

CVWD Wastewater Collection System:

Overview & History of CVWD's Wastewater System - Part 1

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Agenda

Overview & History of
CVWD's Wastewater
System

City of Los Angeles
Conveyance,
Treatment & Disposal
of Wastewater
Agreement

Amalgamated System
Sewerage System
Charges (ASSSC)

Amalgamated System
Sewerage Facilities
Charges (ASSFC)

City of La Canada
Flintridge Conveyance
Agreement

Recycled Water

Sewer Flow vs. Water
Production

Next Discussion

Overview & History of CVWD Wastewater System

- **1929 to 1980 – La Crescenta on Septic Sewage System**
 - 1976 – Glendale installed sewers in Glendale Annex
 - 1966 – Wiley Tract - Installed sewers with treatment using spreading grounds on hillside and abandoned in 1980
- **Why CVWD needed to Construct Wastewater Collection System**
 - Required by Clean Water Act
 - Groundwater Contamination – Nitrates, PCE, & other VOC's
- **1975 to 1979 – Wastewater Assessment Districts Established**
 - Assessment District 79-1 (Above Foothill Blvd) & 79-2 (Below Foothill Blvd)
 - About 6,300 Sewer Accounts – La Crescenta and small part of La Canada Flintridge
 - Sewer District boundary different than Water District boundary and Water Service area

Overview & History of CVWD Wastewater System (Cont)

- **1980 to 1986 – Construction of Sewer Collection System**
 - Installed 66 miles of sewer main and laterals
 - Customer required to connect to sewer lateral and abandon septic system
 - On-site permitting – LA County Bldg & Safety
 - Off-site permitting for laterals and main line – CVWD
 - CVWD responsible for maintenance of the sewer mains
 - Customer responsible for maintenance of sewer lateral within R/W & on-site
- **1981 to 1983 – Sewer Interceptor Pipeline**
 - 21” to 27” dia. sewer main that transports CVWD’s sewage through Glendale to the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) located at the 134 Fwy & 5 Fwy
 - LAGWRP – Jointly owned LA & Glendale and operated by City of Los Angeles

Nitrate Treatment Plant and Diversion to HTP

- **1990 – Ion Exchange Nitrate Removal Treatment Plant**
 - Install at Glenwood Plant for nitrate removal treatment
 - Sewer force main & waste tank installed to pump brine waste to CVWD's sewer interceptor
 - Agreement with City of LA to accept brine waste
 - Brine waste upset operations at LAGWRP
 - Installed sewer diverter valve near LAGWRP diverts low flows from 12:00 am to 2:00 am
 - Brine waste sent through City of LA's "North Outfall" sewer which flows to Hyperion Treatment Plant (HTP) in El Segundo.

Maintenance History

- **Sewer Maintenance**

- 1985 to 2005 – Contracted sewer maintenance, videotape inspection and emergency response services.
- 2005 – Sewer Maintenance Department – 3 FTE
 - Purchase sewer vactor truck & sewer camera truck
 - Cleaned sewer system every 3-years
 - Cleaned sewer interceptor line every 2-years
 - Annual enhanced sewer maintenance areas
 - Response to Sewer Overflows
 - Slip-lining sewer mains in areas of root intrusion

Statewide Discharge Requirements

State Water Resources Control Board (SWRCB) issued a Waste Discharge Requirements (WDR) in 2006

- Mandated agencies to develop a Sewer System Management Plan (SSMP)
- Develop procedures for Sewer System Overflows (SSO)
- CVWD certified it's SSMP in 2009 and recertified in 2014 & 2019
- SSMP requires an internal self-audited every 2-years and recertification of the SSMP every 5-years

Major Items of SSMP:

- Inflow and Infiltration tracking
- Determining percent difference between Average Dry Weather Flow and Peak Wet Weather Flow
- Procedures and Agency contacts for Sewer System Overflows
- Sewer Design Standards
- Operations & Maintenance plan including annual sewer cleaning, CCTV inspection and enhanced maintenance areas.

City of Los Angeles Conveyance, Treatment & Disposal of Wastewater Agreement

Wastewater Treatment & Disposal Agreements

- 1985 to 2005 - City of Glendale Wastewater Treatment & Disposal Agreement
 - CVWD agreement with Glendale, CVWD paid Glendale & Glendale paid LA
 - 2004 – Ended contract with Glendale
 - Glendale/CVWD Settlement - \$1.3M to CVWD for overpayment to LA
- 2005 to Present - City of Los Angeles Conveyance, Treatment & Disposal of Wastewater Agreement
 - Signed agreement in 2005; Contract to be renewed in 2030
 - CVWD included with the 24 Contracting Agencies to City of LA
 - Universal Terms - terms and conditions of the Agreement that were negotiated between Los Angeles and the Original Contracting Entities that provides the same cost recovery for the Amalgamated System Expenses based on quantity of flow and strength of sewage.

City of Los Angeles Conveyance, Treatment & Disposal of Wastewater Agreement

- City of Los Angeles Agreement – Specific Terms
 - City of La Canada Flintridge between City of LA for the treatment and disposal of its wastewater. The flow and strength of discharged from La Canada to CVWD's facilities shall be subtracted from the quantity measured at CVWD's Monitoring Station in determining CVWD's quantity of flow and strength.
 - Calculation of Contracting Entity's MGD-miles is based all or part of the wastewater tributary to LAGWRP that may be diverted from the North Outfall Sewer or other sewers into LAGWRP.
 - Bypass of Nitrate Wastewater – All wastewater from CVWD shall bypass the Los Angeles-Glendale Water Reclamation Plant through a bypass sewer when it contains Nitrate Wastewater and shall include Diverter Gate to insure the diversion of all Nitrate Wastewater into the bypass sewer.

City of Los Angeles Wastewater Agreement

Contracting Agencies

No.	Contracting Agencies
1	Aneta Street - LA
2	City of Beverly Hills
3	City of Burbank
4	Crescenta Valley Water District
5	LA County Sanitation District 4
6	LA County Sanitation District 5
7	LA County Sanitation District 16
8	LA County Sanitation District 27
9	City of Culver City
10	City of El Segundo
11	Federal Office Building - LA
12	City of Glendale
13	Karl Holton Camp - San Fernando
14	City of La Canada Flintridge
15	Las Virgines Municipal Water District
16	City of Marina Del Rey
17	City of San Fernando
18	City of Santa Monica
19	Triunfo Waer & Sanitation District
20	Universal City - LA
21	Veterans Administration - LA
22	West LA Community College
23	LA County Sanitation District 9
24	City of Long Beach

City of Los Angeles Wastewater Agreement

Contracting Agencies

No.	Contracting Agencies (percentage order)	FY 21-22 ASSSC Charge	Percentage
1	City of Santa Monica	10,641,100	22.39%
2	City of Glendale	9,238,800	19.44%
3	City of Burbank	4,544,800	9.56%
4	City of Beverly Hills	4,426,100	9.31%
5	LA County Sanitation District 4	4,126,400	8.68%
6	City of Culver City	2,858,100	6.01%
7	City of El Segundo	2,164,400	4.55%
8	City of San Fernando	1,925,100	4.05%
9	City of Marina Del Rey	1,748,000	3.68%
10	Crescenta Valley Water District	1,655,800	3.48%
11	Universal City - LA	1,035,400	2.18%
12	LA County Sanitation District 5	862,300	1.81%
13	LA County Sanitation District 16	558,500	1.18%
14	Las Virgines Municipal Water District	554,300	1.17%
15	Veterans Administration - LA	292,800	0.62%
16	LA County Sanitation District 9	263,900	0.56%
17	City of La Canada Flintridge	173,500	0.37%
18	LA County Sanitation District 27	149,200	0.31%
19	Triunfo Waer & Sanitation District	147,400	0.31%
20	Aneta Street - LA	62,500	0.13%
21	City of Long Beach	54,800	0.12%
22	West LA Community College	22,900	0.05%
23	Federal Office Building - LA	9,600	0.02%
24	Karl Holton Camp - San Fernando	6,800	0.01%
	Total	47,522,500	100.00%

City of Los Angeles Conveyance, Treatment & Disposal of Wastewater Agreement

Annual Costs based on flow and strength of CVWD's Wastewater:

- Operations & Maintenance (O&M) & Capital Improvement Projects (CIP) invoices are based on CVWD's annual wastewater volume and strength .
- **Volume of water** is based on the net daily wastewater flow.
- **Strength of Sewage** is based on Total Suspended Solids (TSS) & Biological Oxygen Demand (BOD)
 - **Biological Oxygen Demand (BOD)** is a measure of the amount of oxygen required to remove waste organic matter from water in the process of decomposition by aerobic bacteria (those bacteria that live only in an environment containing oxygen).
 - **Total Suspended Solids (TSS)** is the dry-weight of suspended particles, that are not dissolved, in a sample of water that can be trapped by a filter. A water quality parameter used to assess the quality of a wastewater before and after treatment in a wastewater treatment plant.
 - **MGD-Miles** is based on the adjusted distance from the geographical center of CVWD to LAG and HTP, under LA's centroidal MGD-mile billing method. Mgd-miles for flow to LAGWRP is 6.3 and to HTP is 23.7
 - CVWD's strength & flow are recorded at the Elk Street flow monitoring station that is owned by CVWD and contracted with ADS Environmental Services which provides monitoring and testing, and ADS sends data directly to LA.

FY 20-21	Sampling Date	Elk Street Station				
		Average Flow (mgd)	BOD (ppm)	SS (ppm)		
April	04/13/20	1.728	66	310	951	4,468
May						
June						
July	07/16/20	1.624	76	240	1,029	3,251
August						
September						
October	10/15/20	1.581	77	150	1,015	1,978
November						
December						
January	01/07/21	1.596	170	290	2,263	3,860
February						
March						
Annual Average 2020-21		1.63225	97	248	1,315	3,389
Average of all Measured					1,730	2,717
3-YR Annual Average 2019-21		1.60900			1,628	3,541

Amalgamated System Sewerage System Charges (ASSSC)

- **Amalgamated System Sewerage System Charges (ASSSC):**

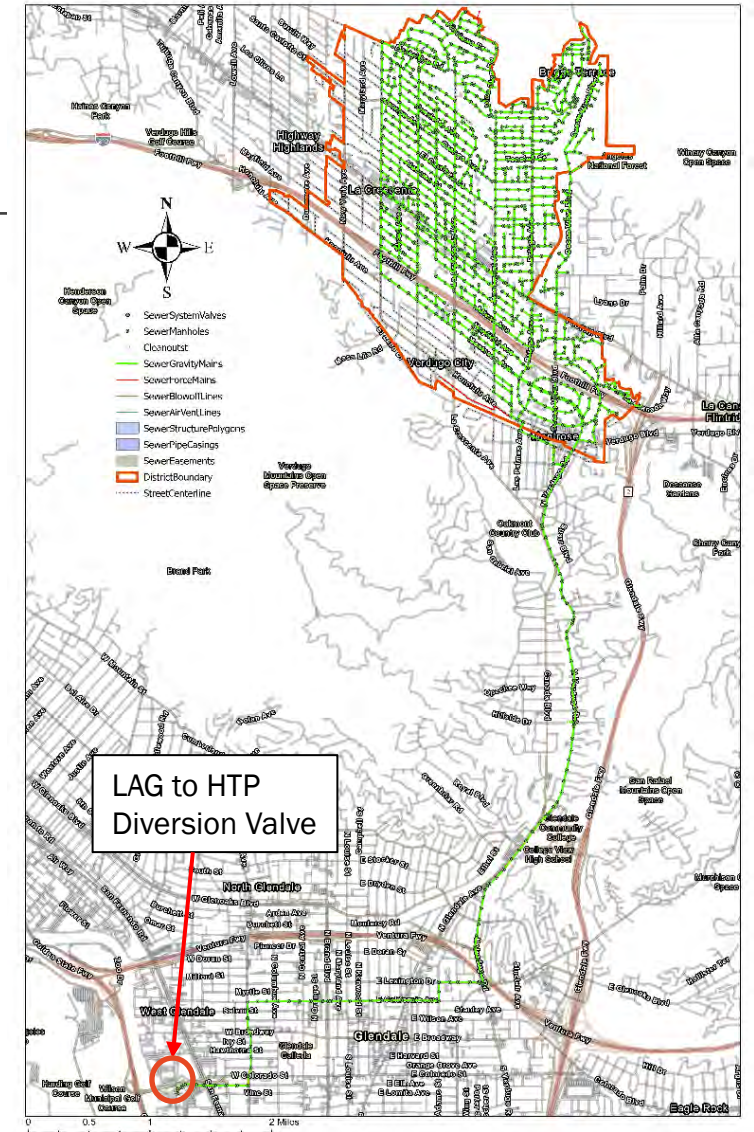
- Charge to CVWD to recover CVWD's proportional share of the Net Amalgamated System expenses including both HTP and Terminal Island plant
- Two (2) Components of ASSSC make up CVWD's invoice to City of LA

- **Operations & Maintenance (O&M) Charges**

- Direct O&M costs of the Amalgamated System as paid by City of LA
- Costs includes upgrades to existing facilities or provide new & expanded facilities
- Costs of administrative, management, & supporting activities relating to the Amalgamated System

- **Capital Improvement (CIP) Charges:**

- Based on latest Los Angeles' Wastewater Capital Improvement Program (WCIP)
- WCIP is evaluated and adjusted annually based on the project schedule, available resources, project needs and revised cost estimates.
- All CIP charges are based on actual discharge flow to the amalgamated system.



Amalgamated System Sewerage Facilities Charges (ASSFC)

Amalgamated System Sewerage Facilities Charges (ASSFC):

- CVWD responsible to the City of LA for charge for any new or upgraded sewer connection relative to new developments such as:
 - Apartments or condos
 - new residential home
 - Additions to an existing residential homes
 - change of use of a business (i.e., retail store remodeled to a restaurant)
- CVWD collects the ASSFC fee for any new or upgraded development as part of CVWD's Sewer Connection Fee and a 10% administrative fee for staff's time.
 - CVWD prepares a quarterly ASSFC report to the City of LA that summaries all ASSFC charges collected for that quarter.
 - The ASSFC is a pass-through cost from the Developer to the City of LA and there is no cost to CVWD.

AMALGAMATED SYSTEM SEWERAGE AGREEMENT
 CONTRACT AGENCY: **Crescenta 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: **March 1, 2021 - April 30, 2021**

Item No.	Parcel No.	Date Permit Faxed	Baseline Discharge			Anticipated Discharge			Net Discharge			ASSFC		
			Flow (gpd)	BOD (mg/L)	SS (mg/L)	Land Use	Flow (gpd)	BOD (mg/L)	SS (mg/L)	Flow (gpd)	BOD (ppd)		SS (ppd)	
1	3100 Community Avenue	03/02/21	385 + 2 BA SFD	230	285	275	380 + 2 BA SFD	230	285	275	110	0.24	0.25	0.0015
	New ADU													
	Item Total										110	0.24	0.25	0.0015
2	4744 Rosewood Ave.	02/20/21	385 + 2 BA SFD	230	285	275	380 + 2 BA SFD	230	285	275	90	0.20	0.21	0.0015
	New Detached ADU (PHASE 1-PAID)													
	Addition to Existing Property (PHASE 2)	03/04/21												
	Item Total										90	0.20	0.21	0.0015
3	2710 Frances Avenue	03/09/21	384 + 1 BA SFD	185	265	275	384 + 1 BA SFD	230	285	275	45	0.10	0.10	0.0005
	Addition to Existing Property													
	Item Total										45	0.10	0.10	0.0005
4	5611 Fremont Avenue	03/25/21	384 + 2 BA SFD	230	285	275	480 + 2 BA SFD	275	285	275	45	0.10	0.10	0.0005
	Addition to existing property													
	Item Total										45	0.10	0.10	0.0005
5	2718 Mountain Pine Drive	04/22/21	384 + 2 BA SFD	230	285	275	480 + 2 BA SFD	275	285	275	45	0.10	0.10	0.0005
	Addition to Existing Property													
	Item Total										45	0.10	0.10	0.0005
6	3161 Paraiso Way	04/29/21	385 + 2 BA SFD	230	285	275	480 + 2 BA SFD	275	285	275	45	0.10	0.10	0.0005
	Item Total										45	0.10	0.10	0.0005
Total for Two-Month Period											530	1.17	1.22	0.0068

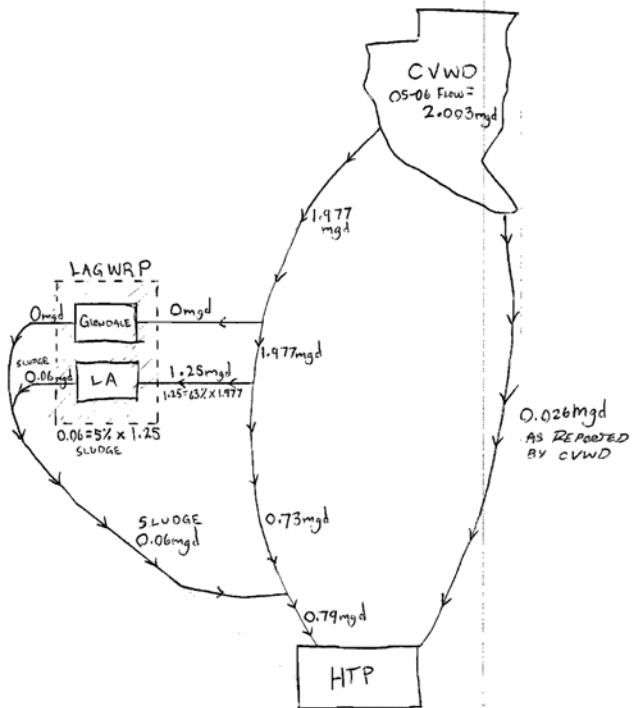
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 Arleta Street: 4.82 CSD 4: 11.82 CSD 16: 19.67 El Segundo: 8.29 Marina Del Rey: 3.66 Torrance: 16.92
 Beverly Hills: 10.18 CSD 9: 7.14 CSD 27: 11.54 Glendale: 3.77^{1,2} Port of Long Beach: 1.25 Universal City: 15.29
 Burbank: 8.19¹ CSD 9: 2.28 Culver City: 5.86 La Canana Printree: 19.84 San Fernando: 12.15¹ Veterans Administration: 9.97
 Chatsworth: 12.30 Las Virgenes: 16.84¹ Santa Monica: 7.25 WU Community College: 6.78

¹ Refer to table "Assignment of Amalgamated System Sewerage Generation Factors to County Use Codes"
² Flow-weighted centroidal distance that may vary from year to year
³ Flow-weighted centroidal distance calculated for Flow Year 2020-21.

ASSFC Mar-Apr 2020-21 CVWD.xls
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05-06 CVWD FLOW DIAGRAM

By: JAIME VALENZUELA



$$\text{TOTAL TREATED FLOW} = 1.25 + 0.79 + 0.026 = \underline{\underline{2.066}} \text{ (mgd)}$$

DISTANCE FROM CVWD TO HTP = 23.7 MILES

DISTANCE FROM CVWD TO LAGWRP = 6.3 MILES

$$\text{CVWD MGD-MILES} = 23.7(0.79 + 0.026) + 6.3(1.25) = \underline{\underline{27.27}} \text{ mgd-miles}$$

City of Los Angeles Agreement Management

ASSSCs

- Billing projections
 - Received between February and April
 - Establishes Treatment costs during CVWDs budget process
- Estimated Bills and Special Amortization
 - Received between July and September
 - Establishes payment schedule for the coming year based on billing projections
 - If any projections, bills or contract agency meetings are late CVWD has the option to amortize costs over the next year.
- Reconciliation Bill
 - Unforeseen O&M or Emergency Response
 - LCF data reporting errors
- Annual Meetings held to discuss all Amalgamated Sewer System Projects

ASSFCs are assessed and passed through to developers through our D-job connection fee assessment based on Sewage Generation Factors provided by the City of Los Angeles

City of La Canada Flintridge Conveyance Agreement

- City of La Canada-Flintridge (LCF) is separated geographically into two separate wastewater districts.
- To service the Northwestern portion of the City, LCF tied into CVWD's collection system for conveyance to LAGWRP and HTP.
 - First interconnection located at intersection of La Canada Crest and Rockland Pl.
 - Second interconnection located at Ocean View and Barton Lane (monitored annually for 1 week)
- All collected data is compiled by City of Los Angeles in an Annual Report that is verified by both CVWD and LCF.

CVWD-LCF Sewer Interconnections

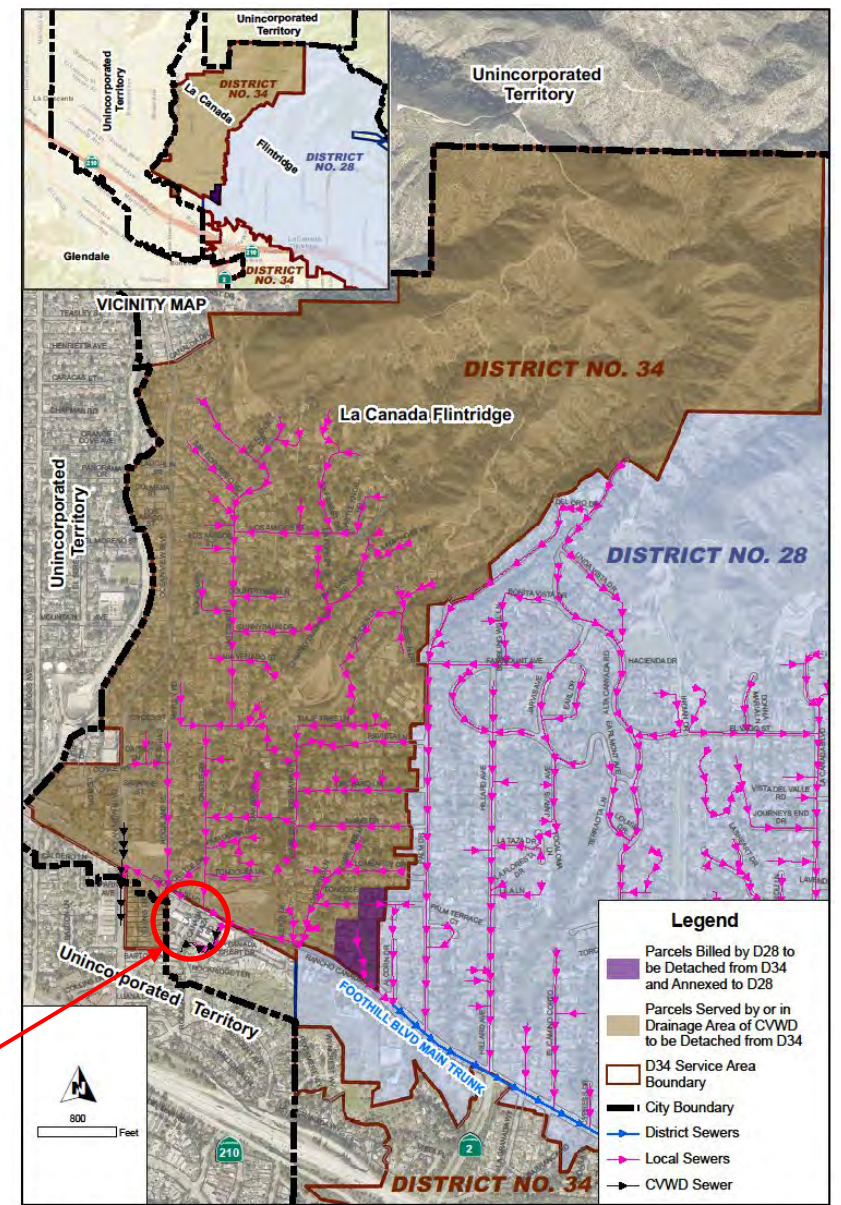


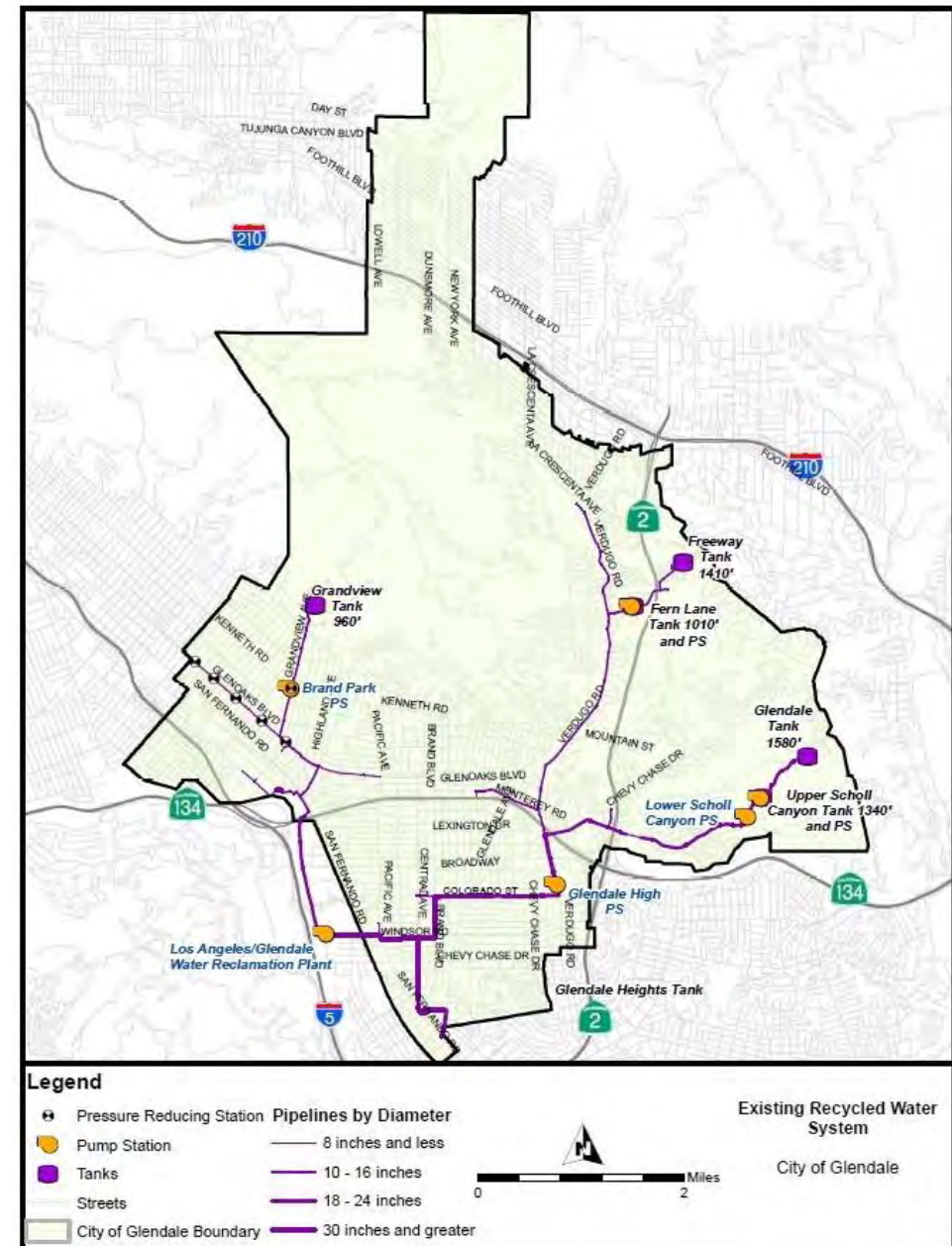
EXHIBIT A

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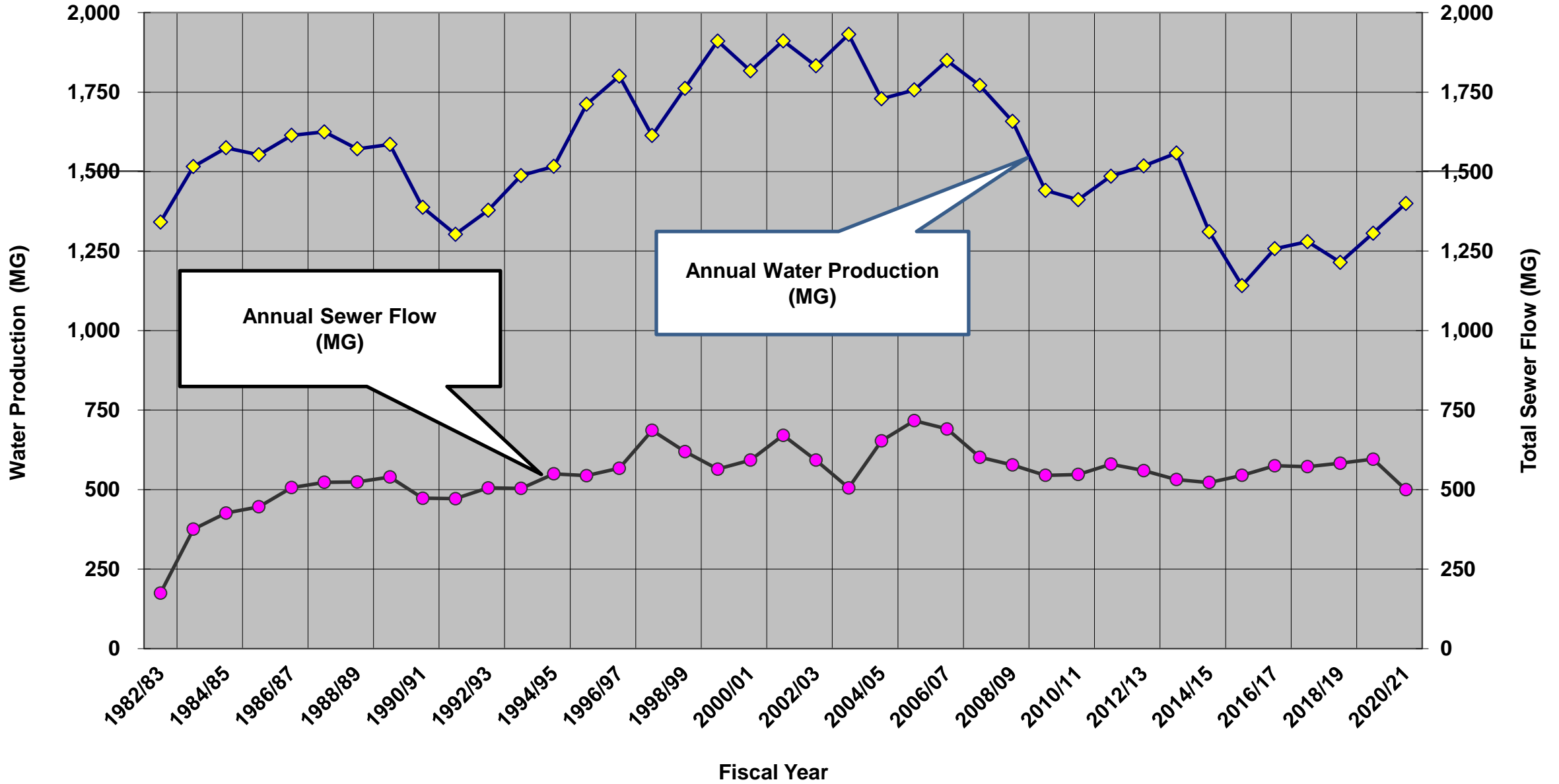
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Recycled or Reclaimed Water

- Recycled or Reclaimed Water is defined by City of LA contract to mean Available Treatment Plant (ATP) Effluent that is put to beneficial reuse in accordance with applicable laws and regulations.
- Los Angeles and CVWD shall share in the ATP Effluent produced by the Amalgamated System.
- Any ATP effluent to which a Party (CVWD) has a right but is not utilized by the Party (CVWD), may be utilized by other Party at no cost until such time as the first Party (CVWD) utilized the ATP Effluent or, if the first Party (CVWD) sells its share.
- City of LA shall provide Contracting Entity (CVWD) access to the ATP Effluent supply at no cost to City of LA.
- Reclaimed water use by CVWD would require a new reservoir be constructed and a separate purple pipe system be installed to serve irrigation customers.



Total Sewer Flow vs. Water Production



Next Discussion

- Discussion of History of CVWD's Wastewater Rates
- Discussion of breakdown on City of LA treatment charges
- Wastewater Master Plan
- Options for future City of LA Charges