

REPORT ON THE  
REVISED MASTER SEWER PLAN  
FOR THE

# EAST PALO ALTO SANITARY DISTRICT

SAN MATEO COUNTY  
CALIFORNIA

APRIL 1983



**MARK THOMAS & CO. INC.**  
CONSULTING CIVIL ENGINEERS & MUNICIPAL PLANNERS  
20065 STEVENS CREEK BLVD., CUPERTINO, CA. 95014 • (408) 253-7863  
OFFICES IN SAN JOSE AND CUPERTINO



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April 28, 1983

Board of Directors  
 East Palo Alto Sanitary District  
 1856 Bay Road  
 East Palo Alto, CA 94303

Gentlemen:

At your direction, we have reviewed your Master Plan of 1973, prepared by Brian-Kangas-Fouk Associates. In the time that has elapsed since this plan was prepared, there have been several changes that effect sewage and wastewater generation per connection (including land use) within the District. For example, the dry spell that effected water supply in most of the State resulted in the State adopting water saving requirements such as low flush toilets and flow restrictors in fixtures for all new construction or future replacements. These requirements have also been adopted by the County of San Mateo. The County of San Mateo, in May of this year, adopted a new Community Plan for the East Palo Alto area which proposes some change in land use and anticipated discharges. Housing costs and public attitudes have increased the number of people sharing a dwelling unit. Our studies indicate that these changes will not make a substantial change in the total buildout sewage flow generated by the District, although the source and quality does change some.

We wish to thank you for the opportunity to serve you by making this review of your Master Plan and System.

Very truly yours,

MARK THOMAS & CO. INC.

John E. Fleming, Vice President  
 RCE No. 10938

JEF/CAA:dh

**DATE RECEIVED**

APR 29 1983

**East Palo Alto Municipal Council**

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## 1. INTRODUCTION

The East Palo Alto Sanitary District was organized in 1939 under the Sanitary District Act of 1923 of the California Health and Safety Code.

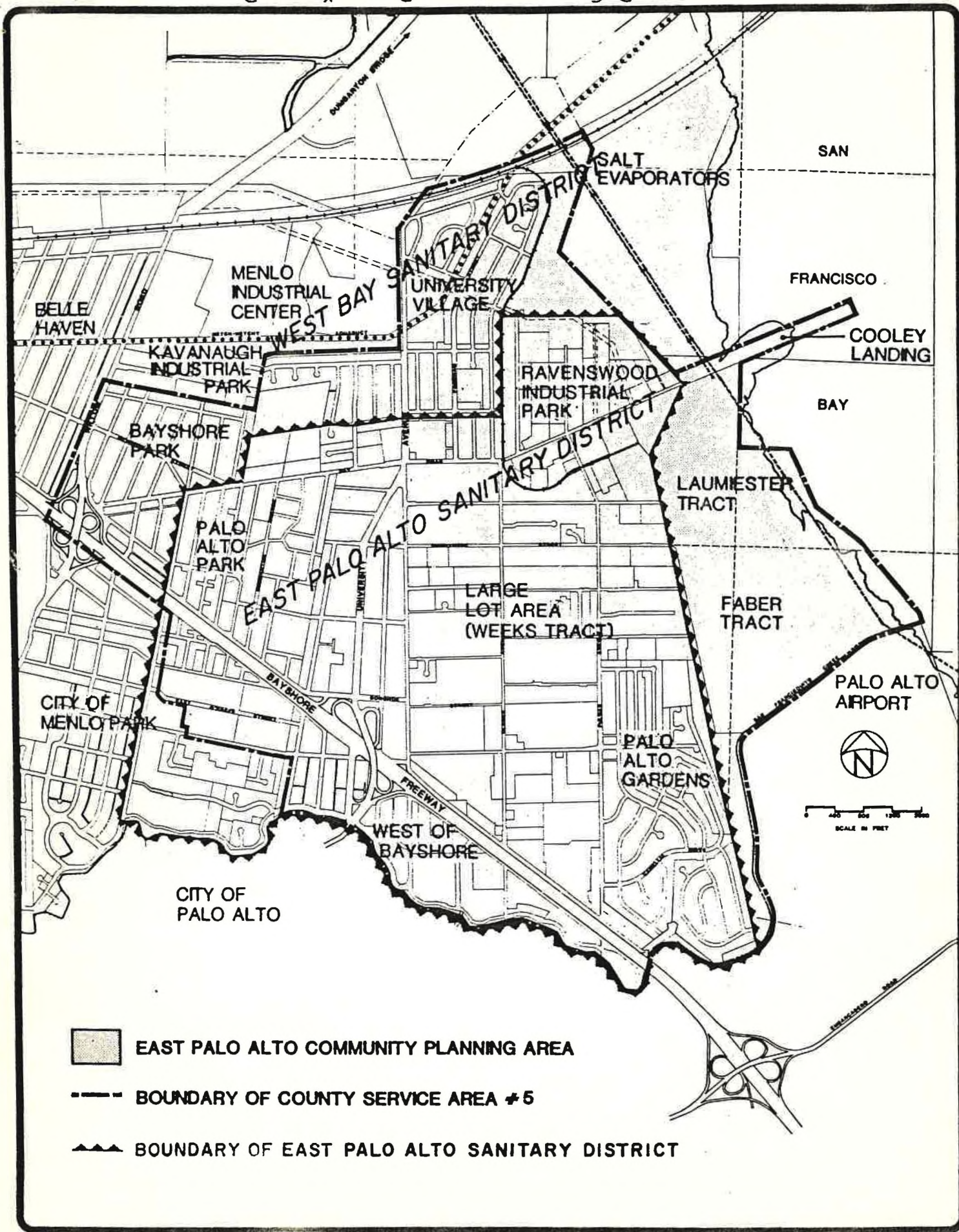
The District is located on the West side of San Mateo County next to Santa Clara County and the San Francisco Bay. As you can see from the attached map, (Fig. 1.1), the East Palo Alto Sanitary District serves a portion of the County area known as East Palo Alto and a small portion of the City of Menlo Park. The balance of the County area outside of the District is served by West Bay Sanitary District.

The purpose of this study is to review the Master Plan prepared in 1973, in the light of current planning for future land use, change in land use over the past ten (10) years and changes in sewer generation due to water conservation, population densities, etc.

There is considerable land within the District that has been used for agriculture purposes and schools. It is anticipated that a large portion of this land will be converted to residential use. Also, there is an area in the Northeast portion of the District where the majority of the land is currently used for warehousing and auto wrecking. This area is proposed to become an industrial park. These proposed changes in land use also indicated the need to review previous planning for the sewer system.

Although the Master Plan concerns itself with plans for generated flows, it is obvious that inflow and infiltration (I/I) of surface and ground water into the system must be considered. Currently, there is a large amount of I/I that must be eliminated. The first phase of the current I/I reduction program is in process and will be commented on in this report.

# East Palo Alto Sanitary District



EAST PALO ALTO AREA MAP

## 2. FLOW GENERATION DATA

The following units have been used to determine the present flow and anticipated future flow to be generated. Land use for present flow was based on actual use. The anticipated future flow was based on the current land use conforming to the plan adopted by the Planning and Development Division, Department of Environmental Management, County of San Mateo, California, and future land use as shown on said adopted plan.

### FLOW GENERATION FIGURES

#### Residential\*

Low Density	Under 8.7 Du/Ac	255.5 Gal/Day/Du
Medium Density	8.8 to 17.4 Du/Ac	210.0 Gal/Day/Du
High Density	17.5 to 34.9 Du/Ac	149.6 Gal/Day/Du

Commercial                      Using 30% land coverage                      3,485 Gal/Day/Ac

Office                              Using 30% land coverage                      2,666 Gal/Day/Ac

Industrial                        Using 30% land coverage                      7,074 Gal/Day/Ac

\* For our calculations, we used the following densities to estimate the flow generated in undeveloped areas and areas set for redevelopment.

Low Density	8 Units/Ac	3.5 People/Unit	73 Gal/Day/Person
Medium Density	15 Units/Ac	3.0 People/Unit	70 Gal/Day/Person
High Density	30 Units/Ac	2.2 People/Unit	68 Gal/Day/Person

Using these amounts, the total buildout sewage flow generated by the District would be 2.85 Million Gallons Per Day (MGD) average dry weather flow and a 4.28 MGD peak rate of flow. (The present Master Plan indicates a 4.35 MGD peak rate of flow).

The District currently has capacity rights of 2.250 MGD average dry weather flow in the primary and secondary facilities at the Palo Alto Water Quality Control Plant and 1.967 MGD average dry weather flow in the advance waste treatment facilities. We recommend that the District increase plant capacity to, at least, 3.0 MGD average dry weather flow. However, the total amount of additional plant capacity required by the District will depend upon the success of future programs for reduction of the infiltration/inflow rate within the District.

The dry weather average daily flow for the Fiscal Year 1982-83 is 1.563 MGD, which is the average of July (1.749, August (1.490) and September (1.450).

The estimated present generated flow is 1.422, using the above generation figures for residential development and available water useage information for commercial and industrial developments.

In 1982, Palo Alto Regional Water Quality Control Plant began a study of future capacity needs; however, the results will not be published until the Spring of 1983. The data in the table below closely approximates their projections. Note that these figures suggest a net increase of 0.10 MGD during the next five (5) years (0.02 MGD/yr) and 0.43 MGD during the following five (5) years (0.086 MGD/yr) giving an average growth rate of 0.053 MGD/yr over the next ten (10) years. At these rates, the District would reach its contracted capacity of 1.967 MGD by 1989.

	ADW* 1982	5 YEAR GROWTH	ADW 1987	5 YEAR GROWTH	ADW 1992
Residential	1.13 MGD	10%	1.24 MGD	10%	1.36 MGD
Commercial	0.07 MGD	10%	0.08 MGD	10%	0.09 MGD
Institutional	0.02 MGD	-0-	0.02 MGD	15%	0.02 MGD
Industrial	<u>0.07 MGD</u>	-0-	<u>0.07 MGD</u>	460%	<u>0.39 MGD</u>
Sub-total	1.29 MGD		1.41 MGD		1.86 MGD
I/I	<u>0.45 MGD</u>	-5%	<u>0.43 MGD</u>	-10%	<u>0.41 MGD</u>
Total	1.74 MGD		1.84 MGD		2.27 MGD

NOTE: The flow rates for 1982 are from the Revenue Program

\* ADW - Average Dry Weather Flow

The Palo Alto study projected capacity needs only through 1992. However, the rate of increase from this study may be used for further projections. Our projected full discharge at buildout is 2.85 MGD or 0.58 MGD more than Palo Alto's 1992 estimate of 2.27. Given annual increases between 0.053 and 0.086 per year, full capacity would be reached in another seven (7) to eleven (11) years or between years 1999 and 2003.

The District records of recent growth give a slightly different picture. Figure 2.4 page 2.7 shows the increase in discharge from 1977 through 1987. Correcting for an assumed 0.375 MGD of infiltration in July of 1977 and 1982 (most of which we believe can be substantially reduced), the figure shows an average increase of approximately 0.114 MGD per year. Projection of this increase into the future suggests the District will exceed current contract capacity in 1987 and will reach full capacity by 1995 (see Figure 2.5 page 2.8 for comparison).

Though these projections vary significantly, they support several policy conclusions:

1. Current contract capacity is probably adequate for at least five (5) years, given substantial elimination of groundwater infiltration.
2. Eventual purchase of a full 3.0 MGD treatment capacity will be necessary by sometime between 10 and 40 years from now.
3. If the District wishes to encourage development, then the system should be upgraded to full capacity within the next ten (10) years. Certain lines will need upgrading sooner.



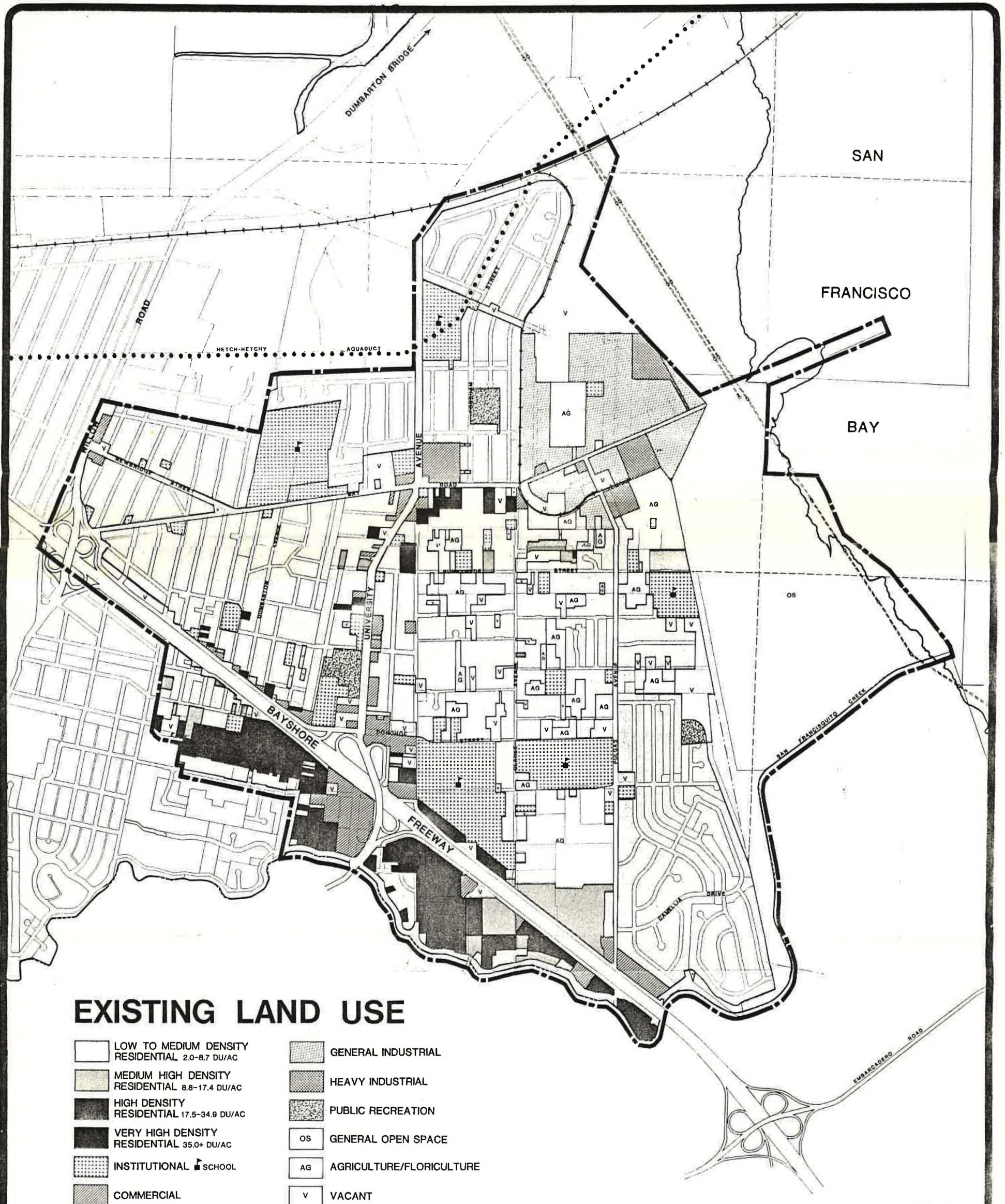


FIG. 14

**EAST PALO ALTO COMMUNITY PLANNING PROGRAM**

PLANNING AND DEVELOPMENT DIVISION · DEPARTMENT OF ENVIRONMENTAL MANAGEMENT · COUNTY OF SAN MATEO · CALIFORNIA

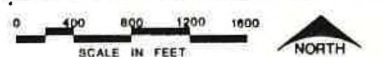
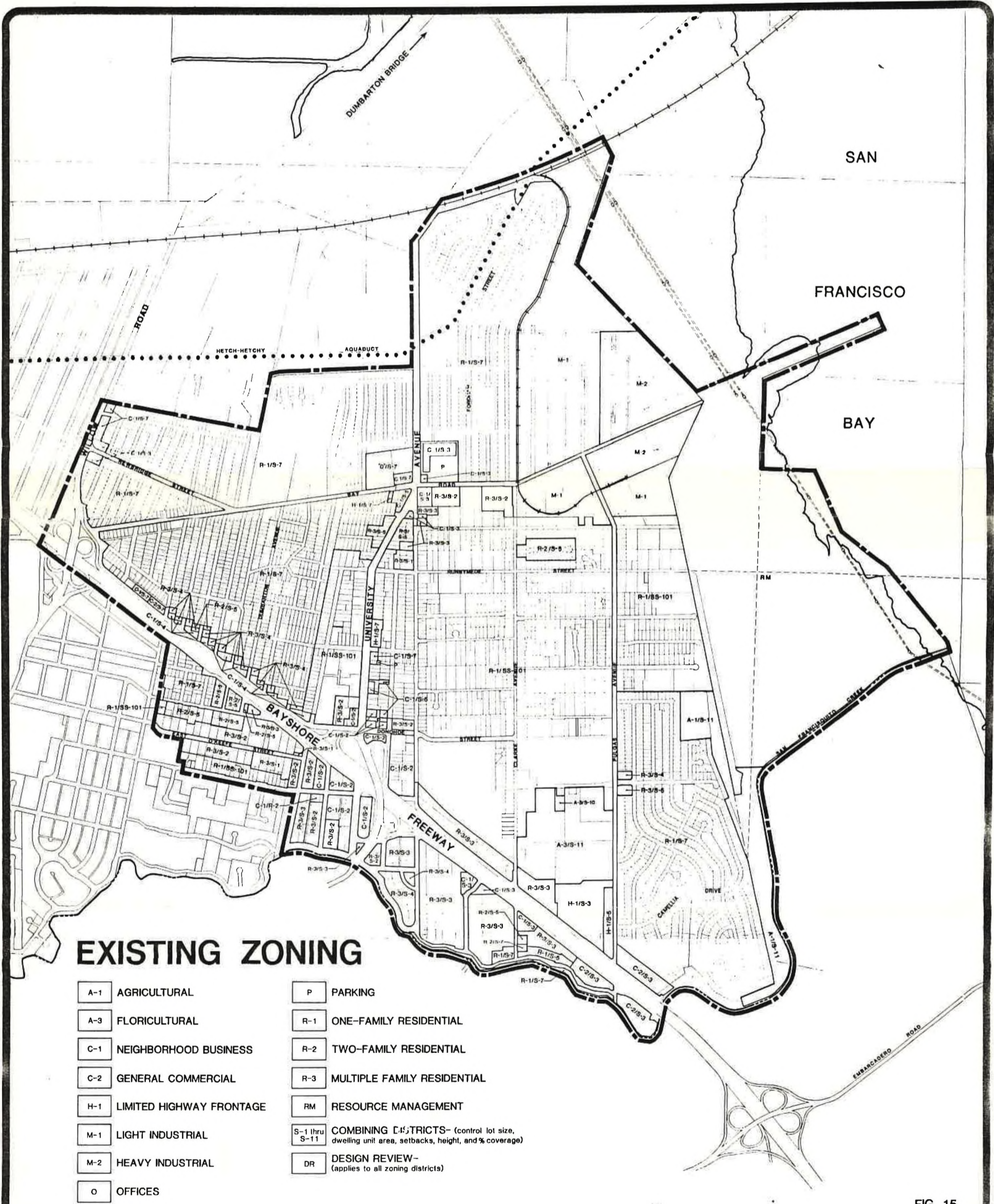


Fig. 2.1

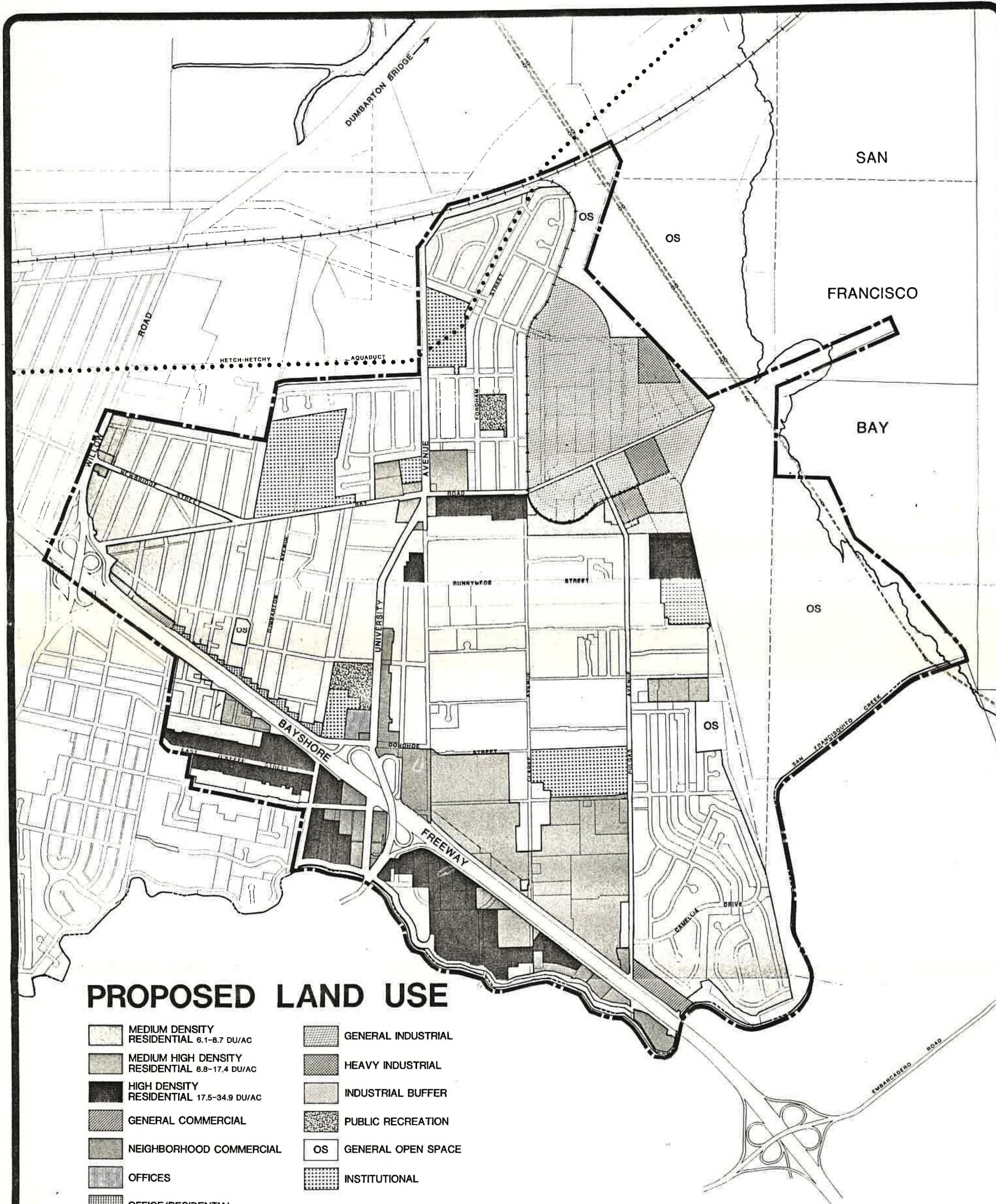


### EXISTING ZONING

<b>A-1</b> AGRICULTURAL	<b>P</b> PARKING
<b>A-3</b> FLORICULTURAL	<b>R-1</b> ONE-FAMILY RESIDENTIAL
<b>C-1</b> NEIGHBORHOOD BUSINESS	<b>R-2</b> TWO-FAMILY RESIDENTIAL
<b>C-2</b> GENERAL COMMERCIAL	<b>R-3</b> MULTIPLE FAMILY RESIDENTIAL
<b>H-1</b> LIMITED HIGHWAY FRONTAGE	<b>RM</b> RESOURCE MANAGEMENT
<b>M-1</b> LIGHT INDUSTRIAL	<b>S-1 thru S-11</b> COMBINING DISTRICTS- (control lot size, dwelling unit area, setbacks, height, and % coverage)
<b>M-2</b> HEAVY INDUSTRIAL	<b>DR</b> DESIGN REVIEW- (applies to all zoning districts)
<b>O</b> OFFICES	

FIG. 15

Fig. 2.2



**PROPOSED LAND USE**

- |  |  |  |                    |
|--|--|--|--------------------|
|  | MEDIUM DENSITY RESIDENTIAL 6.1-8.7 DU/AC       |  | GENERAL INDUSTRIAL |
|  | MEDIUM HIGH DENSITY RESIDENTIAL 8.8-17.4 DU/AC |  | HEAVY INDUSTRIAL   |
|  | HIGH DENSITY RESIDENTIAL 17.5-34.9 DU/AC       |  | INDUSTRIAL BUFFER  |
|  | GENERAL COMMERCIAL                             |  | PUBLIC RECREATION  |
|  | NEIGHBORHOOD COMMERCIAL                        |  | GENERAL OPEN SPACE |
|  | OFFICES  |  | INSTITUTIONAL      |
|  | OFFICE/RESIDENTIAL                             |  |                    |

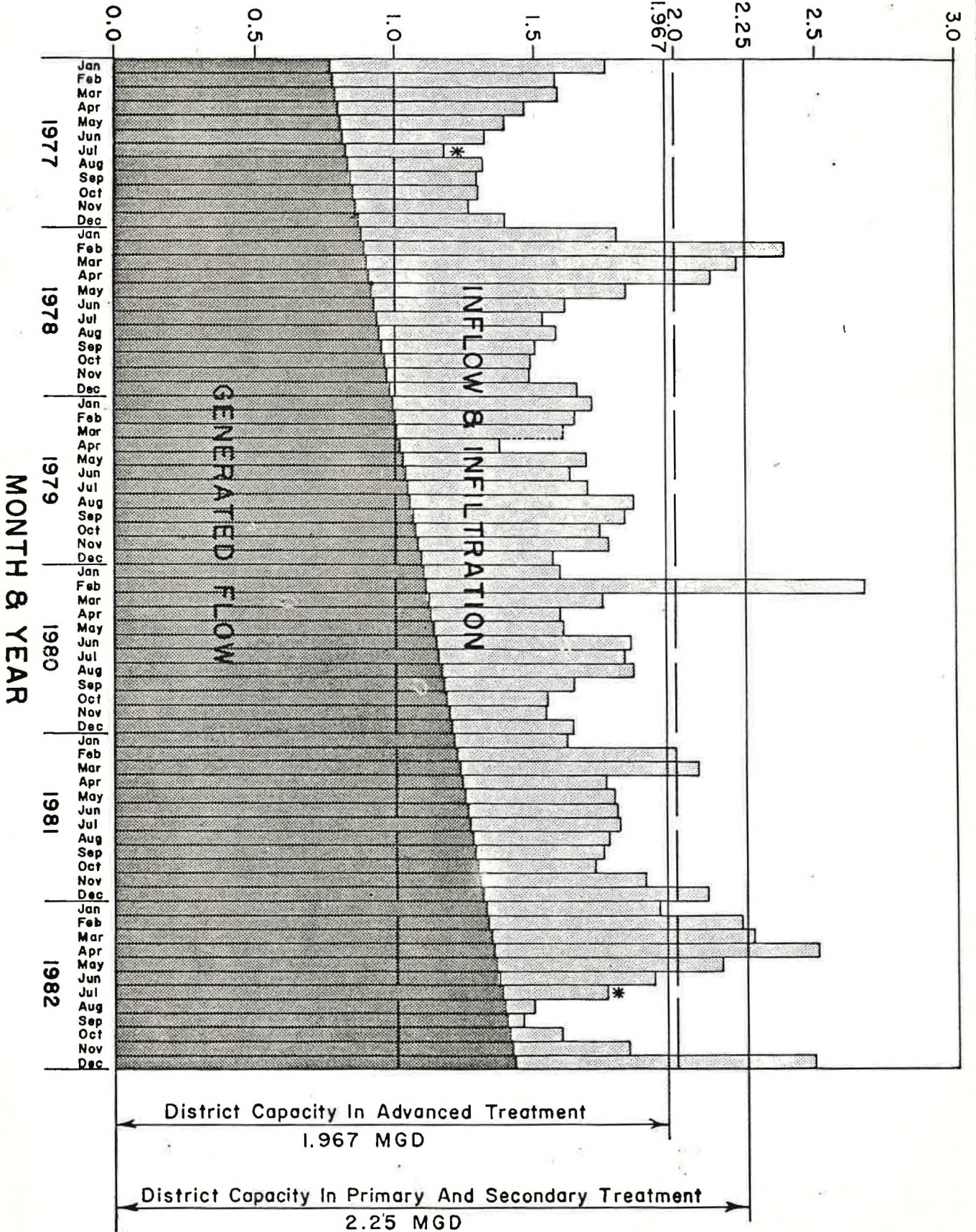
5-18-82 FIG. 17

Fig. 2.3

# DISTRICT SEWAGE FLOW

Fig. 2.4

## AVERAGE DAILY FLOW IN MGD

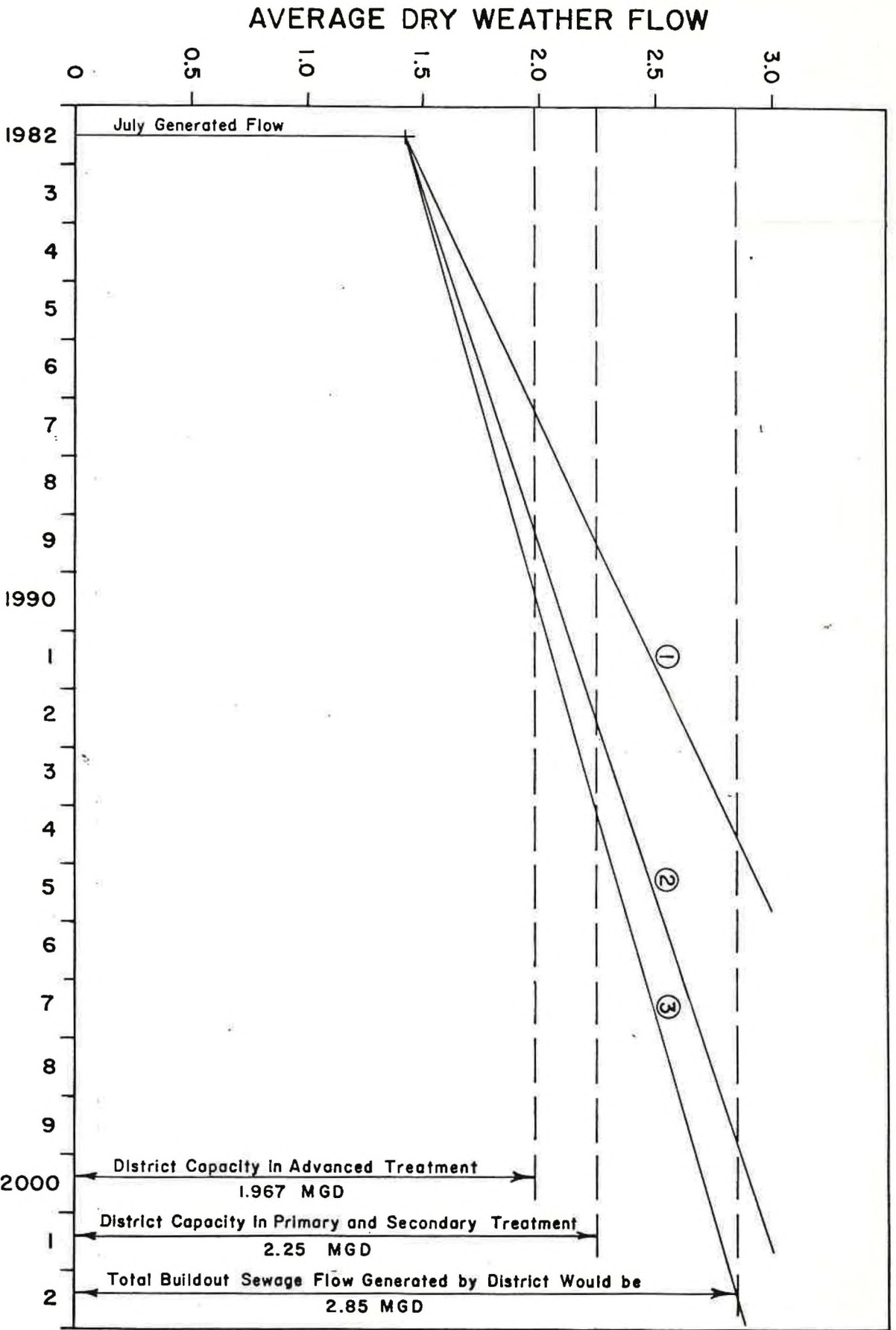


\* Assumed 1/1 in July 1977 and July 1982 to be 0.375 MGD

MONTH & YEAR

District Capacity In Advanced Treatment  
1.967 MGD

District Capacity In Primary And Secondary Treatment  
2.25 MGD



- ① Projection based on past five (5) year growth rate.
- ② Projection used in Palo Alto Regional WQC Plant Expansion Study.
- ③ Projection based on 20 year buildout.

1982  
3  
4  
5  
6  
7  
8  
9  
1990  
1  
2  
3  
4  
5  
6  
7  
8  
9  
2000  
1  
2

YEAR

## TREATMENT PLANT CAPACITY NEEDS

### 3. SYSTEM DEFICIENCIES

A number of the major system deficiencies outlined in the 1973 Master Plan have been corrected by the District. This includes the replacement of the trunk line along the levee from O'Connor to Bay Road and on Bay Road to Clarke Avenue, on Beech Street between Pulgas Avenue and Clarke Avenue and on Clarke Avenue between Beech to Green Street.

Based on our review of the 1973 Master Plan, our studies of the existing system and the future needs of the District, we have determined that the following deficiencies exist in the District's facilities:

Refer to Fig. 3.1 Revised Master Plan & Trunk Service Area Map

FLOW METER: The present Parshall Flume seems to be a good installation but there are two main problems. One is that the recording equipment is located at the Flume and is read and changed once a week. Any malfunction that occurs could go undetected for up to a week. The second problem is when the outfall line backs up for any reason, inaccurate readings are obtained. To be accurate, a Parshall Flume must have a free flowing discharge because it measures depth of flow only.

To solve the first problem, new recording equipment should be installed in the Treatment Plant office where immediate observation can be made. The Agreement with the City of Palo Alto, dated 10 September 1963, stipulates "that City shall maintain and operate the flow metering station. The District shall be billed at City's cost for factory repairs, replacement parts or alterations to the Flow Meter, and for repair or replacement of the metering manhole."

To solve the second problem, another type of flow meter should be installed which would be a meter that measures flow by velocity through a controlled section of pipe that would always be full of water. If this were to be installed near the present meter, it would involve considerable expense and disruption to the Airport operation. The least expensive location would be on the inlet side of the syphon. The pipe is always full, not too deep and is located in an unimproved area and would not require relaying of any pipe. We are not sure if Palo Alto would accept this location; however, the District may wish to pursue the installation of this meter anyway to be able to monitor flows, determine what is occurring and correct or eliminate problems without having to rely on notices or reports from the Palo Alto Plant.

AREA "A": The area North of Bay Road presents a problem. The present sewers are of inadequate size and depth to serve this area if it is developed as proposed in the East Palo Alto Community Plan. It will be necessary

to replace most of the sewer lines to accommodate proposed development. Part of the area can be served to the South but the majority will have to drain to the North and then possibly along the PG&E Easement to where it can be lifted up with a pump station into a line on Bay Road. Other possibilities might be to negotiate an agreement with West Bay Sanitary District to accept this flow and pay them for treatment instead of Palo Alto, or for the area to be transferred to West Bay Sanitary District. In any case, it appears that as the area develops into an industrial area, as proposed, new sewers will have to be installed to handle the sewage.

AREA "E": The section of line between Donohoe Street and Green Street on Cooley Avenue is so flat that it will cause sewage to back up on Donohoe Street; therefore, it should be replaced along with the section on Green Street Area "H".

AREA "F": It will be necessary to replace part of the 6" line on Weeks Street with an 8" line before full industrial development can occur.

AREA "H": As indicated on the present Master Plan, the 10" line on Green Street needs to be replaced with a 12" line. It is currently carrying 80 to 90% of capacity.

AREA "I": There appears to have been an error on Beech Street East of Pulgas Avenue. The Master Plan called for one section of 15" line to be replaced with 18" but review of data indicates more should have been marked for replacement. The section under the drainage ditch that was replaced as part of Project 1973-1 was replaced with 15" instead of 18" as indicated in the Master Plan. We have field checked the existing 15" main from Pulgas Avenue East to the 21" outfall and find that to carry the flow that will be generated by Areas D, E, H & I, it will be necessary to replace all of it with 18". Pulgas Avenue South of Beech Street has inadequate flow. By directing the flow from Area "M" North on Pulgas Avenue at O'Connor Street, it will reduce this problem and assist the line on O'Connor Street East of Pulgas Avenue.

AREA "K": As indicated in the 1973 Master Plan, part of the line on O'Connor Street will have to be replaced. However, it will be necessary to replace more pipe than previously indicated to eliminate the problems on Larkspur Drive, Wisteria Drive and Azalia Drive. Solids and grease continually build up in these lines due to the invert elevations at O'Connor Street being too close to the same as the 12" on O'Connor Street, thus preventing the lines from draining properly.

AREA "L": It is probable that it will not be necessary to replace any of the line on Gardenia Way once the line on O'Connor Street is lowered and the Gardenia Way line can properly drain. This is based on a field check of the profile of this line. There may still be some problems with the line on Camellia Drive due to the low invert at Gardenia Way but, at this time, we do not believe it would be cost effective to replace the line to eliminate this possible problem. After replacement of the O'Connor Street line, monitoring of the lines on Gardenia Way and Camellia Drive should be done to determine what, if any, problems exist.

AREA "M": The 6" line on O'Connor Street between Pulgas Avenue and Clarke Avenue will not handle the flow that will be generated in that area. This should be replaced with an 8" line. The flow from this area is to be diverted North at Pulgas Avenue to Area "I".

AREA "N": As indicated in the Master Plan, all of the 8" line on Pulgas Avenue South of O'Connor Street to Bayshore Freeway needs to be replaced with a 10" line.

ALL AREAS: While installing the depth recording meters in various manholes, it was observed that many of the channels were poorly formed and have low shelves in the manhole bases. These conditions result in reduced capacity in the sewer main and increased maintenance problems. Correction of these problems should be considered, possibly over a period of time on a priority basis established by the District Staff.

All of the requirements discussed here are to enable the District to handle the dry weather flow. Infiltration/inflow required repairs will be discussed below.

During March, over 7800 feet of six inch (6") sewer line was televised. The pipe was found to be structurally sound but many of the joints were leaking water. The televising had to be stopped because the flow of water into the treatment plant was such that they could not accept it and had to use the sewer system as a holding tank, thus backing up the sewers. During the first week in April, flow had returned to normal and on April 11th, televising was resumed.

Based on what we have seen to date, we would recommend that a program be established to pressure-grout seal all lines in the lower areas of the District that are not scheduled for replacement in 1983. Also, when the manholes are being rechanneled, the leaks in the base and walls should also be sealed.

If, during the course of sealing or televising the lines, we find areas that are beyond sealing, it will be necessary to determine the best methods of repairing.

It is very hard to estimate the cost of this work as there are so many variables. The current cost for one crew, with equipment and machine, is five to six thousand dollars a week and should seal between 1500 and 2000 feet of pipe per week.



#### 4. COST ESTIMATES

##### FLOW METER

New transmitter and recorder to be installed at Palo Alto Treatment Plant for the present Parshall Flume, including underground wiring to power and telephone lines.

Transmitter & Recorder, installed, estimated cost	\$12,000
Engineering, Contingency & Inspection 25%	<u>3,000</u>
TOTAL	\$15,000

New flow meter complete with transmitter, recorder, metering manhole, underground wiring, etc.

Flow meter complete, installed, estimated cost	\$12,000
Engineering, Contingency & Inspection 25%	<u>3,000</u>
TOTAL	\$15,000

##### AREA "A": Industrial Area - Demeter Street, Pulgas Avenue & Tara Street

7,000' 8" @ \$35.00/Ft Including Manholes	\$245,000
1,200' 10" @ \$40.00/Ft Including Manholes	48,000
1,000' Force Main @ \$30.00/Ft	30,000
Underground Submersible Lift Station	<u>100,000</u>
	423,000
Engineering, Contingency & Inspection 25%	<u>105,750</u>
TOTAL	\$528,750

##### AREA "E": Cooley Avenue

550' 12" @ \$50.00/Ft Including Manholes	\$ 27,500
Engineering, Contingency & Inspection 25%	<u>6,875</u>
TOTAL	\$ 34,375

##### AREA "F": Weeks Street

835' 8" @ \$32.00/Ft Including Manholes	\$ 26,720
Engineering, Contingency & Inspection 25%	<u>6,680</u>
TOTAL	\$ 33,400

AREA "H": Green Street

1450' 12" @ \$50.00/Ft Including Manholes	\$ 72,500
Engineering, Contingency & Inspection 25%	<u>18,125</u>
TOTAL	\$ <u>90,625</u>

AREA "I": Beech Street

1200' 18" @ \$60.00/Ft Including Manholes	\$ 72,000
50' 10" @ \$40.00/Ft Including Manholes	<u>2,000</u>
	74,000
Engineering, Contingency & Inspection 25%	<u>18,500</u>
TOTAL	\$ <u>92,500</u>

AREA "K": O'Connor Street

470' 15" @ \$60.00/Ft Including Manholes	\$ 28,200
1120' 12" @ \$50.00/Ft Including Manholes	<u>56,000</u>
	84,200
Engineering, Contingency & Inspection 25%	<u>21,050</u>
TOTAL	\$ <u>105,250</u>

AREA "M": O'Connor Street

1325' 8" @ \$32.00/Ft Including Manholes	\$ 42,400
Engineering, Contingency & Inspection 25%	<u>10,600</u>
TOTAL	\$ <u>53,000</u>

AREA "N": Pulgas Avenue

2425' 10" @ \$40.00/Ft Including Manholes	\$ 97,000
Engineering, Contingency & Inspection 25%	<u>24,250</u>
TOTAL	\$ <u>121,250</u>

COST SUMMARY & PRIORITY

<u>PROJECT</u>	<u>TOTAL COST</u>	<u>1983</u>	<u>1984</u>	<u>1985 &amp; AFTER</u>
Flow Meter	\$ 15,000	\$15,000	\$	\$
Industrial Park - Area "A"	528,750			528,750
Cooley Avenue - Area "E"	34,375	34,375		
Weeks Street - Area "F"	33,400			33,400
Green Street - Area "H"	90,625	90,625		
Beach Street - Area "I"	92,500			92,500
O'Connor Street - Area "K"	105,250	105,250		
O'Connor Street - Area "M"	53,000			53,000
Pulgas Avenue - Area "N"	121,250	121,250		
I/I Reduction	450,000	150,000	100,000	200,000
Manhole Repair	50,000	10,000	15,000	25,000
Additional T.P. Capacity	*			*
	<u>\$1,574,150</u>	<u>\$526,500</u>	<u>\$115,000</u>	<u>\$932,650</u>

\* At this time, we do not have any indication of costs for purchasing additional capacity.

## 5. DISTRICT FINANCING

The financing of capital improvements and all operations of the District, until 1974, was provided by taxes with the exception of the initial sanitary sewer system which was constructed in the early 1940's under Assessment District Proceedings and additions to the system over the years which have been paid for by developers and subdividers. Beginning with the fiscal year 1974-75, the District established procedures for collection of sanitary sewer service charges. District capacity rights in the City of Palo Alto Water Quality Control Plant and replacement or upgrading of existing facilities have been financed by taxes and interest income. Since 1974, the general District operating costs have been financed by sanitary sewer service charges.

Presently, the revenue of the District is from an apportionment from the San Mateo County Board of Supervisors of the general County tax rate, interest and sewer service charges. The sewer service charge income is being used to pay the general operating expenses of the District. The income from taxes and interest is being used or will be used to upgrade the system. The District, at the present time, has no provisions for the collection of connection fees for the purchase of additional capacity at the Palo Alto Treatment Plant, replacement of trunk sewers as required in accordance with the District's Master Plan or necessary repairs and improvements to reduce the rate of inflow/infiltration into the collection system. The District has sufficient reserves to finance the recommended improvements, including infiltration/inflow reduction, for the calendar years 1983-84.

Future financing, in addition to apportioned taxes and interest income, will be needed to meet the needs for the additional recommended improvements, infiltration/inflow reduction and purchase of additional treatment plant capacity. Funding for a major portion of the work required for infiltration/inflow can be included in the District's sewer service charges. The necessary funds to supplement apportioned taxes and interest income for financing the required system improvements can be obtained from the establishment of a connection fee. Until the City of Palo Alto has completed their study for the expansion of the Water Quality Control Plant, a realistic estimate of the costs for additional capacity at the treatment plant are not available. However, any connection fees established by the District should include charges for the treatment plant to begin building a reserve for purchase of future capacity.

Depending on the amount of funds generated by apportioned taxes, interest income, sewer service charges and connection fees which are established, it may be possible for the District to finance its needs on a "pay as you go" program. Alternate methods of financing, if the timing for required funds cannot be met by generated income, could be the issuance and sale of Revenue Bonds or negotiations with the City of Palo Alto for purchase of additional treatment plant capacity with extended payments over several years, similar to the District's 1971 Agreement with Palo Alto.

Finally, there are special issues involved in providing full sanitary service to the industrial area (Area "A"). The District must choose between several design options and several financing options. Much of the industrial area North of Bay Road lies in a separate drainage basin. Sewage from this basin must be collected to the North, then pumped into an existing system. There are three (3) design options: pump back into the EPASD system, pump into the WBSD system and contract with WBSD for treatment, or beg the question by annexing the area separately to WBSD. Analysis of these options is not within the scope of this edition of the Master Plan.

There are also several options for financing system extension into the industrial area. The District could include this project in its general system upgrade work and make no separate and special financing arrangements. Or the District could make no special provisions other than to charge a higher zone-rated connect charge for connections in this area to reflect greater development costs. Finally, with cooperation of property owners in the area, a Special Assessment District could be formed with construction costs paid for over fifteen (15) years by property owners and presumably passed on to future industrial users.

## 6. GOALS & IMPLEMENTATION PLAN

In our review of the District's 1973 Master Plan, we noticed operational areas that needed to be reviewed and changed. Although not part of the Master Plan Review, we will comment on them in this area as they are related to the implementation of the Master Plan. You will note in Goals and Implementation Plan (Fig. 6.1) that many of these needs have already been acted upon and are nearing completion.

The Goals have been divided into three (3) areas, Operation, Current and Future Needs.

# East Palo Alto Sanitary District

## GOALS AND SCHEDULE

<u>GOALS &amp; OBJECTIVES</u>	<u>TASKS</u>	<u>TARGET DATE</u>
<u>I. Modernize Operations</u>		
A. Establish District Policies & Procedures	1. Adopt revised Master Plan	May '83
	2. Develop & adopt new operations code	May '83
	3. Develop application and permit forms	May '83
B. Establish Connection Fees	1. Adopt ordinance	May '83
C. Establish Preventative Maintenance Program	1. New District map	Completed
	2. Develop record system	April '83
	3. Set up procedures	April '83
D. Modernize Equipment	1. Study needs	May '83
	2. Dispose of unneeded assets	Fall '83
	3. New flow meter	Fall '83
<u>II. Current Capacity Limitations</u>		
A. Inflow/infiltration	1. Seal MH covers in low areas	Completed
	2. Identify system leaks	April '83
	3. Approve repair program	May '83
	4. 1st phase of repairs	October '83
	5. 2nd phase of repairs	October '84
B. Excess Water Use	1. Study feasibility of water conservation program	August '83
C. Replace Undersize Lines	1. Area "E" Cooley Avenue	Nov. '83
	2. Area "H" Green Street	Nov. '83
	3. Area "K" O'Connor Street	Oct. '83
	4. Area "N" Pulgas Avenue	Oct. '83
D. Localized Restrictions	1. Rechannel manholes (start)	June '83
<u>III. Future Capacity Limitations</u>		
A. Undersize Lines	1. Review status of flow in Areas F, I, L, M	Spring of each year
	2. Install new lines	As needed
B. Industrial Park Area "A"	1. Determine method of serving	Fall '83
	2. Determine method of financing	Fall '83
	3. Install new sewers	
C. Treatment Capacity	1. Determine need & timing	May '83
	2. Determine when capacity will be available	July '83
	3. Negotiate more capacity	

## GOALS & SCHEDULE

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