Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Special Regional Sewerage Program Technical Committee Meeting & Workshop

AGENDA
Thursday, March 29, 2018
12:00 p.m.

Location
Inland Empire Utilities Agency
Koopman Conference Room – Building B
6075 Kimball Avenue
Chino, CA 91708

Call to Order and Roll Call

Additions/Changes to the Agenda

1. **Carollo Sewer Fee Evaluation Workshop**

2. **Action Items**
   A. Approval of the November 30, 2017, January 18 and February 22, 2018 Meeting Minutes
   B. Napa Lateral Design Build Contract Award
   C. City of Ontario Regional Connection Request

3. **Informational Items**
   A. FY 2018/19 Ten Year Capital Improvement Plan

4. **Receive and File**
   A. Draft Regional Policy Committee Agenda
   B. Building Activity Report
   C. Recycled Water Distribution - Operations Summary
   D. Pretreament Meeting Minutes
   E. Legislative Update

5. **Previous Technical Committee Items Requested**
   None.

6. **Other Business**
   A. IEUA General Manager's Update
   B. Committee Member Requested Agenda Items for Next Meeting
   C. Committee Member Comments

D. Next Workshop Meeting – April 11, 2018 at 12:00pm

7. Adjournment

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of this agenda has been posted to the IEUA Website at www.ieua.org and posted in the foyer at the Agency's main office at 6075 Kimball Avenue, Building A, Chino, CA, on Monday, March 26,2018.

Laura Mantilla

WORKSHOP

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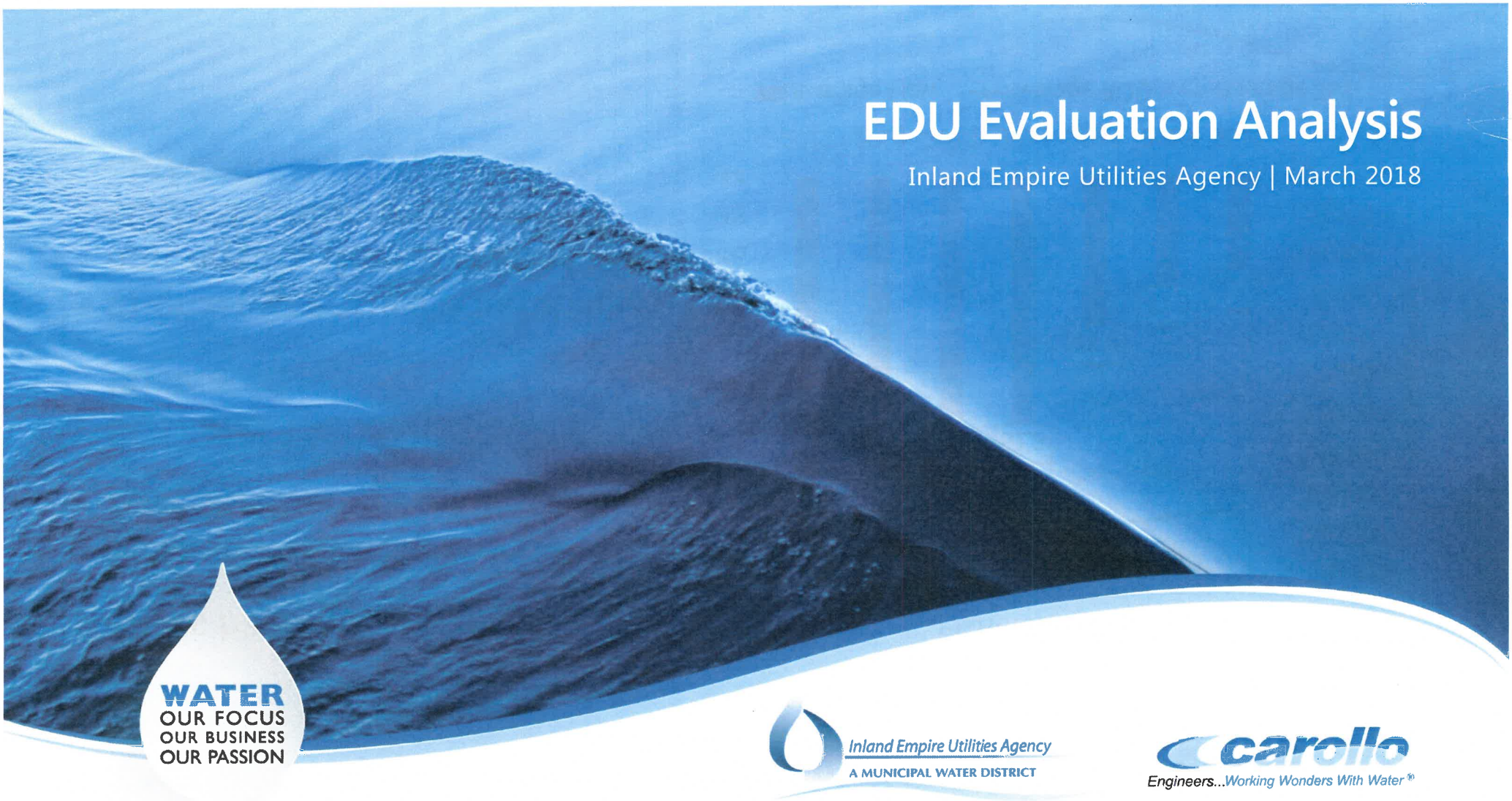

EDU Evaluation Analysis

Inland Empire Utilities Agency | March 2018

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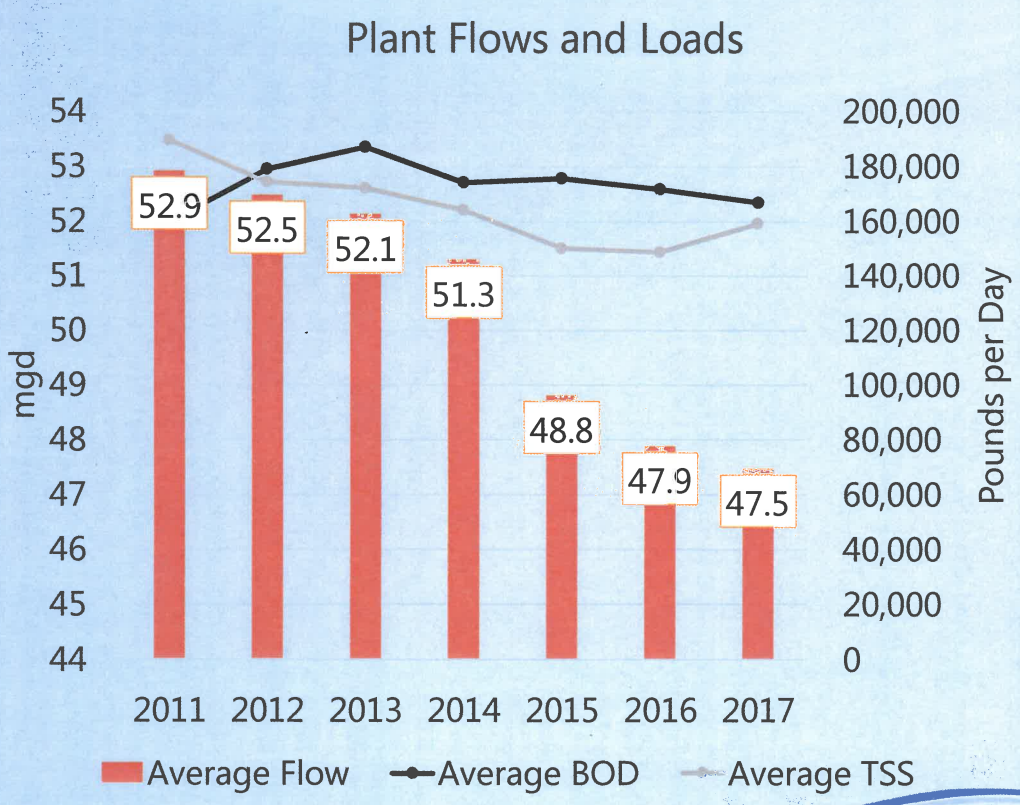
Flows and loads have changed significantly

- Flows have fallen over 10%
- BOD and TSS concentrations have fluctuated
- BOD and TSS loads have also fluctuated
- In order to ensure equitability amongst customer classes the EDU definition must be updated



Connection Fee vs Monthly Billings: The goal of this project is to unify the assumptions used between the two methods

Exhibit J

- $EDU = \frac{F}{270} \times (0.37 + \frac{.31 \times BOD}{230} + \frac{.32 \times TSS}{220})$
- SFR = 1 EDU
- MFR = 1 EDU
- Commercial:
  - Flow determined through fixture counts
  - BOD & TSS predefined through 1 of 7 categories

Monthly Billing

- $EDU = \frac{F}{270} \times (0.37 + \frac{.31 \times BOD}{230} + \frac{.32 \times TSS}{220})$
- SFR = 1 EDU
- MFR = 0.7 EDU
- Commercial:
  - Flow determined through consumption data
  - BOD & TSS predefined through 1 of 9 categories


Data Collection

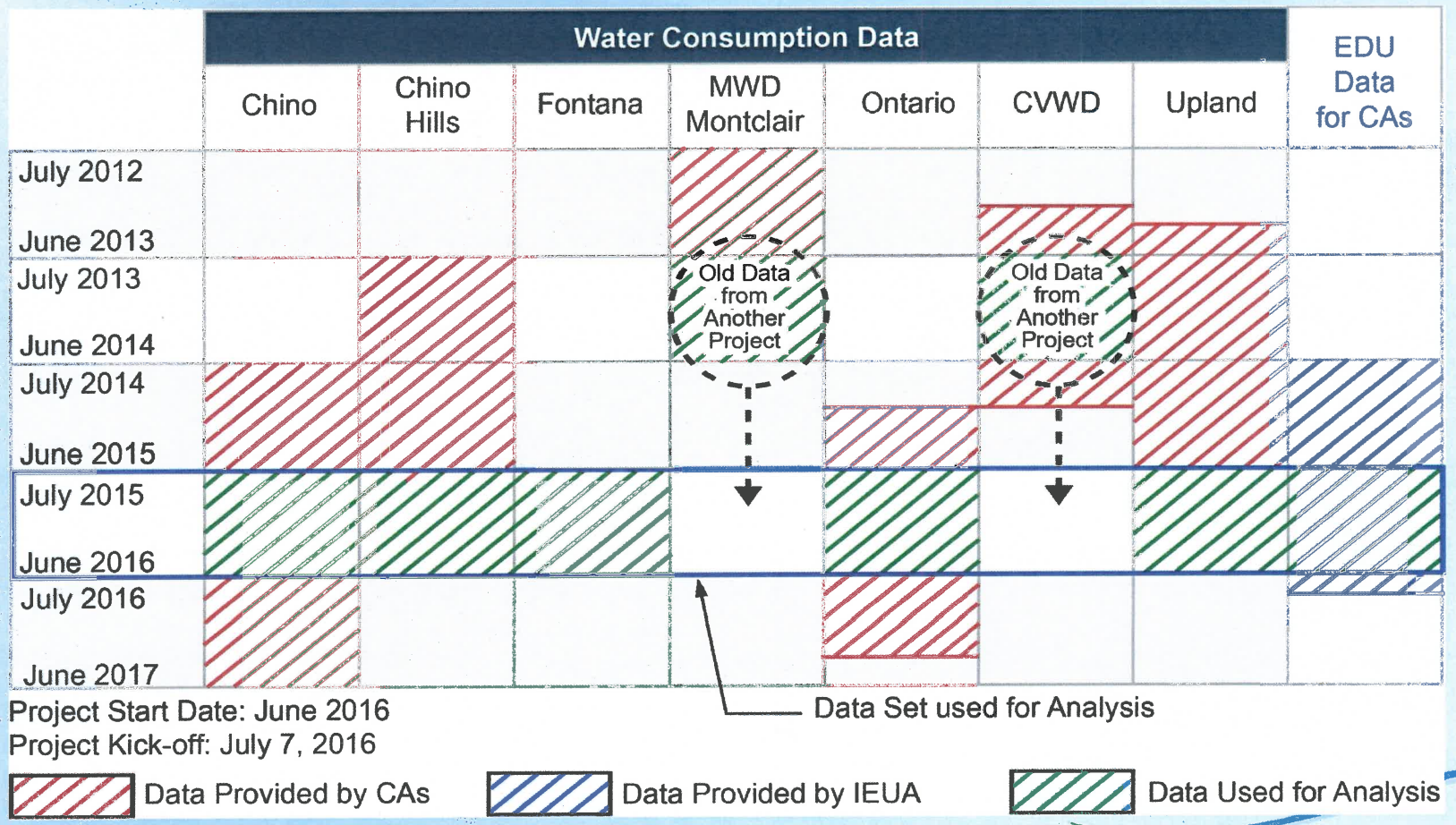
Multiple data sets were analyzed to aid the development of the Revised EDU Equation

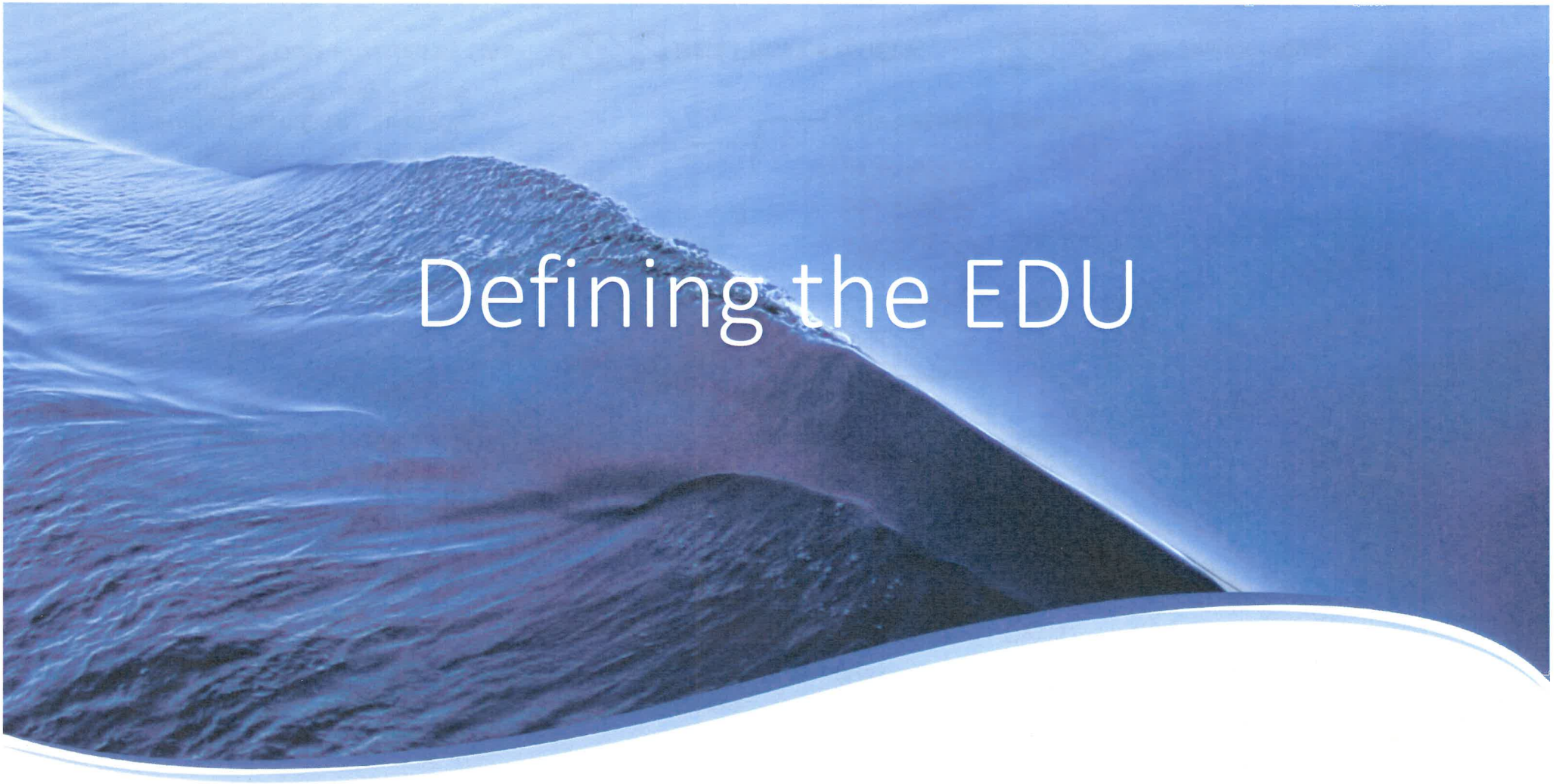
- Monthly Bills: Chino Hills, Chino, Ontario & Fontana
- Bi-Monthly Bills: Montclair, CVWD, Upland
- Plant Influent Loading Data: RP1, RP4, RP5, CCWRF
- EDU Reports from all member agencies
- Historical flow monitoring data
- Permitted industrial flow and load monitoring data

Water Consumption Data Summary

	Chino	Chino Hills	Fontana	Montclair	Ontario	CVWD	Upland
Monthly Billing Cycle	X	X	X		X		
Bi-Monthly Billing Cycle				X		X	X
Account ID		X		X	X	X	X
Meter Size	X	X	X	X	X		X
Usage	X	X	X	X	X	X	X
Start Date	July 2014	July 2013	July 2015	July 2012	January 2015	January 2013	May 2013
End Date	June 2017	June 2016	June 2016	June 2014	March 2017	December 2014	July 2016

Water Consumption Data




Defining the EDU

EDU Formula: What is the purpose of an EDU and how it is defined?

$$EDU = \left[A \left(\frac{Flow}{Flow_{SFR}} \right) + B \left(\frac{BOD}{BOD_{SFR}} \right) + C \left(\frac{TSS}{TSS_{SFR}} \right) \right]$$

- A, B, & C= Proportion of total O&M and net capital costs required for conveyance, treatment, disposal of wastewater attributable to Flow, BOD, & TSS respectively.
- 1 EDU is equivalent to the cost to treat the flow and loads of the typical SFR household.
- Allows a fair comparison of costs between different users of the system.

The Existing EDU formula was last updated in 1984

$$EDU = \frac{F}{270} \times \left(0.37 + \frac{0.31 \times BOD}{230} + \frac{0.32 \times TSS}{220}\right)$$

Assumptions

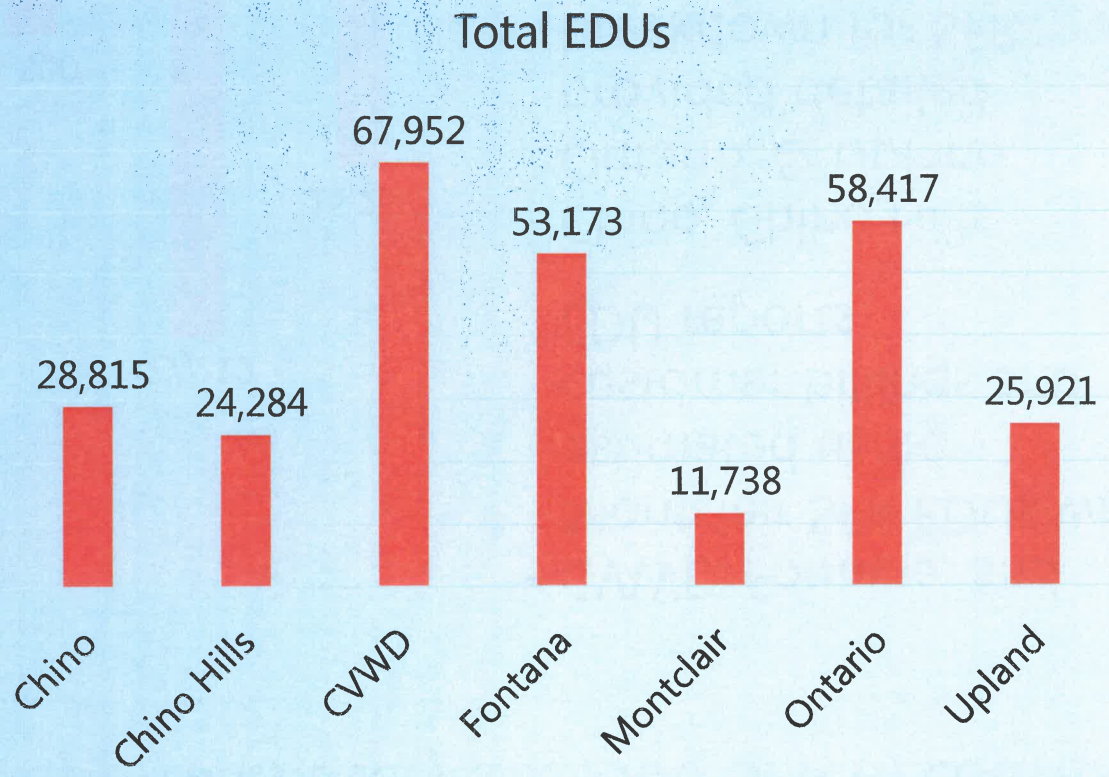
- Flow = 270 gpd
- BOD = 230 mg/L
- TSS = 220 mg/L

Load Implications

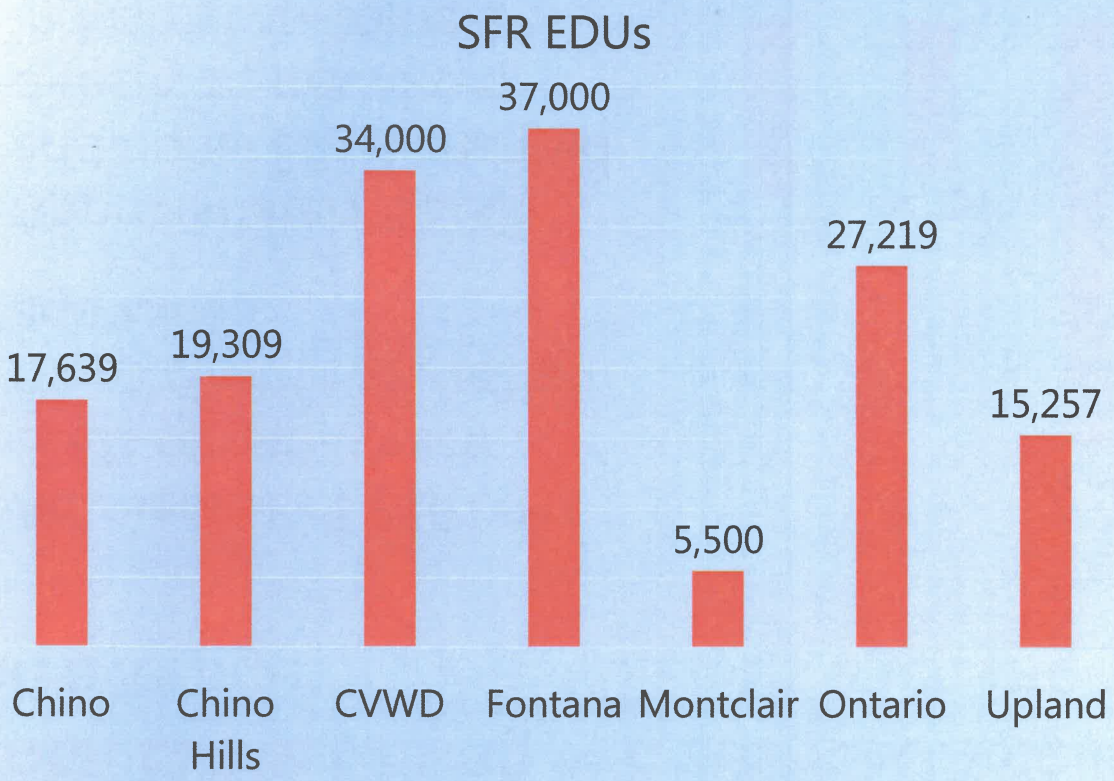
- 0.51 lb/d BOD
- 0.48 lb/d TSS

Total EDUs: During FYE 2016 IEUA collected revenue from an average of 274,500 EDUs each month

- An average of 270,00 EDUs remitted each month from contracting agencies
- Approximately 4,500 additional EDUs charged directly to permitted Industrial customers



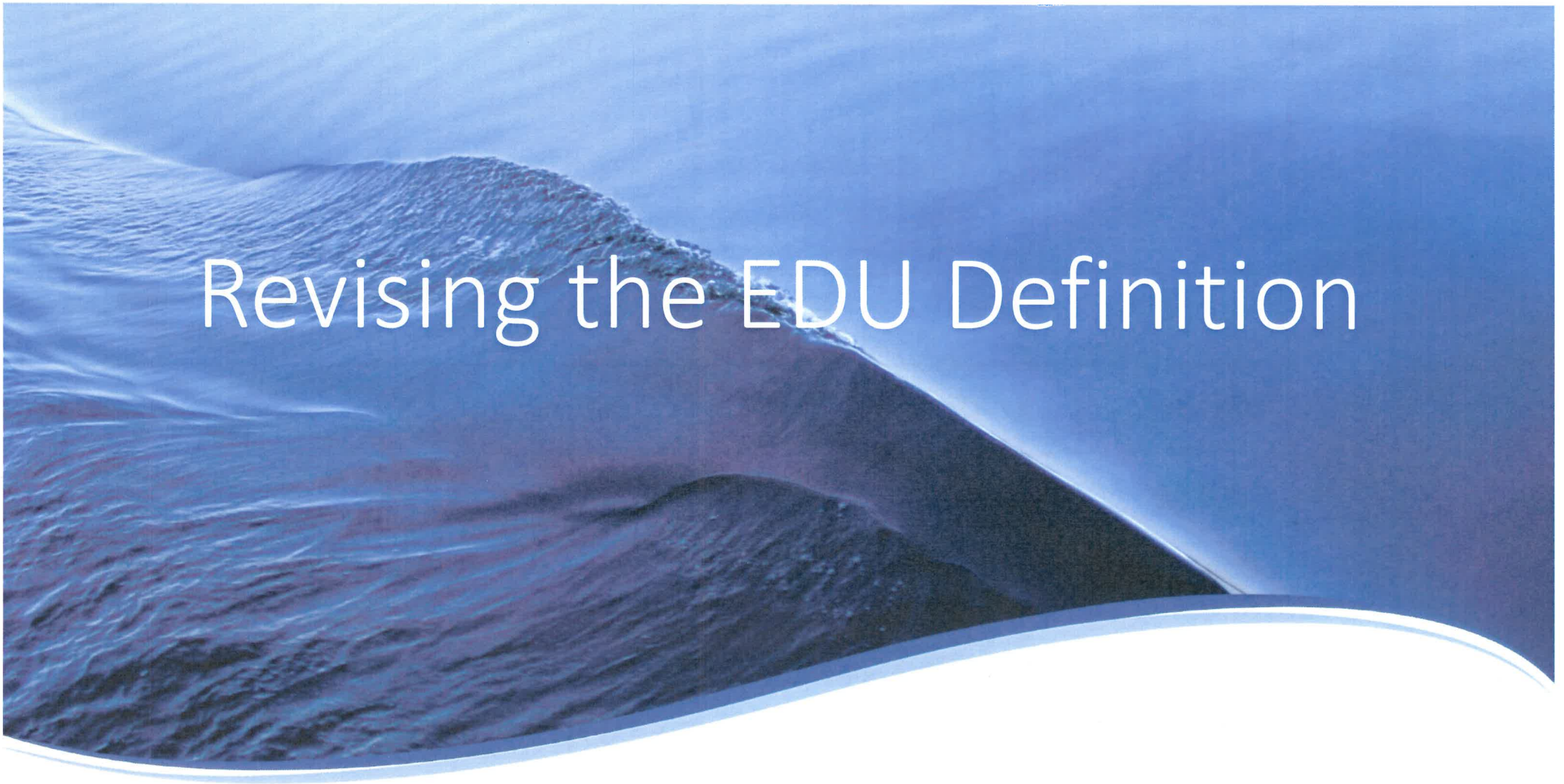
SFR EDUs: IEUA services approximately 155,000 SFR accounts each month



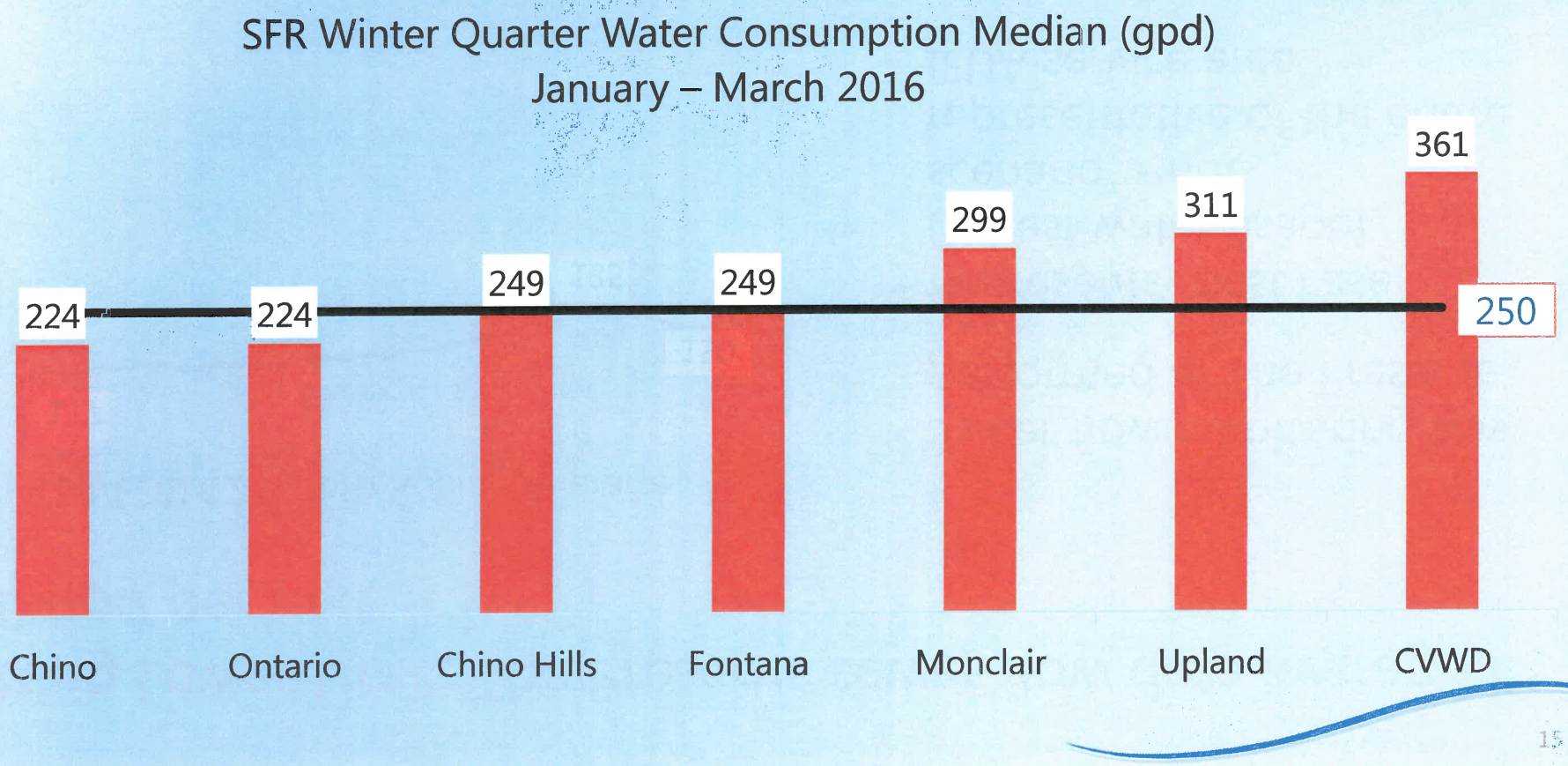
- CVWD, Fontana, and Montclair SFR EDUs were estimated using customer billings and EDU reports
- Chino, Chino Hills, Ontario, & Upland provided detailed breakdown for SFR

EDU Formula Implications: The Existing EDU formula appears to overestimate SFR flows and underestimate concentrations

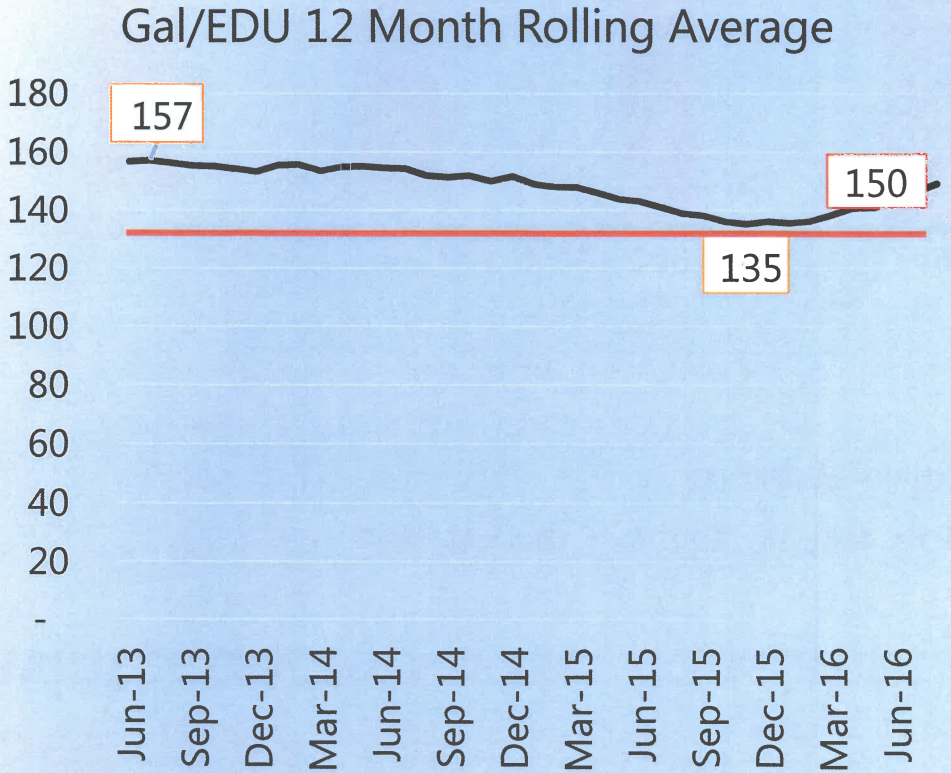
	EDUs	Flow *(mgd)*	TSS *(lbs/d)*	BOD *(lbs/d)*
FYE 2016 Plant Averages		48.1	149,000	172,000
SFR Only *(Based on EDU Formula)*	155,000	41.85	77,000	80,000
% Accounted for by SFR Customers	56.5%	86.2%	51.7%	46.5%
% Contributed by Remaining Customers	43.5%	12.8%	48.3%	53.5%


Revising the EDU Definition

Setting an Upper Limit: Typical sewer flows cannot exceed winter quarter water consumption

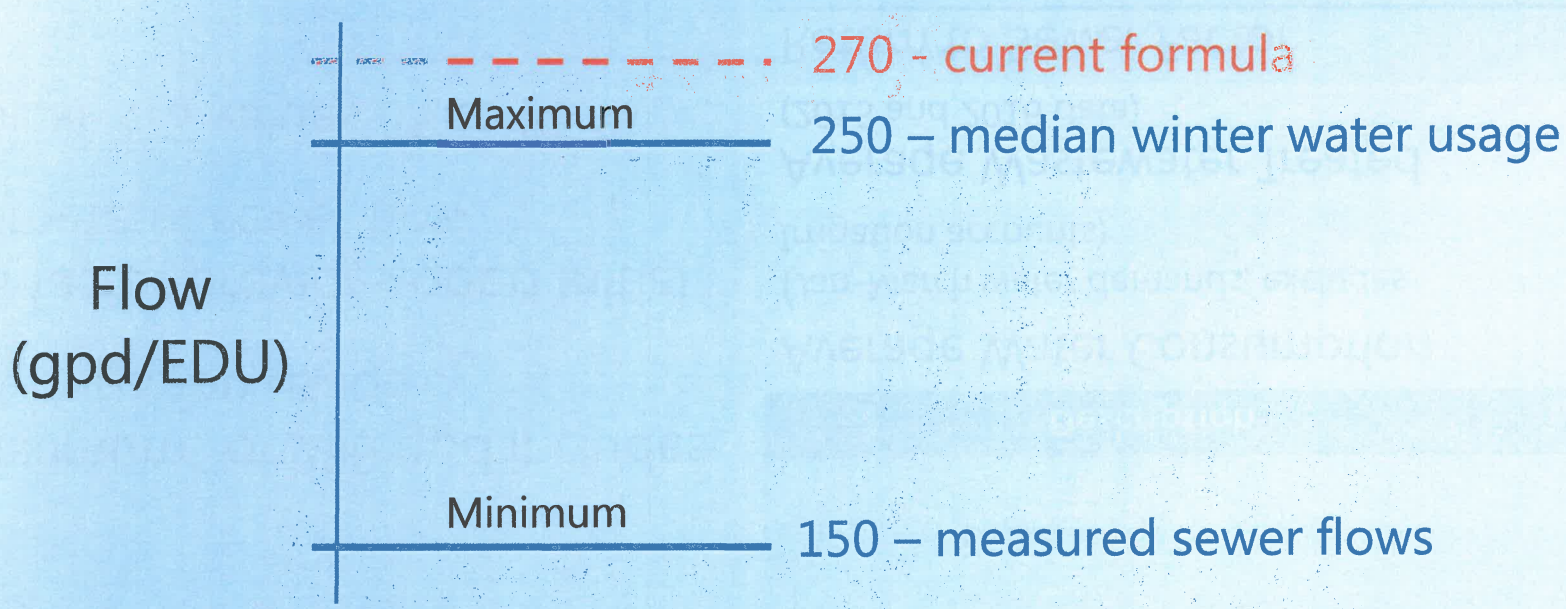


Setting Lower Limit: The Preserve sewer flow data averaged 150 gpd per unit



- Sewer flow monitoring was performed at The Preserve
- Represents "best case (lowest water usage) scenario" - not representative of the entire IEUA service area

Selected EDU Flow value must lie between the maximum and minimum



Return to Sewer factor (RTS) provides an initial estimate of actual sewer flows based on water consumption

- "Maximum" of 250 gpd includes SFR irrigation usage
- RTS factor provides good initial estimate of sewer flow
- Typical RTS values 65 to 85 %

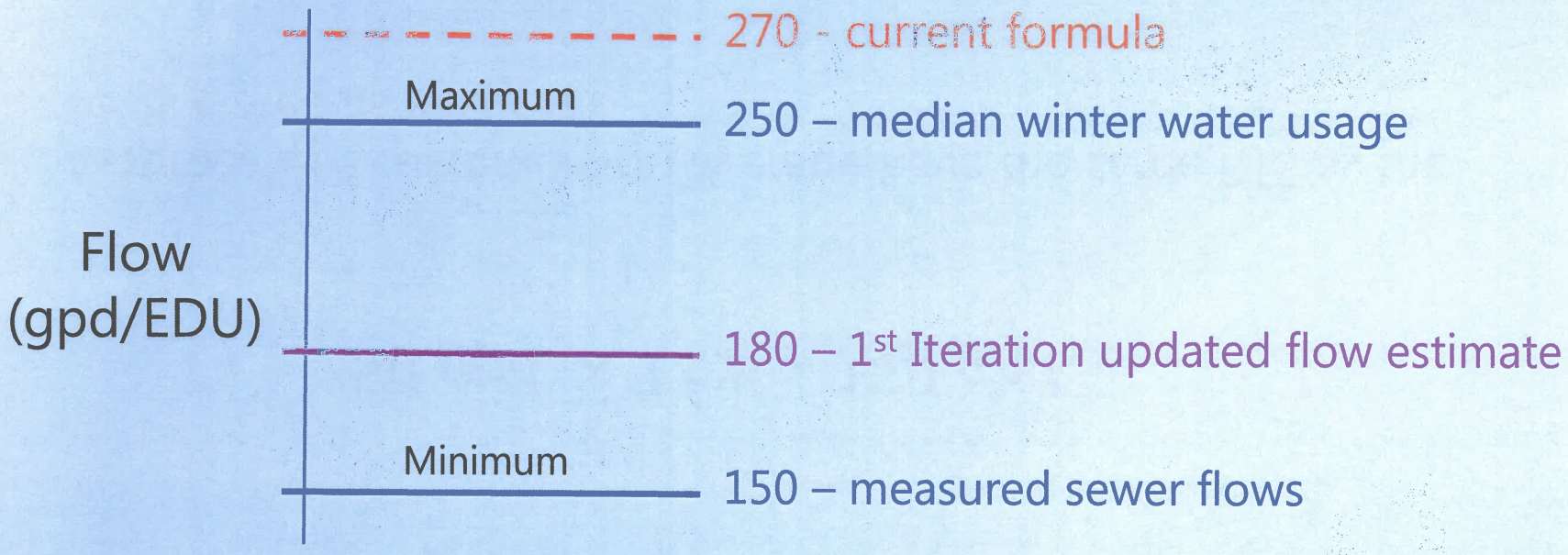
Description	Value
Average Water Consumption (Jan-March water demands, excludes Irrigation accounts)	68 mgd
Average Wastewater Treated (2015 and 2016 data)	49.2 mgd
Return to Sewer Factor	72%

Applying the estimated RTS factor to our "Maximum" value provides a reasonable 1st iteration estimate of sewer flow

$$250\ gpd \times 72\% = 180\ gpd$$

- Assumes SFR customers on average have the same RTS as the service area as a whole

Selected EDU Flow value must lie between maximum and minimum



1st Iteration estimate appears reasonable

BOD and TSS Loadings tend to be higher than in Orange County

- The Preserve = 0.4 lb/d for TSS and BOD (new development; probably low)
- 1996 OCSD Study – SFR = 0.51 lb/d BOD and 0.48 lb/d TSS
- Average people per household:
  - Orange County: 3.0
  - San Bernardino County: 3.3
- 0.56 lb/d BOD and 0.53 lb/d TSS – seem appropriate in this case (10% higher than SFR values for Orange County)

=> 370 mg/L for BOD and 355 mg/L for TSS

The formula must also account for how costs are incurred in the treatment process

	Flow	BOD	TSS	Total
Total IEUA Asset Value*	$276,273,054	$180,302,439	$114,170,620	$570,746,114
Proposed*	44%	34%	22%	100%
Existing	37%	31%	32%	100%

**2015 Cost of Services Study (Carollo)*

Proposed Updated EDU Equation (1st Iteration)

$$EDU = \frac{F}{180} \times \left(0.44 + \frac{0.34 \times BOD}{370} + \frac{0.22 \times TSS}{355}\right)$$

Current Formula:

$$EDU = \frac{F}{270} \times \left(0.37 + \frac{0.31 \times BOD}{230} + \frac{0.32 \times TSS}{220}\right)$$


Results

Results: Based on the Updated EDU Equation and FYE 2016 Flows and Loads IEUA would treat 4,500 fewer EDUs

Month	Flow (mgd)	BOD (mg/L)	TSS (mg/L)
July 2015	47.8	373.4	407.0
August 2015	48.3	341.5	367.5
September 2015	48.8	334	386
October 2015	48.5	332	350
November 2015	48.7	352	360
December 2015	48.5	358	377
January 2016	49.3	349	331
February 2016	47.9	381	377
March 2016	48.3	412	397
April 2016	47.4	464	405
May 2016	47.9	448	408
June 2016	46.1	421	362
Average	**48.1**	**385**	**372**

$$\frac{48.1M}{180} \times \left(0.44 + \frac{0.34 \times 385}{370} + \frac{0.22 \times 372}{355}\right)$$

=

270,000 EDUs

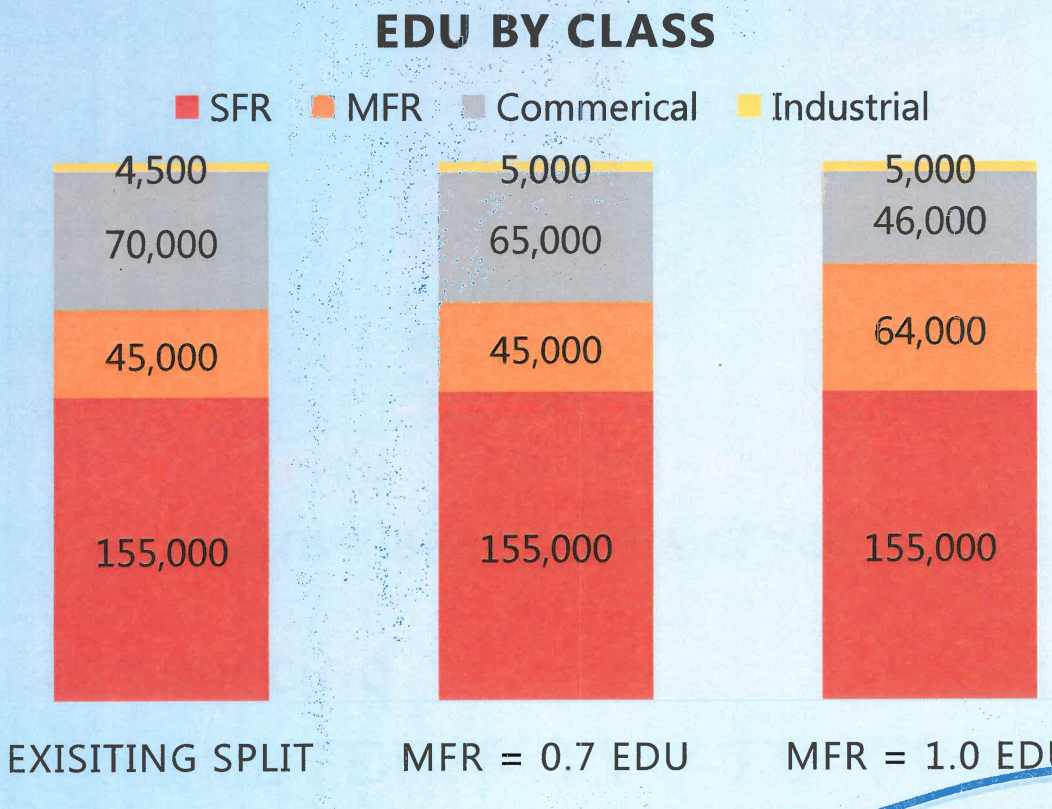
Old Formula =>274,500 EDUs

Results: The 270,000 EDUs can now be allocated amongst the various customer classes

155,000 SFR Units	155,000 EDUs
45,000 MFR Units	45,000 or 64,000 EDUs (depending on definition)
70,000 Commercial EDUs	65,000 or 46,000 EDUs (depending on definition)
4,500 Industrial EDUs	5,000 EDUs

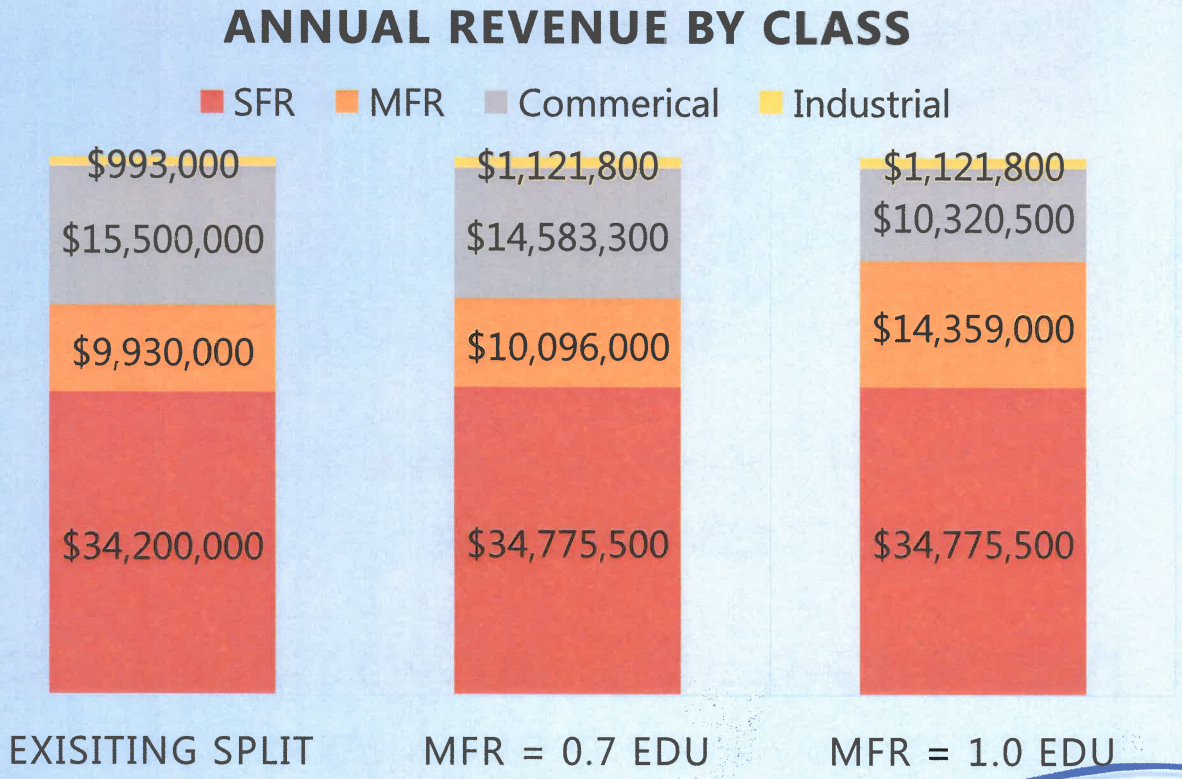
Monthly EDU Impact: Defining a MFR EDU as 0.7 vs 1.0 shifts the distribution of EDUs amongst classes given the updated definition

- Total EDUs attributed to MFR would increase by 42%
- Total EDUs attributed to Commercial customers is reduced by ~30%
- Commercial customers would pay less



Revenue Analysis: Defining a MFR EDU as 0.7 vs 1.0 also shifts the distribution of revenues collected

- Existing rate of $18.39/EDU would increase to $18.70/EDU to generate same revenue
- With less Commercial EDUs, Commercial would pay 29% less and MFR would increase 42%



Summary of Impacts of changing MFR = 0.7 to 1.0 EDU

- Changes the relative share of EDUs by customer class
- Significantly reduces the flows and loads attributed to commercial (and industrial) customers
- An additional 19,000 EDUs allocated to residential customers
- Changing from MFR = 0.7 to MFR = 1.0 would collect more revenue from residential customers

Empirical data suggests smaller BOD and TSS loads from MFR; supporting MFR = 0.7 EDU. But no recent measured data to support/refute MFR = 0.7 has been published.

Recommendation: Carollo proposes to update the EDU definition to reflect new flows and for MFR to be 0.7 EDUs

$$EDU = \frac{F}{180} \times \left(0.44 + \frac{0.34 \times BOD}{370} + \frac{0.22 \times TSS}{355}\right)$$

- SFR = 1 EDU
- MFR = 0.7 EDU
- Commercial: TBD as part of next steps


Q&A

MFR Benchmarking: High level analysis was performed to test the reasonableness of the existing MFR weighting

ONTARIO	SFR	MFR
EDUs Billed	27,300	13,750
Living Units	27,300	20,000
Total Daily Consumption	7.4 MGD	3.4 MGD
Usage per Unit	271 gpd	171 gpd
Percent of SFR	100%	63%

UPLAND	SFR	MFR
EDUs Billed	15,250	8,450
Living Units	15,250	12,000
Total Daily Consumption	5.1 MGD	2.4 MGD
Usage per Unit	335 gpd	197 gpd
Percent of SFR	100%	59%

Inland Empire Utilities Agency

TECHNICAL MEMORANDUM 1 - SEWER USE FEE EVALUATION

FINAL | February 2018

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Inland Empire Utilities Agency

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Inland Empire Utilities Agency

TECHNICAL MEMORANDUM 1

SEWER USE FEE EVALUATION

Digitally signed by Bryce L. Weissert Jr.
Contact Info: Carollo Engineers, Inc.
Date: 2018.02.08 09:14:17-08'00'

REGISTERED PROFESSIONAL ENGINEER
BRYCE L. WEISSERT, JR.
No. 41239
CIVIL
STATE OF CALIFORNIA

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Abbreviations

BOD	biochemical oxygen demand
CA	contracting agency
Carollo	Carollo Engineers, Inc.
EDU	equivalent dwelling unit
gpd	gallons per day
IEUA	Inland Empire Utilities Agency
lbs/d	pounds per day
MFR	multi-family residences
mg/L	milligrams per liter
mgd	million gallons per day
RTS	return to sewer
SFR	single family residence
TM	technical memorandum
TSS	total suspended solids

Technical Memorandum 1

SEWER USE FEE EVALUATION

1.1 Purpose and Background

1.1.1 Purpose

Inland Empire Utilities Agency (IEUA) retained Carollo Engineers, Inc., (Carollo) to conduct an evaluation of the existing equivalent dwelling unit (EDU) definition and how it is applied in rate and fee applications. This study is designed to fully evaluate and recalculate IEUA's EDU formula and how it is applied to connection fees and monthly sewer charges. As customers continue to become more efficient and water-wise, the current EDU formula no longer reasonably corresponds with the flows and biochemical oxygen demand (BOD) and total suspended solids (TSS) loads that are seen at the wastewater treatment plants.

1.1.1.1 Background

IEUA provides sewage treatment and wholesale potable and recycled water to customers in western San Bernardino County. IEUA is contracted to provide sewage treatment to seven different retail agencies with a service population of approximately 875,000. These agencies are the cities of Chino, Chino Hills, Ontario, Upland, Montclair, and Fontana, and Cucamonga Valley Water District (serving Rancho Cucamonga). These agencies will hence be referred to as contracting agencies (CAs).

As sewer flows are typically not metered or monitored, Carollo and IEUA worked with each of the CAs to obtain relevant data for this analysis. In the case of estimated sewer flows which discharge into the IEUA system, water usage is used as the basis in order to determine eventual sewer flow. Five of the seven CAs provide both water and sewer service, so water usage data was available. For the two agencies that do not provide both water and sewer service (Cities of Fontana and Montclair), water usage data from the corresponding water providers, Fontana Water Company and Monte Vista Water District was provided.

Each water purveyor provided a unique dataset that included different levels of detail and spanned different time periods. A summary of the data provided by each of the purveyors is included in Table 1.1 and in Figure 1.1. As shown, the data spanned the period of July 2012 to June 2017. The actual range of data provided by each CA is shown in the table, and graphically depicted in the figure. Appendix A includes raw flow and strength data for the treatment plants and The Preserve. IEUA also provided Carollo with each of the CA's EDU reports from July 2014 to August 2016. These reports are used by IEUA to determine the total amount that each CA bills their respective customers. A summary of the EDU reports are presented in Appendix B. Raw data from each of the CAs is not included in the appendix due to the terms of the Non-Disclosure Agreements. As shown in Table 1.1 and Figure 1.1, the water consumption data set used for the analysis discussed in this document was for FY 2016 (July 2015 - June 2016), for which data was available for 5 of the 7 CAs, and provided the best match with the EDU data set. Older water consumption data from FY 2014 was used for the other two CAs, as it was the most recent data available for them.

Table 1.1 Water Consumption Data Summary

	Chino	Chino Hills	Fontana	Montclair	Ontario	CVWD	Upland
Monthly Billing Cycle	X	X	X		X		
Bi-Monthly Billing Cycle				X		X	X
Account ID		X		X	X	X	X
Meter Size	X	X	X	X	X		X
Usage	X	X	X	X	X	X	X
Start Date	July 2014	July 2013	July 2015	July 2012	January 2015	January 2013	May 2013
End Date	June 2017	June 2016	June 2016	June 2014	March 2017	December 2014	July 2016

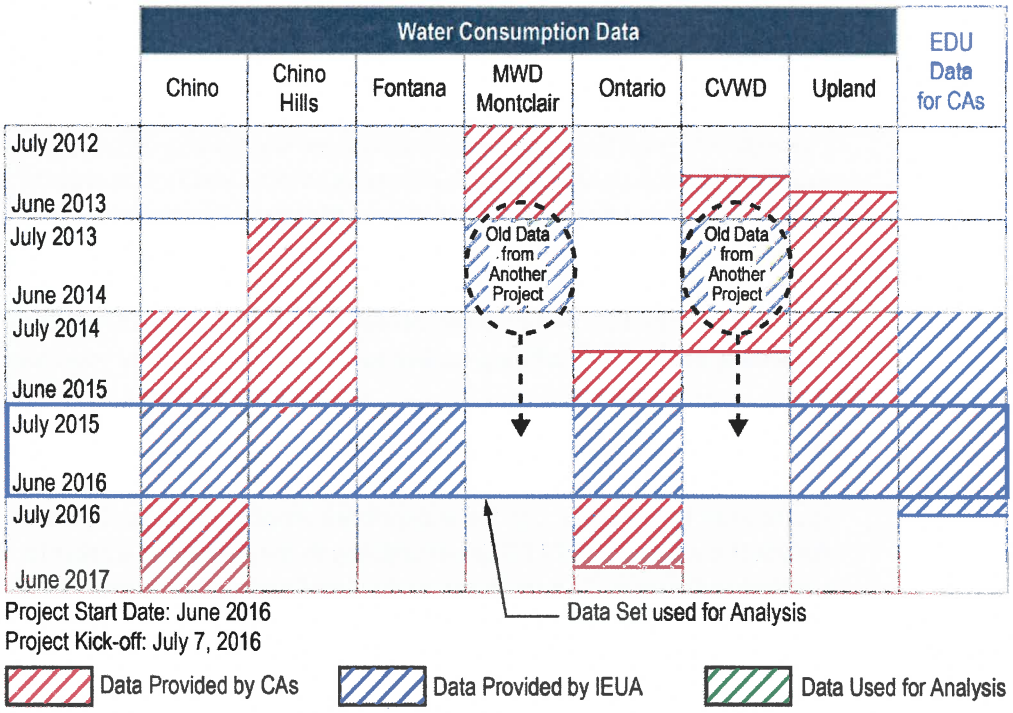

Figure 1.1 Data Ranges

1.1.1.2 Scope of Work

Based on the results of the preliminary analysis and input from both IEUA staff and the CAs, the evaluation is comprised of three specific components.

- **Defining an EDU**: The existing definition will be evaluated for effectiveness and accuracy. Based on the outcome of the evaluation, the EDU definition will be refined to more accurately reflect the current situation.
- **Evaluating Commercial EDU Methodologies**: As not all customers are single-family households, this component of the analysis will review available methodologies for applying the new EDU definition to commercial and industrial customers. The next Technical Memorandum (TM) will present and evaluate three alternatives based on available data, administrative ease, and ratepayer equity.
- **Application of EDU Definitions:** Once a methodology is selected for commercial rates and fees, an alternative basis for billing those rates and fees must also be chosen. Depending on the selected alternative, the rate could be based on square footage, meter size, or water usage. This will also be addressed in a future TM.

This TM outlines the first component of the analysis (DEFINING AN EDU), and is designed to be provided in concert with future workshops with the CAs. The objective of those workshops and this TM is to create a provisional EDU definition and allow input and comments from the CAs to arrive at an acceptable refined definition.

1.2 Defining an EDU

The cost drivers for the treatment of sewage are wastewater influent flow rate, in gallons per day (gpd) and the sewage strength indicators of BOD and TSS. In order to efficiently account for different flows and strengths from a variety of different customer classes, IEUA standardizes each customer's sewer demand in relative terms through the use of an EDU. Typically, an EDU is a unit that represents the cost to treat the average flow volume and strength of effluent from a standard detached single-family residence (SFR). However, IEUA's definition of an SFR varies depending on if an EDU is being applied to connection fees or for monthly billings.

Under the existing connection fee methodology detailed in Exhibit J, one EDU is allocated to all residential classes including detached single family residences, apartments, townhomes, condos and mobile homes. Meanwhile, the monthly billing procedure guidelines (Appendix D) define apartments, townhomes, condos and mobile homes as multi-family residences (MFR) and assigns them a value of 0.7 EDUs per unit due to their assumed smaller footprints and lower population densities. As part of this study, Carollo is reviewing whether IEUA should adopt a single EDU definition that is consistent between connection fees and monthly billings. Without definitive data to support either assumption (MFR = 0.7 EDU or MFR = 1 EDU) both will be explored as part of this analysis.

The current definition of an EDU is accompanied by a formula that is used to translate commercial customers' flows and strengths into multiples of this standardized unit and is presented in relative terms. For example, a parcel with 2.5 EDUs has a sewer demand that is approximately 2.5 times greater than an SFR parcel. IEUA then defines a cost-per-EDU in order to reimburse themselves for the costs required to convey and treat the wastewater.

In order to accomplish this, the formula standardizes a customer's sewage into three billable constituents, flow (measured in gallons per day (gpd)), BOD (mg/L), and TSS (mg/L) by dividing each by the SFR average. Then each billable constituent is multiplied by a cost allocation factor proportional to the costs associated with treating each billable constituent. IEUA then charges a rate per EDU for both connection fees and sewer use fees in order to equitably collect the necessary revenues from all customers.

1.2.1 Current EDU Definition

Last updated in 1984, the current EDU definition assumes 270 gallons per day (gpd), 230 mg/L BOD, and 220 mg/L TSS, with cost allocation factors of 37 percent, 31 percent, and 32 percent to each of those constituents, respectively. The resulting formula is illustrated in Figure 1.2.

$$EDU = \frac{F}{270} \times \left(0.37 + \frac{0.31 \times BOD}{230} + \frac{0.32 \times TSS}{220}\right)$$

Figure 1.2 Current EDU Equation

This formula is part of Exhibit J, which is an attachment that is part of the regional contract between the CAs and IEUA, and is included in Appendix C. Exhibit J outlines the method for calculating EDUs for the residential, commercial, and industrial accounts in the IEUA service area.

Historically, the flow input to the EDU formula for commercial accounts was based on the number of fixture units as determined by Exhibit J. However, in order to validate the EDU flow assumptions, IEUA, under review of the Technical Committee, performed an analysis to determine if the Exhibit J formula accurately depicted flow assumptions. Upon analysis, calculated EDUs in the Exhibit J formula did not match the calculated flows that were being discharged by the various commercial categories. This is further confirmed later in this analysis as a reason to potentially move away from fixture units all-together.

As not all agencies have access to water consumption data there are two distinct methods for estimating the daily flow input to the monthly billing EDU equation. The first is the Connection Fee Methodology for customers which do not have access to water use data. This method makes use of Exhibit J and its flow-per-fixture unit assumptions to determine flow. This methodology is used by the cities of Fontana and Montclair. The second is the "Monthly Billing Procedures" used by the remaining five agencies, which do have water use data. This method uses metered water consumption and a Return to Sewer (RTS) factor to determine flow.

Agencies that do not have access to the water use information use the Exhibit J EDU formula for both connection fees and monthly billings. Both tables are provided in Appendix C and Appendix D for reference.

1.2.2 Existing EDU Assessment

Based on the counts from the CA EDU Reports from FYE 2016 (July 2015 – June 2016) as well as concentration and flow measurements from the permitted industrial customers, IEUA serves and bills approximately 274,500 EDUs from residential (SFR and MFR) and non-residential (commercial and industrial) accounts each month.

Within their EDU Reports, Chino Hills, Chino, Ontario, and Upland separately define SFR and remit a combined monthly average of 80,000 SFR EDUs. CVWD, Fontana, and Montclair do not

provide a detailed customer class split of their billed EDUs. However, according to their billing data they serve a combined monthly average of 75,000 SFR accounts (out of their approximately 130,000 total reported EDUs). Thus, collectively, IEUA serves approximately 155,000 SFR accounts, each one representing one EDU by definition. A summary of SFRs billed by each CA during FYE 2016 is shown in Figure 1.3.

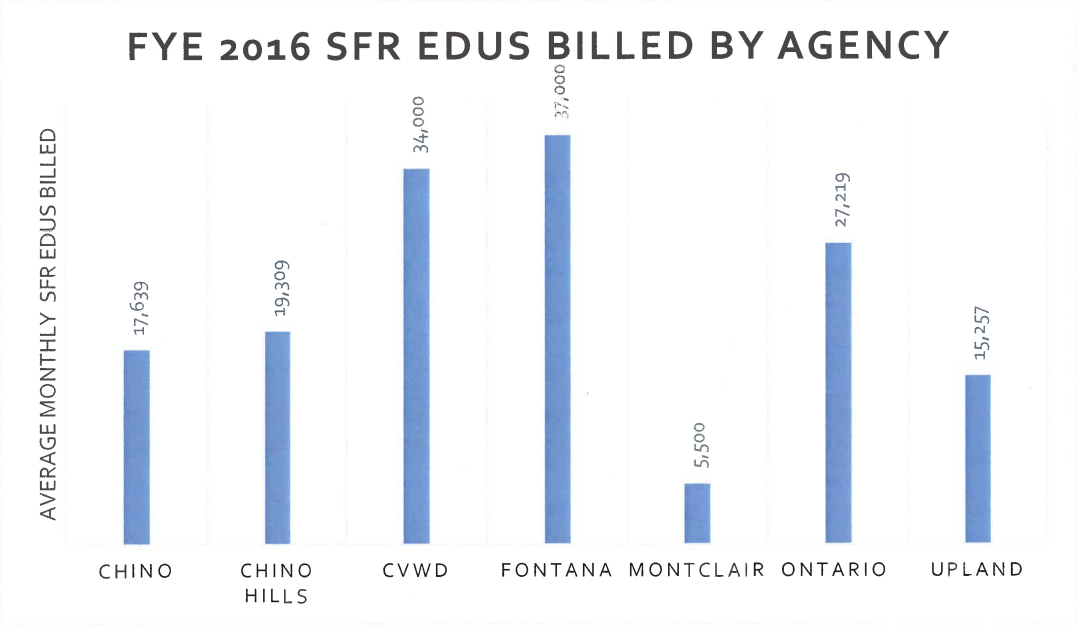

Figure 1.3 SFR EDUs Billed by Agency by Month

Based on the current EDU definition, the 155,000 SFR customers should contribute approximately 41.85 mgd (155,000 EDUs x 270 gpd) to the system. Since the total wastewater flow to the system was approximately 48 mgd in 2016 that means that all other categories (MFR, commercial and industrial) contributed the remaining approximately 6.15 mgd or about 13 percent of the total flow as shown in Table 1.2.

At wastewater concentrations of 220 mg/L TSS and 230 mg/L BOD (from the current EDU definition), the 155,000 SFR customers should produce a total of 77,000 pounds per day (lbs/d) of TSS load and 80,000 lbs/d of BOD load. However, based on the average loads and flows seen at the treatment plants (Table 1.2), SFR customers would contribute 86 percent of flows but only 52 percent and 47 percent of the TSS and BOD load, respectively. This implies that the 119,500 EDUs from all remaining customers (multi-family, commercial, and industrial) contribute only 13 percent of the total flow, yet close to half of the total TSS and BOD load seen at the plants; an unlikely result. To add further perspective, this would mean that the average BOD concentration for the non-SFR accounts would be approximately 1,500 mg/L, while the TSS concentration would be approximately 2,000 mg/L. This high-level EDU review clearly indicates a mismatch in loads and flow from SFRs and other customers and the need to review the current EDU definition.

Table 1.2 Plants Influent Averages (FYE 2016)

	EDUs	Flow (mgd)	TSS (lbs/d)	BOD(lbs/d)
Plant Flows		48.1	149,000	172,000
SFR Only *(Based on EDU formula)*	155,000	41.85	77,000	80,000
% Accounted for by SFR Customers	56.5%	86.2%	51.7%	46.5%
% Contributed by Remaining Customers	43.5%	12.8%	48.3%	53.5%

Furthermore, as an additional validation, Carollo analyzed each of the CAs most recent winter water consumption data (January to March bills) available as a separate proxy for sewer flow. Based on this review, SFR customers purchased approximately 41 mgd of water. **Understanding that not all water purchased ends up in the sewer, and assuming a conservatively high RTS factor of say 90 percent, the current EDU definition overestimates SFR customers' sewer flow by at least 5 mgd (41.85 mgd (155,000 EDUs x 270 gpd) compared to 36.9 mgd (41 mgd x 90%)) confirming a misalignment in flow estimates. In order for the EDU definition to equitably recover costs amongst all customer classes and customers, it must reflect current SFR averages. Based on these results, it is concluded that the EDU definition should be updated.**

The above analysis indicates that the value of the flow contribution in the EDU calculation should be reduced. The need to reduce flow assumptions is to be expected, as conservation messaging and efficiency efforts across the state have resulted in reduced flows discharged into sewer systems. Not only are fixtures using less water, but customers have also become more "water wise" after years of drought and significant public messaging. Consequently, EDU definitions across the state are being evaluated to reflect continued advancement and penetration of conservation devices. While reductions have varied across the state, IEUA has seen approximately a 10 percent decrease in flow volume from 2012 to 2017 (Figure 1.4).

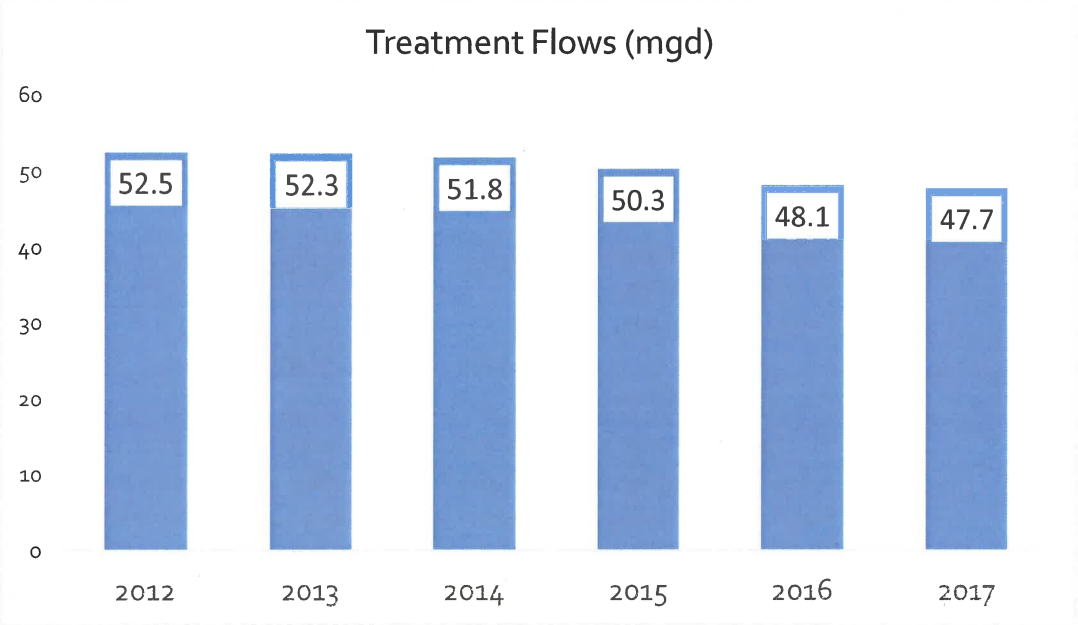

Figure 1.4 Historical Sewer Flows

1.2.3 Updated EDU Definition

As mentioned, based on the existing EDU assessment, it is evident that the current EDU definition overestimates flows from SFR customers. In addition to flows, it is also necessary to evaluate the other components of the formula (e.g., BOD and TSS). While the flows are overestimated, it is not as easy to determine what should be done for the BOD and TSS components of the formula. At this point, the only thing we can postulate is that it is likely that a SFR, assuming the same number of people, would likely discharge a similar load of BOD and TSS into the system as it did when Exhibit J was created. If this is true then BOD and TSS concentrations should increase with reduced flows.

Arriving at a new EDU definition is not a straight forward process because there are several parameters involved, and adjusting each has an impact on the overall result of the equation. Accordingly, we are proposing an iterative approach to arrive at an equation that meets the objectives of all CAs. In this section and those that follow we outline our approach to arriving at a first iteration of the potential new equation and discuss some of the impacts. The concept would be to take the results from the first iteration and use them together with feedback from the CAs to make small adjustments to the equation parameters until a satisfactory equation is developed.

As residential sewer flows and strengths are not regularly measured, it is necessary to estimate some of the values in the equation. Due to the large impact the EDU definition has on the price all customers pay and the fact that it requires the use of multiple assumptions, revision of the EDU must be done in an iterative manner. Thus, IEUA and the CAs can evaluate the impacts and provide input to the assumptions used. **This report will provide a provisional EDU definition that can be updated as new information from IEUA, CAs, and ongoing State-wide research becomes available.**

1.2.3.1 Updated Flow

The most important aspect of the EDU equation is the flow assumption. This is due to the fact that the flow determines the total mass of BOD and TSS when it is multiplied by the presumed BOD and TSS concentrations. To begin this estimation process, both a maximum (ceiling) and minimum (floor) estimate were established to determine the possible range in which a reasonable approximation could reside. After determining a possible range, the actual value to be used in the EDU equation should be determined using the most appropriate assumptions and adjusted through an iterative process. An over or under-estimation of flows contributed from an SFR will impact all remaining customers.

It is reasonable to assume that indoor water use by all customers remains relatively constant throughout the year. This would represent baseline sewer flows, excluding infiltration that might occur during wet periods. Water sales, on the other hand, are shown to peak in the summer and fall in the winter in accordance with irrigation needs. Therefore, it is common to use winter water consumption data in combination with a RTS factor as a close approximation of indoor water use and a proxy for baseline sewer flows. Thus, it is reasonable to assume that the SFR sewer flow assumption cannot exceed the average SFR winter water purchases. This would set a maximum flow contribution from SFR customers.

Based on the most recent winter water billings provided by each of the water purveyors, the average winter quarter water purchase for all SFR customers is 265 gpd. However, examination of the data showed that this average is inflated significantly by a very small minority of extremely high users (that use more than 2,500 gpd). In an attempt to define the usage of the "typical" SFR customer, Carollo utilized the median value of each CAs data rather than the average, as this is a more appropriate statistic to use as it is not impacted by outliers.

Figure 1.5 shows each of the CAs median SFR winter consumption for FYE 2016 as well as the agency-wide median (orange line) of 250 gpd for all SFR customers. The higher than average value for Upland cannot be explained, but may be reflective of continued irrigation or the way their bi-monthly billing cycles were recorded. It should also be noted that Montclair and CVWD only provided data up until 2014 which is prior to California's declaration of a drought state of emergency, which likely explains their higher median values compared to the other CAs. However, it is also likely that they have both seen a significant drop since that time. Therefore, based on the data available, the median of 250 gpd serves as an appropriate **maximum** estimate of the typical SFR sewer flow. Additionally, these figures do not include any estimate for a RTS factor that could potentially further reduce and normalize the medians amongst the CAs. While outdoor usage can vary widely between SFR households, it is not expected that sewer flows would demonstrate the same variance, assuming a similar number of people per household.

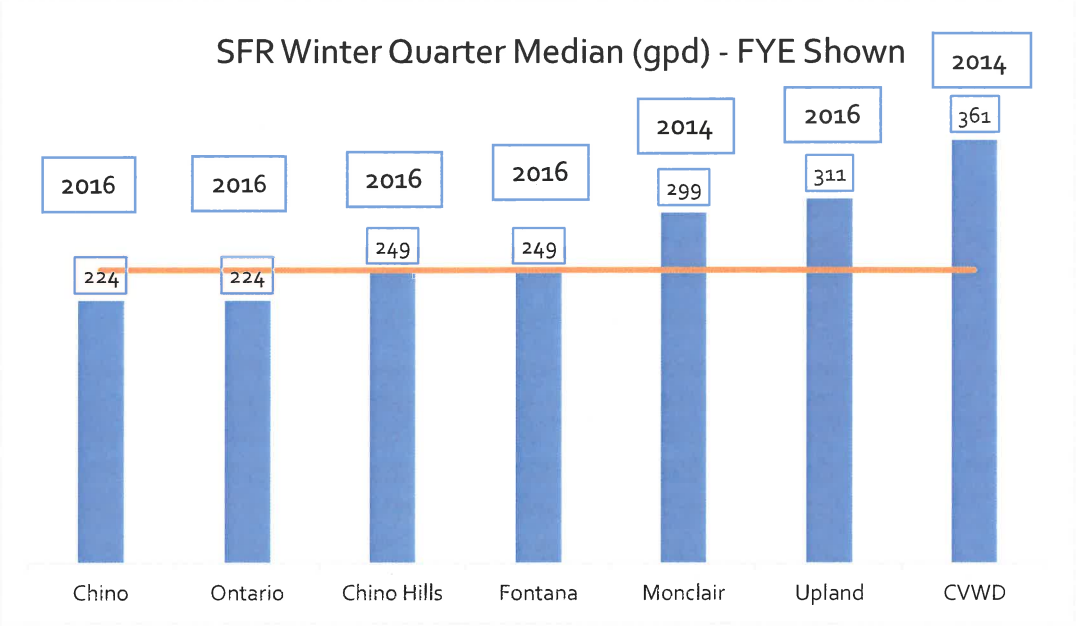

Figure 1.5 SFR Winter Quarter Average Water Consumption by Agency

In order to determine an approximate **minimum** flow assumption, Carollo reviewed available metered sewer flows measured from June 2013 to August 2016. These flows were obtained from a new residential neighborhood called The Preserve in the City of Chino. Based on this data, the average sewer flow per house was approximately 150 gpd. The results of this analysis are presented in Figure 1.6. The newer homes that were part of this sampling data typically have new, higher efficiency fixtures and may also include a higher vacancy rate due to potential delays in occupancy. As a result, it is assumed that these flows would be the lowest in the study, and would represent the lower bound on any estimates.

The impact of plumbing code changes and the implementation of water use efficiency programs was quantified in the 2015 Wastewater Facilities Master Plan flow monitoring. IEUA monitoring of new versus older residential developments showed that urban usage patterns have decreased from a regional indoor flow average of 55 GPCD down to 37 GPCD in new developments. This is consistent with new development trends throughout California (Codes and Standards Research Report: California's Residential Indoor Water Use, May 2015).

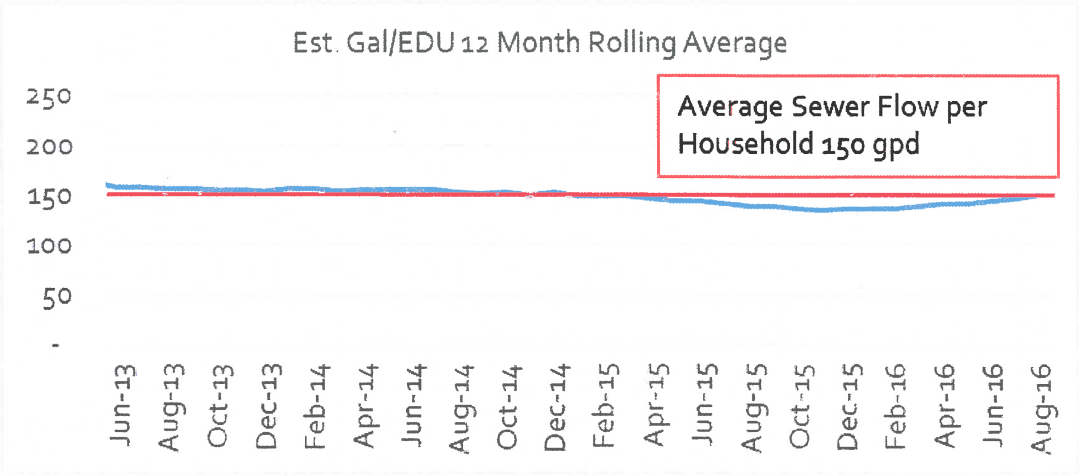

Figure 1.6 Average Sewer Flows from New Preserve Residential Development

Given these estimates for a maximum and minimum flow, it is clear that our estimate must be between 150 (measured sewer flows) and 250 (median winter water usage) gpd per SFR. Please note that the minimum flow value is an actual measured sewer flow while the maximum flow value is a water usage value. In order to make sense of these values we need to put them both in terms of sewer flows.

Step one of our iterative process will make this conversion to the maximum typical sewer flow value by determining an appropriate RTS factor to be applied to the median water usage of 250 gpd, in order to arrive at a sewer flow estimate. Generally, a sewer system experiences between 65 and 85 percent return rates of water use to the sewer, depending on the type of land use and extent of outdoor water use. The return ratio can be as high as 90 percent or more during wet periods.

Since the RTS can vary quite a bit for different regions throughout the state and country, it is a reasonable assumption to start with an RTS for IEUA that is based on the agency-wide ratio of water use to sewer flow. Bearing in mind that only 5 of the 7 data sets correspond to the same period, the water bills showed that the winter quarter water consumption for all non-irrigation customers within the IEUA service area was approximately 68 mgd. Comparing this value to 49.2 mgd (the average flow seen at the treatments plants in 2015 and 2016) reveals an initial overall RTS factor of 72 percent. While not all data stems from the same time period, it still serves as the best available starting point for estimating a RTS factor. As IEUAs SFR customers tend to have large irrigable areas on their properties and fall within standard assumptions this appears to be an appropriate estimate. Applying a 72 percent return to sewer factor to the 250 gpd results in a maximum provisional average flow estimate of 180 gpd. **In order to be conservative in the first iteration of the estimate for the SFR flow value we will use this 180 gpd flow value, instead of the lower 150 gpd value.**

1.2.3.2 Updated Strength Concentrations

The most recent available SFR strength data comes from The Preserve in the City of Chino which had an average load of approximately 0.4 lbs/d of both TSS and BOD per household. However, as mentioned above during discussion of the flow data from this neighborhood, this is a new neighborhood with a potential delay in full occupancy and therefore it may not best reflect the

overall TSS and BOD loads for the service area. A study done by the Orange County Sanitation District in 1996, found that the average SFR contributes approximately 0.51 and 0.48 pounds per day (lbs/d) of BOD and TSS to the sewer system, respectively. While this study appears to be quite dated, based on reviews of other plant data throughout southern California, total BOD and TSS loads have remained relatively constant at the plants on a per capita basis, indicating families still largely contribute the same total mass of BOD and TSS, which intuitively makes sense. For example, it makes sense that the source of BOD and TSS from SFR customers (soap, detergent, food waste, human waste etc.) has seen little change in the past 20 years. So it is reasonable to assume that the total mass has stayed relatively constant in proportion to the number of people per household.

Based on historical census data, the average people per household in Orange County was 3.0, while it is 3.33 in San Bernardino County or about 10 percent higher. It seems appropriate therefore, that loadings from homes in San Bernardino County would tend to be a bit higher than in Orange County. Scaling total pounds of BOD and TSS per SFR proportionately by 10 percent, results in an adjusted estimate of approximately 0.56 and 0.53 lbs/d, respectively.

Using the initial first flow estimate of 180 gpd, and back calculating from the BOD and TSS loads at the treatment plants in 2016, the resulting concentrations are approximately 370 mg/L for BOD and 355 mg/L for TSS. These values will replace the current 230 mg/L and 220 mg/L, BOD and TSS values for first iteration of the Exhibit J revised formula.

As new or additional data (from IEUA, CAs or ongoing state-wide research) becomes available, it is expected that the formula and EDU definition will be reviewed, and if necessary updated, alongside IEUA's rate setting process.

1.2.3.3 Updated Allocation Factors

In addition to flows and loads, the formula must also account for how costs are incurred. An updated cost of service analysis was completed by Carollo in 2015. A copy of the report is included in Appendix E. This study found that 44 percent of treatment costs were related to the amount of flow seen at the plants. This is significantly higher than the value of 37 percent in the current EDU definition. The remaining 34 percent and 22 percent of costs were attributed to treating BOD and TSS, respectively.

The updated flows, loads, and allocations discussed above are included in the provisionally updated EDU equation which can be seen in Figure 1.7. Note that this is not intended to represent the final updated equation, but rather a first iteration of it.

$$EDU = \frac{F}{180} \times \left(0.44 + \frac{0.34 \times BOD}{370} + \frac{0.22 \times TSS}{355}\right)$$

Figure 1.7 Provisionally Updated EDU Equation

1.3 Impact of Updated EDU Definition

The next step in the iterative process is to evaluate the implications of the updated EDU definition on the distribution of EDUs amongst the customer classes. There are two known absolutes. First, the measured flows and loads into the plants and second, the fixed measure of an EDU.

As the number of Residential EDUs is known, any resulting change in the total number of EDUs is absorbed entirely by Commercial customers (as total flows and loads at the plants are unchanged). As mentioned previously, a goal of this study is to unify the conflicting MFR assumptions of 0.7 EDUs per unit for monthly billing and 1 EDU per MFR unit for connection fees. As these different assumptions significantly impact the number of fixed Residential EDUs, the implications of both were evaluated separately.

Based on the average influent flow and strength measured at the IEUA treatment plants during FYE 2016 (Table 1.3), under the Provisionally Updated Equation, IEUA treated approximately 270,000 EDUs each month. The distribution of these EDUs is dependent on the MFR assumption and is explored in this section.

Table 1.3 FYE 2016 Plant Influent Data

Month	Flow (mgd)	TSS (mg/L)	BOD (mg/L)
July 2015	47.8	407.0	373.4
August 2015	48.3	367.5	341.5
September 2015	48.8	386	334
October 2015	48.5	350	332
November 2015	48.7	360	352
December 2015	48.5	377	358
January 2016	49.3	331	349
February 2016	47.9	377	381
March 2016	48.3	397	412
April 2016	47.4	405	464
May 2016	47.9	408	448
June 2016	46.1	362	421
Average	48.1	372	385

In order to understand the implications of the Provisionally Updated EDU Equation, the EDU billings from FYE 2016 served as a baseline for comparison. Based on analysis of the EDU billings, customer data, and measurements from the permitted industrial customers, IEUA billed an approximate average of 274,500 EDUs each month (155,000 SFR, 45,000 MFR (using the 0.7 EDU definition), 70,000 Commercial, and 4,500 Industrial). By definition the Provisionally Updated EDU Equation does not affect the number of Residential customers, however, the EDU count for permitted Industrial customers would rise from 4,500 to 5,000 based on their average measured flow and loads.

Under the monthly billing procedure each MFR account is charged based on an assignment of 0.7 EDUs per unit each month for a total of approximately 45,000 MFR EDUs. However, if IEUA were to change the definition and charge MFR units at 1.0 EDU in order to be in-line with the connection fee definition, approximately 64,000 MFR EDUs (45,000 ÷ 0.7) would be billed each month. As the total number of EDUs is fixed, this increase of 19,000 fixed residential EDUs is absorbed by Commercial and Industrial customers – reducing their overall share of the system. The resulting distribution amongst classes for both assumptions is presented in Figure 1.8.

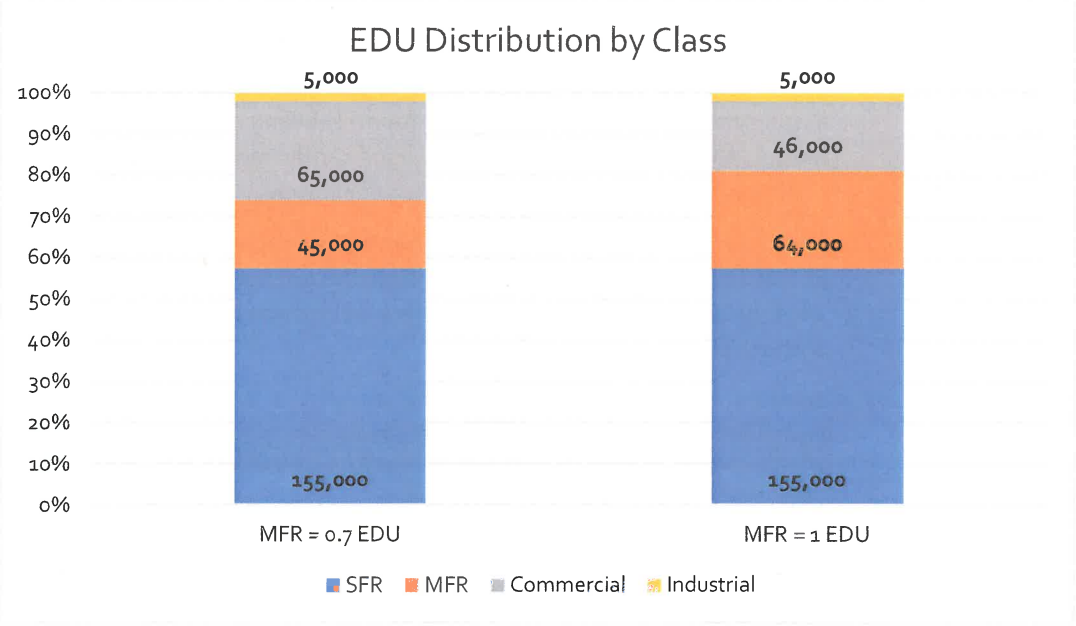

Figure 1.8 Impact of Assigning 1.0 and 0.7 EDU per MFR

Not only does this impact the relative share of the EDUs by customer class, but it significantly alters the assumed flows and loads attributed to commercial (and industrial) customers. The additional 19,000 MFR EDUs attributes residential customers an additional 3.4 mgd (19,000 X 180 gpd) of flow. As the concentration of BOD and TSS attributed to residential customers is less than the average levels seen at the treatment plants (see Table 1.3), by reducing the flow attributed to Commercial, their assumed average BOD and TSS concentrations must increase.

Under the current assumption of MFR units = 0.7 EDU, the average commercial and industrial strength would be 430 mg/L BOD and 423 mg/L TSS. While under the assumption of MFR units = 1.0 EDU, the average commercial and industrial concentrations would rise to 453 mg/L BOD and 449 mg/L TSS, an increase of only 5 or 6 percent. The calculations are summarized in Table 1.4.

Table 1.4 Flow and Strength Calculations

	MFR = 0.7 EDUs	MFR = 1 EDU
Treatment Plant Flows	48.1 mgd	48.1 mgd
Residential Flows *(Residential EDUs x 180 gpd)*	36 mgd	39.4 mgd
Commercial Flows *(Plant Flows - Residential Flows)*	12.1 mgd	8.7 mgd
Treatment Plant BOD Load (lbs/d) (1)	154,444	154,444
Residential BOD Load (lbs/d) *(Residential flow x 8.34 x 370 mg/L)*	111,089	121,581
Commercial BOD Load (lbs/d) *(Plant pounds - Residential pounds)*	43,335	32,863
Commercial BOD concentration *(Commercial Pounds ÷ Commercial Flows ÷ 8.34)*	430 mg/L	453 mg/L
Plant TSS Load (lbs/d) (2)	149,229	149,229
Residential TSS Load (lbs/d) *(Residential flow x 8.34 x 355 mg/L)*	106,585	116,652
Commercial TSS Load (lbs/d) *(Plant pounds - Residential pounds)*	42,644	32,577
Commercial TSS concentration *(Commercial Pounds ÷ Commercial Flows ÷ 8.34)*	423 mg/L	449 mg/L

Notes:
(1) Based on average BOD of 385 mg/L seen at the treatment plants during FYE 2016 (Table 1.3).
(2) Based on average TSS of 372 mg/L seen at the treatment plants during FYE 2016 (Table 1.3).

1.3.1 Conclusion and Discussion

Overall, adjusting the allocation of EDUs for MFR from 0.7 to 1.0 increases the number of EDUs allocated to MFR customers (by 19,000), and therefore lowers the allocation of wastewater flow to commercial and industrial, thereby increasing the average concentration of the BOD and TSS from these customers. However, the analysis showed that the impact would only change the concentrations by 5 to 6 percent. Either definition provides reasonable concentrations of BOD and TSS from commercial and industrial customers, however a change to MFR = 1.0 EDU would collect more revenue from MFR customers.

While the industry norm is to reflect a difference between SFR and MFR, IEUA has not measured data to support using either MFR = 0.7 or MFR = 1.0 EDU. Empirical data has suggested that MFRs tend to result in lower BOD and TSS loads to the sewer compared with an average SFR due to lower average occupancy rates and smaller footprints, tending to support the 0.7 EDU per MFR definition, but no recent measured data to support or refute this argument has yet been published.

Appendix A

RAW FLOW AND STRENGTH DATA

Table A.1 IEUA Monthly Total Influent Data (January 2011- June 2017)

Date	Flow (mgd)	BOD (mg/L)	TSS (mg/L)
January 2011	53.5	389.4	444.4
February 2011	54.0	386.5	525.5
March 2011	53.5	353.5	392.5
April 2011	52.8	289.1	338.1
May 2011	52.5	329.1	463.8
June 2011	51.5	393.7	433.9
July 2011	52.4	379.3	388.3
August 2011	53.2	394.3	345.8
September 2011	52.9	373.2	422.5
October 2011	53.0	376.6	469.5
November 2011	53.2	354.6	481.3
December 2011	52.6	324.6	445.0
January 2012	52.8	336.2	431.7
February 2012	52.3	258.6	332.8
March 2012	52.6	468.1	408.7
April 2012	52.5	529.2	586.1
May 2012	51.4	415.5	427.0
June 2012	51.7	386.6	367.1
July 2012	52.1	387.5	352.7
August 2012	53.2	363.8	378.1
September 2012	52.8	387.3	386.2
October 2012	52.4	390.0	338.7
November 2012	52.5	443.9	379.3
December 2012	53.3	537.4	387.1
January 2013	52.2	411.8	365.0
February 2013	52.1	326.8	373.9
March 2013	51.8	305.7	418.9
April 2013	52.1	355.1	424.9
May 2013	51.6	445.1	404.9
June 2013	51.9	485.5	410.7
July 2013	51.7	555.5	413.0
August 2013	52.5	511.4	437.8
September 2013	52.9	464.8	376.7
October 2013	52.1	462.1	381.6

Table A.1 IEUA Monthly Total Influent Data (January 2011- June 2017) (continued)

Date	Flow (mgd)	BOD (mg/L)	TSS (mg/L)
November 2013	52.2	445.1	359.8
December 2013	52.4	385.4	379.8
January 2014	52.0	388.4	434.4
February 2014	51.4	471.7	405.2
March 2014	51.0	460.5	411.3
April 2014	51.4	470.4	406.3
May 2014	51.1	448.3	387.0
June 2014	50.4	379.0	384.8
July 2014	51.0	414.9	390.2
August 2014	51.4	417.4	362.6
September 2014	51.1	328.6	320.1
October 2014	50.9	375.2	410.0
November 2014	51.6	371.8	350.4
December 2014	52.1	354.6	336.0
January 2015	50.6	348.1	345.3
February 2015	50.0	366.8	331.3
March 2015	49.6	481.8	396.4
April 2015	49.0	603.4	368.6
May 2015	48.7	613.9	390.2
June 2015	47.5	610.3	402.5
July 2015	47.8	407.0	373.4
August 2015	48.3	367.5	341.5
September 2015	48.8	334.0	385.5
October 2015	48.5	332.1	349.8
November 2015	48.7	351.7	360.4
December 2015	48.5	357.9	376.8
January 2016	49.3	349	331
February 2016	47.9	381	377
March 2016	48.3	412	397
April 2016	47.4	464	405
May 2016	47.9	448	408
June 2016	46.1	421	362
July 2016	46.7	405	328
August 2016	47.9	426	380

Table A.1 IEUA Monthly Total Influent Data (January 2011- June 2017) (continued)

Date	Flow (mgd)	BOD (mg/L)	TSS (mg/L)
September 2016	47.5	393	337
October 2016	47.9	431	335
November 2016	48.5	523	366
December 2016	49.0	507	438
January 2017	50.9	378	407
February 2017	47.5	437	420
March 2017	46.4	462	414
April 2017	46.3	430	384
May 2017	46.9	363	357
June 2017	47.0	459	429

Table A.2 The Preserve Sewer Monitoring Data

	Flow (	BOD (mg/L)	TSS (mg/L)	Occupancies
June 2013	8.116	298.5	277.5	1,924
July 2013	9.425	311.0	257.0	1,924
August 2013	11.6696	455.0	552.5	1,946
September 2013	9.0127	333.5	307.5	1,946
October 2013	10.1086	320.0	263.5	1,946
November 2013	9.9912	327.0	248.5	1,967
December 2013	8.285	431.0	376.5	1,976
January 2014	10.2631	302.5	280.5	1,977
February 2014	8.0465	385.0	313.0	2,035
March 2014	8.005	299.0	268.0	2,152
April 2014	9.7239	304.0	299.0	2,169
May 2014	11.0523	312.5	318.0	2,201
June 2014	8.9694	340.0	390.0	2,225
July 2014	10.796	401.5	500.0	2,235
August 2014	11.725	315.0	302.5	2,316
September 2014	10.4371	319.0	348.5	2,352
October 2014	12.8242	267.5	263.5	2,363
November 2014	10.3392	321.0	396.0	2,363
December 2014	11.3655	305.5	418.5	2,363
February 2015	8.5848	340.0	391.0	2,363
March 2015	8.6696	364.0	339.0	2,363

Table A.2 The Preserve Sewer Monitoring Data (continued)

	Flow (mgd)	BOD (mg/L)	TSS (mg/L)	Occupancies
April 2015	9.0227	311.0	253.0	2,363
May 2015	9.9079	392.5	384.5	2,363
June 2015	9.01	205.0	292.0	2,387
July 2015	9.693	459.5	476.5	2,387
August 2015	10.2191	448.5	409.5	2,387
September 2015	9.9567	293.5	297.0	2,387
October 2015	11.0156	370.0	350.0	2,387
November 2015	9.7884	299.5	355.5	2,387
December 2015	12.1963	330.0	280.0	2,387
January 2016	9.5983	250.0	200.0	2,387
February 2016	9.5046	340.0	320.0	2,387
March 2016	10.677	300.5	284.0	2,387
April 2016	11.4544	305.0	250.5	2,448
May 2016	10.5119	270.0	290.0	2,454
June 2016	11.2912	240.0	260.0	2,466
July 2016	13.024	250.0	261.0	2,471
August 2016	13.171	283.7	285.9	2,487

Appendix B

EDU REPORT SUMMARIES

Chino

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
SFR	17,454	17,480	17,511	17,583	17,589	17,644	17,664	17,699	17,745	17,743	17,733	17,826
MFR	3,681	3,682	3,710	3,587	3,680	3,679	3,679	3,679	3,671	3,684	3,680	3,681
Commercial	7,650	7,615	8,647	6,822	6,501	7,946	6,931	6,807	8,718	7,336	7,059	8,849
Total EDUs	**28,785**	**28,776**	**29,868**	**27,992**	**27,769**	**29,270**	**28,273**	**28,185**	**30,133**	**28,764**	**28,472**	**30,356**

Chino Hills

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
SFR	19,462	18,330	19,416	19,046	19,513	19,469	19,495	19,516	19,560	19,529	18,786	19,580
MFR	2,616	2,502	2,615	2,739	2,862	2,754	2,755	2,758	2,750	2,757	2,679	2,776
Schools	265	208	255	255	255	255	256	257	257	255	244	255
Boy's Republic	204	181	178	124	122	106	107	151	153	195	221	197
Commercial	1,918	1,771	1,795	1,329	2,228	1,579	1,621	2,002	1,744	1,939	1,510	1,998
Total EDUs	**24,465**	**22,992**	**24,259**	**23,493**	**24,980**	**24,163**	**24,234**	**24,684**	**24,464**	**24,675**	**23,440**	**24,806**

CVWD

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
Total EDUs	**63,064**	**68,276**	**55,280**	**79,155**	**63,969**	**70,495**	**76,712**	**66,221**	**59,771**	**77,529**	**55,672**	**75,337**

Fontana

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
Total EDUs	**57,925**	**54,742**	**54,173**	**49,688**	**54,066**	**51,047**	**54,135**	**49,691**	**54,154**	**47,879**	**54,978**	**50,832**

Montclair

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
Total EDUs	**13,289**	**10,649**	**13,198**	**10,574**	**12,799**	**10,204**	**12,453**	**10,706**	**12,475**	**10,592**	**12,953**	**11,001**

Ontario

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
SFR	26,818	28,647	26,861	26,532	26,891	28,168	26,983	27,041	27,044	27,138	27,265	27,244
MFR	13,373	14,211	13,523	13,619	13,160	13,879	14,240	13,592	13,839	13,650	13,475	13,524
Industrial	1,511	1,739	1,382	1,328	1,218	1,265	1,120	1,492	1,478	2,600	2,970	2,913
Inter	100	88	87	68	58	347	(225)	84	101	95	119	102
Public	966	968	876	843	747	843	753	827	800	869	848	1,023
Hotel	947	795	830	614	745	775	749	961	859	999	1,006	1,088
Commercial	14,464	17,181	14,833	12,181	12,438	13,080	12,183	14,212	13,178	14,319	16,592	15,469
Total EDUs	**58,179**	**63,628**	**58,392**	**55,184**	**55,256**	**58,357**	**55,803**	**58,209**	**57,299**	**59,670**	**62,275**	**61,363**

Upland

	Sep/2015	Oct/2015	Nov/2015	Dec/2015	Jan/2016	Feb/2016	Mar/2016	Apr/2016	May/2016	Jun/2016	Jul/2016	Aug/2016
SFR	14,266	16,074	14,388	16,096	14,408	16,078	14,468	16,064	14,554	16,074	14,518	16,092
MFR	9,600	7,268	9,639	7,256	9,639	7,260	9,640	7,073	9,653	7,265	9,653	7,267
Industrial	53	-	53	-	52	-	52	-	52	-	52	
Schools	319	126	319	126	316	121	316	121	316	121	316	120
Special	34	-	34	-	34	-	34	-	34	-	34	43
Commercial	2,643	3,340	1,195	1,711	1,321	1,927	1,320	1,796	1,328	293	1,781	2,559
Total EDUs	**26,915**	**26,808**	**25,628**	**25,189**	**25,771**	**25,386**	**25,831**	**25,053**	**25,937**	**23,753**	**26,354**	**26,081**

Appendix C
EXHIBIT J

(Adopted 4/12/84)
(Amended 12/7/94)
(Amended 3/2/05)
(Amended 6/19/13)

EXHIBIT "J"

EQUIVALENT DWELLING UNIT COMPUTATIONS

GENERAL

Equivalent Dwelling Unit (EDU) is a numerical value designation where one EDU represents the sewage flow from a single family residential household. For the purposes of computing uniform financial obligations for each Contracting Agency using the Regional Sewerage System, the following computations shall be used to determine EDU's for residential, commercial, and industrial units:

1. Residential. Each structure or part of a structure which is designed for the purpose of providing permanent housing for one family or tenant shall be one EDU. This includes, but is not limited to, a single family detached residence, an apartment, a townhouse, a condominium, a mobile home or trailer space.

2. Commercial. All structures designed for the purpose of providing permanent housing for enterprises engaged in exchange of goods and services. This shall include, but not be limited to, all private business and service establishments, schools, churches, and public facilities. EDU's shall be determined by multiplying the fixture units (as defined by Table 1) shown on the approved building plans, by the appropriate sewage factor from the following Table 2 (also see Note A). Total EDU's for commercial centers for various use categories will be the sum of the EDU's computed for each category of use. For example, hotel complexes that contain restaurants, pools, health clubs, or

laundry facilities should be calculated based on the individual uses in the hotel complex with the fee based on the sum of the EDU's computed for each category of use.

3. Industrial. All structures designed for the purpose of providing permanent housing for an enterprise engaged in the production, manufacturing, or processing of material. EDU's for industrial users shall be determined as follows:

a. For domestic type wastewater, multiply the fixture units (as defined by Table 1) shown on the approved building plans by a sewage factor of 0.0741, based on a 20 gallons per fixture unit flow per day.

b. For non-domestic wastewater; compute from information contained on the industrial waste permit, using the following formula:

$$\text{EDU} = \frac{\textit{Estimated non-domestic flow}}{270} \left[.37 + .31 \frac{BOD}{230} + .32 \frac{SS}{220} \right]$$

c. Combine the resultant EDU's derived from a and b above.

NOTES:

A. Sewage Factor is derived from the formula

$$SF = K\left[.37 + .31\ \frac{BOD}{230} + .32\ \frac{SS}{220}\right]$$

Where: SF = Sewage Factor

K = Gallons per fixture unit divided by the average domestic household flow of 270 gallons

BOD = Biochemical Oxygen Demand

SS = Suspended solids

B. Reimbursement Fees to be levied on Pre-1979 Structures Connecting to the Regional System

For residential structures with a building permit issued prior to July 1, 1979, no Capital Capacity Reimbursement Account (CCRA) fees will be levied at the time of connection to the regional system. If the original permit was issued after 7/1/79, then the CCRA fees established at the time of permit issuance will apply.

The CCRA fees will apply to all commercial and industrial development regardless of when the structure was constructed. When a non-residential use requests to connect to the regional system or modify its use if already connected, the CCRA fee should be based on the current fee in effect at the time the connection or modified use is made (also see Note C).

C. Reimbursement Fees to be Levied on Existing System Users Who Expand or Revise Use

In some situations existing commercial and industrial users will expand uses to meet increasing demands. As a result, additional fixture units will usually be included within the expanded facility. Under these situations the following criteria will apply:

a. CCRA fees will only be levied on the fixture unit (FU) count difference between existing FU's and new FU's.
b. The CCRA fee will be determined based on the fee in effect at the time of building or sewer permit issuance for the expanding development.
c. A change in use, placing a commercial development in a different Exhibit "J" category, will not result in the recalculation of CCRA obligation for

the existing FU's. Only the new added FU's will be levied CCRA fees based on the Exhibit "J" category which best defines the proposed use.

D. Collection and Reporting of CCRA Fees

a. CCRA fees shall be reported at no later than at the time of occupancy.
b. CCRA fees shall be based on the EDU rate (as established by the EDU resolution adopted by the IEUA Board of Directors) in effect at the time of payment. For example, if CCRA fees are reported in the July report, any connection fees changes effective July 1, would be in effect.

E. Attachment of Sewer Use Rights; Tied to Property or Structure

Under certain situations an existing discharger may want to relocate or renovate a business. The issue may then arise as to ownership of certain existing discharge rights in the regional system.

All sewer capacity remains with the existing building and should be sold to building owners rather than tenants.

In cases where an existing building is completely demolished, the transfer or reuse of capacity rights can be permitted provided that:

a. Proof of building demolition can be documented;

b. Payment for original system capacity can be documented;

c. The demolition occurs simultaneously with the transfer; and

d. The transfer occurs within the Contracting Agency who originally sold the capacity.

Capacity rights would be determined based on fixture unit counts and the Exhibit "J" use category of the demolished structure. Because local collection systems may also be impacted by a relocation, this exception shall be at the sole discretion of the contracting agency who is accepting the relocated capacity.

Any additional EDUs required shall be purchased per Note C of this Exhibit.

TABLE 1 - Fixture Unit (FU) Values[1,2]

Appliances, Appurtenances or Fixtures	Fixture Units
Bathtub or Combination Bath/Shower	2.0
Clothes Washer, domestic, standpipe	3.0
High Efficiency Clothes Washer	2.0
Dental Unit, cuspidor	1.0
Dishwasher with independent drain	2.0
Drinking Fountain or Water Cooler	0.5
Food Waste Grinder (Commercial)	3.0
Floor Drain, Emergency	0.0
Floor Drain	2.0
Shower, single-head trap	2.0
Multi-head, each additional	1.0
Lavatory, single	1.0
Lavatory, In sets of two or three	2.0
Washfountain (1.5-in Minimum Fixture Branch Size)	2.0
Washfountain (2-in Minimum Fixture Branch Size)	3.0
Receptor, indirect waste[3]	
Bar	2.0
Clinical	6.0
Commercial with food waste (1.5-in Minimum Fixture Branch Size)	3.0
Commercial with food waste (2-in Minimum Fixture Branch Size)	4.0
Commercial with food waste (3-in Minimum Fixture Branch Size)	6.0
Kitchen, domestic (with or without food-waste grinder and/or dishwasher)	2.0
Laundry (with or without discharge from a clothes washer)	2.0
Service or Mop Basin	3.0
Service, flushing rim	6.0
Wash, each set of facets	2.0
Urinal	2.0
Waterless Urinal	1.0
Water Closet, 1.6 GPF	4.0
Water Closet, greater than 1.6 GPF	6.0

TABLE 1(a) – Discharge Capacity in Gallons per Minute for Intermittent Flow Only[1,3]

Gallons per Minute	Fixture Units
Up to 7.5	1
Greater than 7.5 to 15	2
Greater than 15 to 30	4
Greater than 30 to 50	6

TABLE 1(b) - Maximum Fixture Units for a Trap and Trap Arm[1,3]

Size of Trap and Trap Arm (inches)	Fixture Units
1.25	1
1.5	3
2	4
3	6
4	8

Footnotes:

1. Tables 1, 1(a), 1(b) are based on the 2010 California Plumbing Code
2. Additional information regarding definitions and plan checking are defined by latest Exhibit J - Table 1 Guideline.
3. Indirect waste receptors shall be sized based on the total drainage capacity of the fixtures that drain therein to, in accordance with Table 1(a). Maximum fixture units for a fixture trap and trap arm loadings for sizes up to 4 inches shall be in accordance with Table 1(b).

TABLE 2[1]

Category	Type of Commercial	Typical Descriptions of Establishment	Gal/ Fixture	BOD/TSS	Sewage Factor (see Note A)
I	Motel/ Hotel	Establishment typically engaged in short-term lodging and may offer food and beverage, recreation, conference/convention room, laundry, and parking services.	12	230/220	0.0444
	Recreation/Amusement	Recreational and amusement services and attractions			
	Restaurant (Fast Food)	Establishments where patrons order or select items and typically pay before eating. Serves food on trays with disposable dishware, has an available drive-thru service, and does not use a dishwasher.			
	Retail Store	Establishment typically engaged in providing retail goods for purchase			
	Office	Establishment where business or services are supplied.			
	Market (without Butcher Shop)	Establishments typically retailing a general line of food, such as canned and frozen foods, fresh fruits and vegetables. Establishment does not process (cut) meat, poultry, or seafood.			
	Bar/Tavern	Establishment typically engaged in preparing and serving alcohol beverages for immediate consumption. May also provide limited food services.			

Category	Type of Commercial	Typical Descriptions of Establishment	Gal/ Fixture	BOD/TSS	Sewage Factor (see Note A)
II	Market (with Butcher Shop)	Establishments typically retailing a general line of food, such as canned and frozen foods, fresh fruits and vegetables. Establishment does process (cut) meat, poultry, or seafood.	24	250/350	0.1081
	Bakery	Establishment typically manufacturing fresh and frozen bread and bread-type roll products, cookies, crackers, doughnuts, pastries, pies, ice cream cones, and etc. May include commercial and storefront bakeries.			
	Mortuary	Establishments typically preparing the dead for burial or internment and conducting funerals. May include crematories.			
III	Convalescent Home	Establishments providing inpatient nursing and rehabilitative serves. The care is typically provided for an extended period of time to individuals requiring nursing care. May include nursing homes, Inpatient care hospices, rest homes with nursing care, etc.	42	250/300	0.1780
	Hospital	Establishments typically known and licensed as general medical and surgical hospitals primarily engaged in providing diagnostic and medical treatment to inpatients with any wide variety of medical conditions.			
	Health Spa with Pool	Establishments typically operating fitness and recreation sports facilities featuring exercise and other active physical conditioning. Must have a pool. May include physical fitness centers with pools, gyms with pools, day spas with pools, etc.			
	Restaurant (Full Service)	Establishments typically providing food services where patrons order and are served while seated and typically pay after eating. May serve food on non-disposable dishware, operates dishwashing equipment, has waiter/waitresses and includes buffets.			

Category	Type of Commercial	Typical Descriptions of Establishment	Gal/ Fixture	BOD/TSS	Sewage Factor (see Note A)
IV	Laundry (Laundromat)	Establishment typically operating coin-operated or similar self-service laundry equipment for customer use on premises. Laundries or Laundromats classified under this category are for non-water efficient washing machines.	43	350/500	0.2499
	Dry Cleaner (Processor)	Establishment typically engaged in laundering services, and specialty cleaning services for garments and other textile items on the premises using solvents other than water. Drop off and pickup sites that do not perform cleaning services are classified under Category I.			
V	Car Wash (Coin Operated) (See Footnote 2)	Establishments typically engaged in the cleaning and/or washing of automotive vehicles. Consists power washing spray wand car washes.	102	150/500	0.4910
VI	Church	Establishments typically engaged in operating religious organizations. May include monasteries, temples, mosques, synagogues, places of worship.	17	230/220	0.0630
	School	Establishments typically engaged in furnishing academic courses and associated coursework. May include universities (public/private), junior colleges (public/private), vocational schools.			
	Public Facility	Establishments typically operated by the local city or other government entities. May include government offices, community centers, fire/police stations, parks, city facilities, court houses, etc.			

Category	Type of Commercial	Typical Descriptions of Establishment	Gal/ Fixture	BOD/TSS	Sewage Factor (see Note A)
VII	Health Spa without Pool	Establishments typically operating fitness and recreation sports facilities featuring exercise and other active physical conditioning. Must not have a pool. May include physical fitness centers with pools, gyms without pools, day spas without pools, etc.	42	230/220	0.1555
	Laundromat	Establishment typically operating facilities with coin-operated or similar self-service laundry equipment for customer use on premises. Laundries or Laundromats classified under this category are for high efficiency front loading washing machines.			

Footnotes:

1. Non-coin operated car washes may be treated as an industrial user.

Appendix D

PROCEDURES FOR ESTABLISHING A REGIONAL SEWER BILLING FORMULA

PROCEDURES FOR ESTABLISHING A REGIONAL SEWER BILLING FORMULA

1. Review of Existing Billing Procedures and Use of Exhibit J of the Regional Sewage Service Contract.

Each agency provided information relative to current billing procedures and capital fee assessments based on fixture unit counts as determined by Exhibit J. A review of the information indicated that the use of Exhibit J for monthly/bi-monthly sewer billing purposes was not accurate. The calculated equivalent dwelling units (EDU's) in the Exhibit J formula did not match the actual flows that were being discharged by the various commercial categories. Please keep in mind that actual flows of the various commercial categories were determined from user accounts that had separate meters for domestic and landscape water use, thus an accurate determination of discharge flows were able to be obtained.

The fluctuation between calculated EDU flows (Exhibit J) and flows based on actual metered consumption varied substantially from category to category. Even users within the same category that had the same number of EDU's had consumption and discharge flows that varied substantially. It was determined that the Exhibit J formula did not consider actual flows therefore the formula should not be used for determining sewer billing EDU's.

2. Formula Format for New Billing Procedure.

A determination was made to utilize as much of the existing formula format as possible. As can be seen by the work sheet (Exhibit A) and the finished table (Exhibit B), this was accomplished by using the Category and Type of Commercial columns, the BOD/SS column, a factor column and utilization of the Sewage Factor formula for determining the BOD/SS impacts. The flow portion of the formula was converted to a percentage of metered consumption.

3. Category and Type of Commercial Columns

These columns were initially established based on similar types of activities and water use. The Type of Commercial column was modified slightly after BOD/SS strengths had been established and sewage discharge characteristics were reviewed. The intent of each category is to combine similar uses and BOD/SS loadings. This will enable different individuals to categorize their various commercial users in the same manner.

4. Established Biological Oxygen Demand (BOD) and Suspended Solids (SS) for Each Category.

Each agency provided information relative to BOD/SS strengths for the various categories that the agency had acquired through its own testing program and through analysis reports submitted by the commercial users. In addition Chino Basin provided commercial user strength characteristic tables from EPA and from the State Water Resources Control Board. During review of the BOD/SS strengths it was found that the original strengths used in Exhibit J appeared to be low. With this information BOD/SS strengths were established for each category of commercial user. Please refer to the attached Exhibit C for the appropriate BOD/SS strengths. In applying the higher BOD/SS strengths to Categories 2,3 and 8 it was determined that the substantially higher strengths caused substantial increases in the sewer rates for those categories. To lessen the impact it was determined to reduce the BOD/SS for Categories 2,3 and 8. The strengths will be reviewed on an annual basis by the Regional Program and implemented as determined by the agencies. The modified strengths are as shown on the finalized work sheet.

5. Discharge Flow Percentage Factor

All commercial users have meters that monitor water consumption. A portion of the consumption is returned to the sewer through either process or user discharge. The amount of discharge to the sewer for each type of user within the category is reasonably typical. Therefore based on information that each agency had developed over the years, percentage of consumption factors were established for each category. These factors represent the amount of consumed water that is returned to the sewer. The established percentage factors are based on metered flows that are for domestic purposes only.

For all metered consumption that have a combined domestic and landscape usage, a factor of 55% is used to determine the domestic portion of the metered consumption. Please refer to item 9 below for applying discount percentage factors to the combined consumption meter readings.

6. Service Unit Formula (SU)

The sewer billing system is based on the assumption that one EDU is equivalent to one residential unit. One residential unit discharges 270 gallons per day of sewage with a BOD of 230 and a SS of 220. The SU formula is used to convert the BOD/SS loadings of various commercial users to an equivalent amount of residential units. The Service Unit Formula is as follows:

$$SU = \frac{Flow}{270}\left(0.37 + 0.31\,\frac{BOD}{230} + 0.32\,\frac{SS}{220}\right)$$

The SU formula was applied to each of the categories to determine the numerical equivalent of a residential unit. These numerical equivalents are indicated in the Service Units column of the work sheet (Exhibit A). The flow factor in the formula is the portion of metered usage attributable to the sewer discharge.

7. Flow Conversion to Hundreds of Cubic Feet (HCF)

The SU formula is based on gallons per day (gpd) of sewer discharge (one residential unit equals 270 gpd). All agency meter readings are based on hundreds of cubic feet (HCF) of water consumption. One HCF is the equivalent of 748 gallons of water. Some agencies bill customers on a monthly basis, other agencies bill customers on a bi-monthly basis. In order to establish a sewer billing formula based on metered consumption a conversion from gpd to HCF has to be made. The following is how the conversion was made for both monthly and bi-monthly:

Conversion to HCF (Hundreds of Cubic Feet):
Bi-Monthly = 270 gpd x 365 days ÷ 748 ÷ 6 months = 21.96
Monthly = 270 gpd x 365 days ÷ 748 ÷ 12 months = 10.98

These two numbers represent the equivalent daily discharge over a one or two month period as measured in HCF. These numbers are then carried forward in the equation as indicated on the work sheet.

8. Equivalent Dwelling Unit (EDU) Calculation and Formula

The next step in the process is to compile all the information and conversions into the original formula. The EDU calculation column on the attached work sheet accomplishes this. The flow percentage factor is multiplied times the meter reading in hundreds of cubic feet (HCF) which is multiplied by the numerical equivalent residential units (service unit formula) and that is divided by the equivalent discharge for either monthly or bi-monthly billing converted to HCF.

$$EDU's = Flow\ \%^{*} \times HCF\left(0.37 + 0.31\,\frac{BOD}{230} + 0.32\,\frac{SS}{220}\right) \div 10.98 \text{ or } 21.96$$

* Add landscape factor if applicable

Sewer Bill = EDU's x Agency EDU billing rate

The last columns in the work sheet represent the resultant factor of the formula calculation with the HCF being the only unknown that is entered when the meter is read by the agency. This decimal factor multiplied by the metered consumption will provide the number of equivalent dwelling units which is then multiplied by the agency's cost per EDU to determine the customers sewer bill.

Please note that these formulas for the various categories are to be used for all metered accounts that provide only domestic water service. If the metered account has combined domestic and landscape usage please refer to item 9 below.

9. Combined Domestic/Landscape Usage

If an account has combined domestic and landscape usage in the HCF metered consumption reading then the HCF reading shall be multiplied by 55% (.55) prior to the EDU's being calculated in the formula. 55% represents the amount of consumption that is contributable to the domestic consumption. If an account has a special circumstance and can show that the landscape usage is different than the norm established above, that account can be so adjusted providing the billing agency documents the change in the landscape factor and can provide that information to the auditor if required.

10. Category 9 - Sewer Billing for Schools

Each contracting agency provided information on how they bill schools for sewer service. Records indicate that the K through 12 grades are very similar in their domestic water use habits and demands. Records indicated that the average use per student was approximately five (5) gallons per student per day. The one college indicated a usage of approximately ten (10) gallons per day per student. All of the information was reviewed and from that review it was determined to bill schools for sewer service based on a gallon per day (gpd) discharge per student. It was also noted that an accurate student count is obtained by each school during the month of October and this number is reported as the school's October Average Daily Attendance or October ADA.

Therefore to calculate a K thru 12 school sewer bill perform the following:

October ADA multiplied by 5 gps/d divided by 270 gpd = EDU's

The EDU's are then multiplied by the agency's monthly or bi-montly sewer rate and that amount is then billed to the school throughout the year. Each October a new student count is obtained and a new rate is determned. For a college use the same procedure except 10 gps/d is used.

EFFECTS OF FORMULA ON
DISTRICT COMMERCIAL USERS

CATEGORY 1

Financial Impact - a reduction in sewer bills from 16% to 20% depending on the amount of water discharge to the sewer.

This category includes all the genral commercial users who do not have or are associated with food services of any kind. These users are mostly domestic waste dischargers only.

CATEGORY 2

The District has no accounts in this category.

CATEGORY 3

Financial Impact - an increase in sewer bills from 15% to 21% depending on the amount of water discharge to the sewer.

This category includes all commercial users who have food as part of their service but not as their only service. This category also includes hospitals and convalescent homes. The major reason for the increase is due to the BOD/SS loadings.

CATEGORY 4

Financial Impact - a reduction in sewer bills from 28% to 46% depending on the amount of water discharge to the sewer.

Both users are subject to permitting and installation of clarifiers to reduce constituent loadings and this is reflected in the low BOD/SS numbers and the removals of other constituents.

CATEGORY 5

Financial Impact - an increase in sewer bills from 5% to 10% depending on the amount of water discharge to the sewer.

The District only has dry cleaners. These users will see a small increase due to the increase in the BOD/SS numbers. Water consumption is very small so the impact will be minimal.

EFFECTS OF FORMULA ON DISTRICT COMMERCIAL USERS

CATEGORY 6

Financial Impact - a reduction in sewer bills from 23% to 36% depending on the amount of water discharge to the sewer.

The District has no motels and only two or three health spas. The majority of those impacted are the churches and the reduction is due the difference in this Districts current billing system.

CATEGORY 7

Financial Impact - a reduction in sewer bills from 22% to 35% depending on the amount of water discharge to the sewer.

The major reason for the reduction is due to the difference in this Districts current billing system.

CATEGORY 8

Financial Impact - an increase in sewer bills from 14% to 20% depending on the amount of water discharge to the sewer.

This category includes all users who have food as a major part of their service and therefore have a greater impact. In this category the EDU Committee has reduced the BOD/SS loadings by 50% because of the impact to the user. Normal loading factors should be 800/600. It is proposed to increase the loadings over the years to comply with what the norm should be.

CATEGORY 9

Financial Impact - Elementary Schools - 136% increase in sewer bills
Jr. High Schools - 18% increase in sewer bills
High Schools - 42% decrease in sewer bills
Colleges - 17% increase in sewer bills

Elementary Schools - during the review process the school water usages and the number of students were compared and it was realized that the District has been dramatically under billing the elementary schools. The actual amount of water per student per day that is discharged to the sewer is greater than what has been billed. I would propose that the increase in fees be made up over a period of 4 years. Bi-monthly bill increases range from $220 to $400 depending on the number of students if the entire 136% were applied at one time.

Jr. High Schools - Here again the investigation indicated that these schools were being underbilled but not as severe. The increase is proposed to be billed with no time for make up.

EFFECTS OF FORMULA ON DISTRICT COMMERCIAL USERS

High Schools - The District originally had high schools grouped with the one college, but in the review process it was determined that their flow discharge is very similar to that of the Jr. High therefore there is a substantial reduction in the sewer rate.

Colleges - The District is the only agency with a college. Originally the college and high school were grouped together but because the college has full time night school activities the discharge per student increases because of the extra 7 hours of daily operation. The increase is reflective of this operational difference.

CHINO BASIN REGIONAL SEWER SERVICE PROGRAM
Volumetric Equivalent Dwelling Unit (EDU) Calculation
Industrial Users

1. Industrial: Shall be defined for purposes of this exhibit, as those industries identified in the Standard Industrial Classification Manual, Bureau of the Budget, 1967, as amended and supplemented, under the category "Division D – Manufacturing" and such other classes of significant waste product as, by regulation, the Administrator deems appropriate. EDU's shall be determined as follows:

   Total EDU's = a + b

   a. Domestic Wastewater EDU's are calculated using Category #1 on Table 1.

   b. Non-domestic Wastewater EDU's are calculated as follows:

$$\frac{\text{Non-Domestic Flow}}{270} \qquad \frac{(0.37 + 0.31\ \text{BOD} + 0.32\ \text{SS})}{230 \qquad 220}$$

2. Procedures for establishing industrial wastewater strength charges shall be as follows:

   a. If required by the Contracting Agency, any Non-residential User may be required to submit on a yearly basis (on or before the first of July of every year), a 24-hour composite wastewater analysis performed by a certified laboratory. Said analysis shall be for BOD, SS and/or any other parameter as may be required by Contracting Agency Ordinance. The results of this analysis may be used to adjust the equivalent dwelling units for any category of the Non-residential User. The frequency of wastewater analysis samples submitted may vary depending on the type of industrial discharge as determined by the Contracting Agency.

b. In the event the User believes the BOD, SS, and sewer factor assigned in this Section is no longer applicable, said User may submit the results of a laboratory analysis of its wastewater from a certified laboratory to the Agency for review. An adjustment may be made if deemed appropriate and consistent with the intent of this Section.

c. If a pretreatment wastewater devise and/or in-plant modification is instituted which involves a change in the quality and/or quantity of wastewater being discharged, the User shall immediately after instituting their new program have the effluent from the industrial plant reanalyzed as described in Section 2.a.

d. All monitoring and laboratory work must be arranged and paid for by the Non-residential User.

3. The specific wastewater rate calculation criteria, to include the assignment of sewer factors to specific Users, shall be determined by the Contracting Agency for all Users not specifically mentioned under the classifications set forth in this section, in accordance with the provisions of this Section.

INDUSTRIAL BILLING
IMPLEMENTATION GUIDELINE

The purpose of this guideline is to provide specific procedures each Contracting Agency should follow to insure that each Agency implements the industrial billing procedures in a manner that is consistent throughout the Regional Program. The following procedures should be used when determining a new industry's billing or when adjusting an existing industrial billing account.

1. **Users having only Domestic Wastewater Discharge** – If the User has no process wastewater discharge, EDU's are to be computed as follows:

    a. The rate used to compute EDU's is the same rate used for Commercial Users under Category #1 of the Commercial Users' Table 1. If the User has a dual meter system (one for domestic and one for landscape), the Category #1 factor is applied directly to the domestic metered consumption.

    b. If all consumption is combined through one meter, and it is verified that the User has landscape use, water consumption could be reduced by 25% to account for the landscape use. The remaining 75% would be applied to the Commercial Category #1 factor in computing the EDU's associated with the domestic discharge. The Contracting Agency is responsible for identifying and retaining documentation supporting the User having landscape water consumption.

2. **Combined Domestic and Non-Domestic Wastewater Discharge** – EDU's are computed based upon water consumption. Water consumption may consist of water used for non-domestic, domestic, and, landscape use. Since the User does not maintain separate metered consumption for domestic versus non-domestic use, the EDU computation requires special computations. Accordingly, the following guidelines should be used:

    a. Domestic EDU's are computed by multiplying the number of employees by 20 gallons per day and dividing the result by 270 gallons per day. The number of employees should be reviewed on an annual basis and updated if warranted. The Contracting Agency is responsible for identifying and retaining documentation supporting the number of employees.

    b. If the User does not have a separate meter for landscape use, total water consumption may be reduced by 25%, providing the Contracting Agency verifies the User uses water for landscape purposes. The Contracting Agency is responsible for identifying and retaining documentation supporting the User having landscape use.

        The 25% factor will be considered a uniform rate reduction. Should a User protest the 25% factor, a factor change should not be considered other than to recommend the User have a separate meter installed for landscape purposes.

    c. In computing non-domestic wastewater EDU's, there are two potential options for identifying water consumption associated with non-domestic use that is to be used in the formula described in Section 1(b):

        i. Non-domestic wastewater EDU's are computed by considering total water consumption as non-domestic wastewater in the formula described in Section 1(b), water consumption used for domestic and landscape purposes are disregarded; or,

ii. Non-domestic wastewater will need to be computed by reducing total water consumption by water consumption associated with domestic and, if applicable, landscape use. Domestic wastewater is computed as described in item 2(a) and landscaping water use is computed as described in item 2(b) above. The computed non-domestic wastewater would then be used in the formula described in Section 1b in order to compute the EDU's associated with non-domestic use.

In addition, the computed non-domestic wastewater may be further reduced by water consumption that stays with the end product. The User is required to furnish documentation that supports such average monthly product water consumption.

d. For non-domestic wastewater EDU calculations, the Contracting Agency will be responsible for determining the User's constituent loading that is entered into the formula described in Section 1(b) and shall maintain this information on file for auditing purposes. The constituents shall be monitored at least once a year, more frequent if required, to insure that the User's EDU's are being computed properly.

Issues to Resolve with Technical Committee Members:

1. Should this new industrial rate calculation procedure be required for existing Users? Based upon the response, the first paragraph above would need to incorporate such understanding. As it is, we are saying it only applies to new Users or Users who are undergoing some other sort of adjustment.

2. Based upon decision of a factor reduction for landscape, should we also use the same method for the Commercial Users?

REGIONAL SEWAGE PROGRAM

SEWER SERVICE BILLING PROCEDURES FOR RESIDENTIAL AND COMMERCIAL CATEGORIES BASED ON EQUIVALENT DWELLING UNIT (EDU) COMPUTATIONS

General

Equivalent Dwelling Unit (EDU) is a numerical value designation where 1 EDU represents the sewage flow from a single family residential household and is equal to 270 gallons per day discharge with a BOD of 230 mgl and a SS of 220 mgl. The following computations shall be used to determine EDU's for residential and commercial units:

Residential: Each structure or part of a structure which is designed for the purpose of providing permanent housing for one family or tenant shall be calculated as follows:

Single Family .....1 EDU
Multiple Family
- Apartment .....0.7 EDU
- Townhouse .....0.7 EDU
- Condominium .....0.7 EDU
- Mobile Home .....0.7 EDU
- Trailer Space .....0.7 EDU

Commercial: All structures designed for the purpose of providing permanent housing for enterprises engaged in the exchange of goods and services. EDU's shall be determined by multiplying the metered water useage in hundreds of cubic feet (HCF) by the appropriate Category factor from Table 1.

TABLE 1

SEWER EDU DETERMINATION
FOR COMMERCIAL CATEGORIES

Category	Type of Commercial	BOD/SS	Flow* %	EDU Formula Bi-monthly	EDU Formula Monthly
1	Office Day Care Center Market w/o grinder Public Facility w/o dining Bar/Tavern w/o food Retail/Service Recreation/Amusement w/o dining	230/220	80%	0.0364 HCF	0.0729 HCF
2	Mortuary	250/350	95%	0.0526 HCF	0.1052 HCF
3	Hotel w/dining Motel w/dining Bar/Tavern w/dining Recreation/Amusement w/dining Public Facility w/dining Hospital - full service Convalescent facility	300/400	85%	0.0525 HCF	0.1050 HCF
4	Laundromat Car Wash	100/150	95%	0.0313 HCF	0.0626 HCF
5	Laundry - Com/Ind Dry Cleaner	350/500	85%	0.0607 HCF	0.1215 HCF
6	Motel w/o dining Health Spa Church/Worship	300/100	80%	0.0335 HCF	0.0670 HCF
7	Outpatient Facility Doctor Office Dental Office	225/100	90%	0.0335 HCF	0.0671 HCF
8	Restaurant - full service Restaurant - Fastfood Market w/grinder Bakery	400/300	85%	0.0521 HCF	0.1042 HCF
9	School - Public/Private K thru 12 College	230/220	 5 gpd/s 10 gpd/s	 0.037 x # students 0.074 x # students	 0.0185 x # students 0.0370 x # students

* If account has combined domestic/landscape useage use 55% for domestic use.
(Metered consumption x 55% x EDU Formula)

MONTHLY SEWER BILLING RATE WORK SHEET FOR COMMERCIAL CATEGORIES

Category	Type of Commercial	BOD/SS	Flow %	Service Units =	Conversion to HCF Bi-monthly billing	Conversion to HCF Monthly billing	EDU Calculation Bi-monthly	EDU Calculation Monthly	EDU Formula Bi-monthly	EDU Formula Monthly
1	Office Day Care Center Market w/o grinder Public Facility w/o dining Bar/Tavern w/o food Retail/Service Recreation/Amusement w/o dining	230/220	80%	Flow / 270	HCF / 21.96	HCF / 10.98	.80 HCF / 21.96	.80 HCF / 10.98	0.0364 HCF	0.0728 HCF
2	Mortuary	800/800	95%	Flow (2.612) / 270	HCF (2.612) / 21.96	HCF (2.612) / 10.98	.95 HCF (2.612) / 21.96	.95 HCF (2.612) / 10.98	0.1130 HCF	0.2260 HCF
3	Hotel w/dining Motel w/dining Bar/Tavern w/dining Recreation/Amusement w/dining Public Facility w/dining Hospital - full service Convalescant facility	500/600	85%	Flow (1.917) / 270	HCF (1.917) / 21.96	HCF (1.917) / 10.98	.85 HCF (1.917) / 21.96	.85HCF (1.917) / 10.98	0.0742 HCF	0.1484 HCF
4	Laundromat Car Wash	100/150	95%	Flow (0.723) / 270	HCF (0.723) / 21.96	HCF (0.723) / 10.98	.95 HCF (0.723) / 21.96	.95 HCF (0.723) / 10.98	0.0313 HCF	0.0626 HCF
5	Laundry - Com/Ind Dry Cleaner	350/500	85%	Flow (1.569) / 270	HCF (1.569) / 21.96	HCF (1.569) / 10.98	.85 HCF (1.569) / 21.96	.85 HCF (1.569) / 10.98	0.0607 HCF	0.1214 HCF
6	Motel w/o dining Health Spa Church/Worship	300/100	80%	Flow (0.919) / 270	HCF (0.919) / 21.96	HCF (0.919) / 10.98	.80 HCF (0.919) / 21.96	.80 HCF (0.919) / 10.98	0.0335 HCF	0.0670 HCF
7	Outpatient Facility Doctor Office Dental Office	225/100	90%	Flow (0.818) / 270	HCF (0.818) / 21.96	HCF (0.818) / 10.98	.90 HCF (0.818) / 21.96	.90 HCF (0.818) / 10.98	0.0335 HCF	0.0670 HCF
8	Restaurant - full service Restaurant - Fastfood Market w/grinder Bakery	1000/600	85%	Flow (2.591) / 270	HCF (2.591) / 21.96	HCF (2.591) / 10.98	.85 HCF (2.591) / 21.96	.85 HCF (2.591) / 10.98	0.1003 HCF	0.2006 HCF
9	School - Public/Private K thru 8 High/College	230/220	5 gpd/s 10 gpd/s	gpd x # of students ÷ 270	gpd/s x # of students ÷ 748 x 365 days ÷ 6 = HCF	gpd/s x # of students ÷ 748 x 365 days ÷ 12 = HCF	HCF ÷ 21.96	HCF ÷ 10.98	Flat Rate	Flat Rate

Service Unit Formula:

$$SU = \frac{Flow}{270}\left(0.37 + 0.31\,\frac{BOD}{230} + 0.32\,\frac{SS}{220}\right)$$

Conversion to HCF (Hundreds of Cubic Feet):

Bi-Monthly = 270 gpd x 365 days ÷ 748 ÷ 6 = 21.96

Monthly = 270 gpd x 365 days ÷ 748 ÷ 12 = 10.98

Appendix E

WASTEWATER CONNECTION FEE REPORT

Inland Empire Utilities Agency

2015 Wastewater Connection Fee Update

FINAL REPORT

April 10, 2015

3150 BRISTOL STREET, SUITE 500 • COSTA MESA, CALIFORNIA 92626 • P. 714.593.5100 • F. 714.593.5101

Inland Empire Utilities Agency

2015 Wastewater Connection Fee Update

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1.0 INTRODUCTION

The Inland Empire Utilities Agency (IEUA or Agency) is a public agency serving the Inland Empire region as a regional wastewater agency, as well as a wholesale supplier of imported and recycled water. In April 2014, the Agency contracted with Carollo Engineers, Inc. to conduct a Connection Fee Study for the regional wastewater and water systems. This report specifically addresses the wastewater connection fees.

The connection fee study builds on the Agency's other planning efforts that are currently being developed. These efforts include the following:

- Integrated Resources Planning
- Recycled Water Program Strategy
- Recharge Plan Update
- Facilities Master Plan
- Energy Management Plan
- Asset Management Plan
- Long Range Plan of Finance
- Connection Fee/Rate Study

IEUA currently imposes Wastewater capacity fees of $5,107 per equivalent dwelling unit. The objective of the connection fee study is to update the wastewater connection fees as appropriate based on current system values and proposed capital improvements; and to develop a new connection fee for the Agency's water system. In order to determine conformance with industry standards and principles, legal requirements, and the Agency Board policy, the following criteria were used in evaluating the validity of the connection fee process:

- Do the connection fees represent a reasonable nexus to the costs incurred by the Agency on behalf of future customers and the benefits received?
- Is the allocation approach consistent with industry practices and California Government Code §54999.7 and §66013?
- Is it likely that the allocation approach will be appropriate for use by the Agency in the future?

The connection fee analysis is based upon a point in time calculation based on the FY 2012/13 Fixed Asset Schedule, current IEUA Ten Year Capital Improvement Plan (CIP), projected flows, and other Agency Data. This report presents Carollo's findings and proposed adjustments to the existing Connection Fees.

2.0 BACKGROUND

2.1 Regional Wastewater System

IEUA's regional wastewater system provides collection, treatment, and disposal of municipal wastewater for the residents and businesses within its service area. The seven member agencies within IEUA's wastewater treatment service area include the City of Chino, the City of Chino Hills, Cucamonga Valley Water District, the City of Fontana, the City of Montclair, the City of Ontario, and the City of Upland. In all, IEUA's wastewater system serves nearly 850,000 residents in a 242 square mile area of western San Bernardino County, and treats an average of 56 million gallons of wastewater per day.

2.1.1 Wastewater Collections

The regional collection system transports wastewater from the member agencies to IEUA's wastewater treatment facilities. The major assets of the collection system includes 94 miles of wastewater interceptor pipes, 72 miles of non-reclaimable wastewater pipes, and four wastewater lift stations. Other collection system assets include manholes, SCADA systems, and various auxiliary equipment.

2.1.2 Wastewater Treatment

IEUA owns, operates, and maintains five wastewater treatment plants located throughout the service area. The plants are interconnected via the regional collections system bypass pipelines. Table 2.1 provides a brief description of each plant.

Table 2.1 Treatment Facilities

Plant		Location	Treatment Processes	Notes
Carbon Canyon Water Recycling Facility	CCWRF	Chino	Primary, Secondary, Tertiary	Solids conveyed to RP-2 for treatment
Regional Water Recycling Plant #1	RP-1	Ontario	Primary, Secondary, Tertiary, Solids	
Regional Water Recycling Plant #2	RP-2	Chino	Solids Treatment Only	Liquids removed during solids processing are conveyed to RP-5
Regional Water Recycling Plant #4	RP-4	Rancho Cucamonga	Primary, Secondary, Tertiary	Solids conveyed to RP-1 for treatment

Table 2.1 Treatment Facilities				
Plant		**Location**	**Treatment Processes**	**Notes**
Regional Water Recycling Plant #5	RP-5	Chino	Primary, Secondary, Tertiary	Solids conveyed to RP-2 for treatment

3.0 CONNECTION FEE OVERVIEW

Connection fees are a method by which local agencies can impose charges to offset the costs of new customers connecting to their water, wastewater, or other utility or infrastructure systems. Capacity fees are governed by California Government Code §66000, which provides a legal framework for the applicability, assessment, and imposition of capacity fees. There are various methods to calculate capacity fees; the most appropriate method for any system is dictated by the system's specific characteristics. The proposed capacity fees represent the maximum fees that the Agency can impose based on the calculations as discussed in this report.

3.1 Statutory Requirements

A connection fee that is levied on users of a wastewater utility is subject to the requirements of Chapter 13.7 (commencing with Section §54999) of Part 1 of Division 2 of Title 5 of the California Government Code relating to the imposition of charges on customers that are public agencies. Connection fees are also subject to the requirements of Government Code §66013. Connection fees are "charges for facilities in existence at the time the charge is imposed or charges for new facilities to be constructed in the future, which are of benefit to the person or property being charged." Section §66013 provides that connection fees "shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed." Section §54999.7 establishes a similar cost-of-service requirement. As determined by *Richmond v. Shasta Community Services Dist. (2004) 32 Cal. 4th 409*, Connection fees are not subject to the provisions of California Constitution article XIII D (Proposition 218). A connection fee is imposed on new connections in order to recover a fair and equitable share of the costs of capacity within the utility facilities. A key tenet in adopting these connection fees is: "growth pays for growth." This means that the costs associated with building excess capacity to serve new customers ultimately should be borne by those new users who benefit from this available capacity.

3.2 Connection Fee Methodologies

Two general types of connection fees are used to recover system investments from new users. They are the System Buy-In Approach and the Incremental Cost Approach. Additionally, utilities

can elect to use a Hybrid Approach that combines the Buy-In and Incremental Approaches. While all are valid, the best approach is dictated by each system's specific characteristics.

3.2.1 Buy-In Approach

Utilities often construct infrastructure capacity to meet projected future demands. The purpose of the Buy-In approach is to recover costs that have already been incurred by the Agency. Existing customers have paid for this system over time through their user rates and fees (through direct capital financing or retired debt). The Buy-In approach provides a mechanism to reimburse existing system users for the carrying costs of constructing system capacity that is available to be used by future users. In this sense, the Buy-In approach segregates the existing system value into costs for existing customers and costs for future users.

There are further considerations when calculating the Buy-In approach. Given that the existing system was constructed over time, the original cost of constructing the system neither accurately reflects the current value of that system nor the cost to construct the facilities today. Consequently, original costs were escalated to Fiscal Year 2014/15 dollars using Engineering News Records Construction Cost Index (ENR-CCI). The Agency's FY 2012/13 fixed asset records were used as the basis for this analysis, which included original costs, acquisition dates, and estimated useful lives.

Replacement costs alone might not be the best estimate of system value, because system assets have a finite lifespan and must be replaced and/or rehabilitated in time. The Agency adjusts the existing cost basis by deducting straight-line depreciation. Accumulated depreciation is determined by dividing the age of each asset by the projected useful life and reducing the asset value by that percentage. By accounting for accumulated depreciation in the Buy-In cost approach, the Agency may recover a proportionate value of capital improvements that will replace depreciated assets or will be undertaken to extend the useful lives of these assets through the future cost component of the connection fee.

The Buy-In approach should not include costs of assets that were grant-funded or donated assets and should only include those costs incurred by the Agency ratepayers for the development of the existing system, which includes the accumulation of fund reserves as well as expenses associated with construction in progress.

Finally, in the calculation of the Buy-In approach, the existing system value is segregated into the portions for existing customers and future users. This is achieved by determining the approximate share of each asset that benefits existing customers and the share that is available to benefit future users. This is calculated on a percentage of capacity basis for major unit processes like primary treatment, secondary treatment, and tertiary treatment and on an average basis for all other assets.

The Buy-In approach divides the value of the existing system available to serve future users by the total number of future users that are expected to benefit from the system in order to calculate the connection fee.

$$Buy\ In\ Connection\ Fee = \frac{Value\ of\ the\ Available\ System}{Expected\ Future\ Users}$$

3.2.2 Incremental Approach

The Incremental approach recovers the cost in present value (2014/15) dollars of the Agency's planned investments that it will undertake to add to serve future development. Projects included in the Agency's capital improvement program have two primary purposes – maintain reliability of existing infrastructure; and increase system capacity. In the Incremental approach, the future system value is segregated between those two purposes. The costs of each project is associated in some percentage to either or both of these purposes. This is achieved by determining the approximate portion of each asset that benefits either existing customers or future users. In the incremental approach, the current value of planned capital improvements that will serve future users through the Agency's planning horizon of 2035 is divided by the expected number of future users through 2035.

The future cost basis accounts for capacity related improvements that will be constructed through 2035. The costs of these improvements are estimated in present value terms (2014/15 dollars). Costs are fairly and reasonably spread over all future users by dividing the total system value by the total number of future users that are projected to receive wastewater service by 2035.

$$Incremental\ Capacity\ Fee = \frac{Capacity\ Related\ CIP}{Expected\ Future\ Users}$$

3.2.3 Hybrid Connection Fee Approach

The Hybrid (Combined) Approach combines the Buy-In and Incremental approaches. Current system value is added to the costs of capacity related capital projects, and divided by the expected future customers.

$$Hybrid\ Connection\ Fee =$$

$$\frac{Value\ of\ the\ Available\ System}{Expected\ Future\ Users} + \frac{Capacity\ Related\ CIP}{Expected\ Future\ Users}$$

3.2.4 Recommended Approach

Based on the characteristics of the Agency's wastewater system and discussion with Agency Staff, Carollo recommends that the hybrid approach be used for the calculation of the wastewater connection fee. IEUA's wastewater system holds available capacity that has been funded by existing users, which drives the need for a Buy-In component. Additionally, the CIP is designed to expand system capacity, calling for an incremental component. Using the hybrid

approach establishes a nexus between the value of the existing and future system, and between the benefits of capital investments to existing customers and future users. The hybrid approach is commonly utilized by other agencies such as the comparable agencies of the City of Las Vegas, Sacramento Regional County Sanitation District, and the San Diego County Water Authority.

4.0 WASTEWATER CONNECTION FEES

In order to calculate the Hybrid connection fee for IEUA, based on the equation presented above, three separate steps must be taken as follows:

1. The Value of the Available System must be determined. This includes determining the value of the existing assets and then adjusting that value based on the share that is available to serve future users. However, this adjustment will be presented after the calculation of the existing system since the future users' share of the other components of the existing system (reserves and construction in progress costs) cannot be determined until the number of expected future users is determined. Similarly, the property tax credit received by connecting customers cannot be determined until the number of expected future users is determined.

2. The Capacity Related CIP, or synonymously the Value of the Future System, and the portion allocated to future users must be determined.

3. The Number of Expected Future Users must be determined.

The following sections of the report outline the process to determine each of these steps.

4.1 Value of Available System

In order to determine the Value of the Available System, the value of the existing system must be determined and must account for reserves, construction in progress a property tax credit, and the portion that is available for future users. This section presents the value of the existing system and the adjustments made for reserves, construction in progress, and property tax credit. A later section in the report shows how the value is adjusted to become the value of the available system.

4.1.1 Net Capital Asset Equity

Net capital asset equity represents the current value of the physical wastewater or water systems funded by existing ratepayers, less accumulated depreciation. This approach accounts for the fact that system assets have been in service and no longer have the full useful life. The terms related to the calculation of net capital asset equity are defined as shown below.

1. Replacement Cost New- Current value of the existing water or sewer system. Original costs are escalated to Fiscal Year 2014/15 dollars using Engineering News Record Construction Cost Index (ENR-CCI).

2. Capital Costs Not Funded by Existing Ratepayers- These include developer-funded assets and are excluded from the ratepayers' equity calculation.

3. Construction in Progress- capital projects currently under construction or recently completed, not captured in the Existing Plant-In-Service asset records.

4. Depreciation- Represents the loss in value of the system as the useful life of that asset is exhausted.

Throughout the remainder of this report, the value of the physical system will be referred to as Replacement Cost New Less Depreciation (RCNLD).

4.1.1.1 Valuation of Physical Assets

The RCNLD represents the value of each system's physical assets. The RCNLD for each system was calculated based on the Agency's Fixed Asset Schedule (physical asset records). The RCNLD of all Agency Fixed Assets are summed into different assigned asset groups. The cost of each asset in the wastewater group was then allocated between flow, BOD, and TSS according to its association with different unit processes in the treatment process. The different unit processes and distribution of costs associated with that process are presented in Table 4.1. The values in Table 4.1 are based on allocations among the billable constituents of flow, BOD, and TSS, based on design criteria for sizing each unit process. The derivations of these allocations are described in more detail in the first part of Appendix A (typed portion).

The second part of Appendix A (handwritten portion) explains how the allocations were made to the existing and future customers (growth) for each existing asset and capital project. The information in Appendix A is then used to allocate the existing assets. The result of this allocation is shown in Appendix B. This is a two-step process.

In the first step the assets are allocated on a unit process basis to the constituents of flow, BOD, and TSS, For example, the fifth asset listed in Appendix B is the RP-5 Aeration Basin. Since an aeration basin is an Activated Sludge process (also considered secondary treatment), the value of it is allocated 100% to BOD, as shown in Table 4.1.

In the second step, the assets are allocated to existing and future customers. Using the same RP-5 Aeration Basin from the first step, it has some existing capacity for future customers (growth), as described in the second part of Appendix A (see Appendix A, page 4 of 15 of the handwritten sheets – the aeration basin is a secondary treatment process and 33% of its capacity is for future customers (growth)).

This two-step process was used to allocate the value of each of the fixed assets in Appendix B.

Table 4.1 Unit Process Allocation			
Unit Process	**Flow**	**BOD**	**TSS**
Collection System	100%		
Preliminary Treatment	100%		
Primary Clarifiers	80%		20%
Activated Sludge		100%	
Secondary Clarifiers	80%	20%	
Tertiary Treatment	100%		
DAF Thickening (WAS)		100%	
Gravity Thickening (Primary Sludge)			100%
Anaerobic Digestion		45%	55%
Sludge Dewatering		45%	55%
Sludge Disposal		45%	55%

It should be noted that some assets cannot be easily classified into the unit processes listed in Table 4.1. For example, the cost of assets such as yard piping, odor control, and instrumentation that support the general function of the facility are otherwise unassignable to any specific unit process. For those assets, the weighted average of the allocation of all the other assets was used. The weighted average of the total asset allocations factors for flow, BOD, and TSS are presented in Table 4.2.

Table 4.2 Asset Allocation Factors	
Billable Constituent	**Allocation**
Flow	44%
BOD	34%
TSS	21%

The total RCNLD for the Agency's wastewater group assets and the total costs that have been allocated between flow, BOD, and TSS are presented in Table 4.3.

Table 4.3 Value of Fixed Assets			
Flow	**BOD**	**TSS**	**Total**
$276,273,054	$180,302,439	$114,170,620	$570,746,114

4.1.2 Value of Fixed Assets Available for Growth

As described above as the second step, the value of capacity in the existing system still available to serve future users (growth) for each existing asset is shown in Appendix B. Table 4.4 summarizes Appendix B by presenting the total RCNLD from Table 4.3 and the portion that is available to serve future users (growth). It also shows how the total value to serve future customers is broken down into each billable constituent of flow, BOD, and TSS.

Table 4.4 Value of Fixed Assets Available for Growth

Allocation	Flow	BOD	TSS	Total
Total Asset Value	$276,273,054	$180,302,439	$114,170,620	$570,746,114
Assets for Growth	$65,000,914	$50,002,336	$31,438,329	$146,441,580

4.1.3 Reserves

The fund balances at the beginning of FY 2014/15 in the Administrative Services Fund, Regional Wastewater Capital Improvement Fund, Non-Reclaimable Wastewater Fund, and the Regional Operations and Maintenance Fund collectively make up the Reserves component of the value of the existing wastewater system. Other funds, which have not been included within this wastewater connection fee calculation, are associated with either the water or recycled water systems. Table 4.5 presents the wastewater fund balances at the beginning of FY 2014/15. Only a portion of the Administrative Services Fund, proportionate to the percentage of all Fixed Assets that are associated with wastewater, is included in the value of the existing wastewater system. This portion of the Administrative Service Fund is included because it is an asset that future users benefit from that has already been paid for by existing users.

Table 4.5 Reserves

Fund	Balance
Administrative Services (GG)	$14,544,155
Non-Reclaimable Wastewater (NC)	4,502,755
Regional Wastewater Capital Improvement (RC)	60,856,307
Regional Operations and Maintenance (RO)	30,215,738
Total Wastewater (RO, NC, RC)	**$110,128,955**

Each reserve balance represents monetary value that a new user buys into when they join the system. Therefore, reserves are assets that are divided amongst both the existing customers and future users in the system. After estimating the number of future users in the system in a later section, the future users' share of the reserve balances can be calculated. The portion of the reserves that are allocated to the connection fees is based upon the ratio of the future users EDUs to total EDUs at the end of the planning period in 2035 (future users plus existing users). The Administrative Services Fund, Regional Wastewater Capital Improvement Fund, Non-

Reclaimable Wastewater Fund, and the Regional Operations and Maintenance Fund are all assets that benefit both existing customers and future wastewater users. Therefore, they are included in the value of the existing system as costs for which future users must reimburse existing customers.

4.1.4 Construction in Progress

The Agency's Construction in Progress are costs associated with the portion of Capital Improvement Plan projects that have been expensed. However, the projects are not yet recorded as Fixed Assets. These can include construction-in-progress projects as well as projects completed in a fiscal year. In this case we are concerned with projects from FY 2013/14 because they are projects that are not included in the fixed asset list described above and are also not included in the future capital projects, which will be described below. We have allocated these projects to growth and existing users on a project-by-project basis in the same fashion that the fixed assets were allocated. Table 4.6 below presents the results of these calculations. A listing of these projects is included at the end of Appendix B.

Table 4.6 Construction in Progress & Completed Projects FY 2013/14

Fund	Total Construction in Progress Costs ($ millions)	Costs Allocated To Growth ($ millions)	Costs Allocated to Existing Customers ($ millions)
Construction in Progress Projects in FY 13/14, Escalated	$13,395,388	$4,377,581	$9,017,807
Completed Projects in FY 13/14, Escalated	$14,754,564	$7,205,444	$7,549,120
Total Construction in Progress and Completed Projects in FY 13/14, Wastewater Fund, Escalated	**$28,149,952**	**$11,583,026**	**$16,566,926**

4.2 Value of Future System

4.2.1 Capital Projects

The value of the future system is determined by evaluating the capital investments that will add capacity to serve future users. As noted previously, IEUA has developed several planning documents to help determine the need for capital investments. These documents include Capital Improvement Plans (CIPs) for both the Water and Sewer systems through 2035. Only the projects that provide a benefit to future users are included as a cost element in the calculation of connection fees.

The Wastewater CIP project types that are included in the calculation of the connection fee include the following:

- Agency Headquarters improvements
- New Agency Laboratory facilities

- Agency Lift Station expansion and upgrades
- Agency-wide repairs and improvements
- New Business Network and Process Automation Control Network upgrades
- Upgrades to the Carbon Canyon Water Recycling Facility
- Upgrades to the Inland Empire Regional Composting Facility
- Expansions and upgrades to the Regional Conveyance System
- RP-1 Sludge Improvements and Expansion
- RP-2 Decommissioning
- RP-4 Improvements and Expansion
- RP-5 Improvements and Expansion

The future capital projects that add capacity specifically benefitting future development or upgrade the system in a manner that benefits both future and existing users are evaluated on a project-by-project basis to determine the amount that should be allocated to future users. Based on this approach, projects that are undertaken strictly to expand capacity for future users are allocated 100% to future customers. Projects that upgrade the system in order to meet regulatory requirements or rehabilitate assets that have reached the end of their useful lives, are allocated to both existing and future users proportionate to capacity requirements. It is important to note that the value of the existing system assets have been reduced by depreciation in order to prevent double counting of asset values.

The calculations for these allocated amounts are included in Appendix C. The method for allocating these costs is identical to the two-step method described above for the fixed assets. However, the methodology is applied to a different list of assets, in this case future assets (CIP projects) that are allocated to both existing and future customers (growth).

Table 4.7 summarizes the portion of the project costs, by fund, that are allocated to future users and that are planned for the Agency's wastewater system through 2035. It should be noted that regardless of which fund the capital projects are listed in (e.g., GG, RC, RO) they are all capital projects and can have allocations to both existing and future customers (growth). For example, a project being listed in the RO fund does not mean that it does not have excess capacity that is available for growth. A specific example is the RP-5 Solids Treatment Facility (RP-2 Relocation). Some of the new facilities will be for existing customers (47%) and some will be for future customers (growth – 53%).

Table 4.7 Wastewater Capital Improvement Projects by Fund			
Fund	**Total Wastewater Project Costs ($ millions)**	**Total Costs Allocated to Growth ($ millions)**	**Total Costs Allocated to Existing Customer ($ millions)**
Administrative Services (GG)	$28,249,010	$10,988,701	$17,260,309
Regional Wastewater Capital Improvement (RC)	401,396,950	272,253,286	129,143,664
Non-Reclaimable Wastewater (NC)	33,174,000	7,961,760	25,212,240
Regional Operations and Maintenance (RO)	345,532,951	138,397,835	207,135,116
Residuals Management & Organics Mgmt (RM)	18,175,000	6,724,750	11,450,250
Total Wastewater (GG, RC, NC, RO, RM)	**829,377,911**	**$436,326,332**	**$390,201,579**

Notes:

(1) 95% of the costs in the CIP that are both associated with the GG Fund and allocated to growth are spent towards projects to develop the wastewater system. 5% are allocated towards the Water Resources CIP. 95% of the GG Fund capital expenses are included here.

4.2.2 Allocation of Projects in Non-Reclaimable Wastewater System

The IEUA has a Non-Reclaimable Wastewater (NRW) system (see Table 4.7 for capital costs). The NRW system is divided into two zones: a northern collection system that conveys wastewater to the Los Angeles County Sanitation Districts for treatment and ocean disposal, and a southern collection system that conveys wastewater to Orange County Sanitation District for treatment and ocean disposal. The IEUA discharges the centrate produced in the RP-1 dewatering process to the NRW system. In addition, some industries discharge to the system to lessen the impact of their high salinity discharges on the IEUA treatment facilities. Finally, domestic wastewater can be bypassed to the NRW system, if needed.

The primary function of the NRW system is to export high salinity wastewater out of IEUA's service area. The NRW system is a key element in the IEUA's salinity management program. Without this system, IEUA would not be able to meet their effluent discharge requirements for salinity without adding expensive advanced treatment to their facilities (e.g., Reverse Osmosis). In 2013, a study was completed to estimate the capital costs of using advanced treatment, instead of the NRW system, for disposal of high salinity wastewater. The result was that advanced treatment would cost approximately $200 million. In addition, exporting the high salinity wastewater improves recycled water quality for both direct use and for groundwater recharge. The benefits of not having to spend $200 million on advanced treatment and of higher quality recycled water accrue to all of the customers in the IEUA service area. Because the benefit is for all customers, the capital costs for the NRW system that are shown in Table 4.7 are included in the allocation of costs to both existing customers and for growth (future customers).

The portion of the NRW capital costs that have been allocated to growth are based on the average allocation to growth of the RP-1 treatment facilities, which is 24%. Alternatively, the overall allocation to growth of all of the RP-1 facilities could have been used (28%). However, since all of the NRW projects over the next 20 years are related to the portion of the NRW system that is in the RP-1 service area, the 24% value was used.

4.3 Customer Base

As stated above, connection fees are calculated by dividing the monetary value of the existing and/or future system by the number of existing and/or future customers. The number of customers is typically expressed as equivalent dwelling units (EDUs).

4.3.1 Equivalent Dwelling Unit

An (EDU) is the measure of a customer's impact on the wastewater system as a ratio to the impact of a typical single-family residence. A commercial customer's impact is calculated based on this ratio while a single-family residence is assumed to have the impact of exactly one EDU. The number of EDUs in the wastewater system is calculated through a series of steps.

1. Determine the EDU flow and loading assumptions.
2. Allocate the existing and future assets to existing customers and future users. This is explained in sections 1.1 and 4.4 regarding the Value of Future System and Value of Available System.
3. Allocate assets to the billable constituents of flow, BOD and TSS. This is explained in Valuation of Physical Assets section of this report.
4. Determine the System flow and Loadings.
5. Determine the Asset Allocation Factors.

6. Calculate the number of EDUs.

4.3.1.1 EDU flow and Loadings Assumptions

The first step is to determine the appropriate values assumed flow, BOD, and TSS for a single-family residence. Due to the effect of conservation efforts, appliance efficiencies, and construction approaches, the per capita water consumption has trended downwards since the last time the Agency calculated single-family residential water consumption and wastewater flow. Utilizing the common assumption that single-family indoor water usage can be used as a proxy for single-family wastewater flows, it can be assumed that single-family wastewater flows have decreased in proportion to the decrease in indoor water consumption. In order to incorporate these effects, Carollo utilized a new indoor water consumption forecast provided by the Agency to represent wastewater flow per EDU. In the Integrated Resources Planning document, the Agency provided an indoor water consumption estimate of 55 gallons per capita per day (gpcd) that was utilized in this calculation to represent wastewater flow, from 2015 through 2035. The Agency also provided projections of singe-family residential units and densities through the year 2035. This data was used to calculate a weighted average of wastewater flows per single-family residence of 195.25 gpcd in Table 4.8.

Table 4.8 Updated Unit flow Assumption

Year	SFR Units	SFR Density	SFR flow, gpcd	SFR Unit flow, gpd
2015	170,447	3.58	55	196.9
2020	178,394	3.52	55	193.6
2025	187,488	3.54	55	194.7
2030	197,642	3.55	55	195.25
2035	207,794	3.56	55	195.8
Weighted Average SFR Unit flow				**195.25**

While this calculation illustrates a decrease in EDU wastewater flows from the prior assumption of 270 gpd, which is the basis of IEUA's contract with its Member Agencies, it is important to note that the per capita loadings are assumed to remain constant. Although Agency customers are consuming less water, the quantity of loadings into the system per capita have not decreased. Therefore, single-family BOD and TSS loading concentration assumptions must be adjusted in order to compensate for the decrease in the flow assumption from 270 to 195 gpd. The BOD and TSS Loading/day assumptions listed in the "Updated" column of Table 4.9 represent the new assumptions utilized in the EDU calculations.

Table 4.9 Updated Unit Loading Assumptions				
	Current		Updated	
Constituent	**Concentration**	**Loading/day**	**Concentration**	**Loading/day**
flow	270 gpd	270 gpd	195 gpd	195 gpd
BOD	230 mg/L	.518 lbs/day	318 mg/L	.518 lbs/day
TSS	220 mg/L	.496 lbs/day	304 mg/L	.496 lbs/day

4.3.1.2 System flow and Loadings

Using the system flow values and projections in conjunction with influent loading concentrations at each regional water recycling plant, as developed in the Facilities Master Plan, the current and projected loadings totals at each plant can be calculated. These calculations are presented in detail in Appendix D. Table 4.10Total Loadings presents the current and projected flow and loadings totals.

Table 4.10 Total Loadings			
	flow, mgd	**BOD, lbs/day**	**TSS, lbs/day**
Current	55.7	186,386	182,492
Future	73.5	240,078	232,751
Increase	17.8	53,692	50,259

4.3.1.3 Wastewater EDU Calculation

The equation below shows the calculation that is used to determine the number of EDUs in the current IEUA wastewater system. It incorporates the updated EDU flow and loadings assumptions, the current system flow and loadings totals, and the asset allocation factors presented above (flow: 44%; BOD: 34%; and TSS: 21%).

$$EDUs = Flow\% * \frac{current\ flow}{flow\ per\ EDU} + BOD\% * \frac{current\ BOD}{BOD\ per\ EDU} + TSS\% * \frac{current\ TSS}{TSS\ per\ EDU}$$

Future EDUs are calculated with the same formula using the increase in flow and loadings totals from Table 4.10 instead of the current flow and loadings totals.

Table 4.11 presents the results of these two calculations.

Table 4.11 Customer Base; Total EDUs	
Existing EDUs in System (Existing Customers)	328,459
Future EDUs (Users to join by 2035)	97,606
Total Customer Base in 2035	**426,066**

4.4 Value of the Future Users Share of the Existing System

As described above, the allocated share of the Value of the Available System was calculated proportionate to the remaining and available system capacity. Assets and future capital projects that equally benefit existing and future users are allocated proportionally based on the number of current and projected EDUs. Finally, future capital improvements that are undertaken strictly to provide future system capacity to serve future users are allocated strictly to future users.

The future users' share of the fixed assets, the reserves, and the property tax credit are shown in the section below.

4.4.1 Future Users' Share of Reserve Funds

There are expected to be 426,066 EDUs in the system by 2035, of which 97,606, or 23%, are new EDUs. Therefore, the future users benefit from 23% of the reserves. Table 4.12 presents the fund balances at the beginning of Fiscal Year 2014/15 as well as the future users' share of existing reserve fund balances.

Table 4.12 Future Users' Share of Reserve Funds		
Fund	**Balance**	**Future's Share**
Administrative Services (GG)	$14,554,155	$3,334,175
Non-Reclaimable Wastewater (NC)	4,502,755	1,031,525
Regional Wastewater Capital Improvement (RC)	60,856,307	13,941,419
Regional Operations and Maintenance (RO)	30,215,738	6,922,048
Total Wastewater (RO, NC, RC)	**$110,128,955**	**$25,229,167**

4.4.2 Total Value of Existing Wastewater System

The sum of the future users' share of the existing assets and reserves in the existing wastewater system is presented in Table 4.13.

Table 4.13 Total Value of Available System	
Wastewater Assets	$146,441,580
Wastewater Reserves	25,229,167
Construction in Progress	11,583,026
Total Value of Available System	**$183,253,772**

4.4.3 Property Tax Credit

The Agency provided a record of property tax receipts dating back to FY 1998/99. Over that period, the Agency collected $279 million in property tax revenue to fund wastewater O&M expenditures, debt service, and direct capital costs. $18.7 million of that amount was available for wastewater capital projects. After adjustment for inflation, using ENR-CCI, the present value of the recorded property tax receipts used to finance capital projects totals $25.0 million. This total was collected from the property tax of both developed and undeveloped properties. The Agency will only credit the portion that is associated with undeveloped properties. This credit is intended to adjust down the connection fee of the new connection by the amount that the undeveloped property has contributed to the existing system before connecting.

In order to estimate the share of the total amount of property taxes that was collected from undeveloped properties, it is assumed that the share is proportionate to the number of new EDUs to be constructed through 2035 relative to the total number of system users by 2035, which equates to 23%. Table 4.14 presents the results of this approach.

Table 4.14 Property Tax Credit	
Present Value of Recorded Property Tax Net of Debt and O&M	$24,975,327
% Contributed by Undeveloped Properties	23%
Contribution made by Undeveloped Properties	$5,721,535
New EDUs Through 2035 (Future Users)	97,606
Credit per New EDU (Future User)	$59

This is a fair and reasonable attempt at calculating the property tax credit based on the Agency's provided receipts since FY 1998/99. The percentage share of property tax that was paid for by vacant lots is unknown. This methodology represents a conservative approach by

overestimating the contributions of undeveloped properties since undeveloped properties contribute, on average, less than a developed property.

4.5 Proposed Connection Fees

Based on the defined Value of the Available System, the Value of the Future System (Capacity Related CIP), and the Number of Expected Future Users, the calculate the hybrid connection fee is as follows:

$$\boldsymbol{Hybrid\ Connection\ Fee} =$$

$$\frac{\boldsymbol{Value\ of\ the\ Available\ System}}{\boldsymbol{Expected\ Future\ Users}} + \frac{\boldsymbol{Capacity\ Related\ CIP}}{\boldsymbol{Expected\ Future\ Users}} =$$

$$\frac{\boldsymbol{Value\ of\ Available\ System}}{\boldsymbol{Expected\ Future\ Users}} = \frac{\$177,532,237}{97,606} = \$1,819$$

$$\frac{\boldsymbol{Capacity\ Related\ CIP}}{\boldsymbol{Expected\ Future\ Users}} = \frac{\$436,326,332}{97,606} = \$4,470$$

The hybrid connection fee is shown below.

$$\boldsymbol{Hybrid\ Connection\ Fee} = \$1,819 + \$4,470 = \$6,289$$

5.0 SUMMARY

In summary, the wastewater connection fee is proposed to be increased from $5,107 per EDU to $6,289 per EDU. Table 5.1 shows the detailed calculation of the charge.

Table 5.1 Summary Connection Fee Calculation	
Buy-In Portion	
RCNLD	$146,441,580
Reserves	25,229,167
Construction in Progress[(1)]	11,583,026
Less Property Tax Revenue	(5,721,535)
Subtotal: Reimbursement Value	*$177,532,237*
Customer Base	
Future Users	97,606
Buy-In Fee	**$1,819**
Incremental Portion	
Sum of Growth Related Costs by 2035	436,326,332
Customer Base	
Future Users	97,606
Incremental Fee	**4,470**
Total Hybrid Connection Fee	$6,289
Notes: (1) Has not been adjusted for additional construction costs since 2012/13 and the total is entirely allocated to future wastewater users.	

ACTION
ITEM

2A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program
Technical Committee Meeting
MINUTES OF NOVEMBER 30, 2017 MEETING

CALL TO ORDER

A regular meeting of the IEUA/Regional Sewerage Program – Technical Committee was held on Thursday, November 30, 2017, at the Inland Empire Utilities Agency located at 6075 Kimball Avenue, Chino, California. Committee Chairman Derek Wieske called the meeting to order at 2:00 p.m.

ATTENDANCE

Committee Members:

Jesus Plasencia	City of Chino
Ron Craig (Alternate)	City of Chino Hills
Braden Yu (Alternate)	Cucamonga Valley Water District
Derek Wieske	City of Montclair
Rosemary Hoerning	City of Upland
Joseph Grindstaff	Inland Empire Utilities Agency

Absent Committee Members:

Chuck Hays	City of Fontana
Scott Burton	City of Ontario

Others Present:

Nicole deMoet	City of Montclair
Amy Bonczewskie	City of Ontario
Chris Berch	Inland Empire Utilities Agency
Kathy Besser	Inland Empire Utilities Agency
Randy Lee	Inland Empire Utilities Agency
Christina Valencia	Inland Empire Utilities Agency
Jerry Burke	Inland Empire Utilities Agency
Connie Gibson	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency
Jason Pivovaroff	Inland Empire Utilities Agency

Others Present (Continued):

Craig Proctor	Inland Empire Utilities Agency
Shaun Stone	Inland Empire Utilities Agency
Ken Tam	Inland Empire Utilities Agency

ADDITIONS/CHANGES TO THE AGENDA

Chairman Wieske asked if there were any changes/additions/deletions to the agenda. There were none.

1. **ACTION ITEMS**

   A. **APPROVAL OF THE MINUTES OF OCTOBER 26, MEETING MINUTES**

> **Motion:** By Ron Craig/City of Chino Hills and seconded by Braden Yu/Cucamonga Valley Water District to approve the minutes of the October 26, 2017 Technical Committee meeting minutes.
>
> **Motion carried:** Unanimously.

   B. **RP-5 AERATION DIFFUSER PANEL REPLACEMENT CONSTRUCTION CONTRACT AWARD**

Shaun Stone/IEUA gave a presentation on the RP-5 Aeration Diffuser Replacement. Mr. Stone explained that due to the degraded panels, it has reduced the process performance, reliability, and increased process electricity usage. IEUA received four bids on November 7, 2017. The lowest responsive bidder was Genesis Construction for $2.99 million. The total project cost is $3.5 million. The construction would be completed in December 2018. Mr. Stone requested that the Technical Committee recommend to the IEUA Board to award the construction contract for the RP-5 Aeration Diffuser Panel Replacement to Genesis Construction in the amount of $2,987,654.

> **Motion:** By Rosemary Hoerning/City of Upland and seconded by Jesus Plasencia/City of Chino to recommend to the IEUA Board of Directors to approve the construction contract award for the RP-5 Aeration Diffuser Panel Replacement Construction Contract Award in the amount of $2,987,654 to Genesis Construction.
>
> **Motion carried:** Unanimously.

   C. **RECYCLED WATER RECONCILIATION PROCESS**

Jason Pivovaroff/IEUA stated that IEUA is requesting approval for a default method for the annual recycled water reconciliation for agencies that exceed their base entitlement for that recycled water use. Mr. Pivovaroff stated that based on the feedback from the Committee at last month's Technical meeting, the recommendation was to have a default methodology unless specifically requested by the agency. For agencies that exceed base entitlement, IEUA would administer a surcharge to that corresponding agency and the remaining agencies under entitlement which have a surplus would receive monetary credit in the subsequent recycled water invoice from IEUA.

Agencies that receive a monetary credit, will have 30 days after notification from IEUA to request an alternative method of payment, either in terms of water purchase or a monetary credit as provided. Today's recommendation is to approve option 3.3.A as described above and in the staff memo.

Jesus Plasencia/City of Chino asked how about the timing of the reconciliation as it relates to Chino Basin Water Master issuing the assessment package. Mr. Pivovaroff stated that IEUA would request the final water numbers in August for the reconciliation process and in September IEUA would notify such agencies.

Motion: By Braden Yu/Cucamonga Valley Water District and seconded by Rosemary Hoerning/City of Upland recommended to approve the default methodology of receiving monetary credit for any surcharges that result from the use of recycled water that exceeds base entitlement.

Motion carried: Unanimously.

2. INFORMATIONAL ITEMS

A. REGIONAL CONTRACT UPDATE

Derek Wieske/City of Montclair provided an update on behalf of Chuck Hays. He reported that all the agencies have met with the facilitator. Mr. Wieske stated that Mr. Hays spoke to Mike Harty on the contract renewal process. The Committee requested that the facilitators provide information on the scope prior to the joint meeting with Technical, Policy and IEUA Board in February. The facilitators also requested a meeting with IEUA's new General Manager, which will be scheduled in the next couple of weeks. Discussion ensued about holding a special workshop on January 18, 2018.

B. RP-1 CAPACITY RECOVERY PROJECT CONSULTANT CONTRACT AWARD

Shaun Stone/IEUA gave an overview of the background for the RP-1 Capacity Recovery Project. Mr. Stone stated that IEUA's lobbyist and internal staff advised IEUA to have the project 30 percent design completed to position IEUA to move forward in anticipation of an infrastructure bill for potential funding opportunities. The proposals were reviewed by IEUA staff and representatives from CVWD, City of Montclair, and the City of Ontario. Mr. Stone stated that the three major tasks are: the site master plan, the liquids capacity recovery, and the solids capacity recovery. IEUA received four proposals in October. Carollo was unanimously selected by the Selection Committee. The consultant contract is estimated to be $13.6 million. The total project budget is $230 million. The total project cost is $210 million. Mr. Stone highlighted that the actual authorization for the work is 30 percent design, approximately $5 million. The project will stop at 30 percent design pending funding opportunities.

C. OPERATIONS UPDATE

Randy Lee/IEUA gave a presentation on the Operations Division. Mr. Lee stated that IEUA achieved a new record of 13,943 AF for recycled water recharged. Mr. Lee then gave an update on staffing and reported that in the last 12 months, 12 employees retired and six will be retiring in the next 12 months, therefore, IEUA has ramped up the volunteer/intern program. Mr. Lee reviewed the number of staff it takes to operate and maintain IEUA's equipment and explained some of the challenges and successes at CDA Desalter 1.

D. **P&ER ANNUAL REPORTS (10-YEAR GROWTH FORECAST, WATER USE, AND ENERGY)**
Ken Tam/IEUA gave an update on the FY 2016/17 Building Activity. He reported that the total equivalent dwelling units (EDUs) totaled 5,189. The projections for the 2017 ten-year growth is 55,388 EDUs; up from 41,782. Mr. Tam explained that IEUA uses this information to forecast future capacity needs. Mr. Tam stated that he has received revised forecasts from some of the agencies and will revise the projections.

3. **RECEIVE AND FILE**

A. **DRAFT REGIONAL POLICY COMMITTEE AGENDA**
The draft Regional Policy Committee Agenda was received and filed by the Committee.

B. **BUILDING ACTIVITY REPORT**
The Building Activity Report was received and filed by the Committee.

C. **RECYCLED WATER DISTRIBUTION - OPERATIONS SUMMARY**
The Recycled Water Distribution Operations Summary was received and filed by the Committee.

D. **SEPTIC FEASIBILITY STUDY UPDATE**
Chris Berch/IEUA gave an update on the septic study evaluation. The report will be completed in the next couple of months. Mr. Berch reviewed the cost summary table, which shows how many septic systems are within each service area, sewer lines, estimated construction cost, connection fees and total cost per septic systems, and estimated cost/septic tank. He reported that yesterday the Prop-1 Groundwater Grant Program released the water quality guidelines. IEUA received approximately $10 million for some of the cleanup work for the TCE Plume. The guidelines include septic-to-sewer projects, which benefits disadvantaged communities.

4. **PREVIOUS TECHNICAL COMMITTEE ITEMS REQUESTED**
None.

5. **OTHER BUSINESS**

A. **IEUA GENERAL MANAGER'S UPDATE**
Joseph Grindstaff stated that Halla Razak has started working for IEUA and is attending the ACWA Conference.

B. **COMMITTEE MEMBER REQUESTED AGENDA ITEMS FOR NEXT MEETING**
None.

C. **COMMITTEE MEMBER COMMENTS**
The Committee thanked Joseph Grindstaff for all he has done for IEUA.

D. **NEXT MEETING – JANUARY 25, 2018**

6. **ADJOURNMENT –** The meeting adjourned at 3:17 p.m.

Transcribed by:

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Laura Mantilla, Executive Assistant

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program
Special Technical Committee Meeting
MINUTES OF JANUARY 18, 2018 MEETING

CALL TO ORDER

A special meeting of the IEUA/Regional Sewerage Program – Technical Committee was held on Thursday, January 18, 2018, at the Inland Empire Utilities Agency located at 6075 Kimball Avenue, Chino, California. Committee Chairman Chuck Hays called the meeting to order at 12:08 p.m. A quorum was present.

ATTENDANCE

Committee Members:

Dave Crosley	City of Chino
Ron Craig (Alternate)	City of Chino Hills
John Bosler	Cucamonga Valley Water District
Chuck Hays	City of Fontana
Derek Wieske	City of Montclair
Scott Burton	City of Ontario
Rosemary Hoerning	City of Upland

Others Present:

Jesus Plasencia	City of Chino
Amanda Coker	City of Chino
Ruben Valdez	City of Chino
Braden Yu	City of CVWD
Rogelio Matta	City of Fontana
Nicole deMoet	City of Montclair
Katie Gienger	City of Ontario
Dennis Diemer	Diemer Engineering Inc.
Michael Harty	Kearns and West, Inc.
Michael Rudinica	MPR Consulting
Sylvie Lee	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency
Craig Proctor	Inland Empire Utilities Agency
Ken Tam	Inland Empire Utilities Agency

ADDITIONS/CHANGES TO THE AGENDA

There were no changes to the agenda.

1. **INFORMATIONAL ITEMS**
   A. **REGIONAL CONTRACT**

Mike Harty, Dennis Diemer and Michael Rudinica (Kearns & West Team) gave a presentation on the findings from the investigation of Phase 1 which included the following issues and topics:

- Current Contract Structure
  - What is working and what is not working
  - Roles of Technical and Policy Committees
  - Decision making on regional sewage system budgets
  - Governance structure

- Service Contract Issues
  - Policy/fairness
    - Recycled Water – current contract does not reflect current conditions
    - Collection of fees
    - Balancing key interests: Authorities and decision making, roles and responsibilities, communication and trust
  - Technical
    - Allocation of regional system capacity
    - Calculation of connection fees (Exhibit J)
    - Allocation of recycled water
  - Contract Administration
    - Financial reporting
    - Budgeting
    - Periodic reports and data collections

- Key findings
  - Contract is generally consistent with industry practice
  - No obvious obstacles to renegotiation
  - Decline in trust among contract agencies and IEUA
  - Preserving authority, a shared interest with different perspective
  - Inconsistent communications from Board to Contract Agencies
  - Commitment to continue negotiations vary among Contract Agencies and IEUA

Kearns & West then reviewed the contract renegotiation timeline and three options:

- Option A: Defer negotiations until January 2, 2020 – assume three-year timeframe to complete
- Option B: Pursue issue-by-issue negotiations as opportunities arise over next 3-4 years
- Option C: Invest resources in current negotiation initiative (2-3 year) timeframe

Kearns & West discussed next steps:

- Joint workshop meeting on February 1, 2018
- Contract agencies and IEUA decision on preferred option

Discussion ensued among the Technical Committee and the Committee stated they don't want to lose momentum and want to start the process. John Bosler stated he would like to see closure on audit and see process on Exhibit J sooner than later. Scott Burton stated that he is interested in the approach for scoping issues. Rosemary Hoerning indicated she would like to see process on Exhibit J.

2. **ADJOURNMENT –** The meeting adjourned at 1:47 p.m.

Transcribed
by:

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Laura Mantilla, Executive Assistant

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program
Technical Committee Meeting
MINUTES OF FEBRUARY 22, 2018 MEETING

CALL TO ORDER

A meeting of the IEUA/Regional Sewerage Program – Technical Committee was held on Thursday, February 22, 2018, at the Inland Empire Utilities Agency located at 6075 Kimball Avenue, Chino, California. Committee Chairman Chuck Hays called the meeting to order at 2:03 p.m. A quorum was present.

ATTENDANCE

Committee Members:

Amanda Coker	City of Chino
Ron Craig (Alternate)	City of Chino Hills
John Bosler	Cucamonga Valley Water District
Chuck Hays	City of Fontana
Mike Hudson	City of Montclair
Katie Gienger	City of Ontario
Rosemary Hoerning	City of Upland

Others Present:

Braden Yu	City of CVWD
Nicole deMoet	City of Montclair
Halla Razak	Inland Empire Utilities Agency
Kathy Besser	Inland Empire Utilities Agency
Sylvie Lee	Inland Empire Utilities Agency
Shaun Stone	Inland Empire Utilities Agency
Craig Proctor	Inland Empire Utilities Agency
Ken Tam	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency

ADDITIONS/CHANGES TO THE AGENDA

There were no changes to the agenda.

Mr. Hays stated that Craig Proctor had an announcement to make regarding the Carollo Workshop. Mr. Proctor stated that a meeting had been scheduled with Carollo Engineering for March 14, 2018; however,

there was a meeting conflict, therefore the meeting needs to be rescheduled. The Committee discussed date options and agreed to meet on March 29, 2018 at noon.

1. **ACTION ITEM**
   A. **REGIONAL CONTRACT – KEARNS & WEST PROPOSAL**

Mr. Hays stated that Kearns & West provided the Committee with a proposal for the Phase 2A of the Regional Sewage Contract. Kearns and West will work with IEUA and Contract agencies to review, confirm and prioritize the issues, identify issues looking for easy wins, confirm the appropriate structure and approach, schedule of completion and identify resources and commitments that the agencies need to commit to. The proposal amount is approximately $15,000. Mr. Hays asked for a motion.

Motion: By John Bosler/Cucamonga Valley Water District and seconded by Katie Gienger/City of Ontario to approve the Regional Sewage Contract Facilitation Proposal for Phase 2A from Kearns & West in the amount of $14,971.

Motion carried: Unanimously.

Discussions ensued about designating a lead negotiator from each agency and how often they want to meet. Sylvie Lee asked the Committee for time commitments and how fast do they want to move forward with the phase of identifying issues. The Committee agreed to meet one hour before the regular Technical Committee meetings. The Committee proposed meeting on March 29 after the regular Technical meeting.

2. **OTHER BUSINESS**
   A. **IEUA GENERAL MANAGER'S UPDATE**

Halla Razak reported that IEUA had a pipeline failure on February 15, 2018, in the city of Ontario. Shaun Stone stated that one of Ontario's contractors who was working on their large storm drain program broke one of the NRW lines located at Bon View Avenue and Francis Street. The spill was contained by 8:00 a.m. and reported no surface runoff. Source Control did water samples and confirmed there was no discharge. The pipeline was repaired and tested by noon.

3. **ADJOURNMENT –** The meeting adjourned at 2:31 p.m.

Transcribed by:

_____

Laura Mantilla, Executive Assistant

ACTION
ITEM

2B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: March 29, 2018/April 5, 2018

To: Regional Committees

From: Inland Empire Utilities Agency #HR

Subject: Napa Lateral Design-Build Contract Award

RECOMMENDATION

It is requested that the Regional Committees recommend the IEUA Board of Directors award the construction contract for the design-build contract for the Napa Lateral, Project No. WR15021, to Ferreira Construction Company in the amount of $5,332,122.

BACKGROUND

In November 2015, IEUA coordinated with the City of Fontana (Fontana Water Company), California Steel Industries (CSI), and the Auto Club Speedway (Speedway) to provide recycled water for delivery to CSI and Speedway for industrial and irrigation use. In December 2015, IEUA submitted an application to the California State Water Resources Control Board (SWRCB) for financial assistance through the Proposition 1 Water Recycling funding program. In November 2017, IEUA received the notification from the SWRCB that the project was selected for financial assistance through a principal forgiveness of $2,500,000 and a low interest loan.

The project consists of the design and construction of approximately 10,000 linear feet of 12-inch, 16-inch, and 24-inch pipelines along Napa Street and San Bernardino Avenue in the unincorporated area of San Bernardino County. Each lateral will connect to IEUA's existing recycled water transmission pipeline located along Etiwanda Avenue. It is anticipated that at least 500 acre-feet per year of recycled water usage will be obtained as a result of this project.

On December 13, 2017, a request for bids was advertised to the prequalified contractors. Several contractors participated in three pre-bid meetings held on December 19, 2017, January 9, 2018, and January 23, 2018. On March 15, 2018, the following four bids were received:

Bidder's Name	Final Bid Amount
Ferreira Construction Company	$5,332,122
J. R. Filanc	$9,117,000
W. A. Rasic	$9,183,800
J. De Sigio Construction	$14,573,562
Engineer's Estimate	**$5,434,000**

Ferreira Construction Company was the lowest responsive and responsible bidder with a final bid amount of $5,332,122. The final bid amount was inclusive of the additive and deductive items stated in the bid forms. Ferreira Construction Company was pre-qualified for the project; presenting the required experience having performed similar projects with other utilities and cities and showing good workmanship and responsiveness. Additionally, Ferreira Construction Company has performed very successfully for IEUA on previous projects.

The following table is the anticipated project cost:

Description	Estimated Cost
Design & Construction (this action)	**$5,332,122**
Contingency (~10%)	$533,212
Construction Management Labor Estimate (8%)	***$469,500***
Total Project Cost:	**$6,334,834**
Total Project Budget	***$6,050,000**
SRF Principal Forgiveness (Grant)	**($2,500,000)**
Overall Total Project Cost:	**$3,834,834**

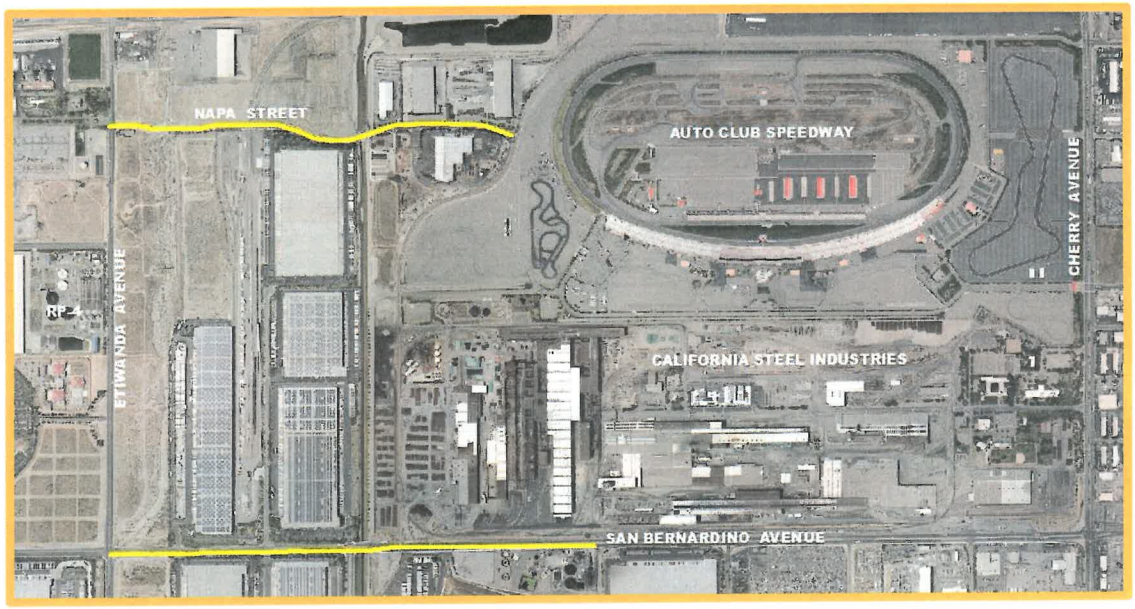
*The total project budget will be adjusted during the Fiscal Year 2018/19 Ten Year Capital Improvement Plan (TYCIP) budget review.

The following is the project schedule:

Project Milestone	Date
Design-Build Contract Award	April 2018
Construction Completion	June 2019

The Napa Lateral Project is consistent with *IEUA's Business Goal of Water Reliability* in which IEUA will maximize the use of recycled water to enhance regional water reliability.

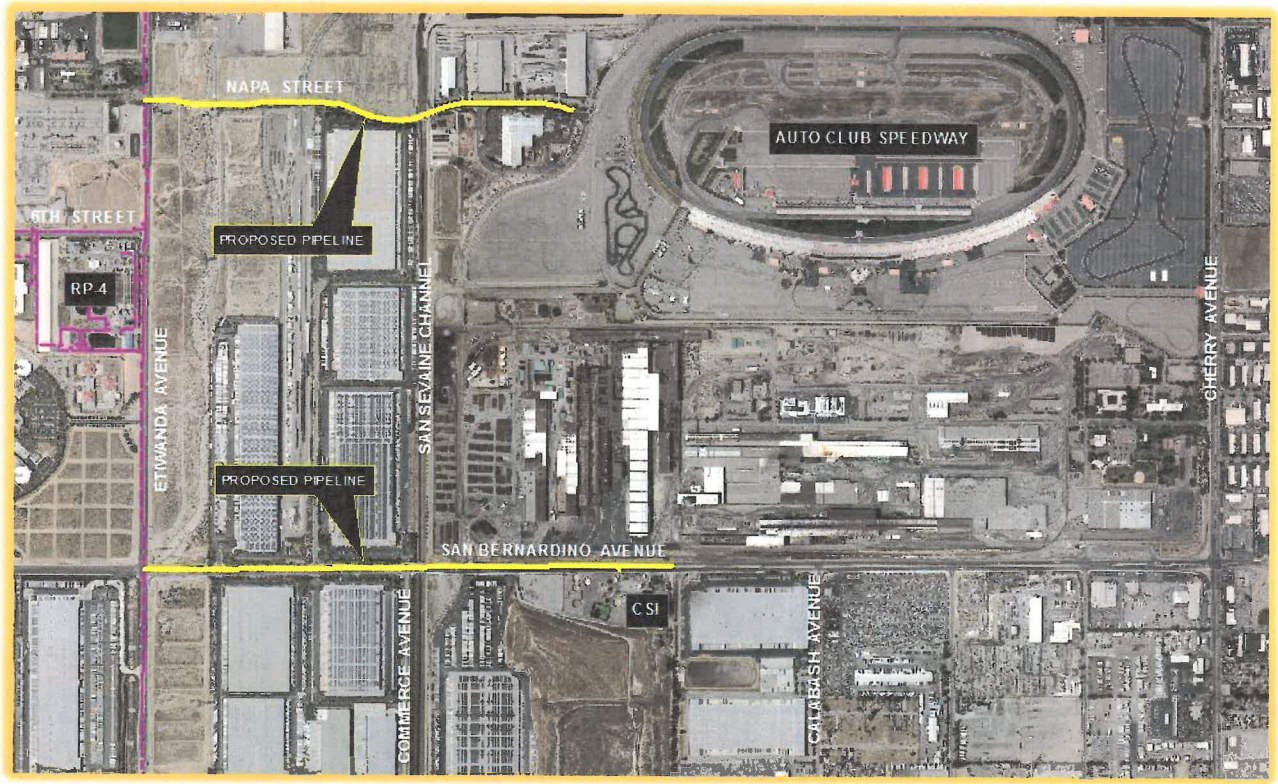
Napa Lateral
Design-Build Contract Award
Project No. WR15021



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Liza Muñoz, P.E.
April 2018

Project Location

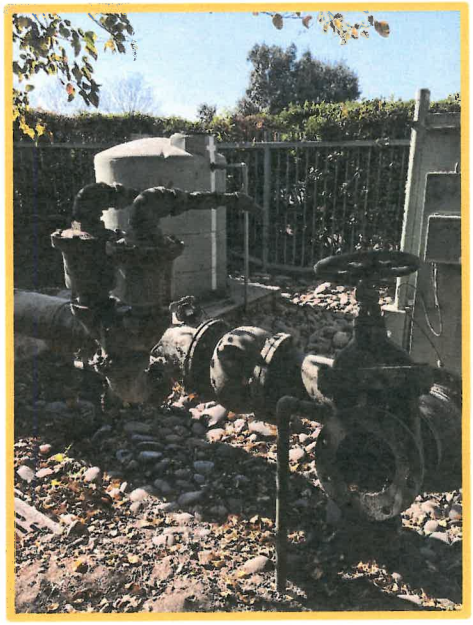


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

The Project

- Coordination to provide recycled water to City of Fontana (Fontana Water Company), California Steel Industries, and Auto Club Speedway in 2015
- Prequalified ten Design-Build entities to submit proposals in 2016
- Received State Water Resources Control Board Proposition 1 Water Recycling funding in 2017
- Design and construct 10,000 linear feet of 12", 16", and 24" pipelines in Napa Street and San Bernardino Avenue through Design-Build project delivery

CSI Lateral Location



Speedway Connection Point

Contractor Selection

Four bids were received on March 15, 2018:

Bidder's Name	Final Bid Amount
Ferreira Construction Company	$5,332,122
J. R. Filanc	$9,117,000
W. A. Rasic	$9,183,800
J. De Sigio Construction	$14,573,562
Engineer's Estimate	**$5,434,000**

Project Budget and Schedule

Description	Estimated Cost
Design & Construction (this action)	**$5,332,122**
Contingency (~10%)	$533,212
Construction Management Labor Estimate (~8%)	***$469,500***
Total Project Cost:	**$6,334,834**
Total Project Budget:	***$6,050,000**
SRF Principal Forgiveness (Grant):	**($2,500,000)**
Overall Total Project Cost:	**$3,834,834**

*The total project budget will be adjusted through the Fiscal Year 2018/19 Ten Year Capital Improvement Plan (TYCIP) budget review.

Project Milestone	Date
Design-Build Contract Award	April 2018
Construction Completion	June 2019

Recommendation

It is requested that the Regional Committees recommend the IEUA Board of Directors award the design-build contract for the Napa Lateral, Project No. WR15021, to Ferreira Construction Company in the amount of $5,332,122.

The Napa Lateral Project is consistent with ***IEUA's Business Goal of Water Reliability***, specifically the Recycled Water objective that IEUA will maximize the use of recycled water to enhance regional water reliability.

ACTION
ITEM

2C

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: March 29, 2018

To: Regional Technical Committee

From: Inland Empire Utilities Agency HHR

Subject: Request by the City of Ontario for a Regional Connection Point to the Eastern Trunk Sewer (Ontario Regional Sewer Connection #O-97)

RECOMMENDATION

It is recommended that the Regional Technical Committee approve the request by the City of Ontario for one new connection point to the Regional System (Ontario Regional Sewer Connection #O-97).

BACKGROUND

On February 6, 2018, IEUA received a request from the City of Ontario (Attachment "A") for the approval of a sewer connection located in Moons Place in the City of Chino. The purpose of the connection is for the City's future Carpenter Trunk Sewer which will serve a tributary area bounded by Vineyard Avenue, Riverside Drive, Cucamonga Channel and Remington Avenue per the City's sewer master plan. The proposed sewer pipeline will be constructed in conjunction with the Colony Commerce West development. Regional Connection #O-97 will be made to an existing manhole on the 48-inch Eastern Trunk Sewer located at the southern end of Moons Place, south of Remington Avenue (Attachment "B").

SUMMARY OF FLOW RATE

Ontario Regional Connection #O-97: Peak Flow Rate = 3.72 MGD

The 48-inch Eastern Trunk Sewer is designed to deliver a maximum flow rate of 36.93 MGD to the Regional Water Recycling Plant No. 5. The proposed additional flow rate of 3.72 MGD is within the remaining pipeline capacity of 22.77 MGD.

CITY OF ONTARIO REG. CONN. O-97
ATTACHMENT "A"

CITY OF ONTARIO

ONTARIO MUNICIPAL UTILITIES COMPANY

February 6, 2018

Ms. Liza Munoz
Senior Engineer
Inland Empire Utility Agency
6075 Kimball Avenue
Chino, CA 91710

Dear Ms. Munoz:

Subject: Request for Regional Sewer Connection to the Eastern Trunk Sewer located in Moon Place.

The City of Ontario is hereby requesting a new Regional Point of Connection for the City's Carpenter Trunk Sewer.

The City is proposing to connect a new 24-inch sewer line to the Eastern Trunk Sewer (ETS) at Manhole #10.2 in the intersection with Moon Place (per IEUA drawing #D4639-007, RP-1 Bypass Sewer Project No. PL02012 Segment 1 at station 87+19.23). The existing 21-inch stub inlet and manhole will need to be reconstructed for the proposed 24-inch main connection.

This proposed connection is for the Carpenter Trunk Sewer from the City of Ontario's Sewer Master Plan and is consistent with the terms of the Eastern Trunk Sewer Agreement between the City and IEUA. Due to recent development related condition changes in the City of Chino, the connection point, as well as the master plan alignment and tributary area, have been amended to this new point of connection with the ETS at Moon Place, instead of the extension south of Carpenter Street with the ETS (see attached exhibit for details).

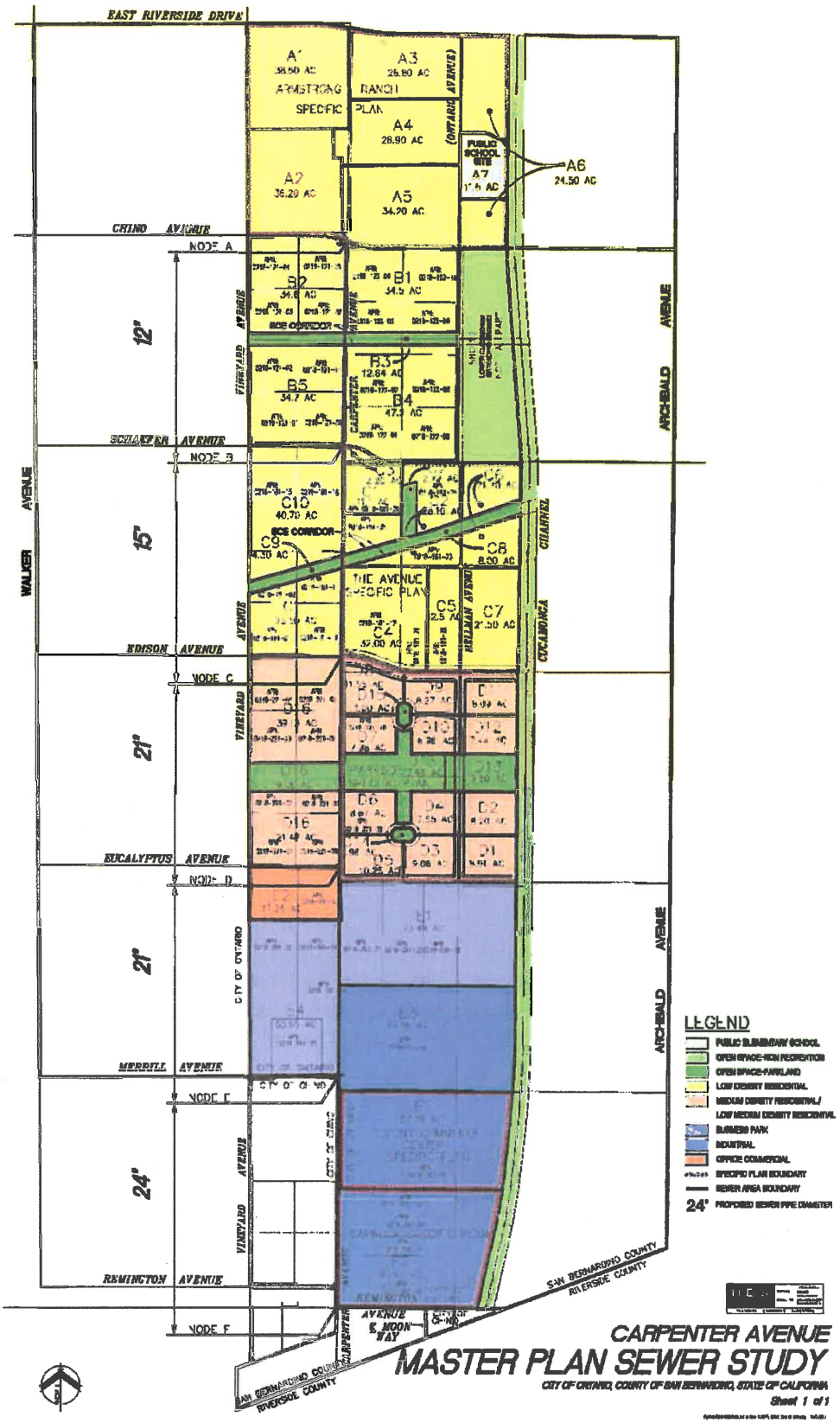
The total ultimate estimated Average Dry Weather Flow (ADWF) is 1.963060 mgd and Peak Dry Weather Flow (PDWF) is 3.719880 mgd. This is based on the current City's Sewer Master Plan Demand Factors and peaking formula [PDWF = 2.0 (ADWF)^0.92].

If you should need any further information, please contact Ahmed Aly at (909) 395-2657.

Sincerely,

Dennis Mejia, P.E.
Utilities Engineering Director

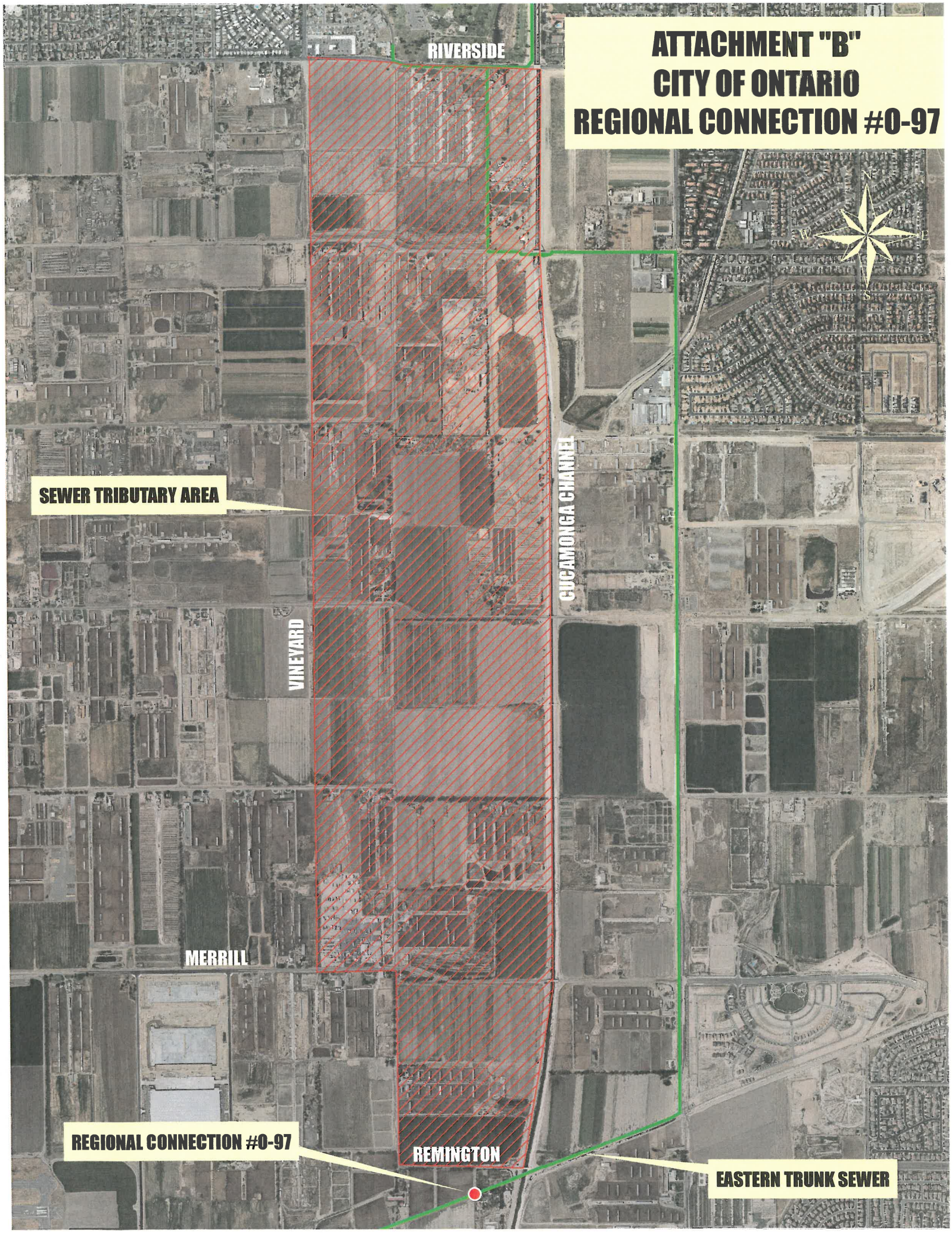
1425 SOUTH BON VIEW AVENUE • ONTARIO, CALIFORNIA 91761-4406 • (909) 395-2605 • FAX: (909) 395-2601
www.ontarioca.gov/omuc



CARPENTER AVENUE
MASTER PLAN SEWER STUDY

CITY OF ONTARIO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

Sheet 1 of 1


ATTACHMENT "B"
CITY OF ONTARIO
REGIONAL CONNECTION #0-97
RIVERSIDE
SEWER TRIBUTARY AREA
CUCAMONGA CHANNEL
VINEYARD
MERRILL
REMINGTON
REGIONAL CONNECTION #0-97
EASTERN TRUNK SEWER

INFORMATION
ITEM

3A

Fiscal Year 18/19 Ten Year Capital Improvement Plan

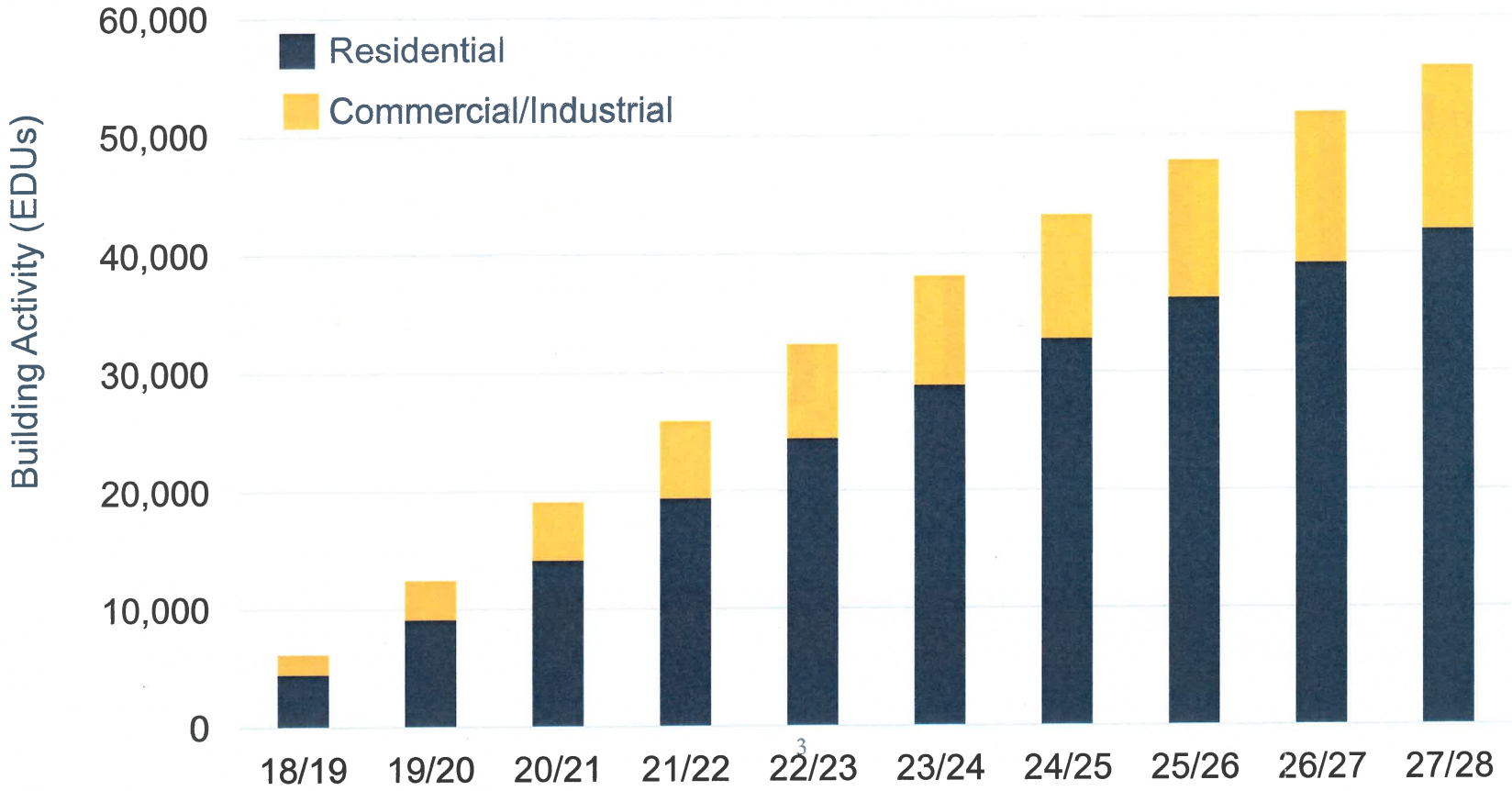
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

April 2018

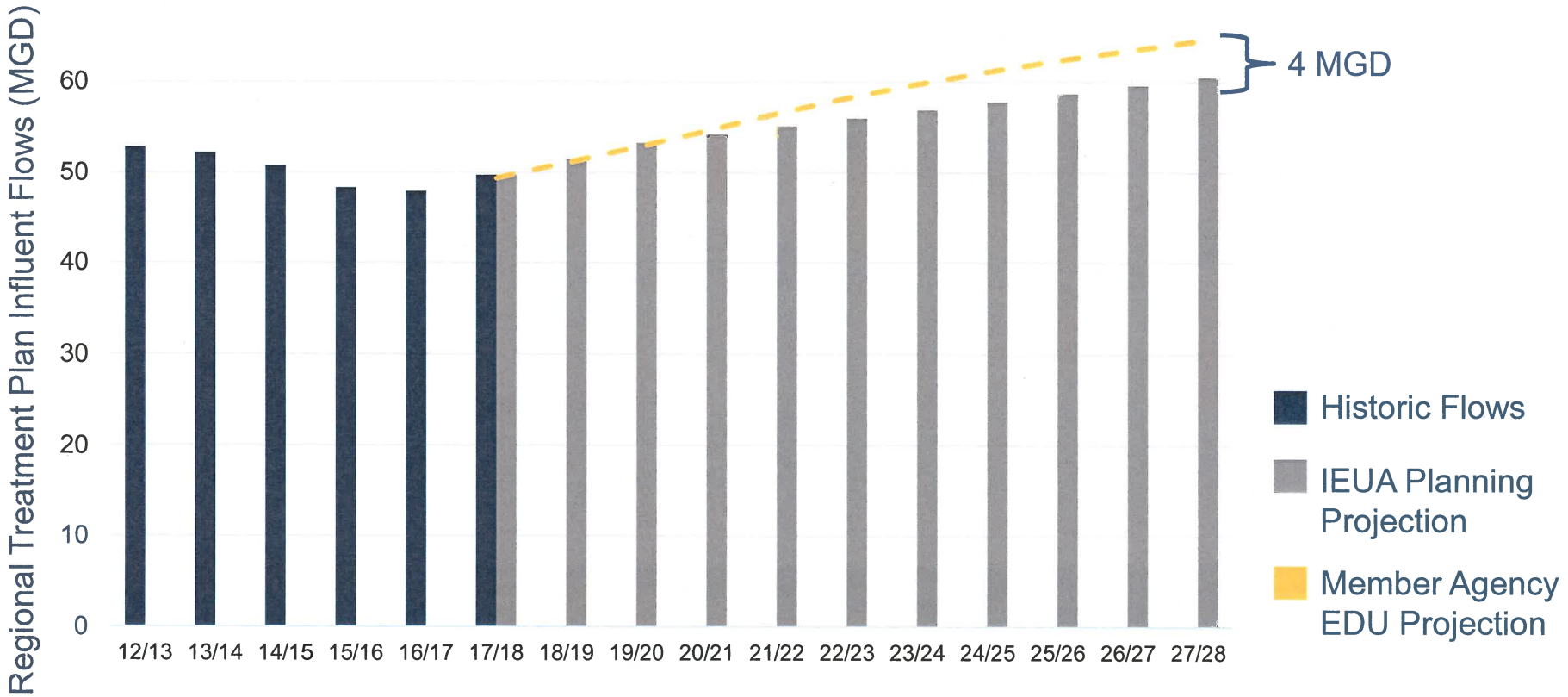
Key Drivers of the Fiscal Year 18/19 Ten Year Capital Improvement Plan

- Member Agency growth projections
- Current wastewater influent flows and concentrations
- Contributing Documents:
  - 2013 Recharge Master Plan Update
  - 2015 Wastewater Facilities Master Plan Update
  - 2015 Recycled Water Program Strategy Update
  - 2015 Energy Management Plan
  - 2016 Integrated Resources Plan
  - 2016 Water Use Efficiency Business Plan

New Equivalent Dwelling Unit (EDU) Forecast
(2017 Member Agency Forecast Data - Cumulative)



Fiscal Year 18/19-27/28 Wastewater Flow Projections



Major Treatment Facility Capacity/Expansion Project

Estimated Treatment Plant Expansion Schedule

Ten Year Capital Improvement Planning Window

Description	15/20	20/25	25/30	30/35	Total Cost
RP-1 Liquids Capacity Recovery					$182 M
RP-1 Solids Treatment Expansion					$45 M
RP-2 Decommissioning					$30 M
RP-5 Liquid Treatment Expansion					$160 M
RP-5 Solids Treatment Facility					$165 M

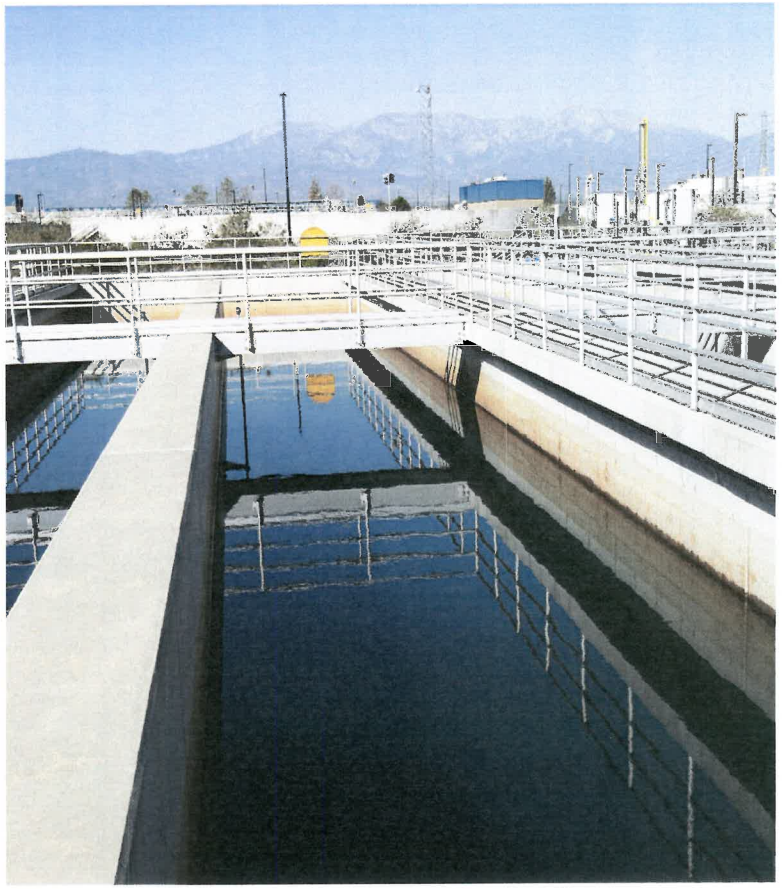
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Ten Year Capital Improvement Plan Budget Summary

- Fiscal Year 17/18 TYCIP: $717 Million
- Fiscal Year 18/19 TYCIP: $716 Million
- No major deviations in capital improvement projects
- Major Capital Projects in the TYCIP:
  - Construction of Regional Treatment Plant No. 5 Solids & Liquids Expansion
  - Regional Treatment Plant No. 1 Capacity Recovery/Expansion Design completion by 2028
  - Includes asset repair and replacement program for all systems

Fiscal Year 18/19 Ten Year Capital Improvement Plan Adoption Schedule

- 3/29/18 Info Item to Tech Committee
- 4/04/18 Info item to IEUA Committees
- 4/05/18 Info Item to Policy Committee
- 4/11/18 Info item to IEUA Board
- 4/26/18 Action item to Tech Committee
- 5/03/18 Action item to Policy Committee
- 5/09/18 Action item to IEUA Committees
- 5/16/18 Action item to IEUA Board



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4A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program Policy Committee Meeting

AGENDA
Thursday, April 5, 2017
4:00 p.m.

Location
Inland Empire Utilities Agency
Boardroom
6075 Kimball Avenue
Chino, CA 91708

Call to Order

Pledge of Allegiance

Public Comment

Changes/Additions/Deletions to the Agenda

1. **Technical Committee Report** *(Oral)*

2. **Action Item**
   A. Approval of the December 7, 2017 and February 01, 2018 Meeting Minutes
   B. Napa Lateral Design Build Contract Award

3. **Informational Items**
   A. Regional Contract Update/Renewal *(Oral)*
   B. FY 2018/19 Ten Year Capital Improvement Plan
   C. Legislative Update

4. **Receive and File**
   A. Building Activity Update
   B. Recycled Water Distribution – Operations Summary
   C. Regional Contract Facilitation Scoping Phase 2A

5. **Other Business**
   A. IEUA General Manager's Update
   B. Committee Member Requested Agenda Items for Next Meeting
   C. Committee Member Comments
   D. Next Meeting – May 3, 2018

6. Adjournment

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. in the foyer at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Monday, April 2, 2018.

_____
Laura Mantilla

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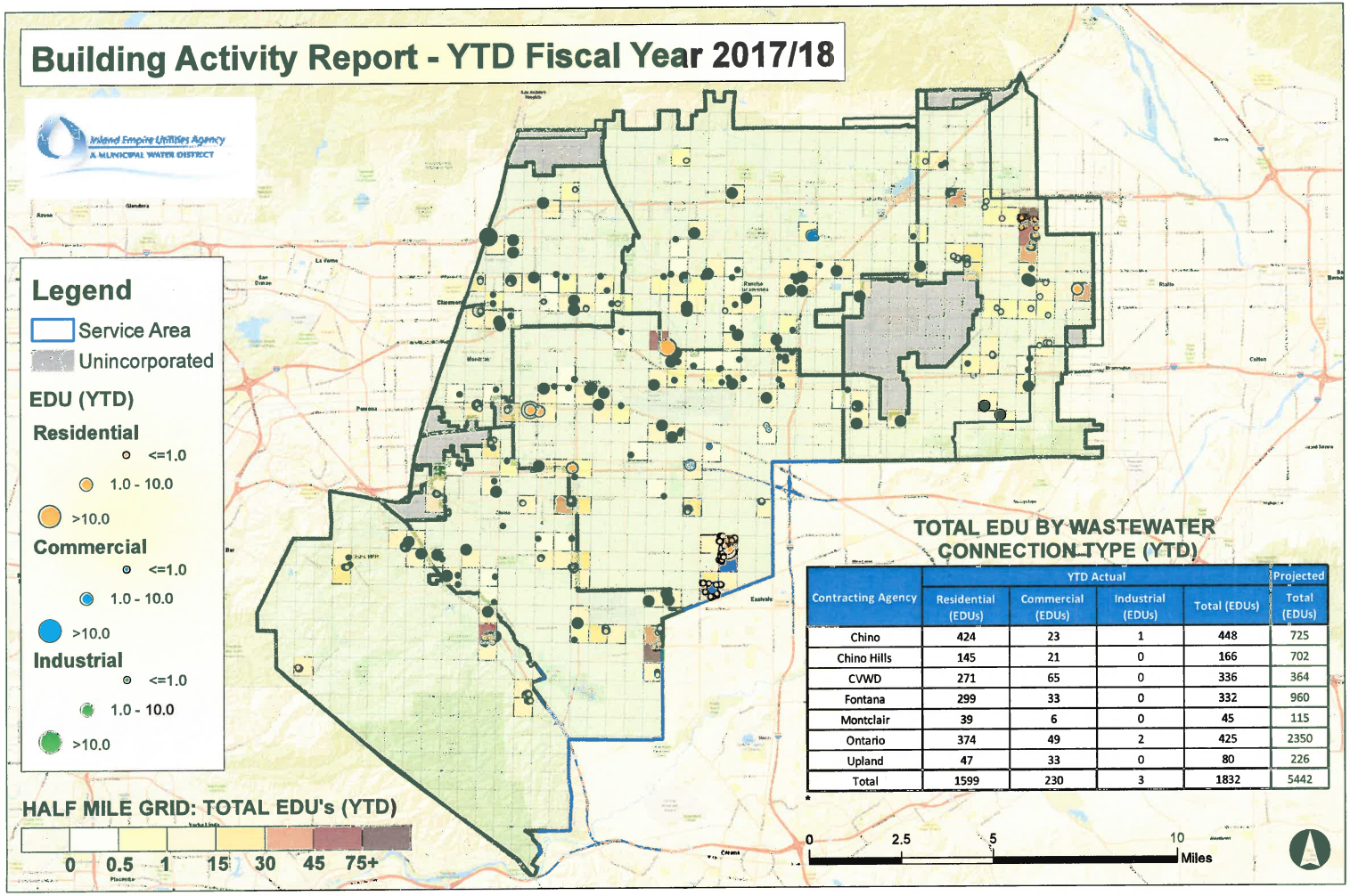
4B

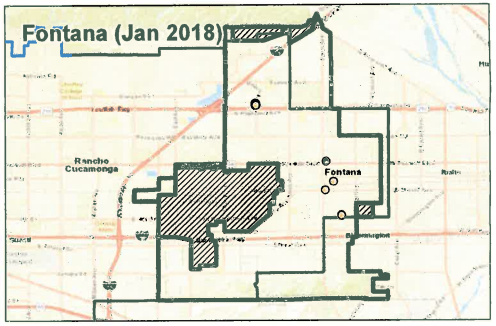
Building Activity Report - YTD Fiscal Year 2017/18

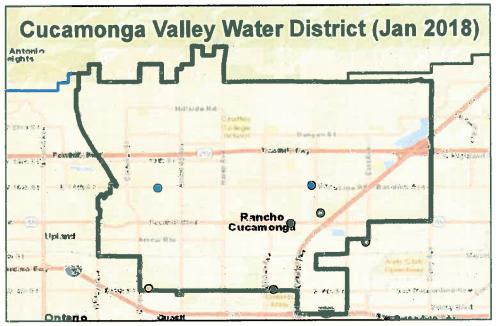
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

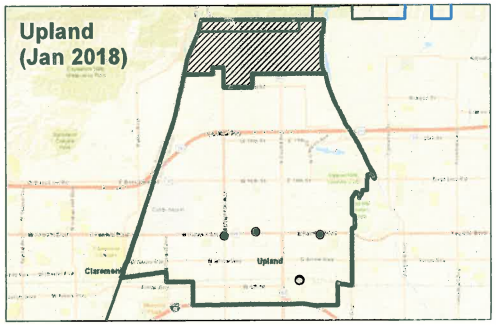


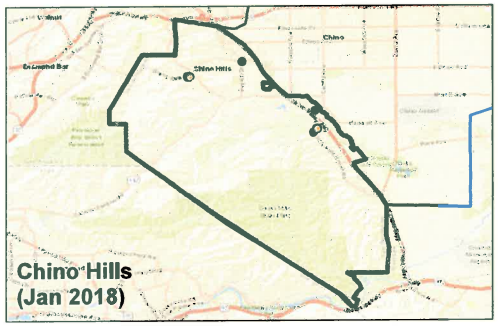
TOTAL EDU BY WASTEWATER CONNECTION TYPE (YTD)

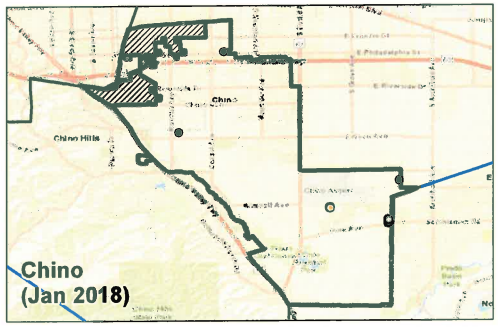
Contracting Agency	YTD Actual				Projected
	Residential (EDUs)	Commercial (EDUs)	Industrial (EDUs)	Total (EDUs)	Total (EDUs)
Chino	424	23	1	448	725
Chino Hills	145	21	0	166	702
CVWD	271	65	0	336	364
Fontana	299	33	0	332	960
Montclair	39	6	0	45	115
Ontario	374	49	2	425	2350
Upland	47	33	0	80	226
Total	1599	230	3	1832	5442

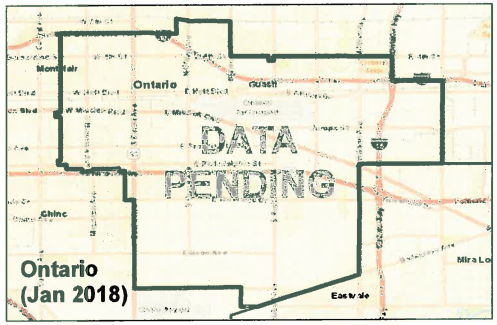


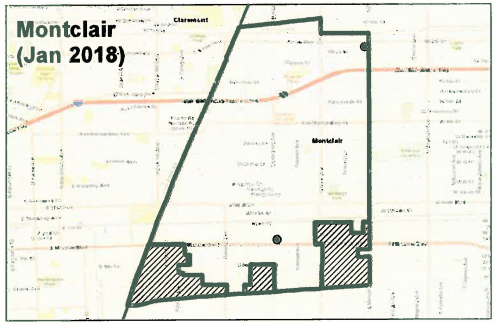












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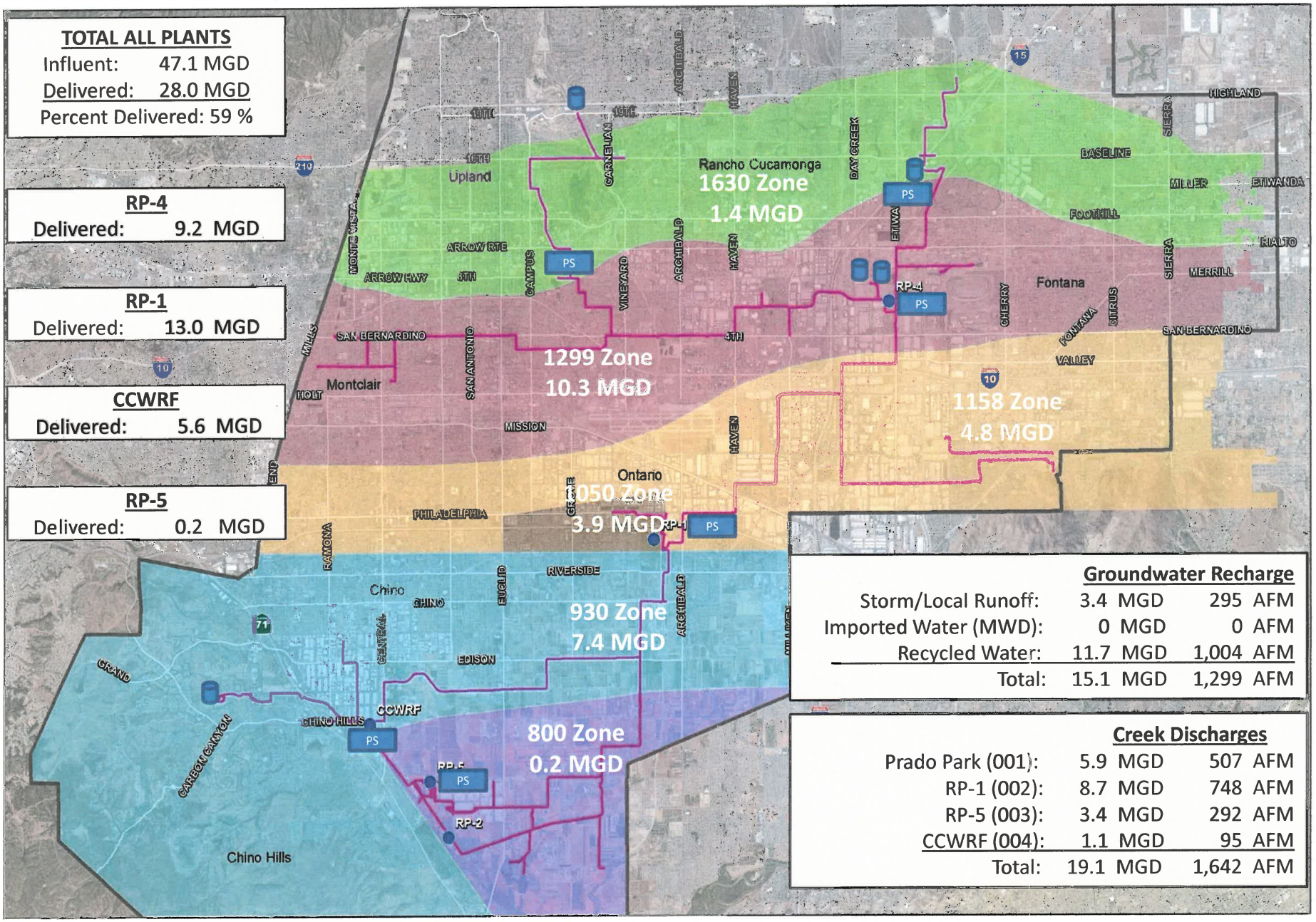
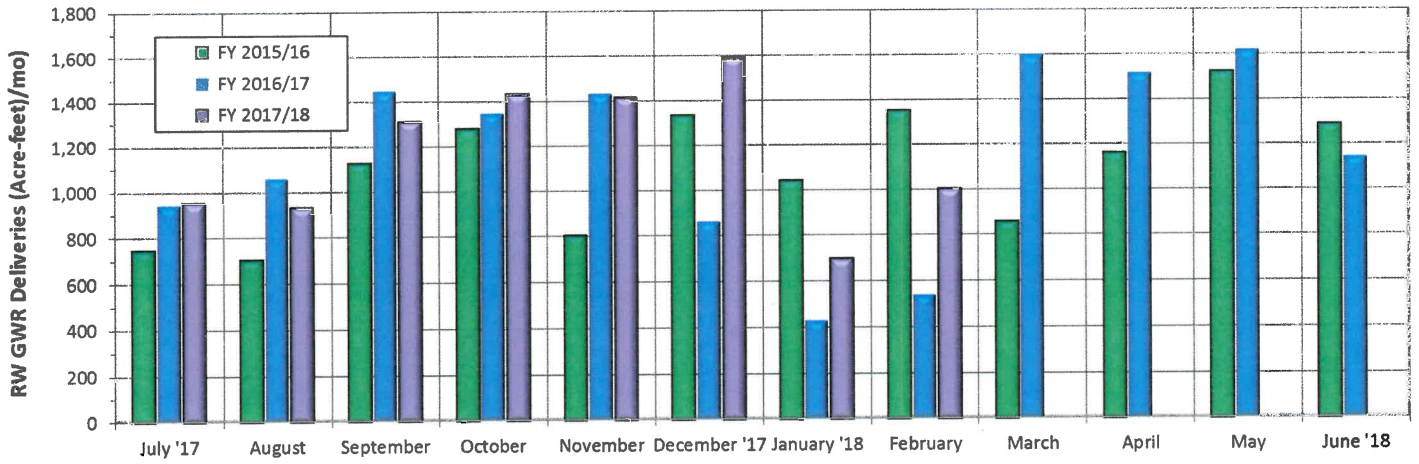
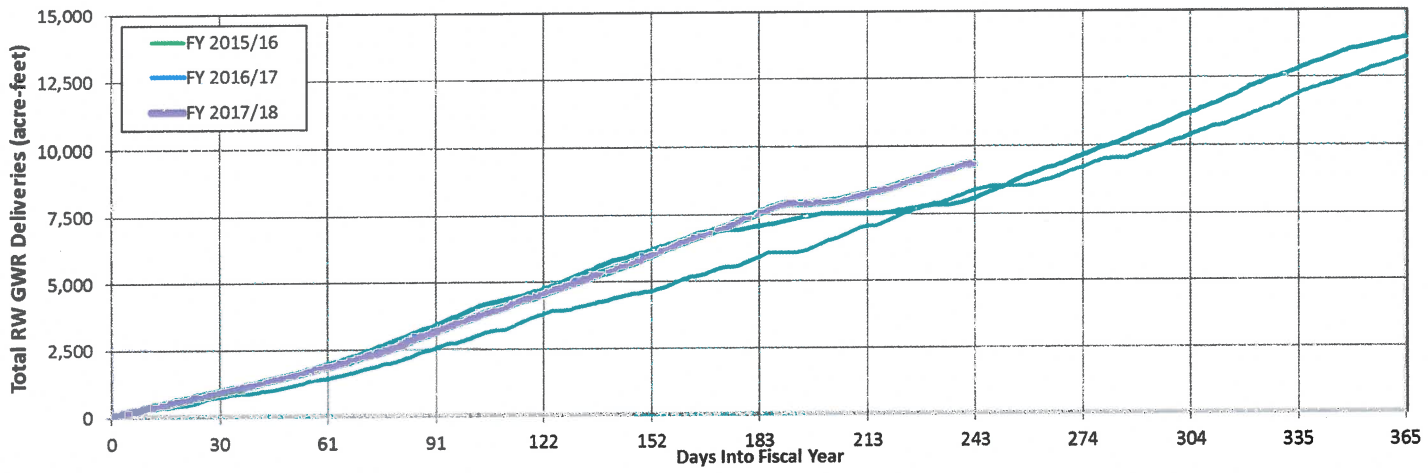
IEUA RECYCLED WATER DISTRIBUTION – FEBRUARY 2018



Recycled Water Recharge Deliveries / Plan - February 2018 (Acre-Feet)

Basin	2/1-2/10	2/11-2/17	2/18-2/24	2/25-2/28	Month Actual	FY To Date Actual	Deliveries are draft until reported as final.
Ely	52.1	62.6	62.3	6.9	183.9	842	
Banana	125.6	47.8	25.7	9.7	208.8	1606	
Hickory	15.0	60.2	44.2	17.3	136.7	988	
Turner 1 & 2	0.0	0.0	0.0	6.0	6.0	935	
Turner 3 & 4	0.0	0.0	6.0	7.3	13.3		
8th Street	78.8	3.2	0.0	0.0	82.0	1039	
Brooks	19.2	36.5	41.6	10.1	107.4	1037	
RP3	57.8	54.6	97.6	21.8	231.8	2113	
Declez	0.0	0.0	0.0	0.0	0.0	0	
Victoria	32.7	1.2	0.0	0.0	33.9	773	
San Sevaine	0.0	0.0	0.0	0.0	0.0	0	
Total	381.2	266.1	277.4	79.1	1,003.8	9,333	8,058 AF, Previous FY To Date Actual





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4D

REGIONAL SEWERAGE PROGRAM
PRETREATMENT SUBCOMMITTEE

March 6, 2018
1:30 PM
IEUA HQ Building A, Rains Conference Room
6075 Kimball Avenue
Chino, CA 91710

Minutes

Members Present

Ruben Valdez..... City of Chino
Andy Zummo..... City of Chino Hills
Nancy Dacumos..... City of Fontana
Nicole deMoet..... City of Montclair
Michael Birmelin..... City of Ontario
Robert Herbster..... City of Upland
Craig Proctor..... IEUA

Absent

Braden Yu..... CVWD

Others Present

Ken Tam..... IEUA
Michael Barber..... IEUA

1. Introductions

   The committee opted to forego introductions.

2. Informational Items & Updates

   a. Tech Meeting Report

      The Technical Committee unanimously agreed to have Kearns and West assist IEUA and the member agencies with the regional contract facilitation process Phase 2A Scoping Session. The facilitation team will work with IEUA and the member agencies to confirm and prioritize what key issues need to be renegotiated for the new contract. After issues are identified, the team will develop a timeline for completing the negotiation process.

b. Treatment Plants

RP-1/RP-4:

- RP-1/RP-4 met all the NPDES requirements during the months of November 2017 thru January 2018.

RP-5:

- RP-5 met all the NPDES requirements during the months of November 2017 thru January 2018.

CCWRF:

- CCWRF met all the NPDES requirements during the months of November 2017 thru January 2018.

Agency-wide:

- The Agency-Wide 12-month running average TDS for the months of November 2017, December 2017, and January 2018 were 463, 459, and 456 mg/L, respectively, which did not exceed the 550 mg/L Agency-wide 12-month running average limit.

- The Agency-wide 12-month running average incremental increase between secondary effluent and water supply TDS for the months of November 2017, December 2017, and January 2018 were 211, 209, and 209 mg/L, respectively, which did not exceed the 250 mg/L Agency-wide 12-month running average limit.

Collections System:

- No SSOs occurred during the months of November 2017 thru January 2018.

Recycled Water:

- No unauthorized discharges of more than 50,000 gallons of disinfected tertiary recycled water into the waters of the state occurred during the months of November 2017 thru January 2018.

- No agricultural runoff events were reported to IEUA by member agencies during the months of November 2017 thru January 2018.

c. Pretreatment Programs

American Beef Packers, in the City of Chino, was issued a Notice of Non-Compliance for exceeding their permitted discharge limit for flow in November. Results of industries investigation found that the flow meter readings collected exceeded the 24-hour period. Corrective actions have been taken including retraining of staff. No further enforcement action was necessary.

American Beef Packers, in the City of Chino, was issued a Notice of Non-Compliance for discharging excessive solids to the Regional Sewer System. Results of industries investigation found that a clogged pump in the treatment area resulted in wastewater bypassing the treatment system and entering the sewer. As a corrective action industry increased cleaning of the skimmer pits and rotary screens to weekly and installed additional screens around the pumps.

American Beef Packers, in the City of Chino, was issued Notices of Non-Compliance for exceeding the permitted local limit for TDS, fixed in January and February. Results of industries investigation for the January violation found that a pressure regulator on their water softening system malfunctioned and the soft water system had to be turned completely off. Once identified, the pressure regulator was immediately repaired. Resampling has been conducted but results indicate inconsistent compliance. Industry investigation is ongoing.

Aquamar, in the City of Rancho Cucamonga, was issued a Notice of Violation and Order for Corrective Action for exceeding the permitted local limit for TDS in December. Results of industries investigation and resampling results are pending.

Inland Powder Coating, in the City of Ontario, was issued a Notice of Violation and Order for Corrective Action in November and January for failure to conduct quarterly self-monitoring for the periods ending Sept 30th and Dec 31st. Results of industries investigation found several administrative issues caused a delay in sampling. Internal changes have been made to prevent a recurrence. Make-up sampling has been completed and results indicated compliance. No further enforcement action was necessary.

Nestle Waters, in the City of Ontario, was issued a Notice of Violation and Order for Corrective Action for exceeding the local daily limit for TDS, fixed in January. Results of industries investigation is pending.

Scotts Brothers Dairy, in the City of Chino, was issued Notices of Non-Compliance for TDS, fixed violations in October and November. Results of industries investigation found that high temperatures increased microbial activity in the treatment system affecting the pH. To adjust the pH, lime was used which increased the TDS. This appears to be an isolated incident. Four additional samples have been collected since November and all results indicated compliance.

3. Discussion Items

   a. Dental Amalgam Rule

IEUA distributed copies of the One-Time Dental Compliance Report for Dental Dischargers form it developed to comply with 40 CFR 441. This certification form will be distributed to dental facilities in the IEUA service area. Several of the committee members stated their agencies will take the lead in notifying the dental facilities of the new certification requirement. IEUA requested the committee provide comments back on the certification form by no later than March 30th. The goal is to notify all dental facilities by the end of May. Dental facilities that commenced operation after July 14, 2017 are required to immediately comply with the new Rule, while existing dental facilities have until July 14, 2020.

b. Local Limits

IEUA submitted the addendum for the Pretreatment Program Local Limits to the Regional Board in January. Based on discussions with the Board, IEUA believes the updates are considered a "non-substantial program change". If the Regional Board concurs with the proposed changes, and no comments are received within 45 days, IEUA will recommend its Board adopt a Notice of Intent to revise the local limits and will set a public hearing for adoption by no later than June.

c. NRWS Pipeline Break

IEUA staff updated the committee on the Non-Reclaimable Wastewater System pipeline break that occurred on February 15th on the force main sewer located in the City of Ontario. The discussion focused on how well the emergency planning and mutual aid worked as well as the excellent cooperation by industry to cease discharge until repairs could be made to the pipeline. As the force main sewer is almost 50 years old, IEUA will be starting design work on a replacement pipeline this year.

d. Pretreatment Compliance Inspection/Audit

As previously discussed, IEUA has yet to receive the Pretreatment Compliance Audit (PCA) report performed by Tetra Tech (EPA Contract Auditors) back in November 2016. IEUA contacted the Regional Board and it is expected the final report will be received in the next several weeks.

e. P3S Conference – Recap

The Committee recapped the recent P3S conference held in Riverside. Several committee members attended the conference and in general thought it was a very good conference with excellent presentations.

Other Items

None

The next pretreatment meeting is tentatively scheduled for June 5, 2018.

The meeting adjourned at 2:50 p.m.

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Last Updated 3-13-18

IEUA Bill Matrix

Year	IEUA Action	Bill No.	Author	Bill Name	Final Status	Comments
2017	Support	Prop 68 (SB 5)	de León	Water Bond	Ballot in June, 18	Coalition support once it was Prop 68 (2/18)
2018	Support	SB 606	Skinner and Hertzberg	Water Management Planning	-	Implementing the Gov. Exec. Order
2018	Support	AB 1668	Friedman	Water Management Planning	-	Implementing the Gov. Exec. Order
2018	Oppose	AB 1876	Frazier	Sacramento-San Joaquin Delta: Delta Stewardship Council	-	MWD Coalition Letter
2018	Watch	SB 2050	Caballero	Small System Water Authority Act of 2018	-	Eastern MWD Bill
2018	Watch	SB 623	Monning	Water quality: Safe and Affordable Drinking Water Fund	-	Public goods charge, also included in a budget trailer
2018	Watch	Water Bond	Jerry Merrill	Water Supply and Water Quality Act of 2018	-	Signatures still being verified for inclusion on the November ballot.