

**CUPERTINO SANITARY DISTRICT**  
SANTA CLARA COUNTY

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November 10, 1964

Board of Directors  
Cupertino Sanitary District  
20065 20833 Stevens Creek Boulevard  
Cupertino, California

Gentlemen:

At the request of the Board, we have reviewed the District's Master Sewer Plan adopted January, 1960 and have analyzed the trend in changes of land uses that would effect the sanitary sewer system of the District.

Our findings, analysis, summaries, and recommendations are included in the following report. We conclude that the District is in a financial position to proceed with necessary construction projects to conform to the enclosed Revised Master Sewer Plan. It appears that these projects can be financed on a "pay-as-you-go" basis with current funds available and anticipated annual revenues.

Additional outfall capacity and sewage treatment facilities will have to be considered in a subsequent report in the future.

Very truly yours,

MARK THOMAS & CO. INC.  
District Manager-Engineer

A handwritten signature in black ink, appearing to read "John E. Fleming", is written over a horizontal line. The signature is fluid and cursive.

John E. Flemming

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## LIST OF EXHIBITS

Title	Exhibit
Revised Master Sewer Plan for the Cupertino Sanitary District	"A"
Trunk Service Area Map for the Cupertino Sanitary District	"B"

REVIEW AND ANALYSIS OF THE EXISTING SEWER SYSTEM  
AND ESTABLISHMENT OF A REVISED MASTER SEWER PLAN  
FOR THE CUPERTINO SANITARY DISTRICT

INTRODUCTION

During the five years since the original District Master Plan was prepared, extensive changes have taken place throughout the area that is served by the Cupertino Sanitary District sewer system. There has been a rapid growth in a number of residential, multiple, and commercial developments. The density in units and population has increased far beyond that anticipated for an area that was formerly thought of as a rural community with a minimum building lot of 10,000 square feet in relative level areas and acre sized lots in hill areas. Triplex construction, apartment construction and the soon-to-be-constructed "high-rise" apartments were not considered for this area, but they are now a fact. The neighborhood commercial centers are being replaced or supplemented by larger developments and the development of industrial parks are in the formative stages.

There are lands outside of the District, but within the future service area of the District where new developments are planned, or where the soil has been overloaded and septic tank failures have occurred. In these areas and other areas where septic tanks may not function properly, expenditure of funds would be better invested in the construction of permanent sewer systems.

In considering these facts, it is evident that the existing mains may be running full within the next few years. New lines, larger lines and parallel lines will be needed and must be planned for now.

General plans and zoning ordinances of the Cities of Cupertino and Saratoga and the unincorporated areas of the County have been reviewed and considered as a guide as to present and future land usage in order to revise the Master Sewer Plan.

## CONTENTS OF THIS REPORT

This report discusses the following subjects that are analyzed and summarized in various tables and exhibits:

- Analysis of the Existing Sewer System
- Criteria for Design of the Revised Master Sewer Plan
- Analysis of Land Use by Trunk Service Areas
- Tabulation of the Computed Ultimate Sewer Flows Anticipated
- Construction Priority List and Recommendations
- Cost Study of the Construction Projects Planned
- Revised Master Sewer Plan for the Cupertino Sanitary District
- Trunk Service Area Map for the Cupertino Sanitary District
- Sewage Outfall and Treatment Facilities
- Methods of Financing Sewer System Expansion
- Summary and Recommendations

## ANALYSIS OF THE EXISTING SEWER SYSTEM

An analysis of the existing facilities was made in detail in order to study where extensions, diversions and paralleling of lines are necessary. The various trunks, their velocities and capacities are listed in Table I.

## CRITERIA FOR DESIGN OF THE REVISED MASTER SEWER PLAN

The recently adopted General Plans for the Cities of Saratoga and Cupertino and recent County developments, were studied to determine the patterns of land usage and its effect on the sewerage system. Table 2 summarizes these findings and establishes the criteria for design of the Revised Master Sewer Plan.

## ANALYSIS OF LAND USE BY TRUNK SERVICE AREAS

Table 3 shows the acreage of various land usage and resulting flows within each Trunk Service Area, and summarizes the same for the entire District.

## TABULATION OF THE COMPUTED ULTIMATE SEWER FLOWS

Table 4 integrates the information in Tables 1, 2, and 3, in order to tabulate the ultimate anticipated flows needed to establish the design of the sewerage system and point out where new construction is necessary.

## CONSTRUCTION PRIORITY LIST AND RECOMMENDATIONS

The following projects shown on Exhibit "B" are listed in the priority as needed by the District. However because of the timing of particular developments that would aid the financing of certain trunks, the priority order is certainly flexible.

1. Pruneridge-Tantau-Homestead Trunk (Service Area "N")

This project would commence with a metering station at the westerly City Limits of Santa Clara on Homestead Road and proceed westerly, thence southerly along the future Tantau Avenue extension to Pruneridge Avenue, thence westerly across Wolfe Road to the Idlewild Outfall north of the Junipero Serra Freeway.

The development of the Vallco Industrial Park will more or less set the construction date of this project and will also assist financially by participation, to the extent of the cost of supplying required sewer facilities in these roads, and the District will pay for the required oversizing. In conjunction, the Tantau portion could be extended at the expense of others, southerly to Stevens Creek Boulevard if development takes place simultaneously.

2. Creston Trunk Relocation (Service Area "I" )

The relocation of the mains and syphons will be required, due to the construction of the Junipero Serra Freeway and relocation of the railroad spur line to Permanente Cement Plant by the State Division of Highways.

The existing trunk from Creston Drive on Foothill Boulevard running north, thence easterly through an easement, across the Creek to Barranca Drive, will be abandoned. Also, the Auburn Lane Trunk from Creston Drive to the above line will be abandoned. A new line will be constructed along Creston Drive from Foothill Boulevard to the existing sewer on Creston Drive. At a point northwest of the existing line on Creston Drive the new main will be extended northeasterly across the Creek, then north under the railroad and the freeway to Peninsular Avenue, then to the existing trunk at Barranca. The majority of the cost of this relocation should be the obligation of the State Division of Highways, and all or a part of this project may be done in conjunction with a proposed assessment district in this area.

3. Florence-Peninsular Diversion Trunk and Pump Station (Service Area "N")

This project would entail the construction of a pump station on the lower end of Florence Drive, a force main northeasterly to Peninsular Avenue extension, then a gravity trunk line southeasterly to the September-Lowe Extension and Diversion Trunk, thence northeasterly across West Valley Freeway (encased in a sleeve or casing), and thence to the existing 10" main.

This project would be designed to ultimately divert 1.14 million gallons per day (peak flow) that would flow to the Homestead Pump Station along the alignment of the existing system. By diverting said peak flow, reconstruction of the Homestead Pump Station will be minimized and a parallel line on Barranca will be avoided.

The cost of construction of the Pump Station and Force Main will be a District responsibility; the gravity line should be installed to serve the property which it passes through and, thus the District would then only pay for the oversizing of the mains.

This project should be constructed prior to the time when the flow through the Florence Drive to Creston Drive syphon reaches maximum capacity, and this time is not too far away.

4. Junipero Serra-Homestead Parallel Trunk (Service Area "N")

All of the existing trunk line on Homestead Road from the Stevens Freeway to Lawrence Station Road, as per the Master Plan Report dated January, 1960, will be undersized for the ultimate anticipated flows (both the average and peak). But from the Nathanson easement (Homestead High School) eastward, the under capacity would become most critical. A parallel trunk sewer should be built to intercept the flow coming from south of the Freeway along the alignment of the existing 10" line in the Nathanson easement at a point just north of the Junipero Serra Freeway, then generally paralleling the Freeway and Homestead Road easterly to the Pruneridge Avenue Trunk Sewer at the Idlewild easement. This would be financed by the District, but portions could be done in conjunction with development and only oversizing and easements would be involved. The sewer freeway crossing at the Nathanson easement has recently been completed to conform to this plan.

5. Stevens Creek-Junipero Serra Diversion Trunk (Service Area "N")

This project will consist of paralleling the Local Improvement District #1 outfall by connecting the Florence-Peninsular Diversion Trunk to the Junipero Serra-Homestead Parallel Trunk through the Nathanson property and across the Junipero Serra Freeway.

The construction of this project should coincide with development of the Nathanson property except that portion across Junipero Serra which should be done immediately. Replacement of the Freeway crossings would be the obligation of the State. The District would pay for the necessary oversizing, and the Developers of the land would pay for the equivalent 8" lines.

6. September-Lowe Diversion Trunk (Service Area "G")

This project would be from McClellan Road to Florence-Peninsular Diversion Trunk paralleling West Valley Freeway. The construction date on this line will also coincide to the Division of Highways planning on the West Valley Freeway project. The West Valley Freeway will be depressed at both Stevens Creek Boulevard and at McClellan Road.

The District main on McClellan Road will be severed, thus requiring a new main to be installed to run northerly along the westerly line of the Freeway from McClellan Road to Stevens Creek Boulevard, and thence a parallel line northerly along Lowe Avenue to the juncture with the Florence-Peninsular Diversion Trunk and where the Stevens Creek Junipero Serra Diversion Trunk crosses the Freeway.

The State should be obligated to pay a large portion of the cost of this project and possible developers would participate with the District.

7. Blaney-Wheaton Diversion Trunk (Service Area "L")

This project will be north from the south side of Stevens Creek Boulevard and easterly to Wheaton Drive at Portal Avenue.

This project entails diverting 1.14 M.G.D. peak flow, 0.76 M.G.D. average flow through a new line from the existing 12" main that flows easterly along the south side of Stevens Creek Boulevard, northerly across Stevens Creek Boulevard to an existing section of 10" main on north Blaney Avenue. The Blaney Avenue main (10") must be extended northerly and thence easterly to the existing 12" main at Wheaton and Portal Avenue.

This project will probably be built by others with necessary oversizing and the Stevens Creek Boulevard crossing to be financed by the District.

8. West Calabazas Creek Trunk (Service Area "C")

This project would be on the west side of Calabazas Creek and would extend from Prospect Road to Pierce Road at Sarahills Drive. It would eliminate the need for a pumping station on Sarahills Drive to

serve a portion of Sarahills Unit No. 2. This trunk line will probably be financed under assessment proceedings.

In the future, this line would be extended up the Creek to the Mt. Eden Road vicinity to serve that area.

9. Argonaut Trunk (Service Area "A")

This project would be southerly from the existing Sea Gull Way sewer system under the Southern Pacific Railroad to Cox Avenue at Woodmont Drive.

This line will probably be installed by others as development takes place in the area.

10. Stelling Diversion Trunk (Service Area "M")

This project would be from McClellan Road to the existing main north of Stevens Creek Boulevard.

The project calls for the installation of a 15" main to be built in conjunction with the construction of improvements for DeAnza College site (Cupertino branch of Foothill College). Up to 2.18 M.G. D. peak flow or 1.45 M. G. D. average flow will be diverted at McClellan Road northerly along Stelling Road main to Stevens Creek Boulevard; thence across Stevens Creek Boulevard to the terminus of the existing 12" main.

Connection fees from the College site should pay most of the cost of this project and the District's share being mainly for the oversizing of the line.

11. Prospect Pump Station Expansion and Parallel Force Main (Service Area "B")

This project would include modification of the pumping equipment to increase capacity and to parallel the existing force main to handle said increased capacity. This was anticipated in the original installation and the design provided for such modifications. The original sleeve under Saratoga-Sunnyvale Road was sized to carry the parallel force main.

12. Prospect-Stelling Parallel Trunk (Service Area "D")

This project would be a gravity trunk from the force main at Prospect and Stelling Roads, north on Stelling to McClellan Road. Possibly another parallel route may have to be investigated in lieu of this plan before a final decision is made.

The greater part of the cost of this work will be the obligation of the District. Timing of this project is contingent on when the flow in the existing main reaches about two-thirds of its capacity. Currently, about 36% of the capacity is being used.

13. West Stevens Creek Canyon Trunk (Service Area "H")

This project would extend the existing sewer southwesterly from the area of the Deep Cliffe Golf Course parking lot along an existing easement more or less paralleling Stevens Creek and thence westerly to Stevens Canyon Road. The cost of this project may be financed by assessment proceedings or by developers of subdivisions. Extensions of this trunk would be on or parallel to Stevens Canyon Road.

14. East Stevens Creek Canyon Trunk (Service Area "H")

This project would extend a trunk line southerly from a junction manhole in the Simms property across the Creek to McClellan Road. This would be contingent on the development of this area and the cost would be borne by the subdivider.

From this point, the trunk would extend southerly to the Santa Clara Sand and Gravel property. This phase would also be contingent on the development of this area, and said lines would be installed under a reimbursement agreement and the original cost must be borne by developers.

15. Homestead Pump Station Expansion and Parallel Force Main (Service Area "J")

This project would include modification of the pumping equipment to increase capacity and to parallel the existing force main to handle said increased capacity. This was anticipated in the original installation and the design provided for such modification.

## COST STUDY OF THE CONSTRUCTION PROJECTS PLANNED

A study of the costs and methods of financing each project is necessary to establish an orderly plan to extend, divert, and parallel certain District trunks and necessary appurtenances. Table 5 details the estimated costs of each of the proposed projects. Table 6 summarizes these findings, and also estimates probable financial participation by the District and by others for each project.

## REVISED MASTER SEWER PLAN FOR THE CUPERTINO SANITARY DISTRICT

The enclosed Exhibit "A" shows the following information:

1. District boundaries and future service area
2. Existing sewer system
3. Peak flow capacity of existing and proposed trunks (in M.G.D.)
4. Anticipated peak flows of existing and proposed trunks (in M.G. D.)
5. Proposed locations of extension, diversions or paralleling of trunks and breakdown of projects.
6. Proposed pump stations and syphons

## TRUNK SERVICE AREA MAP FOR THE CUPERTINO SANITARY DISTRICT

The enclosed Exhibit "B" shows the following information:

1. District boundaries and future service area
2. Existing and proposed trunks
3. Service areas for the trunks

## SEWAGE OUTFALL AND TREATMENT FACILITIES

Currently, the District has an agreement with the Cities of San Jose and Santa Clara for treatment and disposal of sewage wastes emanating from the District. The agreement grants the District a 3.4 M.G.D. (average flow) capacity. Evidence from this report indicates an eventual capacity of 7.9 M.G.D. (average flow) will be needed.

An outfall agreement with the City of Santa Clara is about to be concluded at staff level, and it is anticipated that this agreement between the City and the District will be executed before January, 1965. This will entitle the District to an outfall capacity of 6.8 M.G.D. (peak flow). Evidence from this report indicates an eventual capacity of 11.8 M.G.D. (peak flow) will be needed.

The current proposed outfall agreement provides that the City of Santa Clara shall install a trunk sewer on Homestead Road from Lawrence Station Road westerly to the District's boundaries that, together with the existing trunk sewer, will provide the District with 6.8 M.G. D. (peak flow). The District Board should give some thought at this time as to the possibility of increasing the proposed pipe size to handle the ultimate flow of 11.8 M.G.D. (peak capacity) anticipated. If Santa Clara would agree to this, it would increase the District's outfall participation by about \$15,000.

It appears that the District will need additional sewage outfall and treatment facilities sometime between 1970 and 1975. There are certain alternates to consider, but the internal system of the District is so designed that it can conform to various plans that may be investigated. This problem of additional sewage outfall and treatment facilities is of such a nature that it should be considered in a subsequent report.

#### METHODS OF FINANCING SEWER SYSTEM EXPANSION

In 1962, a District General Obligation Bond Issue for \$1,700,000 was approved by the voters. About \$833,000 of this amount was paid to the City of San Jose for reserve capacity in the San Jose-Santa Clara Sewage Treatment Plant. At the end of this year about \$565,000 will be paid to the City of Santa Clara for reserve capacity in a joint outfall line to the treatment plant. Other expenses amounted to about \$20,000. The balance of the bond money of \$282,000 plus interest earned of \$54,000, results in \$336,000 available for Capital Improvements on the District's internal system.

Also, the District has been accumulating a surplus in the form of an Unappropriated Reserve Account of about \$70,000. In addition, this current fiscal year there will be about \$60,000 in the Capital Outlay Sewer Construction Account available, and about \$40,000 can be set aside in this Annual Budget Account toward construction programs necessary to conform to the Revised Master Sewer Plan.

In summary then, the current funds available and anticipated budget funds total up to the following:

1962 Bond Funds	\$336,000
Current Unappropriated Reserve	70,000
1964-65 Capital Outlay	60,000
1965-66 Capital Outlay	40,000
1966-67 Capital Outlay	40,000
1967-68 Capital Outlay	40,000
	\$586,000

Table 6 summarizes all of the proposed projects and indicates that the probable total cost for the District's share of the additions to the sewer system will be about \$568,900. It, therefore, appears that these projects can be financed on a "pay-as-you-go" basis with current funds available and anticipated annual revenue.

## SUMMARY AND RECOMMENDATIONS

The sequence of the suggested priorities is based upon general information available. The timing of Freeway projects, development of certain properties and critical flow information at various points may require adjustment of the sequence of priorities and, therefore, they should be considered as being flexible.

The current trend of land usage results in a higher density and it is important that the District be prepared to supply sanitary sewer service to all properties in the future service area. It is, therefore, recommended that the Board of Directors of the Cupertino Sanitary District adopt this report and time each project to the economic benefit of the whole District. The District has sufficient bond money and annual construction funds coming in to move forward with the necessary projects. Certain portions of projects may be required in the immediate Future and they can be done at the expense of the District and reimbursed at ordinance rates at time of connection.

It is further recommended that the District Board consider the advantages and disadvantages of increasing the pipe size of the Santa Clara sewer outfall proposed on Homestead to handle the ultimate anticipated peak flows. This plan of action could save future funds, but would limit the choices of alternate plans for ultimate sewage disposal. A subsequent report on additional sewage outfall and treatment facilities should be considered before 1970.

TABLE 1

ANALYSIS OF THE EXISTING SEWER SYSTEM  
(See Exhibits "A" and "B")

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Velocity ft/sec</u>	<u>Capacity C.F.S.</u>	<u>Capacity M.G.D.</u>
AREA "A"						
DeSanka Avenue	South End	Sea Gull Way	6"	2.8	0.55	0.36
Sea Gull Way	DeSanka Avenue	Ted Avenue	8"	2.0	0.70	0.45
Kirkbrook Drive	Sea Gull Way	Prospect Road	8"	1.75	0.61	0.39
Prospect Road	Kirkbrook Drive	Pump Station	8"	1.75	0.61	0.39
AREA "B"						
Pierce Road	-	Highway #9	8"	2.7	0.94	0.61
Easement	Surrey Lane	Highway #9	8"	2.0	0.70	0.45
Highway #9	Blauer Drive	Pierce Road	8"	2.0	0.70	0.45
Highway #9	Pierce Road	Wardell Road	8"	2.2	0.77	0.50
Highway #9	Wardell Road	Pump Station	8"	2.45	0.86	0.56
Prospect Road	Pump Station	Stelling Road	6"			0.46*
AREA "C"						
No existing sewers						
AREA "D"						
W. Prospect Road	West of Stelling	Stelling Road	8"	2.85	0.99	0.64
Stelling Road	Prospect Road	Rainbow Drive	10"	2.05	1.12	0.72
Stelling Road	Rainbow Drive	Orion Lane	10"	2.05	1.12	0.72
Stelling Road	Orion Lane	McClellan Road	10"	2.4	1.31	0.85

C.F.S. = Cubic Feet per Second  
M.G.D. = Million Gallons per Day

TABLE 1 - TRUNK SERVICE AREAS "A", "B", "C", "D"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Velocity ft/sec</u>	<u>Capacity C.F.S.</u>	<u>Capacity M.G.D.</u>
AREA "E"						
McClellan Road	Stelling Road	Kim Lane	10"	3.6	1.96	1.27
McClellan Road	Kim Lane	Highway #9	10"	2.4	1.31	0.85
Highway #9	McClellan Road	Rodrigues Avenue	10"	2.05	1.12	0.72
Highway #9	Rodrigues Avenue	Scofield Drive	10"	2.05	1.12	0.72
Highway #9	Scofield Drive	Stevens Creek Blvd.	10"	2.05	1.12	0.72
Stevens Creek Blvd.	Stelling Road	Highway #9	8"	3.2	1.12	0.72
Stevens Creek Blvd.	Highway #9	Randy Lane	12"	4.35	3.42	2.21
Stevens Creek Blvd.	Randy Lane	Blaney Avenue	12"	4.1	3.22	2.08
Stevens Creek Blvd.	Blaney Avenue	Portal Avenue	12"	2.6	2.04	1.32
Stevens Creek Blvd.	Portal Avenue	Wolfe Road	12"	2.6	2.04	1.32
Wolfe Road	Stevens Creek Blvd.	So. Side Freeway	12"	2.4	1.88	1.21
Wolfe Road	So. Side Freeway	No. Side Freeway	15"	3.3	4.05	2.62
Wolfe Road	No. Side Freeway	Homestead	12"	2.4	1.88	1.21
AREA "F"						
Blaney Avenue	Bollinger Road	John Drive	8"	3.0	1.05	0.68
Blaney Avenue	John Drive	Pacifica Drive	8"	2.75	0.96	0.62
Blaney Avenue	Pacifica Drive	LaMar Drive	8"	2.45	0.86	0.56
Blaney Avenue	LaMar Drive	Price Avenue	10"	2.4	1.31	0.85
Blaney Avenue	Price Avenue	Stevens Creek Blvd.	10"	2.05	1.12	0.72
AREA "G"						
Bubb Road	Rainbow Drive	Regnart Road	8"	2.45	0.86	0.56
Bubb Road	Regnart Road	Terrace Drive	8"	2.45	0.86	0.56
Bubb Road	Terrace Drive	Pumpkin Drive	8"	2.65	0.93	0.60
Bubb Road	Pumpkin Drive	McClellan Road	8"	2.0	0.70	0.45
McClellan Road	Bubb Road	September Drive	8"	2.45	0.86	0.56
Byrne Avenue	McClellan Road	San Fernando Rd.	8"	3.2	1.12	0.72
Byrne Avenue	San Fernando Rd.	Stevens Creek Blvd.	8"	2.0	0.70	0.45
Stevens Creek Blvd.	Byrne Avenue	Lowe Avenue	8"	2.0	0.70	0.45
Lowe Avenue	Stevens Creek Blvd.	University Way	8"	2.2	0.77	0.50

TABLE 1 - TRUNK SERVICE AREAS "E", "F", "G"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Velocity ft/sec</u>	<u>Capacity C.F.S.</u>	<u>Capacity M.G.D.</u>
AREA "H"						
Easement	End of Main	Deep Cliff outfall	8"	2.0	0.70	0.45
Easement	Deep Cliff Outfall	McClellan Road	8"	2.2	0.77	0.50
Alma Way	McClellan Road	Vallecito Road	8"	2.9	1.01	0.65
Easement	Vallecito Road	Palm Avenue	10"	4.6	2.51	1.62
Easement	Palm Avenue	Junction Manhole	10"	2.4	1.31	0.85
Easement	Junction Manhole	Stevens Creek Blvd.	10"	3.15	1.72	1.11
Pharlap Drive	Stevens Creek Blvd.	Woodbury Drive	10"	2.4	1.31	0.85
Pharlap Drive	Woodbury Drive	Florence Drive	10"	2.4	1.31	0.85
Florence Drive	Pharlap Drive	Stevens Creek	10"	2.4	1.31	0.85
Easement	# Syphon across	Stevens Creek	2-6"	2.0	0.78	0.50
Creston Drive	Stevens Creek	Stevens Creek	10"	2.4	1.31	0.85
Easement	# Syphon across	Stevens Creek	2-6"	2.1	0.81	0.52
Auburn Lane	Stevens Creek	Barranca Ext.	10"	2.4	1.31	0.85
AREA "I"						
Foothill Blvd.	Alcalde Road	Palm Avenue	8"	2.2	0.77	0.50
Foothill Blvd,	Palm Avenue	Stevens Creek Blvd.	8"	3.2	1.12	0.72
Foothill Blvd.	Stevens Creek Blvd.	Salem Avenue	8"	3.3	1.15	0.74
Foothill Blvd.	Salem Avenue	Pringlewood	10"	2.7	1.47	0.95
Foothill Blvd.	Pringlewood	Easement	8"	5.7	1.99	1.29
Easement	Foothill Blvd.	-	8"	4.5	1.57	1.01
Easement	-	Stevens Creek	10"	2.7	1.47	0.95
Easement	# Syphon across	Stevens Creek	2-6"	3.75	1.48	0.96
Barranca Drive	Stevens Creek	Pump Station	12"	2.95	2.32	1.50

TABLE I - TRUNK SERVICE AREAS "H", "I"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Velocity ft/sec</u>	<u>Capacity C.F.S.</u>	<u>Capacity M.G.D.</u>
AREA "J"						
Homestead Road	Pump Station	Maxine Avenue	8"			0.92*
Homestead Road	Maxine Avenue	Mary Avenue	12"	3.8	2.98	1.93
Homestead Road	Mary Avenue	LID # 1 Outfall	12"	4.0	3.14	2.03
Homestead Road	LID #1 Outfall	Stelling Road	12"	3.8	2.98	1.93
Homestead Road	Stelling Road	Highway #9	12"	4.6	3.61	2.33
Homestead Road	Highway #9	Blaney Avenue	12"	3.62	2.84	1.83
Homestead Road	Blaney Avenue	Wolfe Road	12"	3.7	2.91	1.88
Homestead Road	Wolfe Road	Leonard Road	12"	4.35	3.42	2.21
Homestead Road	Leonard Road	Peacock Avenue	12"	3.8	2.98	1.93
Homestead Road	Peacock Avenue	Santa Clara Outfall	15"	2.7	3.31	2.14
AREA "K"						
Gardena Drive	West end	Stelling Road	8"	2.45	0.86	0.56
Valley Green Drive	Stelling Road	Easement	8"	2.1	0.73	0.47
Junipero Serra	Valley Green Dr.	Beardon Dr. Ext.	8"	2.1	0.73	0.47
Junipero Serra	Beardon Dr. Ext.	Highway #9	8"	2.75	0.96	0.62
Junipero Serra	Highway #9	Larry Way	8"	2.35	0.82	0.53
Lucille Avenue	Larry Way	Blaney Avenue	8"	3.35	1.17	0.76
Blaney Avenue	Merritt Drive	Lucille Avenue	8"	2.0	0.70	0.45
Blaney Avenue	Lucille Avenue	Homestead Road	10"	2.4	1.31	0.85
AREA "L"						
No. Blaney Avenue	Stevens Creek Blvd.	End of Sewer	10"	2.5	1.36	0.88
Stevens Creek Blvd.	Highway #9	Blaney Avenue	8"	2.1	0.73	0.47
Stevens Creek Blvd.	Blaney Avenue	Portal Avenue	8"	2.0	0.70	0.45
Portal Avenue	Stevens Creek Blvd.	Wheaton Drive	8"	2.0	0.70	0.45
Wheaton Drive	Portal Avenue	Denison Avenue	12"	3.0	2.36	1.52
Denison Avenue	Wheaton Drive	Amherst Drive	12"	3.2	2.51	1.62
Amherst Drive	Denison Avenue	Norwich Avenue	12"	3.1	2.43	1.57
Norwich Avenue	Amherst Drive	Merritt Drive	12"	2.75	2.16	1.40

TABLE 1 – TRUNK SERVICE AREAS "J", "K", "L"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Velocity ft/sec</u>	<u>Capacity C.F.S.</u>	<u>Capacity M.G.D.</u>
AREA "M"						
Stelling Road	Stevens Creek Blvd.	Garden Gate Drive	12"	2.75	2.16	1.40
Stelling Road	Garden Gate Drive	Greenleaf Drive	12"	3.75	2.95	1.91
Greenleaf Drive	Stelling Road	Beardon Drive	12"	4.1	3.22	2.08
Greenleaf Drive	Beardon Drive	End of Greenleaf Dr.	12"	4.3	3.38	2.18
Easement	End of Greenleaf Dr.	Highway #9	15"	3.5	4.29	2.77
Mariani Avenue	Highway #9	Randy Lane	12"	4.3	3.38	2.18
Merritt Drive	Randy Lane	Blaney Avenue	12"	4.3	3.38	2.18
Merritt Drive	Blaney Avenue	Cypress Dr.	12"	4.8	3.77	2.44
Merritt Drive	Cypress Drive	Portal Avenue	15"	3.25	3.99	2.58
Merritt Drive	Portal Avenue	Dennison Avenue	12"	4.8	3.77	2.44
Merritt Drive	Dennison Avenue	Norwich Avenue	15"	4.8	5.89	3.80
Easement	Merritt Drive	So. Side Freeway	15"	4.8	5.89	3.80
Easement	So. Side Freeway	No. Side Freeway	18"	3.7	6.54	4.22
AREA "N"						
Lowe Avenue Ext.	University Way	Greenleaf Dr. Ext.	10"	4.5	2.45	1.58
Greenleaf Dr. Ext.	Lowe Avenue Ext.	Greenleaf Drive	10"	2.2	1.20	0.78
LID #1 Outfall	Greenleaf Drive	Homestead Road	10"	3.6	1.96	1.27
LID #1 Outfall	So. Side Freeway	No. Side Freeway	14"	4.6	4.92	3.17

\*Capacity shown for Force Main was determined from System Curves of the Pump Station and Force Main with both pumps operating.  
#Head Loss due to bends, loss of velocity, etc., not calculated and, therefore, not deducted on Siphons.

TABLE 1 – TRUNK SERVICE AREAS "M", "N"

TABLE 2  
 CRITERIA FOR DESIGN OF THE REVISED MASTER SEWER PLAN  
 (See Exhibit "A")

Land Use (Density of <u>Zoning</u> )	Units Per <u>Acre</u>	Person Per <u>Unit</u>	Person Per <u>Acre</u>	Gallons Per Day Per <u>Person</u>	G.P.D. (Avg. Flow) <u>Per Acre</u>	G.P.D. (Peak Flow) <u>Per Acre</u>	Total Acreage in Service <u>Area</u>	Total Flow in M.G.D.(Peak Flow) in <u>Service: Area</u>
High	15	3	45	75	3375	5063	299.8	1.518
Medium High	9	3	27	75	2025	3038	967.1	2.937
Medium	3.5	4	14	80	1120	1680	1911.6	3.210
Low	2	4	8	80	640	960	399.3	0.383
Very Low	1	4	4	80	320	480	3860.8	1.853
Agricultural, Parks, Golf Courses ,etc .	-	-	-	-	100	150	87.7	0.013
Commercial	-	-	-	-	1000	1500	658.5	0.988
Industrial	-	-	-	-	1000	1500	376.0	0.564
Schools, Churches, etc.	-	-	-	-	1000	1500	<u>246.3</u>	<u>0.369</u>
TOTALS							8807.1	11.835

G. P. D. = Gallons per day  
 M.G.D. = Million Gallons per day  
 Peak Flow = Average Flow x 1.50

TABLE 2

TABLE 3

ANALYSIS OF LAND USE BY TRUNK SERVICE AREAS  
(See Exhibit "B")

LAND USE AND AVERAGE FLOWS IN G. P. D. PER ACRE

Trunk Service Area (with area shown in acres)	High	Medium	Medium	Low	Very	Agric.	Commercial	TOTAL ACRES IN EACH TRUNK SERVICE AREA
	(3375)	High (2025)	(1120)	(640)	Low (320)	Parks (100)	Indust. Schools Churches (1000)	
A	-	-	131.5	132.2	-	-	33.0	296.7
B	-	18.8	194.6	75.2	101.2	-	40.8	430.6
C	-	-	-	123.5	1306.0	-	35.0	1464.5
D	-	9.7	266.4	-	684.4	-	5.8	966.3
E	29.2	110.8	218.6	-	-	-	148.9	507.5
F	6.0	22.9	82.0	-	-	-	46.5	157.4
G	-	111.8	278.6	22.7	303.6	-	166.9	883.6
H	-	46.2	233.3	45.7	1147.6	87.7	3.0	1563.5
I	-	269.5	245.8	-	318.0	-	59.9	893.2
J	46.1	62.0	-	-	-	-	131.2	239.3
K	12.8	98.3	40.1	-	-	-	22.2	173.4
L	-	29.5	14.0	-	-	-	78.1	121.6
M	11.5	93.0	206.7	-	-	-	216.8	528.0
N	<u>194.2</u>	<u>94.6</u>	-	-	-	-	<u>292.7</u>	<u>581.5</u>
Total Acres in each Land Use	299.8	967.1	1911.6	399.3	3860.8	87.7	1280.8	8807.1

TABLE 4  
 TABULATION OF THE COMPUTED ULTIMATE SEWER FLOWS  
 (See Exhibits "A" and "B")

TRUNK SERVICE AREA "A"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri- bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Easement	Woodmont Drive	DeSanka Avenue	132.2	640	0.085	0.085	0.128
DeSanka Avenue	S.P.R.R.	Kirkbrook Drive	34.4	1120	0.038	0.123	0.185
Kirkbrook Drive	Sea Gull Way	Prospect Road	35.0	1120	0.039		
			10.0	1000	0.010	0.172	0.258
Prospect Road	Kirkbrook Drive	Calabazas Creek	62.1	1120	0.070	0.242	0.363
Prospect Road	Calabazas Creek	Pump Station	23.0	1000	0.023	0.265	0.398
TOTAL AREA SERVED			296.7				
AREA "B"						0.265	0.398

TRUNK SERVICE AREA "B"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri-bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Easement "A"	Rodeo Creek	Highway #9	60.0	640	0.038		
			61.2	320	0.020		
			55.0	1120	0.062	0.120	0.180
Highway #9	Easement "A"	Pierce Road	24.0	1120	0.027	0.147	0.221
Highway #9	Pierce Road	Wardell Road	40.0	320	0.013		
			15.2	640	0.010		
			8.0	1120	0.009	0.179	0.269
Highway #9	Wardell Road	Carniel Avenue	47.3	1120	0.053		
			13.8	1000	0.014	0.246	0.369
Highway #9	Carniel Avenue	S.P.R.R.	18.4	1120	0.020		
			4.6	2025	0.009	0.275	0.413
Highway #9	S.P.R.R.	Prospect Road	5.9	1120	0.006		
			14.2	2025	0.029	0.310	0.465
West Prospect	Highway #9	Pump Station	36.0	1120	0.040		
			27.0	1000	0.027	0.377	0.566
TOTAL AREA SERVED			430.4				
AREA "A"					0.265	0.642	0.963
AREA "D"						0.642	0.963

TABLE 4 – TRUNK SERVICE AREA "B"

TRUNK SERVICE AREA "C"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri-bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Pierce Road		@ Mt. Eden Road	350.0	320	0.112	0.112	0.168
Pierce Road	Mt. Eden Road	Via Regina	182.6	320	0.058	0.170	0.255
Pierce Road	Via Regina	Sarahills Drive	205.6	320	0.066	0.236	0.354
Pierce Road	Sarahills Drive	Calabazas Creek	96.6	320	0.031	0.267	0.401
Calabazas Creek	Calabazas Creek	Wardell Road	180.0	320	0.058	0.325	0.488
Calabazas Creek	Wardell Road	Section Line 25 26	236.0 64.1	320 640	0.076 0.041	0.442	0.663
Calabazas Creek	Section Line 25 26	S.P.R.R.	59.4 55.2	640 320	0.038 0.018	0.498	0.747
S.P.R.R.	Calabazas Creek	Prospect Road	35.0	1000	0.035	0.533	0.800
TOTAL AREA SERVED			1464.5				
AREA "D"						0.533	0.800

TABLE 4 - TRUNK SERVICE AREA "C"

TRUNK SERVICE AREA "D"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
	AREA "B"	Stelling Road	-	-	0.642		
	AREA "C"	Stelling Road	-	-	0.533		
West Prospect Road	Prospect Road	S.P.R.R.	480.0	320	0.154	1.329	1.994
Stelling Road	S.P.R.R.	Rainbow Drive	30.0	320	0.010		
			9.7	1120	0.011	1.350	2.025
Stelling Road	Rainbow Drive	Orion Lane	174.4	320	0.056		
			90.0	1120	0.101	1.507	2.261
Stelling Road	Orion Lane	Huntridge	23.0	1120	0.026	1.533	2.300
Stelling Road	Huntridge	McClellan Road	117.7	1120	0.132	1.665	2.498
McClellan Road	@ Stelling		26.0	1120	0.029		
			9.7	2025	0.020		
			5.8	1000	0.006	1.720	2.580
TOTAL AREA SERVED			966.3				
		AREA "E"				0.267	0.400
		AREA "M"				1.453	2.180

TABLE 4 - TRUNK SERVICE AREA "D"

TRUNK SERVICE AREA "E"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
McClellan Road	AREA "D"	Kim			0.267	0.267	0.400
McClellan Road	Kim	Highway #9	20.0	1120	0.022		
			4.0	2025	0.008	0.297	0.446
Highway #9	McClellan Road	Rodrigues Avenue	30.8	1120	0.034		
			2.0	1000	0.002	0.333	0.500
Highway #9	Rodrigues Avenue	Scofield Drive	18.2	1000	0.018		
			37.9	1120	0.042		
			2.0	2025	0.004	0.397	0.596
Highway #9	Scofield Drive	Stevens Creek Blvd.	62.1	1120	0.070		
			11.6	1000	0.012	0.479	0.719
Stevens Creek Blvd.	AREA "M"	Highway #9	-	-	0.440		
Stevens Creek Blvd.	Highway #9	Randy Lane	23.7	1000	0.024	0.943	1.415
Stevens Creek Blvd.	Randy Lane	Blaney Avenue	61.0	1000	0.061		
			13.2	3375	0.045	1.049	1.574
Stevens Creek Blvd.	Stevens Creek Blvd.	AREA "L"			-0.760	0.289	0.434
Stevens Creek Blvd.	AREA "F"	Stevens Creek Blvd.			+0.205	0.494	0.741
Stevens Creek Blvd.	Blaney Avenue	Portal Avenue	5.1	1000	0.005	0.499	0.749
Stevens Creek Blvd.	Portal Avenue	East Estates Drive	14.8	1000	0.015		
			40.2	2025	0.081	0.595	0.893

TABLE 4 - TRUNK SERVICE AREA "E"

TRUNK SERVICE AREA "E"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Stevens Creek Blvd.	East Estates Drive	Wolfe Road	67.8	1120	0.076	0.671	1.007
Wolfe Road	Stevens Creek Blvd.	So. Side Freeway	22.8	2025	0.046		
			12.5	1000	0.013		
			16.0	3375	0.054	0.784	1.176
Wolfe Road	So. Side Freeway	No. Side Freeway	41.8	2025	0.085	0.869	1.304
'TOTAL AREA SERVED			507.5				
AREA "N"						0.869	1.304

TABLE 4 - TRUNK SERVICE AREA "E"

TRUNK SERVICE AREA "F"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Blaney Avenue	John Drive	Pacifica Drive	9.5	1000	0.010		
			11.0	1120	0.012	0.022	0.033
Blaney Avenue	Pacifica Drive	LaMar Drive	27.0	1000	0.027		
			43.0	1120	0.048		
			8.8	2025	0.018	0.115	0.173
Blaney Avenue	LaMar Drive	Price Avenue	28.0	1120	0.031	0.146	0.219
Blaney Avenue	Price Avenue	Stevens Creek Blvd.	10.0	1000	0.010		
			14.1	2025	0.029		
			6.0	3375	0.020	0.205	0.308
TOTAL AREA SERVED			157.4				
AREA "E"						0.205	0.308

TABLE TRUNK SERVICE AREA "F"

TRUNK SERVICE AREA "G"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Bubb Road	Regnart Road	Terrace Drive	61.0	1120	0.068		
			280.6	320	0.090	0.158	0.237
Bubb Road	Terrace Drive	Pumpkin Drive	21.5	1120	0.024	0.182	0.273
Bubb Road	Pumpkin Drive	McClellan	135.8	1120	0.152		
			22.7	640	0.015		
			23.0	320	0.007	0.356	0.534
McClellan Road	Bubb Road	September Drive	20.0	1120	0.022		
			48.6	1000	0.049		
			6.0	2025	0.012	0.439	0.659
September Drive Ext.	McClellan Road	Stevens Creek Blvd.	6.0	2025	0.012		
			7.4	1120	0.008	0.459	0.689
Stevens Creek Blvd.	Imperial	Lowe Avenue	78.0	2025	0.158		
			20.3	1120	0.023		
			78.2	1000	0.078	0.718	1.077
Low Avenue	Stevens Creek Blvd.	University Way	40.1	1000	0.040	0.758	1.137
Low Avenue Ext.	University Way		21.8	2025	0.044		
			12.6	1120	0.014	0.816	1.224
TOTAL AREA SERVED			883.6				
AREA "N"						0.816	1.224

TABLE 4 - TRUNK SERVICE AREA "G"

TRUNK SERVICE AREA "H"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri-bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Stevens Crk. Parallel		Ricardo Rd. Ext.	982.4	320	0.314	0.314	0.471
Stevens Crk. Parallel	Ricardo Rd. Ext.	McClellan Road	45.4	1120	0.051		
			143.8	320	0.046	0.411	0.617
Stevens Crk. Parallel	McClellan Road	Vallecito	53.5	100	0.005	0.416	0.624
Stevens Crk. Parallel	Vallecito	Palm Avenue	39.7	1120	0.044		
			45.7	640	0.029	0.489	0.734
Stevens Crk. Parallel	Palm Avenue	San Fernando Ct. Ext.	18.9	2025	0.038		
			68.9	1120	0.077		
			21.4	320	0.007	0.611	0.917
Stevens Crk. Parallel	San Fernando Ct. Ext.	Stevens Crk. Blvd.	15.0	100	0.002		
			3.5	1120	0.004	0.617	0.926
Pharlap Drive	Stevens Crk. Blvd.	Woodbury Drive	27.3	2025	0.055		
			3.0	1000	0.003		
			19.2	100	0.002	0.677	1.016
Pharlap Drive	Woodbury Drive	Easement	44.8	1120	0.050	0.727	1.091
Florence Drive	Easement	Pump Station	31.0	1120	0.035	0.762	1.143
TOTAL AREA SERVED			1563.5				
AREA "N"						0.762	1.143

TABLE 4 - TRUNK SERVICE AREA "H"

TRUNK SERVICE AREA "I"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Foothill Blvd.	Alcalde	Palm Avenue	31.0	1120	0.035		
			318.0	320	0.102	0.137	0.206
Foothill Blvd.	Palm Avenue	Voss Avenue	7.6	1120	0.009	0.146	0.219
Foothill Blvd.	Voss Avenue	Stevens Crk .Blvd.	10.3	2025	0.021		
			34.7	1000	0.035	0.202	0.303
Foothill Blvd.	Stevens Crk. Blvd.	Old Stevens Crk. Rd.	31.5	1120	0.035		
			106.3	2025	0.215		
			4.0	1000	0.004	0.456	0.684
Foothill Blvd,	Old Stevens Crk Rd.	Poppy Drive	20.0	1120	0.022.		
			10.5	2025	0.021		
			2.0	1000	0.002	0.501	0.752
Foothill Blvd.	Poppy Drive	Alpine Drive	18.8	2025	0.038		
			5.5	1120	0.006	0.545	0.818
Foothill Blvd.	Alpine Drive	Creston Drive	3.7	1000	0.004		
			31.8	2025	0.064	0.613	0.920
Creston Drive	Foothill Blvd.	Easement	48.1	2025	0.097	0.710	1.065
Easement	Creston Drive	Auburn Lane	113.8	1120	0.127		
			36.2	2025	0.073		
			8.7	1000	0.009	0.919	1.379

TABLE 4 - TRUNK SERVICE AREA "I"





TRUNK SERVICE AREA "K"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri-bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Gardena Drive		Stelling Road	12.0	2025	0.024	0.024	0.036
Valley Green Drive	Stelling Road	Easement	15.6	1120	0.017	0.041	0.062
Easement	Valley Green Dr.	Junipero Serra	20.6	2025	0.042	0.083	0.125
Junipero Serra	Easement	Highway #9	9.2	2025	0.019	0.102	0.153
Junipero Serra	Highway #9	Larry Way	27.3	2025	0.055		
			10.0	1000	0.010	0.167	0.251
Lucille Avenue	Larry Way	Randy Lane	12.2	1000	0.012		
			12.8	3375	0.043		
			9.2	2025	0.019	0.241	0.362
Lucille Avenue	Randy Lane	Blaney Avenue	17.3	1120	0.019	0.260	0.390
Blaney Avenue	Lucille Avenue	No. Side Freeway	7.2	1120	0.008		
			20.0	2025	0.041	0.309	0.464
	AREA "M"		-		+0.232	0.541	0.812
TOTAL AREA SERVED			173.4				
		AREA "N"				0.541	0.812

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TABLE 4 - TRUNK SERVICE AREA "K"

TRUNK SERVICE AREA "L"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contri-bution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Highway #9	Park Avenue	Stevens Crk. Blvd.	37.9	1000	0.038		
			10.0	2025	0.020	0.058	0.087
Stevens Creek Blvd.	Easement	Blaney Avenue	8.0	1000	0.008	0.066	0.099
Stevens Creek Blvd.	AREA "E"	Blaney Avenue			+0.760	0.826	1.239
Stevens Creek Blvd.	Stevens Creek Blvd.	(See below)*			-0.580	0.246	0.369
Stevens Creek Blvd.	Blaney Avenue	Portal Avenue	18.4	1000	0.018	0.264	0.396
Portal Avenue	Stevens Creek Blvd.	Wheaton Drive	9.0	1000	0.009	0.273	0.410
Wheaton Drive	(See below)**	Portal Avenue			+0.580	0.853	1.280
Wheaton Drive	Portal Avenue	Dennison Avenue	19.5	2025	0.039	0.892	1.338
Dennison Avenue	Wheaton Drive	Amherst Drive	4.8	1000	0.005		
			4.0	1120	0.005	0.902	1.353
Amherst-Norwich	Dennison Avenue	Merritt Drive	10.0	1120	0.011	0.913	1.370
TOTAL AREA SERVED			121.6				
		AREA "M"				0.913	1.370
* Blaney Avenue	Stevens Crk. Blvd.	Wheaton Ext.			0.580	0.580	0.870
** Wheaton Ext.	Blaney Avenue	Portal Avenue			0.580	0.580	0.870

TABLE 4 - TRUNK SERVICE AREA "L"

TRUNK SERVICE AREA "M"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
	AREA "D"	Stevens Creek Blvd.			1.453	1.453	2.180
Stellina Road	Stelling Road Stevens Creek Blvd.	AREA "E" Garden Gate Drive	108.0	1000	-0.440 0.108	1.121	1.682
Stelling Road	Garden Gate Drive	Hazelbrook Drive	40.0	1000	0.040	1.161	1.742
Stelling Road	Hazelbrook Drive	Greenleaf Drive	13.0	2025	0.026		
			7.2	1120	0.008	1.195	1.793
Greenleaf Drive	Stelling Road	Beardon Drive	22.2	1120	0.025	1.220	1.830
Greenleaf Drive	Beardon Drive	Highway #9	67.3	1120	0.075		
			14.2	2025	0.029		
			11.0	1000	0.011	1.335	2.003
Mariani Avenue	Highway #9	Vista Drive	17.3	2025	0.035		
			4.0	1000	0.004	1.374	2.061
Merritt Drive	Vista Drive	Blaney Avenue	25.3	1000	0.025		
			13.4	2025	0.027		
			18.5	1000	0.019	1.445	2.168
Blaney Avenue	Merritt Drive	AREA "K"			-0.232	1.213	1.820
Merritt Drive	Blaney Avenue	Portal Avenue	26.8	1120	0.030		
			35.1	2025	0.071	1.314	1.971

TABLE 4 - TRUNK SERVICE AREA "M"

TRUNK SERVICE AREA "M"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Merritt Drive	Portal Avenue	Norwich Avenue	28.0	1120	0.031	1.345	2.018
Easement	Norwich Avenue	Auburn Drive	39.6	1120	0.044		
			10.0	1000	0.010		
		AREA "L"			+0.913	2.312	3.468
Easement	Auburn Drive	No. Side Freeway	11.5	3375	0.039		
			15.6	1120	0.017	2.368	3.552
TOTAL AREA SERVED			528.0				
		AREA "N"				2.368	3.552

TABLE 4 - TRUNK SERVICE AREA "M"

TRUNK. SERVICE AREA "N"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
					0.816		
					0.762		
Easement	Low Avenue Ext.	Greenleaf Ext.	44.3	3375	0.150	1.728	2.592
Easement-Greenleaf Ext.	Mary Ave. Ext.	Nathanson Easement	17.9	3375	0.060	1.788	2.682
Nathanson Easement	Greenleaf Drive	Gardena Ext.	40.0	2025	0.081		
			33.3	1000	0.033	1.902	2.853
Junipero Serra	Gardena Ext.	Stelling Road	18.0	3375	0.061		
			17.8	2025	0.036	1.999	2.999
Junipero Serra	Stelling Road	Beardon Proj.	7.5	2025	0.015	2.014	3.021
Junipero Serra	Beardon Proj.	Highway #9	14.3	2025	0.029	2.043	3.065
Junipero Serra	Highway #9	Blaney Avenue	15.0	2025	0.030		
			7.8	1000	0.008	2.081	3.122
					0.541		
Junipero Serra	Blaney Avenue	Linnet Lane	10.8	1000	0.011		
			21.5	3375	0.073	2.706	4.059
					2.368		
Linnet Ln.-Pruneridge	Junipero Serra	Wolfe Rd.				5.074	7.611

TABLE 4 - TRUNK SERVICE AREA "N"

TRUNK SERVICE AREA "N"

<u>Location of Trunk Service Area Sewer</u>	<u>From</u>	<u>To</u>	<u>Area Served (Acres)</u>	<u>Flow per Acre GPD (Avg)</u>	<u>Area Flow Contribution, MGD (Avg)</u>	<u>Accum. Area Flow MGD (Avg)</u>	<u>Accum. Area Flow MGD (Peak)</u>
Linnet Ln.-Pruneridge	Wolfe Road AREA "E"	Tantau	11.9	3375	0.040	5.983	8.975
Tantau	Pruneridge	Homestead	80.6	3375	0.272	6.425	9.638
			169.6	1000	0.170		
Homestead	Tantau	Outfall	71.2	1000	0.071	6.496	9.744
TOTAL AREA SERVED			581.5				
AREA "J"					1.394	7.890	11.835

TABLE 4 - TRUNK SERVICE AREA "N"

TABLE 5

## COST STUDY OF THE CONSTRUCTION PROJECTS PLANNED

<u>DESCRIPTION OF TRUNK</u>		<u>ESTIMATED COST</u>	
1. <u>Pruneridge-Tantau-Homestead Trunk (Service Area "N")</u>			
1.	27" R.C.P.	1000 l.f. @	\$20.00= \$20,000.00
2.	24" V.C.P.	5000 l.f. @	18.00= 90,000.00
3.	21" V.C.P.	1300 l.f. @	15.00= 19,500.00
4.	Manholes	21 ea. @	300.00= 6,300.00
5.	Metering Station	1 l.s. @	5000.00= 5,000.00
	Sub-Total Construction	=	\$140,800.00
	Engineering	=	11,080.00
	Surveys & Staking	=	4,225.00
	Inspection	=	4,225.00
	Contingency	=	8,020.00
	TOTAL ESTIMATED COST	=	\$ 168,350.00
		Say	<u>\$ 168,400.00</u>
2. <u>Creston Trunk Relocation (Service Area "I")</u>			
1.	15" V.C.P.	880 l.f. @	\$10.00= \$8,800.00
2.	14" C.I.P. (Tyton Joint)	180 l.f. @	15.00= 2,700.00
3.	14" C.I.P. (Mech. Joint)	55 l.f. @	18.00= 990.00
4.	10" V.C.P.	1650 l.f. @	6.50= 10,752.00
5.	Pavement re- placement	1900 l.f. @	1.50= 2,850.00
6.	Concrete Jacket	54 l.f. @	5.00= 270.00
7.	30" Sleeve (Open Cut)	410 l.f. @	15.00= 6,150.00
8.	30" Sleeve (Bore & Jack)	135 l.f. @	40.00= 5,400.00
9.	Standard Manholes	8 ea. @	350.00= 2,800.00
10.	Drop Manholes	2 ea. @	400.00= 800.00
11.	Sacked Concrete Rip-rap	l.s. @	500.00= 500.00
12.	Easement Acqui- sition		420.00
13.	Tree Removal	l. s. @	250.00= 250.00
14.	Lateral Replacement	2 ea. @	240.00= 480.00
15.	8" V.C.P.	220 l.f. @	5.00= 1,100.00
16.	8" C.I.P. (Tyton Joint)	220 l.f. @	9.00= 1,980.00
	Sub-Total Construction	=	\$ 46,215.00

Engineering	=	4,680.00	
Surveys & Staking	=	1,850.00	
Inspection	=	1,850.00	
Contingency	=	5,460.00	
TOTAL ESTIMATED COST			\$ 60,055.00
		Say	<u>\$ 60,000.00</u>

3. Florence-Peninsular Diversion Trunk & Pump Station (Service Area "N")

1.	Pump Station	1 ea .Lump Sum=	\$30,000.00	
2.	Storage Bldg.	1 ea .Lump Sum=	2,500.00	
3.	Station Site	1 ea .Lump Sum=	12,500.00	
4.	10" Steel Pipe	800 l.f. @	\$9.00=	7,200.00
5.	8" Steel Pipe	500 l.f. @	7.50=	3,750.00
6.	12" V.C.P.	2000 l.f. @	8.00=	16,000.00
7.	Manholes	7 ea. @	300.00=	2,100.00
8.	Easement Acquisition	1300l.f. @	1.00=	<u>1,300.00</u>
	Sub-Total Construction	=		\$ 75,350.00

Engineering	=	8,665.00	
Surveys & Staking	=	2,635.00	
Inspection	=	2,635.00	
Contingency	=	4,465.00	
TOTAL ESTIMATED COST	=		\$ 93,750.00
		Say	<u>\$ 93,800.00</u>

4. Junipero Serra-Homestead Parallel Trunk (Service Area "N")

1.	18" V.C.P.	2500 l.f. @	\$12.50=	\$31,250.00
2.	15" V.C.P.	7000 l.f. @	9.00=	63,000.00
3.	Manholes	30 ea. @	300.00=	9,000.00
4.	Bore & Jack Sleeve	120l.f. @	40.00=	<u>4,800.00</u>
	Sub-Total Construction	=		\$108,050.00

Engineering	=	8,915.00	
Surveys & Staking	=	3,240.00	
Inspection	=	3,240.00	
Contingency	=	6,175.00	
TOTAL ESTIMATED COST	=		\$ 129,620.00
		Say	<u>\$ 129,600.00</u>

5. Stevens Creek-Junipero Serra Diversion Trunk (Service Area "N")

1.	15" V.C.P.	3000 l.f. @	\$9.00=	\$27,000.00
2.	Manholes	10 ea. @	300.00=	3,000.00
3.	16" C.I.P.	500 l.f. @	15.00=	7,500.00
	Sub-Total Construction		=	<u>\$37,500.00</u>
	Engineering		=	4,100.00
	Surveys & Staking		=	1,500.00
	Inspection		=	1,500.00
	Contingency		=	4,460.00
	TOTAL ESTIMATED COST		=	<u>\$ 49,060.00</u>
				Say <u>\$ 49,000.00</u>

6. September-Lowe Diversion Trunk (Service Area "G")

1.	10" V.C.P.	5300 l.f. @	\$6.00=	\$31,800.00
2.	Manholes	30 ea. @	300.00=	5,400.00
3.	18" R.C.P. Sleeve	200 l.f. @	10.00=	2,000.00
4.	Pavement replacement	1800 l.f. @	1.00=	1,800.00
	Sub-Total Construction		=	<u>\$41,000.00</u>
	Engineering		=	4,350.00
	Surveys & Staking		=	1,640.00
	Inspection		=	1,640.00
	Contingency		=	4,860.00
	TOTAL ESTIMATED COST		=	<u>\$ 53,490.00</u>
				Say <u>\$ 53,500.00</u>

7. Blaney-Wheaton Diversion Trunk (Service Area "L")

1.	10" V.C.P.	1350 l.f. @	\$6.00=	\$8,100.00
2.	Manholes	5 ea. @	300.00=	1,500.00
3.	Pavement replacement	350 l.f. @	4.00=	1,400.00
	Sub-Total Construction		=	<u>\$11,000.00</u>
	Engineering		=	1,875.00
	Surveys & Staking		=	440.00
	Inspection		=	440.00
	Contingency		=	1,375.00
	TOTAL ESTIMATED COST		=	<u>\$ 15,130.00</u>
				Say <u>\$ 15,100.00</u>

8. Yves, Calabazas Creek Trunk (Service Area "C")

1.	12" V.C.P.	4200 l.f. @	\$9.00=	37,800.00	
2.	10" V.C.P.	4100 l.f. @	7.50=	30,750.00	
3.	8" C.I.P.	1800 l.f. @	10.00=	18,000.00	
4.	Manholes	28 ea. @	350.00=	9,800.00	
5.	Concrete Jacket	260 l.f. @	5.00=	1,300.00	
6.	Bore & Jack	100 l.f. @	40.00=	4,000.00	
7.	Pavement Re-				
	placement	1800 l.f. @	1.50=	2,700.00	
8.	Easement R/W	7900 l.f. @	1.00=	7,900.00	
	Sub-Total Construction		=	\$112,250.00	
	Engineering		=	9,205.00	
	Surveys & Staking		=	3,930.00	
	Inspection		=	3,930.00	
	Contingency		=	6,465.00	
	TOTAL ESTIMATED COST		=	\$ 135,780.00*	
				Say	<u>\$ 135,800.00</u>

9. Argonaut Trunk (Service Area "A")

1.	8" V.C.P.	1600 l.f. @	\$4.00=	6,400.00	
2.	8" C.I.P.	150 l.f. @	10.00=	1,500.00	
3.	Manholes	8 ea. @	300.00=	2,400.00	
4.	Bore & Jack	150 l.f. @	30.00=	4,500.00	
5.	Easement R/W	1500 l.f. @	1.50=	225.00	
	Sub-Total Construction		=	\$15,025.00	
	Engineering		=	2,330.00	
	Surveys & Staking		=	600.00	
	Inspection		=	600.00	
	Contingency		=	1,855.00	
	TOTAL ESTIMATED COST		=	\$ 20,410.00	
				Say	<u>\$ 20,400.00</u>

10. Stelling Diversion Trunk (Service Area "M")

1.	15" V.C.P.	2900 l.f. @	\$10.00=	\$29,000.00	
2.	Manholes	10 ea. @	300.00=	3,000.00	
3.	Pavement Re-				
	placement	2900 l.f. @	2.00=	5,800.00	
	Sub-Total Construction		=	\$37,800.00	
	Engineering		=	\$4,120.00	
	Surveys & Staking		=	1,510.00	
	Inspection		=	1,510.00	
	Contingency		=	4,495.00	
	TOTAL ESTIMATED COST		=	\$ 49,435.00	
				Say	<u>\$ 49,400.00</u>

\* Incidental Costs of assessment proceeding not included in this amount.

11 . Prospect Pump Station Expansion and Parallel Force Main (Service Area "B") I. Pump

1.	Pump Station Alterations	1 ea.	Lump Sum=	\$3,000.00	
2.	6" Steel Pipe Force Main	2000 l.f. @	\$6.00=	12,000.00	
3.	Pavement Re- placement	2000 l.f. @	1.50=	<u>3,000.00</u>	
	Sub-Total Construction		=	\$18,000.00	
	Engineering		=	3,025.00	
	Surveys & Staking		=	720.00	
	Inspection		=	720.00	
	Contingency		=	<u>2,245.00</u>	
	TOTAL ESTIMATED COST				\$ 24,710.00
					Say <u>\$ 24,700.00</u>

12. Prospect-Stelling Parallel Trunk (Service Area "D")

1.	12" V.C.P.	8400 l.f. @	\$8.00=	\$67,200.00	
2.	12" C.I.P.	100 l.f. @	10.00=	1,000.00	
3.	Manholes	28 ea. @	300.00=	8,400.00	
4.	Pavement Re- placement	8400 l.f. @	1.50=	<u>12,600.00</u>	
	Sub-Total Construction		=	\$89,200.00	
	Engineering		=	7,770.00	
	Surveys & Staking		=	3,120.00	
	Inspection		=	3,120.00	
	Contingency		=	<u>5,160.00</u>	
	TOTAL ESTIMATED COST				\$ 108,370.00
					Say <u>\$ 108,400.00</u>

13. West Stevens Creek Canyon Trunk (Service Area "H")

1.	8" V.C.P.	5600 l.f. @	\$6.00=	\$33,600.00	
2.	8" C.I.P.	400 l.f. @	9.00=	3,600.00	
3.	Manholes	20 ea. @	300.00=	6,000.00	
4.	Pavement Re- placement	2000 l.f. @	1.50=	<u>3,000.00</u>	
5.	Concrete Jacket	200 l.f. @	3.00=	<u>600.00</u>	
	Sub-Total Construction		=	\$46,800.00	
	Engineering		=	4,710.00	
	Surveys & Staking		=	1,870.00	
	Inspection		=	1,870.00	
	Contingency		=	<u>5,525.00</u>	
	TOTAL ESTIMATED COST				\$ 60,775.00*
					Say <u>\$ 60,800.00</u>

\* Incidental Costs of assessment proceeding not included in this amount.

14. East Stevens Creek Canyon Trunk (Service Area "H")

1.	8" V.C.P.	3000 l.f. @	\$5.00=	\$15,000.00
2.	8" C.I.P.	200 l.f. @	9.00=	1,800.00
3.	Manholes	12 ea. @	300.00=	3,600.00
4.	Concrete Jacket	100 l.f. @	3.00=	<u>300.00</u>
	Sub-Total Construction		=	\$20,700.00
	Engineering		=	2,800.00
	Surveys & Staking		=	830.00
	Inspection		=	830.00
	Contingency		=	<u>2,515.00</u>
	TOTAL ESTIMATED COST			\$ 27,675.00*
				Say <u>\$ 27,700.00</u>

15. Homestead Road Pump Station Expansion and Parallel Force Main(Service Area "J")

1.	Pump Rebuilding	Lump Sum	=	\$3,000.00
2.	8" Steel or C.I.P.			
	Force Main	800 l.f. @	\$7.5=	6,000.00
3.	Pavement Re-			
	placement	800 l.f. @	1.50=	<u>1,200.00</u>
	Sub-Total Construction		=	\$10,200.00
	Engineering		=	1,990.00
	Surveys & Staking		=	410.00
	Inspection		=	410.00
	Contingency		=	<u>1,300.00</u>
	TOTAL ESTIMATED COST			\$ 14,310.00
				Say <u>\$ 14,300.00</u>

GRAND TOTAL ESTIMATED COST= \$1,010,900.00

TABLE 6

SUMMARY OF PRIORITIES, ESTIMATED COSTS, AND FINANCING  
TO CONSTRUCT NEW SEWER FACILITIES TO CONFORM TO THE  
REVISED MASTER SEWER PLAN OF THE CUPERTINO SANITARY DISTRICT

<u>Priority</u>	<u>Description of Project</u>	<u>Estimated Total Cost</u>	<u>Probable Financing by Others</u>	<u>Probable Financing by District</u>
1	Pruneridge-Tantau-Homestead Trunk	\$ 168,400.00	\$ 37,300.00	\$131,100.00
2	Creston Trunk Relocation	60,000.00	57,000.00	3,000.00
3	Florence-Peninsular Diversion Trunk and Pump Station	93,800.00	13,800.00	80,000.00
4	Junipero Serra-Homestead Parallel Trunk	129,600.00	22,800.00	106,800.00
5	Stevens Creek-Junipero Serra Diversion Trunk	49,000.00	18,700.00	30,300.00
6	September-Lowe Diversion Trunk	53,500.00	18,500.00	35,000.00
7	Blaney-Wheaton Diversion Trunk	15,100.00	6,300.00	8,800.00
8	West Calabazas Creek Trunk	135,800.00*	135,800.00*	-0-
9	Argonaut Trunk	20,400.00	20,400.00	-0-
10	Stelling Diversion Trunk	49,400.00	22,900.00	26,500.00
11	Prospect Pump Station Expansion and Parallel Force Main	24,700.00	-0-	24,700.00
12	Prospect-Stelling Parallel Trunk	108,400.00	-0-	108,400.00
13	West Stevens Creek Canyon Trunk	60,800.00*	60,800.00*	-0-
14	East Stevens Creek Canyon Trunk	27,700.00	27,700.00	-0-
15	Homestead Pump Station Expansion and Parallel Force Main	<u>14,300.00</u>	<u>-0-</u>	<u>14,300.00</u>
	TOTALS	<u>\$1,010,900.00</u>	<u>\$442,900.00</u>	<u>\$568,900.00</u>

\*This amount does not include the Incidental Cost of an Assessment District.