

2.5 WASTEWATER FACILITIES

2.5.1 *Introduction*

This section will analyze the growth-induced impacts of the proposed Los Angeles General Plan Framework on the Cities Wastewater Facilities. The impact analysis is conducted on a Citywide level. This level of analysis is appropriate since wastewater drainage sheds do not conform to Community Plan Areas (CPA) but are rather determined by natural drainage patterns. A model was generated for forecasting future wastewater generation flows and the resulting flows were compared to planned wastewater facility expansions to determine whether adequate capacities will be available to meet proposed demands. Population statistics from the Bureau of Census, 1990 Census Data, were used for the baseline data along with employment statistics from the Southern California Association of Governments (SCAG), 1990 Employment Survey.

2.5.2 *Threshold of Significance*

A significant impact to wastewater management would occur if, after taking into account reclamation and flow reduction systems, the additional Citywide effluent flows would exceed future scheduled capacity of any one treatment plant.

2.5.3 *Existing Conditions*

The City of Los Angeles operates wastewater treatment facilities which provide sewage treatment services for most of its incorporated area and for several other cities and unincorporated areas in the Los Angeles Basin and San Fernando Valley. The primary elements of the existing system are two treatment plants, two water reclamation plants, a collection system consisting of 6,500 miles of major interceptor and mainline sewers, five central outfall sewers, eight maintenance yards and 55 pumping plants.

Cities that have contractual rights to discharge specific quantities of wastewater into the city's system are Beverly Hills, Burbank, Culver City, El Segundo, Glendale, San Fernando, Santa Monica, and Universal City. In addition, County Sanitation Districts 4, 5, 11, and 16 serve parts or all of Hollywood, Inglewood, Windsor Hills, Baldwin Hills, Alhambra, Pasadena, and South Pasadena, which also have contractual rights to discharge specific quantities of wastewater into the City's system (see **Table WW-3**). The narrow Harbor Gateway connecting the Harbor area to the rest of the City, as well as several small "islands" north of the City of Inglewood are served by the Los Angeles County Sanitation Districts. Wastewater service and planning areas are determined by natural drainage patterns and do not generally conform to political boundaries.

The sanitary sewer system serving the City of Los Angeles and its contact agencies is operated under the jurisdiction of the City of Los Angeles Bureau of Engineering, Department of Public Works.

The projected wastewater flows indicate a system-wide average of 125 gallons per capita per day (gpcd). These numbers indicate that, in order to meet court and regulatory agency mandated water quality treatment standards while accommodating anticipated growth, additional secondary treatment capacity over the existing total capacity (which is currently being upgraded to full secondary) will be required within the planning areas through the year 2010.

The court and agency decisions establishing these water quality treatment standards were made as a result of the impacts of unanticipated past population growth. Expansion of the system would offset these impacts, as well as those resulting from anticipated future population growth.

Actual measurements of wastewater flows since 1980 at the Hyperion Treatment Plant have consistently shown that the demand for wastewater treatment is exceeding earlier projections. Capacity which should not have been utilized until the late 1990's is being used at present; thus additional capacity must be planned, engineered and construction begun in the very near future because projects such as the expansion of existing treatment facilities and/or construction of new treatment or reclamation facilities require a long time to implement.

2.5.3.1 Treatment Facilities

Hyperion Treatment Plant (HTP)

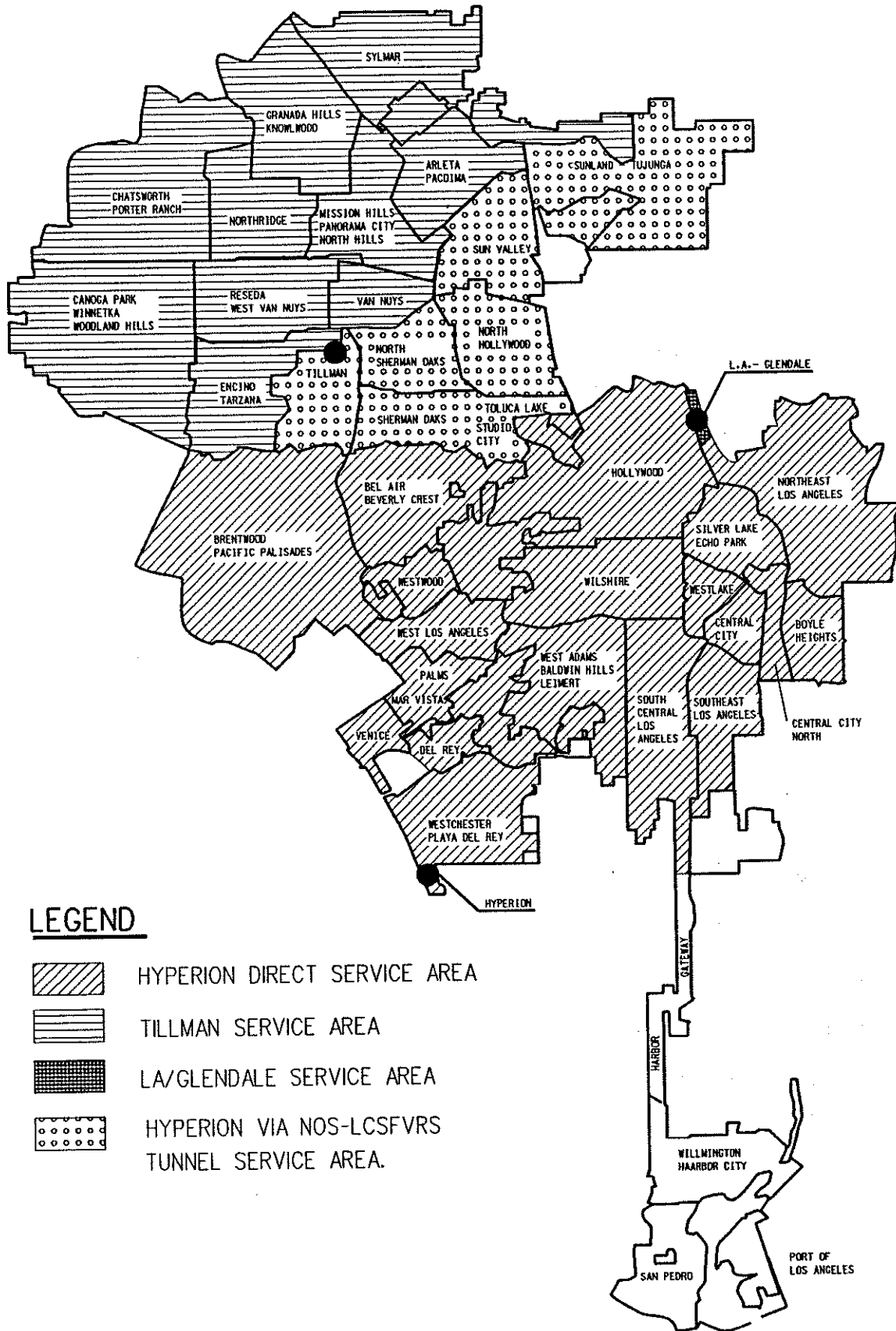
The Hyperion Treatment Plant is located on a 144-acre site adjacent to Santa Monica Bay, southwest of the Los Angeles International Airport. The plant and its service areas are shown in **Figure WW-1**. The drainage area served by the plant is approximately 328,000 acres of the greater metropolitan area.

The largest treatment facilities in the City, the existing Hyperion Plant, was designed and constructed in the early 1950's to be a high rate secondary treatment facility with the ability to process an average flow of 420 million gallons per day (mgd) of wastewater. In 1988, the plant treated an average dry weather flow of approximately 363 mgd. The plant provides primary treatment for all influent flow. Since interim improvements to the aeration system have been completed, secondary treatment is provided for approximately 190 to 200 mgd, utilizing a conventional activated sludge process.





The Hyperion Treatment Plant has three ocean outfalls (one-mile, five-mile and seven-mile). The one-mile outfall is a 12-foot-diameter reinforced concrete pipeline which has not normally been in use since the five-mile outfall was placed in service. It is maintained in standby condition in case of an emergency. The five-mile outfall is the City's major effluent disposal conduit. It was put into service in 1961 and consists of a 12-foot-diameter reinforced concrete pipe, a wye structure, and two diffuser legs that discharge primary and secondary treated wastewater in 187 feet of sea water. The seven-mile outfall was constructed as a result of a study which concluded that pumping sludge to the ocean and disposing of it at a depth of 320 feet



LOS ANGELES
CITYWIDE GENERAL PLAN
FRAMEWORK EIR



LEGEND

-  HYPERION DIRECT SERVICE AREA
-  TILLMAN SERVICE AREA
-  LA/GLENDALE SERVICE AREA
-  HYPERION VIA NOS-LCSFVRS TUNNEL SERVICE AREA.

Hyperion
System

FIGURE WW-1

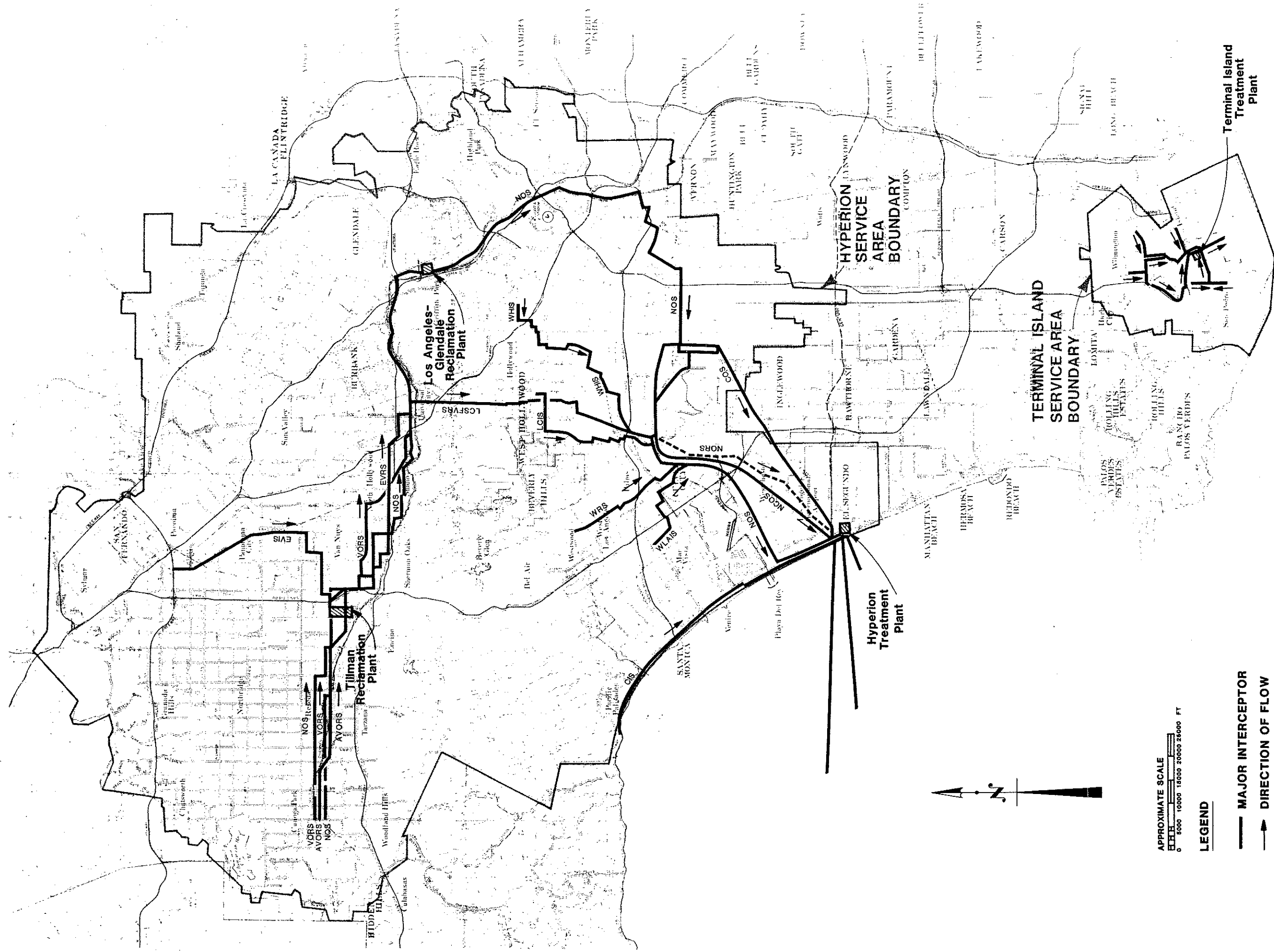
in a submarine canyon would be more economical than continuing to process the digested sludge into fertilizer. At the time it was constructed, this method of disposal was thought to be environmentally acceptable. This outfall is a steel pipeline, 20 inches in inside diameter, with a cement mortar interior lining and a coal tar enamel and gunite outside coating. The seven-mile outfall was permanently taken out of service in November 1987.

Raw sludge removed from the primary sedimentation system and excess waste activated sludge from the activated sludge system are pumped to anaerobic sludge digesters for stabilization. Prior to November 1987, the digested sludge was mixed with secondary effluent, screened to remove floatables and then discharged to the ocean through the seven-mile outfall. Currently, sludge is disposed of either through the Hyperion Energy Recovery systems (HERS), a dewatering and combustion process which includes the generation of electricity for approximately 40,000 homes, or other reuse methods including, as a last-choice option, landfilling. No sludge is discharged to the ocean.

The HTP receives sewage from five major interceptor sewer systems (see **Figure WW-2**):

- Central Outfall Sewer (COS), serving South Central Los Angeles, El Segundo and portions of Culver city.
- North Central Outfall Sewer-North Outfall Sewer Interceptor System (NCOS-NOS), serving the southern portions of the cities of Burbank and Glendale, eastern portions of the San Fernando Valley, sections of eastern, central and south-central Los Angeles Los Angeles, and portions of Culver City.
- North Outfall Sewer-La Cienega, San Fernando Valley Relief Sewer Interceptor System (NOS-LCSFVRS), serving the central, northeastern, and western areas of the San Fernando Valley, the western portion of the City of Los Angeles, Beverly Hills, Hollywood, and Playa del Rey.
- Coastal Interceptor Sewer System (CIS), serving the coastal area of the City of Los Angeles, Pacific Palisades, Venice, and Mar Vista, the City of Santa Monica, and adjacent areas of Los Angeles County.
- North Outfall Replacement Sewer (NORS), completed recently and designed to take the pressure off the 70-year-old North Outfall Sewer (NOS), NORS is an 8-mile sewer, 70 feet below ground, and stretches from the corner of La Cienega Boulevard and Rodeo Road to the Pacific Ocean at El Segundo.

Within the Hyperion Service Area, the City operates and maintains pumping plants at those locations where, because of inadequate hydraulic head, sewage flow must be pumped in order to reach the appropriate treatment facility. These pumping plants vary in size from capacities of about 30 to 100 gallons per minute (gpm) to capacities of up to 35,000 gpm.



APPROXIMATE SCALE
 0 5000 10000 15000 20000 25000 FT

LEGEND

- MAJOR INTERCEPTOR
- DIRECTION OF FLOW
- - - - FUTURE INTERCEPTOR

FIGURE WW-2
 MAJOR INTERCEPTOR SEWER SYSTEMS
 TRIBUTARY TO THE HYPERION TREATMENT PLANT

The current HTP improvement as outlined in the 1991 Facilities Plan and EIR includes expansion of the plant capacity and providing secondary treatment to all effluent prior to discharge into the ocean. By agreement with the Environmental Protection Agency (EPA), the City is scheduled to complete the improvements by the end of 1998. The major changes in the treatment process will significantly reduce the present environmental impacts of the plant.

Tillman Water Reclamation Plant (TWRP)

The Donald C. Tillman Water Reclamation Plant (TWRP) is located in the West San Fernando Valley at the intersection of Victory Boulevard and Woodley Avenue in the Sepulveda Flood Control Plain. The first phase of this water reclamation facility, completed in 1984, was designed to provide advanced secondary treatment for an average flow of 40 mgd. The second phase for an additional 40 mgd of capacity was a major component of the selected plans presented in the 1977 draft and 1982 and 1991 final environmental documents of the City's Wastewater Facilities Plan. The phase two expansion of TWRP is also complete and the additional 40 mgd of capacity is operational. The location of the plant and its service area are shown in **Figure WW-3**. The present service area is limited to those areas that are directly tributary to the Additional Valley Outfall Sewer (AVORS) upstream of the plant and the East Valley Interceptor Sewer (EVIS).

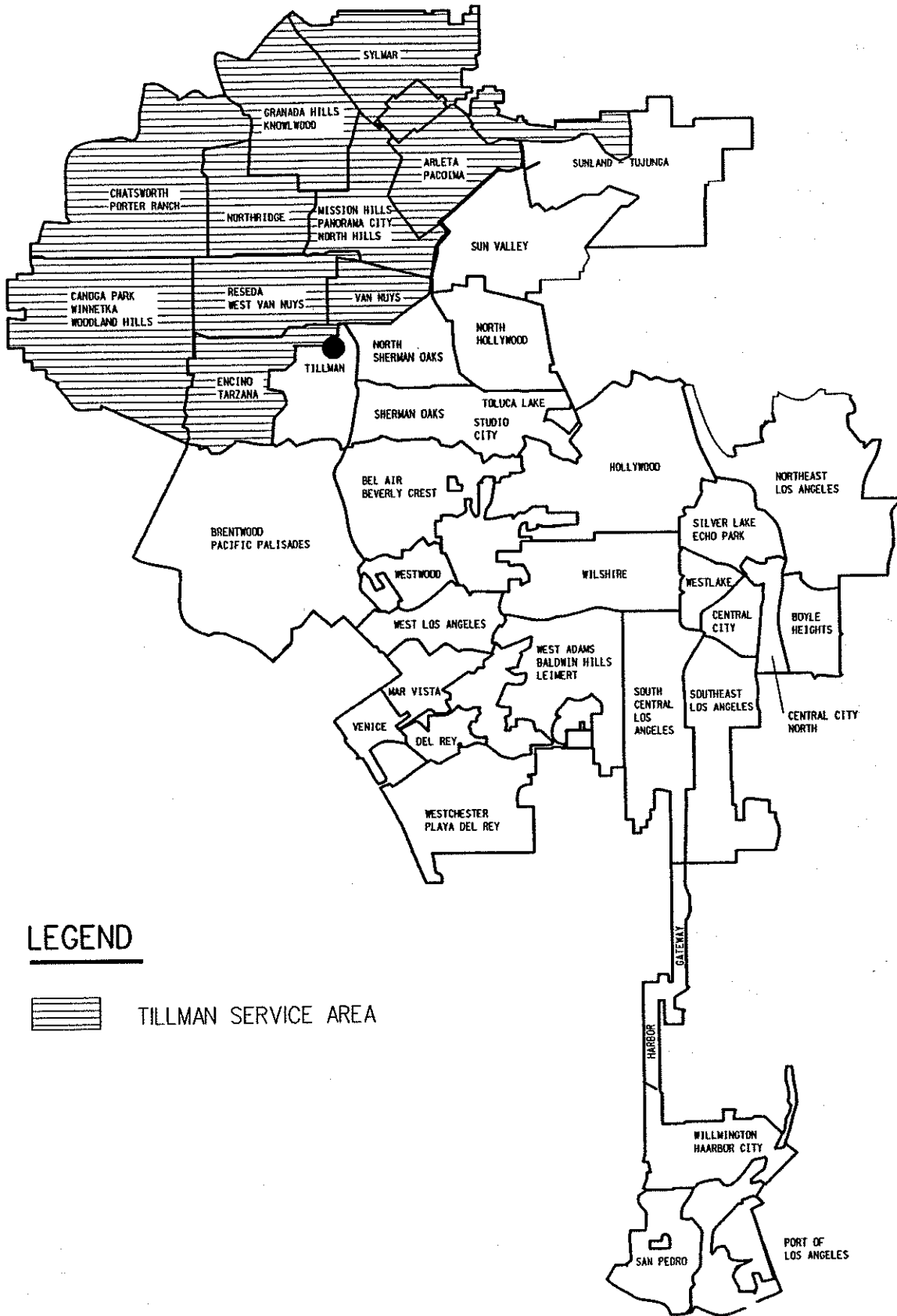
The advanced secondary treated effluent from Tillman is either reclaimed by the City for irrigating nearby parks, golf courses, greenbelt areas, and for filling the manmade Balboa Lake or discharged to the Los Angeles River. A standard rate activated sludge process, followed by coagulation, filtration, disinfection, and dechlorination is utilized to provide the necessary degree of treatment. All waste sludge is returned to AVORS for transport to Hyperion. A computerized instrumentation and control system is provided for routine process monitoring, equipment status monitoring, record keeping and alarm annunciation.

Los Angeles-Glendale Water Reclamation Plant (LAGWRP)

The LAGWRP is located at the southeast junction of the Los Angeles River Flood Control Channel and Colorado Boulevard between Griffith Park and the City of Glendale. Both the plant location and service area are shown in **Figure WW-4**. The LAGWRP is designed to treat an average dry weather flow of 20 mgd and a peak dry weather flow of 30 mgd. The plant is normally operated on a constant flow basis, providing full secondary treatment utilizing the standard rate activated sludge process. Sufficient flow of effluent is derived from either the service area or from the North Outfall Sewer (NOS). The secondary effluent receives advanced treatment through coagulation and filtration along with chlorination and dechlorination. The advanced secondary treated effluent from the plant is either reclaimed and/or discharged to the Los Angeles River. The sludge is transported to the Hyperion plant via the NCOS-NOS Interceptor Sewer System. The Lake Street Pumping Plant, which is owned and operated by the City of Glendale, is the only pumping plant on the collection system tributary to LAGWRP. This plant pumps



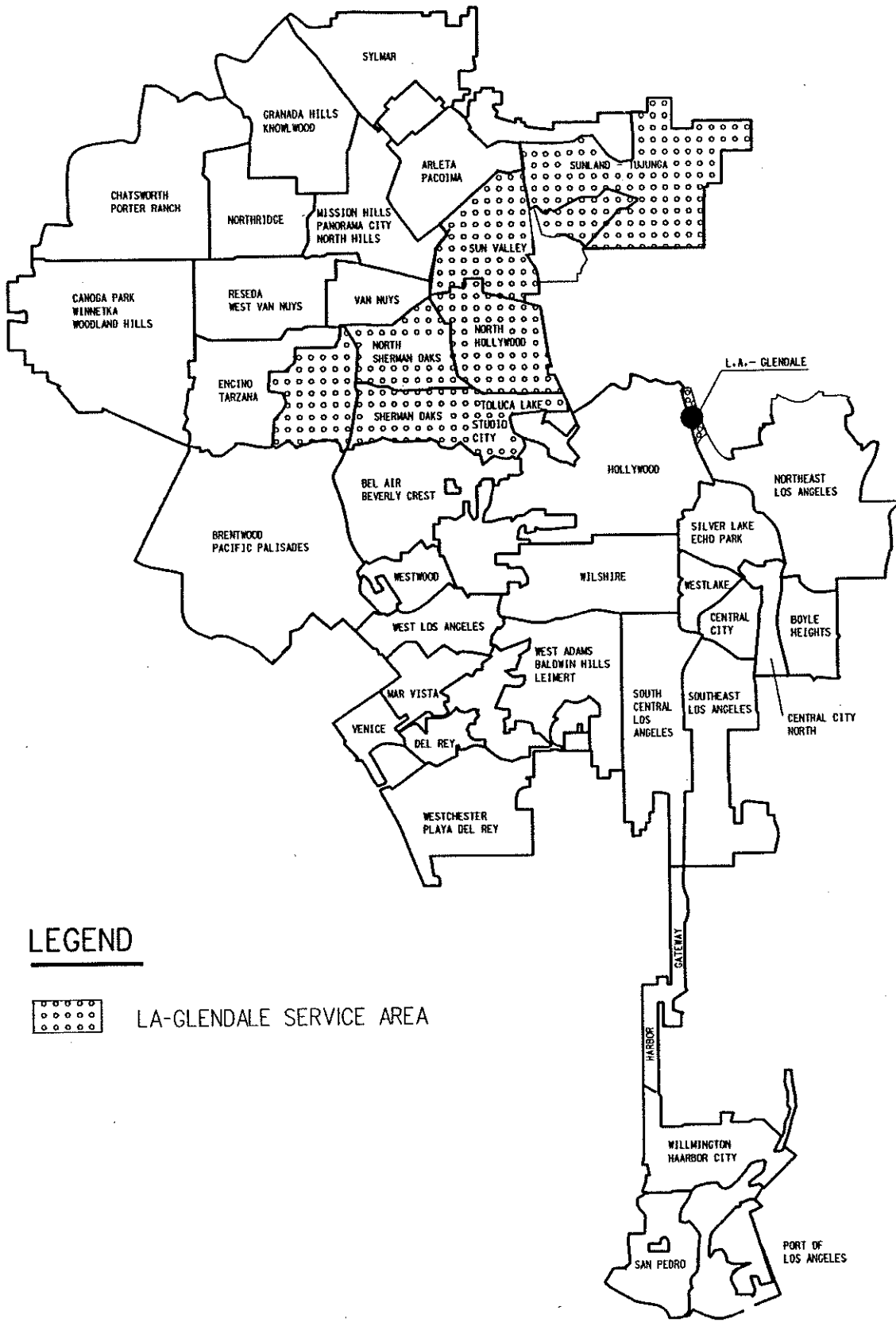
LOS ANGELES
CITYWIDE GENERAL PLAN
FRAMEWORK EIR



**Tillman Water
Reclamation
Plant Service
Area**



LOS ANGELES
CITYWIDE GENERAL PLAN
FRAMEWORK EIR



LEGEND

 LA-GLENDALE SERVICE AREA

Los Angeles-
Glendale Water
Reclamation Plant
Service Area

wastewater generated in the southwest corner of Glendale into the NOS via an 18-inch sewer.

Terminal Island Treatment Plant (TITP)

The Terminal Island Treatment Plant (TITP) is located on Terminal Island in the Los Angeles Harbor area and covers approximately 19 acres. The plant is currently being upgraded. The existing facilities provide secondary treatment for over 20 mgd. The treatment processes consist of pretreatment, primary sedimentation, secondary treatment and sludge digestion, and drying. The liquid effluent flows to the Los Angeles Outer Harbor to a point approximately 3,000 feet off-shore via a 60-inch diameter outfall. The TITP provides an average treatment capacity of 30 mgd.

2.5.3.2 Federal and State Regulations

The administration of the wastewater systems are affected by several federal and state regulations.

Federal Laws and Regulations

The major piece of federal legislation dealing with wastewater is the Federal Water Pollution Control Act which is designed to restore and preserve the integrity of the nation's waters. The goals of the act are: to eliminate the discharge of pollutants to navigable waters; to protect and foster the propagation of fish, shellfish and wildlife; to allow recreation on and in the water; to prohibit the discharge of toxic pollutants; to develop appropriate technology; and to provide financial assistance to construct public treatment systems. In addition to the Water Pollution Control Act, other federal environmental laws such as the National Environmental Policy Act (NEPA), the Clean Air Act, the Federal Noise Control Act, and the National Historic Preservation Act have a bearing on the location, type, planning and funding of the wastewater treatment facilities for the City of Los Angeles.

The federal act governing planning for wastewater facilities construction grant monies is Public Law 92-500, the Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977, 1981, and in 1987 by PL 100-4, the Water Quality Act. The objectives of these laws are to restore and preserve the quality and abundance of the nation's waters.

State Laws and Regulations

The Porter-Cologne Water Quality Act

This act is the primary California law dealing with the control of water quality. The basic principles of the act are based on the premise that the waters of the state must be protected for the use and enjoyment of the people. Activities which may be detrimental to the quality of the waters are to be regulated to attain the highest water quality that is reasonable. This act also

addresses the development of water reclamation facilities and requires the State Department of Health to establish criteria for the use of reclaimed water.

Ocean Plan

The Water Quality Control Plan for Ocean Waters of California was promulgated to protect the quality of the ocean waters for use and enjoyment by the people through control of waste discharges to the ocean. The plan sets out water quality objectives and imposes limits on bacteriological, physical, chemical, biological, toxic, and radioactive constituents of the ocean in numerical and descriptive terms. It also describes requirements for management and design of systems which discharge treated wastewater to the ocean and prescribes effluent quality standards for discharge to the ocean waters. These standards for systems and effluent are provided to ensure the reasonable protection of beneficial uses and the prevention of nuisance.

Bays and Estuaries Policy

The Water Quality Policy for the Enclosed Bays and Estuaries of California, known as the Bays and Estuaries Policy, was adopted by the State Water Resources Control Board on May 16, 1974. It provides water quality principles and guidelines for the prevention of water quality degradation and for the protection of the beneficial uses of these waters. Decisions by the Regional Water Quality Control Board are required to be consistent with the provisions of this policy. This policy does not apply to wastes from vessels or land runoff, except as specifically indicated for siltation and combined sewer flows.

Nondegradation Policy

The State Water Resources Control Board (SWRCB) established this policy to maintain the highest quality of fresh and marine water possible. The main thrust of this policy is that if the existing water quality is better than the quality of water which would exist if the state water criteria were to be met, then the higher (i.e., existing) levels must be maintained.

Thermal Plan

The State Water Quality Control Plan for Control of Temperature specifies limits and conditions for change to temperature by discharge of wastewater into interstate and coastal waters, estuaries, and enclosed bays.

2.5.3.3 Administrative Mandates

In July 1986, the City of Los Angeles was required, by order of the California Regional Water Quality Control Board (Order adopted January 27, 1986), to immediately begin work on several projects to expand the hydraulic capacity and improve treatment in the City's wastewater treatment and disposal system. Most of these projects have been completed (Table WW-1). They include an operational

TABLE WW-1
Project and Compliance Schedule

Task	Compliance Date
I. Increase volume of sewage treated at L.A.- Glendale Water reclamation Plant to 20 mgd.	Completed
II. Have one million gallons of storage tanks capacity available at Jackson Avenue Overflow Structure JAOS.	Completed
III. Installation of the permanent screening and continuous chlorination facility JAOS.	Completed
IV. Increase volume of sewage treated at Tillman Water Reclamation Plant (TWRP) at 40 mgd (Phase I).	Completed
V. Construct Phase II (additional 40 mgd unit) of the TWP thereby increasing capacity from 40 mgd (existing Phase I) to 80 mgd.	
a. Complete construction	Completed
b. Reach operational level	Completed
IV. New North Outfall Relief Sewer (NORS)	
a. Complete construction	Completed
b. Reach operation level	Completed
VII. Complete cleaning of NOS between JAOS and Hyperion Treatment Plant.	April 15, 1994*

Source: California water Quality Control Board Los Angeles Region cease and desist order No. 86-2

* Delayed; Regional Water Quality Control Board Recinded Cease and Desist Order.

decision to increase the volume of sewage treated at the Los Angeles-Glendale Water Reclamation Plant from approximately 12 mgd to 20 mgd, providing a one million gallon tank for detention storage and a permanent screening and continuous chlorination facility at the Jackson Avenue Overflow Structure, and increasing the volume of sewage treated at the Tillman Water Reclamation Plant to 40 mgd.

Other projects mandated by the Water Quality Control Board that were scheduled for completion by 1994 include further increasing the capacity of the Tillman plant to 80 mgd by September 15, 1991, (completed) constructing a new North Outfall Relief Sewer by January 1, 1993, (completed) and cleaning the existing North Outfall Sewer between Jackson Avenue Structure and the Hyperion Treatment Plant by April 1, 1994. To ensure adequate capacity until the system's improvements are complete, and also to reduce water consumption, the City of Los Angeles has launched a ten-point plan with the adoption of three City ordinances. These ordinances are: (1) The Water Closet, Urinal and Showerhead Regulations (Ordinance No. 163,532), (2) Interim Regulations limiting the issuance of building permits, (Ordinance No. 163,559), and (3) Interim Regulation limiting the issuance of building permits by contract cities and other agencies (Ordinance No. 163,565).

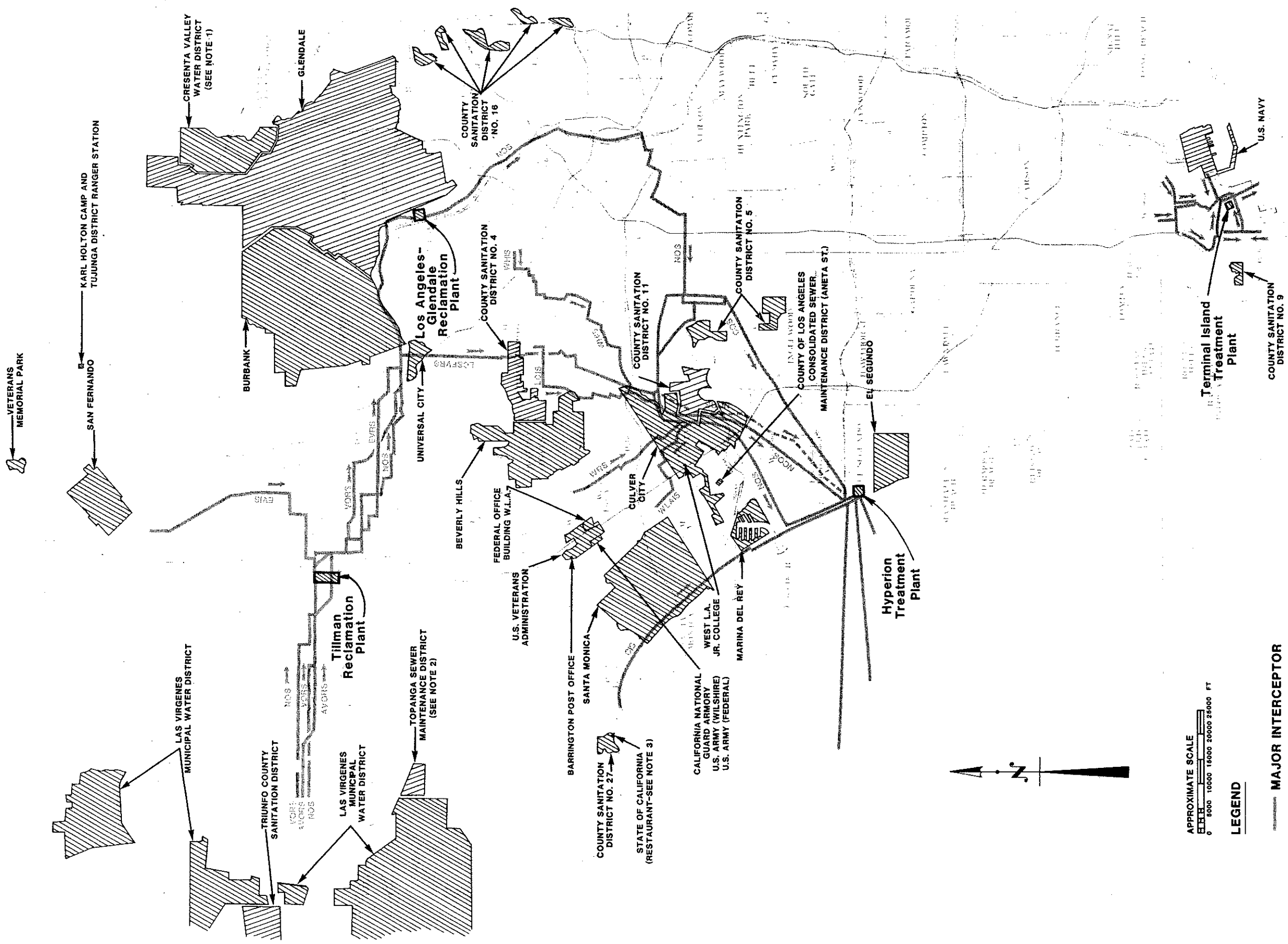
The Water Closet, Urinal and Showerhead regulation is a water conservation ordinance that mandates the retrofitting of low flow fixtures, and the installation of ultra low flow fixtures in all new construction. The provision of xeriscape landscaping that reduces the demand for the consumption of water for all new developments is also included in the regulation. The City estimated that these measures will reduce flows by 10% by 1993.

The interim regulation limiting the issuance of building permits for both the City of Los Angeles and the contract cities and agencies is aimed at ensuring adequate treatment capacity by the regulation of building permit issuance.

2.5.3.4 Contracts With Other Agencies and Jurisdictions

The Hyperion Treatment System serves approximately 90 percent of the City of Los Angeles and 29 contract cities and agencies in the region, including the cities of Culver City, Beverly Hills, Santa Monica, El Segundo, San Fernando, Glendale, Burbank, West Hollywood and several unincorporated areas of Los Angeles County (See **Figure WW-5**). These other cities and agencies have sewerage contractual agreements to use the City of Los Angeles facilities because of the economics involved, their geographical location, and natural drainage patterns.

Eighty-four (84) percent of the wastewater currently in the wastewater system is generated within the City of Los Angeles, and 16 percent within other jurisdictions whose sewage is treated by the City. Some of these jurisdictions are currently generating more sewage than permitted in their contracts.



APPROXIMATE SCALE
 0 5000 10000 15000 20000 25000 FT

LEGEND

MAJOR INTERCEPTOR

DIRECTION OF FLOW

FUTURE INTERCEPTOR

NOTES:
 1. THE CRESCENTA VALLEY COUNTY WATER DISTRICT IS SERVED BY A SUBCONTRACT WITH THE CITY OF GLENDALE.
 2. THE TOPANGA SEWER MAINTENANCE DISTRICT IS SERVED BY A SUBCONTRACT WITH THE LAS VIRGENES MUNICIPAL WATER DISTRICT.
 3. THE STATE OF CALIFORNIA RESTAURANT AT WILL RODGERS STATE PARK IS SERVED BY A SUBCONTRACT WITH THE COUNTY SANITATION DISTRICT NO. 27.

**FIGURE WW-5
 CONTRACTUAL CITIES AND AGENCIES
 SERVICED BY THE CITY OF LOS ANGELES**

The contracts, court orders, and agreements with the other cities and agencies are extremely complex. As an example, Culver City has discharged its sewage to the City of Los Angeles sewage collection system since 1922 or earlier, and conversely, the City of Los Angeles has discharged sewage from certain of its developed areas to the Culver City sewer system over the same period. An initial agreement between the Culver City and the City of Los Angeles made in 1922 and amended in 1935, permitted Culver City to discharge its sewage to Los Angeles' North Outfall Sewer, and obligated Los Angeles to accept, convey, treat and dispose of these flows.

Another example is Burbank's contract with the City of Los Angeles allowing an average flow of 7.4 mgd to the NOS and capacity rights of 10.0 mgd at the HTP. Glendale's contract with the City of Los Angeles allows for peak flow of 17.1 mgd to the NOS and 6.8 mgd to the LCSFVRS for a total of 23.9 mgd with capacity rights of 19.2 mgd to the HTP and 10 mgd to the LAGWRP.

2.5.3.5 Existing Conditions Model

The City of Los Angeles utilizes several wastewater facilities for its sewage treatment needs. These facilities are the Tillman Water Reclamation Plant (TWRP), Burbank Water Reclamation Plant (BWRP), L.A.-Glendale Water Reclamation Plant (LAGWRP), Hyperion Water Treatment Plant (HTP), Los Angeles County Joint Water Pollution Control Plant (JWPCP), and Terminal Island Water Treatment Plant (TITP). The City of Los Angeles owns and operates HTP, TWRP, LAGWRP, and TITP. BWRP and JWPCP are owned and operated by the City of Burbank and the County of Los Angeles respectively. Total treatment capacities are given in Table WW-2 for each facility.

The Hyperion Treatment System (HTS) provides the majority of the City's wastewater treatment needs. The HTS includes HTP, and the two upstream water reclamation plants: TWRP, and LAGWRP. Upstream flows are skimmed off and treated at the two upstream plants to the extent that flows are available and plant capacity exists. Flows not treated by these two upstream plants are routed to the HTP via the NOS and the LCSFV Relief Sewer. Currently, the HTS provides a total of 520 million gallons per day (MGD) of primary treatment capacity.

Figure WW-6 shows City of Los Angeles tributary wastewater drainage sheds for the wastewater facilities utilized by the City. **Figure WW-7** shows a schematic of the relationship between the wastewater facilities network. The area denoted as East Valley and Northeast Valley in **Figure WW-7** represent wastewater drainage sheds defined for modeling purposes. The wastewater models used for analysis route flows from the East Valley drainage shed to LAGWRP and flows from the Northeast Valley drainage shed to TWRP. In reality, these allocations between plants are not fixed since flows can be distributed among the three plants any number of ways, the principle being that HTP receives all the flow that the other two cannot skim off.

Table WW-2

WASTEWATER FACILITIES UTILIZED BY LOS ANGELES

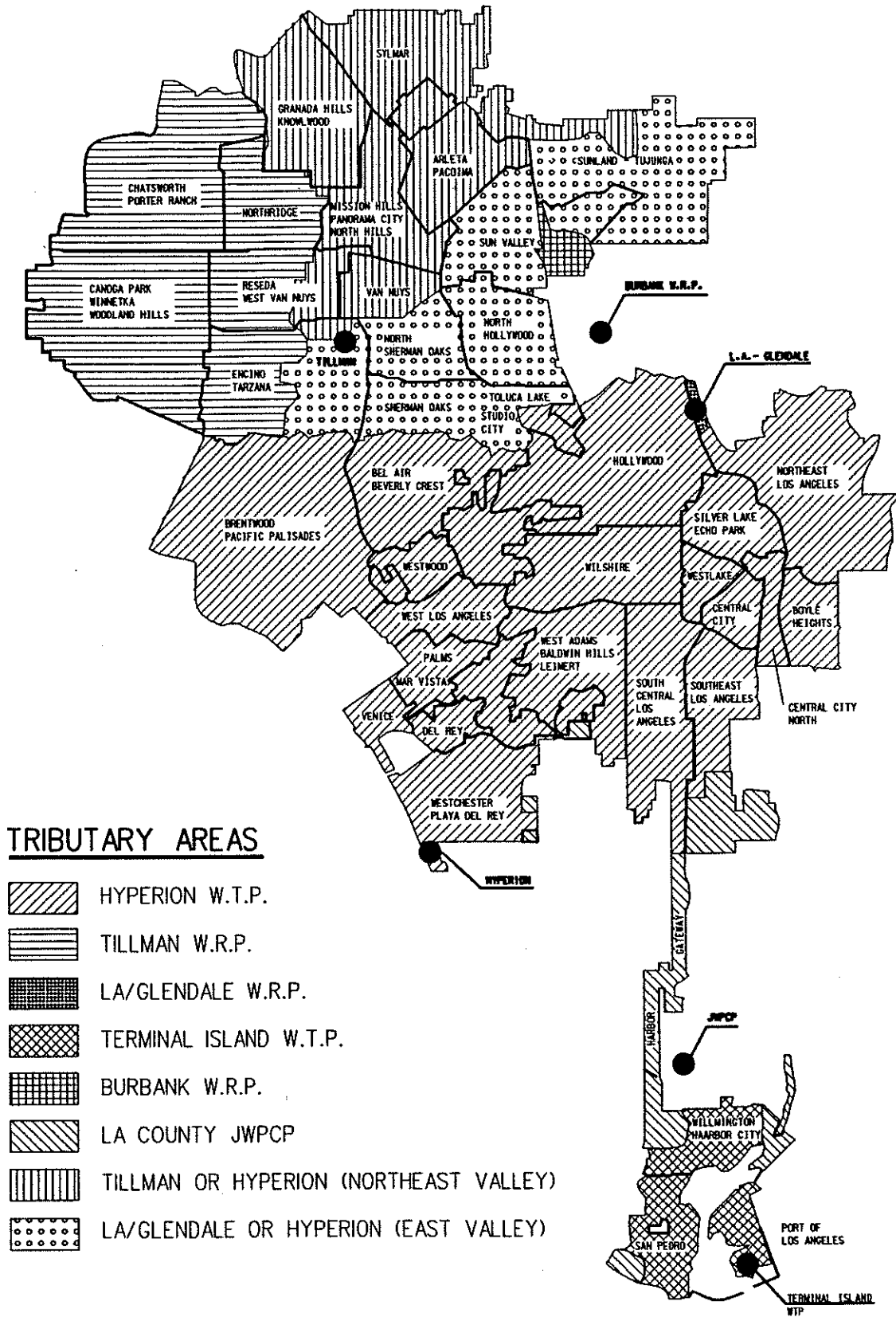
CITY OF LOS ANGELES WASTEWATER TREATMENT/RECLAMATION FACILITIES		1992 TREATMENT CAPACITY (GPD)	
		PRIMARY	SECONDARY
1.0	TILLMAN WATER RECLAMATION PLANT*	80,000,000	80,000,000
2.0	BURBANK WATER RECLAMATION PLANT*	9,000,000	0
	2.1 BURBANK WRP CAPACITY AVAILABLE TO CITY OF LOS ANGELES	1,300,000	0
	2.2 BURBANK WRP CAPACITY WITHOUT L.A. CONTRACTED RIGHTS	7,700,000	0
3.0	LOS ANGELES-GLENDALE WATER RECLAMATION PLANT*	20,000,000	20,000,000
4.0	HYPERION WATER TREATMENT PLANT	420,000,000	190,000,000
5.0	TERMINAL ISLAND WATER TREATMENT PLANT	30,000,000	30,000,000
6.0	LOS ANGELES COUNTY JOINT WATER POLLUTION CONTROL PLANT (JWPCP)	385,000,000	200,000,000
	8.1 JWPCP CAPACITY AVAILABLE TO CITY OF LOS ANGELES	64,600,000	0
	8.2 JWPCP CAPACITY USED BY LOS ANGELES COUNTY	320,400,000	200,000,000

*SOLIDS BACKFLUSHED TO HYPERION WTP FOR TREATMENT. WASTEWATER OVERFLOW TREATED AT HYPERION WTP.

SOURCE: WASTEWATER FACILITIES PLAN UPDATE, JUNE 1989.
L.A. COUNTY SANITATION DISTRICT (LACSD) TECHNICAL SERVICES DEPARTMENT.

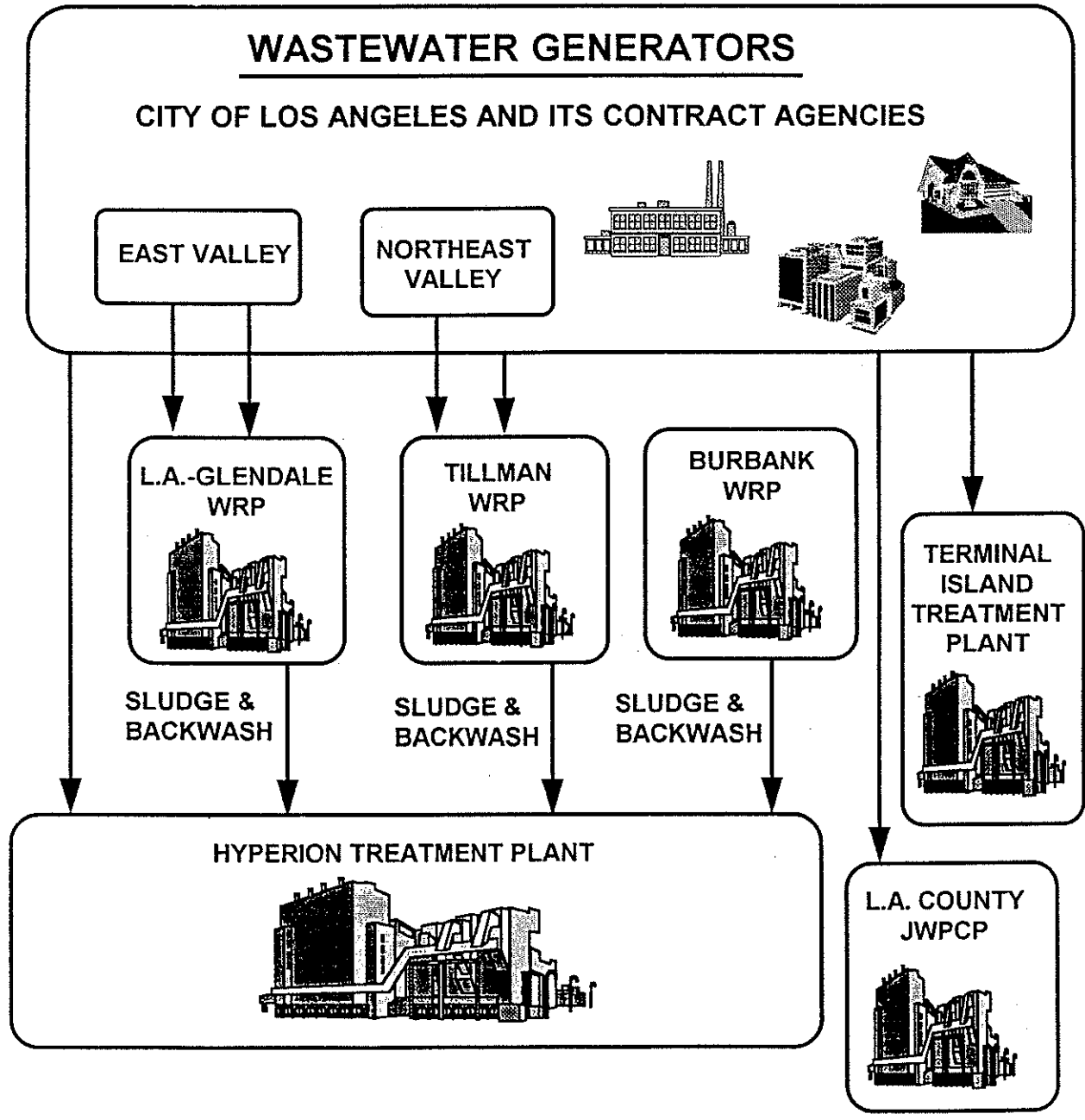


LOS ANGELES
CITYWIDE GENERAL PLAN
FRAMEWORK EIR



Wastewater
Drainage Sheds

FIGURE WW-6



NOTES:

1. HYPERION, TILLMAN, L.A.-GLENDALE, AND TERMINAL ISLAND PLANTS ARE OWNED AND OPERATED BY THE CITY OF LOS ANGELES. BURBANK WRP IS OWNED AND OPERATED BY THE CITY OF BURBANK. L.A. COUNTY JWPCP IS OWNED AND OPERATED BY THE L.A. COUNTY SANITATION DISTRICTS.
2. THE HYPERION TREATMENT SYSTEM (HTS) CONSISTS OF THE HYPERION TREATMENT PLANT AND THE TWO UPSTREAM WATER RECLAMATION FACILITIES - TILLMAN WRP AND L.A.-GLENDALE WRP.
3. THE EAST VALLEY AND NORTHEAST VALLEY REPRESENT HYPOTHETICAL DRAINAGE SHEDS USED FOR MODELING WASTEWATER FLOWS. IN REALITY, FLOWS ORIGINATING IN THESE DRAINAGE SHEDS COULD BE TREATED AT ANY ONE OF THE HTS PLANTS.

Wastewater
Facilities
Network

The wastewater treatment and water reclamation facilities listed above treat Los Angeles city generated sewage as well as sewage generated in other municipalities and agencies. **Table WW-2** gives total treatment capacities for each wastewater facility. Care must be taken in the application of these capacities, however, since a number of external municipalities and agencies also utilize the treatment facilities. **Table WW-3** gives a complete list of the contract agencies and their maximum contracted discharge capacities to the respective treatment facilities for fiscal year 1992 to 1993.

A model was developed to simulate existing Los Angeles generated wastewater influent rates to each of the respective treatment facilities. Sewage generation was broken down by residential, employment, and major sites. Population statistics from the Bureau of Census "1990 Census Data" and employment statistics from the Southern California Association of Governments (SCAG) 1990 Employment Survey were used in conjunction with established wastewater generation rates obtained from the City of Los Angeles Department of Public Works (LADPW) Wastewater Management Program Wastewater Generation Rates to model 1990 sewage generation for the residential and employment sectors. Sites which generate over 40,000 GPD of sewage were treated separately as 'major sites'. Wastewater generation data for these major sites was obtained from the LADPW Industrial Waste Management Division (see **Table WW-4**).

Total residential, employment, and major site wastewater generation in 1990 were 264 MGD, 48 MGD, and 21 MGD respectively. 1990 Citywide municipal wastewater generation was thus 333 MGD.

City of Los Angeles municipally generated wastewater influent was then summed with contract agency wastewater discharge effluent levels and groundwater infiltration estimates to determine total influent levels for each treatment facility. Groundwater infiltration was estimated by applying national average groundwater infiltration rates and applied adjustment factors. Applied adjustment factors were used to calibrate groundwater infiltration levels so that model flow quantities and measured wastewater influent levels would be comparable. Citywide contract agency effluent flows and groundwater infiltration flows measured 59 MGD and 20 MGD respectively. Total wastewater influent levels were thus 413 MGD for all treatment facilities.

Existing remaining capacities for each treatment facility were determined by considering influent levels to each facility and routing excess flows to the respective facility as shown in **Figure WW-7**. A 10 percent backflush was added for TWRP and LAGWRP to model sludge and filter backwash flows returned to the sewer system to be treated at HTP. **Table WW-5** shows the model results and existing capacities of each water treatment facility.

Table WW-3

EXISTING CONTRACT AGENCY WASTEWATER EFFLUENT

CONTRACT AGENCY WASTEWATER EFFLUENT NO. AGENCY	PERMITTED FLOW (MGD)	FISCAL YEAR 1989-1990 (MGD)	FISCAL YEAR 1992-1993 (MGD)	TILLMAN WRP (MGD)	NORTHEAST VALLEY (MGD)	EAST VALLEY (MGD)	BURBANK WRP (MGD)	L.A.-GLENDALE WRP (MGD)	HYPERION WTP (MGD)	LACSD JWPCP (MGD)	TERMINAL ISLAND WTP (MGD)
1 ANETA ST TAX ZONE (M.D.)##	0.030	N/A	N/A							0.024	
2 BARRINGTON P. O.##	0.000	N/A	N/A							0.000	
3 BEVERLY HILLS	7.281	N/A	6.101 INSUFF. DATA							5.745	
4 BURBANK	10.000	N/A	10.590 UNDER REVIEW		0.000		7.917				
5 CALIFORNIA NATIONAL GUARD##	0.000	N/A	N/A							5.309	
6 CULVER CITY	6.706	UNDER REVIEW	2.090							2.125	
7 EL SEGUNDO	2.750	0.130	0.021							0.025	
8 FEDERAL OFFICE BUILDING, WLA	9.150	7.631	6.563					9.164		6.963	
9 GLENDALE (HTP)	10.000	N/A	9.717							0.000	
10 GLENDALE (LAGWRP)#	0.020	N/A	0.011				0.013			0.063	
11 INGLEWOOD##	0.080	N/A	N/A							5.140	
12 KARL HOLTEN CAMP	6.600	N/A	6.849							0.878	
13 LACSD #02 CITY TERR.##	1.860	0.780	0.253							0.878	
14 LACSD #04 WEST HOLLYWOOD	0.407	0.350	0.046							0.003	
15 LACSD #05 INGLEWOOD- WINSOR HILLS	0.490	0.490	0.510							0.473	
16 LACSD #09 LA RAMBLA (TWTP)	0.000	0.000	0.000							0.138	
17 LACSD #11 BALDWIN HILLS	0.000	0.000	0.140							0.138	
18 LACSD #16 EAST OF NORTHEAST L.A. (INCLUDE 0 ALHAMBRA HILLS-0.036,ALHAMBRA-0.0492, 0 PASADENA-0.1665,SOUTH PASADENA-0.238.)	0.000	0.000	0.140	0.847							
19 LACSD #27 TOPANGA	1.218	1.162	0.847								
20 LAS VIRGINES MWD (ESTIMATED, INCL. 0 HIDDEN HILLS AND TOPANGA SMD)	0.970	2.280	1.967							1.997	
21 MARINA DEL REY	1.138	2.040	1.874		1.874					8.672	
22 SAN FERNANDO	11.000	10.840	8.672								
23 SANTA MONICA	0.180	0.140	0.156	0.156							
24 TRUNFO CSD	1.600	1.278	0.774								
25 U.S. NAVY TERMINAL ISLAND (TWTP)	0.390	0.317	0.319								
26 UNIVERSAL CITY	0.000	N/A	N/A							0.319	
27 US ARMY RES. WILSHIRE##	0.000	N/A	N/A							0.000	
28 USAF RESERVE @##	0.000	N/A	N/A							0.000	
29 USAR, FEDERAL AVE.##	1.940	N/A	N/A							0.000	
30 V.A. HOSP., SAWTELLE	0.001	N/A	N/A							0.467	
31 VETERANS MEMORIAL PARK(EXT.)##	0.070	N/A	N/A		0.001					0.022	
32 W.I.A. COLLEGE	50.363	0.020	0.020	1.003	1.876		0.013	8.164		37.968	0.000
CONTRACT AGENCY TOTAL			39.871								0.985

LESS: LACSD JWPCP
 CITY TREATMENT AREA
 LESS: TERMINAL IS
 HYPERION SERVICE AREA

*1984-85 FLOW
 @ WASTEWATER DISCHARGE LESS THAN 100,000 GPD.
 # DOES NOT INCLUDE 1.5 MGD OF GLENDALE OWNERSHIP RIGHTS LEASED TO LOS ANGELES TO TREAT WASTEWATER FROM AREAS TRIBUTARY BY GRAVITY.
 ## WHERE ACTUAL FLOWS ARE NOT AVAILABLE, THE MAXIMUM PERMITTED FLOW IS ASSUMED.
 NOTE: GPD: GALLONS PER DAY. MGD: MILLION GALLONS DAILY. (EXT): DENOTES EXISTING CONDITIONS BECAUSE CONTRACT AGENCY DOES NOT HAVE AN EFFLUENT LIMIT.

SOURCE: U.S. DEPT. OF COMMERCE BUREAU OF THE CENSUS, 1990 CENSUS DATA, 1993.
 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG), 1990 EMPLOYMENT SURVEY, 1993.
 L.A. DEPT. OF PUBLIC WORKS (LADPW) WASTEWATER DIVISION, MAJOR WASTEWATER GENERATORS (OVER 40,000) WASTEWATER EFFLUENT, 1993.
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 LADPW, 1992 ANNUAL MONITORING REPORT HYPERION AND SANTA MONICA BAY, FEB. 24, 1993.
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 LADPW, ANNUAL INFLUENT SUMMARY REPORT-1991 TERMINAL ISLAND TREATMENT PLANT, FEB. 25, 1992.
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 LADPW WASTEWATER MANAGEMENT PROGRAM, 1986 CENSUS TRACTS AND PRIMARY SEWERS IN HSA AND TISA, MAR. 1, 1993.
 L.A. DEPT. OF REC. AND PARKS DESIGN DIV., DESCRIPTION OF THE L.A. ZOO WASTEWATER SYSTEM, JUL. 1992.
 LACSD, JOINT WATER POLLUTION CONTROL PLANT NPDES MONITORING REPORT, MAR. 18, 1993.
 LACSD, SUMMARY OF WASTEWATER FLOWS (FROM) CITY OF LOS ANGELES SERVED BY SANITATION DISTRICTS, SEP. 22, 1993.
 LACSD, TABLE 2 (PAGE 1 OF 4) 1992 WASTEWATER FLOW SUMMARY, SEP. 22, 1993.
 LADPW WASTEWATER MANAGEMENT PROGRAM, WASTEWATER GENERATION RATES BY CENSUS TRACT, SEP. 1993.
 LADPW, AGENCY ANNUAL FLOWS, MARCH 7, 1994.

NOTE: AIR NATIONAL GUARD BASE IS AT VAN NUYS AIRPORT, N.E. VALLEY

TABLE WW-4

EXISTING MAJOR WASTEWATER GENERATION SITES (OVER 40,000 GPD)

MAJOR WASTEWATER GENERATORS (OVER 40,000 GPD)	WASTEWATER EFFLUENT DECEMBER 31, 1992 (UPDATE), HYPERION SERVICE AREA	TOTAL DAILY FLOW	WASTEWATER TREATMENT
LW INDUSTRIAL USER DOING BUSINESS AS NAME	SITE ADDRESS (L.W. PERMIT LOCATION)	FLOW	PLANT
# PERMIT (SITE NAME)	NO. EW STREET	IN 1992(GPD)	
1 483031	AALPHA DYE HOUSE	83528	HYPERION WTP
2 52262	ACE PLATING CO.	62000	HYPERION WTP
3 444612	ALMORE DYE HOUSE	187710	EAST VALLEY
4 411747	ALPHA THERAPEUTIC CORP.	138810	HYPERION WTP
5 456402	AMERICAN NATIONAL CAN CO.	1006000	TILLMAN WRP
6 475290	ANGELICA HEALTHCARE SERVICES GROUP INC.	199843	HYPERION WTP
7 339002	ANGELICA HEALTHCARE SERVICES GRP (ENVRTL)	296540	HYPERION WTP
8 424178	ANHEUSER-BUSCH, INC.	3712238	N.E. VALLEY
9 486487	ARROWHEAD INDUSTRIAL WATER, INC.	58000	HYPERION WTP
10 486505	ARROWHEAD INDUSTRIAL WATER, INC.	58000	HYPERION WTP
11 486513	ARROWHEAD INDUSTRIAL WATER, INC.	58000	HYPERION WTP
12 487541	ARROWHEAD MOUNTAIN SPRING WATER	85000	HYPERION WTP
13 183601	ATLAS CARPET MILLS	185367	HYPERION WTP
14 360781	BAXTER HYLAND DIVISION, LOS ANGELES	308958	LA.-GLENDALE WRP
15 491838	CALIFORNIA DYE AND LAUNDRY, INC.	99159	HYPERION WTP
16 401784	CATERAIR INTERNATIONAL DBA MARRIOTT IN F	41887	HYPERION WTP
17 086181	CEDARS-SHAI MED. CTR. % PLANT OPRNS DEPT.	100048	HYPERION WTP
18 279088	CITY OF LA RECREATION & PARKS	100000	HYPERION WTP
19 371408	CITY OF LA: DOAFUNID208SOURCE4044/DEPT.50	100000	HYPERION WTP
20 428849	CITY OF LA: DOAFUNID208SOURCE4044/DEPT.50	100000	HYPERION WTP
21 486531	CITY OF LOS ANGELES DEPT. OF PARKS & REC.	55872	HYPERION WTP
22 485024	CITY OF LOS ANGELES/REC. AND PARKS	72000	HYPERION WTP
23 482310	CLA HYPERION CONSTRUCTION DIV. (NORS CONSTR.)	100000	HYPERION WTP
24 313942	COCA COLA BOTTLING CO OF LOS ANGELES	89188	HYPERION WTP
25 480496	COLOR FABRIC PROCESSING INC.	18105	102447 EAST VALLEY
26 487833	COLORMAX INDUSTRIES INC.	99021	138479 HYPERION WTP
27 063891	COMMUNITY LINEN RENTAL SERVICE INC.	106007	106450 HYPERION WTP
28 127943	CONSOLIDATED FILM INDUSTRIES	100038	158287 HYPERION WTP
29 438631	CONTINENTAL COLORS	170000	HYPERION WTP
30 482478	CROWN BEVERAGE PACKAGING	100060	100060 N.E. VALLEY
31 367853	CSUN PLANT OPERATIONS	75000	TILLMAN WRP
32 367881	CSUN PLANT OPERATIONS	65000	TILLMAN WRP
33 458478	DARLING-DELAWARE/REC. RENDRG/PETSHMS. OUTFL	57483	HYPERION WTP
34 483458	DELUXE LABORATORIES INC.	258618	HYPERION WTP
35 439563	DICEON ELECTRONICS INC.	13111	57546 TILLMAN WRP
36 485333	DIRTY LAUNDRY INC.	100044	58241 HYPERION WTP
37 489422	DOUBLE "A" WASH & DYE	170000	HYPERION WTP
38 332892	FANSTEEL PREC. METAL (LACSD)	50116	HYPERION WTP
39 242438	FISHKING PROCESSORS INC.	47891	HYPERION WTP
40 452184	FOUR SEASONS/BURTON WAY HOTELS, LTD.	74118	HYPERION WTP
41 442896	GARMENT INDUSTRY LAUNDRY INC.(P.O.BY101)	257486	HYPERION WTP
42 426537	HIGHLAND PLATING COMPANY - J. M. FAETH	50175	HYPERION WTP
43 186133	HOLY CROSS MEDICAL CENTER	80000	N.E. VALLEY
44 342021	HUGHES AIRCRAFT CO/FLEISHER B-281 C45	156600	TILLMAN WRP
45 244994	HYATT HOUSE HOTEL LAX	101548	HYPERION WTP
46 252525	INTERSTATE BRNDS CORP - DOLLY MADISON BKRY	40580	HYPERION WTP
47 489291	J & J DYE HOUSE	100000	HYPERION WTP
48 434218	JUANITA'S FOODS	102537	TERMINAL IS. WTP
49 299888	KAISER HOSP. CFO GENERAL ACCOUNTING	45000	HYPERION WTP
50 376157	KETEMA INC. ALUMINUM EXTRUSION DIVISION	43872	HYPERION WTP
51 454719	KRAFT INC. DAIRY GROUP; KNUDSEN ICE CREAM	94970	HYPERION WTP
52 488531	L.A. WASHING CO.	85040	HYPERION WTP
53 438288	L.A. DYE & PRINT WORKS INC.	324436	HYPERION WTP
54 109289	L.A. ORTHOPAEDIC FDN	40000	HYPERION WTP
55 452988	L.A. ZOO % DEPT OF REC & PARKS, CITY OF LOS ANGELES	1300000	HYPERION WTP
56 295799	LITTON GUIDANCE & CONTROL DIVISION	98441	TILLMAN WRP
57 428223	LONG BEACH NAVAL SHIPYARD (U.S. NAVY)%	450000	TERMINAL IS. WTP
58 482033	LOS ANGELES DEPT. OF WATER AND POWER	50000	EAST VALLEY
59 404115	MATCHMASTER DYING & FINISHING, INC.	728979	HYPERION WTP
60 485176	MATCHMASTER DYING & FINISHING, INC.	288000	HYPERION WTP
61 443994	MCDONNELL DOUGLAS HELICOPTER/E. LIFT STA.	51019	HYPERION WTP
62 002063	MEDICO LINEN SERVICES	114163	HYPERION WTP
63 386850	METROPOLITAN WATER DISTRICT-JENSON PLANT	141931	N.E. VALLEY
64 022730	MODERN PLATING CO. (LACSD)	57804	HYPERION WTP
65 073752	MORGAN SERVICES INC.	88944	HYPERION WTP
66 489487	NORTHERIDGE HOSPITAL MEDICAL CENTER	92500	TILLMAN WRP
67 481773	NORTHERIDGE HOSPITAL MEDICAL CENTER	56000	TILLMAN WRP
68 449894	OLYMPIC FINISHING & PRINTING INC.	83413	HYPERION WTP
69 449702	OLYMPIC FINISHING & PRINTING INC.	83413	HYPERION WTP
70 470472	PACIFIC COAST LAUNDRY	68240	HYPERION WTP
71 491483	PAN PACIFIC FISHERIES HOLDINGS INC.	273848	TERMINAL IS. WTP
72 4781314	PAN PACIFIC FISHERIES INC.	273848	TERMINAL IS. WTP
73 115345	PARAMOUNT CITRUS ASSN. INC.	99988	N.E. VALLEY
74 247773	PRICE PFISTER	97063	N.E. VALLEY
75 483417	PRO-WASH, INC.	201884	HYPERION WTP
76 483282	R. AND T. DEVELOPMENT CORPORATION	61580	HYPERION WTP
77 484357	RAINBOW DIV.-L.A. DYE WORKS INC.	296595	HYPERION WTP
78 124932	RALPHS GROCERY'S BAKERY/ATTN: PROP. ACCTS.	42808	LA.-GLENDALE WRP
79 290611	RELIABLE TEXTILE	55373	HYPERION WTP
80 481874	REPUBLIC-MASTER CHEFS TEXTILE RENTAL SERVICE	182750	HYPERION WTP
81 211808	ROCKETDYNE DIV. OF ROCKWELL INTERNATIONAL CORP.	42000	TILLMAN WRP
82 454784	SANTEE DAIRIES	328884	HYPERION WTP
83 455785	SANTEE DAIRIES	110000	HYPERION WTP
84 455799	SANTEE DAIRIES	80000	HYPERION WTP
85 455807	SANTEE DAIRIES	80000	HYPERION WTP
86 280431	SMITH KLEIN BECHAM CLINICAL LABORATORY	41774	N.E. VALLEY
87 397219	SPARKLETS	100898	HYPERION WTP
88 477071	SPECTROLAB INC.	54890	N.E. VALLEY
89 407845	STAR-KIST FOOD, INC.	252351	TERMINAL IS. WTP
90 204794	STEINER CORPORATION	68970	HYPERION WTP
91 403562	SUPERIOR INDUSTRIES INTERNATIONAL	78855	N.E. VALLEY
92 334763	TECHNICOLOR	168817	HYPERION WTP
93 379235	TECHNICOLOR	237920	HYPERION WTP
94 084006	THE COCA COLA CO.	74354	HYPERION WTP
95 458589	THE FOUR FOUNTY-FOUR PLAZA	62208	HYPERION WTP
96 311138	TRANS WORLD AIRLINES	80488	HYPERION WTP
97 328780	UCLA LAUNDRY FACILITY	51328	HYPERION WTP
98 409577	UNION OIL OF CALIF.	3408000	TERMINAL IS. WTP
99 429086	U.S. BORAX AND CHEMICAL CORP.	51603	TERMINAL IS. WTP
100 173173	VALLEY GENERATING STATION	100000	EAST VALLEY
101 434588	VETERANS ADMINISTRATION MED CENTER	345617	N.E. VALLEY
102 486838	WASHINGTON GARMENT DYEING & FINISHIN INC.	71241	HYPERION WTP
103 402903	WEST HILLS HOSPITAL DBA HUMANA HOSPITAL	50658	TILLMAN WRP
104 448357	WOODLAND PROCESSING INC.	72485	HYPERION WTP
105 258989	YE YUEN LAUNDRY INC.	81385	HYPERION WTP

TOTAL HSA AND TISA WASTEWATER FLOW

21,394,447

Table WW-5

EXISTING WASTEWATER FLOWS AND TREATMENT FACILITY CAPACITIES

CITY OF LOS ANGELES WASTEWATER TREATMENT DISTRIBUTION WASTEWATER SOURCE	1990 TOTAL WASTEWATER (GPD)	TILLMAN WRP (GPD)	NORTHEAST VALLEY (GPD)	EAST VALLEY (GPD)	BURBANK WRP (GPD)	L.A.-GLENDALE WRP (GPD)	HYPERION WTP (GPD)	LACSD JWPCP (GPD)	TERMINAL ISLAND WTP (GPD)
RESIDENTIAL (POPULATION) BUSINESS (EMPLOYMENT) MAJOR GENERATORS CONTRACT AGENCIES GROUNDWATER INFILTRATION	264,389,552 48,060,998 21,394,447 58,932,776 19,891,941	30,288,297 5,882,067 797,146 1,003,000 2,411,415	29,261,669 3,922,954 4,750,237 1,874,792 2,063,971	31,219,366 5,430,308 440,218 13,000 2,390,025	899,497 140,775 0 7,916,677 66,496	363,986 145,251 352,544 9,164,000 40,231	152,072,193 30,161,848 10,242,119 37,966,307 11,612,486	10,189,435 1,137,787 0 0 648,620	9,795,625 1,213,349 5,096,572 1,053,802 640,652
AREA TOTAL	412,669,713	40,382,924	41,873,623	39,492,917	9,023,443	10,066,012	242,054,963	11,975,842	17,800,000
TILLMAN WRP CAPACITY LESS: TILLMAN WASTEWATER TILLMAN SURPLUS/(SHORTAGE) LESS: NORTHEAST VALLEY LA CIENEGA DISCHARGE TO HYPERION #1 PLUS: TILLMAN 10% BACKFLUSH		80,000,000 40,382,924 39,617,076	39,617,076 41,873,623 (2,256,547)	9,933,988 39,492,917 (29,558,929)		20,000,000 10,066,012 9,933,988	2,256,547 8,000,000		
L.A. GLENDALE WRP CAPACITY LESS: GLENDALE WASTEWATER & L.A. TRIBUTARY L.A.-GLENDALE SURPLUS/(SHORTAGE) LESS: EAST VALLEY LA CIENEGA DISCHARGE TO HYPERION #2 PLUS: L.A.-GLENDALE 10% BACKFLUSH					1,300,000 1,106,766 193,234 7,700,000 7,893,234 6,573,234 1,320,000 (7,916,677)		29,558,929 2,000,000		
BURBANK WRP CITY OF LA CONTRACT LESS: L.A. TRIBUTARY WASTEWATER CITY CONTRACT SURPLUS/(SHORTAGE) PLUS: BURBANK WRP REMAINING CAPACITY BURBANK WRP AVAILABLE CAPACITY LESS: BURBANK CITY WASTEWATER BURBANK WRP SURPLUS/(SHORTAGE)									
BURBANK NOS DISCHARGE TO HYPERION PLUS: BURBANK 10% BACKFLUSH (9 MGD CAP.)							7,916,677 768,000		
HYPERION WTP CAPACITY LESS: HSA WASTEWATER AND UPSTREAM SURPL HYPERION SURPLUS/(SHORTAGE)							420,000,000 292,555,106 127,444,894		
LACSD JWPCP CAPACITY LESS: L.A. COUNTY INFLUENT JWPCP SURPLUS AVAILABLE TO CITY OF L.A. LESS: LACSD JWPCP WASTEWATER FROM L.A. LACSD JWPCP SURPLUS/(SHORTAGE)								385,000,000 320,400,000 64,600,000 11,975,842 52,624,158	
TERMINAL ISLAND WTP CAPACITY LESS: TERMINAL ISLAND WASTEWATER TERMINAL ISLAND SURPLUS/(SHORTAGE)									30,000,000 17,800,000 12,200,000

2.5.4 *Project Impacts*

A model was generated to project wastewater treatment need for Project Buildout of the Framework Plan. Under the Project Buildout, the City's population is projected to increase by 821,165 persons from an existing Citywide population of 3,485,399 persons. Similarly, total Citywide employment is projected to increase by 389,414 persons to a total of 2,291,481 persons.

Citywide wastewater generation was determined by aggregating projections for the residential sector, the employment sector, major generators (over 40,000 gallons per day), contract agencies, and groundwater infiltration.

Wastewater generation rates for the residential and employment sector were taken as 88 gallons per capita per day (GPCD) and 28 GPCD respectively. These generation rates represent a decrease of 2 GPCD from existing generation rates for both residential and employment based wastewater generation. This slight decrease in generation rates is intended to model the effects of conservation and flow reduction systems. The generation rates used for residential and employment based wastewater generation are believed to be conservative. The Los Angeles Department of Public Works (LADPW) Wastewater Program Management Division is currently conducting a study to review existing residential and employment generation rates. The LADPW study will also project future unit flows taking into consideration the effects of conservation. Revised 'GPCD' values will be available in the next Wastewater Facilities Plan and can be incorporated at that time; however, for the sake of this analysis, the generation rates above can be used as a conservative projection for future flows.

Existing wastewater generation rates for major generators were assumed to remain constant for the Project Buildout. Since most of the major generators are industrial facilities and industrial employment is projected to increase by only 2.8 percent under Project Buildout, major generator flows can be expected to remain at existing levels. Infiltration rates were also assumed to remain constant. Flows for contract agencies were projected with the assumption that they would maintain the same proportion of future effluent flow relative to the City of Los Angeles as they did in 1990.

Total residential, employment, and major site wastewater generation projections for Project Buildout are 379 MGD, 64 MGD, and 21 MGD respectively. Total Citywide municipally generated wastewater is thus projected at 464 MGD under Project Buildout of the Framework Plan.

Table WW-6 gives projections for contract agency wastewater generation. Total contract agency wastewater flows are projected at 82 MGD. Summing total municipally generated wastewater flows with contract agency wastewater flows and groundwater infiltration, total Citywide wastewater flow is projected at 566 MGD. This represents an increase of 233 MGD from existing wastewater flows.

Table WW-6

PROJECT BUILDOUT CONTRACT AGENCY WASTEWATER EFFLUENT

CONTRACT AGENCY WASTEWATER EFFLUENT NO. AGENCY	PROJECTED WASTEWATER GENERATION TOTAL (GPD)	TILLMAN WRP (MGD)	NORTHEAST VALLEY (MGD)	EAST VALLEY (MGD)	BURBANK WRP (MGD)	L.A.-GLENDALE WRP (MGD)	HYPERION WTP (MGD)	LACSD JWPCP (MGD)	TERMINAL ISLAND WTP (MGD)
1 ANETA ST TAX ZONE (M.D.)##	0.033							0.033	
2 BARRINGTON P. O. @##	0.000							0.000	
3 BEVERLY HILLS	7.999							7.999	
4 BURBANK	11.017				11.017				
5 CALIFORNIA NATIONAL GUARD @##	0.000		0.000						
6 CULVER CITY	7.388							7.388	
7 EL SEGUNDO	2.957							2.957	
8 FEDERAL OFFICE BUILDING, WLA	0.035							0.035	
9 GLENDALE (HTP)	9.133					12.752		9.133	
10 GLENDALE (LAGWRP)#	12.752								
11 INGLEWOOD @##	0.000							0.000	
12 KARL HOLTON CAMP	0.018			0.018					
13 LACSD #02 CITY TERR.##	0.088							0.088	
14 LACSD #04 WEST HOLLYWOOD	7.153							7.153	
15 LACSD #05 INGLEWOOD- WINSOR HILLS	1.222							1.222	
16 LACSD #09 LA RAMBLA (TIWTP)	0.308							0.308	
17 LACSD #11 BALDWIN HILLS	0.004							0.004	
18 LACSD #16 EAST OF NORTHEAST L.A. (INCLUDE ALHAMBRA HILLS-0.036, ALHAMBRA-0.0492, PASADENA-0.1665, SOUTH PASADENA-0.238.)	0.658							0.658	
19 LACSD #27 TOPANGA	0.192							0.192	
20 LAS VIRGINES MWD (ESTIMATED, INCL. HIDDEN HILLS AND TOPANGA SMD)	1.179	1.179							
21 MARINA DEL REY	2.779							2.779	
22 SAN FERNANDO	2.608		2.608						
23 SANTA MONICA	12.068							12.068	
24 TRUNFO CSD	0.217		0.217						
25 U.S. NAVY TERMINAL ISLAND (TIWTP)	1.077							1.077	
26 UNIVERSAL CITY	0.444							0.444	
27 US ARMY RES. WILSHIRE @##	0.000							0.000	
28 USAF RESERVE @##	0.000							0.000	
29 USAR, FEDERAL AVE @##	0.000							0.000	
30 V.A. HOSP., SAWTELLE	0.650							0.650	
31 VETERANS MEMORIAL PARK(EXT.)##	0.001		0.001						
32 W.L.A. COLLEGE	0.031							0.031	
CONTRACT AGENCY TOTAL	82.003	1.396	2.609	0.018	11.017	12.752	52.833	0.000	1.385
LESS: LACSD JWPCP	0.000								
CITY TREATMENT AREA	82.009								
LESS: TERMINAL IS	1.385								
HYPERION SERVICE AREA	80.625								

© WASTEWATER DISCHARGE LESS THAN 100,000 GPD.
 #DOES NOT INCLUDE 1.5 MGD OF GLENDALE OWNERSHIP RIGHTS LEASED TO LOS ANGELES TO TREAT WASTEWATER FROM AREAS TRIBUTARY BY GRAVITY.
 NOTE: GPD: GALLONS PER DAY. MGD: MILLION GALLONS DAILY. (EXT): DENOTES EXISTING CONDITIONS BECAUSE CONTRACT AGENCY DOES NOT HAVE AN EFFLUENT LIMIT.

Future planned treatment capacities for City owned plants (by year 2010) include a 30 MGD secondary treatment expansion (in addition to the existing 420 MGD of treatment capacity currently available) at HTP and a 30 MGD advanced secondary treatment expansion (in addition to the existing 20 MGD of treatment capacity currently available) at LAGWRP. The BWRP has also planned a 6 MGD primary treatment expansion. City of LA Contract rights to BWRP however were assumed to remain constant at the 1990 contract level of 1.3 MGD.

Projected remaining capacities for each treatment facility were determined by considering influent levels to each facility and routing excess flows to the respective facility. As with the existing model, a 10 percent backflush was added for TWRP, LAGWRP, and BWRP to model sludge and filter backwash flows to HTP. **Table WW-7** shows the model results.

After taking into account upstream water reclamation facilities, the HTS will have 42 MGD of capacity in excess of flows. TITP is expected to have 9 MGD of capacity in excess of flows. A review of **Table WW-7** shows total projected flows to the HTS (including backflush) as 538 MGD. Assuming a peak-month flow 6.3% greater than the monthly average (1990, LADPW, Facilities Plan Update) gives a total projected flow of 572 MGD for the HTS. This leaves a reserve capacity of 8 MGD for the HTS. Similarly, total flows to TITP are projected at 21 MGD and peak-month flows are projected at 22.4 MGD; leaving a reserve capacity of 7.6 MGD.

Thus, significant impacts are not expected for the Hyperion Treatment System and TITP; however, remaining capacities available for further growth beyond Project Buildout will be limited.

Assuming that City contract rights for BWRP remain at 1.3 MGD, it is expected that some 0.6 MGD of the City's projected wastewater flows will be in excess of City contract capacity for BWRP. This impacts only the City's contracted capacity however since there will be sufficient capacity at BWRP for these flows.

Impacts to LACSD-JWPCP are discussed in the Cumulative Impacts section.

Thus, the only significant impact expected under the proposed Project Buildout of the Framework Plan is to the City's contracted amount of wastewater flows allowed at BWRP; this impact can be mitigated through mitigation measures provided in the mitigation measures section below.

2.5.5 *Mitigation Measures*

The adoption of the proposed General Plan Framework's policies, goals, and objectives will provide adequate measures to mitigate the impacts of growth on the City's wastewater treatment facilities.

Table WW-7

PROJECT BUILDOUT WASTEWATER FLOWS AND MODEL RESULTS

CITY OF LOS ANGELES WASTEWATER TREATMENT DISTRIBUTION WASTEWATER SOURCE	TOTAL WASTEWATER (GPD)	TILLMAN WRP (GPD)	NORTHEAST VALLEY (GPD)	EAST VALLEY (GPD)	BURBANK WRP (GPD)	L.A.-GLENDALE WRP (GPD)	HYPERION WTP (GPD)	LACSD JWPCP (GPD)	TERMINAL ISLAND WTP (GPD)
RESIDENTIAL (POPULATION) BUSINESS (EMPLOYMENT) MAJOR GENERATORS CONTRACT AGENCIES GROUNDWATER INFILTRATION	379,013,948 64,160,893 21,394,447 82,009,190 19,891,941	43,742,766 7,512,927 797,146 1,396,747 2,411,415	42,699,650 5,335,142 4,750,237 2,608,907 2,063,971	45,259,055 7,075,205 440,218 18,090 2,390,025	1,708,641 126,688 0 11,016,625 66,495	584,612 319,871 352,544 12,752,364 40,231	215,246,320 40,544,016 10,242,119 52,832,843 11,612,486	16,192,414 1,528,694 0 0 666,417	13,302,699 1,712,617 5,038,243 1,449,659 633,319
AREA TOTAL	666,470,419	55,860,001	57,457,907	56,182,593	12,918,449	14,049,623	330,477,784	18,387,624	22,136,537
TILLMAN WRP CAPACITY LESS: TILLMAN WASTEWATER TILLMAN SURPLUS/(SHORTAGE) LESS: NORTHEAST VALLEY LA CIENEGA DISCHARGE TO HYPERION #1 PLUS: TILLMAN 10% BACKFLUSH		80,000,000 55,860,001 24,139,999	24,139,999 57,457,907 (33,317,908)	36,960,377 55,182,593 (19,232,216)		50,000,000 14,049,623 35,950,377	33,317,908 8,000,000		
L.A. GLENDALE WRP CAPACITY LESS: GLENDALE WASTEWATER & L.A. TRIBUTARY L.A.-GLENDALE SURPLUS/(SHORTAGE) LESS: EAST VALLEY LA CIENEGA DISCHARGE TO HYPERION #2 PLUS: L.A.-GLENDALE 10% BACKFLUSH							19,232,216 5,000,000		
BURBANK WRP CITY OF LA CONTRACT LESS: L.A. TRIBUTARY WASTEWATER CITY CONTRACT SURPLUS/(SHORTAGE) PLUS: BURBANK WRP REMAINING CAPACITY BURBANK WRP AVAILABLE CAPACITY LESS: BURBANK CITY WASTEWATER BURBANK WRP SURPLUS/(SHORTAGE)					1,300,000 1,901,824 (601,824) 13,700,000 13,098,176 8,765,448 4,312,728 (11,016,625)				
BURBANK NOS DISCHARGE TO HYPERION PLUS: BURBANK 10% BACKFLUSH (9 MGD CAP.)							11,016,625 1,068,727		
HYPERION WTP CAPACITY LESS: HSA WASTEWATER AND UPSTREAM SURPL HYPERION SURPLUS/(SHORTAGE)							450,000,000 408,113,260 41,886,740		
LACSD JWPCP CAPACITY LESS: L.A. COUNTY INFLUENT JWPCP SURPLUS AVAILABLE TO CITY OF L.A. LESS: LACSD JWPCP WASTEWATER FROM L.A. LACSD JWPCP SURPLUS/(SHORTAGE)								385,000,000 445,859,610 (60,859,610) 18,387,524 (78,247,134)	
TERMINAL ISLAND WTP CAPACITY LESS: TERMINAL ISLAND WASTEWATER TERMINAL ISLAND SURPLUS/(SHORTAGE)									30,000,000 22,136,537 7,863,463

2.5.5.1 Mitigation through Framework Policy

Polices 9.1.1, 9.2.1, 9.2.2, 9.2.3, 9.2.5 and 9.3.1 will provide measures to insure that the City's future wastewater treatment need can be met through:

- monitoring wastewater generation;
- collecting and treating wastewater as required by law;
- maintaining wastewater treatment capacity commensurate with development;
- providing for additional wastewater treatment capacity in the Hyperion Treatment Service Area;
- reviewing other means of expanding the wastewater system's capacity; and
- minimizing wastewater flow and protecting the system from hazardous substances.

2.5.5.2 Additional Recommended Mitigation

The proposed General Plan Framework's policies, goals, and objectives provide adequate mitigation measures and no additional mitigation measures have been identified or are believed to be necessary.

2.5.6 Level of Impact Significance

The increased wastewater treatment need as a result of the proposed Project Buildout is considered to be a significant adverse impact which can be feasibly mitigated (Class II) through implementation of the General Plan Framework's policies, goals, and objectives.