

APPENDIX N-2:
WASTEWATER

Playa Vista - Proposed Project
Related Projects - Wastewater Generation

Project #	Project Name	Project Location	Residential (d.u.)	Office (sq. ft.)	Total (sq. ft.)	Total Rooms	Chick-filadea (sq. ft.)	Warehouse (sq. ft.)	Therapeutic (sq. ft.)	Residential (sq. ft.)	Industrial (sq. ft.)	Parking (spaces)	Anticipated (acres)
1	Regatta	4251 Lincoln B	812										
2	Multi-Media Clinic	4755 S. Aia Rd		48,000									
3	Apartment Complex	9200 Manchester Av	245										
4	Center Drive	8080 Center Dr		280,000									
5	Director Project	Lincoln Blvd/Manchester Av	547			600							
6	Howard Hughes Center	Seaboard / H. Hughes Pkwy		1,467,081		193,000							
7	Barclays Bank	4141 Lincoln Bl		32,000		51,470							
8	Wright B. Temple School	San Ramon Av/Olympic B			5,500		69,150						
9	Westway	10-100 Jefferson St	123,293				25,150				119,857		
10	Apartment	Peeling/Manchester	49										
11	Terra Sol / Mar	1420 27th St		11,000		11,000							
12	Mixed Used (Residential/ Commercial)	1443 6th St	48			70,119							
13	Bot. Champion III	11937 Wilshire Bl											
14	Virginia Avenue Park	Pico Bl/Cloverfield Bl	66				475,000						
15	100% Affordable Senior Apartments	1139-44 4th St					793,000						
16	St. Johns Medical Center &	1338 22nd St					84,800						
17	Master Plan	1649 17th St					50,500						
18	Crossroads School Expansion	9760 Pico Bl					771,000						
19	20th Century Fox Expansion	12201 Pico Bl					16,000						
20	Santa Monica YMCA	332 6th St		185,300									
21	Westgate Media Project Phase I	S/S Olympic B, BVI Centinella Av & Elindy Dr		74,913		165,000							
22	Library Expansion	S/S Olympic Bl 24th Centinella Av & Burdy Dr					66,000						
23	Ranc Corporation	627 Santa Monica Bl		300,000		SF							
24	West BLP	Main/Oleto	120				115,000						
25	LAL Expansion	7131 West 80th St											
26	Airport Park	Douglas Loop		55,772									
27	High Bay Lab	901 N. Nash St											
28	Gas Station/Fast Food	7300 La Tijera Bl		38,000									
29	Office	2250 E. El Segundo Bl		170,000									
30	Office	1855 La Cienega Bl											
31	Cultural City Regal / Theater	Washington / Culver											
32	L.A. Air Force Base Area A	2400-2460 El Segundo Bl		640,000		320							
33	L.A. Air Force Base Area B	Aviation Bl/El Segundo B		713,500		93,750							
34	LAX Master Plan	L.A. International Airport											
35	Continental City - Phase I (2005)	Aviation Bl / Imperial Hwy		1,805,000		1,050							
36	LAX Northside	Westchester Pkwy / Loyola Bl											
37	Marina Del Rey	Parcel 90/104FF	531			288							
37a	Parcel 44L			3,000		226							
37b	Parcel 77W			11,700		144							
37c	Parcel 55/55S/W					175							
37d	Parcel 6P					200							
37e	Parcel 1R					60							
37f	Parcel 1P												
37g	Parcel 145R					276							
37h	Parcel 27R					133							
37i	Parcel 105/101 S		780										
37j	Parcel 140V												
37k	Parcel 123/11 S												
37l	Parcel 149/52/53					55,870							
37m	Parcel 14					295,000							
37n	Parcel 12 & 15 (b)		479										
37o	Parcel 20(a)(b)		614										
37p	Parcel 111 & 112(a)		85										
37q	Parcel 120		209										
38	L.A. Air Force Base-Powerhouse	Marina Blvd/Aviation B		63,860		16,450							
39	Civic Center/Mexico Development	Valley Dr/Marshall Beach Bl		15,000		35,000							
40	Playa Vista Phase I	Playa Vista	3,246	2,077,000			120,000						
41	Office	330 S. San Vicente Bl		55,000									
42	Pr-Y-Out Parking	6335 W. 32nd St											

Plays Vista - Proposed Project
Related Projects - Wastewater Generation

Project #	Project Name	Project Location	Residential (d.u.)	Office (e.f.)	Retail (e.f.)	Hole (rooms)	Child Institutions (e.f.)	Wastewater (e.f.)	Theater (seats)	Restaurant (e.f.)	In-Channel (e.f.)	Parking (spaces)	Landscaping (seats)
43	Retail	5258 Sepulveda Bl			14,728								
44	Residential	5250 Sepulveda Bl	57				38,900						
45	Oliver City Senior Center	3250 Sepulveda Bl			807,500		27,270						
46	Residential	1000 W. MacArthur Bl					30,112						
47	School	800 N. La Brea Bl					55,000						
48	Faithful Church Center	E. of La Cienega			150,000								
49	Auto Dealership	Resecrate Ave/405 NB Ramp			73,000								
50	Airport Marina Ford	Canfield E of Bristol			68,000								
51	Hayden Av Project	3505 Hayden Av			800,000								
52	Office/Resil	El Segundo Blvd/Hawthorne Bl			69,900								
53	Samurai	5800 Jefferson Bl			15,000								
54	Wica Site	3385 Hayden Av			38,285								
55	Pratt Coffee Architects	9658 Jefferson Bl			1,102,500								
56	Grand Avenue Courtyard	1950 E. Grand Avenue			93,569								
57	Sony Pictures Studios	16202 Washington Bl			254,461								
58	For His Mail Expansion	Sepulveda Bl			8,000								
59	Commercial	1735 Ocean Av			58,330								
60	Hotel	1745 Ocean Av			120,610								
61	888 N. Sepulveda Bl	Sepulveda Bl, El Segundo			43,000								
62	Mayfair Theater Site	210 Santa Monica Bl			87,000								
63	888 N. Sepulveda Bl	Sepulveda Bl, El Segundo			100,000								
64	2300 E. Imperial Hwy	El Imperial Hwy, El Segundo											
65	Knollwood La Tijera	Knollwood La Tijera	187		84,105								
66	Knollwood Av Senior Housing	3000 Olympic Boulevard			152,000								
67	Retail	3131 Exposition Boulevard			39,320								
68	Sea Castle Apartments	120 Wilshire Bl	159										
69	Santa Monica Hospital	1725 The Promenade											
70	Convent Hospital	1502 Wilshire Bl											
71	Plaza	1338 20th St	75										
72	Assisted Living Facility	1249-1255 20th St											
73	Santa Monica Public Safety Facility	1312 15th St	31										
74	McDonald's Mixed Use	1855 Main St											
75	Transportation Facility Master Plan	1540 2nd St			40,000								
76	GOC	Coleridge Av			290,086								
77	Xerox Phase IV	2300 Rosemead			263,242								
78	Phoebus Boutique	1851-1861 El Segundo Bl			19,000								
79	Metel	2072 & 4023 Main St	133										
80	El Segundo Corporate Campus	445 & 475 Continental			75,000								
81	Commercial	700 N. Nash			19,000								
82	Corporate Pointe - I	155-555 N. Nash			125,000								
83	Corporate Pointe - II	Slauson Av/SR-90			850,000								
84	Commercial	Slauson Av/SR-90			230,000								
85	Shopping Center	SW Corner of Douglas & Mariposa			83,674								
86	Shopping Center	3737 Crenshaw Bl			132,802								
87	National Payment Partners LLC	8985 Venice Bl			37,800								
88	Mixed Use Project	National Blvd/Harden Ave			197,300								
89	Santa Barbara Plaza	2480 S. La Brea	280		20,000								
90	Sacramento Apartments	Marin Luther King Jr. Blvd/Huntington Rd			800,000								
91	Office Building	3101 S. La Brea	206		45,712								
92	Western Office Bldg	8787 Venice Bl			74,553								
93	Warehouse	11110 W. Pico Bl											
94	Warehouse	3450 S. La Brea Av											
95	Apartment	Paranet/Talbot	305										
96	Apartment	3025 Olympic Bl @ Nebraska			150,000								
97	Plays Vista Phase II	Plays Vista	2,800		175,000								
98	Plays Vista Phase I	Plays Vista	1,100		3,875,847								
99	Total Wastewater Generation (Total)		1,100		11,844,356								
100	Total Cumulative Wastewater Generation		1,100		1,844								
101	Total Cumulative Wastewater Generation		1,100		2,440								
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186	Total Cumulative Wastewater Generation</												

Plays Vista - Proposed Project
Related Projects - Wastewater Generation

Project #	Project Name	Project Location	Residential (cu ft)	Office (sq ft)	Retail (sq ft)	Hotel (rooms)	Covered mechanical (sq ft)	Warehouse (sq ft)	Tractor/haul (sq ft)	Restaurant (sq ft)	Industrial (sq ft)	Paving (sq ft)	Landscaping (sq ft)
5	Assumed 100 sq ft per storage tank average	10 Assumed 300 sq ft per LMB laundry room											
Source: City of Los Angeles Dept. LA CEQA Thresholds Guide May 1994													
Sewerage generation rates of wastewater are assumed to have been possible water													

February 18, 2003

Dorothy Meyer
CDM
18881 Von Karmen Ave, Ste 650
Irvine, CA 92612

Re: Playa Vista Phase 2 Wastewater

Dear Dorothy:

Per your request, this letter is written to outline the sewerage train description. This includes the capacities for the on- and off-site systems, both during the existing conditions and at 2010, the assumed build-out. The following breakdown is provided:

1. The on-site development drains into a system of sewer pipes located and sized to collect and convey the local flows within the site. These pipes are within existing and proposed streets and public utility easements. They include 6" and 8" laterals from the end use developments draining into 8", 10", 12" or 15" sewer main lines.
2. All of these on-site sewer mains drain into a sewer trunk line in Jefferson Boulevard. This sewer trunk line size is 18", 24", or 42". The 18" is from Playa Vista Drive to Alla Road, the 24" is from Alla Road to the Marina Pump Station, and the 42" is from the Marina Pump Station to the Ballona Pump Station.
3. Phase 2 Development will continue this routing concept by connecting to the 42" sewer trunk line in Jefferson.
4. The Marina Pump Station is located approximately 750' east of Alla Road on the north side of Jefferson Boulevard. It is currently functioning and will continue to do so until the Ballona Pump Station expansion (A new pump and Piping connection) is brought on line in the next few months.
5. The Marina Pump Station discharges into an existing 18" ductile iron force main routed westerly in Jefferson Boulevard to Lincoln Boulevard, then routed southerly in Lincoln Boulevard to the North Outfall Sewer (NOS).
6. The Ballona Pump Station is located approximately at the Jefferson/Inglewood intersection. It discharges into an existing 36" ductile iron force main routed southerly along Inglewood and Centinela, and then southerly along Sepulveda before its outfall into the NCOS.
7. The NCOS is routed to the Sewage Treatment Plant west of the City of El Segundo.
8. There are no existing (See Note 9) or proposed site flows draining into the North Outfall Sewer (NOS) or the North Outfall Relief Sewer (NORS). All flows previously draining to these facilities have been rerouted into the Jefferson trunk line.

**WASTEWATER ROUTING
PLAYA VISTA, PHASE 2 EIR
February 18, 2003**

9. There is a single existing building in the EMT area currently draining to the NOS through an on-site pump and force main. This flow is scheduled to be routed to the on-site permanent system in the next few months.
10. The NOS is currently dry except for some very minor local flows from along the Westchester area immediately south of Playa Vista that could not be diverted. The major flows previously carried by the NOS were diverted to the NORS in 1993. According to the City Wastewater Master Schedule, the NOS will be rehabilitated with an anticipated completion in 2006.

The attached spreadsheet indicates the flows for each of these facilities. If you have any questions, please contact me at 310/954 3745, or by e-mail at mcrehan@psomas.com.

Sincerely,

PSOMAS

Michael J. Crehan, P.E.

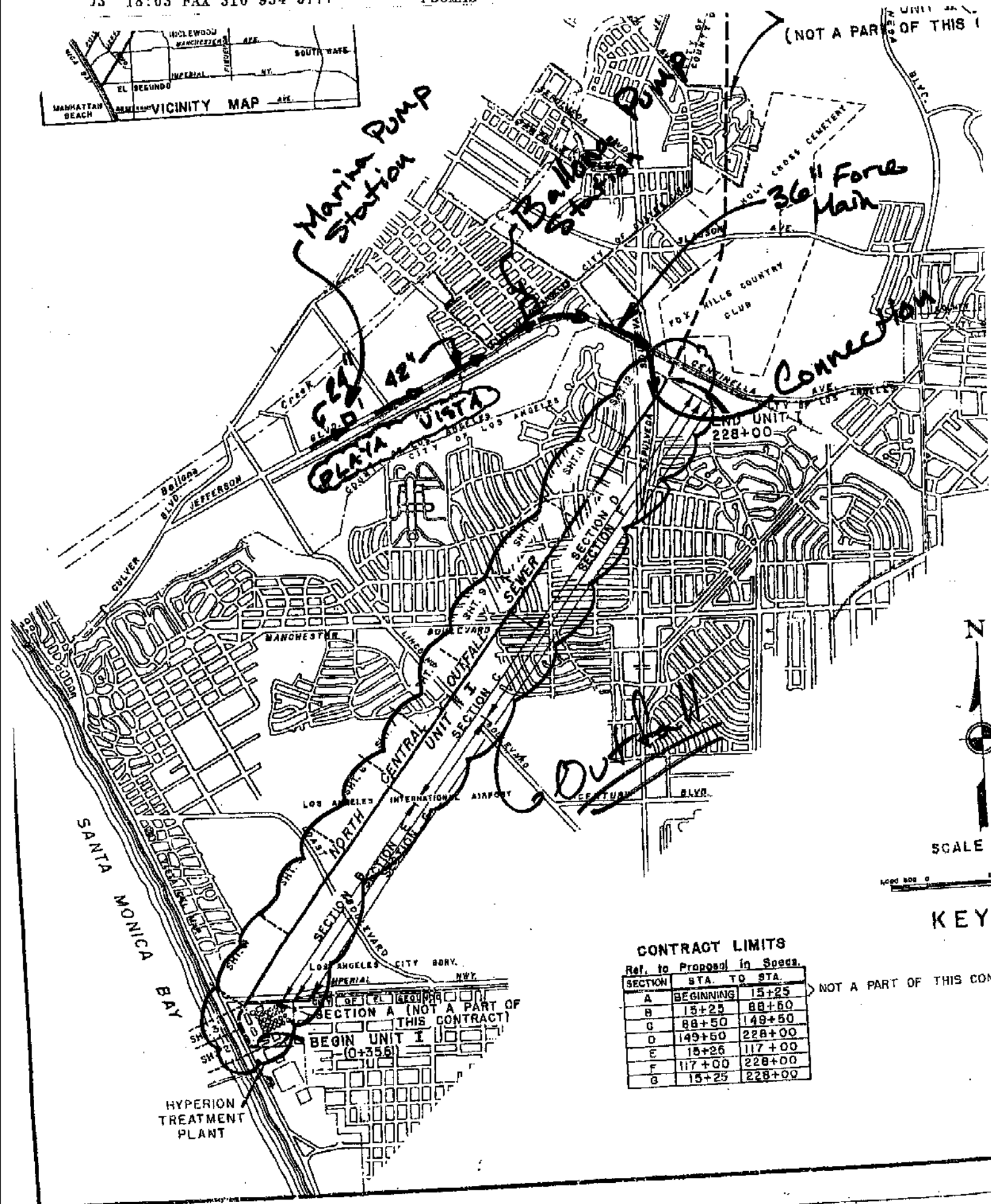
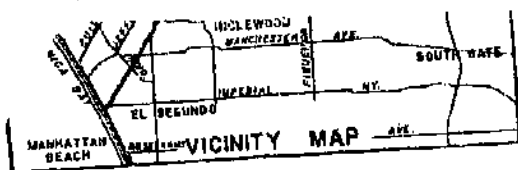
Copy: Marc Huffman – Playa Capital

Facility	Description	Existing ADWF(1)	Existing PDWF(2)	2020 ADWF(1)	2020 PDWF(2)	3/4 Full Capacity	Full Capacity
18" Main	In Jefferson	1.0	1.6			2.3(4)	3.0
24" Main	In Jefferson	1.3	2.1			5.0(4)	6.0
42" Main	In Jefferson	2.9	6.0			22(4)	25.9
36" Force Main	To the NCOS	2.9	6.0			N/A	25.9
Ballona Pump Sta	To the NCOS	2.9	6.0			N/A	25.9
NOS		0	0	155	233	178(4)	283
NCOS (5)		97	146	79	119	154(4)	244

The NCOS 2010 flows, prorated from the 2004 and 2010 flows, are 100 for the PDWF, and 64 for the ADWF.

Notes:

1. ADWF = Average dry weather flow
2. PDWF = Peak dry weather flow
3. All flows are listed in Million Gallons per Day (MGP)
4. Calculated based on cross-section
5. In approx. 2004, another outfall sewer will come on line, reducing the NCOS flows to 88 for PDWF, & 55 ADWF



CONTRACT LIMITS
Ref. to Proposal in Specs.

SECTION	STA.	TO STA.
A	BEGINNING	15+25
B	15+25	88+50
C	88+50	149+50
D	149+50	228+00
E	15+25	117+00
F	117+00	228+00
G	15+25	228+00

P S O M A S

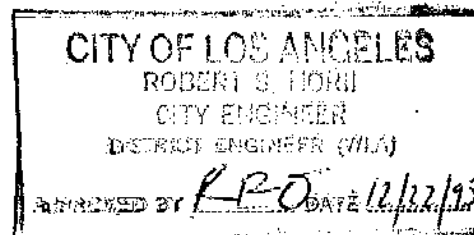
Information and Engineering Solutions

CALCULATIONS AND REPORT

for

TRACT NO. 49104-01
ONSITE SEWER SYSTEM

Psomas Job No. 1MTP0108-23
December 12, 1995



**CALCULATIONS AND REPORT
for
TRACT 49104 ONSITE SEWER SYSTEM
PLAYA VISTA, LOS ANGELES, CALIFORNIA**

Psomas Project No: 1MTP0108-23

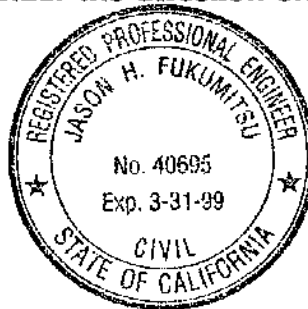
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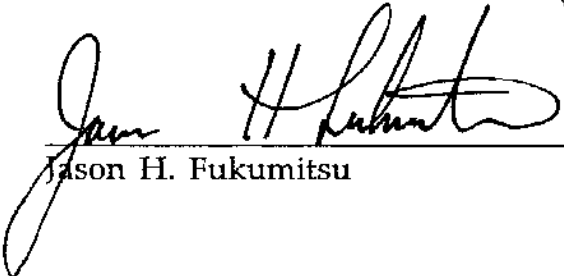
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Santa Monica, California 90405
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Under the direction of:




Jason H. Fukumitsu

RCE # 40695

12-19-95
Date

Contents

TABLE OF CONTENTS

TITLE SHEET

SIGNATURE SHEET

TABLE OF CONTENTS

Section 1: INTRODUCTION AND SUMMARY

1.0 Introduction

1.1 Summary

1.2 Proposed Sewage System

Section 2: METHODOLOGY AND DESIGN CRITERIA

2.1 Methodology

2.2 Design Criteria

APPENDIX: SEWER MAP

Tract 49104-01 and 49104-02 Sewer Area Study

1

Section One

1.0 INTRODUCTION

The Playa Vista sewage system under existing and ultimate development conditions is analyzed in this report. This report addresses the capacity of the existing Marina Pump Station, developed proposed Peak Dry Weather Flows (PDWF), and presents a strategy for phased development within the Playa Vista Development. This report specifically addresses the sewage system for Tract 49104-01 and 49104-02, but also addresses the sewage for all areas tributary to the proposed system.

The approximately 800 acres Playa Vista project site is located in southwestern Los Angeles two miles northwest of the Los Angeles International Airport. The site is divided into four areas (Area A, B, C, and D) by the Ballona Creek Channel in the east-west direction and by Lincoln Boulevard in the north-south direction. The areas tributary to the proposed sewage system consist of:

<u>Development</u>	<u>Area</u>	<u>Description</u>
North Marina South Marina	A	(North of Ballona Creek, West of Lincoln Blvd.)
West Jefferson	B	(South of Ballona Creek, West of Lincoln Blvd.)
North Culver South Culver	C	(North of Ballona Creek, East of Lincoln Blvd.)
North Jefferson Lincoln - Bay West Park Village Center East Park West Campus East Campus	D	(South of Ballona Creek, East of Lincoln Blvd.)

Area "D" is located east of Lincoln Boulevard and represents 433 acres of the Playa Vista site of which 249 acres will be developed as Tentative Tract No. 49104. The remaining 177 acres of Area "D" consists of 100 acres of McDonnell-Douglas plant site and 77 acres of undeveloped land. The tract is divided into 60 acre east section and a 189 acre west section.

Tentative Tract No. 49104-01 is located on the west side of Area "D" of the Playa Vista project site. The Tract is bounded by Jefferson Boulevard to the north, proposed "H" Street to the south, Alla Road and proposed 7th Street to the east, and Lincoln Boulevard to the west.

Tract 49104-01 is a 49 acre Phased Tract of the 249 acre 49104.

1.1 SUMMARY

The major sewage facilities for Tract No. 49104 will include a single trunk main in Jefferson Boulevard which will collect flows from smaller on-site branch mains and convey them to a single existing pump station location. The entire system up to the pump station will be a gravity system.

The location of the sewage facilities and the associated tributary boundaries are shown on the 1"= 100' scale Sewer Area Study Map included in this report.

Summaries of the gross tributary areas are presented in Figure 1.1-1 and Table 1.1-1. A summary of the resulting gross sewage flow calculations is presented in Table 1.1-2. Detailed tributary areas and resulting flow calculations are summarized in Table 1.1-3. The PDWF design flows are presented in Table 1.1-4, and the corresponding sewer main line hydraulics are presented in Table 1.1-5.

The proposed sewage improvements will provide the necessary facilities to convey the Peak Dry Weather Flows for the proposed Lincoln Bay, West Park, and north Jefferson neighborhoods. The existing Marina Pump Station has a total capacity of 6.3 cfs, with Future Peak Wet Weather Flows of 2.3 cfs, leaving an available capacity of 4.0 cfs. Future flows for the portions of Playa Vista Development not served by this system amount to 10.7 cfs and will be addressed with future development and studies. Options explored are outlined in the following section.

1.2 PROPOSED SEWAGE SYSTEM

The proposed sewage system that can be serviced by the existing Marina Pump Station is comprised of a single gravity system that will convey flows from the Lincoln Bay, West Park, and North Jefferson neighborhoods. Based on the EIR entitlements, the Peak Dry Weather Flow for these three neighborhoods sums to 3.404 cfs.

The system consists of a single trunk main in Jefferson Boulevard that begins at Bay Street as an 18" vcp pipe. It transitions to a 24" vcp pipe at Alla Road and continues on to join the Marina Pump Station via an existing manhole.

The trunk main collects flows from smaller on-site branch mains that serve proposed lots throughout the Lincoln Bay and West Park neighborhoods which include proposed Tracts 49104-01 and 49104-02. These on-site mains consist of 8" to 12" pvc pipes and one 15" vcp pipe.

A 12" pvc stubout is provided at the upstream end of the Jefferson Boulevard trunk main for future service to the North Jefferson neighborhood, also known as proposed Tract 49104-03.

Some of the 8" pvc pipes have a normal velocity less than 3.0 fps, as indicated in table 1.1-5. These lines will be flushed at a regular interval with water from the reclaimed water system. The flushing system will be controlled by the irrigation controllers and can be adjusted as necessary based upon field conditions. Flushing flow in the sewer lines will be maintained at a minimum depth of 3". The corresponding flushing system analysis calculations are summarized in table 1.1-6.

The proposed flushing system consists of a reduced pressure backflow prevention connected directly to a 4" sewer wye. The assembly protects against backflow by either back-pressure or back-siphonage through the cross-connection between the reclaimed water system and the sewer system. The assembly includes a tightly closing resilient-seated gate valve on each end of the backflow prevention, and it has two (2) independent and internally loaded check valves with a pressure differential relief valve located between the check valves.

All additional areas can be serviced in the future as follows:

<u>Area</u>	<u>Development Name</u>	<u>Option</u>
B	West Jefferson	(1) Connect to N. Jefferson system install a new parallel line in Jefferson Boulevard to existing pump station, upgrade existing pump station or construct a new pump station, pump to Ballona Creek pump station. (2) Connect to N. Jefferson system and connect both to a possible new sewer treatment plant. (3) Connect to N. Jefferson system, disconnect West Park from existing pump station, install new trunk main to Ballona Creek pump station for West Park and future developments.

<u>Area</u>	<u>Development Name</u>	<u>Option</u>
D	Village Center East Park West Campus East Campus	(1) Connect to existing pump station via a new trunk main in Jefferson Blvd, upgrade or replace existing pump station. (2) Connect to possible new sewer treatment plant via a new trunk main in Jefferson Blvd. (3) Connect to existing Ballona Creek pump station via a new trunk main in Jefferson Blvd. (4) Construct an additional on-site pump station to pump flows to the Ballona Creek pump station.

FIGURE 1.1-1: GROSS TRIBUTARY AREAS (PLAYA VISTA NEIGHBORHOOD PLAN)

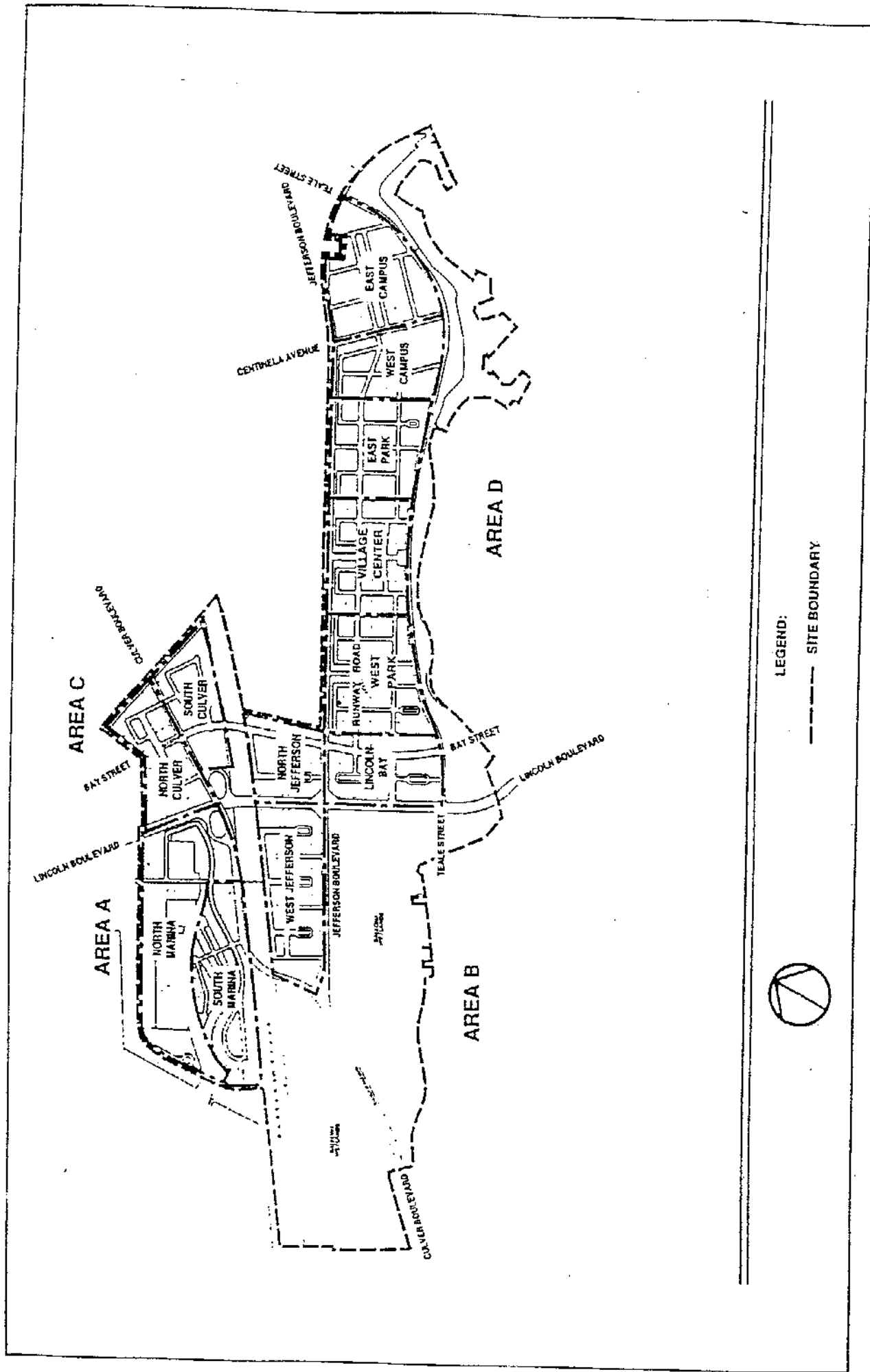


TABLE 1.1-1: GROSS TRIBUTARY AREAS (PLAYA VISTA NEIGHBORHOOD DEVELOPMENT SUMMARY)

Table III.C-2

PLAYA VISTA NEIGHBORHOOD DEVELOPMENT SUMMARY^a

Development Area	Neighborhood	Dwelling Units		Office ^b		Retail		Hotel		Community Serving Projected
		Maximum	Projected	Maximum	Projected	Maximum	Projected	Maximum	Projected	
A	Marina North	1,410	1,410	125,000	125,000	70,000	70,000	450	450	4,000
A	Marina South	1,166	1,166	0	0	5,000	5,000	0	0	10,000
B	West Jefferson	1,800	1,800	0	0	20,000	20,000	0	0	40,000
C	North Culver	1,016	1,016	900,000	900,000	150,000	130,000	0	0	20,000
C	South Culver	1,165	1,016	0	0	20,000	20,000	0	0	10,000
D	North Jefferson	615	495	550,000	550,000	10,000	5,000	0	0	15,000
D	Lincoln-Day	1,815	1,515	20,000	20,000	10,000	5,000	0	0	140,000
D	West Park	1,745	1,465	30,000	30,000	20,000	15,000	0	0	15,000
D	Village Center	1,720	1,421	300,000	200,000	300,000	300,000	300	300	52,500
D	East Park	1,490	1,340	30,000	30,000	20,000	15,000	0	0	10,000
D	West Campus	530	441	3,500,000	3,170,000	15,000	10,000	600	300	62,500
D	East Campus	0	0							200,000
			13,085		5,025,000		595,000		1,050	579,000

^a The dwelling units and floor spaces shown in the "maximum" columns for each neighborhood would be offset by reductions in other neighborhoods such that the total buildout would not exceed the totals shown in the "projected" columns. The "projected" totals are the applicant's preliminary estimates of actual distribution within each neighborhood.

^b Office entitlement may be exchanged for residential entitlement at a proportion to be determined in discussion with the City of Los Angeles.

^c Office development identified to occur within the West Campus neighborhood represents the total office development anticipated to occur within both the West Campus and East Campus neighborhoods.

Source: Macquire Thomas Partners, January 1991.

City of Los Angeles
State Clearinghouse No. 90810510

Page III.C - 4

Master Plan for Playa Vista
Draft Program EIR - September 28, 1992

TABLE 1.1-2: GROSS TRIBUTARY AREA FLOW CALCULATION

NEIGHBORHOOD	RESIDENTIAL DWELLING UNITS	MAXIMUM DENSITIES PER PLAYA VISTA ENTITLEMENTS					MARINA SLIPS	NEIGHBORHOOD TOTALS		CUMULATIVE TOTALS	
		OFFICE AREA	RETAIL AREA	HOTEL ROOMS	COMMUNITY SERVING AREA	CAR WASHES		TOTAL AVE. DAILY FLOW	TOTAL PEAK FLOW	AVE. DAILY FLOW	PEAK FLOW
Tract 49104-01/02:											
Lincoln Bay											
Sewer Flow Factor	1,515 du	20,000 sf	5,000 sf	0 rooms	140,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	303,000 gpd	4,700 gpd	590 gpd	0 gpd	14,000 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.469 cfs	0.007 cfs	0.001 cfs	0.000 cfs	0.022 cfs	0.000 cfs	0.000 cfs	0.499 cfs	1.405 cfs		
West Park											
Sewer Flow Factor	1,465 du	30,000 sf	15,000 sf	0 rooms	15,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	293,000 gpd	7,050 gpd	1,770 gpd	0 gpd	1,500 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.433 cfs	0.011 cfs	0.003 cfs	0.000 cfs	0.002 cfs	0.000 cfs	0.000 cfs	0.469 cfs	1.331 cfs		
Tract 49104-03:											
North Jefferson											
Sewer Flow Factor	495 du	550,000 sf	5,000 sf	0 rooms	15,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	99,000 gpd	128,250 gpd	590 gpd	0 gpd	1,500 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.153 cfs	0.200 cfs	0.001 cfs	0.000 cfs	0.002 cfs	0.000 cfs	0.000 cfs	0.356 cfs	1.038 cfs		
Master Plan:											
West Jefferson											
Sewer Flow Factor	1,800 du	0 sf	20,000 sf	0 rooms	40,000 sf	1 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	360,000 gpd	0 gpd	2,360 gpd	0 gpd	4,000 gpd	2,060 gpd	0 gpd				
Total Ave. Flow (cfs)	0.557 cfs	0.000 cfs	0.004 cfs	0.000 cfs	0.006 cfs	0.003 cfs	0.000 cfs	0.570 cfs	1.587 cfs		
North Marina											
Sewer Flow Factor	1,410 du	125,000 sf	70,000 sf	450 rooms	4,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	282,000 gpd	29,375 gpd	8,260 gpd	67,500 gpd	400 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.435 cfs	0.045 cfs	0.013 cfs	0.104 cfs	0.001 cfs	0.000 cfs	0.000 cfs	0.600 cfs	1.662 cfs		
South Marina											
Sewer Flow Factor	1,166 du	0 sf	5,000 sf	0 rooms	10,000 sf	0 car wash	840 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	233,200 gpd	0 gpd	590 gpd	0 gpd	1,000 gpd	0 gpd	10,920 gpd				
Total Ave. Flow (cfs)	0.361 cfs	0.000 cfs	0.001 cfs	0.000 cfs	0.002 cfs	0.000 cfs	0.017 cfs	0.380 cfs	1.100 cfs		
North Culver											
Sewer Flow Factor	1,016 du	900,000 sf	130,000 sf	0 rooms	20,000 sf	1 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	203,200 gpd	211,500 gpd	16,340 gpd	0 gpd	2,000 gpd	2,060 gpd	0 gpd				
Total Ave. Flow (cfs)	0.314 cfs	0.327 cfs	0.024 cfs	0.000 cfs	0.003 cfs	0.003 cfs	0.000 cfs	0.672 cfs	1.841 cfs		
South Culver											
Sewer Flow Factor	1,016 du	0 sf	20,000 sf	0 rooms	10,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	203,200 gpd	0 gpd	2,360 gpd	0 gpd	1,000 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.314 cfs	0.000 cfs	0.004 cfs	0.000 cfs	0.002 cfs	0.000 cfs	0.000 cfs	0.320 cfs	0.940 cfs		
Village Center											
Sewer Flow Factor	1,421 du	200,000 sf	300,000 sf	300 rooms	52,500 sf	1 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	284,200 gpd	47,000 gpd	35,400 gpd	45,000 gpd	5,250 gpd	2,060 gpd	0 gpd				
Total Ave. Flow (cfs)	0.440 cfs	0.073 cfs	0.055 cfs	0.070 cfs	0.008 cfs	0.003 cfs	0.000 cfs	0.648 cfs	1.783 cfs		
East Park											
Sewer Flow Factor	1,340 du	30,000 sf	15,000 sf	0 rooms	10,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	266,000 gpd	7,080 gpd	1,770 gpd	0 gpd	1,000 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.415 cfs	0.011 cfs	0.003 cfs	0.000 cfs	0.002 cfs	0.000 cfs	0.000 cfs	0.430 cfs	1.230 cfs		
West Campus											
Sewer Flow Factor	441 du	3,170,000 sf	10,000 sf	300 rooms	62,500 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	88,200 gpd	744,950 gpd	1,180 gpd	45,000 gpd	6,250 gpd	0 gpd	0 gpd				
Total Ave. Flow (cfs)	0.136 cfs	1.153 cfs	0.002 cfs	0.070 cfs	0.010 cfs	0.000 cfs	0.000 cfs	1.370 cfs	3.511 cfs		
East Campus											
Sewer Flow Factor	0 du	0 sf	0 sf	0 rooms	200,000 sf	0 car wash	0 slips				
Total Ave. Flow (gpd)	200 gpd/unit	235 gpd/1000 sf	118 gpd/1000 sf	150 gpd/room	100 gpd/1000 sf	2060 gpd/car wash	13 gpd/slip				
Total Ave. Flow (cfs)	0.000 cfs	0.000 cfs	0.000 cfs	0.000 cfs	0.031 cfs	0.000 cfs	0.000 cfs	0.031 cfs	0.114 cfs		
Total Ave. Flow (cfs)	13,085 cfs	9,025,000 sf	595,000 sf	1,050 rooms	579,000 sf	3 car washes	840 slips	6.345 cfs	14.053 cfs		

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
A. TRACT 49104-01 ONSITE SEWER SYSTEM

TRACT 49104-01 LOT NO.	MASTER PLAN LOT NO.	LOT DATA										LOT DENSITY DATA										CIVIC/COMMUNITY	
		Proposed Land Use	LOT GROSS AREA From Tract Map	LOT GROSS AREA From Tract Map	PERCENT OF MASTER PLAN LOT	Prop. Max. Lot Coverage	PROP. MAX LOT COVERAGE AREA	RESIDENTIAL		RETAIL		OFFICE		PROP. No. Building Stories	PROP MAX. CIVIC/COMM. AREA								
								Prop. Max. Dwelling Units Per Acre	PROP. MAX DWELLING UNITS	Prop. Max. Allow. Retail Area Per Master Plan Lot	Prop. Max. Retail Area Per Tract Lot	Prop. Max. Allow. Office Area Per Master Plan Lot	Prop. Max. Office Area Per Tract Lot										
PROJECTED FLOW CALCULATIONS ONSITE SEWER SYSTEM																							
1	65	Med. Res./Comm.	25,654 sf	0.59 ac	100.0%	55%	14,110 sf	55 du/ac	33 du	10,000 sf	10,000 sf	10,000 sf	15,000 sf	15,000 sf	14,110 sf	N/A	0 sf						
2	82	Open Space	63,455 sf	1.48 ac	100.0%	25%	15,864 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	2 stories	31,728 sf						
3	79	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
4	79	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	15,000 sf	15,000 sf	6,012 sf	N/A	0 sf						
5	79	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
6	76	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
7	76	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	15,000 sf	15,000 sf	6,012 sf	N/A	0 sf						
8	76	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
9	61	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
10	61	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	15,000 sf	15,000 sf	6,012 sf	N/A	0 sf						
11	61	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
12	82	Med. Res./Comm.	18,240 sf	0.42 ac	100.0%	55%	10,032 sf	55 du/ac	24 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
13	60	Med.-Low Res.	18,240 sf	0.42 ac	44.2%	50%	9,120 sf	40 du/ac	24 du	10,000 sf	10,000 sf	10,000 sf	15,000 sf	15,000 sf	10,032 sf	N/A	0 sf						
14	60	Med.-Low Res.	22,992 sf	0.53 ac	55.8%	50%	11,496 sf	40 du/ac	22 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
15	63	Med.-Low Res.	19,923 sf	0.46 ac	100.0%	50%	9,962 sf	40 du/ac	19 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
16	64	Med. Res./Comm.	25,654 sf	0.59 ac	100.0%	55%	14,110 sf	55 du/ac	33 du	10,000 sf	10,000 sf	10,000 sf	15,000 sf	15,000 sf	14,110 sf	N/A	0 sf						
17	59	Med.-Low Res.	42,146 sf	0.97 ac	100.0%	50%	21,073 sf	40 du/ac	39 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
18	58	Med.-Low Res.	10,278 sf	0.24 ac	25.4%	50%	5,139 sf	40 du/ac	10 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
19	58	Med.-Low Res.	17,095 sf	0.39 ac	42.2%	50%	8,543 sf	40 du/ac	16 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
20	58	Med.-Low Res.	13,138 sf	0.30 ac	32.4%	50%	6,568 sf	40 du/ac	13 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
21	52	Open Space	26,072 sf	0.60 ac	100.0%	25%	6,519 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
22	53	Med.-Low Res.	13,072 sf	0.30 ac	100.0%	50%	6,536 sf	40 du/ac	13 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
23	54	Med.-Low Res.	13,072 sf	0.30 ac	100.0%	50%	6,536 sf	40 du/ac	13 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
24	56	Med.-Low Res.	18,240 sf	0.42 ac	50.0%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
25	55	Med.-Low Res.	18,240 sf	0.42 ac	50.0%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
26	55	Med.-Low Res.	18,240 sf	0.42 ac	50.0%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
27	58	Med.-Low Res.	18,240 sf	0.42 ac	50.0%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
28	57	Med.-Hi Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
29	57	Med.-Hi Res./Comm.	18,098 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	15,000 sf	15,000 sf	6,012 sf	N/A	0 sf						
30	57	Med.-Hi Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
31	73	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
32	73	Med. Res./Comm.	18,098 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	15,000 sf	15,000 sf	6,012 sf	N/A	0 sf						
33	73	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	15,000 sf	15,000 sf	4,494 sf	N/A	0 sf						
34	49	Open Space	36,068 sf	0.83 ac	100.0%	25%	9,022 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
35	48	Community Servicing	58,645 sf	1.35 ac	100.0%	50%	29,323 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
36	47	Open Space	36,068 sf	0.83 ac	100.0%	25%	9,022 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	16,043 sf						
37	46	Medium Residential	31,825 sf	0.73 ac	58.6%	55%	17,558 sf	55 du/ac	41 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	117,299 sf						
38	46	Medium Residential	22,555 sf	0.52 ac	41.4%	55%	12,405 sf	55 du/ac	29 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	16,045 sf						
39	45	Medium Residential	19,468 sf	0.45 ac	43.2%	55%	10,707 sf	55 du/ac	25 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
40	45	Medium Residential	25,595 sf	0.59 ac	56.8%	55%	14,078 sf	55 du/ac	33 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
41	41	Open Space	14,669 sf	0.34 ac	100.0%	25%	3,667 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						
42	42	Med.-Hi Res./Comm.	23,564 sf	0.54 ac	100.0%	55%	12,960 sf	80 du/ac	44 du	5,000 sf	5,000 sf	5,000 sf	7,500 sf	7,500 sf	7,500 sf	N/A	7,335 sf						
43	44	Med.-High Res.	17,086 sf	0.39 ac	100.0%	55%	8,397 sf	80 du/ac	32 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf						

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
A. TRACT 49104-01 ONSITE SEWER SYSTEM

TRACT 49104-01 LOT NO.	MASTER PLAN LOT NO.	Proposed Land Use	LOT DATA				LOT DENSITY DATA											
			LOT GROSS AREA From Tract Map	LOT GROSS AREA From Tract Map	PERCENT OF MASTER PLAN LOT	PROP. MAX. LOT Coverage	PROP. MAX. LOT COVERAGE AREA	RESIDENTIAL		RETAIL				OFFICE		CIVIC/COMMUNITY		
								Prop. Max. Dwelling Units Per Acre	PROP. MAX. DWELLING UNITS	Prop. Max. Allow. Retail Area Per Master Plan Lot	Prop. Max. Allow. Retail Area Per Tract Lot	PROP. MAX. RETAIL AREA	PROP. MAX. RETAIL AREA FOR FLOW CALC.	Prop. Max. Allow. Office Area Per Master Plan Lot	Prop. Max. Allow. Office Area Per Tract Lot	PROP. MAX. OFFICE AREA	Prop. No. Building Stories	PROP. MAX. CIVIC/COMM. AREA
PROJECTED FLOW CALCULATIONS ONSITE SEWER SYSTEM																		
44	43	Med.-Hi Res./Comm.	22,992 sf	0.53 ac	100.0%	55%	12,846 sf	80 du/ac	43 du	5,000 sf	5,000 sf	5,000 sf	2,646 sf	10,000 sf	10,000 sf	10,000 sf	N/A	0 sf
45	37	Open Space	11,463 sf	0.26 ac	100.0%	25%	2,866 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	5,732 sf
46	23	Community Servicing	18,438 sf	0.42 ac	100.0%	50%	9,219 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	27,657 sf
47	22	Med.-High Res.	18,375 sf	0.42 ac	50.1%	55%	10,106 sf	80 du/ac	34 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
48	22	Med.-High Res.	19,311 sf	0.42 ac	49.9%	55%	10,071 sf	80 du/ac	34 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
49	21	Med.-High Res.	18,247 sf	0.42 ac	34.0%	55%	10,038 sf	80 du/ac	34 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
50	21	Med.-High Res.	17,891 sf	0.41 ac	33.3%	55%	9,840 sf	80 du/ac	33 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
51	21	Med.-High Res.	17,545 sf	0.40 ac	32.7%	55%	9,650 sf	80 du/ac	33 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
52	20	Med.-High Res.	46,789 sf	1.07 ac	100.0%	55%	25,734 sf	80 du/ac	86 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
53	19	Med.-High Res.	25,139 sf	0.58 ac	100.0%	55%	13,826 sf	80 du/ac	47 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
54	19	Med.-High Res.	79,769 sf	1.83 ac	100.0%	55%	43,873 sf	80 du/ac	147 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
55	17	Med.-High Res.	28,026 sf	0.60 ac	34.8%	55%	14,314 sf	80 du/ac	48 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
56	17	Med.-High Res.	24,819 sf	0.57 ac	33.3%	55%	13,650 sf	80 du/ac	48 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
57	17	Med.-High Res.	23,627 sf	0.54 ac	31.7%	55%	12,995 sf	80 du/ac	44 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
58	16	Med.-High Res.	21,090 sf	0.48 ac	100.0%	55%	11,600 sf	80 du/ac	39 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
59	15	Med.-High Res.	22,992 sf	0.53 ac	100.0%	55%	12,646 sf	80 du/ac	43 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
60	14	Open Space	40,465 sf	0.93 ac	100.0%	25%	10,116 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
TOTALS			1,374,765 sf	31.56 ac			671,630 sf		1,536 du	199,000 sf	90,090 sf	90,090 sf	57,646 sf	287,500 sf	137,500 sf	130,751 sf	N/A	202,333 sf
																	N/A	259,099 sf

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
A. TRACT 49104-01 ONSITE SEWER SYSTEM

TRACT 49104-01 LOT NO.	MASTER PLAN LOT NO.	SEWERFLOW DATA				TOTAL AVE. FLOW PER LOT
		RESIDENTIAL	RETAIL	OFFICE	CIVIC/COMM.	
		Ave. Daily Flow- Residential (200 gpd/du)	Ave. Daily Flow- Retail (118 gpd/1000 sf)	Ave. Daily Flow- Office (235 gpd/1000 sf)	Ave. Daily Flow- Civic/Community (100 gpd/1000 sf)	Total Ave. Flow Per Lot
PROJECTED FLOW ONSITE SEWER SYSTEM						
1	65	6,578 gpd	0 gpd	3,318 gpd	0 gpd	9,894 gpd
2	82	0 gpd	0 gpd	0 gpd	3,173 gpd	3,173 gpd
3	79	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
4	79	4,619 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd
5	79	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
6	78	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
7	78	4,619 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd
8	78	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
9	61	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
10	61	4,619 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd
11	61	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
12	82	4,706 gpd	0 gpd	2,358 gpd	0 gpd	7,064 gpd
13	80	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd
14	80	4,323 gpd	0 gpd	0 gpd	0 gpd	4,323 gpd
15	83	3,759 gpd	0 gpd	0 gpd	0 gpd	3,759 gpd
16	64	6,578 gpd	0 gpd	3,318 gpd	0 gpd	9,894 gpd
17	59	7,840 gpd	0 gpd	0 gpd	0 gpd	7,840 gpd
18	58	1,968 gpd	0 gpd	0 gpd	0 gpd	1,968 gpd
19	58	3,238 gpd	0 gpd	0 gpd	0 gpd	3,238 gpd
20	58	2,512 gpd	0 gpd	0 gpd	0 gpd	2,512 gpd
21	52	0 gpd	0 gpd	0 gpd	1,304 gpd	1,304 gpd
22	53	2,501 gpd	0 gpd	0 gpd	0 gpd	2,501 gpd
23	54	2,501 gpd	0 gpd	0 gpd	0 gpd	2,501 gpd
24	58	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd
25	55	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd
26	55	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd
27	56	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd
28	57	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
29	57	4,619 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd
30	57	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
31	73	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
32	73	4,619 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd
33	73	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd
34	49	0 gpd	0 gpd	0 gpd	1,804 gpd	1,804 gpd
35	48	0 gpd	0 gpd	0 gpd	11,729 gpd	11,729 gpd
36	47	0 gpd	0 gpd	0 gpd	1,804 gpd	1,804 gpd
37	46	8,162 gpd	0 gpd	0 gpd	0 gpd	8,162 gpd
38	46	5,796 gpd	0 gpd	0 gpd	0 gpd	5,796 gpd
39	45	5,016 gpd	0 gpd	0 gpd	0 gpd	5,016 gpd
40	45	6,564 gpd	0 gpd	0 gpd	0 gpd	6,564 gpd
41	41	0 gpd	0 gpd	0 gpd	733 gpd	733 gpd
42	42	8,755 gpd	590 gpd	1,763 gpd	0 gpd	11,108 gpd
43	44	6,378 gpd	0 gpd	0 gpd	0 gpd	6,378 gpd

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
A. TRACT 49104-01 ONSITE SEWER SYSTEM

TRACT 49104-01 LOT NO.	MASTER PLAN LOT NO.	SEWER FLOW DATA				Total Ave. Flow Per Lot	TOTAL AVE. FLOW PER LOT
		RESIDENTIAL	RETAIL	OFFICE	CIVIC/COMM.		
		Ave. Daily Flow- Residential (200 gpd/du)	Ave. Daily Flow- Retail (118 gpd/1000 sf)	Ave. Daily Flow- Office (235 gpd/1000 sf)	Ave. Daily Flow- Civic/Community (100 gpd/1000 sf)		
PROJECTED FLOW ONSITE SEWER SYSTEM							
44	43	6,545 gpd	312 gpd	2,350 gpd	0 gpd	11,207 gpd	0.017 cfs
45	37	0 gpd	0 gpd	0 gpd	573 gpd	573 gpd	0.001 cfs
46	23	0 gpd	0 gpd	0 gpd	2,766 gpd	2,766 gpd	0.004 cfs
47	22	6,849 gpd	0 gpd	0 gpd	0 gpd	6,849 gpd	0.011 cfs
48	22	6,826 gpd	0 gpd	0 gpd	0 gpd	6,826 gpd	0.011 cfs
49	21	6,802 gpd	0 gpd	0 gpd	0 gpd	6,802 gpd	0.011 cfs
50	21	6,672 gpd	0 gpd	0 gpd	0 gpd	6,672 gpd	0.010 cfs
51	21	6,544 gpd	0 gpd	0 gpd	0 gpd	6,544 gpd	0.010 cfs
52	20	17,286 gpd	0 gpd	0 gpd	0 gpd	17,286 gpd	0.027 cfs
53	19	9,334 gpd	0 gpd	0 gpd	0 gpd	9,334 gpd	0.014 cfs
54	18	29,400 gpd	0 gpd	0 gpd	0 gpd	29,400 gpd	0.045 cfs
55	17	8,680 gpd	0 gpd	0 gpd	0 gpd	8,680 gpd	0.013 cfs
56	17	9,216 gpd	0 gpd	0 gpd	0 gpd	9,216 gpd	0.014 cfs
57	17	8,778 gpd	0 gpd	0 gpd	0 gpd	8,778 gpd	0.013 cfs
58	18	7,847 gpd	0 gpd	0 gpd	0 gpd	7,847 gpd	0.012 cfs
59	15	8,545 gpd	0 gpd	0 gpd	0 gpd	8,545 gpd	0.013 cfs
60	14	0 gpd	0 gpd	0 gpd	2,023 gpd	2,023 gpd	0.003 cfs
TOTALS		307,115 gpd	8,802 gpd	30,727 gpd	25,910 gpd	370,553 gpd	0.573 cfs

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
B. TRACT 49104-02 ONSITE SEWER SYSTEM

TRACT 49104-02 LOT NO.	MASTER PLAN LOT NO.	LOT DATA				LOT DENSITY DATA										CIVIC/COMMUNITY		
		Proposed Land Use	LOT GROSS AREA From Tract Map	LOT GROSS AREA Map	PERCENT OF MASTER PLAN LOT	Prop. Max. Lot Coverage	PROP. MAX LOT COVERAGE AREA	RESIDENTIAL			RETAIL			OFFICE			Prop. No. Building Stories	PROP MAX CIVIC/COMM. AREA
								Prop. Max. Dwelling Units Per Acre	PROP. MAX DWELLING UNITS	Prop. Max. Allow. Retail Area Per Master Plan Lot	Prop. Max. Allow. Retail Area Per Tract Lot	PROP. MAX. RETAIL AREA	PROP MAX. RETAIL AREA FOR FLOW CALC.	Prop. Max. Allow. Office Area Per Master Plan Lot	Prop. Max. Allow. Office Area Per Tract Lot	PROP MAX. OFFICE AREA		
PROJECTED FLOW CALCULATIONS ONSITE SEWER SYSTEM																		
1	69	Open Space	22,615 sf	0.52 ac	100.0%	25%	5,654 sf	0 du/ac	1 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
2	70	Med.-Low Res.	12,432 sf	0.29 ac	100.0%	50%	6,218 sf	40 du/ac	0 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	2 stories	12,432 sf
3	71	Med.-Low Res.	12,432 sf	0.29 ac	100.0%	50%	6,218 sf	40 du/ac	12 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
4	72	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
5	72	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	4,008 sf	15,000 sf	6,012 sf	6,012 sf	N/A	0 sf
6	72	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
7	87	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
8	87	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	4,008 sf	15,000 sf	6,012 sf	6,012 sf	N/A	0 sf
9	87	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
10	89	Medium Residential	18,240 sf	0.42 ac	33.8%	50%	9,120 sf	55 du/ac	24 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
11	89	Medium Residential	20,480 sf	0.47 ac	37.9%	50%	10,240 sf	55 du/ac	26 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
12	89	Medium Residential	15,312 sf	0.35 ac	28.3%	50%	7,656 sf	55 du/ac	20 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
13	89	Med.-Low Res.	15,312 sf	0.35 ac	28.3%	50%	7,656 sf	40 du/ac	15 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
14	89	Med.-Low Res.	20,480 sf	0.47 ac	37.9%	50%	10,240 sf	40 du/ac	19 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
15	89	Med.-Low Res.	18,240 sf	0.42 ac	33.8%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
16	86	Med.-Low Res.	18,240 sf	0.42 ac	33.8%	50%	9,120 sf	40 du/ac	17 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
17	86	Med.-Low Res.	20,480 sf	0.47 ac	37.9%	50%	10,240 sf	40 du/ac	19 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
18	86	Med.-Low Res.	15,312 sf	0.35 ac	28.3%	50%	7,656 sf	40 du/ac	15 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
19	85	Med.-Low Res.	15,312 sf	0.35 ac	28.3%	50%	7,656 sf	40 du/ac	15 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
20	85	Med.-Low Res.	20,480 sf	0.47 ac	37.9%	50%	10,240 sf	40 du/ac	19 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
21	84	Med. Res./Comm.	18,240 sf	0.42 ac	100.0%	55%	10,032 sf	55 du/ac	0 du	10,000 sf	10,000 sf	10,000 sf	10,000 sf	15,000 sf	15,000 sf	10,032 sf	2 stories	20,064 sf
22	83	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
23	83	Med. Res./Comm.	18,688 sf	0.43 ac	40.1%	55%	10,278 sf	55 du/ac	24 du	10,000 sf	4,008 sf	4,008 sf	4,008 sf	15,000 sf	6,012 sf	6,012 sf	N/A	0 sf
24	83	Med. Res./Comm.	13,968 sf	0.32 ac	30.0%	55%	7,682 sf	55 du/ac	18 du	10,000 sf	2,996 sf	2,996 sf	2,996 sf	15,000 sf	4,494 sf	4,494 sf	N/A	0 sf
25	68	Med. Res./Comm.	16,799 sf	0.39 ac	31.6%	55%	9,239 sf	55 du/ac	22 du	10,000 sf	3,183 sf	3,183 sf	3,183 sf	15,000 sf	4,745 sf	4,745 sf	N/A	0 sf
26	68	Med. Res./Comm.	22,147 sf	0.51 ac	41.7%	55%	12,181 sf	55 du/ac	28 du	10,000 sf	4,170 sf	4,170 sf	4,170 sf	15,000 sf	6,256 sf	6,256 sf	N/A	0 sf
27	68	Med. Res./Comm.	14,180 sf	0.33 ac	28.7%	55%	7,788 sf	55 du/ac	18 du	10,000 sf	2,666 sf	2,666 sf	2,666 sf	15,000 sf	4,000 sf	4,000 sf	N/A	0 sf
28	67	Med.-Low Res.	41,771 sf	0.98 ac	100.0%	50%	20,868 sf	40 du/ac	39 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
29	68	Med.-Low Res.	9,870 sf	0.23 ac	25.6%	50%	4,935 sf	40 du/ac	10 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
30	68	Med.-Low Res.	16,312 sf	0.37 ac	42.3%	50%	8,158 sf	40 du/ac	15 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
31	69	Med.-Low Res.	12,287 sf	0.28 ac	32.1%	50%	6,194 sf	40 du/ac	12 du	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	0 sf	N/A	0 sf
TOTALS			536,925 sf	12.33 ac			273,378 sf		544 du	138,000 sf	50,000 sf	50,000 sf	40,000 sf	195,000 sf	75,000 sf	70,032 sf		32,496 sf

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
B. TRACT 49104-02 ONSITE SEWER SYSTEM

TRACT MASTER PLAN LOT NO.	SEWER FLOW DATA					TOTAL AVE. FLOW PER LOT
	RESIDENTIAL	RETAIL	OFFICE	CIVIC/COMM.	Total Ave. Flow Per Lot	
	Ave. Daily Flow-Residential (200 gpd/lot)	Ave. Daily Flow-Retail (118 gpd/1000 sf)	Ave. Daily Flow-Office (235 gpd/1000 sf)	Ave. Daily Flow-Civic/Community (100 gpd/1000 sf)		
PROJECTED FLOW ONSITE SEWER SYSTEM						
1	100 gpd	0 gpd	0 gpd	0 gpd	100 gpd	0.000 cfs
2	0 gpd	0 gpd	0 gpd	1,243 gpd	1,243 gpd	0.002 cfs
3	2,383 gpd	0 gpd	0 gpd	0 gpd	2,383 gpd	0.004 cfs
4	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
5	4,819 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd	0.010 cfs
6	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
7	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
8	4,819 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd	0.010 cfs
9	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
10	4,708 gpd	0 gpd	0 gpd	0 gpd	4,708 gpd	0.007 cfs
11	5,272 gpd	0 gpd	0 gpd	0 gpd	5,272 gpd	0.008 cfs
12	3,967 gpd	0 gpd	0 gpd	0 gpd	3,967 gpd	0.006 cfs
13	2,912 gpd	0 gpd	0 gpd	0 gpd	2,912 gpd	0.005 cfs
14	3,861 gpd	0 gpd	0 gpd	0 gpd	3,861 gpd	0.006 cfs
15	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd	0.005 cfs
16	3,450 gpd	0 gpd	0 gpd	0 gpd	3,450 gpd	0.005 cfs
17	3,861 gpd	0 gpd	0 gpd	0 gpd	3,861 gpd	0.006 cfs
18	2,912 gpd	0 gpd	0 gpd	0 gpd	2,912 gpd	0.005 cfs
19	2,912 gpd	0 gpd	0 gpd	0 gpd	2,912 gpd	0.005 cfs
20	3,861 gpd	0 gpd	0 gpd	0 gpd	3,861 gpd	0.006 cfs
21	0 gpd	0 gpd	2,359 gpd	2,006 gpd	4,364 gpd	0.007 cfs
22	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
23	4,819 gpd	473 gpd	1,413 gpd	0 gpd	6,705 gpd	0.010 cfs
24	3,627 gpd	354 gpd	1,056 gpd	0 gpd	5,037 gpd	0.008 cfs
25	4,342 gpd	373 gpd	1,115 gpd	0 gpd	5,831 gpd	0.009 cfs
26	5,693 gpd	492 gpd	1,470 gpd	0 gpd	7,655 gpd	0.012 cfs
27	3,676 gpd	315 gpd	940 gpd	0 gpd	4,930 gpd	0.006 cfs
28	7,771 gpd	0 gpd	0 gpd	0 gpd	7,771 gpd	0.012 cfs
29	1,913 gpd	0 gpd	0 gpd	0 gpd	1,913 gpd	0.003 cfs
30	3,096 gpd	0 gpd	0 gpd	0 gpd	3,096 gpd	0.005 cfs
31	2,375 gpd	0 gpd	0 gpd	0 gpd	2,375 gpd	0.004 cfs
TOTALS	106,734 gpd	4,720 gpd	16,458 gpd	3,250 gpd	133,161 gpd	0.206 cfs

**TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
C. MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY**

MASTER PLAN LOT NO.	Proposed Land Use	LOT DATA			LOT DENSITY DATA						
		LOT GROSS AREA From Master Plan	LOT GROSS AREA From Master Plan	Prop. Max. Lot Coverage	Prop. Max. Coverage Area	Prop. Max. Dwelling Units Per Acre	RESIDENTIAL	PROPR. MAX. RETAIL AREA	PROPR. MAX. RETAIL AREA FOR FLOW CALC.	OFFICE	CIVIC/COMMUNITY
PROJECTED FLOW CALCULATIONS MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY											
1	Office/Comm.	70,822 sf	1.63 ac	60%	42,493 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
2	Office/Comm.	57,559 sf	1.32 ac	60%	34,535 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
3	Office/Comm.	84,887 sf	1.95 ac	60%	50,932 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
4	Open Space	48,895 sf	1.12 ac	25%	12,171 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
5	Community Servicing	34,329 sf	0.79 ac	50%	17,165 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
6	Office/Comm.	96,590 sf	2.22 ac	60%	57,954 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
7	Office/Comm.	72,854 sf	1.67 ac	60%	43,712 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
8	Office/Comm.	94,945 sf	2.18 ac	60%	56,967 sf	0 du/ac	0 du	5,000 sf	5,000 sf	0 sf	N/A
9	Med.-High Res.	148,815 sf	3.42 ac	55%	81,648 sf	80 du/ac	270 du	0 sf	0 sf	0 sf	N/A
10	Med.-High Res.	33,162 sf	0.76 ac	55%	18,250 sf	80 du/ac	60 du	0 sf	0 sf	0 sf	N/A
11	Med.-High Res.	27,997 sf	0.64 ac	55%	15,398 sf	80 du/ac	51 du	0 sf	0 sf	0 sf	N/A
12	Med.-High Res.	65,028 sf	1.51 ac	55%	36,095 sf	80 du/ac	121 du	0 sf	0 sf	0 sf	N/A
13	Medium Residential	178,362 sf	4.05 ac	55%	96,988 sf	55 du/ac	218 du	0 sf	0 sf	0 sf	N/A
24	Med.-High Res.	59,280 sf	1.36 ac	55%	32,604 sf	80 du/ac	108 du	0 sf	0 sf	0 sf	N/A
25	Open Space	14,023 sf	0.32 ac	25%	3,506 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
26	Med.-High Res.	60,232 sf	1.38 ac	55%	33,128 sf	80 du/ac	110 du	0 sf	0 sf	0 sf	N/A
27	Open Space	14,211 sf	0.33 ac	25%	3,553 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
28	Med.-High Res.	38,070 sf	0.87 ac	55%	20,939 sf	80 du/ac	69 du	0 sf	0 sf	0 sf	N/A
29	Med.-High Res.	54,581 sf	1.25 ac	55%	30,020 sf	80 du/ac	100 du	0 sf	0 sf	0 sf	N/A
30	Open Space	17,640 sf	0.40 ac	25%	4,410 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
31	Med.-High Res.	26,336 sf	0.60 ac	55%	14,485 sf	80 du/ac	48 du	0 sf	0 sf	0 sf	N/A
32	Med.-High Res.	87,182 sf	1.94 ac	55%	50,932 sf	80 du/ac	123 du	0 sf	0 sf	0 sf	N/A
33	Med.-High Res.	22,854 sf	0.53 ac	55%	12,625 sf	80 du/ac	42 du	0 sf	0 sf	0 sf	N/A
34	Med.-High Res.	20,652 sf	0.47 ac	55%	11,359 sf	80 du/ac	37 du	0 sf	0 sf	0 sf	N/A
35	Open Space	10,708 sf	0.25 ac	25%	2,677 sf	0 du/ac	0 du	0 sf	0 sf	0 sf	N/A
36	Med.-Hi Res./Comm.	17,138 sf	0.39 ac	55%	9,425 sf	80 du/ac	31 du	5,000 sf	4,425 sf	5,000 sf	N/A
38	Med.-Hi Res./Comm.	22,954 sf	0.53 ac	55%	12,625 sf	80 du/ac	42 du	5,000 sf	2,625 sf	10,000 sf	N/A
39	Med.-High Res.	17,089 sf	0.39 ac	55%	9,399 sf	80 du/ac	31 du	0 sf	0 sf	0 sf	N/A
40	Med.-Hi Res./Comm.	23,568 sf	0.54 ac	55%	12,982 sf	80 du/ac	43 du	5,000 sf	5,000 sf	7,500 sf	N/A
50	Medium Residential	32,408 sf	0.74 ac	55%	17,623 sf	55 du/ac	40 du	0 sf	0 sf	0 sf	N/A
51	Medium Residential	29,776 sf	0.68 ac	55%	16,377 sf	55 du/ac	37 du	0 sf	0 sf	0 sf	N/A
74	Medium Residential	15,274 sf	0.35 ac	50%	7,637 sf	55 du/ac	19 du	0 sf	0 sf	0 sf	N/A
75	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
77	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
78	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
80	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
81	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
90	Medium Residential	33,194 sf	0.76 ac	50%	16,587 sf	55 du/ac	41 du	0 sf	0 sf	0 sf	N/A
91	Medium Residential	24,900 sf	0.57 ac	50%	12,480 sf	55 du/ac	31 du	0 sf	0 sf	0 sf	N/A
92	Medium Residential	29,508 sf	0.68 ac	50%	14,753 sf	55 du/ac	37 du	0 sf	0 sf	0 sf	N/A
93	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	0 sf	N/A
94	Med.-Low Res.	26,272 sf	0.65 ac	50%	14,136 sf	40 du/ac	26 du	0 sf	0 sf	0 sf	N/A
95	Med.-Low Res.	45,555 sf	1.05 ac	50%	22,778 sf	40 du/ac	42 du	0 sf	0 sf	0 sf	N/A

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
C. MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY

MASTER PLAN LOT NO.	LOT DATA				LOT DENSITY DATA						
	Proposed Land Use	LOT GROSS AREA From Master Plan	LOT GROSS AREA From Master Plan	Prop. Max. Lot Coverage	PROP. MAX LOT COVERAGE AREA	RESIDENTIAL		RETAIL		CIVIC/COMMUNITY	
						Prop. Max. Dwelling Units Per Acre	PROP. MAX DWELLING UNITS	PROP. MAX. RETAIL AREA	PROP MAX. RETAIL AREA FOR FLOW CALC.		
PROJECTED FLOW CALCULATIONS MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY											
96	Open Space	7,046 sf	0.16 ac	25%	1,762 sf	0 du/ac	0 du	0 sf	0 sf	N/A	3,523 sf
97	Med.-Low Res.	15,274 sf	0.35 ac	50%	7,637 sf	40 du/ac	14 du	0 sf	0 sf	N/A	0 sf
98	Med.-Low Res.	28,272 sf	0.65 ac	50%	14,136 sf	40 du/ac	28 du	0 sf	0 sf	N/A	0 sf
99	Med.-Low Res.	55,803 sf	1.29 ac	50%	27,902 sf	40 du/ac	51 du	0 sf	0 sf	N/A	0 sf
100	Med.-Low Res.	47,723 sf	1.10 ac	50%	23,862 sf	40 du/ac	44 du	0 sf	0 sf	N/A	0 sf
101	Med.-Low Res.	42,854 sf	0.98 ac	50%	21,427 sf	40 du/ac	39 du	0 sf	0 sf	N/A	0 sf
102	Med.-Low Res.	36,496 sf	0.84 ac	50%	18,243 sf	40 du/ac	33 du	0 sf	0 sf	N/A	0 sf
103	Med.-Low Res.	29,565 sf	0.68 ac	50%	14,783 sf	40 du/ac	27 du	0 sf	0 sf	N/A	0 sf
104	Open Space	17,332 sf	0.40 ac	25%	4,333 sf	0 du/ac	0 du	0 sf	0 sf	N/A	0 sf
105	Med.-Low Res.	24,932 sf	0.57 ac	50%	12,466 sf	40 du/ac	22 du	0 sf	0 sf	N/A	8,868 sf
106	Medium Residential	24,912 sf	0.57 ac	50%	12,458 sf	55 du/ac	31 du	0 sf	0 sf	N/A	0 sf
107	Community Serving	148,286 sf	3.40 ac	50%	74,143 sf	0 du/ac	0 du	0 sf	0 sf	N/A	0 sf
108	Open Space	255,588 sf	5.87 ac	25%	63,897 sf	0 du/ac	0 du	0 sf	0 sf	N/A	222,429 sf
109	Community Serving	174,299 sf	4.00 ac	50%	87,150 sf	0 du/ac	0 du	0 sf	0 sf	N/A	127,794 sf
110	Open Space	58,588 sf	1.34 ac	25%	14,647 sf	0 du/ac	0 du	0 sf	0 sf	N/A	281,449 sf
TOTALS		2,796,826 sf	64.21 ac		1,382,431 sf		2,148 du	45,000 sf	42,050 sf	N/A	1,903,662 sf

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
C. MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY

MASTER PLAN LOT NO.	SEWER FLOW DATA					TOTAL AVE. FLOW PER LOT
	RESIDENTIAL	RETAIL	OFFICE	CIVIC/COMM.	Total Ave. Flow Per Lot	
	Ave. Daily Flow- Residential (200 gpd/du)	Ave. Daily Flow- Retail (118 gpd/1080 sq)	Ave. Daily Flow- Office (235 gpd/1000 sq)	Ave. Daily Flow- Civic/Community (180 gpd/1000 sq)		
PROJECTED FLOW MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY						
1	0 gpd	580 gpd	0 gpd	16,597 gpd	17,597 gpd	0.027 cfs
2	0 gpd	580 gpd	0 gpd	13,814 gpd	14,404 gpd	0.022 cfs
3	0 gpd	580 gpd	0 gpd	20,963 gpd	20,963 gpd	0.032 cfs
4	0 gpd	0 gpd	0 gpd	2,435 gpd	2,435 gpd	0.004 cfs
5	0 gpd	0 gpd	0 gpd	5,149 gpd	5,149 gpd	0.008 cfs
6	0 gpd	580 gpd	0 gpd	23,182 gpd	23,772 gpd	0.037 cfs
7	0 gpd	580 gpd	0 gpd	17,485 gpd	18,075 gpd	0.028 cfs
8	0 gpd	580 gpd	0 gpd	22,787 gpd	23,377 gpd	0.036 cfs
9	54,000 gpd	0 gpd	0 gpd	0 gpd	54,000 gpd	0.084 cfs
10	12,000 gpd	0 gpd	0 gpd	0 gpd	12,000 gpd	0.019 cfs
11	10,200 gpd	0 gpd	0 gpd	0 gpd	10,200 gpd	0.016 cfs
12	24,200 gpd	0 gpd	0 gpd	0 gpd	24,200 gpd	0.037 cfs
13	43,600 gpd	0 gpd	0 gpd	0 gpd	43,600 gpd	0.067 cfs
24	21,600 gpd	0 gpd	0 gpd	0 gpd	21,600 gpd	0.033 cfs
25	0 gpd	0 gpd	0 gpd	701 gpd	701 gpd	0.001 cfs
26	22,000 gpd	0 gpd	0 gpd	0 gpd	22,000 gpd	0.034 cfs
27	0 gpd	0 gpd	0 gpd	711 gpd	711 gpd	0.001 cfs
28	13,600 gpd	0 gpd	0 gpd	0 gpd	13,600 gpd	0.021 cfs
29	20,000 gpd	0 gpd	0 gpd	0 gpd	20,000 gpd	0.031 cfs
30	0 gpd	0 gpd	0 gpd	862 gpd	862 gpd	0.001 cfs
31	9,600 gpd	0 gpd	0 gpd	0 gpd	9,600 gpd	0.015 cfs
32	24,600 gpd	0 gpd	0 gpd	0 gpd	24,600 gpd	0.038 cfs
33	8,400 gpd	0 gpd	0 gpd	0 gpd	8,400 gpd	0.013 cfs
34	7,400 gpd	0 gpd	0 gpd	0 gpd	7,400 gpd	0.011 cfs
35	0 gpd	0 gpd	0 gpd	535 gpd	535 gpd	0.001 cfs
36	6,200 gpd	522 gpd	1,175 gpd	0 gpd	7,897 gpd	0.012 cfs
38	8,400 gpd	310 gpd	2,350 gpd	0 gpd	11,060 gpd	0.017 cfs
39	6,200 gpd	0 gpd	0 gpd	0 gpd	6,200 gpd	0.010 cfs
40	6,800 gpd	580 gpd	1,763 gpd	0 gpd	9,143 gpd	0.013 cfs
50	8,000 gpd	0 gpd	0 gpd	0 gpd	8,000 gpd	0.012 cfs
51	7,400 gpd	0 gpd	0 gpd	0 gpd	7,400 gpd	0.011 cfs
74	3,800 gpd	0 gpd	0 gpd	0 gpd	3,800 gpd	0.006 cfs
75	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
77	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
78	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
80	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
81	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
90	8,200 gpd	0 gpd	0 gpd	0 gpd	8,200 gpd	0.013 cfs
91	6,200 gpd	0 gpd	0 gpd	0 gpd	6,200 gpd	0.010 cfs
92	7,400 gpd	0 gpd	0 gpd	0 gpd	7,400 gpd	0.011 cfs
93	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
94	5,200 gpd	0 gpd	0 gpd	0 gpd	5,200 gpd	0.008 cfs
95	8,400 gpd	0 gpd	0 gpd	0 gpd	8,400 gpd	0.013 cfs

TABLE 1.1-3: DETAILED TRIBUTARY AREA FLOW CALCULATIONS
C. MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY

MASTER PLAN LOT NO.	SEWERFLOW DATA					TOTAL AVE. FLOW PER LOT
	RESIDENTIAL	RETAIL	OFFICE	CIVIC/COMM.	Total Ave. Flow Per Lot	
	Ave. Daily Flow- Residential (300 gpd/du)	Ave. Daily Flow- Retail (118 gpd/1000 sf)	Ave. Daily Flow- Office (235 gpd/1000 sf)	Ave. Daily Flow- Civic/Community (100 gpd/1000 sf)		
PROJECTED FLOW MASTER PLAN LOTS OUTSIDE 49104-01/02 BOUNDARY						
96	0 gpd	0 gpd	0 gpd	352 gpd	352 gpd	0.001 cfs
97	2,800 gpd	0 gpd	0 gpd	0 gpd	2,800 gpd	0.004 cfs
98	5,200 gpd	0 gpd	0 gpd	0 gpd	5,200 gpd	0.008 cfs
99	10,200 gpd	0 gpd	0 gpd	0 gpd	10,200 gpd	0.016 cfs
100	8,600 gpd	0 gpd	0 gpd	0 gpd	8,600 gpd	0.014 cfs
101	7,800 gpd	0 gpd	0 gpd	0 gpd	7,800 gpd	0.012 cfs
102	6,800 gpd	0 gpd	0 gpd	0 gpd	6,800 gpd	0.010 cfs
103	5,400 gpd	0 gpd	0 gpd	0 gpd	5,400 gpd	0.008 cfs
104	0 gpd	0 gpd	0 gpd	867 gpd	867 gpd	0.001 cfs
105	4,400 gpd	0 gpd	0 gpd	0 gpd	4,400 gpd	0.007 cfs
106	6,200 gpd	0 gpd	0 gpd	0 gpd	6,200 gpd	0.010 cfs
107	0 gpd	0 gpd	0 gpd	22,243 gpd	22,243 gpd	0.034 cfs
108	0 gpd	0 gpd	0 gpd	12,778 gpd	12,778 gpd	0.020 cfs
109	0 gpd	0 gpd	0 gpd	26,145 gpd	26,145 gpd	0.040 cfs
110	0 gpd	0 gpd	0 gpd	2,929 gpd	2,929 gpd	0.005 cfs
TOTALS	429,800 gpd	4,962 gpd	5,288 gpd	190,366 gpd	630,216 gpd	0.975 cfs

TABLE 1.1-4: PDWF DESIGN FLOW SUMMARY

LINE NO.	LOTS WITH LATERAL CONNECTIONS	GROSS AREA OF LOTS WITH LATERAL CONNECTIONS	UPSTREAM LINES CONTRIBUTING	GROSS AREA OF UPSTREAM LINES	TOTAL GROSS AREA	TOTAL MAXIMUM AVERAGE FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON MAXIMUM FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON RATIO OF AREA TRIBUTARY TO LINE TO TOTAL PHASE 1 AREA (cfs)	PDWF DESIGN FLOW (cfs)	NOTES
11B	Tract 49104-01 Lot 34 Master Plan Lot 80	69,280 sf			69,280 sf	0.015 cfs	0.061	0.075	0.061	
12A	Master Plan Lots 74,75	30,548 sf	12B	139,883 sf	170,241 sf	0.049 cfs	0.171	0.169	0.169	
12B	Master Plan Lots 93-98	139,683 sf			139,683 sf	0.038 cfs	0.138	0.141	0.138	
13	Tract 49104-01 Lots 1,16	51,308 sf	14A,18 14B,15A	1,338,061 sf 1,319,821 sf	1,369,389 sf 1,319,821 sf	0.483 cfs 0.441 cfs	1.365 1.259	1.128 1.077	1.128 1.077	
14A	Tract 49104-02 Lots 22-24	46,824 sf	14C,25,28A	533,010 sf	579,834 sf	0.215 cfs	0.657	0.511	0.511	
14B	Tract 49104-02 Lots 4-9	93,248 sf	14D	38,720 sf	131,968 sf	0.067 cfs	0.230	0.134	0.134	
14D	Tract 49104-02 Lots 10,11	38,720 sf			38,720 sf	0.015 cfs	0.061	0.044	0.061	
15A	Tract 49104-02 Lots 20,21	38,720 sf	15B,16A	740,187 sf	740,187 sf	0.226 cfs	0.888	0.638	0.638	
15B	Tract 49104-02 Lots 20,21	38,720 sf	15C	168,512 sf	207,232 sf	0.048 cfs	0.170	0.202	0.170	
15C	Tract 49104-02 Lot 19 Master Plan Lots 81,101,102,110	169,512 sf			169,512 sf	0.036 cfs	0.129	0.167	0.129	
16A	Tract 49104-01 Lots 2-5	110,079 sf	16B,19A	422,878 sf	532,955 sf	0.178 cfs	0.553	0.474	0.474	
16B	Tract 49104-01 Lots 6-11	93,248 sf	17A	180,280 sf	273,528 sf	0.105 cfs	0.342	0.259	0.259	
17A			17B	180,280 sf	180,280 sf	0.053 cfs	0.184	0.178	0.178	
17B	Tract 49104-01 Lots 13,24,27	54,720 sf	17C,20	125,560 sf	180,280 sf	0.053 cfs	0.184	0.178	0.178	
17C					0 sf	0.000 cfs	0.000	0.000	0.000	Future Line
18	Tract 49104-01 Lot 12	18,240 sf			18,240 sf	0.011 cfs	0.044	0.022	0.044	
19A	Master Plan Lot 80	15,274 sf	19B,22	134,074 sf	149,348 sf	0.042 cfs	0.151	0.150	0.150	
19B	Master Plan Lots 99,100	103,528 sf			103,528 sf	0.029 cfs	0.108	0.108	0.108	
20	Tract 49104-01 Lots 14,15,17-20	125,560 sf			125,560 sf	0.037 cfs	0.132	0.128	0.132	
21A	Master Plan Lot 91	24,960 sf	21B	61,912 sf	86,872 sf	0.033 cfs	0.122	0.092	0.092	
21B	Master Plan Lot 50	32,406 sf	21C	29,506 sf	61,912 sf	0.024 cfs	0.090	0.068	0.068	
21C	Master Plan Lot 92	29,506 sf			29,506 sf	0.011 cfs	0.046	0.035	0.046	
22	Master Plan Lots 77,78	30,548 sf			30,548 sf	0.009 cfs	0.036	0.036	0.036	
23	Tract 49104-02 Lots 25-31	133,446 sf			133,446 sf	0.032 cfs	0.182	0.135	0.182	
24A			24B	47,479 sf	47,479 sf	0.006 cfs	0.025	0.053	0.025	

TABLE 1.1-4: PDWF DESIGN FLOW SUMMARY

LINE NO.	LOTS WITH LATERAL CONNECTIONS	GROSS AREA OF LOTS WITH LATERAL CONNECTIONS	UPSTREAM LINES CONTRIBUTING	GROSS AREA OF UPSTREAM LINES	TOTAL GROSS AREA	TOTAL MAXIMUM AVERAGE FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON MAXIMUM FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON RATIO OF AREA TRIBUTARY TO LINE TO TOTAL PHASE 1 AREA (cfs)	PDWF DESIGN FLOW (cfs)	NOTES
24B	Tract 49104-02 Lots 1-3	47,479 sf			47,479 sf	0.006 cfs	0.025	0.053	0.025	
25			23.24A	180,925 sf	180,925 sf	0.058 cfs	0.200	0.178	0.178	
26	Tract 49104-02 Lot 18 Master Plan Lot 103				44,877 sf	0.013 cfs	0.051	0.050	0.051	
27	Tract 49104-02 Lots 12,13 Master Plan Lots 104-106	97,800 sf			97,800 sf	0.028 cfs	0.105	0.102	0.105	
28A	Tract 49104-02 Lots 15,16	36,480 sf	28B	183,637 sf	220,117 sf	0.064 cfs	0.219	0.213	0.213	
28B	Tract 49104-02 Lots 14,17 Master Plan Lots 34,39	40,990 sf	26,27	142,677 sf	183,637 sf	0.053 cfs	0.186	0.181	0.181	
29		37,741 sf			37,741 sf	0.021 cfs	0.080	0.043	0.080	

TABLE 1.1-4: PDWF DESIGN FLOW SUMMARY

LINE NO.	LOTS WITH LATERAL CONNECTIONS	GROSS AREA OF LOTS WITH LATERAL CONNECTIONS	UPSTREAM LINES CONTRIBUTING	GROSS AREA OF UPSTREAM LINES	TOTAL GROSS AREA	TOTAL MAXIMUM AVERAGE FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON MAXIMUM FLOW FROM LOTS (cfs)	PEAK FLOW BASED ON RATIO OF AREA TRIBUTARY TO LINE TO TOTAL PHASE I AREA (cfs)	PDWF DESIGN FLOW (cfs)	NOTES
1A			1B, 1.1	4,708,516 sf	4,708,516 sf	2,044 cfs	5,043	4,072	4,072	Existing 12" Per D-18051
1.1						0.290 cfs	N/A	N/A	0.861	
1B			1C	4,708,516 sf	4,708,516 sf	1,754 cfs	4,391	3,403	3,403	
1C			1D	4,708,516 sf	4,708,516 sf	1,754 cfs	4,391	3,403	3,403	
1D			1E, 1.3	4,708,516 sf	4,708,516 sf	1,754 cfs	4,391	3,403	3,403	
1E			1F	3,319,147 sf	3,319,147 sf	1,272 cfs	3,282	2,480	2,480	
1F			2A, 2.1	3,319,147 sf	3,319,147 sf	1,272 cfs	3,282	2,480	2,480	
2.1	Master Plan Lots 1-13	1,012,665 sf			1,012,665 sf	0.417 cfs	1,197	0.847	0.847	Future Master Plan Lots 1-13
2A			2B	2,306,482 sf	2,306,482 sf	0.954 cfs	2,290	1,784	1,784	
2B			2C, 3A, 4A	2,306,482 sf	2,306,482 sf	0.854 cfs	2,290	1,784	1,784	
2C			2D	732,562 sf	732,562 sf	0.181 cfs	0.504	0.632	0.504	
2D			2E, 21A, 2B	732,562 sf	732,562 sf	0.181 cfs	0.504	0.632	0.504	
2E	Master Plan Lot 51	29,778 sf	2F	578,173 sf	607,949 sf	0.108 cfs	0.347	0.534	0.347	
2F			2G	578,173 sf	578,173 sf	0.095 cfs	0.313	0.510	0.313	
2G	Master Plan Lots 109, 109	429,887 sf	2H	148,286 sf	578,173 sf	0.095 cfs	0.313	0.510	0.313	
2H	Master Plan Lot 107	148,286 sf			148,286 sf	0.034 cfs	0.125	0.149	0.125	
3A	Tract 49104-01 Lots 43, 59	38,178 sf	3B, 5, 6A	919,996 sf	958,172 sf	0.487 cfs	1,402	0.806	0.806	
3B			7, 8A	395,993 sf	395,993 sf	0.205 cfs	0.629	0.382	0.382	
4A			4B, 9A, 11A	615,748 sf	615,748 sf	0.197 cfs	0.606	0.540	0.540	
4B	Tract 49104-01 Lots 28-33	93,248 sf			93,248 sf	0.052 cfs	0.182	0.098	0.182	
5	Tract 49104-01 Lots 53-57, 59, 60	242,837 sf			242,837 sf	0.119 cfs	0.395	0.233	0.395	
6A	Tract 49104-01 Lots 41, 42, 44, 45	89,824 sf	6B	191,342 sf	291,166 sf	0.151 cfs	0.477	0.266	0.266	
6B	Master Plan Lot 36	191,342 sf			191,342 sf	0.102 cfs	0.335	0.187	0.335	
7	Tract 49104-01 Lots 46-52	155,596 sf			155,596 sf	0.083 cfs	0.278	0.155	0.278	
8A	Master Plan Lots 24, 25, 26	133,535 sf	8B	106,862 sf	240,397 sf	0.122 cfs	0.393	0.231	0.231	
8B	Master Plan Lot 27-29	106,862 sf			106,862 sf	0.053 cfs	0.186	0.111	0.186	
9A			9B	188,245 sf	188,245 sf	0.060 cfs	0.207	0.185	0.185	
9B	Tract 49104-01 Lots 25, 26, 37-40	136,024 sf	10	52,221 sf	188,245 sf	0.060 cfs	0.207	0.185	0.185	
10	Tract 49104-01 Lots 21-23	52,221 sf			52,221 sf	0.010 cfs	0.040	0.058	0.040	
11A	Tract 49104-01 Lots 35, 36	94,734 sf	11B, 12A	239,521 sf	334,255 sf	0.085 cfs	0.283	0.311	0.283	

TABLE 1.1 - 5
PLAYA VISTA SEWER MAIN LINE HYDRAULIC ANALYSIS

PIPE AND FLOW DATA				ORIGINAL DESIGN			MODIFIED DESIGN				MODIFIED MANNING'S COEF.			
Pipe No.	Dia. (in)	Manning's n	PDWF (cfs)	Design Slope	Normal Velocity (fps)	Normal Depth (ft)	Design Slope	Normal Velocity (fps)	Normal Depth (ft)	NOTES	Manning's "n"	Design Slope	Normal Velocity (fps)	Normal Depth (ft)
1A	24	0.014	4.265	0.0604	9.9	0.39					0.010	0.0604	12.6	0.33
1B	24	0.014	3.403	0.0109	5.1	0.53					0.010	0.0109	6.4	0.45
1C	24	0.014	3.403	0.0020	2.8	0.83					0.010	0.0020	3.5	0.69
1D	24	0.014	3.403	0.0020	2.8	0.83					0.010	0.0020	3.5	0.69
1E	18	0.014	2.480	0.0106	4.7	0.51					0.010	0.0106	6.0	0.43
1F	18	0.014	2.480	0.0030	3.0	0.72					0.010	0.0030	3.8	0.59
2A	15	0.014	1.784	0.0043	3.1	0.59					0.010	0.0043	4.0	0.49
2B	15	0.014	1.784	0.0042	3.1	0.59					0.010	0.0042	4.0	0.49
2C	10	0.014	0.504	0.0044	2.3	0.35					0.010	0.0044	2.9	0.29
2D	10	0.014	0.504	0.0044	2.3	0.35					0.010	0.0044	2.9	0.29
2E	8	0.014	0.347	0.0044	2.1	0.32					0.010	0.0044	2.7	0.27
2F	8	0.014	0.313	0.0044	2.0	0.30					0.010	0.0044	2.6	0.25
2G	8	0.014	0.313	0.0044	2.0	0.30					0.010	0.0044	2.6	0.25
2H	8	0.014	0.125	0.0084	2.0	0.16				Shallow MH w/ Flushing System	0.010	0.0084	2.5	0.13
3A	12	0.014	0.806	0.0052	2.7	0.40					0.010	0.0052	3.5	0.33
3B	8	0.014	0.362	0.0050	2.2	0.32					0.010	0.0050	2.8	0.26
4A	10	0.014	0.540	0.0197	4.0	0.25					0.010	0.0197	5.1	0.21
4B	8	0.014	0.182	0.0134	2.6	0.17					0.010	0.0134	3.3	0.14
5	8	0.014	0.385	0.0106	3.0	0.26					0.010	0.0106	3.8	0.22
6A	8	0.014	0.266	0.0063	2.2	0.25					0.010	0.0063	2.8	0.21
6B	8	0.014	0.335	0.0060	2.3	0.29				MH w/ Flushing System	0.010	0.0060	3.0	0.24
7	8	0.014	0.278	0.0103	2.7	0.22					0.010	0.0103	3.4	0.19
8A	8	0.014	0.231	0.0050	2.0	0.25					0.010	0.0050	2.5	0.21
8B	8	0.014	0.186	0.0060	2.0	0.21					0.010	0.0060	2.5	0.18
9	8	0.014	0.185	0.0146	2.7	0.17					0.010	0.0146	3.5	0.14
10	8	0.014	0.185	0.0062	2.0	0.21					0.010	0.0062	2.6	0.18
11A	8	0.014	0.283	0.0050	2.1	0.28					0.010	0.0050	2.7	0.23
11B	8	0.014	0.061	0.0160	2.0	0.09				Flushing System	0.010	0.0160	2.6	0.08
12A	8	0.014	0.169	0.0068	2.0	0.19					0.010	0.0068	2.6	0.16
12B	8	0.014	0.138	0.0078	2.0	0.17				Shallow MH w/ Flushing System	0.010	0.0078	2.5	0.14
13	12	0.014	1.128	0.0066	3.3	0.45					0.010	0.0066	4.2	0.38

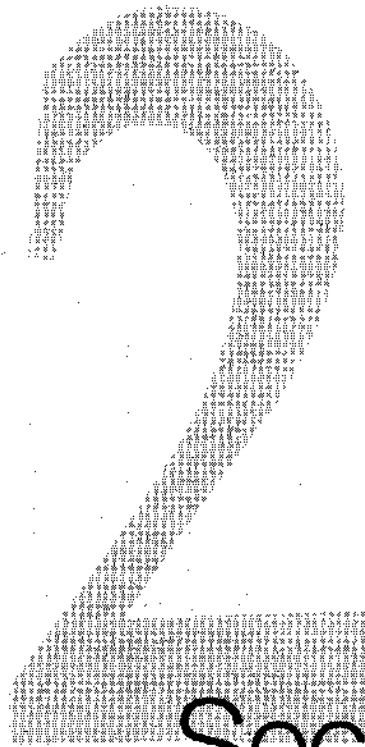
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TABLE 1.1 - 5
PLAYA VISTA SEWER MAIN LINE HYDRAULIC ANALYSIS

PIPE AND FLOW DATA				ORIGINAL DESIGN			MODIFIED DESIGN				MODIFIED MANNING'S COEF.			
Pipe No.	Dia. (in)	Manning's n	PDWF (cfs)	Design Slope	Normal Velocity (fps)	Normal Depth (ft)	Design Slope	Normal Velocity (fps)	Normal Depth (ft)	NOTES	Manning's "n"	Design Slope	Normal Velocity (fps)	Normal Depth (ft)
14A	12	0.014	1.077	0.0055	3.0	0.46					0.010	0.0055	3.8	0.38
14B	10	0.014	0.511	0.0059	2.6	0.33					0.010	0.0059	3.3	0.27
15A	10	0.014	0.638	0.0044	2.4	0.40					0.010	0.0044	3.1	0.33
15B	8	0.014	0.170	0.0068	2.0	0.19				Flushing System	0.010	0.0068	2.6	0.16
15C	8	0.014	0.129	0.0260	3.0	0.12					0.010	0.0260	3.8	0.10
16A	10	0.014	0.474	0.0044	2.3	0.34					0.010	0.0044	2.9	0.28
16B	8	0.014	0.259	0.0238	3.5	0.17					0.010	0.0238	4.5	0.15
17A	8	0.014	0.178	0.0065	2.0	0.20					0.010	0.0065	2.6	0.17
17B	8	0.014	0.178	0.0065	2.0	0.20					0.010	0.0065	2.6	0.17
18	8	0.014	0.044	0.0868	3.3	0.05					0.010	0.0868	4.2	0.05
19A	8	0.014	0.150	0.0074	2.0	0.18					0.010	0.0074	2.6	0.15
19B	8	0.014	0.108	0.0333	3.1	0.10					0.010	0.0333	3.9	0.09
20	8	0.014	0.132	0.0082	2.0	0.16				MH w/ Flushing System	0.010	0.0082	2.6	0.14
21A	8	0.014	0.092	0.0110	2.0	0.18				Shallow MH	0.010	0.0110	2.5	0.11
21B	8	0.014	0.068	0.0140	2.0	0.10				Shallow MH w/ Flushing System	0.010	0.0140	2.5	0.09
22	8	0.014	0.036	0.0329	2.2	0.06				Shallow MH w/ Flushing System	0.010	0.0329	2.8	0.05
23	8	0.014	0.051	0.0675	3.2	0.06					0.010	0.0675	4.0	0.05
24	8	0.014	0.105	0.0333	3.1	0.10					0.010	0.0333	3.9	0.09
25A	8	0.014	0.213	0.0056	2.0	0.23					0.010	0.0056	2.6	0.19
25B	8	0.014	0.181	0.0120	2.5	0.17				Flushing System	0.010	0.0120	3.2	0.15
26	8	0.014	0.182	0.0205	3.0	0.15					0.010	0.0205	3.9	0.13
27	8	0.014	0.400	0.0700	5.9000	0.21					0.010	0.0700	7.5	0.14
28A	8	0.014	0.210	0.0160	3.0	0.17					0.010	0.0160	3.7	0.15
28B	8	0.014	0.210	0.0160	3.0	0.17					0.010	0.0160	3.7	0.15
29	8	0.014	0.030	0.0280	2.0	0.06				MH w/ Flushing System	0.010	0.0280	2.5	0.05
30	8	0.014	0.160	0.0130	2.5000	0.16					0.010	0.0130	3.2	0.13
31A	8	0.014	0.160	0.0130	2.5000	0.16					0.010	0.0130	3.2	0.13
31B	8	0.014	0.061	0.0160	2.0	0.09				Shallow MH w/ Flushing System	0.010	0.0160	2.6	0.08
32	8	0.014	0.134	0.0090	2.1	0.16				MH w/ Flushing System	0.010	0.0090	2.7	0.14

TABLE 1.1 - 6
PLAYA VISTA SEWER FLUSHING SYSTEM ANALYSIS

Pipe No.	Dia. (in)	Manning's n	Q (cfs)	Design Slope	Normal Velocity (fps)	Normal Depth (ft)	Length (ft)	Q (cfs)	Q (gpm)	Normal Velocity (fps)	Normal Depth (ft)	1 min. Volume (gal)	5 min. volume (gal)	10 min volume (gal)
ULTIMATE CONDITION DESIGN FLOW DATA														
8B	8	0.014	0.186	0.0060	2.0	0.21	870	0.580	260.3	2.7	0.40	260.3	1301.5	2603.0
6B	8	0.014	0.335	0.0060	2.3	0.29	530	0.580	260.3	2.7	0.40	260.3	1301.5	2603.0
2H	8	0.014	0.125	0.0084	2.0	0.16	1913	0.530	237.9	3.0	0.34	237.9	1189.3	2378.6
21B	8	0.014	0.068	0.0140	2.0	0.10	408	0.790	354.6	3.9	0.37	354.6	1772.8	3545.5
11B	8	0.014	0.061	0.0160	2.0	0.09	517	0.840	377.0	4.2	0.37	377.0	1885.0	3769.9
12B	8	0.014	0.138	0.0078	2.0	0.17	712	0.610	273.8	3.0	0.38	273.8	1368.8	2737.7
31B	8	0.014	0.061	0.0160	2.0	0.09	324	0.840	377.0	4.2	0.37	377.0	1885.0	3769.9
32	8	0.014	0.134	0.0090	2.1	0.16	300	0.470	210.9	3.0	0.31	210.9	1054.7	2109.4
22	8	0.014	0.036	0.0329	2.2	0.06	578	1.210	543.0	4.2	0.37	377.0	2715.2	5430.5
10	8	0.014	0.185	0.0062	2.0	0.21	570	0.590	264.8	2.7	0.40	264.8	1324.0	2647.9
20	8	0.014	0.132	0.0082	2.0	0.16	847	0.580	260.3	3.0	0.36	260.3	1301.5	2603.0
29	8	0.014	0.030	0.0280	2.0	0.06	194	1.120	502.7	5.6	0.37	502.7	2513.3	5026.6
INTERIM CONDITION FLOW DATA														
6A	8	0.014	0.266	0.0063	2.2	0.25	357	0.600	269.3	2.7	0.40	269.2	1346.4	2692.8
15B	8	0.014	0.170	0.0068	2.0	0.19	40	0.620	278.3	2.8	0.40	278.2	1391.3	2782.6
25B	8	0.014	0.213	0.0120	2.5	0.17	200	0.560	251.3	2.6	0.40	251.3	1256.6	2513.3



Section Two

2.1 METHODOLOGY

The City of Los Angeles methodology for determining individual sewer main sizes included determining the Average Dry Weather Flow (ADWF) for each pipe and converting it to a Peak Dry Weather Flow (PDWF) as outlined in Section F235 of the City of Los Angeles "Sewer Design Manual" dated June 1992.

The ADWF for each branch main directly serving a group of lots was determined by applying a sewer generation factor to the maximum possible land use for each lot. The ADWF for each branch main directly serving a group of lots was determined by applying a sewer generation factor to the maximum land use for each lot. The sewer generation factors used are presented in Table 2.1-1 which meet or exceed the factors found in Table F227 of the Sewer Design Manual. The maximum proposed land uses were taken from the Proposed Development Criteria for vesting Tentative Tract Map No. 49104. The ADWF for each lot was summed and converted to a PDWF. Pipe sizes were calculated per the design criteria outlined in Section 2.2 of the Sewer Design Manual using $d/D \leq 0.50$.

For mains downstream of the confluenced branch mains, the ADWF was determined by proportioning the total area of all lots served by the main to the total area of all lots served by the system. The resulting factor was applied to the maximum allowable ADWF for the system as determined by the maximum project entitlements. The methodology prevents oversizing of onsite mains and results in a total peak equivalent to the maximum flow generated by the project entitlements.

The pipe slopes selected are a factor of the site characteristics. Because the site is essentially flat, pipe slopes necessary to achieve the minimum required velocity of 3 fps would have resulted in manholes with depths of 25-30 feet. In addition, based upon the existing invert at the Marina pump station, the site could not be serviced by gravity flow. Therefore, absolute minimum slopes allowed by code were used, with a minimum velocity of 1.1 fps.

2.2 DESIGN CRITERIA FOR SEWER STUDY

As shown in Table 2.2-1 taken from the approved project EIR, the following sewage generation factors were applied to the

Dwelling Units:	200 gpd/unit
Office Area:	235 gpd/1000 sf
Retail Area:	118 gpd
Hotel Rooms:	150 gpd/room
Community Serving:	2060 gpd/car wash
Marina Slips	13 gpd/slip

These factors meet or exceed the factors found in Table F227 of the Sewer Design Manual.

The ADWF was converted to PDWF per the following equation found in Section F235 of the Sewer Design Manual:

$$PDWF = 2.64 (Q_{ADWF})^{0.905}$$

The adequacy of each pipe was determined by comparing the PDWF calculated for the pipe to the maximum flow allowed for the pipe based on its size and slope. The maximum flow allowed for each pipe was determined using Mannings Equation as follows:

$$Q = (1.486/n) A R^{2/3} S^{1/2}$$

Where $n = 0.014$ and $d/D \leq 0.5$

TABLE 2.1-1: SEWAGE GENERATION FACTORS AND PROJECTED WASTEWATER FLOWS

Table V.O.4-4
PROJECTED WASTEWATER FLOWS
(Using City Public Works Department Factors (Unadjusted))

Land Use	County (Area A)	City (Areas B, C, D)	All Areas (A, B, C, D)	Flow Factors*	County Area A		City Areas	
					(MGD)	(MGD)	(MGD)	(MGD)
Residential (units)	2,576	10,509	13,085	200 gpd/unit	0.515	2.102	2.617	
Office (usable sq. ft.)	125,000	4,900,000	5,025,000	235 gpd/1000 sq. ft.	0.029	1.151	1.180	
Retail (usable sq. ft.)	75,000	520,000	595,000	118 gpd/1000 sq. ft.	0.009	0.061	0.070	
Hotel (rooms)	450	600	1,050	150 gpd/room	0.068	0.090	0.158	
Civic/Community (gross sq. ft.)	14,000	565,000	579,000	100 gpd/1000 sq. ft.	0.001	0.056	0.057	
Marina (slips)	840	---	840	13 gpd/slip	0.011	---	0.011	
Car Wash	0	3	3	2060 gpd/car wash	0.000	0.006	0.006	
				Miscellaneous:	0.033	0.182	0.215	
				TOTAL:	0.666	3.648	4.314	
				Less Existing Flow:	0.000	0.079	0.079	
				ADDITIONAL FLOW:	0.666	3.569	4.235	

gpd - gallons per day
MGD - million gallons per day

* City of Los Angeles, Wastewater Program Management Division, Sewer Facilities Charge Type Description, May 1988, pages 1-3. Factors adjusted by +17.6% to reflect the difference between gross vs. usable sq. ft. where applicable.
Source: Camp Dresser & McKee, 1992.

City of Los Angeles
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Page V.O.4 - 20

Master Plan for Playa Vista
Draft Program EIR - September 28, 1992

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March 14, 1995

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650 SOUTH SPRING ST. SUITE 200
LOS ANGELES, CA 90014-1911

Psomas and Associates
Attn: Dalin Webster
3420 Ocean Park Blvd.
Santa Monica, CA 90504

Dear Mr. Webster:

PLAYA VISTA DEVELOPMENT/CLARIFICATION

This is to clarify previous correspondence dated December 20, 1994 regarding the conditions for the development of the first two tracts (Phase I) of the Playa Vista project.

The additional remaining capacity of the Marina Pumping Plant is 4 cfs. The flow contribution of the subject development cannot exceed this capacity.

Should you have any questions, please contact Mr. Carmelo Martinez of my staff at (213) 847-8876.

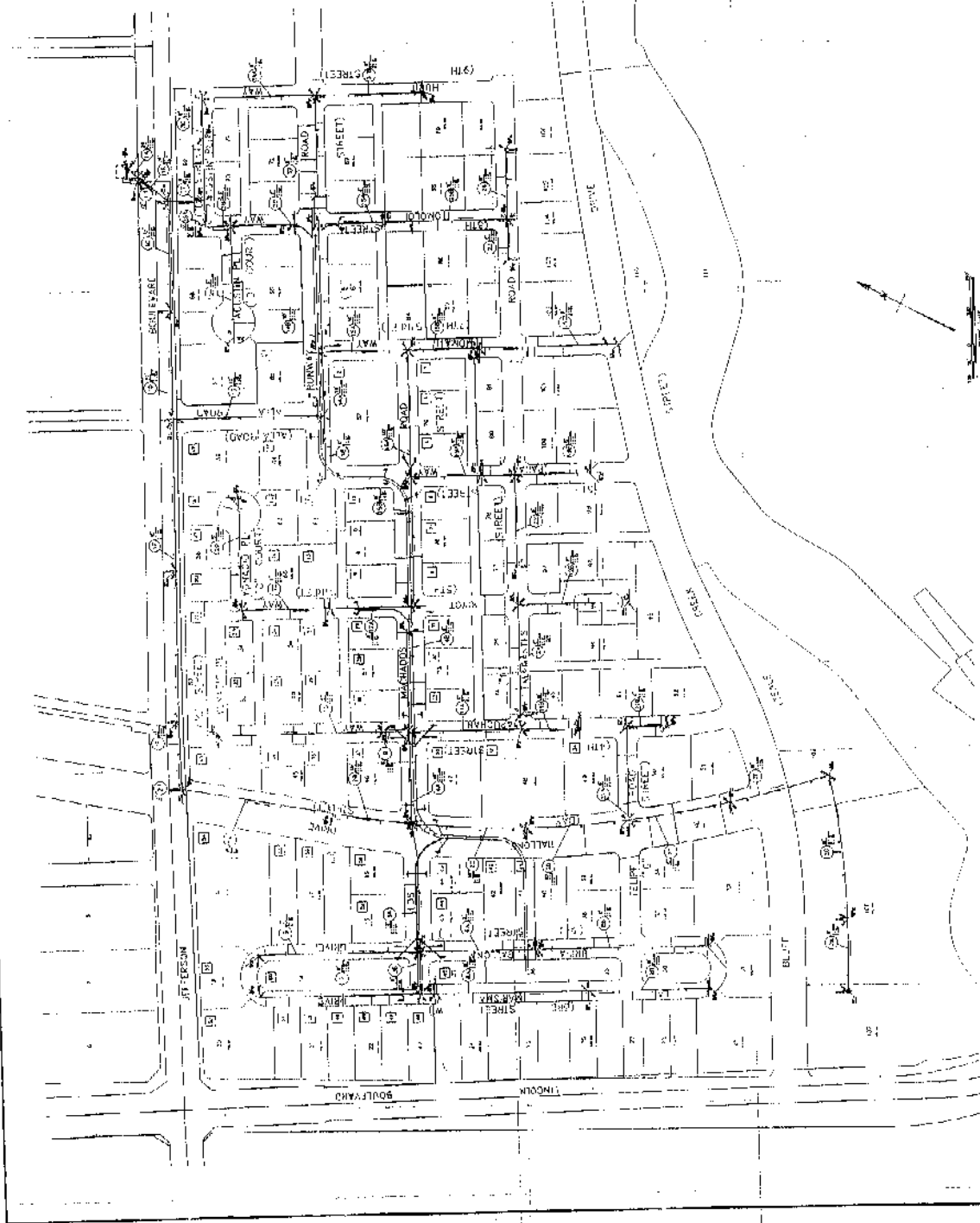
Sincerely,

Robert S. Horii
City Engineer


By: William R. Hansen, Division Engineer
Collection Systems Engineering Division

WRH:CM:ja/53G57

cc: Stan Sysak, WLA
Terry Oberrieder, WLA
Fred Sangalang, CSED



LEGEND

- Line Number and Size
- Tract 49104-01 Lot
- Master Plan Lot
- Tract 49104-02 Boundary
- Existing Sewer Line
- Design Sewer
- Normal Velocity (fps)
- Normal Depth (ft)
- Flowing System
- Station Marking
- Clearcut Structure With Flashed System

DESIGN PIPE VELOCITIES (ft/sec) = 2.15

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- 86.0 < V < 86.5
- 86.5 < V < 87.0
- 87.0 < V < 87.5
- 87.5 < V < 88.0
- 88.0 < V < 88.5
- 88.5 < V < 89.0
- 89.0 < V < 89.5
- 89.5 < V < 90.0
- 90.0 < V < 90.5
- 90.5 < V < 91.0
- 91.0 < V < 91.5
- 91.5 < V < 92.0
- 92.0 < V < 92.5
- 92.5 < V < 93.0
- 93.0 < V < 93.5
- 93.5 < V < 94.0
- 94.0 < V < 94.5
- 94.5 < V < 95.0
- 95.0 < V < 95.5
- 95.5 < V < 96.0
- 96.0 < V < 96.5
- 96.5 < V < 97.0
- 97.0 < V < 97.5
- 97.5 < V < 98.0
- 98.0 < V < 98.5
- 98.5 < V < 99.0
- 99.0 < V < 99.5
- 99.5 < V < 100.0

**TRACT 49104 (WESTERLY PORTION)
SEWER AREA STUDY**

PSOMAS
 Planning & Surveying
 1000 N. Spring St., #720
 Los Angeles, CA 90012
 (213) 475-1111
 FAX (213) 475-1112

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 Review At The Los Angeles City Planning Department
 - 200 N. Spring St., #720, Los Angeles, CA 90012

Crook, David

From: Belal B. TAMIMI [bbtamimi@SAN.LACITY.ORG]
Sent: Tuesday, May 20, 2003 11:38 AM
To: Crook, David
Cc: Abdulsamad Danishwar; Brent Lorscheider; Randy Price
Subject: The Village at Playa Vista

This is in response to your request of a "will-serve" letter via e-mail and also it was a response to a notice of preparation of a draft environmental impact report and notice of public scoping meeting / open house for the proposed Village at Playa Vista project, which is located south of Jefferson Boulevard, between Lincoln and Centinela. The Bureau of Sanitation, Wastewater Engineering Services Division, has conducted a preliminary evaluation of potential impacts on the wastewater services for the proposed project.

The City has adopted a policy to reduce all sanitary sewer overflows by 25% over the next five years and is carefully reviewing all future developments that propose to increase the sewer discharge by at least 10,000 gallons per day to insure that adequate sewer capacity exist. Your development proposal exceeds this level and so WESD has reviewed the flow generation calculations, wye-maps showing existing sewer lines to the proposed site, and existing remaining capacity in those lines. The following is a review summary, that I obtained when a notice of preparation of a draft environmental impact report and notice of public scoping meeting submitted to the City of Los Angeles for review and comments:

PROPOSED SEWER DISCHARGE: -

Building Type	Area / SF (approximately)	Unit Flow Rate	Flow Rate / GPD
Dwelling units	2,600 200/1000 GSF		520,000
Office space	175,000	80/1000 GSF	14,000
Retail space	150,000	80/1000 GSF	12,000
Community-serving	40,000	4/occupant (2600X2.5=6500)	26,000

Total 572,000

SEWER AVAILABILITY

Sewer availability for your proposal is approved contingent upon the following: once this development gets underway and before a construction permit will be issued a sewer permit will be required by the Bureau of Engineering. This office may then conduct a sewer availability study to thoroughly evaluate the additional flow impact to the system concurrent with the Bureau of Engineering permit process and plan check of your proposal. This may necessitate re-gauging of the flow and calculating the capacities of the sewer line of the area. A final determination of adequate sewer capacity and approval for sewer connection could be given at that time.

If you have any questions, please call Belal Tamimi or my staff at (323) 342-6254.