Special Regional Sewerage Program
Technical Committee Meeting

AGENDA
Thursday, November 29, 2021
2:00 p.m.
Teleconference Call

In effort to prevent the spread of COVID-19, the Regional Sewerage Program Technical Committee Meeting will be held remotely by teleconference.

Teams Conference Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NmRmY2FmMDYtNTBmMS00MjA5LTk3ODgtZDkyY2U3MTRmZGYz%40thread.v2/0?context=%7b%22Tid%22%3a%224c0c1e57-30f3-4048-9bd2-cd58917dcf07%22%2c%22Oid%22%3a%22329ec40e-eb94-4218-9621-6bfa0baa9697%22%7d

Teleconference: (415) 856-9169/Conference ID: 715 477 121#

This meeting is being conducted virtually by video and audio conferencing. There will be no public location available to attend the meeting; however, the public may participate and provide public comment during the meeting by calling into the number provided above. Alternatively, you may email your public comments to the Recording Secretary Laura Mantilla at lmantilla@ieua.org no later than 24 hours prior to the scheduled meeting time. Your comments will then be read into the record during the meeting.

Call to Order

Roll Call

Public Comment

Members of the public may address the Committee on any item that is within the jurisdiction of the Committee; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Comments will be limited to three minutes per speaker.

Additions to the Agenda

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

(Continued)

1. **Action Items**
   A. Approval of October 28, 2021 Technical Committee Meeting Minutes
   B. Request by the City of Chino for a Sewer Connection C-44 to the Westside Interceptor
   C. Request by the City of Fontana for a Sewer Connection F-32 to the Etiwanda Trunk Sewer

2. **Informational Items**
   A. Return to Sewer Study *(Oral)*
   B. Operations & Compliance Updates (*Oral)*

3. **Receive and File**
   A. December 2, 2021 Regional Sewerage Program Policy Committee Meeting - Cancelled
   B. Building Activity Report
   C. Recycled Water Distribution - Operations Summary
   D. Revised Annual FY 2020-21 Reports

4. **Technical Committee Items Distributed**
   None

5. **Other Business**
   A. IEUA General Manager's Update
   B. Committee Member Requested Agenda Items for Next Meeting
   C. Committee Member Comments
   D. Next Regular Meeting – December 30, 2021

Adjournment

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Recording Secretary (909) 993-1944, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency*, a Municipal Water District, hereby certify that, per Government Code Section 54954.2, a copy of this agenda has been posted at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA and on the Agency's website at www.ieua.org at least seventy-two (72) hours prior to the meeting date and time above.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Laura Mantilla at (909) 993-1944 or lmantilla@ieua.org, 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.

ACTION ITEM

1A

Regional Sewerage Program
Technical Committee Meeting
MINUTES OF OCTOBER 28, 2021

CALL TO ORDER

A regular meeting of the IEUA/Regional Sewerage Program – Technical Committee was held via teleconference on Thursday, October 28, 2021. Committee Chair Nicole deMoet/City of Upland called the meeting to order at 2:01 p.m. Recording Secretary Laura Mantilla took roll call and established a quorum was present.

ATTENDANCE via Teleconference

COMMITTEE MEMBERS PRESENT:

David Crosley	City of Chino
Mark Wiley	City of Chino Hills
Eduardo Espinoza	Cucamonga Valley Water District (CVWD)
Abigail Gomez	City of Fontana
Courtney Jones	City of Ontario
Nicole deMoet	City of Upland
Christiana Daisy	Inland Empire Utilities Agency (IEUA)

ABSENT:

Monica Heredia	City of Montclair

OTHERS PRESENT:

Amanda Coker	City of Chino
Steve Nix	City of Fontana
Christopher Quach	City of Ontario
Braden Yu	City of Upland
Kathy Besser	Inland Empire Utilities Agency
Christina Valencia	Inland Empire Utilities Agency
Javier Chagoyen-Lazaro	Inland Empire Utilities Agency
Robert Delgado	Inland Empire Utilities Agency
Lucia Diaz	Inland Empire Utilities Agency
Warren Green	Inland Empire Utilities Agency

OTHERS PRESENT (continued):

Elizabeth Hurst	Inland Empire Utilities Agency
Eddie Lin	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency
Bonnie Marseilles	Inland Empire Utilities Agency
Kanes Pantayatiwong	Inland Empire Utilities Agency
Cathleen Pieroni	Inland Empire Utilities Agency
Jesse Pompa	Inland Empire Utilities Agency
Jeanina Romero	Inland Empire Utilities Agency
Ken Tam	Inland Empire Utilities Agency
Yvonne Taylor	Inland Empire Utilities Agency
Jeff Ziegenbein	Inland Empire Utilities Agency

PUBLIC COMMENTS

There were no public comments.

ADDITIONS/CHANGES TO THE AGENDA

There were no additions/changes to the agenda.

1. ACTION ITEMS

A. APPROVAL OF SEPTEMBER 30, 2021 TECHNICAL COMMITTEE MEETING MINUTES

Motion: By Mark Wiley/City of Chino Hills and seconded by Dave Crosley/City of Chino to approve the meeting minutes of the September 30, 2021, Regional Technical Committee meeting by the following vote:

Ayes:	Crosley, Espinoza, Wiley, Gomez, Daisy, Jones, deMoet
Noes:	None
Absent:	Heredia
Abstain:	None

The motion passed by a vote of 7 ayes, 0 noes, 0 abstain, and 1 absent.

2. INFORMATIONAL ITEMS

A. GRANTS SEMI-ANNUAL UPDATE

Jesse Pompa/IEUA gave an update on the status of the grant and loan funding agreements. He noted that the following four projects received funding: RP-5 Expansion, Philadelphia Force Main Improvements, Wineville/Jurupa/RP-3 Basin Improvements, and South Archibald Plume Remediation project. Mr. Pompa informed the Committee of a grant opportunity for the multibenefit drought relief funding from the Department of Water Resources (DWR). He stated that if any member agencies are interested in pursuing the grant opportunity, IEUA can review the application and provide comments. In response to an inquiry by Eduardo Espinoza/CVWD, Mr. Pompa indicated he would distribute a copy of the email from DWR to the member agencies.

B. OPERATIONS DIVISION QUARTERLY UPDATE

Kanes Pantayatiwong/IEUA gave an update on IEUA's safety trends, digital Laserfiche forms, and dashboard reports.

Lucia Diaz/IEUA provided information on the Hyperion Water Reclamation Plant sewage spill incident and gave an overview of IEUA's Collection System. Ms. Diaz also provided an update on the Haven Avenue manhole covers, SCE public safety power shutoff and IEUA's service area electrical hardening grid.

C. RETURN TO SEWER STUDY

Ken Tam/IEUA provided an update on the Return to Sewer Study, noting that Data Collaborative obtained full data sets of information and began the data modeling analysis. He informed the Committee that the project is slightly ahead of schedule. A meeting will be scheduled to provide the data to the Technical Committee Subgroup and would subsequently be provided to the full Committee.

D. OPERATIONS & COMPLIANCE UPDATES

Ken Tam/IEUA reported that IEUA experienced a category 3 Sanitary Spill Overflow during the cleaning and lining project of the Cucamonga trunk regional line on October 21. The contractor identified damage to the line and approximately 85 gallons of wastewater may have infiltrated the surrounding soil. A section of the pipe was repaired, and the contractor will excavate and remove the affected soil.

3. RECEIVE AND FILE

A. DRAFT REGIONAL SEWERAGE PROGRAM POLICY COMMITTEE MEETING AGENDA

B. BUILDING ACTIVITY REPORT

C. RECYCLED WATER DISTRIBUTION – OPERATIONS SUMMARY

D. ANNUAL REPORTS (10-YEAR GROWTH FORECAST, RECYCLED WATER & ENERGY)

Items 3A through 3C were received and filed by the Committee. Item 3D was pulled from consideration at staff's request and will be presented at the next scheduled Technical Committee meeting.

4. TECHNICAL COMMITTEE ITEMS DISTRIBUTED

There were no items distributed.

5. OTHER BUSINESS

A. IEUA GENERAL MANAGER'S UPDATE

Christiana Daisy/IEUA stated that staff is currently reviewing the draft Regional Contract which was recently received.

B. COMMITTEE MEMBER REQUESTED AGENDA ITEMS FOR NEXT MEETING

Chair deMoet requested that the Kearns & West contract be added to the agenda for the next meeting to discuss potentially extending the contract. Ms. Daisy recommended that IEUA present a recommendation to the committee to extend the contract through June 30, 2022.

C. COMMITTEE MEMBER COMMENTS

There were no member comments.

D. NEXT MEETING – NOVEMBER 25, 2021

Chair deMoet stated that the next regular scheduled meeting falls on the Thanksgiving holiday. IEUA proposed holding a special meeting on November 29 to bring two connection requests for the Committee's consideration. The Committee concurred to hold a special meeting on Tuesday, November 29 at 2:00 pm.

ADJOURNMENT – Chair deMoet adjourned the meeting 2:50 p.m.

Prepared by:

Laura Mantilla, Executive Assistant

ACTION ITEM

1B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: November 29, 2021

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Request by the City of Chino for a Regional Connection Point to the Westside Interceptor (Chino Regional Sewer Connection # C-44)

RECOMMENDATION

It is recommended that the Regional Technical Committee approve the request by the City of Chino for one new connection point to the Westside Interceptor (Chino Regional Sewer Connection # C-44).

BACKGROUND

On August 18, 2021, Inland Empire Utilities Agency (IEUA) received a request from the City of Chino (Attachment "A") for the approval of a new Regional Connection to the Westside Interceptor at Station 87+31.66 through the construction of a new manhole on the east side of the tributary area to the existing 27-inch sewer.

The connection point is required to serve four new industrial development buildings between the San Antonio Creek Channel on the west, the Union Pacific Railway to the north, and the County Road to the south. The development encompasses approximately 16.5 Acres. An overall vicinity map is provided (Attachment "B").

Average Dry Weather Flows provided by the City and peaked using IEUA's Peaking Factors:

SUMMARY OF FLOW RATES UTILIZED

Chino Regional Connection # C-44:

Average Dry Weather Flow (ADWF) Rate = 0.00241 MGD
Peak Dry Weather Flow (PDWF) Rate = 0.00743 MGD
Peak Wet Weather Flow (PWWF) Rate = 0.01039 MGD

The hydraulic model was used to evaluate the capacity of the Westside Interceptor to Carbon Canyon Water Recycling Facility (CCWRF) as shown in Attachment "B". The hydraulic analysis shows that the connections will not create a capacity deficiency within the noted collection system at buildout under PWWF. The Westside Interceptor has a depth to Diameter ratio (d/D) of 0.42 and a flowrate of 6.69 MGD. The full capacity of this 27-inch line is 14.2 MGD, leaving an available capacity of 7.5 MGD. Also, the connection will not create a capacity deficiency further downstream.

ATTACHMENT A
August 4, 2021, City of Chino Regional Interceptor Request
Received on August 18, 2021

CITY of CHINO

August 4, 2021

Mr. Matthew A. Poeske, PE
Senior Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: Sewer Connections to existing IEUA sewer at Station 87+31.66 for a new industrial/manufacturing development by Alere Group at 12473 East End Avenue, Chino, consisting of four (4) buildings

Dear Mr. Poeske:

The City of Chino is hereby requesting new points of connection. The connections are new 6" private sewer laterals to an existing IEUA sewer main. The new sewer lateral points of connection are located on Sheet 2 of 4 of the attached plan.

These proposed connections will serve the site, consisting of four (4) warehouse/office buildings at 12473 East End Avenue. The peak wastewater flows were provided by Johnson Plumbing on behalf of the Alere Group. Copies of the sewer discharge certification letters are attached and summarized below:

1. Building 1 consists of a 203,647 sf warehouse/office building with an estimated average outflow of 1,537 GPD and an estimated maximum outflow of 3,841.50 GPD.
2. Building 2 consists of a 21,790 sq warehouse/office building with an estimated average outflow of 424 GPD and an estimated maximum out of 1,060.50 GPD.
3. Building 3 consists of a 13,608 sq warehouse/office building with an estimated average outflow of 242 GPD and an estimated maximum out of 605.50 GPD.
4. Building 4 consists of a 11,888 sq warehouse/office building with an estimated average outflow of 213 GPD and an estimated maximum out of 533 GPD.

If you should need any further information, please contact me at (909) 334-3417.

Sincerely,

Christopher L. Magdosku, P.E.
City Engineer
Enclosure: Sewer Discharge Certification Letter

13220 Central Avenue, Chino, California 91710
Mailing Address: P.O. Box 667, Chino, California 91708-0667
(909) 334-3250 • (909) 334-3720 Fax
Web Site: www.cityofchino.org

WALLACE P. JOHNSON PLUMBING AND HEATING, INC.

June 23rd, 2021

Re: County RD & East Ave.
12473 East End Ave.
Chino, Ca

To whom it may concern,

The estimated average daily sewage flow for Bldg. 1 of the above reference project is based on the square footage of the building and the various occupancies. The office square footage for the first floor is 2,679, the second floor square footage is 2497 and the square footage of the warehouse is 203647. The average total gallons per day is 1537.00. The maximum flow per day is 3841.50. The information provided is based on the 2019 CPC TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE/ SEWAGE FLOW RATES. No industrial waste will be discharged into the sanitary sewer.

Please call for any questions.

Sincerely,

Dan Johnson
President
714-630-7700

WALLACE P. JOHNSON PLUMBING AND HEATING, INC.

SEWER GPD'S, FLOW RATES AND PEAKING FACTORS BASED ON 2019 CPC CHAPTER 4 TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE / SEWAGE FLOW RATES

JOB SITE: EAST END BLDG. 1

BUILDING AREA (ft^2)	BLDG.1	GPD		GPD		GPD		GPD	
OFFICE 1ST FLOOR	2679	267.9	0	0	0	0	0	0	0
OFFICE 2ND FLOOR	2497	249.7	0	0	0	0	0	0	0
WAREHOUSE	203647	1019	0	0	0	0	0	0	0
TOTAL=	**208823**	**1536.6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Land use	Contributing Unit Type	Enter Flow (gpd/Unit)	Flow Duration (hrs)	Peak Factor	Enter No. of Units	Avg. Flow (gpd)	Avg. Flow (gpm)	Peak Flow (gpd)	Peak Flow (gpm)
Heavy & Light Industrial, Manufacturing, Warehouses	Building 1	1536.6	24	2.5	1.00	1,537	1.07	3,842	2.67
Heavy & Light Industrial, Manufacturing, Warehouses	Building 2	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 3	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 4	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 5	0	24	3	1.00				
					Sub-totals:	**1,537**	**1**	**3,842**	**3**
					Grand Totals:	**1,537**	**1.07**	**3,841.50**	**2.67**

Qmax=PFmax X Qavg Where Qmax=maximum flowrate
PFmax=maximum peaking factor
Qavg=average flowrate

REGISTERED PROFESSIONAL ENGINEER
FARIBORZ MOZHGANI
No. M33211
Exp. 9/30/21
MECHANICAL
STATE OF CALIFORNIA

WALLACE P. JOHNSON PLUMBING AND HEATING, INC.

June 23rd, 2021

Re: County RD & East Ave.
12473 East End Ave.
Chino, Ca

To whom it may concern,

The estimated average daily sewage flow for Bldg. 2 of the above reference project is based on the square footage of the building and the various occupancies. The office square footage for the first floor is 3152 and the square footage of the warehouse is 21790.
The average total gallons per day is 424.00. The maximum flow per day is 1060.50. The information provided is based on the 2019 CPC TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE/ SEWAGE FLOW RATES. No industrial waste will be discharged into the sanitary sewer.

Please call for any questions.

Sincerely,

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714-630-7700

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SEWER GPD'S, FLOW RATES AND PEAKING FACTORS BASED ON 2019 CPC CHAPTER 4 TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE / SEWAGE FLOW RATES

JOB SITE: EAST END BLDG. 2

BUILDING AREA (ft^2)	BLDG.2	GPD		GPD		GPD		GPD	
OFFICE 1ST FLOOR	3152	315.2	0	0	0	0	0	0	0
OFFICE 2ND FLOOR	0	0	0	0	0	0	0	0	0
WAREHOUSE	21790	109	0	0	0	0	0	0	0
TOTAL=	24942	424.2	0	0	0	0	0	0	0

Land use	Contributing Unit Type	Enter Flow (gpd/Unit)	Flow Duration (hrs)	Peak Factor	Enter No. of Units	Avg. Flow (gpd)	Avg. Flow (gpm)	Peak Flow (gpd)	Peak Flow (gpm)
Heavy & Light Industrial, Manufacturing, Warehouses	Building 1	424.2	24	2.5	1.00	424	0.29	1,061	0.74
Heavy & Light Industrial, Manufacturing, Warehouses	Building 2	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 3	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 4	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 5	0	24	3	1.00				
					Sub-totals:	424	0	1,061	1
					Grand Totals:	424	0.29	1,060.50	0.74

Qmax=PFmax X Qavg Where Qmax=maximum flowrate
PFmax=maximum peaking factor
Qavg=average flowrate

REGISTERED PROFESSIONAL ENGINEER
FARIBORZ MOZHGANI
No. M33211
Exp. 9/30/21
MECHANICAL
STATE OF CALIFORNIA

WALLACE P. JOHNSON JP PLUMBING AND HEATING, INC.

June 23rd, 2021

Re: County RD & East Ave.
12473 East End Ave.
Chino, Ca

To whom it may concern,

The estimated average daily sewage flow for Bldg. 3 of the above reference project is based on the square footage of the building and the various occupancies. The office square footage for the first floor is 1732 and the square footage of the warehouse is 13608.
The average total gallons per day is 242.00. The maximum flow per day is 605.50. The information provided is based on the 2019 CPC TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE/ SEWAGE FLOW RATES. No industrial waste will be discharged into the sanitary sewer.

Please call for any questions.

Sincerely,

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714-630-7700

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SEWER GPD'S, FLOW RATES AND PEAKING FACTORS BASED ON 2019 CPC CHAPTER 4 TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE / SEWAGE FLOW RATES

JOB SITE: EAST END BLDG. 3

BUILDING AREA (ft^2)	BLDG.3	GPD		GPD		GPD		GPD	
OFFICE 1ST FLOOR	1732	173.2	0	0	0	0	0	0	0
OFFICE 2ND FLOOR	0	0	0	0	0	0	0	0	0
WAREHOUSE	13608	69	0	0	0	0	0	0	0
TOTAL=	**15340**	**242.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Land use	Contributing Unit Type	Enter Flow (gpd/Unit)	Flow Duration (hrs)	Peak Factor	Enter No. of Units	Avg. Flow (gpd)	Avg. Flow (gpm)	Peak Flow (gpd)	Peak Flow (gpm)
Heavy & Light Industrial, Manufacturing, Warehouses	Building 1	242.2	24	2.5	1.00	242	0.17	606	0.42
Heavy & Light Industrial, Manufacturing, Warehouses	Building 2	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 3	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 4	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 5	0	24	3	1.00				
					Sub-totals:	**242**	**0**	**606**	**0**
					Grand Totals:	**242**	**0.17**	**605.50**	**0.42**

Qmax=PFmax X Qavg Where Qmax=maximum flowrate
PFmax=maximum peaking factor
Qavg=average flowrate

REGISTERED PROFESSIONAL ENGINEER
FARIBORZ MOZHGANI
No. M33211
Exp 9/30/24
MECHANICAL
STATE OF CALIFORNIA

WALLACE P. JOHNSON PLUMBING AND HEATING, INC.

June 23rd, 2021

Re: County RD & East Ave.
12473 East End Ave.
Chino, Ca

To whom it may concern,

The estimated average daily sewage flow for Bldg. 4 of the above reference project is based on the square footage of the building and the various occupancies. The office square footage for the first floor is 1532 and the square footage of the warehouse is 11888.
The average total gallons per day is 213.00. The maximum flow per day is 533.00. The information provided is based on the 2019 CPC TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE/ SEWAGE FLOW RATES. No industrial waste will be discharged into the sanitary sewer.

Please call for any questions.

Sincerely,

Dan Johnson
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714-630-7700

REGISTERED PROFESSIONAL ENGINEER
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No. M33211
Exp. 9/30/24
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STATE OF CALIFORNIA

WALLACE P. JOHNSON PLUMBING AND HEATING, INC.

SEWER GPD'S, FLOW RATES AND PEAKING FACTORS BASED ON 2019 CPC CHAPTER 4 TABLE A OCCUPANT LOAD FACTOR: [BSC, DSA-SS & DSA-SS/CC] AND TABLE H 201.1(4) ESTIMATED WASTE / SEWAGE FLOW RATES

JOB SITE: EAST END BLDG. 4

BUILDING AREA (ft^2)	BLDG.4	GPD		GPD		GPD		GPD	
OFFICE 1ST FLOOR	1532	153.2	0	0	0	0	0	0	0
OFFICE 2ND FLOOR	0	0	0	0	0	0	0	0	0
WAREHOUSE	11888	60	0	0	0	0	0	0	0
TOTAL=	**13420**	**213.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Land use	Contributing Unit Type	Enter Flow (gpd/Unit)	Flow Duration (hrs)	Peak Factor	Enter No. of Units	Avg. Flow (gpd)	Avg. Flow (gpm)	Peak Flow (gpd)	Peak Flow (gpm)
Heavy & Light Industrial, Manufacturing, Warehouses	Building 1	213.2	24	2.5	1.00	213	0.15	533	0.37
Heavy & Light Industrial, Manufacturing, Warehouses	Building 2	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 3	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 4	0	24	2.5	1.00				
Heavy & Light Industrial, Manufacturing, Warehouses	Building 5	0	24	3	1.00				
					Sub-totals:	**213**	**0**	**533**	**0**
					Grand Totals:	**213**	**0.15**	**533.00**	**0.37**

Qmax=PFmax X Qavg Where Qmax=maximum flowrate
PFmax=maximum peaking factor
Qavg=average flowrate

REGISTERED PROFESSIONAL ENGINEER
FARIBORZ MOZHGANI
No. M33211
Exp. 9/30/21
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STATE OF CALIFORNIA

SEWER IMPROVEMENT PLANS

FOR

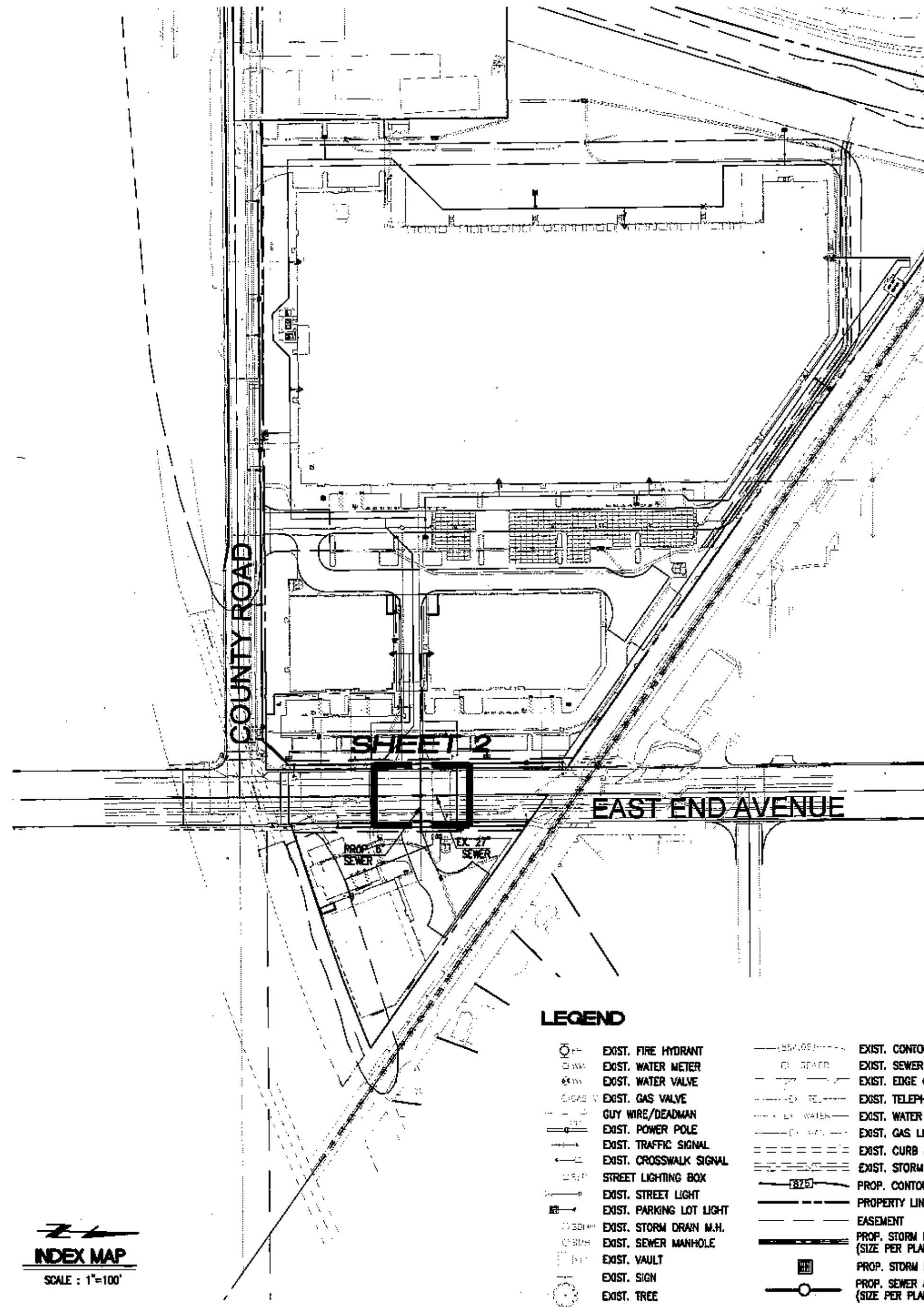
EAST END AVENUE – 223.9' NORTH OF COUNTY ROAD

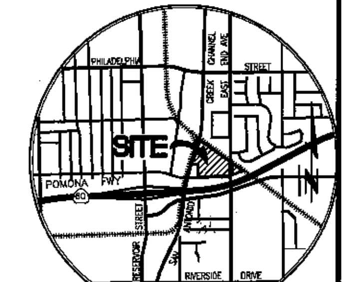
SEWER GENERAL CONSTRUCTION NOTE: (I.E.U.A.)

1. ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH THE PROJECT SPECIFICATIONS AS APPROVED BY THE INLAND EMPIRE UTILITIES AGENCY, THE CITY OF ______CHINO______ AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION) AND I.E.U.A. STANDARD STANDARD DETAIL SHEET OF THIS PLAN SET (SHTS. No.__3 & 4__) AS APPROPRIATE.
2. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS, WHETHER OR NOT SHOWN ON THESE PLANS.
3. ALL OBSTRUCTIONS WITHIN THE AREA TO BE IMPROVED ARE TO BE REMOVED OR RELOCATED AT THE DIRECTION OF THE ENGINEER. UTILITIES ARE TO BE RELOCATED BY THEIR RESPECTIVE OWNERS. CONTRACTOR IS REFERRED TO SECTION 5 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
4. UTILITY LINE LOCATIONS WERE TAKEN FROM RECORD AND WERE NOT LOCATED IN THE FIELD UNLESS OTHERWISE NOTED ON THE PLAN. THE CONTRACTOR IS REFERRED TO SECTION 5 OF THE STANDARD SPECIFICATIONS. FOR PUBLIC WORKS CONSTRUCTION.
5. IN CASE OF ANY ACCIDENTS INVOLVING SAFETY MATTERS COVERED BY SECTION 6424 OF THE CALIFORNIA LABOR CODE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STATE DIVISION OF INDUSTRIAL SAFETY.
6. CALL UNDERGROUND SERVICE ALERT (800–422–4133) FOR UNDERGROUND LOCATIONS 48 HOURS BEFORE DIG.
7. THE CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT 48–HRS PRIOR TO THE TIME OF CONSTRUCTION WITHIN THE PUBLIC RIGHT–OF–WAY THE CONTRACTOR IS REFERRED TO SECTION 7–10.3 OF THE STANDARD SPECS. FOR PUBLIC WORKS CONSTRUCTION.
8. THE CONTRACTOR SHALL RENEW OR REPLACE ANY EXISTING TRAFFIC STRIPING AND/OR PAVEMENT MARKINGS WHICH DURING HIS OPERATIONS HAVE BEEN EITHER REMOVED OR THE EFFECTIVENESS OF WHICH HAS BEEN REDUCED. RENEWAL OF PAVEMENT STRIPING & MARKINGS SHALL BE DONE IN CONFORMANCE WITH SECTION 310–5.6 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
9. ALL SEWER MAINS SHALL BE BELL AND SPIGOT EXTRA STRENGTH VITRIFIED CLAY PIPE (VCP) SEWER PIPE UNLESS OTHERWISE NOTED ON THE PLANS.
10. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING SEWER MAIN(S) AND NOTIFY AND OBTAIN APPROVAL OF THE DESIGN ENGINEER AND IUEA OF ANY VARIATION FROM DESIGN.
11. CONSTRUCTION SHALL NOT BEGIN ON FACILITIES TO BE OWNED BY I.E.U.A. UNTIL AFTER THE ISSUANCE OF A PERMIT BY I.E.U.A. TO ALLOW THE CONSTRUCTION AND ALSO AFTER A PRE–CONSTRUCTION CONFERENCE TO BE HELD AT LEAST 1 WEEK PRIOR TO BEGINNING CONSTRUCTION.
12. IN ADDITION, I.E.U.A. AND THE CITY OF ______CHINO______ SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF THE TRUNK SEWER OR ANY FACILITIES OWNED AND OPERATED BY I.E.U.A. AND/OR CITY OF ______CHINO______.
13. ALL TRENCHING AND/OR SHORING SHALL MEET REQUIREMENTS OF CAL–OSHA.
14. THE CONTRACTOR SHALL SUBMIT COPIES OF HIS DEPARTMENT OF INDUSTRIAL SAFETY PERMIT TO I.E.U.A. AND TO THE CITY OF
15. SHOP DRAWINGS AS REQUIRED BY THE PERMIT SHALL BE APPROVED BY I.E.U.A. PRIOR TO BEGINNING OF THE CONSTRUCTION.
16. UNLESS OTHERWISE APPROVED, LOW PRESSURE WATER TEST FOR THE GRAVITY SEWER LINES AND PRESSURE WATER TEST FOR THE PRESSURIZED PIPELINES SHALL BE PERFORMED IN CONFORMANCE WITH SECTION 306–1.4. OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

CONTRACTOR SHALL MAINTAIN THE PIPELINE OPERATION DURING THE CONSTRUCTION. DIVERSION TIME FOR THIS OPERATION IS 2 HOURS AND SHOULD BE COORDINATED WITH I.E.A.U. INSPECTOR DURING CONSTRUCTION.

CONTRACTOR SHALL PUT A TEMPORARY 6" PIPE TO DIVERT FLOW AND MAKE SURE THAT NO LEAK OR SPILL DURING THIS TEMPORARY CONNECTION OR SHALL PUMP TO DIVERT FLOW WITHOUT SPILLING ANY INDUSTRIAL WASTE INTO THE GROUND TO CONTAMINATE THE SOIL.





VICINITY MAP
N.T.S.

SEWER CONSTRUCTION NOTES:

		QTY:
1	INSTALL 6" VCP EXTRA STRENGTH SEWER PIPE BEDDING AND SUPPORT PER IEUA STD DETAIL ON SHEET 3	90 LF
2	INSTALL SEWER DROP MANHOLE PER DETAIL ON SHEET 4	1 EA
3	INSTALL SEWER CLEAN OUT PER DETAIL ON SHEET 4	3 EA

ABBREVIATIONS

AB	AGGREGATE BASE	FG	FINISH GRADE	ST	STREET
AC	ASPHALT CONCRETE	FH	FIRE HYDRANT	STD	STANDARD
ADA	AMERICAN DISABILITY ACT	FL	FLOWLINE	ST LT	STREET LIGHT
ARCH	ARCHITECTURAL	FS	FINISH SURFACE	STA	STATION
AVE	AVENUE	GB	GRADE BREAK	S'LY	SOUTHERLY
BCR	BEGIN CURB RETURN	H	HEIGHT OF RETAINING WALL	SW	STEM WALL
BEG	BEGIN	HP	HIGH POINT	SWR	SEWER
BLDG	BUILDING	H/P	HIGH PRESSURE	S/W	SIDEWALK
BLVD	BOULEVARD	IMP	IMPROVEMENT	TAN	TANGENT
BOP	BOTTOM OF PIPE	INT	INTERSECTION	TB	TOP OF BERM
BOW	BOTTOM OF WALL	INV	INVERT	TC	TOP OF CURB
BW	BACK OF WALK	IRR	IRRIGATION WATER	TF	TOP OF FOOTING
BVC	BEGIN VERTICAL CURVE	L	LENGTH	TG	TOP OF GRATE
CAB	COMPACTED AGGREGATE BASE	LG	LIP OF GUTTER	TI	TRAFFIC INDEX
CB	CATCH BASIN	LP	LOW POINT	TOP	TOP OF PIPE
CF	CURB FACE	LS	LANDSCAPING	TR	TOP OF RAIL
C&G	CURB AND GUTTER	MH	MANHOLE	TS	TOP OF CONCRETE SLAB
CIP	CAST IRON PIPE	N'LY	NORTHERLY	TW	TOP OF WALL
CLF	CHAIN LINK FENCE	NG	NATURAL GRADE	TYP	TYPICAL
℄, C/L	CENTERLINE	#, NO	NUMBER	VC	VERTICAL CURVE
CO	CLEANOUT	OC	ON CURB	W	WIDTH
CONC	CONCRETE	P	PAD ELEVATION	WM	WATER METER
CY	CUBIC YARD	P/L	PROPERTY LINE	W'LY	WESTERLY
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	PCC	PORTLAND CEMENT CONCRETE		
		PKWY	PARKWAY		
DED	DEDICATION	PP	POWER POLE		
DW	DOMESTIC WATER	PR	PROPOSED		
DWY	DRIVEWAY	PVC	POLYVINYCHLORIDE		
DWG	DRAWING	PVI	POINT VERTICAL INTERSECTION		
ECR	END CURB RETURN	PVMT	PAVEMENT		
E'LY	EASTERLY	R	RATE		
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE		
EP	EDGE OF PAVEMENT	RD	ROOF DRAIN		
ESMT	EASEMENT	R/W	RIGHT OF WAY		
EVC	END VERTICAL CURVE	S	SLOPE		
EX, EXIST	EXISTING	SD	STORM DRAIN		
(0.1)	EXISTING ELEVATION	SF	SQUARE FEET		
FF	FINSIH FLOOR	SHT	SHEET		

SHEET INDEX	
1	TITLE SHEET
2	PLAN AND PROFILE
3–4	DETAILS

LEGEND

- EXIST. FIRE HYDRANT
- EXIST. WATER METER
- EXIST. WATER VALVE
- EXIST. GAS VALVE
- GUY WIRE/DEADMAN
- EXIST. POWER POLE
- EXIST. TRAFFIC SIGNAL
- EXIST. CROSSWALK SIGNAL
- STREET LIGHTING BOX
- EXIST. STREET LIGHT
- EXIST. PARKING LOT LIGHT
- EXIST. STORM DRAIN M.H.
- EXIST. SEWER MANHOLE
- EXIST. VAULT
- EXIST. SIGN
- EXIST. TREE
- EXIST. TRAFFIC SIGNAL BOX
- EXIST. GAS METER
- EXIST. MAIL BOX
- EXIST. TELEPHONE MANHOLE
- EXIST. GRADE ELEVATION
- EXIST. CONTOUR LINE
- EXIST. SEWER LINE
- EXIST. EDGE OF A.C. PAVEMENT
- EXIST. TELEPHONE CONDUIT
- EXIST. WATER LINE
- EXIST. GAS LINE
- EXIST. CURB & GUTTER
- EXIST. STORM DRAIN LINE
- PROP. CONTOUR
- PROPERTY LINE
- EASEMENT
- PROP. STORM DRAIN LINE (SIZE PER PLAN)
- PROP. STORM DRAIN INLET
- PROP. SEWER & MANHOLE (SIZE PER PLAN)
- PROP. SEWER & CLEAN OUT (SIZE PER PLAN)
- PROP. WATER LINE (SIZE PER PLAN) W/WATER METER & BACKFLOW VALVE
- PROP. FIRE HYDRANT W/THRUST BLOCK & VALVE
- PROP. STREET LIGHT

INDEX MAP
SCALE : 1"=100'

UTILITY CONTACTS:

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION.

MONTE VISTA WATER DISTRICT	(909)624–0035
CALIFORNIA PUBLIC UTILITIES COMMISSION RAIL CROSSINGS SAFETY SECTION	(213)576–7085
UNION PACIFIC RAILROAD	(402)544–8536
SOUTHERN CALIFORNIA GAS COMPANY	(909)335–7550
SOUTHERN CALIFORNIA EDISON	(909)930–8431
FRONTIER COMMUNICATIONS	(909)469–6336
CHARTER COMMUNICATIONS	(714)414–1454
INLAND EMPIRE UTILITY AGENCY	(909)993–1522

BENCHMARK:

CITY OF CHINO BENCHMARK NO. "125/37"

A 2 1/2 INCH BRASS DISC STAMPED "125/37" LOCATION IN TOP OF CURB, 5 FEET WEST OF THE BEGINNING OF CURB RETURN OF THE SOUTHWEST CURB RETURN, AND BEING 61 FEET WEST AND 18 FEET SOUTH OF THE CENTERLINE INTERSECTION OF EAST END AVENUE AND COUNTY ROAD.

ELEVATION = 764.8375' (NGVD '29 / 2001 ADJ.)

ENGINEER'S NOTICE TO CONTRACTORS:

THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PLANS OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE DUE PRECAUTIONS OF THE RECORDED UTILITIES AS WELL AS ANY NOT SHOWN AND SHALL CONFIRM ALL ALIGNMENTS AND GRADES BY FIELD INVESTIGATIONS.

BASIS OF BEARING:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM (CCS83), ZONE 5, NORTH AMERICAN DATUM 1983 (NAD83) BASED LOCALLY ON CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS) "LORS" AND "EWPP" AS SHOWN HEREON (BASIS OF BEARINGS: S 81°29'26.1760" E). ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND REPRESENTED HEREON BY THE CENTERLINE OF EAST END AVENUE BEING NORTH 00°38'12" WEST.

SEAL

REGISTERED PROFESSIONAL ENGINEER
REINHARD STENZEL
R.C.E. NO. 56155
Exp. 12-31-22
CIVIL
STATE OF CALIFORNIA

811
Know what's below.
Call before you dig.

PREPARED BY
FIRM: THIENES ENGINEERING INC.
ADDRESS: 14349 FIRESTONE BOULEVARD
LA MIRADA, CA 90638
TELEPHONE: (714) 521–4811 FAX: (714) 521–4173
[illegible] 4/14/21
REINHARD STENZEL RCE 56155 DATE

Designed ______ ______
Drawn ______ ______
Checked ______ ______ Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

APPROVED BY:
______ Date______
CIVIL ENGINEER FOR I.E.U.A.

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

INLAND EMPIRE UTILITIES AGENCY
6075 Kimball Ave, Chino CA 91710
Telephone (909) 993–1600

PROJECT NO. PM 20158
SEWER CONNECTION AT EAST END AVE.
TITLE SHEET

SHEET NO. 1 OF 4
PROJECT NO. PM 20158
DRAWING NO. BA–2310

Last Update: 10/21/20
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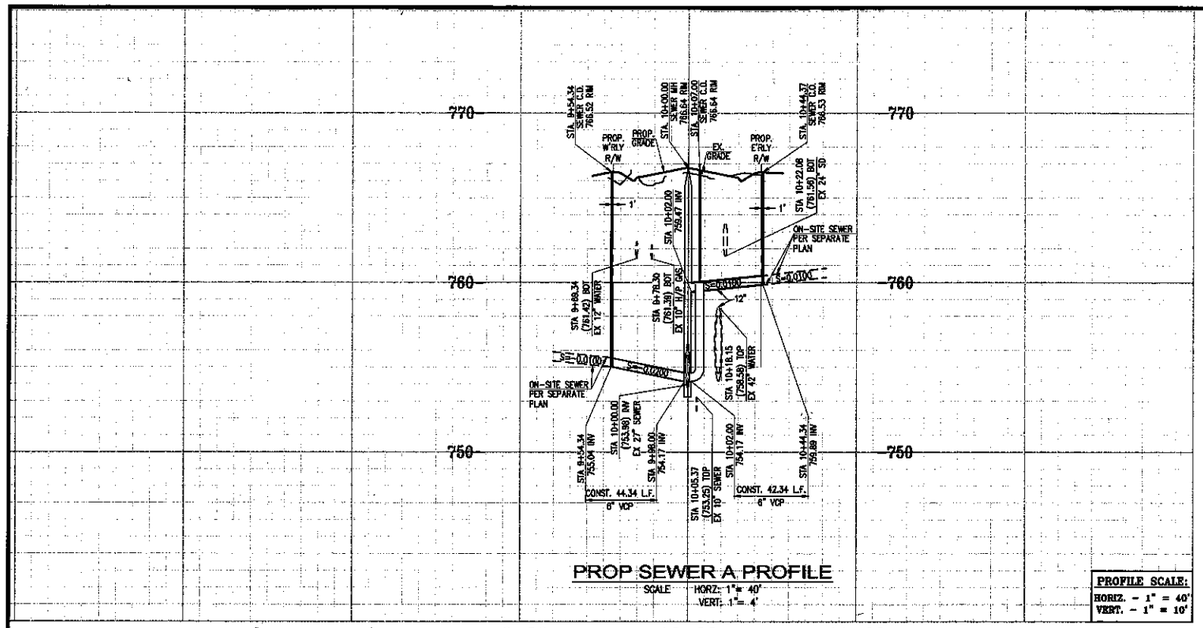

SEWER CONSTRUCTION NOTES:

1. INSTALL 6" VCP EXTRA STRENGTH SEWER PIPE BEDDING AND SUPPORT PER IEUA STD DETAIL ON SHEET 3
2. INSTALL SEWER DROP MANHOLE PER DETAIL ON SHEET 4
3. INSTALL SEWER CLEAN OUT PER DETAIL ON SHEET 4

SEAL

REGISTERED PROFESSIONAL ENGINEER * REINHARD STENZEL * R.C.E. NO. 56155 Exp. 12-31-22 CIVIL STATE OF CALIFORNIA

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ADDRESS: 14349 FIRESTONE BOULEVARD
LA MIRADA, CA 90638
TELEPHONE: (714) 521-4811 FAX: (714) 521-4173
REINHARD STENZEL RCE 56155 4/14/21 DATE

Designed
Drawn
Checked
Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

APPROVED BY:
Date
CIVIL ENGINEER FOR I.E.U.A.

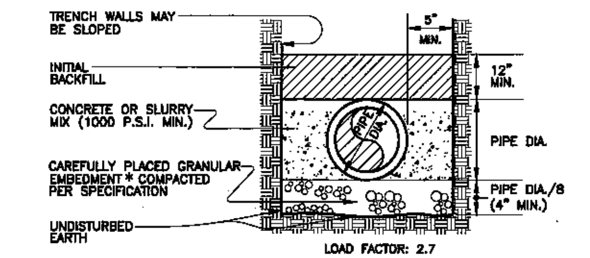
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

INLAND EMPIRE UTILITIES AGENCY
6075 Kimball Ave, Chino CA 91710
Telephone (909) 993-1600

PROJECT NO. PM 20158
SEWER CONNECTION AT EAST END AVE.
PLAN AND PROFILE

SHEET NO. 2 OF 4
PROJECT NO. PM 20158
DRAWING NO. BA-2310

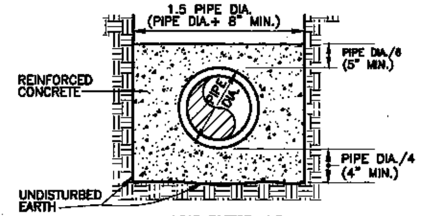
Last Updated 10/21/20
O:\3700-3799\3712\SEWER\3712SEW02.dwg



LOAD FACTOR: 2.7

NOTE: THIS TYPE OF CONSTRUCTION REQUIRES THE CONCRETE TO EXTEND FROM THE PIPE TO THE TRENCH WALL. CAUTION: NOT RECOMMENDED WHERE NATIVE SOILS ARE EXPANSIVE.

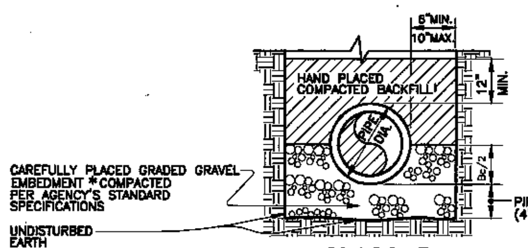
CLASS A-III – SIDECRADLING



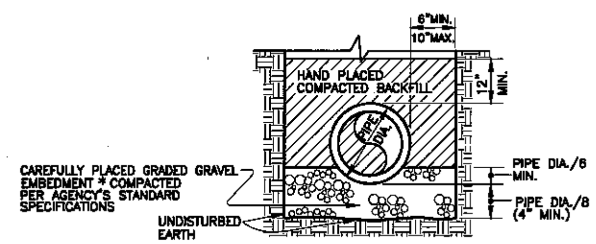
LOAD FACTOR: 4.5

NOTE: THIS TYPE OF CONSTRUCTION SHOULD BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER, AND MAY YIELD HIGHER LOAD FACTORS THAN INDICATED.

CLASS A-IV
CONCRETE ENCASEMENT



CLASS B
LOAD FACTOR 1.9



CLASS C
LOAD FACTOR 1.5

*GRANULAR EMBEDMENT:

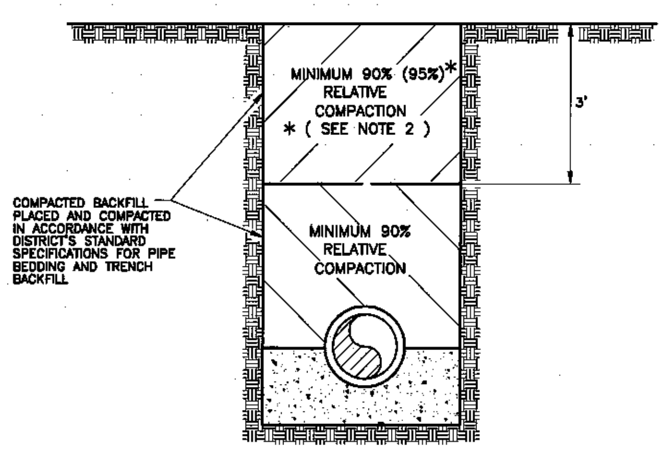
COARSE GRAINED NATIVE SOILS OR IMPORTED SAND WITH A MINIMUM SAND EQUIVALENCE OF 30 AND OF SUCH SIZE THAT 90 TO 100 PERCENT WILL PASS A NO. 4 SIEVE AND NO MORE THAN 5 PERCENT WILL PASS A NO. 200 SIEVE.

NOTES

1. SLAG, PEA GRAVEL, OR OTHER ALTERNATIVE MATERIALS WILL NOT BE ACCEPTABLE IN LIEU OF GRANULAR EMBEDMENT.
2. TRENCH SHORING & TRENCH WALL SLOPING SHALL BE IN CONFORMANCE WITH STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.
3. MATERIALS, EMBEDMENT, PLACEMENT AND COMPACTION OF GRANULAR EMBEDMENT* AND COMPACTED BACKFILL WILL CONFORM TO THE AGENCY'S STANDARD SPECIFICATION FOR PIPE BEDDING AND TRENCH BACKFILL.

BEDDING DETAIL NOTES

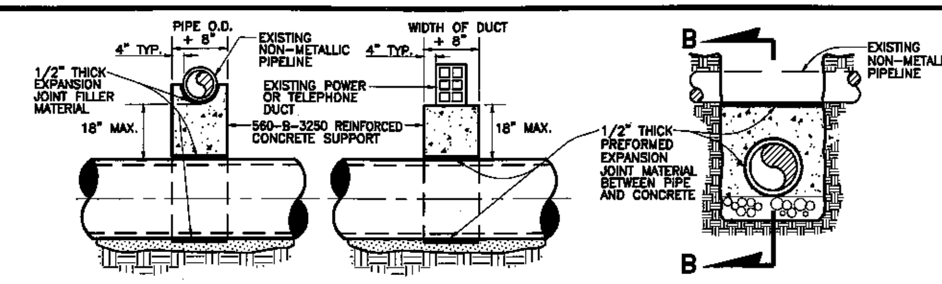
BEDDING DETAILS
NO SCALE



NOTES:

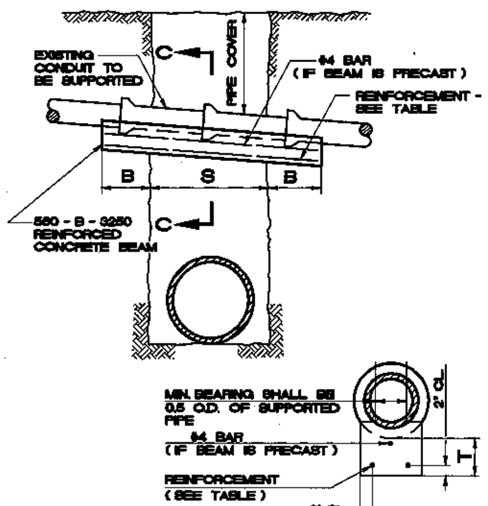
1. MATERIAL FOR COMPACTED BACKFILL WILL CONSIST OF SUITABLE JOB EXCAVATED MATERIALS, IMPORTED SOILS, OR GRADED GRAVEL AS DEFINED IN THE AGENCY'S STANDARD SPECIFICATION FOR PIPE BEDDING AND TRENCH BACKFILL. SLAG, PEA GRAVEL, CRUSHED ROCK, OR OTHER ALTERNATIVE MATERIALS WILL NOT BE ACCEPTABLE.
2. COMPACTION UNDER THE STREET AND STRUCTURES SHALL BE 95%.
3. ALL PIPELINES CARRYING RECLAIMED WATER SHALL BE CLEARLY MARKED BY PIPE COLOR (PURPLE) OR BY PLACING IN BACKFILL PURPLE IDENTIFICATION TAPE. SAID TAPE SHALL BE NOT LESS THAN ONE FOOT OR MORE THAN TWO FEET ABOVE TOP OF PIPE.

BACKFILL DETAIL
NO SCALE



SECTION B-B

CASE 1
NO SCALE



SECTION C - C

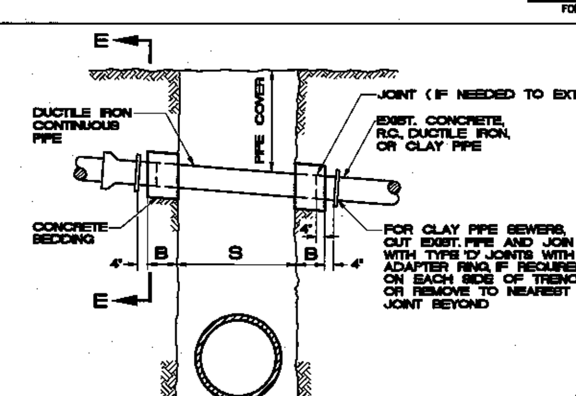
NOTES

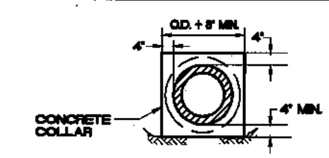
1. WIDTH OF BEAM SHALL EQUAL O.D. + 8" OF SUPPORTED PIPE.
2. IF SUPPORTED PIPE IS BEDDED IN CONCRETE, BEAM WIDTH SHALL BE EQUAL BEDDING WIDTH.
3. IF BEAM IS PRECAST, ENDS OF BEAM SHALL BE FULLY BEDDED IN 420-C-2000 CONCRETE FOR LENGTH 'B'. THE BEDDING SHALL HAVE A MINIMUM THICKNESS OF 4". CLASS 'C' MORTAR SHALL BE PLACED BETWEEN TOP OF BEAM AND SUPPORTED PIPE TO PROVIDE MINIMUM BEARING SHOWN.
4. THIS CASE IS PERMITTED ONLY IF THE TRENCH WALLS ARE FIRM AND UNYIELDING.
5. MAXIMUM SPACING OF BARS SHALL BE 4" O.C.

REINFORCED CONCRETE BEAM (DIMENSIONS AND REINFORCEMENT)

S	PIPE COVER														
	0" TO 8'-0"			8'-1" TO 12'-0"			12'-1" TO 16'-0"			16'-1" TO 20'-0"			20'-1" TO 25'-0"		
	T	BARS	B	T	BARS	B	T	BARS	B	T	BARS	B	T	BARS	B
0" TO 4'-0"	8"	#4	1'-6"	8"	#4	1'-6"	9"	#4	1'-6"	10"	#4	1'-6"	10 1/2"	#4	1'-6"
4'-1" TO 5'-0"	8"	#4	1'-6"	9 1/2"	#4	1'-6"	11"	#4	1'-6"	12"	#4	1'-6"	12 1/2"	#5	1'-6"
5'-1" TO 6'-0"	9"	#4	1'-6"	11"	#5	1'-6"	12 1/2"	#5	1'-6"	13 1/2"	#5	2'-0"	14 1/2"	#5	2'-0"
6'-1" TO 7'-0"	10"	#5	1'-6"	12 1/2"	#5	2'-0"	14 1/2"	#5	2'-0"	15 1/2"	#5	2'-0"	16 1/2"	#6	2'-0"
7'-1" TO 8'-0"	11"	#5	1'-6"	14"	#5	2'-0"	16"	#5	2'-0"	17 1/2"	#6	2'-6"	19"	#6	2'-6"
8'-1" TO 9'-0"	12 1/2"	#5	2'-0"	15 1/2"	#6	2'-6"	17 1/2"	#6	2'-6"	19 1/2"	#6	2'-6"	21"	#6	2'-6"
9'-1" TO 10'-0"	13 1/2"	#6	2'-0"	17"	#6	2'-6"	19 1/2"	#6	3'-0"	21 1/2"	#6	3'-0"	23"	#6	3'-0"
10'-1" TO 11'-0"	14 1/2"	#6	2'-6"	18 1/2"	#6	3'-0"	21"	#6	3'-0"	23 1/2"	#6	3'-0"	25"	#7	3'-0"
11'-1" TO 12'-0"	15 1/2"	#6	2'-6"	20"	#6	3'-0"	23"	#7	3'-6"	25 1/2"	#7	3'-6"	27"	#7	3'-6"
12'-1" TO 13'-0"	17"	#6	3'-0"	21 1/2"	#7	3'-6"	24 1/2"	#7	3'-6"	27 1/2"	#7	4'-0"	29"	#7	4'-0"
13'-1" TO 14'-0"	18"	#7	3'-0"	23"	#7	3'-6"	26 1/2"	#7	4'-0"	29 1/2"	#7	4'-0"	31 1/2"	#7	4'-0"
14'-1" TO 15'-0"	19"	#7	3'-0"	25"	#7	4'-0"	28"	#7	4'-0"	31 1/2"	#7	4'-6"			
15'-1" TO 16'-0"	20 1/2"	#7	3'-6"	26 1/2"	#7	4'-0"	30"	#8	4'-6"						
16'-1" TO 17'-0"	21 1/2"	#7	3'-6"	28"	#8	4'-6"									
17'-1" TO 18'-0"	22 1/2"	#8	4'-0"	29 1/2"	#8	4'-6"									

CASE 2
REINFORCED CONCRETE BEAM
FOR 4" TO 24" I.D. PIPE – NO SCALE





SECTION E - E

ALLOWABLE SPANS AND MIN. REQUIRED BEARING FOR DUCTILE IRON PIPE

DEPTH OF COVER	6" PIPE		8" PIPE		10" PIPE	
	S (MAX.)	B(MIN.)	S (MAX.)	B(MIN.)	S (MAX.)	B(MIN.)
0" TO 8'-0"	11'-0"	1'-6"	13'-6"	1'-6"	16'-6"	2'-0"
8'-1" TO 16'-0"	8'-0"	1'-6"	10'-0"	2'-0"	12'-0"	2'-6"
16'-1" TO 25'-0"	7'-0'	1'-6"	9'-0"	2'-0"	10'-6"	2'-6"

CASE 3
DUCTILE IRON PIPE
NO SCALE

PIPE SUPPORTS – GENERAL NOTES

1. ALL CROSSING HOUSE LATERALS 10" AND SMALLER SHALL BE SUPPORTED BY USE OF CASE 3 PIPE SUPPORT DETAIL.
2. ALL NON-METALLIC CROSSING PIPELINE AND CONDUITS WITH 18" OR LESS CLEARANCE, EXCEPT THOSE COVERED BY NOTE 1 ABOVE, SHALL BE SUPPORTED BY CASE 1 PIPE SUPPORT DETAIL.
3. ALL NON-METALLIC CROSSING PIPELINE AND CONDUITS NOT COVERED BY THE ABOVE NOTES 1 OR 2 SHALL BE SUPPORTED BY THE USE OF CASE 2 PIPE SUPPORT DETAIL.
4. BACKFILL SHALL BE BROUGHT UP UNIFORMLY ALONG BOTH SIDES OF PROTECTED PIPE AND SUPPORT SO AS TO INDUCE NO UNBALANCED FORCE.
5. CROSSING METALLIC CONDUITS 3 INCHES (NOMINAL SIZE) AND LARGER SHALL BE BACKFILLEDTO 2'-0" BELOW THE CROSSING CONDUIT WITH MATERIALS AS DESCRIBED IN THE DISTRICT'S DTANDARD SPECIFICATIONS FOR PIPE BEDDING AND TRENCH BACKFILL. THE TRENCH SHALL THEN BE BACKFILLED TO 12 INCHES OVER THE CONDUIT WITH CLEAN, MOISTENED SAND (SAND EQUIVALENT OVER 30), BROUGHT UP IN LAYERS OF NOT OVER 6 INCHES AND MECHANICALLY COMPACTED TO A RELATIVE DENSITY OF AT LEAST 90% WITH SPECIAL ATTENTION BEING GIVEN TO THE PIPE BOTTOM AND HAUNCH AREAS OF THE BACKFILL.
6. IF BEDDING IS REMOVED FROM THE EXISTING PIPE THAT WILL REMAIN IN PLACE, THE PIPE SHALL BE EMBEDDED WITH CONCRETE AT NO EXTRA COST TO THE AGENCY.
7. UNLESS OTHERWISE INDICATED, CONCRETE SHALL BE CLASS 420-C-2000.

PIPE SUPPORT DETAILS

SEAL

REGISTERED PROFESSIONAL ENGINEER
REINHARD STENZEL
R.C.E. NO. 56155
Exp. 12-31-22
CIVIL
STATE OF CALIFORNIA

811
Know what's below.
Call before you dig.

PREPARED BY
FIRM: THIENES ENGINEERING INC.
ADDRESS: 14349 FIRESTONE BOULEVARD
LA MIRADA, CA 90638
TELEPHONE: (714) 521-4811 FAX: (714) 521-4173
[illegible] 4/14/21
REINHARD STENZEL RCE 56155 DATE

Designed ______
Drawn ______
Checked ______ Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

APPROVED BY: ______ Date ______
CIVIL ENGINEER FOR I.E.U.A.

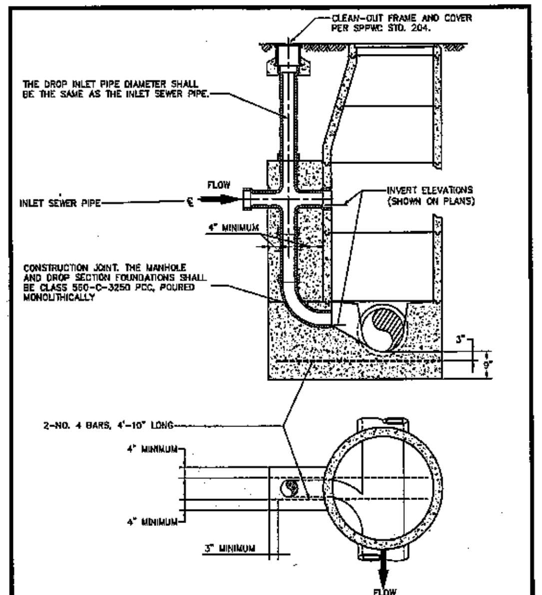
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

INLAND EMPIRE UTILITIES AGENCY
6075 Kimball Ave, Chino CA 91710
Telephone (909) 993-1600

PROJECT NO. PM 20158
SEWER CONNECTION AT EAST END AVE.
STANDARD DETAILS
BEDDING AND PIPE SUPPORT DETAILS

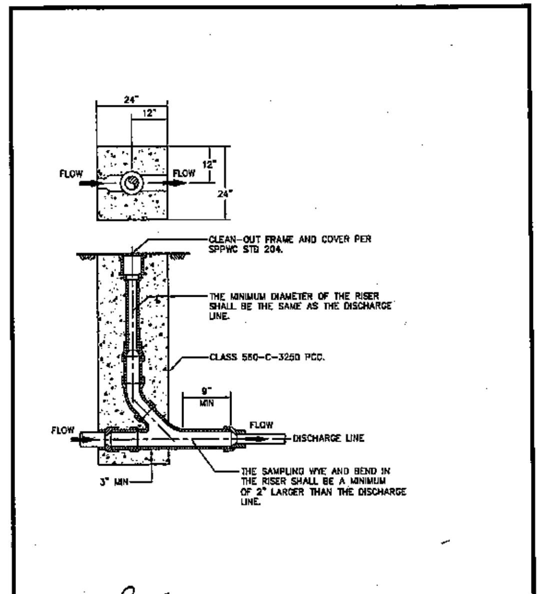
SHEET NO. 3 OF 4
PROJECT NO. PM 20158
DRAWING NO. BA-2310

Last Update: 10/21/20
G:\3700-3799\3712\SEWER\3712SEW03-04 DETAILS.dwg



APPROVED	[illegible] CITY ENGINEER	4/30/16 DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			SEWER MANHOLE DROP INLET	520

(2)



APPROVED	[illegible] CITY ENGINEER	6/30/16 DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			SAMPLING WYE	527

(3)

SEWER CONSTRUCTION NOTES:

1. INSTALL 6" VCP EXTRA STRENGTH SEWER PIPE BEDDING AND SUPPORT PER IEUA STD DETAIL ON SHEET 3
2. INSTALL SEWER DROP MANHOLE PER DETAIL ON SHEET 4
3. INSTALL SEWER CLEAN OUT PER DETAIL ON SHEET 4

SEAL

REGISTERED PROFESSIONAL ENGINEER
REINHARD STENZEL
R.C.E. NO. 56155
Exp. 12-31-22
CIVIL
STATE OF CALIFORNIA

Know what's below. Call before you dig.

PREPARED BY
FIRM: THIENES ENGINEERING INC.
ADDRESS: 14349 FIRESTONE BOULEVARD
LA MIRADA, CA 90638
TELEPHONE: (714) 521-4811 FAX: (714) 521-4173
[illegible] 4/14/21
REINHARD STENZEL RCE 56155 DATE

Designed ________
Drawn ________
Checked ________ Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

APPROVED BY:
CIVIL ENGINEER FOR I.E.U.A. Date ________

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

INLAND EMPIRE UTILITIES AGENCY
6075 Kimball Ave, Chino CA 91710
Telephone (909) 993-1600

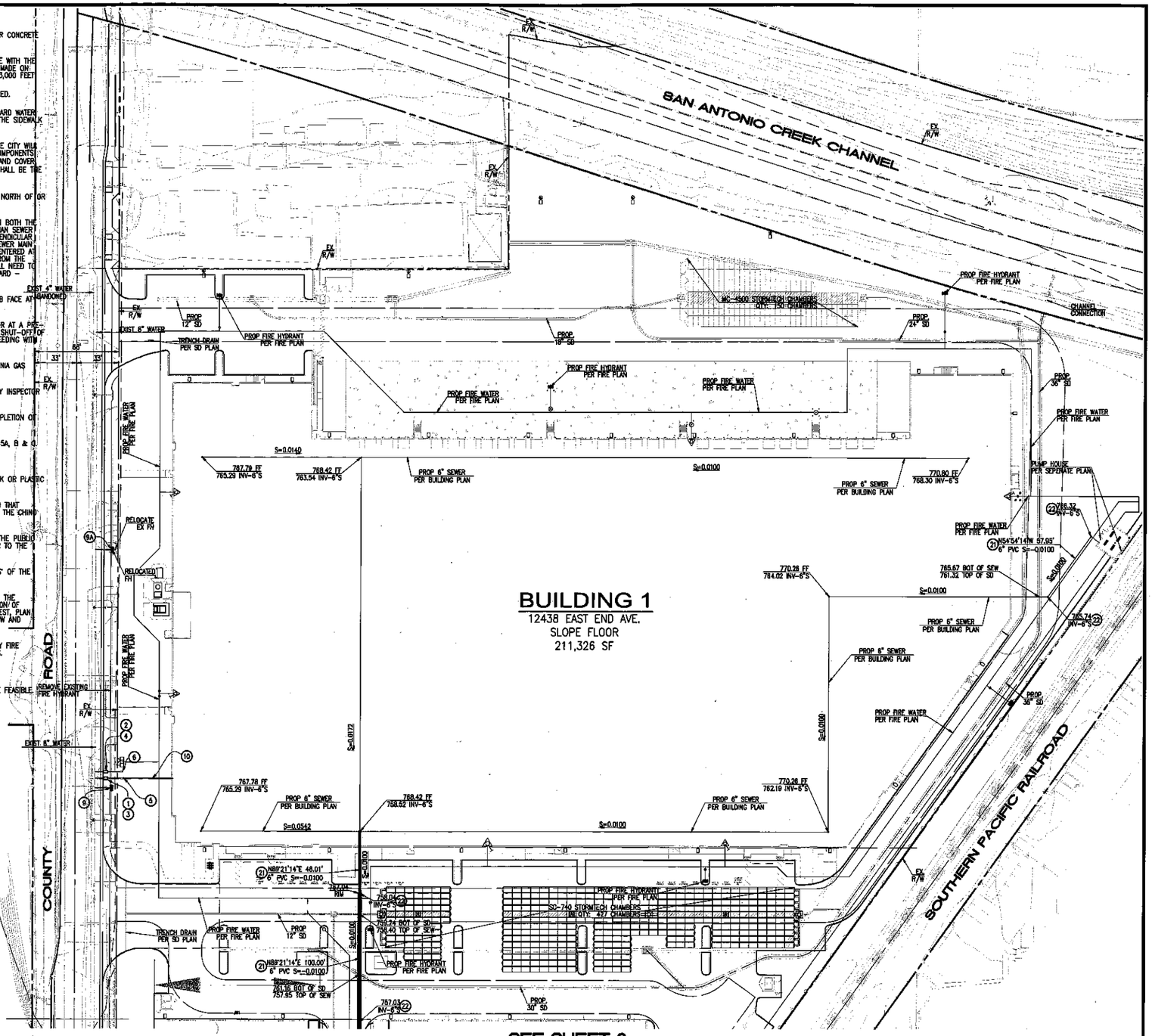
PROJECT NO. PM 20158
SEWER CONNECTION AT EAST END AVE.
DETAILS

SHEET NO. 4 OF 4
PROJECT NO. PM 20158
DRAWING NO. BA-2310

Last Update: 10/21/20
O:\3700-3799\3712\SEWER\3712SDW03-04 DETAILS.dwg

GENERAL NOTES FOR WATER IMPROVEMENT PLANS:

1. THESE DRAWINGS AND THE DATA HEREIN SHALL BE PART OF THE SPECIFICATIONS.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CHINO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS, STANDARD SPECIAL PROVISIONS, SPECIAL PROJECT PROVISIONS, THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), LATEST EDITION WITH SUPPLEMENTS, AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA) SPECIFICATIONS. ANY VARIATION FROM, OR EXCEPTION TO, THE STANDARDS OR THESE NOTES SHALL BE APPROVED BY THE CITY ENGINEER.
3. MATERIALS AND METHODS SHALL BE APPROVED BY THE CITY ENGINEER.
4. HOURS OF OPERATION SHALL BE FROM 7:00 AM TO 8:00 PM, MONDAY THROUGH FRIDAY. OTHER HOURS SHALL REQUIRE WRITTEN AUTHORIZATION FROM THE CITY ENGINEER OR THE BUILDING OFFICIAL. ROAD/LANE CLOSURES SHALL BE LIMITED TO THE HOURS OF 8:30 AM TO 3:30 PM ON WEEKDAYS.
5. THE PUBLIC WORKS INSPECTOR SHALL BE NOTIFIED AT (909) 334-6250 AT LEAST 24 HOURS IN ADVANCE OF REQUIRED INSPECTIONS.
6. PRIOR TO CONSTRUCTION WORK, ALL CONTRACTORS, INCLUDING SUBCONTRACTORS, SHALL OBTAIN A CITY BUSINESS LICENSE AND AN ENCROACHMENT PERMIT.
7. STATE LAW SB 3019 REQUIRES THE CONTRACTOR TO OBTAIN AN IDENTIFICATION NUMBER FROM UNDERGROUND SERVICE ALERT PRIOR TO THE ISSUANCE OF A CITY ENCROACHMENT PERMIT. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO FULL WORKING DAYS (48 HOURS MINIMUM) IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ASCERTAIN THE SIZE AND TRUE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ANY REPAIRS TO ANY DAMAGED PUBLIC AND/OR PRIVATE UTILITIES, SHOWN OR NOT SHOWN HEREON.
8. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THE PLANS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND IDENTIFYING UNDERGROUND UTILITY LINES AND SUBSTRUCTURES AND SHALL PROTECT THEM FROM DAMAGE.
10. PRIOR TO ANY CONSTRUCTION WORK WHICH COULD DAMAGE OR CONFLICT WITH UNDERGROUND STRUCTURES OR UTILITIES, THE CONTRACTOR SHALL EXCAVATE INSPECTION HOLES TO DETERMINE THE LOCATION AND DEPTH OF SAID STRUCTURES AND UTILITIES IN THE VICINITY OF, OR WHICH MAY BE AFFECTED BY, THE PROPOSED IMPROVEMENT WORK.
11. IF EXISTING UTILITIES OR OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, WORK SHALL STOP AND THE CITY ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
12. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED OR ALTERED EXISTING IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY AS DIRECTED BY THE CITY ENGINEER.
13. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL AT ALL TIMES.
14. PRIOR TO TAKING WATER FROM THE FIRE HYDRANT, THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO OBTAIN A CITY HYDRANT WATER METER.
15. ALL CONSTRUCTION DEBRIS INCLUDING DUST, DIRT, AND ANY TYPE OF SCRAP MUST BE DISPOSED OF THROUGH THE SOLID WASTE SYSTEM. IT IS STRICTLY PROHIBITED TO WASH ANY DUST, DIRT, SCRAP OR OTHER MATERIAL TO THE STREET AND/OR STORM DRAIN SYSTEM.
16. WATER MAINS SHALL BE PVC OR DI (DUCTILE IRON). PVC PIPE 4-INCH THROUGH 12-INCH DIAMETERS, SHALL BE AWWA C-900 AND 14-INCH OR LARGER SHALL BE AWWA C-905. DI PIPE SHALL BE AWWA C-151 WITH AWWA C-104 CEMENT MORTAR LINING, WHEN APPROVED IN ADVANCE BY THE CITY ENGINEER, STEEL PIPE WITH AWWA C-200 OUTSIDE COAT WRAPPING AND CEMENT MORTAR LINING MAY BE USED. ACP (ASBESTOS CEMENT PIPE) WILL NO LONGER BE ACCEPTED. PRESSURE CLASS 200 (DR14) MAY BE USED SOUTH OF AND INCLUDING SCHAEFER AVENUE. PRESSURE CLASS 150 (DR18) MAY BE USED ELSEWHERE.
17. WATER MAINS CONSTRUCTED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE A MINIMUM COVER OF 42 INCHES FROM THE FINISHED STREET SURFACE. GRADING SHALL BE STRAIGHT, UNLESS OTHERWISE INDICATED ON THE PLANS.
18. A 14 AWG COATED/INSULATED COPPER TRACING WIRE SHALL BE LAID ON TOP OF NON-METALLIC MAINS AND SERVICE LINES AND WRAPPED AROUND THE MAIN OR SERVICE LINE AT 10' INTERVALS WITH CONDUCTING CONNECTIONS TO THE VALVES.
19. ALL PIPES INSTALLED ABOVE OR BELOW GROUND (MAINS, LATERALS AND SERVICE LINES) THAT ARE DESIGNED TO CARRY RECYCLED WATER, SHALL BE COLORED PURPLE OR DISTINCTIVELY WRAPPED WITH PURPLE TAPE.
20. WATER METER BOXES SHALL BE CONSIDERED PART OF THE WATER SERVICE AND SHALL BE BROUGHT TO GRADE AND LEVELED BEFORE THE CITY WILL INSTALL ANY WATER METERS.
21. A VALVE CAN AND COVER SHALL BE INSTALLED AT EACH VALVE PER STANDARD DRAWING 455. VALVE CANS SHALL BE 8-INCH DIAMETER PVC SDR 35 TELESCOPING TYPE, BROOKS PRODUCTS 8-3/4 INCH DIAMETER OR AN APPROVAL EQUAL. VALVE COVERS MARKED "WATER" OR "RECYCLED WATER" SHALL BE ALHAMBRA FOUNDRY A2986B OR AN APPROVED EQUAL. ALL VALVE COVERS SHALL BE PAINTED WITH TWO (2) COATS OF VISTA NO. 999 "METAL PRIME" PRIMER OR APPROVED EQUAL; VALVE COVERS MARKED "WATER" SHALL BE PAINTED WITH TWO (2) COATS OF DUPONT TRAFFIC PAINT NO. 7001 BLUE OR APPROVED EQUAL AND VALVE COVERS MARKED "RECYCLED WATER" SHALL BE PAINTED WITH TWO (2) COATS OF PANTONE NO. 512 PURPLE OR APPROVED EQUAL.
22. WATER SERVICE VAULTS SHALL BE BEST, BROOKS PRODUCTS, QUICK SET, J&R CONCRETE SERIES 400 OR AN APPROVED EQUAL.
23. PRESSURE TESTING AND CHLORINATION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CHINO AND AWWA SPECIFICATIONS. PRESSURE TESTS SHALL NOT BE MADE ON VALVES. THE MAXIMUM LINE LENGTH FOR A TEST SHALL BE NO MORE THAN 3,000 FEET
24. A MINIMUM 1" WATER SERVICE SHALL BE PROVIDED TO EACH LOT, AS REQUIRED.
25. WATER METERS INSTALLED PER STANDARD DRAWINGS 405A AND 405B, "STANDARD WATER SERVICE 1" AND SMALLER" SHALL BE SET 9" BEHIND THE CURB OR BEHIND THE SIDEWALK IN AREAS PROTECTED FROM VEHICULAR OR PEDESTRIAN TRAFFIC.
26. THE CONTRACTOR SHALL PURCHASE THE WATER METERS FROM THE CITY. THE CITY WILL INSTALL THE WATER METER AND SENSOR UNIT. ALL OTHER MATERIALS AND COMPONENTS AND THEIR INSTALLATION (INCLUDING, BUT NOT LIMITED TO, THE METER BOX AND COVER, SERVICE AND SUPPLY LINES, VALVES, ADAPTORS, COUPLINGS AND FITTINGS) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER.
27. FOR NEW STREET CONSTRUCTION, WATER MAINS SHALL BE LOCATED 12 FEET NORTH OF OR 12 FEET EAST OF THE STREET CENTERLINE.
28. WATER AND SEWER MAINS SHOULD BE SEPARATED AS FAR AS REASONABLE IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS WITH WATER MAINS ALWAYS HIGHER THAN SEWER MAINS. THE MINIMUM HORIZONTAL SEPARATION SHALL BE 10 FEET, FOR PERPENDICULAR CONSTRUCTION, WATER MAINS SHALL BE CONSTRUCTED 3 FEET ABOVE THE SEWER MAIN AND SHALL CROSS AT A 90° ANGLE. A LENGTH OF SEWER PIPE SHALL BE CENTERED AT THE CROSSING SO THAT THE SEWER JOINTS ARE THE MAXIMUM DISTANCE FROM THE WATER MAIN. IF ANY OF THESE CONDITIONS CANNOT BE MET, THE DESIGN WILL NEED TO BE REVIEWED AND APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD – DIVISION OF DRINKING WATER PRIOR TO CITY APPROVAL.
29. A "W", 3 INCHES WIDE AND 3 INCHES HIGH, SHALL BE STAMPED IN THE CURB FACE AT THE WATER LATERAL LOCATION, 3" BELOW THE TOP OF CURB.
30. CONNECTIONS TO EXISTING WATER MAINS SHALL BE DONE BY THE CONTRACTOR AT A PRE-ARRANGED TIME AND UNDER THE SUPERVISION OF THE CITY INSPECTOR. THE SHUT-OFF OF ANY WATER LINES SHALL BE SCHEDULED AT LEAST 48 HOURS BEFORE PROCEEDING WITH CONSTRUCTION.
31. GAS LINES SHALL BE CONSTRUCTED OR MODIFIED BY THE SOUTHERN CALIFORNIA GAS COMPANY.
32. NO TRENCH BACKFILL SHALL TAKE PLACE PRIOR TO APPROVAL FROM THE CITY INSPECTOR AND SHALL BE DONE IN ACCORDANCE WITH STANDARD DRAWING 109.
33. "AS-BUILT" RECORD DRAWINGS SHALL BE FURNISHED TO THE CITY UPON COMPLETION OF CONSTRUCTION.
34. FIRE HYDRANT ASSEMBLIES SHALL BE INSTALLED PER STANDARD DRAWINGS 445A, B & C. HYDRANT LOCATIONS SHALL BE MARKED PER STANDARD DRAWING 446.
35. FIRE HYDRANTS NOT ACCEPTED FOR SERVICE SHALL BE COVERED WITH A SACK OR PLASTIC BAG INDICATING THE HYDRANT IS NOT IN SERVICE.
36. THE FIRE SPRINKLER SERVICE "POINT OF CONNECTION" SHALL BE LOCATED SO THAT ON-SITE UNDERGROUND PIPING CAN BE INSTALLED PER PLANS APPROVED BY THE CHINO VALLEY INDEPENDENT FIRE DISTRICT.
37. THESE PLANS ARE APPROVED FOR WATER FACILITIES AND EQUIPMENT WITHIN THE PUBLIC RIGHT-OF-WAY ONLY. FOR ON-SITE WATER FACILITIES AND EQUIPMENT, REFER TO THE APPROVED BUILDING PLANS.
38. LANDSCAPE IRRIGATION SHALL BE CONSTRUCTED PER "PARKWAY REQUIREMENTS" OF THE CITY OF CHINO STANDARD SPECIFICATIONS.
39. APPROVAL OF THESE PLANS BY THE CITY OR ITS AGENTS SHALL NOT RELIEVE THE CONTRACTOR OR THE APPLICANT OF THE RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING THE CONSTRUCTION. UPON REQUEST, PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.
40. ALL REQUIRED FIRE PROTECTION PLANS MUST BE APPROVED BY CHINO VALLEY FIRE DISTRICT PRIOR TO ANY FIRE SERVICE HOT TAP OR WATER MAIN CONNECTIONS.
41. "SIZE ON SIZE" HOT TAPS ARE NOT PERMITTED.
42. RECYCLED WATER SHALL BE USED FOR ALL CONSTRUCTION PURPOSES, WHERE FEASIBLE.
43.



SEE SHEET 2

WATER CONSTRUCTION NOTES

		QTY
(1)	INSTALL 2" WATER SERVICE & 2" METER (DOMESTIC) PER STD. DWG. No. MWD-102.	4 EA
(2)	INSTALL 1.5" SERVICE & 1" METER (IRRIGATION) PER STD. DWG. No. MWD-102.	3 EA
(3)	INSTALL 2" COPPER PIPE, TYPE K, OR APPROVED EQUAL.	175 LF
(4)	INSTALL 1.5" COPPER PIPE, TYPE K, OR APPROVED EQUAL.	175 LF
(5)	INSTALL 2" BACKFLOW PREVENTION ASSEMBLY (DOMESTIC) PER STD. DWG. No. MWD-104 A.	4 EA
(6)	INSTALL 1" BACKFLOW PREVENTION ASSEMBLY (IRRIGATION) PER STD. DWG. No. MWD-104 A.	4 EA
(7)	INSTALL 10" DOC PER STD. DWG. No. MWD-105B.	4 EA
(8)	INSTALL 8" DOC PER STD. DWG. No. MWD-105B.	1 EA
(9)	INSTALL 6" FIRE HYDRANT ASSEMBLY PER STD. DWG. No. MWD-106.	4 EA
(9A)	RELOCATE EXISTING FIRE HYDRANT PER STD. DWG. No. MWD-106	1 EA
(10)	INSTALL 3" PVC SCHEDULE 80 DOMESTIC WATER	265 LF

SEWER CONSTRUCTION NOTES

		QTY
(21)	INSTALL 6" P.V.C. SDR 35 SEWER PIPE	540 LF
(22)	INSTALL 6" SEWER CLEAN OUT PER CITY OF CHINO STD. 510	7 EA
(23)	INSTALL SEWER LATERAL PER CITY OF CHINO STD. 500	2 EA

NOTICE TO CONTRACTOR:

CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SHALL REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

SEWER NOTE:

SEWER SHOWN FOR REFERENCE ONLY. ALL BUILDING AND SITE SEWER IMPROVEMENTS ARE PER SEPARATE PLAN & PERMIT.

CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING UTILITIES AND DRAINAGE SYSTEMS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY CONSTRUCTION.

SEAL

REGISTERED PROFESSIONAL ENGINEER REINHARD STENZEL R.C.E. NO. 56155 Exp. 12-31-22 CIVIL STATE OF CALIFORNIA

811 Know what's below. Call before you dig.

0 20 40 80 120

SCALE:1"=40'

PREPARED BY	REVISIONS	MADE BY	MADE DATE	RECOMMENDED BY	RECOMMENDED DATE	BENCH MARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE	CITY ENGINEER'S STAFF	BY	DATE	RECOMMENDED BY:
FIRM: THIENES ENGINEERING INC.						*CITY OF CHINO BM 128/37*		WATER:			DRAWN:			
ADDRESS: 14349 FIRESTONE BOULEVARD LA MIRADA, CA 90638						A 3-1/2" BRASS DISC STAMPED "125/37" LOCATED IN TOP OF CURB, 5' WEST OF THE BCR OF THE SOUTHWEST CURB RETURN, AND BEING 81' WEST AND 16' SOUTH OF THE CENTERLINE INTERSECTION OF EAST END AVENUE AND COUNTY ROAD.		SEWER:			DESIGNED:			
TELEPHONE: (714) 521-4811 FAX: (714) 521-4173						*ELEVATION = 783.4688*		FIRE:			CHECKED:			CITY ENGINEER
REINHARD STENZEL RCE 56155 7/2/21 DATE								PLANNING:			RECOMMENDED:			DATE:
								TRAFFIC:						
								SERVICES:						

CITY OF CHINO ENGINEERING DIVISION

UTILITY PLAN

COUNTY ROAD AND EAST END AVENUE INDUSTRIAL BUILDINGS

12438, 12448, 12480 & 12473 EAST END AVENUE, CHINO, CALIFORNIA

PROJECT NO.

SHEET 1 OF 2

DRAWING NO. GP-XXXX

PLOT DATE: 7/2/2021 8:45 AM
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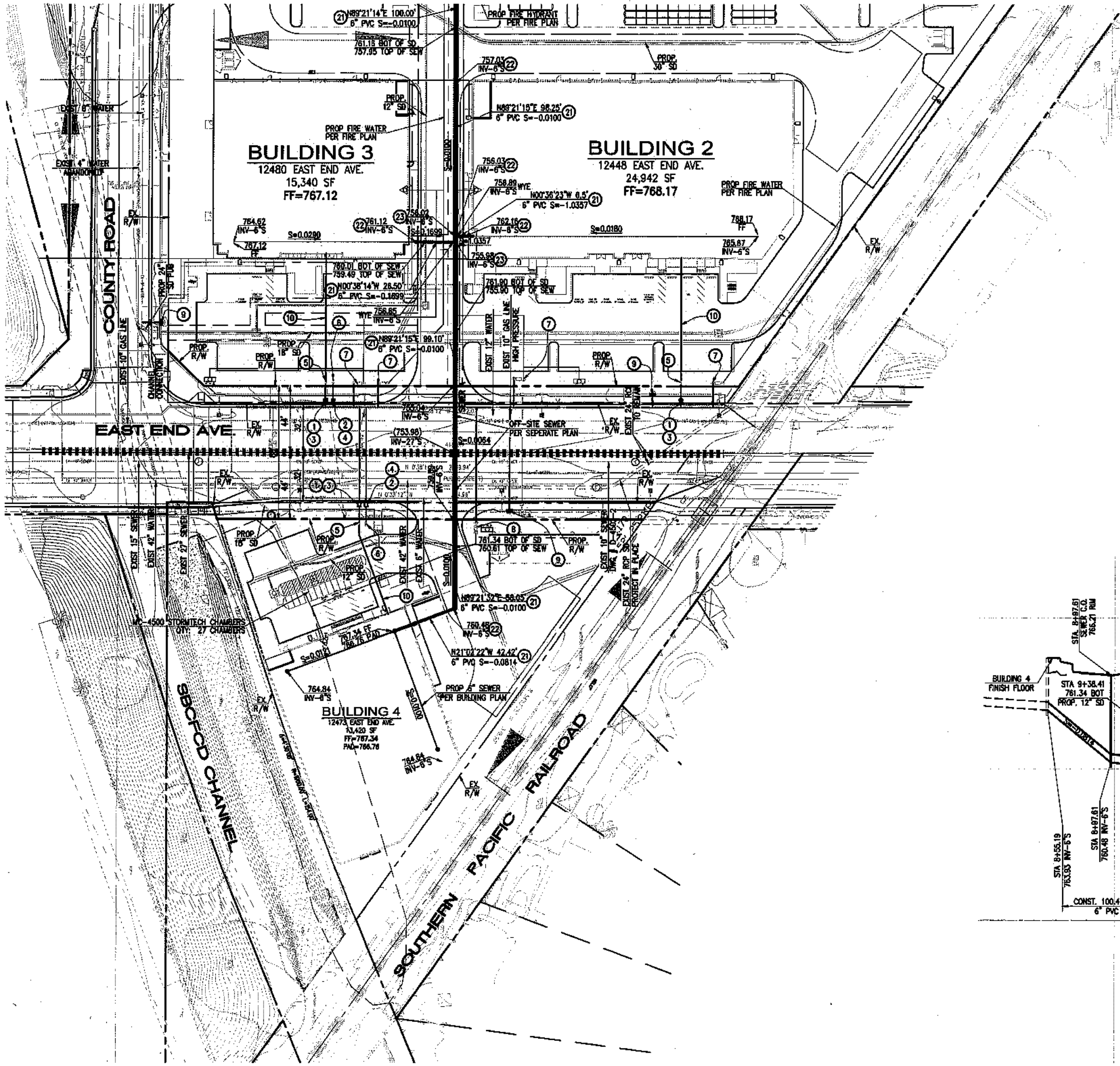
SEE SHEET 1



WATER CONSTRUCTION NOTES

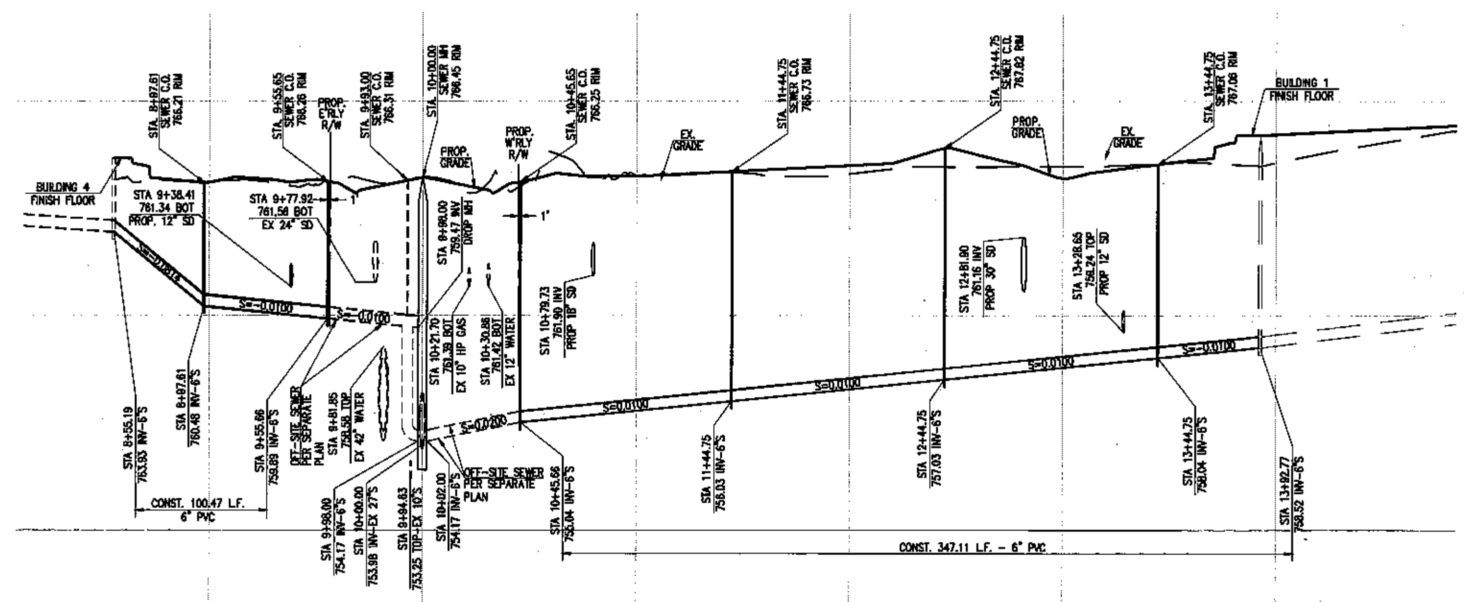
1. INSTALL 2" WATER SERVICE & 2" METER (DOMESTIC) PER STD. DWG. No. MVWD-102.
2. INSTALL 1.5" SERVICE & 1" METER (IRRIGATION) PER STD. DWG. No. MVWD-102.
3. INSTALL 2" COPPER PIPE, TYPE K, OR APPROVED EQUAL.
4. INSTALL 1.5" COPPER PIPE, TYPE K, OR APPROVED EQUAL.
5. INSTALL 2" BACKFLOW PREVENTION ASSEMBLY (DOMESTIC) PER STD. DWG. No. MVWD-104 A.
6. INSTALL 1" BACKFLOW PREVENTION ASSEMBLY (IRRIGATION) PER STD. DWG. No. MVWD-104 A.
7. INSTALL 10" DDC PER STD. DWG. No. MVWD-105B.
8. INSTALL 8" DDC PER STD. DWG. No. MVWD-105B.
9. INSTALL 6" FIRE HYDRANT ASSEMBLY PER STD. DWG. No. MVWD-106.

(9A) RELOCATE EXISTING FIRE HYDRANT PER STD. DWG. No. MVWD-106

10. INSTALL 3" PVC SCHEDULE 80 DOMESTIC WATER

SEWER CONSTRUCTION NOTES

21. INSTALL 6" P.V.C. SDR 35 SEWER PIPE
22. INSTALL 6" SEWER CLEAN OUT PER CITY OF CHINO STD. 510
23. INSTALL SEWER LATERAL PER CITY OF CHINO STD. 500



PROP SEWER A PROFILE

SCALE HORZ: 1"= 40'
VERT: 1"= 4'

CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING UTILITIES AND DRAINAGE SYSTEMS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY CONSTRUCTION.

SEAL

REGISTERED PROFESSIONAL ENGINEER
REINHARD STENZEL
R.C.E. NO. 56155
Exp. 12-31-22
CIVIL
STATE OF CALIFORNIA

811
Know what's **below.**
Call before you dig.

NOTICE TO CONTRACTOR:

CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SHALL REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

SEWER NOTE:

SEWER SHOWN FOR REFERENCE ONLY. ALL BUILDING AND SITE SEWER IMPROVEMENTS ARE PER SEPARATE PLAN & PERMIT.

0 20 40 80 120
SCALE:1"=40'

PREPARED BY	
FIRM: THIENES ENGINEERING INC.	
ADDRESS: 14349 FIRESTONE BOULEVARD LA MIRADA, CA 90638	
TELEPHONE: (714) 521-4811	FAX: (714) 521-4173
	7/2/21
REINHARD STENZEL RCE 56155	DATE

REVISIONS	MADE BY	MADE DATE	RECOMMENDED BY	RECOMMENDED DATE

BENCH MARK DATA

CITY OF CHINO BM 129/37
A 2-1/2" BRASS DISC STAMPED "125/37" LOCATED IN TOP OF CURB, 5' WEST OF THE BCR OF THE SOUTHWEST CURB RETURN, AND BEING 81' WEST AND 18' SOUTH OF THE CENTERLINE INTERSECTION OF EAST END AVENUE AND COUNTY ROAD.
ELEVATION = 765.4568

REFERENCE DRAWINGS

REVIEWED BY STAFF	BY	DATE
WATER:		
SEWER:		
FIRE:		
PLANNING:		
TRAFFIC:		
SERVICES:		

CITY ENGINEER'S STAFF	BY	DATE
DRAWN:		
DESIGNED:		
CHECKED:		
RECOMMENDED:		

RECOMMENDED BY:

CITY ENGINEER
DATE: ______

CITY OF CHINO ENGINEERING DIVISION

UTILITY PLAN
COUNTY ROAD AND EAST END AVENUE
INDUSTRIAL BUILDINGS
12438, 12448, 12480 & 12473 EAST END AVENUE, CHINO, CALIFORNIA

PROJECT NO.
SHEET 2 OF 2
DRAWING NO.

PLOT DATE: 7/2/2021 8:49 AM
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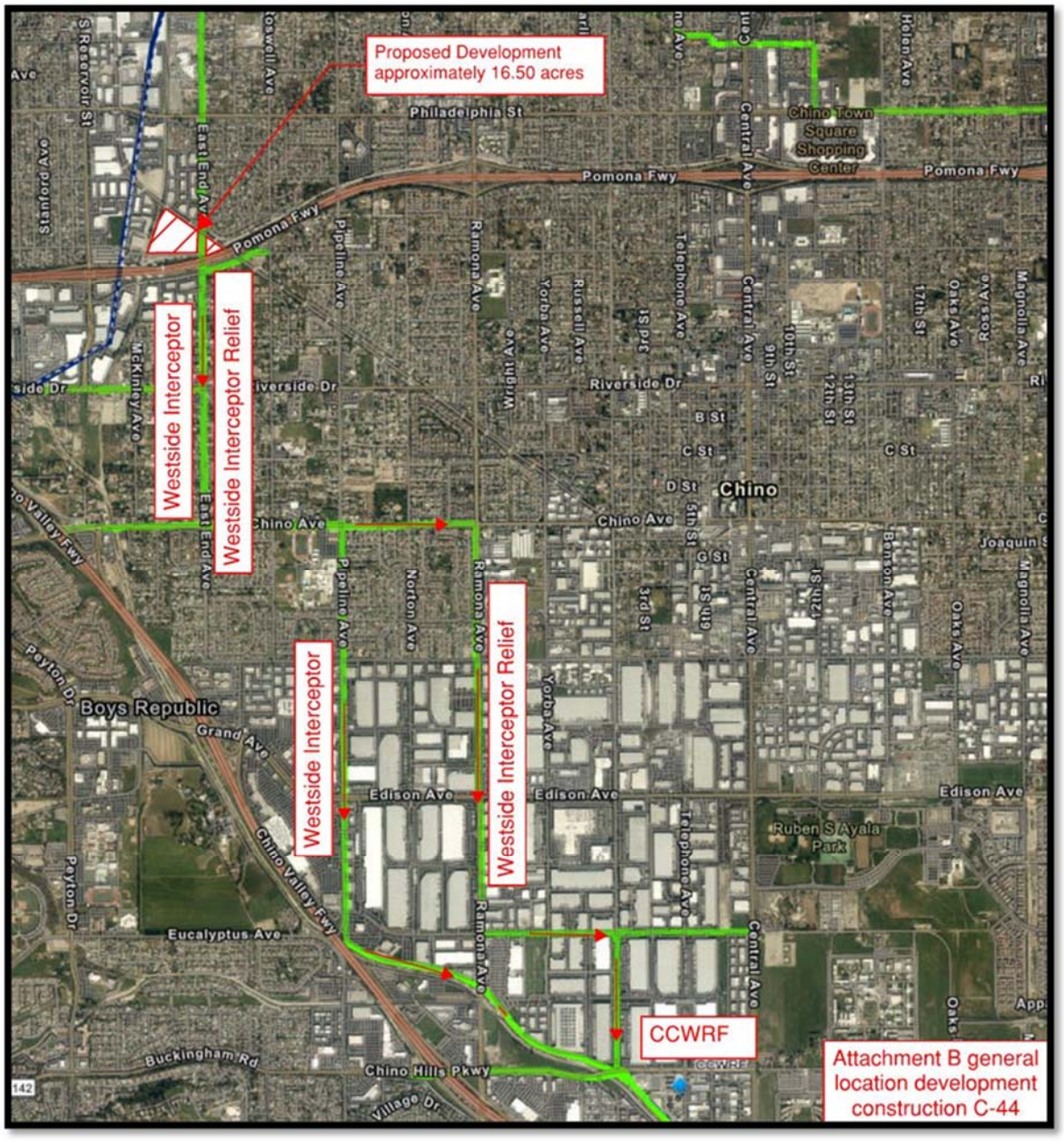
ATTACHMENT B
General Location for Connection C-44

ATTACHMENT B – General Location



ACTION ITEM

1C

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: November 29, 2021

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Request by the City of Fontana for a Regional Connection Point to the Etiwanda Trunk Sewer (Fontana Regional Sewer Connection # F-32)

RECOMMENDATION

It is recommended that the Regional Technical Committee approve the request by the City of Fontana for one new connection point to the Etiwanda Trunk Sewer (Regional Sewer Connection # F-32).

BACKGROUND

On October18, 2021, Inland Empire Utilities Agency (IEUA) received a request from the City of Fontana (Attachment "A") for the approval of a new Regional Connection to the Etiwanda Trunk Sewer at Station 274+65.00 through an existing manhole on the west side of this tributary area to the existing 20-inch sewer. On August 18, 2021, the City submitted the approved Local Agency Formation Commission (LAFCO) Irreconcilable Annexation Agreement to include this area as part of the City.

The connection point is required to serve a 14-unit apartment complex. The project is located west of Palms Avenue, East of Ilex Street, north of Owens Street and south of Ivy Street. The development encompasses approximately one acre. An overall vicinity map is provided (Attachment "B").

Average Dry Weather Flows provided by the City and peaked using IEUA's Peaking Factors:

SUMMARY OF FLOW RATES UTILIZED

Fontana Regional Connection # F-32: Average Dry Weather Flow (ADWF) Rate =0.2218 MGD
Peak Dry Weather Flow (PDWF) Rate = 0.4753 MGD
Peak Wet Weather Flow (PWWF) Rate =0.635 MGD

The hydraulic model was used to evaluate the Etiwanda Trunk to Regional Water Recycled Plant No. 4 (RP-4) as shown in Attachment "B". The hydraulic analysis shows that the connections will not create a capacity deficiency within the noted collection system at buildout under PWWF. The Etiwanda Trunk has a depth to Diameter ratio (d/D) of 0.38 and flowrate of 9.07 MGD. The full capacity of this 20-inch line is 29.06 MGD, leaving an available capacity of 19.99 MGD. Capacity to RP-4 is sufficient to meet the flows added by this development.

ATTACHMENT A
October 7, 2021, City of Fontana Regional Interceptor Request
Received on October 18, 2021

FONTANA
CALIFORNIA

October 7th, 2021

Matthew Poeske, Senior Engineer – PE
Inland Empire Utilities Agency (IEUA)
6075 Kimball Avenue
Chino, CA 91708

Subject: **Sewer Connection to Existing IEUA Interceptor Relief Sewer Line at 8305 Ilex Street for a 14-Unit Apartment Complex**

Dear Mr. Poeske,

The City of Fontana would like to request a sewer lateral connection to the Fontana Interceptor relief sewer line on Ilex Street for a proposed 14-unit apartment complex located at 8305 Ilex Street. The new sewer lateral point of connection is at station 274+87.21 per the approved Sewer Plan 1678 located on sheet 27.

Due to state regulations regarding on-site disposal systems and the proximity of the complex to an existing sewer line, the City is unable to allow a cesspool on-site and would like to proceed with approval to connect to the IEUA interceptor line. Attached is the revised sewer plan showing the proposed connection and profile for the new lateral.

This property is anticipated to contribute fourteen (14) EDU's to the existing system, approximately 154 GPM. The peak wastewater outflows were provided by Andresen Architecture. Copy of the letters are attached.

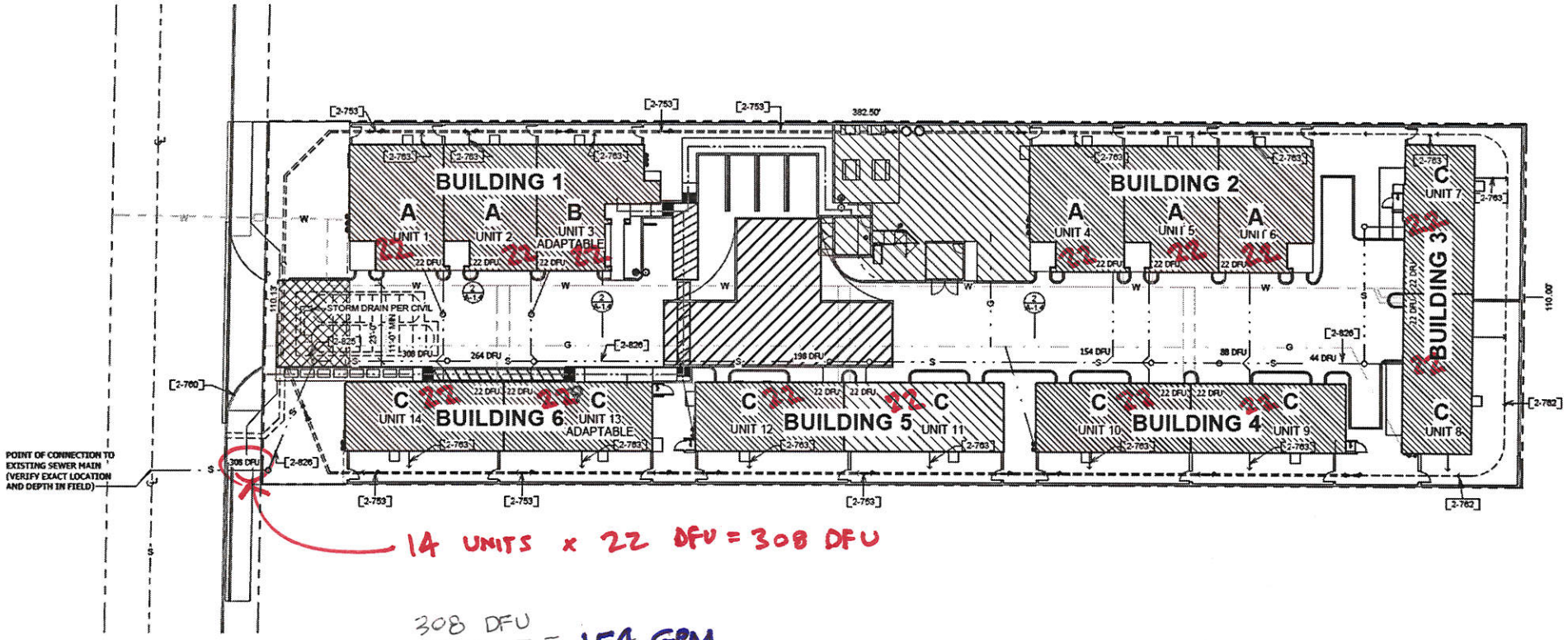
If you have any questions or need additional information, please do not hesitate to contact me at (909) 350-7607 or by email at hpham@fontana.org.

Respectfully,

DEPARTMENT OF ENGINEERING

Henry Pham
Assistant Engineer

Attachments



14 UNITS x 22 DFU = 308 DFU

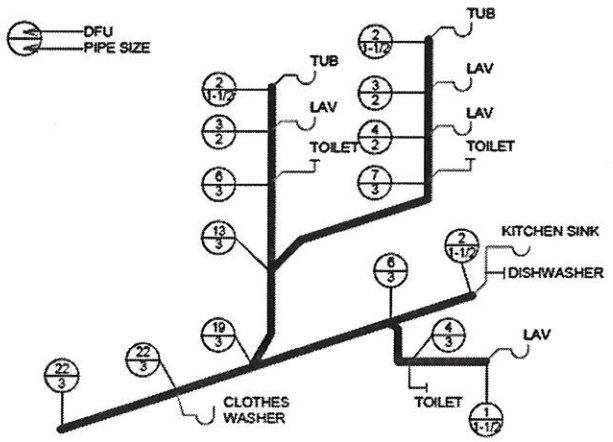
$\frac{308 \text{ DFU}}{2} = 154 \text{ GPM}$

709.3 Conversion of GPM Flow to Dfu Values

Where discharges to a waste receptor or to a drainage system are only known in gallons per minute (liters per second) values, the *drainage fixture unit* values for those flows shall be computed on the basis that 1 gpm (0.06 L/s) of flow is equivalent to two *drainage fixture units*.

LICENSED ARCHITECT
Douglas Andresen
C-14504
12-31-21
RENEWAL DATE
STATE OF CALIFORNIA

(1) & (2)



DRAINAGE FIXTURE UNIT VALUES (DFU). 2013 CPC Table 702.1

DRAINAGE FIXTURE UNITS - TYP.

1" = 1'-0"

ANDRESEN ARCHITECTURE INC.
17087 ORANGE WAY, FONTANA, CA 92335 (909) 355-6688

DFU TYPICAL PER BUILDING UNITS C

FIXTURE	UNITS	TOTAL
BATH/SHOWER	(2)2 x2=	8
CLOTHES WASHER	(2)3 x1=	6
LAVATORY	(2)1 x4=	8
KITCHEN SINK W/DISHWASHER	(2)2 x1=	4
WATER CLOSET 1.28 GPF	(2)3 x3=	18
TOTAL WSFU:		44 DFU

DFU PER RECREATION UNIT C

FIXTURE	UNITS	TOTAL
BATH/SHOWER	2 x2=	4
CLOTHES WASHER	3X1=	3
LAVATORY	1 x4=	4
KITCHEN SINK W/DISHWASHER	2 x1=	2
WATER CLOSET 1.28 GPF	3 x3=	9
TOTAL WSFU:		22 DFU

DFU TYPICAL PER BUILDING UNITS A&B

FIXTURE	UNITS	TOTAL
BATH/SHOWER	(3)2 x2=	12
CLOTHES WASHER	(3)3 x1=	9
LAVATORY	(3)1 x4=	12
KITCHEN SINK W/DISHWASHER	(3)2 x1=	6
WATER CLOSET 1.28 GPF	(3)3 x3=	27
TOTAL WSFU:		66 DFU

DFU PER RECREATION UNIT A&B

FIXTURE	UNITS	TOTAL
BATH/SHOWER	2 x2=	4
CLOTHES WASHER	3X1=	3
LAVATORY	1 x4=	4
KITCHEN SINK W/DISHWASHER	2 x1=	2
WATER CLOSET 1.28 GPF	3 x3=	9
TOTAL WSFU:		22 DFU

CLIENT: A & A REIT
17284 NEWHOPE STREET #215
FOUNTAIN VALLEY, CA 92708

CONTACT: ABDEL AWAD
(909) 519-3416
abdelawad30@gmail.com

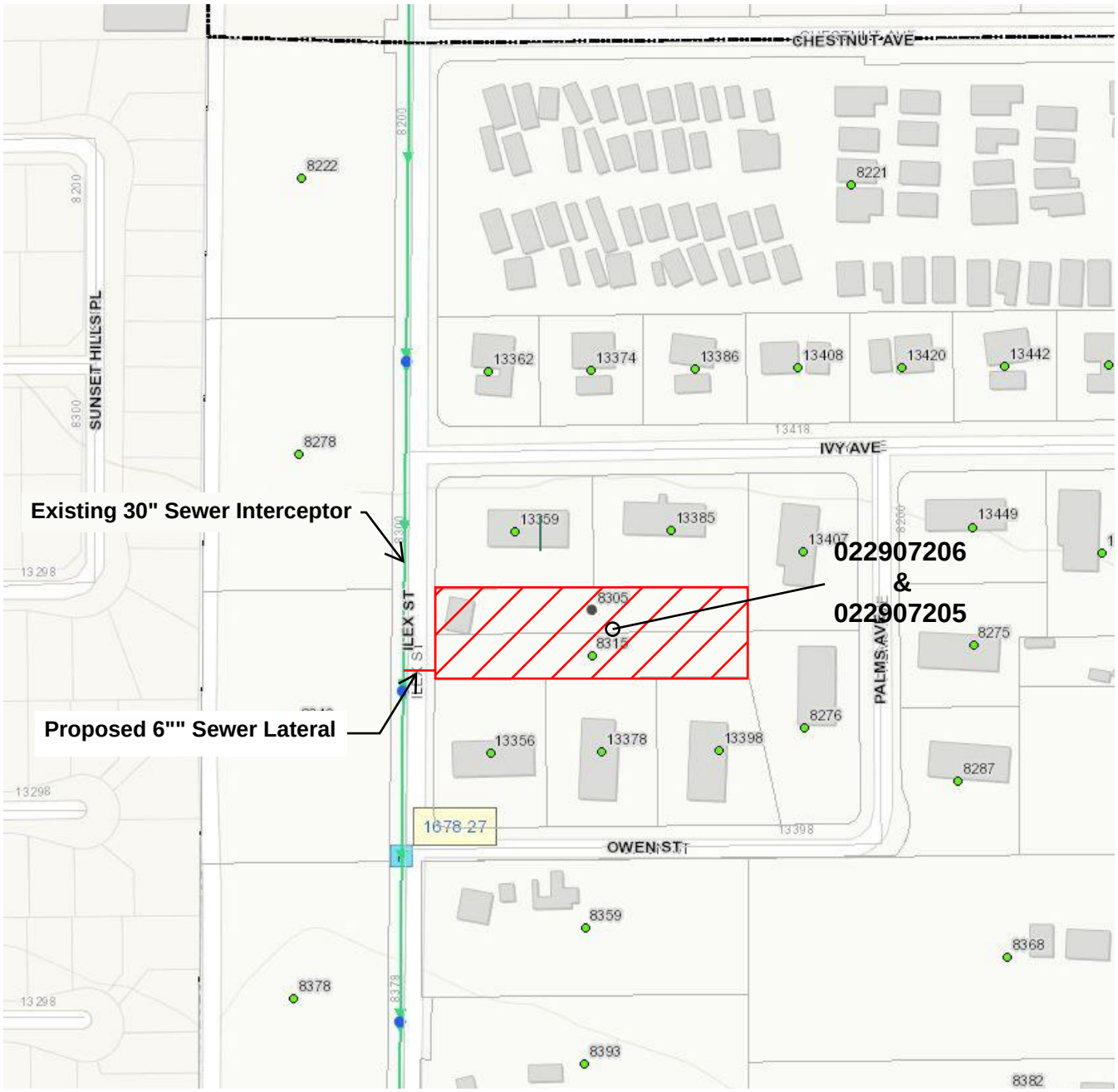
PROJECT ADDRESS: 8305 ILEX STREET
FONTANA, CA 92335

ARCHITECT: ANDRESEN ARCHITECTURE, INC
17087 ORANGE WAY
FONTANA, CA 92335
(909) 355-6688

CONTACT: DOUG ANDRESEN
doug.andresen@aaifirm.com

DRAINAGE FIXTURE UNITS - TYP.

IRREVOCABLE AGREEMENT NO. 19-002 (9305 Ilex Street)
(SEWER SERVICE)



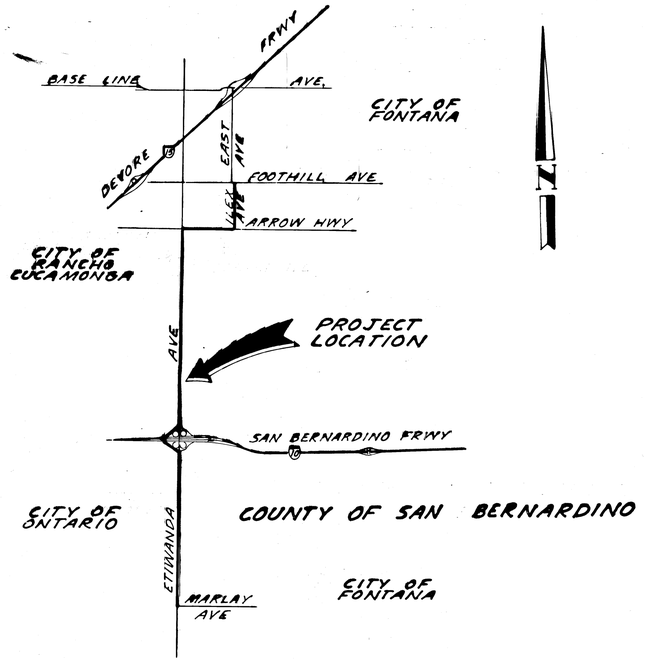
City of Fontana Engineering
February 26th, 2020

ETIWANDA TRUNK SEWER

IN THE

CITY OF FONTANA

COUNTY OF SAN BERNARDINO



LOCATION MAP

NOT TO SCALE

NOTE: SEE SHEET NO. 2 FOR INDEX MAP

CONSTRUCTION NOTES AND QUANTITIES

	DESCRIPTION	TOTAL QUANTITY		PHASE I	PHASE II	PHASE III	PHASE IV
△ 1	CONSTRUCT 24" EXTRA STRENGTH V.C.P.	12,150.65	L.F.	3630.65	3,828	4692	ø
△ 2	CONSTRUCT 48" DIAMETER MANHOLE PER STD. DETAIL 109 & 112.	28	EA	13	5	10	ø
3	REMOVE AND REPLACE EXISTING PAVEMENT PER DETAIL ON SHEET 29.	265,924	S.F.	67,232	35,670	84,000	79,022
4	CONSTRUCT METERING MANHOLE PER DETAIL ON SHEET NO. 30.	1	EA	1	ø	ø	ø
△ 5	CONSTRUCT 27" EXTRA STRENGTH V.C.P.	3051	L.F.	ø	3051	ø	ø
△ 6	CONSTRUCT 54" x 0.563" STEEL CASING.	32	L.F.	ø	32	ø	ø
△ 7	CONSTRUCT 42" EXTRA STRENGTH V.C.P.	3367	L.F.	ø	ø	324	3,043
△ 8	CONSTRUCT 72" DIAMETER MANHOLE PER DETAIL ON SHEET 29.	11	EA	ø	1	2	8
9	CONSTRUCT 54" x 0.50" STEEL CASING.	545	L.F.	ø	545	ø	ø
10	CONSTRUCT INVERTED SIPHON FROM STA. 260+27± TO STA. 261+49.70 INCLUDING SIPHON MANHOLES, VENT, AND ALL INCIDENTAL ITEMS.	1	EA	ø	ø	ø	1
11	CONSTRUCT 72"C.B.M.W.D. MANHOLE PER DETAIL 5 ON SHEET 29.	1	E.A.	1	ø	ø	ø
△ 12	CONSTRUCT 60" DIAMETER MANHOLE PER DETAIL ON SHEET 29.	27	E.A.	1	15	6	6
△ 13	CONSTRUCT 36" EXTRA STRENGTH V.C.P.	4776	L.F.	ø	ø	3,302	1,474
△ 14	CONSTRUCT 60" x 0.25" STEEL CASING.	33	L.F.	ø	ø	33	ø
15	CONSTRUCT 72" x 0.50" STEEL CASING.	36	L.F.	ø	ø	ø	36
△ 16	CONSTRUCT 30" EXTRA STRENGTH V.C.P.	1693	L.F.	ø	ø	ø	1,693
17	RECONSTRUCT DRIVEWAY APPROACH AND CURB PER CITY OF ONTARIO STANDARDS 105 & 106	1	EA.	ø	1	ø	ø
△ 18	CONSTRUCT 33" EXTRA STRENGTH V.C.P.	217.5	L.F.	217.5	ø	ø	ø
△ 19	CONSTRUCT 15" EXTRA STRENGTH V.C.P.	2086.02	L.F.	2086.02	ø	ø	ø
20	CONSTRUCT 42" x 0.563 THICK STEEL CASING	60	L.F.	60	ø	ø	ø
21	CONSTRUCT ASPHALT CONCRETE CAP	249,050	S.F.	53,950	62,850	75,600	56,650
△ 22	CONSTRUCT 60" x 0.563" THICK STEEL CASING	93	L.F.	ø	ø	93	ø
△2 23	CONSTRUCT 6" EXTRA STRENGTH VCP SEWER LATERAL	1	EACH				
△2 24	CORE THRU EXISTING MANHOLE FOR STD. DROP MANHOLE PER CITY STD. 2002. CHISEL OUT EXISTING CONRETE SHELF TO FORM NEW CHANNEL. SMOOTH SURFACE WITH 1/2" CEMENT MORTAR	1	EACH				
△2 25	CONSTRUCT STANDARD CAST IN PLACE MANHOLE PER CITY STD. 2001	1	EACH				

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND THE CITY OF FONTANA PUBLIC WORKS DEPARTMENT STANDARD SPECIFICATIONS DATED, 1975.
2. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE FONTANA PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF ANY WORK WITHIN THE CITY LIMITS.
3. TERMINATE ALL 4" HOUSE SEWER LATERALS AT THE PROPERTY LINE WITH A PLUG.
4. ADEQUATE STAKES SHALL BE SET BY THE ENGINEER TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK TO THE PLAN GRADES.
5. ALL PIPELINES OR SUBSTRUCTURES OF ANY KIND AND ALL TELEPHONE OR POWER POLES WATER METERS, VALVES, HYDRANTS, IRRIGATION STRUCTURES, ETC. SHOWN OR NOT SHOWN ON THIS PLAN AND LOCATED WITHIN AREAS TO BE IMPROVED AND INTERFERING WITH CONSTRUCTION, SHALL BE RELOCATED BY OTHERS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL AGENCIES CONCERNED BEFORE CONSTRUCTION BEGINS.
6. "AS-BUILT" PLANS SHALL BE PROVIDED TO THE CITY BY THE CONTRACTOR.
7. ALL 4" HOUSE SEWER LATERALS SHALL BE INSTALLED ON A 2% MINIMUM GRADE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
8. SEWER CONTRACTOR SHALL CHISEL "X" IN THE CURB AT THE LOCATION OF ALL LATERALS.
9. MANHOLE FRAMES AND COVERS TO BE CONSTRUCTED BY THE SEWER CONTRACTOR 6" BELOW FINISHED SURFACE GRADE AND UPON COMPLETION OF PAVING, THE PAVING CONTRACTOR SHALL RAISE SAME TO FINISHED GRADE.
10. ALL STATIONING REFERS TO CENTERLINE OF SEWER.
11. FOR SOIL INFORMATION REFER TO SUBSURFACE SOIL INVESTIGATION REPORT BY C.H.J. INCORPORATED DATED MARCH 13, 1986. (JOB NO. 86161-3)
12. CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
13. ELEVATIONS SHOWN ON PROFILE AS "TOP OF MANHOLE" ARE APPROXIMATE ONLY AND NOT TO BE USED FOR SETTING OF MANHOLE RING.
14. CONSTRUCTION AND LANE CLOSURE PERMITS SHALL BE OBTAINED FROM THE CITY OF RANCHO CUCAMONGA 24 HOURS PRIOR TO START OF ANY WORK WITHIN THE CITY RIGHT-OF-WAY.
15. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE CITY OF ONTARIO PRIOR TO COMMENCING WORK WITHIN THE CITY LIMITS.

BENCH MARK No. 364

USCGS " " STATION "PARCEL" 1963. 108' EAST OF R.R. ON BASELINE ROAD, SET 9-67.

ELEVATION 1361.63

UTILITY NOTIFICATIONS

POWER: SOUTHERN CALIFORNIA EDISON COMPANY
P.O. BOX 788
300 N. PEPPER STREET
RIALTO, CA 92376
MR. DAVE JONES
(714) 820-5191

GAS: SOUTHERN CALIFORNIA GAS COMPANY
16231 VALLEY BLVD.
FONTANA, CA 92335
MR. LOU WESTFALL
(714) 889-9711

SOUTHERN CALIFORNIA GAS COMPANY
TRANSMISSION DIVISION
2191 E. BIRCH STREET
BREA, CA 92621
(714) 529-2889

TELEPHONE: GENERAL TELEPHONE
9000 HELLMAN AVENUE
RANCHO CUCAMONGA, CA 91730
(714) 945-3562

PACIFIC BELL
3939 E. CORONADO ST.
ANAHEIM, CA 92807
(714) 999-5639

WATER: CUCAMONGA COUNTY WATER DISTRICT
9641 SAN BERNARDINO ROAD
CUCAMONGA, CA 91730
(714) 987-2591

FONTANA WATER COMPANY
16803 SPRING STREET
FONTANA, CA 92335
(714) 822-2201

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
1111 SUNSET BOULEVARD
LOS ANGELES, CA 90012
(213) 250-6000

SEWER: CITY OF FONTANA
8353 SIERRA AVENUE
FONTANA; CA 92335
(714) 350-7640

CHINO BASIN MUNICIPAL WATER DISTRICT
8555 ARCHIBALD AVENUE
CUCAMONGA, CA 91730
(714) 987-1712

CALTRANS
DISTRICT 8
247 W. 3RD STREET
SAN BERNARDINO, CA 92402
(714) 383-4017

CITY OF ONTARIO
PUBLIC SERVICES AGENCY
1425 S. BON VIEW AVENUE
ONTARIO, CA 91764
(714) 986-1151 EX. 63

CITY OF RANCHO CUCAMONGA
9320 BASE LINE ROAD
RANCHO CUCAMONGA, CA 91730
(714) 989-6631

COUNTY OF SAN BERNARDINO
ENVIRONMENTAL PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
825 EAST THIRD STREET
SAN BERNARDINO, CA 92415
(714) 387-2891

PRIVATE ENGINEER'S NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS . THESE LOCATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT ON RECORD OR NOT SHOWN ON THESE PLANS.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

REGISTERED PROFESSIONAL ENGINEER — JERRY C. POQUIZ — No. 37037 — Exp. 6-30-22 — CIVIL — STATE OF CALIFORNIA

10/13/21

△2

HP ENGINEERING, INC.
1465 CRESTVIEW ROAD
REDLANDS, CA. 92374
HENRY C. POQUIZ
RCE 37037, EXP 6/30/22
(909) 335-8239

REGISTERED PROFESSIONAL ENGINEER — JOHN SIMS — 20344 — 9/30/88 — CIVIL — STATE OF CALIFORNIA

CUCAMONGA COUNTY WATER DISTRICT
DATE APPROVED 27 OCT 86
BY J. Bergson
DISTRICT ENGINEER R.C.E. 34347

48 HOURS PRIOR TO EXCAVATION, CALL UNDERGROUND SERVICE ALERT (USA) TOLL FREE 1-800-422-4133

SOUTHERN CALIFORNIA GAS COMPANY
TRANSMISSION PIPELINE
EMERGENCY PHONE 714-529-2889 OR 714-529-7070
7:30 a.m. to 4:00 p.m.
AFTER HOURS 213-689-2641

REVISIONS			
△1	PIPE SIZE REVISED, RP-4 SITE SELECTED	3/23/87	RJS
△2	CONST. 6" VCP SEWER LAT., MANHOLE, AND DROP MANHOLE CONNECTION	10.13.21	

Hall & Foreman, Inc.
3186-L AIRWAY AVENUE • COSTA MESA, CALIFORNIA 92626-4675 • (714) 641-8777
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

PREPARED UNDER THE SUPERVISION OF:
JOHN SIMS R.C.E. 20344 — 6/20/86 DATE

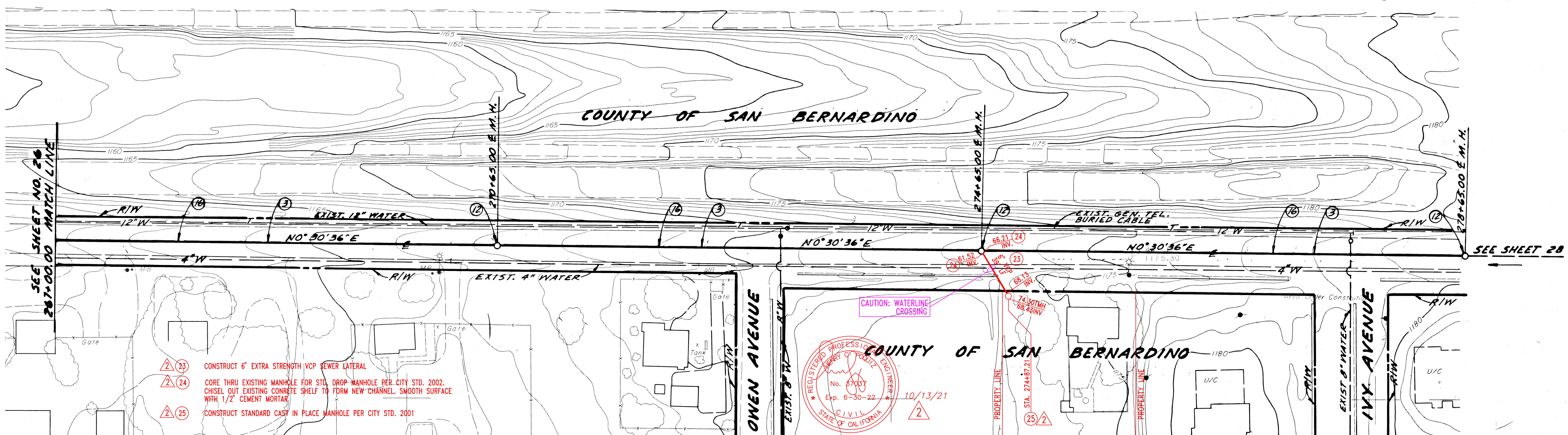
AS BUILT

CITY OF FONTANA, CALIFORNIA
PUBLIC WORKS DEPARTMENT

SEWER PLAN
TITLE SHEET

DRAWN BY	DESIGNED BY	CHECKED BY	JOB NO.	APPROVED
J.S	J.S.		3586	CITY ENGINEER R.C.E. 18932

SCALE: HORIZ.: 1"= 40' VERT.: 1"= 4'
DATE: JUNE 1986
DR. NO. 1678
SHT. NO. 1



2 (23) CONSTRUCT 6" EXTRA STRENGTH VCP SEWER LATERAL

2 (24) CORE THRU EXISTING MANHOLE FOR STD. DROP MANHOLE PER CITY STD. 2002. CHISEL OUT EXISTING CONRETE SHELF TO FORM NEW CHANNEL. SMOOTH SURFACE WITH 1/2" CEMENT MORTAR

2 (25) CONSTRUCT STANDARD CAST IN PLACE MANHOLE PER CITY STD. 2001

REGISTERED PROFESSIONAL ENGINEER
HENRY C. POQUIZ
No. 37037
Exp. 6-30-22
CIVIL
STATE OF CALIFORNIA
10/13/21 2

HP ENGINEERING, INC.
1465 CRESTVIEW ROAD
REDLANDS, CA. 92374
HENRY C. POQUIZ
RCE 37037, EXP 6/30/22
(909) 335-8239

ILEX AVENUE

CONSTRUCTION NOTES:

(3) REMOVE AND REPLACE EXISTING PAVEMENT PER DETAIL ON SHEET 29.

(12) CONSTRUCT 60" DIAMETER MANHOLE PER DETAIL ON SHEET 29.

(16) CONSTRUCT 30" EXTRA STRENGTH V.C.P.

REGISTERED PROFESSIONAL ENGINEER
JOHN SIMS
20344
9/30/89
CIVIL
STATE OF CALIFORNIA

REVISIONS	ENG'R. APPR'VL	DATE	CITY APPR'VL	DATE
2 CONST. 6" VCP SEWER LAT., MANHOLE, AND DROP MANHOLE CONNECTION	[illegible]	10.13.21		

CUCAMONGA COUNTY WATER DISTRICT
DATE APPROVED 27 OCT 86
BY [illegible]
86-334 DISTRICT ENGINEER R.C.E. 34347

Hall & Foreman, Inc.
3186-L AIRWAY AVENUE • COSTA MESA, CALIFORNIA 92626-4675 • (714) 641-8777
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
PREPARED UNDER THE SUPERVISION OF:
John Sims
JOHN SIMS R.C.E. 20344
6/25/86
DATE

CITY OF FONTANA, CALIFORNIA
PUBLIC WORKS DEPARTMENT

DRAWN BY J.S.
DESIGNED BY J.S.
CHECKED BY

SEWER PLAN
ETIWANDA INTERCEPTOR
ILEX AVENUE
FROM STA. 267+00.00 TO STA. 278+65.00

SCALE: HORIZ.: 1"= 40' VERT.: 1"= 4'
DATE: JUNE 1986

JOB NO. 3586
APPROVED [illegible] CITY ENGINEER R.C.E. 18932
DR. NO. 1678
SHT. NO. 27

ATTACHMENT B
General Location for Connection F-32


Foothill Blvd
Foothill Blvd
Foothill Blvd
Proposed Development
Approximately 0.97 acres
Newcastle Ct
Ivy Ave
Ivy Ave
Catch
Basin
Etiwanda A
Oatman Dr
Joliet Dr
Flagstaff Dr
Chatham Dr
Ilex St
Cottonwood Ave
Mulberry Ave
Banana Ave
Parsley Ln
Etiwanda Trunk
Arrow Rte
Arrow Blvd
Arrow Rte
Arrow Blvd
Calabash Ave
Goodman
Hickory Ave
Whittram Ave
Whittram Ave
Etiwanda Ave
Etiwanda Trunk
Napa St
Auto Club
Speedway
RP-4
6th St
RP-4
Etiwanda Ave
To RP-1
Attachment B general location
development construction F-32

RECEIVE AND FILE

3A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

NOTICE OF CANCELLATION OF THE

REGIONAL SEWERAGE POLICY COMMITTEE

SCHEDULED FOR THURSDAY, DECEMBER 2, 2021, 3:30 P.M.

HAS BEEN CANCELLED DUE TO A LACK OF BUSINESS TRANSACTIONS

THE NEXT REGULAR MEETING IS SCHEDULED FOR THURSDAY, JANUARY 6, 2022 AT 3:30 P.M.

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency*, a Municipal Water District, hereby certify that, per Government Code Section 54954.2, a copy of this agenda has been posted at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA and on the Agency's website at www.ieua.org at least seventy-two (72) hours prior to the meeting date and time above.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Laura Mantilla at (909) 993-1944 or lmantilla@ieua.org, 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.

RECEIVE AND FILE

3B

Building Activity Report - YTD Fiscal Year 2021/22

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Legend

Service Area
Unincorporated

Residential
<=1.0
1.0 - 10.0
>10.0

Commercial
<=1.0
1.0 - 10.0
>10.0

Industrial
<=1.0
1.0 - 10.0
>10.0

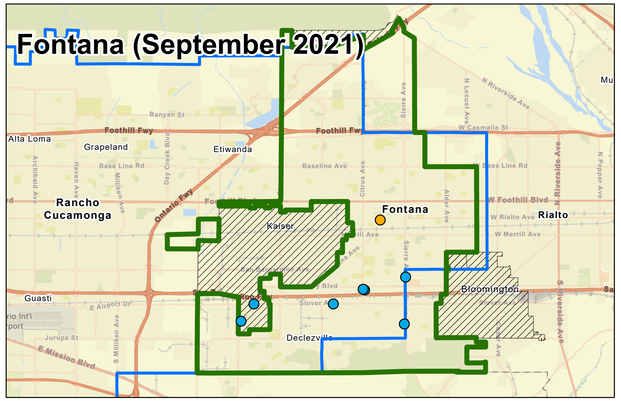
HALF MILE GRID: TOTAL EDU's (YTD)

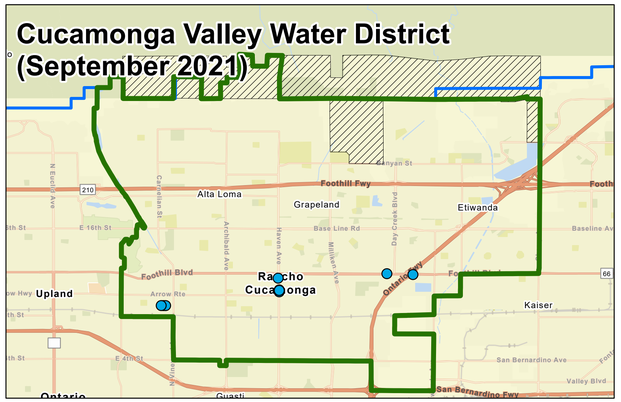
0 | 0.5 | 1 | 15 | 30 | 45 | 75+

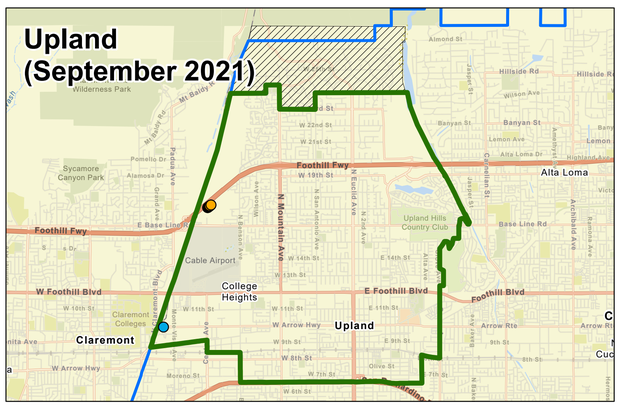
0 2.5 5 10 Miles

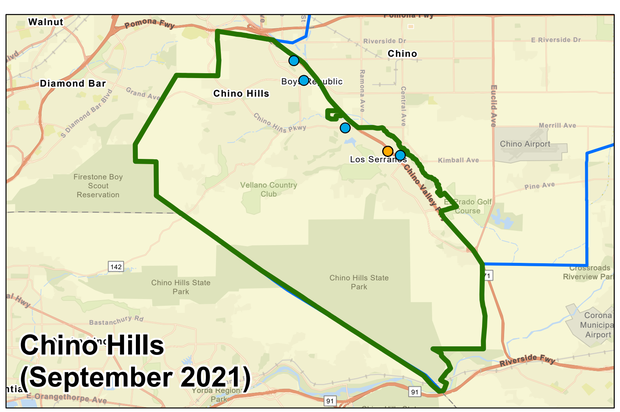
TOTAL EDU BY WASTEWATER CONNECTION TYPE (YTD)

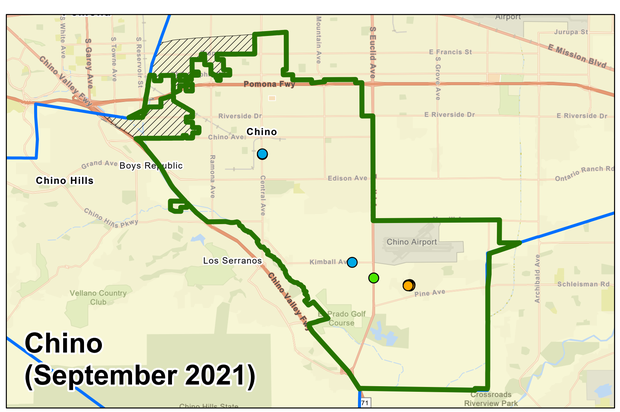
Contracting Agency	YTD Actual				Projected
	Commercial (EDUs)	Industrial (EDUs)	Residential (EDUs)	Total (EDUs)	Total (EDUs)
Chino	22	0	120	142	434
Chino Hills	45	0	18	63	276
CVWD	30	0	0	30	2050
Fontana	31	0	139	170	1792
Montclair	7	0	0	7	474
Ontario	86	0	281	367	7560
Upland	4	0	27	31	952
Total	225	1	585	810	13538

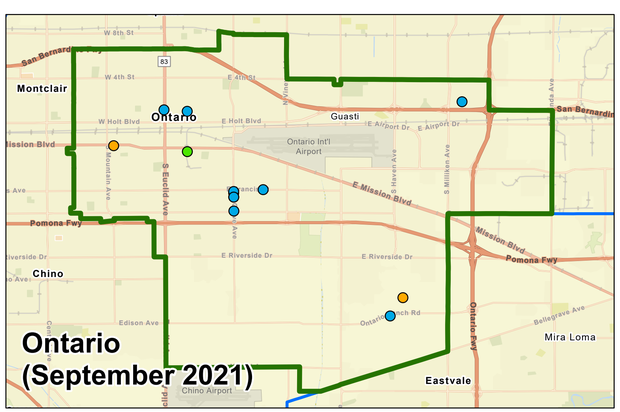


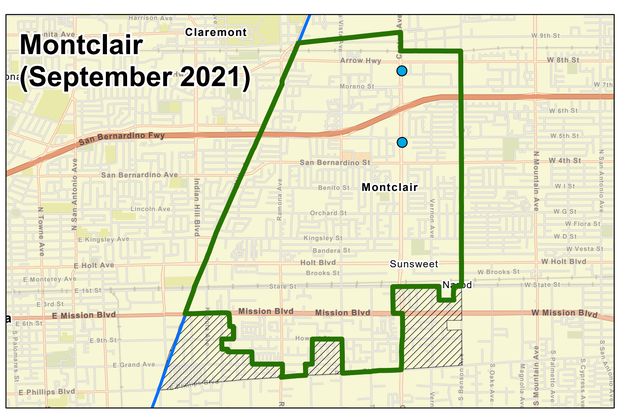












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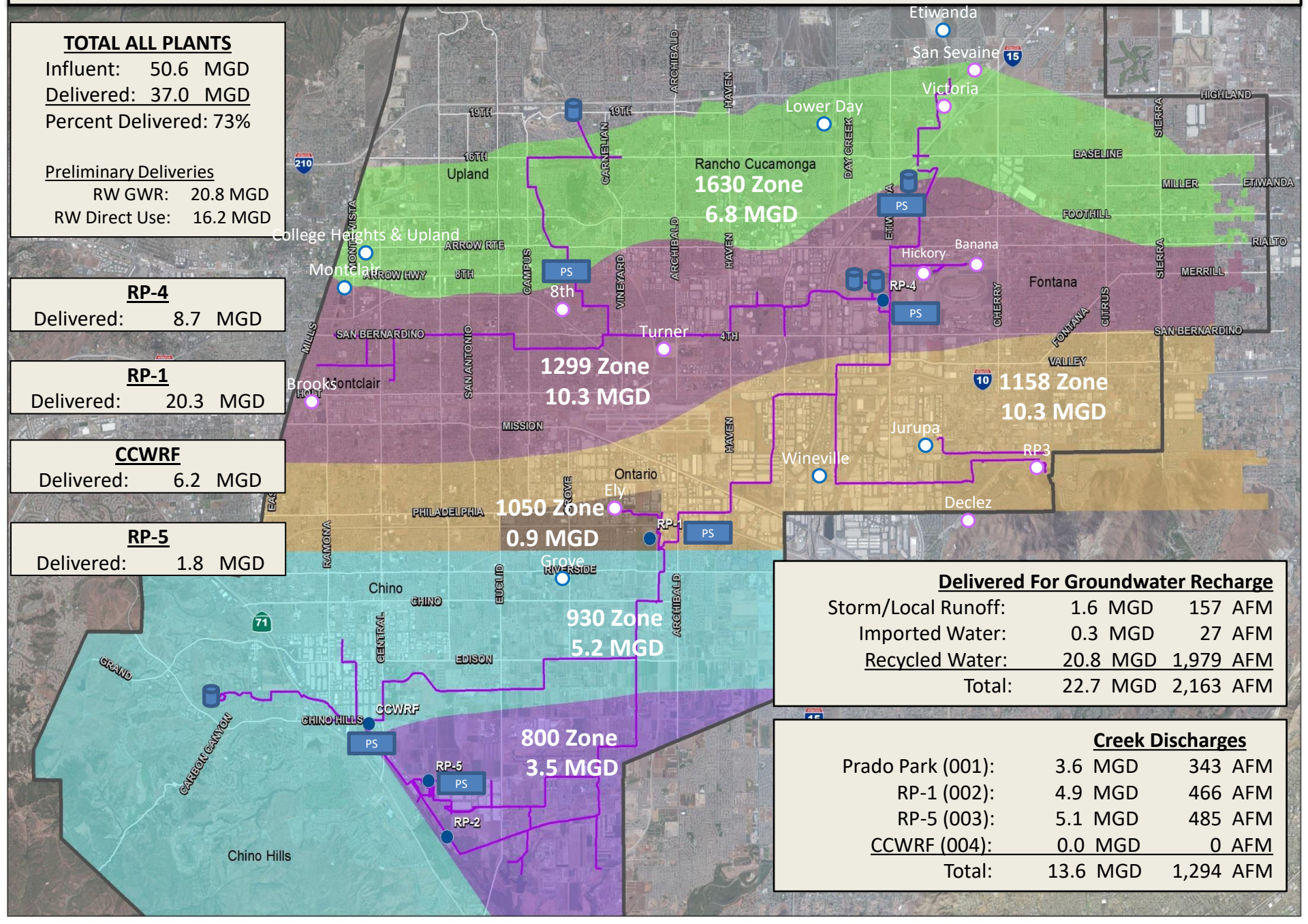
3C

IEUA RECYCLED WATER DISTRIBUTION – OCTOBER 2021



TOTAL ALL PLANTS

Influent:	50.6 MGD
Delivered:	37.0 MGD
Percent Delivered:	73%

Preliminary Deliveries

RW GWR:	20.8 MGD
RW Direct Use:	16.2 MGD

RP-4

Delivered: 8.7 MGD

RP-1

Delivered: 20.3 MGD

CCWRF

Delivered: 6.2 MGD

RP-5

Delivered: 1.8 MGD

Delivered For Groundwater Recharge

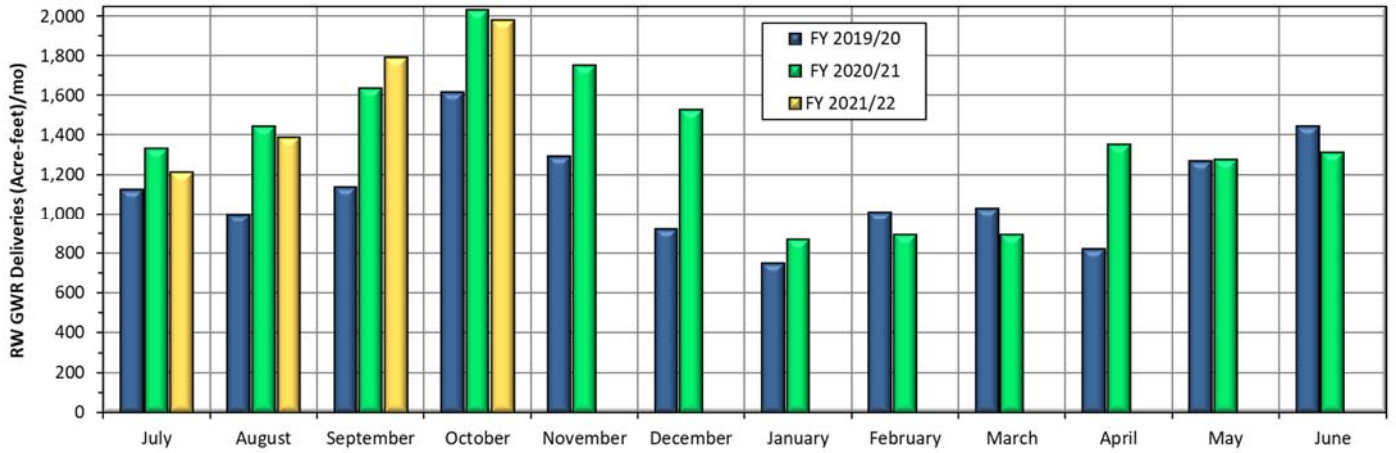
Storm/Local Runoff:	1.6 MGD	157 AFM
Imported Water:	0.3 MGD	27 AFM
Recycled Water:	20.8 MGD	1,979 AFM
Total:	22.7 MGD	2,163 AFM

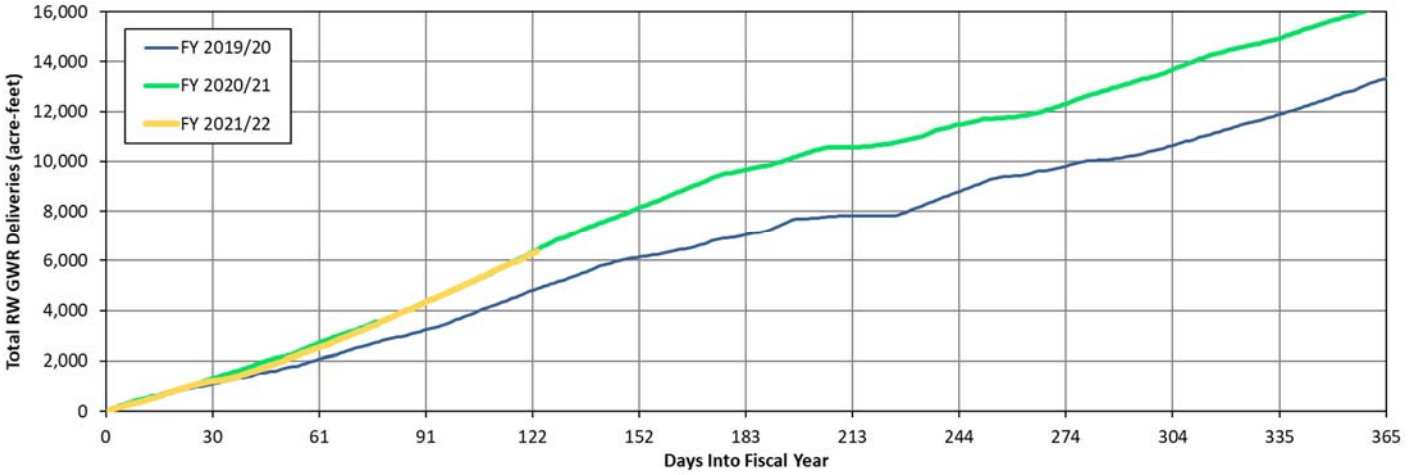
Creek Discharges

Prado Park (001):	3.6 MGD	343 AFM
RP-1 (002):	4.9 MGD	466 AFM
RP-5 (003):	5.1 MGD	485 AFM
CCWRF (004):	0.0 MGD	0 AFM
Total:	13.6 MGD	1,294 AFM

Recycled Water Recharge Actuals - October 2021 (Acre-Feet)

Basin	10/1-10/9	10/10-10/16	10/17-10/23	10/24-10/31	Month Actual	FY To Date Actual	Deliveries are draft until reported as final and do not included evaporative losses.
Ely	0.0	0.0	25.9	80.1	106.0	351	
Banana	23.1	28.4	0.0	0.0	51.5	316	
Hickory	0.0	8.2	20.9	21.7	50.8	567	
Turner 1 & 2	0.0	0.0	0.0	0.0	0.0	231	
Turner 3 & 4	35.8	53.9	68.0	53.2	210.9		
8th Street	121.7	24.1	64.5	88.5	298.8	600	
Brooks	16.8	24.0	12.7	21.7	75.2	408	
RP3	178.9	142.2	147.6	96.4	565.1	2096	
Declez	29.5	41.4	20.3	13.4	104.6	436	
Victoria	71.5	54.5	56.6	72.2	254.8	281	
San Sevaine	85.2	70.1	56.0	49.9	261.2	1081	
Total	562.5	446.8	472.5	497.1	1,978.9	6,366	6,435 AF previous FY to day actual





RECEIVE AND FILE

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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: November 29, 2021

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Planning Annual Reports – Fiscal Year 2020/21

RECOMMENDATION

This is an informational item.

BACKGROUND

Inland Empire Utilities Agency (IEUA) monitors and compiles water, wastewater, and energy use data and projections on an annual basis. In an effort to streamline reporting to the IEUA Board of Directors and the Regional Technical Committee, the Strategic Planning and Resources department has developed the Planning Annual Report (PAR) and the Annual Energy Report (AER) for Fiscal Year 2021/21.

The PAR covers annual water use in IEUA service area which includes potable water and recycled water use along with projections for imported, recycled, and regional water use. The report also covers historical and projected groundwater deliveries, the Dry Year Yield program, and the Santa Ana River Regional Baseflow Obligation. The PAR also includes a summary of wastewater historical, actual, and flow projections at the treatment plants along with a summary of the regional contracting agency's 10-year growth projections in terms of Equivalent Dwelling Units (EDU). The AER tracks IEUA's energy consumption, renewable generation performance, and energy efficiency projects for the fiscal year.

Staff submitted the PAR and AER for FY 2020/21 for the October 20, 2021, IEUA Board of Director's meeting as a receive and file item. An error was identified in Table 14 of the PAR, which summarizes the 10-Year Projected EDU values of the regional contracting agencies. There were no errors identified in the AER. Due to the identification of the error, the PAR and AER receive and file item for the October 28, 2021 Regional Technical Committee was continued to the following meeting. An updated PAR was resubmitted as a receive and file item for the IEUA Board of Director's November 17, 2021.

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Planning Annual Report

Fiscal Year 2020/2021

Revised for November 2021

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***Ten Year Projected EDU Activity located on page 19 revised October 26, 2021**

INTRODUCTION

The Inland Empire Utilities Agency (IEUA) is located in Western San Bernardino County and serves approximately 900,000 residents in a 242-square mile service area. As a regional wastewater treatment agency, IEUA provides wastewater utility services to seven regional contracting agencies (RCAs) under the Chino Basin Regional Sewage Service Contract: cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and Cucamonga Valley Water District (CVWD) in the city of Rancho Cucamonga. In addition to the RCAs, the Agency provides wholesale imported water from the Metropolitan Water District of Southern California (MWD) to seven retail agencies: the cities of Chino, Chino Hills, Ontario, Upland, CVWD in the city of Rancho Cucamonga, Fontana Water Company in the city of Fontana, and the Monte Vista Water District in the city of Montclair.

In addition to providing these key services, IEUA also produces and distributes high quality recycled water, implements the Chino Basin stormwater/groundwater recharge program, and provides regional water resources planning to ensure reliable, cost-effective environmentally responsible water supplies for current and future customers. The purpose of the Strategic Planning Annual Report (SPAR) is to provide annually updated information about the IEUA service area's potable water, recycled water, groundwater, and wastewater. This report also provides a holistic summary of historic trends, usage patterns, current programs, and future forecasts.

SECTION 1: ANNUAL IEUA SERVICE AREA WATER USE

IEUA monitors and compiles water use data from each of its retail agencies to track overall water demands and sources of supply. Annual water use is split between potable water usage and the direct use of recycled water. IEUA's regional water usage in FY 20/21 was 202,776 AF (183,242 AF potable usage and 19,534 AF recycled direct usage). Recycled water used for groundwater recharge is not included in this total but can be found in Section 2 of the SPAR.

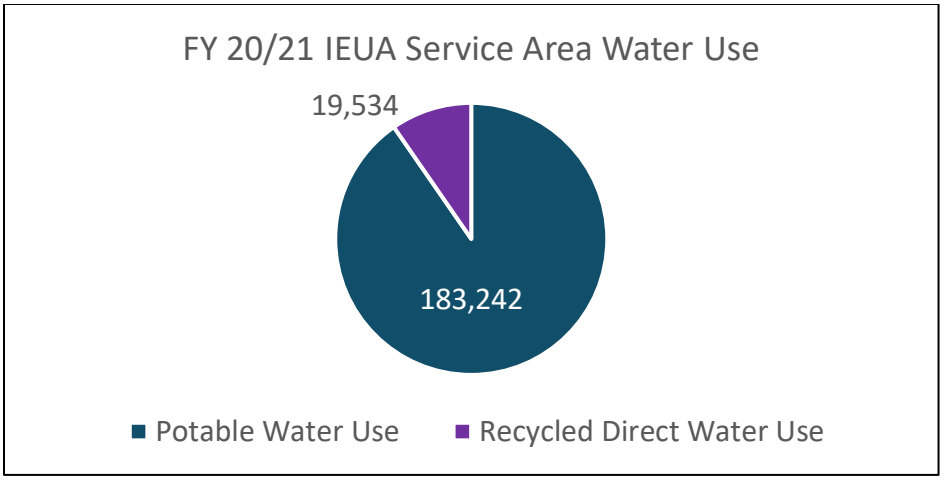


Figure 1 – FY 20/21 IEUA Service Area Water Use

Current Potable Water Use

Total potable water consumption within IEUA's service area for FY 20/21 was 183,242 AF. This is approximately a 4% increase (7,413 AF) from FY 2019/20 potable consumption of 175,829 AF. The region is now using approximately 11% less potable water than before the recent drought in FY 13/14 when potable consumption was at 205,381 AF. MWD Tier 1 imported water use in the region slightly increased from 66,438 AF in FY 19/20 to 71,444 AF in FY 20/21. Both FY 19/20 and FY 20/21 MWD usage includes Dry Year Yield (DYY) water supplies. For more information on DYY, see "Dry Year Yield" in section 2 of the SPAR. A breakdown of the IEUA regional usage can be found in Table 2, while a breakdown of the retail water agencies' FY 20/21 water usage can be found in Appendix B.

Projected Imported Water Use

Demands for MWD Tier 1 imported water brought into the region through IEUA were projected to 2045 as part of the 2020 Urban Water Management Plan (2020 UWMP). The 2020 UWMP imported water demand projections were supplied by the retail agencies to IEUA. IEUA expects imported demand to increase over the next 25 years based on the 2020 UWMP projections.

Table 1 – Projected Imported Water Use Demands by Retail Agency (AF)

Retail Agency	2025	2030	2035	2040	2045
Chino	5,353	5,353	5,353	5,353	5,353
Chino Hills	7,153	7,367	7,711	7,758	7,802
CVWD	28,369	28,369	28,369	28,369	28,369
FWC	15,000	15,000	15,000	15,000	15,000
MVWD	5,000	5,000	5,000	5,000	5,000
Ontario	11,000	13,000	15,000	17,000	17,000
Upland	5,541	5,541	5,541	5,541	5,541
Total	**77,416**	**79,630**	**81,974**	**84,021**	**84,065**

Table 2 – Fiscal Year 2020/2021 Regional Potable Monthly Water Use

		IEUA Service Area Potable Water Use FY20/21 (AF)												
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported MWD	5,020	5,593	5,107	4,141	3,324	2,604	3,177	2,705	3,454	3,497	4,598	5,224	*48,444*
	DYY Take	3,533	3,333	3,333	2,500	1,500	2,000	-	-	-	2,000	2,600	2,200	*23,000*
Subtotal		***8,553***	***8,927***	***8,440***	***6,641***	***4,824***	***4,604***	***3,177***	***2,705***	***3,454***	***5,497***	***7,198***	***7,424***	***71,444***
Production	Chino Groundwater	5,256	5,490	4,736	5,540	4,276	4,390	3,961	3,977	4,284	5,085	5,254	6,437	*58,687*
	Other Groundwater	2,732	3,042	2,682	2,442	2,070	1,724	1,769	1,568	1,608	1,895	2,054	2,070	*25,654*
	Local Surface Water	1,795	1,339	1,099	1,074	1,097	827	973	979	870	805	661	462	*11,981*
Subtotal		***9,784***	***9,871***	***8,517***	***9,056***	***7,443***	***6,941***	***6,703***	***6,524***	***6,762***	***7,785***	***7,968***	***8,970***	***96,322***
Purchases	CDA	1,315	1,333	1,276	1,607	1,450	1,553	1,519	1,166	1,347	1,252	1,324	1,451	*16,593*
	CVWD	-	-	-	-	-	-	-	-	-	-	-	-	-
	MVWD	700	803	798	548	335	177	239	342	311	325	536	508	*5,621*
	SAWCo	1,365	1,142	906	789	755	417	579	489	554	788	885	884	*9,552*
	West End	203	226	190	183	146	205	139	145	127	160	120	183	*2,027*
Subtotal		***3,583***	***3,503***	***3,169***	***3,127***	***2,686***	***2,352***	***2,476***	***2,142***	***2,339***	***2,525***	***2,866***	***3,025***	***33,794***
Sales	Chino Hills	(947)	(1,037)	(1,015)	(833)	(543)	(524)	(317)	(353)	(408)	(634)	(819)	(719)	*(8,150)*
	Ontario	(47)	(46)	(45)	(45)	(44)	(28)	(44)	(41)	(44)	(42)	(34)	(40)	*(500)*
	MVWD	(53)	(52)	(51)	(51)	(104)	(87)	(86)	(46)	(50)	(47)	(38)	(45)	*(709)*
	Upland	(1,318)	(1,149)	(861)	(743)	(657)	(334)	(499)	(449)	(509)	(746)	(851)	(844)	*(8,959)*
Subtotal		**(2,365)**	**(2,283)**	**(1,971)**	**(1,673)**	**(1,347)**	**(973)**	**(946)**	**(889)**	**(1,012)**	**(1,469)**	**(1,742)**	**(1,648)**	***(18,318)***
Total		**19,555**	**20,018**	**18,155**	**17,151**	**13,605**	**12,923**	**11,411**	**10,482**	**11,543**	**14,338**	**16,291**	**17,771**	**183,242**

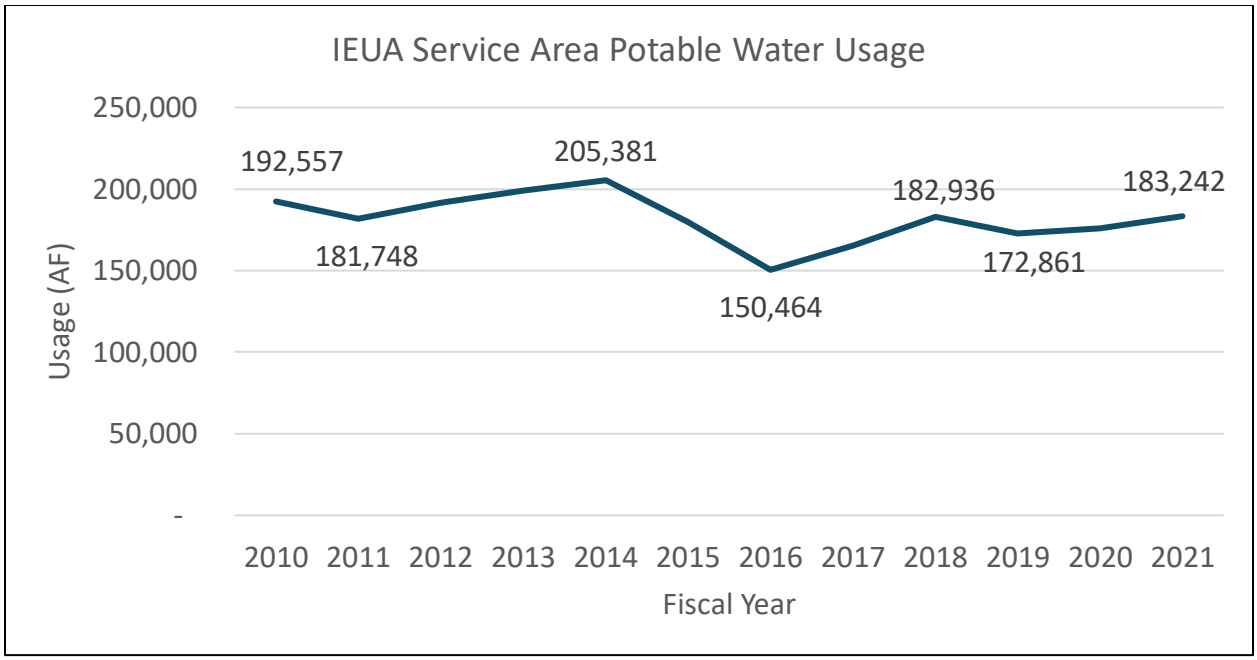


Figure 2 – IEUA Service Area Potable Water Use

Current Recycled Water Use

IEUA is the wholesale recycled water provider to the RCAs which work as or with retail agencies to directly serve their customers. IEUA contracting/retail water agencies which served recycled water in 2020/21 include:

- City of Chino
- City of Chino Hills
- Cucamonga Valley Water District (CVWD)
- City of Fontana (through FWC)
- City of Montclair (through MVWD)
- City of Ontario
- City of Upland

Fontana Water Company (FWC) and Monte Vista Water District (MVWD) are the water retailers in the Cities of Fontana and Montclair, respectively, but are not IEUA regional contracting agencies. FWC and MVWD retail recycled water obtained from their overlying cities, which are IEUA regional contracting agencies. San Bernardino County is currently a direct use customer of IEUA based on long standing historical contracts. Total recycled water direct use within the region was 19,534 AF in FY 20/21.

Table 3 – Recycled Water Demand by Agency for FY 20/21

Retail Agency	Direct Use (AF)	Percent of Direct Demand
Chino	5,643	29%
Chino Hills	1,668	9%
CVWD	1,222	6%
Fontana/FWC	425	2%
Montclair/MVWD	343	2%
Ontario	8,556	44%
Upland	772	4%
IEUA	628	3%
San Bernardino County	277	1%
Total	**19,534**	**100%**

Projected Recycled Water Use

Direct recycled water use in the IEUA service area has been projected out to 2040 in both the 2020 UWMP and as part of the Recycled Water Demand Forecast Technical Memorandum (Demand Forecast). The 2020 UWMP recycled water projections were supplied by the retail agencies to IEUA as part of the 2020 UWMP. The Demand Forecast recycled water projections utilized land use-based demand modeling completed by IEUA in conjunction with the retail agencies in 2015 and were subsequently updated in 2021.

Table 4 – Projected Recycled Water Direct Use Demand by Retail Agency (AF)

Retail Agency	Projection Source	2025	2030	2035	2040
Chino	2020 UWMP	4,500	4,500	4,000	3,800
	Demand Forecast	5,498	5,780	5,961	6,178
Chino Hills	2020 UWMP	1,609	1,609	1,609	1,609
	Demand Forecast	1,858	2,047	2,047	2,626
CVWD	2020 UWMP	1,800	2,000	2,000	2,000
	Demand Forecast	2,032	2,288	2,513	2,674
FWC	2020 UWMP	1,000	1,500	2,000	2,500
	Demand Forecast	994	1,392	1,911	2,000
MVWD	2020 UWMP	1,100	1,100	1,100	1,100
	Demand Forecast	359	363	396	398
Ontario	2020 UWMP	12,168	13,465	14,330	16,059
	Demand Forecast	9,188	10,383	10,814	12,820
Upland	2020 UWMP	703	703	703	703
	Demand Forecast	940	1,022	1,062	1,158
Total	**2020 UWMP**	**22,880**	**24,877**	**25,742**	**27,771**
	Demand Forecast	**20,869**	**23,275**	**24,704**	**27,854**

Projected Regional Water Use

Projected water use was calculated as part of the development of the 2020 UWMP. IEUA collected each retail agencies' projected water use from their respective UWMP and totaled the use to obtain a regional water use projection. Regional water use projections include both potable and recycled water direct use.

Table 5 – 2020 UWMP Projected Water Demand by Retail Agency (AF)

Retail Agency	2025	20302	2035	2040	2045
Chino	20,843	22,310	23,087	23,963	25,108
Chino Hills	17,120	17,334	17,678	17,725	17,769
CVWD	53,369	58,092	59,650	60,949	60,949
FWC	45,593	46,909	47,665	50,442	51,943
MVWD	14,232	14,564	15,175	15,437	15,706
Ontario	52,550	58,513	63,406	73,668	73,668
Upland	25,328	25,328	25,328	25,328	25,328
Total	**229,035**	**243,050**	**251,989**	**267,512**	**270,471**

Projected water use was also calculated as part of the 2015 Integrated Resources Plan (2015 IRP), which developed a range of demand possibilities to accommodate for future uncertainty caused by the various demand factors including climate change. This analysis came from demand modeling conducted as part of the 2015 IRP and 2015 Urban Water Management Plan (2015 UWMP), which found that new developments in the region are more water efficient due to changes in the plumbing code, higher density developments with less landscaping, and compliance landscape ordinance requirements set forth in AB1881.

Table 6 – 2015 IRP Demand Forecast (AF)

Urban M&I Forecast	2015	2020	2040
High Forecast	225,000	230,000	267,000
Medium Forecast	225,000	220,100	238,600
Low Forecast	225,000	212,000	217,400

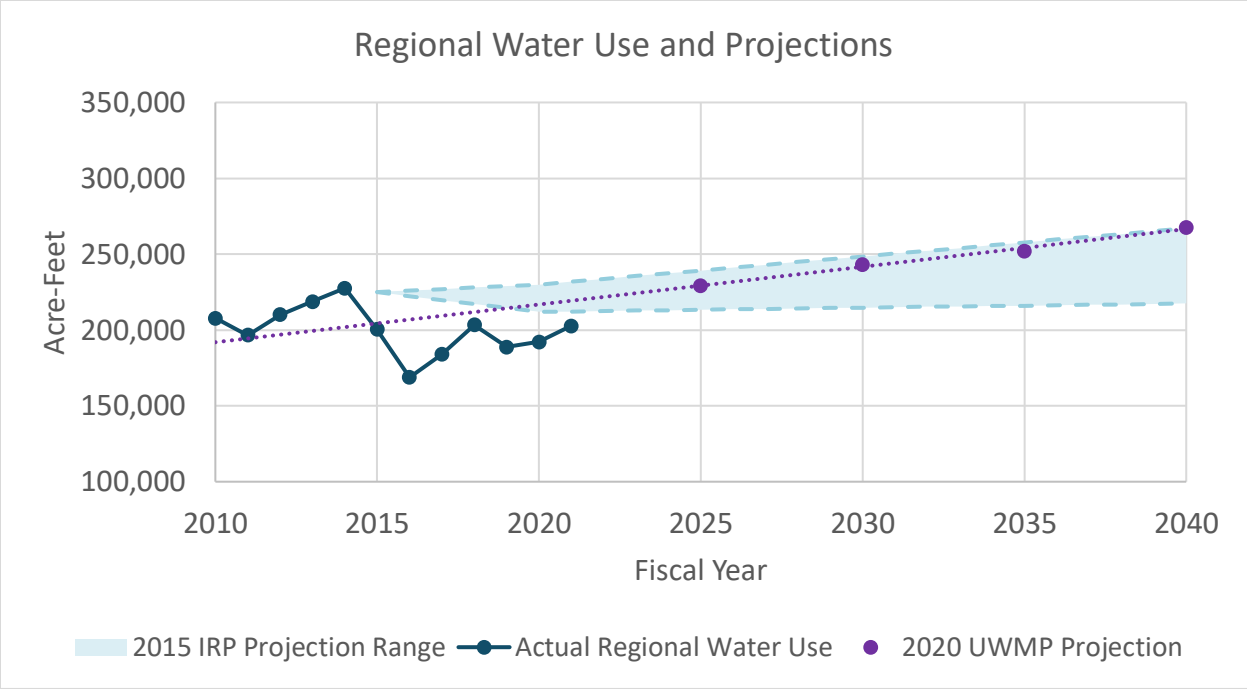


Figure 3 – IEUA Regional Water Use and Projections

The 2020 UWMP and 2015 IRP both reach approximately 267,000 AF in the year 2040. However, IEUA's actual FY 20/21 regional water use of 202,776 AF (183,242 AF potable use and 19,534 AF recycled direct use) is below the 2020 low demand forecast of 212,000 AF outlined in IEUA's 2015 IRP. A continuous focus on water use efficiency and per capita reductions, as required in SB X7-7, AB 1668, and SB 606 is anticipated to reduce per capita water use and demands. IEUA anticipates a slight increase in FY21/22 water use due to the continually growing population in the region and the general climate change trend of projected temperature increases. However, long-term demands are not expected to exceed the peak 10-year demand reached during FY 13/14.

In addition to the increase in projected water use, an increase to the number of Meter Equivalent Units (MEUs) in the region is also anticipated. For FY 21/22 it is projected that the region will contain 413,826 MEUs, an increase of 4,937 MEUs from FY 20/21's actual MEUs count of 408,889.

Table 7 – Projected MEUs

Retail Agency	FY 20/21 Actual MEUs	FY 21/22 Projected MEUs
Chino	39,264	40,238
Chino Hills	39,499	38,924
CVWD	105,805	106,006
FWC	90,162	91,413
MVWD	21,901	21,979
Ontario	76,459	78,166
Upland	32,779	33,966
WVWD*	3,020	3,134
Total	**408,889**	**413,826**

**IEUA and WVWD have a shared service area for emergency supply*

SECTION 2: GROUNDWATER RECHARGE DELIVERIES

Historical Groundwater Recharge Deliveries

The Chino Basin is one of the largest groundwater basins in Southern California containing approximately 5,000,000 AF of water with an un-used storage capacity of approximately 1,000,000 AF. Groundwater from the Chino Basin accounts for approximately 29% of FY 20/21, regional water supplies. The Chino Basin is an adjudicated basin and has been overseen by the Chino Basin Watermaster (CBWM) since 1978. The basin is dependent on rainfall and supplemental sources for recharge.

IEUA, in coordination with CBWM, the Chino Basin Water Conservation District (CBWCD), San Bernardino County Flood Control District (SBCFCD), the Chino Desalter Authority (CDA), and local agencies capture water for replenishment. Sources include recycled water from IEUA's regional water recycling plants, stormwater and dry weather flow capture, and imported water recharge.

Recharged imported water is either purchased by a local agency, requested by the Chino Basin Watermaster to maintain safe operating yield of the basin, used to blend down recharged recycled water TDS levels, or as part of the Chino Basin Dry-Year Yield (DYY) Program. Total groundwater recharge delivered to the Chino Basin in FY 20/21 was 23,430 AF. Groundwater recharge deliveries is water delivered to recharge facilities and does not take into consideration evaporative or other losses that may occur prior to recharge.

Table 8 – FY 20/21 Groundwater Recharge Purchases

Groundwater Recharge Source	Recharge (AF)
Recycled Water	16,253
Stormwater & Dry Weather Flow	4,911
Imported Water	2,266
IEUA (MWD)	*0*
*DYY Puts**	*0*
*TVMWD (MWD)***	*2,266*
Total	**23,430**

**DYY Puts Exclude aquifer storage and recovery*

*** Three Valleys Municipal Water District (TVMWD) purchases water directly from MWD.*

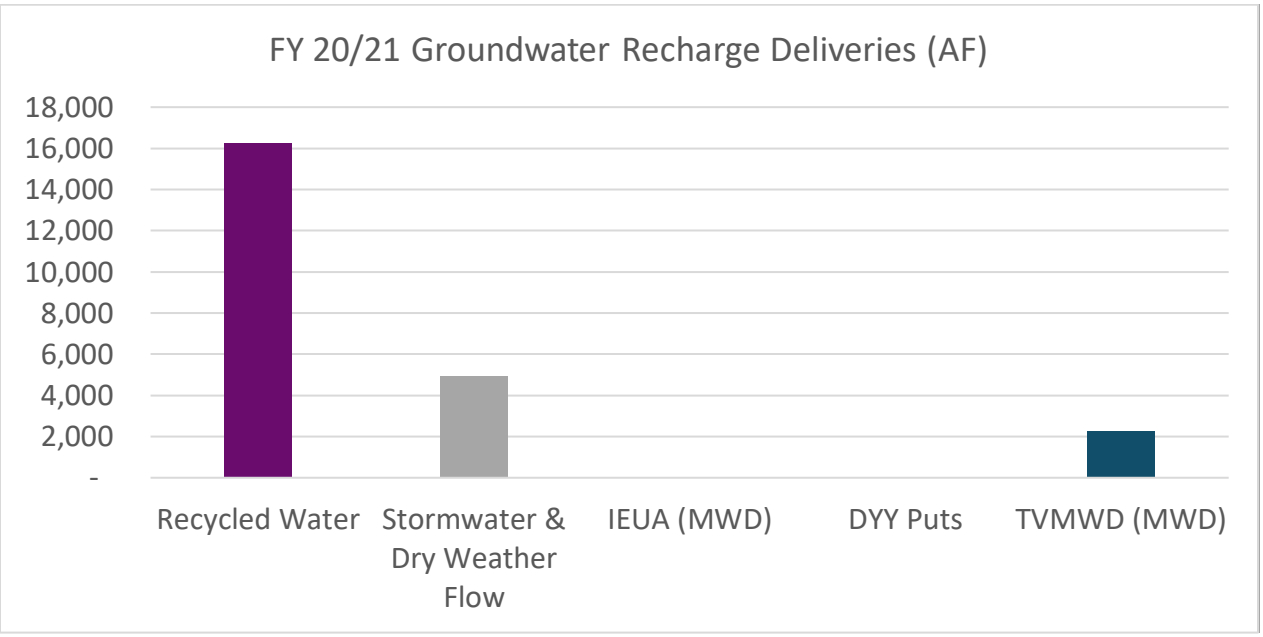


Figure 4 – FY 20/21 Groundwater Recharge Deliveries

Recycled water groundwater recharge use was 16,253 AFY in FY 20/21, up 21% from FY 19/20's recycled water ground water recharge of 13,381 AF. Recycled water is recharged by IEUA on behalf of its RCAs and retail water agencies.

Table 9 – FY 20/21 Recycled Groundwater Recharge Deliveries by Agency

Retail Agency	Recharge (AF)
Chino	-
Chino Hills	1,463
CVWD	9,336
Fontana/FWC	3,185
Montclair/MVWD	737
Ontario	-
Upland	1,531
Subtotal	**16,253**

FY 20/21 was a 5 year low for groundwater recharge totals but was also the highest recycled water recharge recorded to date at over 16,000 AF. The overall decrease to recharged is due in part to low precipitation rates reducing stormwater availability and MWD not requesting the storage of any water for the DYY program in FY 20/21.

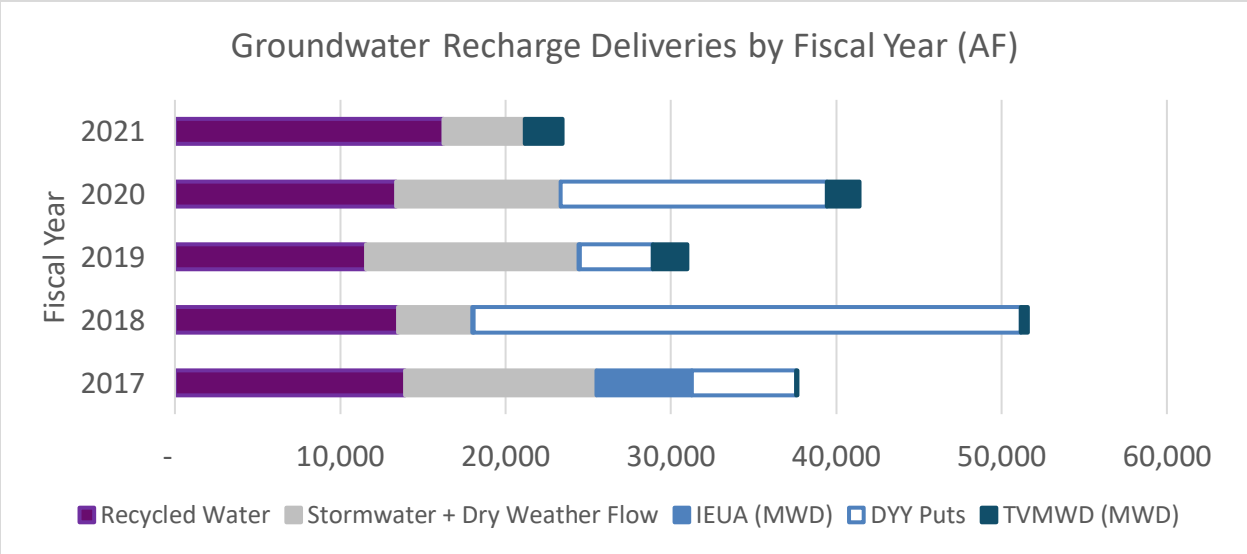


Figure 5 – Historical Groundwater Recharge Deliveries

Projected Groundwater Recharge Deliveries

It is projected that future groundwater recharge delivery projections will remain at an estimated 16,420 AFY of recycled water as outlined in the 2018 Recharge Master Plan Update. Due to the unpredictability of storm events and variability of imported water for groundwater recharge in the IEUA region, the five-year average was taken to determine the projected recharge of stormwater and dry weather flows and imported water. It is estimated that future groundwater

recharge will contain 8,761 AF of stormwater and dry weather flows and 2,549 AF of imported water. Imported groundwater projections do not include DYY values as continued storage of DYY water is not expected to continue past FY 20/21.

Table 10 – Projected Groundwater Recharge Deliveries by Source

Groundwater Recharge Source	Projected Groundwater Recharge (AFY)
Recycled Water	16,420
Stormwater & Dry Weather Flow	8,761
Imported Water (No DYY)	2,549
Total	**27,730**

Dry Year Yield

The DYY program provides for the storage of up to 100,000 AF of water in a MWD Storage Account in the Chino Basin pursuant to the Groundwater Storage Program Funding Agreement dated June 2003 and as subsequently amended. Signatories to the Phase I Agreement are:

- Metropolitan Water District of Southern California,
- Inland Empire Utilities Agency
- Three Valleys Municipal Water District
- Chino Basin Watermaster

The DYY Agreement provides for storage of up to 25,000 AF per year unless Chino Basin Watermaster allows for more, and extraction, at MWD's call during dry years, of up to 33,000 AF per year not to exceed the amount of water in the Metropolitan Storage Account (DYY Account). In February 2019, the signatories expanded the extraction provisions so that water could be voluntarily extracted from the DYY Account outside of call years, with approval from the signatories.

From June 2017 through June 2021 a total of 64,830 AF were stored in the DYY Account; 59,894 AF by groundwater recharge and 4,936 AF by Aquifer Storage and Recovery (ASR) injected water. From July 2019 through June 2021 Cucamonga Valley Water District and Fontana Water Company have voluntarily extracted 40,395 AF, leaving the account with a balance of 24,435 AF.

Table 11 – DYY Account Balance

DYY Account Balance (June 2017-June 2021)	
"PUTS"	
Recharged Water	59,894
ASR Injection	4,936
"TAKES"	
CVWD	37,895
FWC	2,500
Total	**24,435**

The voluntary production projection for FY 21/22 is shown in Table 11. Signatories have agreed for Cucamonga Valley Water District and Fontana Water Company to extract the remaining DYY Account balance by June 2022.

Table 12 – DYY Voluntary Production Projections

Agency	Baseline	July-December 2021 Production	Jan-June 2022 Production	Total DYY Voluntary Production
CVWD	5,536	13,000	5,000	18,000
FWC	863	4,000	1,000	5,000

SECTION 3: SANTA ANA REGIONAL BASEFLOW OBLIGATION

Santa Ana River Regional Baseflow Obligation

The Santa Ana River has a regional baseflow obligation established by past judgment. The baseflow obligation is a joint obligation between IEUA and Western Municipal Water District to ensure an average of 42,000 AF at Prado Dam. The minimum baseflow obligation was reduced to 34,000 AF after 1986 as long as no cumulative baseflow debt exists. In Water Year 2019/2020, baseflow at Prado Dam was 74,465 AF. More information about the Santa Ana River baseflow obligation can be found in the Santa Ana River Watermaster Annual Report (https://www.wmwd.com/292/Santa-Ana-Watermaster-Reports).

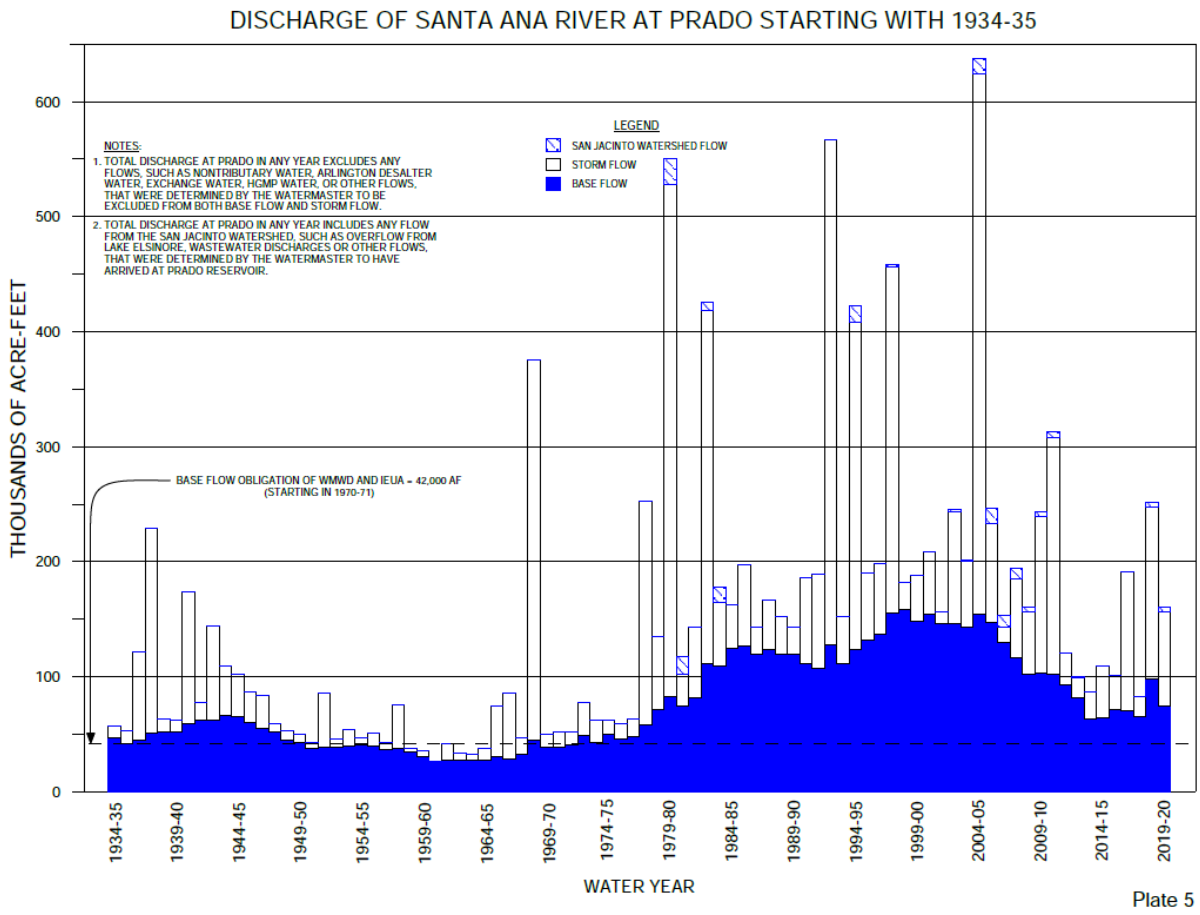


Figure 6 – Discharge of Santa Ana River at Prado
Source: Santa Ana River Watermaster Annual Report 2019-2020

SECTION 4: WASTEWATER

Wastewater Actuals

Over the past decade the IEUA service area has experienced an increase in indoor water use efficiency as a direct result of drought, shifting public policy, more efficient building and plumbing codes, and effective conservation program campaigns. This increased efficiency has decreased the volume of wastewater flows received by IEUA treatment plants by approximately 10% since 2010. While the flows have continued to decrease, the regional population has continued to grow. The combination of an increased population but reduced wastewater flow has resulted in an increase in the strength of the wastewater coming into IEUA's treatment facilities. This trend of increased wastewater strength is expected to continue as both the population and regional water efficiency continue to increase. Current and future wastewater treatment plant expansions are driven by the increased strength of wastewater flows to the facilities, rather than the volume of flows to the facilities.

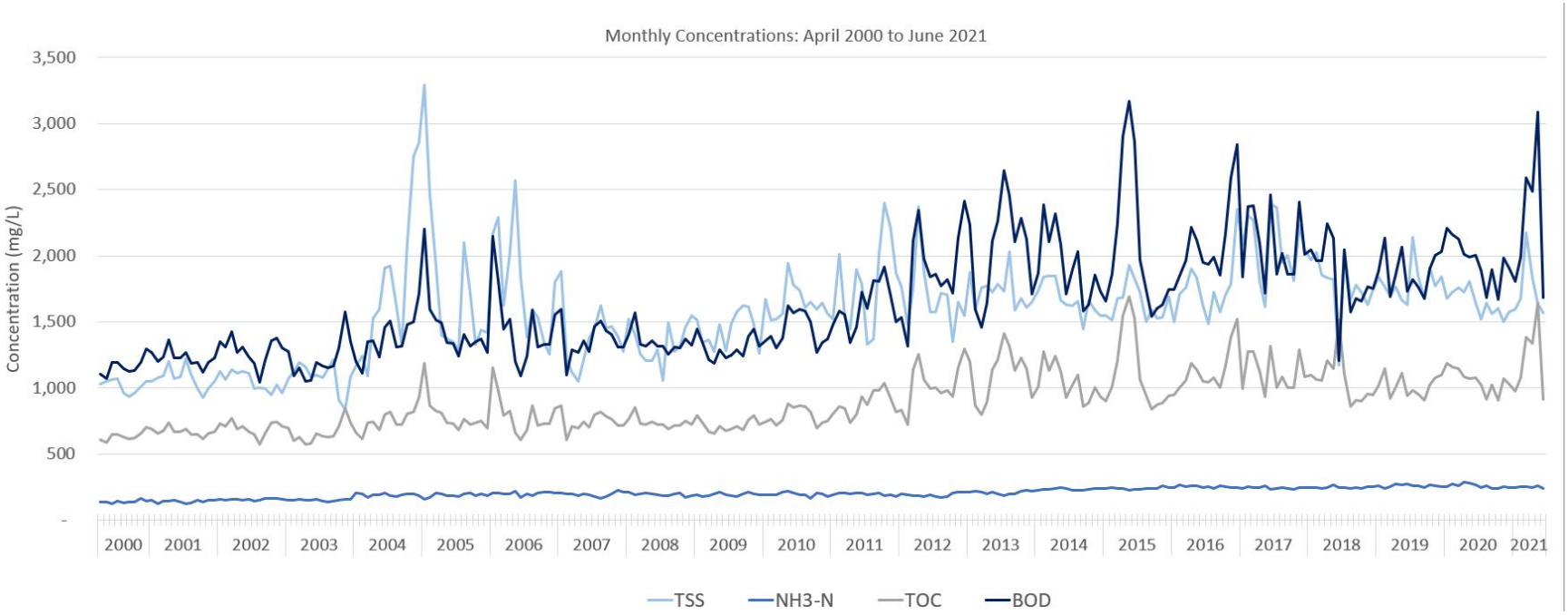


Figure 7 – Monthly Concentrations: April 2000 – June 2021

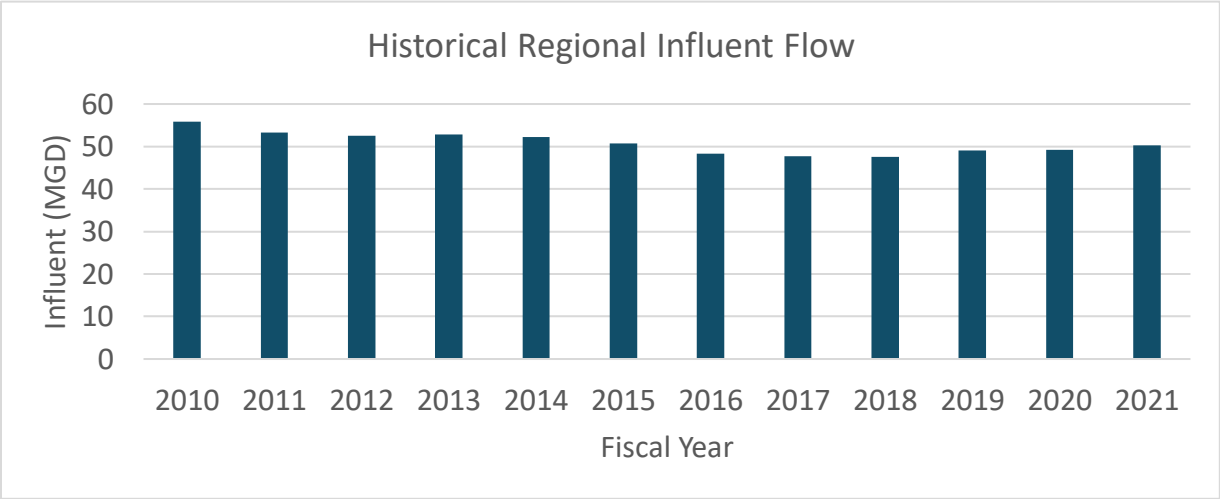


Figure 8 – Historical Regional Influent Flows

While wastewater flows have decreased from FY 09/10, recycled water use has increased. This increase in recycled water utilization can be attributed to the San Bernardino Avenue Lift Station and the Montclair Lift Station. The Montclair Lift Station pumps wastewater from portions of Montclair, Upland, and Chino to IEUA's RP-1 and CCWRF treatment plants. The San Bernardino Ave Pump Station pumps a portion of the flow from the City of Fontana to IEUA's RP-4 treatment plant. Together, these lift stations help shift flows that would naturally flow from one portion of the service area to a different treatment plant to balance flows and keep water in the northern portion of the service area. This shift in flows allows IEUA to maximize the potential for recycled water use. These lift stations also increase regional system flexibility and allow the treatment plants to operate as an interconnected system.

Equivalent Dwelling Unit (EDU) activity has increased from FY 19/20 to FY 20/21 with the addition of 5,281 EDUs to the region compared to the addition of only 3,435 EDUs the previous fiscal year. The additional EDUs added in FY 20/21 are 3,732 EDUs lower than the RCAs projections of 9,013 EDUs and 1,281 EDUs more than the IEUA Budgeted Projections of 4,000 EDUs. Two sets of projections exist to allow for conservative estimates on both the flow and financial aspects of EDUs. The RCAs projections are required under the Regional Sewage Service Contract and serve as a planning tool for plant treatment capacity. Under the Regional Sewage Service Contract, RCAs who report EDU projections that are lower than what the regional experiences may have building moratoriums imposed. For this reason, the RCAs may make projections conservatively high. Budgeted projections on the other hand are used by IEUA to project future needs. To ensure fund availability, budgeted projections are conservatively low. The result of both sets of projections is the assumption that projections are conservative, ensuring IEUA treatment plants can handle the added load while also ensuring the agency does not over project fund availability.

Table 13 – Historical EDU Activity

Building Activity for Last Five Fiscal Years (FY 15/16 through FY 19/20)			
Year	**Building Activity (EDUs)**	**Budgeted Projections (EDUs)**	**RCAs Projections (EDUs)**
FY 15/16	4,787	4,330	5,849
FY 16/17	5,189	3,000	5,277
FY17/18	5,223	4,000	5,442
FY 18/19	3,459	4,000	6,149
FY 19/20	3,435	4,000	6,390
FY 20/21	5,281	4,000	9,013

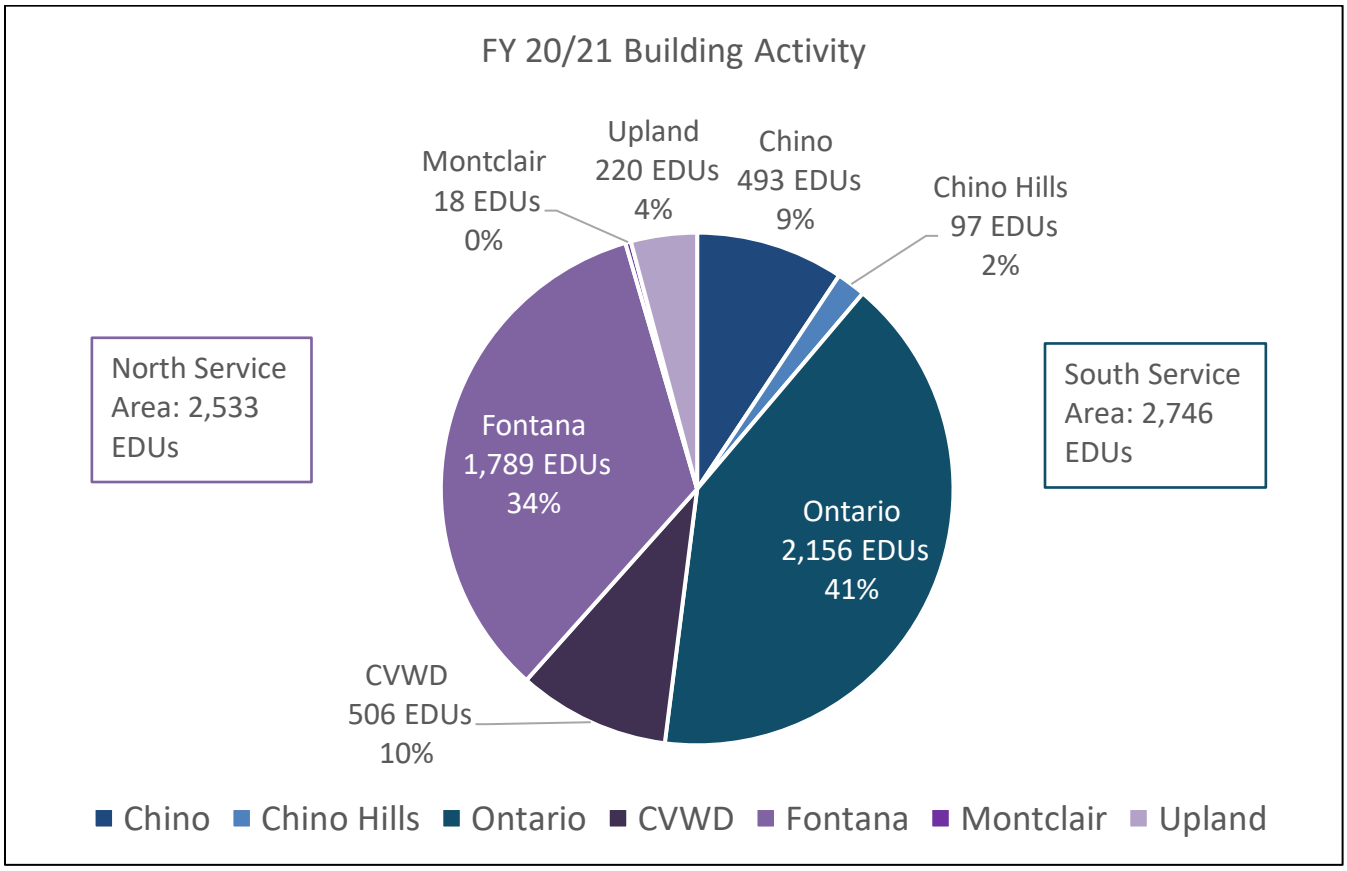


Figure 9 – FY 20/21 Building Activity

Wastewater Projections

Wastewater flow forecasts are conducted annually and are based on four main components: (1) historical wastewater flow trends; (2) per dwelling unit wastewater generation factors, based on the 2015 Wastewater Facilities Master Plan Update (WWFMPU) projections; (3) actual influent flows measured at the treatment plants; and (4) expected future growth numbers provided by the RCAs. These projections are used to determine future demands on the Agency's facilities and help anticipate the need for modifications to treatment plants and solids handling facilities.

The WWFMPU identified the projected flows to the treatment plants in 2035 through 2060. The WWFMPU estimates that there will be a regional flow of 73.5 MGD by 2035 and an ultimate/build-out flow of 80 MGD by 2060. The increase in flows implies that there will be facility expansions over the next 20 years.

In 2021, the RCAs completed a survey of their 10-year capacity demand forecast. The results of the 10-year capacity demand forecast survey are summarized in Table 12. For FY 2021/22, the forecasted activity was 13,538 EDUs. Over the next ten years, activity was projected to total 100,857 EDUs region wide. Approximately 77% of this projected activity is a result of new development in the service areas of Ontario and Fontana. Over the next ten years, building activity is projected to be approximately 80% residential and 20% commercial/industrial.

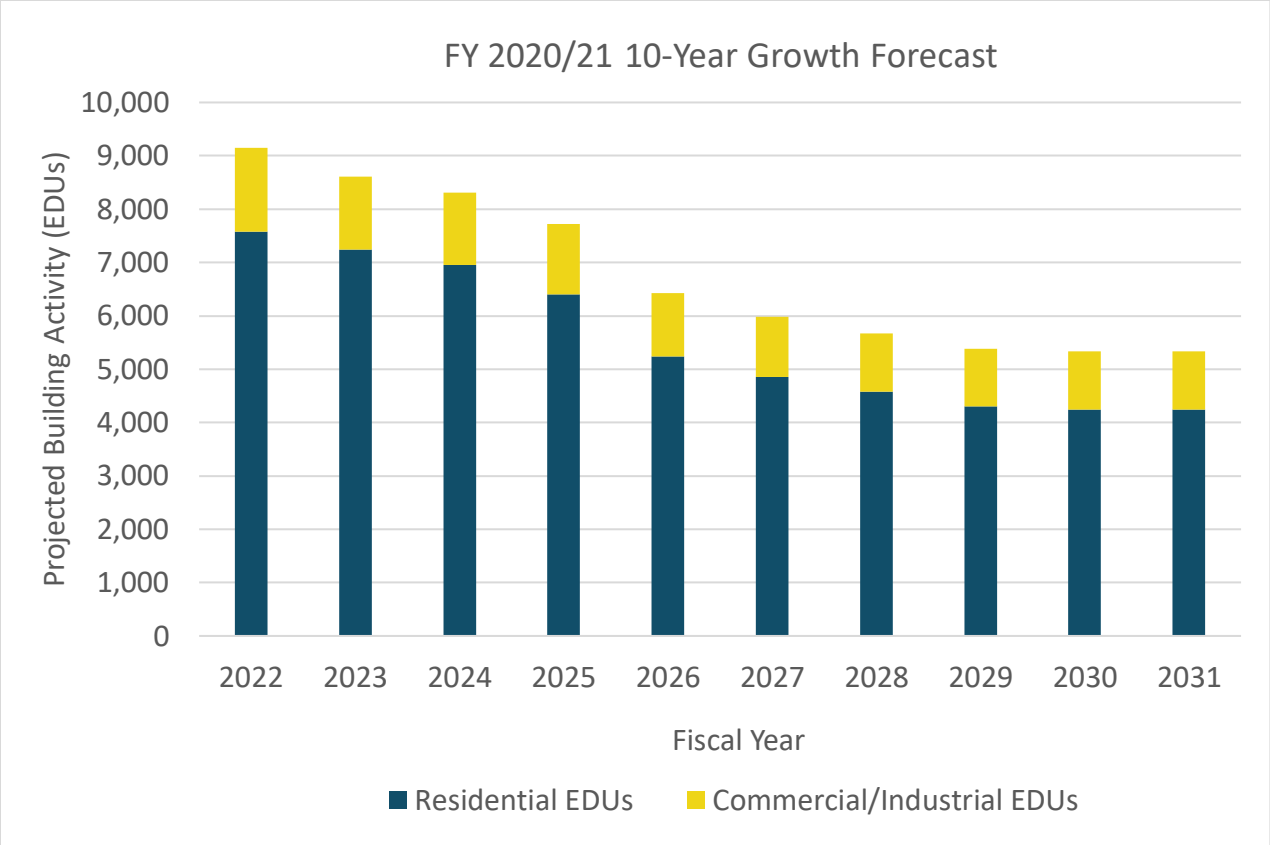


Figure 10 – FY 20/21 10-Year Growth Forecast

Table 14 – 10 Year Projected EDU Activity**

Fiscal Year	Chino EDUs	Chino Hills EDUs	CVWD EDUs	Fontana EDUs	Montclair* EDUs	Ontario EDUs	Upland EDUs	Total EDUs
FY 21/22	434	138	2,050	1,792	474	3,780	476	9,144
FY 22/23	396	361	2,050	1,863	106	3,382	456	8,614
FY 23/24	396	570	1,650	1,935	26	3,382	351	8,310
FY 24/25	396	391	1,250	2,011	26	3,382	271	7,727
FY 25/26	396	200	890	2,089	26	2,660	176	6,437
FY 26/27	395	276	490	2,171	26	2,520	100	5,978
FY 27/28	285	231	490	2,171	26	2,410	55	5,668
FY 28/29	285	1	490	2,171	26	2,410	0	5,383
FY 29/30	235	1	490	2,171	26	2,410	0	5,333
FY 30/31	235	1	490	2,171	26	2,410	0	5,333
TOTAL	**3,453**	**2,170**	**10,340**	**20,545**	**788**	**28,746**	**1,885**	**67,927**

**The City of Montclair's forecasts have been extended from last Fiscal Year as a completed 2021 10-year capacity demand forecast was not completed. **EDU values revised October 26, 2021.*

APPENDIX A: ACRONYMS

AF: Acre Feet

AFY: Acre Feet per Year

ASR: Aquifer Storage and Recovery

CBWCD: Chino Basin Water Conservation District

CBWM: Chino Basin Water Master

CDA: California Desalter Authority

CVWD: Cucamonga Valley Water District

DYY: Dry Year Yield Program

EDU: Equivalent Dwelling Unit

FWC: Fontana Water Company

IEUA: Inland Empire Utilities Agency

IRP: 2015 Integrated Resource Plan

MEUs: Meter Equivalent Units

MGD: Million Gallons per Day

MVWD: Monte Vista Water District

MWD: Metropolitan Water District of Southern California

SPAR: Strategic Planning Annual Report

RCAs: Regional Contracting Agencies

SAR: Santa Ana River

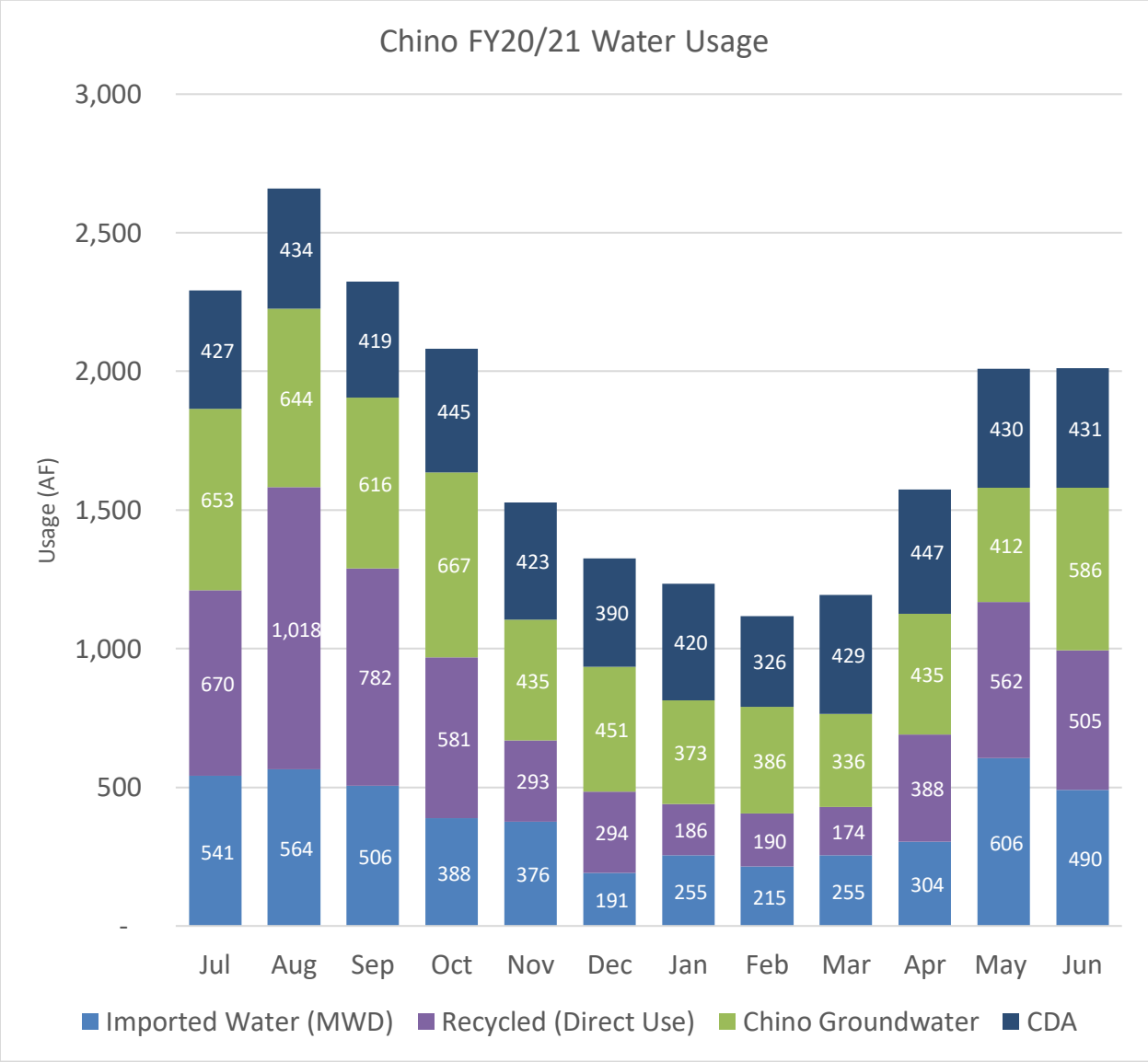
SBCFCD: San Bernardino County Flood Control District

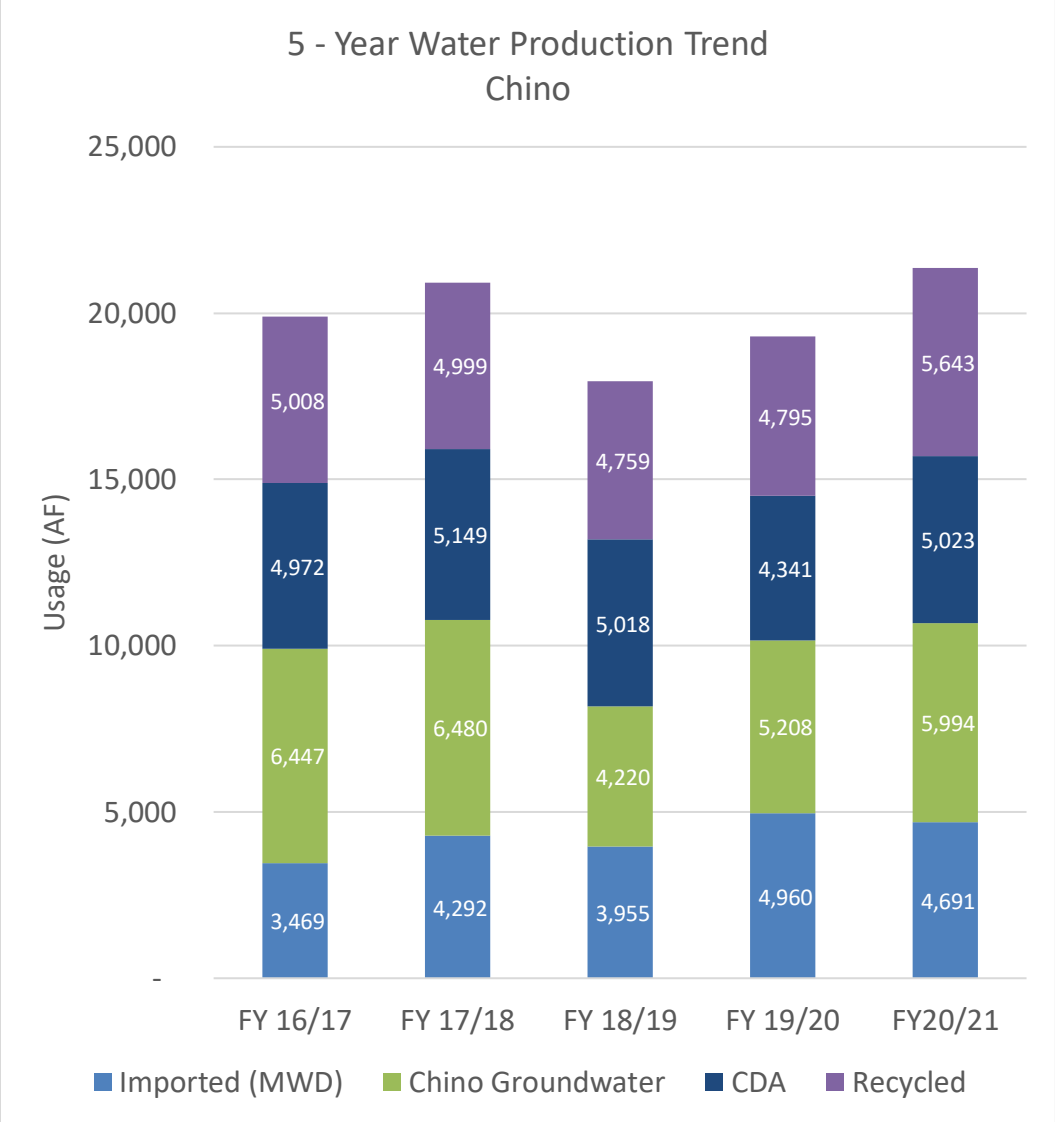
UWMP: Urban Water Management Plan

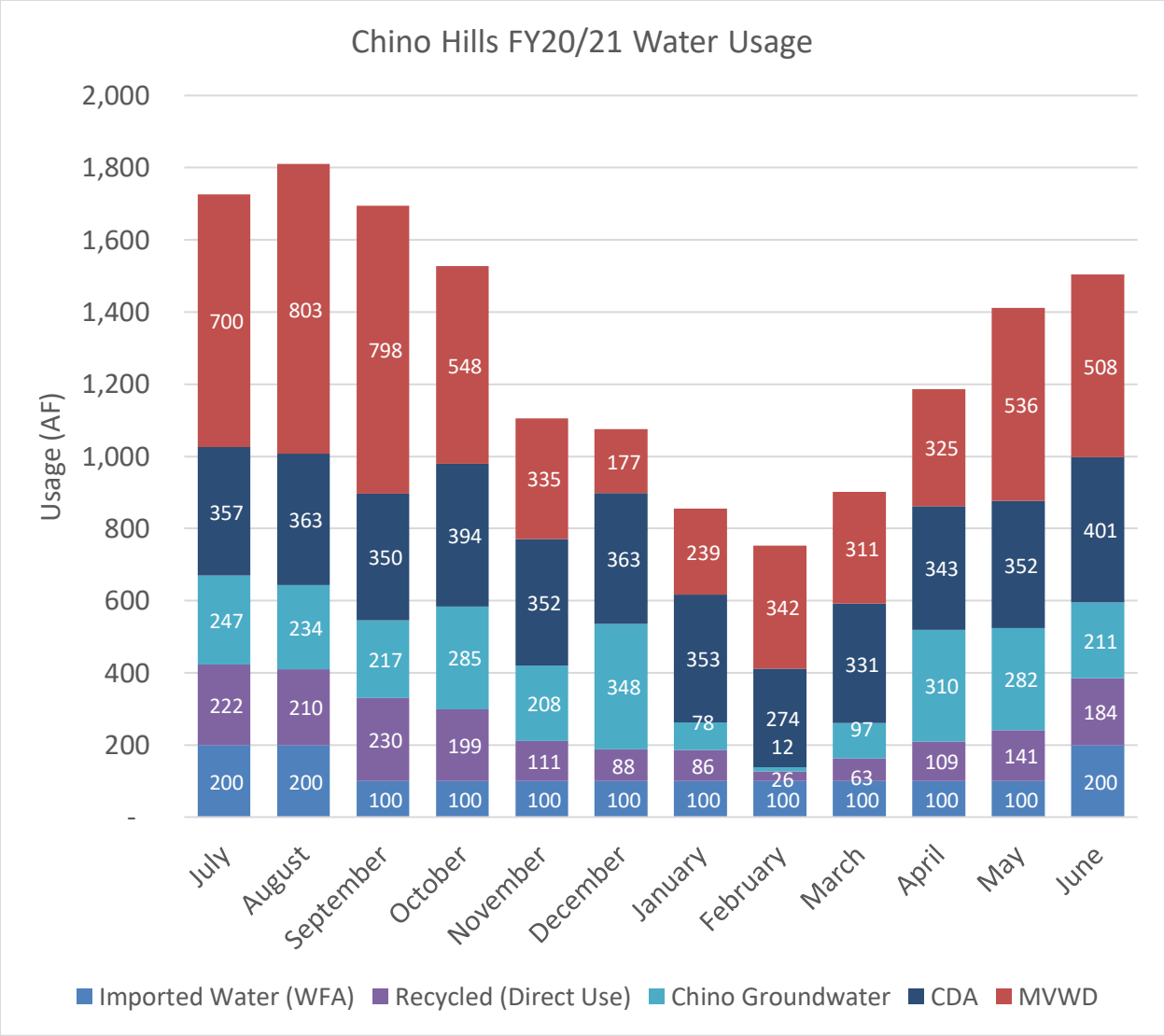
WVMWD: West Valley Municipal Water District

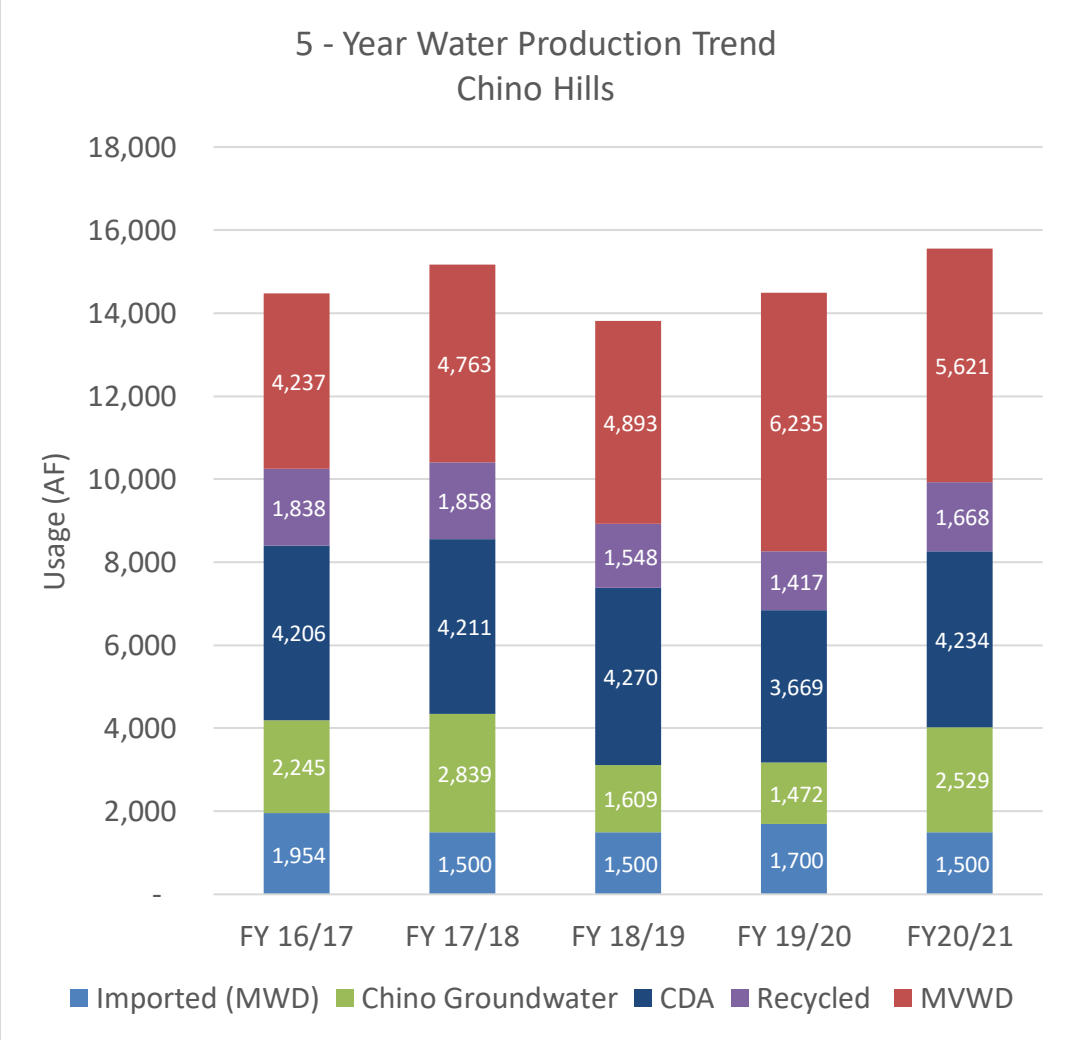
WWFMPU: 2015 Wastewater Facilities Master Plan Update

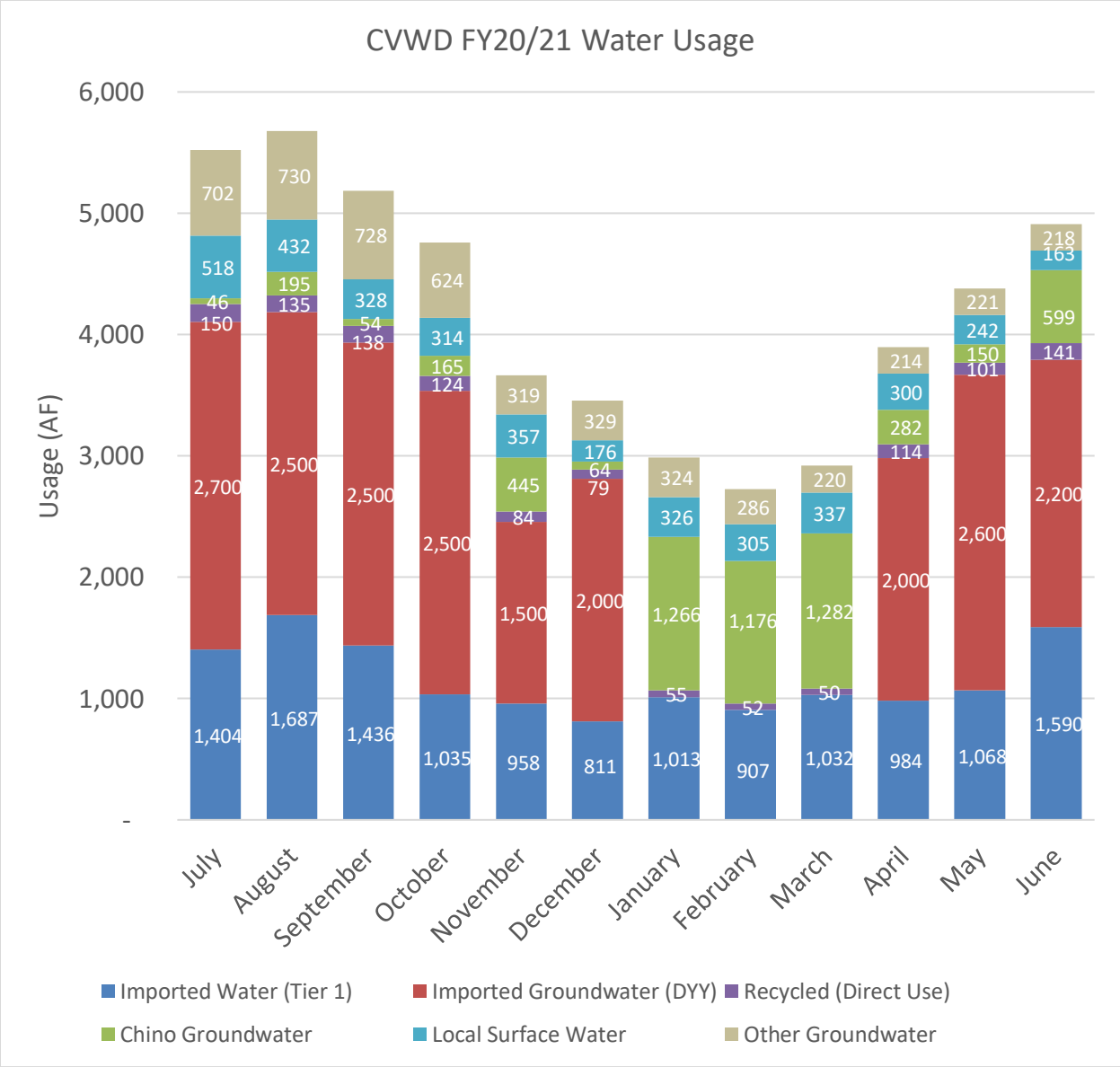
APPENDIX B: RETAIL AGENCY WATER USE CHARTS

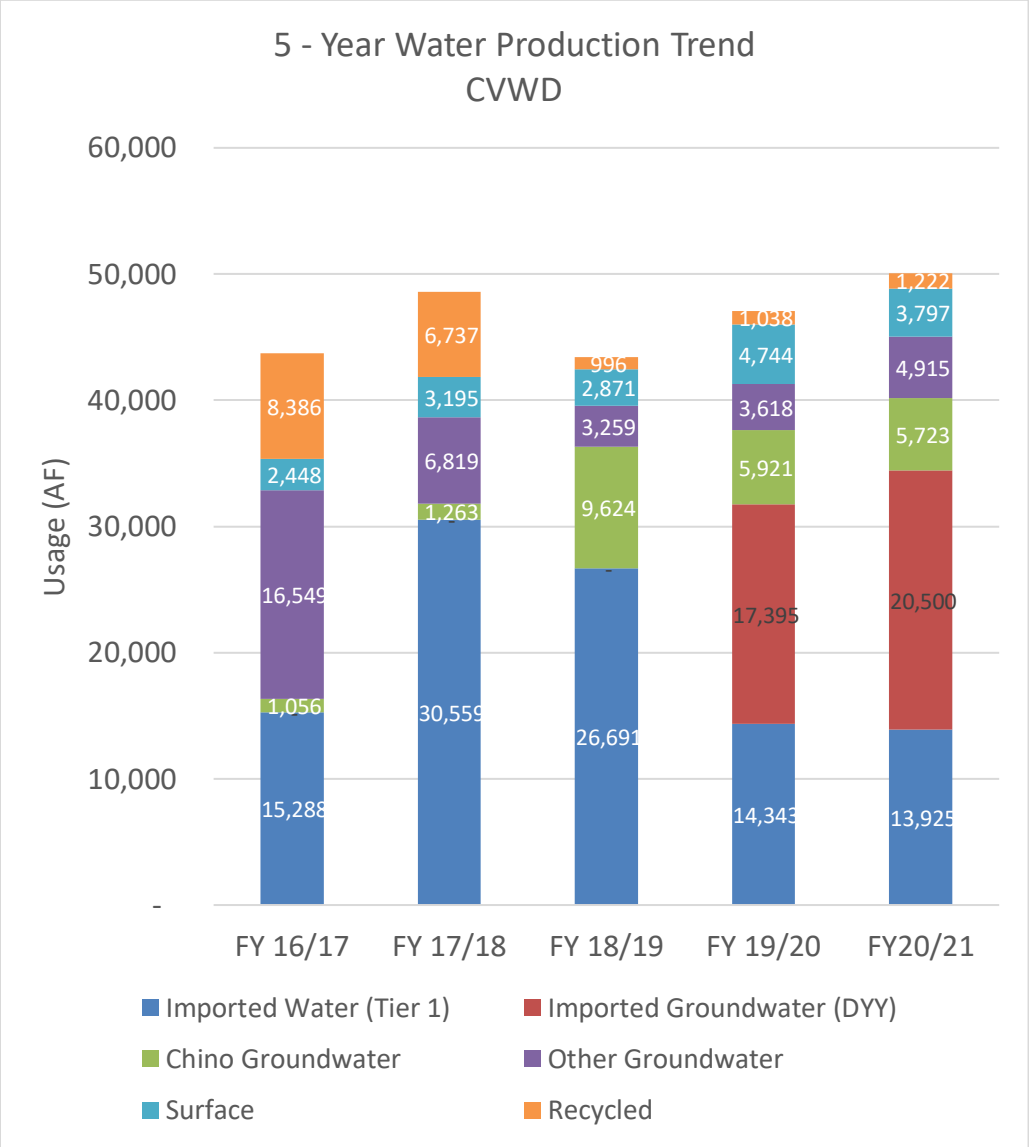

Chino FY20/21 Water Usage
Usage (AF)
3,000
2,500
2,000
1,500
1,000
500
-
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
541
670
653
427
564
1,018
644
434
506
782
616
419
388
581
667
445
376
293
435
423
191
294
451
390
255
186
373
420
215
190
386
326
255
174
336
429
304
388
435
447
606
562
412
430
490
505
586
431
Imported Water (MWD)
Recycled (Direct Use)
Chino Groundwater
CDA

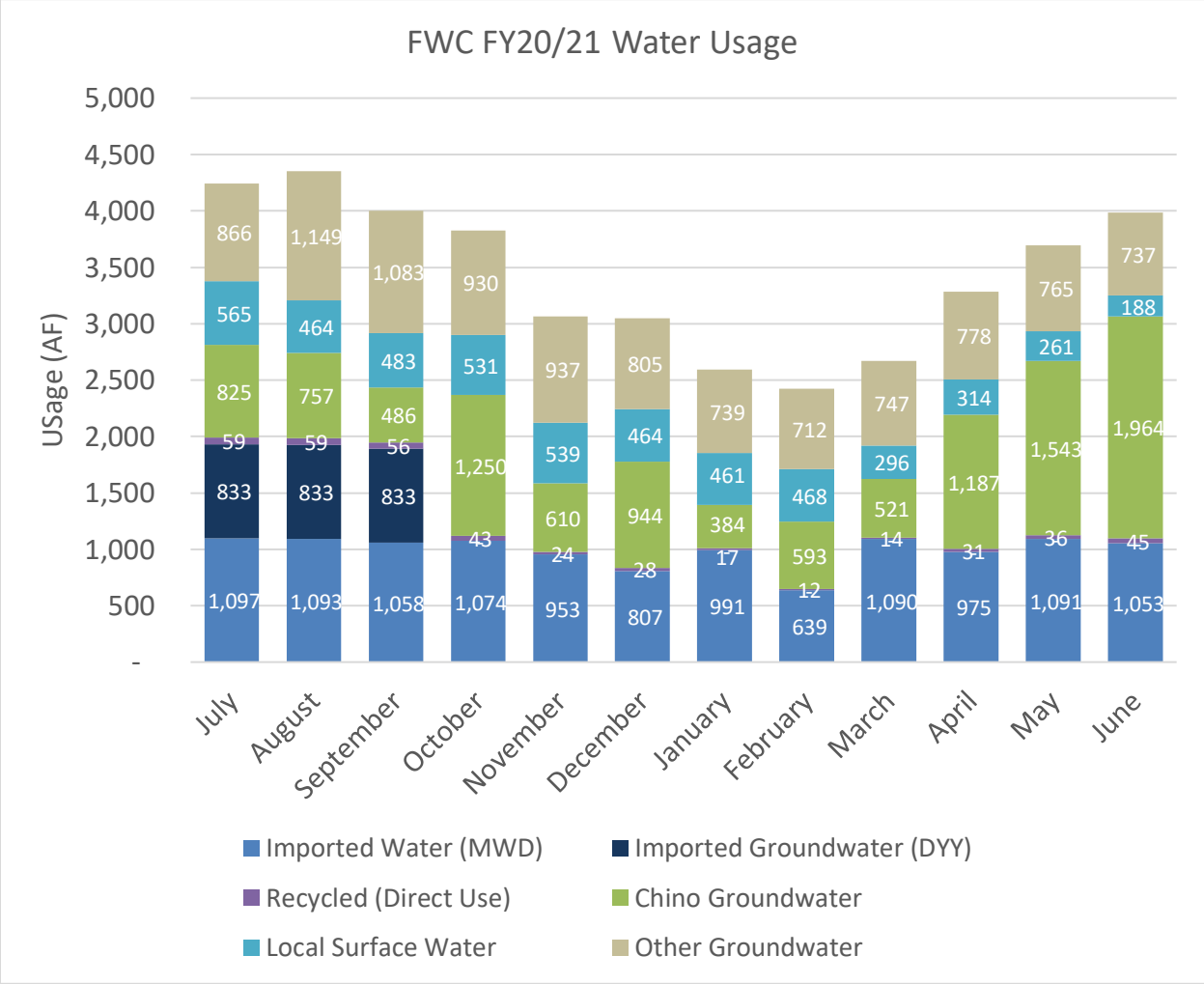

5 - Year Water Production Trend
Chino
25,000
20,000
15,000
10,000
5,000
-
Usage (AF)
5,008
4,999
4,759
4,795
5,643
4,972
5,149
5,018
4,341
5,023
6,447
6,480
4,220
5,208
5,994
3,469
4,292
3,955
4,960
4,691
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
Imported (MWD)
Chino Groundwater
CDA
Recycled

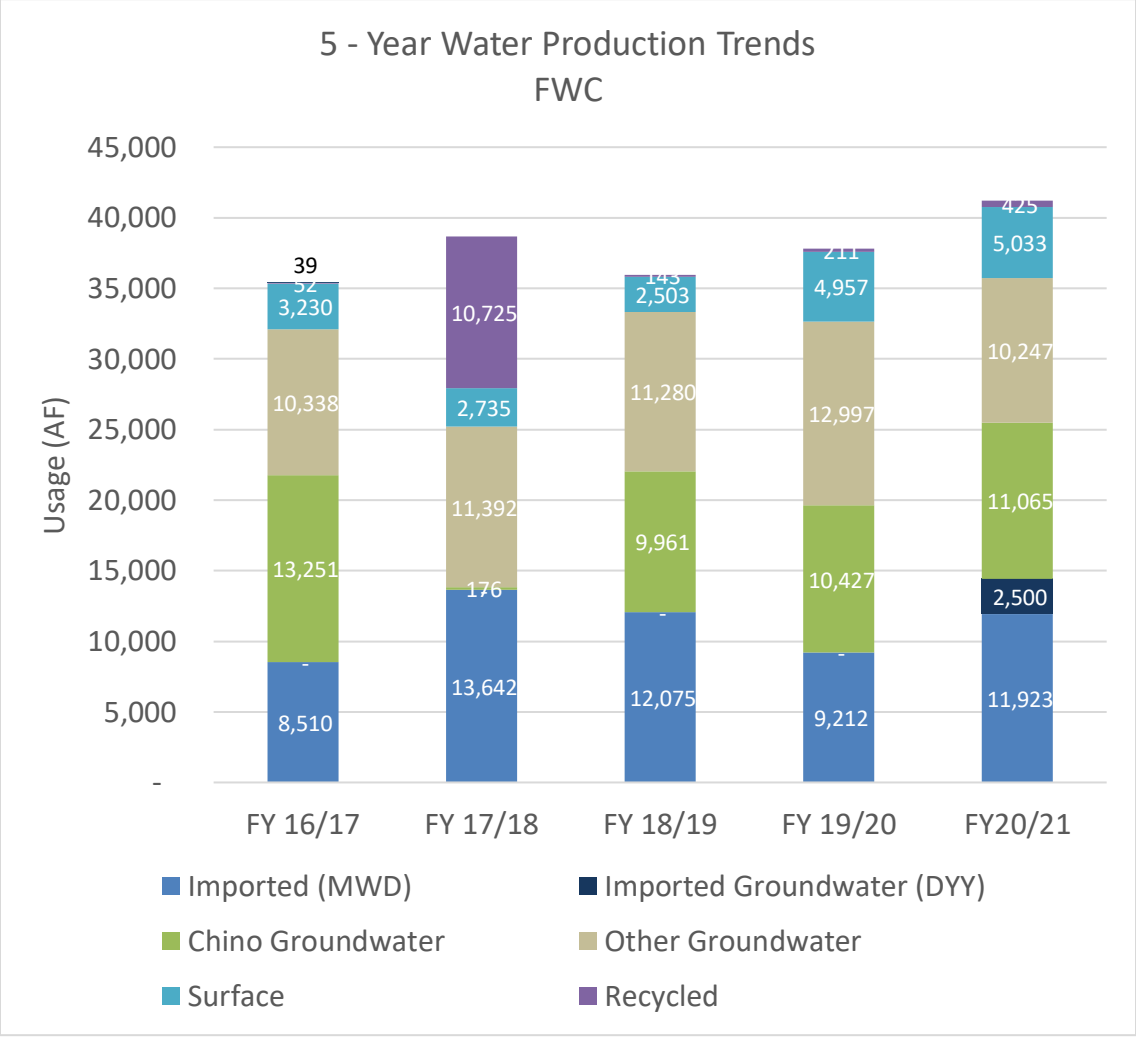

Chino Hills FY20/21 Water Usage
Usage (AF)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
July
August
September
October
November
December
January
February
March
April
May
June
700
803
798
548
335
177
239
342
311
325
536
508
357
363
350
394
352
363
353
274
331
343
352
401
247
234
217
285
208
348
78
12
97
310
282
211
222
210
230
199
111
88
86
26
63
109
141
184
200
200
100
100
100
100
100
100
100
100
100
200
Imported Water (WFA)
Recycled (Direct Use)
Chino Groundwater
CDA
MVWD

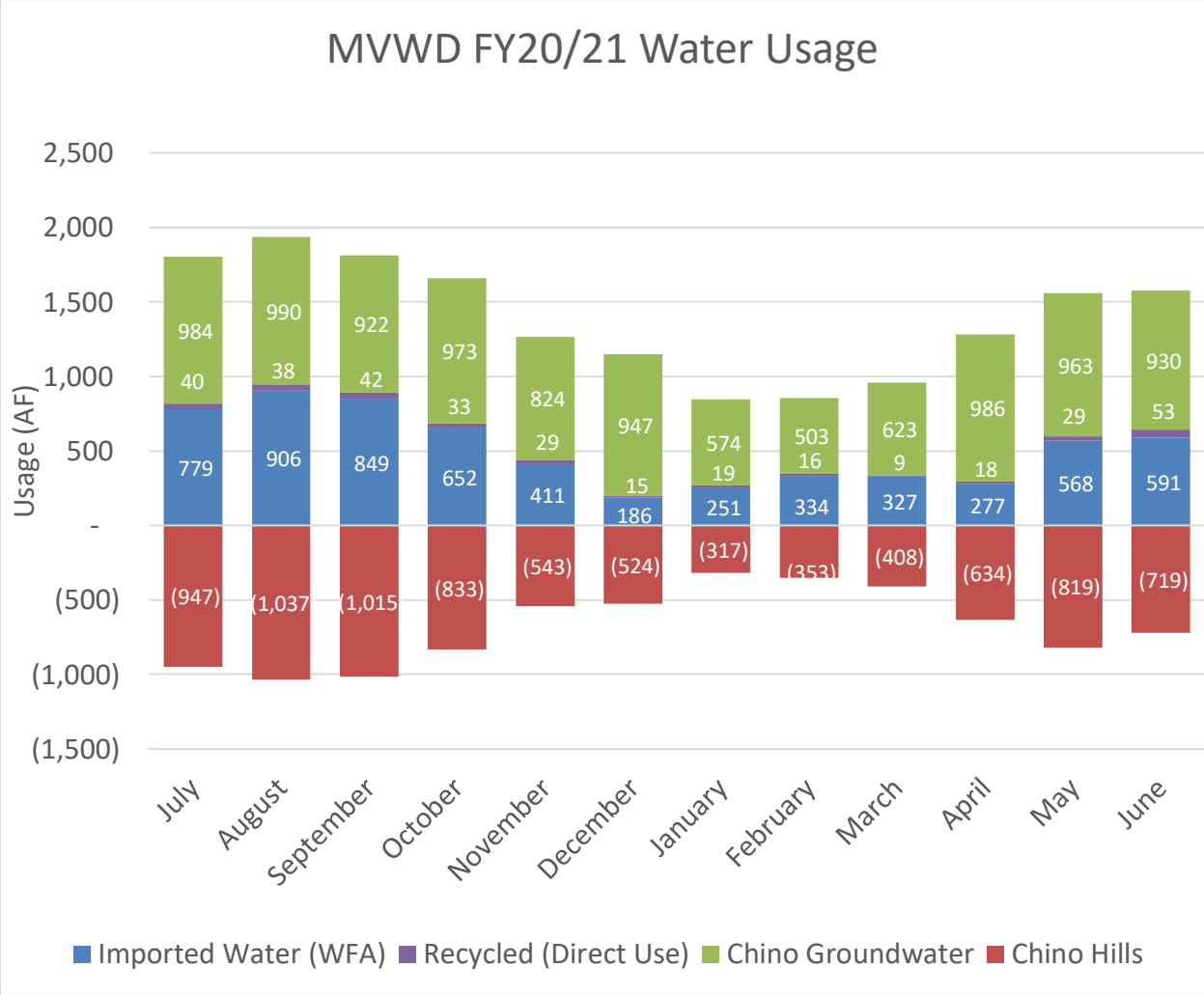

5 - Year Water Production Trend
Chino Hills
Usage (AF)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
4,237
1,838
4,206
2,245
1,954
4,763
1,858
4,211
2,839
1,500
4,893
1,548
4,270
1,609
1,500
6,235
1,417
3,669
1,472
1,700
5,621
1,668
4,234
2,529
1,500
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
Imported (MWD)
Chino Groundwater
CDA
Recycled
MVWD

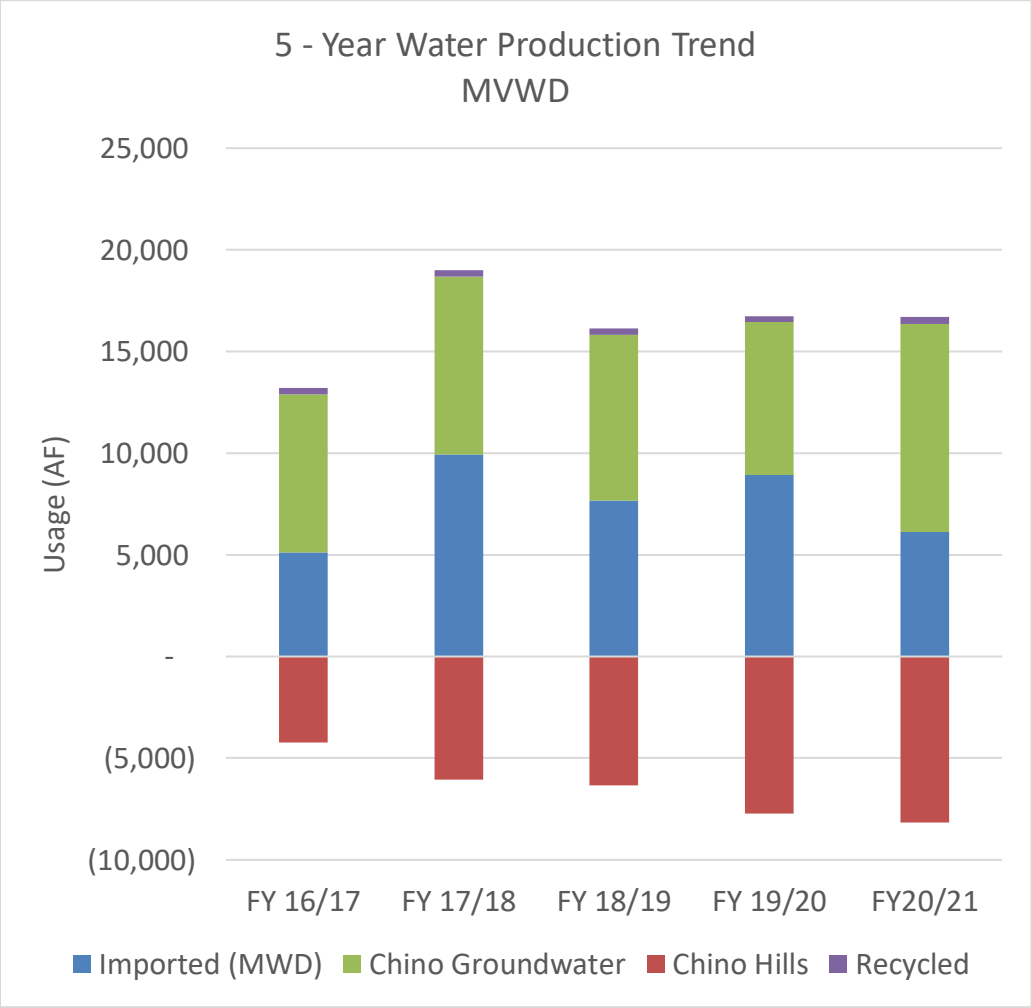

CVWD FY20/21 Water Usage
Usage (AF)
6,000
5,000
4,000
3,000
2,000
1,000
-
July
August
September
October
November
December
January
February
March
April
May
June
1,404
2,700
150
46
518
702
1,687
2,500
135
195
432
730
1,436
2,500
138
54
328
728
1,035
2,500
124
165
314
624
958
1,500
84
445
357
319
811
2,000
79
64
176
329
1,013
1,266
55
326
324
907
1,176
52
305
286
1,032
1,282
50
337
220
984
2,000
114
282
300
214
1,068
2,600
101
150
242
221
1,590
2,200
141
599
163
218
Imported Water (Tier 1)
Imported Groundwater (DYY)
Recycled (Direct Use)
Chino Groundwater
Local Surface Water
Other Groundwater

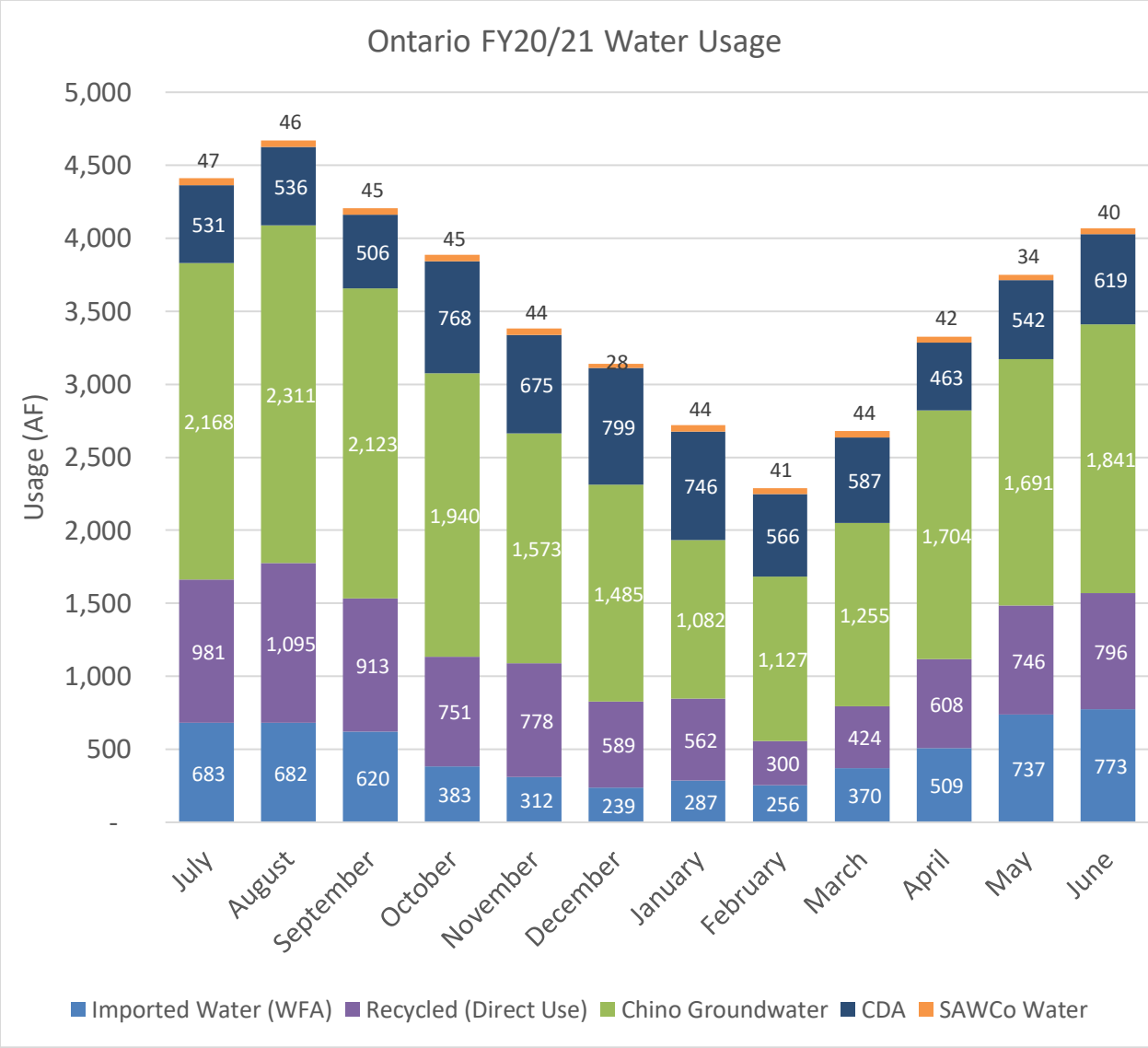

5 - Year Water Production Trend
CVWD
Usage (AF)
60,000
50,000
40,000
30,000
20,000
10,000
-
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
8,386
2,448
16,549
1,056
15,288
6,737
3,195
6,819
1,263
30,559
996
2,871
3,259
9,624
26,691
1,038
4,744
3,618
5,921
17,395
14,343
1,222
3,797
4,915
5,723
20,500
13,925
Imported Water (Tier 1)
Imported Groundwater (DYY)
Chino Groundwater
Other Groundwater
Surface
Recycled

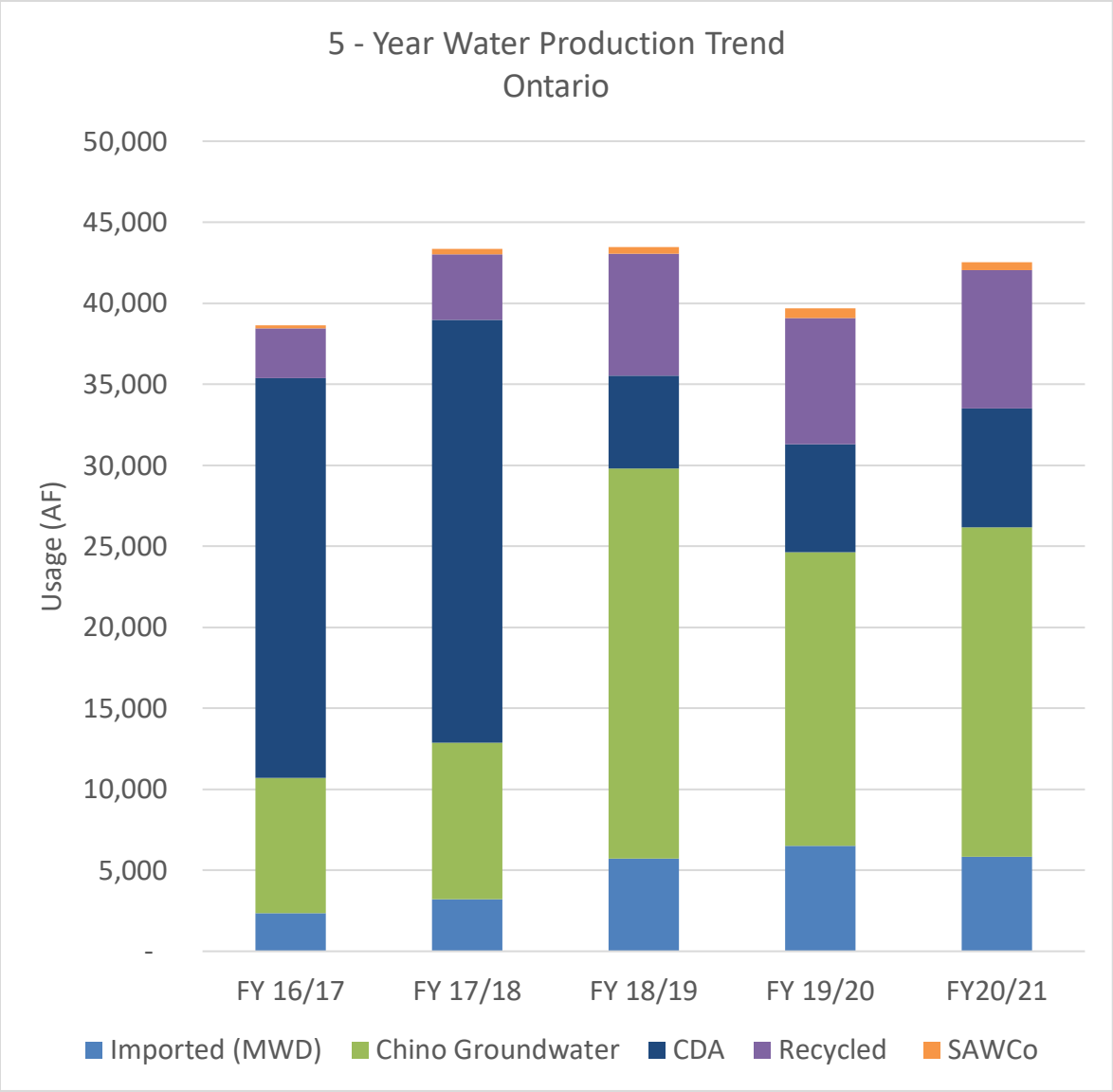

FWC FY20/21 Water Usage
USage (AF)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
July
August
September
October
November
December
January
February
March
April
May
June
866
565
825
59
833
1,097
1,149
464
757
59
833
1,093
1,083
483
486
56
833
1,058
930
531
1,250
43
1,074
937
539
610
24
953
805
464
944
28
807
739
461
384
17
991
712
468
593
12
639
747
296
521
14
1,090
778
314
1,187
31
975
765
261
1,543
36
1,091
737
188
1,964
45
1,053
Imported Water (MWD)
Imported Groundwater (DYY)
Recycled (Direct Use)
Chino Groundwater
Local Surface Water
Other Groundwater

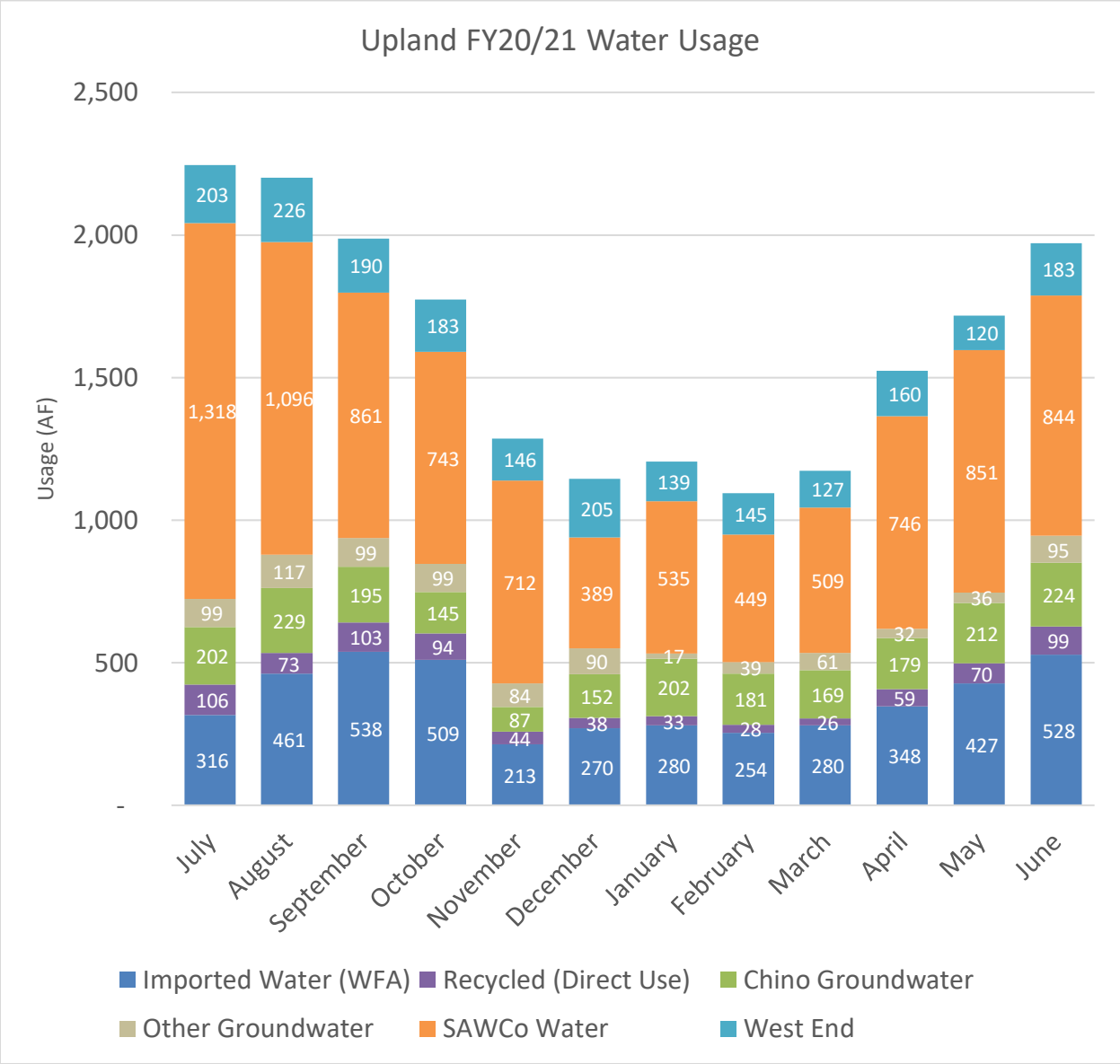

5 - Year Water Production Trends
FWC
Usage (AF)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
39
3,230
10,338
13,251
8,510
10,725
2,735
11,392
176
13,642
2,503
11,280
9,961
12,075
4,957
12,997
10,427
9,212
5,033
10,247
11,065
2,500
11,923
Imported (MWD)
Imported Groundwater (DYY)
Chino Groundwater
Other Groundwater
Surface
Recycled

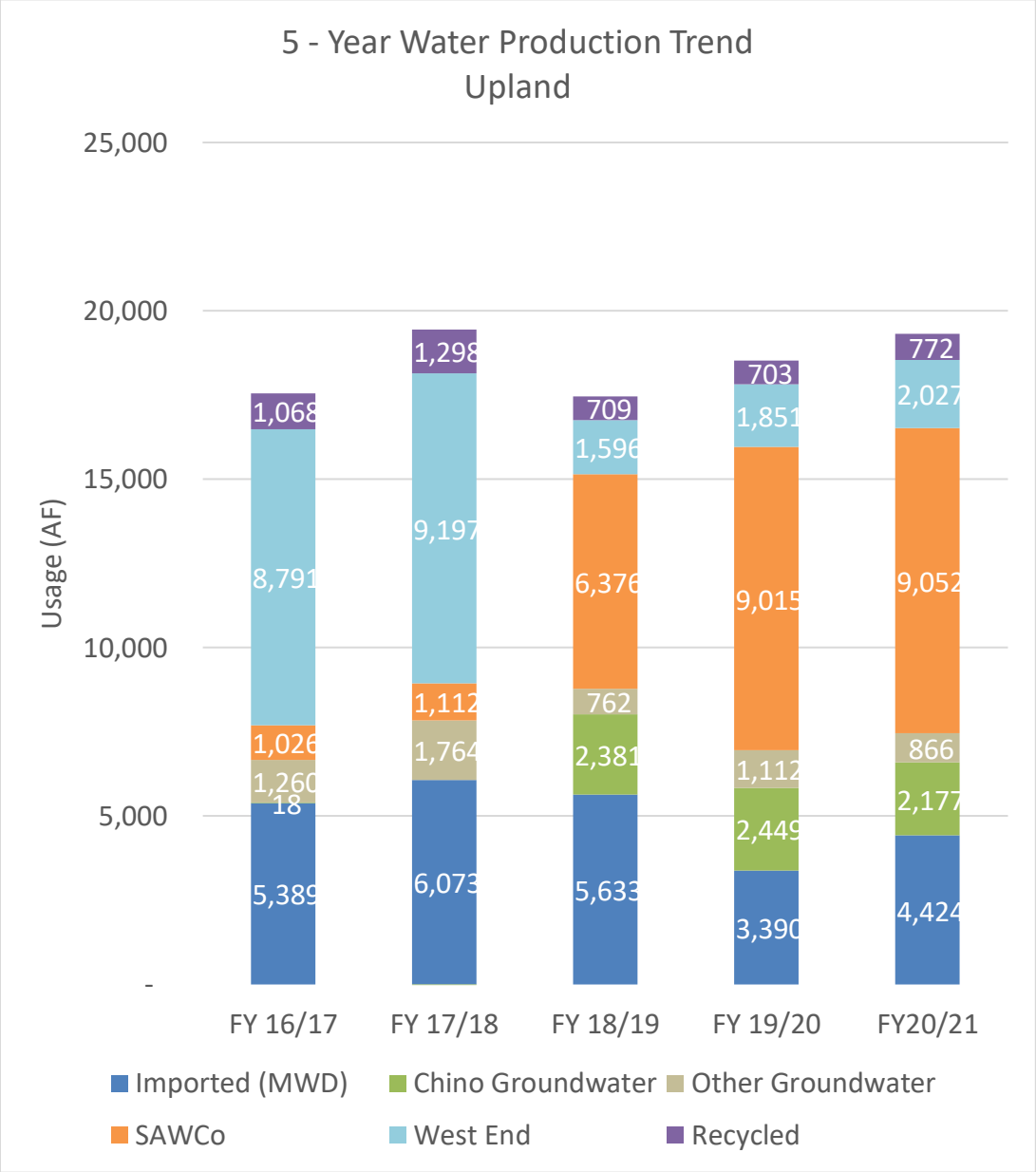

MVWD FY20/21 Water Usage
Usage (AF)
2,500
2,000
1,500
1,000
500
-
(500)
(1,000)
(1,500)
July
August
September
October
November
December
January
February
March
April
May
June
984
40
779
(947)
990
38
906
(1,037)
922
42
849
(1,015)
973
33
652
(833)
824
29
411
(543)
947
15
186
(524)
574
19
251
(317)
503
16
334
(353)
623
9
327
(408)
986
18
277
(634)
963
29
568
(819)
930
53
591
(719)
Imported Water (WFA)
Recycled (Direct Use)
Chino Groundwater
Chino Hills


5 - Year Water Production Trend
MVWD
25,000
20,000
15,000
10,000
5,000
-
(5,000)
(10,000)
Usage (AF)
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
Imported (MWD)
Chino Groundwater
Chino Hills
Recycled


Ontario FY20/21 Water Usage
Usage (AF)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
July
August
September
October
November
December
January
February
March
April
May
June
47
46
45
45
44
28
44
41
44
42
34
40
531
536
506
768
675
799
746
566
587
463
542
619
2,168
2,311
2,123
1,940
1,573
1,485
1,082
1,127
1,255
1,704
1,691
1,841
981
1,095
913
751
778
589
562
300
424
608
746
796
683
682
620
383
312
239
287
256
370
509
737
773
Imported Water (WFA)
Recycled (Direct Use)
Chino Groundwater
CDA
SAWCo Water


5 - Year Water Production Trend
Ontario
Usage (AF)
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
Imported (MWD)
Chino Groundwater
CDA
Recycled
SAWCo


Upland FY20/21 Water Usage
Usage (AF)
2,500
2,000
1,500
1,000
500
-
July
August
September
October
November
December
January
February
March
April
May
June
203
1,318
99
202
106
316
226
1,096
117
229
73
461
190
861
99
195
103
538
183
743
99
145
94
509
146
712
84
87
44
213
205
389
90
152
38
270
139
535
17
202
33
280
145
449
39
181
28
254
127
509
61
169
26
280
160
746
32
179
59
348
120
851
36
212
70
427
183
844
95
224
99
528
Imported Water (WFA)
Recycled (Direct Use)
Chino Groundwater
Other Groundwater
SAWCo Water
West End


5 - Year Water Production Trend
Upland
25,000
20,000
15,000
10,000
5,000
-
Usage (AF)
1,068
8,791
1,026
1,260
18
5,389
1,298
9,197
1,112
1,764
6,073
709
1,596
6,376
762
2,381
5,633
703
1,851
9,015
1,112
2,449
3,390
772
2,027
9,052
866
2,177
4,424
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY20/21
Imported (MWD)
Chino Groundwater
Other Groundwater
SAWCo
West End
Recycled

IEUA
Energy Report

FISCAL YEAR 2020/21

Strategic Planning and Resources

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

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IEUA Energy Portfolio

Executive Summary

The 2020/21 Energy Report tracks IEUA's energy consumption and portfolio, renewable generation performance and savings, and energy efficiency projects for the fiscal year. The report includes a brief description of upcoming projects and initiatives that will be implemented over the next few years.

IEUA's energy portfolio included:

- Imported Electricity
- Solar Energy
- Wind Power
- Battery Storage
- Biogas
- Natural gas

2020/21 IEUA's energy use

- Total Electricity consumption: 81,119 MWh of electricity
- Renewable Energy: 8,096 MWh (10% of total electricity)
- Annual energy expenses: $9.7 million [imported electricity, renewable energy, natural gas, and energy management services]
- Renewable energy savings since 2008: $1,143,000.

Did you know?

*In 2019 a typical U.S. household used 11,880 kWh**

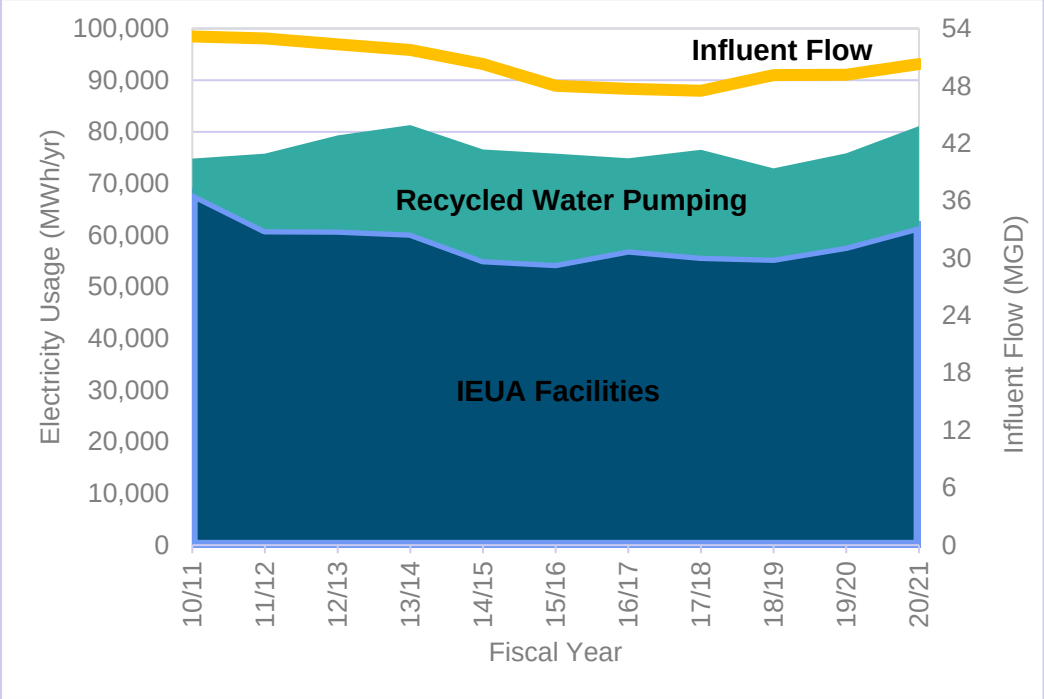
The renewable energy generated by IEUA would be able to provide electricity to at least 682 homes.

Source: U.S. Energy Information Administration

Flow and Energy Consumption

- In 2020/21, the annual average influent flow to the regional water recycling plants was 50.3 MGD which was an increase of 2.3% as compared to the previous fiscal year of 49.2 MGD (Figure 1).
- In 2020/21, IEUA facilities, which include the regional water recycling plants, composting facility, and recycled water pumping, used approximately 81,119 MWh of electricity (Figure 1). The electricity consumption for 2020/21 increased by 7.2% as compared to the previous fiscal year of 75,703 MWh. This was due to the increased recycled water pumping and groundwater recharge activity.

Figure 1: IEUA Electricity Use and Regional Influent Flows



Expenditure

- The cost of electricity remains the highest non-labor operations and maintenance (O&M) expenditure for IEUA. In 2020/21, the annual cost for energy related utilities and energy management was $9.7 million compared to the previous fiscal year of $7.6 million due to more power consumption, Southern California Edison (SCE) rates increase, and rising energy costs in California. IEUA has a diversified energy procurement approach, that includes on-site generation Power Purchase Agreements (PPA), energy demand management, electricity purchase from Southern California Edison, and direct access contract with Shell Energy North America, that continues to provide rate stabilization and cost effectiveness.

Renewable Energy Production and Storage

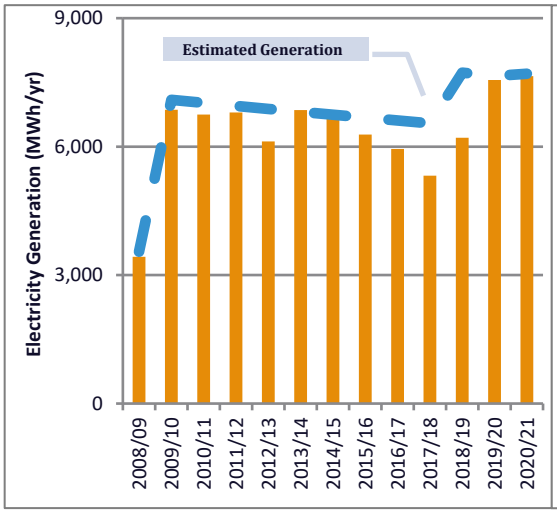
- IEUA's diverse renewable portfolio consists of 5.0 MW solar, 1.0 MW of wind, 3.0 MW of engines, and 4.0 MW battery (Figure 2). The battery storage optimizes energy management by charging from the grid during off-peak periods and discharging during on-peak periods, therefore it is not considered as onsite generation. In order to increase onsite renewable generation, IEUA plans to complete the installation of the necessary emissions control required by South Coast Air Quality Management District to have the Renewable Energy Efficiency Project (REEP) engines operating as part of the RP-5 Expansion project.

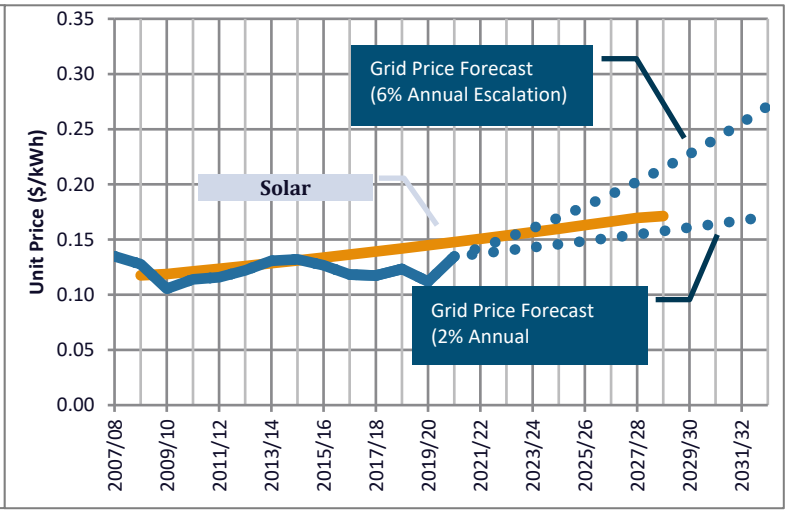
Figure 2: IEUA's Diverse Renewable Portfolio

- In 2020/21, 8,096 MWh of electricity was generated onsite, 2.9% more than 2019/20. The increase is due to the 70 kw of rooftop solar on the RP-5 lab operating for a full year and increase in the wind turbine energy production.
- IEUA's renewable portfolio generated 10% of the electricity used in 2020/21. Of the electricity consumed by IEUA;
    - 7,645 MWh was produced by the solar across IEUA facilities; and
    - 451 MWh was produced by the wind turbine at RP-4.

- Despite PPA average rates being typically higher than the average grid price in 2020/21, renewable energy projects provided overall $99,000 in savings, as a result of lower standby charges compared to the facility demand charge rate.
- Generated solar electricity varies throughout the year due to the different number of sunlight hours, solar generation is usually higher in the summer and lower in the winter.
- The REEP engine has been offline since August 2017, operation is expected to restart the engine subsequent to the completion of the RP-5 Biosolids Facility project and the installation of the emission control equipment, which is anticipated in 2025.
- In 2015, IEUA partnered with Advanced Microgrid Solutions (AMS) through an energy management services (EMS) agreement to install 4 MW of battery storage and 1.5 MW of solar to optimize energy management and achieve cost savings through strategic procurement. The RP-1, RP-5, and CCWRF battery storage systems started commercial operation in November 2018, and the RP-4 and IERCF battery storage and solar system began commercial operation in March 2019. All facilities have completed their second year of operation. As of April 2020, the battery systems are now being operated and maintained by Enel X.

Solar across IEUA facilities generated 7,645 MWh of renewable energy, **1.2% more than 2019/20.** The slight increase in output was due to the IEUA-owned 70 kw of rooftop solar on the RP-5 lab operating for a full year.





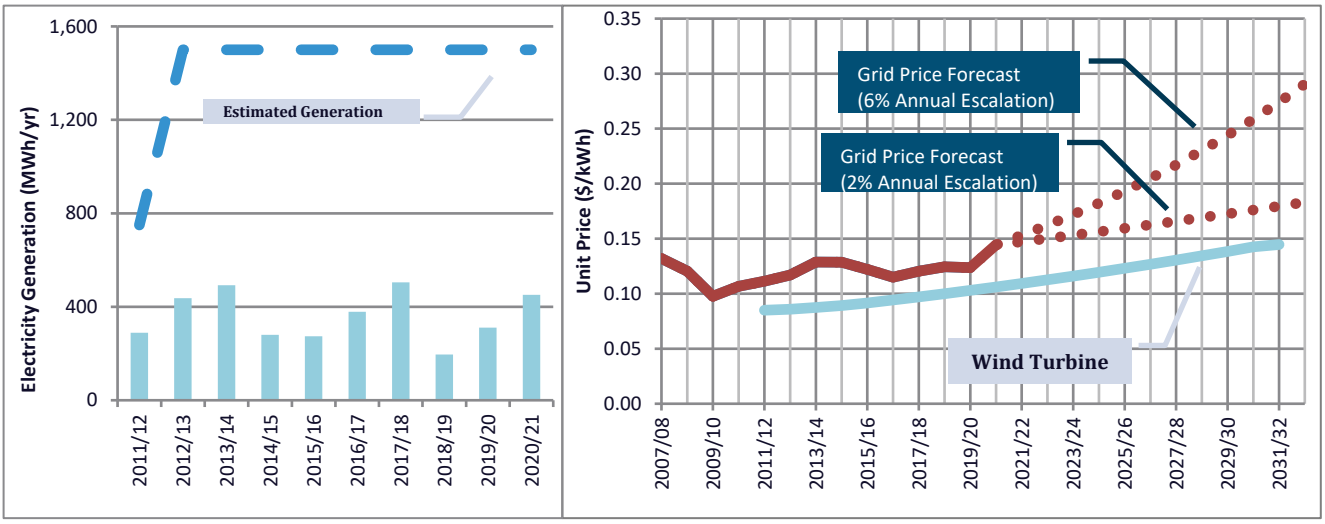
For 2020/21, the SunPower PPA rate or the solar was higher than the average grid price. However, the solar projects provided approximately $82,000 in savings, as a result of lower standby charges compared to the facility demand charge rate. The current SunPower PPA will expire in 2029. Staff will negotiate with the provider to extend the contract or purchase the solar, if cost-effective for the Agency.

Solar generated an overall savings of $332,000 from 2008/09 to 2020/21

Table 1: Savings from Solar Power PPA

Savings FY 08/09 – FY 20/21	$332,000
Range of Savings PPA Term (FY 08/09 – FY 28/29)	$721,000 (2% Esc) $1,815,000 (6% Esc)

Wind turbine at RP-4 generated 451 MWh of renewable energy, **45% higher than 2019/20** due to the system being online during the entire fiscal year. For 2020/21, the PPA rate for the wind turbine was 20% lower than the average grid price. The wind turbine provided approximately $17,000 in savings.

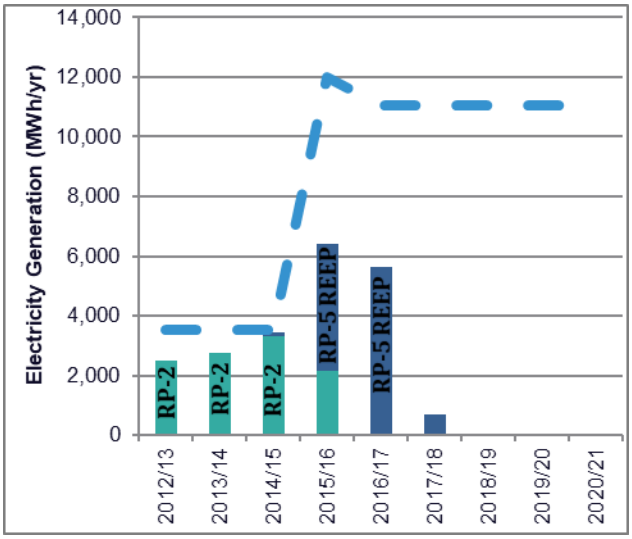


Wind generated $101,000 in savings from 2011/12 to 2020/21.

Table 2: Savings from Wind Power

Savings FY 11/12 – FY 20/21	$101,000
Range of Savings PPA Term (FY 11/12 – FY 31/32)	$243,000 (2% Esc) $422,000 (6% Esc)

Renewable energy was not generated by the REEP engines since the RP-5 Solids Handling Facility was not operational the entire fiscal year. The REEP engines at RP-5 were put offline in August 2017. **The engines are expected to go back online in 2025 after the completion of the RP-5 Biosolids Facility project**, and the installation of the SCAQMD required emission controls.



Battery Storage + Solar Performance

The AMS battery storage at RP-1, RP-5 and CCWRF (2.5 MW combined) started commercial operation in November 2018, and the 1.5 MW battery storage at RP-4 and 1.5 MW of solar at IERCF started commercial operation on March 2019. In the second year of commercial operation, **RP-1, RP-5, and CCWRF experienced a combined average demand reduction of 509 kW** during on-peak hours with a total bill savings of $99,000. While the system at **IERCF and RP-4 achieved an average demand reduction of 483 kW during on-peak hours and solar generation of 2,165 MWh** with a total bill savings of $255,000 in the second term year. Since the minimum guaranteed savings per the contracts were not met, the battery system owners reconciled the remainder of the expected savings to the Agency.

The battery storage systems incurred an $354,000 in savings during year 2 of operation.

Energy Efficiency Projects

- IEUA continues to work with Southern California Edison and Southern California Regional Energy Network (SoCalREN) to conduct comprehensive energy audits and to implement projects to reduce electricity consumption and demand throughout its facilities and operations. In FY 20/21, the following process optimization project was completed:
  - RP-1 1158 Recycled Water Pump Station Upgrade
    - Completed: September 2020
    - Expected annual savings: 927,000 kWh and $116,000
    - Incentive: $86,000
      Avoided power usage: 81 kW
- Since the start of the partnership in 2015, the Agency's implementation of energy efficiency projects has accumulated:
    - Expected annual savings: 5,236,000 kWh and $615,000
    - Incentive: $491,000
    - Avoided power usage: 474 kW

Other Projects

RP-1 SCE Primary Metering Cabinet Replacement

- In April 2021, SCE with the support of IEUA staff replaced the primary metering cabinet at RP-1 to improve safety and reliability.

RP-5 Solids Handling Facility (SHF) Feasibility Study

- IEUA conducted a business case study to evaluate future uses of the RP-5 SHF, developing the following project alternatives:
    - Status quo – Idle assets and land
    - Lease for organics processing
    - Sell for organics processing
    - Lease as logistics hub
    - Sell as logistics hub
- The study concluded that the preferred alternative at this time is the Status Quo because of the benefits of using the facility as a construction staging site and contractor parking area for the RP-5 Expansion Project, and the costs associated with moving the RP-5 expansion contractor elsewhere.

Upcoming Projects

Aeration Blower Replacement

- These projects will replace the existing aeration blowers with energy efficient blowers at RP-4 and CCWRF, which are expected to be completed in February 2022 and November 2023, respectively. In total, both projects are expected to save the Agency an estimated 1,900 MWh/year or $232,000/year.

CCWRF Odor Control Equipment Replacement

- The CCWRF Improvements project will replace the existing odor control system with biotrickling filters by November 2023. In addition to continuing to address plant odor, the measure will also provide energy savings of about 247 MWh/year or $31,000/year.

Process Optimization

- Automated ammonia controls will be installed at RP-4 and CCWRF by June 2022 and November 2023, respectively. The ammonia controls will optimize operation and reduce power consumption of the aeration blowers. These projects would result in an estimated savings of 570 MWh/year or $71,000/year.

SCE Charge Ready 2 Program

- Through the Charge Ready 2 program, SCE will design, construct, and install electric vehicle (EV) charging infrastructure. The customer is only required to purchase and install the EV chargers. IEUA has submitted applications for charging infrastructure across 4 facilities.

Beneficial Use of Biogas

- IEUA evaluated opportunities to beneficially use the biogas generated at RP-1 in addition to onsite use for digesters heating. Staff plans on updating the study to consider new technologies, and incorporate recent changes in funding, capital and energy costs.

Other Energy Related Activities

Isle Energy Management & Optimization Partnership

- IEUA has partnered with Isle Utilities along with several agencies nationwide to discuss the challenges and successes of implementing energy optimization projects. Isle will invite vendors who will propose successful technologies and practices to reduce and optimize energy usage and onsite renewable generation.

Statewide Grid Emergency

- In August and September 2020, the State of California experienced extreme heat waves resulting in investor-owned utilities requesting their customers to reduce their load during peak hours to avoid rotating power outages. IEUA responded by shifting 2 MW of load and the battery storage discharged 1 MW to lessen the strain on the grid. Due to the likelihood of future extreme heat events occurring, the California Public Utilities Commission (CPUC) created the Enhanced Statewide Emergency Load Reduction Program, which is a demand response program that compensates customers for reducing loads during these events. IEUA explored the viability of participating in the program. Since IEUA is currently enrolled in other demand response programs with the battery storage systems, the Agency is not eligible for dual participation.

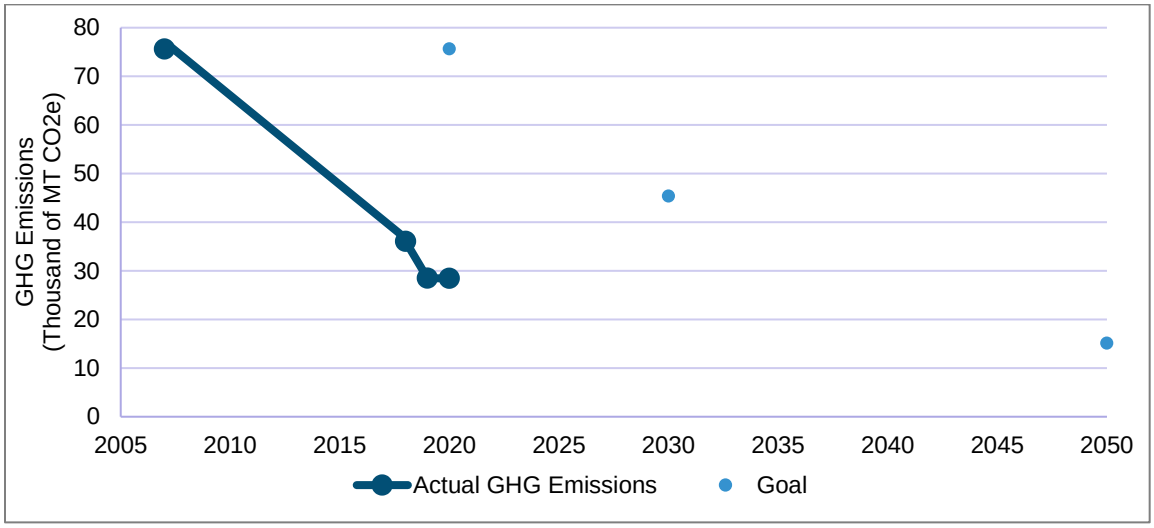
SCE Rate Increases

- During the FY 2020/21, SCE increased their rates by an estimated 20% based on facility billing. In mid-August 2021, the California Public Utilities Commission approved an additional 8% increase in rates that is expected to be implanted in Fall 2021. Staff is working with SCE to validate the billing accuracy and will continue to collaborate with the utility to enroll in the most cost-effective available rate.

Climate Change Action Plan

- In 2018, IEUA staff developed a Climate Change Action Plan that described the vision and direction needed to bolster IEUA's water management system and minimize its carbon footprint. IEUA is following AB 32 standards using the oldest emission baseline data available to reduce GHG levels to 2007 levels by 2020, 40 percent below 2007 levels by 2030, and 80 percent below 2007 levels by 2050. 2020 greenhouse gas emissions (GHG) were similar to 2019, which is 62% below the 2007 baseline levels.

Figure 3: Greenhouse Gas Emissions Actuals and Goals



- IEUA is planning to implement capital projects and will continue to optimize operations and maintenance activities to allow the Agency to continue to prepare its system for the effects of climate change by focusing on increasing the use of zero-carbon energy sources and reducing energy consumption. The majority of the projects being explored fall into four categories, solar, hydropower, biogas (renewable methane), and energy efficiency. The current list of projects being explored by IEUA, are in varying degrees of planning and review with some being feasible for pre-design as soon as 2022 while others are 10 or more years out.

- Potential projects
    - Solar: favorable outlook for the carport solar because of the forecasted SCE rate increase and higher facility load.
    - Hydropower: a feasibility study conducted in FY 19/20 at two proposed locations deemed the project to be not feasible. Staff will re-evaluate in the future.
    - Biogas: staff will update the RP-1 Beneficial Use of Biogas Feasibility Study to evaluate cost effective alternative consistent with the Agency's Business Goals.
    - Energy efficiency: multiple ongoing expected to be completed by 2023, RP-4 blowers and ammonia controls expected to be online in 2022.