BEAUMONT-CHERRY VALLEY WATER DISTRICT
PLAN OF SERVICE
DRAFT – Revision 2

for the

Beaumont Pointe Development

Prepared for:

Applicant: Beaumont Pointe Partners, LLC
18032 Lemon Drive, Suite 367
Yorba Linda, California 92776

Prepared by:

Pacific Advanced Civil Engineering, Inc.
17520 Newhope Street #200
Fountain Valley, CA 92708

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PACE Job No. B740

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List of Abbreviations

ADD	Average Day Demand
AF	Acre-ft
AFY	Acre-ft per Year
Applicant	Beaumont Pointe Partners LLC
AWWA	American Water Works Association
BCVWD	Beaumont Cherry Valley Water District
bgs	Below Ground Surface
BPD	Beaumont Pointe Development (previously referred to as the Jack Rabbit Trail Development)
City	City of Beaumont California
Development	Beaumont Pointe Development (previously referred to as the Jack Rabbit Trail Development)
Developer	Beaumont Pointe Partners LLC
District	Beaumont Cherry Valley Water District
DWR	California Department of Water Resources
ET	Evapotranspiration
GPD	Gallons per Day
GPM	Gallons per Minute
Jack Rabbit Trail	Previous Name of the Beaumont Pointe Development
MDD	Maximum Day Demand
MG	Million Gallons
MGD	Million Gallons per Day
NPW	Non-Potable Water
NRCS	National Resources Conservation Service
PACE	Pacific Advanced Civil Engineering
Project	Beaumont Pointe Development
PW	Potable Water
PW	Potable Water
PZ	Pressure Zone
RCFWCD	Riverside County Flood and Water Control District
Riverside LAFCO	Riverside County Local Agency Formation Commission
SAWPA	Santa Ana Watershed Project Authority
SGPWA	San Gorgonio Pass Water Agency
SPW	State Project Water
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
HC	Hidden Canyon Development (Adjacent to Beaumont Pointe Development)

1 Introduction

1.1 Project Background

The Beaumont Pointe Development (previously referred to as the Jack Rabbit Trail Development and herein referred to as Project), located in the City of Beaumont, CA, will be a new 539.90-acre industrial, commercial, and recreational complex. The project will be developed by the Beaumont Pointe Partners, LLC (Applicant). The site is currently an undisturbed hill side with the new Hidden Canyon (HC) Development to the east and the CA-60 freeway to the North. The project will be constructed over three separate phases consisting of general commercial/retail land uses and five large industrial warehouse buildings totaling approximately 5.0 million square feet of floor space.

The Project is currently located outside of the Beaumont Cherry Valley Water District's ("District") service area but within the District's sphere of influence, requiring the Project to be annexed into the District's service area. The Project's total annexation area will be 539.90 acres. As part of the annexation process, the Project will be required to obtain a District reviewed and approved Water Supply Assessment (WSA) and Plan of Service to verify that the District will have adequate water supplies for the project as well as an approved method of service.

From 2018 through 2021, the Project worked with the District to complete a Water Supply Assessment (WSA), dated April 13, 2021. The Beaumont Pointe Development WSA was originally based on the District's 2015 Urban Water Management Plan (UWMP). During the District's June 9th, 2021 Board Meeting, the 2021 Beaumont Pointe WSA was presented and approved by the District's Board of Directors. Subsequently, the District provided the Project with a conditional Will Serve Letter, which stipulated that the District will provide water service to the Project.

In August 26, 2021, four months after approval of the Beaumont Pointe WSA, the District Board of Directors approved the 2020 BCVWD UWMP, updating the District's 2015 UWMP to be in compliance with State law. State law indicates that the WSA for a project shall utilize the most recent UWMP (See Water Code Section 10910 (c)3), which states that if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from that plan in preparing the WSA. In January 2022, the Project started to work with the District to provide an addendum for the purposes of identifying, summarizing, and providing modified and/or replacement language to the Project's previously approved WSA for the differences between the BCVWD 2015 and 2020 UWMP's. In August of 2022, the District approved the Beaumont Pointe WSA Addendum and the Project is currently requesting an extension to the current will serve letter.

The purposes of this report is to identify the proposed modifications to the District's distribution system to supply the Project with potable and non-potable water. The modifications will need to be designed per the District's requirements and the Applicant shall be responsible for any capital costs to tie into and construct the proposed modifications. The Project's domestic potable water (PW) and fire flow demands are proposed to be serviced from the District's 2650 pressure zone (PZ), which currently serves the westerly edge of the District's service area, south of Interstate 10 and west of Cherry Valley Blvd. As part of on-going water conservation efforts, the Project's outdoor irrigation demands are proposed to utilize non-potable water (NPW) distributed by BCVWD.

1.2 Report Objectives

The objectives of the Beaumont Pointe Development, Plan of Service Report is to identify the proposed PW and NPW infrastructure needed to service the Project's demands. Specifically, this includes the following:

- Summarize the Project's PW and NPW demands as defined in the Project's WSA (and subsequent Addendum).

- Provide an overview of the District's existing PW and NPW infrastructure within the vicinity of the Project.

- Provide an overview of the proposed modifications to the District's PW and NPW infrastructure in order to service the Project.

- Provide an overview of the operation of the proposed PW and NPW infrastructure during the three development phases of the Project

- Define the District and Private (future tenants) owned and operated portions of the proposed PW and NPW infrastructure

- Define the parameters of the Project's Community Facility District and proposing financing method.

2 Project Water Demands

2.1 Overview of Project

The Beaumont Pointe development project site is currently located outside of the District's service area, but within its sphere-of-influence adjacent to the District's southwest boundary. The Project will consist of a gross area of approximately 540 acres (276.4 net acres). It is located within portions of Sections 1 and 2 of T3S, R2W, which is proposed to be incorporated into the City and annexed into the BCVWD service area as part of the entitlement process. The Project is located south of State Highway 60, and northwest of Jack Rabbit Trail Road and the proposed Hidden Canyon Industrial Park, as shown in **Figure 2-1** below.

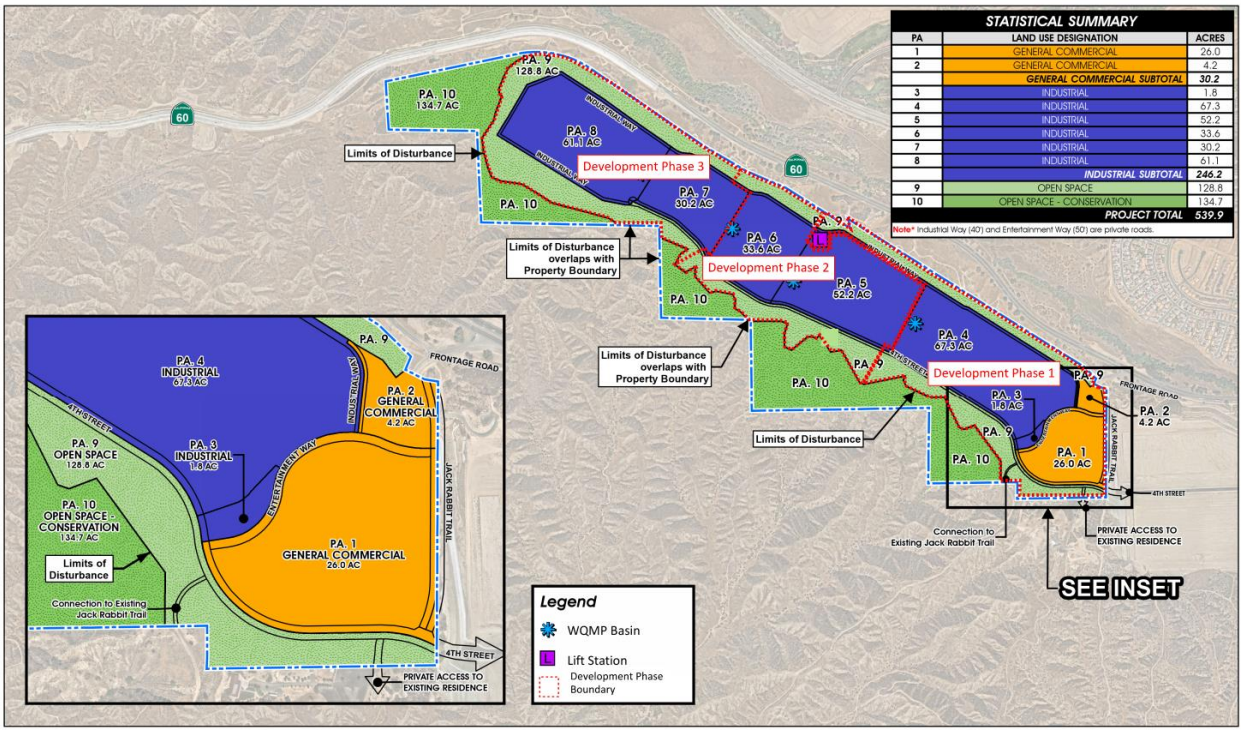

Figure 2-1: Beaumont Pointe Land Use Plan

The project will be constructed over three separate phases consisting of general commercial/retail land uses and five large industrial warehouse buildings totaling approximately 5.0 million square feet of floor space. The general commercial/retail land use will consist of a hotel and retail shopping center. The industrial uses are proposed to include a small self-storage facility and five (5) separate large warehouse 'big-box' structures. 4th Street will be extended northwesterly from its proposed west end within the adjacent Hidden Canyon project.

As shown in **Figure 2-1**, the Project will be developed over three separate phases based on the boundaries between the different planning areas. Development Phases 1, 2, and 3 will consist of planning areas 1-4, 5-6, and 7-8 respectively with planning area 9 developed as shown in each phase.

Table 2-1: Beaumont Pointe Land Uses

Planning Area	Land Use	Acreage
Planning Area 1	General Commercial	26.0
Planning Area 2	General Commercial	4.20
Planning Area 3	Industrial	1.80
Planning Area 4	Industrial	67.30
Planning Area 5	Industrial	52.20
Planning Area 6	Industrial	33.60
Planning Area 7	Industrial	30.20
Planning Area 8	Industrial	61.10
Planning Area 9	Open Space	128.80
Planning Area 10	Open Space – Conservation	134.70
	Total	**539.90**

2.2 Project Potable and Non-Potable Water Demands

As summarized in the Project's WSA and subsequent Addendum (see **Appendix B** and **C**), the estimated water demand for the Project is based on recent dialogue with District and the City of Beaumont staff. Typical commercial retail and entertainment ADD factors range from 1,400 GPD/acre (City of Lathrop, CA) to 2,000 GPD/acre (City of Oxnard, CA). For conservative purposes, the WSA utilized a water demand factor of 1,500 GPD/acre. Planning Area 2 will consist of a 125 room hotel which usually exhibit much higher unit water demands and were assumed in the WSA with a single occupant estimated at 100 GPD per room.

For Planning Areas 3 through 8, BCVWD recently reviewed the total water use for a nearby industrial distribution center east of the Project site (Wolverine), and determined that the maximum water use for "big-box" warehouse distribution developments should be estimated using an employee density factor of one employee per 1,500 sf of warehouse/office space and 15 GPD per employee. This is supported by recent studies prepared by NAIOP as described in the Hidden Canyon Water Supply Assessment.

Based on conversations with the District, future developments within their service area will be required to utilize non-potable water for all outdoor irrigation demands. This is part of the District's ongoing water conservation efforts. Therefore **Table 2-2** below summarizes the average day potable (indoor) and non-potable water (outdoor) demands which equates to 99,535 GPD (69 GPM) and 76,049 GPD (53 GPM) respectively.

The District's 2016 Master Plan analyzed the historical potable water demands of the District and determined that a 1.87 maximum day demand (MDD) to average day demand ratio existed from 2005 to 2014. The District's 1.87 MDD peaking factor is fairly consistent with neighboring District's MDD peaking factors such as EMWD (2.0-2.5) and the Yucaipa Valley Water District (2.0). In conclusion, the 2016 Master Plan recommended future projects within the District's service area utilize a **MDD peaking factor of 2.0** for potable water planning purposes.

Based on the District's required MDD peaking factor of 2, the Project's **MDD for domestic indoor potable water is equal to 199,070 GPD or 138 GPM.**

Table 2-2: Average Day Beaumont Pointe Potable and Non-Potable Water Demands

Planning Area	Land Use	Type [1] Quantity	units	Indoor Water Demand Factor [3]		Outdoor Water Demand Factor [4]		[5] Indoor Water Demand		[5] Outdoor Irrigation Demand [6]	
1	Restaurant	30,000	sf	1,000	gpd/ksf	670,000	gal/Ac/Yr	30,000	gpd		
	Entertainment	5.0	Ac[2]	1,500	gpd/Ac			7,438	gpd		
	Irrigation	3.9	Ac	-				-			
	Total Acres	26.0	Ac	-				-		7,159	gpd
2	Hotel	125	keys	100	gpd/key	670,000	gal/Ac/Yr	12,500	gpd		
	Irrigation	0.6	Ac	-				-			
	Total Acres	4.2	Ac	-				-		1,101	gpd
Total	-	**30.2**	**Acres**	**-**		**-**		**49,938**	**gpd**	**8,260**	**gpd**
	-										
Total								**55.9**	**AFY**	**9.3**	**AFY**

[1] Based on proposed site plan, Alt. 11; uses required 15% landscape irrigation.
[2] Total entertainment area = go-cart, rock climbing, trampoline park, bowling alley, and miniature golf = 216,000 sf = 4.96 acres.
[3] Based on typical water usage used by water agencies throughout southern California.
[4] Based on outdoor water demand factor used for Amazon Distribution Center.
[5] Represents demand on BCVWD potable (domestic) water sources until non-domestic water becomes available.
[6] Represents demand that could be served by non-domestic water sources.

Planning Area	Land Use	[1] Warehouse /Office Bldg Area	Employee count [2]	Project Site Acreage [1] total	Bldg	Irrig.	Indoor Water Demand Factor [2]		Outdoor Water Demand Factor [3]		[4] Indoor Water Demand		[4] Outdoor Irrigation Demand [5]	
3	Self-Storage	25,000	17	1.8	1.5	0.3	15	gpd/emp	670,000	gal/Ac/Yr	260	gpd	496	gpd
	office	1,000												
4	Ware-house	1,369,880	920	67.3	57.2	10.1	15	gpd/emp	670,000	gal/Ac/Yr	13,799	gpd	18,531	gpd
	office	10,000												
5	Ware-house	984,340	663	52.2	44.4	7.8	15	gpd/emp	670,000	gal/Ac/Yr	9,943	gpd	14,373	gpd
	office	10,000												
6	Ware-house	669,400	450	33.6	28.6	5.0	15	gpd/emp	670,000	gal/Ac/Yr	6,754	gpd	9,252	gpd
	office	6,000												
7	Ware-house	583,240	393	30.2	25.7	4.5	15	gpd/emp	670,000	gal/Ac/Yr	5,892	gpd	8,315	gpd
	office	6,000												
8	Ware-house	1,284,800	863	61.1	51.9	9.2	15	gpd/emp	670,000	AF/Ac/Yr	12,948	gpd	16,823	gpd
	office	10,000												
Total	**Ware-house**	**4,916,660**	**3,306**	**246.2**	**209.3**	**36.9**	**15**	**gpd/emp**	**670,000**	**AF/Ac/Yr**	**49,597**	**gpd**	**67,789**	**gpd**
	office	**43,000**												
Total		**4,959,660**									**55.6**	**AFY**	**75.9**	**AFY**

[1] Based on approved site plan and tabulation of proposed land uses, and landscape area required at 15% of total.
[2] Based on recent water demand prepared by BCVWD for similar warehouse development project (Hidden Canyon), which estimated 1 employee per 1500 sf of warehouse/office space.
[3] Based on outdoor water demand factor used for Amazon Distribution Center.
[4] Represents demand on BCVWD potable (domestic) water sources until non-domestic water becomes available.
[5] Represents demand that could be served by non-domestic water sources.

2.3 Project Fire Flow Requirements

The Beaumont Pointe Development's fire flow requirements will be dictated by the Riverside County Fire Department as the development will fall under their service area. The largest fire flow requirement of the Beaumont development will be the warehouse/office buildings (industrial). California Fire Code (2019) will require each warehouse/office building to be installed with automatic sprinklers (where greater than 3,600 square feet) and have an available fire flow of 4,000 GPM for a 4-hour window. Additionally, the District's Master Plan requires a minimum system-wide pressure of 40 psi under MDD plus fire flows conditions, with a 20 psi residual at the flowing hydrant (Table 6-3 in the District's Master Plan).

Table 2-3: Beaumont Pointe Development – Fire Flow Requirements

Requirement	Value
Largest Fire Flow Requirement – Beaumont Pointe Development	4,000 GPM
Fire Flow Duration Requirement – Beaumont Pointe Development	4 hours

3 Plan of Service

3.1 Overview of BCVWD System

The Beaumont-Cherry Valley Water District provides potable and non-potable water service to about 19,215 active accounts, (19,659 connections), as of September 2020, in the City of Beaumont and the unincorporated community of Cherry Valley in Riverside and San Bernardino Counties in Southern California. The District is located approximately 75 miles east of Los Angeles along Interstate 10 with its present service area covering approximately 28 square miles. The District's sphere of influence or ultimate service planning area, encompasses an area of approximately 37.52 square miles which will include the Beaumont Pointe Development.

3.2 Overview of the BCVWD Potable and Non-Potable Supply

BCVWD owns and operates both a potable and a non-potable water distribution system. BCVWD provides potable water and scheduled irrigation water to users through the potable water system. BCVWD provides non-potable water for landscape irrigation of parks, playgrounds, school yards, street medians and common areas through its non-potable (recycled) water system.

Table 3-1 presents the BCVWD potable and non-potable water connections and demands as listed in the BCVWD 2020 UWMP.

Table 3-1**: Current and Future Water Sources Available to BCVWD**

	Potable Water	Non-Potable Water	Total
Number of Connections	19,359	300	19,659[1]
Average Annual, MGD	10.8[2]	5.6[2]	16.4
Maximum Day, MGD	21.6[2]	6.7[2]	NA
Total Demand, AF[3]	10,845	1,647	12,492

Notes:
1. Taken from Section 3.1 the BCVWD 2020 UWMP.
2. Taken from Section 3.6 in the BCVWD 2020 UWMP.
3. The Total Demand shown does not include system losses.

3.3 Existing Potable Water Infrastructure Near Annexation Area – 2650 Pressure Zone

The District's potable water distribution system is comprised of 11 pressure zones ranging in elevation from 2,100 feet mean sea level (MSL) to 2,900 feet. The extracted groundwater from the wells is pumped directly into the distribution system and stored in 14 different storage tanks providing a total storage volume of 22 million gallons (MG). The storage tanks are installed to provide elevated storage to maintain each pressure in each zone. The BCVWD's potable system is also constructed such that any higher zone reservoir can supply water on an emergency basis to any lower zone through a series of pressure reducing valve stations. The District's PW system is provided with 14 storage tanks ranging in size from 0.5 to 5 million gallons (MG) providing a total storage volume of 22 MG. Please see **Appendix A** for a hydraulic profile of the District's PW distribution system.

The District's 2650 PZ, which currently serves the westerly part of the District's service area, is being proposed to service the Beaumont Pointe Development. The 2650 PZ, as well as the 2520 and 2370 PZ, are currently pressurized by the 5-million gallon (MG) Hannon Tank, which is primarily filled with groundwater extracted from Well 29. Under normal operating conditions, potable water demands will be provided from the 5 MG Hannon Tank out to the 2650 PZ and the lower 2520 and 2370 PZ. The 2650 PZ is also equipped with the two pressure regulating valve stations located along Hannon Road in the north, and along 4th Street in the south of the PZ near the Beaumont Pointe Development. The purpose of these

pressure regulating stations is allow for the higher 2750 PZ to back feed the 2650 PZ during emergency situation such as maximum day demands or fire events.

As shown in **Figure 3-1**, the 2650 PZ has a series of large transmission lines feeding the individual sub areas of the PZ. The District recently constructed a 24-inch transmission pipeline that extends the service area of the 2650 PZ from north of the CA-60, south to the intersection of Potrero Blvd and 4th Street adjacent to the proposed Hidden Canyon Development

3.3.1 Potable Water Point of Connection – Hidden Canyon Development

The Project is proposing to connect to the District's 2650 PZ through the adjacent Hidden Canyon (HC) Development located to the east of the project at the intersection of Potrero Blvd and 4th Street. The HC Development is scheduled to be completed before the start of the Beaumont Pointe Development. According to the *Hidden Canyon Beaumont Distribution Center – Water Demands and Domestic Water Service Calculations – January 23, 2020* (**Appendix D**), the design of the HC's potable water system was to address the District's concerns over water quality and water turnover in this area of the 2650 PZ. Both the HC Development (and the Beaumont Pointe Development) will require large diameter distribution lines to meet emergency fire flow conditions, however the low potable water demand during normal conditions will result in large volumes of unused water located at the end of the District's service area.

To address the District's concerns, the HC Development will install two 16-inch lines connecting off the 24-inch transmission line at Potrero and 4th Steet to form a distribution loop through the HC Development. The improvements will also require an isolation valve to be installed on the 24-inch transmission line to divert flow through the Development as part of the normal conveyance path. The required length of the dual piping system through the HC will depend on the average turnover rate by the daily HC water demands. As shown in the **Appendix D**, the 18-inch distribution loop with extend up to approximately 800 LF from the western edge of the HC Development as the average HC Development PW demand will be capable of turning over this remaining segment of straight pipe within 8 hours. The District intends for the "North" 16-inch line to be the primary potable water service for the HC Development from the 2650 PZ Hannon Tank and the "South" 16-inch line to be a redundant service from the 4th Street 2750/2650 pressure reducing station.

This service concept allows the District to provide redundant daily and emergency service, eliminate large diameter dead end pipes, and allow for the 2750 PZ to flush out the distribution pipelines and back feed the 5 MG Hannon Tank due to the relatively low average day demand.

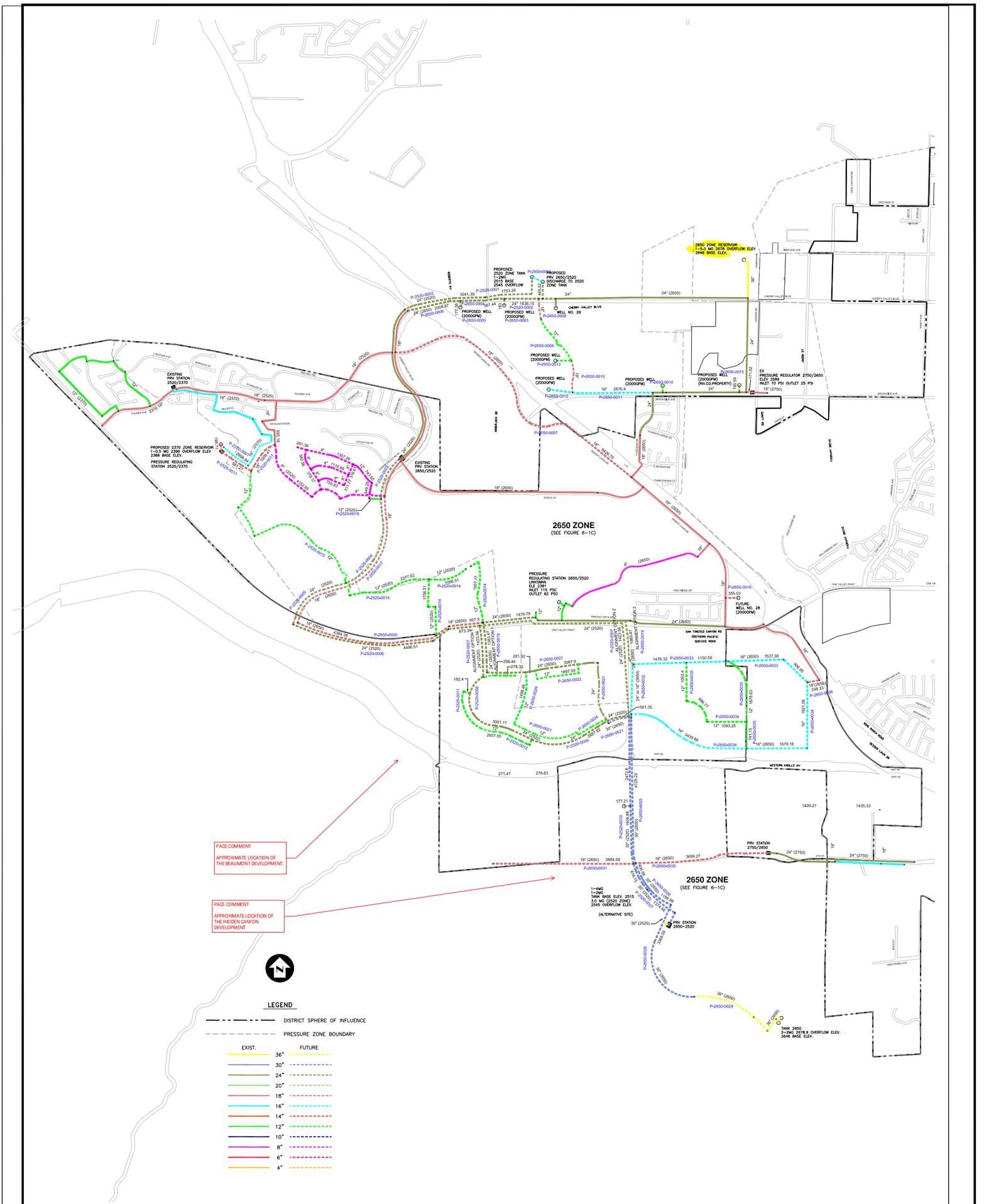

FIGURE 3-1

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SCALE	
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	06/2022
JOB NO.	B740

JOB
BEAUMONT DEVELOPMENT

BEAUMONT CA

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3.4 Proposed Potable Water Improvements

The proposed potable water improvements will be designed to provide redundant daily and emergency service while reducing the potential water quality and turn-over concerns associated with the Project's low potable water demand. All proposed potable water improvements shall be constructed by the Applicant (per the District's requirements and standards) and will be owned and operated by the District upon project completion.

To address the development's high fire flow requirements, as shown in **Figure 3-2** & **Figure 3-3**, the existing 16-inch distribution loop from the HC Development will be extended to service the Project. To reduce potential water quality issues, the following improvements will be provided.

- A single 8-inch line will connect to the 16-inch loop to service Project's domestic (non-fire flow) potable water demands. The single 8-inch line will be routed along 4th Street terminating between Planning Areas 7 and 8. A single 8-inch line was selected as it is the smallest size allowed within the District's distribution system, and with the Project's ADD of 99,535 GPD, the Project will be able to provide a sufficient turn-over rate of 5.2 hours. While a loop helps redundancy and hydraulic stability in a distribution system, because of the Project's location at the end of the District's service area, the added piping would only increase water quality issues due to low demand.

- Similar to the HC Development, extending the 16-inch distribution loop and diverting the primary flow path through the HC development will allow District to flush out and back feed the 2650 PZ from the 4th Street 2750/2650 pressure regulating station. A 16-inch isolation valve will be installed within the HC Development to divert the primary flow path west. The existing 24-inch isolation valve at Potrero Blvd will remained closed.

- To be discussed further below, four District approved, 10-inch reduced pressure backflow preventers (RPZ) in a 2 duty + 1 standby configuration will be installed on the fire flow distribution piping feeding the Project's fire service distribution loop. Because of the length of piping needed for the Development, diverting the all PW through the Project will increase water quality concerns (due to low demands) and will limit the ability of the District to flush out area due to the large amount of water required.

The Project's fire flows will be provided through a 12-inch northern and 16-inch southern fire flow distribution loop. The south 16-inch line is designed as the primary service will all of the building fire service laterals connecting to the 16-inch line. The northern 12-inch will provide hydraulic stability/redundancy but will also allow for fire hydrants to be installed along the northern edge of the property. Please note that the 800 LF of 18-inch pipe installed on the south loop will be re-purposed as part of the improvements. Any additional requirements from the Riverside County Fire Department will be incorporated into the project's design documents accordingly.

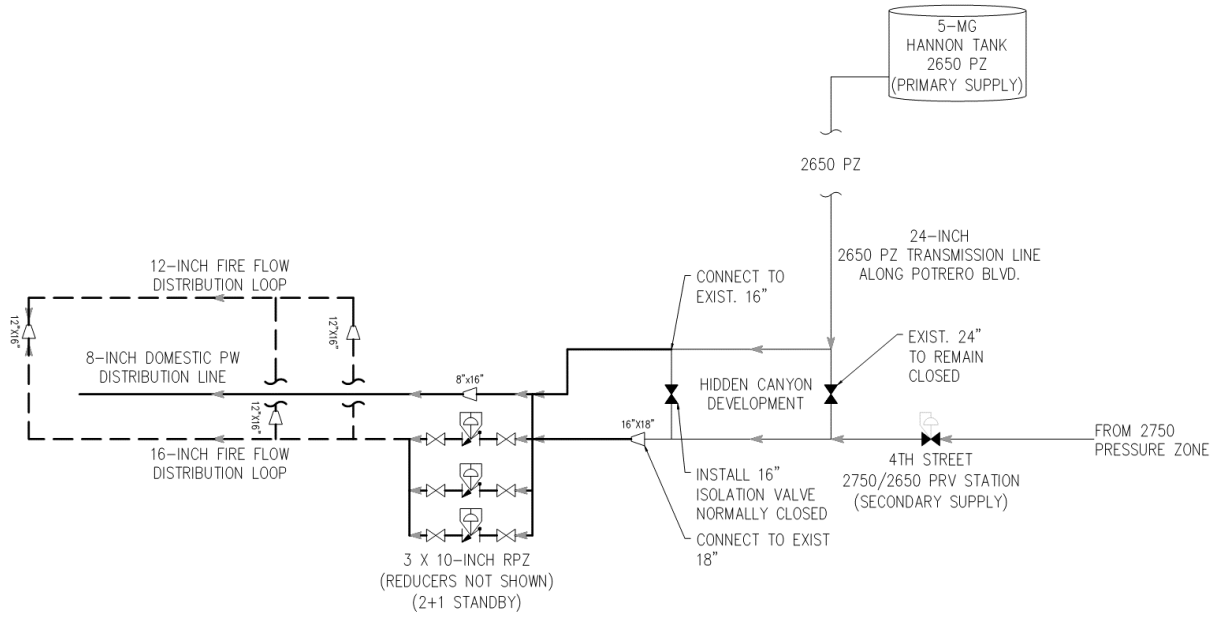

Figure 3-2: Proposed Domestic and Fire Service Distribution System Schematic

NORTH

1200 600 0 1200 2400

SCALE: 1"=1200'

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE

Color Coding Legend
Pipe: Diameter (in)

<= 4.0
<= 6.0
<= 8.0
<= 12.0
<= 14.0
<= 16.0
<= 18.0
<= 20.0
<= 24.0
<= 30.0
<= 36.0
Other

INTERSTATE 10

OAK VALLEY PARKWAY

PLANNING AREA 8
INDUSTRIAL WAREHOUSE #5

PLANNING AREA 7
INDUSTRIAL WAREHOUSE #4

PLANNING AREA 6
INDUSTRIAL
WAREHOUSE #3

PLANNING AREA 5
INDUSTRIAL
WAREHOUSE #2

PLANNING AREA 4
INDUSTRIAL
WAREHOUSE #1

DEVELOPMENT PHASE III
DEVELOPMENT PHASE II

PLANNING AREA 10
CONSERVATION

BEAUMONT POINTE DEVELOPMENT

CALIFORNIA HIGHWAY 60

PLANNING AREA 9
RECREATION AND CONSERVATION
DEVELOPMENT PHASE I

12"Ø & 16"Ø FIRE SERVICE DISTRIBUTION LOOP

FROM 2650 PZ
PRIMARILY THE 5 MG HANNON TANK

POTRERO BLVD.

CALIFORNIA HIGHWAY 60

EXIST. 24-INCH VALVE
MODELED AS CLOSED

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE.

8" LINE (DOMESTIC PW DEMANDS)

2 + 1 10-INCH REDUCED PRESSURE
DETECTOR ASSEMBLY

16-INCH DISTRIBUTION LOOP EXTENDED
UP TO THE DEVELOPMENT.

PLANNING AREAS 1-2
COMMERCIAL

CONNECT TO AND EXTEND
EXIST. 16-INCH LINE

EXIST. 16-INCH PW LINE
"NORTH" SUPPLY

EXIST. 16-INCH PW LINE
"SOUTH" SUPPLY

INSTALL 16-INCH PW VALVE
AND KEEP VALVE CLOSED.

CONNECT TO, REDUCE AND
INSTALL 16-INCH LINE.

HIDDEN CANYON
DISTRIBUTION CENTER

W. 4TH STREET

FROM 4TH STREET
2750/2650 PRESSURE REGULATING
STATION

PROPOSED POTABLE WATER IMPROVEMENTS BEAUMONT POINTE DEVELOPMENT

BEAUMONT DEVELOPMENT

CA

JOB BEAUMONT

SCALE	1"=1200'
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	01/2022
JOB NO.	B740

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FIGURE
3-3

3.4.1 Development Stages

As described in **Section 2.1**, the Project will be constructed over 3 separate phases with Planning Areas 1-4, 5-6, and 7-8 constructed in Phase 1, 2, and 3 respectively. As shown in **Figure 3-3**, the design concept of a looped fire distribution loop and a single 8-inch potable water line capable of being turned over by the connected planning areas will be continued throughout the Development phases. A key part of the design is the construction of the 12-inch line connecting the northern and southern fire flow lines between planning areas 4 and 5 which will provide a loop during the interim conditions.

3.4.2 Design Specifications

All proposed potable water improvements will be designed and constructed per the requirements and standard details of the District. This specifically includes the following parameters referenced in the District's 2016 Potable Water Master Plan. All District preferred equipment manufacturers will be listed in the bid specifications to help provide commonality for future maintenance and spare parts.

Table 3-2: Potable Water Improvements – Design Specifications

Parameter	Value
Minimum Diameter of Mains (Excluding Fire Hydrant Laterals)	≥ 8 inches
Material of Construction	Cement Mortar Lined and Asphalt Coated Ductile Iron Pipe (Pressure Class 150 Min.)
Maximum Velocity	10 feet per second (during MDD + Fire Flow) 7 feet per second (during peak hour demand)
Corrosion Protection	All buried DIP will be double polyethylene wrapped per AWWA C105

Notes
1. **Table 3-2** taken from Table 6-2 in the District's 2016 Potable Water Master Plan

3.4.3 Modeling of Proposed Potable Water Improvements – Modeling Assumptions

Bentley's WaterGEMS for AutoCAD 2019 water distribution analysis and design software was used to conduct a steady state analysis of the proposed potable water improvements for the Beaumont Pointe Development under MDD plus fire flows conditions. A steady-state analysis determines the operating behavior of the system at a specific point in time under steady-state conditions (i.e. demands and hydraulic grades remain constant over the analyzed period).

The Beaumont WaterGEMS model was created from a combination of preliminary grading files of the development, ArcGIS aerial imaging, and potable water utility exhibits included in the District's Master Plan (see **Appendix E**). The following baseline assumptions were used in the steady-state analysis, with several components taken from the District's requirements.

- All pipes were assigned a Hazen-Williams friction loss coefficient of 130.
- The location of PW demands were assigned at the nearest applicable junction.
- The location of all existing PW transmission lines were assumed to match the District's PW utility exhibits. Only transmission lines were included in the model
    - The elevation of all lines were assumed to be installed with 4 feet of cover (4 feet below the finished grade). Finished grade elevations were provided by Google Earth.
- The model only includes the MDDs of the Beaumont Pointe Development.
- The model assumes the 5-MG Hannon Tank is the primary source of pressure for the 2650 PZ.
- The 5-MG Hannon Tank was assumed to half full with a water level elevation of 2,662.35 feet.
- The boundaries of the PZ were assumed to match the District's PW utility exhibits.
- 4th Street Pressure Regulating Station
    - As stated in the Design of the 4th Street 2750/2650 PRV station TM (see **Appendix E**) the station was modeled under its worse supply conditions of 70 psi at the station and with a flow restrict of 6,000 GPM.
        - Since the station will be installed at the existing grade (approximately 2,450 feet), the 2750 PZ was modeled as an elevated reservoir with a HGL of 2,611.7 feet (70 psi) simulating the lowest supply pressure from the 2750 PZ
- Recommended Backflow Preventers on Fire System Distribution Loop
    - To model the backflow preventers on the Development's fire system, the District's Standard Plate 7, and Zurn's reduced pressure detector backflow preventer model 475DA were inputted as general purpose valves. This allowed for the manufacturer's head loss curves to be inputted into the model under different operating conditions.

Fire Flow Analysis

WaterGEMS has a fire flow analysis feature which determines the available fire flows at each junction under steady-state conditions. The available fire flows at a single junction are determined after the system wide MDDs have been satisfied and as long as specific, user-defined, operating criteria are satisfied. In other words, the fire flow analysis determines the available fire flows for a single fire event if it were to occur at each of the selected junctions.

As required by Section 6 of the 2016 Master Plan the following operating constraints/requirements were inputted into the fire flow analysis.

- The calculated available fire flows must also be provided in conjunction with MDDs.
- A minimum residual pressure at each junction tested for available fire flows must be greater than or equal to 20 psi as fire flows are being extracted.
- A minimum zone wide pressure at each junction must be greater than or equal to 40 psi during the fire flow analysis.
- The fire flow analysis shall simulate one 5,000 GPM fire flow event at each of the tested junctions. If 5,000 GPM cannot be provided the model will determine the next available fire flows while meeting the user defined performance criteria.

  - For the purposes of analyzing the performance of the distribution system, the upper limit of the fire flow analysis was set at 5,000 GPM, even though the highest fire flow requirement is 4,000 GPM.
- The maximum velocity in any pipe shall not exceed 10 feet per second.

3.4.4 Modeling of Proposed Potable Water Improvements – Modeling Results

Figure 3-4 shows the available fire flows at each junction under MDD plus fire flow conditions. Each junction was capable of providing the required fire flows of the specified location's land use. For example, the tested junctions within the industrial land uses in the Project were able to provide a fire flow greater than 4,000 GPM.

Figure 3-5 shows the residual pressure during a simulated fire event at each specified junction while maintaining the performance requirements stated in **Section 3.4.3** within the distribution system. In other words if the specified junction was able to obtain a fire flow of 4,000 GPM as shown in **Figure 3-4**, then **Figure 3-5** shows the residual pressure available at the junction if 4,000 GPM was flowing through the junction. Please note that the fire flow analysis is capped out at 5,000 GPM.

Importance of the 4th Street 2750/2650 Pressure Regulating Station

Figure 3-6 below shows the performance of the distribution model if the 4th street 2750/2650 pressure regulating station was taken out of service. As shown there is a notice drop in the available fire flows within the Project with areas along the southern distribution line close to or below the required 4,000 GPM fire flow requirement. It is recommended that should the 4th Street station be taken out of service, the District leave the 24-inch isolation valve open (instead of normally closed to diverting water through the Hidden Canyon Development) as this will allow for the 5 MG Hannon Tank to utilize both 16-inch lines to reliability feed the areas fire flows.

NORTH

1200 600 0 1200 2400

SCALE: 1"=1200'

BEAUMONT POINTE DEVELOPMENT PROPERTY LINE

Color Coding Legend
Pipe: Diameter (in)

<= 4.0
<= 6.0
<= 8.0
<= 12.0
<= 14.0
<= 16.0
<= 18.0
<= 20.0
<= 24.0
<= 30.0
<= 36.0
Other

Color Coding Legend
Junction: Fire Flow (Available) (gpm)

<= 2,000
<= 3,000
<= 3,999
<= 4,500
Other

MAXIMUM DAY DEMAND + FF AVAILABLE FIRE FLOWS AT EACH JUNCTION

INTERSTATE 10

OAK VALLEY PARKWAY

FROM 2650 PZ
PRIMARILY THE 5 MG HANNON TANK

POTRERO BLVD.

CALIFORNIA HIGHWAY 60

PLANNING AREA 8
INDUSTRIAL WAREHOUSE #5

PLANNING AREA 7
INDUSTRIAL WAREHOUSE #4

PLANNING AREA 6
INDUSTRIAL WAREHOUSE #3

PLANNING AREA 5
INDUSTRIAL WAREHOUSE #2

PLANNING AREA 4
INDUSTRIAL WAREHOUSE #1

PLANNING AREAS 1-2
COMMERCIAL

DEVELOPMENT PHASE III
DEVELOPMENT PHASE II

PLANNING AREA 10
CONSERVATION

BEAUMONT POINTE DEVELOPMENT

PLANNING AREA 9
RECREATION AND CONSERVATION
DEVELOPMENT PHASE I

12"Ø & 16"Ø FIRE SERVICE DISTRIBUTION LOOP

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE.

8" LINE (DOMESTIC PW DEMANDS)

2 + 1 10-INCH REDUCED PRESSURE
DETECTOR ASSEMBLY

16-INCH DISTRIBUTION LOOP EXTENDED
UP TO THE DEVELOPMENT.

CONNECT TO AND EXTEND
EXIST. 16-INCH LINE

EXIST. 16-INCH PW LINE
"NORTH" SUPPLY

EXIST. 16-INCH PW LINE
"SOUTH" SUPPLY

INSTALL 16-INCH PW VALVE
AND KEEP VALVE CLOSED.

CONNECT TO, REDUCE AND
INSTALL 16-INCH LINE.

EXIST. 24-INCH VALVE
MODELED AS CLOSED

CALIFORNIA HIGHWAY 60

W. 4TH STREET

FROM 4TH STREET
2750/2650 PRESSURE REGULATING
STATION

HIDDEN CANYON
DISTRIBUTION CENTER

JOB BEAUMONT DEVELOPMENT CA

BEAUMONT

SCALE	1"=1200'
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	01/2022
JOB NO.	B740

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FIGURE
3-4

MAXIMUM DAY DEMAND + FF RESIDUAL PRESSURE AT SPECIFIED JUNCTION DURING SIMULATED FIRE EVENT

NORTH

1200 600 0 1200 2400

SCALE: 1"=1200'

BEAUMONT POINTE DEVELOPMENT PROPERTY LINE

Color Coding Legend
Pipe: Diameter (in)

- <= 4.0
- <= 6.0
- <= 8.0
- <= 12.0
- <= 14.0
- <= 16.0
- <= 18.0
- <= 20.0
- <= 24.0
- <= 30.0
- <= 36.0
- Other

Color Coding Legend
Junction: Pressure (Calculated Residual) (psi)

- <= 20
- <= 40
- <= 50
- <= 60
- Other

INTERSTATE 10

OAK VALLEY PARKWAY

FROM 2650 PZ
PRIMARILY THE 5 MG HANNON TANK

POTRERO BLVD.

CALIFORNIA HIGHWAY 60

PLANNING AREA 8
INDUSTRIAL WAREHOUSE #5

PLANNING AREA 7
INDUSTRIAL WAREHOUSE #4

PLANNING AREA 6
INDUSTRIAL WAREHOUSE #3

PLANNING AREA 5
INDUSTRIAL WAREHOUSE #2

PLANNING AREA 4
INDUSTRIAL WAREHOUSE #1

PLANNING AREA 10
CONSERVATION

BEAUMONT POINTE DEVELOPMENT

DEVELOPMENT PHASE III

DEVELOPMENT PHASE II

PLANNING AREA 9
RECREATION AND CONSERVATION
DEVELOPMENT PHASE I

12"Ø & 16"Ø FIRE SERVICE DISTRIBUTION LOOP

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE.

8" LINE (DOMESTIC PW DEMANDS)

2 + 1 10-INCH REDUCED PRESSURE
DETECTOR ASSEMBLY

16-INCH DISTRIBUTION LOOP EXTENDED
UP TO THE DEVELOPMENT.

PLANNING AREAS 1-2
COMMERCIAL

CALIFORNIA HIGHWAY 60

EXIST. 24-INCH VALVE
MODELED AS CLOSED

CONNECT TO AND EXTEND
EXIST. 16-INCH LINE

EXIST. 16-INCH PW LINE
"NORTH" SUPPLY

EXIST. 16-INCH PW LINE
"SOUTH" SUPPLY

INSTALL 16-INCH PW VALVE
AND KEEP VALVE CLOSED.

CONNECT TO, REDUCE AND
INSTALL 16-INCH LINE.

HIDDEN CANYON
DISTRIBUTION CENTER

W. 4TH STREET

FROM 4TH STREET
2750/2650 PRESSURE REGULATING
STATION

JOB: BEAUMONT DEVELOPMENT CA

BEAUMONT

SCALE	1"=1200'
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	01/2022
JOB NO.	B740

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FIGURE
3-5

NORTH

1200 600 0 1200 2400

SCALE: 1"=1200'

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE

Color Coding Legend
Pipe: Diameter (in)

<= 4.0
<= 6.0
<= 8.0
<= 12.0
<= 14.0
<= 16.0
<= 18.0
<= 20.0
<= 24.0
<= 30.0
<= 36.0
Other

Color Coding Legend
Junction: Fire Flow (Available) (gpm)

<= 2,000
<= 3,000
<= 3,999
<= 4,500
Other

MAXIMUM DAY DEMAND + FF
AVAILABLE FIRE FLOWS WITH 4TH
STREET 2750/2650 PZ OUT OF
SERVICE

INTERSTATE 10

OAK VALLEY PARKWAY

PLANNING AREA 8
INDUSTRIAL WAREHOUSE #5

PLANNING AREA 7
INDUSTRIAL WAREHOUSE #4

PLANNING AREA 6
INDUSTRIAL
WAREHOUSE #3

PLANNING AREA 5
INDUSTRIAL
WAREHOUSE #2

PLANNING AREA 4
INDUSTRIAL
WAREHOUSE #1

DEVELOPMENT PHASE III
DEVELOPMENT PHASE II

PLANNING AREA 10
CONSERVATION

BEAUMONT POINTE DEVELOPMENT

CALIFORNIA HIGHWAY 60

PLANNING AREA 9
RECREATION AND CONSERVATION
DEVELOPMENT PHASE I

12"Ø & 16"Ø FIRE SERVICE DISTRIBUTION LOOP

BEAUMONT POINTE DEVELOPMENT
PROPERTY LINE.

8" LINE (DOMESTIC PW DEMANDS)

2 + 1 10-INCH REDUCED PRESSURE
DETECTOR ASSEMBLY

16-INCH DISTRIBUTION LOOP EXTENDED
UP TO THE DEVELOPMENT.

PLANNING AREAS 1-2
COMMERCIAL

HIDDEN CANYON
DISTRIBUTION CENTER

FROM 2650 PZ
PRIMARILY THE 5 MG HANNON TANK

POTRERO BLVD.

CALIFORNIA HIGHWAY 60

EXIST. 24-INCH VALVE
MODELED AS CLOSED

CONNECT TO AND EXTEND
EXIST. 16-INCH LINE

EXIST. 16-INCH PW LINE
"NORTH" SUPPLY

EXIST. 16-INCH PW LINE
"SOUTH" SUPPLY

INSTALL 16-INCH PW VALVE
AND KEEP VALVE CLOSED.

CONNECT TO, REDUCE AND
INSTALL 16-INCH LINE.

W. 4TH STREET

FROM 4TH STREET
2750/2650 PRESSURE REGULATING
STATION

JOB BEAUMONT DEVELOPMENT CA

BEAUMONT

SCALE	1"=1200'
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	01/2022
JOB NO.	B740

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FIGURE
3-6

3.5 Existing Non-Potable Water Infrastructure Near Annexation Area

As of 2018, BCVWD has over 44 miles of non-potable water transmission and distribution system in place. The backbone transmission system forms a loop around the City of Beaumont and is comprised of primarily 24-in diameter cement mortar lined, ductile iron pipe, all installed after year 2000. The system includes a 2-MG reservoir and three major non-potable water PZ (2800, 2600 and 2520 PZ).

The 2800 NPW PZ is currently separated from the 2600 and lower PZ. The 2800 NPW PZ is supplied with non-potable groundwater from Well 26 and supplemented with PW via air-gap at the 2800 Zone 2-MG NPW reservoir. The 2600 and lower non-potable water pressure zones are supplied with potable water through air-gapped interconnections between the potable and non-potable water system. The adjacent Hidden Canyon Development will extend the 18-inch NPW main from 4th Street and Potrero Blvd to the edge of the BPD.

3.6 Proposed Non-Potable Water Infrastructure

All proposed non-potable water improvements shall be constructed by the Applicant (per the District's requirements and standards) and will be owned and operated by the District upon project completion.

In order to minimize the use of potable water, the Development's landscaping design shall conform to the City of Beaumont Landscaping Ordinances and utilize NPW for irrigation demands. The existing 18-inch NPW line from Hidden Canyon will be reduced to 14-inches and extended along 4th Street within the development. All NPW lines shall be designed and installed in accordance with the City and BCVWD requirements. Lines shall be constructed of ductile iron pipe with push-on joints (with appropriate restraints), and bagged with purple polyethylene bags as required by either the District or the DDW. Signs shall be posted around all use areas stating that non-potable water is being used and it is unsafe to drink. All signage shall be installed in accordance with the DDW requirements. The irrigation services connections shall be made with proper reduced-pressure (RP) devices.

NORTH

1200 600 0 1200 2400

SCALE: 1"=1200'

8"Ø NPW IRRIGATION LINE

EXIST. NPW LINE

BEAUMONT POINTE DEVELOPMENT PROPERTY LINE

INTERSTATE 10

OAK VALLEY PARKWAY

CALIFORNIA HIGHWAY 60

PLANNING AREA 8 INDUSTRIAL WAREHOUSE #5

PLANNING AREA 10 CONSERVATION

INSTALL 8"Ø NPW LINE

PLANNING AREA 7 INDUSTRIAL WAREHOUSE #4

PLANNING AREA 6 INDUSTRIAL WAREHOUSE #3

PLANNING AREA 5 INDUSTRIAL WAREHOUSE #2

PLANNING AREA 4 INDUSTRIAL WAREHOUSE #1

PLANNING AREA 3 INDUSTRIAL

PLANNING AREAS 1,2 COMMERCIAL

BEAUMONT POINTE DEVELOPMENT

INSTALL 8"Ø NPW LINE

PLANNING AREA 9 RECREATION AND CONSERVATION

BEAUMONT POINTE DEVELOPMENT PROPERTY LINE.

CONNECT TO FUTURE NPW LINE. (POINT OF CONNECTION).

FUTURE 18"Ø NPW LINE

POTRERO BLVD.

CALIFORNIA HIGHWAY 60

W. 4TH STREET

HIDDEN CANYON DISTRIBUTION CENTER

PROPOSED NPW IMPROVEMENTS

JOB BEAUMONT DEVELOPMENT CA

BEAUMONT

SCALE	1"=1200'
DESIGNED	
DRAWN	TDM
CHECKED	TDM
DATE	01/2022
JOB NO.	B740

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FIGURE

3-7

3.7 Required Engineering

The Applicant shall perform all necessary calculations, and prepare construction drawings fully describing the work required, including main line extension, fire service assemblies and connection to the existing pipelines for service. The construction drawings, calculations, and other works, shall be prepared by, or under the direct supervision of a Civil Engineer registered in the State of California. All design work shall conform to District's Standards and be subject to the approval of the District.

3.8 Required Water Services

Final domestic and non-potable meter sizes will be determined by the Applicant, but shall include backflow devices (where necessary), angle meter stop, and appropriate fittings in accordance with District's standard drawings and specifications.

3.9 Required Fire Hydrants

The Applicant shall install the necessary fire hydrants and appurtenances subsequent to the determination of fire flow requirements by the County of Riverside. The District typically requires wet-barrel type fire hydrants with one 4-inch and two 2-1/2 inch outlets, in accordance with AWWA. Fire hydrants shall be located generally behind curbs or sidewalks, if sidewalks are adjacent to curb, the Applicant shall refer to the District's specifications and standards for the appropriate location of off-site hydrant(s). Where on-site private fire hydrants are located in parking areas, bollards shall be installed (minimum of 4) around fire hydrant heads in accordance with the Riverside County Fire Department standards or City of Beaumont Standards as applicable. The jurisdictional Fire Department shall approve all fire hydrant locations.

3.10 Main Line Extension Agreement

As a result of additional mainline pipe facilities to be owned and operated by the District, the Applicant shall execute a mainline extension agreement with the District. All applicable reimbursements (if any) shall be in accordance with the District's adopted policies and procedures.

3.11 Required Fees

The Applicant shall pay all applicable deposits, District charges, front footage fees, facility and fees (capacity charges) prior to construction of any off-site water system improvements. Monthly service charges will be in accordance with the applicable District Rules and Regulations.

Other feeds include meter installation fees, which are paid by the Developer at time of construction for a project. Deposits are collected to cover District costs for plan check, GIS and record drawing data, and construction inspection. The Developer posts a performance, labor and material bond for the construction and a maintenance bond once construction is completed and approved by the District

3.12 Financing of the Proposed Improvements – Community Facilities District

The costs associated with the engineering, construction and permitting of all the proposed potable water improvements shall be paid by the Applicant.

Based on the Project's location at the perimeter of the District's sphere of influence, the proposed improvements to the District's distribution systems will only be servicing the Project's low domestic potable water demands. This would place a financial burden on the District's existing rate payers to fund the operation, maintenance and eventual replacement of the improvements over the life of the Project if an alternative funding mechanism was not established.

As a result, the Applicant and District shall enter into a Service Agreement pursuant to which the Applicant will agree that the District shall form a community facilities district (CFD) that will include only the Project

land and that will impose an annual special tax on the land to finance 100% of costs of the O&M and replacement of the proposed improvements.

3.12.1 Financing Model

Total Annual Special Taxes of Community Facilities District

As shown in Appendix G, the CFD administrator will be responsible for calculating each year's levy of special taxes and providing the County Assessor with the amounts to include in the property tax bills for the Project land. The special taxes collected annually for replacement will be deposited into a discrete account to be maintained by the District for the purpose of funding the future replacement costs of the proposed PW and NPW improvements and the special taxes collected for O&M and CFD administrative expenses would be deposited in the District General Fund or a subaccount as described below:

- Infrastructure Replacement Funds

    - The PW and NPW distribution systems will consist primarily of distribution piping and infrastructure such as valves. Both the PW and NPW systems will utilize cement mortar-lined ductile iron pipe of various sizes and distribution infrastructure such as butterfly valves, hydrants, meter assemblies and air related valves.
    - The annual deposit into the replacement account will be based on the costs associated with replacing the completed portions of the PW and NPW distribution system at the end of their respective service life based on 2022 replacement costs and an average inflation rate of 3%.
    - The estimated 2020 bid costs for the proposed PW and NPW distribution valves and piping is estimated to be **$1,911,388** and **$8,350,075** which includes prevailing wages for all associated labor.

      For example, the estimated 2022 bid costs for the first phase of the PW and NPW distribution valves and distribution systems will be $1,005,144 and $4,646,190, respectively. Therefore, based on the average service life of 20 years for the distribution valves and 50 years for the distribution system, the first infrastructure replacement fund deposit would be $67,561 and $180,576, respectively and would increase 3% every year. When the entire PW and NPW distribution valve and distribution system is completed in year 5, the annual replacement amount deposit would be $136,792 and $369,776, respectively, increasing at 3% per year.

- Operation and Maintenance Funds

  An additional amount equal to 10% of the amount of the levy for replacement will also be included in the annual levy of special taxes to fund the District's costs of operating and maintaining the PW and NPW distribution system with any excess available to fund, in the District's sole discretion, any other District operations or capital facilities costs.

- CFD Administrative Expenses

  The annual levy of special taxes will also include an amount to cover all actual costs of administering the CFD.

Total Annual Withdraws from Reserve

The District will withdraw funds from the replacement account to pay for the replacement of the PW and NPW improvements at the end of each item's useful service life.

By:

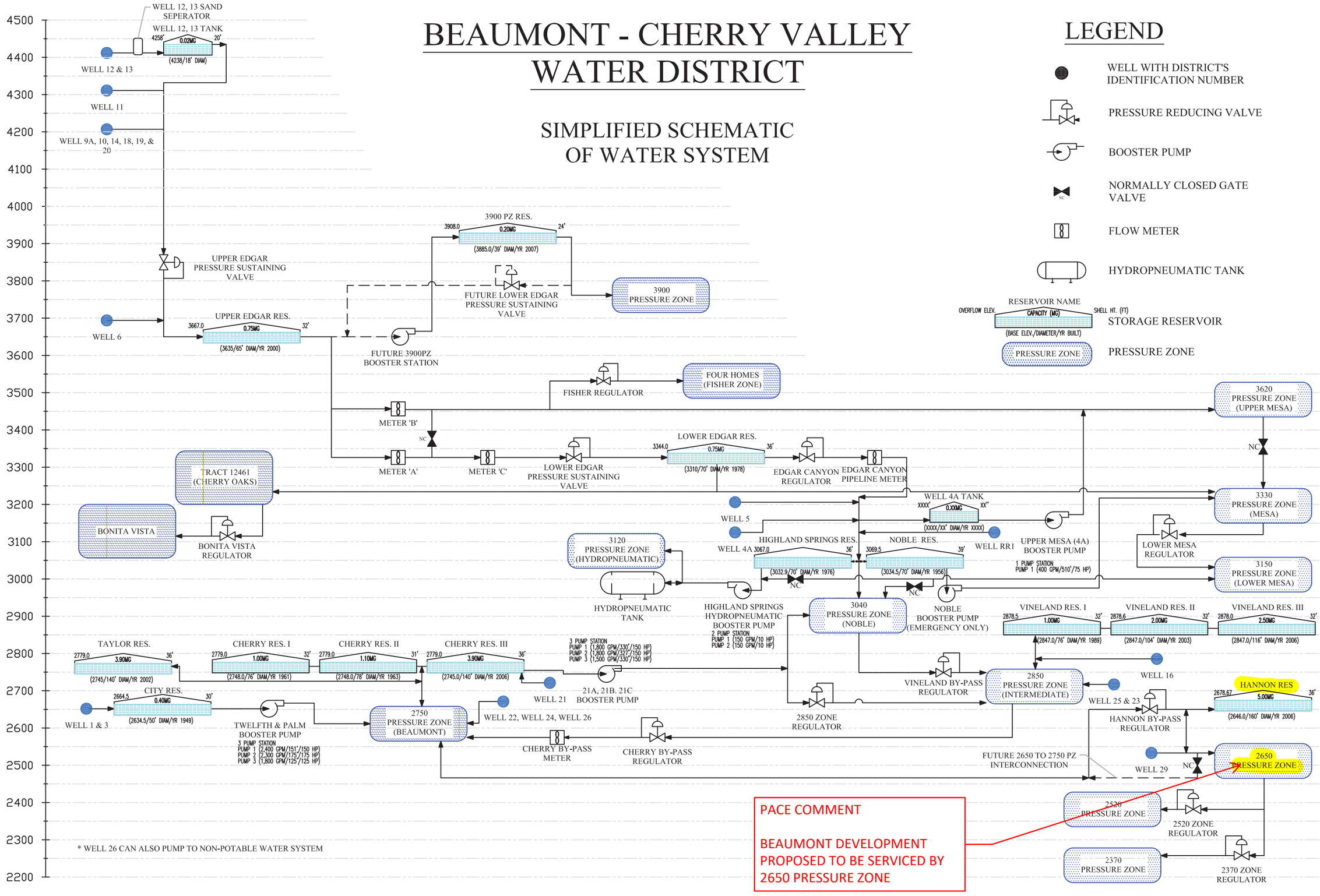
_____
Dan Jaggers, General Manager
Beaumont-Cherry Valley Water District

Date:_____

Appendix A – BCVWD Potable Water Distribution System Hydraulic Profile

BEAUMONT - CHERRY VALLEY WATER DISTRICT

SIMPLIFIED SCHEMATIC OF WATER SYSTEM



LEGEND

- WELL WITH DISTRICT'S IDENTIFICATION NUMBER
- PRESSURE REDUCING VALVE
- BOOSTER PUMP
- NORMALLY CLOSED GATE VALVE
- FLOW METER
- HYDROPNEUMATIC TANK
- RESERVOIR NAME / OVERFLOW ELEV. / CAPACITY (MG) / SHELL HT. (FT) / (BASE ELEV./DIAMETER/YR BUILT) — STORAGE RESERVOIR
- PRESSURE ZONE — PRESSURE ZONE

FIGURE 2-7 HYDRAULIC SCHEMATIC

Appendix B – Water Supply Assessment for Beaumont Pointe Development

BEAUMONT-CHERRY VALLEY WATER DISTRICT

560 MAGNOLIA AVENUE

BEAUMONT, CALIFORNIA 92223

www.bcvwd.org

WATER SUPPLY ASSESSMENT

for

Beaumont Pointe

City of Beaumont, CA

June 28, 2020
Revised October 29, 2020
Revised March 9, 2021
Revised April 2, 2021
Revised April 13, 2021

Prepared by
CHARLES MARR CONSULTING
And Pacific Advanced Civil Engineering, Inc.

for

Beaumont Pointe Partners, LLC

18032 LEMON DRIVE, SUITE 367

YORBA LINDA, CALIFORNIA 92886

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1. INTRODUCTION

The Beaumont Pointe development project (BP or "Project") (formerly known as and referred to in some exhibits herein as "Jack Rabbit Trail") is proposed to be constructed in the City of Beaumont, CA on a site with gross area of approximately 540 acres south of Highway 60 and northwest of the proposed Hidden Canyon Industrial site. Project development limits will result in a graded net area of approximately 276.4 net acres. The project will consist of (1) general commercial/retail land uses on approximately 30.2 acres, and (2) five large graded building pads with one building on each pad totaling approximately 5.0 million square feet of warehouse/office structures. Existing 4th Street is proposed to be extended from the proposed alignment in Hidden Canyon to the BP site. The Riverside County Fire Department has identified a fire flow requirement for the Project of 4,000 gpm for 4 hours. The Project site will be annexed into the Beaumont Cherry Valley Water District (BCVWD) service area.

The Project site was previously planned with a land use density of 2,000 equivalent dwelling units (EDUs) and was included in the BCVWD's 2015 Urban Water Management Plan (UWMP) with 2,000 EDUs (previously identified as Jack Rabbit Trail). Based on the District's adopted EDU usage factor of 0.546 AFY/EDU, this equates to an estimated water demand of 1,092 AFY. The new BP land use plan estimates a density of 360 EDUs, representing a reduced site density by 82 percent. The water demand estimate using specific factors developed for each of the land uses currently proposed for BP, provides an updated demand estimate of 197 AFY. As a result of the changed land use plan, the Water Supply Assessment (WSA) accounts for a vastly reduced water demand estimate from what the UWMP assumes for the site.

2. WATER SUPPLY ASSESSMENT (WSA) LEGISLATIVE REQUIREMENTS

Two Senate Bills passed in 2001 to advance water supply planning efforts in California and provide for developing comprehensive water policies to meet future water needs by integrating water supply and land use planning. These were Senate Bill 221 and Senate Bill 610, (SB 221 and SB 610, respectively). The intent was to provide additional assurance that new projects, as defined by the legislation, will have reliable water supply both now and 20 years into the future considering existing and other new development projects also under consideration. The legislation provides for evaluation of those common water sources in order to confirm their ability to continue supplying existing water users while concurrent projects come on line, as well as keep decisionmakers adequately informed of the proposed projects, and all concurrent development projects' water demands as a measure against current water supply entitlements.

2.1 Senate Bill 221 (SB 221)

SB 221 applies to residential subdivisions and chaptered in Government Code §65867.5 *et seq* which states:

> *(c) A development agreement that includes a subdivision, as defined in Government Code §666473.7, shall not be approved unless the agreement provides that any tentative map prepared for the subdivision will comply with the provisions of §666473.7.*

Government Code §666473.7 states:

> *(a) For purposes of this section, the following definitions apply:*

(1) "Subdivision" means a proposed residential development of more than 500 dwelling units, except that for a public water agency that has fewer than 5,000 service connections, "subdivision" means any proposed residential development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections.

(b)(1) The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision, a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, and shall be based on written verification from the applicable water supply system within 90 days of a request.

(i) Government Code §666473.7 shall not apply to any residential project proposed for a site that is within an urbanized area and has previously been developed for urban uses, or where the immediate contiguous properties surrounding the residential project site area, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households.

(a)(2) "Sufficient water supply" means the total water supplies available during normal, single-dry and multiple-dry years within a 20-year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including but not limited to agricultural and industrial uses.

This does not mean that 100 percent of the development's unrestricted water demand must be met 100 percent of the time, nor does it mean the new development may not have an impact on the service level of existing customers. A "sufficient water supply" may be found to exist for a proposed subdivision and for existing customers, even where a drought-induced shortage will be known to occur, as long as a minimum water supply can be estimated and planned for during a record drought.

2.2 Senate Bill 610 (SB 610)

SB 610, chaptered in Water Code §10910 *et seq*, requires a city or county that determines a "Project," as defined in Water Code §10912, is subject to the California Environmental Quality Act (CEQA), the city or county must identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment (WSA), except as otherwise specified. Water Code §10912 defines a "Project" as any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 sq. ft. of floor space.

(4) A proposed hotel or motel, or both having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sq. ft. of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.[1]

The basic question to be answered in the WSA is:

Will the water supplier's total projected water supplies during normal, dry, and multiple dry years during a 20-year projection meet the projected water demand of the proposed project, in addition the water supplier's existing and planned future uses, including agricultural and manufacturing uses?

The WSA, under SB 610, is to include the following, if applicable to the supply conditions:

1. Discussion regarding whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses.
2. Identification of existing water supply entitlements, water rights, or water service contracts secured by the purveying agency and water received in prior years pursuant to those entitlements, rights, and contracts.
3. Description of the quantities of water received in prior years by the public water system under the existing water supply entitlements, water rights or water service contracts.
4. Water supply entitlements, water rights or water service contracts shall be demonstrated by supporting documentation such as the following:
    a. Written contracts or other proof of entitlement to an identified water supply.
    b. Copies of capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.
    c. Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.
    d. Any necessary regulatory approvals that are required to be able to convey or deliver the water supply.
5. Identification of other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.
6. If groundwater is included for the supply of a proposed project, the following additional information is required:
    a. Description of groundwater basin(s) from which the proposed project will be supplied. Adjudicated basins must have a copy of the court order or decree adopted and a description of the amount of groundwater the public water system

[1] The water use for one dwelling unit depends on regional climate and varies from agency to agency

has the legal right to pump. For non-adjudicated basins, information on whether the California Department of Water Resources has identified the basin as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the Department of Water Resources that characterizes the condition of the basin, and a detailed description of the efforts being undertaken in the basin to eliminate the long-term overdraft.

b. Description and analysis of the amount and location of groundwater pumped by the public water system for the past five (5) years from any groundwater basin from which the proposed project will be supplied. Analysis should be based on information that is reasonably available, including, but not limited to, historic use records.
c. Description and analysis of the amount and location of groundwater projected to be pumped by the public water system from any groundwater basin from which the proposed project will be supplied. Analysis should be based on information that is reasonably available, including, but not limited to, historic use records.
d. Analysis of sufficiency of the groundwater from the basin(s) from which the proposed project will be supplied.

7. The water supply assessment shall be included in any environmental document prepared for the project.

SB 610 prescribes a timeframe within which a public water system is required to submit the assessment to the city or county and authorizes the city or county to seek a writ of mandamus to compel the public water system to comply with requirements relating to the submission of the assessment.

SB 610 requires the public water system, or the city or county, as applicable, if that entity concludes that water supplies are, or will be, insufficient, to submit the plans for acquiring additional water supplies.

SB 610 requires the city or county to include the water supply assessment and certain other information in any environmental document prepared for the project pursuant to the act.

2.3 Summary

The Senate bills are quite similar; SB 221 applies to proposed residential subdivisions over 500 dwelling units or a subdivision project that proposes 10 percent of the number of existing agency water connections, whichever is smaller; SB 610 to other types of large projects or mixed use projects. Both require documentation of water supply and demand under normal, dry and multiple dry year scenarios to accommodate the project plus existing and known planned projects. Both rely on the agency's UWMP for support.

Based on the description in the introduction, the proposed **Beaumont Pointe development project requires a water supply assessment pursuant to SB 610 under Section 10912 (a) (2)**. The Project includes a proposed business establishment having more than 500,000 square feet of floor space. The Project proposes over 5,000,000 square feet of floor space.
For the Project, the water purveyor is the Beaumont-Cherry Valley Water District (BCVWD).

3. URBAN WATER MANAGEMENT PLANNING ACT

3.1 Background

The California Water Code requires that all urban water suppliers within the state, serving over 3,000 acre-feet (AF) of water (1 AF = 325,829 gallons) or having at least 3,000 service connections, to prepare Urban Water Management plans (UWMPs) on a five-year, ongoing basis demonstrating their continued ability to provide water supplies for current and future expected development under normal, single dry and multiple dry year scenarios. The Urban Water Management Planning Act was enacted in 1983 and amendments were made periodically since then. The Act also requires imported water suppliers to prepare UWMPs. Water Code sections §10610 through §10656 detail the information that must be included in the plans. These plans also require the assessment of urban water conservation measures and wastewater recycling as well as a water shortage contingency plan outlining how the municipal water provider will manage water shortages of up to 50 percent of their normal supplies in a given year.

An UWMP is a planning tool that provides general guidance to water management agencies. It provides managers and the public with past and current water supply issues facing the agency. It is not a substitute for project-specific planning documents, nor was it intended to be, when mandated by the State Legislature. When specific projects are chosen to be implemented, detailed project plans are prepared, environmental analysis (if required) is prepared, and financial and operational plans are developed.

"The UWMP is intended to function as a planning tool to guide broad-perspective decision-making" by water agency managers and directors.[2] It should not be viewed as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty and planning projections and may change in response to a number of factors. "[L]ong-term water planning involves expectations and not certainties. The State Supreme Court has recognized the uncertainties inherent in long-term land use and water planning and observed that the generalized information required …in the early stages of the planning process are replaced by firm assurances of water supplies at later stages."[3] It is appropriate to look at the UWMP as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

- What are the potential sources of supply and what is the reasonable probable yield from them?
- What is the probable demand, given a reasonable set of assumptions about growth and implementation of good water management practices?
- How well do supply and demand figures match up, assuming that the various probable supplies will be pursued by the implementing agency?

Based on the answers to these questions, the implementing agency will pursue feasible and cost-

[2] Sonoma County Water *Coalition v. Sonoma County Water Agency* (2010) 189 Cal. App. 4th 33, 39, taken from SGPWA 2015 UWMP.
[3] Ibid.

effective options and opportunities to meet demands.

The UWMP Act requires the supplier to document water supplies available during normal, single dry, and multiple dry water years over a 20-year projection and the existing and projected future water demand during the same 20-year period. The Act requires that the projected supplies and demands be presented in 5-year increments for the 20-year projection period.

Like SB 221 and SB 610, specific levels of supply reliability are not mandated (i.e., whether a specific level of demand can be met over a designated frequency); rather, the law provides that it is a local policy decision of the water provider as part of the planning process. As provided for in the law, the WSA can rely on the data in the latest UWMP in assessing the water demand of the proposed project relative to the overall increase in demands expected by BCVWD. The Beaumont Pointe development project site was included in Table 3-6 of BCVWD's 2015 UWMP (previously identified as Jack Rabbit Trail). The Project site was previously planned with a land use density of, and corresponding water demand for, 2,000 equivalent dwelling units (EDUs). The new BP land use plan estimates a significantly reduced density of 360 EDUs, representing a reduced site density by 82 percent and corresponding water demand estimate.

In late 2017 and 2018, BCVWD prepared a set of "White Papers" that evaluated the growth in demand within the SGPWA and the current and future water supply from the SGPWA on a regional basis. The White Papers determined that the rate of growth has reduced and refines the imported water supply accordingly. This is discussed later in this WSA.

3.2 San Gorgonio Pass Water Agency 2015 UWMP

The Beaumont Pointe project is located within the service area of the San Gorgonio Pass Water Agency (SGPWA or Pass Agency). BCVWD provided data to SGPWA on BCVWD's projected demands so the SGPWA could prepare their UWMP. Because the California Department of Water Resources (DWR) required the imported water suppliers to submit their UWMPs earlier than the retail agencies, BCVWD made some preliminary estimates of their demand over the 20-year projection period and provided the projections to SGPWA. These preliminary estimates deviated slightly from the actual demands in BCVWD's 2015 UWMP. Table 3-1 is taken from SGPWA 2015 UWMP (Table 2-4):

Table 3-1 - Projected Water Demands on SGPWA (AF)

Agency	2020	2025	2030	2035	2040
BCVWD	10,860	12,476	14,087	15,886	17,334
City of Banning	-	501	1,344	2,237	2,718
YVWD	1,809	1,967	2,162	2,391	2,644
Other	500	1,600	2,800	3,900	5,000
Total Water Demands	**13,169**	**16,544**	**20,393**	**24,414**	**27,696**

Note: San Gorgonio Pass Water Agency 2015 UWMP, Table 2-4.

SGPWA's 2015 UWMP states the "retail purveyor demands reflect reasonably anticipated supplies through the planning periods" and take into account non-SGPWA supplies available to the retail purveyors, such as local groundwater, recycled water, etc.

Since the Beaumont Pointe project site was included in the demands in BCVWD's 2015 UWMP,

it is considered to be included in the 2015 SGPWA UWMP, adopted by SGPWA Board of Directors as Resolution No. 2017-03, on March 20, 2017. "Other" demands in Table 3-1 reflect the demand from other agencies in SGPWA service area not currently receiving imported water from SGPWA.

In the introductory section of the SGPWA's 2015 UWMP, the SGPWA reviewed the water supply and demand requirements on a regional basis and did not focus on specific conditions within the service area of the retail water agencies.

"It is the stated goal of SGPWA to import supplemental water and to protect and enhance local water supplies for use by present and future water users and to sell imported water at wholesale to local retail water purveyors within its service area. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the [Urban Water Management] Plan successfully achieves this goal. It is important to note that this document has been completed to address regional resource management and does not address the particular conditions of any specific retail water agency or entity within the SGPWA service area. The retail urban water suppliers within SGPWA service area are preparing separate UWMPs, but SGPWA has coordinated with the retailers during development of this Plan to ensure a level of consistency with the retailers to the extent possible.[4]

BCVWD recognizes and acknowledges the disclaimer statement within the 2015 Urban Water Management Plan prepared by the SGPWA related to regional planning. While the UWMP prepared by the SGPWA "…does not address the particular conditions of any specific retail water agency…" BCVWD relies upon the policies and practices of the SGPWA as a foundation for regional water supply solutions. In other words, while the SGPWA's regional planning document does not address local water conditions, BCVWD does rely upon the policies of the SGPWA to provide comprehensive regional solutions related to the use of imported water in the Pass area. As example of the policies and practices adopted by the SGPWA and relied upon by BCVWD include, but are not limited, to the following:

- San Gorgonio Pass Water Agency, Ordinance No. 8, An Ordinance Establishing Rules and Regulations for SGPWA Water Service, February 7, 2005;
- San Gorgonio Pass Water Agency Strategic Plan, May 2012;
- San Gorgonio Pass Water Agency, Resolution No. 2014-02, A Resolution of the San Gorgonio Pass Water Agency Establishing a Policy for Meeting Future Water Demands, February 18, 2014;
- San Gorgonio Pass Water Agency, Ordinance No. 10, Ordinance Establishing Water Shortage Plan, July 21, 2014;
- San Gorgonio Pass Water Agency, Resolution No. 2015-05, Resolution of the Board of Directors of the San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water, July 27, 2015;
- San Gorgonio Pass Water Agency, State of the Supply PowerPoint Presentation, September 30, 2016;
- San Gorgonio Pass Water Agency, Ordinance No. 13, An Ordinance Amending Rules and Regulations Regarding Authorization for Service, June 5, 2017.

[4] SGPWA 2015 UWMP

3.3 BCVWD's 2015 UWMP

There were some minor differences between the projections in BCVWD's 2015 UWMP and the projections provided to SGPWA for their 2015 UWMP. These differences stemmed from the need for BCVWD to provide preliminary demand projections early on so the SGPWA could meet their prescribed deadline.

BCVWD's demands for imported water are presented in BCVWD's 2015 UWMP (Table 6-26) and are repeated in Table 3-2 below. Table 3-2 shows the actual imported water demand to meet the potable water demand plus the banking water demand to ensure drought-proofing of future development. If imported water is not available in a given year, no banking will occur. But when imported water is available, any deficiencies from previous years would be "carried over" and "made up." As can be seen, there is a slight difference between the demands in Table 3-2 versus those shown above in Table 3-1.

Table 3-2 - BCVWD Imported Water Needs from BCVWD 2015 UWMP

	2020	2025	2030	2035	2040
BCVWD Drinking Water Demand, AFY	10,313*	11,407*	12,503	13,843	15,362
Banking Demands, AFY	1,000	1,500	2,000	2,500	2,500
Total BCVWD Imported Water Demand	11,313	12,907	14,503	16,343	17,862

Note: Taken from BCVWD 2015 UWMP, Table 6-26. Equal to purchased imported water system for recharge plus make-up for non-potable system and water for banking.

*Includes imported water for non-potable water system since non-potable water system is supplied with potable groundwater.

4. BEAUMONT POINTE PROJECT DESCRIPTION

The Beaumont Pointe development project site is currently located outside of the District's service area, but within its sphere-of-influence adjacent to the District's southwest boundary. The Project consists of a gross area of approximately 540 acres (276.4 net acres). It is located within portions of Sections 1 and 2 of T3S, R2W, which is proposed to be incorporated into the City and annexed into the BCVWD service area as part of the entitlement process. The Project is located south of State Highway 60, and northwest of Jack Rabbit Trail Road and the proposed Hidden Canyon Industrial Park, as shown in Figure 1.

4.1 Project Description

The Beaumont Pointe project is proposed to include general commercial (GC), industrial distribution land uses, and open space. The GC land use will consist of a hotel and retail shopping center. The industrial uses are proposed to include a small self-storage facility and five (5) separate large warehouse 'big-box' structures totaling approximately 5.0 million square feet. Existing 4th Street will be extended northwesterly from its proposed west end within the adjacent Hidden Canyon project. Figure 1 shows the Project vicinity, and Figure 2 illustrates the Land Use Plan.

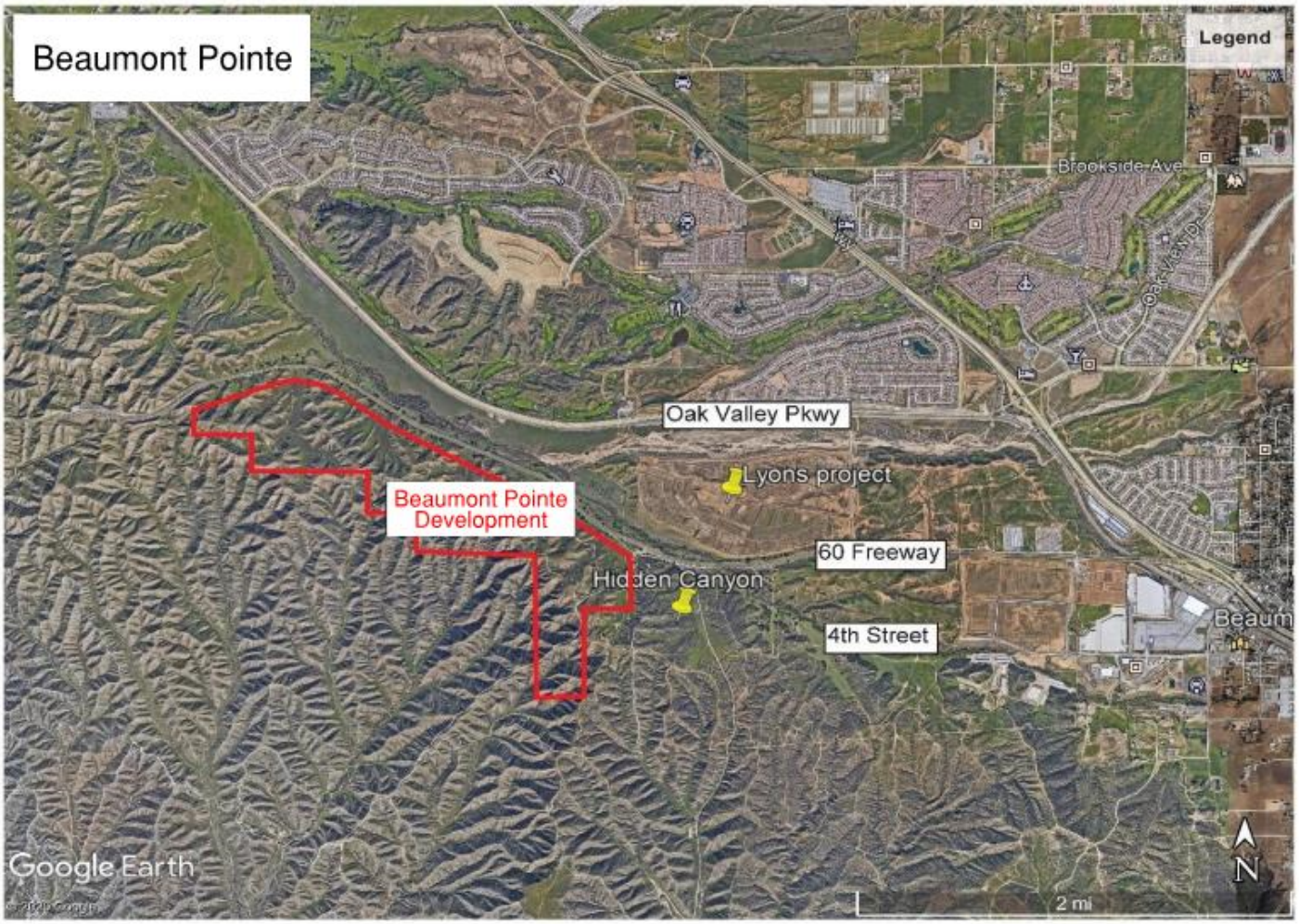


Figure 1 – Beaumont Pointe General Location

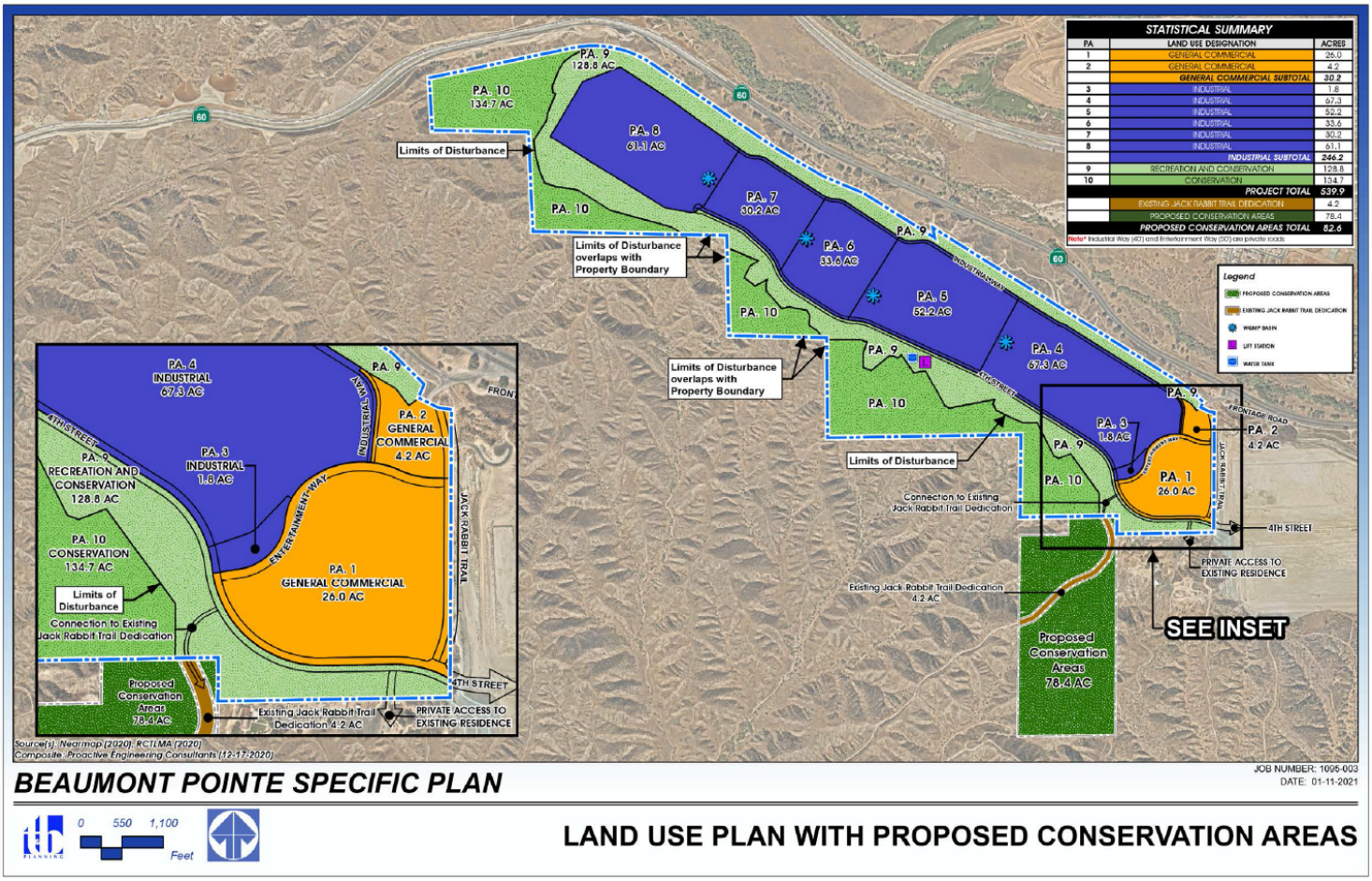


Figure 2 – Beaumont Pointe Land Use Plan

A summary of the land uses is included in Table 4-1:

Table 4-1 - Beaumont Pointe Land Uses [1]

Planning Area	Land Use	Acreage
1 thru 2	Hotel	30.2
	Restaurant	
	Entertainment	
	Landscape	
3 thru 8	Warehouse	246.2
	Office	
	Landscape	
9 and 10	Open Space	263.5
Total		**539.9**

[1] Based on proposed site plan, Alternative 11.

The project is required to adhere to the landscaping standards in "Guide to California Friendly Landscaping" and the City of Beaumont's Landscaping Ordinance which requires water efficient landscaping. Pursuant to BCVWD requirements, landscaping in non-turf areas shall be drought tolerant and irrigated with drip or bubbler type heads.

4.2 Estimated Water Demand

The estimated water demand for the Project is based on recent dialogue with District and the City of Beaumont staff. The total Project consists of approximately 30.2 acres of general commercial land uses and 5.0 million square feet (sf) of industrial distribution warehouse.

For Planning Areas 1 and 2 typical water usage factors used in the industry can range from 1,500 to 3,000 gallons per day (gpd) per acre. Major area water agencies that have published usage factors by land use category includes East Valley Water District (2014) and Eastern Municipal Water District. These agencies have adopted usage factors for general commercial developments at 2,050 and 2,000 gpd per acre to estimate general commercial water demands. Beaumont Pointe includes hotel uses which are typically grouped within the general commercial classification; however, usually exhibit much higher unit water demands. For the purpose of estimating water demands for the WSA, hotel uses are deemed similar to residential uses with a single occupant estimated at 100 gpd per room.

For Planning Areas 3 through 8, BCVWD recently reviewed the total water use for a nearby existing 720,000 sf industrial distribution center east of the Project site (Wolverine), and determined that the maximum water use for "big-box" warehouse distribution developments should be estimated using an employee density factor of one employee per 1,500 sf of warehouse/office space and 15 gpd per employee. This is supported by recent studies prepared by NAIOP [5] as described in the Hidden Canyon Water Supply Assessment. Therefore, because BP Planning Areas 3 through 8 development is virtually identical to the Wolverine "big-box" product this factor is appropriate for the WSA for BP. Thus, the total number of employees contributing to water demand at full buildout of Planning Areas 3 through 8 at BP is estimated to be 3,306h. These usage factors are consistent with the existing Wolverine project and completed planning studies for Hidden Canyon. Planning Areas 9 and 10 will remain open space. Tables 4-2 and 4-3 summarize the estimated BP Project indoor (potable) and outdoor (non-potable) water demands:

[5] NAIOP Research Foundation (2010). Logistics Trends and Specific Industries that Will Drive Warehouse and Distribution Growth and Demand for Space, L. Nicolas Ronderos, Director, Urban Development Programs Regional Plan Association, March

Table 4-2 - Planning Areas 1 and 2 - Beaumont Pointe General Commercial Water Demand Estimate

Planning Area	Land Use	Type [1] Quantity	units	Indoor Water Demand Factor [3]		Outdoor Water Demand Factor [4]		[5] Indoor Water Demand		[5] Outdoor Irrigation Demand [6]	
1	Restaurant	30,000	sf	1,000	gpd/ksf	670,000	gal/Ac/Yr	30,000	gpd		
	Entertainment	5.0	Ac[2]	1,500	gpd/Ac			7,438	gpd		
	Irrigation	3.9	Ac	-				-			
	Total Acres	26.0	Ac	-				-		7,159	gpd
2	Hotel	125	keys	100	gpd/key	670,000	gal/Ac/Yr	12,500	gpd		
	Irrigation	0.6	Ac	-				-			
	Total Acres	4.2	Ac	-				-		1,101	gpd
Total	-	**30.2**	**Acres**	**-**		**-**		**49,938**	**gpd**	**8,260**	**gpd**
	-										
Total								**55.9**	**AFY**	**9.3**	**AFY**

[1] Based on proposed site plan, Alt. 11; uses required 15% landscape irrigation.
[2] Total entertainment area = go-cart, rock climbing, trampoline park, bowling alley, and miniature golf = 216,000 sf = 4.96 acres.
[3] Based on typical water usage used by water agencies throughout southern California.
[4] Based on outdoor water demand factor used for Amazon Distribution Center.
[5] Represents demand on BCVWD potable (domestic) water sources until non-domestic water becomes available.
[6] Represents demand that could be served by non-domestic water sources.

Table 4-3 - Planning Areas 3 thru 8 - Beaumont Pointe Industrial Water Demand Estimate

Planning Area	Land Use	[1] Warehouse /Office Bldg Area	Employee count [2]	Project Site Acreage [1] total	Bldg	Irrig.	Indoor Water Demand Factor [2]		Outdoor Water Demand Factor [3]		[4] Indoor Water Demand		[4] Outdoor Irrigation Demand [5]	
3	Self-Storage	25,000	17	1.8	1.5	0.3	15	gpd/emp	670,000	gal/Ac/Yr	260	gpd	496	gpd
	office	1,000												
4	Ware-house	1,369,880	920	67.3	57.2	10.1	15	gpd/emp	670,000	gal/Ac/Yr	13,799	gpd	18,531	gpd
	office	10,000												
5	Ware-house	984,340	663	52.2	44.4	7.8	15	gpd/emp	670,000	gal/Ac/Yr	9,943	gpd	14,373	gpd
	office	10,000												
6	Ware-house	669,400	450	33.6	28.6	5.0	15	gpd/emp	670,000	gal/Ac/Yr	6,754	gpd	9,252	gpd
	office	6,000												
7	Ware-house	583,240	393	30.2	25.7	4.5	15	gpd/emp	670,000	gal/Ac/Yr	5,892	gpd	8,315	gpd
	office	6,000												
8	Ware-house	1,284,800	863	61.1	51.9	9.2	15	gpd/emp	670,000	AF/Ac/Yr	12,948	gpd	16,823	gpd
	office	10,000												
Total	**Ware-house**	**4,916,660**	**3,306**	**246.2**	**209.3**	**36.9**	**15**	**gpd/emp**	**670,000**	**AF/Ac/Yr**	**49,597**	**gpd**	**67,789**	**gpd**
	office	**43,000**												
Total		**4,959,660**									**55.6**	**AFY**	**75.9**	**AFY**

[1] Based on approved site plan and tabulation of proposed land uses, and landscape area required at 15% of total.
[2] Based on recent water demand prepared by BCVWD for similar warehouse development project (Hidden Canyon), which estimated 1 employee per 1500 sf of warehouse/office space.
[3] Based on outdoor water demand factor used for Amazon Distribution Center.
[4] Represents demand on BCVWD potable (domestic) water sources until non-domestic water becomes available.
[5] Represents demand that could be served by non-domestic water sources.

Table 4-2 and 4-3 calculate to a total estimated water demand at BP buildout of 175,584 gpd, or 197 AFY. Based on BCVWD equivalent dwelling unit usage of 0.546 AFY per equivalent dwelling unit, this equates to 360 EDUs. Of the total water demand, candidate non-potable water demand for outdoor irrigation is estimated to be 85.2 AFY, or approximately 43 percent of the total demands of the Project.

5. BCVWD WATER SYSTEM

BCVWD owns and operates the water system which would serve the Beaumont Pointe development project. BCVWD was first formed in April 1919, to provide domestic and irrigation water to the developing community of Beaumont and the surrounding area. BCVWD was originally named the Beaumont Irrigation District. In 1973, the name was changed to the Beaumont-Cherry Valley Water District. Sometime after that the hyphen was dropped from the name. However, even though the name has changed, the BCVWD's authority comes from the Irrigation District Law of the State of California.

BCVWD owns approximately 1,524 acres of watershed land north of Cherry Valley along the Little San Gorgonio Creek (also known as Edgar Canyon) and Noble Creek. There are two stream diversion locations within Little San Gorgonio Creek that are in the Department of Water Resources, Division of Water Rights, database. The diversions have pre-1914 recorded water rights amounting to 3,000 miners inch hours (MIH) or approximately 45,000 acre-feet per year (AFY) of right for diversion of water for domestic and irrigation uses. However, BCVWD has never had a demand that requires such large quantities of water supply; and the watersheds may not be capable of supplying such quantities during an average year. The creeks/canyons have been used for water development via diversions for irrigation and domestic service since the latter part of the 1800s. Currently, BCVWD diverts water from Little San Gorgonio Canyon Creek into a series of ponds adjacent to the creek where it percolates and recharges the shallow aquifers in the Canyon. BCVWD's wells located in Edgar Canyon provide a significant portion of BCVWD's water supply.

Figure 3 shows BCVWD's present Service Boundary and Sphere of Influence (SOI). BCVWD's present service area covers approximately 28 square miles, virtually all of which is in Riverside County and includes the City of Beaumont and the community of Cherry Valley. BCVWD-owned watershed land extends across Riverside County line into San Bernardino County where BCVWD operates a number of wells and several reservoirs.

BCVWD's SOI, or ultimate service planning area, encompasses an area of approximately 37.5 square miles (14.3 sq. mi. are in the City of Beaumont). This SOI was established by the Riverside and San Bernardino County Local Agency Formation Commissions (LAFCOs). SOIs are established as a planning tool and help establish agency boundaries and avoid problems in service, unnecessary duplication of costs, and inefficiencies associated with overlapping service.

BCVWD's SOI is bounded on the west and north by the Yucaipa Valley Water District (YVWD) and on the east by the City of Banning. The northerly boundary of Eastern Municipal Water District (EMWD) is one mile south of the BCVWD's southerly SOI boundary. The area between EMWD and the BCVWD's SOI is not within any SOI and could be annexed to either BCVWD or EMWD. BCVWD's SOI in Little San Gorgonio Canyon follows Oak Glen Road. The area west of Oak Glen

Road is within YVWD's SOI, and the area east of Oak Glen Road is within BCVWD's SOI.

The service area ranges in elevation from 2,300 feet above mean sea level in Fairway Canyon area of Beaumont on the southwestern boundary, to 2,900 feet in Cherry Valley, and to over 4,000 feet in the upper reaches of the SOI.

The area serves primarily as a "bedroom" community for the Riverside/San Bernardino Area and the communities east of Los Angeles County along the I-10 corridor.

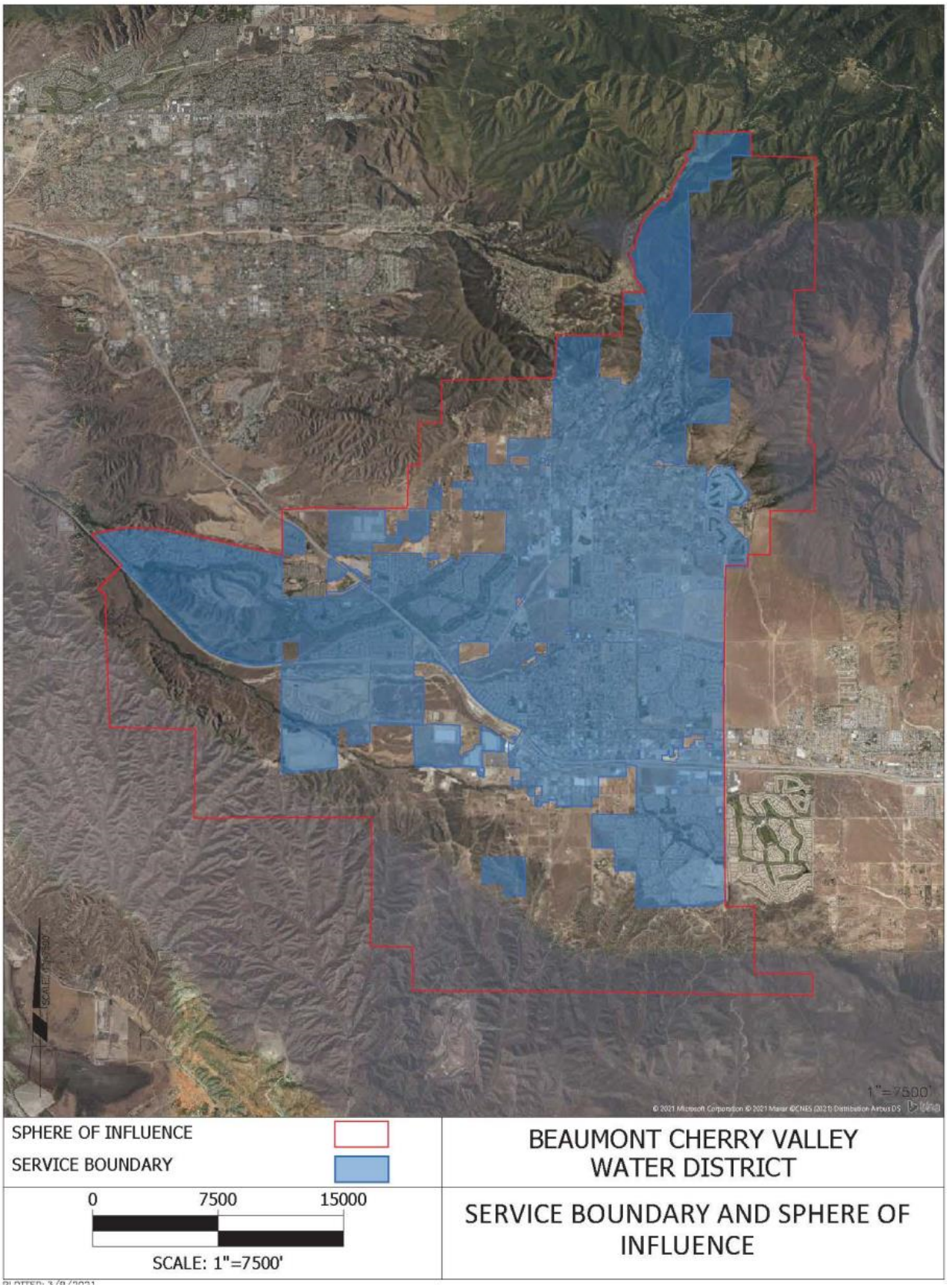


Figure 3 – BCVWD Boundary and Sphere of Influence

5.1 Overview of BCVWD's Water System and Operation

BCVWD owns and operates both a potable and a non-potable water distribution system. BCVWD provides potable water and scheduled irrigation water to users through the potable water system. BCVWD provides non-potable water for landscape irrigation of parks, playgrounds, school yards, street medians and common areas through its non-potable (recycled) water system.

Table 5-1 presents BCVWD 2019 potable and non-potable water connections and pumping amounts. The number of connections was 5,600 in year 2000, before the housing boom that encompassed Western Riverside County and particularly Beaumont.

Table 5-1 - BCVWD Potable and Non-potable Water Connections and Deliveries 2019

	Potable Water	Non-potable Water (Landscape)	Total
Number of Connections	19,339[(a)]	309	19,648
Water Pumped, AFY	11,447 [(b)]	1,547	12,994
Average Annual, mgd	10.2	1.4	11.6
Maximum Day, mgd	19.2[(c)]	4.3	NA

a) 45 of these connections are agricultural water connections on potable water system.
b) 260 AF was transferred into Non-potable System for make-up.
c) Historic maximum day demand was 22.1 mgd in 2009.

5.2 Potable Water System

BCVWD's potable water system is supplied by wells in Little San Gorgonio Creek (Edgar Canyon) and the Beaumont Groundwater Basin (sometimes called the Beaumont Storage Unit or the Beaumont Management Zone). BCVWD has a total of 24 wells; 1 well is a standby. Only 20 of the wells are used to any great extent. Twelve of the wells have auxiliary engine drives, a portable generator connection, or an in-place standby generator. BCVWD has three portable generators capable of operating 50, 350 and 500 horsepower (HP) motors. The Beaumont Groundwater Basin is adjudicated and managed by the Beaumont Basin Watermaster[6]. BCVWD augments its groundwater supply with imported State Project Water (SPW) from the SGPWA which is recharged at BCVWD's recharge facility at the intersection of Brookside Avenue and Beaumont Avenue. Overall, the water quality from BCVWD's wells is excellent. Total Dissolved Solids (TDS) is usually below 250 mg/L. Nitrates are only a sporadic problem in a few wells at present. BCVWD continues to monitor these wells per State Water Resources Control Board, (SWRCB) Division of Drinking Water (CDDW) requirements. No wells have had to be taken out of service because of water quality concerns.

[6] San Timoteo Watershed Management Authority vs. City of Banning et al, Superior Court of the State of California, for the County of Riverside, Riverside Court, Stipulation for Entry of Judgement Adjudicating Groundwater Rights in the Beaumont Basin, RIC 389197, February 4, 2004.

Wells in Edgar Canyon have limited yield, particularly in dry years, and take water from shallow alluvial and bedrock aquifers; wells in the Beaumont Basin are large capacity and pump from deep aquifers – some as deep as 1,500 feet below the ground surface. The Edgar Canyon wells are very inexpensive to operate and are the preferred source; however, those wells are not able to meet the average day demand and need to be supplemented with the Beaumont Basin wells. The Edgar Canyon wells pump to a gravity transmission main that extends the full length of the BCVWD-owned properties in Edgar Canyon. The transmission main connects to the distribution system in Cherry Valley. Water from the Edgar Canyon Wells, which is not used in the developed areas adjacent to Edgar Canyon or Cherry Valley, can be released to lower pressure zones, if needed.

During 2019, the Edgar Canyon Wells provided about 10.5 percent of BCVWD's total annual potable water supply; the rest is pumped from wells in the Beaumont Basin. BCVWD's total well capacity (Edgar Canyon and Beaumont Basin) is about 33 million gallons per day (mgd). BCVWD is easily able to meet the maximum day demand (historic maximum about 22 mgd) with the largest well out of service. Wells with auxiliary power can supply up to 21.4 mgd.

Because of the range of topographic elevations in the BCVWD's service area, 11 pressure zones are needed to provide reasonable operating pressures for customers.

BCVWD has 14 reservoirs ranging in size from 0.5 million gallons (MG) to 5 MG. Total storage is approximately 22 MG, slightly more than two (2) average days or one (1) maximum day. The reservoirs provide gravity supply to its respective pressure zones. BCVWD's system is constructed such that higher zone reservoirs can supply water on an emergency basis to lower zone reservoirs. Booster pumps in the system pump water from lower pressure zones to higher pressure zones. This provides flexibility in system operations. Sufficient reservoir redundancy exists permitting reservoirs to be taken out of service for maintenance.

The backbone transmission system in the main pressure zones is primarily 24-inch diameter though there are some 30-inch diameter pipelines leading to some reservoirs. The bulk of the backbone transmission and distribution pipe is ductile iron with cement mortar lining, that was installed in the last 10 to 15 years. A number of small, older, distribution lines in the system are gradually being replaced over time with minimum 8-inch diameter ductile iron pipe. The system is capable of providing over 4,000 gpm fire flow in the industrial/commercial areas of the service area.

5.3 Imported Water and Recharge Facilities

BCVWD imported and storm water recharge facility consists of a 78-acre site on the east side of Beaumont Avenue, between Brookside Avenue and Cherry Valley Boulevard, where imported water is currently recharged. The recharge project site was selected after extensive hydrogeologic studies and pilot testing over a multi-year period. Phase 1 of the recharge facility, located on the westerly half of the site, went on-line in late summer 2006. Phase 2 of the recharge facility was completed in 2014. To date, only imported water has been recharged at the site. Since its operation in 2006 through the end of 2018, 84,242 acre-feet (27.4 billion gallons) of imported water have been recharged. The capacity of the recharge site is conservatively estimated at 25,000 to 30,000 AFY, based on short term studies. With more aggressive

maintenance, the capacity may be as much as 35,000 AFY.

BCVWD and Riverside County Flood and Water Conservation District (RCFWCD) are jointly in design of Beaumont MDP-Line16, a large diameter storm drain in Grand Avenue, which drains a watershed area of 505 acres to BCVWD's recharge site. This project is planned to be operational by 2022. BCVWD also envisions recharging recycled water, not needed for irrigation, at the recharge site in the future, with appropriate treatment and permits.

The SGPWA imports State Project Water (SPW) through the East Branch Extension (EBX) of the California State Water Project (Governor Edmund G. Brown California Aqueduct). EBX Phase I was completed in 2003; EBX Phase II was completed in 2018. The completion of EBX Phase II improvements brings SGPWA's imported water delivery capacity to the Pass Area to 48 cubic feet per second (cfs) or 34,750 AFY if it was operational all year continuously.

BCVWD takes water from a 20-inch diameter turnout and metering station at the current end of the EBX at Orchard Avenue and Noble Creek in Cherry Valley. Design of an expansion of the turnout was recently completed and began the increased capacity recharge in 2019. Water from the turnout is metered by the Department of Water Resources (DWR) and then enters a 3,500-ft long, 24-inch diameter gravity pipeline, constructed by BCVWD, which conveys the water to BCVWD's groundwater recharge site.

The 24-inch diameter pipeline was constructed in 2006 and at 34 cfs would have a velocity of 10.8 feet per second – a reasonable velocity for a mortar-lined pipeline. If operated eleven months out of the year at that rate, the pipeline could convey 22,500 acre-feet per year. Higher velocities could be tolerated for short periods which would result in increased short-term delivery capacity.

5.4 Non-potable (Recycled) Water System

As of 2018, BCVWD has over 44 miles of non-potable water transmission and distribution system in place. The backbone transmission system forms a loop around the City of Beaumont and is comprised of primarily 24-in diameter cement mortar lined, ductile iron pipe, all installed after year 2000. The system includes a two (2) million-gallon recycled (non-potable) water reservoir which provides gravity storage for the system. As shown in Table 5-1, at the end of year 2019 approximately 309 connections delivered 1,547 AFY of non-potable water. The BCVWD system includes three major non-potable water pressure zones (2800 Zone, 2600 Zone and 2520 Zone) with plans to expand service to areas requiring two additional pressure zones (3040 Zone, 2370 Zone).

The 2 MG non-potable reservoir, (2800 Zone Non-potable Water Tank) constructed at the BCVWD Groundwater Recharge Site can directly receive potable water or untreated SPW through air-gap connections. The reservoir and non-potable water system can serve a blend of recycled water, imported, untreated SPW, and potable water.

The 2800 Non-potable Water Zone is currently separated from the 2600 and lower pressure zones. The 2800 Non-potable Water Zone is supplied with water from Well 26, supplemented with potable groundwater via air-gap at the 2800 Zone Non-potable water reservoir. The 2600 and lower non-potable water pressure zones can also be supplied with potable water through air-

gapped interconnections between the potable and non-potable water system. BCVWD has a capital project approved to provide fine screening to the SPW prior to entering the 2800 Zone Non-potable Water Reservoir. This project will be implemented when demands increase and/or the non-potable water system is tested and approved for recycled water use.

BCVWD is working with the City of Beaumont to secure recycled water for use in the non-potable water system. The City is currently constructing an expansion and upgrade to its existing wastewater treatment facility, which involves installing new membrane bioreactor (MBR) treatment units and additional reverse osmosis membrane treatment. Upon completion, the facility will have a capacity to deliver six (6) million gallons per day (mgd). A brine line from the treatment plant to the Inland Empire Brine Line (IEBL) in San Bernardino is also under construction. A memorandum of understanding (MOU) between BCVWD and the City for recycled water purchase and use was signed in July 2019 and the City and BCVWD are in the process of finalizing and agreement for purchase of recycled water through an ad-hoc committee of City Council members and BCVWD Board Members.

In order to have the ability to use recycled water for recharging when supply exceeds landscape irrigation demand, BCVWD plans to obtain recharge permits. Recycled water for this beneficial reuse could be supplied to BCVWD's groundwater recharge or other area facility. Recycled water use and recharge is permitted by the Adjudication.

6. UPDATED WATER DEMANDS IN SAN GORGONIO PASS AREA

In 2018, BCVWD developed a series of White Papers (White Papers No. 1 through 7) that evaluated water supply, water demands, current and future water supply costs, funding requirements and funding strategies considering both BCVWD's service area and the SGPWA as a whole. These White Papers were presented at BCVWD Board Meetings and elsewhere. The purpose of the White Papers was to assess the water supply situation vis-à-vis the growth in demand. The results of this series of White Papers indicated that the regional imported water demands in BCVWD's 2015 UWMP and the SGPWA 2015 UWMP may be overstated, primarily because of over-aggressive growth in demand, and limited consideration of recent state-mandated conservation and indoor water use requirements.

6.1 Regional Water Supply and Demand Spreadsheet Models

BCVWD, in cooperation with the other major retailers, developed a Regional Water Demand Spreadsheet or Workbook which included a separate worksheet for each of the three major retailers in the SGPWA service area: BCVWD, City of Banning, and Yucaipa Valley Water District (YVWD)/City of Calimesa. The other water supply agencies, e.g., Cabazon Water District, High Valleys Water District, etc. that are not currently receiving imported water from SGPWA were also included, based on data in SGPWA's 2015 UWMP.

The spreadsheet model allows the water agency to input (and adjust):

- New EDU Water Demand, AFY/EDU
- Existing EDU Water Demand, AFY/EDU
- Infill EDUs/year
- Commercial & Institutional EDUs/yr, %Residential EDUs
- Commercial & Institutional EDUs, Minimum EDUs/yr
- Water Conservation, % Reduction on Existing Demands
- Water Conservation, % Reduction on New Demands
- 2017 Year Ending Potable Water Demand, AF
- Beaumont Basin Groundwater Storage Account Maximum, AF
- Beaumont Basin Groundwater Storage Account 2017 Ending Balance, AF

The demand worksheets included the major development projects in each of the retailer's service areas, based on data in specific plans, water supply assessments, regional water resource planning studies, and other sources. The spreadsheets allow the water supply agencies to input their own development rates, on a year by year basis, to adjust anticipated housing startups, build-out years for large developments, and the amount of in-fill development and commercial/institution development; adjust unit water demands for new and existing housing, and account for any anticipated conservation for new and existing demands, among other items. Each water supplier could adjust their imported water banking requirements and evaluate the impact of their strategies on their own Beaumont Basin storage accounts over time.

The spreadsheet provides a graph of the agency's annual groundwater storage account balance which is automatically updated with any input change. The purpose is to allow the agencies to model, on a year by year basis, various imported water purchase and banking strategies vis-à-vis available imported water from SGPWA. Adjustments can be made to water demands using conservation factors on new and existing (older) housing units; water supply sources can include groundwater, recharged recycled water (indirect potable reuse), and captured storm water. Beaumont Basin Watermaster's redistribution of unused overlier rights and forbearance water are included in the model.

The worksheets were reviewed by the retail water agency managers for reasonableness of growth taking into account the housing market and absorption capacity of the SGPWA service area. These spreadsheets, and their criteria are described in detail in White Paper No. 6, and summarized below:

Separate spreadsheet models have been developed for:

- BCVWD
- City of Banning, including Banning Heights Mutual Water Company, High Valleys Water District
- YVWD (Summerwind Ranch and Mesa Verde Area)
- All combined

6.1.1 City of Banning

Major development projects in the City of Banning which are included in the Regional Spreadsheet Model are shown in Table 6-1.

Table 6-1 - Major Development Projects in City of Banning

Project Name	Projected EDUs	Estimated Start-up Year	Build-out Years
Butterfield Ranch (Atwell)	4,862	2020	30
Rancho San Gorgonio	3,385	2019	17
Diversified Pacific	98	2021	5
St. Boniface	171	2023	10

The data in Table 6-1 is taken from the water supply spreadsheets; these and other projects have been delayed. As a result, the water supply spreadsheets most likely overestimate the near-term water demands.

Butterfield Ranch (Atwell by Pardee) was projected to start in 2015 and extend for 30 years to buildout in 2045 per the Project's Water Supply Assessment (WSA). The project recently started grading operations and currently is selling homes to be occupied in 2020. Butterfield Ranch proposes 4,862 EDUs, calculating to an average of 160 EDUs per year over the 30-year build-out period. Rancho San Gorgonio is planned for 3,385 EDUs and was initially projected to start in 2017 and be fully built out by 2034 (17 years) per the Project's WSA (about 200 EDUs per year average over the build-out period). This project has not yet started and probably will not start until 2022 or later.

The spreadsheet for Banning included two other projects:

- Diversified Pacific (98 EDUs)
- St. Boniface (171 EDUs)

The developers have not yet published construction schedules for these. The spreadsheet assumes 2021 and 2023 for starting, and build out of 5 and 10 years, respectively, which may overestimate District demands over the next few years.

In the development of the spreadsheet model for the City of Banning, the San Gorgonio Integrated Regional Water Management Plan (SGIRWMP), May 2, 2018 (Revised August 1, 2018) was analyzed in addition to the City's 2015 UWMP. The SGIRWMP covered the SGPWA service area generally east of Highland Springs Avenue. The SGIRWMP integrated three separate studies:

- Water Supply Reliability Study
- San Gorgonio Region Recycled Water Study
- San Gorgonio Integrated Watershed and Groundwater Model Technical Memorandum

The City of Banning has firm groundwater supplies from the Banning Storage Unit, Banning Bench Storage Unit, Cabazon Storage Unit, and Banning Canyon Storage Unit totaling 9,675 AFY[7] .

In addition, in accordance with the Adjudication, the City of Banning is entitled to 31.43% of the unused overlier pumping rights in the Beaumont Storage Unit. Watermaster developed estimates for years 2018 through 2022 and are included in the spreadsheet. The amount of unused pumping rights varies from year to year, depending on hydrologic conditions and other factors, and is evaluated by Watermaster annually. The 2018 Annual Watermaster Report indicates that Banning's reallocated unused overlier pumping amount for 2021 is 1,497 AFY, slightly more than that reported in the City's 2015 UWMP. As some of the overlying parties develop their properties, the overlier rights will be used by the potable water and recycled water supplying agency and will no longer be available for reallocation. As a result, the total amount subject to reallocation will decrease over time. BCVWD made an estimate of the unused overlier pumping rights under a "developed" or "build-out" condition and estimated the total unused overlier amount would be 1,800 AFY under full buildout. The City of Banning's share (31.43%) would be 560 AFY (rounded) at buildout. The spreadsheet allows for the gradual reduction of the unused overlier pumping rights over time. It is projected by BCVWD to decrease to 560 AFY by 2030 or so as the overlying properties develop.

The City of Banning has 52,320 AF banked in their Beaumont Basin Storage account at the end of 2018 per Watermaster. For the period 2008 through 2017, the City of Banning has recharged an average of 1,294 AFY of SPW in BCVWD's recharge facility. The City can store up to 80,000 AF.

Table 6-2 presents a summary on the Supply-Demand Spreadsheet Model for the City of Banning. The year 2040 data was projected from previous years since the model currently only extends to 2035.

Table 6-2 was based on the following criteria:

- 2017 Ending Potable Water Demand: 7,500 AFY
- New EDU water demand: 0.52 AFY/EDU
- Existing EDU water demand: 0.62 AFY/EDU
- No demand reduction due to conservation on either existing or new EDUs

This was reviewed by the City of Banning. Table 6-2 indicates that the City of Banning has adequate local supply until 2035. Note that Banning's Beaumont Basin Groundwater Storage Account is full in 2030 (Per the spreadsheet model it actually fills in 2027). This indicates that the City of Banning has minimal imported water needs from SGPWA until 2040.

[7] Table 5-4 in Banning 2015 UWMP.

Table 6-2 - Summary of Spreadsheet Supply-Demand Model for City of Banning

Demand or Supply	Year				
	2020	2025	2030	2035	2040
Total New EDUs/year	218	388	706	220	220
Potable Water Demand, AFY	7,678	8,406	9,902	10,832	11,400
Banning/Cabazon Groundwater, AFY	9,675	9,675	9,675	9,675	9,675
Beaumont Reallocated Overlier Rights, AFY	1,450	1,100	600	560	560
Total Local Supply, AFY	11,125	10,775	10,275	10,235	10,235
Surplus/(Deficiency)	3,447	2,369	373	-597	-1,165
Imported Water, AFY					1,000
Groundwater Storage Account, AF	63,100	77,573	80,000	78,415	76,510

6.1.2 YVWD/City of Calimesa

Major development projects in the YVWD service area within SGPWA (principally the City of Calimesa) which are included in the Regional Spreadsheet Model are shown in Table 6-3.

Table 6-3 - Major Development Projects in YVWD in SGPWA (City of Calimesa)

Project Name	Projected EDUs	Estimated Start-up Year	Build-out Years
Summerwind Ranch	3,841	2019	20
Mesa Verde	3,650	2022	20
JP Ranch (a)	500	2025	10

(a) Per discussions with BCVWD.

To develop the spreadsheet for YVWD, several references were reviewed for YVWD's water supply and projected demands within their service area lying within the SGPWA boundaries:

- 2015 SGPWA UWMP
- 2015 San Bernardino Valley Regional UWMP
- Mesa Verde Water Supply Assessment (WSA) – Draft August 11, 2017
- YVWD Strategic Plan for Sustainable Future (Adopted August 20, 2008)

The EDUs for Summerwind Ranch and Mesa Verde were taken from the Specific Plans for these projects. First move-ins are scheduled to occur by 2019. Mesa Verde is estimated to start in 2022. An estimated 20-year build-out time for Summerwind Ranch and Mesa Verde was assumed, resulting in an average of 192 and 183 EDUs per year, respectively. Per YVWD, future phases of JP Ranch will likely not start until 2025 with a 10-year build-out period (about 50 EDUs

per year). It should be noted there will be additional EDUs associated with the developments for related commercial and retail developments, schools, parks, restaurants, etc.

Water supply sources for these projects are:

- Reallocated unused overlier pumping rights in the Beaumont Basin
- Oak Valley Partners' earmarked transfer right
- Banked groundwater from storage
- Imported Water from SGPWA
- Treated potable water from the YVWD's Regional Water Treatment Plant

In accordance with the Adjudication, YVWD's share (13.58%) of the reallocated unused overlier pumping right was determined by Watermaster for 2018 through 2022 and reported in the 2018 Watermaster annual report. To project the amount available under more long-term conditions, BCVWD made an evaluation of a fully developed condition of the developable overlier parcels as shown on the worksheet in the spreadsheet. BCVWD believes the total unused overlier right at build-out will be about 1,800 AFY; YVWD's share will be about 240 AFY (rounded).

Both Mesa Verde and Summerwind Ranch are part of the original Oak Valley Development that started with the Landmark Land Company of California in the 1980s. The original Landmark Project was a master planned golf/recreational development. Oak Valley Partners (OVP) took over the project and were involved in the Beaumont Basin Adjudication. OVP has overlying groundwater rights in the Beaumont Basin [originally 1,806 AFY but reduced to 1,398.9 AFY, (round to 1,399 AFY), after the safe yield was reduced in 2014]. These overlier groundwater rights will be transferred to YVWD to serve the Summerwind Ranch development only per YVWD.

YVWD uses 700 gal/day/EDU (0.78 AFY/EDU) for total water demand for existing EDUs; but requires all new development to be dual-plumbed and requires the use of recycled water outside. Potable water demands are estimated by YVWD to be 40% of the total water demand, i.e. 280 gal/day/EDU (0.37 AFY/EDU) with the remainder, i.e., 420 gal/day/EDU to be recycled water. It is BCVWD's opinion that the Adjudication requires OVP to forebear the pumping of their 1,399 AFY overlier pumping right, on an acre-ft by acre-ft basis, for both potable and recycled water.

YVWD has groundwater banked in the Beaumont Basin; at the end of 2018, per Watermaster, the amount in storage was 16,633 AF. YVWD has a 50,000 AF storage account.

The Mesa Verde WSA indicates 1,200 AFY is proposed to be recharged (banked) by YVWD from 2020 through 2040. YVWD developed a strategic plan entitled *The Integration and Preservation of Resources for a Sustainable Future* (adopted August 2008) which identified a groundwater banking program for future reliability for droughts and disruption in the SPW supply. The Plan indicates a Board policy of banking 15 percent of the total water supply used by the YVWD's customers. Data was not available to confirm the 1,200 AFY in Table 6-4, but 1,200 AFY is used in the spreadsheet model.

Table 6-4 - YVWD - SGPWA Imported Water Demands

Agency	2015	2020	2025	2030	2035	2040
Drinking Water Demands: Yucaipa Valley Water Filtration Facility	454	609	767	962	1,191	1,444
Conjunctive Use Demands - Local Water Banking	0	1,200	1,200	1,200	1,200	1,200
New Development Long-Term Supply - Sustainability Program	0	2,504	3,040	3,596	4,344	3,407
Purchase from SGPWA	**454**	**4,313**	**5,007**	**5,758**	**6,735**	**6,051**

Source: Mesa Verde Project WSA Draft August 11, 2017, page 25

The total of the drinking water demands for the Water Filtration Facility plus the Conjunctive Use Demands match with the projected imported water demands in the SGPWA 2015 UWMP as shown in Table 3-1.

Table 6-4 also identifies “New Development Long-Term Supply - Sustainability Program” which relates to YVWD’s Strategic Plan for a Sustainable Future. YVWD requires all new developments to provide funding to secure 7.0 AF of supplemental imported water per EDU. This amount of water is sufficient to meet the drinking water demands generated by each new EDU for a period of 20 years. YVWD also offers a Crystal Status Development Program whereby the developer provides funding for 15.68 AF of supplemental imported water per EDU which is sufficient to meet the potable and non-potable (recycled) water demands of the new EDU for 20 years. The difference between the two programs is that under the standard (7.0 AF/EDU) program, development will be restricted, (i.e., no grading or building permits will be issued), when a Stage 2 water shortage is declared (10% cutback). However, Crystal Status Development can continue through a Stage 4 Shortage (35% cutback). The 7.0 AF/EDU will not need to be replenished for 20 years. For this spreadsheet, the Standard 7.0 AF/EDU imported water purchase and storage is used, since it is difficult to determine how many new developments will purchase Crystal status. This is conservative.

The spreadsheet assumes that 7.0 AF/EDU will be applied to all new developments (Mesa Verde and JP Ranch) in YVWD, except for Summerwind Ranch, which has overlier pumping rights available to meet its projected demands.

Table 6-5 presents a summary on the Supply-Demand Spreadsheet Model for YVWD in the SGPWA service area, i.e., principally the City of Calimesa. Year 2040 data was projected from previous years since the model currently only extends to 2035.

Table 6-5 was based on the following criteria:

- 2017 Ending Potable Water Demand: 500 AFY
- New EDU water demand: 0.37 AFY/EDU
- Existing EDU water demand: 0.78 AFY/EDU
- Water demand reduction from conservation on new EDUs: 10%
- Water demand reduction from conservation on existing EDUs: none

Table 6-5 indicates that YVWD, in SGPWA service area has sufficient local supply to meet demands until 2025, at which time imported water will be needed unless YVWD plans on withdrawing water from their storage account. The YVWD Beaumont Basin Groundwater Storage Account is full in 2030 primarily because of the "Sustainability Water" which is banked.

Table 6-5 - Summary of Spreadsheet Supply-Demand Model for YVWD (City of Calimesa)

Demand or Supply	Year					
	2018	2020	2025	2030	2035	2040
Total New EDUs/year		83	464	551	551	500
Potable Water Demand, AFY	503	544	1,065	2,054	3,058	4,062
Oak Valley Partners Earmark Transfer, AFY	3	50	586	1,399	1,399	1,399
Beaumont Reallocated Overlier Rights, AFY	864	627	400	240	240	240
Total Local Supply, AFY	867	677	986	1,639	1,639	1,639
Surplus/(Deficiency)	364	133	(79)	(415)	(1,419)	(2,423)
Imported Water for Regional Filtration Facility, AFY (a)	500	609	767	962	1,191	1,444
Imported Water for Banking, AFY (a)		1,200	1,200	1,200	1,200	1,200
Imported Water for Sustainability, AFY	49	51	1,655	2,260	2,260	2,260
Total Imported Water, AFY	549	1,860	3,622	4,422	4,651	4,904
To (From) Storage, AFY	913	1,993	3,542	4,007	3,232	2,481
Groundwater Storage Account, AF	16,689	19,397	32,825	50,000	50,000	50,000

(a) Source: YVWD's Mesa Verde WSA, pg. 25, SGPWA SPW or equivalent used at Filtration Plant

6.1.3 BCVWD

6.1.3.1 City of Beaumont Development

Major development projects in the BCVWD service area, which are included in the Regional Spreadsheet Model, are shown in Table 6-6. The projected EDUs planned or yet to be built are estimated and may vary slightly from City of Beaumont Project Status Report estimates.

Table 6-6 - Major BCVWD Development Projects in Planning or Construction Stages

Project Name	Projected EDUs (Planned or Yet to be Built)	Estimated Start-up Year	Build-out Years
Tournament Hills Ph 4	281	2020	4
Sundance[(a)]	1,262	2018	5
Fairway Canyon[(a)]	1,810	2019	20
Heartland Olivewood[(a)]	1,081	2018	20
Four Seasons[(a)]	203	2018	3
Kirkwood Ranch	391	2022	12
Potrero Creek Estates	700	2025	10
Noble Creek Meadows	648	2021	15
Hidden Canyon Industrial[(a)]	82	2019	5
Sunny Cal Egg Ranch	529	2019	10
Beaumont Pointe (current proposed)	360	2022	2
The Preserve/Legacy Highlands	3,218	2025	25
Taurek	244	2022	20
TR 32950 Manzanita	95	2022	10
Other Projects on City of Beaumont's Project Status List (10/18/2018)			
Sundance Corporate Center[(b)]	---	2018	2019
Rolling Hills Ranch Industrial Ph 2	---	2020	2021
Centerpointe Commercial[(b)]	---	2018	2019
San Gorgonio Village Ph 2[(a)]	---	2020	2021
Total EDUs	***10,904***		

(a) Under construction
(b) Recently completed

Prior "proposed" projects equivalent dwelling units within the BCVWD service area were estimated at 12,544 (Legacy Highlands WSA, June 2020). The BP Project site was previously planned with a land use density of 2,000 equivalent dwelling units (EDUs). The new BP land use plan estimates a significantly reduced density of 360 EDUs, representing a reduced site density by 82 percent. The update presented in Table 6-6, as calculated in Section 4.2, is updated with this lower density for BP contributing to total EDU count of 10,904, and a reduction by 1,640 EDUs. Figure 4 shows the number of single-family home building permits issued in the City of Beaumont since year 2002. (Year 2018 was estimated based on data through September 2018.) Although not shown in the figure, the permit applications started to increase in 1999- 2000 and reached their peak in 2005 with 2,300 new home permits issued for that year. The number of

permits for new homes declined to a low of 169 in 2011. Over the last 10 years, permits averaged 396 per year, and 508 over the last 5 years. The 16-year average was 747 per year. Future growth will likely be in the range of 450 to 650 permits per year, although some developers have projected slightly higher amounts in their build-out forecasts.

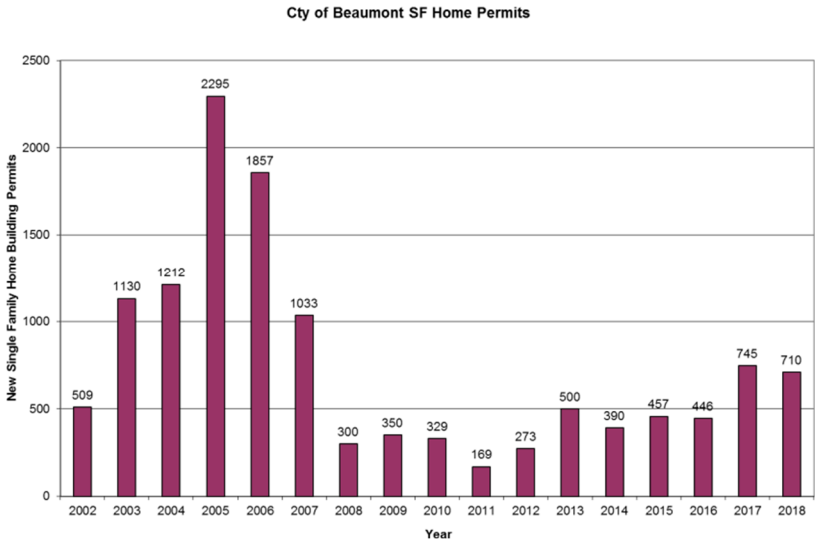


Figure 4
City of Beaumont Single Family Home Permits

6.1.3.2 Cherry Valley Growth and Development

The ultimate build-out population for that portion of Cherry Valley served by BCVWD, based on the Pass Area Land Use Plan[8,9] densities, was estimated to add a population of approximately 21,700, or about 7,750 EDUs. This was BCVWD's estimate in 2009 using GIS land use data from Riverside County and typical development densities for the various land uses in the General Plan. This estimate included a population growth of 6,736 in the City of Calimesa. BCVWD will not be serving the City of Calimesa as this is within YVWD's service area. Cherry Valley population is being reviewed as part of the 2020 UWMP update work in conjunction with the City of Beaumont's General Plan Update (2020). As a result, the increased population estimate to be served by BCVWD may be overestimated. BCVWD now believes it to be closer to 15,000 people at build-out, or about 5,350 EDUs. The build-out population is based on an increase from the current 2.43 persons per EDU to 2.8 persons per EDU projected at build-out.

The housing unit count within Cherry Valley was 2,874 in 2010 per the census data, but 26.6 percent of those are mobile homes. Adjusting for the reduced water use in mobile homes, the 2,874 housing units are equivalent to about 2,485 EDUs. The Sunny Cal Egg Ranch Development (529 EDUs from Table 6-6), is included with the City of Beaumont's development projects, but is actually within the current Cherry Valley census area. The Sunny Cal EDUs would have been included in the projected 2,865 EDU increase for Cherry Valley, (5,350 EDUs – 2,485 EDUs). To avoid "double counting EDUs," the Sunny Cal Egg Ranch EDUs were deducted from the 2,865 EDUs, resulting in a net projected 2,336 EDU increase for Cherry Valley to build-out.

[8] Pass Area Land Use Plan, October 7, 2003, Part of Riverside County General Plan.
[9] The Pass Area Plan, County of Riverside General Plan Amendment 960, Draft March 2014.

The buildout population and EDUs will be revised in future updates of the BCVWD Potable Water Master Plan and UWMP.

BCVWD believes Cherry Valley will be growing at a low rate keeping with its character of residential rural community, which is estimated to be less than 10 EDUs/year until the City of Beaumont's currently planned projects are developed. Once the City of Beaumont has developed, Cherry Valley will begin to be developed at a gradually increasing rate, perhaps increasing to 30 to 50 EDUs/year, but this is not expected to occur until after 2040.

6.1.3.3 Supply Demand Model for BCVWD

Table 6-7 presents a summary of the spreadsheet model for BCVWD's demand which was based on the following criteria:

- 2019 Ending Potable and Non-potable Water Demand: 13,337 AFY
- New EDU water demand: 0.546 AFY/EDU
- Existing EDU water demand: 0.62 AFY/EDU
- Water demand reduction from conservation on new EDUs: 5%
- Water demand reduction from conservation on existing EDUs: 5%

Table 6-7 - Summary of Spreadsheet Supply-Demand Model for BCVWD[12]

Demand or Supply	Year						
	2019	2020	2022	2025	2030	2035	2040
Total New EDUs/year	381	580	940 [1]	460	502 [1]	378 [1]	207 [1]
Potable and Non-potable Water Demand, AFY	13,337 [2]	13,668	14,498 [3]	15,188 [4]	16,584 [5]	17,772 [6]	18,337 [13]
Edgar Canyon, AFY	1,700	2,100	2,100	2,100	2,100	2,100	2,100
Beaumont Reallocated Overlier Rights, AFY	1,905 [11]	1,962 [11]	1,826 [11]	1,200	760	760	760
Forbearance Water (Sunny Cal Egg Ranch), AFY	0	50	100 [7]	200	340	340	340
Recycled Water City of Beaumont, AFY	0	1,556	1,808 [8]	2,188	2,840	3,487	3,930
Stormwater Capture, AFY	0	0	0	250	250	250	250
Other Local Water Resource Projects, AFY	0	0	0	250	250	250	250
Total Local Supply, AFY	3,605	5,668	5,834	6,188	6,540	7,187	7,630
Surplus/(Deficiency), AFY	-9,732	-8,000	-8,664 [9]	-9,000	-10,044	-10,585	-10,707
Imported Water for Replenishment, AFY	9,732	8,000	8,664 [9]	9,000	10,044	10,585	10,707
Imported Water for Drought proofing, AFY	1,000	1,000	1,000 [9]	2,000	2,500	2,500	2,500
Total Imported Water, AFY	10,732	9,000	9,664 [9]	11,000	12,544	13,085	13,207
To (From) Storage, AFY	1,000	1,000	0	2,000	2,500	2,500	2,500
Groundwater Storage Account, AF	34,794 [10]	35,794	35,794	41,794	52,294	64,794	77,294

[1] Previous BCVWD planning identified Years 2020 - 2024 with 580 EDU/yr, and old JRT starting in 2030 at 80 EDU/yr for 25 years (Hidden Canyon WSA, Table 8). BP (JRT) update proposes 360 EDUs and buildout in 2022; therefore, 2022 EDUs/yr = 580 + 360 = 940. As such, EDUs/year for 2030, 2035 and 2040 decrease by 50 EDUs/yr, 80 EDUs/yr, and 90 EDUs/yr, respectively. NOTE - 360 EDUs is the Project's Total Potable and Non-Potable Demands

[2] Adjusted for Year 2019, which was 13,129 AFY for 2018 (Legacy Highlands WSA, Table 12); 381 EDU/yr*0.546AFY/EDU = 208 AFY.

[3] Year 2022 adds 2 years at Year 2020 EDU rate at 0.546AFY/EDU plus 197 AFY for BP (updated demand estimate) = 14,498 AFY.

[4] Accounts for 423 EDU's in 2023, 381 EDU's in 2024, and 460 EDU's in 2025. The Project's 197 AF demand is accounted for in the 2022 column.

[5] Accounts for 500 EDUs in 2026, 525 EDUs in 2027, 519 EDUs in 2028, 510 EDUs in 2029, and 502 EDUs in 2030. The District's previous projection accounted for 50 EDUs in the first of year of construction (2030) of the orginal (residential) BP Project. The current Project's 197 AF demand is accounted for in the 2022 column.

[6] Accounts for 474 EDUs in 2031, 467 EDUs in 2032, 456 EDUs in 2033, 402 EDUs in 2034, and 368 EDUs in 2035. The District's previous demand projection accounted for 80 EDUs/yr from 2031-2033, and 90 EDUs/yr in 2034 and 2035 for the original (residential) BP Project. The current Project's 197 AF demand is accounted for in the 2022 column.

[7] Assumes forbearance water credit for Sunny Cal Egg Ranch will be 100 AFY by Year 2022.

[8] Based on proportionate deliveries of recycled water from Year 2020 (1,556 AFY) to 2025 (2,188 AFY), or 126.4 AFY x 2 yrs increase.

[9] For conservative analysis, assumes no increase from Year 2020.

[10] Per Beaumont Basin Watermaster 2018 Annual Report, Section 3.5.

[11] Per Beaumont Basin Watermaster 2018 Annual Report, Table 3-7.

[12] Demand data presented in Table 6-7 represents the most reasonable and accurate demand projections to date. It should be noted that the District is currently analyzing current and future projected demands to be included in its 2020 Urban Water Management Plan Update, which will be submitted to the Department of Water Resources around July 2021. Demands presented herein may be subject to change at the discretion of the District. Demand values currently presented are considered to be conservative.

[13] Assumes uniform 207 EDU/yr increase from 2036-2040; The District's previous demand projections did not extend to 2040. This is considered to be conservative. It is assumed that the 90 EDU/yr trend would continue from 2036-2040 for the original (residential) JRT Project. The current Project's 197 AF demand is accounted for in the 2022 column.

BCVWD's source of supply consists of:

- **Edgar Canyon (Little San Gorgonio Creek) Groundwater** – The annual yield for Edgar Canyon is based on 37 years of pumping records. The average annual production for the period 1983 – 2019 was 2,094 AFY, which was rounded to 2,100 AFY in the spreadsheet. However, for 2018, the production was reduced to 1,700 AFY to account for the reduced production in some wells due to reduced pump efficiency. These pumps have been refurbished and will be refurbished on a regular basis.

- **Beaumont Basin**
    - **Reallocated Unused Overlier Pumping Rights** – Watermaster provided the amount of reallocated overlier rights in the 2018 Annual Report for each year up to 2023. BCVWD was allocated 1,905 AF in 2019 and 1,962 AF in 2020. Thereafter, BCVWD made an estimate based on production and development of the overlier's property. BCVWD estimated the long-term, fully developed, unused overlying party pumping rights would be about 1,800 AFY. BCVWD gets 42.51% of the unused overlier pool each year. At full development, BCVWD estimates its share is 760 AFY.
    - **Forbearance Water** is credited to a water supplier by Watermaster for any potable and/or recycled water provided to an overlier when the overlier's property develops. The overlier forbears pumping the equivalent amount of water supplied. BCVWD will supply the Sunny Cal Egg Ranch Development with both potable and recycled water. Sunny Cal Egg Ranch and associated partners are overlying parties and have pumping rights. BCVWD estimates that fully developed demand from recycled and potable water is about 340 AFY. The amount of forbearance water will increase over time from zero (0) AFY to 340 AFY as the project develops to anticipated buildout in 2030.
    - **Water from Groundwater Storage** – BCVWD has an 80,000 AF storage account in the Beaumont Basin. As of the end of 2018, there were 34,794 AF in storage per Watermaster's 2018 Annual Report. BCVWD's plan, which is shown in BCVWD's 2015 UWMP, envisions banking from 1,000 AFY to 2,500 AFY to drought proof BCVWD. This is accounted for in the spreadsheet each year. Should there be a year when the projected amount cannot be delivered by SGPWA, any deficiency will be made up in successive years when adequate supply is available. Table 6-7 shows that for average water supply conditions, banking is anticipated every year and no water will be withdrawn from storage.
- **Recycled Water from the City of Beaumont** – The City of Beaumont is required by Regional Water Quality Control Board (RWQCB) Order No. R8 -2015-0026 to have recycled water put to beneficial reuse by March 1, 2020. The City started construction of the new wastewater treatment plant, reverse osmosis desalting unit, and the required brine line from the wastewater treatment plant to the Inland Empire Brine Line (IEBL), in San Bernardino. The City has completed and has an approved Title 22 Engineering Report for the Treatment Facilities. The City and BCVWD signed a Memorandum of Understanding (MOU) in 2019 which began the process of an agreement for purchase of recycled water by BCVWD from the new treatment plant. BCVWD and the City are working jointly on defining the pumping and storage requirements at the treatment plant. The City will be the recycled water producer; BCVWD the distributor. BCVWD is in process of completing their Title 22 Engineering Report for the Distribution and Reuse Applications. BCVWD has developed draft rules and regulation for recycled water use and developed a cross-connection testing and control plan which has been approved by the SWRCB Division of Drinking Water. In the future, as more recycled water becomes available during the late fall, winter, and early spring, BCVWD and the City will develop

an advanced treatment facility and secure permits for groundwater recharge of the surplus effluent. BCVWD and City will discuss providing recycled water to the Oak Valley Greens and/or Tukwet Canyon Golf Courses in exchange for forbearance water which will increase BCVWD's potable water supply.
The BCVWD spreadsheet model is based on 0.25 AFY/EDU (225 gallons/day/EDU) connected to the City's wastewater system. The City is obligated to maintain a 1.8 mgd discharge to Cooper's Creek for habitat maintenance; the available recycled water accounts for this 1.8 mgd "loss." A capacity factor of 75 percent is applied to the available wastewater to account for brine discharge, recycled water used on the plant site for maintenance, and water contained in the biosolids, hauled off-site.

- **Storm Water Capture** – BCVWD and Riverside County Flood and Water Conservation District (RCFWCD) are jointly working on a Santa Ana Watershed Project Authority (SAWPA) Grant Project to design and construct Beaumont MDP-Line 16 storm water capture project, also known as the Grand Avenue Storm Drain in Cherry Valley. The project is partially funded under the Integrated Regional Water Management Implementation Grant Program under Proposition 84. A detailed analysis of the runoff potential was performed using 77 years of daily rainfall records from the Beaumont Rain Gage with the runoff determined for each storm using the Natural Resources Conservation Service (NRCS) curve number method. An estimated 200 to 230 AFY can be captured with MDP-Line 16 project. Other projects, in and around the BCVWD recharge facility, will capture excess flow in both Brookside Ave and Beaumont Ave to increase the annual capture (long term average) to 250 AFY.
- **Other Local Water Resource Projects** – BCVWD has several other local water resource projects which can be implemented including:
    - High nitrate groundwater at the mouth of Edgar Canyon. This groundwater can supplement the recycled water/non-potable water system flow in the summer, high demand months, making well water available for potable water use. BCVWD believes as much as 300 AFY can be captured and reused.
    - San Timoteo Canyon Extraction Wells to capture groundwater from the Beaumont Basin flowing into San Timoteo Canyon and also to capture City of Beaumont wastewater flow discharged to Cooper's Creek once the water has percolated and is no longer available for habitat maintenance. It is estimated that 400 to 800 AFY can be captured and put into the recycled water/non-potable water system to meet summertime demands.
    - For purposes of this WSA, 250 AFY are assumed to be available with the initial phases of these projects.
- **Imported Water from SGPWA** -- The amount of imported water which BCVWD is able to purchase and recharge is only the amount left over after YVWD, the City of Banning, and others have purchased the amount each needs to meet their demands and banking. The amount available from the SGPWA collectively is discussed later in this WSA. BCVWD has entered into an agreement, and participated financially, with the SGPWA for a share of the yield from the Sites Reservoir Project. This is discussed later in this WSA.

6.2 Summary of Member Agency Imported Water Demands on SGPWA

Table 6-8 presents a summary of the spreadsheet model demands for the City of Banning, YVWD/Calimesa, and BCVWD from Tables 6-2, 6-5, and 6-7 presented previously. The imported water demands include from 3,816 to 7,912 AFY for banking and drought proofing. Table 6-8 also includes a projected amount of imported water for member agencies in SGPWA that are not currently taking SPW. These amounts were taken from SGPWA's 2015 UWMP. BCVWD believes these amounts are conservative considering the growth rates in the SGPWA Area.

Table 6-8 - Regional Summary of Spreadsheet Supply-Demand Model for SGPWA

Demand or Supply	Year					
	2018	2020	2025	2030	2035	2040
Potable Water Demand, Banning YVWD/Calimesa, BCVWD (Potable and Non-potable), AFY	21,135	21,890	24,659	28,540	31,662	33,799
Local Supply, Banning YVWD/Calimesa, BCVWD, AFY	16,949	17,470	17,949	18,454	19,061	19,504
Imported Water Demand, incl. drought proofing, etc., AFY	10,272	10,860	14,622	16,966	17,736	19,111
Total Imported and Local Supply, AFY	27,221	28,330	32,571	35,420	36,797	38,615
Total to (from) Regional Groundwater Storage, AF	6,085	6,440	7,912	6,880	5,135	3,816
Regional Groundwater Storage, not incl. SGPWA, AF	106,118	117,791	150,592	179,494	189,309	198,804
SGPWA Imported Water Demands for those agencies not currently taking imported water, from SGPWA 2015 UWMP, AFY		500	1,600	2,800	3,900	5,000
Total Imported Water Demand, AFY	10,272	11,360	16,222	19,766	21,636	24,087
Total Imported Water Demand, without banking or drought proofing, AFY	9,223	9,109	11,367	13,806	15,676	17,151

7. SGPWA AVAILABLE IMPORTED WATER

At the present time the "firm" supplies of imported water available to SGPWA, or in the final stages of being finalized, by Year 2040 are:

- Table A
- Yuba Accord Water
- SBVMWD (agreement is in final stages of development)
- AVEK (Nickel Water)
- Ventura/Casitas Water Lease/Purchase
- Delta Conveyance Project (DCP)
- Sites Reservoir (Sites)
- Purchase of State Water Project Contractors Incremental DCP Reliability Benefits
- Purchase or Leasing of Metropolitan's DCP Phase 2 Water
- Other Sources Available through SWP

These are discussed in White Paper No. 6, and reiterated in Table 6-8:

7.1 State Water Project (SWP) Table A

SGPWA's contract with the Department of Water Resources (DWR) states a Table A amount of 17,300 AFY. Table A is the maximum amount of water the SGPWA can convey through the SWP facilities. This amount of water is not available consistently every year. In fall of each year, DWR provides an initial delivery allocation as a percent of Table A depending on amount of water in reservoir storage and anticipated hydrologic conditions. The allocation can be increased or decreased depending on the precipitation during the winter; a final allocation is usually issued in spring and sets the amount of water available, as a percentage of Table A, from the SWP. Since 1992, the allocation has averaged about 65%. DWR has prepared a reliability study[10] which indicated the SWP can deliver only about 62% of Table A (10,726 AF to SGPWA) in any one year. Table B-5B, in DWR's Bulletin 132-17, forecasts the amount of SPW delivered to SGPWA in future years at 10,380 AFY.

In the discussions over the DCP, experts believe the current SWP reliability will decrease over time to 48%, or possibly even lower, due to anticipated additional regulatory constraints to protect threatened and endangered fish within the Delta. The length of time over which this decline in reliability will occur is not certain, but to be conservative, it is assumed that by 2035, the SWP reliability will decrease to 48%. Implementation of DCP by 2030 to 2035 is expected to restore reliability to above 60%.

For planning purposes in the WSA, the SWP delivery reliability is assumed to decline at a linear rate from 2020 to 2035. Therefore, by the Year 2035, with a delivery reliability of 48%, the SGPWA can expect only about 8,300 AFY from the SWP. Once the DCP is in place, the reliability will be restored, and possibly improved, over its current 62% reliability.

[10] DWR (2012). State Water Project Delivery Reliability Report 2011. State of California Dept. of Water Resources, June.

7.2 Yuba Accord Water

Through the Yuba Dry Year Transfer Program, the official name for Yuba Accord Water, SGPWA can purchase additional supplemental water from Yuba County Water District under an agreement.[11] The amount of water available from the Yuba Accord varies year to year depending on hydrologic conditions. Yuba Accord Water has only been available, for purchase by SWCs since about 2009. Delivery "loss" (termed "carriage cost" in DWR's Bulletin 132 series), in the Delta is typically assumed by DWR to be 20% of the delivered amount, adjusted as needed based on water quality considerations, plus an additional 2 to 3% Delta Conveyance "loss." Records in the Bulletin 132 series indicate that SGPWA purchased Yuba Accord Water in four years since 2009 although Yuba Accord Water was available every year from 2009 through 2015 except 2011. Purchases by SGPWA averaged 374 AFY, with deliveries averaging 280 AFY (25% loss).

The amount of Yuba Accord Water available depends on the calculated Sacramento Valley Water Year Index. Between 75,000 AFY (Dry Years) and 140,000 AFY may be available depending on the Water Year Index. If all 22 SWCs decide to participate in a given year, SGPWA's share of the Accord Water is 0.21%, based on the proportion of SGPWA's Table A and the Total Table A of all 22 participants. If some SWCs do not want to participate in a given year, the allocation to each SWC is adjusted upward. SGPWA would normally get 158 AFY during a dry year and a maximum of about 294 AFY.

The SGPWA estimates that about 300 AFY, on the average, of Yuba Accord Water can be obtained.[12] For purposes of this WSA, a conservative 30% total loss is assumed, which will reduce the amount that can be actually delivered to the Pass Area to 200 AFY. This is reasonable considering the past experience.

7.3 San Bernardino Valley Municipal Water District (SBVMWD Water)

The SGPWA Board of Directors authorized the General Manager to sign the Surplus Water Sale agreement with SBVMWD to purchase up to 5,000 AFY of SBVMWD's Table A water in years that SBVMWD's Board of Directors declares a surplus[13]. The availability of SBVMWD surplus water depends on hydrologic and groundwater conditions within SBVMWD's service area per SBVMWD Ordinance 79. SGPWA has the right of first refusal on the first 5,000 AFY of surplus water. Assuming SGPWA exercises the right, the agreement states that SBVMWD must first offer 50% of the available supply to one or both agencies that are in both SBVMWD and SGPWA, i.e. Yucaipa Valley WD and South Mesa Water Company. Fifty percent of the water and any additional water "left over," can be offered to other SGPWA retailers. The agreement is for a term of 15 years from the date of execution (terminates in 2033), but SGPWA intends to renegotiate the terms and extend to some point in the future. Execution of the agreement is anticipated soon.

SGPWA estimates, based on past hydrologic conditions, this is likely to occur about two years out of every five, or 40% of the time. This is equivalent to 2,000 AFY in any one year. The term

[11] DWR (2008). Agreement for the Supply and Conveyance of Water by the Department of Water Resources for the state of California to the Participating State Water Contractors under the Dry Year Water Purchase Program, March 31.
[12] Refer to Table 3-1 of SGPWA 2015 UWMP
[13] SGPWA Regular Board Meeting Minutes, October 16, 2017, page 4.

of this agreement will be at least 15 years from now or until about 2032.[14] For purposes of this WSA, the amount of water available from SBVMWD is 2,000 AFY until 2032.

7.4 AVEK-Nickel Water

In June 2017, SGPWA Board of Directors approved an agreement with the Antelope Valley-East Kern Water Agency (AVEK) for 1,700 AFY for 20 years (to 2037) with the right of first refusal to extend it for another 20 years. The water rights on the Kern River originally belonged to the Nickel Family, LLC that were sold to Kern County Water Agency (KCWA) and subsequently leased to other parties in various amounts. One portion (1,700 AFY) is under the control of AVEK, which offered the water to SGPWA. This water is not subject to the reliability issues of the SWP. Per the take-or-pay agreement, SGPWA must take all of the 1,700 AF each year or pay for 1,700 AF even if the SGPWA does not take all, or any portion, of it in any one year.

7.5 City of Ventura and Casitas Municipal Water District (Ventura Water)

The Ventura County Watershed Protection District is one of 29 State Water Contractors, but the agency lacks the infrastructure at present to be able to take its 20,000 AFY of Table A water. The County's Table A is allocated to three entities: City of Ventura (10,000 AFY), United Water Conservation District (5,000 AFY), and Casitas Municipal Water District (5,000 AFY). Up until 2018, these agencies sold their Table A water back to the "Turn-back Pool" (discussed later in this WSA). In 2018, the City of Ventura (Ventura) and Casitas Municipal Water District (Casitas MWD) entered into an agreement to exchange Table A water with SGPWA. BCVWD understands the SGPWA is also negotiating to enact an exchange of Table A water with Ventura (and possibly Casitas MWD) for year 2020.

The SGPWA may be considering extending it to a more long-term arrangement. The SGPWA Board of Directors, at the May 4, 2020 meeting, authorized the General Manager to sign the draft agreement presented at the board meeting and authorized staff to complete any and all actions required to document the CEQA exemption, including the filing of the Notice of Exemption, and develop and execute any agreements or documentation with DWR for the one-year deal.

Under the terms of the 2018 agreement, SGPWA received all of Ventura's and Casitas MWD's Table A water allocation for year 2018, or 5,250 AF considering the Department of Water Resources' 2018 final allocation at 35% (up from the original 30% in the draft agreement). SGPWA paid all of the Transportation Capital, Transportation Minimum, Conservation Capital and Conservation Minimum charges. Finally, each party to the agreement would be responsible for paying the variable costs for pumping the water to their respective service areas.

The SGPWA is obligated to return 40% of the Table A water taken from Ventura and Casitas MWD within 10-years, no later than the end of calendar year 2028. This amount would be from SGPWA's future Table A allocation, presumably during a "wet year". Ventura and Casitas MWD must initiate the request for return of the 40%, except they may not request return in any year that DWR has a Table A allocation of 30% or less. If the Table A allocation is between 30 and 50%, the two agencies will negotiate the delivery amount for that year. If there is any "balance"

[14] SGPWA 2015 UWMP

remaining after the 10-year period, the two agencies and SGPWA will negotiate alternative delivery methods which could include extension of the 10-year period by five years rolling the balance into a long-term exchange, should that develop.

The SGPWA is also considering a more long-term water transfer with a State Water Contractor for a portion of their unused SWP Table A allocation. Based on recent information published by SGPWA, it appears that supply would potentially start at approximately 6,000 AF on an average year in 2020 and might decline to 3,500 AF in 2040 as that potential partner agency utilizes more of their Table A supplies.

Currently, a one-year deal is in process, and it is believed that the SGPWA is pursuing a longer-term arrangement. For the purposes of this WSA, a conservative approach will be taken and no long-term arrangement will be in place.

7.6 Delta Conveyance Project (DCP), formerly California Water Fix (CWF)

The SWP was authorized in the Burns-Porter Act, also known as the California Water Resources Development Bond Act, passed by vote of the people in November 1960 (Proposition 1). Construction on most of the basic facilities of the SWP was completed by 1975. Due to cost considerations, and the fact that initial project water demands are lower than design capacity, a number of the originally planned facilities were "scaled down" or deferred. Many have not been constructed to date for various reasons. One of those projects was the Cross-delta Facility known as the Peripheral Canal. As a result of the scaling down and facility deferments/cancelations, the SWP is not able to live up to its original delivery capacity. A number of other facilities were scaled down, deferred, or not constructed.

The Sacramento-San Joaquin Delta levees are vulnerable to seismic shaking; the Delta ecosystem continues to decline; flooding and saline water intrusion into the Delta impacts the water quality delivered to municipal and agricultural users during dry years; climate change, whether short-term (50 or 100 years) or long term 500 or more years, will cause increased water levels in the Delta further stressing vulnerable levees. The SWP dams and reservoirs were designed about 50 years ago with the hydrology of the times. Climate change will impact the operation of the SWP. Precipitation, which used to fall as snow and be stored in snowpack, will be in the form of rain which the reservoirs were not designed to accommodate. More and more water will be lost to the ocean in future years because of increased runoff and less storage.

The Delta Conveyance Project (DCP), intended to address some of these issues, proposes a dual, gravity tunnel conveyance system from north of the Delta extending south to the Clifton Court Forebay. At the southerly end of the tunnels, a new Clifton Court Pumping Facility would lift water from the tunnels into Clifton Court Forebay. The water would be pumped from Clifton Court Forebay by the State and Federal Central Valley Project pumps as they now do. About 9,000 cfs would be diverted from the Sacramento River into the tunnels and around the Delta improving water supply reliability and export water quality TDS. The cost for the DCP was anticipated to be shared 55% by the State Water Contractors and 45% by federal Central Valley Project Contractors. This allocation share may change depending on the number of Central Valley Project Contractor participants.

Governor Newsom has stated his support for a "one-tunnel" DCP in his "State of the State"

address February 12, 2019. Originally planned as Phase 1 of the CWF.

The Delta Conveyance Project (DCP) is moving forward. On January 15, 2020 DWR issued a Notice of Preparation (NOP) for the environmental work on the reduced-size project which started the scoping comment phase. The scoping comment period ended April 17, 2020. DWR will be considering the comments when the Environmental Impact Report is prepared. The draft EIR is expected to be out for review and comment in early 2021.

The Delta Conveyance Project Authority has been established for the design and construction of the DCP. A Delta Conveyance Financing Authority has been established to develop the financing. The DCP is anticipated to be funded by revenue bonds issued by the State or a Jojnt Powers Financing Agency with payment by State Water Contractors south of the Delta through their existing contracts with the DWR – extended as needed into the future. In addition to other federal, State and local permits, DCP requires changes to the water rights permits for the State Water Project (SWP) Debt Service taxes. White Papers No. 3 and 6 provide more details on the funding, etc. The DCP is not expected to be operational until Year 2035. Until then, the reliability of the SWP would gradually degrade over time to 48% without the DCP due to a variety of reasons.

The original CWF with its two-tunnel approach was projected to increase the future reliability of the SWP by 14% (DWR study) to 17.62% (Metropolitan study) resulting in an increase of the overall reliability to 62% or, in the best case, 65.62%. This is at or slightly above the current reliability. It is not known to what amount of reliability increase will result from the new DCP but, to be conservative, it is assumed the reliability will be restored to 60 to 62%.

Without DCP, SGPWA's reliable Table A would be 8,300 AFY (rounded, based on 48% of 17,300 AFY). The reliable Table A supply for SGPWA would increase from 10,380 AFY to 10,726 AFY at 60% and 62% reliability, respectively.

7.7 Sites Reservoir

Sites Reservoir is a proposed reservoir that would be located at the site of a cattle ranch in the eastern foothills of the Central Valley about 78 miles northwest of Sacramento and north of the Sacramento-San Joaquin Delta near the Town of Maxwell, CA. Sites Reservoir is not on any major stream; all water must be pumped into the reservoir. Sites Reservoir was part of the original California Water Project, but was deferred. The reservoir in the original project proposal would have had a surface area of about 14,000 acres and store between 1.27 and 1.81 million acre-feet depending on final project. The estimated water yield would be between 470,000 to 640,000 acre-feet per year, depending on yearly rainfall and environmental regulations, according to DWR. The original project cost estimate was over $5 billion.

The Sites Project Authority, a Joint Powers Agency, was formed in 2010 to be a proponent and facilitator, to design and potentially acquire, construct, manage, govern, and operate Sites Reservoir and related facilities. Flood flows in the Sacramento River, over and above that needed to meet the demands of existing water rights holders, would be captured and pumped into Sites Reservoir. The Authority prepared a Value Planning Study in October 2019 to identify alternatives which would make the project more affordable. The Report was completed in April 2020 which scaled down the original project.

A preliminary analysis indicated that reservoir sizes of 1.3 to 1.5 million acre-feet (MAF) with assumed diversion criteria would be able to provide enough water to meet current participant demands. The Tehama-Colusa Canal and the Colusa Basin Drain would be used as the conveyance systems. The recommended project includes 1.5 MAF and 1,000 cfs of release capacity into the Sacramento River or to the Colusa Basin Drain at Dunnigan, and 243,000 AFY long term yield, was estimated at a cost of $3.0 billion.

The project Authority stated the 21 agencies put up $27 million for planning and studies with another $19 million due October 2020 to continue the process. Sites reservoir was approved by the California Water Commission (CWC) for $816 million of Proposition 1 funding on July 24, 2018. The CWC also agreed to provide $40.8 million in early funding to assist in completing the needed environmental analyses and obtain permits.

SGPWA has made a financial commitment of 10,000 AF and BCVWD has committed to 4,000 AF (total 14,000 AF) to the Sites Project Authority to fund Phase 1 of the Sites Reservoir Study. Reliability is between 65% (worst-case) and 100%[15]. The result is 9,100 AFY at 65% reliability.

Sites Reservoir will not produce water until about Year 2030; however, costs will be incurred by project participants moving forward. For the purposes of the WSA analysis it is assumed that water will not be available until 2035. The Authority's current plan will finance Phase 2 costs on a year-by-year basis.

The Sites Reservoir Project Authority is working closely with the federal Bureau of Reclamation to secure Bureau participation and funding which will reduce the cost to the participants. It is believed that the Authority would be responsible for 60% of the project cost, and the remainder from the State and federal agencies. This may change since the Authority anticipated slightly more Proposition 1 funding than the $816 million.

Although the Sites Reservoir is not expected to deliver water for another 15 years, currently the project is moving forward and is named in the Governor's Water Resiliency Plan. The project has been awarded a substantial CWC Proposition grant. The Sites Project Authority is continuing to refine its financing plan to fund the study phases. The reservoir is an "off-stream" reservoir giving it a reduced environmental footprint. Although there is some risk in the implementation, with each study phase completed the risk becomes less and the project is more certain.

7.8 Sale of State Water Project Contractors Restoration of DCP Reliability Benefits

All 'South of the Delta' SWP Contractors pay their proportionate share of the DCP costs. With the implementation of the DCP, there will be an increase in SWP reliability. Although all of the "South of the Delta" SWP Contractors will be paying their proportionate share of the DCP, for various reasons, a few SWP Contractors may not need the benefits of the increased yield and may be interested in transferring (selling) their incremental yield to other interested SWP Contractors, such as SGPWA. Currently, not enough is known about the sale of incremental yield and, therefore, will not be considered until it is better defined.

[15] See White Paper No. 1, Table 3

7.9 Purchase or Leasing of Metropolitan's Original CWF Phase 2 Water

With original CWF 2-tunnel, 2-phase concept, Metropolitan Water District of Southern California (Metropolitan) board of Directors voted to fund their share of the original CWF plus agreeing to fund the second phase of the CWF (second tunnel), i.e. the Central Valley Project share. This would have made water available for Metropolitan to sell/lease to other interested parties, e.g. SGPWA. With the DCP scaled down to one tunnel, this does not appear to be an option any longer.

7.10 Other Sources of Imported Water

There are other sources of water available through the SWP which include:

7.10.1 Article 21 Water

Article 21 Water is water that is offered for purchase by DWR resulting from reservoir releases needed to accommodate impending storm or snowmelt runoff when water is still available after operational requirements for SWP water deliveries, water quality and Sacramento-San Joaquin Delta requirements are met. This water is available only on short notice and must be taken immediately. BCVWD has capacity in its groundwater recharge facility to accommodate Article 21 Water. SGPWA is constructing their own Fiesta Recharge Facility which can be used for Article 21 Water. Article 21 Water is in addition to the State Water Contractor's Table A amount.

An analysis of Article 21 Water availability indicated the amount available is highly variable and there is competition for the water. If the requests for purchase are greater than the available amount, it is typically allocated on the basis of the requestors' Table A. A review of recent purchases from 2002 to 2015, with up to 17 "buyers," indicated that if SGPWA were a purchaser, their share would be about 0.5% of the total available. (The large agencies tend to dominate the purchases.) Table 7-2 presents an analysis of Article 21 Water availability to SGPWA based on DWR records from 1969 – 2015. Two periods of time were analyzed: total record and recent record.

Table 7-1 - Estimated Amount of Article 21 Water Available to SGPWA Based on 0.5% of Total Available AF

	1969-2015	2001- 2015
Average, AFY	939	824
Median, AFY	362	216
Maximum, AFY	4,542	3,655
75th Percentile, AFY	1,544	1,550

Article 21 water was available during the heavy snowfall year 2018-19 although the SGPWA was not able to take advantage of this since the BCVWD connection was out of service due to construction of the expanded turnout and the SGPWA's Fiesta Recharge Facility was not operational.

7.10.2 Turn-back Pool Water

Turn-back Pool Water is water that other State Water Contractors have ordered from DWR as part of their Table A entitlement, but decided they did not need the water that particular year and sold it back to DWR. DWR in-turn offers it for purchase at a relatively low set price to other State Water Contractors. Turn-back Pool Water has only been available since about 1996 following the Monterey Amendments to the State Water Contracts. Analysis of the data from 1997 through 2015, shows SWCs sold an average of 59,000 AFY of water back to the "pool" for purchase by other interested SWCs. (The median value was 29,770 AFY). Purchase of Turn-back pool water is also competitive, depending on hydrologic conditions. Assuming SGPWA's share is 0.5% based on the analysis of Article 21 Water, 295 AFY on the average could be purchased (149 AFY median). It would be reasonable that SGPWA could rely on about 200 AFY of Turn-back pool water.

7.10.3 Short-term or Long-term Water Transfers or Exchanges

Short-term or Long-term Water Transfers or Exchanges is water that can be obtained through exchanges and transfers from other State Water Contractors who do not need all of their Table A water in a given year or years. There are opportunities almost every year.

7.10.4 Recommendations for SGPWA

There is considerable competition for the Turn-back Pool and Article 21 Water and its availability is uncertain from year to year. SGPWA can take advantage of this water whenever it is available, and can consider short term transfers whenever available. Transfers of SWC Table A is subject to the SWP delivery reliability.

7.11 Summary of Available Imported Water Supplies

Table 7-2 summarizes the range of imported water supplies available to SGPWA based on the current and potential sources presented above. Agreements are in place for Ventura- Casitas, AVEK-Nickel Water, and SBVMWD Surplus Water. SGPWA is one of the 22 SWCs that has signed on to the Yuba Accord. Their share of the Yuba Accord Water is 0.21% of the available

water. In addition, through their State Water Contract, SGPWA can purchase Article 21 Water and Turn-back Pool Water.

The SGPWA has agreed to support the original CWF and participate in its funding, and it is assumed the SGPWA will support the DCP. BCVWD and SGPWA have made financial commitments to Sites Reservoir, and currently plan to contribute to future phases of the Sites Reservoir project.

Table 7-3 presents a summary of current and projected SGPWA imported water supplies, through 2040 in 5-year increments based on the yields in Table 7-2. Figure 5 shows the sources of imported water supply and the regional imported water demand with and without banking and drought proofing.

Table 7-2 - SGPWA Current and Projected Available Imported Water Supply through 2040

Source	Low Yield Case, Annual Amount, AFY	High Yield Case, Annual Amount, AFY	Comment
Existing Table A	8,300	10,380	17,300 AFY but only 60% reliable (10,380 AFY) per Bulletin 132; to degrade to approximately 48% (8,300 AFY) without Delta Conveyance Project (DCP) by 2035
Yuba Accord	200	200	When available, represents average per year
San Bernardino Valley MWD Surplus Table A Water (SBVMWD Water)	2,000	2,000	Up to 5,000 AFY available estimated 2 out of every 5 years (40%) of time = 2,000 AFY; agreement terminates in 2032, but can be extended.
Antelope Valley East Kern Water Agency (AVEK) Nickel Water, (AVEK Nickel Water)	1,700	1,700	20-year agreement terminates in 2037 with option for a 20-year extension
Additional Table A SGPWA Partner Agency	500	3,000	Looking at extended exchange agreement with Additional Table A SGPWA Partner Agency to utilize unused Table A. Estimated to be net 3,000 AFY initially to 500 AFY by 2040.
Article 21 Water Purchase	800	800	Variable, represents average per year
Turn-back Pool Purchases	200	200	Variable, represents average per year
Delta Conveyance Project (DCP)	0	0	Will increase reliability of State Water Project (SWP) back to 60 to 62%
Sites Reservoir	9,100	14,000	Worst case with 65% assumed reliability. (BCVWD has committed to 4,000 AFY of the 14,000 AFY)
Total Imported Water Potentially Available	22,800	32,280	

Table 7-3 - Regional Summary of SGPWA Imported Water Supply, AFY

Source	Year					
	2018	**2020**	**2025**	**2030**	**2035**	**2040**
Imported Water Demand Table 6-8	10,272	11,360	16,222	19,766	21,636	24,087
Imported Water Demand, Table 6-8, without banking or drought proofing	9,223	9,109	11,367	13,806	15,676	17,151
Table A	10,380	10,135	9,524	8,912	8,300	8,300
Yuba Accord	200	200	200	200	200	200
AVEK Nickel	1,700	1,700	1,700	1,700	1,700	
SBVMWD	2,000	2,000	2,000	2,000		
Ventura-Casitas	5,250		(2,100)			
Subtotal	19,530	14,035	11,324	12,812	10,200	8,500
Extension of SBVMWD Agreement (potential)					2,000	2,000
Extension of AVEK Nickel agreement						1,700
Article 21 Water Purchases		800	800	800	800	800
Turn-back Pool Water Purchases		200	200	200	200	200
Additional Table A SGPWA Partner Agency Side Deal		3,000	2,500	2,000	1,500	500
Subtotal	19,530	18,035	14,824	15,812	14,700	13,700
DCP Reliability Recovery to 60% (worst case)					2,080	2,080
Sites Reservoir (worst case)					9,100	9,100
Total Imported Water Supply	19,530	18,035	14,824	15,812	25,880	24,880

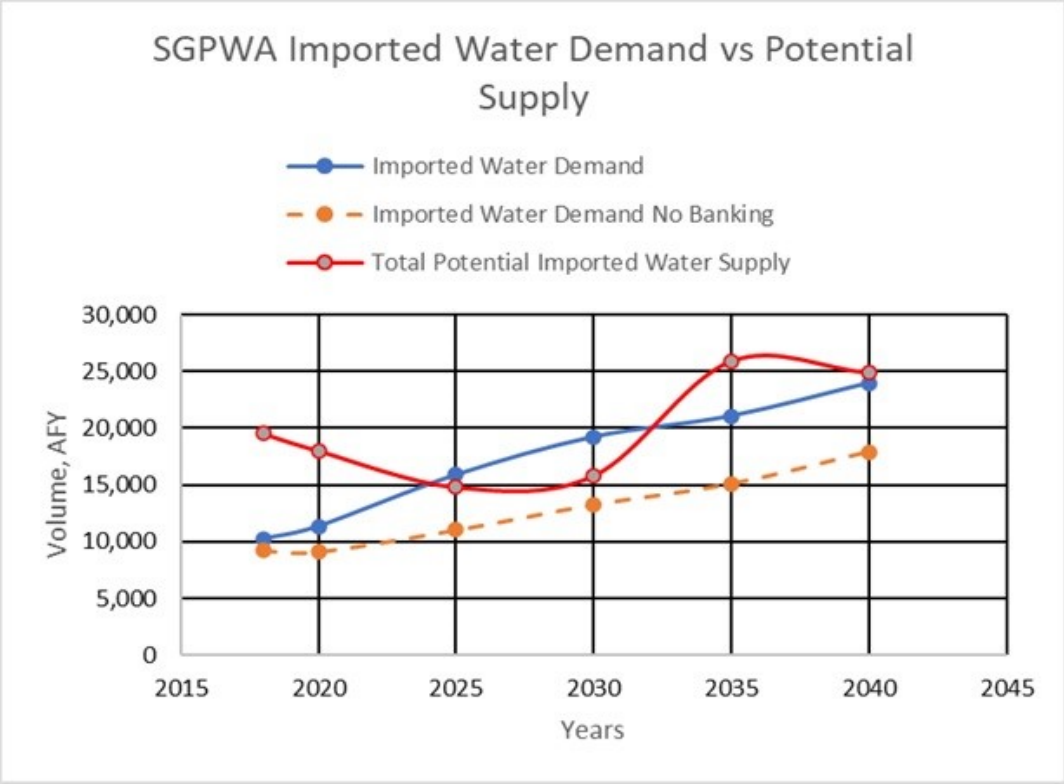


Figure 5
SGPWA Imported Water Sources and Demand to 2040 (Worst Case Conditions)

Until 2025, SGPWA has sufficient imported water to meet the demands of the City of Banning, BCVWD, YVWD/Calimesa as well as the demands from those SGPWA members currently not taking imported water. (Those agency total demands are shown in Table 6-8.) BCVWD has determined these are very conservative and it is unlikely that these areas will be developing to require those demands within the timeframe shown. It would be reasonable to believe that the Yucaipa/Calimesa to Banning area will develop more fully before moving into these outlying areas. Nevertheless, Table 6-8 shows that about 6,000 AFY will be banked regionally by the water suppliers between now (2020) and 2025, which is about 30,000 AF of additional water in storage for a total of 150,592 AF in storage by year 2025.

From 2025 to 2035 (when DCP and Sites Reservoir become operational), adequate imported water supply will be available to meet the imported water demands but with reduced amounts available for banking. The region's member agencies would still have nearly 145,000 AF in banked storage which could be used if needed. In a normal year, banking would continue in 2030, but at slightly reduced annual amounts until DCP and Sites Reservoir come on-line.

7.12 Contingency Plan

It is recognized that DCP and Sites could be delayed or perhaps reduced in size and capacity. But, as these projects go through the design and permitting process over the next few years, these risks will be assessed. SGPWA can take action to supplement its existing supply with short-term exchanges and transfers from other agencies. If it is evident that DCP and/or Sites

Reservoir will be delayed indefinitely, the short-term exchanges and transfers can be converted to long-term transfers. An option is to extend the AVEK-Nickel Water Agreement for another 20 years to 2057 as allowed in the existing agreement. Another option is participating with other local agencies in other water resource projects such as groundwater, brackish water, or sea water desalination projects with water exchanges.

8. WATER SUPPLY AND DEMAND FOR BCVWD

Section 6.1.3 presented the water demand and water supply requirements, including imported water, under average hydrologic conditions for BCVWD. Section 7 quantified the imported water demands on the SGPWA from BCVWD and the other member agencies of the SGPWA. As presented in Section 7 and Figure 5, SGPWA will have enough, or has made commitments for or taken steps to acquire, imported water supply to meet its needs to year 2040 and beyond. Since BCVWD's demands and imported water requirements are included in SGPWA's demands, including imported water, it can be concluded that BCVWD has sufficient supply and imported water to meet demands beyond 2040 under average demand and supply conditions.

It should be pointed out that 28.6% of the Sites Reservoir Project yield, (4,000 AFY/14,000 AFY) shown in Figure 5 above, is committed to BCVWD by virtue of BCVWD's financial commitment to the Sites Reservoir Project Phase 1 and Phase 2 - 2019. Figure 6 shows BCVWD's demand is less than the available supply. Figure 6 is based on the data in Table 6-7. Figure 7 shows the accumulated volume in BCVWD's Beaumont Basin groundwater storage account. By 2040, the storage account is almost full (77,294 AF in storage). Table 6-7 indicates that BCVWD's imported water demand will be 10,707 AFY in 2040; this means that BCVWD is projected to have 7.2 years of imported water demand in storage which can be used to supply water during drought periods even if no SPW is available.

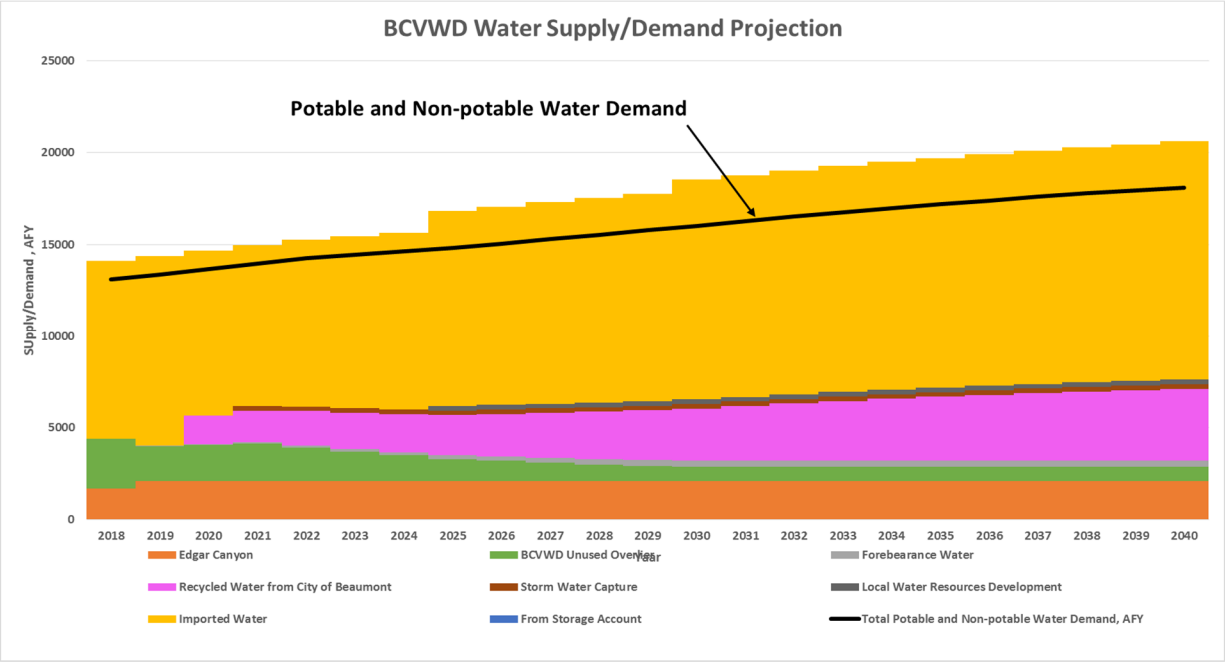


Figure 6
BCVWD's Water Supply and Demand Projection to 2040

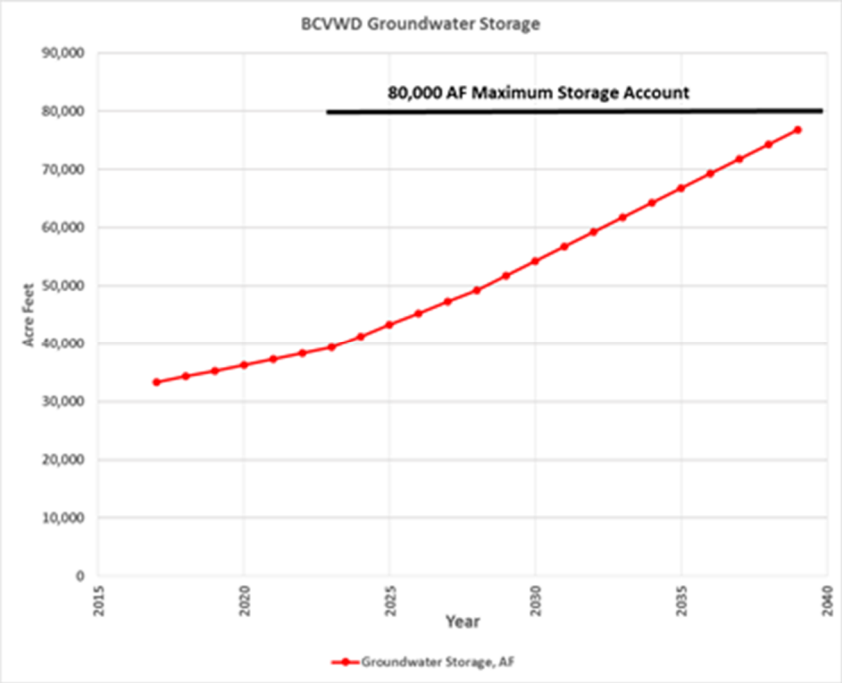


Figure 7
BCVWD's Groundwater Storage Balance to 2040

9. WATER SUPPLY SINGLE AND MULTIPLE DRY PERIOD ANALYSIS

The previous sections in this WSA analyzed a typical, normal or average, water supply year. The previous sections demonstrated there is adequate water supply both regionally and for BCVWD to meet the needs provided the projects and agreements identified are implemented. But, in addition to a "normal" year, the WSA requires a supply sufficiency analysis for critical dry year and multiple dry year conditions. The water supply conditions for these periods are presented in BCVWD's 2015 UWMP, Section 7, Water Supply Reliability Assessment. Key tables and information are extracted from the 2015 UWMP to support the analysis presented herein and updated. The scenarios evaluated in this section include:

- Single Critical Dry Year -- the lowest water supply available to BCVWD, a worst-case condition
- 2 Consecutive Dry Years -- the lowest average available water supply over a 2-year period
- 3 Consecutive Dry Years-- the lowest average available water supply over a 3-year period
- 6 Consecutive Dry Years-- the lowest average available water supply over a 6-year period

BCVWD will be relying on banked water to provide the major portion of the supply during these periods.

BCVWD enjoys the benefits of a groundwater basin (Beaumont Basin) with very large storage capacity. BCVWD and its neighboring agencies in the San Gorgonio Pass Area take advantage

of this by banking imported water during wet years for use during extended droughts. Complementing the large storage capacity is the fact that percolation and recharge occur at relatively high rates. It is very easy to "bank" water in the Beaumont Basin. It is retained in the Basin due to well-managed groundwater levels, and the ample storage capacity. Figure 8 shows the amount of water BCVWD has accumulated in its storage account since 2003. Imported water began to be spread in 2006. As of the end of 2018, there were 34,794 AF in storage. BCVWD's current maximum storage capacity is 80,000 AF. The figure shows the drop in storage in response to the drought in 2015 when there was very little imported water available for recharge and banking.

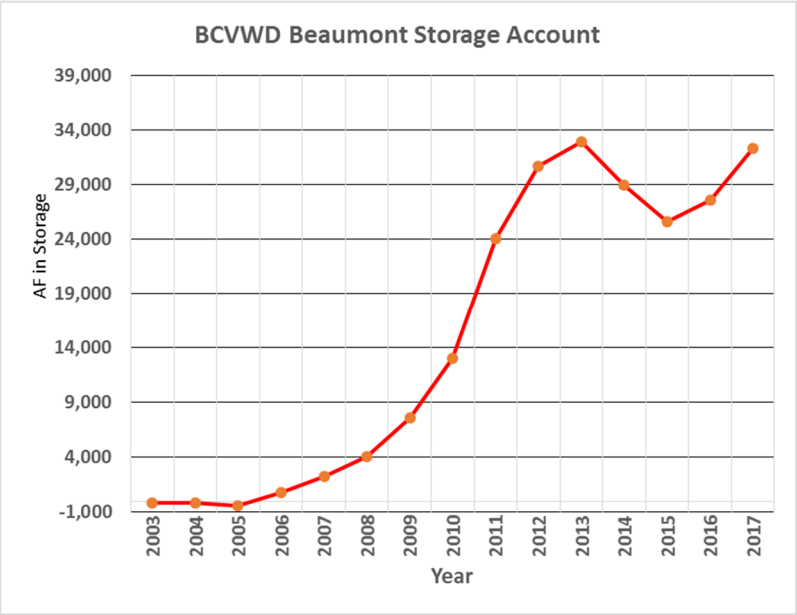


Figure 8
BCVWD Historic Beaumont Basin Groundwater Storage Account

9.1 Water Source Availability

The amount of water available during the dry periods from BCVWD's water sources are presented below.

9.1.1 Groundwater

9.1.1.1 Beaumont Basin

The Beaumont Basin is managed by the Beaumont Basin Watermaster under the principles of the Adjudication.

In any given year, BCVWD can pump out its stored (banked) water. The storage is replenished, at least partially, every year by forbearance water, reallocated unused Overlying Party pumping rights, and imported water when available. Recharge, using advanced treated recycled water from the City of Beaumont, will occur in the future. The amount of imported water that can be recharged in any year depends on DWR's SWP allocation. This varies from year to year.

The amount of unused Overlying Party rights is based on a 5-year moving average and could decrease slightly during drought periods as the Overlying Parties use more groundwater to compensate for the lack of rainfall. The forbearance water will decrease during dry periods as users reduce water consumption.

Table 9-1 shows the estimated amount of water credited to BCVWD by Watermaster for a single or multiple dry year analysis. For the dry year analysis, it was estimated that there would be a 15% conservation effect; in other words, for dry year analysis, only 85% of average annual forbearance, reallocated Overlying Party rights, etc. would be available. In Table 9-1 the 15% reduction factor is also applied to the recycled forbearance water to account for a potential reduction in treated wastewater due to water conservation effects.

Table 9-1 - Summary of BCVWD's Forbearance and Reallocated Overlier Pumping Rights

Item	2019	2020	2025	2030	2035	2040
Total Allocated Overlying Party Rights, and Forbearance Water from Table 6-7, AFY	1,905	2,012	1,400	1,100	1,100	1,100
Expected to be Available for Single and Multiple Dry Year Analysis, AFY	2,300	1,710	1,190	935	935	935

9.1.1.2 Edgar Canyon

Groundwater from Edgar Canyon is affected to some degree by climate. The average annual extraction from Edgar Canyon is 2,094 AFY (rounded to 2,100 AFY) based on records from 1983-2019. During that period of time the minimum extracted was 1,117 AFY, which occurred in 1991. This can be considered the "Single Dry Year Water Available." The 2-year, 3-year, and 6-year moving averages for the extractions from 1983-2019 were determined and are presented in Table 9-2 along with the Base Period for moving averages.

Table 9-2 - Groundwater Available from Edgar Canyon for Single and Multiple Dry Year Analysis

Drought Condition (Base Years)	Average Available over the Drought Period, AFY
Single Dry Year (1991)	1,117
2 Consecutive Dry Years (1990 – 91)	1,173
3 Consecutive Dry Years (1989 – 91)	1,230
6 Consecutive Dry Years (1987 – 92)	1,367

9.1.2 Imported Water

The amount of imported water available from the SGPWA via the State Water Project is climate dependent. A spreadsheet was developed using the 2015 DWR Delivery Capability Report simulation data (1922 to 2003) for SGPWA to develop an estimate of the delivery capability for the single dry year and multiple dry year reliability analysis. The 2-, 4-, and 6-year moving averages of annual estimated delivery allocations were determined for the period 1922-2003. A summary of the Table A delivery percentages is shown in Table 9-3.

Table 9-3 - SGPWA SWP Delivery Capability as Percent of Table A (Based on 2017 DWR SWP Delivery Capability Report)

Dry Year(s)	Single	2-year	4-year	6-year
Table A Annual Delivery Average Over the Drought Period, %	8	14	16	13

The percentages in Table 9-3 were compared to actual SWP delivery allocations for the period 1992 to 2020, a 28-year period:

Minimum year	5% (2014)
Minimum 2 consecutive years	12.5% (2014-15)
Minimum 3 consecutive years	20% (2013 – 15)
Minimum 6 consecutive years	40% (2013 – 18)

The actual minimum year and minimum 2 and 3 consecutive years allocation percentages are less than those reported in the 2017 DWR SWP Delivery Capability Report. The 2017 Report replaced the 3-year statistic with a 4-year statistic but is conservatively assumed to be an equivalent measure. Therefore, for the reliability analysis in the BP WSA, the lowest allocation percentages were used, as shown in Table 9-4:

Table 9-4 - SGPWA SWP Delivery Capability as Percent of Table A (Used for WSA Reliability Analysis)

Dry Year(s)	Single	2-year	3-year	6-year
Table A Annual Delivery Average Over the Drought Period, %	5	12.5	16	13

It should be noted that not all SGPWA imported water sources will be available during extended dry periods.

Yuba Accord Water is a dry-year program of which SGPWA can expect 200 AFY during dry years. AVEK-Nickel Water is “South of the Delta” water and is not affected by DWR’s SWP reliability

issues and is available every year until termination of the existing agreement in 2037. The Delta Conveyance Project reliability recovery water and the Delta Conveyance Project Side Deals would be available during extended dry periods but are subject to the average Table A delivery percentages as SPW in Table 9-4.

During dry periods San Bernardino Valley MWD Surplus Water, Article 21 water, and Turn-back Pool Water would likely not be available and should not be counted on for supply. Similarly, the availability of short and long term exchanges are unlikely, which would also include any additional Table A Water should SGPWA be able to secure a long-term exchange contract with the Additional Table A SGPWA Partner Agency.

The Sites Reservoir Project was designed to be a dry period flow augmentation project. Excess storm flows in the Sacramento River are diverted and pumped into Sites Reservoir, stored, and released back into the Sacramento River during dry periods. Data from the Sites Project Authority submitted with their application to the California Water Commission for Proposition 1 Funding was used to determine the amount of water which could be depended on during dry periods. Figure 9 (borrowed from Sites Reservoir Project Authority's Proposition 1 Application Executive Summary) shows the dry year benefits based on 82 years of hydrologic simulation using the CalSim II Model[16].

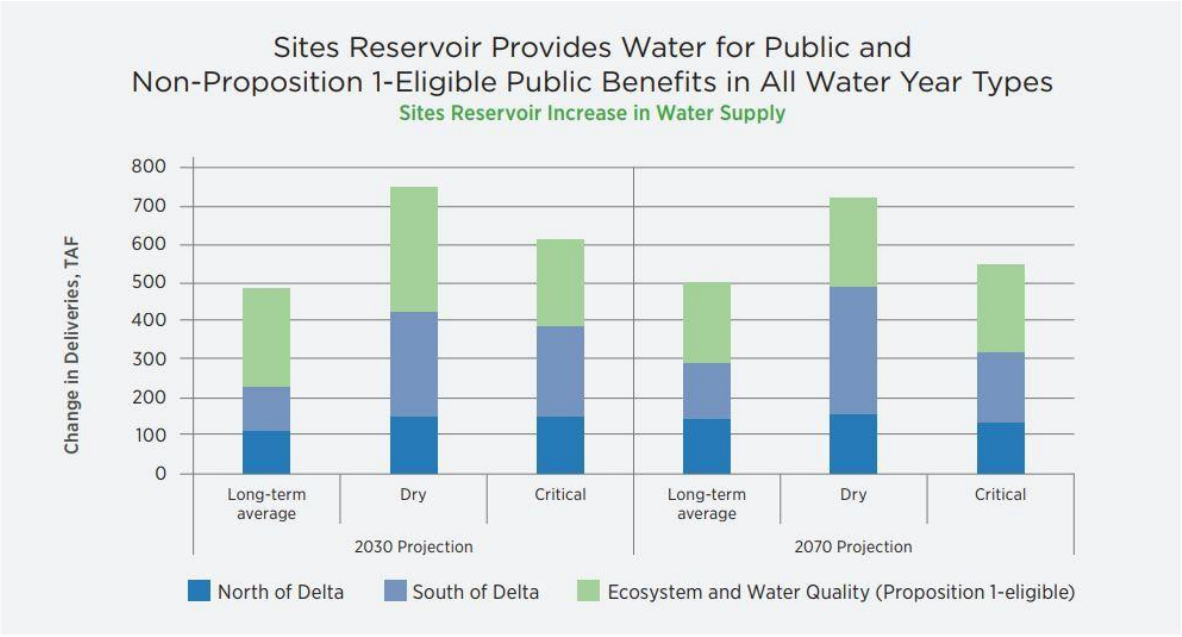


Figure 9 - Sites Reservoir Available Water 2030 and 2070

Attachment D9, prepared by the Sites Project Authority, in response to questions from the California Water Commission, February 23, 2018, provided a breakdown of the estimated amounts of Sites Project Water which would be delivered to the project participants. Table 9-5 presents a summary of the preliminary estimates of Sites Reservoir Water available to SGPWA.

[16] Sites Project Authority (2017). Sites Project Executive Summary for California's Water Storage Investment Program, August 14.

It is important to note this is a preliminary estimate developed prior to the Value Planning Analysis.

The modeling that was performed for the application was prescribed by the California Water Commission and includes the effects of climate change. For the analysis in the BP WSA, the year 2030 values will be used for 2030 through 2040. The "critical" volume will be used for all the dry period analyses to be conservative.

Table 9-5 - SGPWA Preliminary Amount of Sites Reservoir Water Available, AFY

Development Condition	82-year Simulation (Average)	Water Year Type				
		Wet	Above Normal	Below Normal	Dry	Critical
Current	8,400	2,700	2,900	5,600	19,000	13,800
2030	9,500	3,000	7,700	7,400	18,000	16,400
2070	11,400	5,400	7,300	11,500	17,900	17,200

Source: Attachment D9 of Sites Project Authority response to California Water Commission comments on Proposition 1 Application February 23, 2018.

Tables 9-6 through 9-9 present a summary of the imported water supply to the SGPWA for the single dry year, and 2, 3 and 6 consecutive year dry periods.

Table 9-6 - Regional Summary of SGPWA Imported Water Supply Single Dry Year, AFY

Source	Year				
	2020	2025	2030	2035	2040
Table A	17,300	17,300	17,300	17,300	17,300
Allocation (5%)	865	865	865	865	865
Yuba Accord (Dry Year Program)	200	200	200	200	200
AVEK Nickel (Not Affected)	1,700	1,700	1,700	1,700	1,700
Subtotal	2,765	2,765	2,765	2,765	2,765
DCP Allocation (5% of Reliability Recovery, 2080 AFY)				104	104
Sites Reservoir Critical Dry Period				16,400	16,400
Total Imported Water Supply	2,765	2,765	2,765	19,269	19,269

Table 9-7 - Regional Summary of SGPWA Imported Water Supply Two Consecutive Dry Years, AFY

Source	Year				
	2020	2025	2030	2035	2040
Table A	17,300	17,300	17,300	17,300	17,300
Allocation (12.5%)	2,163	2,163	2,163	2,163	2,163
Yuba Accord (Dry Year Program)	200	200	200	200	200
AVEK Nickel (Not Affected)	1,700	1,700	1,700	1,700	1,700
Subtotal	4,063	4,063	4,063	4,063	4,063
DCP Allocation (12.5% of Reliability Recovery, 2080 AFY)				260	260
Sites Reservoir Critical Dry Period				16,400	16,400
Total Imported Water Supply	4,063	4,063	4,063	20,723	20,723

Table 9-8 - Regional Summary of SGPWA Imported Water Supply Three Consecutive Dry Years, AFY

Source	Year				
	2020	2025	2030	2035	2040
Table A	17,300	17,300	17,300	17,300	17,300
Allocation (16%)	2,768	2,768	2,768	2,768	2,768
Yuba Accord (Dry Year Program)	200	200	200	200	200
AVEK Nickel (Not Affected)	1,700	1,700	1,700	1,700	1,700
Subtotal	4,668	4,668	4,668	4,668	4,668
DCP Allocation (16% of Reliability Recovery, 2080 AFY)				333	333
Sites Reservoir Critical Dry Period				16,400	16,400
Total Imported Water Supply	4,668	4,668	4,668	21,401	21,401

Table 9-9 - Regional Summary of SGPWA Imported Water Supply Six Consecutive Dry Years, AFY

Source	Year				
	2020	2025	2030	2035	2040
Table A	17,300	17,300	17,300	17,300	17,300
Allocation (13%)	2,249	2,249	2,249	2,249	2,249
Yuba Accord (Dry Year Program)	200	200	200	200	200
AVEK Nickel (Not Affected)	1,700	1,700	1,700	1,700	1,700
Subtotal	4,149	4,149	4,149	4,149	4,149
DCP Allocation (13% of Reliability Recovery)				270	270
Sites Reservoir Dry Period				16,400	16,400
Total Imported Water Supply	4,149	4,149	4,149	20,819	20,819

Table 9-10 presents a summary of total SGPWA regional imported water demand and the imported water supply available during the single and multiple dry years. The demand does not include the "banking" demand, since "banking" would not be occurring during years when imported water supply is reduced. Table 9-10 shows the conditions when the imported water demand exceeds the supply which will require SGPWA's member agencies, like BCVWD to withdraw water from their storage account. The supply of imported water is less than the demand until Sites Reservoir comes on-line about year 2035.

Table 9-10 - Summary of SGPWA Regional Imported Water Supply and Demand Single and Multiple Dry Years

Source	2020	2025	2030	2035	2040
Demand without Banking or drought proofing (Tables 6-8, 7-4), AFY	9,109	11,367	13,806	15,676	17,151
Total Supply					
Single Dry Year (Table 9-6), AFY	2,765	2,765	2,765	19,269	19,269
2 Consecutive Dry Years (Table 9-7), AFY	4,063	4,063	4,063	20,723	20,723
3 Consecutive Dry Years (Table 9-8), AFY	4,668	4,668	4,668	21,401	21,401
6 Consecutive Dry Years (Table 9-9), AFY	4,149	4,149	4,149	20,819	20,819

When the demand for imported water exceeds the supply, it is reasonable to assume the imported water will be allocated in proportion to the member agency's fraction of the total imported water demand without banking. Table 9-11 shows the allocation percentages.

Table 9-11 - Member Agency's Percent of Available Imported Water When Demand Exceeds Supply

Agency	Year				
	2020	2025	2030	2035	2040
City of Banning	0	0	0	0	5.8%
YVWD/Calimesa	6.7%	6.7%	7.0%	7.6%	8.4%
BCVWD	87.8%	79.2%	72.8%	67.5%	62.4%
Other Member Agencies	5.5%	14.1%	20.3%	24.9%	29.2%
Total	100%	100%	100%	100%	100%

Table 9-12 shows the estimated amount of imported water BCVWD can expect during single and multiple dry year periods based on the amount of imported water presented in Table 9-10 and the allocation percentages in Table 9-11.

Table 9-12 - BCVWD Available Imported Water During Single and Multiple Dry Year Periods

Scenario	Year				
	2020	2025	2030	2035	2040
Single Dry Year, AFY	2,428	2,189	2,012	13,011	12,029
2 Consecutive Dry Years, AFY	3,568	3,217	2,956	13,993	12,937
3 Consecutive Dry Years, AFY	4,100	3,696	3,396	14,451	13,360
6 Consecutive Dry Years, AFY	3,644	3,285	3,018	14,058	12,997

9.1.3 Recycled Water

Recycled water from the City of Beaumont is consistently available; although during droughts, consumers are more aware of water conservation and reduce their indoor water consumption somewhat. They are more aware of the need to do only full loads of laundry, full loads for the dishwasher, etc. Agencies, including the City of Beaumont, have observed a reduction in wastewater flows during the recent drought.

The average year amount of recycled water from the City of Beaumont is taken from Table 6-7. As stated in the discussion for Table 6-7, the total wastewater produced by the City is reduced by 1.8 mgd for habitat maintenance, and a capacity factor of 75% was applied to the remaining water to account for brine and other losses. For a single dry year, an estimate of 90% of the normal, average recycled water will be available. As the drought becomes more pervasive, the amount of recycled water is estimated to reduce further to 85% of normal. Table 9-13 provides an estimate of the available recycled water during extended dry periods from the City of Beaumont.

Table 9-13 - BCVWD Available Recycled Water During Single and Multiple Dry Year Periods

Agency	Year				
	2020	2025	2030	2035	2040
Average Year (Table 6-7), AFY	1,556	2,188	2,840	3,487	3,930
Single Dry Year (90%), AFY	1,400	1,970	2,555	3,135	3,535
2, 3, and 6 Consecutive Dry Years (85%), AFY	1,320	1,860	2,415	2,960	3,340

9.1.4 Storm Water and Other Local Water Resources

Storm water and Urban Runoff quantities are dependent on rainfall. Review of the rainfall record at Beaumont for the period 1888 – 2006 resulted in the data shown in Table 9-14. To determine the multiple dry year rainfall as a percent of the average rainfall, the 2-, 3-, and 6-year moving averages of the annual rainfall was determined.

Table 9-14 - Ratio of Dry Period Precipitation to Average Precipitation at Beaumont and Estimated New Water from Storm Water Capture and Local Water Resource Projects

Dry Year(s)	Single	2-year	3-year	6-year
% of Annual Average	36%	45%	45%	65%
Total Storm water Capture, beginning 2021, 250 AFY	90	110	110	160
Total Local Water Resource Projects, beginning 2025, 250 AFY	90	110	110	160

9.2 Water Demands During Critical and Multi-year Dry Periods

Table 6-7 showed the average BCVWD water demands (potable and non- potable). These demands are used in the Dry Period Reliability Analysis below for the 1, 2, and 3 consecutive year dry periods, primarily because there may not be enough time to implement water demand restrictions and see the effect of these restrictions on demand. However, for the 6 consecutive year dry period, it is assumed the water shortage contingency planning actions set forth in Section 8 of BCVWD's 2015 UWMP would be in effect and at least a 15% reduction in demand would be obtained. This is over and above the nominal water conservation efforts envisioned in the development of the average demands in Table 6-7. Water supply for single dry year, 2 consecutive dry years, 3 consecutive dry years, and 6 consecutive dry years are presented in Tables 9-15 through 9-18 respectively.

Table 9-15 - BCVWD Water Supply Summary – Critical Dry Year

Single Dry Year						
	YEAR					
	2020	2022	2025	2030	2035	2040
DEMAND						
Total Water Demand	13,668	14,498	15,188	16,584	17,772	18,337
SUPPLY						
Groundwater						
Edgar Canyon, AFY	1,117	1,117	1,117	1,117	1,117	1,117
Beaumont Basin, Allocated Overlier Pumping Rights and Forbearance Water, AFY	1,710	1,502	1,190	935	935	935
Storm Water, AFY	90	90	90	90	90	90
Other Local Water Resource Projects, AFY	90	90	90	90	90	90
Recycled Water, AFY	1,400	1,628	1,970	2,555	3,135	3,535
Imported SPW,AFY	2,428	2,332	2,189	2,012	13,011	12,029
Subtotal Supply, AFY	6,835	6,579	6,646	6,799	18,378	17,796
From Banked Beaumont Basin Storage, AF	6,833	7,739	8,542	9,785	-606	541

Table 9-16 - BCVWD Water Supply Summary – 2 Consecutive Dry Years

2 Consecutive Dry Years						
	YEAR					
	2020	2022	2025	2030	2035	2040
DEMAND						
Total Water Demand	13,668	14,498	15,188	16,584	17,772	18,337
SUPPLY						
Groundwater						
Edgar Canyon, AFY	1,173	1,173	1,173	1,173	1,173	1,173
Beaumont Basin, Allocated Overlier Pumping Rights and Forbearance Water, AFY	1,710	1,502	1,190	935	935	935
Storm Water, AFY	90	90	90	90	90	90
Other Local Water Resource Projects, AFY	90	90	90	90	90	90
Recycled Water, AFY	1,320	1,536	1,860	2,415	2,960	3,340
Imported SPW,AFY	3,568	3,428	3,217	2,956	13,993	12,937
Subtotal Supply, AFY	7,951	7,819	7,620	7,659	19,241	18,565
From Banked Beaumont Basin Storage, AF	5,717	6,679	7,568	8,925	-1,469	-228
Total Volume Withdrawn from Storage, AF	11,434	13,359	15,136	17,849	-2,937	-455

Table 9-17 - BCVWD Water Supply Summary – 3 Consecutive Dry Years

3 Consecutive Dry Years						
	YEAR					
	2020	2022	2025	2030	2035	2040
DEMAND						
Total Water Demand	13,668	14,498	15,188	16,584	17,772	18,337
SUPPLY						
Groundwater						
Edgar Canyon, AFY	1,230	1,230	1,230	1,230	1,230	1,230
Beaumont Basin, Allocated Overlier Pumping Rights and Forbearance Water, AFY	1,710	1,502	1,190	935	935	935
Storm Water, AFY	90	90	90	90	90	90
Other Local Water Resource Projects, AFY	90	90	90	90	90	90
Recycled Water, AFY	1,320	1,536	1,860	2,415	2,960	3,340
Imported SPW,AFY	4,100	3,938	3,696	3,396	14,451	13,360
Subtotal Supply, AFY	8,540	8,368	8,156	8,156	19,756	19,045
From Banked Beaumont Basin Storage, AF	5,128	6,112	7,032	8,428	-1,984	-708
Total Volume Withdrawn from Storage, AF	15,384	18,335	21,096	25,283	-5,951	-2,123

Table 9-18 - BCVWD Water Supply Summary – 6 Consecutive Dry Years

6 Consecutive Dry Years						
	YEAR					
	2020	2022	2025	2030	2035	2040
DEMAND						
Total Water Demand	11,618	12,323	12,910	14,096	15,106	15,587
SUPPLY						
Groundwater						
Edgar Canyon, AFY	1,367	1,367	1,367	1,367	1,367	1,367
Beaumont Basin, Allocated Overlier Pumping Rights and Forbearance Water, AFY	1,710	1,502	1,190	935	935	935
Storm Water, AFY	90	90	90	90	90	90
Other Local Water Resource Projects, AFY	90	90	90	90	90	90
Recycled Water, AFY	1,320	1,536	1,860	2,415	2,960	3,340
Imported SPW,AFY	3,644	3,500	3,285	3,018	14,058	12,997
Subtotal Supply, AFY	8,221	8,085	7,882	7,915	19,500	18,819
From Banked Beaumont Basin Storage, AF	3,397	4,238	5,028	6,181	-4,394	-3,232
Total Volume Withdrawn from Storage, AF	20,381	25,427	30,167	37,087	-26,361	-19,393

Table 9-15 through 9-18 demonstrate BCVWD can provide water to the planned developments listed in Table 6-6 (Section 6) which include the Beaumont Pointe development project during critical dry year and multiple dry year periods by relying on BCVWD's Beaumont Basin Groundwater Storage assuming DCP and Sites Reservoir are on-line as planned. BCVWD will need to maintain 25,713 AF of water banked in storage to meet the 6-year dry period by the time Sites Reservoir and the DCP are "on-line." This is not an unreasonable amount of storage considering BCVWD has an 80,000 AF storage account and as of the end of 2018, 34,794 AF in storage.

Table 6-7 provided BCVWD's Beaumont Basin storage account balance under the basis of average water supply conditions assuming the development projects listed in Table 6-6 were constructed. Table 6-7 shows a steady increase in projected groundwater storage from 35,794 AF in 2020-22 to approximately 77,294 AF in the year 2040. To achieve this level of storage, BCVWD will be banking additional water for drought proofing to supply water during critical and multiple dry year period.

The water banking pursuant to BCVWD's 2015 UWMP:

> *BCVWD's plan, which is shown in BCVWD's 2015 UWMP envisions banking anywhere from 1,000 AFY to 2,500 AFY to drought proof new development. This is accounted for in the spreadsheet each year. Should there be a year when the projected amount cannot be delivered by SGPWA, any deficiency will be made up in successive years when adequate supply is available*[17].

In addition to BCVWD, YVWD/Calimesa and the City of Banning have storage accounts which when combined with BCVWD's will have an estimated 117,800 AF in storage as of the end of 2021. Tables 6-2 and 6-5 (Section 6 herein) show that the storage accounts for YVWD/Calimesa and the City of Banning these agencies are projected to have 50,000 and 76,510 AF, respectively, in storage by 2040. When combined with BCVWD's projected storage account balance, on a regional basis there will be over 200,000 AF in banked storage – more than ample to meet the needs during short-term droughts.

[17] BCVWD (2015). UWMP, pg 7-4

10. CONCLUSIONS

1. The projected water demand from the Beaumont Pointe development project is 197 AFY of which 85.2 AFY is outdoor, non-potable water use. This compares to BCVWD's current demand of 13,668 AFY (estimated for 2020).
2. The Beaumont Pointe development project site was included in the list of planned development projects in BCVWD's 2015 UWMP (previously identified as Jack Rabbit Trail) which demonstrated adequate water supplies upto the year 2040. The BP project site was previously planned with a land use density of 2,000 equivalent dwelling units (EDUs). The new BP land use plan estimates a significantly reduced density by 1,640 EDUs for a new proposed Project total of 360 EDUs, representing reduced site density and water demand by 82 percent.
3. BCVWD prepared a series of White Papers which analyzed the regional (SGPWA) imported water supply requirements and funding requirements. These White Papers are referenced for the BP WSA. The basis for the White Papers was a regional spreadsheet demand model, developed by BCVWD, which was reviewed by the City of Banning and YVWD.
4. The White Papers indicate that SGPWA can obtain sufficient imported water supply to supplement local supplies to meet regional needs including BCVWD's needs. The White Papers also indicated that adequate funding is available to implement the imported water projects currently planned for the short and long terms.
5. BCVWD prepared and adopted a Potable Water Master Plan which identified water needs and facility needs to build-out. The BCVWD 2015 UWMP identified recycled water from the City of Beaumont for non-potable water irrigation with a plan for the recharge of surplus recycled water with appropriate treatment and permits. The City and BCVWD signed a Memorandum of Understanding (MOU) in 2019 which began the process of an agreement for purchase of recycled water by BCVWD. In addition, storm water capture and other local water resource projects were identified. One of these projects, MDP-Line 16, (Grand Avenue Storm Drain) is currently in design by the Riverside County Flood and Water Conservation District and BCVWD. The storm drain will be partially funded through a grant from the Santa Ana Watershed Project Authority.
6. SGPWA and BCVWD have made financial commitments to the Sites Reservoir project Phase 1 studies and will commit funds to Phase 2.
7. Adequate water supply exists, or is planned, for the Beaumont Pointe development project to 2040 and beyond as outlined in Tables 9-6 through 9-9. BCVWD can meet the Project needs as well as BCVWD's existing demands and the demands of the other planned developments within BCVWD's service area which are listed in the BP WSA.
8. Multiple dry-year reliability analysis demonstrates that BCVWD will be able to meet its existing demands and the demands of the other planned developments within its service area which were listed in the BP WSA. BCVWD will supplement its existing supply sources during these dry periods with banked water in BCVWD's Beaumont Basin Groundwater Storage Account.

9. Pursuant to §10910 of the California Water Code (SB 610) and information provided in the BP WSA, BCVWD has determined that currently available and planned supplies are sufficient to meet the water demands of the proposed BP project in addition to the existing and other planned project demands during normal, single dry and multiple dry years over the next 20 years, as outlined in Tables 9-15 through 9-18.
10. Pursuant to the California Government Code Section 66473.7, (SB 221) BCVWD has determined that it has sufficient and adequate water supply available to serve the long-term needs of the Beaumont Pointe in addition to the existing and other planned project demands during normal, single dry and multiple dry years over the next 20 years, as outlined in Table 9-15 through 9-18.

11. REFERENCES

1. TTM 31570 – Legacy Highlands WSA, Beaumont Cherry Valley Water District, revised June 2020.
2. Hidden Canyon Industrial Park WSA, Beaumont Cherry Valley Water District, February 2019.
3. Beaumont Basin Watermaster 2017 Annual Report, March 2018.
4. Beaumont Basin Watermaster 2018 Annual Report, February 2020 draft
5. 2019 DWR State Water Project Delivery Capability Report, August 2020.
6. 2015 Urban Water Management Plan, Beaumont Cherry Valley Water District, adopted January 17, 2017; acknowledged by California Department of Water Resources, March 14, 2018.

Appendix C – Water Supply Assessment for Beaumont Point Development – Addendum #1 – August 2022

BEAUMONT-CHERRY VALLEY WATER DISTRICT

560 MAGNOLIA AVENUE

BEAUMONT, CALIFORNIA 92223

www.bcvwd.org

ADDENDUM #1 - WATER SUPPLY ASSESSMENT

for

BEAUMONT POINTE DEVELOPMENT

City of Beaumont, CA

DRAFT - January 17, 2022
FINAL – April 8th, 2022
FINAL Rev 1 – July 28th, 2022
FINAL Rev 2 – August 24th, 2022

Prepared by
Pacific Advanced Civil Engineering, Inc. (PACE)

for

Beaumont Pointe Partners, LLC

18032 LEMON DRIVE, SUITE 367

YORBA LINDA, CALIFORNIA 92886

1 Background and Purpose for Addendum

1.1 Background

The Beaumont Pointe Development "Project", previously referred to as the Jack Rabbit Trail Development, is located in the City of Beaumont, CA. The Project will be a new 625-acre industrial, commercial, and recreational complex constructed south of the CA-60 freeway and northwest of the proposed Hidden Canyon Development. The Project will consist of general commercial/retail land uses and five large industrial warehouse buildings totaling approximately 5.0 million square feet of floor space. The Project is currently proceeding with filing an EIR and seeking incorporation into the Beaumont Cherry Valley Water District (BCVWD) and, by association, the San Gorgonio Pass Water Agency (SGPWA).

The Project will be located in the Beaumont Cherry Valley Water District's ("District") sphere of influence. The Project's potable water (PW) and fire flow demands are proposed to be provided from the District's 2650 pressure zone, which currently serves the westerly part of the District's service area, south of Interstate 10 and west of Cherry Valley Blvd. As part of on-going water conservation efforts and the Project's plan of service with the District, all outdoor irrigation demands will utilize non-potable water (NPW) distributed by BCVWD.

From 2018 through 2021, the Project worked with the District to complete a Water Supply Assessment (WSA), dated April 13, 2021. The Beaumont Pointe Development WSA was originally based on the District's 2015 Urban Water Management Plan (UWMP) and continuously updated with the most current information from the SGPWA / District's "White Papers", which contained the most current updated calculations and projections for imported water supplied from SGPWA and local groundwater supplied from BCVWD for their committed service area. During the District's June 9th, 2021 Board Meeting, the 2021 Beaumont Pointe WSA was presented and approved by the District's Board of Directors. Subsequently, the District provided the Project with a conditional Will Serve Letter, which stipulated that the District will provide water service to the Project. The Project is currently working with the District on a Plan of Service document required by the Will Serve Letter.

In August 26, 2021, four months after approval of the Beaumont Pointe WSA, the District Board of Directors approved the 2020 BCVWD UWMP, updating the District's 2015 UWMP to be in compliance with State law. Specific to the Beaumont Pointe Development, the 2020 BCVWD UWMP incorporates the specific change in land use from residential to commercial, reducing the total water demand for the Project from 2,000 Equivalent Dwelling Units (EDUs) to 360.26 EDUs, a reduction of 82%. Additionally, the 2020 BCWD UMWP further defines the District's and City of Beaumont's commitment to using non-potable water, available from the City's upgraded Title 22 recycled water treatment plant and shallow aquifer wells, which are not suitable for direct potable water supply. This is consistent with the approved Beaumont Pointe Development WSA, which indicated 43.31% of the total demand could be supplied by BCVWD's non-potable water system. Doing so reduces the Project's imported and local ground water (potable) demand further, from 360.26 EDUs to 204.21 EDUs.

1.2 Purpose for Addendum

State law indicates that the WSA for a project shall utilize the most recent UWMP (See Water Code Section 10910 (c)3), which states that if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from that plan in preparing the WSA. As mentioned above, the water demand information presented in the approved Beaumont Pointe WSA utilized the District's most up to date calculations from the "White Papers" and therefore, the water demand values are consistent with the adopted BCVWD 2020 UWMP. However, the approved Beaumont Pointe WSA also indicated that it was based on the BCVWD 2015 UWMP and therefore, the document did present tables and information about the general service areas from both the SGPWA and BCVWD 2015 UWMPs, which the Project wishes to now update with this Addendum. The BCVWD 2020 UWMP includes the Beaumont Pointe Development water demands and indicates that the District can meet its service area's water supply requirements under normal, single, and multiple consecutive dry years.

Since Beaumont Pointe Development's overall water demands did not change (outdoor irrigation demands will utilize NPW as discussed further), and since the updated BCVWD 2020 UWMP included the Project's demands and verified the District can satisfy the service area's demands under the required conditions, the purpose of this addendum is the following:

- Identify, summarize, and provide modified and/or replacement language to the Project's previously approved WSA for differences between the SGPWA and BCVWD 2015 and 2020 UWMPs referenced in the Project's WSA. Specifically, this includes the following:
    - As indicated in the BCVWD 2020 UWMP and the previously approved Beaumont Pointe Development WSA, update the Project's WSA to further define the use of NPW supplies for all outdoor irrigation demands.
    - Update the SGPWA and BCVWD data and tables presented in the Beaumont Pointe Development WSA with the current data and tables from agency's 2020 UWMPs.
    - Update the SGPWA and BCVWD data and tables for the projected future water supplies and demands of BCVWD for the required 20-year projection (through 2045) under normal, single, and multiple consecutive dry year conditions.
    - Add a new section summarizing the BCVWD 2020 Water Shortage Contingency Plan referenced in the BCVWD 2020 UWMP.

2 2021 Beaumont Pointe WSA Updates

As part of this addendum, the following lists the revisions, additions, and/or deletions that shall be made from the existing sections in the approved *April 13th, 2021 Water Supply Assessment for the Beaumont Pointe Development.*

Section 1. Introduction

Within Section 1, the second paragraph shall be removed and replaced with the following. This revision adds language reflecting the Project's utilization of NPW for all outdoor irrigation demands as discussed during the Project's Plan of Service. Additionally, this revision includes a brief introduction to the planning of the Project in the updated BCVWD 2020 UWMP.

> The Project was previously planned and included in the BCVWD's 2015 UWMP with a land use density of 2,000 equivalent dwelling units (EDUs) (previously identified as Jack Rabbit Trail). Based on the District's adopted EDU usage factor of 0.546 AFY/EDU, this equates to an estimated water demand of 1,092 AFY. The new Beaumont Pointe Development land use plan, consisting primarily of industrial warehouse buildings, estimates a density of 360.26 EDUs. The originally approved Beaumont Pointe Development WSA indicated that approximately 43.31% of the potable water demand from the 360.26 EDUs could be served by BCVWD's Non-Potable Water (NPW) system reducing the Project's potable water demand to 204.21 EDUs. As part of the Project's Plan of Service documents and ongoing water conservation efforts, the Project will be designed to utilize NPW for all outdoor irrigation demands.
>
> To clarify, when the District was preparing the basis for future water demands within the District's service area in the BCVWD's 2020 UWMP, the District utilized the potable water demands from the DRAFT November 2020 Beaumont Pointe WSA. This draft version of the Project's WSA identified the potable water demand as 221 EDUs as shown in Table 3-7 in the BCVWD's 2020 UWMP. Because the Project's updated land use plan has a potable water demand of 204.21 EDUs, the District's 2020 UWMP conservatively included the Project's anticipated potable water demands at 221 EDUs.

Section 3.1 Background

The fifth paragraph shall be removed and replaced with the following. This revision updates 2015 UWMP references with the applicable BCVWD 2020 UWMP updates showing the District's latest UWMP has considered the Beaumont Pointe Development in their updated water supply assessments.

> Like SB 221, SB 610 specific levels of supply reliability are not mandated (i.e., whether a specific level of demand can be met over a designated frequency); rather, the law provides that it is a local policy decision of the water provider as part of the planning process. As provided for in the law, the WSA can rely on the data in the latest UWMP in assessing the water demand of the proposed project relative to the overall increase in demands expected by BCVWD. The Beaumont Pointe development project site was included in Table 3-7 of BCVWD's 2020 UWMP (previously identified as Jack Rabbit Trail). The Project site was previously planned for the development of single-family residences with a land use density of, and corresponding water demand for, 2,000 equivalent dwelling units (EDUs). Based on the District's adopted EDU usage factor of 0.546 AFY/EDU, this equates to an estimated water demand of 1,092 AFY. The new Beaumont Pointe Development land use plan, consisting primarily of industrial warehouse buildings, estimates a density of 360.26 EDUs. The originally approved Beaumont Pointe Development WSA indicated that approximately 43.31% of the potable water demand from the 360.26 EDUs could be served by BCVWD's Non-Potable Water (NPW) system reducing the Project's potable water demand to 204.21 EDUs. As part of the Project's Plan of Service documents and ongoing water conservation efforts, the Project will be designed to utilize NPW for all outdoor irrigation demands.

To clarify, when the District was preparing the basis for future water demands within the District's service area in the BCVWD's 2020 UWMP, the District utilized the potable water demands from the November 2020 BP DRAFT WSA. This draft version of the Project's WSA identified the potable water demand as 221 EDUs as shown in Table 3-7 in the BCVWD's 2020 UWMP. Because the Project's updated land use plan has a potable water demand of 204.21 EDUs, the District's 2020 UWMP conservatively included the Project's anticipated potable water demands.

Section 3.2 San Gorgonio Pass Water Agency 2015 UWMP

Section 3.2 shall be removed and replaced with the following and the section title shall be replaced with "San Gorgonio Pass Water Agency 2020 UWMP". This section has been updated to reflect the changes in both the BCVWD and the SGPWA 2020 UWMP.

The Beaumont Pointe Development is located within the service area of the San Gorgonio Pass Water Agency (SGPWA or Pass Agency). BCVWD provided data to SGPWA on BCVWD's projected demands so the SGPWA could prepare their UWMP. Because the California Department of Water Resources (DWR) required the imported water suppliers to submit their UWMPs earlier than the retail agencies, BCVWD made some preliminary estimates of their demand over the 20-year projection period and provided the projections to SGPWA. These preliminary estimates deviated slightly from the actual demands in BCVWD's 2020 UWMP. Since the BP Project site was included in the demands in BCVWD's 2020 UWMP, it is considered to be included in the 2020 SGPWA UWMP, adopted by SGPWA Board of Directors on June 21st, 2021. Table 3-1 below is taken from Table 3-16 in the SGPWA 2020 UWMP.

Table 3-1 – Project Total Water Supply for SGPWA Region through 2045 (AFY)

Service Area Water Supply to Meet Demands	2025	2030	2035	2040	2045
City of Banning	9,473	10,198	10,853	11,565	12,278
Beaumont Cherry Valley	14,963	16,160	17,515	18,710	19,693
Yucaipa Valley WD (Riverside Portion)	1,509	1,841	2,174	2,507	2,839
South Mesa WC (Riverside Portion)	1,032	1,084	1,138	1,196	1,196
High Valley WD	3,400	3,600	3,900	4,100	4,300
Cabazon County WD					
Mission Springs (SGPWA area)					
Other SGPWA service area not served by named retailers					
Total SGPWA Boundary Supply to meet Demands	30,400	32,900	35,600	38,100	40,300

Note:
1. Table 3-1 is taken from Table 3-16 in the SGPWA 2020 UWMP.
2. The supply totals necessary to meet demands in the table above are rounded to the nearest 100.

In Chapter 1 of the SGPWA's 2020 UWMP, the UWMP stated the following.

"It is important to note that this UWMP [SGPWA 2020 UWMP] has been completed to address regional resource management and does not address the particular conditions of any specific retail water agency or entity within the SGPWA service area. The retail urban water suppliers within SGPWA service area are preparing their own separate UWMPs where required, though SGPWA has facilitated coordination among the retailers to assure consistency."

BCVWD recognizes and acknowledges the disclaimer statement within the 2020 Urban Water Management Plan prepared by the SGPWA related to regional planning. While the UWMP prepared by the SGPWA "…does not address the particular conditions of any specific retail water agency…" BCVWD relies upon the policies and practices of the SGPWA as a foundation for regional water supply solutions. In other words, while the SGPWA's regional planning document does not address local water conditions, BCVWD does rely upon the policies of the SGPWA to provide comprehensive regional solutions related to the use of imported water in the SGPWA area. As an example of the policies and practices adopted by the SGPWA and relied upon by BCVWD include, but are not limited, to the following:

- San Gorgonio Pass Water Agency, Ordinance No. 8, An Ordinance Establishing Rules and Regulations for SGPWA Water Service, February 7, 2005;
- San Gorgonio Pass Water Agency Strategic Plan, May 2012;
- San Gorgonio Pass Water Agency, Resolution No. 2014-02, A Resolution of the San Gorgonio Pass Water Agency Establishing a Policy for Meeting Future Water Demands, February 18, 2014;
- San Gorgonio Pass Water Agency, Ordinance No. 10, Ordinance Establishing Water Shortage Plan, July 21, 2014;
- San Gorgonio Pass Water Agency, Resolution No. 2015-05, Resolution of the Board of Directors of the San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water, July 27, 2015;
- San Gorgonio Pass Water Agency, State of the Supply PowerPoint Presentation, September 30, 2016;
- San Gorgonio Pass Water Agency, Ordinance No. 13, An Ordinance Amending Rules and Regulations Regarding Authorization for Service, June 5, 2017.

Section 3.3 BCVWD's 2015 UWMP

Section 3.3 shall be revised as shown in red below. This Section has been updated to note the minor differences between the projections in the BCVWD's 2020 UWMP and the projections provided to SGPWA for their 2020 UWMP. Additionally, the section title shall be revised to state "BCVWD's 2020 UWMP".

There were some minor differences between the projections in BCVWD's 2020 UWMP and the projections provided to SGPWA for their 2020 UWMP. These differences stemmed from the need for BCVWD to provide preliminary demand projections early on so the SGPWA could meet their prescribed deadline.

BCVWD's demands for imported water are presented in BCVWD's 2020 UWMP (Table 6-24) and are repeated in Table 3-2 below. Table 3-2 shows the actual imported water demand to meet the potable water demand plus the banking water demand to ensure drought-proofing of future development. If imported water is not available in a given year, no banking will occur. But when imported water is available, any deficiencies from previous years would be "carried over" and "made up." As can be seen, there is a slight difference between the demands in Table 3-1 versus those shown above in Table 3-1.

Table 3-2 BCVWD Imported Water Needs from BCVWD 2020 UWMP

	2025	2030	2035	2040	2045
BCVWD Drinking Water Demand, AFY	9,144[2]	9,546[2]	9,966	10,717	11,281
Banking Demands, AFY	1,500	1,200	1,000	1,000	1,000
Total BCVWD Imported Water Demand, AFY	**10,644**	**10,746**	**10,966**	**11,717**	**12,281**

Note:
1. Taken from the BCVWD 2020 UWMP, Table 6-24
2. Includes imported water for non-potable water system since non-potable water system is supplied with potable groundwater.

Section 4.1 – Figure 2

Figure 2 shall be replaced with the following updated Figure 2. While the land use and acreage of the Beaumont Pointe Development project did not change, this Addendum updates Figure 2 of the previously approved WSA to no longer show the additional proposed conservation area south of the project.

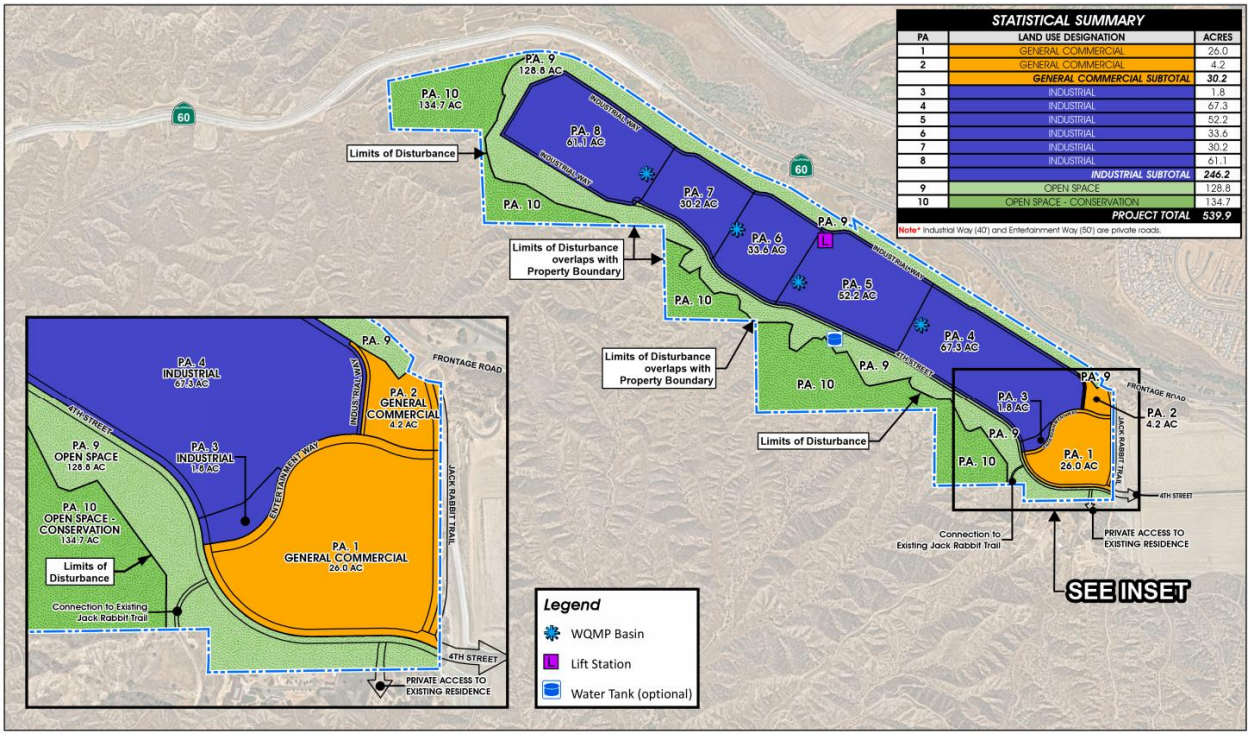


Figure 2 – Beaumont Pointe Land Use Plan

Section 4.1 – Project Description

The last paragraph in Section 4.1 shall be revised as shown in red below. These revisions will clarify the use of utilizing non-potable water for all outdoor irrigation demands.

> The project is required to adhere to the landscaping standards in the "Guide to California Friendly Landscaping", the City of Beaumont's, and Riverside County Landscaping Ordinances which requires water efficient landscaping. Pursuant to BCVWD requirements, and as part of ongoing water conservation efforts, all outdoor irrigation demands shall utilize non-potable water, and recycled water produced by the City of Beaumont and distributed by BCVWD as it becomes available.

Section 4.2 – Estimated Water Demand - Tables 4-2 Note 5 and 6

Notes 5 and 6 under Table 4-2 in the WSA shall be revised as shown in red below. These revisions clarify the potable water demand for the Project's latest land use plan, and the use of non-potable water for all outdoor irrigation demands.

> [5] Not Used
>
> [6] Represents demands that will be served by non-domestic water sources.

Section 4.2 – Estimated Water Demand - Tables 4-3 Note 4 and 5

Notes 4 and 5 under Table 4-3 in the WSA shall be revised as shown in red below. These revisions clarify the potable water demand for the Project's latest land use plan, and the use of non-potable water for all outdoor irrigation demands.

[4] Not Used

[5] Represents demands that will be served by non-domestic water sources.

Section 4.2 – Estimated Water Demand

The last paragraph shall be revised as shown in red below. These revisions clarify the reduced potable water demand shown in the BCVWD 2020 UWMP and the use of non-potable water for all outdoor irrigation demands.

Table 4-2 and 4-3 calculate the total estimated water demand at Beaumont Pointe Development buildout of 175,584 gpd, or 196.70 AFY. Based on BCVWD equivalent dwelling unit usage of 0.546 AFY per equivalent dwelling unit, this equates to 360.26 EDUs (196.70 AFY). Of the total water demand, the potable water demand is estimated to be 204.21 EDUs (111.50 AFY) and the non-potable water demand for outdoor irrigation is estimated to be 85.20 AFY, equivalent to 156.04 EDUs.

Section 5.1 – Overview of BCVWD's Water System and Operation – Table 5-1

Table 5-1 shall be revised as shown in red below. These revisions update the potable and non-potable water connections, average and maximum day demands to reflect the values listed in the BCVWD 2020 UWMP. Please note that the BCVWD 2020 UWMP does not include the total water pumped for 2020 and therefore this row was removed from Table 5-1.

Table 5-1 BCVWD Potable and Non-Potable Water Connection and Deliveries 2020

	Potable Water	Non-Potable Water	Total
Number of Connections	19,359	300	19,659[1]
Average Annual, MGD	10.8[2]	5.6[2]	16.4
Maximum Day, MGD	21.6[2]	6.7[2]	NA
Total Demand, AF[3]	10,845	1,647	12,492

Notes:
1. Taken from Section 3.1 the BCVWD 2020 UWMP.
2. Taken from Section 3.6 in the BCVWD 2020 UWMP.
3. The Total Demand shown does not include system losses.

Section 5.2 – Potable Water System

Section 5.2 shall be removed and replaced with the potable water system overview provided in the District's 2020 UWMP.

BCVWD's potable water system is supplied by wells in Little San Gorgonio Creek (Edgar Canyon) and the Beaumont Basin (sometimes called the Beaumont Storage Unit or the Beaumont Management Zone). The District has a total of 24 wells (1 well is a standby). One of the wells, Well 26, can pump into either the potable water or the non-potable water system. Currently, it is pumping into the non-potable water system.

The Beaumont Basin is adjudicated and managed by the Beaumont Basin Watermaster. BCVWD augments its groundwater supply with imported State Project Water from the SGPWA which is recharged at BCVWD's recharge facility at the intersection of Brookside Avenue and Beaumont Avenue. The Beaumont Basin Adjudication requires that the extracted amount of water from the Basin must be replaced.

Wells in Edgar Canyon have limited yield, particularly in dry years, and take water from shallow alluvial and fractured bedrock aquifers. Wells in the Beaumont Basin are large capacity and pump from deep aquifers – some as deep as 1,500 ft below the ground surface. The Edgar Canyon wells are very inexpensive to operate and are the preferred source due to there being no replenishment requirement like the Beaumont Basin; however, those wells are not able to meet the current average day demand. The Edgar Canyon wells pump to a gravity transmission main that extends the full length of the District-owned properties in Edgar Canyon. The transmission main connects to the distribution system in Cherry Valley. Water from the Edgar Canyon Wells, which is not used in the developed areas adjacent to Edgar Canyon or Cherry Valley, is transferred to lower pressure zones serving the City of Beaumont. The Edgar Canyon Wells provide about 15 to 20 percent of the total annual supply; the rest is pumped from wells in the Beaumont Basin supplemented by recharged imported water.

BCVWD has two active stream diversion locations within Little San Gorgonio Creek (Edgar Canyon) that are in the State Water Resources Control Board, Division of Water Rights database (S014351, S014352). The diversions have pre-1914 recorded water rights amounting to 3,000 miner's inch hours (MIH) or approximately 45,000 AFY of right for diversion of water for domestic and irrigation uses. These date back to the early history of the District. However, the District has never had a demand that requires such large quantities of water supply; and the watersheds may not be capable of supplying such quantities during an average year. At the present time, the District currently diverts streamflow in Edgar Canyon to a series of percolation ponds which recharge the shallow wells in Edgar Canyon. This water is then extracted for domestic purposes.

BCVWD's total well capacity (Edgar Canyon and Beaumont Basin) is about 27.5 mgd with the largest well out of service, which is greater than the current 21.6 mgd maximum day demand (2020). The District has 11 pressure zones and 14 reservoirs (tanks) ranging in size from 0.5 MG to 5 MG. Total storage is approximately 22 MG –just over two average days or just over one maximum day. The reservoirs provide gravity supply to their respective pressure zones. The BCVWD's potable system is constructed such that any higher zone reservoir can supply water on an emergency basis to any lower zone reservoir. There are booster pumps in the system to pump water up from a lower pressure zone to a higher pressure zone also.

The transmission system in the main pressure zones is comprised of 24-in diameter pipelines (there are some 30-in diameter pipelines at some reservoirs). The bulk of the transmission system is ductile iron pipe with cement mortar lining and was installed in the last 10 to 15 years. There are a number of small distribution lines (4-in and smaller) that are gradually being replaced over time with minimum 8-in diameter ductile iron pipe. All developments, since the early 1980s, have installed mortar lined, ductile iron pipe. The distribution system is capable of providing over 4,000 gallons per minute (gpm) fire flow in the industrial/commercial areas of the service area.

Section 5.3 – Imported Water and Recharge Facilities

Section 5.3 shall be removed and replaced with the Imported Water and Recharge Facilities overview provided in the District's 2020 UWMP.

Around 2001, BCVWD began investigating an 80-acre site on the east side of Beaumont Avenue between Brookside Avenue and Cherry Valley Boulevard as a location for a facility to recharge captured storm flow and imported water. After extensive hydrogeologic investigations, including pilot testing, the District eventually purchased the site (known as the Oda Property) and developed Phase 1 of the recharge facility on the westerly half of the site. The Phase 1 facilities were completed and went online in late summer 2006. Phase 2 of the recharge facility was completed in 2014. The 80-acre site has excellent recharge capabilities with long-term percolation rates around 7 to 10 acre-ft/acre/day, with proper maintenance.

The District completed construction of a 24-in pipeline from the SGPWA turnout on East Branch Extension (EBX) of the State Water Project to the District's recharge facilities in 2006. A metering station was installed at the turnout at Noble Creek and Vineland Avenue and BCVWD began taking imported water deliveries from SGPWA for recharge in September of 2006. In 2019, the EBX facility was expanded to allow for additional imported water capacity. Since its operation in 2006 through the end of 2020, nearly 108,900 acre-ft (about 35.5 billion gallons) of imported water have been recharged. As of the end of 2020, BCVWD has 39,750 acre-ft "banked" in the Beaumont Basin; this is more than a three-year supply.

The District is also currently working with Riverside County Flood Control and Water Conservation District to complete the MDP Line 16 Project, which will allow the District to capture and recharge stormwater at the Phase 2 recharge facilities. The expected volume of stormwater able to be recharged is approximately 250 AFY. Construction is expected to begin in 2021 and be completed by fall 2022.

Section 5.4– Non-potable (Recycled) Water System

Section 5.4 shall be removed and replaced with the Non-potable (Recycled) Water System overview provided in the District's 2020 UWMP. The purpose of including this section will be to identify the current and future operating NPW systems and their source of NPW.

Currently, BCVWD has over 40 miles of non-potable water transmission and distribution pipelines (6-in and larger) in-place. This construction has occurred since about 2002. A 24-in diameter ductile iron pipeline forms a loop around the City of Beaumont. The system includes a 2 million gallon recycled (non-potable) water reservoir which provides gravity storage and pressurization for the system. The 2 MG non-potable water reservoir is configured to receive potable water or untreated State Project Water (SPW) through air gap connections. The non-potable water system can have a blend of recycled water, imported water, non-potable groundwater, and potable water. The 2 MG reservoir is located at the District's groundwater recharge facility at Beaumont Avenue between Brookside Avenue and Cherry Valley Boulevard. There are about 300 existing landscape connections to the recycled water system receiving about 1,600 acre-ft of water based on 2020 water meter records (in 2019, the non-potable water demand was 1,540 acre-ft). The effects of increased development in the District's service area impacted the non-potable system too.

A large part of the non-potable water system is currently supplied from Well 26 and supplemented with potable water which is introduced into the 2 MG non-potable water tank through an air gap connection. The non-potable water system in the Tournament Hills and Fairway Canyon area is currently supplied with potable water through temporary interconnections between the potable and non-potable water system.

BCVWD is currently working with the City of Beaumont to secure recycled water for use in the non-potable water system. As of the end of 2020, the City is nearing the completion of the

expansion and upgrade of its existing wastewater treatment facility to bring it to 6 MGD capacity and will be installing a new membrane bioreactor (MBR) treatment unit followed by reverse osmosis membrane treatment. A brine line from the treatment plant to the Inland Empire Brine Line (IEBL) in San Bernardino was constructed in 2020. Upon the availability of recycled water from the City, the non-potable system will be completely severed from the potable system.

A memorandum of understanding between BCVWD and the City for recycled water purchase and use was signed in July 2019 and the City and BCVWD are in the process of finalizing an agreement for purchase of recycled water through an ad-hoc committee consisting of City Council members and BCVWD Board Members.

The Regional Water Quality Control Board (RWQCB) has ordered the City to be in compliance with the maximum benefit provisions, which include providing recycled water for beneficial use, by November 30, 2020. Construction completion has been delayed due to wet weather and the Covid-19 virus shutdown.

When the demand for recycled water for landscape irrigation is less than the supply available (winter months), BCVWD may ultimately recharge surplus recycled water at BCVWD's groundwater recharge facility or some alternative facility with appropriate treatment and permits. Recycled water use and recharge is permitted by the Beaumont Basin Adjudication.

Section 6.1 Regional Water Supply Demand Spreadsheet Models

As required by SB610, a Project's WSA must identify other public water systems that receive water from the same source as the public water system. Since BCVWD relies heavily on imported water from the SGPWA, updated numbers from the other regional retail agencies and their estimated current and future water demands were listed in the original Project's WSA. Therefore, Table 3-16 from the 2020 SGPWA UWMP is shown below and is intended to update the water supply demands for the different SGPWA service areas described in Section 6.1.1 through Section 6.1.3 in the original WSA.

Table 6-1: Projected Total Water Supply for SGPWA Region through 2045 (AFY)

Service Area Water Supply to Meet Demands	2025	2030	2035	2040	2045
City of Banning	9,473	10,198	10,853	11,565	12,278
Beaumont Cherry Valley	14,963	16,160	17,515	18,710	19,693
Yucaipa Valley WD (Riverside Portion)	1,509	1,841	2,174	2,507	2,839
South Mesa WC (Riverside Portion)	1,032	1,084	1,138	1,196	1,196
High Valley WD	3,400	3,600	3,900	4,100	4,300
Cabazon County WD					
Mission Springs (SGPWA area)					
Other SGPWA service area not served by named retailers					
Total SGPWA Boundary Supply to meet Demands	30,400	32,900	35,600	38,100	40,300

Note:
1. Taken from Table 3-16 in the SGPWA 2020 UWMP
2. The supply totals necessary to meet demands shown in the table above are rounded to the nearest 100.

Section 6.1.3.1 – City of Beaumont Development and Section 6.1.3.2 Cherry Valley Growth and Development.

Section 6.1.3.1 and 6.1.3.2 in the Beaumont Pointe Development WSA listed the major development projects in the BCVWD service area and their estimated existing and future EDUs. This allowed for the Supply-Demand Model for BCVWD to be projected for the next 20 years. The following is intended to replace Sections 6.1.3.1 and 6.1.3.2 in the Project's WSA and is taken from the District's updated 2020 UWMP.

Historic and current populations for the District's service area were extracted from the District's 2015 UWMP are presented in Table 6-2 (Table 3-4 from the BCVWD 2020 UWMP) as the District is still awaiting the results of the 2020 census. There were some adjustments to account for the latest census data. The data in Table 6-2 came from several sources:

- 1980 and 1990 populations and household information – U.S. Census Bureau, 2000 Census of Population and Housing, Population and Housing Unit Counts, PHC-3-6, California, Washington D.C., 2003. This data was used for the City of Beaumont. Data for Cherry Valley for this period was estimated.

- 2000, and 2010, 2015, and 2019 population and household information – U.S. Census Bureau American Fact Finder for Beaumont, CA and Cherry Valley CDP12, CA.

- 2020 Population- Estimated for Cherry Valley based on historic growth from 2018. Estimate for the City of Beaumont based on housing completions from City Planning Department, Major Project Status for period 2010 through 2019, and District staff discussions with various developers regarding construction progress for major projects in the District's service area (ongoing projects discussed herein).

Table 6-2: Historical Population and Housing

	1980	1990	2000	2005	2010	2015	2020
City of Beaumont							
Population	6,818	9,685	11,384	19,105	36,877	43,370	51,647
Households	2,852	3,718	3,881	6,307	11,801	12,759	
People/Household	2.39	2.60	2.93	3.03	3.12	3.18	
Housing Units			4,258	6,949	12,908	13,563	
Occupied Housing Units			3,881	6,307	11,801	12,759	
Cherry Valley							
Population	5,012	5,945	5,891	6,126	6,362	6,595	7,610
Households	2,023	2,530	2,310	2,416	2,612	2,692	
People/Household	2.48	2.35	2.55	2.54	2.44	2.45	
Housing Units			2,627	2,750	2,874	2,903	
Occupied Housing Units			2,434	2,523	2,612	2,692	
Total							
Population	11,830	15,630	17,275	25,231	43,239	49,965	59,258
Households	4,875	6,248	6,191	8,723	14,413	15,451	
People/Household	2.43	2.5	2.79	2.89	3.00	3.23	
Housing Units			6,885	9,699	15,782	16,466	
Occupied Housing Units			6,315	8,830	14,413	15,451	

Notes
1. Taken from Table 3-4 in the 2020 BCVWD UWMP.

Figure 6-1 shows the population growth in the City of Beaumont and Cherry Valley from 1980 to 2020. The population after 2015 was estimated as described for Table 6-2.

The data in Table 6-2 and Figure 6-1 shows a very rapid growth for the City of Beaumont between the years 2000 to 2020. Nearly 2/3 of this growth occurred between 2000 and 2010 based on building permits issued by the City of Beaumont. The high rate of growth decreased after 2010 following the economic turndown in the U.S. and California in 2008 which continued for several years. The rate of growth in the District's service area has increased again after 2015 after the start of the economic recovery. The population in Cherry Valley remained relatively constant since 1990. The community of Cherry Valley did not experience the same growth spurt that occurred in the City of Beaumont and other areas in Western Riverside County.

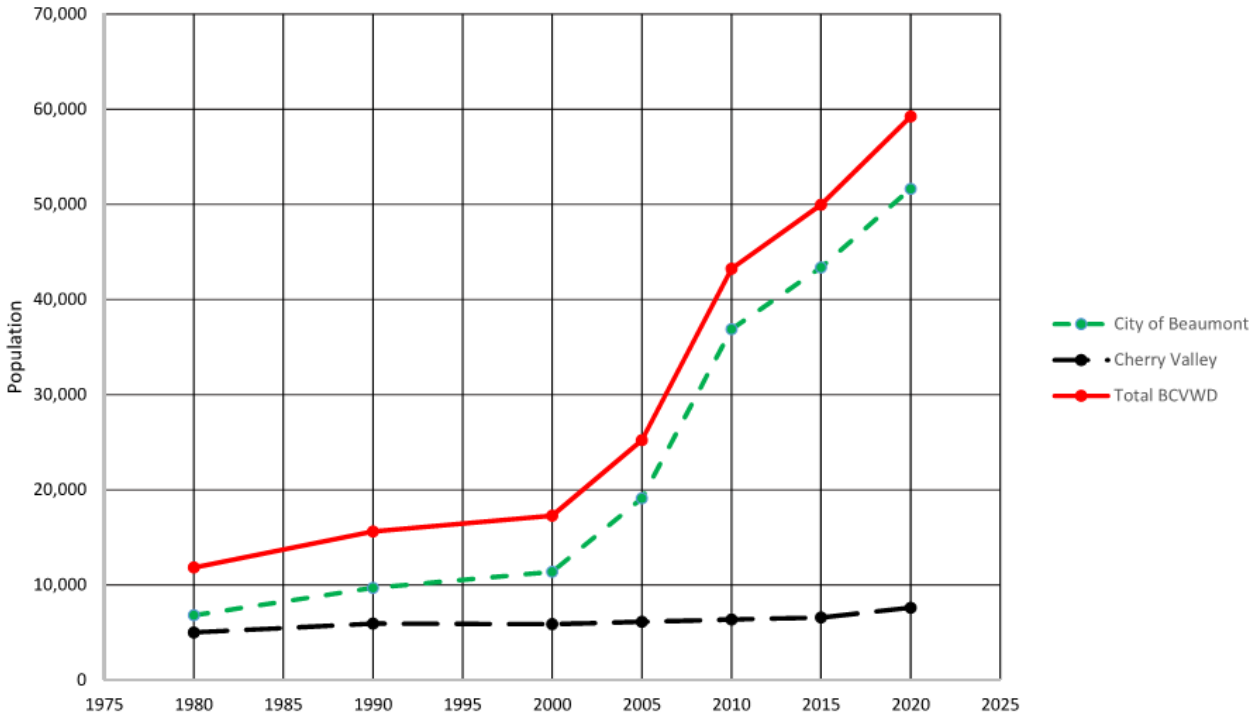


Figure 6-1: Historical Population Growth in District

Figure 6-1 shows the number of single-family home building permits issued in the City of Beaumont for the year 2010 through 2019 (February 2020). BCVWD projects that approximately 500 single family home building permits were issues in 2020. Although not shown in Figure 6-1, the permits started picking up in 1999-2000 and reached their peak in 2005 with nearly 2,300 new home permits issued for that year. The number of permits for new homes declined to a low of 169 in 2011. Over the last 10 years (2011-2020), permit averaged 450 per years; over the last 5 years (2016-2020), permits averaged 541 per year. The 20-year average has been 693 per year. Future growth will likely be in the range of 350 to 650 permits per year, although some developers have project slightly higher amount in their build-out forecasts.

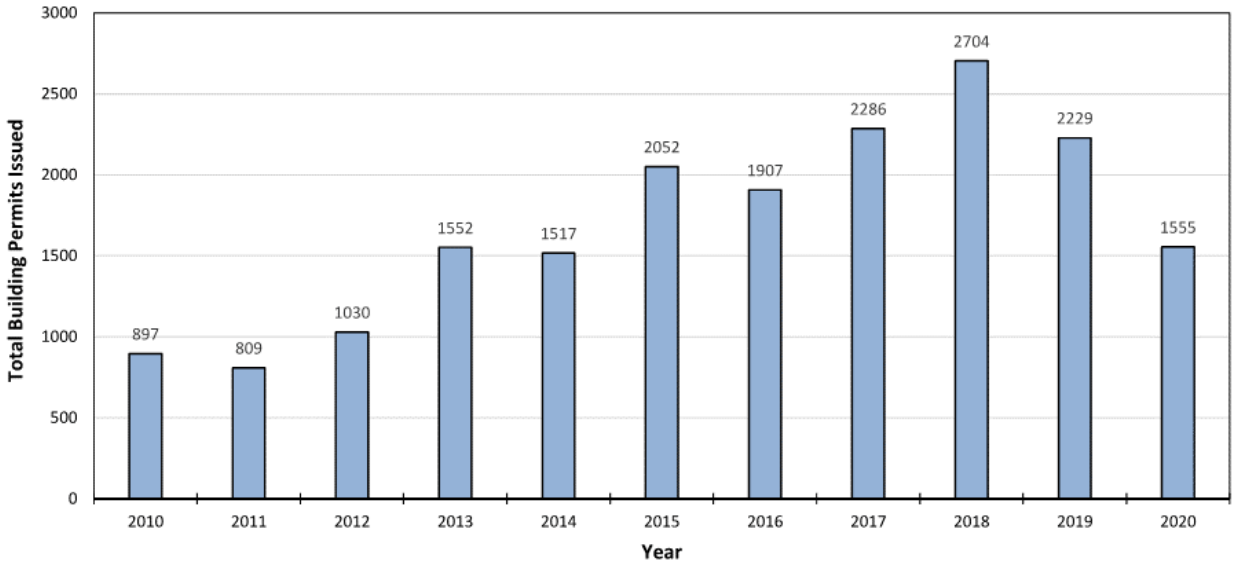


Figure 6-2: Growth in Beaumont as Shown by Single Family Home Building Permits

BCVWD uses Equivalent Dwelling Units (EDUs) to project water demands, water supply needs, and estimated population growth in the service area. Review of the City of Beaumont's Major Project Status Report listed six projects that were currently under development (on-going construction). These are listed in Table 6-3 below. It appears there are about 3,155 EDUs in the current on-going projects yet to the constructed as of February 2021.

Table 6-4 presents a list of other projects in various stages of approval the City of Beaumont. The total number EDUs is estimated to about 9,200.

Table 6-3: Projects within BCVWD Service Area Under Construction

Development Name	Total Anticipated EDU's	Estimated Housing Units Yet to be Constructed (Feb. 2021) [16]	Estimated Build-out Year
Sundance	4,450	808	2027
Fairway Canyon SCPGA	3,300	1,650	2035
Olivewood (Heartland)	981	697	2030
Hidden Canyon Industrial Park (Beaumont Distribution Center)	Industrial	-	2021
Sundance Corporate Center	Commercial	-	2021
Totals	**8,731**	**3,155**	

Note:
1. Taken from Table 3-6 in the BCVWD 2020 UWMP

The housing units yet to be constructed in Table 6-3 plus the EDUs in the other projects in Table 6-4 total about 12,400 EDUs in the City of Beaumont. This would result in an increase in population of about 35,000 people based on 3.28 people per EDU (average density for the City of Beaumont). This would bring the total Beaumont population to about 95,000. Based on the estimated build-out year for each project in Table 6-4, this population would not occur until after 2045.

Table 6-4: Other Projects within BCVWD Service Area or Sphere of Influence

Development Name	Total Probable EDU's	Estimated Build-out Year	Status (April 2021)
Beaumont Industrial Park (Industrial) [1,2]	70	2040	
Beaumont Downtown District	900	Unknown	
Beaumont Village (Mixed Use) [1,2]	2350	Unknown	
Beaumont Pointe (Jack Rabbit Trail – Commercial/Industrial) [1]	221	2027	
CJ Foods (Industrial)	225	2023	Incremental EDU increase per year, beginning 2018 and ending in 2023
Dowling Orchard (Industrial)[1,2]	50	Unknown	
Potrero Logistics (Hidden Canyon II) [1,2]	59	2031	
I-10 & Oak Valley Parkway (Commercial)[1]	200	2035	
Kirkwood Ranch	391	2040	Specific Plan (1991), Tent. Tract Map 27357 Approved
Loma Linda/BUSD (Commercial/Industrial)[1,2]	100	2040	
MCM Chicken Ranch (Industrial) [1,2]	50	2045	
Noble Creek Vistas (Tract 29522)	298	Unknown	
Noble Creek Meadows (Tract 29267)	274	2025	
Oak Creek Village*(Commercial) [1,2]	100	Unknown	
Oak Valley Parkway/Oak View Drive (Commercial) [1,2]	75	Unknown	
Olivewood (Commercial) [1,2]	40	2035	
Potrero Creek Estates [1,2]	700	Unknown	Specific Plan (1989)
Riedman Properties (Merlin Properties)	140	2035	

Note:

1. Taken from Table 3-7 in the BCVWD 2020 UWMP

Table 6-4 Cont.: Other Projects within BCVWD Service Area or Sphere of Influence

Development Name	Total Probable EDU's	Estimated Build-out Year	Status (April 2021)
SDC Fairway Canyon Commercial[1,2]	75	Unknown	
Sunny Cal Egg Ranch	529	2040	
Taurek	244	Unknown	
Legacy Highlands (Residential, Commercial, Industrial)[2]	2,542	Unknown	
Tournament Hills Phase 3, (TM 36307)	284	2028	Tract 36307, Amendment to Oak Valley Specific Plan Approved
Oak Valley Towncenter (NW Corner Beaumont Avenue & Oak Valley Parkway)	60	2030	
Manzanita (Tract 32850)	95	2035	
Xenia Apartments[3]	100	2029	
Totals	**9,272**		

(1) Commercial/Industrial "EDUs" determined based on 0.546 AFY/EDU, or approximately 487 gal/EDU/day.
(2) District staff estimated EDUs due to project not fully entitled.

Note:
1. Taken from Table 3-7 in the BCVWD 2020 UWMP

Prior "proposed" projects equivalent dwelling units within the BCVWD service area were estimated at 12,544 (Legacy Highlands WSA, June 2020). The Beaumont Pointe Development project site was previously planned with a land use density of 2,000 equivalent dwelling units (EDUs). The new Beaumont Pointe Development land use plan estimates a significantly reduced density of 360.26 EDUs, representing a reduced site density by 82 percent. The originally approved Beaumont Pointe Development WSA indicated that approximately 43.31% of the potable water demand from the 360.26 EDUs could be served by BCVWD's Non-Potable Water (NPW) system reducing the Project's potable water demand to 204.21 EDUs. As part of the Project's Plan of Service documents and ongoing water conservation efforts, the Project will be designed to utilize NPW for all outdoor irrigation demands or approximately 156.04 EDUs.

To clarify, when the District was preparing the basis for future water demands within the District's service area in the BCVWD's 2020 UWMP, the District utilized the potable water demands from the November 2020 BP DRAFT WSA. This draft version of the Project's WSA identified the potable water demand as 221 EDUs as shown in Table 6-4. Because the Project's updated land use plan has a potable water demand of 204.21 EDUs, the District's 2020 UWMP conservatively included the Project's anticipated potable water demands.

Table 6-5: Summary of New EDUs in BCVWD Service Area

	Cumulative New EDUs					
	2020	2025	2030	2035	2040	2045
Beaumont	1947	4026	6293	8732	10693	12502
Cherry Valley	14	40	97	158	228	262
Total	1961	4066	6390	8889	10922	12764
Average New EDUs/year	654	421	465	500	406	368

Note:
1. Taken from Table 3-8 in the BCVWD 2020 UWMP

Based on the past history of building permits in the City of Beaumont, presented previously in Figure 6-2, an average of 470 EDUs per year for the period 2020 through 2045 shown in Table 6-5 is believed to be a reasonable market assimilation rate for the area. Table 6-6 shows the growth in population for Beaumont, Cherry Valley and BCVWD, as a whole, based on the anticipated EDU growth shown in Table 6-5.

Table 6-6: Current and Projected Population in BCVWD Service Area

	Based on Expected EDU Growth in Table 3-8					
	2020	2025	2030	2035	2040	2045
Beaumont	51,647	58,467	65,901	73,901	80,335	86,266
Cherry Valley	7,610	7,682	7,838	8,005	8,197	8,290
Total	59,258	66,149	73,739	81,906	88,532	94,556

Note:
1. Taken from Table 3-9 in the BCVWD 2020 UWMP

The growth in EDUs in Table 6-6 was the basis for projecting the water demand in the 2020 UWMP and is presented in future sections of this WSA addendum.

The BCVWD service area build-out or “saturation” population was determined using the City of Beaumont’s Zoning Map and Table 3.2a from the City’s General Plan (2020) to determine the total areas of the various zoning categories in the District’s SOI. Actual GIS data was obtained from the City and integrated into the District’s GIS system to determine the land uses within the District’s SOI. The zoning designation includes a range of dwelling units/acre. Table 3.2 from the City’s General Plan Update includes the estimated number of residential units per land use category.

A similar approach was used for Cherry Valley, only the data from Riverside County General Plan, Pass Area Land Use Plan was used. Again, the GIS data set was obtained from the County and integrated into the District’s GIS system to determine the land use category areas within the District’s SOI.

BCVWD believes the build-out population for the SOI will increase from that presented in the 2015 UWMP, but the increase is yet to be determined. Build-out will not occur until sometime after 2045. Build-out population is valuable to determine ultimate water demands and ultimate facility requirements.

Section 6.1.3.3 – Supply Demand Model for BCVWD

Section 6.1.3.3 shall be removed and replaced with the following updates from the BCVWD 2020 UWMP. As required by the SB610, the Project's WSA shall discuss the public water systems water supplies available during normal conditions for existing and future conditions in 5 year periods for 20 years. To update Section 6 and to provide a 20-year outlook based on the BCVWD 2020 UWMP, the following is intended to replace Section 6.1.3.3 based on providing a 20-year projection.

BCVWD's current and future water sources can be summarized in the Table below and as described below. As shown in the table above, the total BCVWD demand is less than the total available supply showing BCVWD will have sufficient water supplies for the Project under normal operating conditions.

Table 6-7: Current and Future Water Sources Available to BCVWD

Water Source	Current	Future
Groundwater, Edgar Canyon	●	●
Groundwater stored in the Beaumont Basin	●	●
Imported Water purchased through SGPWA	●	●
Recycled water for landscape irrigation		■
Recycled water for groundwater recharge from the City of Beaumont		Potential
Storm Water Capture and Recharge from Edgar Canyon, Noble Creek and other local watershed		■
Urban Storm Runoff captured in detention and water quality basins		■
Captured, nitrate-contaminated shallow groundwater from Edgar Canyon to supplement non-potable water system		Potential
Singleton Basin groundwater		Potential
San Timoteo Basin groundwater to supplement non-potable water system		■
Joint Projects with Other Agencies with Exchanges		Potential
Sites Reservoir		Potential

● Firm, existing source ■ Firm, future source

Note:
1. Taken from Table 6-1 in the BCVWD 2020 UWMP

BCWD's source of supply consists of:

- **Edgar Canyon (Little San Gorgonio Creek) Groundwater –** BCVWD has long-term records on pumping. From 1957 to 2020, a period of 64 years, the average production from the Edgar Canyon Wells is 1,881 AFY. However, prior to 1983, the ability to utilize the water pumped from Edgar Canyon was limited due to a lack of sufficient conveyance capacity to deliver water from Edgar Canyon to Cherry Valley and Beaumont. In 1983,

the District installed the 14-in Edgar Canyon Transmission Main which enabled larger quantities of water to be conveyed from Edgar Canyon to Cherry Valley and Beaumont. From 1983 to 2020, a period of 38 years, the average amount pumped was 2,073 AFY. This is far more indicative of Edgar Canyon's ability to produce water. As shown in Table 6-7 in the BCVWD 2020 UWMP the Edgar Canyon Wells produced about 10% of the District's annual demand (potable and non-potable) in 2020.

- **Beaumont Basin**
    - **Overlier Potable and Non-Potable Water Forbearance** – is credited to a water supplier by Watermaster for any potable and/or recycled water provided to an overlying party or an overlying party's land. The overlier forbears pumping the equivalent amount of water supplied and the appropriator then has the right to pump the volume of water forgone by the overlier. This is done through the Basin Watermaster who transfers forgone water to the appropriator's groundwater storage account on an annual basis.

    - **Reallocated Unused Overlier Pumping Rights** – All of the "safe yield" from the Beaumont Basin is allocated to the overlying parties (overliers). Each overlier was given a share of the safe yield and was allowed to pump no more than five times that share in any five-year period. Most, if not all, of the overliers do not pump their entire share of the safe yield. The amount of groundwater not produced by an overlying party shall be available for allocation to appropriators in accordance with their percentage shares of unused safe yield stated in the Adjudication Exhibit C3. BCVWD's share is 42.51% of the unused overlier pumping rights. The Beaumont Basin Watermaster administers this reallocation and transfers the appropriate amounts into the appropriators' storage accounts on an annual basis.

    - **Return Flow Credits** – Return flow is defined as the portion of water which is applied to the land which is not evaporated or evapo-transpired and which ultimately percolates (returns) to the groundwater table and which can be re-extracted for use. Return flows originate from irrigation of agricultural land and lawns and landscaped areas in rural and urban settings and from deep percolation of septic tank effluent in unsewered areas, e.g., Cherry Valley. In most adjudicated groundwater basins, credit is given to the supplier of water which is used on land overlying the groundwater basin and which percolates back or "returns" to the groundwater. Watermaster provided annual return flow estimates from various land uses in Table 3 of the Safe Yield Report and were used in estimating current and future return flow credits.

- **Storm Water** – Stormwater capture plays a significant role in BCVWD's local water resources supply development. Diverted stormwater is/will be routed to percolation ponds capable of recharging the groundwater basins. The District currently has stormwater diversion located in the Upper and Middle of Edgar Canyon

    - **Potential Stormwater Capture Projects** – The District has a number of potential stormwater capture projects as summarized in Table 6-8 with their potential estimated stormwater capture flows shown in Table 6-9.

Table 6-8: Potential Stormwater Capture Projects

Project	Brief Description
Soft plug in Noble Creek at BCVWD Groundwater Recharge Facility	Large flows which would bypass the spreading basins at the mouth of Edgar Canyon (Figure 6-10 above) could still be captured. Provide "soft plug" in lined portion of Noble Creek channel and divert flows into BCVWD's recharge facility. (Note that only extreme flows actually make it out of the canyon). Estimated Yield – 500 AFY.
Stormwater Capture Noble Creek	Noble Creek flows could be desilted on property owned by BCVWD (15.7 acres) along Noble Creek upstream of Noble St and west of Cherry Ave. Unfortunately, this area is not over the Beaumont Basin, but the property could be used for desilting basins with the desilted water released back into Noble Cr. and recaptured at a soft plug in the lined channel and diverted into the District's recharge site. Estimated Yield = 400 AFY.
Marshall Creek s/o Elm to I-10	There is a significant amount of urban runoff from the developed area east of Beaumont Ave, between Oak Valley Parkway and Brookside Ave. which could be captured in the soft bottom of Marshall Creek using training dikes to prevent the water from going under the I-10 bridge. There is about 300 ac of urban drainage. Estimated Yield = 150 AFY.
Beaumont MDP Line 16	Approximately 517 acres of area could be intercepted by a storm drain along Grand Ave. and conveyed to the District's Recharge facility. This water is relatively free of sediments and runoff is generated with even the slightest amount of rainfall. Refer to Table 6-11 for estimates of stormwater capture.
Sundance Urban Runoff	Eighth St., Cherry Ave., and Starlight Ave. Basins capture runoff from the Sundance development. These basins capture runoff effectively, but percolation needs to be improved. Refer to Table 6-11 for estimates of stormwater capture.

Note:
1. Taken from Table 6-8 in the BCVWD 2020 UWMP.

Table 6-9: Summary of the Urban Runoff Drainage Areas and Retention Basin Volumes

Facility	Drainage Area, acres	Basin Volume, acre-ft
Beaumont MDP Line 16	517	90
Cherry Ave Basin	426	240
Eighth St. Basin	475	128
Starlight Basin	250	32

Note:
1. Taken from Table 6-11 in the BCVWD 2020 UWMP.

- **Non-Potable Groundwater**

  - **Mouth of Edgar Canyon (Potential)**– High nitrate groundwater located at the mouth of Edgar Canyon can supplement the recycled water/non-potable water system flow in the summer, high demand months, making well water available for potable water use. BCVWD believes as much as 300 AFY can be captured and reused.

  - **San Timoteo Creek (Potential)** – San Timoteo Canyon Extraction Wells to capture groundwater from the Beaumont Basin flowing into San Timoteo Canyon and also to capture City of Beaumont wastewater flow discharged to Cooper's Creek once the water has percolated and is no longer available for habitat

maintenance. It is estimated that 400 to 800 AFY can be captured and put into the recycled water/non-potable water system to meet summertime demands.

- **Recycled Water –** The District is currently in the process of finalizing its Non-Potable Water Master Plan, which includes more current non-potable system facility requirements and recycled water supply projections. The non-potable/recycled water supply data provided in this WSA addendum are consistent with the District's 2020 UWMP. The non-potable/recycled water supply projections are considered draft as of the date of approval of this Addendum 1. Data from the BCVWD 2020 UWMP is used for consistency.

  BCVWD is currently working with the City of Beaumont to distribute Title 22 recycled water produced at the City of Beaumont's Treatment Plant No. 1. Phase 1 of the City's wastewater treatment plant construction has been completed, increasing the rated capacity from 4 MGD to 6 MGD. Process upgrades include redundant coarse screens, a grit removal system, a flow equalization basin, a fine screen system, an activated sludge process coupled with a new MBR system followed by a partial RO, and a new UV disinfection system. The City submitted a Title 22 Recycled Water Engineering Report to the Santa Ana Regional Water Board in September 2019 and is awaiting formal comment. Another component to the treatment facility upgrades is the construction of a 12-inch diameter gravity pipeline from the Beaumont WWTP to the nearest connection point in the Inland Empire Brine Line (IEBL) to dispose of the brine waste generated by the upgraded treatment facility. Construction of the brine line was completed around early 2020 and is approximately 23 miles long.

  BCVWD continues to work with the City relative to recycled water. Historically, the City of Beaumont's effluent has experienced TDS concentrations of about 400 mg/L, which is an excess of the Regional Board's Maximum Benefit Water Quality Objectives for the Beaumont Basin. With the implementation of the reverse osmosis system, the recycle water from the City will be treated to a high-level and should have no issue in achieving the Maximum Benefit Water Quality Objectives.

  Table 6-10 below lists the estimated recycled water produced, the recycled water that must be reserved for habitat mitigation (1.8 mgd), and the net amount of recycled water available for recycling. Please note that not all the wastewater can be recycled due to onsite recycled water demands and reject water from the reverse osmosis process.

Table 6-10: Recycled Water Available from City of Beaumont's WWTP

Year	2020	2025	2030	2035	2040	2045
City of Beaumont Population	51,663	59,261	67,104	74,891	79,522	81,513
Wastewater Generation Flow Rate, gpcd	70	67.5	65	65	62	60
Wastewater Flow, mgd	3.62	4	4.36	4.87	4.93	4.89
Environmental Mitigation Flow, mgd	1.8	1.8	1.8	1.8	1.8	1.8
Wastewater Available for Recycling, mgd	1.82	2.2	2.56	3.07	3.13	3.09
Estimated amount which can be recycled, mgd	1.45	1.8	2.13	2.58	2.64	2.6
Estimated amount which can be recycled, AFY	1,630	2,017	2,381	2,892	2,955	2,915
Estimated amount which can be recycled, AF/month	136	168	198	241	246	243
Estimated amount which can be recycled, gal/min	1,020	1,260	1,480	1,800	1,840	1,810

Notes

1. The City of Beaumont population growth is less aggressive than shown in tables presented in Section 3 of the BCVWD 2020 UWMP to be conservative in the amount of recycled water available.
2. Table taken from Table 6-15 in the BCVWD 2020 UWMP.

- **Imported Water from SGPWA –** The amount of imported water which BCVWD is able to purchase and recharge is only the amount left over after YVWD, the City of Banning, and others have purchased the amount each needs to meet their demands and banking. The amount available from the SGPWA collectively is discussed later in this WSA. BCVWD has entered into an agreement, and participated financially, with the SGPWA for a share of the yield from the Sites Reservoir Project. This is discussed later in this WSA.

For the normal year, there is more than enough supply to meet the demand and BCVWD can bank water in the Beaumont Basin, which will be needed during dry periods. As noted in Table 6-11 below, demand totals include BCVWD's need include banking imported water to ground water storage for drought proofing. Any additional supply available after all demands have been satisfied would be recharged and added to BCVWD's storage account.

A summary of the Water Supply Assessment for an average year is indicated below in Table 6-11.

Table 6-11: Water Supply Assessment for Normal Year Conditions

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Drought Proofing, AFY	1,500	1,200	1,000	1,000	1,000
Supplemental Water to Non-Potable System, AFY	276	246	-	-	-
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	**16,929**	**17,873**	**18,869**	**19,846**	**20,660**
LOCAL SUPPLY					
Potable Groundwater					
Edgar Canyon, AFY	2,073	2,073	2,073	2,073	2,073
Beaumont Basin Groundwater Available					
Overlier Potable Forebearance, AFY	-	67	264	384	384
Overlier Non-Potable Forebearance, AFY	471	480	1,123	1,158	1,158
Reallocation of Unused Overlier Rights, AFY	1,322	1,286	1,165	1,099	1,099
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	185	535	535	535	535
Non-Potable Groundwater					
Mouth of Edgar Canyon, AFY	-	-	300	300	300
San Timoteo Creek, AFY	-	-	600	600	600
Recycled Water Available, AFY	2,017	2,381	2,892	2,955	2,915
Subtotal Local Supply, AFY	**6,348**	**7,335**	**9,820**	**10,027**	**10,220**
BCVWD's Share of Imported Supply					
Table A Allocation (58%), AFY	7,877	7,184	6,653	5,860	5,248
Yuba Accord, AFY	182	166	154	135	121
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	2,368	2,159	2,000	1,761	1,577
Sites Reservoir, AFY	-	-	3,037	5,623	7,911
Additional SWP Transfers/Exchanges, AFY	455	415	385	339	303
Subtotal Imported Supply (Normal Conditions), AFY	**12,216**	**11,142**	**13,355**	**14,711**	**16,050**
Total Supply, AFY	**18,565**	**18,478**	**23,175**	**24,738**	**26,270**
From (To) Banked Beaumont Basin Storage, AF	(1,636)	(605)	(4,306)	(4,892)	(5,610)

Note:
1. Taken from Table 7-8 in the BCVWD 2020 UWMP

Section 7 SGPWA Available Imported Water

BCVWD relies on imported water from the SGPWA. In order to meet the requirements of SB610 of showing the current and future availability of the BCVWD water supplies, Section 7 of the original WSA is intended to be replaced with following which is essentially a summary of Section 3.1 from the 2020 SGPWA UWMP in order to describe the updated SGPWA Imported Water Supply Sources.

7 SGPWA Available Imported Water

In November of 1962, SGPWA entered a State Water Project water service contract (SWP Contract) with the State of California Department of Water Resources (DWR). The SWP Contract authorized DWR to deliver SWP water to SGPWA under certain terms and conditions.

SGPWA also acquires water supplies through contracts with other agencies and annual water transfers and exchanges. SGPWA annually acquires Yuba Accord water as well as water under the Nickel Agreement. SGPWA may also acquire water through an agreement with San Bernardino Valley Municipal Water District (SBVMWD) as well as annual transfers and exchanges with other SWP contractors. And, in the future, SGPWA will acquire water through the Sites Reservoir Agreement. All of these additional supplies, beyond SGPWA's SWP supply, are discussed in the following sections

SGPWA's delivery of supplemental water includes both delivery to water filtration facilities and groundwater recharge basins to assist with the management of groundwater in the SGPWA service area. Whether by direct delivery, in-lieu recharge, or direct recharge, the SGPWA plays a critical role in the local management of groundwater and surface water resources.

7.1 State Water Project Overview

The State Water Project (SWP) is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959, with the construction of most facilities completed by 1973. Today, the SWP includes 28 dams and reservoirs, 26 pumping and generating plants, and approximately 660 miles of aqueducts.

The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. The water flowing in the Feather River is captured by the SWP in Oroville dam and reservoir. Storage released from Oroville Dam flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct or diverted by SWP contractors upstream, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. The California Aqueduct conveys water along the west side of the San Joaquin Valley to the Edmonston Pumping Plant, where water is pumped over the Tehachapi Mountains. From there the California Aqueduct divides into the East and West Branches. SGPWA takes its SWP deliveries from the East Branch, which was completed in 2003. Phase 2 of the East Branch Extension was completed in 2018 which increased the capacity of the supplemental water supplies and allowed the SGPWA to take the Agency's official maximum allotment of State Project Water.

SGPWA delivers its SWP supplies, along with other water supplies, to recharge local groundwater basins through transmission pipelines and recharge systems as well as some delivery to Yucaipa Valley Water District.

SGPWA is one of 29 water agencies that have a SWP Contract with DWR. Each SWP contractor's SWP Contract contains a "Table A Annual Amounts" (Table A) which lists the contracted maximum amount of water an agency may receive under its contract. Table A is also used in determining each contractor's share of the total SWP water supply DWR determines to be available each year. The total planned annual delivery capability of the SWP and the sum of all

contractors' maximum Table A amounts was originally 4.23 million acre-feet. The initial SWP storage and conveyance facilities were designed to meet contractors' water demands with the construction of additional storage facilities planned as demands increased. However, few additional SWP storage facilities have been constructed since the early 1970s and a portion of the original conveyance design was never completed. SWP conveyance facilities were generally designed and have been constructed to deliver Table A to all contractors. The maximum Table A of all SWP contractors now totals about 4.133 million AF. SGPWA manages its SWP supplies to maximize the availability of these supplies to its retail customers. In this way, SGPWA seeks to optimally manage its Table A wet year supplies, acquire additional SWP supplies through Article 21 conditions (SWP surplus conditions), access Advanced Table A supplies, and potentially exchange Table A supplies with other SWP contractors. All of these actions improve the long-term reliability of Table A supplies.

7.1.1 Table A Allocations

SGPWA's Table A Annual Amount is 17,300 acre-feet per year up through the 2045 UWMP planning horizon. SGPWA's Table A represents a maximum contract amount that could be available each year assuming that the SWP could deliver 100% contract supplies to all SWP contractors. The last 100% allocation year occurred in 2006. SGPWA's SWP Contract has numerous components that allow SGPWA to manage and control the annually available SWP water supplies.

More often than not, actual SWP allocations are less than 100% SGPWA's Table A Annual Amount. Annual SWP percentage Table A allocations fluctuate based upon hydrology, water storage, and regulatory criteria in the Delta. Table 7-1 below shows the SGPWA Table A Annual Amount from 2010 through 2020, the SWP allocation percentage, and the final available Table A allocation from 2010-2020. During this period, the SGPWA received on average 8,335 acre-feet, or about 48% of the Table A contract amount. It is important to recognize that this period included a significant and recent drought event.

Table 7-1: SWP Table A Allocations and Deliveries

Year	SWP Contract Table A	Percent Allocation	Allocation Amount
2010	17,300	50%	8,650
2011	17,300	80%	13,840
2012	17,300	65%	11,245
2013	17,300	35%	6,055
2014	17,300	5%	865
2015	17,300	20%	3,460
2016	17,300	60%	10,380
2017	17,300	85%	14,705
2018	17,300	35%	6,055
2019	17,300	75%	12,975
2020	17,300	20%	3,460

Notes
1. Taken from Table 3-1 in the 2020 SGPWA UWMP.

DWR has projected that it is less likely that 100% allocation years will occur on a regular basis in the future. In August 2020, DWR finalized the "2019 SWP Delivery Capability Report" (DCR) that outlined the probable future water supply allocations for the SWP system. The DCR showed variations in future Table A deliveries based upon hydrological and regulatory conditions. These

conditions are summarized in Table 7-2 below along with SGPWA's corresponding Table A amount.

Table 7-2: SWP Estimated Table A Deliveries from DCR (values in acre-feet)

	Long Term Average		Single Dry Year (1977)		Dry Periods							
					2 Year Drought (1976-1977)		4-Year Drought (1931-1934)		6-Year Drought (1987-1992)		6 Year Drought (1929-1934)	
2017 Report	2,571	62%	336	8%	1,206	29%	1,397	34%	1,203	29%	1,408	34%
2019 Report	2,414	58%	288	7%	1,311	32%	1,228	30%	1,058	26%	1,158	28%

Notes
1. Taken from Table 3-2 in the 2020 SGPWA UWMP

As shown in Table 7-2, DWR's long-term average reliability shows a downward trend from 62% in the 2017 SWP DCR to 58% in the 2019 DCR. DWR attributes this downward trend to climatological and hydrological factors that impact precipitation patterns and snowfall accumulation above its main SWP facility, Lake Oroville. In this way, SGPWA characterizes its average normal year SWP water supply through 2045 as 58% of its Table A Annual Amount in accordance with the DCR. Thus, from 2025 through 2045, SGPWA's projected Table A final available allocation will be 58% of 17,300 acre-feet or 10,034 acre-feet per year. Importantly, SGPWA anticipates years where its Table A Allocation exceeds the average normal year delivery of 58%. In these years, SGPWA will capture and store the surplus water assets.

The single dry year characterization and five consecutive dry year characterization for the SWP supplies are also an important consideration in SGPWA's UWMP. The 2017 and 2019 DCR represent the single driest year as 1977 with an 8% SWP allocation estimate in 2017 DCR and a 7% SWP allocation estimate in 2019 DCR. The single lowest historical SWP allocation occurred in 2014 at 5%, and this 5% allocation is also representative of the 2021 Table A Allocation. As such, to be conservative in its projections, SGPWA will use 5% of 17,300 acre-feet or 865 acre-feet per year as the single dry year allocation through 2045 as depicted in Table 7-3.

Table 7-3: SWP Future Table A Projected Water Year Deliveries During Single and Multi-Year Drought Conditions (AFY)

Table A	Year Type	Amount
Normal		10,034
Single Dry Year		865
Multi-Year Drought	Year 1	6,055
	Year 2	865
	Year 3	865
	Year 4	3,460
	Year 5	6,055

Notes
1. Taken from Table 3-3 in the 2020 SGPWA UWMP

The 2019 DCR also identifies various drought periods for purposes of characterizing SWP allocation percentages that would accompany those drought periods. The averaging of the allocations over the course of the drought period is not representative of SGPWA drought planning purposes. SGPWA will use the following drought characterization for its short-term and long-term planning: year 1 at 35%; year 2 at 5%; year 3 at 5%; year 4 at 20%; and year 5 at 35%. SGPWA examined the historical record and determined that there was no representative five consecutive year historical SWP delivery dry period that adequately reflects a potential future

five-year critical drought condition that could drastically reduce SWP supply deliveries for SGPWA's service area. As such, taking a more conservative planning approach, SGPWA created a more restrictive dry year characterization that adequately represents a critical drought over five consecutive years. In this dry year modeled sequence, two consecutive critically dry years are bounded by Table A allocations that are reflected in the recent historical record. Table 3-4 shows the normal year, single dry year, and five consecutive dry years planned SWP Table A Allocation for San Gorgonio Pass Water Agency through 2045.

Table 7-4: Future SWP Allocations by Year Type Through 2045 (AFY)

Total Supply		2025	2030	2035	2040	2045
Normal		10,034	10,034	10,034	10,034	10,034
Single Dry Year		865	865	865	865	865
Multi-Year Drought	Year 1	6,055	6,055	6,055	6,055	6,055
	Year 2	865	865	865	865	865
	Year 3	865	865	865	865	865
	Year 4	3,460	3,460	3,460	3,460	3,460
	Year 5	6,055	6,055	6,055	6,055	6,055

Notes
1. Taken from Table 3-4 in the 2020 SGPWA UWMP

7.1.2. Table A Carryover Water

SGPWA's SWP Contract allows it to forego use of its allocated SWP Table A supply and retain a portion of that allocated supply in storage for future use. This retained supply is termed "Carryover" and is governed under Article 56 of SGPWA's SWP contract. Carryover water is water that is released from Oroville dam and reservoir, re-diverted at the Delta, and then stored in San Luis Reservoir – an off-stream reservoir located just outside the City of Santa Nella at the junction of Interstate 5 and California State Highway 152. San Luis Reservoir is jointly owned and operated by the state and federal governments and all SWP contractors may use the storage facility to manage Carryover water supplies. In short, the San Luis Reservoir receives, regulates, and stores exported water derived from the State Water Project and Federal Central Valley Project.

The amount of water that SGPWA may carryover in any given year is subject to a set of rules that implicate all SWP contractors throughout California. In brief, SGPWA delivers its Table A supplies to Carryover in San Luis Reservoir with an expectation that it will be able to divert all or a portion of these supplies in a subsequent year. In the event that water supplies are abundant, San Luis Reservoir may "spill." When San Luis Reservoir reaches a "spill" stage, DWR releases SGPWA's Carryover in accordance with the aforementioned rules as they apply in the context of all entities with stored water in San Luis Reservoir. Nevertheless, over the last 10 years SGPWA has retained a portion of its Table A Allocation as Carryover even in the driest years and continues to maintain a Carryover balance. Table 7-5 shows SGPWA's Carryover balance from 2010 through 2020.

Table 7-5: SGPWA Historic SWP Carryover Storage and Use (AFY)

Year	Source	Available Carryover
2010	97-12 Historic Delivery Database	2,719
2011	97-12 Historic Delivery Database	4,535
2012	97-12 Historic Delivery Database	4,956
2013	Finalization Report	5,277
2014	Finalization Report	5,264
2015	Finalization Report	954
2016	Finalization Report	936
2017	Finalization Report	1,700
2018	Finalization Report	5,159
2019	Finalization Report	2,668
2020	Finalization Report	4,211

Notes
1. Taken from Table 3-5 in the 2020 SGPWA UWMP

The Carryover supplies noted in Table 7-5 combine a number of water management factors that impact SGPWA's overall water supply availability. For example, where SGPWA is able to acquire additional water assets in normal and wet year types, SGPWA may carryover SWP supplies to water shortage years for use. Moreover, where SGPWA may acquire alternative supplies through transfers and exchanges, even in the driest years, the Agency may then manage its supply portfolio to preserve Carryover supplies for later use. For instance, in 2015, SGPWA stored 954 acre-feet of water supplies as Carryover when SWP allocations were at the lowest historical allocation on record – five percent (5%) – in the 2014 water year (see Table 7-1). Similarly, in 2015 – a 20% allocation year – SGPWA was able to carryover 936 acre-feet of water into the 2016 water year by acquiring alternative supplies and flexibly managing regional supplies in coordination with the retail agencies. SGPWA's management actions coordinated the Agency's available water supply portfolio in these years with the regional retail agencies water supply portfolios and water conservation efforts in order to preserve SWP supplies for future uses.

SGPWA will have access to its Table A Carryover supplies in future years based upon the hydrological and regulatory conditions. The Table A Carryover supplies result from a number of variables that are tied to the SWP Table A annual percent allocation, operations in San Luis Reservoir, and water supply management by SGPWA throughout its service area. In wet years, SGPWA carries over substantial supplies that are considered in the annual carryover numbers.

Accordingly, water years 2013 through 2017 above are representative of a five-year Carryover supply availability for SGPWA – and include 2014 and 2015 two of the driest years on record. Furthermore, SGPWA conservatively estimates future Carryover supplies in a normal year to be approximately 5,200 acre-feet similar to 2013, 2014, and 2018 and carryover in a single dry year to be just over 900 acre-feet like 2015 and 2016. These supplies are estimated based upon typical SWP management in a normal year in context of SGPWA's total water supply portfolio. The future normal year Carryover supply represents approximately half of SGPWA's normal year carryover number as noted in Table 7-5 but other years represent Carryover supplies that may result from additional SGPWA multi-year management actions that allow Carryover supplies to be available in these year types. Table 7-6 shows the Carryover supplies through 2025 and Table 7-7 shows the representative Table A Carryover supplies through 2045

Table 7-6: Carryover Supplies Through 2025 (AFY)

Carryover	Year Type	Amount
Normal		3,000
Single Dry Year		936
Multi-Year Drought	Year 1	3,000
	Year 2	2,500
	Year 3	954
	Year 4	936
	Year 5	1,700

Notes
1. Taken from Table 3-6 in the 2020 SGPWA UWMP

Table 7-7: Future Available Table A Carryover Supplies (AFY)

Year Type		2025	2030	2035	2040	2045
Normal		3,000	3,000	3,000	3,000	3,000
Single Dry Year		936	936	936	936	936
Multi-Year Drought	Year 1	3,000	3,000	3,000	3,000	3,000
	Year 2	2,500	2,500	2,500	2,500	2,500
	Year 3	954	954	954	954	954
	Year 4	936	936	936	936	936
	Year 5	1,700	1,700	1,700	1,700	1,700

Notes
1. Taken from Table 3-7 in the 2020 SGPWA UWMP

7.1.3 Delta Conveyance Project Future SWP Increment

The Delta Conveyance Project, if implemented, would increase the future reliability of SGPWA water supplies derived from the SWP. Consistent with Executive Order N-10-19, in early 2019, the state announced a new single tunnel project, which proposed a set of new diversion intakes along Sacramento River in the north Delta for SWP. In 2019, the California Department of Water Resources (DWR) initiated planning and environmental review for a single tunnel Delta Conveyance Project (DCP) to protect the reliability of State Water Project (SWP) supplies from the effects of climate change and seismic events, among other risks. DWR's current schedule for the DCP environmental planning and permitting extends through the end of 2024. DCP will potentially be operational no later than 2040 following extensive planning, permitting, and construction.

SGPWA anticipates that the DCP will increase access to water assets by providing conveyance opportunities that are currently unavailable. SGPWA recently increased its investment in the DCP from 1.22% to 2% of project capacity in order to improve future conveyance actions related to its water asset portfolio. As such, the DCP investment should provide better access to SWP supplies in normal and wet years as well as opportunities to deliver alternative planned supplies as they become available to SGPWA.

7.2 SGPWA Additional Imported Water Supplies

SGPWA has numerous other current and future water assets besides its Table A Annual Amount and Table A carryover supplies. These supplies are derived from the following items: Yuba

Accord, Nickel Agreement, San Bernardino Valley Municipal Water District Agreement, and Sites Reservoir Agreement. These additional water sources are more fully described below.

7.2.1. Yuba Accord Water

In 2008, SGPWA entered into the Yuba Accord Agreement and has amended the agreement several times through 2014. The Yuba Accord Agreement allows SGPWA to purchase water from Yuba County Water Agency through its contractual arrangement with DWR that permits 21 SWP contractors (including SGPWA) and the San Luis and Delta-Mendota Water Authority regular access to the supply. Yuba Accord water comes from the Yuba River, located north of the Delta, and the water purchased under this agreement is subject to losses associated with transporting it to SGPWA's service area. While the amount of this water varies each year depending on hydrologic conditions, the Agency anticipates receiving an average future amount of approximately 300 AFY. The Agency recently signed an extension to this agreement allowing it to purchase this water well into the future. Table 7-8 shows the last five years of Yuba Accord water supplies coming to SGPWA. Table 7-9 shows the normal, single dry, and five consecutive dry year water supplies available under the Yuba Accord.

Table 7-8: Last Five Years of Yuba Accord Water Deliveries (AFY)

Year	Yuba Accord Deliveries
2015	0
2016	0
2017	0
2018	124
2019	0
2020	406

Notes:

1. Taken from Table 3-8 in the 2020 SGPWA UWMP

Table 7-9: Yuba Accord Future Water Deliveries in all Year Types (AFY)

Yuba Accord Supply		2025	2030	2035	2040	2045
Normal		400	400	400	400	400
Single Dry Year		100	100	100	100	100
Multi-Year Drought	Year 1	300	300	300	300	300
	Year 2	100	100	100	100	100
	Year 3	100	100	100	100	100
	Year 4	200	200	200	200	200
	Year 5	300	300	300	300	300

Notes:

2. Taken from Table 3-9 in the 2020 SGPWA UWMP

7.2.2. Nickel Agreement

SGPWA signed an agreement with Antelope Valley – East Kern Water Agency (AVEK) on July 7, 2017 (hereafter called "Nickel Agreement"). The Nickel Agreement entitles SGPWA to purchase 1,700 acre-feet of AVEK water each year under a take or pay provision. The AVEK water is non-project water that is provided by the Kern County Water Agency. The Nickel Agreement expires in 2036 and SGPWA has a right of first refusal for an additional 20-year term. AVEK is required

to deliver 100% of the supply in all years. Table 7-10 shows SGPWA Nickel Agreement water deliveries since 2017.

Table 7-10: Nickel Agreement Water Deliveries since 2017 (AFY)

Year	Nickel Agreement Deliveries
2017	1,700
2018	1,700
2019	1,700
2020	1,700

Notes:
1. Taken from Table 3-10 in the 2020 SGPWA UWMP

SGPWA may consider the Nickel Agreement water supply always available in normal, single dry, and five consecutive dry years. The Nickel Agreement is a take or pay contract with no shortage provision that obligates AVEK to deliver the water in all year types. Table 7-11 shows the SGPWA Nickel Agreement future water supply availability.

Table 7-11: Nickel Agreement Future Water Deliveries in all Year Types (AFY)

Nickel Agreement Deliveries		2025	2030	2035	2040	2045
Normal		1,700	1,700	1,700	1,700	1,700
Single Dry Year		1,700	1,700	1,700	1,700	1,700
Multi-Year Drought	Year 1	1,700	1,700	1,700	1,700	1,700
	Year 2	1,700	1,700	1,700	1,700	1,700
	Year 3	1,700	1,700	1,700	1,700	1,700
	Year 4	1,700	1,700	1,700	1,700	1,700
	Year 5	1,700	1,700	1,700	1,700	1,700

Notes:
1. Taken from Table 3-11 in the 2020 SGPWA UWMP.

7.2.3. San Bernardino Valley Municipal Water District Agreement

SGPWA entered the Surplus Water Sale Agreement with San Bernardino Valley Municipal Water District Surplus Water Sale Agreement (SBVMWD Agreement) in June of 2018. SBVMWD is a SWP contractor that holds an entitlement to 102,600 acre-feet under its Table A Annual Amount in its 1960 SWP contract. The SBVMWD Agreement entitles SGPWA to purchase up to 5,000 acre-feet of SWP entitlement each year with SBMVWD's express concurrence. The SBVMWD Agreement expires on December 31, 2032, and there is no right of renewal. Nevertheless, SGPWA anticipates renewing this contract. The amount of water available under the contract varies each year and is subject to the "sole discretion" of SBVMWD whether the water will be made available for SGPWA to purchase. The water supply under this agreement may be available depending upon SBVMWD's supply availability determination. The SGPWA is not incorporating this potential supply into its water supply reliability determinations for all year types but considers the supply a component of its available transfer and exchange supplies and, when acquired, may be incorporated into its groundwater storage facilities.

7.2.4. Site Reservoir Agreement

SGPWA signed the Sites Reservoir Agreement in 2019. Sites Reservoir is a proposed new 1,500,000 acre-feet off-stream storage reservoir in northern California near Maxwell. Sacramento River flows will be diverted during excess flow periods and stored in the off-stream reservoir and released for use in the drier periods. Sites Reservoir is expected to provide water supply, environmental, flood, and recreational benefits. The proponents of Sites Reservoir include 30 entities including several individual SWP Public Water Agencies (PWAs). Sites Reservoir is expected to provide approximately 240 TAF of additional deliveries on average to participating agencies under existing conditions. Sites Reservoir is currently undergoing environmental planning and permitting. Full operations of the Sites Reservoir are estimated to start by 2029 following environmental planning, permitting, and construction. Sites was conditionally awarded $816 million from the California Water Commission for ecosystem, recreation, and flood control benefits under Proposition 1. Reclamation has also invested in Sites Reservoir and has allocated $13.7 million in 2021 for the project. Both SGPWA and Beaumont Cherry Valley Water District have purchased shares in Sites Reservoir, 10,000 shares and 4,000 shares respectively, that would augment supplies in the San Gorgonio Pass Water Agency service area. Table 7-12 shows the future availability of Sites Reservoir water in the SGPWA's service area and incorporates both the SGPWA and Beaumont Cherry Valley potential supplies. Other stakeholders with investments in Sites Reservoir have accounted for available supplies in 2035 as well.

Table 7-12 Future Availability of Site Reservoir Water (AFY)

Sites Reservoir		2025	2030	2035	2040	2045
Normal		0	0	10,000	12,000	15,000
Single Dry Year		0	0	10,000	12,000	15,000
Multi-Year Drought	Year 1	0	0	10,000	12,000	15,000
	Year 2	0	0	10,000	12,000	15,000
	Year 3	0	0	10,000	12,000	15,000
	Year 4	0	0	10,000	12,000	15,000
	Year 5	0	0	10,000	12,000	15,000

Notes:
1. Taken from Table 3-12 in the 2020 SGPWA UWMP.

7.2.5. Water Transfers and Exchanges

SGPWA also engages in water transfers and exchanges involving its SWP assets and other contractors' SWP water assets. Historically, SGPWA has both received and delivered water through these transfers and exchanges with various agencies throughout California. These transfers are essentially spot market transfers where short-term opportunities are identified and then actions taken for acquisition. These transfers help support management of SGPWA's and the retail agencies' water supply portfolios. Future SGPWA transfers and exchanges depend upon the allocations available to SGPWA and other water purveyors. As noted in Section 7.2.1., SGPWA has regularly acquired Yuba Accord water through its transfer and exchange activities. In addition, the State Water Contractors collectively develop annual water transfer and exchange programs to develop transferable supplies and negotiate transfer terms. SGPWA regularly participates in SWC's transfer programs. SGPWA seeks to augment potential opportunities for exchanges and transfers with SWP contractors and alternative transfer opportunities like the SWC annual transfer program. Table 7-13 shows the planned future SWP and other water transfer opportunities that could be available for SGPWA.

Table 7-13 SGPWA Future Transfers and Exchanges (AFY)

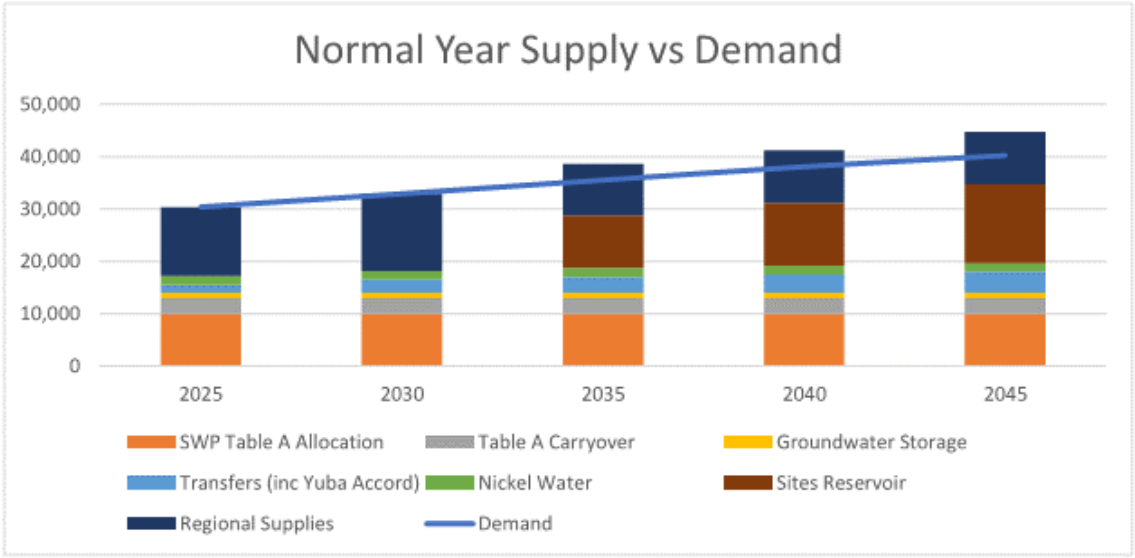
Target Supply	2025	2030	2035	2040	2045
State Water Project	500	1,000	1,000	1,000	1,000
Additional Supplies	600	1,100	1,600	2,100	2,600
Total Transfers	1,100	2,100	2,600	3,100	3,600

Notes:
1. Taken from Table 3-13 in the 2020 SGPWA UWMP.

7.3. Summary of Available Imported Water Supplies

As shown in Figure 7-1, SGPWA has reliable water supplies through the 2045 planning horizon. SGPWA has assessed the available SWP supplies, imported supplies, and locally available managed water supplies to assess regional water supply reliability through this planning horizon. In addition, SGPWA engages in annual water transfers and exchanges and stores water both within SGPWA's service area boundaries and outside its boundaries to address variable water conditions. Together, these supplies make up SGPWA's regional water asset portfolio that is actively managed by coordinated actions between SGPWA and the regional retail agencies to ensure long-term reliability.

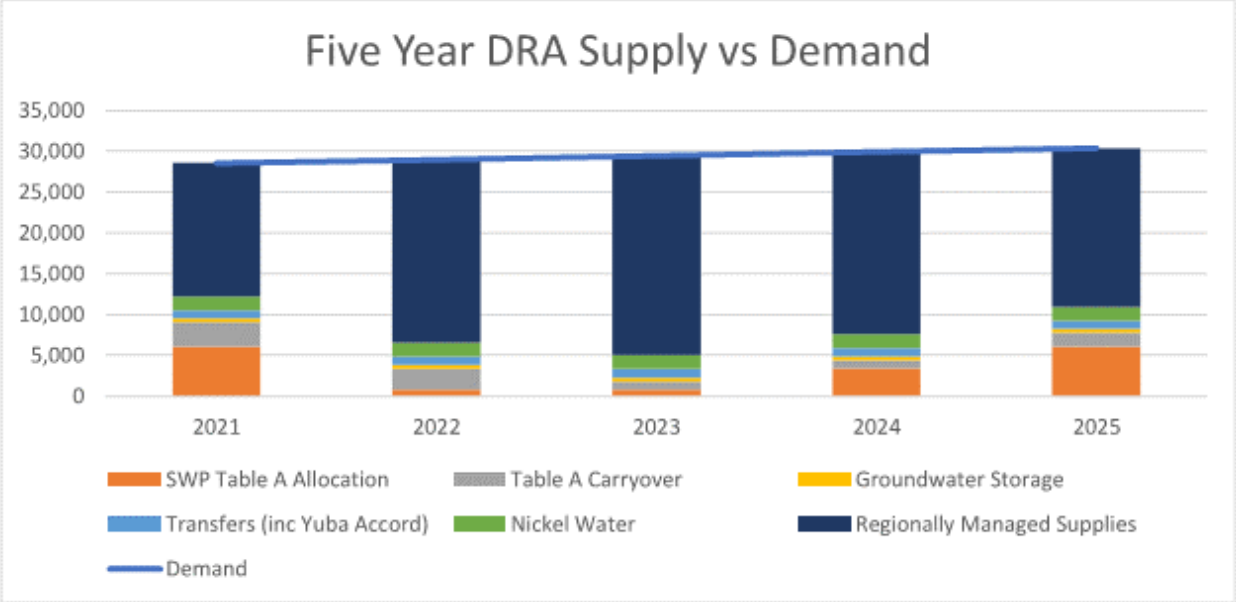
Figure 7-1: SGPWA's Water Service Reliability through 2045 (AFY)



Notes
1. Taken from Figure ES-2 from the 2020 SGPWA UWMP.

SGPWA also coordinates management of its water supplies with the retail agencies to address projected dry conditions. Specifically, SGPWA and the retail agencies capture and store surplus imported water in normal and wet years in order to use the stored water assets to meet regional demands in dry years. Moreover, the retail agencies rely upon locally managed water supplies, including native groundwater, recycled supplies, surface water assets, and return flows, to meet their annual demands. These actions stabilize annual fluctuations in recurring imported supplies that may not meet regional demands under certain dry conditions. Figure 7-2 shows a water reliability assessment for a drought lasting five consecutive years where the retail agencies in SGPWA service area use stored water and regionally managed supplies to offset fluctuations in its SWP supplies. In summary, SGPWA's diverse surface water supply portfolio, combined with its coordinated management of regionally managed surface and groundwater resources with retail purveyors, provide stable and reliable water supplies to meet SGPWA's current and 2045 future water demands in its service area.

Figure 7-2: SGPWA's Drought Risk Assessment from 2021 through 2025 (AFY)



Notes

1. Taken from Figure ES-3 from the 2020 SGPWA UWMP.

Section 8 Water Supply and Demand for BCVWD

As shown in the updated Sections 6 and 7 above, BCVWD has sufficient supply and imported water to meet demands beyond 2045 under average demand and supply conditions (see specifically updates to Section 6.1.3.3.). Therefore, no amendments are required for this section.

Section 9 Water Supply Single and Multiple Dry Period Analysis

As shown in the updated Sections 6 and 7 above, BCVWD has sufficient supply and imported water from SGPWA to meet the District's water supply requirements beyond 2045 under normal supply conditions. As required by SB610, the Project's WSA must describe the reliability of BCVWD's water supplies during dry years. The following is intended to summarize the water supply reliability and drought risk assessment presented in Section 7 of the BCVWD 2020 UWMP for the purposes of replacing Section 9 in the Project's WSA.

Section 9 – Water Supply Reliability and Drought Risk Assessment

Section 9.1 Constraints on Water Sources

A detailed description of BCVWD's current and future water sources are described previously in Section 6 of this WSA. Table 9-1, below shows a summary of BCVWD's current and future water sources and identifies the factors that affect the specific source's consistency of supply. Climate affects the amount of water available from most of the sources; there are some legal constraints on the Beaumont Groundwater Basin Source due to the Adjudication and contractual and environmental constraints on the imported State Project Water.

Table 9-1: Factors Resulting in Inconsistency of Supply

Water Supply Source	Cause of Inconsistent Supply				Additional Information
	Legal	Environmental	Water Quality	Climate	
Edgar Canyon Groundwater				X	
Beaumont Basin Groundwater Appropriator Rights	X				(1)
Beaumont Basin Groundwater Unused Overlier Rights	X			X	(2)
Imported State Project Water	X	X		X	(3)
Recycled Water				X	(4)
Stormwater Capture and Percolation				X	
Urban Runoff Capture and Percolation				X	
Nitrate-contaminated Groundwater from mouth of Edgar Canyon				X	

(1) After 2014, the Appropriator production rights are zero per Adjudication
(2) Reallocation of Overlier pumping rights are variable. Estimated to drop to 200 AFY by 2045.
(3) SWP reliability discussed in text. 10% of Table A is available 100% of the time; adjusted per draft allocation agreement.
(4) Recycled water is not subject to any significant variations; but some drought period reductions in flow are experienced – maybe 10%. Domestic water restrictions typically have the greatest impact on outdoor water use.

The District relies on groundwater banking within the Beaumont Basin during wet periods to supply demands during specified dry periods. Complementing the large storage capacity is the fact that percolation and recharge occur at relatively high rates making it very easy to "bank" water in the Beaumont Basin. Figure 9-1 below shows the amount of water BCVWD has accumulated in its storage account since 2003. Please note that imported water began to be spread in 2006.

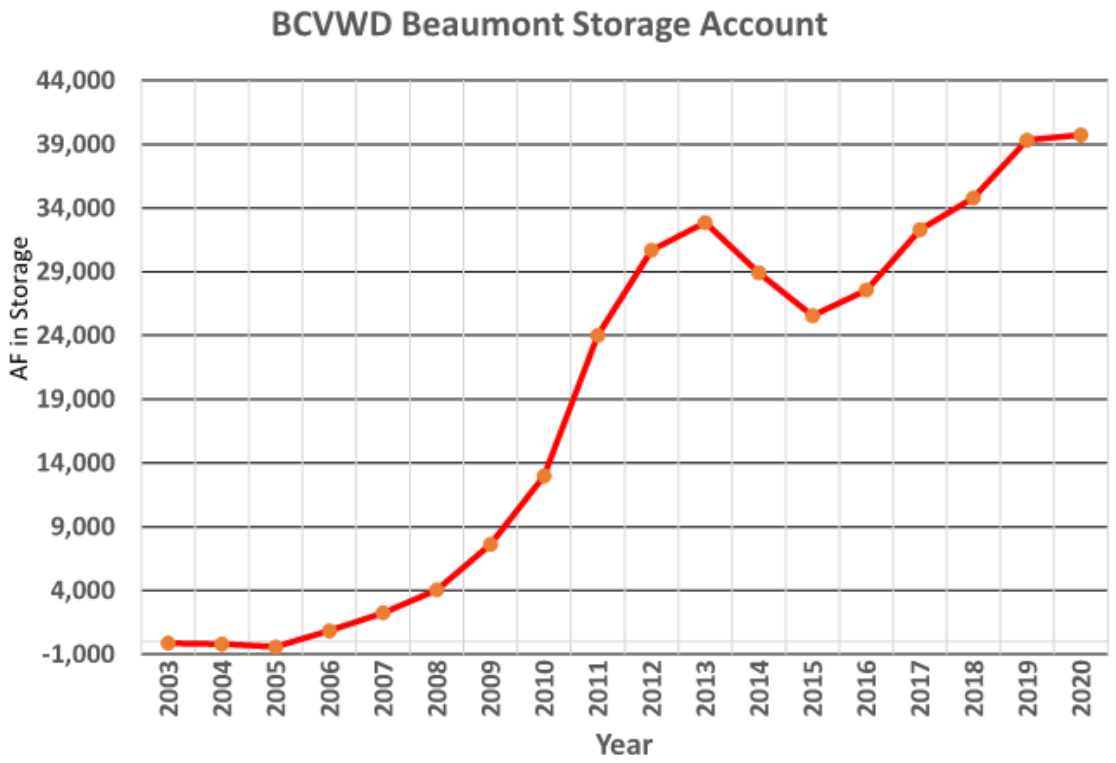


Figure 9-1 – BCVWD's Beaumont Basin Storage Amount

Notes

1. Taken from Figure 7-1 in the BCVWD 2020 UWMP

With the ability to bank water and the large "underground" reservoir, BCVWD and its neighboring agencies can withstand extended periods of drought without severe restrictions. At the end of 2020, for example, BCVWD had 39,750 AF in storage. This amount in BCVWD's storage account has seen an increase of about 14,182 AF since 2015. BCVWD can store up to 80,000 AF in the Beaumont Basin managed by the Watermaster.

In Table 9-2 below (Table 6-24 in the 2020 BCVWD UWMP) a quantity of BCVWD-purchased imported water was identified as "From SGPWA for Banking." This varied from 1,000 AFY to 1,500 AFY and is over and above the amount of imported water needed to meet demands. The purpose of this "banking water" is to build up BCVWD's Beaumont Basin Groundwater Storage Account to be used as reserve for drought periods when adequate SPW is not available.

SGPWA is to supply the imported water requested in Table 9-2 below to meet BCVWD's needs plus the anticipated SPW for banking. If, in any year(s), either of these quantities cannot be supplied for any reason, the accumulated shortfall is expected to be delivered to BCVWD by SGPWA as soon as possible once imported water is available. In this way, BCVWD will be able to keep adequate water in storage for current (2020) needs and accommodate growth in BCVWD's service area. BCVWD anticipates banking around 28,500 AF of water over the next 25 years, which would bring BCVWD's storage account to about 68,250 AF. This is over 3 years of SPW requirements to meet 2045 demands with no SPW for over 3.5 years. The following subsections quantify the variability in BCVWD's water sources.

Table 9-2: BCVWD Water Supplies – Projected

DWR Table 6-9 Retail: Water Supplies — Projected											
Water Supply **Drop down list** May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
		2025		**2030**		**2035**		**2040**		**2045** (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Groundwater (not desalinated)	Little San Gorgonio Canyon	2,070	2,200	2,070	2,200	2,070	2,200	2,070	2,200	2,070	2,200
Groundwater (not desalinated)	Beaumont Basin (Reallocated unused overlier rights)	1,322		1,286		1,165		1,099		1,099	
Groundwater (not desalinated)	Beaumont Basin total forbearance water	471		547		1,387		1,542		1,542	
Groundwater (not desalinated)	Return flows	280		514		868		922		1,155	
Stormwater Use	Beaumont MDP Line 16	185		185		185		185		185	
Stormwater Use	Misc. Stormwater	0		350		350		350		350	
Purchased or Imported Water	From SGPWA for Replenishment of Beaumont Basin (Potable water)	8,868		9,300		9,966		10,717		11,281	
Recycled Water	From City of Beaumont for Landscaping	2,017		2,381		2,892		2,955		2,915	
Purchased or Imported Water	To supplement Non-Potable Water Supply (Purchased for Replenishment)	276		246		0		0		0	
Groundwater (not desalinated)	Non-Potable Groundwater at Mouth of Edgar Canyon	0		0		300		300		300	
Groundwater (not desalinated)	Non-Potable Groundwater along San Timoteo Creek	0		0		600		600		600	
Purchased or Imported Water	From SGPWA for Banking	1,500		1,200		1,000		1,000		1,000	
Purchased or Imported Water	Additional Imported Water Available from SGPWA	1,572		396		2,389		2,994		3,769	
Total		18,561	2,200	18,475	2,200	23,172	2,200	24,734	2,200	26,266	2,200
Total Imported Water Required		10,644		10,746		10,966		11,717		12,281	
Total Imported Water Available to BCVWD from SGPWA (See Table 7-8)		12,216		11,142		13,355		14,711		16,050	
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*											
NOTES:											

Section 9.2 Regional Supply Reliability

BCVWD has a very diverse water portfolio that allows it to maintain a reliable water supply to its current and future customers. The existing sources include:

- Unadjudicated groundwater from the Little San Gorgonio Creek (Edgar Canyon)
- Adjudicated groundwater from the Beaumont Basin
- Stormwater capture in Edgar Canyon (Little San Gorgonio Creek) and recharge in percolation ponds in Upper and Middle Canyon and at the Canyon mount in recently added desilting and recharge basins.
- Non-potable groundwater supplying the existing non-potable water system
- Imported State Project Water from SGPWA
- AVEK-Nickel Water leased through SGPWA
- Yuba Accord water purchased through SGPWA

Potential Future Sources include the following and were described in Section 6.1.3.3 in this WSA Addendum.

- Recycled water from the City of Beaumont for landscape irrigation and with advanced treatment for indirect potable reuse (groundwater recharge).
- Improved recharge of captured urban runoff from Sundance development
- Non-potable groundwater from the mouth of Edgar Canyon
- Non-potable groundwater from San Timoteo Creek
- Stormwater capture and recharge via the MDP Line 16 Storm Drain (cost shared with RCFC&WCD, SAWPA grant and preparing for construction)
- Stormwater capture from Noble and Marshall Creek
- Additional urban runoff capture and recharge from developing areas

BCVWD's water management strategy since its formation has always been to maximize local water resources including local groundwater and capture and percolate surface flows in Little San Gorgonio Creek for subsequent extraction in the District's Edgar Canyon wells. With the development that occurred starting about year 2000, BCVWD began installation of a non-potable water system with the intent of using recycled water from the City of Beaumont. Currently (2020), the water demand in the non-potable system is about 12% of the total water demand. This demand is being partially met by non-potable groundwater. When recycled water becomes available, the District's non-potable demand will be primarily met with recycled water. Any additional non-potable demands will be met with non-potable groundwater.

As discussed above, BCVWD has an 80,000 AF storage account in the Beaumont Basin to purchase and store imported water when available in ample supply during wet years. In addition to SGPWA's Table A amount, there are two other sources of imported water over and that are available and are discussed within Section 7 above:

- Article 21 Water
- Turn-Back Pool Water

Section 9.3 Water Service Reliability Assessment

The amount of water available during the dry periods from BCVWD's water sources are presented below.

Section 9.3.1 Groundwater

Section 9.3.1.1. Beaumont Basin

The Beaumont Basin is managed by the Beaumont Basin Watermaster. In any given year, BCVWD can pump out its stored (banked) water. The storage is replenished, at least partially, every year by forbearance water, reallocated unused Overlying Party pumping rights, return flows, and imported water, when available. The amount of imported water that can be recharged in any year depends on DWR's SWP allocation and varies from year to year. The amount of unused Overlying Party rights is based on a 5-year moving average and could decrease slightly during drought periods as the Overlying Parties use more well water to compensate for the lack of rainfall. The forbearance water and return flows will also decrease during dry periods as users reduce water consumption.

Table 9-3 below (Table 7-2 in the BCVWD 2020 UWMP) shows the estimated amount of water credited to BCVWD by Watermaster for a single or multiple dry year analysis. For the dry year analysis, it was estimated that there would be a 15% conservation effect; in other words, for dry year analysis, only 85% of average annual forbearance, reallocated Overlying Party rights, etc. would be available. In Table 9-3, the 15% reduction factor is also applied to the recycled forbearance water to account for a potential reduction in treated wastewater due to water conservation effects. This is believed to be conservative.

Return flow credits, included in Table 9-3 below, were not applied with a 15% reduction factor as return flows are dependent upon the conservation factors in effect during the year for which credits are given.

Table 9-3 Summary of BCVWD's Beaumont Basin Storage Credits[1,2]

Item	2025	2030	2035	2040	2045
Total Return Flow Credits, Reallocated Unused Overlier Rights, and Forbearance Water from Table 6-10, AFY	2,073	2,346	2,820	2,963	3,196
Expected Ground Water Available for Dry Year Analysis, AFY	1,804	2,065	2,483	2,583	2,816

Note

1. *Taken from Table 7-2 in the BCVWD 2020 UWMP.*
2. *Reference Table 6-10 included in the table above should reference to Table 7-8 in the 2020 BCVWD UWMP.*

Edgar Canyon

Groundwater from Edgar Canyon is affected to some degree by climate change. The average annual extraction from Edgar Canyon is 2,073 AFY based on records from 1983-2020. During that period of time, the minimum extracted was 1,117 AFY, which occurred in 1991. This can be considered the "Single Dry Year Water Available." The 2-year, 3-year, 4-year, 5-year and 6-year moving averages for the extractions from 1983 -20 were determined and are presented in Table 9-2 (Table 7-3 in the BCVWD 2020 UWMP) along with the Base Period for moving averages.

Table 9-4 Groundwater Available from Edgar Canyon for Single and Multiple Dry Year Analysis

Drought Condition (Base Years)	Average Available over the Drought Period, AFY
Single Dry Year (1991)	1,117
2 Consecutive Dry Years (1990 – 91)	1,173
3 Consecutive Dry Years (1989 – 91)	1,230
4 Consecutive Dry Years (1989 – 92)	1,267
5 Consecutive Dry Years (1988 – 92)	1,305
6 Consecutive Dry Years (1987 – 92)	1,367

Note
1. *Taken from Table 7-3 in the BCVWD 2020 UWMP.*

Section 9.3.2 Imported Water

The amount of imported water available from the SGPWA via the State Water Project is very climate dependent. A spreadsheet was developed using the 2019 DWR Delivery Capability Report simulation data (1922 to 2003) for SGPWA to develop an estimate of the delivery capability for the single dry year and multiple dry year reliability analysis. The 2-, 3-, 4-, 5-, and 6-year moving averages of annual estimated delivery allocations were determined for the period 1922-2003. A summary of the Table A delivery percentages is shown in Table 9-5 (Table 7-4 in the BCVWD 2020 UWMP).

Table 9-5 SGPWA SWP Delivery Capability as Percent of Table A

Year	Long-term Average		Single Dry Year (1977)		Dry Periods							
					2-Year Drought (1976-1977)		4-Year Drought (1931-1934)		6-Year Drought (1987-1992)		6-Year Drought (1929-1934)	
2017 Report	2,571	62%	336	8%	1,206	29%	1,397	34%	1,203	29%	1,408	34%
2019 Report	2,414	58%	288	7%	1,311	32%	1,228	30%	1,058	26%	1,158	28%

Note
1. *Taken from Table 7-4 in the BCVWD 2020 UWMP.*

The percentages in Table 9-3 were compared to actual SWP delivery allocations for the period 1922 to 2020. The allocations found in BCVWD's analysis of available data are indicated below:

Minimum year	5% (2015, 2020)
Minimum 2 consecutive years	12.5% (2014 - 2015)
Minimum 3 consecutive years	18% (1990 – 1992)
Minimum 4 consecutive years	26% (1988 – 1991)
Minimum 5 consecutive years	24% (1988 – 1992)
Minimum 6 consecutive years	25% (1987 – 1992)

As can be seen, the actual minimum single dry year and minimum 2 consecutive dry years are less than those from the 2019 DWR SWP Delivery Capability Report. For the reliability analysis in this 2020 UWMP and this WSA, the allocation percentages in Table 9-6 (Table 7-5 in the BCVWD 2020 UWMP) will be used.

Table 9-6 SGPWA SWP Delivery Capability as Percent of Table A (Used for Reliability Analysis)

Dry Year(s)	Single	2-Year	3-Year	4-Year	5-Year	6-Year
Table A Annual Delivery Average Over the Drought Period, %	5	12.5	18	26	24	25

Note
1. *Taken from Table 7-5 in the BCVWD 2020 UWMP.*

For the reliability analysis, the percentages in Table 9-6 will be applied to BCVWD's estimated available imported water supplies for any particular dry year period. The results of the reliability analysis are presented in Tables 9-11 through 9-16.

By Resolution 2015-05, the SGPWA Board of Directors established an obligation to meet the future water supply needs of the region, including BCVWD. BCVWD can rely on the SGPWA to secure and deliver the imported water needed to meet BCVWD's current and future demands as set forth in this 2020 UWMP and subsequent UWMP updates in concert with DWR's Delivery Capability Reports.

Section 9.3.3. Recycled Water

Recycled water is consistently available; although during droughts, consumers are more aware of water conservation and reduce their indoor water consumption somewhat. They are more aware of the need to do only full loads of laundry, full loads for the dishwasher etc. Agencies, including the City of Beaumont, have observed a reduction in wastewater flows during the current drought.

BCVWD is counting on one source of recycled water, the City of Beaumont. For a single dry year, an estimate of 90% of the normal, average recycled water will be available. As the drought becomes more pervasive, the amount of recycled water is estimated to reduce further to 85% of normal. Table 9-7 provides an estimate of the available recycled water during extended dry periods. The amount of recycled water under normal conditions is shown in the updated Section 6 above.

Table 9-7 Estimated Recycled Water Available During Extended Dry Periods

		Year				
		2025	2030	2035	2040	2045
City of Beaumont Recycled Water Available (AFY)	% Available	2017	2381	2892	2955	2915
Single Dry Year	90%	1820	2150	2610	2660	2630
2-Years	85%	1720	2030	2460	2520	2480
3-Years	85%	1720	2030	2460	2520	2480
4-Years	85%	1720	2030	2460	2520	2480
5-Years	85%	1720	2030	2460	2520	2480
6-Years	85%	1720	2030	2460	2520	2480

Notes:

1. Taken from Table 7-6 in the BCVWD 2020 UWMP.
2. The District is currently in the process of finalizing its Non-Potable Water Master Plan, which includes more current non-potable system facility requirements and recycled water supply projections. The non-potable/recycled water supply data provided in this WSA addendum are consistent with the District's 2020 UWMP. The non-potable/recycled water supply projections are considered draft as of the date of approval of this Addendum 1. Data from the BCVWD 2020 UWMP is used for consistency.

Section 9.3.4. Storm Water and Urban Runoff Reliability (Potential Projects).

Storm water and Urban Runoff quantities are very dependent on rainfall. Review of the rainfall record at Beaumont for the period 1888 – 2006 resulted in the data shown in Table 9-8 (Table 7-7 in the BCVWD 2020 UWMP). To determine the multiple dry year rainfall as a percent of the average rainfall, the 2-, 3-, 4-, 5- and 6-year moving averages of the annual rainfall was determined.

Table 9-8 Estimated Recycled Water Available During Extended Dry Periods

Dry Year (s)	Normal	Single	2 - Year	3 - Year	4 - Year	5 - Year	6 - Year
% of Annual Average		36%	45%	52%	52%	61%	63%
Facility	Estimated Average Annual Stormwater Capture, AFY						
MDP Line 16	185	66	83	96	96	113	117
Misc. Urban Runoff Basins	350	126	158	182	182	213	222
Total Stormwater Capture	535	192	241	279	278	325	339

Notes:

1. Taken from Table 7-7 in the BCVWD 2020 UWMP.

Section 9.4 Drought Risk Assessment

A conservative approach was taken when considering the amount of imported supply BCVWD could expect in future conditions. BCVWD has included in its anticipated imported water supplies from the anticipated Table A Allocation available (using percentages described previously in Table 9-6), as well as additional potential sources of imported water identified in SGPWA's 2020 UWMP (June 2021). In any given year, when the demand for imported water exceeds the available supply, it is reasonable to assume that the imported water will be allocated by SGPWA

in proportion to each member agency's fraction of the total imported water demand without banking. A summary of the expected allocation percentages for each agency is indicated in Table 9-9, below. Percentages as indicated were determined based on a series of White Papers (White Papers No. 1 through 7) that evaluated water supply and demand for the major retailers in the SGPWA service area.

Table 9-9 Member Agency's Percent of Available Imported Water When Demand Exceed Supply

Agency	Year				
	2025	2030	2035	2040	2045
City of Banning	0.0%	0.0%	0.0%	5.6%	5.6%
YVWD/Calimesa	7.0%	7.3%	7.9%	8.1%	8.5%
BCVWD	78.5%	71.6%	66.3%	58.4%	52.3%
Other Member Agencies	14.5%	21.1%	25.8%	27.9%	33.6%
Total	100%	100%	100%	100%	100%

Notes:

1. Taken from Table 7-9 in the BCVWD 2020 UWMP.

In the future, other SGPWA water retailers will require greater supplies of imported water to meet growing demands. As a result, the allocation percentages described above will continue to change. BCVWD expects to update these percentages after the adoption of the 2020 UWMP updates for the other member agencies in the SGPWA service area.

For the Single Dry Year, potable and non-potable water demands in Table 9-11 (Table 7-11 in the BCVWD 2020 UWMP) did not reflect any conservation. For 2 consecutive dry years through 6 consecutive dry years, demand reductions for potable and non-potable water were included. The estimated demand reductions (as percent) that could be seen during various multiple dry years are indicated below in Tables 9-12 through 9-16 (Tables 7-12 through 7-16 in the BCVWD 2020 UWMP).

Table 9-10 Estimated Demand Reductions During Various Dry Year Periods

Dry Year Analysis Period	Demand Reductions
Single Dry Year	0%
2 Consecutive Dry Years	10%
3 Consecutive Dry Years	20%
4 Consecutive Dry Years	25%
5 Consecutive Dry Years	30%
6 Consecutive Dry Years	40%

Notes:

1. Taken from Table 7-10 in the BCVWD 2020 UWMP.

This is a reasonable assumption since there would be adequate time to implement the potential water use restrictions identified in Section 10 for a dry period lasting longer than a single year.
Tables 9-11 through 9-16 present the water service reliability assessment for single through 6 consecutive dry years.

Table 9-11 Water Service Reliability Assessment for Single Dry Year

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	**15,429**	**16,673**	**18,097**	**19,124**	**19,988**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,117	1,117	1,117	1,117	1,117
Beaumont Basin Groundwater Available					
Overlier Potable Forebearance, AFY	-	67	264	384	384
Overlier Non-Potable Forebearance, AFY	471	480	523	558	558
Reallocation of Unused Overlier Rights, AFY	1,322	1,286	1,165	1,099	1,099
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	66	192	192	192	192
Recycled Water Available, AFY	1,820	2,150	2,610	2,660	2,630
Subtotal Local Supply, AFY	**5,076**	**5,805**	**6,739**	**6,932**	**7,135**
BCVWD's Share of Imported Supply					
Table A Allocation (5%), AFY	679	619	573	505	452
Yuba Accord, AFY	16	14	13	12	10
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	204	186	172	152	136
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	39	36	33	29	26
Subtotal Imported Supply, AFY	**2,273**	**2,073**	**2,205**	**2,262**	**2,657**
Total Supply, AFY	**7,349**	**7,878**	**8,944**	**9,195**	**9,792**
From Banked Beaumont Basin Storage, AF	8,080	8,795	9,153	9,929	10,196

Notes:

1. Taken from Table 7-11 in the BCVWD 2020 UWMP.

Table 9-12 Water Service Reliability Assessment for 2 Consecutive Dry Years

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	15,429	16,673	18,097	19,124	19,988
Total Water Demand (10% Demand Reduction), AFY	**13,886**	**15,006**	**16,287**	**17,212**	**17,989**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,173	1,173	1,173	1,173	1,173
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	60	237	346	346
Overlier Non-Potable Forebearance, AFY	424	432	471	502	502
Reallocation of Unused Overlier Rights, AFY	1,190	1,157	1,049	989	989
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	241	241	241	241	241
Recycled Water, AFY	1,720	2,030	2,460	2,520	2,480
Subtotal Local Supply , AFY	**5,028**	**5,607**	**6,499**	**6,693**	**6,886**
BCVWD's Share of Imported Supply					
Table A Allocation (12.5%), AFY	1,698	1,548	1,434	1,263	1,131
Yuba Accord, AFY	39	36	33	29	26
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	510	465	431	380	340
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	98	90	83	73	65
Subtotal Imported Supply, AFY	**3,680**	**3,356**	**3,394**	**3,309**	**3,594**
Total Supply, AFY	**8,708**	**8,963**	**9,893**	**10,002**	**10,481**
From Banked Beaumont Basin Storage, AF	5,178	6,042	6,395	7,209	7,508
Total Withdrawn from Storage during Dry Period, AF	10,357	12,084	12,790	14,419	15,017

Notes:

1. Taken from Table 7-12 in the BCVWD 2020 UWMP.

Table 9-13 Water Service Reliability Assessment for 3 Consecutive Dry Years

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	15,429	16,673	18,097	19,124	19,988
Total Water Demand (20% Demand Reduction), AFY	**12,343**	**13,338**	**14,478**	**15,299**	**15,990**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,230	1,230	1,230	1,230	1,230
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	54	211	308	308
Overlier Non-Potable Forebearance, AFY	377	384	418	446	446
Reallocation of Unused Overlier Rights, AFY	1,058	1,028	932	880	880
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	241	241	241	241	241
Recycled Water, AFY	1,720	2,030	2,460	2,520	2,480
Subtotal Local Supply , AFY	**4,906**	**5,481**	**6,361**	**6,546**	**6,739**
BCVWD's Share of Imported Supply					
Table A Allocation (18%), AFY	2,444	2,230	2,065	1,819	1,629
Yuba Accord, AFY	57	52	48	42	38
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	735	670	621	547	490
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	141	129	119	105	94
Subtotal Imported Supply, AFY	**4,712**	**4,297**	**4,265**	**4,077**	**4,282**
Total Supply, AFY	**9,617**	**9,778**	**10,626**	**10,623**	**11,021**
From Banked Beaumont Basin Storage, AF	2,726	3,560	3,852	4,676	4,969
Total Withdrawn from Storage during Dry Period, AF	8,178	10,680	11,555	14,029	14,908

Notes:

1. Taken from Table 7-13 in the BCVWD 2020 UWMP.

Table 9-14 Water Service Reliability Assessment for 4 Consecutive Dry Years

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	15,429	16,673	18,097	19,124	19,988
Total Water Demand (25% Demand Reduction), AFY	**11,572**	**12,505**	**13,573**	**14,343**	**14,991**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,267	1,267	1,267	1,267	1,267
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	50	198	288	288
Overlier Non-Potable Forebearance, AFY	353	360	392	418	418
Reallocation of Unused Overlier Rights, AFY	992	964	874	825	825
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	241	241	241	241	241
Recycled Water, AFY	1,720	2,030	2,460	2,520	2,480
Subtotal Local Supply , AFY	**4,853**	**5,426**	**6,300**	**6,481**	**6,674**
BCVWD's Share of Imported Supply					
Table A Allocation (26%), AFY	3,531	3,221	2,982	2,627	2,352
Yuba Accord, AFY	82	74	69	61	54
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	1,061	968	896	790	707
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	204	186	172	152	136
Subtotal Imported Supply, AFY	**6,212**	**5,666**	**5,533**	**5,193**	**5,282**
Total Supply, AFY	**11,066**	**11,093**	**11,833**	**11,674**	**11,956**
From Banked Beaumont Basin Storage, AF	506	1,412	1,740	2,669	3,035
Total Withdrawn from Storage during Dry Period, AF	2,025	5,648	6,960	10,675	12,140

Notes:

1. Taken from Table 7-14 in the BCVWD 2020 UWMP.

Table 9-15 Water Service Reliability Assessment for 5 Consecutive Dry Years

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	15,429	16,673	18,097	19,124	19,988
Total Water Demand (30% Demand Reduction), AFY	**10,800**	**11,671**	**12,668**	**13,387**	**13,992**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,305	1,305	1,305	1,305	1,305
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	47	185	269	269
Overlier Non-Potable Forebearance, AFY	330	336	366	390	390
Reallocation of Unused Overlier Rights, AFY	926	900	816	770	770
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	241	241	241	241	241
Recycled Water, AFY	1,720	2,030	2,460	2,520	2,480
Subtotal Local Supply , AFY	**4,801**	**5,373**	**6,241**	**6,417**	**6,610**
BCVWD's Share of Imported Supply					
Table A Allocation (24%), AFY	3,259	2,973	2,753	2,425	2,171
Yuba Accord, AFY	75	69	64	56	50
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	980	894	827	729	653
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	188	172	159	140	126
Subtotal Imported Supply, AFY	**5,837**	**5,324**	**5,216**	**4,914**	**5,032**
Total Supply, AFY	**10,639**	**10,697**	**11,456**	**11,331**	**11,642**
From Banked Beaumont Basin Storage, AF	162	974	1,212	2,056	2,350
Total Withdrawn from Storage during Dry Period, AF	808	4,871	6,058	10,279	11,748

Notes:

1. Taken from Table 7-15 in the BCVWD 2020 UWMP.

Table 9-16 Water Service Reliability Assessment for 6 Consecutive Dry Years

	YEAR				
	2025	**2030**	**2035**	**2040**	**2045**
DEMAND					
Potable Water Demand, AFY	13,196	14,252	15,391	16,285	17,082
Supplemental Water to Non-Potable System, AFY	276	246	228	278	328
Non-Potable Water Demand, AFY	1,957	2,175	2,478	2,561	2,578
Total Water Demand, AFY	15,429	16,673	18,097	19,124	19,988
Total Water Demand (40% Demand Reduction), AFY	**9,257**	**10,004**	**10,858**	**11,474**	**11,993**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,367	1,367	1,367	1,367	1,367
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	40	158	231	231
Overlier Non-Potable Forebearance, AFY	283	288	314	335	335
Reallocation of Unused Overlier Rights, AFY	793	771	699	660	660
Return Flow Credits, AFY	280	514	868	922	1,155
Storm Water, AFY	241	241	241	241	241
Recycled Water, AFY	1,720	2,030	2,460	2,520	2,480
Subtotal Local Supply , AFY	**4,684**	**5,251**	**6,107**	**6,275**	**6,468**
BCVWD's Share of Imported Supply					
Table A Allocation (25%), AFY	3,395	3,097	2,867	2,526	2,262
Yuba Accord, AFY	79	72	66	58	52
AVEK Nickel, AFY	1,335	1,217	1,127	993	889
SGPWA Carryover Water, AFY	1,021	931	862	759	680
Sites Reservoir, AFY	-	-	286	571	1,143
Additional SWP Transfers/Exchanges, AFY	196	179	166	146	131
Subtotal Imported Supply, AFY	**6,025**	**5,495**	**5,374**	**5,054**	**5,157**
Total Supply, AFY	**10,709**	**10,747**	**11,482**	**11,329**	**11,625**
From Banked Beaumont Basin Storage, AF	(1,452)	(743)	(623)	146	368
Total Withdrawn from Storage during Dry Period, AF	(8,709)	(4,458)	(3,740)	875	2,208

Notes:

1. Taken from Table 7-16 in the BCVWD 2020 UWMP.

In all of the assessments, water must be extracted from BCVWD's Beaumont Basin Storage Account. Tables 9-11 through 9-16 clearly indicate the importance of maintaining substantial amounts of water in the storage account. Based on the assessment, BCVWD should keep about 12,000 AF in the storage account in order to maintain a 5-year supply as mandated by BCVWD Resolution 2015-05, if conservation measures are in effect. The total amount required to be withdrawn from banked storage will increase if conservation measures and restrictions described in Section 10 cannot be achieved. If no conservation occurs (worst case, conservative), BCVWD will need to maintain about 52,000 AF in its storage account to meet the demands during a 5 consecutive year dry period.

A summary of the available supplies expected during a 5-year drought, beginning in 2020 are summarized in Table 9-17 (Table 7-17 in the BCVWD 2020 UWMP) below. The results of the Drought Risk Assessment above assume that the demand reductions and conservation measures described in Section 12 (Section 8 in the BCVWP 2020 UWMP) are achieved.

Table 9-17 5-Year Drought Risk Assessment

	YEAR				
	2021	**2022**	**2023**	**2024**	**2025**
DEMAND					
Potable Water Demand, AFY	12,412	12,604	12,787	12,952	13,472
Non-Potable Water Demand, AFY	1,642	1,664	1,686	1,696	1,957
Total Water Demand, AFY	14,054	14,268	14,473	14,648	15,429
Demand Reduction (%)	0%	10%	20%	25%	30%
Total Water Demand (Including Reductions), AFY	**14,054**	**12,841**	**11,578**	**10,986**	**10,800**
LOCAL SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,117	1,173	1,232	1,267	1,305
Beaumont Basin Available, AFY					
Overlier Potable Forebearance, AFY	-	-	-	-	-
Overlier Non-Potable Forebearance, AFY	-	-	-	-	330
Reallocation of Unused Overlier Rights, AFY	2,025	1,826	1,827	2,017	926
Return Flow Credits, AFY	235	246	258	269	280
Storm Water, AFY	-	185	185	185	241
Recycled Water, AFY		1,520	1,580	1,650	1,720
Subtotal Local Supply , AFY	**3,377**	**4,950**	**5,082**	**5,388**	**4,802**
BCVWD's Share of Imported Supply					
Table A Allocation (%), AFY	5%	12.5%	18%	26%	24%
Table A Allocation , AFY	679	1,698	2,444	3,531	3,259
Yuba Accord, AFY	16	39	57	82	75
AVEK Nickel, AFY	1,335	1,335	1,335	1,335	1,335
SGPWA Carryover Water, AFY	204	510	735	1,061	980
Sites Reservoir, AFY	-	-	-	-	-
Additional SWP Transfers/Exchanges, AFY	39	98	141	204	188
Subtotal Imported Supply, AFY	**2,273**	**3,680**	**4,712**	**6,212**	**5,837**
Total Supply, AFY	**5,650**	**8,630**	**9,794**	**11,600**	**10,639**
From Banked Beaumont Basin Storage, AF	8,404	4,212	1,785	(614)	161
Total Withdrawn from Storage during Dry Period, AF	8,404	12,616	14,401	13,786	13,947

Notes:

1. Taken from Table 7-17 in the BCVWD 2020 UWMP.

Section 11 Conclusions (Previously Section 10 in Project's WSA)

The following revisions noted in red shall be incorporated into Section 11 (previously Section 10 in the Project's WSA)

1. The projected water demand from the Beaumont Pointe Development project is 196.70 AFY of which 85.20 AFY is outdoor, non-potable water use. This equates to approximately 1% of the District existing water demand for 2020.

2. The Beaumont Pointe development project site was included in the list of planned development projects in BCVWD's 2020 UWMP (previously identified as Jack Rabbit Trail) which demonstrated adequate water supplies up to the year 2045. To clarify, when the District was preparing the basis for future water demands within the District's service area in the BCVWD's 2020 UWMP, the District utilized the potable water demands from the DRAFT November 2020 Beaumont Pointe WSA. This draft version of the Project's WSA identified the potable water demand as 221 EDUs as shown in Table 3-7 in the BCVWD's 2020 UWMP. Because the Project's updated land use plan has a potable water demand of 204.21 EDUs, the District's 2020 UWMP conservatively included the Project's anticipated potable water demands at 221 EDU

3. BCVWD prepared a series of White Papers which analyzed the regional (SGPWA) imported water supply requirements and funding requirements. These White Papers are referenced for the Beaumont Pointe Development WSA. The basis for the White Papers was a regional spreadsheet demand model, developed by BCVWD, which was reviewed by the City of Banning and YVWD.

4. The White Papers indicate that SGPWA can obtain sufficient imported water supply to supplement local supplies to meet regional needs including BCVWD's needs. The White Papers also indicated that adequate funding is available to implement the imported water projects currently planned for the short and long terms.

5. BCVWD prepared and adopted a Potable Water Master Plan which identified water needs and facility needs to build-out. The BCVWD 2020 UWMP identified recycled water from the City of Beaumont for non-potable water irrigation with a plan for the recharge of surplus recycled water with appropriate treatment and permits. The City and BCVWD signed a Memorandum of Understanding (MOU) in 2019 which began the process of an agreement for purchase of recycled water by BCVWD. In addition, storm water capture and other local water resource projects were identified. One of these projects, MDP-Line 16, (Grand Avenue Storm Drain) is currently in design by the Riverside County Flood and Water Conservation District and BCVWD. The storm drain will be partially funded through a grant from the Santa Ana Watershed Project Authority.

6. SGPWA and BCVWD have made financial commitments to the Sites Reservoir project Phase 1 studies and will commit funds to Phase 2.

7. Adequate water supply exists, or is planned, for the Beaumont Pointe development project to 2045 and beyond as outlined in Section 9. BCVWD can meet the Project needs as well as BCVWD's existing demands and the demands of the other planned developments within BCVWD's service area which are listed in the Beaumont Pointe Development WSA.

8. Multiple dry-year reliability analysis demonstrates that BCVWD will be able to meet its existing demands and the demands of the other planned developments within its service area which were listed in the Beaumont Pointe WSA. BCVWD will supplement its existing supply sources during these dry periods with banked water in BCVWD's Beaumont Basin Groundwater Storage Account.

9. Pursuant to §10910 of the California Water Code (SB 610) and information provided in the BP WSA, BCVWD has determined that currently available and planned supplies are sufficient to meet the water demands of the proposed BP project in addition to the existing and other planned project demands during normal, single dry and multiple dry years over the next 20 years, as outlined in Section 6 through 9 in this WSA.

10. Pursuant to the California Government Code Section 66473.7, (SB 221) BCVWD has determined that it has sufficient and adequate water supply available to serve the long-term needs of the Beaumont Pointe in addition to the existing and other planned project demands during normal, single dry and multiple dry years over the next 20 years, as outlined in Sections 6 through 9.

3 2021 Beaumont Pointe WSA Additions

Addition of Section 10 – BCVWD Water Shortage Contingency Plan

The BCVWD 2020 UWMP Section 10 addresses the DWR new requirements of a District-wide Water Shortage Contingency Plan (WSCP). The following is intended to be added as Section 10 – BCVWD Water Shortage Contingency Plan to the Project's WSA to summarize the BCVWD WSCP.

SECTION 10 – BCVWD WATER SHORTAGE CONTINGENCY PLAN (WSCP)

As a companion to the BCVWD 2020 UWMP and required by the State, the District prepared and approved the BCVWD 2020 Water Shortage Contingency Plan (WSCP) as a strategic planning process to prepare for and respond to water shortages. As part of this new requirement, BCVWD will assess each year's water supplies to determine if there was a water volume shortage for that year. Based on the water shortage, the District will implement one of the six water conservation levels (shown in Table 10-1 below), as defined in the District's WSCP, to encourage or require water conservation among its service area. The Beaumont Pointe Development will be subject to these water conservation levels as dictated by BCVWD.

Table 10-1 Water Shortage Contingency Levels

DWR Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** (*Narrative description*)
1	Up to 10%	Up to 10% reduction in normal, "long term" water supply (including conjuntive use water in storage); response actions includes voluntary public demand reduction of 10%, and community outreach encouraging conservation.
2	Up to 20%	Up to 20% reduction in normal, "long term" water supply (including conjuntive use water in storage); includes any actions from Shortage Level 1. Response actions include mandatory 10% reduction - Increased public outreach, restaurants serve water upon request, lodging must offer opt out of linen services
3	Up to 30%	Up to 30% reduction in normal, "long term" water supply (including conjuntive use water in storage); response actions includes any actions from Shortage Levels 1 and 2. Response actions include mandatory 20% reduction - limit landscape irrigation to certain number of days per week
4	Up to 40%	Up to 40% reduction in normal, "long term" water supply (including conjuntive use water in storage); response actions includes any actions from Shortage Levels 1, 2 and 3. Response actions include mandatory 25% reduction - limit irrigation of lawns to once a week except for lawns and turf irrigate with recycled water, restrict water use for decorative water features, limit filling of pools only to cases where appropriate cover is in place
5	Up to 50%	Up to 50% reduction in normal, "long term" water supply (including conjuntive use water in storage); response actions includes any actions from Shortage Levels 1 - 4. Response actions include mandatory 30% reduction - prohibit filling of swimming pools, washing of automobiles only limited to facilities using recycled water, prohibit potable water use for construction activities,industrial water users required to reduce water use (food processing, concrete mixing plant)
6	>50%	Greater than 50% reduction in normal, "long term" water supply (including conjuntive use water in storage); response actions includes any actions from Shortage Levels 1 - 5. Response actions include mandatory 30% reduction - prohibit landscape irrigation except for irrigation with use of recycled water, industrial water users required to further reduce water use (food processing, concrete mixing plant)
NOTES:		

Notes:

1. Taken from Table 8-1 in the BCVWD 2020 UWMP.

4 2021 Beaumont Pointe WSA Attachments

Beaumont Basin Adjudication and 2020 Annual Watermaster Report

Water Code Section 10910(f) must be met which will require the Project's WSA to include a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public system. While the updated sections above summarize the amount of groundwater available for BCVWD listed in the 2020 UWMP, the following will be included as attachments to meet the requirements of Water Code Section 10910(f).

Attachment A – Beaumont Basin Formation Documents

Attachment B – Amended Judgement Pursuant to Stipulation Adjudicating Groundwater Rights in the Beaumont Basin

Attachment C – Beaumont Basin Watermaster 2020 Consolidated Annual Report and Engineering Report

Beaumont Cherry Valley Water District 2020 Urban Water Management Plan and Water Shortage Contingency Plan

The information presented in the Project's WSA references the 2020 BCVWD 2020 UWMP. The following attachments include the updated BCVWD 2020 UWMP and their new 2020 BCVWD Water Shortage Contingency Plan.

Attachment D – BCVWD 2020 Urban Water Management Plan

Attachment E – BCVWD 2020 Water Shortage Contingency Plan

Water Supply Assessment for Beaumont Pointe – April 13th, 2021

This addendum is intended to update the Project's previously approved WSA. Attached will be the previously approved WSA for the Project

Attachment F – Water Supply Assessment for Beaumont Pointe – April 2021

Appendix D – Hidden Canyon Beaumont Distribution Center – Water Demands and Domestic Water Service Calculations

January 23, 2020,

Mr. Erik Engelstad
Lassen Development Partners, LLP
3900 S Wadsworth Blvd
Denver, CO 80235

Subject: Hidden Canyon Beaumont Distribution Center – Water Demands and Domestic Water Service Calculations

Charles Marr Consulting (CMC), partnered with Thienes Engineering Inc, has completed the analysis of the Hidden Canyon Beaumont Distribution Center (HC or Project) for the purpose of:

1. Estimating the potable and non-potable water demands
2. Defining a potable water distribution system that could be approved by the Beaumont-Cherry Valley Water District
3. Providing hydraulic calculations supporting the domestic water pipeline sizes for serving the Project from the proposed Fourth Street extension

Conclusion

The fire flow analysis performed here is conservatively based on a higher standard than required by the fire department. The District will provide the required 4,000 gpm at 20 psi for Hidden Canyon at a minimum service pressure of 20 psi. (For the purposes of a conservative analysis 5,000 gpm at 30 psi is used here.) This analysis shows that the 2650 Zone can supply up to 4,500 gpm to the Project site during emergency fireflow. Any supplemental flow to the HC project site can be provided from the proposed 4th Street PRV station and 2750 Zone.

Hidden Canyon Project Description

The Hidden Canyon development project is planned for approximately 2.9 million square feet of warehouse structures (2 separate buildings, **Attachment 1**) and is located in the City of Beaumont and within the Beaumont-Cherry Valley Water District service area. Access to the project site will include extension of 4th Street to the west from Potrero Boulevard.

The District recently oversaw the construction of the 24-inch transmission pipeline in Potrero Boulevard extending their backbone 2650 Zone from north of the 60 freeway to 4th Street. The construction also extended the 2650 Zone to the east in 4th Street with a 24-inch pipeline to the proposed location of the 2750-to-2650 pressure-reducing valve (PRV) station.

The District's September 24, 2019 memorandum (**Attachment 2**) identified design PRV station flows and a preliminary layout of the station. It indicates that the 2750 Zone can provide in excess of 5,000 gpm through year 2030. Peak hour demand from future projects including

Hidden Canyon, Olivewood and Jack Rabbit Trail are envisioned to require supplemental service through the PRV station with primary service from the Hannan Tank, which floats the 2650 Zone from north of the freeways. A fire hydrant flow test performed last year on the 2750 Zone upstream of the proposed PRV station at the 18-inch pipeline loop for the recently constructed Amazon Distribution Center approximately 0.67 miles east of Potrero Boulevard confirms this. The fire hydrant flow test (**Attachment 3**) hydraulic results are as follows:

- Minimum Static Pressure = 91 psi
- Maximum Static Pressure = 105 psi (Avg is calculated as 98 psi)
- Observed flow = 4,000 gpm
- Residual Pressure during flow = 76 psi

The calculations performed for this technical memorandum (**Attachment 4**) show these hydraulic figures equate to 6,000 gpm at 72 psi at the proposed PRV station location. The 2750 Zone will be essential for redundancy and reliability of the 2650 Zone south of the 60 Freeway and west of Potrero Boulevard.

In order to confirm the Attachment 4 calculations, Thienes Engineering requested and received two additional fire hydrant flow tests for two separate fire hydrants – FH No. 1 located at Oak Valley Parkway and Linksman Drive and FH No. 2 located in 4th Street approximately one half mile east of Potrero Boulevard. The fire hydrants represent existing or proposed hydrants within the District's computer hydraulic model. District staff performed the tests using their model simulating current and future demands of the 2650 Zone with the proposed 2650 Zone PRV station in operation. The fire hydrant flow tests are included in **Attachment 6**, and the hydraulic results are as follows:

Fire Hydrant No. 1 (Oak Valley Pkwy and Linksman Dr)

- Minimum Static Pressure = 123 psi
- Maximum Static Pressure = 128 psi (Avg is calculated as 125.5 psi)
- Observed flow = 4,000 gpm
- Residual Pressure during flow = 90.2 psi

Fire Hydrant No. 2 (4th Street east of Potrero Blvd)

- Minimum Static Pressure = 90 psi
- Maximum Static Pressure = 95 psi (Avg is calculated as 92.5 psi)
- Observed flow = 4,000 gpm
- Residual Pressure during flow = 57.8 psi

It should be noted that Fire Hydrant No. 2 is located approximately at the proposed site of the PRV station. The results show a drop in pressure between static conditions and observed flow conditions of 35 psi. If the static and residual pressures were read on the 2650 Zone at the simulated fire flow location on the downstream side of the proposed PRV with pressure setting at or slightly below 2650 feet hydraulic gradient, minimal pressure loss would be expected because the PRV would act to maintain the downstream pressure setting regardless of flow.

Therefore, it is apparent the model simulation included a pressure setting on the PRV below 57.8 psi, resulting in no flow assistance from the 2750 Zone. Therefore, in order to confirm the calculations of Attachment 4 using the two recent flow tests (Attachment 6), we provide these revised calculations with the understanding that no assistance from the PRV station occurred during the tests. Thus, during the FH No. 2 test simulation 100 percent of the Project potable water demands were supplied from the main 2650 Zone (Hanna) Tank and the Potrero Boulevard transmission main.

Hidden Canyon Water Demands

The project water demands are estimated based on one employee per 1500 square feet of office/warehouse building structure, and confirms BCVWD staff estimate in the Approved Water Supply Assessment dated February 2019, and Will-serve letter dated March 5, 2019 (**Attachment 5**). Irrigation demands have been updated to reflect measured acreage for the major perimeter slopes and various landscaping for strip irrigation surrounding each building, as well as planter boxes located throughout the parking area. **Table 1** outlines the potable and non-potable water demands of Hidden Canyon Beaumont Distribution Center:

Table 1 - Hidden Canyon Water Demand Estimate

Buildings	Land Use	[1] Bldg Area (sf)	Employee count [2]	Project Site Acreage [1] total	Bldg	Irrig.	Indoor Water Demand Factor [2]	Outdoor Water Demand Factor [3]	[4] Indoor Water Demand	Outdoor Irrigation Demand [5]
1	Ware-house	1,842,040	1,308	85.3	68.2	17.1	15 gpd/emp	670,000 gal/Ac/Yr	19,616 gpd	31,389 gpd
	office	25,000								
2	Ware-house	975,170	692	57.3	46.8	10.5	15 gpd/emp	670,000 AF/Ac/Yr	10,384 gpd	19,274 gpd
	office	25,000								
Total	**Ware-house**	**2,817,210**	**2,000**	**142.6**	**115.0**	**27.6**	**15 gpd/emp**	**670,000 AF/Ac/Yr**	**30,000 gpd**	**50,663 gpd**
	office	**50,000**								
Total		**2,867,210**							**24 AFY**	**57 AFY**

[1] Based on approved site plan and tabulation of proposed land uses.

[2] Based on typical industry planning factor or Water Supply Assessment (Feb 2019) water demand estimate, approved in March 2019 Board meeting.

[3] Based on outdoor water demand factor used for Amazon Distribution Center.

[4] Represents demand on BCVWD potable (domestic) water sources until non-domestic water becomes available.

[5] Represents demand that could be served by non-domestic water sources.

This is consistent with industry standard usage factors and typical landscape ordinance restrictions of recent. Peaking factors can vary based on size of development project and land use type. Based on our recent discussions with District staff, the Project will be conditioned to serve recycled water for all outdoor irrigation. Peaking for the maximum-day demand (highest volume of water used in a 24-hour period) on the domestic water system could range from 1.5 to 4.0 times average demand. Peak-hour peaking could range from 2.0 to 4.0 times the maximum-day demand. **Table 2** presents peaking of the water demands that could be

expected from HC:

Table 2 - Hidden Canyon Water Demand Peaking

Demand	Average		Max Day	Peak hour
	gpd	gpm		
indoor	30,000 gpd	21 gpm	62.5 gpm [1]	187.5 gpm [1]
outdoor	50,663 gpd	35 gpm	- [2]	- [2]

[1] Based on 3 x avg = Max Day; 3 x Max Day = Peak Hour

[2] It is understood that all outdoor irrigation demands will be served by a separate water system. Peaking would depend on City of Beaumont landscape ordinance, landscape and irrigation design.

BCVWD Water System proposed for serving Hidden Canyon

The Hidden Canyon Beaumont Distribution Center project team met with Beaumont Cherry Valley Water District staff on October 9, 2019 to discuss water service for the Project and construction status of the District's 2650 Zone domestic water system in the Project region. With the exception of the pressure-reducing valve (PRV) station, all domestic transmission piping is completed in Potrero Boulevard south to 4th Street and in 4th Street east to the Amazon Distribution Center where it will connect to the 2750 Zone via the PRV station.

One of the primary concerns for the District is water quality and water turnover in the piping system for Hidden Canyon. The Project will require approximately one mile of transmission pipeline in 4th Street from the existing facilities in Potrero Boulevard, which represents a large volume of water that will only serve the Project in the interim. Thus, circulation is necessary in order to maintain water quality without regular flushing of the pipeline due to a relatively low average daily demand. This can be achieved by a dual piping system within 4th Street connecting to the Potrero Boulevard transmission main to serve the HC project and operate in the interim specifically to circulate 2750 and 2650 Zone water, as illustrated in **Figures 1 and 2**:

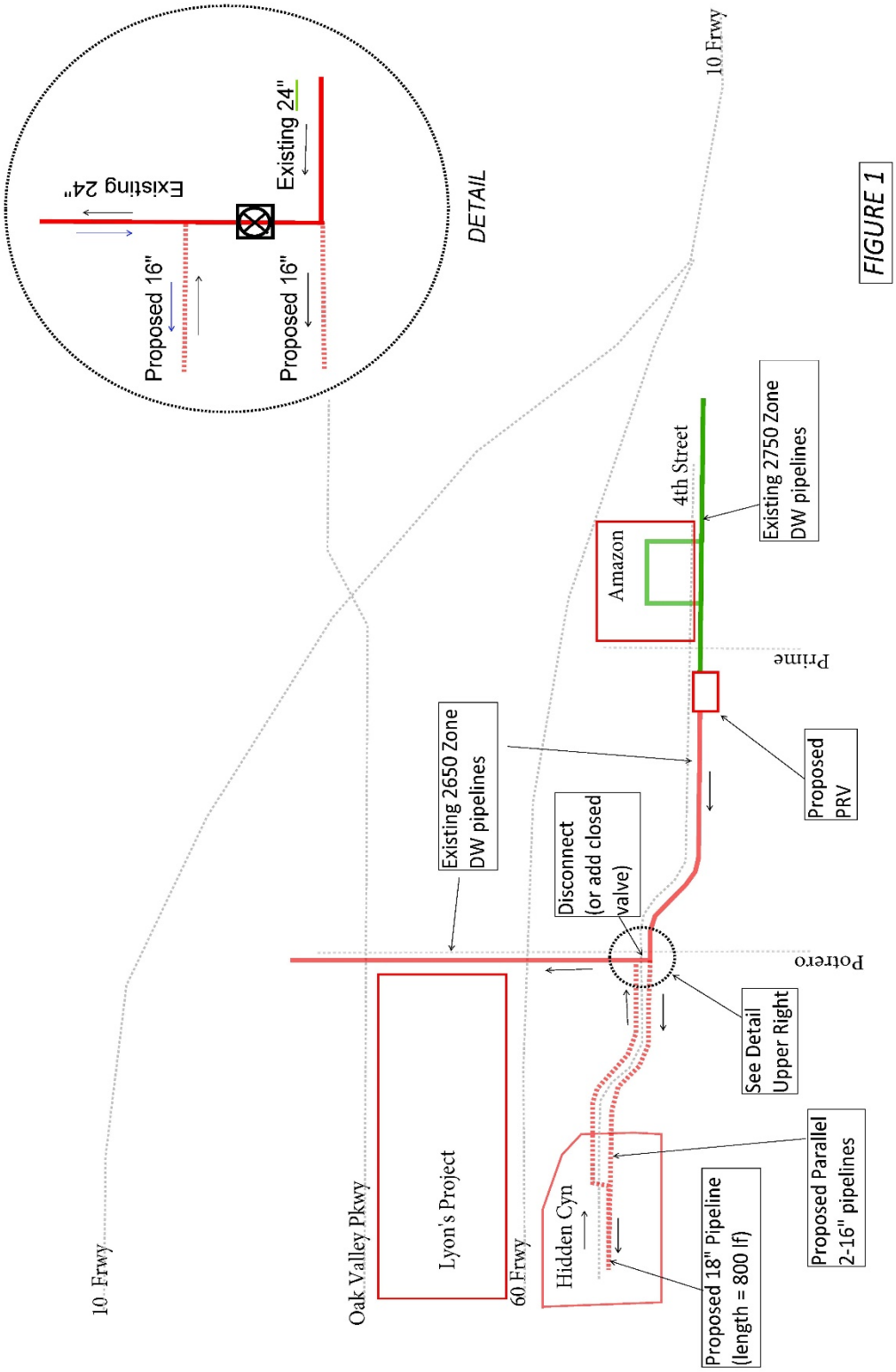
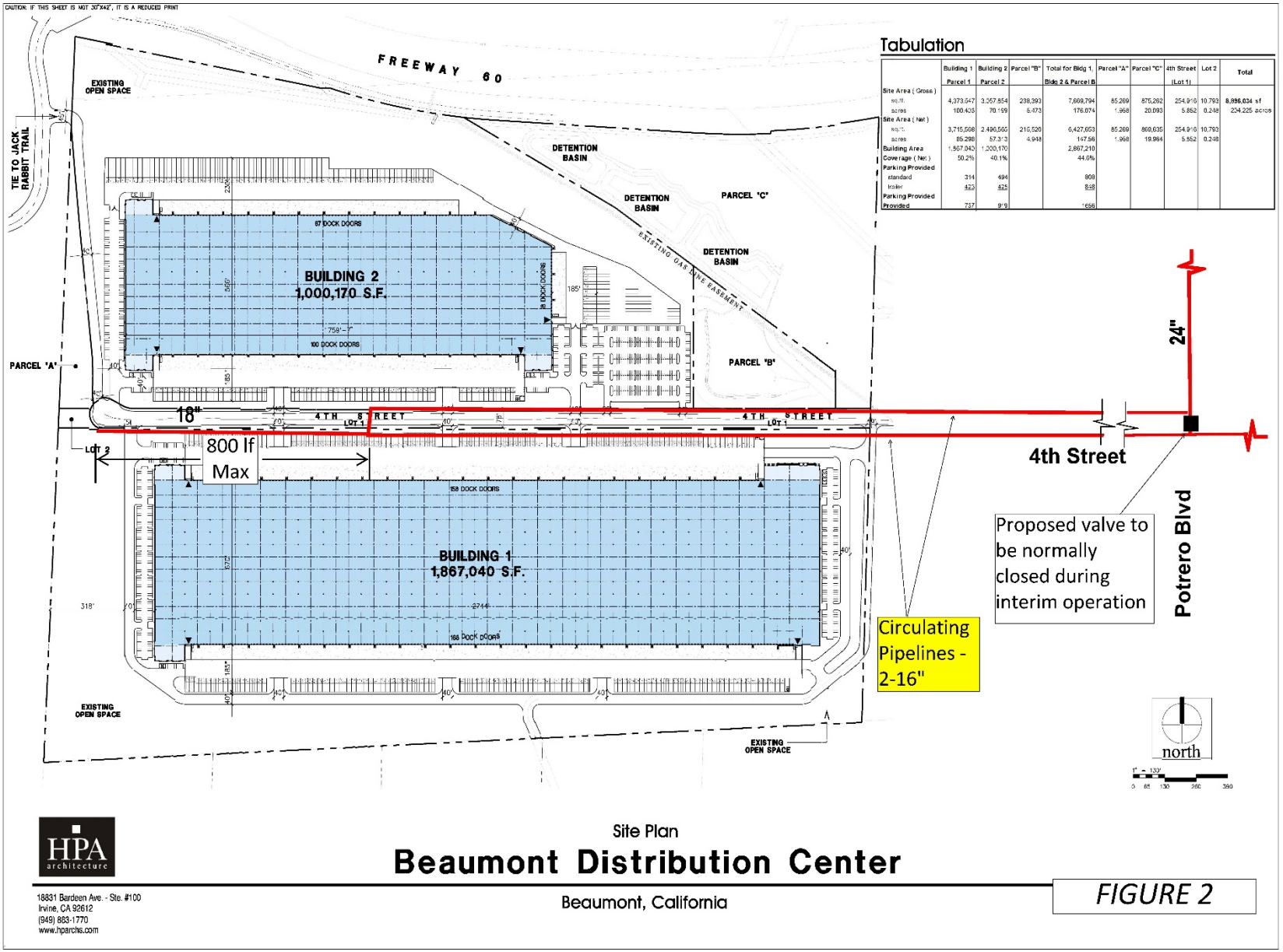

Existing 24"
Existing 24"
Proposed 16"
Proposed 16"
DETAIL
10 Frwy
4th Street
Existing 2750 Zone
DW pipelines
Amazon
Prime
Proposed
PRV
Existing 2650 Zone
DW pipelines
Disconnect
(or add closed
valve)
Potrero
See Detail
Upper Right
Proposed Parallel
2-16" pipelines
Proposed 18" Pipeline
(length = 800 lf)
Hidden Cyn
Lyon's Project
Oak Valley Pkwy
60 Frwy
10 Frwy

FIGURE 1



The figures illustrate this recent solution to the water quality concern with one minor modification – a closed valve between the connection points at Potrero Boulevard. Employing the dual piping configuration with a closed valve at Potrero Boulevard and 4th Street between the two connection points for the new HC supply system will create true circulation when supplied by the proposed PRV station. The District memorandum (Attachment 2) indicates domestic water from the proposed PRV station could be used to backfeed the 2650 Zone and replenish its storage (Hannan Tank). By diverting flow through the Project site as part of a normal conveyance path to the central service areas of the 2650 Zone to the north, the District can maintain water circulation and quality during sole service to HC in the interim to this remote area.

we should recommend that this continue to be normal operating procedures until demand picks up in this area

This would be an interim operating condition until more development occurs to the west of the HC project. Ultimately, the future demand to the west and north will provide the daily turnover of system water without requiring the forced circulation in 4th Street, and the closed valve can be permanently opened. The 4th Street system would be sized to equal the ultimate transmission capacity planned for future development to the west. Attachment 4 includes calculations that confirm the dual piping configuration (2-16-inch pipelines) for interim and ultimate operation in 4th Street west of Potrero Boulevard.

Additional calculations are performed to analyze the FH No. 1 and FH No. 2 test results that would represent the primary hydraulic source for the Project, while the PRV station to the east, supplied from the 2750 Zone would act as a secondary source for supplementing unusual peak demands and emergency fire flow. **Figure 3** illustrates the location of the additional fire flow tests for FH No. 1 and FH No. 2, as well as the 2650 Zone piping required to convey flows to the proposed Hidden Canyon Distribution Center.

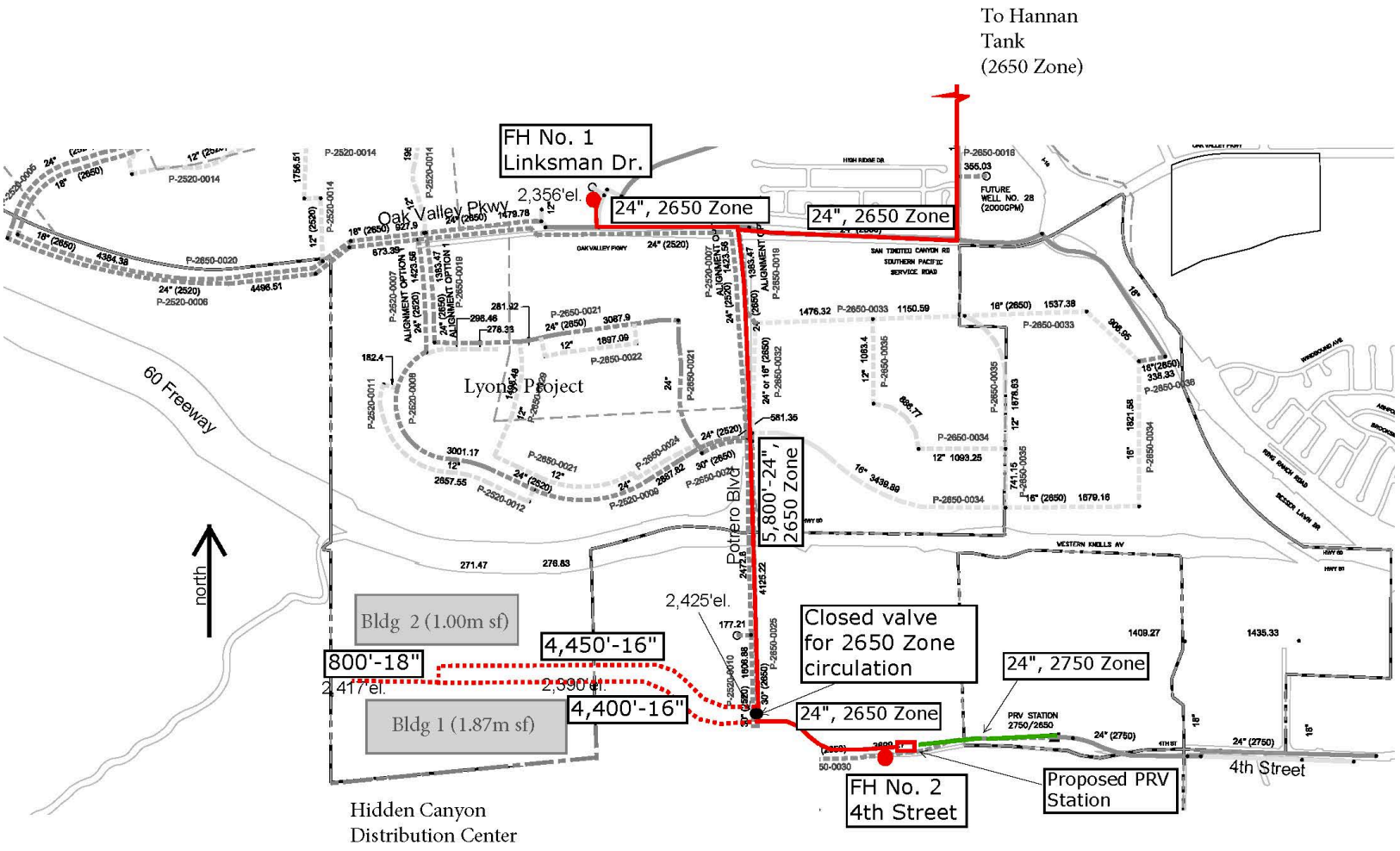


FIGURE 3

Charles Marr Consulting

Attachment 7 includes the additional calculations that confirm the dual piping configuration analyzed here with the 16-inch pipelines under interim and ultimate operation is adequate to supply 5,000 gpm fireflow during maximum-day demand. **Table 3** summarizes the service pressures resulting from the 2018 flow test and the two additional flow tests recently provided by the District, as included in **Attachments 3 and 6**, respectively. It should be noted that the District flow tests were based on a fire flow of 4,000 gpm, and that 5,000 gpm was used for this technical memorandum to provide a conservative analysis.

Table 3 - Calculated HGLs and Project Service Pressures

Fire Flow Test	at Potrero Blvd and 4th Street	Flow from 2650 Zone	Flow from PRV (2750 Zone)	Total HC Project Flow [1]	West end of Hidden Cyn		Meets minimum pressure?
					HGL	Service Pressure [2]	
May 2018	2646 feet	0 gpm	5,063 gpm	5,063 gpm	2,580 ft	71 psi	Yes
Nov. 2019 (FH No. 1)	2493 feet	5,063 gpm	0 gpm	5,063 gpm	2,448 ft	13 psi	No
Nov. 2019 (FH No. 2)	2493 feet	5,063 gpm	0 gpm	5,063 gpm	2,448 ft	13 psi	No
Nov. 2019 (FH No. 1)	2493 feet	4,493 gpm	570 gpm	5,063 gpm	2,493 ft	33 psi	Yes
Nov. 2019 (FH No. 2)	2493 feet	4,493 gpm	570 gpm	5,063 gpm	2,493 ft	33 psi	Yes

[1] For May 2018 test, all Project service flow supplied through proposed 4th Street PRV and 2750 Zone. For November 2019 test, all Project service flow supplied from Hannan Tank and Potrero Blvd 2650 Zone.

[2] Based on Project service elevation equal 2417'el. above mean sea level.

The District will provide the required 4,000 gpm at 20 psi for Hidden Canyon at a minimum service pressure of 20 psi. However, the analysis performed here is conservatively based on a higher standard than required by the fire department (5,000 gpm fireflow for Hidden Canyon at a minimum service pressure of 30 psi). Table 3 summarizes the calculations and indicates that the most recent model simulation tests performed by BCVWD staff show that the 2650 Zone can supply up to 4,500 gpm to the Project site during emergency fireflow. Any supplemental flow to the site can be provided from the proposed 4th Street PRV station.

For interim operation of the on-site transmission system serving only Hidden Canyon, the required length of the dual piping system from Potrero Boulevard to the HC project depends on the turnover rate by daily HC water demands that can 'consume' the volume of water in the west-most 4th Street 18-inch deadend pipeline. For the purposes of this analysis, water turnover is proposed every eight (8) hours at average demand. **Table 4** summarizes the volume calculations of various lengths of 18-inch pipe versus HC demand for eight hours.

Table 4 - Proposed length of Deadend 18-inch TM in 4th Street

Average HC Domestic Water Demand	Volume (on average) Consumed in 8 hours	Volume of 18-inch Pipe at…			
		1000 lf	900 lf	800 lf	700 lf
30,000 gpd	10,000 gal	13,220 gal	11,898 gal	10,576 gal	9,254 gal

This shows that the volume stored in approximately 800 linear feet of 18-inch pipeline is purged by HC demand approximately every eight hours. Therefore, 800 linear feet could be the length of service pipe at the west end of 4th Street within the HC project site. At maximum day demand, approximately three (3) times the length of 18-inch pipe, or 2,400 linear feet, could be purged by HC demand in 8 hours.

Please let me know if you have any questions.

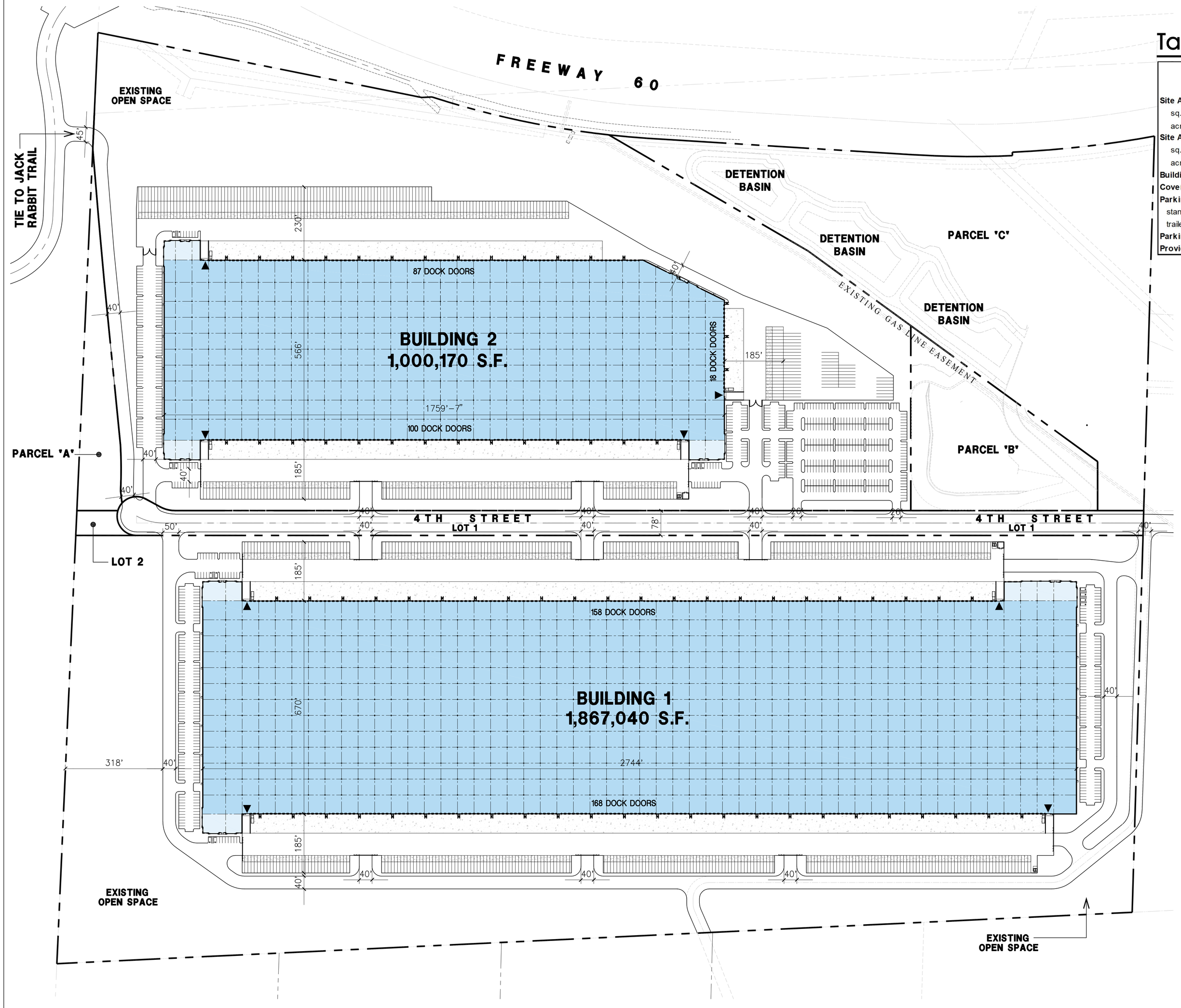
Charlie Marr, P.E.
Charles Marr Consulting
(562) 781-7936
(714) 264-6719 mobile
charlie@cmarrcon.com

Attachment 1 - Hidden Canyon Site plan
Attachment 2 - BCVWD Memorandum – Design of PRV
Attachment 3 - Fire Flow Analysis
Attachment 4 - Engineering calculations
Attachment 5 - Updated Will-serve letter
Attachment 6 - Additional Fire flow Analyses (for revised report)
Attachment 7 - Additional Engineering Calculations (for revised report)

ec: Bruce McDonald, McDonald Property Group
Brian Thienes, Thienes Engineering, Inc.
Reinhard Stenzel, Thienes Engineering, Inc.
file

ATTACHMENT 1

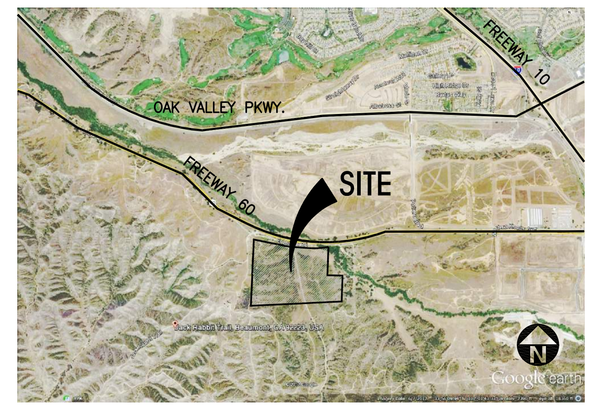
CAUTION: IF THIS SHEET IS NOT 30"X42", IT IS A REDUCED PRINT



Tabulation

	Building 1 Parcel 1	Building 2 Parcel 2	Parcel "B"	Total for Bldg 1, Bldg 2 & Parcel B	Parcel "A"	Parcel "C"	4th Street (Lot 1)	Lot 2	Total
Site Area (Gross)									
sq.ft.	4,373,547	3,057,854	238,393	7,669,794	85,269	875,262	254,916	10,793	**8,896,034** sf
acres	100.403	70.199	5.473	176.074	1.958	20.093	5.852	0.248	204.225 acres
Site Area (Net)									
sq.ft.	3,715,568	2,496,565	215,520	6,427,653	85,269	869,635	254,916	10,793	
acres	85.298	57.313	4.948	147.56	1.958	19.964	5.852	0.248	
Building Area	1,867,040	1,000,170		2,867,210					
Coverage (Net)	50.2%	40.1%		44.6%					
Parking Provided									
standard	314	494		808					
trailer	423	425		848					
Parking Provided									
Provided	737	919		1656					

Aerial Map



Legend

- OFFICE
- WAREHOUSE
- ▼ DRIVE THRU DOOR

north

1" = 130'
0 65 130 260 390

HPA architecture

Site Plan

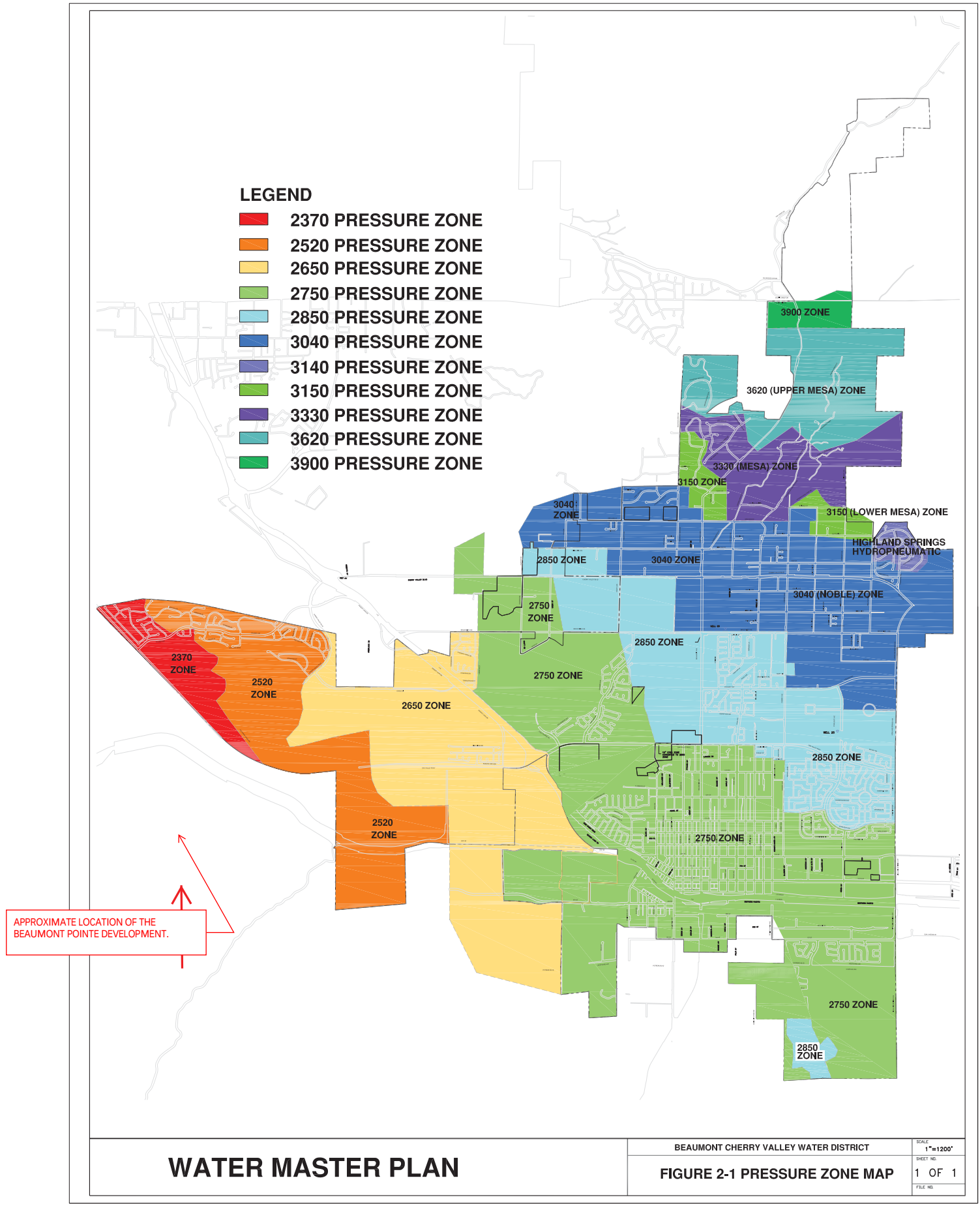
Beaumont Distribution Center

Beaumont, California

18831 Bardeen Ave. - Ste. #100
Irvine, CA 92612
(949) 863-1770
www.hparchs.com

August 13, 2018 / Job #10282
Scheme 1

Appendix E – BCVWD Potable Water Utility Exhibit – 2016 Potable Water Master Plan



WATER MASTER PLAN

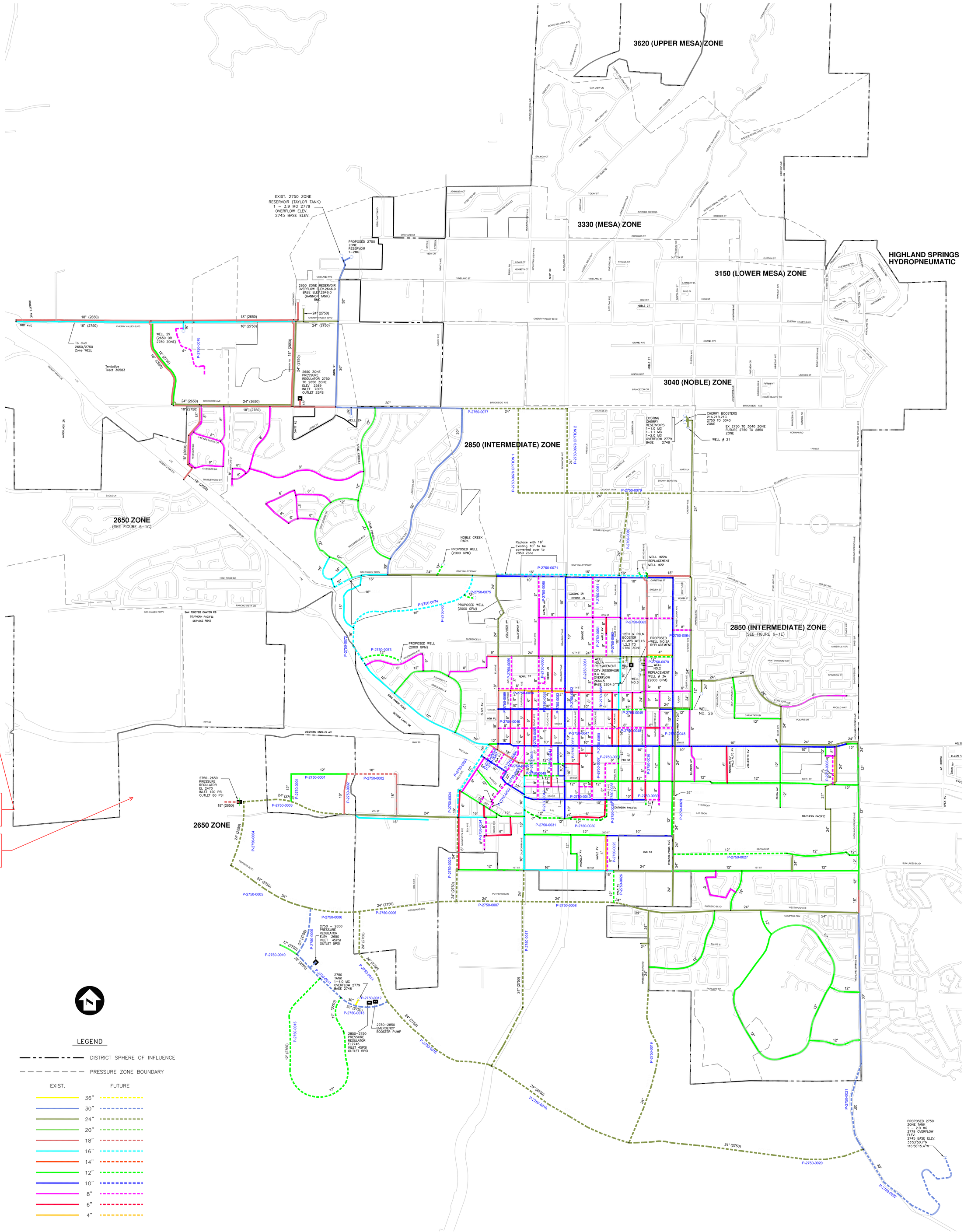
BEAUMONT CHERRY VALLEY WATER DISTRICT

FIGURE 2-1 PRESSURE ZONE MAP

SCALE: 1"=1200'

SHEET NO. 1 OF 1

FILE NO.



not to scale

NOBEL SYSTEMS
436 E. VANDERBILT WAY, SAN BERNARDINO, CALIFORNIA 92408
Phone 1-909-890-5611

WATER MASTER PLAN

BEAUMONT CHERRY VALLEY WATER DISTRICT

2750 (BEAUMONT) ZONE

SCALE 1"=1000'

SHEET NO. 1 OF 1

FILE NO.

2650 ZONE RESERVOIR
1-5.0 MG 2678 OVERFLOW ELEV
2646 BASE ELEV.

PROPOSED
2520 ZONE TANK
1-2MG
2515 BASE
2545 OVERFLOW

PROPOSED
PRV 2650/2520
DISCHARGE TO 2520
ZONE TANK

PROPOSED WELL
(2000GPM)

WELL NO. 29

PROPOSED WELL
(2000GPM)
(RIV.CO.PROPERTY)

EX
PRESSURE REGULATOR 2750/2650
ELEV 2589
INLET 70 PSI OUTLET 25 PSI

EXISTING
PRV STATION
2520/2370

PROPOSED 2370 ZONE RESERVOIR
1-0.5 MG 2399 OVERFLOW ELEV
2368 BASE ELEV.

PRESSURE REGULATING
STATION 2520/2370

EXISTING
PRV STATION
2650/2520

2650 ZONE
(SEE FIGURE 6-1C)

PRESSURE
REGULATING STATION 2650/2520
LINKSMAN
ELE 2381
INLET 115 PSC
OUTLET 62 PSC

FUTURE
WELL NO. 28
(2000GPM)

2650 ZONE
(SEE FIGURE 6-1C)

1-4MG
1-2MG
TANK BASE ELEV. 2515
3.0 MG (2520 ZONE)
2545 OVERFLOW ELEV.
(ALTERNATIVE SITE)

PRV STATION
2650-2520

PRV STATION
2750/2650

TANK 2650
2-2MG 2678.9 OVERFLOW ELEV.
2646 BASE ELEV.

PACE COMMENT

APPROXIMATE LOCATION OF
THE BEAUMONT DEVELOPMENT.

PACE COMMENT

APPROXIMATE LOCATION OF
THE HIDDEN CANYON
DEVELOPMENT

LEGEND

DISTRICT SPHERE OF INFLUENCE

PRESSURE ZONE BOUNDARY

EXIST.	FUTURE
36"	
30"	
24"	
20"	
18"	
16"	
14"	
12"	
10"	
8"	
6"	
4"	

NOT TO SCALE

NOBEL SYSTEMS
436 E. VANDERBILT WAY, SAN BERNARDINO, CALIFORNIA 92408
Phone 1-909-890-5611

WATER MASTER PLAN

BEAUMONT CHERRY VALLEY WATER DISTRICT

2650/2520/2370 ZONE

SCALE 1"=1000'

SHEET NO. 1 OF 1

FILE NO.

Appendix F – Design of PRV on Fourth Street, 2750 Zone to 2650 Zone

Beaumont Cherry Valley Water District
560 Magnolia Avenue
Beaumont, CA 92223
951-845-9581
www.bcvwd.org

DATE: September 24, 2019

TO: Dan Jaggers, PE, General Manager
Mark Swanson, PE, Senior Engineer

FROM: Joe Reichenberger PE, Senior Engineer

SUBJECT: Design of PRV on Fourth St., 2750 Zone to 2650 Zone

An EPANET2 computer model was used to analyze the 2650, 2520 and 2370 Pressure Zones which are currently supplied by the Hannon Tank and a large transmission main from the Hannon Tank which runs south and crosses under I-10 in jacked casing near Desert Lawn Drive and Champions Drive. Also, the 2750 Pressure Zone was modeled to determine the effects of the demands on the 2750 Pressure Zone through the proposed pressure reducing station. The proposed pressure reducing station on Fourth Street will act as a necessary backup and secondary supply during high demand times, e.g., peak hour demands and maximum day demand plus fire flow. The station flows were also analyzed under minimum flows. Two conditions were analyzed: Current (2020) and (projected future) 2030 demands. It is believed that a second 2650 Zone water storage tank will be constructed south of Highway 60 around 2030 or when needed depending on development conditions. In addition, a 2520 Zone tank is anticipated south of 4th Street as shown in the District's Potable Water Master Plan.

Under normal conditions, i.e., other than maximum day demand plus fire flow and peak hour demands, Hannon Tank will be able to meet the demand and provide adequate pressure. It is under the fire flow and peak hour conditions that the pressure regulator is needed to support Hannon Tank. In the analysis, a 4,000 gpm fire flow was assumed for the Hidden Canyon Development area and/or the Olivewood Development area.

Table 1
Range of Flows for Pressure Regulating Station on 4th St.

	2020	2020 No Hannon	2030	2030 No Hannon
Average Day, gpm	0	1,962	0	3,512
Maximum Day, gpm	0	3,924	690	7,024
Peak Hour Reduced Peak Factor, gpm	1,998	8,830	6,280	15,803
Mininum Month, gpm	0	1,079	0	1,932
Minimum Flow, gpm	0	432	0	773
Maximum Day plus Fire	1,703	7,524	3,856	11,023

Table 1 was developed from hydraulic model analysis.

The 2750 Zone is able to provide 6,000 gpm currently, and about 5,500 gpm at the proposed pressure regulating station, based on development conditions in 2030. This is over and above the existing demands in the 2750 Pressure Zone. Table 1, above, shows that the potable water system will be able to meet the demands to approximately 2030. BCVWD believes the demands, particularly those for peak hour are conservative. With regulations requiring reduced outdoor water use, the normal daily peaking factors will most likely be reduced. In the analysis, a peaking factor of 2.25 times the demand on the maximum day was used for the peak hour.

Various analyses were performed with the Hannon Tank being out of service, which would result in all flows to the 2650 and lower pressure zones coming through the proposed pressure regulating station. This would put a large burden on the 2750 Zone which it would not be able to supply at the proposed regulating station. It is very unlikely that Hannon Tank will be out of service for maintenance for an extended duration. The Hannon Tank is a prestressed concrete tank constructed approximately 14 years ago; therefore it is relatively new. The Hannon Tank can be filled with water pumped from Well 29 or from the 2750 Pressure Zone. There is an interconnection between the Well 29 discharge pipeline and the 2650 Pressure Zone. In an emergency, Well 29 could be operated and pumped directly into the system without having Hannon Tank in service.

Based on the range of flows from the model, the pressure regulating station should consist of one 4", and two 8" ClaValves, Model 92-01, Pressure Reducing Valve with Pressure Sustaining Feature, class 150. This combination of sizes meets the minimum requirements and provides adequate capacity to meet the maximum day demand plus fire with the Hannon Tank out of service. A cavitation check indicates that special hardened metallurgy is not required. Table 2 shows the recommended initial valve sizing for the proposed pressure regulating stations.

Table 2
Valve Sizes and Capacities for Pressure Regulating Station on 4th St.

	Diameter, in	Max gpm	Min gpm	Intermittent Max gpm
Valve 1	4	800	4	990
Valve 2	8	3,100	15	3,900
Valve 3	8	3,100	15	6,150
Total		7,000		11,040

The pressure regulating station is designed to be expandable as development occurs in the 2650 and lower pressure zones. The station is designed with a small valve and two larger valves, to accommodate the higher demand and fire flow. The station should be set allowing the small valve to open first, followed in-turn by the larger valves as flows increase.

The pressure sustaining feature is needed to ensure there is adequate pressure in the 2750 Zone at all times. The valves shall be set to maintain a minimum pressure of approximately 70 psi in the 2750 Zone at the pressure reducing valve inlet. This will provide sufficient operating pressure in the 2750 Zone, even with 6,000 gpm going through the regulators. The valves shall be set open when the downstream pressure drops below 2650 hydraulic grade line. The 4-in valve shall be set to open first, followed by the first 8-in and then the second 8-in. The

maximum pressure on the upstream side of the valve (2750 Zone) is 125 psi. The inlet and outlet pipes should be at least 18-in diameter. A concept level sketch of the proposed regulating station is shown in Figure 1. Figure 1 is NOT TO SCALE.

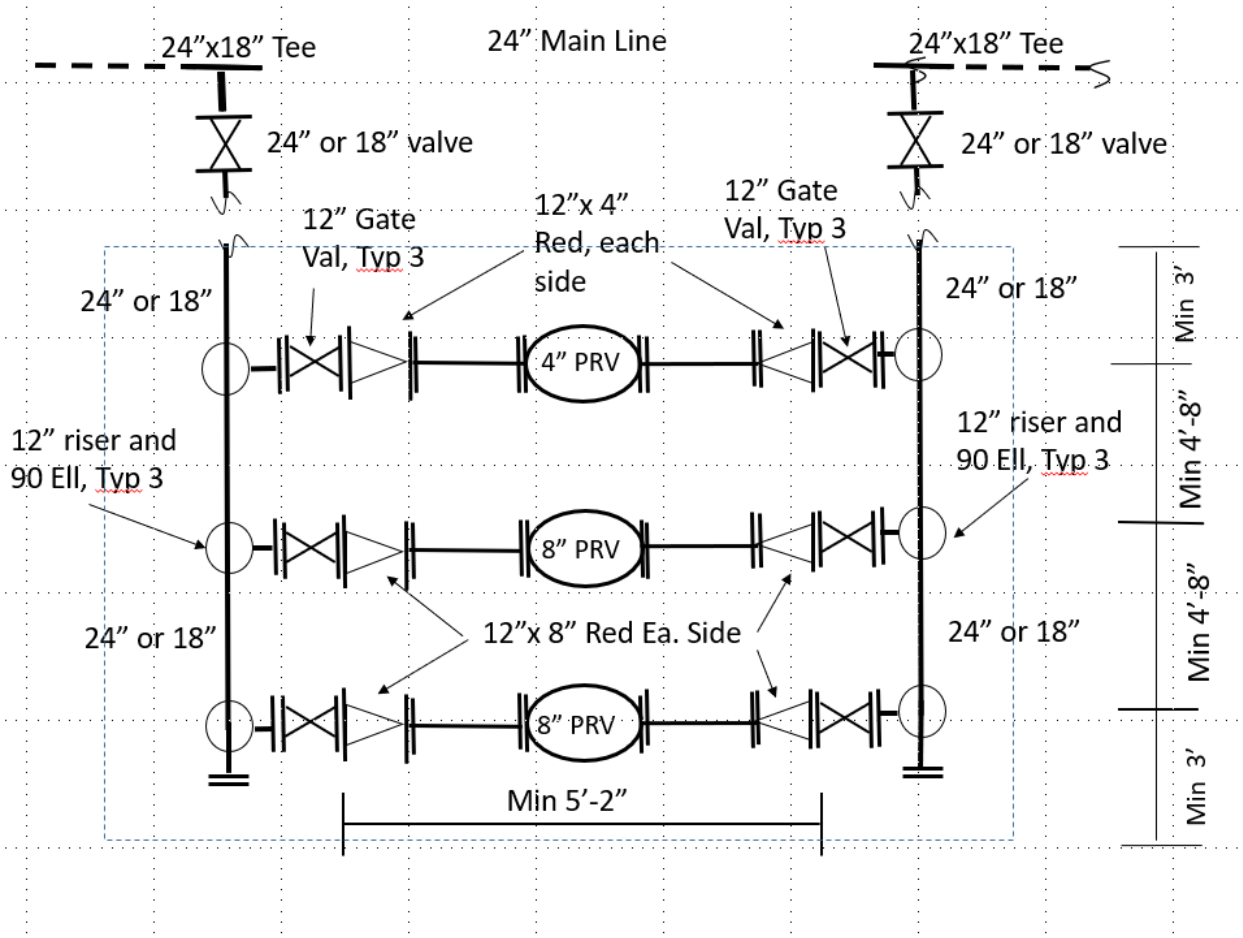


Figure 1
Conceptual Plan for Pressure Regulating Station on 4th Street

The station shall be constructed above ground (not in a vault) adjacent to 4th Street with 24-inch or 18-in, below grade, laterals from the 24-in main line. Each regulator will have a 12-in diameter riser pipeline from the 24-inch or 18-in lateral. Spacing shown allows for future installation of larger regulating valves and provides space for the pilot control systems on the valves.

Other requirements are:

1. Pressure regulating station is to be completely fenced (wrought iron), with a minimum 15-ft wide access gate and meet City of Beaumont requirements, as applicable
2. Provide paved parking for a BCVWD truck or truck/crane located out of traffic (traveled way) for access, operation, maintenance, and repair of the regulating station.

3. Provide a flow meter (propeller type) on the inlet lateral. Ensure proper straight pipe distances upstream and downstream of the meter for meter accuracy
4. Provide at least 100A, 120v power to the station for: power tools, operational solenoids, flow meter SCADA, etc.
5. Install pressure gauges upstream and downstream of each valve for setting adjustment.
6. Provide space in design for future risers as necessary.

Appendix G – Preliminary Cash Flow Analysis

Preliminary Cash Flow Analysis - February 2023
Beaumont Pointe Dev - Domestic Potable/Non-Potable Water and Fire Dist. Systems

	Phase 1	Phase 2	Phase 3
Initial Year	1	3	5
Acres	69.10	85.80	77.70
Building Square Feet	1,414,000	1,681,000	1,900,000
Estimated Yearly 2022 Base Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 499,663	$ 303,370
Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20	years	
Assumed Average Useful Life - Distribution System[4]=	50	years	
Repair and Replace Asphalt and Traffic Control	0.00%	Or Replacement Costs	
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

Preliminary Draft

	1	2	3	4	5	6	7	8
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 67,561	$ 69,588	$ 107,306	$ 110,526	$ 136,792	$ 140,896	$ 145,123	$ 149,476
PW / Non-PW and Fire Distribution Loop	$ 180,576	185,994	$ 290,873	299,599	369,776	380,869	392,295	404,064
Subtotal	**$ 248,138**	**$ 255,582**	**$ 398,179**	**$ 410,125**	**$ 506,568**	**$ 521,765**	**$ 537,418**	**$ 553,540**
Operation and Maintenance Funds								
Operations and Maintenance	$ 24,814	$ 25,558	$ 39,818	$ 41,012	$ 50,657	$ 52,176	$ 53,742	$ 55,354
Subtotal	**$ 24,814**	**$ 25,558**	**$ 39,818**	**$ 41,012**	**$ 50,657**	**$ 52,176**	**$ 53,742**	**$ 55,354**
Total Annual Deposit into Reserve	**$ 272,952**	**$ 281,140**	**$ 437,997**	**$ 451,137**	**$ 557,225**	**$ 573,941**	**$ 591,160**	**$ 608,894**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 24,814	$ 25,558	$ 39,818	$ 41,012	$ 50,657	$ 52,176	$ 53,742	$ 55,354
Subtotal	**$ 24,814**	**$ 25,558**	**$ 39,818**	**$ 41,012**	**$ 50,657**	**$ 52,176**	**$ 53,742**	**$ 55,354**
Total Annual Withdraws (Costs) from Reserve	**$ 24,814**	**$ 25,558**	**$ 39,818**	**$ 41,012**	**$ 50,657**	**$ 52,176**	**$ 53,742**	**$ 55,354**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 248,138**	**$ 503,720**	**$ 901,899**	**$ 1,312,024**	**$ 1,818,592**	**$ 2,340,357**	**$ 2,877,775**	**$ 3,431,315**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 272,952	$ 281,140	$ 437,997	$ 451,137	$ 557,225	$ 573,941	$ 591,160	$ 608,894
CFD Admin	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487
Total Anticipated Annual CFD Proceeds	**$ 282,952**	**$ 291,340**	**$ 448,401**	**$ 461,749**	**$ 568,049**	**$ 584,982**	**$ 602,421**	**$ 620,381**
Total Industrial SqFt	**1,414,000**	**1,414,000**	**3,095,000**	**3,095,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.1010**	**0.1041**	**0.1072**	**0.1104**	**0.1137**	**0.1171**	**0.1206**	**0.1242**
Anticipated Undeveloped CFD Proceeds per Acre	**857**	**882**	**1,501**	**1,545**	**-**	**-**	**-**	**-**
Total Anticipated Developed CFD Proceeds	**$ 142,873**	**$ 147,159**	**$ 331,770**	**$ 341,723**	**$ 568,049**	**$ 584,982**	**$ 602,421**	**$ 620,381**
Anticipated Undeveloped CFD Proceeds	**140,078**	**144,181**	**116,632**	**120,027**	**-**	**-**	**-**	**-**
Total Anticipated Annual CFD Proceeds	**$ 282,952**	**$ 291,340**	**$ 448,401**	**$ 461,749**	**$ 568,049**	**$ 584,982**	**$ 602,421**	**$ 620,381**
Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 24,814	$ 25,558	$ 39,818	$ 41,012	$ 50,657	$ 52,176	$ 53,742	$ 55,354
Admin	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487
Subtotal	**$ 34,814**	**$ 35,758**	**$ 50,222**	**$ 51,625**	**$ 61,481**	**$ 63,217**	**$ 65,003**	**$ 66,841**
Anticipated CFD Cash Flow								
CFD Revenues	$ 248,138	$ 503,844	$ 902,275	$ 1,312,851	$ 1,820,076	$ 2,342,751	$ 2,881,340	$ 3,436,321
Estimated Interest Earnings	124	252	451	656	910	1,171	1,441	1,718
Less: Replacement Costs	-	-	-	-	-	-	-	-
Total Cumulative Annual CFD Balance	**$ 248,262**	**$ 504,096**	**$ 902,727**	**$ 1,313,508**	**$ 1,820,986**	**$ 2,343,922**	**$ 2,882,781**	**$ 3,438,039**

Notes

1 Estimated 2022 bid costs for the just valves on the PW and Fire Distribution Loops. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* by Developer's Research.

2 Line item costs also include the associated asphalt repair costs need to construct the improvements.

3 Estimated 2022 bid costs for the PW and Fire Distribution Loops excluding the costs for valves. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* per Developer.

4 Average useful life of valves and the pipelines assumed to be 20 and 50 years respectively.

5 Total replacement funds are based on the future replacement costs (adjusted for inflation).

6 Annual O&M Costs are based on 10.00% of annual Replacement Funds.

7 Total replacement funds are based on the future replacement costs (adjusted for inflation) spread out through the average useful life of the equipment. Anticipated Replacement Funds escalated by 20 year average of the Engineering News-Record City Cost Index for Los Angeles.

Preliminary Cash Flow Analysis - February 2023
Beaumont Pointe Dev - Domestic Potable/Non-Potable Water and Fire Dist. Systems

	Phase 1	Phase 2	Phase 3
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Acres	69.10	85.80	77.70
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Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20 years		
Assumed Average Useful Life - Distribution System[4]=	50 years		
Repair and Replace Asphalt and Traffic Control	0.00%	Or Replacement Costs	
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	9	10	11	12	13	14	15	16
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2031	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 153,961	$ 158,579	$ 163,337	$ 168,237	$ 173,284	$ 178,482	$ 183,837	$ 189,352
PW / Non-PW and Fire Distribution Loop	416,186	428,672	441,532	454,778	468,421	482,474	496,948	511,856
Subtotal	**$ 570,147**	**$ 587,251**	**$ 604,869**	**$ 623,015**	**$ 641,705**	**$ 660,956**	**$ 680,785**	**$ 701,208**
Operation and Maintenance Funds								
Operations and Maintenance	$ 57,015	$ 58,725	$ 60,487	$ 62,301	$ 64,171	$ 66,096	$ 68,078	$ 70,121
Subtotal	**$ 57,015**	**$ 58,725**	**$ 60,487**	**$ 62,301**	**$ 64,171**	**$ 66,096**	**$ 68,078**	**$ 70,121**
Total Annual Deposit into Reserve	**$ 627,161**	**$ 645,976**	**$ 665,355**	**$ 685,316**	**$ 705,876**	**$ 727,052**	**$ 748,863**	**$ 771,329**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 57,015	$ 58,725	$ 60,487	$ 62,301	$ 64,171	$ 66,096	$ 68,078	$ 70,121
Subtotal	**$ 57,015**	**$ 58,725**	**$ 60,487**	**$ 62,301**	**$ 64,171**	**$ 66,096**	**$ 68,078**	**$ 70,121**
Total Annual Withdraws (Costs) from Reserve	**$ 57,015**	**$ 58,725**	**$ 60,487**	**$ 62,301**	**$ 64,171**	**$ 66,096**	**$ 68,078**	**$ 70,121**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 4,001,462**	**$ 4,588,713**	**$ 5,193,582**	**$ 5,816,596**	**$ 6,458,301**	**$ 7,119,258**	**$ 7,800,043**	**$ 8,501,251**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 627,161	$ 645,976	$ 665,355	$ 685,316	$ 705,876	$ 727,052	$ 748,863	$ 771,329
CFD Admin	11,717	11,951	12,190	12,434	12,682	12,936	13,195	13,459
Total Anticipated Annual CFD Proceeds	**$ 638,878**	**$ 657,927**	**$ 677,545**	**$ 697,750**	**$ 718,558**	**$ 739,988**	**$ 762,058**	**$ 784,788**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.1279**	**0.1317**	**0.1356**	**0.1397**	**0.1439**	**0.1481**	**0.1526**	**0.1571**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 638,878**	**$ 657,927**	**$ 677,545**	**$ 697,750**	**$ 718,558**	**$ 739,988**	**$ 762,058**	**$ 784,788**
Anticipated Undeveloped CFD Proceeds	-	-	-	-	-	-	-	-
Total Anticipated Annual CFD Proceeds	**$ 638,878**	**$ 657,927**	**$ 677,545**	**$ 697,750**	**$ 718,558**	**$ 739,988**	**$ 762,058**	**$ 784,788**
Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 57,015	$ 58,725	$ 60,487	$ 62,301	$ 64,171	$ 66,096	$ 68,078	$ 70,121
Admin	11,717	11,951	12,190	12,434	12,682	12,936	13,195	13,459
Subtotal	**$ 68,731**	**$ 70,676**	**$ 72,677**	**$ 74,735**	**$ 76,853**	**$ 79,032**	**$ 81,273**	**$ 83,580**
Anticipated CFD Cash Flow								
CFD Revenues	$ 4,008,186	$ 4,597,441	$ 5,204,608	$ 5,830,225	$ 6,474,846	$ 7,139,039	$ 7,823,394	$ 8,528,514
Estimated Interest Earnings	2,004	2,299	2,602	2,915	3,237	3,570	3,912	4,264
Less: Replacement Costs	-	-	-	-	-	-	-	-
Total Cumulative Annual CFD Balance	**$ 4,010,190**	**$ 4,599,740**	**$ 5,207,211**	**$ 5,833,140**	**$ 6,478,083**	**$ 7,142,609**	**$ 7,827,305**	**$ 8,532,778**

Notes

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4 Average useful life of valves and the pipelines assumed to be 20 and 50 years respectively.

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Assumed Average Useful Life - Distribution Valves[4]=	20	years	
Assumed Average Useful Life - Distribution System[4]=	50	years	
Repair and Replace Asphalt and Traffic Control	0.00%	Or Replacement Costs	
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	17	18	19	20	21	22	23	24
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2039	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 195,033	$ 200,884	$ 206,910	$ 213,117	$ 219,511	$ 226,096	$ 232,879	$ 239,865
PW / Non-PW and Fire Distribution Loop	527,212	543,029	559,319	576,099	593,382	611,183	629,519	648,404
Subtotal	**$ 722,245**	**$ 743,912**	**$ 766,229**	**$ 789,216**	**$ 812,893**	**$ 837,280**	**$ 862,398**	**$ 888,270**
Operation and Maintenance Funds								
Operations and Maintenance	$ 72,224	$ 74,391	$ 76,623	$ 78,922	$ 81,289	$ 83,728	$ 86,240	$ 88,827
Subtotal	**$ 72,224**	**$ 74,391**	**$ 76,623**	**$ 78,922**	**$ 81,289**	**$ 83,728**	**$ 86,240**	**$ 88,827**
Total Annual Deposit into Reserve	**$ 794,469**	**$ 818,303**	**$ 842,852**	**$ 868,138**	**$ 894,182**	**$ 921,008**	**$ 948,638**	**$ 977,097**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ 1,815,401	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	957,406	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-	-	616,688
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ -**	**$ -**	**$ 1,815,401**	**$ -**	**$ 957,406**	**$ -**	**$ 616,688**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 72,224	$ 74,391	$ 76,623	$ 78,922	$ 81,289	$ 83,728	$ 86,240	$ 88,827
Subtotal	**$ 72,224**	**$ 74,391**	**$ 76,623**	**$ 78,922**	**$ 81,289**	**$ 83,728**	**$ 86,240**	**$ 88,827**
Total Annual Withdraws (Costs) from Reserve	**$ 72,224**	**$ 74,391**	**$ 76,623**	**$ 1,894,323**	**$ 81,289**	**$ 1,041,134**	**$ 86,240**	**$ 705,515**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 9,223,496**	**$ 9,967,408**	**$ 10,733,637**	**$ 9,707,452**	**$ 10,520,345**	**$ 10,400,219**	**$ 11,262,617**	**$ 11,534,199**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 794,469	$ 818,303	$ 842,852	$ 868,138	$ 894,182	$ 921,008	$ 948,638	$ 977,097
CFD Admin	13,728	14,002	14,282	14,568	14,859	15,157	15,460	15,769
Total Anticipated Annual CFD Proceeds	**$ 808,197**	**$ 832,306**	**$ 857,135**	**$ 882,706**	**$ 909,042**	**$ 936,164**	**$ 964,098**	**$ 992,866**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.1618**	**0.1666**	**0.1716**	**0.1767**	**0.1820**	**0.1874**	**0.1930**	**0.1988**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 808,197**	**$ 832,306**	**$ 857,135**	**$ 882,706**	**$ 909,042**	**$ 936,164**	**$ 964,098**	**$ 992,866**
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Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 72,224	$ 74,391	$ 76,623	$ 78,922	$ 81,289	$ 83,728	$ 86,240	$ 88,827
Admin	13,728	14,002	14,282	14,568	14,859	15,157	15,460	15,769
Subtotal	**$ 85,952**	**$ 88,394**	**$ 90,905**	**$ 93,490**	**$ 96,149**	**$ 98,885**	**$ 101,700**	**$ 104,596**
Anticipated CFD Cash Flow								
CFD Revenues	$ 9,255,023	$ 10,003,562	$ 10,774,794	$ 11,569,397	$ 10,572,673	$ 11,415,239	$ 11,325,939	$ 12,219,872
Estimated Interest Earnings	4,628	5,002	5,387	5,785	5,286	5,708	5,663	6,110
Less: Replacement Costs	-	-	-	(1,815,401)	-	(957,406)	-	(616,688)
Total Cumulative Annual CFD Balance	**$ 9,259,650**	**$ 10,008,564**	**$ 10,780,181**	**$ 9,759,781**	**$ 10,577,960**	**$ 10,463,541**	**$ 11,331,602**	**$ 11,609,294**

Notes

1 Estimated 2022 bid costs for the just valves on the PW and Fire Distribution Loops. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* by Developer's Research.

2 Line item costs also include the associated asphalt repair costs need to construct the improvements.

3 Estimated 2022 bid costs for the PW and Fire Distribution Loops excluding the costs for valves. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* per Developer.

4 Average useful life of valves and the pipelines assumed to be 20 and 50 years respectively.

5 Total replacement funds are based on the future replacement costs (adjusted for inflation).

6 Annual O&M Costs are based on 10.00% of annual Replacement Funds.

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Preliminary Cash Flow Analysis - February 2023
Beaumont Pointe Dev - Domestic Potable/Non-Potable Water and Fire Dist. Systems

	Phase 1	Phase 2	Phase 3
Initial Year	1	3	5
Acres	69.10	85.80	77.70
Building Square Feet	1,414,000	1,681,000	1,900,000
Estimated Yearly 2022 Base Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 499,663	$ 303,370
Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20 years		
Assumed Average Useful Life - Distribution System[4]=	50 years		
Repair and Replace Asphalt and Traffic Control	0.00%	Or Replacement Costs	
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	25	26	27	28	29	30	31	32
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2047	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 247,061	$ 254,473	$ 262,107	$ 269,971	$ 278,070	$ 286,412	$ 295,004	$ 303,854
PW / Non-PW and Fire Distribution Loop	667,857	687,892	708,529	729,785	751,678	774,229	797,456	821,379
Subtotal	**$ 914,918**	**$ 942,366**	**$ 970,637**	**$ 999,756**	**$ 1,029,748**	**$ 1,060,641**	**$ 1,092,460**	**$ 1,125,234**
Operation and Maintenance Funds								
Operations and Maintenance	$ 91,492	$ 94,237	$ 97,064	$ 99,976	$ 102,975	$ 106,064	$ 109,246	$ 112,523
Subtotal	**$ 91,492**	**$ 94,237**	**$ 97,064**	**$ 99,976**	**$ 102,975**	**$ 106,064**	**$ 109,246**	**$ 112,523**
Total Annual Deposit into Reserve	**$ 1,006,410**	**$ 1,036,602**	**$ 1,067,700**	**$ 1,099,731**	**$ 1,132,723**	**$ 1,166,705**	**$ 1,201,706**	**$ 1,237,757**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 91,492	$ 94,237	$ 97,064	$ 99,976	$ 102,975	$ 106,064	$ 109,246	$ 112,523
Subtotal	**$ 91,492**	**$ 94,237**	**$ 97,064**	**$ 99,976**	**$ 102,975**	**$ 106,064**	**$ 109,246**	**$ 112,523**
Total Annual Withdraws (Costs) from Reserve	**$ 91,492**	**$ 94,237**	**$ 97,064**	**$ 99,976**	**$ 102,975**	**$ 106,064**	**$ 109,246**	**$ 112,523**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 12,449,117**	**$ 13,391,482**	**$ 14,362,119**	**$ 15,361,874**	**$ 16,391,623**	**$ 17,452,263**	**$ 18,544,723**	**$ 19,669,957**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 1,006,410	$ 1,036,602	$ 1,067,700	$ 1,099,731	$ 1,132,723	$ 1,166,705	$ 1,201,706	$ 1,237,757
CFD Admin	16,084	16,406	16,734	17,069	17,410	17,758	18,114	18,476
Total Anticipated Annual CFD Proceeds	**$ 1,022,494**	**$ 1,053,008**	**$ 1,084,434**	**$ 1,116,800**	**$ 1,150,133**	**$ 1,184,463**	**$ 1,219,820**	**$ 1,256,233**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.2047**	**0.2108**	**0.2171**	**0.2236**	**0.2303**	**0.2371**	**0.2442**	**0.2515**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 1,022,494**	**$ 1,053,008**	**$ 1,084,434**	**$ 1,116,800**	**$ 1,150,133**	**$ 1,184,463**	**$ 1,219,820**	**$ 1,256,233**
Anticipated Undeveloped CFD Proceeds	-	-	-	-	-	-	-	-
Total Anticipated Annual CFD Proceeds	**$ 1,022,494**	**$ 1,053,008**	**$ 1,084,434**	**$ 1,116,800**	**$ 1,150,133**	**$ 1,184,463**	**$ 1,219,820**	**$ 1,256,233**
Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 91,492	$ 94,237	$ 97,064	$ 99,976	$ 102,975	$ 106,064	$ 109,246	$ 112,523
Admin	16,084	16,406	16,734	17,069	17,410	17,758	18,114	18,476
Subtotal	**$ 107,576**	**$ 110,643**	**$ 113,798**	**$ 117,044**	**$ 120,385**	**$ 123,823**	**$ 127,360**	**$ 130,999**
Anticipated CFD Cash Flow								
CFD Revenues	$ 12,524,212	$ 13,472,840	$ 14,450,212	$ 15,457,193	$ 16,494,670	$ 17,563,558	$ 18,664,800	$ 19,799,366
Estimated Interest Earnings	6,262	6,736	7,225	7,729	8,247	8,782	9,332	9,900
Less: Replacement Costs	-	-	-	-	-	-	-	-
Total Cumulative Annual CFD Balance	**$ 12,530,474**	**$ 13,479,576**	**$ 14,457,438**	**$ 15,464,922**	**$ 16,502,917**	**$ 17,572,340**	**$ 18,674,132**	**$ 19,809,266**

Notes

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2 Line item costs also include the associated asphalt repair costs need to construct the improvements.

3 Estimated 2022 bid costs for the PW and Fire Distribution Loops excluding the costs for valves. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* per Developer.

4 Average useful life of valves and the pipelines assumed to be 20 and 50 years respectively.

5 Total replacement funds are based on the future replacement costs (adjusted for inflation).

6 Annual O&M Costs are based on 10.00% of annual Replacement Funds.

7 Total replacement funds are based on the future replacement costs (adjusted for inflation) spread out through the average useful life of the equipment. Anticipated Replacement Funds escalated by 20 year average of the Engineering News-Record City Cost Index for Los Angeles.

Preliminary Cash Flow Analysis - February 2023
Beaumont Pointe Dev - Domestic Potable/Non-Potable Water and Fire Dist. Systems

	Phase 1	Phase 2	Phase 3
Initial Year	1	3	5
Acres	69.10	85.80	77.70
Building Square Feet	1,414,000	1,681,000	1,900,000
Estimated Yearly 2022 Base Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 499,663	$ 303,370
Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20 years		
Assumed Average Useful Life - Distribution System[4]=	50 years		
Repair and Replace Asphalt and Traffic Control	0.00% Or Replacement Costs		
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	33	34	35	36	37	38	39	40
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2055	**2056**	**2057**	**2058**	**2059**	**2060**	**2061**	**2062**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 312,970	$ 322,359	$ 332,030	$ 341,991	$ 352,251	$ 362,818	$ 373,703	$ 384,914
PW / Non-PW and Fire Distribution Loop	846,021	871,401	897,543	924,470	952,204	980,770	1,010,193	1,040,499
Subtotal	**$ 1,158,991**	**$ 1,193,760**	**$ 1,229,573**	**$ 1,266,461**	**$ 1,304,454**	**$ 1,343,588**	**$ 1,383,896**	**$ 1,425,412**
Operation and Maintenance Funds								
Operations and Maintenance	$ 115,899	$ 119,376	$ 122,957	$ 126,646	$ 130,445	$ 134,359	$ 138,390	$ 142,541
Subtotal	**$ 115,899**	**$ 119,376**	**$ 122,957**	**$ 126,646**	**$ 130,445**	**$ 134,359**	**$ 138,390**	**$ 142,541**
Total Annual Deposit into Reserve	**$ 1,274,890**	**$ 1,313,137**	**$ 1,352,531**	**$ 1,393,107**	**$ 1,434,900**	**$ 1,477,947**	**$ 1,522,285**	**$ 1,567,954**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,278,817
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,278,817**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 115,899	$ 119,376	$ 122,957	$ 126,646	$ 130,445	$ 134,359	$ 138,390	$ 142,541
Subtotal	**$ 115,899**	**$ 119,376**	**$ 122,957**	**$ 126,646**	**$ 130,445**	**$ 134,359**	**$ 138,390**	**$ 142,541**
Total Annual Withdraws (Costs) from Reserve	**$ 115,899**	**$ 119,376**	**$ 122,957**	**$ 126,646**	**$ 130,445**	**$ 134,359**	**$ 138,390**	**$ 3,421,358**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 20,828,948**	**$ 22,022,708**	**$ 23,252,282**	**$ 24,518,742**	**$ 25,823,197**	**$ 27,166,785**	**$ 28,550,680**	**$ 26,697,276**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 1,274,890	$ 1,313,137	$ 1,352,531	$ 1,393,107	$ 1,434,900	$ 1,477,947	$ 1,522,285	$ 1,567,954
CFD Admin	18,845	19,222	19,607	19,999	20,399	20,807	21,223	21,647
Total Anticipated Annual CFD Proceeds	**$ 1,293,735**	**$ 1,332,359**	**$ 1,372,137**	**$ 1,413,105**	**$ 1,455,299**	**$ 1,498,754**	**$ 1,543,508**	**$ 1,589,601**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.2590**	**0.2667**	**0.2747**	**0.2829**	**0.2914**	**0.3001**	**0.3090**	**0.3182**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 1,293,735**	**$ 1,332,359**	**$ 1,372,137**	**$ 1,413,105**	**$ 1,455,299**	**$ 1,498,754**	**$ 1,543,508**	**$ 1,589,601**
Anticipated Undeveloped CFD Proceeds	-	-	-	-	-	-	-	-
Total Anticipated Annual CFD Proceeds	**$ 1,293,735**	**$ 1,332,359**	**$ 1,372,137**	**$ 1,413,105**	**$ 1,455,299**	**$ 1,498,754**	**$ 1,543,508**	**$ 1,589,601**
Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 115,899	$ 119,376	$ 122,957	$ 126,646	$ 130,445	$ 134,359	$ 138,390	$ 142,541
Admin	18,845	19,222	19,607	19,999	20,399	20,807	21,223	21,647
Subtotal	**$ 134,744**	**$ 138,598**	**$ 142,564**	**$ 146,645**	**$ 150,844**	**$ 155,166**	**$ 159,613**	**$ 164,189**
Anticipated CFD Cash Flow								
CFD Revenues	$ 20,968,257	$ 22,172,501	$ 23,413,161	$ 24,691,328	$ 26,008,128	$ 27,364,720	$ 28,762,298	$ 30,202,091
Estimated Interest Earnings	10,484	11,086	11,707	12,346	13,004	13,682	14,381	15,101
Less: Replacement Costs	-	-	-	-	-	-	-	(3,278,817)
Total Cumulative Annual CFD Balance	**$ 20,978,741**	**$ 22,183,587**	**$ 23,424,867**	**$ 24,703,673**	**$ 26,021,132**	**$ 27,378,402**	**$ 28,776,679**	**$ 26,938,376**

Notes

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	Phase 1	Phase 2	Phase 3
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Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System[3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System[3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20 years		
Assumed Average Useful Life - Distribution System[4]=	50 years		
Repair and Replace Asphalt and Traffic Control	0.00%	Or Replacement Costs	
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	41	42	43	44	45	46	47	48
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2063	**2064**	**2065**	**2066**	**2067**	**2068**	**2069**	**2070**
Total Annual Deposits into Reserve								
Replacement Funds[5]								
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 396,461	$ 408,355	$ 420,606	$ 433,224	$ 446,220	$ 459,607	$ 473,395	$ 487,597
PW / Non-PW and Fire Distribution Loop	1,071,714	1,103,865	1,136,981	1,171,091	1,206,223	1,242,410	1,279,682	1,318,073
Subtotal	**$ 1,468,175**	**$ 1,512,220**	**$ 1,557,587**	**$ 1,604,314**	**$ 1,652,444**	**$ 1,702,017**	**$ 1,753,078**	**$ 1,805,670**
Operation and Maintenance Funds								
Operations and Maintenance	$ 146,817	$ 151,222	$ 155,759	$ 160,431	$ 165,244	$ 170,202	$ 175,308	$ 180,567
Subtotal	**$ 146,817**	**$ 151,222**	**$ 155,759**	**$ 160,431**	**$ 165,244**	**$ 170,202**	**$ 175,308**	**$ 180,567**
Total Annual Deposit into Reserve	**$ 1,614,992**	**$ 1,663,442**	**$ 1,713,345**	**$ 1,764,746**	**$ 1,817,688**	**$ 1,872,219**	**$ 1,928,385**	**$ 1,986,237**
Total Annual Withdraws (Costs) from Reserve								
Replacement Costs								
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	1,729,181	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	1,113,807	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	-	-	-
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-	-	-
Subtotal	**$ -**	**$ 1,729,181**	**$ -**	**$ 1,113,807**	**$ -**	**$ -**	**$ -**	**$ -**
Operation and Maintenance Costs[6]								
Operations and Maintenance	$ 146,817	$ 151,222	$ 155,759	$ 160,431	$ 165,244	$ 170,202	$ 175,308	$ 180,567
Subtotal	**$ 146,817**	**$ 151,222**	**$ 155,759**	**$ 160,431**	**$ 165,244**	**$ 170,202**	**$ 175,308**	**$ 180,567**
Total Annual Withdraws (Costs) from Reserve	**$ 146,817**	**$ 1,880,403**	**$ 155,759**	**$ 1,274,239**	**$ 165,244**	**$ 170,202**	**$ 175,308**	**$ 180,567**
Total Balance in Reserve								
Total Balance in Reserve[7]	**$ 28,165,451**	**$ 27,948,489**	**$ 29,506,076**	**$ 29,996,583**	**$ 31,649,027**	**$ 33,351,044**	**$ 35,104,121**	**$ 36,909,791**
Anticipated CFD								
Total Annual Deposit Required for Reserve	$ 1,614,992	$ 1,663,442	$ 1,713,345	$ 1,764,746	$ 1,817,688	$ 1,872,219	$ 1,928,385	$ 1,986,237
CFD Admin	22,080	22,522	22,972	23,432	23,901	24,379	24,866	25,363
Total Anticipated Annual CFD Proceeds	**$ 1,637,073**	**$ 1,685,964**	**$ 1,736,318**	**$ 1,788,178**	**$ 1,841,589**	**$ 1,896,597**	**$ 1,953,251**	**$ 2,011,600**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.3277**	**0.3375**	**0.3476**	**0.3580**	**0.3687**	**0.3797**	**0.3910**	**0.4027**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 1,637,073**	**$ 1,685,964**	**$ 1,736,318**	**$ 1,788,178**	**$ 1,841,589**	**$ 1,896,597**	**$ 1,953,251**	**$ 2,011,600**
Anticipated Undeveloped CFD Proceeds	-	-	-	-	-	-	-	-
Total Anticipated Annual CFD Proceeds	**$ 1,637,073**	**$ 1,685,964**	**$ 1,736,318**	**$ 1,788,178**	**$ 1,841,589**	**$ 1,896,597**	**$ 1,953,251**	**$ 2,011,600**
Total Anticipacted Annual CFD Withdrawls								
Total Annual Operations and Maintenance Costs	$ 146,817	$ 151,222	$ 155,759	$ 160,431	$ 165,244	$ 170,202	$ 175,308	$ 180,567
Admin	22,080	22,522	22,972	23,432	23,901	24,379	24,866	25,363
Subtotal	**$ 168,898**	**$ 173,744**	**$ 178,731**	**$ 183,863**	**$ 189,145**	**$ 194,580**	**$ 200,174**	**$ 205,930**
Anticipated CFD Cash Flow								
CFD Revenues	$ 28,406,550	$ 29,932,974	$ 29,776,346	$ 31,395,548	$ 31,949,882	$ 33,667,874	$ 35,437,786	$ 37,261,174
Estimated Interest Earnings	14,203	14,966	14,888	15,698	15,975	16,834	17,719	18,631
Less: Replacement Costs	-	(1,729,181)	-	(1,113,807)	-	-	-	-
Total Cumulative Annual CFD Balance	**$ 28,420,754**	**$ 28,218,759**	**$ 29,791,234**	**$ 30,297,438**	**$ 31,965,857**	**$ 33,684,708**	**$ 35,455,505**	**$ 37,279,805**

Notes

1 Estimated 2022 bid costs for the just valves on the PW and Fire Distribution Loops. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* by Developer's Research.

2 Line item costs also include the associated asphalt repair costs need to construct the improvements.

3 Estimated 2022 bid costs for the PW and Fire Distribution Loops excluding the costs for valves. Line item costs taken from the 5/26/2022 *Beaumont Pointe Cost Detail Schedule* per Developer.

4 Average useful life of valves and the pipelines assumed to be 20 and 50 years respectively.

5 Total replacement funds are based on the future replacement costs (adjusted for inflation).

6 Annual O&M Costs are based on 10.00% of annual Replacement Funds.

7 Total replacement funds are based on the future replacement costs (adjusted for inflation) spread out through the average useful life of the equipment. Anticipated Replacement Funds escalated by 20 year average of the Engineering News-Record City Cost Index for Los Angeles.

Preliminary Cash Flow Analysis - February 2023
Beaumont Pointe Dev - Domestic Potable/Non-Potable Water and Fire Dist. Systems

	Phase 1	Phase 2	Phase 3
Initial Year	1	3	5
Acres	69.10	85.80	77.70
Building Square Feet	1,414,000	1,681,000	1,900,000
Estimated Yearly 2022 Base Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 499,663	$ 303,370
Estimated Yearly Escalated Bid Costs - Distribution Valves[1,2]=	$ 1,005,144	$ 530,092	$ 341,445
Estimated Yearly 2022 Base Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,408,285	$ 1,398,813
Estimated Yearly Escalated Bid Costs - Distribution System [3,2] =	$ 4,646,190	$ 2,554,949	$ 1,574,376
Assumed Average Useful Life - Distribution Valves[4]=	20 years		
Assumed Average Useful Life - Distribution System[4]=	50 years		
Repair and Replace Asphalt and Traffic Control	0.00% Or Replacement Costs		
CFD Admin Escalation	2.00%		
CFD Interest Earnings	0.05%		
Operations and Maintenance (% of Replacement Fund)	10%		

	49	50	51	52	53	54
Assumed Average Inflation Rate per Year for ENR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	2071	**2072**	**2073**	**2074**	**2075**	**2076**
Total Annual Deposits into Reserve						
Replacement Funds[5]						
PW / Non-PW and Fire Distribution Loop - Just Valves	$ 502,225	$ 517,292	$ 532,811	$ 548,795	$ 565,259	$ 582,216
PW / Non-PW and Fire Distribution Loop	1,357,615	1,398,343	1,440,294	1,483,503	1,528,008	1,573,848
Subtotal	**$ 1,859,840**	**$ 1,915,635**	**$ 1,973,104**	**$ 2,032,297**	**$ 2,093,266**	**$ 2,156,064**
Operation and Maintenance Funds						
Operations and Maintenance	$ 185,984	$ 191,564	$ 197,310	$ 203,230	$ 209,327	$ 215,606
Subtotal	**$ 185,984**	**$ 191,564**	**$ 197,310**	**$ 203,230**	**$ 209,327**	**$ 215,606**
Total Annual Deposit into Reserve	**$ 2,045,824**	**$ 2,107,199**	**$ 2,170,415**	**$ 2,235,527**	**$ 2,302,593**	**$ 2,371,671**
Total Annual Withdraws (Costs) from Reserve						
Replacement Costs						
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 1[1,3]	$ -	$ -	$ -	$ -	$ -	$ -
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 2[1,3]	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop - Just Valves Phase 3[1,3]	-	-	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 1[2,3]	-	20,368,460	-	-	-	-
PW / Non-PW and Fire Distribution Loop Phase 2[2,3]	-	-	-	11,200,657	-	-
PW / Non-PW and Fire Distribution Loop Phase 3[2,3]	-	-	-	-	-	6,901,916
Repair and Replace Asphalt and Traffic Control	-	-	-	-	-	-
Subtotal	**$ -**	**$ 20,368,460**	**$ -**	**$ 11,200,657**	**$ -**	**$ 6,901,916**
Operation and Maintenance Costs[6]						
Operations and Maintenance	$ 185,984	$ 191,564	$ 197,310	$ 203,230	$ 209,327	$ 215,606
Subtotal	**$ 185,984**	**$ 191,564**	**$ 197,310**	**$ 203,230**	**$ 209,327**	**$ 215,606**
Total Annual Withdraws (Costs) from Reserve	**$ 185,984**	**$ 20,560,024**	**$ 197,310**	**$ 11,403,887**	**$ 209,327**	**$ 7,117,523**
Total Balance in Reserve						
Total Balance in Reserve[7]	**$ 38,769,631**	**$ 20,316,806**	**$ 22,289,910**	**$ 13,121,551**	**$ 15,214,817**	**$ 10,468,965**
Anticipated CFD						
Total Annual Deposit Required for Reserve	$ 2,045,824	$ 2,107,199	$ 2,170,415	$ 2,235,527	$ 2,302,593	$ 2,371,671
CFD Admin	25,871	26,388	26,916	27,454	28,003	28,563
Total Anticipated Annual CFD Proceeds	**$ 2,071,695**	**$ 2,133,587**	**$ 2,197,331**	**$ 2,262,981**	**$ 2,330,596**	**$ 2,400,234**
Total Industrial SqFt	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**	**4,995,000**
Anticipated Developed CFD Proceeds per SqFt	**0.4148**	**0.4271**	**0.4399**	**0.4530**	**0.4666**	**0.4805**
Anticipated Undeveloped CFD Proceeds per Acre	-	-	-	-	-	-
Total Anticipated Developed CFD Proceeds	**$ 2,071,695**	**$ 2,133,587**	**$ 2,197,331**	**$ 2,262,981**	**$ 2,330,596**	**$ 2,400,234**
Anticipated Undeveloped CFD Proceeds	-	-	-	-	-	-
Total Anticipated Annual CFD Proceeds	**$ 2,071,695**	**$ 2,133,587**	**$ 2,197,331**	**$ 2,262,981**	**$ 2,330,596**	**$ 2,400,234**
Total Anticipacted Annual CFD Withdrawls						
Total Annual Operations and Maintenance Costs	$ 185,984	$ 191,564	$ 197,310	$ 203,230	$ 209,327	$ 215,606
Admin	25,871	26,388	26,916	27,454	28,003	28,563
Subtotal	**$ 211,855**	**$ 217,952**	**$ 224,226**	**$ 230,684**	**$ 237,330**	**$ 244,170**
Anticipated CFD Cash Flow						
CFD Revenues	$ 39,139,645	$ 41,074,850	$ 22,700,031	$ 24,743,679	$ 15,648,660	$ 17,812,548
Estimated Interest Earnings	19,570	20,537	11,350	12,372	7,824	8,906
Less: Replacement Costs	-	(20,368,460)	-	(11,200,657)	-	(6,901,916)
Total Cumulative Annual CFD Balance	**$ 39,159,215**	**$ 20,726,927**	**$ 22,711,381**	**$ 13,555,394**	**$ 15,656,484**	**$ 10,919,538**

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