CVWD Wastewater Collection System:

Overview & History of CVWD's Wastewater System Part 2

Prepared by: David S. Gould and Brook Yared

Date: August 24, 2021

Agenda

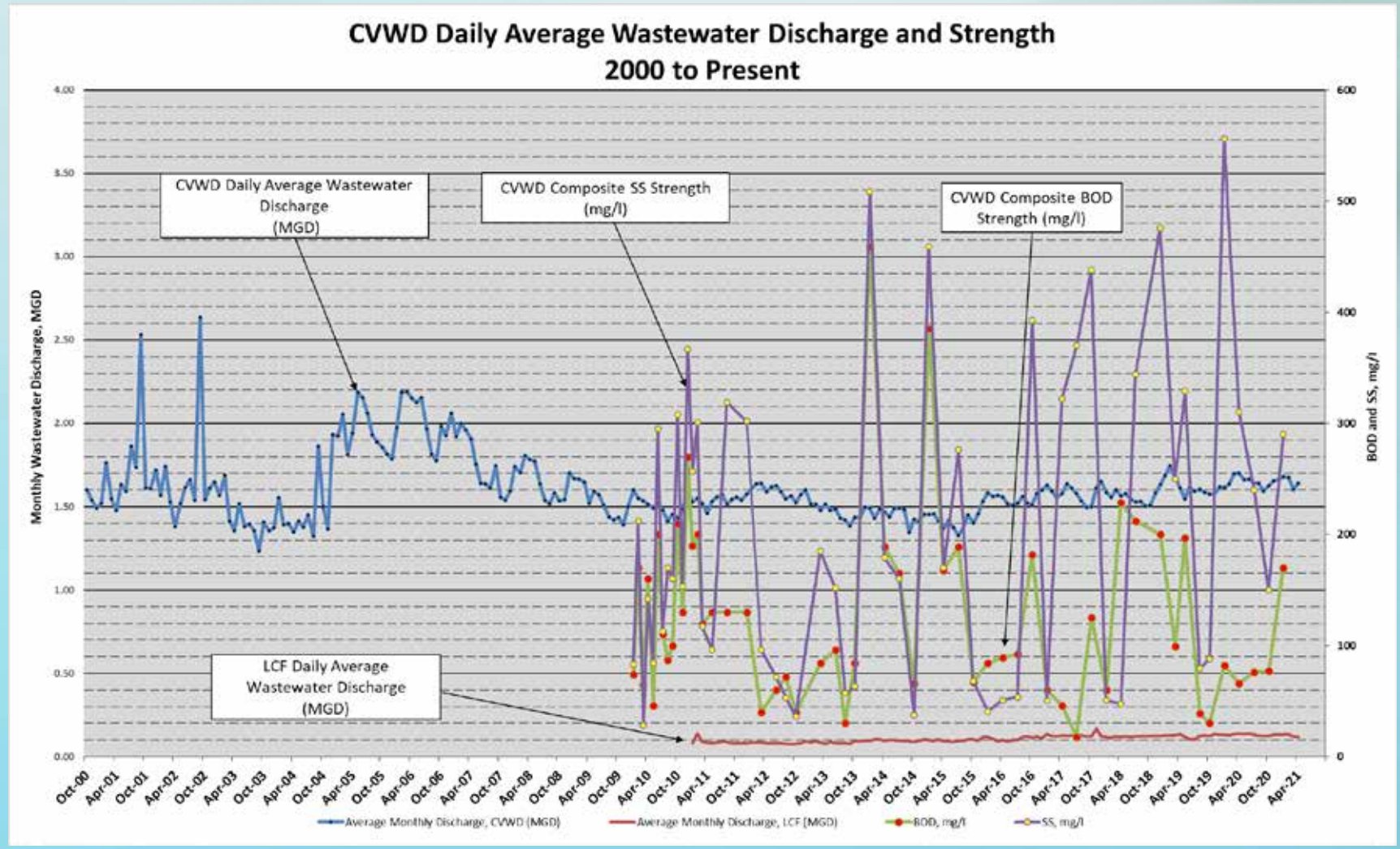
- **City of Los Angeles Contract**
  - 10-year Strength and Flow
  - Breakdown of Annual Conveyance, Treatment & Disposal Costs
  - 10-year Review of Conveyance, Treatment & Disposal Costs
- **CVWD**
  - Wastewater Rates Summary
  - Inflow and Infiltration Study
- **Wastewater Master Plan**
- **Wastewater Options for the Future**

Definition and Acronyms for Reference:

- ASSSC - Amalgamated System Sewerage System Charge
- ASSFC - Amalgamated System Sewerage Facilities Charge
- BOD – Biological Oxygen Demand - measure of the amount of oxygen required to remove waste matter
- SS – Total Suspended Solids is the number of suspended particles, that are not dissolved
- MGD – Million Gallons per Day
- MGD-Miles - Calculated based on regional flows of agencies contributing to the Amalgamated Sewer System

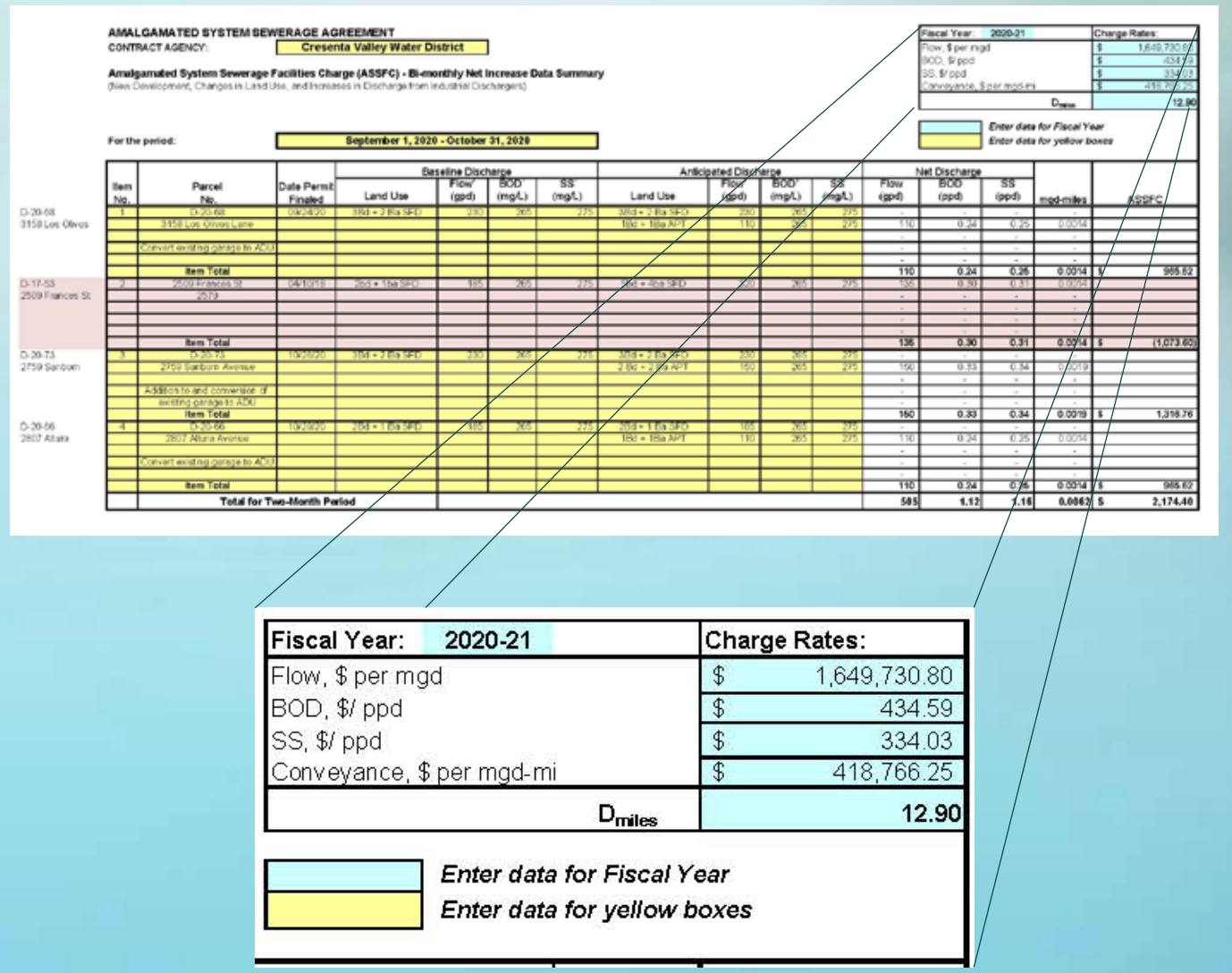
City of Los Angeles – 10-year Strength and Flow

- Flow – Daily Average 1.54 MGD
- Strength
  - **BOD** - Annual Avg. – 1,270 mg/l
  - **Suspended Solids** is the suspended particles, that are not dissolved
    - Annual Avg. – 310 mg/L
- Typical for Residential – 275 to 400 mg/L
- Typical for Commercial – 100 to 1,500 mg/L



City of Los Angeles – Breakdown of Costs

- ASSSC & ASSFC both dependent on MGD-Miles
  - ASSSC – Treatment/Disposal
  - ASSFC – New construction results in additional flow
- MGD-Miles
  - Calculated based on regional flows of agencies contributing to the Amalgamated Sewer System
- ASSFC
  - Bi-monthly Summary uses D-Miles
  - Pass-through cost to Developers



AMALGAMATED SYSTEM SEWERAGE AGREEMENT

CONTRACT AGENCY: Cresenta Valley Water District

Amalgamated System Sewerage Facilities Charge (ASSFC) - Bi-monthly Net Increase Data Summary

(New Development, Changes in Land Use, and Increases in Discharge from Industrial Dischargers)

For the period: September 1, 2020 - October 31, 2020

Item No.	Parcel No.	Date Permit Finaled	Baseline Discharge: Land Use	Baseline Flow (gpd)	Baseline BOD (mg/L)	Baseline SS (mg/L)	Anticipated Discharge: Land Use	Anticipated Flow (gpd)	Anticipated BOD (mg/L)	Anticipated SS (mg/L)	Net Discharge: Flow (gpd)	Net BOD (ppd)	Net SS (ppd)	mgd-miles	ASSFC
1	D-20-68	08/24/20	3Bd + 2 Ba SFD	330	265	275	3Bd + 2 Ba SFD	330	265	275					
	3158 Los Olivos Lane						1Bd + 1Ba APT	110	265	275	110	0.24	0.25	0.0014	
	Convert existing garage to ADU										-	-	-	-	
	Item Total										110	0.24	0.25	0.0014	$ 965.62
2	2509 Frances St	04/10/18	2Bd + 1Ba SFD	165	265	275	3Bd + 4Ba SFD	330	265	275	165	0.30	0.31	0.0014	
	2509										-	-	-	-	
	Item Total										165	0.30	0.31	0.0014	$ (1,073.60)
3	D-20-73	10/2/2020	3Bd + 2 Ba SFD	330	265	275	3Bd + 2 Ba SFD	330	265	275	-	-	-	-	
	2759 Sanborn Avenue						2 Bd + 2 Ba APT	150	265	275	150	0.33	0.34	0.0019	
	Addition to and conversion of existing garage to ADU										-	-	-	-	
	Item Total										150	0.33	0.34	0.0019	$ 1,316.76
4	D-20-66	10/2/2020	2Bd + 1Ba SFD	165	265	275	2Bd + 1Ba SFD	165	265	275	-	-	-	-	
	2807 Altura Avenue						1Bd + 1Ba APT	110	265	275	110	0.24	0.25	0.0014	
	Convert existing garage to ADU										-	-	-	-	
	Item Total										110	0.24	0.25	0.0014	$ 965.62
	Total for Two-Month Period										585	1.12	1.16	0.0062	$ 2,174.40

Fiscal Year: 2020-21	Charge Rates:
Flow, $ per mgd	$ 1,649,730.80
BOD, $/ ppd	$ 434.59
SS, $/ ppd	$ 334.03
Conveyance, $ per mgd-mi	$ 418,766.25
D_{miles}	12.90

Enter data for Fiscal Year

Enter data for yellow boxes

MGD-MILES Calculation

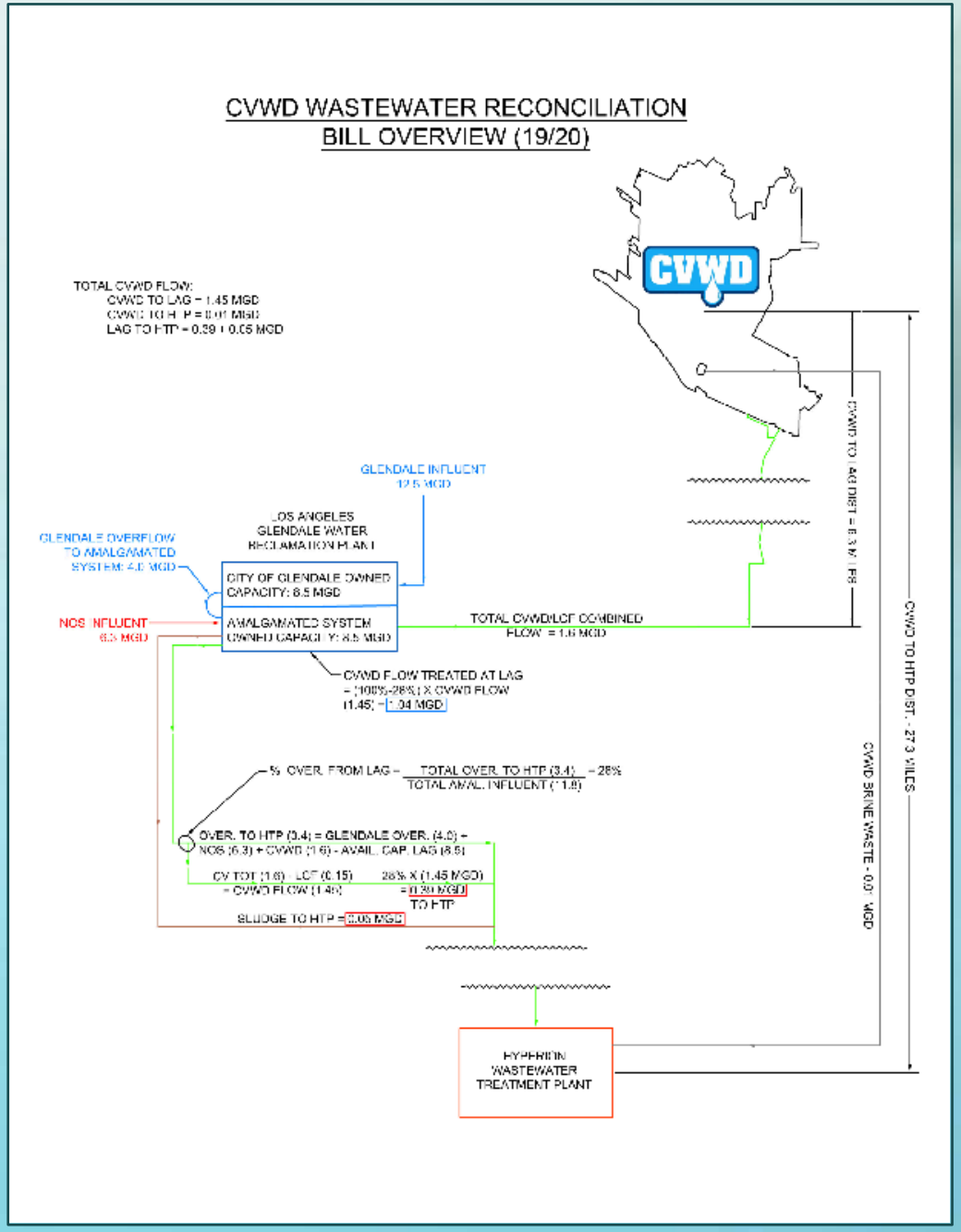
- MGD-MILES Equation

$$CVWD_{MGD\text{-}MILES} = \left(DIST.\text{-}\ HTP\right) \times \left(Q_{CVWD\text{-}HTP} + Q_{SLUDGE} + Q_{BRINE}\right) + \left(DIST.\text{-}\ LAG \times Q_{CVWD\text{-}LAG}\right)$$

- Example – FY 19/20

$$CVWD_{MGD\text{-}MILES} = \left(27.3\right) \times \left(0.39MGD + 0.05MGD + 0.01MGD\right) + \left(6.3 \times 1.04\right)$$
$$= \left(27.3\right) \times \left(0.45MGD\right) + \left(6.55\right)$$
$$= \left(12.29\right) + \left(6.55\right) = 18.84MGD\text{-}\ Miles$$

- Brine waste reported to City of Los Angeles by CVWD in Annual Diversion Report.
- Per City of LA Calculation: - MGD-Miles = 17.5 MGD-Miles



City of Los Angeles – 10-year Review of Costs

- **ASSSCS Billing Projections**
  - Sent out – April / May each year
  - Estimated for 5 years
  - Operations & Maintenance Costs
  - Capital Improvement Costs
  - "F" Factor – Estimate percent
- **Reconciliation – Previous Year**
  - Sent out – Jan / Feb each year
  - Based on projects completed & M & O costs for the previous year
  - Either Credit or additional payment

CITY OF LOS ANGELES
CALIFORNIA

BOARD OF PUBLIC WORKS MEMBERS

ERIC GARCETTI
MAYOR

Brock Yared
Senior Engineer
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, CA 91214

Dear Mr. Yared:

CRESCENTA VALLEY WATER DISTRICT
TRANSMITTAL OF BILLING PROJECTIONS FOR FY 2021-22 THROUGH

This letter is transmitting the 5-year billing projections for wastewater service 2021-22 through 2025-26, attached. The calculation is based on Los Angeles' W Improvement Program (WCIP). Since the WCIP is evaluated and adjusted base schedule, available resources, project needs and revised cost estimates among oth projections could be lower or higher than the projections submitted to you last year Please note that the budgeted capital costs included in these projections are only system projects with prioritization scores above the level corresponding to the avail

If you would like to review the calculation of the 5-year projections, please call Su staff at (213) 485-2326 and she will be happy to send you a copy. In addition, pl with any questions or comments you may have on the projections.

Sincerely,

ENRIQUE C. ZALDIVAR, P.E.
Director and General Manager
LA Sanitation and Environment

By:
Eva Y. Sung
Division Manager
Financial Management Division

ECZ/EPS/DHB/SR/TL:mo

Attachment: 5-Year Projections

zero waste • zero wasted water
AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

TABLE 1. SUMMARY OF PROJECTED AGENCY CHARGES O&M AND CAPITAL PORTIONS OF ASSSCS

	2021-22 ($000)	2022-23 ($000)	2023-24 ($000)	2024-25 ($000)	2025-26 ($000)
Aneta Street	62.5	71.0	61.6	64.3	72.1
Beverly Hills	4,426.1	5,004.6	4,411.4	4,845.1	5,447.4
Burbank	4,544.8	5,160.6	4,567.5	4,561.7	5,031.0
Crescenta Valley	1,655.8	1,873.4	1,654.1	1,824.9	2,040.6
CSD 4	4,126.4	4,651.5	4,132.1	4,657.6	5,253.4
CSD 5	862.3	977.1	857.2	912.9	1,024.1
CSD 16	558.5	625.6	570.4	656.8	738.8
CSD 27	149.2	169.3	147.8	156.2	175.2
Culver City	2,858.1	3,242.1	2,801.3	3,084.6	3,495.0
El Segundo	2,164.4	2,467.7	2,114.7	2,133.5	2,397.9
Federal Office Building	9.6	10.8	9.4	11.1	12.5
Glendale	9,238.8	10,387.3	9,375.7	10,347.5	11,616.4
Karl Holton Camp	6.8	7.8	6.2	6.6	7.5
La Canada	173.5	196.5	172.1	188.5	212.0
Las Virgines	554.3	624.4	559.2	619.1	695.1
Marina Del Rey	1,748.0	1,991.1	1,716.7	1,784.8	1,996.2
San Fernando	1,925.1	2,170.4	1,929.5	2,142.4	2,415.6
Santa Monica	10,641.1	12,048.3	10,528.1	11,550.7	13,036.4
Triunfo	147.4	165.2	150.4	173.8	195.4
Universal City	1,035.4	1,164.3	1,045.6	1,178.8	1,327.4
Veterans Administration	292.8	331.2	292.2	319.8	358.9
WLA Community College	22.9	26.0	22.8	24.3	27.2
CSD 9	263.9	300.6	258.9	267.2	299.7
City of Long Beach	54.8	62.6	53.5	54.4	61.1
Total	$47,522.4	$53,729.4	$47,438.4	$51,566.6	$57,937.0

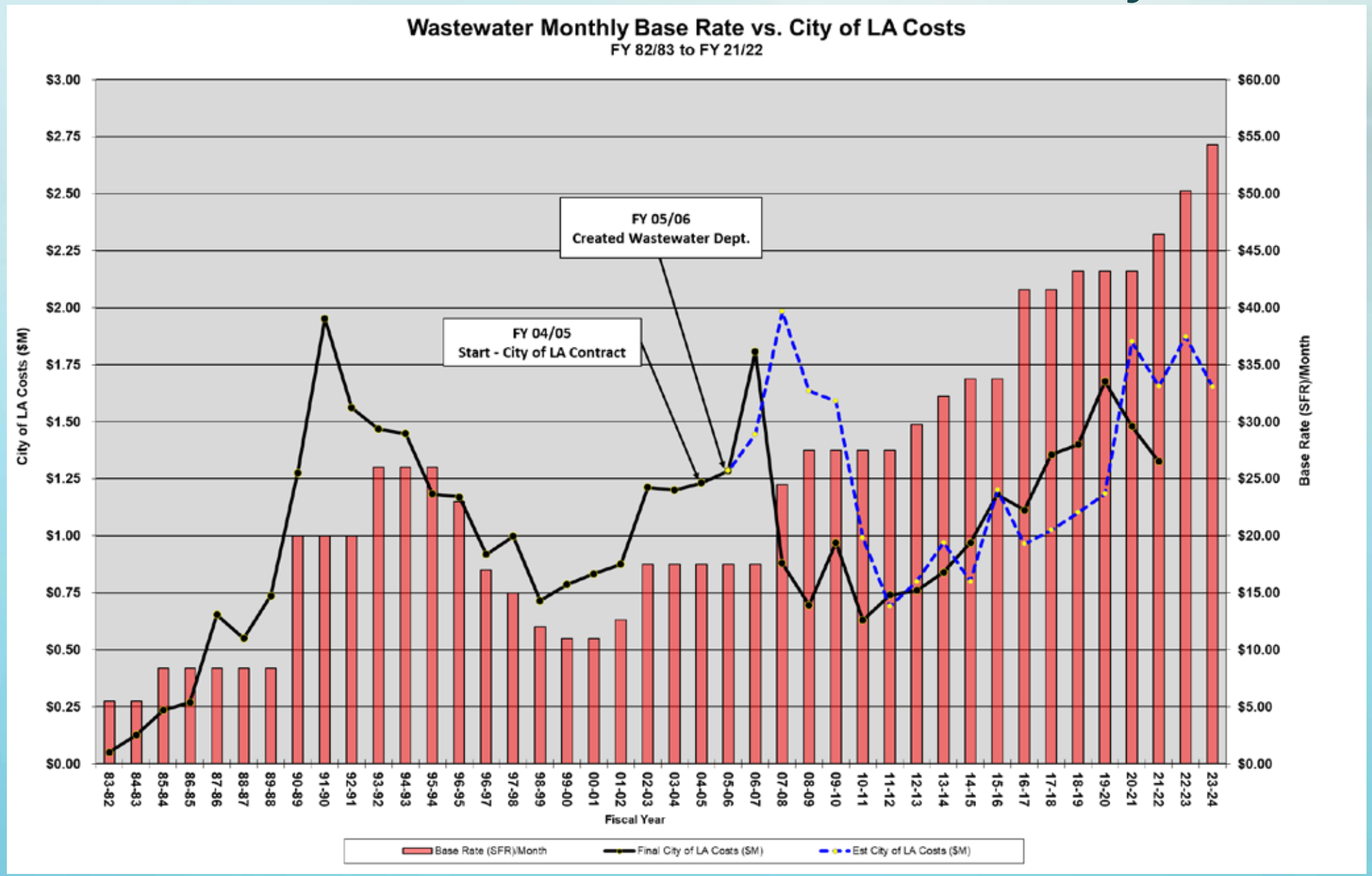
Projection -ASSSC 2021-22 - Final Summary

4/27/2021

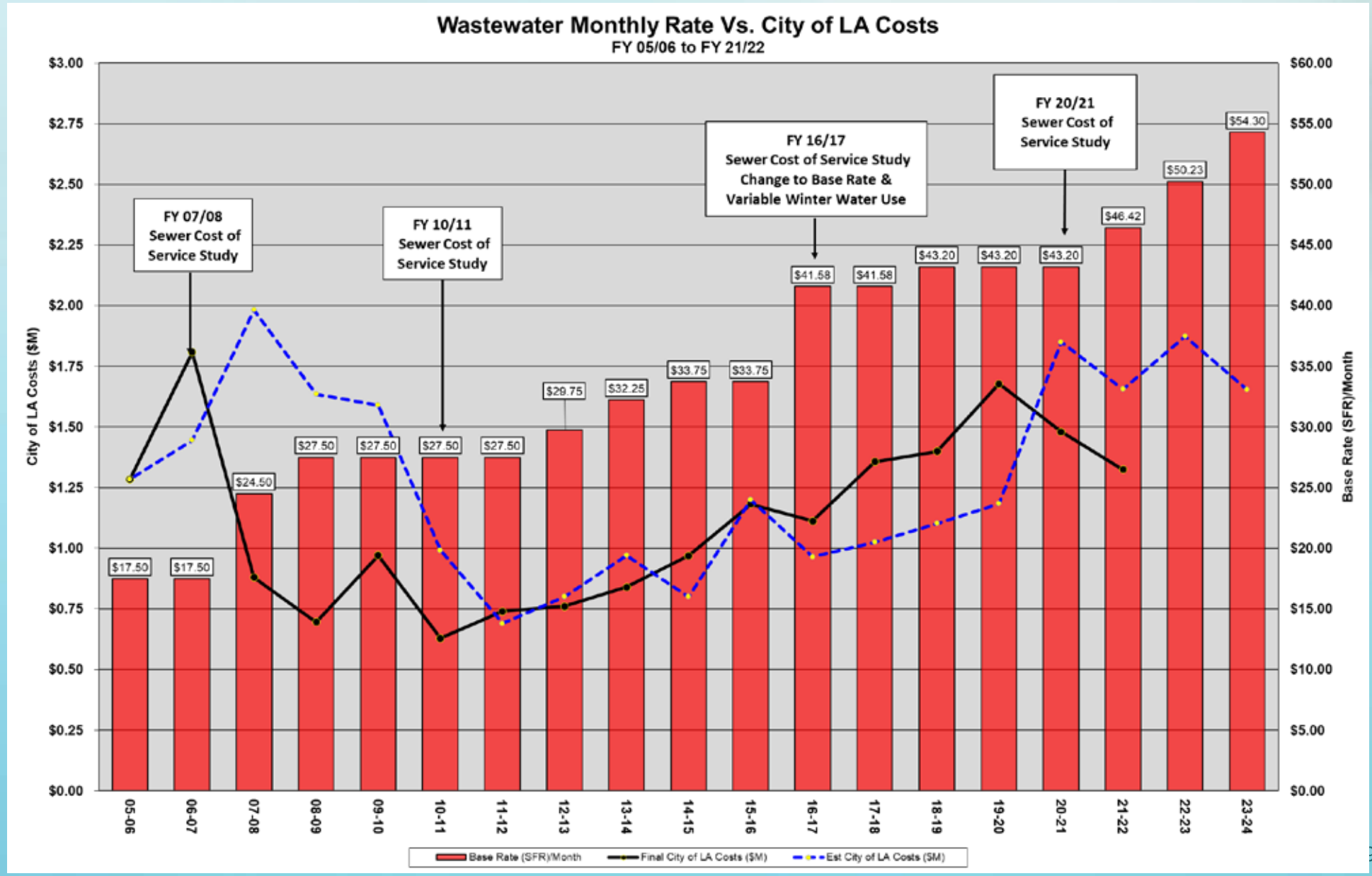
City of Los Angeles – 10-year Review of Costs

Summary of City of LA - Projections																
Fiscal Year	**FY 2010-11**	**FY 2011-12**	**FY 2012-13**	**FY 2013-14**	**FY 2014-15**	**FY 2015-16**	**FY 2016-17**	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**	**FY 2020-21**	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
FY 2010-11	$992,300	$1,116,000	$995,500	$980,700	$1,280,400											
FY 2011-12		$966,200	$1,088,900	$1,116,300	$983,000	$1,074,600										
FY 2012-13			$1,045,400	$1,201,900	$1,373,000	$1,492,600	$1,530,100									
FY 2013-14				$1,421,300	$1,682,500	$1,699,700	$1,631,000	$1,594,200								
FY 2014-15					$1,103,211	$2,222,700	$1,940,400	$1,900,800	$1,337,900							
FY 2015-16						$1,605,696	$1,803,700	$1,618,400	$1,349,300	$1,121,900						
FY 2016-17							$1,202,982	$1,386,600	$1,218,000	$1,545,100	$817,300					
FY 2017-18								$1,220,221	$1,378,000	$1,293,000	$1,094,700	$1,006,900				
FY 2018-19									$1,326,900	$1,492,700	$1,159,800	$1,181,300	$1,106,000			
FY 2019-20										$1,578,524	$1,582,800	$1,424,200	$1,378,800	$1,331,700		
FY 2020-21											$1,850,000	$1,709,000	$2,084,200	$1,881,500	$1,947,900	
FY 2021-22												$1,655,800	$1,873,700	$1,654,100	$1,824,900	$2,040,600
Estimated Invoice		$706,221	$940,868	$1,079,869	$803,498	$1,195,867	$964,799	$1,024,959	$1,101,540	$1,183,861	$1,480,000	$1,325,987	$1,500,484	$1,324,626	$1,461,405	$1,634,140
Estimate "F" Factor		0.73	0.90	0.76	0.73	0.74	0.80	0.84	0.83	0.75	0.80	0.80	0.80	0.80	0.80	0.80
Reconciliation Cost		$51,529	($42,416)	($128,557)	$166,323	($14,262)	$89,079	$331,219	$331,777							
Actual Cost w/Reconciliation	**$629,204**	**$757,750**	**$898,452**	**$951,312**	**$969,821**	**$1,181,605**	**$1,053,878**	**$1,356,178**	**$1,433,317**	**$1,183,861**	**$1,480,000**	**$1,325,987**				
Actual - Projected	($363,096)	($208,450)	($146,948)	($469,988)	($133,390)	($424,091)	($149,104)	$135,957	$106,417	($308,839)	$320,200	$144,687				
Percentage increase/decrease from previous year		20%	19%	6%	2%	22%	-11%	29%	6%	-17%	25%	-10%				

CVWD – Wastewater Rates Summary



CVWD – Wastewater Rates Summary

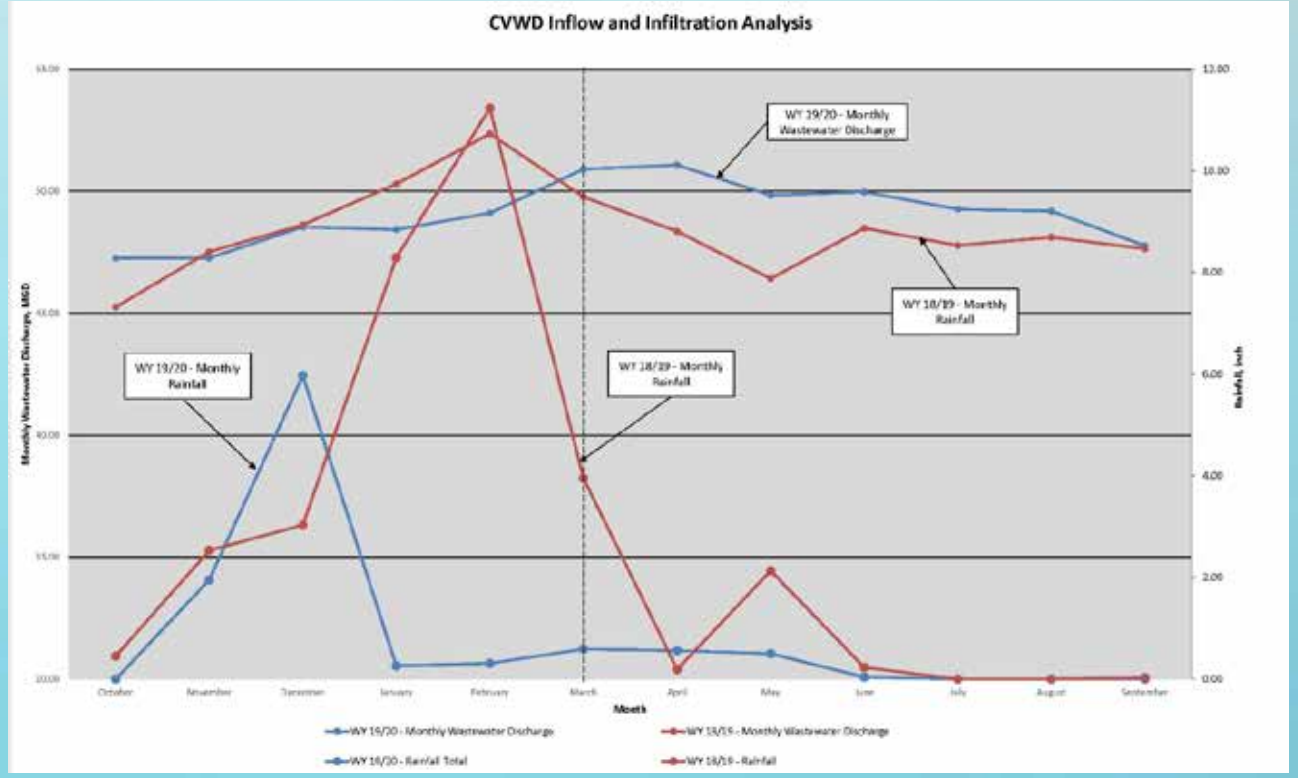


Inflow and Infiltration

- Where does inflow and Infiltration come from:
  - Surface Flows through Maint. Hole Covers
  - Cracks in Sewer Mains
  - Offsets at Pipe Joints
  - Maintenance Holes Section Gaps
- Ratio of the average dry weather wastewater flows and average wet weather wastewater flows (ADWF).
- Not currently regulated but adds to treated wastewater. Good Indicator of system condition.
- ADWF is equal to the average wastewater discharge over three driest months (June, July, Aug.)
- AWWF is equal to the average wastewater discharge over three wettest months (January, February, March)

Inflow and Infiltration Summary

Year	Dry Weather (MGD	Wet Weather (MGD)	Difference (MGD)	5-yr avg
2010	1.47	1.56	0.06	11.09%
2011	1.55	1.53	-0.01	9.50%
2012	1.59	1.63	0.03	5.95%
2013	1.45	1.50	0.04	4.34%
2014	1.49	1.47	-0.01	2.08%
2015	1.36	1.44	0.06	2.11%
2016	1.53	1.57	0.03	2.83%
2017	1.58	1.59	0.01	2.54%
2018	1.53	1.58	0.03	2.41%
2019	1.60	1.70	0.06	3.86%
2020	1.65	1.65	0.00	2.62%



Wastewater Master Plan

Major elements:

1. Use CVWD's wastewater GIS & As-builts
2. Location of new flow monitoring stations
3. Hydraulic Analysis – Determine design vs actual capacity
4. Develop an Inflow/Infiltration Study
5. Future Development & Flows – Review Zoning & Housing Element Plan for Los Angeles County & LCF
6. Review District's standard details (i.e. pre-cast sewer manhole).
7. Prioritized short- & long-term Capital Improvement Program (CIP) plan.

• Proposed Project Schedule

Wastewater Master Plan
Preliminary Project Schedule

Task	State Date	End Date	Days
Draft RFP	July-21	August-21	35
Staff Report	August-21	August-21	4
Engineering Com	**August-21**	**August-21**	**0**
Final RFP	August-21	September-21	6
Send out	September-21	September-21	2
Pre-Proposal Mtg	September-21	September-21	20
Proposal Due	September-21	October-21	22
Staff Report	October-21	October-21	2
Board Meeting - Award Contract	**October-21**	**October-21**	**4**
Kickoff Mtg	October-21	November-21	14
Data Request	November-21	November-21	14
30% Submittal	November-21	March-22	120
90% Submittal	March-22	September-22	176
Staff Report	September-22	September-22	1
Engineering Com	**September-22**	**September-22**	**4**
100% Submittal	September-22	October-22	30
Staff Report	October-22	October-22	1
Board Meeting - Approved	**October-22**	**October-22**	**4**

Wastewater Options for Future

Wastewater Treatment Feasibility Study

- **Future 3.0MG (min.) WW Treatment Plant** by CVWD with possible partnerships - Glendale & LCF
- **LA County Sanitation District - New Pump Station** – Send Flow to LA County Sanitation District through LCF & Pasadena
- **Membrane Bioreactor (MBR) Plants** – combines membrane filtration with biological treatment
  - Reduce flow to City of LA
  - Sludge Removal
  - Recycled Water – Groundwater Recharge

Next Step