units.

7. Commercial and Industrial user irrigation demands are based on up to 10% of the total acreage being landscaped with desert landscaping. Most commercial users will not have turf landscaping per Washington City Landscaping and Water Conservation Ordinance which only allows irrigated lawn in Active Recreation Areas or Single-Family residences. Total irrigation demand per acre for Commercial and Industrial users equates to 214 gpd/acre (7122*10%*0.3).

8. Other non-residential users, such as church sites, are assumed to have the maximum allowable 5,000 square feet of irrigated turf per meter as part of an Active Recreation Area. This equates to 654 gpd (7122*0.8*(5000/43560)). Additionally, desert landscaping demand will be assumed similar to commercial at 214 gpd/acre. Total demand is estimated to be 214 gpd multiplied by acres plus a constant 654 gpd.

9. Irrigation demands for each park were obtained from Washington City metered data averaged over 3 years (2021-2023).

10. Irrigation demands for future parks were estimated based on the ET data compiled by USU and assuming 80% of park area will be landscaped with cold season turf and 15% with desert landscaping. Total irrigation demand per acre for future parks equates to 4,878 gpd/acre (7122*80%*0.8 + 7122*15%*0.3).

11. Peak hour demand scenarios based on all irrigation use for all users occurring during an 8-hour period (i.e., peaking factor of 3).

* Values were obtained from data provided by Washington City based on approved planning documents.

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
1	Green Springs West (GSW)	-	Existing Residential	-	-	-	472	650	306800	213.06	639.17	J3(27%),J4(27%),J5(27%),J7(19%)
		-	Ex. Com/Bus/Ind	11.8	214	-	-	-	2525	1.75	5.26	J37(50%),J41(50%)
		Green Springs	Park	-	-	-	-	-	52237	36.28	108.83	J15
		A	Com/Bus/Ind	9.1	214	-	-	-	1947	1.35	4.06	J63
		B	Com/Bus/Ind	3.3	214	-	-	-	706	0.49	1.47	J62
		C	Com/Bus/Ind	8.5	214	-	-	-	1819	1.26	3.79	J37
2	Green Springs North (GSN)	-	Existing Residential	-	-	-	-	-	-	-	-	-
		A*	Mixed Use PCD	575.2	-	-	2200	650	1430000	993.06	2,979.17	J14,J23 (All 1/2)
3	Green Springs East (GSE)	-	Existing Residential	-	-	-	709	650	460850	320.03	960.10	J13(3%),J16(3%),J17(3%),J35(23%),J36(23%), J46(23%),J64(23%)
		Boilers	Park	-	-	-	-	-	3957	2.75	8.24	J42
		A*	Medium Density	31.8	-	-	165	185	30525	21.20	63.59	J46,J53 (All 1/2)
		B	Com/Bus/Ind	5.6	214	-	-	-	1198	0.83	2.50	J44
		C*	PUD	5.2	-	-	5	650	3380	2.35	7.04	J17
		D	Church Site	4.8	214	-	-	-	1681	1.17	3.50	J14
		E*	PUD	26.5	-	-	27	650	17225	11.96	35.89	J13
		F	Com/Bus/Ind	53.3	214	-	-	-	11406	7.92	23.76	J6
		G	Com/Bus/Ind	16.7	214	-	-	-	3574	2.48	7.45	J6
		H	Com/Bus/Ind	10	214	-	-	-	2140	1.49	4.46	J60
		I	Com/Bus/Ind	13	214	-	-	-	2782	1.93	5.80	J36
		J	Com/Bus/Ind	1.8	214	-	-	-	385	0.27	0.80	J43
		K	Com/Bus/Ind	2.4	214	-	-	-	514	0.36	1.07	J47
		L	Com/Bus/Ind	9.1	214	-	-	-	1947	1.35	4.06	J47

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
4	Downtown (DT)	-	Existing Residential	-	-	-	172	650	111800	77.64	232.92	J48(21%),J70(29%),J71(21%),J72(29%)
		Dog Town	Park	-	-	-	-	-	19871	13.80	41.40	J72
		Nisson	Park	-	-	-	-	-	21645	15.03	45.09	J75
		Veterans	Park	-	-	-	-	-	22774	15.82	47.45	J71
		A	Medium Density	82.3	-	5	412	185	76128	52.87	158.60	J40,J84 (All 1/2)
		B	Com/Bus/Ind	4.7	214	-	-	-	1006	0.70	2.10	J40
		C	Com/Bus/Ind	11	214	-	-	-	2354	1.63	4.90	J82
		D	Com/Bus/Ind	6.2	214	-	-	-	1327	0.92	2.76	J83
		E*	PUD	13.2	-	-	200	650	130000	90.28	270.83	J83
		F*	PUD	28.5	-	-	72	650	46800	32.50	97.50	J81
		G*	Medium Density	9.5	-	-	25	185	4625	3.21	9.64	J85
		H	Medium Density	22.2	-	5	111	185	20535	14.26	42.78	J73
		I	Medium Density	17.8	-	5	89	185	16465	11.43	34.30	J70
		J	Com/Bus/Ind	12.7	214	-	-	-	2718	1.89	5.66	J70
		K	Com/Bus/Ind	3.5	214	-	-	-	749	0.52	1.56	J70
		L	Com/Bus/Ind	10.2	214	-	-	-	2183	1.52	4.55	J70
5	Sienna Hills (SH)	-	Existing Residential	-	-	-	291	650	189150	131.35	394.06	J18(22%),J38(22%),J51(22%),J78(12%),J80(22%)
		Canyon	Park	-	-	-	-	-	495	0.34	1.03	J78
		Sienna Hills	Park	-	-	-	-	-	32935	22.87	68.61	J65
		-	Ex. Com/Bus/Ind	26.2	214	-	-	-	5607	3.89	11.68	J11(22%),J39(78%)
		A	Com/Bus/Ind	28.7	214	-	-	-	6142	4.27	12.80	J50
		B	Com/Bus/Ind	6.8	214	-	-	-	1455	1.01	3.03	J45
		C	Com/Bus/Ind	1.8	214	-	-	-	385	0.27	0.80	J82
		D	Com/Bus/Ind	0.4	214	-	-	-	86	0.06	0.18	J82
		E	Com/Bus/Ind	7.3	214	-	-	-	1562	1.08	3.25	J50
		F	Com/Bus/Ind	4.7	214	-	-	-	1006	0.70	2.10	J45
		G	Com/Bus/Ind	66.8	214	-	-	-	14295	9.93	29.78	J11
		H	Com/Bus/Ind	26	214	-	-	-	5564	3.86	11.59	J22
		I	Medium Density	37.7	-	5	189	185	34873	24.22	72.65	J22
6	Coral Canyon (CC)	-	Existing Residential	-	-	-	184	650	119600	83.06	249.17	J8(18%),J10(82%)
		-	Ex. Com/Bus/Ind	14.7	214	-	-	-	3146	2.18	6.55	J9
		Razor Ridge	Park	-	-	-			8161	5.67	17.00	J1
		Highland	Park	-	-	-			31516	21.89	65.66	J27
		Heritage	Park	-	-	-	-	-	23000	15.97	47.92	J21
		A	Low Density	16.2	-	3	49	309	15017	10.43	31.29	J27
		B*	Mixed Use PCD	55	-	-	193	650	125450	87.12	261.35	J27
		C	Medium Density	14.1	-	5	71	185	13043	9.06	27.17	J8
		D*	Mixed Use PCD	22.6	-	-	164	650	106600	74.03	222.08	J1
		E*	Mixed Use PCD	75.3	-	-	145	650	94250	65.45	196.35	J178

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
7	Washington Fields West (WFW)	-	Existing Residential	-	-	-	427	650	277550	192.74	578.23	J87(5%),J91(15%),J92(16%),J93(6%),J94(11%), J95(8%),J101(8%),J109(8%),J110(8%),J114(5%), J119(6%),J104(4%)
		Pine View	Park	-	-	-	-	-	50505	35.07	105.22	J113
		A	Low Density	16.4	-	3	49	309	15203	10.56	31.67	J93
		B*	PUD	31.2	-	-	144	650	93600	65.00	195.00	J99
		C	Low Density	7.1	-	3	21	309	6582	4.57	13.71	J108
		D	Low Density	12.9	-	3	39	309	11958	8.30	24.91	J105
		E	Low Density	10.1	-	3	30	309	9363	6.50	19.51	J100
		F	Low Density	79.9	-	3	240	309	74067	51.44	154.31	J117(50%),J119(50%)
		G	Low Density	4.2	-	3	13	309	3893	2.70	8.11	J111
		H	Low Density	9.4	-	3	28	309	8714	6.05	18.15	J111
		I	Low Density	29.4	-	3	88	309	27254	18.93	56.78	J110
		J	Low Density	25.8	-	3	77	309	23917	16.61	49.83	J110
		K	Low Density	8	-	3	24	309	7416	5.15	15.45	J101
		L	Com/Bus/Ind	5.2	214	-	-	-	1113	0.77	2.32	J101
		M	Low Density	22.1	-	3	66	309	20487	14.23	42.68	J92
		N	Very Low Density	9.3	-	2	19	463	8612	5.98	17.94	J107
		O*	Very Low Density	5	-	-	2	463	926	0.64	1.93	J91
		P	Very Low Density	75.2	-	2	150	463	69635	48.36	145.07	J95(50%),J98(50%)
		Q	Com/Bus/Ind	0.8	214	-	-	-	171	0.12	0.36	J91
		R	Low Density	32.6	-	3	98	309	30220	20.99	62.96	J97
		S	Com/Bus/Ind	9.4	214	-	-	-	2012	1.40	4.19	J96
8	Washington Dam Road (WD)	-	Existing Residential	-	-	-	129	650	83850	58.23	174.69	J127(69%),J128(31%)
		-	Ex. Com/Bus/Ind	45.2	214	-	-	-	9673	6.72	20.15	J147(83%),J152(17%)
		A	Low Density	48.5	-	3	146	309	44960	31.22	93.67	J105
		B	Com/Bus/Ind	9.8	214	-	-	-	2097	1.46	4.37	J147
		C	Com/Bus/Ind	5	214	-	-	-	1070	0.74	2.23	J151
		D	Low Density	76.9	-	3	231	309	71286	49.50	148.51	J128
		E	Medium Density	6.4	-	5	32	185	5920	4.11	12.33	J151
		F	Medium Density	1.8	-	5	9	185	1665	1.16	3.47	J151
		G	Medium Density	1.9	-	5	10	185	1758	1.22	3.66	J151
		H	Medium Density	9.6	-	5	48	185	8880	6.17	18.50	J128
9	Sunrise Valley (SV)	-	Existing Residential	-	-	-	118	650	76700	53.26	159.79	J66(50%),J68(50%)
		-	Ex. Com/Bus/Ind	37.4	214	-	-	-	8004	5.56	16.67	J68
		Sunrise Valley	Park	-	-	-	-	-	27419	19.04	57.12	J66
		A*	Mixed Use PCD	75.3	-	-	222	650	144300	100.21	300.63	J172
		B	Com/Bus/Ind	63.5	214	-	-	-	13589	9.44	28.31	J67
		C*	Medium Density	10.5	-	-	32	185	5920	4.11	12.33	J66
		D*	Medium Density	20.7	-	-	42	185	7770	5.40	16.19	J66
10	Washington Fields East (WFE)	-	Existing Residential	-	-	-	561	650	364650	253.23	759.69	J95(14%),J129(10%),J137(11%),J140(10%),J142(6%), J143(9%),J148(6%),J150(10%),J154(8%),J160(6%), J166(10%)
		Shooting Star	Park	-	-	-	-	-	24710	17.16	51.48	J143
		A	Medium Density	27.3	-	5	137	185	25253	17.54	52.61	J87
		B*	Low Density	52.2	-	-	125	309	38625	26.82	80.47	J144
		C*	Low Density	46.6	-	-	111	309	34299	23.82	71.46	J137
		D	Low Density	22.1	-	3	66	309	20487	14.23	42.68	J112
		E	Low Density	3.6	-	3	11	309	3337	2.32	6.95	J112
		F*	Low Density	30.8	-	-	67	309	20703	14.38	43.13	J125
		G	Very Low Density	10.3	-	2	21	463	9538	6.62	19.87	J154
		H	Com/Bus/Ind	53.7	214	-	-	-	11492	7.98	23.94	J96
		I	Low Density	5.1	-	3	15	309	4728	3.28	9.85	J142
		J	Com/Bus/Ind	28.7	214	-	-	-	6142	4.27	12.80	J142
		K	Low Density	65.1	-	3	195	309	60348	41.91	125.72	J167
11	Long Valley	-	Existing Residential		-	-	768	650	499200	346.67	1,040.00	J130(50%),J156(50%)
		A*	Mixed Use PCD	221.4	-	-	1632	650	1060800	736.67	2,210.00	J130,J168,J171 (All 1/3)

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
12	Washington Fields South (WFS)	-	Existing Residential	-	-	-	562	650	365300	253.68	761.04	J89,J90,J97,J98,J103, J106,J124,J126(11% EA 88% Total),J91(12%)
		Treasure Valley	Park	-	-	-	-	-	31516	21.89	65.66	J123
		A	Low Density	9.8	-	3	29	309	9085	6.31	18.93	J91
		B	Low Density	47.7	-	3	143	309	44218	30.71	92.12	J89
		C	Com/Bus/Ind	11.9	214	-	-	-	2547	1.77	5.31	J96
		D	Com/Bus/Ind	4.4	214	-	-	-	942	0.65	1.96	J88
		E*	Medium Density	32	-	-	300	185	55500	38.54	115.63	J126
		F	Medium Density	35	-	5	175	185	32375	22.48	67.45	J126
13	Stucki Farms (SF)	-	Existing Residential	-	-	-	688	650	447200	310.56	931.67	J131(6%),J132(23%),J133(7%),J134(16%),J135(16%), J139(16%),J150(16%)
		Wheels (Future)	Park	92.03	4878	-	-	-	448922	311.75	935.25	J142
		A	Com/Bus/Ind	3.9	214	-	-	-	835	0.58	1.74	J124
		B	Com/Bus/Ind	46.7	214	-	-	-	9994	6.94	20.82	J124
		C	Com/Bus/Ind	3	214	-	-	-	642	0.45	1.34	J139
		D*	Mixed Use PCD	50.9	-	-	249	650	161850	112.40	337.19	J131
		E*	Mixed Use PCD	377.4	-	-	1839	650	1195350	830.10	2,490.31	J164
		F	Com/Bus/Ind	24.6	214	-	-	-	5264	3.66	10.97	J142
14	Airport	-	Ex. Com/Bus/Ind	-	-	-	-	-	-	-	-	-
		A	Com/Bus/Ind	694.1	214	-	-	-	148537	103.15	309.45	J165
		B	Com/Bus/Ind	275.9	214	-	-	-	59043	41.00	123.01	J165
		C	Com/Bus/Ind	64.8	214	-	-	-	13867	9.63	28.89	J165
						Total:	**16,171**		**10,127,268**	**7,033**	**21,098**	

Washington City Irrigation Water Load Calculations Build Out Scenario 3 (Full Buildout)

1. Peak day demand of 650 gpd per ERU for existing residential connections is based on recorded usage on the Washington City Culinary Water System in the month of July, subtracted by the month of January recorded usage.

2. The number of current residential units in each district are based on a count of the existing culinary system connections.

3. Parcels designated as Planned Unit Development (PUD) and Planned Community Development (PCD) will include a mix of different land use types, open space, and community parks, similar to the existing City. Irrigation demands for these areas were based on the existing use of 650 gpd/ERU and number of ERUs were provided by Washington City based on approved planning documents.

4. Irrigation demands for remaining future development are based on evapo-transpiration (ET) and precipitation data compiled by Utah State University (USU) which shows that the St. George area has a precipitation deficit of 8.13-inches which equates to GPD per irrigated acre of 7,122. This value is then utilized in conjunction with the estimated irrigation acre percentage of total acreage for each land use and landscaping type to calculate the irrigation. Plant Factor ET values are provided by USU. It is assumed that landscaping in Washington City will consist of a combination of cold-season turf with a plant factor of 0.8 and desert landscaping with a plant factor of 0.3. The irrigation demand per acre was determined by the following equation: 7122 x Plant Factor x Percent Irrigated.

5. Irrigation demands for future single-family residential parcels designated as Medium Density, Low Density, and Very Low Density are based on the maximum 8% allowable turf per Washington City Landscaping and Water Conservation Ordinance. It is assumed an additional 22% will have desert landscaping for a total of 30% irrigated acreage. The resulting irrigation demand in gpd/acre was determined from the ET data described in Note 4 to be 926 gpd/acre (7122*0.8*8% + 7122*0.3*22%). Subsequently, based on unity density assumptions: Very Low Density = 463 gpd/ERU (2 ERU/ac.), Low Density = 309 gpd/ERU (3 ERU/ac.), and Medium Density = 185 gpd/ERU (5 ERU/ac.)

6. Irrigation demands for multi-family residential are estimated to be the same as single-family on a per acre basis, which is 926 gpd/acre. For most multi-family users, this will consist of common area landscaping instead of individual units.

7. Commercial and Industrial user irrigation demands are based on up to 10% of the total acreage being landscaped with desert landscaping. Most commercial users will not have turf landscaping per Washington City Landscaping and Water Conservation Ordinance which only allows irrigated lawn in Active Recreation Areas or Single-Family residences. Total irrigation demand per acre for Commercial and Industrial users equates to 214 gpd/acre (7122*10%*0.3).

8. Other non-residential users, such as church sites, are assumed to have the maximum allowable 5,000 square feet of irrigated turf per meter as part of an Active Recreation Area. This equates to 654 gpd (7122*0.8*(5000/43560)). Additionally, desert landscaping demand will be assumed similar to commercial at 214 gpd/acre. Total demand is estimated to be 214 gpd multiplied by acres plus a constant 654 gpd.

9. Irrigation demands for each park were obtained from Washington City metered data averaged over 3 years (2021-2023).

10. Irrigation demands for future parks were estimated based on the ET data compiled by USU and assuming 80% of park area will be landscaped with cold season turf and 15% with desert landscaping. Total irrigation demand per acre for future parks equates to 4,878 gpd/acre (7122*80%*0.8 + 7122*15%*0.3).

11. Peak hour demand scenarios based on all irrigation use for all users occurring during an 8-hour period (i.e., peaking factor of 3).

* Values were obtained from data provided by Washington City based on approved planning documents.

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
1	Green Springs West (GSW)	-	Existing Residential	-	-	-	2354	650	1530100	1,062.57	3,187.71	J3,J4,J5,J7,J12,J15,J19,J24,J25, J26,J57,J58,J59,J61,J63 (All 1/15)
		-	Ex. Com/Bus/Ind	11.8	214	-	-	-	2525	1.75	5.26	J37(50%),J41(50%)
		Green Springs	Park	-	-	-	-	-	52237	36.28	108.83	J15
		A	Com/Bus/Ind	9.1	214	-	-	-	1947	1.35	4.06	J63
		B	Com/Bus/Ind	3.3	214	-	-	-	706	0.49	1.47	J62
		C	Com/Bus/Ind	8.5	214	-	-	-	1819	1.26	3.79	J37
2	Green Springs North (GSN)		Existing Residential	-	-	-	-	650	-	-	-	-
		A*	Mixed Use PCD	575.2	-	-	2200	650	1430000	993.06	2,979.17	J14,J23 (All 1/2)

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
3	Green Springs East (GSE)	-	Existing Residential	-	-	-	1306	650	848900	589.51	1,768.54	J13,J16,J17,J35,J36,J42, J46,J64 (All 1/8)
		Boilers	Park	-	-	-	-	-	3957	2.75	8.24	J42
		A*	Medium Density	31.8	-	-	165	185	30525	21.20	63.59	J46,J53 (All 1/2)
		B	Com/Bus/Ind	5.6	214	-	-	-	1198	0.83	2.50	J44
		C*	PUD	5.2	-	-	5	650	3380	2.35	7.04	J17
		D	Church Site	4.8	214	-	-	-	1681	1.17	3.50	J14
		E*	PUD	26.5	-	-	27	650	17225	11.96	35.89	J13
		F	Com/Bus/Ind	53.3	214	-	-	-	11406	7.92	23.76	J6
		G	Com/Bus/Ind	16.7	214	-	-	-	3574	2.48	7.45	J6
		H	Com/Bus/Ind	10	214	-	-	-	2140	1.49	4.46	J60
		I	Com/Bus/Ind	13	214	-	-	-	2782	1.93	5.80	J36
		J	Com/Bus/Ind	1.8	214	-	-	-	385	0.27	0.80	J43
		K	Com/Bus/Ind	2.4	214	-	-	-	514	0.36	1.07	J47
		L	Com/Bus/Ind	9.1	214	-	-	-	1947	1.35	4.06	J47
4	Downtown (DT)	-	Existing Residential	-	-	-	2426	650	1576900	1,095.07	3,285.21	J48,J49,J55,J69,J70,J71,J72, J74,J75,J77,J83,J85 (All 1/12)
		Dog Town	Park	-	-	-	-	-	19871	13.80	41.40	J72
		Veterans	Park	-	-	-	-	-	22774	15.82	47.45	J71
		Nisson	Park	-	-	-	-	-	21645	15.03	45.09	J75
		A	Medium Density	82.3	-	5	412	185	76128	52.87	158.60	J40,J84 (All 1/2)
		B	Com/Bus/Ind	4.7	214	-	-	-	1006	0.70	2.10	J40
		C	Com/Bus/Ind	11	214	-	-	-	2354	1.63	4.90	J82
		D	Com/Bus/Ind	6.2	214	-	-	-	1327	0.92	2.76	J83
		E*	PUD	13.2	-	-	200	650	130000	90.28	270.83	J83
		F*	PUD	28.5	-	-	72	650	46800	32.50	97.50	J81
		G*	Medium Density	9.5	-	-	25	185	4625	3.21	9.64	J85
		H	Medium Density	22.2	-	5	111	185	20535	14.26	42.78	J73
		I	Medium Density	17.8	-	5	89	185	16465	11.43	34.30	J70
		J	Com/Bus/Ind	12.7	214	-	-	-	2718	1.89	5.66	J70
		K	Com/Bus/Ind	3.5	214	-	-	-	749	0.52	1.56	J70
		L	Com/Bus/Ind	10.2	214	-	-	-	2183	1.52	4.55	J70
5	Sienna Hills (SH)	-	Existing Residential	-	-	-	2321	650	1508650	1,047.67	3,143.02	J18,J22,J38,J40,J45,J51,J52, J54,J65,J78,J79,J80,J81,J82, J84 (All 1/15)
		Canyon	Park	-	-	-	-	-	495	0.34	1.03	J78
		Sienna Hills	Park	-	-	-	-	-	32935	22.87	68.61	J65
		-	Ex. Com/Bus/Ind	26.2	214	-	-	-	5607	3.89	11.68	J11(22%),J39(78%)
		A	Com/Bus/Ind	28.7	214	-	-	-	6142	4.27	12.80	J50
		B	Com/Bus/Ind	6.8	214	-	-	-	1455	1.01	3.03	J45
		C	Com/Bus/Ind	1.8	214	-	-	-	385	0.27	0.80	J82
		D	Com/Bus/Ind	0.4	214	-	-	-	86	0.06	0.18	J82
		E	Com/Bus/Ind	7.3	214	-	-	-	1562	1.08	3.25	J50
		F	Com/Bus/Ind	4.7	214	-	-	-	1006	0.70	2.10	J45
		G	Com/Bus/Ind	66.8	214	-	-	-	14295	9.93	29.78	J11
		H	Com/Bus/Ind	26	214	-	-	-	5564	3.86	11.59	J22
		I	Medium Density	37.7	-	5	189	185	34873	24.22	72.65	J22

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
6	Coral Canyon (CC)	-	Existing Residential	-	-	-	1686	650	1095900	761.04	2,283.13	J2,J8,J9,J10,J21,J28,J29, J30,J31,J32,J173,J175,J177 (All 1/13)
		-	Ex. Com/Bus/Ind	14.7	214	-	-	-	3146	2.18	6.55	J9
		Razor Ridge	Park	-	-	-	-	-	8161	5.67	17.00	J1
		Highland	Park	-	-	-	-	-	31516	21.89	65.66	J27
		Heritage	Park	-	-	-	-	-	23000	15.97	47.92	J21
		A	Low Density	16.2	-	3	49	309	15017	10.43	31.29	J27
		B*	Mixed Use PCD	55	-	-	193	650	125450	87.12	261.35	J27
		C	Medium Density	14.1	-	5	71	185	13043	9.06	27.17	J8
		D*	Mixed Use PCD	22.6	-	-	164	650	106600	74.03	222.08	J1
		E*	Mixed Use PCD	75.3	-	-	145	650	94250	65.45	196.35	J178
7	Washington Fields West (WFW)	-	Existing Residential	-	-	-	1603	650	1041950	723.58	2,170.73	J87,J91,J92,J93,J94,J95,J97,J98, J101,J102,J104,J105,J107,J109,J110, J111,J112,J113,J114,J116,J118,J119, J120,J121,J122,J125 (All 1/26)
		Pine View	Park	-	-	-	-	-	50505	35.07	105.22	J113
		A	Low Density	16.4	-	3	49	309	15203	10.56	31.67	J93
		B*	PUD	31.2	-	-	144	650	93600	65.00	195.00	J99
		C	Low Density	7.1	-	3	21	309	6582	4.57	13.71	J108
		D	Low Density	12.9	-	3	39	309	11958	8.30	24.91	J105
		E	Low Density	10.1	-	3	30	309	9363	6.50	19.51	J100
		F	Low Density	79.9	-	3	240	309	74067	51.44	154.31	J117(50%),J119(50%)
		G	Low Density	4.2	-	3	13	309	3893	2.70	8.11	J111
		H	Low Density	9.4	-	3	28	309	8714	6.05	18.15	J111
		I	Low Density	29.4	-	3	88	309	27254	18.93	56.78	J110
		J	Low Density	25.8	-	3	77	309	23917	16.61	49.83	J110
		K	Low Density	8	-	3	24	309	7416	5.15	15.45	J101
		L	Com/Bus/Ind	5.2	214	-	-	-	1113	0.77	2.32	J101
		M	Low Density	22.1	-	3	66	309	20487	14.23	42.68	J92
		N	Very Low Density	9.3	-	2	19	463	8612	5.98	17.94	J107
		O*	Very Low Density	5	-	-	2	463	926	0.64	1.93	J91
		P	Very Low Density	75.2	-	2	150	463	69635	48.36	145.07	J95(50%),J98(50%)
		Q	Com/Bus/Ind	0.8	214	-	-	-	171	0.12	0.36	J91
		R	Low Density	32.6	-	3	98	309	30220	20.99	62.96	J97
		S	Com/Bus/Ind	9.4	214	-	-	-	2012	1.40	4.19	J96
8	Washington Dam Road (WD)	-	Existing Residential	-	-	-	489	650	317850	220.73	662.19	J127,J128,J169,J180 (All 1/4)
		-	Ex. Com/Bus/Ind	45.2	214	-	-	-	9673	6.72	20.15	J147(83%),J152(17%)
		A	Low Density	48.5	-	3	146	309	44960	31.22	93.67	J105
		B	Com/Bus/Ind	9.8	214	-	-	-	2097	1.46	4.37	J147
		C	Com/Bus/Ind	5	214	-	-	-	1070	0.74	2.23	J151
		D	Low Density	76.9	-	3	231	309	71286	49.50	148.51	J128
		E	Medium Density	6.4	-	5	32	185	5920	4.11	12.33	J151
		F	Medium Density	1.8	-	5	9	185	1665	1.16	3.47	J151
		G	Medium Density	1.9	-	5	10	185	1758	1.22	3.66	J151
		H	Medium Density	9.6	-	5	48	185	8880	6.17	18.50	J128
9	Sunrise Valley (SV)	-	Existing Residential	-	-	-	384	650	249600	173.33	520.00	J66,J68 (All 1/2)
		-	Ex. Com/Bus/Ind	37.4	214	-	-	-	8004	5.56	16.67	J68
		Sunrise Valley	Park	-	-	-	-	-	27419	19.04	57.12	J66
		A*	Mixed Use PCD	75.3	-	-	222	650	144300	100.21	300.63	J172
		B	Com/Bus/Ind	63.5	214	-	-	-	13589	9.44	28.31	J67
		C*	Medium Density	10.5	-	-	32	185	5920	4.11	12.33	J66
		D*	Medium Density	20.7	-	-	42	185	7770	5.40	16.19	J66

DISTRICT	DISTRICT NAME	ID	IRRIGATION USER	ACRES	PEAK DAY GPD PER ACRE	ERU/ACRE	ERUS	PEAK DAY GPD PER ERU	PEAK DAY GPD TOTAL	PEAK DAY GPM TOTAL	PEAK HOUR GPM TOTAL, PHF =3	Junction Node
10	Washington Fields East (WFE)	-	Existing Residential	-	-	-	1570	650	1020500	708.68	2,126.04	J95,J129,J137,J138,J140,J142,J143, J144,J145,J148,J149,J150,J154, J155,J158,J159,J160,J163,J166, J167 (All 1/18)
		Shooting Star	Park	-	-	-	-	-	24710	17.16	51.48	J143
		A	Medium Density	27.3	-	5	137	185	25253	17.54	52.61	J87
		B*	Low Density	52.2	-	-	125	309	38625	26.82	80.47	J144
		C*	Low Density	46.6	-	-	111	309	34299	23.82	71.46	J137
		D	Low Density	22.1	-	3	66	309	20487	14.23	42.68	J112
		E	Low Density	3.6	-	3	11	309	3337	2.32	6.95	J112
		F*	Low Density	30.8	-	-	67	309	20703	14.38	43.13	J125
		G	Very Low Density	10.3	-	2	21	463	9538	6.62	19.87	J154
		H	Com/Bus/Ind	53.7	214	-	-	-	11492	7.98	23.94	J96
		I	Low Density	5.1	-	3	15	309	4728	3.28	9.85	J142
		J	Com/Bus/Ind	28.7	214	-	-	-	6142	4.27	12.80	J142
		K	Low Density	65.1	-	3	195	309	60348	41.91	125.72	J167
11	Long Valley	-	Existing Residential	-	-	-	768	650	499200	346.67	1,040.00	J130,J156 (All 1/2)
		A*	Mixed Use PCD	221.4	-	-	1632	650	1060800	736.67	2,210.00	J130,J168,J171 (All 1/3)
12	Washington Fields South (WFS)	-	Existing Residential	-	-	-	866	650	562900	390.90	1,172.71	J89,J90,J91,J97,J98,J103,J106, J123,J124,J126 (All 1/10)
		Treasure Valley	Park	-	-	-	-	-	31516	21.89	65.66	J123
		A	Low Density	9.8	-	3	29	309	9085	6.31	18.93	J91
		B	Low Density	47.7	-	3	143	309	44218	30.71	92.12	J89
		C	Com/Bus/Ind	11.9	214	-	-	-	2547	1.77	5.31	J96
		D	Com/Bus/Ind	4.4	214	-	-	-	942	0.65	1.96	J88
		E*	Medium Density	32	-	-	300	185	55500	38.54	115.63	J126
		F	Medium Density	35	-	5	175	185	32375	22.48	67.45	J126
13	Stucki Farms (SF)	-	Existing Residential	-	-	-	707	650	459550	319.13	957.40	J131(6%),J132(23%),J133(7%), J134(16%),J135(16%),J139(16%), J150(16%)
		Wheels (Future)	Park	92.0	4878	-	-	-	448922	311.75	935.25	J142
		A	Com/Bus/Ind	3.9	214	-	-	-	835	0.58	1.74	J124
		B	Com/Bus/Ind	46.7	214	-	-	-	9994	6.94	20.82	J124
		C	Com/Bus/Ind	3	214	-	-	-	642	0.45	1.34	J139
		D*	Mixed Use PCD	50.9	-	-	249	650	161850	112.40	337.19	J131
		E*	Mixed Use PCD	377.4	-	-	1839	650	1195350	830.10	2,490.31	J164
		F	Com/Bus/Ind	24.6	214	-	-	-	5264	3.66	10.97	J142
14	Airport	-	Ex. Com/Bus/Ind	-	-	-	-	-	-	-	-	-
		A	Com/Bus/Ind	694.1	214	-	-	-	148537	103.15	309.45	J165
		B	Com/Bus/Ind	275.9	214	-	-	-	59043	41.00	123.01	J165
		C	Com/Bus/Ind	64.8	214	-	-	-	13867	9.63	28.89	J165
						Total:	**27,570**		**17,536,618**	**12,178**	**36,535**	

APPENDIX C: DEMAND ANALYSIS FROM METERED DATA

INDOOR USAGE (JANUARY)
GALLONS PER MONTH

GREEN SPRINGS
AVG GAL/MONTH JAN: 7,171

SILVERSTONE GREEN SPRINGS
AVG GAL/MONTH jAN: 6,067

BRIO
AVG GAL/MONTH JAN: 4,430

PERRY LANDING
AVG GAL/MONTH JAN: 4,496

BURKE SPRINGS
AVG GAL/MONTH JAN: 4,716

CORAL RIDGE
AVG GAL/MONTH JAN: 3,754

ARROYO SIENNA HILLS
AVG GAL/MONTH JAN: 4,598

FOURTEENTH FAIRWAY
AVG GAL/MONTH JAN: 4,756

BUENA VISTA
AVG GAL/MONTH JAN: 5,441

HIGHLAND PARK
AVG GAL/MONTH JAN: 5,009

OLD TOWN NORTH
AVG GAL/MONTH JAN: 13,834

PINEVALLEY TOWNHOMES
AVG GAL/MONTH JAN: 5,130

COTTONMILL
AVG GAL/MONTH JAN: 5,690

OLD TOWN
AVG GAL/MONTH JAN: 7,061

VIRGIN RIVER

SUNRISE VALLEY
AVG GAL/MONTH JAN: 5,211

INDIAN KNOLLS
AVG GAL/MONTH JAN: 9,207

HOBBLE CREEK
AVG GAL/MONTH JAN: 4,957

SCENIC VIEW
AVG GAL/MONTH JAN: 10,110

PRIMROSE
AVG GAL/MONTH JAN: 6,311

CANTERWOOD
AVG GAL/MONTH JAN: 6,540

PINE VIEW PARK
AVG GAL/MONTH JAN: 9,306

ARABIAN WAY
AVG GAL/MONTH JAN: 7,493

THE FIELDS
AVG GAL/MONTH JAN: 10,454

RUSTED HILLS
AVG GAL/MONTH JAN: 7,943

BROOKHAVEN
AVG GAL/MONTH JAN: 6,354

FUTURE WARNER VALLEY LAKE

STONEHEDGE
AVG GAL/MONTH JAN: 5,641

IRON HORSE
AVG GAL/MONTH JAN: 7,218

STUCKI FARMS
AVG GAL/MONTH JAN: 3,757

NORTH

Total Subdivision Culinary Meters	Subdivision Name	Avg Gal/Month January
14	Old Town North	13,834
77	The Fields	10,454
144	Scenic View	10,110
45	Pine View Park	9,306
26	Indian Knolls	9,207
282	Rusted Hills	7,943
236	Arabian Way	7,493
47	Iron Horse	7,218
136	Green Springs	7,171
28	Old Town	7,061
108	Canterwood	6,540
152	Brookhaven	6,354
107	Primrose	6,311
87	Silverstone	6,067
90	Cottonmill	5,690
102	Stonehedge	5,641
174	Buena Vista	5,441
146	Sunrise Valley	5,211
158	Pinevalley Townhomes	5,130
109	Highland Park	5,009
73	Hobble Creek	4,957
118	Fourteenth Fairway	4,756
81	Burke Springs	4,716
185	Arroyo Sienna Hills	4,598
140	Perry Landing	4,496
467	Brio	4,430
268	Stucki Farms	3,757
113	Coral Ridge	3,754
3,713	Total Avg. Gal/Month	6,523
	Total Avg. GPD (31)	210
	Total Avg. GPM	0.15

INDOOR USAGE (JANUARY)
GALLONS PER MONTH

3000-5000 GAL/MONTH
5000-7000 GAL/MONTH
7000-9000 GAL/MONTH
9000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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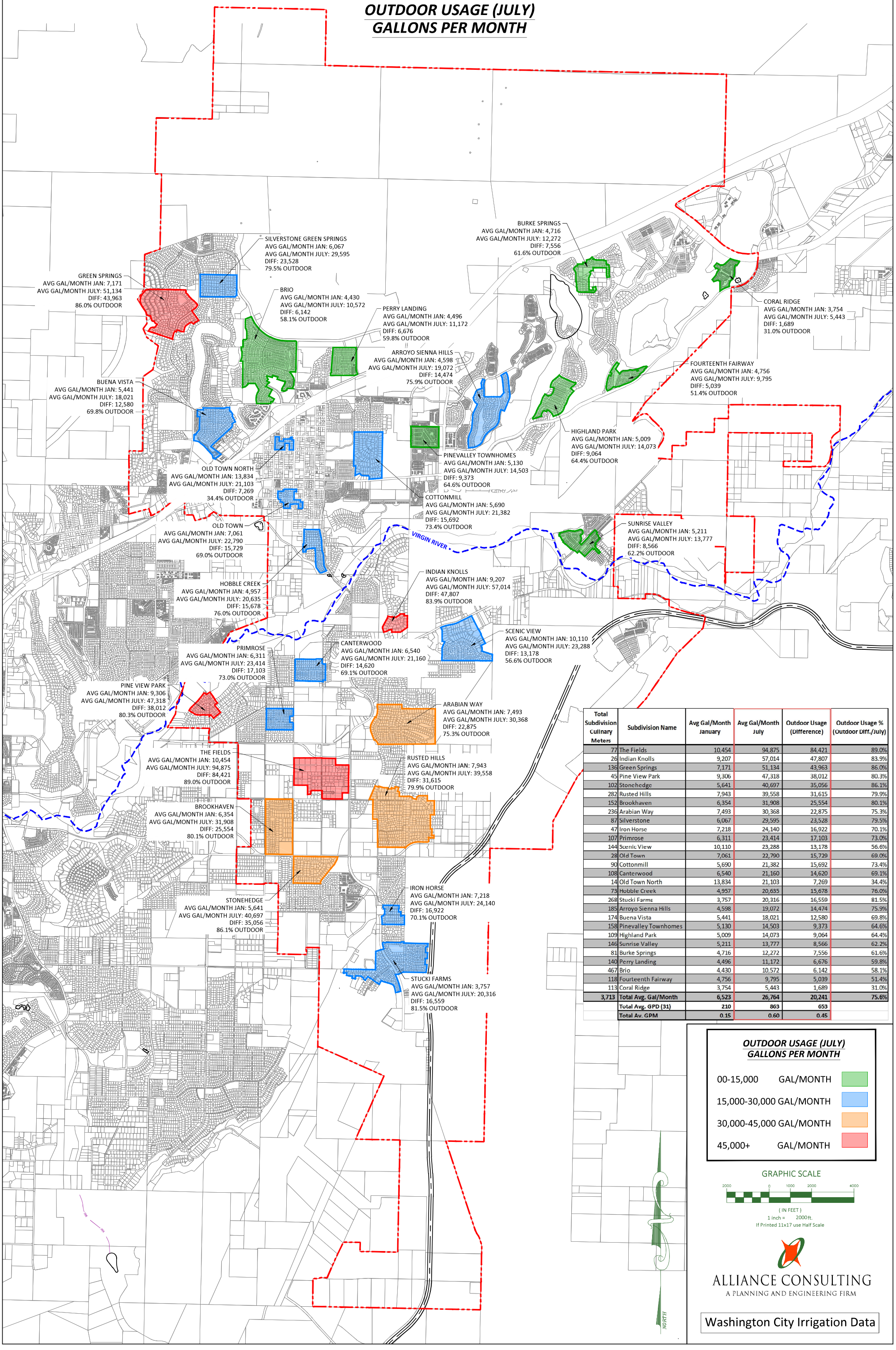
Washington City Irrigation Data

OUTDOOR USAGE (JULY)
GALLONS PER MONTH



Total Subdivision Culinary Meters	Subdivision Name	Avg Gal/Month January	Avg Gal/Month July	Outdoor Usage (Difference)	Outdoor Usage % (Outdoor Diff./July)
77	The Fields	10,454	94,875	84,421	89.0%
26	Indian Knolls	9,207	57,014	47,807	83.9%
136	Green Springs	7,171	51,134	43,963	86.0%
45	Pine View Park	9,306	47,318	38,012	80.3%
102	Stonehedge	5,641	40,697	35,056	86.1%
282	Rusted Hills	7,943	39,558	31,615	79.9%
152	Brookhaven	6,354	31,908	25,554	80.1%
236	Arabian Way	7,493	30,368	22,875	75.3%
87	Silverstone	6,067	29,595	23,528	79.5%
47	Iron Horse	7,218	24,140	16,922	70.1%
107	Primrose	6,311	23,414	17,103	73.0%
144	Scenic View	10,110	23,288	13,178	56.6%
28	Old Town	7,061	22,790	15,729	69.0%
90	Cottonmill	5,690	21,382	15,692	73.4%
108	Canterwood	6,540	21,160	14,620	69.1%
14	Old Town North	13,834	21,103	7,269	34.4%
73	Hobble Creek	4,957	20,635	15,678	76.0%
268	Stucki Farms	3,757	20,316	16,559	81.5%
185	Arroyo Sienna Hills	4,598	19,072	14,474	75.9%
174	Buena Vista	5,441	18,021	12,580	69.8%
158	Pinevalley Townhomes	5,130	14,503	9,373	64.6%
109	Highland Park	5,009	14,073	9,064	64.4%
146	Sunrise Valley	5,211	13,777	8,566	62.2%
81	Burke Springs	4,716	12,272	7,556	61.6%
140	Perry Landing	4,496	11,172	6,676	59.8%
467	Brio	4,430	10,572	6,142	58.1%
118	Fourteenth Fairway	4,756	9,795	5,039	51.4%
113	Coral Ridge	3,754	5,443	1,689	31.0%
3,713	**Total Avg. Gal/Month**	6,523	26,764	20,241	75.6%
	Total Avg. GPD (31)	210	863	653	
	Total Av. GPM	0.15	0.60	0.45	

OUTDOOR USAGE (JULY)
GALLONS PER MONTH

- 00-15,000 GAL/MONTH
- 15,000-30,000 GAL/MONTH
- 30,000-45,000 GAL/MONTH
- 45,000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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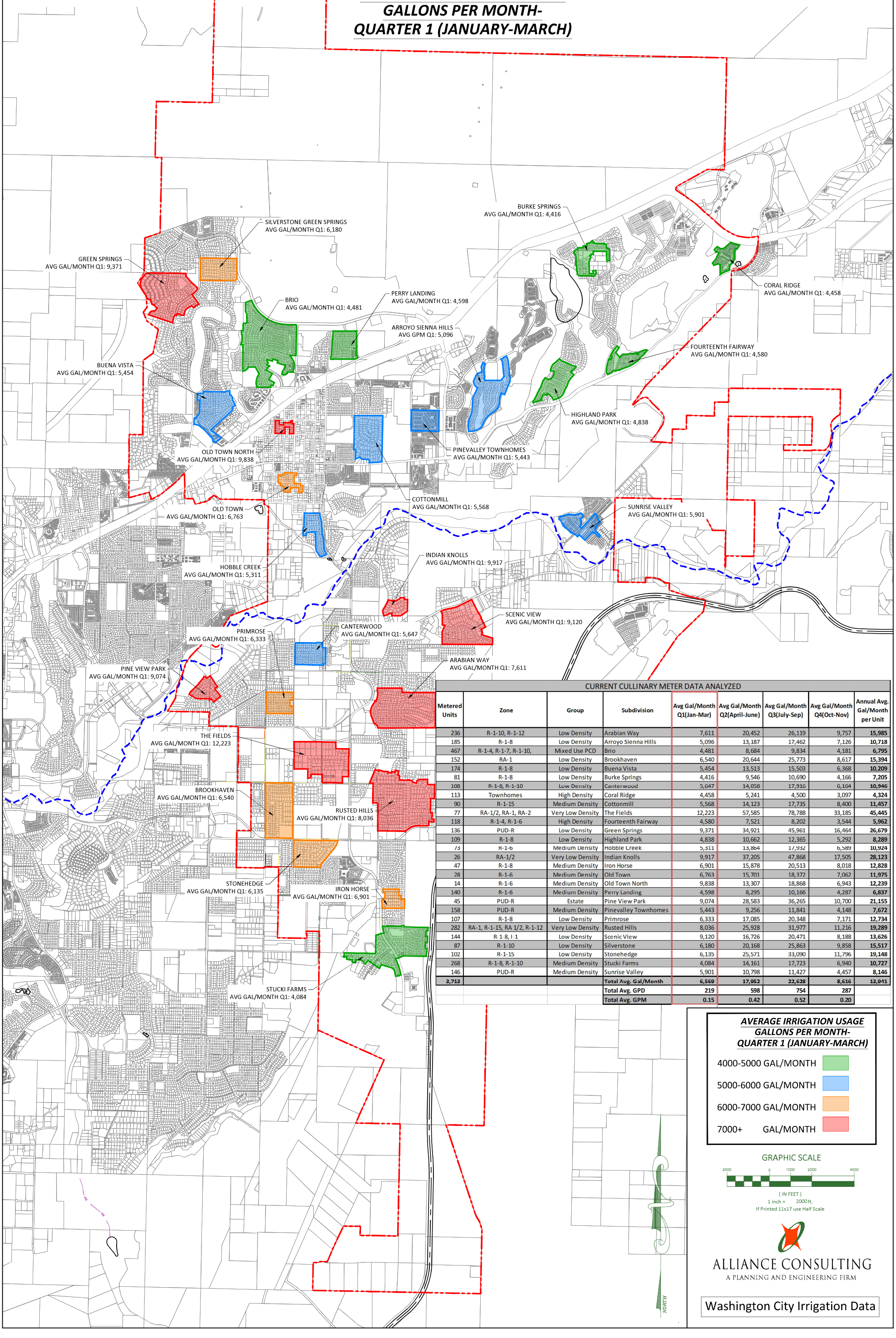
Washington City Irrigation Data

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 1 (JANUARY-MARCH)



CURRENT CULLINARY METER DATA ANALYZED

Metered Units	Zone	Group	Subdivision	Avg Gal/Month Q1(Jan-Mar)	Avg Gal/Month Q2(April-June)	Avg Gal/Month Q3(July-Sep)	Avg Gal/Month Q4(Oct-Nov)	Annual Avg. Gal/Month per Unit
236	R-1-10, R-1-12	Low Density	Arabian Way	7,611	20,452	26,119	9,757	**15,985**
185	R-1-8	Low Density	Arroyo Sienna Hills	5,096	13,187	17,462	7,126	**10,718**
467	R-1-4, R-1-7, R-1-10,	Mixed Use PCD	Brio	4,481	8,684	9,834	4,181	**6,795**
152	RA-1	Low Density	Brookhaven	6,540	20,644	25,773	8,617	**15,394**
174	R-1-8	Low Density	Buena Vista	5,454	13,513	15,503	6,368	**10,209**
81	R-1-8	Low Density	Burke Springs	4,416	9,546	10,690	4,166	**7,205**
108	R-1-8, R-1-10	Low Density	Canterwood	5,647	14,058	17,916	6,164	**10,946**
113	Townhomes	High Density	Coral Ridge	4,458	5,241	4,500	3,097	**4,324**
90	R-1-15	Medium Density	Cottonmill	5,568	14,123	17,735	8,400	**11,457**
77	RA-1/2, RA-1, RA-2	Very Low Density	The Fields	12,223	57,585	78,788	33,185	**45,445**
118	R-1-4, R-1-6	High Density	Fourteenth Fairway	4,580	7,521	8,202	3,544	**5,962**
136	PUD-R	Low Density	Green Springs	9,371	34,921	45,961	16,464	**26,679**
109	R-1-8	Low Density	Highland Park	4,838	10,662	12,365	5,292	**8,289**
73	R-1-6	Medium Density	Hobble Creek	5,311	13,864	17,932	6,589	**10,924**
26	RA-1/2	Very Low Density	Indian Knolls	9,917	37,205	47,868	17,505	**28,123**
47	R-1-8	Medium Density	Iron Horse	6,901	15,878	20,513	8,018	**12,828**
28	R-1-6	Medium Density	Old Town	6,763	15,701	18,372	7,062	**11,975**
14	R-1-6	Medium Density	Old Town North	9,838	13,307	18,868	6,943	**12,239**
140	R-1-6	Medium Density	Perry Landing	4,598	8,295	10,166	4,287	**6,837**
45	PUD-R	Estate	Pine View Park	9,074	28,583	36,265	10,700	**21,155**
158	PUD-R	Medium Density	Pinevalley Townhomes	5,443	9,256	11,841	4,148	**7,672**
107	R-1-8	Low Density	Primrose	6,333	17,085	20,348	7,171	**12,734**
282	RA-1, R-1-15, RA 1/2, R-1-12	Very Low Density	Rusted Hills	8,036	25,928	31,977	11,216	**19,289**
144	R-1-8, I-1	Low Density	Scenic View	9,120	16,726	20,471	8,188	**13,626**
87	R-1-10	Low Density	Silverstone	6,180	20,168	25,863	9,858	**15,517**
102	R-1-15	Low Density	Stonehedge	6,135	25,571	33,090	11,796	**19,148**
268	R-1-8, R-1-10	Medium Density	Stucki Farms	4,084	14,161	17,723	6,940	**10,727**
146	PUD-R	Medium Density	Sunrise Valley	5,901	10,798	11,427	4,457	**8,146**
3,713			**Total Avg. Gal/Month**	**6,569**	**17,952**	**22,628**	**8,616**	**13,941**
			Total Avg. GPD	**219**	**598**	**754**	**287**	
			Total Avg. GPM	**0.15**	**0.42**	**0.52**	**0.20**	

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 1 (JANUARY-MARCH)

- 4000-5000 GAL/MONTH
- 5000-6000 GAL/MONTH
- 6000-7000 GAL/MONTH
- 7000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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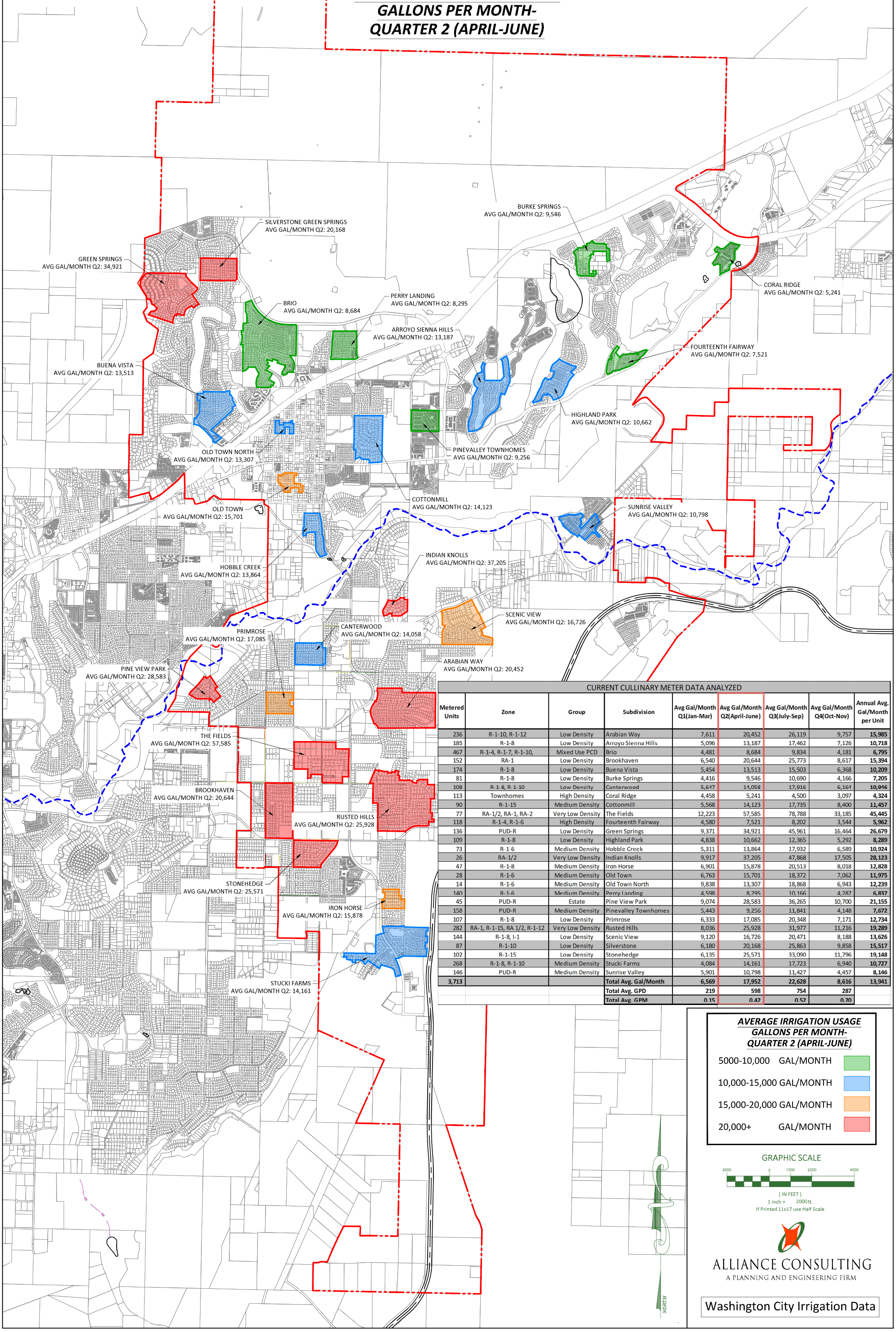
Washington City Irrigation Data

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 2 (APRIL-JUNE)



CURRENT CULLINARY METER DATA ANALYZED

Metered Units	Zone	Group	Subdivision	Avg Gal/Month Q1(Jan-Mar)	Avg Gal/Month Q2(April-June)	Avg Gal/Month Q3(July-Sep)	Avg Gal/Month Q4(Oct-Nov)	Annual Avg. Gal/Month per Unit
236	R-1-10, R-1-12	Low Density	Arabian Way	7,611	20,452	26,119	9,757	**15,985**
185	R-1-8	Low Density	Arroyo Sienna Hills	5,096	13,187	17,462	7,126	**10,718**
467	R-1-4, R-1-7, R-1-10,	Mixed Use PCD	Brio	4,481	8,684	9,834	4,181	**6,795**
152	RA-1	Low Density	Brookhaven	6,540	20,644	25,773	8,617	**15,394**
174	R-1-8	Low Density	Buena Vista	5,454	13,513	15,503	6,368	**10,209**
81	R-1-8	Low Density	Burke Springs	4,416	9,546	10,690	4,166	**7,205**
108	R-1-8, R-1-10	Low Density	Canterwood	5,647	14,058	17,916	6,164	**10,946**
113	Townhomes	High Density	Coral Ridge	4,458	5,241	4,500	3,097	**4,324**
90	R-1-15	Medium Density	Cottonmill	5,568	14,123	17,735	8,400	**11,457**
77	RA-1/2, RA-1, RA-2	Very Low Density	The Fields	12,223	57,585	78,788	33,185	**45,445**
118	R-1-4, R-1-6	High Density	Fourteenth Fairway	4,580	7,521	8,202	3,544	**5,962**
136	PUD-R	Low Density	Green Springs	9,371	34,921	45,961	16,464	**26,679**
109	R-1-8	Low Density	Highland Park	4,838	10,662	12,365	5,292	**8,289**
73	R-1-6	Medium Density	Hobble Creek	5,311	13,864	17,932	6,589	**10,924**
26	RA-1/2	Very Low Density	Indian Knolls	9,917	37,205	47,868	17,505	**28,123**
47	R-1-8	Medium Density	Iron Horse	6,901	15,878	20,513	8,018	**12,828**
28	R-1-6	Medium Density	Old Town	6,763	15,701	18,372	7,062	**11,975**
14	R-1-6	Medium Density	Old Town North	9,838	13,307	18,868	6,943	**12,239**
140	R-1-6	Medium Density	Perry Landing	4,598	8,295	10,166	4,287	**6,837**
45	PUD-R	Estate	Pine View Park	9,074	28,583	36,265	10,700	**21,155**
158	PUD-R	Medium Density	Pinevalley Townhomes	5,443	9,256	11,841	4,148	**7,672**
107	R-1-8	Low Density	Primrose	6,333	17,085	20,348	7,171	**12,734**
282	RA-1, R-1-15, RA 1/2, R-1-12	Very Low Density	Rusted Hills	8,036	25,928	31,977	11,216	**19,289**
144	R-1-8, I-1	Low Density	Scenic View	9,120	16,726	20,471	8,188	**13,626**
87	R-1-10	Low Density	Silverstone	6,180	20,168	25,863	9,858	**15,517**
102	R-1-15	Low Density	Stonehedge	6,135	25,571	33,090	11,796	**19,148**
268	R-1-8, R-1-10	Medium Density	Stucki Farms	4,084	14,161	17,723	6,940	**10,727**
146	PUD-R	Medium Density	Sunrise Valley	5,901	10,798	11,427	4,457	**8,146**
3,713			**Total Avg. Gal/Month**	**6,569**	**17,952**	**22,628**	**8,616**	**13,941**
			Total Avg. GPD	**219**	**598**	**754**	**287**	
			Total Avg. GPM	**0.15**	**0.42**	**0.52**	**0.20**	

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 2 (APRIL-JUNE)

- 5000-10,000 GAL/MONTH
- 10,000-15,000 GAL/MONTH
- 15,000-20,000 GAL/MONTH
- 20,000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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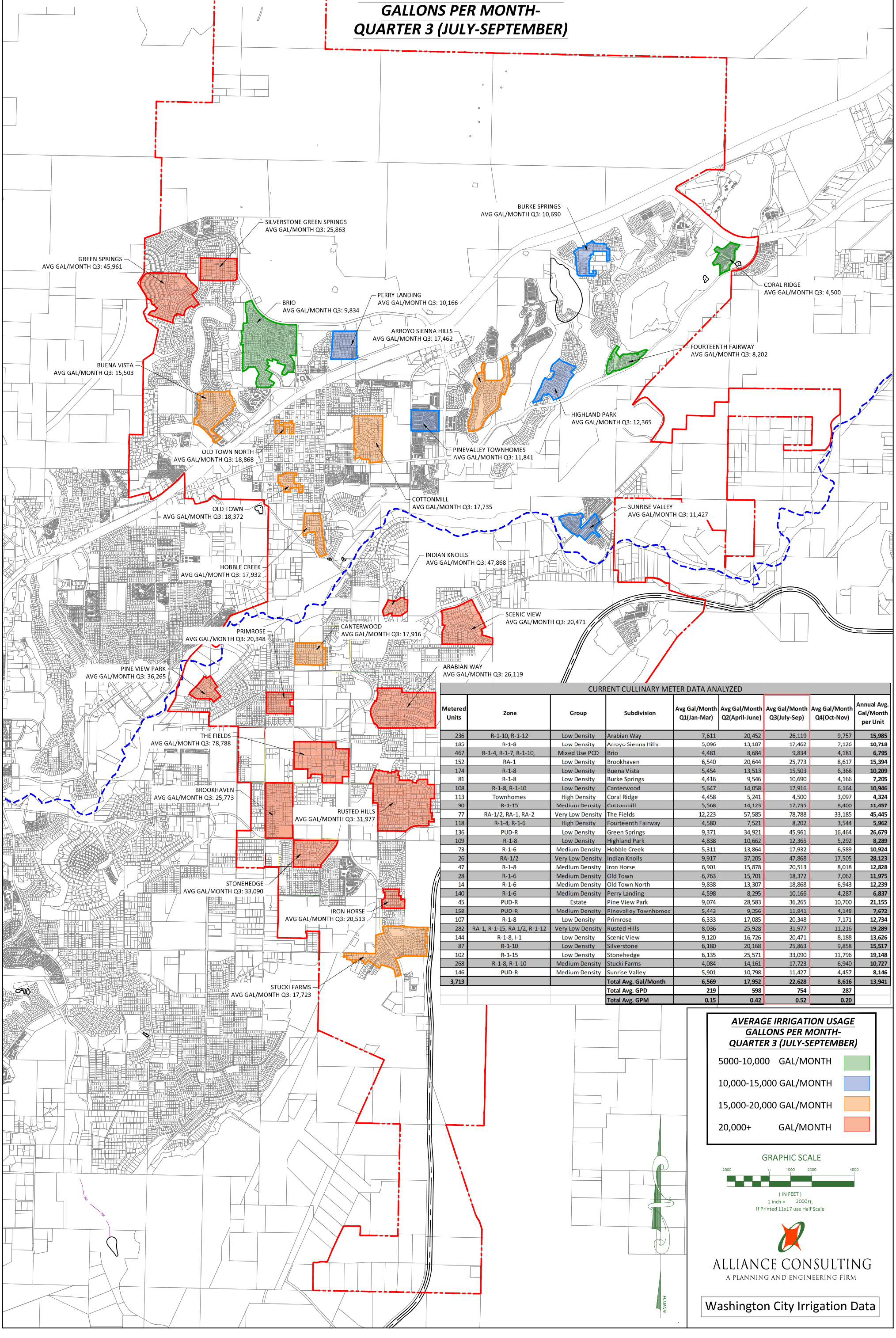
Washington City Irrigation Data

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 3 (JULY-SEPTEMBER)



CURRENT CULLINARY METER DATA ANALYZED

Metered Units	Zone	Group	Subdivision	Avg Gal/Month Q1(Jan-Mar)	Avg Gal/Month Q2(April-June)	Avg Gal/Month Q3(July-Sep)	Avg Gal/Month Q4(Oct-Nov)	Annual Avg. Gal/Month per Unit
236	R-1-10, R-1-12	Low Density	Arabian Way	7,611	20,452	26,119	9,757	**15,985**
185	R-1-8	Low Density	Arroyo Sienna Hills	5,096	13,187	17,462	7,126	**10,718**
467	R-1-4, R-1-7, R-1-10,	Mixed Use PCD	Brio	4,481	8,684	9,834	4,181	**6,795**
152	RA-1	Low Density	Brookhaven	6,540	20,644	25,773	8,617	**15,394**
174	R-1-8	Low Density	Buena Vista	5,454	13,513	15,503	6,368	**10,209**
81	R-1-8	Low Density	Burke Springs	4,416	9,546	10,690	4,166	**7,205**
108	R-1-8, R-1-10	Low Density	Canterwood	5,647	14,058	17,916	6,164	**10,946**
113	Townhomes	High Density	Coral Ridge	4,458	5,241	4,500	3,097	**4,324**
90	R-1-15	Medium Density	Cottonmill	5,568	14,123	17,735	8,400	**11,457**
77	RA-1/2, RA-1, RA-2	Very Low Density	The Fields	12,223	57,585	78,788	33,185	**45,445**
118	R-1-4, R-1-6	High Density	Fourteenth Fairway	4,580	7,521	8,202	3,544	**5,962**
136	PUD-R	Low Density	Green Springs	9,371	34,921	45,961	16,464	**26,679**
109	R-1-8	Low Density	Highland Park	4,838	10,662	12,365	5,292	**8,289**
73	R-1-6	Medium Density	Hobble Creek	5,311	13,864	17,932	6,589	**10,924**
26	RA-1/2	Very Low Density	Indian Knolls	9,917	37,205	47,868	17,505	**28,123**
47	R-1-8	Medium Density	Iron Horse	6,901	15,878	20,513	8,018	**12,828**
28	R-1-6	Medium Density	Old Town	6,763	15,701	18,372	7,062	**11,975**
14	R-1-6	Medium Density	Old Town North	9,838	13,307	18,868	6,943	**12,239**
140	R-1-6	Medium Density	Perry Landing	4,598	8,295	10,166	4,287	**6,837**
45	PUD-R	Estate	Pine View Park	9,074	28,583	36,265	10,700	**21,155**
158	PUD-R	Medium Density	Pinevalley Townhomes	5,443	9,256	11,841	4,148	**7,672**
107	R-1-8	Low Density	Primrose	6,333	17,085	20,348	7,171	**12,734**
282	RA-1, R-1-15, RA 1/2, R-1-12	Very Low Density	Rusted Hills	8,036	25,928	31,977	11,216	**19,289**
144	R-1-8, I-1	Low Density	Scenic View	9,120	16,726	20,471	8,188	**13,626**
87	R-1-10	Low Density	Silverstone	6,180	20,168	25,863	9,858	**15,517**
102	R-1-15	Low Density	Stonehedge	6,135	25,571	33,090	11,796	**19,148**
268	R-1-8, R-1-10	Medium Density	Stucki Farms	4,084	14,161	17,723	6,940	**10,727**
146	PUD-R	Medium Density	Sunrise Valley	5,901	10,798	11,427	4,457	**8,146**
3,713			**Total Avg. Gal/Month**	**6,569**	**17,952**	**22,628**	**8,616**	**13,941**
			Total Avg. GPD	**219**	**598**	**754**	**287**	
			Total Avg. GPM	**0.15**	**0.42**	**0.52**	**0.20**	

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 3 (JULY-SEPTEMBER)

- 5000-10,000 GAL/MONTH
- 10,000-15,000 GAL/MONTH
- 15,000-20,000 GAL/MONTH
- 20,000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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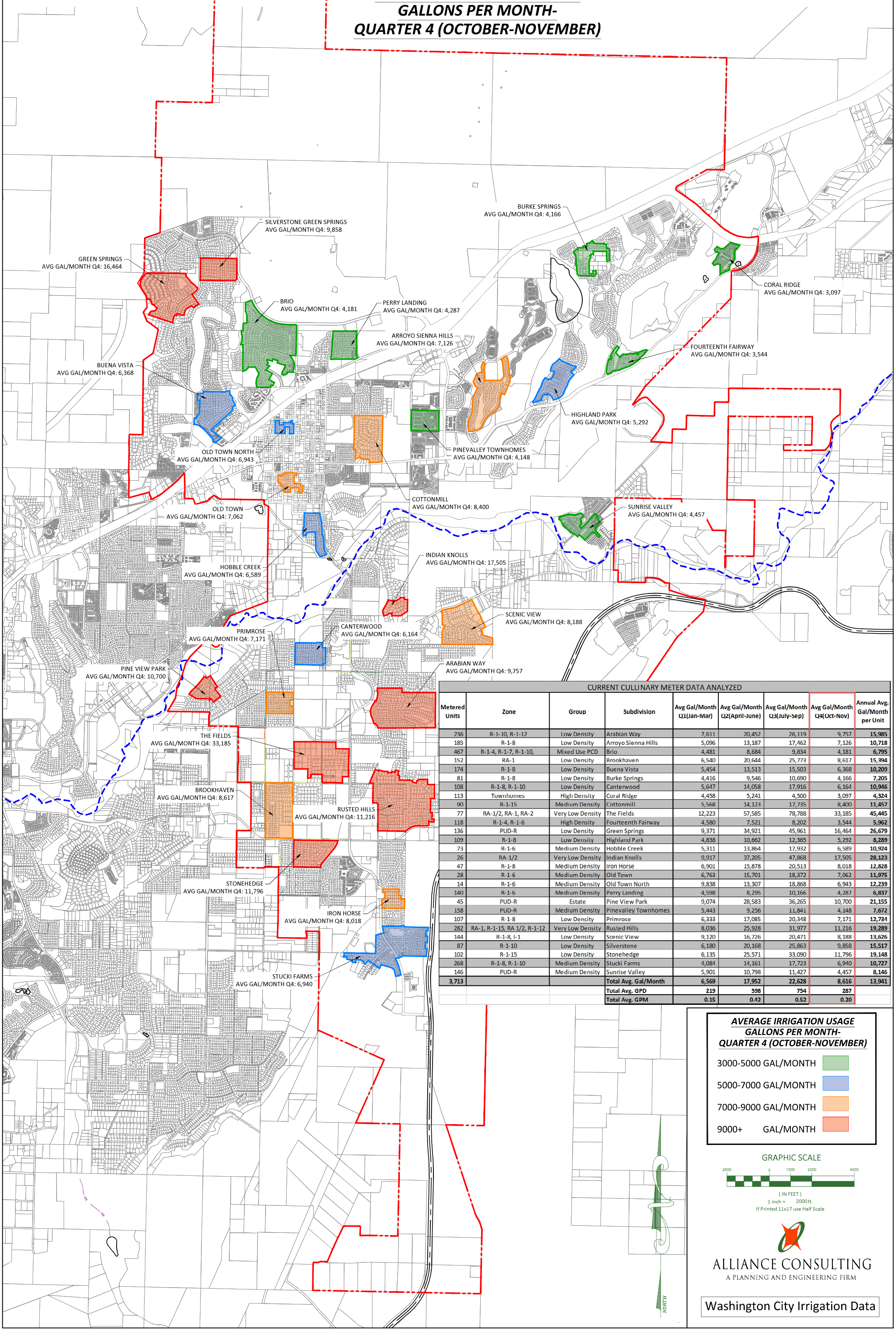
A PLANNING AND ENGINEERING FIRM

Washington City Irrigation Data

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 4 (OCTOBER-NOVEMBER)



CURRENT CULLINARY METER DATA ANALYZED

Metered Units	Zone	Group	Subdivision	Avg Gal/Month Q1(Jan-Mar)	Avg Gal/Month Q2(April-June)	Avg Gal/Month Q3(July-Sep)	Avg Gal/Month Q4(Oct-Nov)	Annual Avg. Gal/Month per Unit
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467	R-1-4, R-1-7, R-1-10,	Mixed Use PCD	Brio	4,481	8,684	9,834	4,181	**6,795**
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81	R-1-8	Low Density	Burke Springs	4,416	9,546	10,690	4,166	**7,205**
108	R-1-8, R-1-10	Low Density	Canterwood	5,647	14,058	17,916	6,164	**10,946**
113	Townhomes	High Density	Coral Ridge	4,458	5,241	4,500	3,097	**4,324**
90	R-1-15	Medium Density	Cottonmill	5,568	14,123	17,735	8,400	**11,457**
77	RA-1/2, RA-1, RA-2	Very Low Density	The Fields	12,223	57,585	78,788	33,185	**45,445**
118	R-1-4, R-1-6	High Density	Fourteenth Fairway	4,580	7,521	8,202	3,544	**5,962**
136	PUD-R	Low Density	Green Springs	9,371	34,921	45,961	16,464	**26,679**
109	R-1-8	Low Density	Highland Park	4,838	10,662	12,365	5,292	**8,289**
73	R-1-6	Medium Density	Hobble Creek	5,311	13,864	17,932	6,589	**10,924**
26	RA-1/2	Very Low Density	Indian Knolls	9,917	37,205	47,868	17,505	**28,123**
47	R-1-8	Medium Density	Iron Horse	6,901	15,878	20,513	8,018	**12,828**
28	R-1-6	Medium Density	Old Town	6,763	15,701	18,372	7,062	**11,975**
14	R-1-6	Medium Density	Old Town North	9,838	13,307	18,868	6,943	**12,239**
140	R-1-6	Medium Density	Perry Landing	4,598	8,295	10,166	4,287	**6,837**
45	PUD-R	Estate	Pine View Park	9,074	28,583	36,265	10,700	**21,155**
158	PUD-R	Medium Density	Pinevalley Townhomes	5,443	9,256	11,841	4,148	**7,672**
107	R-1-8	Low Density	Primrose	6,333	17,085	20,348	7,171	**12,734**
282	RA-1, R-1-15, RA 1/2, R-1-12	Very Low Density	Rusted Hills	8,036	25,928	31,977	11,216	**19,289**
144	R-1-8, I-1	Low Density	Scenic View	9,120	16,726	20,471	8,188	**13,626**
87	R-1-10	Low Density	Silverstone	6,180	20,168	25,863	9,858	**15,517**
102	R-1-15	Low Density	Stonehedge	6,135	25,571	33,090	11,796	**19,148**
268	R-1-8, R-1-10	Medium Density	Stucki Farms	4,084	14,161	17,723	6,940	**10,727**
146	PUD-R	Medium Density	Sunrise Valley	5,901	10,798	11,427	4,457	**8,146**
3,713			**Total Avg. Gal/Month**	**6,569**	**17,952**	**22,628**	**8,616**	**13,941**
			Total Avg. GPD	**219**	**598**	**754**	**287**	
			Total Avg. GPM	**0.15**	**0.42**	**0.52**	**0.20**	

AVERAGE IRRIGATION USAGE GALLONS PER MONTH- QUARTER 4 (OCTOBER-NOVEMBER)

- 3000-5000 GAL/MONTH
- 5000-7000 GAL/MONTH
- 7000-9000 GAL/MONTH
- 9000+ GAL/MONTH

GRAPHIC SCALE

2000 0 1000 2000 4000

(IN FEET)
1 inch = 2000 ft.
If Printed 11x17 use Half Scale

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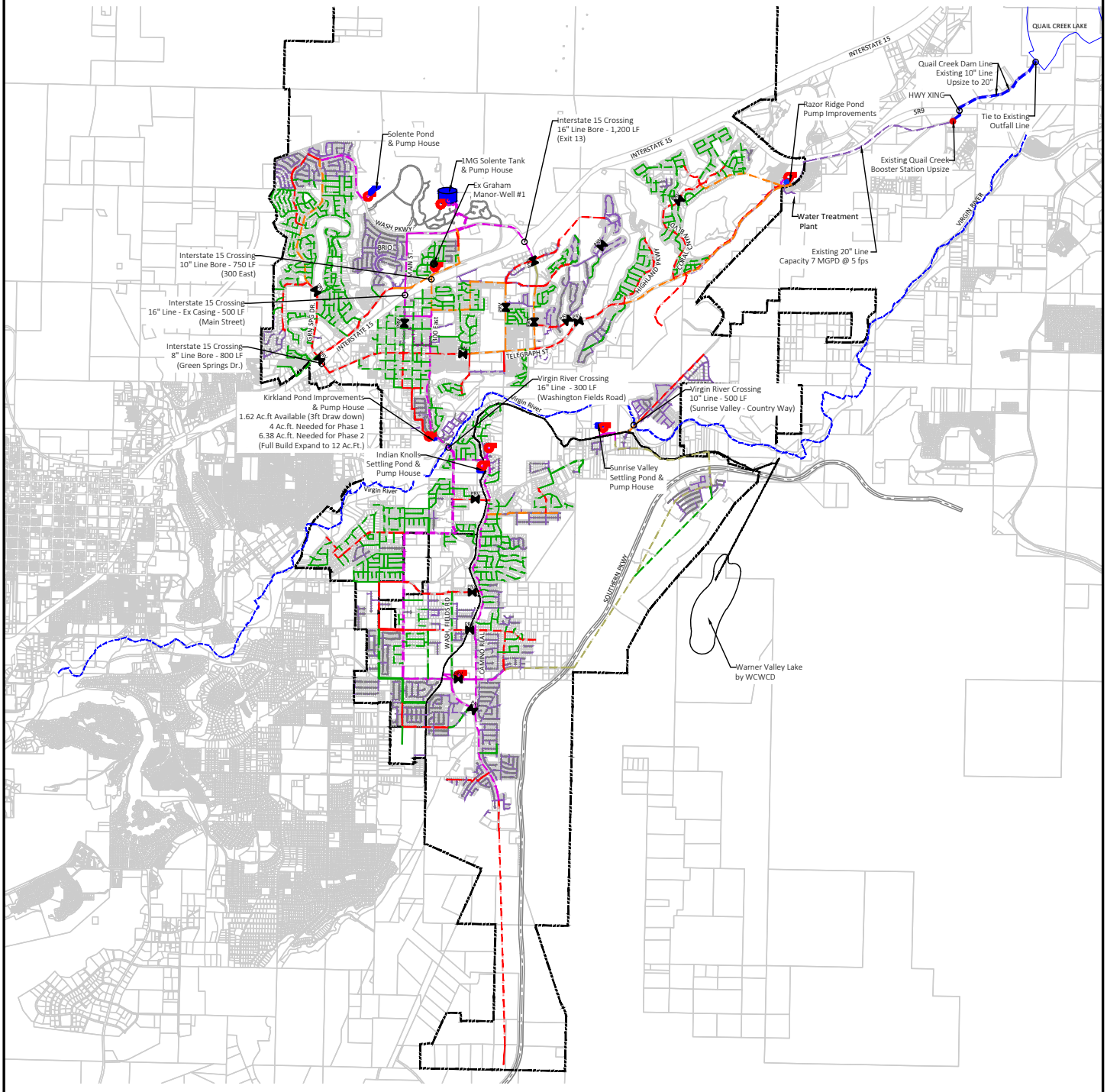
Washington City Irrigation Data

APPENDIX D: SYSTEM COST ESTIMATES AND INITIAL PROJECTS

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- FULL BUILD OUT



LEGEND

- NEW 18" IRR LINE
- NEW 16" IRR LINE
- NEW 12" IRR LINE
- NEW 10" IRR LINE
- NEW 8" IRR LINE
- NEW 6" IRR LINE
- EXISTING DRY LINE IRR

- EXISTING WELL SITE
- NEW PUMP LOCATION
- NEW TANK LOCATION
- POND
- PRV NEW PRV LOCATIONS

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=8000'

FIGURE 7.1

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

300 East to Veterans Park to Main Street

Irrigation Infrastructure Improvements - Project 1A

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	6" Irrigation Line Piping, Bends & Fittings (Purple Pipe)	4,000	LF	$ 105.00	$ 420,000.00
2	1 1/2" Irrigation Meter Setter (Veterans Park)	1	EACH	$ 2,600.00	$ 2,600.00
3	Asphalt Remove & Replace (Pipe LF x Trench Width)	32,000	SF	$ 4.50	$ 144,000.00
4	Tie to Existing Irrigation Lines (2 Locations)	1	LS	$ 5,000.00	$ 5,000.00
				Total	**$ 571,600.00**

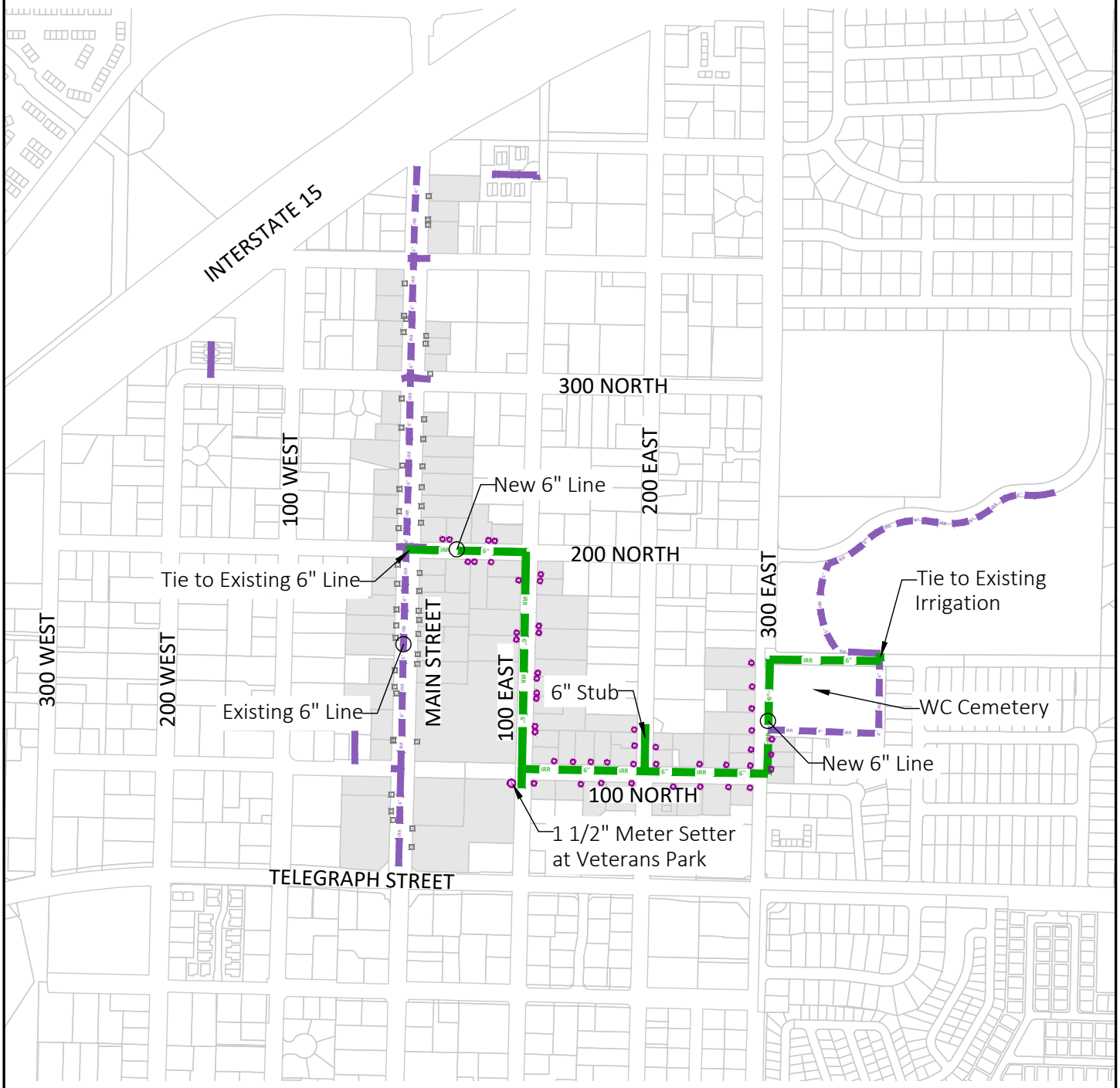
Contingency 20%	$ 114,320.00
Engineering/Admin/Etc. 18%	$ 102,888.00
Grand Total	**$ 788,808.00**

Irrigation Infrastructure Improvements - Project 1B

5	3/4" Setters for Existing Service Stubs	45	EACH	$ 690.00	$ 31,050.00
6	3/4" Irrigation Meters for Existing Services	45	EACH	$ 480.00	$ 21,600.00
7	3/4" Setter for Existing Homes	48	EACH	$ 2,600.00	$ 124,800.00
8	3/4" Irrigation Meters for Existing Homes	48	EACH	$ 480.00	$ 23,040.00
9	Asphalt/Concrete Remove & Replace	48	EACH	$ 950.00	$ 45,600.00
				Total	**$ 246,090.00**

Contingency 20%	$ 49,218.00
Engineering/Admin/Etc. 18%	$ 44,296.20
Grand Total	**$ 339,604.20**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO. 1



LEGEND

- NEW 6" IRR LINE - 4,000 LF
- EXISTING IRR LINE
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=600'

FIGURE 7.2

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

Existing Well No.1 to Main Street and Brio Subdivision

Irrigation Infrastructure Improvements - Project 2A

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	16" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	3,150	LF	$ 165.00	$ 519,750.00
2	10" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	2,000	LF	$ 135.00	$ 270,000.00
3	Existing Well Improvements for Connection (Graham Manor - Well 1)	1	LS	$ 500,000.00	$ 500,000.00
4	Asphalt Remove & Replace (Pipe LF x Trench Width)	41,200	SF	$ 4.50	$ 185,400.00
5	Tie to Existing Irrigation Lines (3 Locations - Brio Subdivision)	1	LS	$ 7,500.00	$ 7,500.00
				Total	**$ 1,482,650.00**

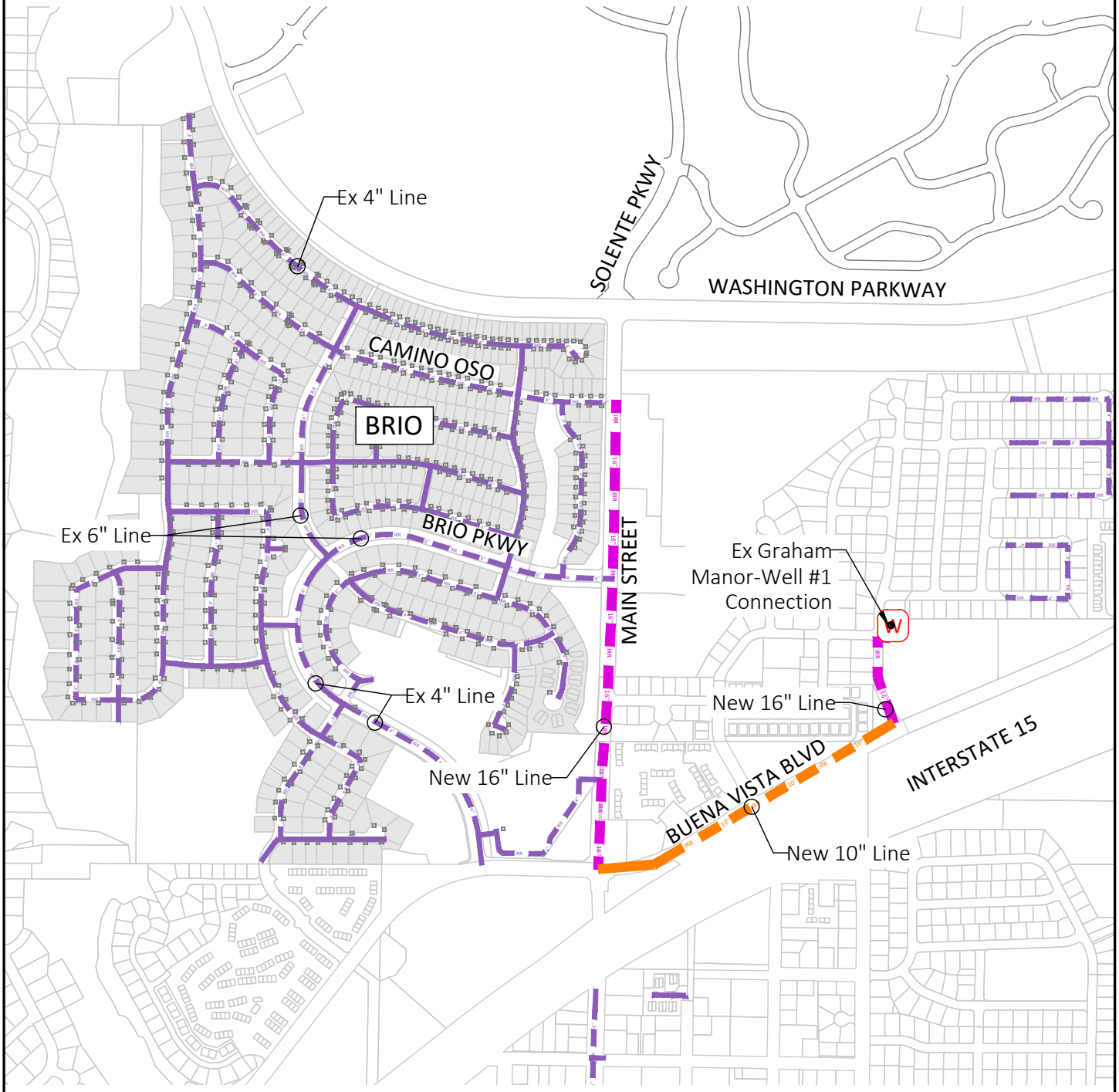
Contingency 20%	$ 296,530.00
Engineering/Admin/Etc. 18%	$ 266,877.00
Grand Total	**$ 2,046,057.00**

Irrigation Infrastructure Improvements - Project 2B

6	3/4" Setters for Existing Service Stubs	627	EACH	$ 690.00	$ 432,630.00
7	3/4" Irrigation Meters for Existing Services	627	EACH	$ 480.00	$ 300,960.00
				Total	**$ 733,590.00**

Contingency 20%	$ 146,718.00
Engineering/Admin/Etc. 18%	$ 132,046.20
Grand Total	**$ 1,012,354.20**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.2



LEGEND

- NEW 16" IRR LINE - 3,150 LF
- NEW 10" IRR LINE - 2,000 LF
- EXISTING 6" IRR LINE
- EXISTING 4" IRR LINE
- W — EXISTING WELL SITE
- EXISTING IRRIGATION METER SERVICE BOX
- IRRIGATED PARCELS

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=800'

FIGURE 7.3

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

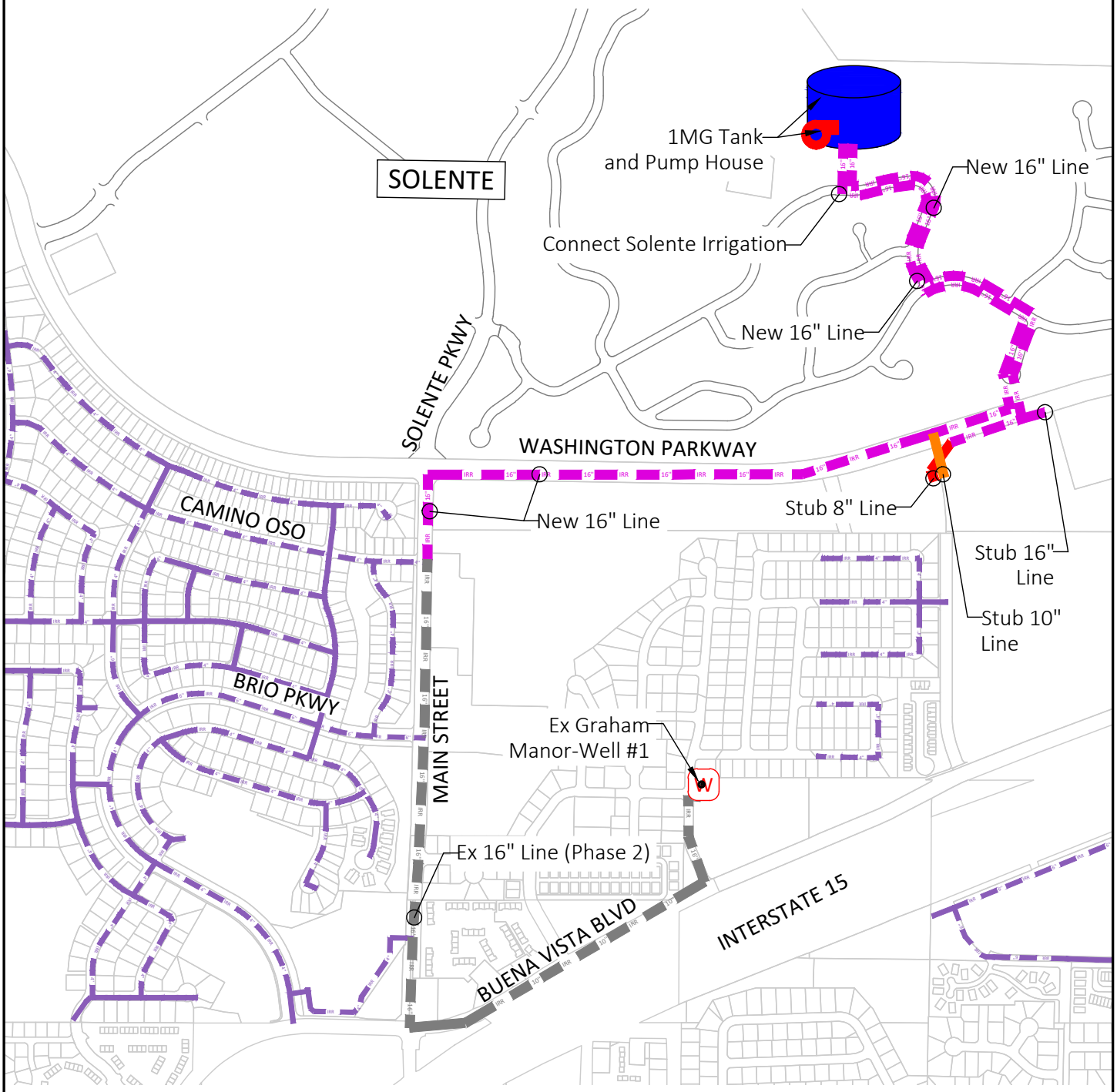
Main Street to Solente Tank

Irrigation Infrastructure Improvements - Project 3

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	16" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	9,500	LF	$ 165.00	$ 1,567,500.00
2	10" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	250	LF	$ 135.00	$ 33,750.00
3	8" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	250	LF	$ 110.00	$ 27,500.00
4	Solente Tank (1 Million Gallons)	1	LS	$ 2,780,000.00	$ 2,780,000.00
5	Solente Tank Booster Pump House	1	LS	$ 1,200,000.00	$ 1,200,000.00
6	Asphalt Remove & Replace (Pipe LF x Trench Width) (Main St & Wash Pkwy)	32,000	SF	$ 4.50	$ 144,000.00
7	Tie to Existing Irrigation Lines (1 Location)	1	LS	$ 2,500.00	$ 2,500.00
				Total	**$ 5,755,250.00**

Contingency 20%	$ 1,151,050.00
Engineering/Admin/Etc. 18%	$ 1,035,945.00
Grand Total	**$ 7,942,245.00**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.3



LEGEND

- NEW 16" IRR LINE - 9,500 LF
- NEW 10" IRR LINE - 250 LF
- NEW 8" IRR LINE - 250 LF
- EX 16" IRR LINE (PHASE 2)
- EX 8" IRR LINE (PHASE 2)
- EXISTING 4" IRR LINE
- EXISTING WELL SITE
- NEW PUMP LOCATION
- NEW TANK LOCATION

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=800'

FIGURE 7.4

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

Main Street to Kirkland Pond

Irrigation Infrastructure Improvements - Project 4A

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	16" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	8,750	LF	$ 165.00	$ 1,443,750.00
2	10" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	2,050	LF	$ 135.00	$ 276,750.00
3	8" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	250	LF	$ 110.00	$ 27,500.00
4	Kirkland Pond Improvements Project 1 (4 Ac.Ft.)	1	LS	$ 1,500,000.00	$ 1,500,000.00
5	Kirkland Pond Pump House Project 1	2	EACH	$ 2,000,000.00	$ 4,000,000.00
6	Interstate 15 Crossing - 10" Line Bore - 750 LF (300 East)	1	LS	$ 930.00	$ 930.00
7	Virgin River Crossing - 16" Line - 300 LF (Washington Fields Road)	1	LS	$ 1,200.00	$ 1,200.00
8	Asphalt Remove & Replace (Pipe LF x Trench Width)	88,400	SF	$ 4.50	$ 397,800.00
9	Tie to Existing Irrigation Lines (1 Location)	1	LS	$ 2,500.00	$ 2,500.00
				Total	**$ 7,650,430.00**

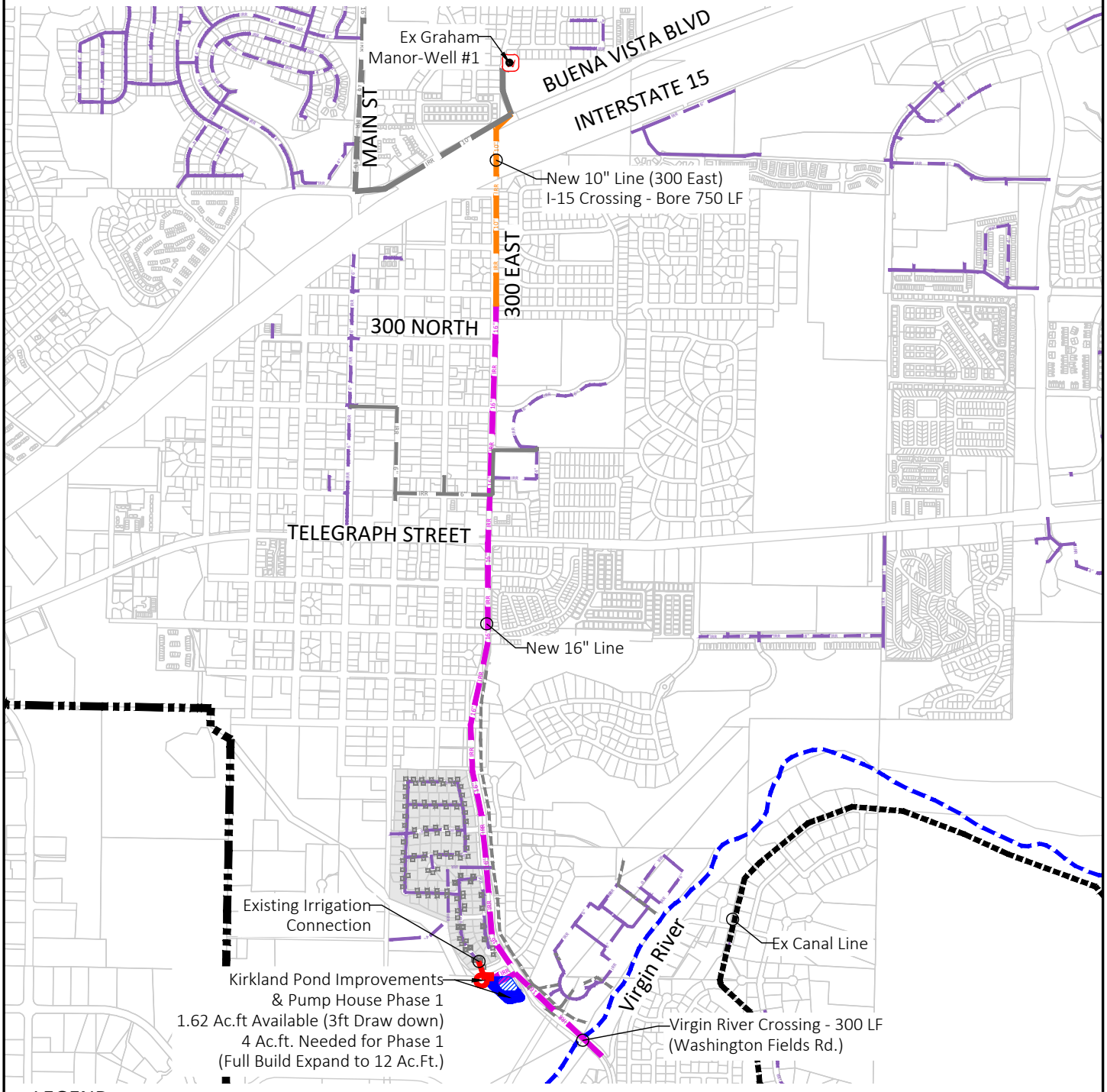
Contingency 20%	$ 1,530,086.00
Engineering/Admin/Etc. 18%	$ 1,377,077.40
Grand Total	**$ 10,557,593.40**

Irrigation Infrastructure Improvements - Project 4B

10	3/4" Setters for Existing Service Stubs	114	EACH	$ 690.00	$ 78,660.00
11	3/4" Irrigation Meters for Existing Services	114	EACH	$ 480.00	$ 54,720.00
12	3/4" Setter for Existing Homes	34	EACH	$ 2,600.00	$ 88,400.00
13	3/4" Irrigation Meters for Existing Homes	34	EACH	$ 480.00	$ 16,320.00
14	Asphalt/Concrete Remove & Replace	34	EACH	$ 950.00	$ 32,300.00
				Total	**$ 270,400.00**

Contingency 20%	$ 54,080.00
Engineering/Admin/Etc. 18%	$ 48,672.00
Grand Total	**$ 373,152.00**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.4



LEGEND

- NEW 16" IRR LINE - 8,750 LF
- NEW 10" IRR LINE - 2,050 LF
- NEW 8" IRR LINE - 250 LF
- EX IRR LINE (PHASE 1-3)
- EXISTING IRR LINE
- EXISTING CANAL LINE
- EXISTING WELL SITE
- NEW PUMP LOCATION
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS
- POND

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=1500'

FIGURE 7.5

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

Kirkland Pond to Irrigation Zone 6

Irrigation Infrastructure Improvements - Project 5A

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	16" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	15,500	LF	$ 165.00	$ 2,557,500.00
2	8" Irrigation Transmission Piping, Bends & Fittings (Purple Pipe)	1,350	LF	$ 110.00	$ 148,500.00
3	6" Irrigation Piping, Bends & Fittings (Purple Pipe)	4,800	LF	$ 105.00	$ 504,000.00
4	Asphalt Remove & Replace (Pipe LF x Trench Width)	173,200	SF	$ 4.50	$ 779,400.00
5	Tie to Existing Irrigation Lines (7 Locations)	1	LS	$ 17,500.00	$ 17,500.00
				Total	**$ 4,006,900.00**

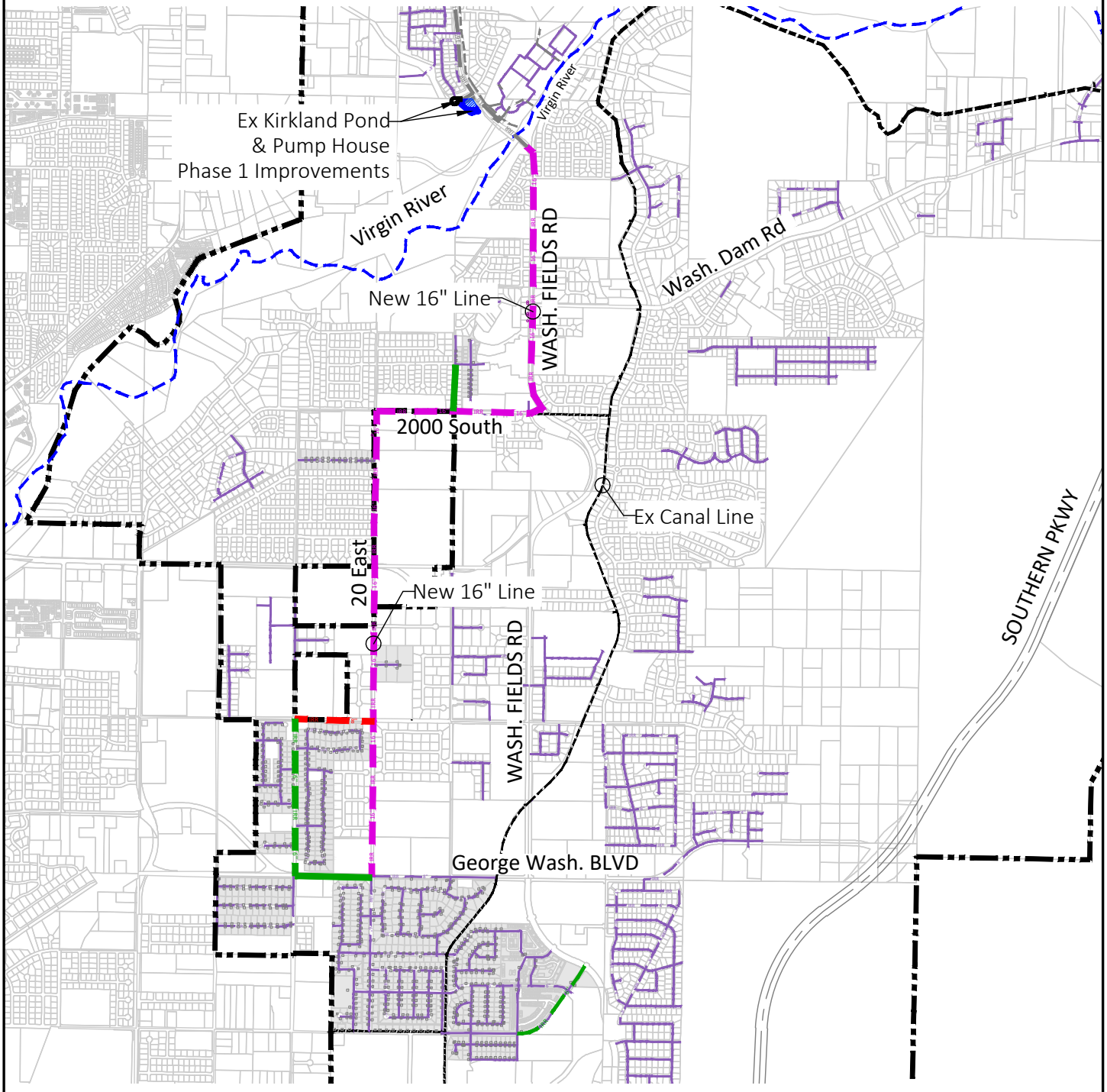
Contingency 20%	$ 801,380.00
Engineering/Admin/Etc. 18%	$ 721,242.00
Grand Total	**$ 5,529,522.00**

Irrigation Infrastructure Improvements - Project 5B

6	3/4" Setters for Existing Service Stubs	819	EACH	$ 690.00	$ 565,110.00
7	3/4" Irrigation Meters for Existing Services	819	EACH	$ 480.00	$ 393,120.00
8	3/4" Setter for Existing Homes	6	EACH	$ 2,600.00	$ 15,600.00
9	3/4" Irrigation Meters for Existing Homes	6	EACH	$ 480.00	$ 2,880.00
10	Asphalt/Concrete Remove & Replace	6	EACH	$ 950.00	$ 5,700.00
				Total	**$ 982,410.00**

Contingency 20%	$ 196,482.00
Engineering/Admin/Etc. 18%	$ 176,833.80
Grand Total	**$ 1,355,725.80**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.5



LEGEND

- NEW 16" IRR LINE - 15,500 LF
- NEW 8" IRR LINE - 1,350 LF
- NEW 6" IRR LINE - 4,800 LF
- EX 16" IRR LINE (PHASE 4)
- EXISTING IRR LINE
- EXISTING CANAL LINE
- PUMP LOCATION
- POND
- EXISTING IRRIGATION METER SERVICE BOX
- NEW IRRIGATION METER
- IRRIGATED PARCELS

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=2500'

FIGURE 7.6

ALLIANCE CONSULTING
A Land Planning and Engineering Firm

Preliminary Engineer's Estimate

Washington City Irrigation Master Plan

PROJECT: Washington City Irrigation Master Plan
PREPARED BY: ALLIANCE CONSULTING
PROJECT NO.: 4616-24
LOCATION: Washington County, Utah
DATE: April 16, 2024

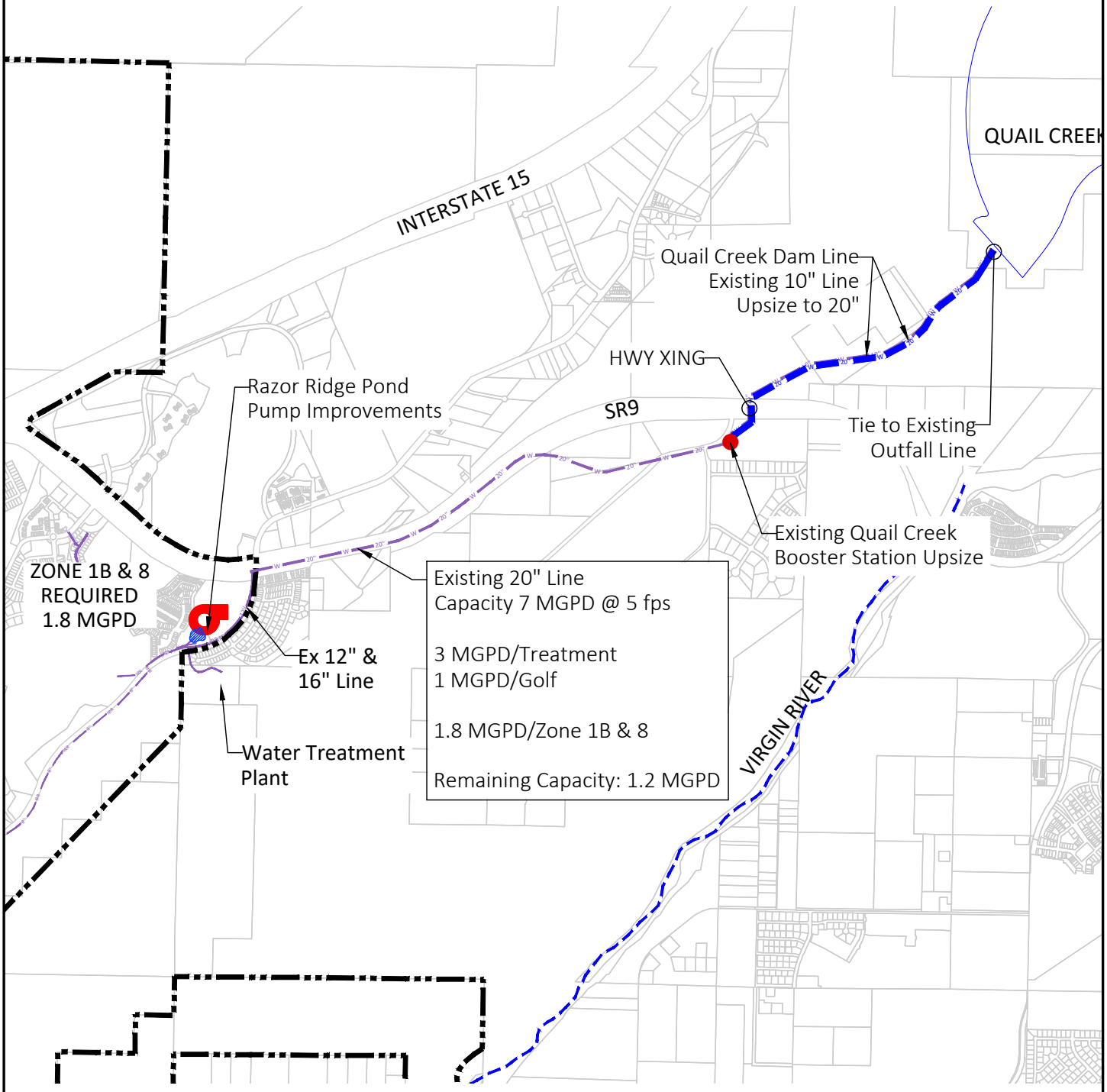
Quail Creek Source Improvements

Irrigation Infrastructure Improvements - Project 6

ITEM #	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED PRICE
1	Quail Creek Pipe Line Upsize to 20" (From Quail Booster to Quail Creek Dam)	6,025	LF	$ 285.00	$ 1,717,125.00
2	Quail Creek Booster Pump Upsize	1	LS	$ 1,200,000.00	$ 1,200,000.00
3	SR-9 Highway Crossing (Approx. 140 LF)	1	LS	$ 25,000.00	$ 25,000.00
4	Tie to Existing Location @ Quail Creek Dam	1	LS	$ 75,000.00	$ 75,000.00
5	Razor Ridge Pond PUMP Improvements	1	LS	$ 1,200,000.00	$ 1,200,000.00
				Total	**$ 4,217,125.00**

Contingency 20%	$ 843,425.00
Engineering/Admin/Etc. 18%	$ 759,082.50
Grand Total	**$ 5,819,632.50**

IRRIGATION INFRASTRUCTURE IMPROVEMENTS- PROJECT NO.6



LEGEND

- NEW 20" WATER LINE
- EXISTING WATER LINE
- EXISTING IRR LINE
- PUMP LOCATION
- POND

ALLIANCE CONSULTING
Planning and Engineering

Washington City
Where Dixie Begins

SCALE 1"=2500'

FIGURE 7.7

APPENDIX E: HYDRAULIC MODEL RESULTS

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	1	Zone 1 - 3270	86
35	J-2	3,045.00	1	Zone 1 - 3270	101
39	J-3	3,058.00	1	Zone 1 - 3270	53
40	J-4	3,060.00	1	Zone 1 - 3270	52
41	J-5	3,045.00	1	Zone 1 - 3270	58
45	J-6	3,078.00	1	Zone 1 - 3270	39
48	J-7	3,050.00	1	Zone 1 - 3270	56
53	J-8	3,040.00	1	Zone 1 - 3270	103
54	J-9	3,090.00	1	Zone 1 - 3270	81
71	J-10	3,050.00	1	Zone 1 - 3270	99
130	J-11	2,980.00	1	Zone 1 - 3270	81
147	J-12	2,920.00	1	Zone 1 - 3270	113
149	J-13	3,030.00	1	Zone 1 - 3270	60
150	J-14	3,040.00	1	Zone 1 - 3270	55
232	J-15	3,010.00	1	Zone 1 - 3270	74
497	J-16	2,994.00	0	Zone 1 - 3270	75
525	J-17	3,010.00	0	Zone 1 - 3270	68
548	J-18	3,080.00	0	Zone 1 - 3270	38
639	J-19	3,050.28	0	Zone 1 - 3270	56
759	J-20	2,970.00	0	Zone 1 - 3270	86
762	J-21	3,033.58	0	Zone 1 - 3270	106
781	J-22	3,021.07	0	Zone 1 - 3270	64
791	J-23	3,015.50	0	Zone 1 - 3270	71
810	J-24	2,997.59	0	Zone 1 - 3270	79
815	J-26	3,014.00	0	Zone 1 - 3270	72
852	J-27	3,150.00	0	Zone 1 - 3270	55
855	J-28	3,100.00	0	Zone 1 - 3270	77
858	J-29	3,050.00	0	Zone 1 - 3270	99
867	J-32	3,080.00	0	Zone 1 - 3270	86
1573	J-34	2,980.00	0	Zone 1 - 3270	87
43	J-35	2,960.00	1	Zone 2 - 3080	55
44	J-36	2,892.00	1	Zone 2 - 3080	85
47	J-37	2,846.00	1	Zone 2 - 3080	105
56	J-38	2,910.00	1	Zone 2 - 3080	74
57	J-39	2,970.00	1	Zone 2 - 3080	48
195	J-41	2,864.00	1	Zone 2 - 3080	97
234	J-42	2,870.00	1	Zone 2 - 3080	95
296	J-43	2,880.00	0	Zone 2 - 3080	91
300	J-44	2,986.00	0	Zone 2 - 3080	41
475	J-45	2,890.00	0	Zone 2 - 3080	82
490	J-46	2,925.00	0	Zone 2 - 3080	70
494	J-47	2,946.00	0	Zone 2 - 3080	70
502	J-48	2,840.00	0	Zone 2 - 3080	108
530	J-49	2,878.00	0	Zone 2 - 3080	91
544	J-51	2,960.00	0	Zone 2 - 3080	52
549	J-52	2,926.00	0	Zone 2 - 3080	67
624	J-53	2,952.00	0	Zone 2 - 3080	57
827	J-60	2,810.00	0	Zone 2 - 3080	121
839	J-64	3,000.00	0	Zone 2 - 3080	37

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
1005	J-65	2,884.88	0	Zone 2 - 3080	84
69	J-66	2,646.00	1	Zone 3 - 2910	120
321	J-68	2,705.00	0	Zone 3 - 2910	94
63	J-70	2,675.00	1	Zone 4 - 2920	150
141	J-71	2,786.00	1	Zone 4 - 2920	58
270	J-72	2,730.00	1	Zone 4 - 2920	126
846	J-75	2,790.00	0	Zone 4 - 2920	56
1088	J-77	2,722.00	0	Zone 4 - 2920	129
37	J-78	2,818.00	1	Zone 5 - 3050	100
131	J-79	2,840.00	1	Zone 5 - 3050	91
264	J-80	2,810.00	1	Zone 5 - 3050	104
64	J-86	2,622.00	1	Zone 6 - 2850	96
65	J-87	2,628.00	1	Zone 6 - 2850	94
89	J-88	2,692.00	1	Zone 6 - 2850	66
90	J-89	2,660.00	1	Zone 6 - 2850	80
91	J-90	2,652.00	1	Zone 6 - 2850	84
92	J-91	2,632.00	1	Zone 6 - 2850	92
93	J-92	2,612.00	1	Zone 6 - 2850	101
95	J-93	2,620.00	1	Zone 6 - 2850	97
125	J-94	2,600.00	1	Zone 6 - 2850	106
134	J-95	2,650.00	1	Zone 6 - 2850	84
208	J-96	2,676.00	1	Zone 6 - 2850	73
217	J-97	2,644.00	1	Zone 6 - 2850	87
218	J-98	2,656.00	1	Zone 6 - 2850	82
222	J-99	2,640.00	1	Zone 6 - 2850	89
225	J-100	2,618.00	1	Zone 6 - 2850	98
227	J-101	2,625.00	1	Zone 6 - 2850	95
276	J-102	2,600.00	1	Zone 6 - 2850	106
281	J-103	2,650.00	1	Zone 6 - 2850	84
382	J-104	2,640.25	0	Zone 6 - 2850	89
385	J-105	2,620.00	0	Zone 6 - 2850	97
389	J-106	2,660.00	0	Zone 6 - 2850	80
392	J-107	2,624.00	0	Zone 6 - 2850	96
395	J-108	2,606.00	0	Zone 6 - 2850	103
424	J-109	2,600.00	0	Zone 6 - 2850	106
426	J-110	2,605.00	0	Zone 6 - 2850	104
429	J-111	2,615.00	0	Zone 6 - 2850	100
533	J-113	2,590.00	0	Zone 6 - 2850	110
571	J-114	2,629.91	0	Zone 6 - 2850	93
870	J-115	2,603.37	0	Zone 6 - 2850	105
875	J-117	2,612.88	0	Zone 6 - 2850	100
881	J-119	2,610.83	0	Zone 6 - 2850	101
891	J-121	2,629.15	0	Zone 6 - 2850	93
897	J-123	2,651.03	0	Zone 6 - 2850	84
903	J-124	2,686.93	0	Zone 6 - 2850	68
980	J-126	2,678.64	0	Zone 6 - 2850	72
67	J-127	2,706.00	1	Zone 7 - 3010	129
68	J-128	2,690.00	1	Zone 7 - 3010	129
73	J-129	2,862.00	1	Zone 7 - 3010	61

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
76	J-130	2,800.00	1	Zone 7 - 3010	82
80	J-131	2,746.00	1	Zone 7 - 3010	111
81	J-132	2,720.00	1	Zone 7 - 3010	123
83	J-133	2,796.00	1	Zone 7 - 3010	90
84	J-134	2,704.00	1	Zone 7 - 3010	130
85	J-135	2,710.00	1	Zone 7 - 3010	127
116	J-136	2,680.00	1	Zone 7 - 3010	134
138	J-137	2,820.00	1	Zone 7 - 3010	79
202	J-138	2,730.00	1	Zone 7 - 3010	118
205	J-139	2,694.00	1	Zone 7 - 3010	134
211	J-140	2,742.00	1	Zone 7 - 3010	113
252	J-141	2,682.00	1	Zone 7 - 3010	139
259	J-142	2,750.00	1	Zone 7 - 3010	110
273	J-143	2,750.00	1	Zone 7 - 3010	110
312	J-144	2,800.00	0	Zone 7 - 3010	88
315	J-145	2,745.00	0	Zone 7 - 3010	112
317	J-146	2,750.00	0	Zone 7 - 3010	110
319	J-147	2,746.00	0	Zone 7 - 3010	111
399	J-148	2,750.00	0	Zone 7 - 3010	110
403	J-149	2,680.00	0	Zone 7 - 3010	140
410	J-150	2,694.00	0	Zone 7 - 3010	134
439	J-151	2,690.00	0	Zone 7 - 3010	129
566	J-152	2,750.00	0	Zone 7 - 3010	110
568	J-153	2,734.00	0	Zone 7 - 3010	117
574	J-154	2,674.00	0	Zone 7 - 3010	143
665	J-155	2,676.00	0	Zone 7 - 3010	142
713	J-156	2,746.00	0	Zone 7 - 3010	105
722	J-157	2,691.85	0	Zone 7 - 3010	135
727	J-159	2,684.00	0	Zone 7 - 3010	138
910	J-160	2,750.00	0	Zone 7 - 3010	110
920	J-162	2,674.00	0	Zone 7 - 3010	143
944	J-166	2,687.56	0	Zone 7 - 3010	137
1018	J-169	2,689.21	0	Zone 7 - 3010	136
634	J-174	3,080.00	0	Zone 8 - 3150	0
703	J-176	2,925.00	0	Zone 8 - 3150	67
971	J-178	2,995.68	0	Zone 8 - 3150	36

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	6	Zone 1 - 3270	78
35	J-2	3,045.00	0	Zone 1 - 3270	93
39	J-3	3,058.00	58	Zone 1 - 3270	64
40	J-4	3,060.00	58	Zone 1 - 3270	63
41	J-5	3,045.00	58	Zone 1 - 3270	69
45	J-6	3,078.00	0	Zone 1 - 3270	47
48	J-7	3,050.00	40	Zone 1 - 3270	66
53	J-8	3,040.00	15	Zone 1 - 3270	96
54	J-9	3,090.00	2	Zone 1 - 3270	74
71	J-10	3,050.00	68	Zone 1 - 3270	91
130	J-11	2,980.00	1	Zone 1 - 3270	89
147	J-12	2,920.00	0	Zone 1 - 3270	123
149	J-13	3,030.00	10	Zone 1 - 3270	67
150	J-14	3,040.00	0	Zone 1 - 3270	63
232	J-15	3,010.00	36	Zone 1 - 3270	84
497	J-16	2,994.00	10	Zone 1 - 3270	83
525	J-17	3,010.00	10	Zone 1 - 3270	76
548	J-18	3,080.00	29	Zone 1 - 3270	45
639	J-19	3,050.28	0	Zone 1 - 3270	67
759	J-20	2,970.00	0	Zone 1 - 3270	93
762	J-21	3,033.58	40	Zone 1 - 3270	98
781	J-22	3,021.07	0	Zone 1 - 3270	71
791	J-23	3,015.50	0	Zone 1 - 3270	82
810	J-24	2,997.59	0	Zone 1 - 3270	90
815	J-26	3,014.00	0	Zone 1 - 3270	83
852	J-27	3,150.00	22	Zone 1 - 3270	48
855	J-28	3,100.00	0	Zone 1 - 3270	69
858	J-29	3,050.00	0	Zone 1 - 3270	91
867	J-32	3,080.00	0	Zone 1 - 3270	78
1573	J-34	2,980.00	0	Zone 1 - 3270	97
43	J-35	2,960.00	74	Zone 2 - 3080	59
44	J-36	2,892.00	74	Zone 2 - 3080	93
47	J-37	2,846.00	1	Zone 2 - 3080	113
56	J-38	2,910.00	29	Zone 2 - 3080	73
57	J-39	2,970.00	3	Zone 2 - 3080	48
195	J-41	2,864.00	1	Zone 2 - 3080	105
234	J-42	2,870.00	3	Zone 2 - 3080	102
296	J-43	2,880.00	0	Zone 2 - 3080	98
300	J-44	2,986.00	0	Zone 2 - 3080	42
475	J-45	2,890.00	0	Zone 2 - 3080	82
490	J-46	2,925.00	74	Zone 2 - 3080	75
494	J-47	2,946.00	0	Zone 2 - 3080	77
502	J-48	2,840.00	16	Zone 2 - 3080	117
530	J-49	2,878.00	0	Zone 2 - 3080	102
544	J-51	2,960.00	29	Zone 2 - 3080	51
549	J-52	2,926.00	0	Zone 2 - 3080	67
624	J-53	2,952.00	0	Zone 2 - 3080	61
827	J-60	2,810.00	0	Zone 2 - 3080	128
839	J-64	3,000.00	74	Zone 2 - 3080	41

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
1005	J-65	2,884.88	23	Zone 2 - 3080	84
69	J-66	2,646.00	46	Zone 3 - 2910	144
321	J-68	2,705.00	32	Zone 3 - 2910	119
63	J-70	2,675.00	23	Zone 4 - 2920	124
141	J-71	2,786.00	32	Zone 4 - 2920	58
270	J-72	2,730.00	36	Zone 4 - 2920	100
846	J-75	2,790.00	15	Zone 4 - 2920	56
1088	J-77	2,722.00	0	Zone 4 - 2920	104
37	J-78	2,818.00	16	Zone 5 - 3050	100
131	J-79	2,840.00	0	Zone 5 - 3050	91
264	J-80	2,810.00	29	Zone 5 - 3050	104
64	J-86	2,622.00	0	Zone 6 - 2850	81
65	J-87	2,628.00	10	Zone 6 - 2850	78
89	J-88	2,692.00	0	Zone 6 - 2850	50
90	J-89	2,660.00	28	Zone 6 - 2850	63
91	J-90	2,652.00	28	Zone 6 - 2850	67
92	J-91	2,632.00	59	Zone 6 - 2850	76
93	J-92	2,612.00	31	Zone 6 - 2850	84
95	J-93	2,620.00	12	Zone 6 - 2850	81
125	J-94	2,600.00	21	Zone 6 - 2850	90
134	J-95	2,650.00	51	Zone 6 - 2850	68
208	J-96	2,676.00	0	Zone 6 - 2850	57
217	J-97	2,644.00	28	Zone 6 - 2850	70
218	J-98	2,656.00	28	Zone 6 - 2850	65
222	J-99	2,640.00	0	Zone 6 - 2850	73
225	J-100	2,618.00	0	Zone 6 - 2850	82
227	J-101	2,625.00	15	Zone 6 - 2850	79
276	J-102	2,600.00	0	Zone 6 - 2850	90
281	J-103	2,650.00	28	Zone 6 - 2850	67
382	J-104	2,640.25	8	Zone 6 - 2850	72
385	J-105	2,620.00	0	Zone 6 - 2850	81
389	J-106	2,660.00	28	Zone 6 - 2850	63
392	J-107	2,624.00	0	Zone 6 - 2850	79
395	J-108	2,606.00	0	Zone 6 - 2850	87
424	J-109	2,600.00	15	Zone 6 - 2850	89
426	J-110	2,605.00	15	Zone 6 - 2850	87
429	J-111	2,615.00	0	Zone 6 - 2850	83
533	J-113	2,590.00	35	Zone 6 - 2850	94
571	J-114	2,629.91	10	Zone 6 - 2850	77
870	J-115	2,603.37	0	Zone 6 - 2850	88
875	J-117	2,612.88	0	Zone 6 - 2850	84
881	J-119	2,610.83	12	Zone 6 - 2850	85
891	J-121	2,629.15	0	Zone 6 - 2850	77
897	J-123	2,651.03	22	Zone 6 - 2850	67
903	J-124	2,686.93	28	Zone 6 - 2850	52
980	J-126	2,678.64	28	Zone 6 - 2850	55
67	J-127	2,706.00	40	Zone 7 - 3010	112
68	J-128	2,690.00	18	Zone 7 - 3010	100
73	J-129	2,862.00	25	Zone 7 - 3010	44

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
76	J-130	2,800.00	62	Zone 7 - 3010	52
80	J-131	2,746.00	19	Zone 7 - 3010	94
81	J-132	2,720.00	71	Zone 7 - 3010	105
83	J-133	2,796.00	22	Zone 7 - 3010	72
84	J-134	2,704.00	50	Zone 7 - 3010	112
85	J-135	2,710.00	50	Zone 7 - 3010	109
116	J-136	2,680.00	0	Zone 7 - 3010	104
138	J-137	2,820.00	28	Zone 7 - 3010	62
202	J-138	2,730.00	0	Zone 7 - 3010	101
205	J-139	2,694.00	50	Zone 7 - 3010	116
211	J-140	2,742.00	25	Zone 7 - 3010	96
252	J-141	2,682.00	0	Zone 7 - 3010	122
259	J-142	2,750.00	15	Zone 7 - 3010	92
273	J-143	2,750.00	40	Zone 7 - 3010	92
312	J-144	2,800.00	0	Zone 7 - 3010	71
315	J-145	2,745.00	0	Zone 7 - 3010	94
317	J-146	2,750.00	0	Zone 7 - 3010	92
319	J-147	2,746.00	6	Zone 7 - 3010	94
399	J-148	2,750.00	15	Zone 7 - 3010	92
403	J-149	2,680.00	0	Zone 7 - 3010	122
410	J-150	2,694.00	75	Zone 7 - 3010	116
439	J-151	2,690.00	0	Zone 7 - 3010	100
566	J-152	2,750.00	1	Zone 7 - 3010	92
568	J-153	2,734.00	0	Zone 7 - 3010	99
574	J-154	2,674.00	20	Zone 7 - 3010	125
665	J-155	2,676.00	0	Zone 7 - 3010	124
713	J-156	2,746.00	62	Zone 7 - 3010	75
722	J-157	2,691.85	0	Zone 7 - 3010	117
727	J-159	2,684.00	0	Zone 7 - 3010	121
910	J-160	2,750.00	15	Zone 7 - 3010	92
920	J-162	2,674.00	0	Zone 7 - 3010	125
944	J-166	2,687.56	0	Zone 7 - 3010	119
1018	J-169	2,689.21	0	Zone 7 - 3010	119
634	J-174	3,080.00	0	Zone 8 - 3150	0
703	J-176	2,925.00	0	Zone 8 - 3150	67
971	J-178	2,995.68	0	Zone 8 - 3150	36

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	90	0.37	0.61	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	158	0.25	0.04	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	29	0.18	0.03	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	68	0.43	0.36	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	47	0.30	0.10	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	51	0.33	0.09	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	36	0.93	1.09	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	10	0.25	0.08	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	10	0.25	0.09	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	47	0.30	0.16	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	109	0.69	0.22	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	192	0.31	0.03	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	111	0.18	0.00	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	158	0.25	0.04	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	57	0.23	0.12	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	18	0.45	0.34	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	29	0.74	0.75	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	249	0.40	0.14	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	83	0.34	0.09	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	83	0.34	0.10	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	40	0.17	0.04	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	-42	0.27	0.11	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	22	0.14	0.03	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	22	0.14	0.03	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	2	0.01	0.00	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	2	0.02	0.00	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	15	0.10	0.01	Zone 1 - 3270
P-41	2,256	J-32	J-8	6.0	PVC	15	0.17	0.05	Zone 1 - 3270
P-42	453	R-6	PMP-25	16.0	PVC	249	0.40	0.02	Zone 1 - 3270
P-43	756	PMP-25	J-23	16.0	PVC	249	0.40	0.03	Zone 1 - 3270
P-44	700	T-1	PMP-26	16.0	PVC	187	0.30	0.02	Zone 1 - 3270
P-45	920	PMP-26	J-14	16.0	PVC	187	0.30	0.02	Zone 1 - 3270
P-46	432	R-2	PMP-27	16.0	PVC	153	0.24	0.01	Zone 1 - 3270
P-47	406	PMP-27	J-1	16.0	PVC	153	0.24	0.01	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-90	3,734	J-12	J-34	8.0	PVC	40	0.26	0.14	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	40	1.03	2.37	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	1	0.01	0.00	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	5	0.02	0.00	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	136	0.56	0.08	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	47	0.30	0.12	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	3,657	5.83	8.35	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	2,295	3.66	3.31	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	111	0.18	0.00	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	108	0.31	0.04	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	2,359	3.76	3.32	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	29	0.74	1.10	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	3,461	5.52	4.55	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	3,494	4.40	4.11	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	18	0.47	0.22	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	18	0.45	0.39	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	7	0.18	0.16	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	47	0.54	0.08	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-3,494	5.57	9.47	Zone 2 - 3080
P-120	2,149	J-46	J-35	6.0	PVC	122	1.38	2.48	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	2	0.01	0.00	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	2	0.01	0.00	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	-33	0.83	1.11	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	61	0.25	0.03	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	38	0.15	0.01	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	1,498	6.12	17.31	Zone 2 - 3080
P-139	397	Well-1	PMP-28	16.0	PVC	1,498	2.39	0.40	Zone 2 - 3080
P-140	296	PMP-28	J-47	16.0	PVC	1,498	2.39	0.30	Zone 2 - 3080
P-141	644	R-1	PMP-29	16.0	PVC	2,359	3.76	1.51	Zone 2 - 3080
P-142	6,039	PMP-29	J-49	16.0	PVC	2,359	3.76	14.17	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	48	1.23	0.96	Zone 2 - 3080
P-172	5,588	J-36	J-64	4.0	PVC	58	1.48	11.72	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	32	0.21	0.07	Zone 3 - 2910
P-178	581	R-4	PMP-33	10.0	PVC	78	0.32	0.02	Zone 3 - 2910

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-179	1,949	PMP-33	J-66	10.0	PVC	78	0.32	0.08	Zone 3 - 2910
P-195	770	J-77	J-72	8.0	PVC	36	0.23	0.02	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	47	0.54	0.33	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	36	0.23	0.07	Zone 4 - 2920
P-201	1,715	J-71	J-75	8.0	PVC	15	0.10	0.01	Zone 4 - 2920
P-207	621	R-1	PMP-30	8.0	PVC	59	0.38	0.05	Zone 4 - 2920
P-208	925	PMP-30	J-70	8.0	PVC	59	0.38	0.07	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	22	0.14	0.02	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	16	0.07	0.00	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	7	0.18	0.03	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	38	0.15	0.00	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	529	0.84	0.22	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	29	0.33	0.22	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	17	0.11	0.01	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	30	0.35	0.12	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	-128	0.20	0.01	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	-100	0.16	0.01	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	529	0.84	0.28	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	12	0.30	0.08	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	21	0.14	0.00	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	89	1.01	0.82	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	-51	0.32	0.07	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	539	0.86	0.34	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-28	0.32	0.09	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	23	0.15	0.02	Zone 6 - 2850
P-250	1,336	J-104	J-107	8.0	PVC	-59	0.37	0.10	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	518	0.83	0.18	Zone 6 - 2850
P-252	1,184	J-110	J-109	6.0	PVC	15	0.17	0.03	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	37	0.23	0.08	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	68	0.43	0.13	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	15	0.10	0.01	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	461	0.74	0.13	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	357	0.57	0.07	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	367	0.59	0.12	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-261	1,384	J-86	J-105	16.0	PVC	539	0.86	0.21	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	56	0.36	0.07	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	56	0.36	0.10	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	450	0.72	0.08	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	450	0.72	0.08	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	35	0.22	0.09	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	276	0.44	0.03	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	276	0.44	0.09	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	33	0.21	0.02	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	11	0.07	0.00	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	100	0.16	0.01	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	73	0.12	0.00	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	45	0.28	0.06	Zone 6 - 2850
P-287	1,675	J-88	J-126	6.0	PVC	73	0.82	0.74	Zone 6 - 2850
P-294	675	R-1	PMP-31	16.0	PVC	539	0.86	0.10	Zone 6 - 2850
P-295	746	PMP-31	J-86	16.0	PVC	539	0.86	0.11	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	112	0.18	0.01	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	19	0.03	0.00	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	22	0.14	0.03	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	50	0.56	0.29	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	62	0.18	0.02	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	28	0.71	0.80	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	28	0.32	0.06	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	15	0.04	0.00	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	72	0.46	0.17	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	32	0.36	0.15	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	25	0.65	0.30	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	7	0.08	0.01	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	7	0.08	0.00	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	124	0.35	0.21	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	124	0.35	0.08	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	58	0.37	0.12	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	12	0.02	0.00	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	261	0.42	0.07	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-328	537	J-151	J-128	16.0	PVC	142	0.23	0.01	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	1	0.01	0.00	Zone 7 - 3010
P-330	550	J-146	J-153	6.0	PVC	7	0.08	0.00	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	6	0.06	0.00	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	407	0.65	0.12	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	427	0.68	0.09	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	427	0.68	0.14	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	427	0.68	0.13	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	-28	0.18	0.02	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	-43	0.28	0.05	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	455	0.73	0.15	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	455	0.73	0.05	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	348	0.56	0.09	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	348	0.56	0.10	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	211	0.34	0.06	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	527	0.84	0.34	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	527	0.84	0.11	Zone 7 - 3010
P-366	267	R-8	PMP-32	16.0	PVC	567	0.90	0.04	Zone 7 - 3010
P-367	528	PMP-32	J-127	16.0	PVC	567	0.90	0.09	Zone 7 - 3010
P-368	453	R-4	PMP-34	16.0	PVC	142	0.23	0.01	Zone 7 - 3010
P-369	701	PMP-34	J-151	16.0	PVC	142	0.23	0.01	Zone 7 - 3010
P-417	3,837	J-178	J-174	8.0	PVC	0	0.00	0.00	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	0	0.00	0.00	Zone 8 - 3150
P-419	935	J-174	R-2	8.0	PVC	0	0.00	0.00	Zone 8 - 3150

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	17	Zone 1 - 3270	93
35	J-2	3,045.00	0	Zone 1 - 3270	106
39	J-3	3,058.00	173	Zone 1 - 3270	71
40	J-4	3,060.00	173	Zone 1 - 3270	72
41	J-5	3,045.00	173	Zone 1 - 3270	77
45	J-6	3,078.00	0	Zone 1 - 3270	77
48	J-7	3,050.00	121	Zone 1 - 3270	67
53	J-8	3,040.00	45	Zone 1 - 3270	110
54	J-9	3,090.00	7	Zone 1 - 3270	89
71	J-10	3,050.00	204	Zone 1 - 3270	103
130	J-11	2,980.00	3	Zone 1 - 3270	119
147	J-12	2,920.00	0	Zone 1 - 3270	131
149	J-13	3,030.00	29	Zone 1 - 3270	98
150	J-14	3,040.00	0	Zone 1 - 3270	93
232	J-15	3,010.00	109	Zone 1 - 3270	89
497	J-16	2,994.00	29	Zone 1 - 3270	113
525	J-17	3,010.00	29	Zone 1 - 3270	106
548	J-18	3,080.00	87	Zone 1 - 3270	73
639	J-19	3,050.28	0	Zone 1 - 3270	76
759	J-20	2,970.00	0	Zone 1 - 3270	123
762	J-21	3,033.58	121	Zone 1 - 3270	113
781	J-22	3,021.07	0	Zone 1 - 3270	101
791	J-23	3,015.50	0	Zone 1 - 3270	91
810	J-24	2,997.59	0	Zone 1 - 3270	98
815	J-26	3,014.00	0	Zone 1 - 3270	91
852	J-27	3,150.00	66	Zone 1 - 3270	61
855	J-28	3,100.00	0	Zone 1 - 3270	82
858	J-29	3,050.00	0	Zone 1 - 3270	106
867	J-32	3,080.00	0	Zone 1 - 3270	93
1573	J-34	2,980.00	0	Zone 1 - 3270	105
43	J-35	2,960.00	221	Zone 2 - 3080	56
44	J-36	2,892.00	221	Zone 2 - 3080	95
47	J-37	2,846.00	3	Zone 2 - 3080	115
56	J-38	2,910.00	87	Zone 2 - 3080	72
57	J-39	2,970.00	9	Zone 2 - 3080	48
195	J-41	2,864.00	3	Zone 2 - 3080	107
234	J-42	2,870.00	8	Zone 2 - 3080	105
296	J-43	2,880.00	0	Zone 2 - 3080	101
300	J-44	2,986.00	0	Zone 2 - 3080	43
475	J-45	2,890.00	0	Zone 2 - 3080	82
490	J-46	2,925.00	221	Zone 2 - 3080	76
494	J-47	2,946.00	0	Zone 2 - 3080	79
502	J-48	2,840.00	49	Zone 2 - 3080	120
530	J-49	2,878.00	0	Zone 2 - 3080	107
544	J-51	2,960.00	87	Zone 2 - 3080	48
549	J-52	2,926.00	0	Zone 2 - 3080	66
624	J-53	2,952.00	0	Zone 2 - 3080	62
827	J-60	2,810.00	0	Zone 2 - 3080	131
839	J-64	3,000.00	221	Zone 2 - 3080	38

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
1005	J-65	2,884.88	69	Zone 2 - 3080	84
69	J-66	2,646.00	137	Zone 3 - 2910	107
321	J-68	2,705.00	97	Zone 3 - 2910	81
63	J-70	2,675.00	68	Zone 4 - 2920	124
141	J-71	2,786.00	96	Zone 4 - 2920	57
270	J-72	2,730.00	109	Zone 4 - 2920	100
846	J-75	2,790.00	45	Zone 4 - 2920	55
1088	J-77	2,722.00	0	Zone 4 - 2920	103
37	J-78	2,818.00	48	Zone 5 - 3050	100
131	J-79	2,840.00	0	Zone 5 - 3050	91
264	J-80	2,810.00	87	Zone 5 - 3050	104
64	J-86	2,622.00	0	Zone 6 - 2850	80
65	J-87	2,628.00	29	Zone 6 - 2850	76
89	J-88	2,692.00	0	Zone 6 - 2850	43
90	J-89	2,660.00	84	Zone 6 - 2850	55
91	J-90	2,652.00	84	Zone 6 - 2850	58
92	J-91	2,632.00	178	Zone 6 - 2850	69
93	J-92	2,612.00	93	Zone 6 - 2850	79
95	J-93	2,620.00	35	Zone 6 - 2850	77
125	J-94	2,600.00	64	Zone 6 - 2850	85
134	J-95	2,650.00	153	Zone 6 - 2850	62
208	J-96	2,676.00	0	Zone 6 - 2850	50
217	J-97	2,644.00	84	Zone 6 - 2850	64
218	J-98	2,656.00	84	Zone 6 - 2850	59
222	J-99	2,640.00	0	Zone 6 - 2850	69
225	J-100	2,618.00	0	Zone 6 - 2850	78
227	J-101	2,625.00	46	Zone 6 - 2850	74
276	J-102	2,600.00	0	Zone 6 - 2850	85
281	J-103	2,650.00	84	Zone 6 - 2850	59
382	J-104	2,640.25	23	Zone 6 - 2850	66
385	J-105	2,620.00	0	Zone 6 - 2850	80
389	J-106	2,660.00	84	Zone 6 - 2850	54
392	J-107	2,624.00	0	Zone 6 - 2850	73
395	J-108	2,606.00	0	Zone 6 - 2850	83
424	J-109	2,600.00	46	Zone 6 - 2850	84
426	J-110	2,605.00	46	Zone 6 - 2850	82
429	J-111	2,615.00	0	Zone 6 - 2850	78
533	J-113	2,590.00	105	Zone 6 - 2850	89
571	J-114	2,629.91	29	Zone 6 - 2850	71
870	J-115	2,603.37	0	Zone 6 - 2850	84
875	J-117	2,612.88	0	Zone 6 - 2850	79
881	J-119	2,610.83	35	Zone 6 - 2850	80
891	J-121	2,629.15	0	Zone 6 - 2850	71
897	J-123	2,651.03	66	Zone 6 - 2850	59
903	J-124	2,686.93	84	Zone 6 - 2850	46
980	J-126	2,678.64	84	Zone 6 - 2850	47
67	J-127	2,706.00	121	Zone 7 - 3010	126
68	J-128	2,690.00	54	Zone 7 - 3010	136
73	J-129	2,862.00	76	Zone 7 - 3010	55

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
76	J-130	2,800.00	186	Zone 7 - 3010	87
80	J-131	2,746.00	56	Zone 7 - 3010	104
81	J-132	2,720.00	214	Zone 7 - 3010	116
83	J-133	2,796.00	65	Zone 7 - 3010	83
84	J-134	2,704.00	149	Zone 7 - 3010	123
85	J-135	2,710.00	149	Zone 7 - 3010	119
116	J-136	2,680.00	0	Zone 7 - 3010	140
138	J-137	2,820.00	84	Zone 7 - 3010	72
202	J-138	2,730.00	0	Zone 7 - 3010	114
205	J-139	2,694.00	149	Zone 7 - 3010	127
211	J-140	2,742.00	76	Zone 7 - 3010	107
252	J-141	2,682.00	0	Zone 7 - 3010	135
259	J-142	2,750.00	46	Zone 7 - 3010	103
273	J-143	2,750.00	120	Zone 7 - 3010	105
312	J-144	2,800.00	0	Zone 7 - 3010	83
315	J-145	2,745.00	0	Zone 7 - 3010	107
317	J-146	2,750.00	0	Zone 7 - 3010	105
319	J-147	2,746.00	17	Zone 7 - 3010	106
399	J-148	2,750.00	46	Zone 7 - 3010	103
403	J-149	2,680.00	0	Zone 7 - 3010	134
410	J-150	2,694.00	225	Zone 7 - 3010	127
439	J-151	2,690.00	0	Zone 7 - 3010	136
566	J-152	2,750.00	3	Zone 7 - 3010	105
568	J-153	2,734.00	0	Zone 7 - 3010	112
574	J-154	2,674.00	61	Zone 7 - 3010	137
665	J-155	2,676.00	0	Zone 7 - 3010	136
713	J-156	2,746.00	186	Zone 7 - 3010	111
722	J-157	2,691.85	0	Zone 7 - 3010	130
727	J-159	2,684.00	0	Zone 7 - 3010	134
910	J-160	2,750.00	46	Zone 7 - 3010	103
920	J-162	2,674.00	0	Zone 7 - 3010	138
944	J-166	2,687.56	0	Zone 7 - 3010	130
1018	J-169	2,689.21	0	Zone 7 - 3010	133
634	J-174	3,080.00	0	Zone 8 - 3150	0
703	J-176	2,925.00	0	Zone 8 - 3150	67
971	J-178	2,995.68	0	Zone 8 - 3150	36

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	270	1.10	4.64	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	475	0.76	0.28	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	86	0.55	0.21	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	204	1.30	2.72	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	141	0.90	0.71	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	154	0.98	0.66	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	109	2.78	8.30	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	29	0.74	0.60	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	29	0.74	0.69	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	138	0.88	1.17	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	327	2.08	1.66	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	575	0.92	0.22	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	335	0.53	0.02	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	475	0.76	0.29	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	172	0.70	0.89	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	51	1.31	2.46	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	87	2.21	5.71	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	748	1.19	1.05	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	249	1.02	0.71	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	249	1.02	0.75	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	121	0.50	0.32	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	-127	0.81	0.85	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	66	0.42	0.20	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	66	0.42	0.20	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	7	0.04	0.00	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	7	0.07	0.01	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	45	0.29	0.07	Zone 1 - 3270
P-41	2,256	J-32	J-8	6.0	PVC	45	0.51	0.41	Zone 1 - 3270
P-48	247	R-6	PMP-35	16.0	PVC	748	1.19	0.07	Zone 1 - 3270
P-49	456	PMP-35	J-23	16.0	PVC	748	1.19	0.13	Zone 1 - 3270
P-50	655	T-1	PMP-36	16.0	PVC	562	0.90	0.11	Zone 1 - 3270
P-51	971	PMP-36	J-14	16.0	PVC	562	0.90	0.16	Zone 1 - 3270
P-52	268	R-2	PMP-37	16.0	PVC	459	0.73	0.03	Zone 1 - 3270
P-53	465	PMP-37	J-1	16.0	PVC	459	0.73	0.05	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-90	3,734	J-12	J-34	8.0	PVC	121	0.78	1.05	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	121	3.10	18.09	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	3	0.02	0.00	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	14	0.06	0.00	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	318	1.30	0.36	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	141	0.90	0.90	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	4,325	6.90	11.40	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	3,173	5.06	6.03	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	335	0.53	0.02	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	326	0.92	0.33	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	3,364	5.37	6.41	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	87	2.21	8.42	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	3,831	6.11	5.49	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	3,746	4.72	4.68	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	54	1.38	1.61	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	51	1.31	2.86	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	19	0.48	0.93	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	141	1.61	0.58	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-3,746	5.98	10.77	Zone 2 - 3080
P-120	2,149	J-46	J-35	6.0	PVC	273	3.09	11.02	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	5	0.02	0.00	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	5	0.02	0.00	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	85	2.18	6.63	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	185	0.76	0.23	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	116	0.48	0.08	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	1,469	6.00	16.71	Zone 2 - 3080
P-143	318	Well-1	PMP-38	16.0	PVC	1,469	2.34	0.31	Zone 2 - 3080
P-144	259	PMP-38	J-47	16.0	PVC	1,469	2.34	0.25	Zone 2 - 3080
P-145	542	R-1	PMP-41	16.0	PVC	3,364	5.37	2.46	Zone 2 - 3080
P-146	6,104	PMP-41	J-49	16.0	PVC	3,364	5.37	27.64	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	52	1.32	1.10	Zone 2 - 3080
P-172	5,588	J-36	J-64	4.0	PVC	84	2.14	23.16	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	97	0.62	0.57	Zone 3 - 2910
P-180	650	R-4	PMP-40	10.0	PVC	234	0.95	0.21	Zone 3 - 2910

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-181	1,879	PMP-40	J-66	10.0	PVC	234	0.95	0.60	Zone 3 - 2910
P-195	770	J-77	J-72	8.0	PVC	109	0.70	0.18	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	141	1.61	2.53	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	109	0.70	0.53	Zone 4 - 2920
P-201	1,715	J-71	J-75	8.0	PVC	45	0.29	0.08	Zone 4 - 2920
P-209	639	R-1	PMP-42	8.0	PVC	177	1.13	0.36	Zone 4 - 2920
P-210	912	PMP-42	J-70	8.0	PVC	177	1.13	0.51	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	68	0.43	0.13	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	48	0.20	0.02	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	19	0.48	0.16	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	116	0.48	0.02	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	1,588	2.53	1.70	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	87	0.98	1.65	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	50	0.32	0.07	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	91	1.04	0.88	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	-385	0.61	0.11	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	-301	0.48	0.07	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	1,588	2.53	2.17	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	35	0.89	0.64	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	64	0.41	0.03	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	267	3.03	6.27	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	-153	0.97	0.56	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	1,616	2.58	2.57	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-84	0.95	0.69	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	69	0.44	0.13	Zone 6 - 2850
P-250	1,336	J-104	J-107	8.0	PVC	-176	1.12	0.75	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	1,553	2.48	1.41	Zone 6 - 2850
P-252	1,184	J-110	J-109	6.0	PVC	46	0.52	0.23	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	110	0.70	0.61	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	203	1.30	0.99	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	46	0.30	0.08	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	1,384	2.21	1.01	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	1,071	1.71	0.52	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	1,100	1.76	0.95	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-261	1,384	J-86	J-105	16.0	PVC	1,616	2.58	1.61	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	169	1.08	0.57	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	169	1.08	0.79	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	1,349	2.15	0.65	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	1,349	2.15	0.62	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	105	0.67	0.67	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	827	1.32	0.23	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	827	1.32	0.67	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	99	0.63	0.13	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	34	0.21	0.02	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	301	0.48	0.07	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	218	0.35	0.02	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	134	0.85	0.44	Zone 6 - 2850
P-287	1,675	J-88	J-126	6.0	PVC	218	2.47	5.65	Zone 6 - 2850
P-296	756	R-1	PMP-43	16.0	PVC	1,616	2.58	0.88	Zone 6 - 2850
P-297	855	PMP-43	J-86	16.0	PVC	1,616	2.58	1.00	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	335	0.54	0.08	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	56	0.09	0.00	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	65	0.42	0.23	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	149	1.69	2.21	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	186	0.53	0.19	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	84	2.13	6.09	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	84	0.95	0.47	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	46	0.13	0.01	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	216	1.38	1.34	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	96	1.09	1.17	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	76	1.94	2.29	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	20	0.23	0.06	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	20	0.23	0.04	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	371	1.05	1.63	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	371	1.05	0.58	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	175	1.12	0.92	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	37	0.06	0.00	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	783	1.25	0.57	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-328	537	J-151	J-128	16.0	PVC	425	0.68	0.05	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	3	0.04	0.00	Zone 7 - 3010
P-330	550	J-146	J-153	6.0	PVC	20	0.23	0.02	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	17	0.19	0.01	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	1,220	1.95	0.90	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	1,281	2.04	0.71	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	1,281	2.04	1.04	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	1,281	2.04	0.97	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	-84	0.54	0.14	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	-130	0.83	0.37	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	1,365	2.18	1.11	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	1,365	2.18	0.42	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	1,045	1.67	0.65	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	1,045	1.67	0.77	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	634	1.01	0.44	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	1,581	2.52	2.62	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	1,581	2.52	0.87	Zone 7 - 3010
P-370	507	R-4	PMP-39	16.0	PVC	425	0.68	0.05	Zone 7 - 3010
P-371	643	PMP-39	J-151	16.0	PVC	425	0.68	0.06	Zone 7 - 3010
P-372	304	R-8	PMP-44	16.0	PVC	1,701	2.71	0.39	Zone 7 - 3010
P-373	466	PMP-44	J-127	16.0	PVC	1,701	2.71	0.60	Zone 7 - 3010
P-417	3,837	J-178	J-174	8.0	PVC	0	0.00	0.00	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	0	0.00	0.00	Zone 8 - 3150
P-419	935	J-174	R-2	8.0	PVC	0	0.00	0.00	Zone 8 - 3150

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	1	Zone 1 - 3270	103
35	J-2	3,045.00	1	Zone 1 - 3270	118
39	J-3	3,058.00	1	Zone 1 - 3270	67
40	J-4	3,060.00	1	Zone 1 - 3270	66
41	J-5	3,045.00	1	Zone 1 - 3270	73
45	J-6	3,078.00	1	Zone 1 - 3270	48
48	J-7	3,050.00	1	Zone 1 - 3270	71
53	J-8	3,040.00	1	Zone 1 - 3270	120
54	J-9	3,090.00	1	Zone 1 - 3270	98
71	J-10	3,050.00	1	Zone 1 - 3270	116
130	J-11	2,980.00	1	Zone 1 - 3270	91
147	J-12	2,920.00	1	Zone 1 - 3270	127
149	J-13	3,030.00	1	Zone 1 - 3270	69
150	J-14	3,040.00	1	Zone 1 - 3270	65
232	J-15	3,010.00	1	Zone 1 - 3270	88
497	J-16	2,994.00	1	Zone 1 - 3270	85
525	J-17	3,010.00	1	Zone 1 - 3270	78
548	J-18	3,080.00	1	Zone 1 - 3270	48
639	J-19	3,050.28	0	Zone 1 - 3270	70
759	J-20	2,970.00	1	Zone 1 - 3270	95
762	J-21	3,033.58	0	Zone 1 - 3270	123
781	J-22	3,021.07	1	Zone 1 - 3270	73
791	J-23	3,015.50	0	Zone 1 - 3270	85
810	J-24	2,997.59	0	Zone 1 - 3270	93
815	J-26	3,014.00	0	Zone 1 - 3270	86
852	J-27	3,150.00	0	Zone 1 - 3270	72
855	J-28	3,100.00	0	Zone 1 - 3270	94
858	J-29	3,050.00	0	Zone 1 - 3270	116
867	J-32	3,080.00	0	Zone 1 - 3270	103
1573	J-34	2,980.00	0	Zone 1 - 3270	101
43	J-35	2,960.00	1	Zone 2 - 3080	55
44	J-36	2,892.00	1	Zone 2 - 3080	86
47	J-37	2,846.00	1	Zone 2 - 3080	106
56	J-38	2,910.00	1	Zone 2 - 3080	74
57	J-39	2,970.00	1	Zone 2 - 3080	48
58	J-40	2,890.00	1	Zone 2 - 3080	82
195	J-41	2,864.00	1	Zone 2 - 3080	98
234	J-42	2,870.00	1	Zone 2 - 3080	95
296	J-43	2,880.00	0	Zone 2 - 3080	91
300	J-44	2,986.00	0	Zone 2 - 3080	42
475	J-45	2,890.00	0	Zone 2 - 3080	82
490	J-46	2,925.00	0	Zone 2 - 3080	70
494	J-47	2,946.00	0	Zone 2 - 3080	71
502	J-48	2,840.00	0	Zone 2 - 3080	108
530	J-49	2,878.00	0	Zone 2 - 3080	92
536	J-50	2,966.00	0	Zone 2 - 3080	49
544	J-51	2,960.00	0	Zone 2 - 3080	52
549	J-52	2,926.00	0	Zone 2 - 3080	67
624	J-53	2,952.00	0	Zone 2 - 3080	58

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
646	J-54	2,934.00	0	Zone 2 - 3080	63
827	J-60	2,810.00	0	Zone 2 - 3080	121
834	J-62	2,850.00	0	Zone 2 - 3080	104
837	J-63	2,900.00	0	Zone 2 - 3080	82
839	J-64	3,000.00	0	Zone 2 - 3080	38
1005	J-65	2,884.88	0	Zone 2 - 3080	84
69	J-66	2,646.00	1	Zone 3 - 2910	138
70	J-67	2,730.00	1	Zone 3 - 2910	102
321	J-68	2,705.00	1	Zone 3 - 2910	113
49	J-69	2,810.00	1	Zone 4 - 2920	48
63	J-70	2,675.00	1	Zone 4 - 2920	150
141	J-71	2,786.00	1	Zone 4 - 2920	58
270	J-72	2,730.00	1	Zone 4 - 2920	126
841	J-73	2,720.00	0	Zone 4 - 2920	87
846	J-75	2,790.00	1	Zone 4 - 2920	56
926	J-76	2,740.00	0	Zone 4 - 2920	78
1088	J-77	2,722.00	0	Zone 4 - 2920	129
37	J-78	2,818.00	1	Zone 5 - 3050	100
131	J-79	2,840.00	1	Zone 5 - 3050	91
264	J-80	2,810.00	1	Zone 5 - 3050	104
326	J-81	2,840.00	0	Zone 5 - 3050	91
651	J-82	2,848.00	0	Zone 5 - 3050	87
655	J-83	2,824.50	0	Zone 5 - 3050	98
849	J-84	2,878.00	0	Zone 5 - 3050	74
930	J-85	2,900.00	0	Zone 5 - 3050	65
64	J-86	2,622.00	1	Zone 6 - 2850	99
65	J-87	2,628.00	1	Zone 6 - 2850	96
89	J-88	2,692.00	1	Zone 6 - 2850	68
90	J-89	2,660.00	1	Zone 6 - 2850	82
91	J-90	2,652.00	1	Zone 6 - 2850	86
92	J-91	2,632.00	1	Zone 6 - 2850	94
93	J-92	2,612.00	1	Zone 6 - 2850	103
95	J-93	2,620.00	1	Zone 6 - 2850	100
125	J-94	2,600.00	1	Zone 6 - 2850	108
134	J-95	2,650.00	1	Zone 6 - 2850	87
208	J-96	2,676.00	1	Zone 6 - 2850	75
217	J-97	2,644.00	1	Zone 6 - 2850	89
218	J-98	2,656.00	1	Zone 6 - 2850	84
222	J-99	2,640.00	1	Zone 6 - 2850	91
225	J-100	2,618.00	1	Zone 6 - 2850	100
227	J-101	2,625.00	1	Zone 6 - 2850	97
276	J-102	2,600.00	1	Zone 6 - 2850	108
281	J-103	2,650.00	1	Zone 6 - 2850	87
382	J-104	2,640.25	0	Zone 6 - 2850	91
385	J-105	2,620.00	0	Zone 6 - 2850	100
389	J-106	2,660.00	0	Zone 6 - 2850	82
392	J-107	2,624.00	0	Zone 6 - 2850	98
395	J-108	2,606.00	0	Zone 6 - 2850	106
424	J-109	2,600.00	0	Zone 6 - 2850	108

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
426	J-110	2,605.00	0	Zone 6 - 2850	106
429	J-111	2,615.00	0	Zone 6 - 2850	102
434	J-112	2,634.00	0	Zone 6 - 2850	93
533	J-113	2,590.00	0	Zone 6 - 2850	113
571	J-114	2,629.91	0	Zone 6 - 2850	95
870	J-115	2,603.37	0	Zone 6 - 2850	107
875	J-117	2,612.88	0	Zone 6 - 2850	103
881	J-119	2,610.83	0	Zone 6 - 2850	104
891	J-121	2,629.15	0	Zone 6 - 2850	96
894	J-122	2,631.56	0	Zone 6 - 2850	95
897	J-123	2,651.03	0	Zone 6 - 2850	86
903	J-124	2,686.93	0	Zone 6 - 2850	71
977	J-125	2,638.62	0	Zone 6 - 2850	91
980	J-126	2,678.64	0	Zone 6 - 2850	74
67	J-127	2,706.00	1	Zone 7 - 3010	124
68	J-128	2,690.00	1	Zone 7 - 3010	131
73	J-129	2,862.00	1	Zone 7 - 3010	57
76	J-130	2,800.00	1	Zone 7 - 3010	84
80	J-131	2,746.00	1	Zone 7 - 3010	107
81	J-132	2,720.00	1	Zone 7 - 3010	118
83	J-133	2,796.00	1	Zone 7 - 3010	85
84	J-134	2,704.00	1	Zone 7 - 3010	125
85	J-135	2,710.00	1	Zone 7 - 3010	122
116	J-136	2,680.00	1	Zone 7 - 3010	135
138	J-137	2,820.00	1	Zone 7 - 3010	75
202	J-138	2,730.00	1	Zone 7 - 3010	114
205	J-139	2,694.00	1	Zone 7 - 3010	129
211	J-140	2,742.00	1	Zone 7 - 3010	109
252	J-141	2,682.00	1	Zone 7 - 3010	135
259	J-142	2,750.00	1	Zone 7 - 3010	105
273	J-143	2,750.00	1	Zone 7 - 3010	105
312	J-144	2,800.00	0	Zone 7 - 3010	84
315	J-145	2,745.00	0	Zone 7 - 3010	107
317	J-146	2,750.00	0	Zone 7 - 3010	105
319	J-147	2,746.00	0	Zone 7 - 3010	107
399	J-148	2,750.00	0	Zone 7 - 3010	105
403	J-149	2,680.00	0	Zone 7 - 3010	135
410	J-150	2,694.00	0	Zone 7 - 3010	129
439	J-151	2,690.00	0	Zone 7 - 3010	131
566	J-152	2,750.00	0	Zone 7 - 3010	105
568	J-153	2,734.00	0	Zone 7 - 3010	112
574	J-154	2,674.00	0	Zone 7 - 3010	138
665	J-155	2,676.00	0	Zone 7 - 3010	137
713	J-156	2,746.00	0	Zone 7 - 3010	107
722	J-157	2,691.85	0	Zone 7 - 3010	130
727	J-159	2,684.00	0	Zone 7 - 3010	134
910	J-160	2,750.00	0	Zone 7 - 3010	105
920	J-162	2,674.00	0	Zone 7 - 3010	138
935	J-164	2,770.00	0	Zone 7 - 3010	97

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
937	J-165	2,850.00	0	Zone 7 - 3010	62
944	J-166	2,687.56	0	Zone 7 - 3010	132
947	J-167	2,800.00	0	Zone 7 - 3010	84
956	J-168	2,920.00	0	Zone 7 - 3010	32
1018	J-169	2,689.21	0	Zone 7 - 3010	131
1034	J-170	2,692.40	0	Zone 7 - 3010	130
1577	J-171	2,820.00	0	Zone 7 - 3010	75
33	J-172	2,915.00	1	Zone 8 - 3150	89
634	J-174	3,080.00	0	Zone 8 - 3150	17
703	J-176	2,925.00	0	Zone 8 - 3150	84
971	J-178	2,995.68	1	Zone 8 - 3150	54
1026	J-179	2,670.00	0	Supply	100
1037	J-180	2,650.00	0	Supply	108
1075	J-181	2,738.42	0	Supply	70

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	80	Zone 1 - 3270	103
35	J-2	3,045.00	0	Zone 1 - 3270	117
39	J-3	3,058.00	58	Zone 1 - 3270	62
40	J-4	3,060.00	58	Zone 1 - 3270	61
41	J-5	3,045.00	58	Zone 1 - 3270	67
45	J-6	3,078.00	10	Zone 1 - 3270	44
48	J-7	3,050.00	40	Zone 1 - 3270	64
53	J-8	3,040.00	24	Zone 1 - 3270	120
54	J-9	3,090.00	2	Zone 1 - 3270	98
71	J-10	3,050.00	68	Zone 1 - 3270	114
130	J-11	2,980.00	11	Zone 1 - 3270	86
147	J-12	2,920.00	0	Zone 1 - 3270	121
149	J-13	3,030.00	22	Zone 1 - 3270	65
150	J-14	3,040.00	498	Zone 1 - 3270	60
232	J-15	3,010.00	36	Zone 1 - 3270	82
497	J-16	2,994.00	10	Zone 1 - 3270	80
525	J-17	3,010.00	12	Zone 1 - 3270	73
548	J-18	3,080.00	29	Zone 1 - 3270	42
639	J-19	3,050.28	0	Zone 1 - 3270	65
759	J-20	2,970.00	0	Zone 1 - 3270	91
762	J-21	3,033.58	40	Zone 1 - 3270	123
781	J-22	3,021.07	28	Zone 1 - 3270	68
791	J-23	3,015.50	497	Zone 1 - 3270	80
810	J-24	2,997.59	0	Zone 1 - 3270	88
815	J-26	3,014.00	0	Zone 1 - 3270	81
852	J-27	3,150.00	119	Zone 1 - 3270	71
855	J-28	3,100.00	0	Zone 1 - 3270	93
858	J-29	3,050.00	0	Zone 1 - 3270	116
867	J-32	3,080.00	0	Zone 1 - 3270	103
1573	J-34	2,980.00	0	Zone 1 - 3270	95
43	J-35	2,960.00	74	Zone 2 - 3080	60
44	J-36	2,892.00	76	Zone 2 - 3080	94
47	J-37	2,846.00	2	Zone 2 - 3080	114
56	J-38	2,910.00	29	Zone 2 - 3080	73
57	J-39	2,970.00	3	Zone 2 - 3080	48
58	J-40	2,890.00	27	Zone 2 - 3080	82
195	J-41	2,864.00	1	Zone 2 - 3080	106
234	J-42	2,870.00	3	Zone 2 - 3080	103
296	J-43	2,880.00	0	Zone 2 - 3080	99
300	J-44	2,986.00	1	Zone 2 - 3080	44
475	J-45	2,890.00	2	Zone 2 - 3080	82
490	J-46	2,925.00	84	Zone 2 - 3080	76
494	J-47	2,946.00	2	Zone 2 - 3080	78
502	J-48	2,840.00	16	Zone 2 - 3080	118
530	J-49	2,878.00	0	Zone 2 - 3080	103
536	J-50	2,966.00	5	Zone 2 - 3080	49
544	J-51	2,960.00	29	Zone 2 - 3080	51
549	J-52	2,926.00	0	Zone 2 - 3080	67
624	J-53	2,952.00	11	Zone 2 - 3080	62

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
646	J-54	2,934.00	0	Zone 2 - 3080	63
827	J-60	2,810.00	1	Zone 2 - 3080	129
834	J-62	2,850.00	0	Zone 2 - 3080	112
837	J-63	2,900.00	1	Zone 2 - 3080	90
839	J-64	3,000.00	74	Zone 2 - 3080	42
1005	J-65	2,884.88	23	Zone 2 - 3080	84
69	J-66	2,646.00	115	Zone 3 - 2910	149
70	J-67	2,730.00	9	Zone 3 - 2910	112
321	J-68	2,705.00	92	Zone 3 - 2910	123
49	J-69	2,810.00	0	Zone 4 - 2920	48
63	J-70	2,675.00	38	Zone 4 - 2920	106
141	J-71	2,786.00	32	Zone 4 - 2920	58
270	J-72	2,730.00	36	Zone 4 - 2920	82
841	J-73	2,720.00	14	Zone 4 - 2920	86
846	J-75	2,790.00	15	Zone 4 - 2920	56
926	J-76	2,740.00	0	Zone 4 - 2920	78
1088	J-77	2,722.00	0	Zone 4 - 2920	86
37	J-78	2,818.00	16	Zone 5 - 3050	100
131	J-79	2,840.00	0	Zone 5 - 3050	91
264	J-80	2,810.00	29	Zone 5 - 3050	104
326	J-81	2,840.00	33	Zone 5 - 3050	91
651	J-82	2,848.00	2	Zone 5 - 3050	87
655	J-83	2,824.50	91	Zone 5 - 3050	97
849	J-84	2,878.00	26	Zone 5 - 3050	74
930	J-85	2,900.00	3	Zone 5 - 3050	65
64	J-86	2,622.00	0	Zone 6 - 2850	99
65	J-87	2,628.00	27	Zone 6 - 2850	96
89	J-88	2,692.00	1	Zone 6 - 2850	68
90	J-89	2,660.00	59	Zone 6 - 2850	81
91	J-90	2,652.00	28	Zone 6 - 2850	85
92	J-91	2,632.00	66	Zone 6 - 2850	94
93	J-92	2,612.00	45	Zone 6 - 2850	103
95	J-93	2,620.00	22	Zone 6 - 2850	99
125	J-94	2,600.00	21	Zone 6 - 2850	108
134	J-95	2,650.00	75	Zone 6 - 2850	86
208	J-96	2,676.00	11	Zone 6 - 2850	75
217	J-97	2,644.00	49	Zone 6 - 2850	89
218	J-98	2,656.00	52	Zone 6 - 2850	84
222	J-99	2,640.00	65	Zone 6 - 2850	91
225	J-100	2,618.00	7	Zone 6 - 2850	100
227	J-101	2,625.00	21	Zone 6 - 2850	97
276	J-102	2,600.00	0	Zone 6 - 2850	108
281	J-103	2,650.00	28	Zone 6 - 2850	86
382	J-104	2,640.25	8	Zone 6 - 2850	91
385	J-105	2,620.00	40	Zone 6 - 2850	100
389	J-106	2,660.00	28	Zone 6 - 2850	81
392	J-107	2,624.00	6	Zone 6 - 2850	98
395	J-108	2,606.00	5	Zone 6 - 2850	105
424	J-109	2,600.00	15	Zone 6 - 2850	108

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
426	J-110	2,605.00	51	Zone 6 - 2850	106
429	J-111	2,615.00	9	Zone 6 - 2850	102
434	J-112	2,634.00	17	Zone 6 - 2850	93
533	J-113	2,590.00	35	Zone 6 - 2850	112
571	J-114	2,629.91	10	Zone 6 - 2850	95
870	J-115	2,603.37	0	Zone 6 - 2850	107
875	J-117	2,612.88	26	Zone 6 - 2850	103
881	J-119	2,610.83	37	Zone 6 - 2850	103
891	J-121	2,629.15	0	Zone 6 - 2850	95
894	J-122	2,631.56	0	Zone 6 - 2850	94
897	J-123	2,651.03	22	Zone 6 - 2850	85
903	J-124	2,686.93	35	Zone 6 - 2850	71
977	J-125	2,638.62	14	Zone 6 - 2850	91
980	J-126	2,678.64	89	Zone 6 - 2850	73
67	J-127	2,706.00	40	Zone 7 - 3010	136
68	J-128	2,690.00	74	Zone 7 - 3010	156
73	J-129	2,862.00	25	Zone 7 - 3010	68
76	J-130	2,800.00	307	Zone 7 - 3010	98
80	J-131	2,746.00	131	Zone 7 - 3010	116
81	J-132	2,720.00	73	Zone 7 - 3010	128
83	J-133	2,796.00	22	Zone 7 - 3010	95
84	J-134	2,704.00	51	Zone 7 - 3010	135
85	J-135	2,710.00	51	Zone 7 - 3010	133
116	J-136	2,680.00	0	Zone 7 - 3010	154
138	J-137	2,820.00	52	Zone 7 - 3010	86
202	J-138	2,730.00	0	Zone 7 - 3010	126
205	J-139	2,694.00	52	Zone 7 - 3010	140
211	J-140	2,742.00	25	Zone 7 - 3010	120
252	J-141	2,682.00	0	Zone 7 - 3010	146
259	J-142	2,750.00	338	Zone 7 - 3010	117
273	J-143	2,750.00	40	Zone 7 - 3010	117
312	J-144	2,800.00	27	Zone 7 - 3010	95
315	J-145	2,745.00	0	Zone 7 - 3010	119
317	J-146	2,750.00	0	Zone 7 - 3010	117
319	J-147	2,746.00	7	Zone 7 - 3010	119
399	J-148	2,750.00	15	Zone 7 - 3010	117
403	J-149	2,680.00	0	Zone 7 - 3010	147
410	J-150	2,694.00	76	Zone 7 - 3010	141
439	J-151	2,690.00	7	Zone 7 - 3010	156
566	J-152	2,750.00	1	Zone 7 - 3010	117
568	J-153	2,734.00	0	Zone 7 - 3010	124
574	J-154	2,674.00	27	Zone 7 - 3010	150
665	J-155	2,676.00	0	Zone 7 - 3010	149
713	J-156	2,746.00	92	Zone 7 - 3010	123
722	J-157	2,691.85	0	Zone 7 - 3010	142
727	J-159	2,684.00	0	Zone 7 - 3010	146
910	J-160	2,750.00	15	Zone 7 - 3010	117
920	J-162	2,674.00	0	Zone 7 - 3010	150
935	J-164	2,770.00	830	Zone 7 - 3010	106

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
937	J-165	2,850.00	154	Zone 7 - 3010	69
944	J-166	2,687.56	25	Zone 7 - 3010	144
947	J-167	2,800.00	42	Zone 7 - 3010	95
956	J-168	2,920.00	246	Zone 7 - 3010	44
1018	J-169	2,689.21	0	Zone 7 - 3010	144
1034	J-170	2,692.40	0	Zone 7 - 3010	142
1577	J-171	2,820.00	246	Zone 7 - 3010	87
33	J-172	2,915.00	100	Zone 8 - 3150	122
634	J-174	3,080.00	0	Zone 8 - 3150	52
703	J-176	2,925.00	0	Zone 8 - 3150	118
971	J-178	2,995.68	65	Zone 8 - 3150	87
1026	J-179	2,670.00	0	Supply	99
1037	J-180	2,650.00	0	Supply	108
1075	J-181	2,738.42	0	Supply	70

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	188	0.77	2.36	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	444	0.71	0.24	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	43	0.28	0.06	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	68	0.43	0.36	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	88	0.56	0.30	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	51	0.33	0.09	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	36	0.93	1.09	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	12	0.31	0.12	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	10	0.25	0.09	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	78	0.50	0.40	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	109	0.69	0.22	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	192	0.31	0.03	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	345	0.55	0.02	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	433	0.69	0.24	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	67	0.27	0.15	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	21	0.53	0.46	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	29	0.74	0.75	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	249	0.40	0.14	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	83	0.34	0.09	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	83	0.34	0.10	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	40	0.17	0.04	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	-42	0.27	0.11	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	119	0.76	0.60	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	119	0.76	0.62	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	2	0.01	0.00	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	2	0.02	0.00	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	24	0.15	0.02	Zone 1 - 3270
P-41	2,256	J-32	J-8	6.0	PVC	24	0.27	0.13	Zone 1 - 3270
P-78	678	T-1	PMP-96	16.0	PVC	985	1.57	0.32	Zone 1 - 3270
P-79	958	PMP-96	J-14	16.0	PVC	985	1.57	0.45	Zone 1 - 3270
P-80	345	R-2	PMP-98	16.0	PVC	334	0.53	0.02	Zone 1 - 3270
P-81	367	PMP-98	J-1	16.0	PVC	334	0.53	0.02	Zone 1 - 3270
P-82	176	R-6	PMP-101	16.0	PVC	746	1.19	0.05	Zone 1 - 3270
P-83	455	PMP-101	J-23	16.0	PVC	746	1.19	0.13	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-90	3,734	J-12	J-34	8.0	PVC	40	0.26	0.14	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	40	1.03	2.37	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	1	0.01	0.00	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	9	0.06	0.00	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	142	0.58	0.08	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	46	0.29	0.11	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	3,643	5.81	8.30	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	2,303	3.68	3.33	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	340	0.54	0.02	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	247	0.70	0.20	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	2,347	3.74	3.29	Zone 2 - 3080
P-104	1,501	J-39	J-50	8.0	PVC	90	0.57	0.24	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	29	0.74	1.10	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	3,438	5.49	4.49	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	3,458	5.52	7.16	Zone 2 - 3080
P-110	1,056	J-54	J-40	10.0	PVC	146	0.60	0.14	Zone 2 - 3080
P-113	297	J-40	PRV-48	10.0	PVC	119	0.49	0.03	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	17	0.44	0.19	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	21	0.53	0.53	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	9	0.23	0.24	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	27	0.31	0.03	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-3,459	5.52	9.29	Zone 2 - 3080
P-120	2,149	J-46	J-35	6.0	PVC	122	1.38	2.47	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	6	0.04	0.00	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	5	0.03	0.00	Zone 2 - 3080
P-128	428	J-37	J-62	6.0	PVC	2	0.02	0.00	Zone 2 - 3080
P-129	2,506	J-62	J-63	6.0	PVC	1	0.02	0.00	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	-32	0.82	1.08	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	138	0.56	0.13	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	115	0.47	0.07	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	1,483	6.06	17.00	Zone 2 - 3080
P-137	1,686	J-54	J-45	8.0	PVC	-62	0.39	0.14	Zone 2 - 3080
P-138	615	J-54	J-50	8.0	PVC	-85	0.54	0.09	Zone 2 - 3080
P-163	443	R-1	PMP-97	16.0	PVC	2,347	3.74	1.03	Zone 2 - 3080

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-164	6,221	PMP-97	J-49	16.0	PVC	2,347	3.74	14.46	Zone 2 - 3080
P-165	339	Well-1	PMP-99	16.0	PVC	1,484	2.37	0.34	Zone 2 - 3080
P-166	230	PMP-99	J-47	16.0	PVC	1,484	2.37	0.23	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	48	1.22	0.95	Zone 2 - 3080
P-172	5,588	J-36	J-64	4.0	PVC	58	1.47	11.63	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	102	0.65	0.62	Zone 3 - 2910
P-174	1,888	J-68	J-67	8.0	PVC	9	0.06	0.00	Zone 3 - 2910
P-188	518	J-181	PMP-82	10.0	PVC	217	0.89	0.14	Zone 3 - 2910
P-189	2,203	PMP-82	J-66	10.0	PVC	217	0.89	0.61	Zone 3 - 2910
P-194	1,367	J-71	J-69	8.0	PVC	-41	0.26	0.05	Zone 4 - 2920
P-195	770	J-77	J-72	8.0	PVC	36	0.23	0.02	Zone 4 - 2920
P-197	1,865	PRV-52	J-69	8.0	PVC	41	0.26	0.07	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	27	0.31	0.12	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	29	0.19	0.05	Zone 4 - 2920
P-201	1,715	J-71	J-75	8.0	PVC	15	0.10	0.01	Zone 4 - 2920
P-202	1,423	J-71	J-76	8.0	PVC	21	0.14	0.02	Zone 4 - 2920
P-203	499	J-76	J-73	8.0	PVC	21	0.14	0.01	Zone 4 - 2920
P-206	544	J-73	J-77	8.0	PVC	7	0.05	0.00	Zone 4 - 2920
P-218	605	R-1	PMP-84	8.0	PVC	67	0.43	0.06	Zone 4 - 2920
P-219	887	PMP-84	J-70	8.0	PVC	67	0.43	0.08	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	20	0.13	0.01	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	94	0.39	0.07	Zone 5 - 3050
P-225	1,597	J-78	J-82	10.0	PVC	78	0.32	0.07	Zone 5 - 3050
P-226	1,212	J-82	J-81	8.0	PVC	33	0.21	0.03	Zone 5 - 3050
P-227	1,973	J-82	J-83	10.0	PVC	136	0.55	0.23	Zone 5 - 3050
P-228	368	J-83	PRV-52	8.0	PVC	41	0.26	0.01	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	9	0.23	0.04	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	114	0.47	0.02	Zone 5 - 3050
P-232	853	PRV-48	J-84	10.0	PVC	119	0.48	0.08	Zone 5 - 3050
P-233	1,509	J-84	J-82	10.0	PVC	92	0.38	0.09	Zone 5 - 3050
P-234	2,414	J-83	J-85	8.0	PVC	3	0.02	0.00	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	168	0.27	0.03	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	20	0.23	0.11	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	-26	0.16	0.02	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-238	2,689	J-95	J-96	6.0	PVC	-20	0.23	0.11	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	46	0.52	0.25	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	304	0.48	0.07	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	368	0.59	0.10	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	233	0.37	0.06	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	22	0.56	0.28	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	21	0.14	0.00	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	131	1.49	1.69	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	34	0.21	0.03	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	260	0.41	0.09	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-28	0.32	0.09	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	66	0.42	0.12	Zone 6 - 2850
P-250	1,336	J-104	J-107	8.0	PVC	36	0.23	0.04	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	139	0.22	0.02	Zone 6 - 2850
P-252	1,184	J-110	J-109	6.0	PVC	15	0.17	0.03	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	-1	0.01	0.00	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	65	0.42	0.12	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	-28	0.18	0.03	Zone 6 - 2850
P-256	1,290	J-101	J-112	8.0	PVC	-46	0.30	0.06	Zone 6 - 2850
P-257	2,664	J-98	J-104	6.0	PVC	12	0.14	0.04	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	78	0.13	0.00	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	-41	0.07	0.00	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	-31	0.05	0.00	Zone 6 - 2850
P-261	1,384	J-86	J-105	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-262	223	J-88	PRV-39	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-264	989	J-95	PRV-41	8.0	PVC	-88	0.56	0.15	Zone 6 - 2850
P-265	1,095	J-112	PRV-42	8.0	PVC	-78	0.50	0.14	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	56	0.36	0.07	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	56	0.36	0.10	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	15	0.02	0.00	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	41	0.07	0.00	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	35	0.22	0.09	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	-78	0.12	0.00	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	-78	0.12	0.01	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-276	1,124	J-104	J-122	4.0	PVC	3	0.07	0.01	Zone 6 - 2850
P-277	849	J-122	J-101	4.0	PVC	3	0.07	0.01	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	75	0.48	0.08	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	53	0.34	0.04	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	158	0.25	0.02	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	123	0.20	0.01	Zone 6 - 2850
P-284	598	J-112	J-125	6.0	PVC	15	0.17	0.01	Zone 6 - 2850
P-285	1,473	J-125	J-95	6.0	PVC	1	0.01	0.00	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	33	0.21	0.03	Zone 6 - 2850
P-287	1,675	J-88	J-126	6.0	PVC	122	1.38	1.94	Zone 6 - 2850
P-290	782	J-180	PRV-58	16.0	PVC	300	0.48	0.04	Zone 6 - 2850
P-291	831	PRV-58	J-105	16.0	PVC	300	0.48	0.04	Zone 6 - 2850
P-292	296	J-179	PRV-59	16.0	PVC	557	0.89	0.05	Zone 6 - 2850
P-293	270	PRV-59	J-96	16.0	PVC	557	0.89	0.04	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	1,211	1.93	0.84	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	1,115	1.78	0.94	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	22	0.14	0.03	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	51	0.58	0.30	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	920	2.61	3.61	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	52	1.32	2.50	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	52	0.59	0.19	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	2	0.00	0.00	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	100	0.64	0.32	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	60	0.68	0.49	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	25	0.65	0.30	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	8	0.09	0.01	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	8	0.09	0.01	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	1,227	3.48	14.98	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	1,227	3.48	5.30	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	49	0.31	0.09	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	50	0.08	0.00	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	1,364	2.18	1.58	Zone 7 - 3010
P-328	537	J-151	J-128	16.0	PVC	1,301	2.08	0.42	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	1	0.01	0.00	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-330	550	J-146	J-153	6.0	PVC	8	0.09	0.00	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	7	0.08	0.00	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	353	0.56	0.09	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	380	0.61	0.07	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	458	0.73	0.16	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	458	0.73	0.14	Zone 7 - 3010
P-338	306	PRV-39	J-139	16.0	PVC	0	0.00	0.00	Zone 7 - 3010
P-339	294	PRV-41	J-149	8.0	PVC	-88	0.56	0.05	Zone 7 - 3010
P-340	478	PRV-42	J-155	8.0	PVC	-78	0.50	0.06	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	23	0.15	0.01	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	8	0.05	0.00	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	510	0.81	0.18	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	510	0.81	0.07	Zone 7 - 3010
P-348	12,843	J-164	J-165	8.0	PVC	154	0.98	5.62	Zone 7 - 3010
P-349	1,596	J-131	J-164	16.0	PVC	984	1.57	0.74	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	191	0.30	0.03	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	216	0.34	0.04	Zone 7 - 3010
P-352	1,687	J-148	J-167	8.0	PVC	42	0.27	0.07	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	1,313	2.09	1.71	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	610	0.97	0.45	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	610	0.97	0.15	Zone 7 - 3010
P-359	692	J-170	J-150	16.0	PVC	1,300	2.07	0.54	Zone 7 - 3010
P-365	8,850	J-142	J-168	12.0	PVC	-336	0.95	2.29	Zone 7 - 3010
P-392	454	J-180	PMP-81	16.0	PVC	650	1.04	0.10	Zone 7 - 3010
P-393	504	PMP-81	J-127	16.0	PVC	650	1.04	0.11	Zone 7 - 3010
P-394	566	J-181	PMP-83	16.0	PVC	1,308	2.09	0.45	Zone 7 - 3010
P-395	532	PMP-83	J-151	16.0	PVC	1,308	2.09	0.42	Zone 7 - 3010
P-400	682	J-179	PMP-111	16.0	PVC	1,300	2.07	0.53	Zone 7 - 3010
P-401	685	PMP-111	J-170	16.0	PVC	1,300	2.07	0.53	Zone 7 - 3010
P-407	4,740	J-168	J-130	12.0	PVC	-613	1.74	3.72	Zone 7 - 3010
P-408	4,359	J-168	J-171	6.0	PVC	31	0.35	0.39	Zone 7 - 3010
P-409	2,342	J-171	J-156	6.0	PVC	-215	2.44	7.73	Zone 7 - 3010
P-417	3,837	J-178	J-174	8.0	PVC	-166	1.06	1.93	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	-100	0.64	0.59	Zone 8 - 3150

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-426	389	R-2	PMP-100	10.0	PVC	166	0.68	0.07	Zone 8 - 3150
P-427	562	PMP-100	J-174	10.0	PVC	166	0.68	0.10	Zone 8 - 3150
P-430	3,463	J-172	J-176	8.0	PVC	-100	0.64	0.68	Zone 8 - 3150
P-431	12,847	J-180	J-179	63.0	PVC	1,857	0.19	0.02	Supply
P-432	18,653	R-7	J-181	63.0	PVC	4,332	0.45	0.17	Supply
P-433	10,208	J-181	J-180	63.0	PVC	2,807	0.29	0.04	Supply

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	239	Zone 1 - 3270	85
35	J-2	3,045.00	0	Zone 1 - 3270	93
39	J-3	3,058.00	173	Zone 1 - 3270	56
40	J-4	3,060.00	173	Zone 1 - 3270	56
41	J-5	3,045.00	173	Zone 1 - 3270	61
45	J-6	3,078.00	31	Zone 1 - 3270	41
48	J-7	3,050.00	121	Zone 1 - 3270	51
53	J-8	3,040.00	72	Zone 1 - 3270	102
54	J-9	3,090.00	7	Zone 1 - 3270	81
71	J-10	3,050.00	204	Zone 1 - 3270	89
130	J-11	2,980.00	32	Zone 1 - 3270	82
147	J-12	2,920.00	0	Zone 1 - 3270	115
149	J-13	3,030.00	65	Zone 1 - 3270	63
150	J-14	3,040.00	1,493	Zone 1 - 3270	59
232	J-15	3,010.00	109	Zone 1 - 3270	73
497	J-16	2,994.00	29	Zone 1 - 3270	78
525	J-17	3,010.00	36	Zone 1 - 3270	71
548	J-18	3,080.00	87	Zone 1 - 3270	35
639	J-19	3,050.28	0	Zone 1 - 3270	60
759	J-20	2,970.00	0	Zone 1 - 3270	87
762	J-21	3,033.58	121	Zone 1 - 3270	105
781	J-22	3,021.07	84	Zone 1 - 3270	63
791	J-23	3,015.50	1,490	Zone 1 - 3270	75
810	J-24	2,997.59	0	Zone 1 - 3270	82
815	J-26	3,014.00	0	Zone 1 - 3270	75
852	J-27	3,150.00	358	Zone 1 - 3270	43
855	J-28	3,100.00	0	Zone 1 - 3270	67
858	J-29	3,050.00	0	Zone 1 - 3270	98
867	J-32	3,080.00	0	Zone 1 - 3270	85
1573	J-34	2,980.00	0	Zone 1 - 3270	89
43	J-35	2,960.00	221	Zone 2 - 3080	49
44	J-36	2,892.00	227	Zone 2 - 3080	84
47	J-37	2,846.00	6	Zone 2 - 3080	104
56	J-38	2,910.00	87	Zone 2 - 3080	72
57	J-39	2,970.00	9	Zone 2 - 3080	48
58	J-40	2,890.00	81	Zone 2 - 3080	81
195	J-41	2,864.00	3	Zone 2 - 3080	96
234	J-42	2,870.00	8	Zone 2 - 3080	94
296	J-43	2,880.00	1	Zone 2 - 3080	89
300	J-44	2,986.00	3	Zone 2 - 3080	41
475	J-45	2,890.00	5	Zone 2 - 3080	82
490	J-46	2,925.00	253	Zone 2 - 3080	69
494	J-47	2,946.00	5	Zone 2 - 3080	69
502	J-48	2,840.00	49	Zone 2 - 3080	107
530	J-49	2,878.00	0	Zone 2 - 3080	91
536	J-50	2,966.00	16	Zone 2 - 3080	48
544	J-51	2,960.00	87	Zone 2 - 3080	47
549	J-52	2,926.00	0	Zone 2 - 3080	66
624	J-53	2,952.00	32	Zone 2 - 3080	57

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
646	J-54	2,934.00	0	Zone 2 - 3080	62
827	J-60	2,810.00	4	Zone 2 - 3080	119
834	J-62	2,850.00	1	Zone 2 - 3080	102
837	J-63	2,900.00	4	Zone 2 - 3080	81
839	J-64	3,000.00	221	Zone 2 - 3080	31
1005	J-65	2,884.88	69	Zone 2 - 3080	83
69	J-66	2,646.00	346	Zone 3 - 2910	71
70	J-67	2,730.00	28	Zone 3 - 2910	33
321	J-68	2,705.00	277	Zone 3 - 2910	44
49	J-69	2,810.00	0	Zone 4 - 2920	47
63	J-70	2,675.00	114	Zone 4 - 2920	106
141	J-71	2,786.00	96	Zone 4 - 2920	58
270	J-72	2,730.00	109	Zone 4 - 2920	82
841	J-73	2,720.00	43	Zone 4 - 2920	86
846	J-75	2,790.00	45	Zone 4 - 2920	56
926	J-76	2,740.00	0	Zone 4 - 2920	77
1088	J-77	2,722.00	0	Zone 4 - 2920	85
37	J-78	2,818.00	48	Zone 5 - 3050	100
131	J-79	2,840.00	0	Zone 5 - 3050	91
264	J-80	2,810.00	87	Zone 5 - 3050	104
326	J-81	2,840.00	98	Zone 5 - 3050	90
651	J-82	2,848.00	6	Zone 5 - 3050	87
655	J-83	2,824.50	274	Zone 5 - 3050	96
849	J-84	2,878.00	79	Zone 5 - 3050	74
930	J-85	2,900.00	10	Zone 5 - 3050	64
64	J-86	2,622.00	0	Zone 6 - 2850	99
65	J-87	2,628.00	82	Zone 6 - 2850	96
89	J-88	2,692.00	2	Zone 6 - 2850	68
90	J-89	2,660.00	176	Zone 6 - 2850	75
91	J-90	2,652.00	84	Zone 6 - 2850	79
92	J-91	2,632.00	199	Zone 6 - 2850	93
93	J-92	2,612.00	135	Zone 6 - 2850	102
95	J-93	2,620.00	66	Zone 6 - 2850	98
125	J-94	2,600.00	64	Zone 6 - 2850	107
134	J-95	2,650.00	225	Zone 6 - 2850	86
208	J-96	2,676.00	33	Zone 6 - 2850	75
217	J-97	2,644.00	147	Zone 6 - 2850	88
218	J-98	2,656.00	156	Zone 6 - 2850	83
222	J-99	2,640.00	195	Zone 6 - 2850	90
225	J-100	2,618.00	20	Zone 6 - 2850	100
227	J-101	2,625.00	64	Zone 6 - 2850	97
276	J-102	2,600.00	0	Zone 6 - 2850	107
281	J-103	2,650.00	84	Zone 6 - 2850	80
382	J-104	2,640.25	23	Zone 6 - 2850	90
385	J-105	2,620.00	119	Zone 6 - 2850	99
389	J-106	2,660.00	84	Zone 6 - 2850	76
392	J-107	2,624.00	18	Zone 6 - 2850	97
395	J-108	2,606.00	14	Zone 6 - 2850	105
424	J-109	2,600.00	46	Zone 6 - 2850	107

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
426	J-110	2,605.00	153	Zone 6 - 2850	105
429	J-111	2,615.00	26	Zone 6 - 2850	101
434	J-112	2,634.00	50	Zone 6 - 2850	93
533	J-113	2,590.00	105	Zone 6 - 2850	111
571	J-114	2,629.91	29	Zone 6 - 2850	94
870	J-115	2,603.37	0	Zone 6 - 2850	106
875	J-117	2,612.88	77	Zone 6 - 2850	102
881	J-119	2,610.83	112	Zone 6 - 2850	103
891	J-121	2,629.15	0	Zone 6 - 2850	95
894	J-122	2,631.56	0	Zone 6 - 2850	94
897	J-123	2,651.03	66	Zone 6 - 2850	80
903	J-124	2,686.93	106	Zone 6 - 2850	70
977	J-125	2,638.62	43	Zone 6 - 2850	91
980	J-126	2,678.64	267	Zone 6 - 2850	68
67	J-127	2,706.00	121	Zone 7 - 3010	138
68	J-128	2,690.00	221	Zone 7 - 3010	148
73	J-129	2,862.00	76	Zone 7 - 3010	66
76	J-130	2,800.00	922	Zone 7 - 3010	84
80	J-131	2,746.00	393	Zone 7 - 3010	102
81	J-132	2,720.00	220	Zone 7 - 3010	116
83	J-133	2,796.00	67	Zone 7 - 3010	83
84	J-134	2,704.00	153	Zone 7 - 3010	126
85	J-135	2,710.00	153	Zone 7 - 3010	123
116	J-136	2,680.00	0	Zone 7 - 3010	141
138	J-137	2,820.00	155	Zone 7 - 3010	78
202	J-138	2,730.00	0	Zone 7 - 3010	125
205	J-139	2,694.00	155	Zone 7 - 3010	136
211	J-140	2,742.00	76	Zone 7 - 3010	119
252	J-141	2,682.00	0	Zone 7 - 3010	147
259	J-142	2,750.00	1,014	Zone 7 - 3010	113
273	J-143	2,750.00	120	Zone 7 - 3010	117
312	J-144	2,800.00	80	Zone 7 - 3010	93
315	J-145	2,745.00	0	Zone 7 - 3010	117
317	J-146	2,750.00	0	Zone 7 - 3010	115
319	J-147	2,746.00	21	Zone 7 - 3010	117
399	J-148	2,750.00	46	Zone 7 - 3010	116
403	J-149	2,680.00	0	Zone 7 - 3010	147
410	J-150	2,694.00	229	Zone 7 - 3010	141
439	J-151	2,690.00	22	Zone 7 - 3010	148
566	J-152	2,750.00	3	Zone 7 - 3010	115
568	J-153	2,734.00	0	Zone 7 - 3010	122
574	J-154	2,674.00	81	Zone 7 - 3010	150
665	J-155	2,676.00	0	Zone 7 - 3010	149
713	J-156	2,746.00	276	Zone 7 - 3010	109
722	J-157	2,691.85	0	Zone 7 - 3010	143
727	J-159	2,684.00	0	Zone 7 - 3010	146
910	J-160	2,750.00	46	Zone 7 - 3010	116
920	J-162	2,674.00	0	Zone 7 - 3010	150
935	J-164	2,770.00	2,490	Zone 7 - 3010	89

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
937	J-165	2,850.00	461	Zone 7 - 3010	36
944	J-166	2,687.56	76	Zone 7 - 3010	144
947	J-167	2,800.00	126	Zone 7 - 3010	94
956	J-168	2,920.00	737	Zone 7 - 3010	32
1018	J-169	2,689.21	0	Zone 7 - 3010	144
1034	J-170	2,692.40	0	Zone 7 - 3010	147
1577	J-171	2,820.00	737	Zone 7 - 3010	64
33	J-172	2,915.00	301	Zone 8 - 3150	77
634	J-174	3,080.00	0	Zone 8 - 3150	17
703	J-176	2,925.00	0	Zone 8 - 3150	75
971	J-178	2,995.68	196	Zone 8 - 3150	47
1026	J-179	2,670.00	0	Supply	99
1037	J-180	2,650.00	0	Supply	107
1075	J-181	2,738.42	0	Supply	69

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	563	2.30	18.09	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	1,312	2.09	1.81	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	129	0.83	0.45	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	204	1.30	2.72	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	264	1.68	2.29	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	154	0.98	0.66	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	109	2.78	8.30	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	36	0.92	0.90	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	29	0.74	0.69	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	232	1.48	3.05	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	327	2.08	1.66	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	575	0.92	0.22	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	1,017	1.62	0.16	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	1,281	2.04	1.79	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	200	0.81	1.16	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	61	1.55	3.35	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	87	2.21	5.71	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	748	1.19	1.05	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	249	1.02	0.71	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	249	1.02	0.75	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	121	0.50	0.32	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	-127	0.81	0.85	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	358	2.29	4.56	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	358	2.29	4.75	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	7	0.04	0.00	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	7	0.07	0.01	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	72	0.46	0.17	Zone 1 - 3270
P-41	2,256	J-32	J-8	6.0	PVC	72	0.82	0.98	Zone 1 - 3270
P-72	862	T-1	PMP-88	16.0	PVC	2,935	4.68	3.03	Zone 1 - 3270
P-73	768	PMP-88	J-14	16.0	PVC	2,935	4.68	2.70	Zone 1 - 3270
P-74	352	R-2	PMP-90	16.0	PVC	1,001	1.60	0.17	Zone 1 - 3270
P-75	350	PMP-90	J-1	16.0	PVC	1,001	1.60	0.17	Zone 1 - 3270
P-76	392	R-6	PMP-94	16.0	PVC	2,238	3.57	0.83	Zone 1 - 3270
P-77	573	PMP-94	J-23	16.0	PVC	2,238	3.57	1.22	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-90	3,734	J-12	J-34	8.0	PVC	121	0.78	1.05	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	121	3.10	18.09	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	3	0.02	0.00	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	27	0.17	0.01	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	318	1.30	0.36	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	137	0.87	0.86	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	2,001	3.19	2.74	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	721	1.15	0.39	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	1,017	1.62	0.12	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	740	2.10	1.50	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	852	1.36	0.50	Zone 2 - 3080
P-104	1,501	J-39	J-50	8.0	PVC	268	1.71	1.84	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	87	2.21	8.42	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	1,481	2.36	0.94	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	1,336	2.13	1.23	Zone 2 - 3080
P-110	1,056	J-54	J-40	10.0	PVC	435	1.78	1.07	Zone 2 - 3080
P-113	297	J-40	PRV-48	10.0	PVC	353	1.44	0.20	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	50	1.29	1.41	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	61	1.55	3.89	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	24	0.62	1.53	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	82	0.94	0.21	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-1,339	2.14	1.60	Zone 2 - 3080
P-120	2,149	J-46	J-35	6.0	PVC	268	3.04	10.67	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	19	0.12	0.02	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	15	0.09	0.02	Zone 2 - 3080
P-128	428	J-37	J-62	6.0	PVC	6	0.06	0.00	Zone 2 - 3080
P-129	2,506	J-62	J-63	6.0	PVC	4	0.05	0.01	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	110	2.81	10.64	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	415	1.70	1.03	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	346	1.42	0.57	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	1,599	6.53	19.54	Zone 2 - 3080
P-137	1,686	J-54	J-45	8.0	PVC	-183	1.17	1.01	Zone 2 - 3080
P-138	615	J-54	J-50	8.0	PVC	-252	1.61	0.67	Zone 2 - 3080
P-159	438	R-1	PMP-89	16.0	PVC	852	1.36	0.16	Zone 2 - 3080

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-160	6,236	PMP-89	J-49	16.0	PVC	852	1.36	2.22	Zone 2 - 3080
P-161	425	Well-1	PMP-91	16.0	PVC	1,604	2.56	0.49	Zone 2 - 3080
P-162	388	PMP-91	J-47	16.0	PVC	1,604	2.56	0.45	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	47	1.20	0.92	Zone 2 - 3080
P-172	5,588	J-36	J-64	4.0	PVC	64	1.63	13.96	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	305	1.95	4.76	Zone 3 - 2910
P-174	1,888	J-68	J-67	8.0	PVC	28	0.18	0.04	Zone 3 - 2910
P-190	470	R-4	PMP-93	10.0	PVC	651	2.66	1.00	Zone 3 - 2910
P-191	2,117	PMP-93	J-66	10.0	PVC	651	2.66	4.51	Zone 3 - 2910
P-194	1,367	J-71	J-69	8.0	PVC	-123	0.79	0.40	Zone 4 - 2920
P-195	770	J-77	J-72	8.0	PVC	109	0.70	0.18	Zone 4 - 2920
P-196	575	R-1	PMP-78	8.0	PVC	201	1.28	0.41	Zone 4 - 2920
P-197	1,865	PRV-52	J-69	8.0	PVC	123	0.79	0.54	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	82	0.94	0.93	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	88	0.56	0.35	Zone 4 - 2920
P-201	1,715	J-71	J-75	8.0	PVC	45	0.29	0.08	Zone 4 - 2920
P-202	1,423	J-71	J-76	8.0	PVC	64	0.41	0.12	Zone 4 - 2920
P-203	499	J-76	J-73	8.0	PVC	64	0.41	0.04	Zone 4 - 2920
P-206	544	J-73	J-77	8.0	PVC	21	0.14	0.01	Zone 4 - 2920
P-217	944	PMP-78	J-70	8.0	PVC	201	1.28	0.68	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	62	0.40	0.11	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	284	1.16	0.57	Zone 5 - 3050
P-225	1,597	J-78	J-82	10.0	PVC	236	0.96	0.52	Zone 5 - 3050
P-226	1,212	J-82	J-81	8.0	PVC	98	0.62	0.23	Zone 5 - 3050
P-227	1,973	J-82	J-83	10.0	PVC	406	1.66	1.76	Zone 5 - 3050
P-228	368	J-83	PRV-52	8.0	PVC	123	0.79	0.11	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	24	0.62	0.27	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	346	1.42	0.14	Zone 5 - 3050
P-232	853	PRV-48	J-84	10.0	PVC	353	1.44	0.59	Zone 5 - 3050
P-233	1,509	J-84	J-82	10.0	PVC	274	1.12	0.65	Zone 5 - 3050
P-234	2,414	J-83	J-85	8.0	PVC	10	0.06	0.01	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	492	0.79	0.20	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	61	0.69	0.86	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	-77	0.49	0.15	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-238	2,689	J-95	J-96	6.0	PVC	-60	0.68	0.84	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	138	1.57	1.90	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	919	1.47	0.56	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	1,112	1.78	0.76	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	687	1.10	0.46	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	66	1.69	2.12	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	64	0.41	0.03	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	393	4.46	12.89	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	102	0.65	0.26	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	769	1.23	0.65	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-84	0.95	0.69	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	200	1.27	0.95	Zone 6 - 2850
P-250	1,336	J-104	J-107	8.0	PVC	109	0.69	0.31	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	407	0.65	0.12	Zone 6 - 2850
P-252	1,184	J-110	J-109	6.0	PVC	46	0.52	0.23	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	-3	0.02	0.00	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	196	1.25	0.93	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	-84	0.54	0.23	Zone 6 - 2850
P-256	1,290	J-101	J-112	8.0	PVC	-141	0.90	0.48	Zone 6 - 2850
P-257	2,664	J-98	J-104	6.0	PVC	38	0.43	0.35	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	224	0.36	0.03	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	-132	0.21	0.01	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	-103	0.16	0.01	Zone 6 - 2850
P-261	1,384	J-86	J-105	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-262	223	J-88	PRV-39	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-264	989	J-95	PRV-41	8.0	PVC	-264	1.69	1.18	Zone 6 - 2850
P-265	1,095	J-112	PRV-42	8.0	PVC	-236	1.51	1.06	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	169	1.08	0.57	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	169	1.08	0.79	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	35	0.06	0.00	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	112	0.18	0.01	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	105	0.67	0.67	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	-240	0.38	0.02	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	-240	0.38	0.07	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-276	1,124	J-104	J-122	4.0	PVC	8	0.20	0.06	Zone 6 - 2850
P-277	849	J-122	J-101	4.0	PVC	8	0.20	0.04	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	226	1.44	0.61	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	160	1.02	0.31	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	474	0.76	0.16	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	368	0.59	0.05	Zone 6 - 2850
P-284	598	J-112	J-125	6.0	PVC	46	0.52	0.11	Zone 6 - 2850
P-285	1,473	J-125	J-95	6.0	PVC	3	0.03	0.00	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	99	0.63	0.25	Zone 6 - 2850
P-287	1,675	J-88	J-126	6.0	PVC	366	4.15	14.81	Zone 6 - 2850
P-290	782	J-180	PRV-58	16.0	PVC	887	1.42	0.30	Zone 6 - 2850
P-291	831	PRV-58	J-105	16.0	PVC	887	1.42	0.32	Zone 6 - 2850
P-292	296	J-179	PRV-59	16.0	PVC	1,680	2.68	0.37	Zone 6 - 2850
P-293	270	PRV-59	J-96	16.0	PVC	1,680	2.68	0.34	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	3,632	5.80	6.45	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	3,345	5.34	7.20	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	67	0.43	0.25	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	153	1.74	2.32	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	933	2.65	3.71	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	155	3.96	19.13	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	155	1.76	1.46	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	2,035	5.77	6.38	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	301	1.92	2.47	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	181	2.05	3.78	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	76	1.94	2.29	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	25	0.28	0.09	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	25	0.28	0.05	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	1,651	4.68	25.96	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	1,651	4.68	9.19	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	304	1.94	2.54	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	2,024	3.23	3.17	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	4,093	6.53	12.12	Zone 7 - 3010
P-328	537	J-151	J-128	16.0	PVC	1,873	2.99	0.82	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	3	0.04	0.00	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-330	550	J-146	J-153	6.0	PVC	25	0.28	0.03	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	21	0.24	0.02	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	358	0.57	0.09	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	439	0.70	0.10	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	675	1.08	0.32	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	675	1.08	0.30	Zone 7 - 3010
P-338	306	PRV-39	J-139	16.0	PVC	0	0.00	0.00	Zone 7 - 3010
P-339	294	PRV-41	J-149	8.0	PVC	-264	1.69	0.35	Zone 7 - 3010
P-340	478	PRV-42	J-155	8.0	PVC	-236	1.51	0.46	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	-87	0.55	0.14	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	-132	0.85	0.39	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	831	1.33	0.44	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	831	1.33	0.17	Zone 7 - 3010
P-348	12,843	J-164	J-165	8.0	PVC	461	2.94	42.95	Zone 7 - 3010
P-349	1,596	J-131	J-164	16.0	PVC	2,952	4.71	5.67	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	-285	0.46	0.06	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	-209	0.33	0.04	Zone 7 - 3010
P-352	1,687	J-148	J-167	8.0	PVC	126	0.80	0.51	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	3,938	6.28	13.10	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	1,131	1.81	1.41	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	1,131	1.81	0.47	Zone 7 - 3010
P-359	692	J-170	J-150	16.0	PVC	6,631	10.58	11.01	Zone 7 - 3010
P-365	8,850	J-142	J-168	12.0	PVC	1,020	2.89	17.86	Zone 7 - 3010
P-388	620	J-180	PMP-79	16.0	PVC	1,252	2.00	0.45	Zone 7 - 3010
P-389	614	PMP-79	J-127	16.0	PVC	1,252	2.00	0.45	Zone 7 - 3010
P-390	480	J-181	PMP-80	16.0	PVC	1,894	3.02	0.75	Zone 7 - 3010
P-391	571	PMP-80	J-151	16.0	PVC	1,894	3.02	0.89	Zone 7 - 3010
P-398	659	J-179	PMP-110	16.0	PVC	6,631	10.58	10.48	Zone 7 - 3010
P-399	688	PMP-110	J-170	16.0	PVC	6,631	10.58	10.95	Zone 7 - 3010
P-407	4,740	J-168	J-130	12.0	PVC	-10	0.03	0.00	Zone 7 - 3010
P-408	4,359	J-168	J-171	6.0	PVC	294	3.34	25.73	Zone 7 - 3010
P-409	2,342	J-171	J-156	6.0	PVC	-442	5.02	29.44	Zone 7 - 3010
P-417	3,837	J-178	J-174	8.0	PVC	-497	3.17	14.73	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	-301	1.92	4.50	Zone 8 - 3150

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-424	474	R-2	PMP-92	10.0	PVC	497	2.03	0.61	Zone 8 - 3150
P-425	522	PMP-92	J-174	10.0	PVC	497	2.03	0.68	Zone 8 - 3150
P-430	3,463	J-172	J-176	8.0	PVC	-301	1.92	5.24	Zone 8 - 3150
P-431	12,847	J-180	J-179	63.0	PVC	8,311	0.86	0.39	Supply
P-432	18,653	R-7	J-181	63.0	PVC	12,345	1.27	1.18	Supply
P-433	10,208	J-181	J-180	63.0	PVC	10,451	1.08	0.48	Supply

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	1	Zone 1 - 3270	103
35	J-2	3,045.00	1	Zone 1 - 3270	118
39	J-3	3,058.00	1	Zone 1 - 3270	67
40	J-4	3,060.00	1	Zone 1 - 3270	66
41	J-5	3,045.00	1	Zone 1 - 3270	73
45	J-6	3,078.00	1	Zone 1 - 3270	58
48	J-7	3,050.00	1	Zone 1 - 3270	70
53	J-8	3,040.00	1	Zone 1 - 3270	120
54	J-9	3,090.00	1	Zone 1 - 3270	98
71	J-10	3,050.00	1	Zone 1 - 3270	116
130	J-11	2,980.00	1	Zone 1 - 3270	100
147	J-12	2,920.00	1	Zone 1 - 3270	127
149	J-13	3,030.00	1	Zone 1 - 3270	79
150	J-14	3,040.00	1	Zone 1 - 3270	74
232	J-15	3,010.00	1	Zone 1 - 3270	88
497	J-16	2,994.00	1	Zone 1 - 3270	94
525	J-17	3,010.00	1	Zone 1 - 3270	87
548	J-18	3,080.00	1	Zone 1 - 3270	57
639	J-19	3,050.28	0	Zone 1 - 3270	70
759	J-20	2,970.00	1	Zone 1 - 3270	105
762	J-21	3,033.58	0	Zone 1 - 3270	123
781	J-22	3,021.07	1	Zone 1 - 3270	83
791	J-23	3,015.50	0	Zone 1 - 3270	85
810	J-24	2,997.59	0	Zone 1 - 3270	93
813	J-25	2,998.00	0	Zone 1 - 3270	93
815	J-26	3,014.00	0	Zone 1 - 3270	86
852	J-27	3,150.00	0	Zone 1 - 3270	72
855	J-28	3,100.00	0	Zone 1 - 3270	94
858	J-29	3,050.00	0	Zone 1 - 3270	116
861	J-30	3,094.00	0	Zone 1 - 3270	97
863	J-31	3,130.00	0	Zone 1 - 3270	81
867	J-32	3,080.00	0	Zone 1 - 3270	103
974	J-33	2,980.00	0	Zone 1 - 3270	146
1573	J-34	2,980.00	0	Zone 1 - 3270	101
43	J-35	2,960.00	1	Zone 2 - 3080	54
44	J-36	2,892.00	1	Zone 2 - 3080	84
47	J-37	2,846.00	1	Zone 2 - 3080	104
56	J-38	2,910.00	1	Zone 2 - 3080	77
57	J-39	2,970.00	1	Zone 2 - 3080	51
58	J-40	2,890.00	1	Zone 2 - 3080	85
195	J-41	2,864.00	1	Zone 2 - 3080	96
234	J-42	2,870.00	1	Zone 2 - 3080	94
296	J-43	2,880.00	0	Zone 2 - 3080	89
300	J-44	2,986.00	0	Zone 2 - 3080	41
475	J-45	2,890.00	0	Zone 2 - 3080	85
490	J-46	2,925.00	0	Zone 2 - 3080	69
494	J-47	2,946.00	0	Zone 2 - 3080	62
502	J-48	2,840.00	0	Zone 2 - 3080	107
530	J-49	2,878.00	0	Zone 2 - 3080	91

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
536	J-50	2,966.00	0	Zone 2 - 3080	53
544	J-51	2,960.00	0	Zone 2 - 3080	55
549	J-52	2,926.00	0	Zone 2 - 3080	70
624	J-53	2,952.00	0	Zone 2 - 3080	57
646	J-54	2,934.00	0	Zone 2 - 3080	66
658	J-55	2,900.00	0	Zone 2 - 3080	81
801	J-56	3,042.76	0	Zone 2 - 3080	18
819	J-57	2,940.00	0	Zone 2 - 3080	63
821	J-58	2,910.00	0	Zone 2 - 3080	76
823	J-59	2,894.00	0	Zone 2 - 3080	83
827	J-60	2,810.00	0	Zone 2 - 3080	120
830	J-61	2,884.00	0	Zone 2 - 3080	88
834	J-62	2,850.00	0	Zone 2 - 3080	102
837	J-63	2,900.00	0	Zone 2 - 3080	81
839	J-64	3,000.00	0	Zone 2 - 3080	36
1005	J-65	2,884.88	0	Zone 2 - 3080	88
69	J-66	2,646.00	1	Zone 3 - 2910	138
70	J-67	2,730.00	1	Zone 3 - 2910	102
321	J-68	2,705.00	1	Zone 3 - 2910	113
49	J-69	2,810.00	1	Zone 4 - 2920	48
63	J-70	2,675.00	1	Zone 4 - 2920	106
141	J-71	2,786.00	1	Zone 4 - 2920	58
270	J-72	2,730.00	1	Zone 4 - 2920	82
841	J-73	2,720.00	0	Zone 4 - 2920	87
844	J-74	2,810.00	0	Zone 4 - 2920	48
846	J-75	2,790.00	0	Zone 4 - 2920	56
926	J-76	2,740.00	0	Zone 4 - 2920	78
1088	J-77	2,722.00	0	Zone 4 - 2920	86
37	J-78	2,818.00	1	Zone 5 - 3050	100
131	J-79	2,840.00	1	Zone 5 - 3050	91
264	J-80	2,810.00	1	Zone 5 - 3050	104
326	J-81	2,840.00	0	Zone 5 - 3050	91
651	J-82	2,848.00	0	Zone 5 - 3050	87
655	J-83	2,824.50	0	Zone 5 - 3050	98
849	J-84	2,878.00	0	Zone 5 - 3050	74
930	J-85	2,900.00	0	Zone 5 - 3050	65
64	J-86	2,622.00	1	Zone 6 - 2850	99
65	J-87	2,628.00	1	Zone 6 - 2850	96
89	J-88	2,692.00	1	Zone 6 - 2850	68
90	J-89	2,660.00	1	Zone 6 - 2850	82
91	J-90	2,652.00	1	Zone 6 - 2850	86
92	J-91	2,632.00	1	Zone 6 - 2850	94
93	J-92	2,612.00	1	Zone 6 - 2850	103
95	J-93	2,620.00	1	Zone 6 - 2850	100
125	J-94	2,600.00	1	Zone 6 - 2850	108
134	J-95	2,650.00	1	Zone 6 - 2850	87
208	J-96	2,676.00	1	Zone 6 - 2850	75
217	J-97	2,644.00	1	Zone 6 - 2850	89
218	J-98	2,656.00	1	Zone 6 - 2850	84

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
222	J-99	2,640.00	1	Zone 6 - 2850	91
225	J-100	2,618.00	1	Zone 6 - 2850	100
227	J-101	2,625.00	1	Zone 6 - 2850	97
276	J-102	2,600.00	1	Zone 6 - 2850	108
281	J-103	2,650.00	1	Zone 6 - 2850	87
382	J-104	2,640.25	0	Zone 6 - 2850	91
385	J-105	2,620.00	0	Zone 6 - 2850	100
389	J-106	2,660.00	0	Zone 6 - 2850	82
392	J-107	2,624.00	0	Zone 6 - 2850	98
395	J-108	2,606.00	0	Zone 6 - 2850	106
424	J-109	2,600.00	0	Zone 6 - 2850	108
426	J-110	2,605.00	0	Zone 6 - 2850	106
429	J-111	2,615.00	0	Zone 6 - 2850	102
434	J-112	2,634.00	0	Zone 6 - 2850	93
533	J-113	2,590.00	0	Zone 6 - 2850	113
571	J-114	2,629.91	0	Zone 6 - 2850	95
870	J-115	2,603.37	0	Zone 6 - 2850	107
873	J-116	2,600.00	0	Zone 6 - 2850	108
875	J-117	2,612.88	0	Zone 6 - 2850	103
878	J-118	2,604.00	0	Zone 6 - 2850	106
881	J-119	2,610.83	0	Zone 6 - 2850	104
884	J-120	2,604.00	0	Zone 6 - 2850	106
891	J-121	2,629.15	0	Zone 6 - 2850	96
894	J-122	2,631.56	0	Zone 6 - 2850	95
897	J-123	2,651.03	0	Zone 6 - 2850	86
903	J-124	2,686.93	0	Zone 6 - 2850	71
977	J-125	2,638.62	0	Zone 6 - 2850	91
980	J-126	2,678.64	0	Zone 6 - 2850	74
67	J-127	2,706.00	1	Zone 7 - 3010	125
68	J-128	2,690.00	1	Zone 7 - 3010	132
73	J-129	2,862.00	1	Zone 7 - 3010	58
76	J-130	2,800.00	1	Zone 7 - 3010	85
80	J-131	2,746.00	1	Zone 7 - 3010	108
81	J-132	2,720.00	1	Zone 7 - 3010	119
83	J-133	2,796.00	1	Zone 7 - 3010	86
84	J-134	2,704.00	1	Zone 7 - 3010	126
85	J-135	2,710.00	1	Zone 7 - 3010	124
116	J-136	2,680.00	1	Zone 7 - 3010	136
138	J-137	2,820.00	1	Zone 7 - 3010	76
202	J-138	2,730.00	1	Zone 7 - 3010	115
205	J-139	2,694.00	1	Zone 7 - 3010	130
211	J-140	2,742.00	1	Zone 7 - 3010	110
252	J-141	2,682.00	1	Zone 7 - 3010	136
259	J-142	2,750.00	1	Zone 7 - 3010	106
273	J-143	2,750.00	1	Zone 7 - 3010	106
312	J-144	2,800.00	0	Zone 7 - 3010	85
315	J-145	2,745.00	0	Zone 7 - 3010	108
317	J-146	2,750.00	0	Zone 7 - 3010	106
319	J-147	2,746.00	0	Zone 7 - 3010	108

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
399	J-148	2,750.00	0	Zone 7 - 3010	106
403	J-149	2,680.00	0	Zone 7 - 3010	136
410	J-150	2,694.00	0	Zone 7 - 3010	130
439	J-151	2,690.00	0	Zone 7 - 3010	132
566	J-152	2,750.00	0	Zone 7 - 3010	106
568	J-153	2,734.00	0	Zone 7 - 3010	113
574	J-154	2,674.00	0	Zone 7 - 3010	139
665	J-155	2,676.00	0	Zone 7 - 3010	138
713	J-156	2,746.00	0	Zone 7 - 3010	108
722	J-157	2,691.85	0	Zone 7 - 3010	131
725	J-158	2,866.00	0	Zone 7 - 3010	56
727	J-159	2,684.00	0	Zone 7 - 3010	135
910	J-160	2,750.00	0	Zone 7 - 3010	106
915	J-161	2,726.00	0	Zone 7 - 3010	117
920	J-162	2,674.00	0	Zone 7 - 3010	139
923	J-163	2,720.00	0	Zone 7 - 3010	119
935	J-164	2,770.00	0	Zone 7 - 3010	98
937	J-165	2,850.00	0	Zone 7 - 3010	63
944	J-166	2,687.56	0	Zone 7 - 3010	133
947	J-167	2,800.00	0	Zone 7 - 3010	85
956	J-168	2,920.00	0	Zone 7 - 3010	33
1018	J-169	2,689.21	0	Zone 7 - 3010	132
1034	J-170	2,692.40	0	Zone 7 - 3010	131
1577	J-171	2,820.00	0	Zone 7 - 3010	76
33	J-172	2,915.00	1	Zone 8 - 3150	106
199	J-173	2,998.00	1	Zone 8 - 3150	70
634	J-174	3,080.00	0	Zone 8 - 3150	34
636	J-175	2,920.00	1	Zone 8 - 3150	104
703	J-176	2,925.00	0	Zone 8 - 3150	101
941	J-177	2,960.69	1	Zone 8 - 3150	86
971	J-178	2,995.68	1	Zone 8 - 3150	71
1026	J-179	2,670.00	0	Supply	100
1037	J-180	2,650.00	0	Supply	108
1075	J-181	2,738.42	0	Supply	70

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	80	Zone 1 - 3270	98
35	J-2	3,045.00	59	Zone 1 - 3270	109
39	J-3	3,058.00	71	Zone 1 - 3270	63
40	J-4	3,060.00	71	Zone 1 - 3270	64
41	J-5	3,045.00	71	Zone 1 - 3270	69
45	J-6	3,078.00	10	Zone 1 - 3270	40
48	J-7	3,050.00	71	Zone 1 - 3270	61
53	J-8	3,040.00	68	Zone 1 - 3270	112
54	J-9	3,090.00	61	Zone 1 - 3270	91
71	J-10	3,050.00	59	Zone 1 - 3270	107
130	J-11	2,980.00	11	Zone 1 - 3270	81
147	J-12	2,920.00	71	Zone 1 - 3270	121
149	J-13	3,030.00	86	Zone 1 - 3270	61
150	J-14	3,040.00	498	Zone 1 - 3270	57
232	J-15	3,010.00	107	Zone 1 - 3270	80
497	J-16	2,994.00	74	Zone 1 - 3270	74
525	J-17	3,010.00	76	Zone 1 - 3270	68
548	J-18	3,080.00	70	Zone 1 - 3270	35
639	J-19	3,050.28	71	Zone 1 - 3270	68
759	J-20	2,970.00	0	Zone 1 - 3270	86
762	J-21	3,033.58	99	Zone 1 - 3270	116
781	J-22	3,021.07	98	Zone 1 - 3270	62
791	J-23	3,015.50	497	Zone 1 - 3270	84
810	J-24	2,997.59	71	Zone 1 - 3270	89
813	J-25	2,998.00	71	Zone 1 - 3270	89
815	J-26	3,014.00	71	Zone 1 - 3270	81
852	J-27	3,150.00	119	Zone 1 - 3270	63
855	J-28	3,100.00	59	Zone 1 - 3270	85
858	J-29	3,050.00	59	Zone 1 - 3270	108
861	J-30	3,094.00	59	Zone 1 - 3270	89
863	J-31	3,130.00	59	Zone 1 - 3270	74
867	J-32	3,080.00	59	Zone 1 - 3270	95
974	J-33	2,980.00	0	Zone 1 - 3270	137
1573	J-34	2,980.00	0	Zone 1 - 3270	95
43	J-35	2,960.00	74	Zone 2 - 3080	54
44	J-36	2,892.00	76	Zone 2 - 3080	85
47	J-37	2,846.00	2	Zone 2 - 3080	101
56	J-38	2,910.00	70	Zone 2 - 3080	72
57	J-39	2,970.00	3	Zone 2 - 3080	48
58	J-40	2,890.00	97	Zone 2 - 3080	81
195	J-41	2,864.00	1	Zone 2 - 3080	93
234	J-42	2,870.00	76	Zone 2 - 3080	94
296	J-43	2,880.00	0	Zone 2 - 3080	91
300	J-44	2,986.00	1	Zone 2 - 3080	42
475	J-45	2,890.00	72	Zone 2 - 3080	82
490	J-46	2,925.00	84	Zone 2 - 3080	70
494	J-47	2,946.00	2	Zone 2 - 3080	64
502	J-48	2,840.00	91	Zone 2 - 3080	109
530	J-49	2,878.00	91	Zone 2 - 3080	93

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
536	J-50	2,966.00	5	Zone 2 - 3080	49
544	J-51	2,960.00	70	Zone 2 - 3080	48
549	J-52	2,926.00	70	Zone 2 - 3080	66
624	J-53	2,952.00	11	Zone 2 - 3080	58
646	J-54	2,934.00	70	Zone 2 - 3080	63
658	J-55	2,900.00	91	Zone 2 - 3080	81
801	J-56	3,042.76	0	Zone 2 - 3080	19
819	J-57	2,940.00	71	Zone 2 - 3080	59
821	J-58	2,910.00	71	Zone 2 - 3080	73
823	J-59	2,894.00	71	Zone 2 - 3080	80
827	J-60	2,810.00	1	Zone 2 - 3080	118
830	J-61	2,884.00	71	Zone 2 - 3080	86
834	J-62	2,850.00	0	Zone 2 - 3080	99
837	J-63	2,900.00	72	Zone 2 - 3080	77
839	J-64	3,000.00	74	Zone 2 - 3080	37
1005	J-65	2,884.88	93	Zone 2 - 3080	83
69	J-66	2,646.00	115	Zone 3 - 2910	149
70	J-67	2,730.00	9	Zone 3 - 2910	112
321	J-68	2,705.00	92	Zone 3 - 2910	123
49	J-69	2,810.00	91	Zone 4 - 2920	47
63	J-70	2,675.00	107	Zone 4 - 2920	104
141	J-71	2,786.00	107	Zone 4 - 2920	57
270	J-72	2,730.00	105	Zone 4 - 2920	80
841	J-73	2,720.00	14	Zone 4 - 2920	85
844	J-74	2,810.00	91	Zone 4 - 2920	47
846	J-75	2,790.00	106	Zone 4 - 2920	55
926	J-76	2,740.00	0	Zone 4 - 2920	76
1088	J-77	2,722.00	91	Zone 4 - 2920	83
37	J-78	2,818.00	70	Zone 5 - 3050	100
131	J-79	2,840.00	70	Zone 5 - 3050	91
264	J-80	2,810.00	70	Zone 5 - 3050	104
326	J-81	2,840.00	102	Zone 5 - 3050	90
651	J-82	2,848.00	72	Zone 5 - 3050	87
655	J-83	2,824.50	182	Zone 5 - 3050	96
849	J-84	2,878.00	96	Zone 5 - 3050	74
930	J-85	2,900.00	94	Zone 5 - 3050	63
64	J-86	2,622.00	0	Zone 6 - 2850	99
65	J-87	2,628.00	45	Zone 6 - 2850	96
89	J-88	2,692.00	1	Zone 6 - 2850	68
90	J-89	2,660.00	70	Zone 6 - 2850	80
91	J-90	2,652.00	39	Zone 6 - 2850	84
92	J-91	2,632.00	74	Zone 6 - 2850	94
93	J-92	2,612.00	42	Zone 6 - 2850	103
95	J-93	2,620.00	38	Zone 6 - 2850	99
125	J-94	2,600.00	28	Zone 6 - 2850	108
134	J-95	2,650.00	87	Zone 6 - 2850	86
208	J-96	2,676.00	11	Zone 6 - 2850	75
217	J-97	2,644.00	88	Zone 6 - 2850	89
218	J-98	2,656.00	91	Zone 6 - 2850	84

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
222	J-99	2,640.00	65	Zone 6 - 2850	91
225	J-100	2,618.00	7	Zone 6 - 2850	100
227	J-101	2,625.00	34	Zone 6 - 2850	97
276	J-102	2,600.00	28	Zone 6 - 2850	108
281	J-103	2,650.00	39	Zone 6 - 2850	85
382	J-104	2,640.25	28	Zone 6 - 2850	91
385	J-105	2,620.00	67	Zone 6 - 2850	100
389	J-106	2,660.00	39	Zone 6 - 2850	80
392	J-107	2,624.00	34	Zone 6 - 2850	98
395	J-108	2,606.00	5	Zone 6 - 2850	105
424	J-109	2,600.00	28	Zone 6 - 2850	108
426	J-110	2,605.00	63	Zone 6 - 2850	106
429	J-111	2,615.00	37	Zone 6 - 2850	101
434	J-112	2,634.00	44	Zone 6 - 2850	93
533	J-113	2,590.00	63	Zone 6 - 2850	112
571	J-114	2,629.91	28	Zone 6 - 2850	95
870	J-115	2,603.37	0	Zone 6 - 2850	106
873	J-116	2,600.00	28	Zone 6 - 2850	108
875	J-117	2,612.88	26	Zone 6 - 2850	102
878	J-118	2,604.00	28	Zone 6 - 2850	106
881	J-119	2,610.83	54	Zone 6 - 2850	103
884	J-120	2,604.00	28	Zone 6 - 2850	106
891	J-121	2,629.15	28	Zone 6 - 2850	95
894	J-122	2,631.56	28	Zone 6 - 2850	94
897	J-123	2,651.03	81	Zone 6 - 2850	84
903	J-124	2,686.93	47	Zone 6 - 2850	71
977	J-125	2,638.62	42	Zone 6 - 2850	91
980	J-126	2,678.64	100	Zone 6 - 2850	72
67	J-127	2,706.00	55	Zone 7 - 3010	130
68	J-128	2,690.00	111	Zone 7 - 3010	131
73	J-129	2,862.00	35	Zone 7 - 3010	59
76	J-130	2,800.00	338	Zone 7 - 3010	83
80	J-131	2,746.00	131	Zone 7 - 3010	109
81	J-132	2,720.00	73	Zone 7 - 3010	120
83	J-133	2,796.00	22	Zone 7 - 3010	87
84	J-134	2,704.00	51	Zone 7 - 3010	128
85	J-135	2,710.00	51	Zone 7 - 3010	125
116	J-136	2,680.00	0	Zone 7 - 3010	135
138	J-137	2,820.00	59	Zone 7 - 3010	78
202	J-138	2,730.00	35	Zone 7 - 3010	118
205	J-139	2,694.00	52	Zone 7 - 3010	133
211	J-140	2,742.00	35	Zone 7 - 3010	112
252	J-141	2,682.00	0	Zone 7 - 3010	139
259	J-142	2,750.00	358	Zone 7 - 3010	108
273	J-143	2,750.00	53	Zone 7 - 3010	110
312	J-144	2,800.00	62	Zone 7 - 3010	86
315	J-145	2,745.00	35	Zone 7 - 3010	110
317	J-146	2,750.00	35	Zone 7 - 3010	108
319	J-147	2,746.00	7	Zone 7 - 3010	109

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
399	J-148	2,750.00	35	Zone 7 - 3010	109
403	J-149	2,680.00	35	Zone 7 - 3010	140
410	J-150	2,694.00	86	Zone 7 - 3010	133
439	J-151	2,690.00	7	Zone 7 - 3010	131
566	J-152	2,750.00	1	Zone 7 - 3010	108
568	J-153	2,734.00	0	Zone 7 - 3010	114
574	J-154	2,674.00	42	Zone 7 - 3010	142
665	J-155	2,676.00	35	Zone 7 - 3010	141
713	J-156	2,746.00	92	Zone 7 - 3010	106
722	J-157	2,691.85	0	Zone 7 - 3010	135
725	J-158	2,866.00	39	Zone 7 - 3010	59
727	J-159	2,684.00	35	Zone 7 - 3010	139
910	J-160	2,750.00	35	Zone 7 - 3010	109
915	J-161	2,726.00	0	Zone 7 - 3010	120
920	J-162	2,674.00	0	Zone 7 - 3010	143
923	J-163	2,720.00	35	Zone 7 - 3010	123
935	J-164	2,770.00	830	Zone 7 - 3010	98
937	J-165	2,850.00	154	Zone 7 - 3010	61
944	J-166	2,687.56	35	Zone 7 - 3010	136
947	J-167	2,800.00	77	Zone 7 - 3010	87
956	J-168	2,920.00	246	Zone 7 - 3010	32
1018	J-169	2,689.21	55	Zone 7 - 3010	137
1034	J-170	2,692.40	0	Zone 7 - 3010	135
1577	J-171	2,820.00	246	Zone 7 - 3010	73
33	J-172	2,915.00	100	Zone 8 - 3150	116
199	J-173	2,998.00	59	Zone 8 - 3150	80
634	J-174	3,080.00	0	Zone 8 - 3150	50
636	J-175	2,920.00	59	Zone 8 - 3150	114
703	J-176	2,925.00	0	Zone 8 - 3150	112
941	J-177	2,960.69	59	Zone 8 - 3150	96
971	J-178	2,995.68	65	Zone 8 - 3150	83
1026	J-179	2,670.00	0	Supply	99
1037	J-180	2,650.00	55	Supply	108
1075	J-181	2,738.42	0	Supply	70

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	417	1.70	10.37	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	962	1.53	1.02	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	235	1.50	1.37	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	59	0.37	0.27	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	235	1.50	1.85	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	284	1.82	2.06	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	107	2.73	8.06	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	76	1.94	3.62	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	74	1.88	3.93	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	224	1.43	2.88	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	355	2.27	1.93	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	956	1.53	0.57	Zone 1 - 3270
P-17	658	J-12	PRV-55	8.0	PVC	283	1.80	0.89	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	716	1.14	0.09	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	951	1.52	1.03	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	461	1.88	5.50	Zone 1 - 3270
P-21	1,610	J-21	PRV-43	8.0	PVC	0	0.00	0.00	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	57	1.45	2.94	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	70	1.78	3.83	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	1,027	1.64	1.88	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	530	2.17	2.90	Zone 1 - 3270
P-28	1,210	J-24	J-25	6.0	PVC	71	0.80	0.51	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	389	1.59	1.71	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	424	1.73	3.22	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	106	0.68	0.61	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	178	1.14	1.25	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	119	0.76	0.62	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	178	1.13	1.05	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	61	0.69	0.47	Zone 1 - 3270
P-36	1,473	J-29	J-30	6.0	PVC	59	0.66	0.44	Zone 1 - 3270
P-37	2,092	J-32	J-31	6.0	PVC	59	0.66	0.62	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	185	1.18	0.96	Zone 1 - 3270
P-39	1,621	J-2	J-33	8.0	PVC	122	0.78	0.46	Zone 1 - 3270
P-40	1,288	J-33	PRV-51	8.0	PVC	122	0.78	0.36	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-41	2,256	J-32	J-8	6.0	PVC	68	0.77	0.87	Zone 1 - 3270
P-66	237	R-6	PMP-66	16.0	PVC	1,524	2.43	0.25	Zone 1 - 3270
P-67	526	PMP-66	J-23	16.0	PVC	1,524	2.43	0.55	Zone 1 - 3270
P-68	638	T-1	PMP-67	16.0	PVC	1,695	2.70	0.81	Zone 1 - 3270
P-69	983	PMP-67	J-14	16.0	PVC	1,695	2.70	1.25	Zone 1 - 3270
P-70	356	R-2	PMP-69	16.0	PVC	958	1.53	0.16	Zone 1 - 3270
P-71	379	PMP-69	J-1	16.0	PVC	958	1.53	0.17	Zone 1 - 3270
P-90	3,734	J-12	J-34	8.0	PVC	71	0.45	0.39	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	71	1.81	6.67	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	-69	0.44	0.11	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	415	2.65	1.99	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	490	2.00	0.81	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	178	1.14	1.39	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	1,895	3.02	2.47	Zone 2 - 3080
P-99	3,268	J-47	J-56	10.0	PVC	677	2.77	7.50	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	1,636	2.61	1.77	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	716	1.14	0.06	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	612	1.74	1.05	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	1,868	2.98	2.16	Zone 2 - 3080
P-104	1,501	J-39	J-50	8.0	PVC	101	0.65	0.30	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	70	1.78	5.64	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	1,700	2.71	1.22	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	2,329	3.72	3.44	Zone 2 - 3080
P-110	1,056	J-54	J-40	10.0	PVC	540	2.20	1.59	Zone 2 - 3080
P-111	1,869	J-49	J-55	10.0	PVC	747	3.05	5.15	Zone 2 - 3080
P-112	4,023	J-55	J-54	10.0	PVC	656	2.68	8.71	Zone 2 - 3080
P-113	297	J-40	PRV-48	10.0	PVC	443	1.81	0.31	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	38	0.98	0.85	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	56	1.43	3.37	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	25	0.63	1.55	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	141	1.59	0.57	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-1,652	2.64	2.37	Zone 2 - 3080
P-119	1,458	J-56	J-44	10.0	PVC	677	2.77	3.35	Zone 2 - 3080
P-120	2,149	J-46	J-35	6.0	PVC	110	1.25	2.06	Zone 2 - 3080

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-121	3,005	J-58	J-57	6.0	PVC	71	0.80	1.27	Zone 2 - 3080
P-122	192	PRV-55	J-59	8.0	PVC	283	1.80	0.26	Zone 2 - 3080
P-123	2,341	J-41	J-59	8.0	PVC	-70	0.45	0.24	Zone 2 - 3080
P-124	761	J-59	J-58	6.0	PVC	142	1.61	1.16	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	338	2.16	3.44	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	266	1.70	3.81	Zone 2 - 3080
P-127	1,642	J-60	J-61	6.0	PVC	71	0.80	0.69	Zone 2 - 3080
P-128	428	J-37	J-62	6.0	PVC	73	0.82	0.19	Zone 2 - 3080
P-129	2,506	J-62	J-63	6.0	PVC	72	0.82	1.10	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	37	0.95	1.42	Zone 2 - 3080
P-131	248	J-37	PRV-54	8.0	PVC	260	1.66	0.29	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	505	2.06	1.48	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	412	1.68	0.79	Zone 2 - 3080
P-135	2,275	J-49	J-47	10.0	PVC	-258	1.05	0.87	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	749	3.06	4.80	Zone 2 - 3080
P-137	1,686	J-54	J-45	8.0	PVC	142	0.91	0.64	Zone 2 - 3080
P-138	615	J-54	J-50	8.0	PVC	-96	0.61	0.11	Zone 2 - 3080
P-155	317	Well-1	PMP-70	16.0	PVC	1,685	2.69	0.40	Zone 2 - 3080
P-156	263	PMP-70	J-47	16.0	PVC	1,685	2.69	0.33	Zone 2 - 3080
P-157	396	R-1	PMP-71	16.0	PVC	2,449	3.91	1.00	Zone 2 - 3080
P-158	6,273	PMP-71	J-49	16.0	PVC	2,449	3.91	15.78	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	37	0.93	0.58	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	102	0.65	0.62	Zone 3 - 2910
P-174	1,888	J-68	J-67	8.0	PVC	9	0.06	0.00	Zone 3 - 2910
P-186	749	J-181	PMP-75	10.0	PVC	217	0.89	0.21	Zone 3 - 2910
P-187	1,947	PMP-75	J-66	10.0	PVC	217	0.89	0.54	Zone 3 - 2910
P-194	1,367	J-71	J-69	8.0	PVC	-153	0.98	0.59	Zone 4 - 2920
P-195	770	J-77	J-72	8.0	PVC	105	0.67	0.17	Zone 4 - 2920
P-197	1,865	PRV-52	J-69	8.0	PVC	244	1.56	1.92	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	141	1.59	2.50	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	-38	0.24	0.08	Zone 4 - 2920
P-200	2,561	J-74	J-75	8.0	PVC	169	1.08	1.33	Zone 4 - 2920
P-201	1,715	J-71	J-75	8.0	PVC	-63	0.40	0.14	Zone 4 - 2920
P-202	1,423	J-71	J-76	8.0	PVC	249	1.59	1.52	Zone 4 - 2920

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-203	499	J-76	J-73	8.0	PVC	249	1.59	0.53	Zone 4 - 2920
P-204	889	PRV-54	J-74	8.0	PVC	260	1.66	1.03	Zone 4 - 2920
P-206	544	J-73	J-77	8.0	PVC	235	1.50	0.52	Zone 4 - 2920
P-215	646	R-1	PMP-72	8.0	PVC	68	0.44	0.06	Zone 4 - 2920
P-216	936	PMP-72	J-70	8.0	PVC	68	0.44	0.09	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	45	0.29	0.06	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	297	1.21	0.62	Zone 5 - 3050
P-225	1,597	J-78	J-82	10.0	PVC	349	1.42	1.07	Zone 5 - 3050
P-226	1,212	J-82	J-81	8.0	PVC	102	0.65	0.25	Zone 5 - 3050
P-227	1,973	J-82	J-83	10.0	PVC	521	2.13	2.79	Zone 5 - 3050
P-228	368	J-83	PRV-52	8.0	PVC	244	1.56	0.38	Zone 5 - 3050
P-229	2,829	PRV-51	J-78	8.0	PVC	122	0.78	0.80	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	25	0.63	0.27	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	412	1.68	0.20	Zone 5 - 3050
P-232	853	PRV-48	J-84	10.0	PVC	443	1.81	0.89	Zone 5 - 3050
P-233	1,509	J-84	J-82	10.0	PVC	346	1.42	1.00	Zone 5 - 3050
P-234	2,414	J-83	J-85	8.0	PVC	94	0.60	0.43	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	367	0.59	0.11	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	21	0.24	0.12	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	6	0.04	0.00	Zone 6 - 2850
P-238	2,689	J-95	J-96	6.0	PVC	-33	0.37	0.28	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	53	0.60	0.32	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	499	0.80	0.18	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	614	0.98	0.25	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	432	0.69	0.20	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	38	0.98	0.77	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	28	0.18	0.01	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	192	2.18	3.41	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	69	0.44	0.13	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	393	0.63	0.19	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-39	0.44	0.17	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	77	0.49	0.16	Zone 6 - 2850
P-250	1,336	J-104	J-107	8.0	PVC	50	0.32	0.07	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	322	0.51	0.08	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-252	1,184	J-110	J-109	6.0	PVC	28	0.32	0.09	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	-14	0.09	0.01	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	78	0.50	0.17	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	-27	0.17	0.03	Zone 6 - 2850
P-256	1,290	J-101	J-112	8.0	PVC	-75	0.48	0.15	Zone 6 - 2850
P-257	2,664	J-98	J-104	6.0	PVC	24	0.27	0.15	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	171	0.27	0.02	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	-78	0.12	0.00	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	-50	0.08	0.00	Zone 6 - 2850
P-261	1,384	J-86	J-105	16.0	PVC	439	0.70	0.14	Zone 6 - 2850
P-262	223	J-88	PRV-39	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-264	989	J-95	PRV-41	8.0	PVC	-143	0.91	0.38	Zone 6 - 2850
P-265	1,095	J-112	PRV-42	8.0	PVC	-141	0.90	0.41	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	146	0.93	0.44	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	119	0.76	0.41	Zone 6 - 2850
P-268	1,411	J-115	J-116	6.0	PVC	28	0.32	0.11	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	36	0.06	0.00	Zone 6 - 2850
P-270	1,302	J-117	J-118	6.0	PVC	28	0.32	0.10	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	90	0.14	0.00	Zone 6 - 2850
P-272	1,343	J-119	J-120	6.0	PVC	28	0.32	0.10	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	63	0.40	0.26	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	-138	0.22	0.01	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	-166	0.27	0.03	Zone 6 - 2850
P-276	1,124	J-104	J-122	4.0	PVC	14	0.36	0.17	Zone 6 - 2850
P-277	849	J-122	J-101	4.0	PVC	-14	0.35	0.12	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	114	0.73	0.17	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	33	0.21	0.02	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	223	0.36	0.04	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	177	0.28	0.01	Zone 6 - 2850
P-284	598	J-112	J-125	6.0	PVC	22	0.25	0.03	Zone 6 - 2850
P-285	1,473	J-125	J-95	6.0	PVC	-20	0.23	0.06	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	76	0.49	0.15	Zone 6 - 2850
P-287	1,675	J-88	J-126	6.0	PVC	176	2.00	3.83	Zone 6 - 2850
P-288	1,196	J-87	PRV-47	8.0	PVC	-85	0.54	0.17	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-290	782	J-180	PRV-58	16.0	PVC	21	0.03	0.00	Zone 6 - 2850
P-291	831	PRV-58	J-105	16.0	PVC	21	0.03	0.00	Zone 6 - 2850
P-292	296	J-179	PRV-59	16.0	PVC	882	1.41	0.11	Zone 6 - 2850
P-293	270	PRV-59	J-96	16.0	PVC	882	1.41	0.10	Zone 6 - 2850
P-302	712	R-1	PMP-73	16.0	PVC	439	0.70	0.07	Zone 6 - 2850
P-303	798	PMP-73	J-86	16.0	PVC	439	0.70	0.08	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	1,211	1.93	0.84	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	1,115	1.78	0.94	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	22	0.14	0.03	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	51	0.58	0.30	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	74	0.21	0.03	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	59	1.51	3.22	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	95	1.07	0.59	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	976	2.77	1.64	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	229	1.46	1.49	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	177	2.01	3.62	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	35	0.90	0.56	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	79	0.90	0.77	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	44	0.49	0.15	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	303	0.86	1.12	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	303	0.86	0.40	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	168	1.08	0.85	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	991	1.58	0.84	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	1,364	2.18	1.58	Zone 7 - 3010
P-328	537	J-151	J-128	16.0	PVC	414	0.66	0.05	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	1	0.01	0.00	Zone 7 - 3010
P-330	550	J-146	J-153	6.0	PVC	8	0.09	0.00	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	7	0.08	0.00	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	606	0.97	0.24	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	648	1.03	0.20	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	824	1.32	0.46	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	864	1.38	0.47	Zone 7 - 3010
P-338	306	PRV-39	J-139	16.0	PVC	0	0.00	0.00	Zone 7 - 3010
P-339	294	PRV-41	J-149	8.0	PVC	-143	0.91	0.11	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-340	478	PRV-42	J-155	8.0	PVC	-141	0.90	0.18	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	-20	0.13	0.01	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	-56	0.36	0.08	Zone 7 - 3010
P-343	1,286	J-157	J-161	6.0	PVC	39	0.45	0.18	Zone 7 - 3010
P-344	1,537	J-161	J-158	6.0	PVC	39	0.45	0.22	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	994	1.59	0.62	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	958	1.53	0.22	Zone 7 - 3010
P-347	1,158	J-162	J-163	6.0	PVC	35	0.40	0.14	Zone 7 - 3010
P-348	12,843	J-164	J-165	8.0	PVC	154	0.98	5.62	Zone 7 - 3010
P-349	1,596	J-131	J-164	16.0	PVC	984	1.57	0.74	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	223	0.36	0.04	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	259	0.41	0.06	Zone 7 - 3010
P-352	1,687	J-148	J-167	8.0	PVC	77	0.49	0.21	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	1,313	2.09	1.71	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	1,399	2.23	2.09	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	1,258	2.01	0.57	Zone 7 - 3010
P-356	800	PRV-47	J-169	8.0	PVC	-85	0.54	0.12	Zone 7 - 3010
P-359	692	J-170	J-150	16.0	PVC	2,219	3.54	1.45	Zone 7 - 3010
P-365	8,850	J-142	J-168	12.0	PVC	618	1.75	7.05	Zone 7 - 3010
P-382	685	J-180	PMP-74	16.0	PVC	1,454	2.32	0.66	Zone 7 - 3010
P-383	686	PMP-74	J-127	16.0	PVC	1,454	2.32	0.66	Zone 7 - 3010
P-384	428	J-181	PMP-76	16.0	PVC	421	0.67	0.04	Zone 7 - 3010
P-385	678	PMP-76	J-151	16.0	PVC	421	0.67	0.07	Zone 7 - 3010
P-386	810	J-179	PMP-77	16.0	PVC	2,219	3.54	1.70	Zone 7 - 3010
P-387	565	PMP-77	J-170	16.0	PVC	2,219	3.54	1.18	Zone 7 - 3010
P-407	4,740	J-168	J-130	12.0	PVC	263	0.75	0.78	Zone 7 - 3010
P-408	4,359	J-168	J-171	6.0	PVC	109	1.24	4.08	Zone 7 - 3010
P-409	2,342	J-171	J-156	6.0	PVC	-137	1.55	3.34	Zone 7 - 3010
P-413	680	J-175	J-176	8.0	PVC	-176	1.12	0.38	Zone 8 - 3150
P-414	489	PRV-43	J-173	8.0	PVC	0	0.00	0.00	Zone 8 - 3150
P-415	2,562	J-177	J-175	8.0	PVC	-117	0.75	0.68	Zone 8 - 3150
P-416	2,363	J-173	J-177	8.0	PVC	-59	0.37	0.17	Zone 8 - 3150
P-417	3,837	J-178	J-174	8.0	PVC	-341	2.18	7.34	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	-276	1.76	3.84	Zone 8 - 3150

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-422	440	R-2	PMP-68	10.0	PVC	341	1.39	0.28	Zone 8 - 3150
P-423	645	PMP-68	J-174	10.0	PVC	341	1.39	0.42	Zone 8 - 3150
P-430	3,463	J-172	J-176	8.0	PVC	-100	0.64	0.68	Zone 8 - 3150
P-431	12,847	J-180	J-179	63.0	PVC	3,100	0.32	0.06	Supply
P-432	18,653	R-7	J-181	63.0	PVC	5,268	0.54	0.24	Supply
P-433	10,208	J-181	J-180	63.0	PVC	4,630	0.48	0.11	Supply

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
32	J-1	3,080.00	239	Zone 1 - 3270	124
35	J-2	3,045.00	176	Zone 1 - 3270	103
39	J-3	3,058.00	213	Zone 1 - 3270	75
40	J-4	3,060.00	213	Zone 1 - 3270	92
41	J-5	3,045.00	213	Zone 1 - 3270	88
45	J-6	3,078.00	31	Zone 1 - 3270	76
48	J-7	3,050.00	213	Zone 1 - 3270	33
53	J-8	3,040.00	203	Zone 1 - 3270	113
54	J-9	3,090.00	182	Zone 1 - 3270	92
71	J-10	3,050.00	176	Zone 1 - 3270	99
130	J-11	2,980.00	32	Zone 1 - 3270	106
147	J-12	2,920.00	213	Zone 1 - 3270	113
149	J-13	3,030.00	257	Zone 1 - 3270	98
150	J-14	3,040.00	1,493	Zone 1 - 3270	98
232	J-15	3,010.00	321	Zone 1 - 3270	90
497	J-16	2,994.00	221	Zone 1 - 3270	101
525	J-17	3,010.00	228	Zone 1 - 3270	95
548	J-18	3,080.00	210	Zone 1 - 3270	41
639	J-19	3,050.28	213	Zone 1 - 3270	94
759	J-20	2,970.00	0	Zone 1 - 3270	117
762	J-21	3,033.58	297	Zone 1 - 3270	122
781	J-22	3,021.07	294	Zone 1 - 3270	79
791	J-23	3,015.50	1,490	Zone 1 - 3270	120
810	J-24	2,997.59	213	Zone 1 - 3270	105
813	J-25	2,998.00	213	Zone 1 - 3270	103
815	J-26	3,014.00	213	Zone 1 - 3270	90
852	J-27	3,150.00	358	Zone 1 - 3270	51
855	J-28	3,100.00	176	Zone 1 - 3270	75
858	J-29	3,050.00	176	Zone 1 - 3270	111
861	J-30	3,094.00	176	Zone 1 - 3270	91
863	J-31	3,130.00	176	Zone 1 - 3270	75
867	J-32	3,080.00	176	Zone 1 - 3270	98
974	J-33	2,980.00	0	Zone 1 - 3270	129
1573	J-34	2,980.00	0	Zone 1 - 3270	85
43	J-35	2,960.00	221	Zone 2 - 3080	48
44	J-36	2,892.00	227	Zone 2 - 3080	81
47	J-37	2,846.00	6	Zone 2 - 3080	91
56	J-38	2,910.00	210	Zone 2 - 3080	62
57	J-39	2,970.00	9	Zone 2 - 3080	47
58	J-40	2,890.00	291	Zone 2 - 3080	70
195	J-41	2,864.00	3	Zone 2 - 3080	86
234	J-42	2,870.00	229	Zone 2 - 3080	88
296	J-43	2,880.00	1	Zone 2 - 3080	88
300	J-44	2,986.00	3	Zone 2 - 3080	41
475	J-45	2,890.00	215	Zone 2 - 3080	76
490	J-46	2,925.00	253	Zone 2 - 3080	68
494	J-47	2,946.00	5	Zone 2 - 3080	62
502	J-48	2,840.00	274	Zone 2 - 3080	106
530	J-49	2,878.00	274	Zone 2 - 3080	91

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
536	J-50	2,966.00	16	Zone 2 - 3080	44
544	J-51	2,960.00	210	Zone 2 - 3080	23
549	J-52	2,926.00	210	Zone 2 - 3080	56
624	J-53	2,952.00	32	Zone 2 - 3080	56
646	J-54	2,934.00	210	Zone 2 - 3080	56
658	J-55	2,900.00	274	Zone 2 - 3080	77
801	J-56	3,042.76	0	Zone 2 - 3080	18
819	J-57	2,940.00	213	Zone 2 - 3080	51
821	J-58	2,910.00	213	Zone 2 - 3080	68
823	J-59	2,894.00	213	Zone 2 - 3080	79
827	J-60	2,810.00	4	Zone 2 - 3080	110
830	J-61	2,884.00	213	Zone 2 - 3080	75
834	J-62	2,850.00	1	Zone 2 - 3080	88
837	J-63	2,900.00	217	Zone 2 - 3080	63
839	J-64	3,000.00	221	Zone 2 - 3080	30
1005	J-65	2,884.88	278	Zone 2 - 3080	73
69	J-66	2,646.00	346	Zone 3 - 2910	146
70	J-67	2,730.00	28	Zone 3 - 2910	108
321	J-68	2,705.00	277	Zone 3 - 2910	119
49	J-69	2,810.00	274	Zone 4 - 2920	41
63	J-70	2,675.00	320	Zone 4 - 2920	90
141	J-71	2,786.00	321	Zone 4 - 2920	50
270	J-72	2,730.00	315	Zone 4 - 2920	66
841	J-73	2,720.00	43	Zone 4 - 2920	72
844	J-74	2,810.00	274	Zone 4 - 2920	44
846	J-75	2,790.00	319	Zone 4 - 2920	49
926	J-76	2,740.00	0	Zone 4 - 2920	65
1088	J-77	2,722.00	274	Zone 4 - 2920	70
37	J-78	2,818.00	211	Zone 5 - 3050	97
131	J-79	2,840.00	210	Zone 5 - 3050	89
264	J-80	2,810.00	210	Zone 5 - 3050	102
326	J-81	2,840.00	307	Zone 5 - 3050	83
651	J-82	2,848.00	215	Zone 5 - 3050	81
655	J-83	2,824.50	547	Zone 5 - 3050	82
849	J-84	2,878.00	289	Zone 5 - 3050	71
930	J-85	2,900.00	283	Zone 5 - 3050	48
64	J-86	2,622.00	0	Zone 6 - 2850	99
65	J-87	2,628.00	136	Zone 6 - 2850	95
89	J-88	2,692.00	2	Zone 6 - 2850	68
90	J-89	2,660.00	209	Zone 6 - 2850	69
91	J-90	2,652.00	117	Zone 6 - 2850	72
92	J-91	2,632.00	222	Zone 6 - 2850	91
93	J-92	2,612.00	126	Zone 6 - 2850	101
95	J-93	2,620.00	115	Zone 6 - 2850	95
125	J-94	2,600.00	83	Zone 6 - 2850	103
134	J-95	2,650.00	262	Zone 6 - 2850	85
208	J-96	2,676.00	33	Zone 6 - 2850	75
217	J-97	2,644.00	264	Zone 6 - 2850	87
218	J-98	2,656.00	273	Zone 6 - 2850	83

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
222	J-99	2,640.00	195	Zone 6 - 2850	90
225	J-100	2,618.00	20	Zone 6 - 2850	99
227	J-101	2,625.00	101	Zone 6 - 2850	96
276	J-102	2,600.00	83	Zone 6 - 2850	104
281	J-103	2,650.00	117	Zone 6 - 2850	73
382	J-104	2,640.25	83	Zone 6 - 2850	89
385	J-105	2,620.00	202	Zone 6 - 2850	100
389	J-106	2,660.00	117	Zone 6 - 2850	69
392	J-107	2,624.00	101	Zone 6 - 2850	96
395	J-108	2,606.00	14	Zone 6 - 2850	104
424	J-109	2,600.00	83	Zone 6 - 2850	105
426	J-110	2,605.00	190	Zone 6 - 2850	104
429	J-111	2,615.00	110	Zone 6 - 2850	100
434	J-112	2,634.00	133	Zone 6 - 2850	92
533	J-113	2,590.00	189	Zone 6 - 2850	107
571	J-114	2,629.91	83	Zone 6 - 2850	93
870	J-115	2,603.37	0	Zone 6 - 2850	103
873	J-116	2,600.00	83	Zone 6 - 2850	105
875	J-117	2,612.88	77	Zone 6 - 2850	101
878	J-118	2,604.00	83	Zone 6 - 2850	104
881	J-119	2,610.83	161	Zone 6 - 2850	102
884	J-120	2,604.00	83	Zone 6 - 2850	104
891	J-121	2,629.15	83	Zone 6 - 2850	94
894	J-122	2,631.56	83	Zone 6 - 2850	92
897	J-123	2,651.03	243	Zone 6 - 2850	72
903	J-124	2,686.93	140	Zone 6 - 2850	70
977	J-125	2,638.62	127	Zone 6 - 2850	90
980	J-126	2,678.64	300	Zone 6 - 2850	61
67	J-127	2,706.00	166	Zone 7 - 3010	139
68	J-128	2,690.00	333	Zone 7 - 3010	151
73	J-129	2,862.00	106	Zone 7 - 3010	49
76	J-130	2,800.00	1,013	Zone 7 - 3010	83
80	J-131	2,746.00	393	Zone 7 - 3010	100
81	J-132	2,720.00	220	Zone 7 - 3010	115
83	J-133	2,796.00	67	Zone 7 - 3010	82
84	J-134	2,704.00	153	Zone 7 - 3010	124
85	J-135	2,710.00	153	Zone 7 - 3010	121
116	J-136	2,680.00	0	Zone 7 - 3010	142
138	J-137	2,820.00	178	Zone 7 - 3010	73
202	J-138	2,730.00	106	Zone 7 - 3010	122
205	J-139	2,694.00	155	Zone 7 - 3010	134
211	J-140	2,742.00	106	Zone 7 - 3010	117
252	J-141	2,682.00	0	Zone 7 - 3010	145
259	J-142	2,750.00	1,075	Zone 7 - 3010	111
273	J-143	2,750.00	158	Zone 7 - 3010	111
312	J-144	2,800.00	187	Zone 7 - 3010	78
315	J-145	2,745.00	106	Zone 7 - 3010	99
317	J-146	2,750.00	106	Zone 7 - 3010	96
319	J-147	2,746.00	21	Zone 7 - 3010	98

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Zone	Pressure (psi)
399	J-148	2,750.00	106	Zone 7 - 3010	114
403	J-149	2,680.00	106	Zone 7 - 3010	145
410	J-150	2,694.00	259	Zone 7 - 3010	140
439	J-151	2,690.00	22	Zone 7 - 3010	152
566	J-152	2,750.00	3	Zone 7 - 3010	96
568	J-153	2,734.00	0	Zone 7 - 3010	103
574	J-154	2,674.00	126	Zone 7 - 3010	148
665	J-155	2,676.00	106	Zone 7 - 3010	147
713	J-156	2,746.00	276	Zone 7 - 3010	109
722	J-157	2,691.85	0	Zone 7 - 3010	141
725	J-158	2,866.00	118	Zone 7 - 3010	64
727	J-159	2,684.00	106	Zone 7 - 3010	145
910	J-160	2,750.00	106	Zone 7 - 3010	114
915	J-161	2,726.00	0	Zone 7 - 3010	125
920	J-162	2,674.00	0	Zone 7 - 3010	149
923	J-163	2,720.00	106	Zone 7 - 3010	128
935	J-164	2,770.00	2,490	Zone 7 - 3010	88
937	J-165	2,850.00	461	Zone 7 - 3010	34
944	J-166	2,687.56	106	Zone 7 - 3010	142
947	J-167	2,800.00	232	Zone 7 - 3010	91
956	J-168	2,920.00	737	Zone 7 - 3010	31
1018	J-169	2,689.21	166	Zone 7 - 3010	143
1034	J-170	2,692.40	0	Zone 7 - 3010	146
1577	J-171	2,820.00	737	Zone 7 - 3010	64
33	J-172	2,915.00	301	Zone 8 - 3150	101
199	J-173	2,998.00	176	Zone 8 - 3150	66
634	J-174	3,080.00	0	Zone 8 - 3150	58
636	J-175	2,920.00	176	Zone 8 - 3150	101
703	J-176	2,925.00	0	Zone 8 - 3150	99
941	J-177	2,960.69	176	Zone 8 - 3150	82
971	J-178	2,995.68	196	Zone 8 - 3150	77
1026	J-179	2,670.00	0	Supply	98
1037	J-180	2,650.00	166	Supply	107
1075	J-181	2,738.42	0	Supply	69

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-1	11,103	J-1	J-2	10.0	PVC	1,292	5.28	84.29	Zone 1 - 3270
P-2	2,283	J-14	J-6	16.0	PVC	3,931	6.27	13.80	Zone 1 - 3270
P-3	1,422	J-14	J-13	8.0	PVC	706	4.51	10.46	Zone 1 - 3270
P-4	3,682	J-2	J-10	8.0	PVC	176	1.12	2.06	Zone 1 - 3270
P-5	1,928	J-20	J-11	8.0	PVC	711	4.54	14.37	Zone 1 - 3270
P-6	1,510	J-5	J-3	8.0	PVC	856	5.46	15.86	Zone 1 - 3270
P-7	1,231	J-3	J-15	4.0	PVC	140	3.58	13.29	Zone 1 - 3270
P-11	1,044	J-13	J-17	4.0	PVC	228	5.82	27.72	Zone 1 - 3270
P-12	1,200	J-13	J-16	4.0	PVC	221	5.64	30.08	Zone 1 - 3270
P-13	3,265	J-11	J-22	8.0	PVC	679	4.33	22.32	Zone 1 - 3270
P-15	938	J-19	J-5	8.0	PVC	1,249	7.97	19.86	Zone 1 - 3270
P-16	1,295	J-4	J-19	16.0	PVC	3,280	5.23	5.60	Zone 1 - 3270
P-17	658	J-12	PRV-55	8.0	PVC	1,258	8.03	14.11	Zone 1 - 3270
P-18	331	J-20	PRV-56	16.0	PVC	3,189	5.09	1.36	Zone 1 - 3270
P-19	2,362	J-6	J-20	16.0	PVC	3,900	6.22	14.07	Zone 1 - 3270
P-20	4,872	J-1	J-21	10.0	PVC	1,546	6.32	51.62	Zone 1 - 3270
P-21	1,610	J-21	PRV-43	8.0	PVC	162	1.04	0.78	Zone 1 - 3270
P-22	1,463	J-22	PRV-57	4.0	PVC	175	4.48	23.87	Zone 1 - 3270
P-23	1,290	J-22	J-18	4.0	PVC	210	5.35	29.27	Zone 1 - 3270
P-24	3,742	J-23	J-4	16.0	PVC	3,492	5.57	18.16	Zone 1 - 3270
P-27	1,986	J-19	J-24	10.0	PVC	1,818	7.43	28.39	Zone 1 - 3270
P-28	1,210	J-24	J-25	6.0	PVC	213	2.41	3.91	Zone 1 - 3270
P-29	2,084	J-24	J-26	10.0	PVC	1,393	5.69	18.19	Zone 1 - 3270
P-30	3,338	J-26	J-12	10.0	PVC	1,683	6.88	41.39	Zone 1 - 3270
P-31	2,769	J-3	J-26	8.0	PVC	503	3.21	10.86	Zone 1 - 3270
P-32	2,180	J-2	J-28	8.0	PVC	534	3.41	9.56	Zone 1 - 3270
P-33	2,267	J-28	J-27	8.0	PVC	358	2.29	4.75	Zone 1 - 3270
P-34	1,837	J-21	J-29	8.0	PVC	533	3.40	8.04	Zone 1 - 3270
P-35	1,494	J-29	J-9	6.0	PVC	182	2.07	3.63	Zone 1 - 3270
P-36	1,473	J-29	J-30	6.0	PVC	176	1.99	3.34	Zone 1 - 3270
P-37	2,092	J-32	J-31	6.0	PVC	176	1.99	4.75	Zone 1 - 3270
P-38	1,568	J-21	J-32	8.0	PVC	554	3.54	7.36	Zone 1 - 3270
P-39	1,621	J-2	J-33	8.0	PVC	406	2.59	4.29	Zone 1 - 3270
P-40	1,288	J-33	PRV-51	8.0	PVC	406	2.59	3.41	Zone 1 - 3270

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-41	2,256	J-32	J-8	6.0	PVC	203	2.30	6.69	Zone 1 - 3270
P-60	342	R-6	PMP-54	16.0	PVC	4,982	7.95	3.21	Zone 1 - 3270
P-61	649	PMP-54	J-23	16.0	PVC	4,982	7.95	6.09	Zone 1 - 3270
P-62	729	T-1	PMP-55	16.0	PVC	6,130	9.78	10.03	Zone 1 - 3270
P-63	907	PMP-55	J-14	16.0	PVC	6,130	9.78	12.48	Zone 1 - 3270
P-64	414	R-2	PMP-56	16.0	PVC	3,077	4.91	1.59	Zone 1 - 3270
P-65	464	PMP-56	J-1	16.0	PVC	3,077	4.91	1.78	Zone 1 - 3270
P-90	3,734	J-12	J-34	8.0	PVC	213	1.36	2.97	Zone 1 - 3270
P-91	2,190	J-34	J-7	4.0	PVC	213	5.43	51.00	Zone 1 - 3270
P-92	1,685	J-5	J-15	4.0	PVC	181	4.62	29.16	Zone 1 - 3270
P-93	1,113	J-37	J-41	8.0	PVC	-618	3.95	6.40	Zone 2 - 3080
P-94	724	J-36	J-42	8.0	PVC	825	5.27	7.10	Zone 2 - 3080
P-95	643	J-43	J-36	10.0	PVC	1,105	4.52	3.66	Zone 2 - 3080
P-97	2,430	J-45	J-52	8.0	PVC	500	3.19	9.45	Zone 2 - 3080
P-98	1,581	J-43	J-46	16.0	PVC	1,472	2.35	1.55	Zone 2 - 3080
P-99	3,268	J-47	J-56	10.0	PVC	604	2.47	6.07	Zone 2 - 3080
P-100	1,484	J-48	J-43	16.0	PVC	1,719	2.74	1.94	Zone 2 - 3080
P-101	242	PRV-56	J-39	16.0	PVC	3,189	5.09	0.99	Zone 2 - 3080
P-102	1,344	J-39	J-45	12.0	PVC	2,464	6.99	13.88	Zone 2 - 3080
P-103	1,415	J-49	J-48	16.0	PVC	2,408	3.84	3.45	Zone 2 - 3080
P-104	1,501	J-39	J-50	8.0	PVC	715	4.57	11.31	Zone 2 - 3080
P-105	1,902	J-52	J-51	4.0	PVC	210	5.35	43.17	Zone 2 - 3080
P-108	953	J-46	J-53	16.0	PVC	946	1.51	0.41	Zone 2 - 3080
P-109	1,503	J-44	T-1	16.0	PVC	1,400	2.23	1.34	Zone 2 - 3080
P-110	1,056	J-54	J-40	10.0	PVC	1,615	6.60	12.12	Zone 2 - 3080
P-111	1,869	J-49	J-55	10.0	PVC	1,144	4.67	11.33	Zone 2 - 3080
P-112	4,023	J-55	J-54	10.0	PVC	870	3.55	14.69	Zone 2 - 3080
P-113	297	J-40	PRV-48	10.0	PVC	1,324	5.41	2.36	Zone 2 - 3080
P-114	872	J-52	J-38	4.0	PVC	81	2.08	3.43	Zone 2 - 3080
P-115	1,701	PRV-57	J-38	4.0	PVC	175	4.48	27.77	Zone 2 - 3080
P-116	3,618	J-38	PRV-50	4.0	PVC	47	1.21	5.20	Zone 2 - 3080
P-117	383	J-48	PRV-53	6.0	PVC	415	4.71	4.28	Zone 2 - 3080
P-118	1,949	J-44	J-53	16.0	PVC	-799	1.27	0.62	Zone 2 - 3080
P-119	1,458	J-56	J-44	10.0	PVC	604	2.47	2.71	Zone 2 - 3080

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-120	2,149	J-46	J-35	6.0	PVC	273	3.10	11.04	Zone 2 - 3080
P-121	3,005	J-58	J-57	6.0	PVC	213	2.41	9.71	Zone 2 - 3080
P-122	192	PRV-55	J-59	8.0	PVC	1,258	8.03	4.12	Zone 2 - 3080
P-123	2,341	J-41	J-59	8.0	PVC	-621	3.96	13.56	Zone 2 - 3080
P-124	761	J-59	J-58	6.0	PVC	425	4.82	8.88	Zone 2 - 3080
P-125	1,829	J-42	J-60	8.0	PVC	596	3.80	9.83	Zone 2 - 3080
P-126	3,166	J-60	J-37	8.0	PVC	379	2.42	7.36	Zone 2 - 3080
P-127	1,642	J-60	J-61	6.0	PVC	213	2.41	5.31	Zone 2 - 3080
P-128	428	J-37	J-62	6.0	PVC	218	2.47	1.45	Zone 2 - 3080
P-129	2,506	J-62	J-63	6.0	PVC	217	2.46	8.39	Zone 2 - 3080
P-130	1,544	J-53	J-64	4.0	PVC	116	2.96	11.72	Zone 2 - 3080
P-131	248	J-37	PRV-54	8.0	PVC	773	4.93	2.15	Zone 2 - 3080
P-132	1,108	J-45	J-65	10.0	PVC	1,495	6.11	11.02	Zone 2 - 3080
P-133	859	J-65	PRV-49	10.0	PVC	1,216	4.97	5.83	Zone 2 - 3080
P-135	2,275	J-49	J-47	10.0	PVC	-247	1.01	0.81	Zone 2 - 3080
P-136	1,734	J-47	J-43	10.0	PVC	860	3.51	6.19	Zone 2 - 3080
P-137	1,686	J-54	J-45	8.0	PVC	-255	1.63	1.88	Zone 2 - 3080
P-138	615	J-54	J-50	8.0	PVC	-699	4.46	4.44	Zone 2 - 3080
P-151	311	Well-1	PMP-58	16.0	PVC	1,716	2.74	0.40	Zone 2 - 3080
P-152	259	PMP-58	J-47	16.0	PVC	1,716	2.74	0.34	Zone 2 - 3080
P-153	470	R-1	PMP-59	16.0	PVC	3,578	5.71	2.38	Zone 2 - 3080
P-154	6,198	PMP-59	J-49	16.0	PVC	3,578	5.71	31.46	Zone 2 - 3080
P-171	643	J-35	J-64	4.0	PVC	52	1.32	1.10	Zone 2 - 3080
P-172	5,588	J-36	J-64	4.0	PVC	53	1.36	10.02	Zone 2 - 3080
P-173	3,061	J-66	J-68	8.0	PVC	305	1.95	4.76	Zone 3 - 2910
P-174	1,888	J-68	J-67	8.0	PVC	28	0.18	0.04	Zone 3 - 2910
P-184	627	J-181	PMP-64	10.0	PVC	651	2.66	1.34	Zone 3 - 2910
P-185	2,074	PMP-64	J-66	10.0	PVC	651	2.66	4.42	Zone 3 - 2910
P-194	1,367	J-71	J-69	8.0	PVC	-448	2.86	4.33	Zone 4 - 2920
P-195	770	J-77	J-72	8.0	PVC	315	2.01	1.27	Zone 4 - 2920
P-197	1,865	PRV-52	J-69	8.0	PVC	722	4.61	14.30	Zone 4 - 2920
P-198	1,667	PRV-53	J-71	6.0	PVC	415	4.71	18.62	Zone 4 - 2920
P-199	2,285	J-70	J-77	8.0	PVC	-90	0.58	0.37	Zone 4 - 2920
P-200	2,561	J-74	J-75	8.0	PVC	499	3.18	9.90	Zone 4 - 2920

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-201	1,715	J-71	J-75	8.0	PVC	-180	1.15	1.00	Zone 4 - 2920
P-202	1,423	J-71	J-76	8.0	PVC	722	4.61	10.92	Zone 4 - 2920
P-203	499	J-76	J-73	8.0	PVC	722	4.61	3.83	Zone 4 - 2920
P-204	889	PRV-54	J-74	8.0	PVC	773	4.93	7.72	Zone 4 - 2920
P-206	544	J-73	J-77	8.0	PVC	679	4.34	3.72	Zone 4 - 2920
P-213	665	R-1	PMP-60	8.0	PVC	229	1.46	0.61	Zone 4 - 2920
P-214	952	PMP-60	J-70	8.0	PVC	229	1.46	0.87	Zone 4 - 2920
P-223	1,393	J-79	J-80	8.0	PVC	162	1.04	0.67	Zone 5 - 3050
P-224	1,236	J-79	J-78	10.0	PVC	845	3.45	4.27	Zone 5 - 3050
P-225	1,597	J-78	J-82	10.0	PVC	1,040	4.25	8.12	Zone 5 - 3050
P-226	1,212	J-82	J-81	8.0	PVC	307	1.96	1.91	Zone 5 - 3050
P-227	1,973	J-82	J-83	10.0	PVC	1,553	6.34	21.07	Zone 5 - 3050
P-228	368	J-83	PRV-52	8.0	PVC	722	4.61	2.82	Zone 5 - 3050
P-229	2,829	PRV-51	J-78	8.0	PVC	406	2.59	7.48	Zone 5 - 3050
P-230	634	PRV-50	J-80	4.0	PVC	47	1.21	0.91	Zone 5 - 3050
P-231	216	PRV-49	J-79	10.0	PVC	1,216	4.97	1.47	Zone 5 - 3050
P-232	853	PRV-48	J-84	10.0	PVC	1,324	5.41	6.78	Zone 5 - 3050
P-233	1,509	J-84	J-82	10.0	PVC	1,035	4.23	7.60	Zone 5 - 3050
P-234	2,414	J-83	J-85	8.0	PVC	283	1.81	3.27	Zone 5 - 3050
P-235	1,512	J-99	J-100	16.0	PVC	1,096	1.75	0.86	Zone 6 - 2850
P-236	2,676	J-92	J-91	6.0	PVC	63	0.71	0.90	Zone 6 - 2850
P-237	1,222	J-89	J-90	8.0	PVC	19	0.12	0.01	Zone 6 - 2850
P-238	2,689	J-95	J-96	6.0	PVC	-99	1.12	2.12	Zone 6 - 2850
P-239	1,305	J-97	J-91	6.0	PVC	159	1.81	2.47	Zone 6 - 2850
P-240	1,375	J-98	J-97	16.0	PVC	1,501	2.40	1.40	Zone 6 - 2850
P-241	1,297	J-96	J-98	16.0	PVC	1,846	2.95	1.93	Zone 6 - 2850
P-242	1,929	J-87	J-99	16.0	PVC	1,291	2.06	1.48	Zone 6 - 2850
P-243	785	J-100	J-93	4.0	PVC	115	2.94	5.88	Zone 6 - 2850
P-244	391	J-102	J-94	8.0	PVC	83	0.53	0.06	Zone 6 - 2850
P-245	1,275	J-97	J-103	6.0	PVC	576	6.53	26.09	Zone 6 - 2850
P-246	1,290	J-95	J-104	8.0	PVC	206	1.32	0.97	Zone 6 - 2850
P-247	2,206	J-105	J-87	16.0	PVC	1,166	1.86	1.40	Zone 6 - 2850
P-248	1,203	J-106	J-103	6.0	PVC	-117	1.33	1.29	Zone 6 - 2850
P-249	1,344	J-107	J-92	8.0	PVC	230	1.47	1.24	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-250	1,336	J-104	J-107	8.0	PVC	152	0.97	0.57	Zone 6 - 2850
P-251	1,303	J-100	J-108	16.0	PVC	961	1.53	0.58	Zone 6 - 2850
P-252	1,184	J-110	J-109	6.0	PVC	83	0.95	0.68	Zone 6 - 2850
P-253	2,586	J-110	J-92	8.0	PVC	-41	0.26	0.10	Zone 6 - 2850
P-254	1,360	J-111	J-110	8.0	PVC	233	1.48	1.28	Zone 6 - 2850
P-255	1,596	J-111	J-101	8.0	PVC	-83	0.53	0.22	Zone 6 - 2850
P-256	1,290	J-101	J-112	8.0	PVC	-225	1.44	1.14	Zone 6 - 2850
P-257	2,664	J-98	J-104	6.0	PVC	72	0.82	1.16	Zone 6 - 2850
P-258	1,157	J-108	J-119	16.0	PVC	508	0.81	0.16	Zone 6 - 2850
P-259	955	J-114	J-107	16.0	PVC	-240	0.38	0.03	Zone 6 - 2850
P-260	1,667	J-111	J-114	16.0	PVC	-156	0.25	0.03	Zone 6 - 2850
P-261	1,384	J-86	J-105	16.0	PVC	1,308	2.09	1.09	Zone 6 - 2850
P-262	223	J-88	PRV-39	16.0	PVC	0	0.00	0.00	Zone 6 - 2850
P-264	989	J-95	PRV-41	8.0	PVC	-430	2.74	2.90	Zone 6 - 2850
P-265	1,095	J-112	PRV-42	8.0	PVC	-425	2.71	3.14	Zone 6 - 2850
P-266	1,091	J-108	J-115	8.0	PVC	439	2.80	3.33	Zone 6 - 2850
P-267	1,524	J-115	J-102	8.0	PVC	356	2.27	3.15	Zone 6 - 2850
P-268	1,411	J-115	J-116	6.0	PVC	83	0.95	0.81	Zone 6 - 2850
P-269	774	J-117	J-111	16.0	PVC	103	0.16	0.01	Zone 6 - 2850
P-270	1,302	J-117	J-118	6.0	PVC	83	0.95	0.75	Zone 6 - 2850
P-271	738	J-119	J-117	16.0	PVC	264	0.42	0.03	Zone 6 - 2850
P-272	1,343	J-119	J-120	6.0	PVC	83	0.95	0.77	Zone 6 - 2850
P-273	3,073	J-102	J-113	8.0	PVC	189	1.20	1.96	Zone 6 - 2850
P-274	686	J-107	J-121	16.0	PVC	-419	0.67	0.07	Zone 6 - 2850
P-275	1,978	J-121	J-97	16.0	PVC	-502	0.80	0.26	Zone 6 - 2850
P-276	1,124	J-104	J-122	4.0	PVC	43	1.09	1.34	Zone 6 - 2850
P-277	849	J-122	J-101	4.0	PVC	-41	1.04	0.93	Zone 6 - 2850
P-278	682	J-103	J-123	8.0	PVC	341	2.18	1.31	Zone 6 - 2850
P-279	664	J-123	J-90	8.0	PVC	98	0.63	0.13	Zone 6 - 2850
P-280	1,326	J-96	J-124	16.0	PVC	670	1.07	0.30	Zone 6 - 2850
P-281	615	J-124	J-88	16.0	PVC	531	0.85	0.09	Zone 6 - 2850
P-284	598	J-112	J-125	6.0	PVC	66	0.75	0.22	Zone 6 - 2850
P-285	1,473	J-125	J-95	6.0	PVC	-60	0.68	0.46	Zone 6 - 2850
P-286	1,303	J-126	J-89	8.0	PVC	228	1.46	1.18	Zone 6 - 2850

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-287	1,675	J-88	J-126	6.0	PVC	529	6.00	29.27	Zone 6 - 2850
P-288	1,196	J-87	PRV-47	8.0	PVC	-261	1.67	1.39	Zone 6 - 2850
P-290	782	J-180	PRV-58	16.0	PVC	60	0.10	0.00	Zone 6 - 2850
P-291	831	PRV-58	J-105	16.0	PVC	60	0.10	0.00	Zone 6 - 2850
P-292	296	J-179	PRV-59	16.0	PVC	2,649	4.23	0.86	Zone 6 - 2850
P-293	270	PRV-59	J-96	16.0	PVC	2,649	4.23	0.78	Zone 6 - 2850
P-300	568	R-1	PMP-61	16.0	PVC	1,308	2.09	0.45	Zone 6 - 2850
P-301	675	PMP-61	J-86	16.0	PVC	1,308	2.09	0.53	Zone 6 - 2850
P-310	1,236	J-134	J-132	16.0	PVC	3,632	5.80	6.45	Zone 7 - 3010
P-311	1,606	J-132	J-131	16.0	PVC	3,345	5.34	7.20	Zone 7 - 3010
P-312	2,614	J-132	J-133	8.0	PVC	67	0.43	0.25	Zone 7 - 3010
P-313	1,319	J-134	J-135	6.0	PVC	153	1.74	2.32	Zone 7 - 3010
P-314	2,169	J-156	J-130	12.0	PVC	1,107	3.14	5.09	Zone 7 - 3010
P-315	1,473	J-138	J-137	4.0	PVC	178	4.54	24.65	Zone 7 - 3010
P-316	813	J-141	J-138	6.0	PVC	284	3.22	4.49	Zone 7 - 3010
P-317	880	J-140	J-142	12.0	PVC	2,007	5.69	6.22	Zone 7 - 3010
P-318	1,630	J-159	J-143	8.0	PVC	688	4.39	11.42	Zone 7 - 3010
P-319	1,576	J-143	J-144	6.0	PVC	530	6.02	27.68	Zone 7 - 3010
P-320	660	J-144	J-129	4.0	PVC	106	2.71	4.26	Zone 7 - 3010
P-321	1,489	J-144	J-145	6.0	PVC	237	2.69	5.89	Zone 7 - 3010
P-322	855	J-145	J-146	6.0	PVC	131	1.48	1.13	Zone 7 - 3010
P-323	5,273	J-128	J-136	12.0	PVC	1,831	5.19	31.42	Zone 7 - 3010
P-324	1,867	J-136	J-156	12.0	PVC	1,831	5.19	11.13	Zone 7 - 3010
P-325	1,646	J-149	J-148	8.0	PVC	342	2.18	3.16	Zone 7 - 3010
P-326	1,792	J-150	J-140	16.0	PVC	2,216	3.54	3.74	Zone 7 - 3010
P-327	1,861	J-150	J-139	16.0	PVC	4,093	6.53	12.12	Zone 7 - 3010
P-328	537	J-151	J-128	16.0	PVC	2,163	3.45	1.07	Zone 7 - 3010
P-329	2,403	J-153	J-152	6.0	PVC	3	0.04	0.00	Zone 7 - 3010
P-330	550	J-146	J-153	6.0	PVC	25	0.28	0.03	Zone 7 - 3010
P-331	339	J-153	J-147	6.0	PVC	21	0.24	0.02	Zone 7 - 3010
P-332	1,293	J-154	J-149	16.0	PVC	172	0.27	0.02	Zone 7 - 3010
P-335	941	J-155	J-154	16.0	PVC	298	0.48	0.05	Zone 7 - 3010
P-336	1,376	J-157	J-155	16.0	PVC	829	1.32	0.47	Zone 7 - 3010
P-337	1,282	J-141	J-157	16.0	PVC	947	1.51	0.56	Zone 7 - 3010

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-338	306	PRV-39	J-139	16.0	PVC	0	0.00	0.00	Zone 7 - 3010
P-339	294	PRV-41	J-149	8.0	PVC	-430	2.74	0.86	Zone 7 - 3010
P-340	478	PRV-42	J-155	8.0	PVC	-425	2.71	1.37	Zone 7 - 3010
P-341	946	J-140	J-160	8.0	PVC	103	0.66	0.20	Zone 7 - 3010
P-342	1,163	J-160	J-148	8.0	PVC	-3	0.02	0.00	Zone 7 - 3010
P-343	1,286	J-157	J-161	6.0	PVC	118	1.34	1.40	Zone 7 - 3010
P-344	1,537	J-161	J-158	6.0	PVC	118	1.34	1.67	Zone 7 - 3010
P-345	1,303	J-159	J-162	16.0	PVC	1,337	2.13	1.07	Zone 7 - 3010
P-346	490	J-162	J-141	16.0	PVC	1,231	1.96	0.34	Zone 7 - 3010
P-347	1,158	J-162	J-163	6.0	PVC	106	1.21	1.04	Zone 7 - 3010
P-348	12,843	J-164	J-165	8.0	PVC	461	2.94	42.95	Zone 7 - 3010
P-349	1,596	J-131	J-164	16.0	PVC	2,952	4.71	5.67	Zone 7 - 3010
P-350	1,256	J-166	J-150	16.0	PVC	-812	1.30	0.41	Zone 7 - 3010
P-351	1,481	J-149	J-166	16.0	PVC	-706	1.13	0.37	Zone 7 - 3010
P-352	1,687	J-148	J-167	8.0	PVC	232	1.48	1.58	Zone 7 - 3010
P-353	2,161	J-139	J-134	16.0	PVC	3,938	6.28	13.10	Zone 7 - 3010
P-354	2,342	J-127	J-169	16.0	PVC	2,558	4.08	6.39	Zone 7 - 3010
P-355	781	J-169	J-159	16.0	PVC	2,132	3.40	1.52	Zone 7 - 3010
P-356	800	PRV-47	J-169	8.0	PVC	-261	1.67	0.93	Zone 7 - 3010
P-359	692	J-170	J-150	16.0	PVC	7,381	11.78	13.43	Zone 7 - 3010
P-365	8,850	J-142	J-168	12.0	PVC	932	2.64	15.09	Zone 7 - 3010
P-376	276	J-180	PMP-62	16.0	PVC	2,724	4.35	0.85	Zone 7 - 3010
P-377	293	PMP-62	J-127	16.0	PVC	2,724	4.35	0.90	Zone 7 - 3010
P-378	809	J-179	PMP-63	16.0	PVC	7,381	11.78	15.70	Zone 7 - 3010
P-379	609	PMP-63	J-170	16.0	PVC	7,381	11.78	11.81	Zone 7 - 3010
P-380	487	J-181	PMP-65	16.0	PVC	2,185	3.49	0.99	Zone 7 - 3010
P-381	706	PMP-65	J-151	16.0	PVC	2,185	3.49	1.44	Zone 7 - 3010
P-407	4,740	J-168	J-130	12.0	PVC	-94	0.27	0.12	Zone 7 - 3010
P-408	4,359	J-168	J-171	6.0	PVC	289	3.28	24.88	Zone 7 - 3010
P-409	2,342	J-171	J-156	6.0	PVC	-448	5.08	30.09	Zone 7 - 3010
P-413	680	J-175	J-176	8.0	PVC	-365	2.33	1.47	Zone 8 - 3150
P-414	489	PRV-43	J-173	8.0	PVC	162	1.04	0.24	Zone 8 - 3150
P-415	2,562	J-177	J-175	8.0	PVC	-189	1.21	1.64	Zone 8 - 3150
P-416	2,363	J-173	J-177	8.0	PVC	-13	0.09	0.01	Zone 8 - 3150

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Zone
P-417	3,837	J-178	J-174	8.0	PVC	-862	5.50	40.82	Zone 8 - 3150
P-418	2,976	J-176	J-178	8.0	PVC	-665	4.25	19.61	Zone 8 - 3150
P-420	440	R-2	PMP-57	10.0	PVC	862	3.52	1.58	Zone 8 - 3150
P-421	522	PMP-57	J-174	10.0	PVC	862	3.52	1.87	Zone 8 - 3150
P-430	3,463	J-172	J-176	8.0	PVC	-301	1.92	5.24	Zone 8 - 3150
P-431	12,847	J-180	J-179	63.0	PVC	10,030	1.03	0.55	Supply
P-432	18,653	R-7	J-181	63.0	PVC	15,815	1.63	1.87	Supply
P-433	10,208	J-181	J-180	63.0	PVC	12,979	1.34	0.71	Supply