WASTEWATER CAPITAL IMPROVEMENT PROGRAM

PROGRESS REPORT

WASTEWATER SUPPORT SYSTEMS DIVISION/BUREAU OF SANITATION
WASTEWATER PROGRAM MANAGEMENT DIVISION/BUREAU OF ENGINEERING
CITY OF LOS ANGELES

DATE: January 25, 1994

TO: Distribution

FROM: Kenneth L. Ludwig, Division Manager
Wastewater Support Systems Division (WSSD)
Bureau of Sanitation

Wayne Savaria, Division Manager
Wastewater Program Management Division (WPMD)
Bureau of Engineering

SUBJECT: **WASTEWATER CAPITAL IMPROVEMENT PROGRAM PROGRESS REPORT (WCIPPR)**

This is a report on the progress of the City's Wastewater Capital Improvement Program (WCIP). This report is the first and only document produced at WPMD that analyzes the past WCIP from Fiscal Year 1988/89 to Mid Fiscal Year 1992/93, comparing the actual program performance to the planned project activities. Because of the complexity of the analyses and the resulting data displays, the report appears in five parts. The major parts are: **Part 2, the Executive Summary** which presents the most important observations and recommendations; **Part 3, the Detailed Report** that supports the recommendations and discussions in the Executive Summary; and **Part 4, the Appendices** that contain the listing of the full database and further important details such as additional investigations on the database to date; **Part 5, Comments And Responses** that includes all the comments received and the responses prepared for those comments. ***Only Part 2 is attached; other parts are available upon request.***

The final presentations in the Executive Summary are short, simple, and comprehensive, compared to the complexities of the data system, the many documents used in the study, and the Detailed Report. However, the Executive Summary is itself a small report in several sections. This was necessary to provide three major types of summaries: a) the status as of early 1993 of the program's entire collection of projects; b) the status early in 1993 of the projects planned to be delivered by the end of Fiscal Year 1992/93; and c) analyses of the costs and durations of the completed projects.

Improvement of the data handling became a focus of concern as the analyses progressed. Thus, the report contains a discussion of the present data process and its difficulties, and of preliminary proposed ways to improve the situation by a more centralized system. The difficulty of the data system is a major reason why collecting data for the report has taken a number of months.

The key concepts are briefly discussed.

1. **Improved program control and efficiency appears urgent:**
   a) Most projects are completed well after their originally planned completion dates.
   b) Planned and actual costs of projects are often very different, with costs for most projects overestimated.
   c) Many projects are canceled before their completion, often at very early stages.
   d) Estimated total costs for the program have nearly doubled over the past few years.
   e) Current economic trends make raising additional revenues difficult.

2. **The program faces large challenges in the near future:**
   a) Some important facilities are already years past their planned dates for repair or replacement.
   b) In the past few years roughly a billion dollars of additional work on the collection system have been added to the program.
   c) There is a federal court order to complete full secondary treatment at Hyperion by December 1998.

3. **Management should be aided by better information handling, with necessary modifications of hardware, software, and office procedures:**
   a) Assembling information for this analysis of planned versus actual performance has been very difficult and time-consuming.
   b) Regular updating of the analyses in this report should be done to see overall progress of the program on a continuous basis.
   c) More detailed and unified online scheduling and accounting information should be used to understand difficulties of projects while they are in progress, so that major delays can be prevented.

4. **This report contains both detailed data analyses and specific recommendations.**
   a) Not only are various analyses presented in many tables and graphs, but the Appendices contain a listing of the entire Preliminary Integrated Database for all the WCIP projects.
   b) A list of specific recommendations appears at the end of the Executive Summary.

Please direct your questions or comments to Reza Iranpour at (213) 847-9657.

Distribution

Bureau of Engineering

B. Rollo
B. Smith
A. Incardona
B. LaFrance
R. Chaudhary

Bureau of Sanitation

H. Sizemore
J. Crosse
S. Furuta
G. Garnas
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PART 2
EXECUTIVE SUMMARY

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SECTION 1
INTRODUCTION

In 1986 major changes were taking place in the City's Wastewater Capital Improvement Program (WCIP). Through various court actions the City was being required to meet specific schedules for expanding its treatment capacities, and increase its overall levels of effluent quality. The major project improvements necessary to meet these schedules were estimated to cost several billion dollars and take up to 12 years to complete. Realizing that the revenue structure to pay for these improvements was not in place, the Bureau of Engineering, through the pro-active efforts of many individuals, obtained the City residents' approval of a long term bond indebtedness of over two billion dollars. At the same time, and in order to help insure that these and other necessary projects were completed as required, the Bureau of Engineering formed the Wastewater Program Management Division (WPMD). The responsibilities within WPMD were broad in scope, but its overall purpose was to help manage the planning and financial aspects of the expanding WCIP. In short, their goal was to identify the long term planning needs for the Program and to help keep those required program projects on schedule and within budget. Much has taken place since those early days, yet the program responsibilities and goals remain the same. Knowing this, the question of how effective we have been in delivering the program is often asked, and needs to be answered, if management is going to adequately chart the program's future.

With this in mind, staff within WPMD took on the task of providing management with a single report that would: a) demonstrate statistical methods for analyzing the progress of the WCIP by comparing planning data with information on actual expenditures and project completions; b) make a preliminary demonstration of the integration of information from various data sources needed to accomplish objective a) above, and thereby display the value of a more unified data system; and c) determine whether the current progress of the WCIP needs further improvement by the results from the analyses and data handling demonstrated in objectives a) and b) above. This document is that report, and as such it is believed that it will greatly assist the executive overview and cost control of the WCIP.

We note that some offices have undertaken to propose improvements in program management. However, to our knowledge these recommendations are restricted to ways of tightening control at the level of individual projects, and the analyses justifying them can not be applied to larger scale study of the past to present performance of the program. This study recommends improvements on a larger scale than proposed by others...improvements in program information handling and executive control.

The scope and complexity of the program are challenging the information handling capabilities of the bureaus. This is reflected in the scope and complexity of the analyses and the efforts needed to find ways to organize the data collected and to propose improvements in data handling. Thus, this Executive Summary has itself become a condensed report of several sections, with graphs and tables of the most important aspects of the report findings. Due to the mass of information and the numerous assumptions made in the report, it is likely that the reader may need several careful readings to fully understand its content. However, there is no difficulty in understanding the overall conclusions: (1) improved executive control is needed, and (2) improved data handling would contribute to improved control.

Some important considerations are discussed in Section 2; overall results are displayed in Section 3; the WCIP data system and possible improvements are presented in Section 4; specifics of the conclusions and recommendations are presented in Section 5. Detailed findings along with data about individual projects and categories are found in Parts 3 and 4; the reader is encouraged to examine these for clarification and justification of the results in this Part.

SECTION 2
IMPORTANT CONSIDERATIONS

The report represents an exhaustive effort that has taken more than a year to complete. Some indication of this is given in the body of the report, Sections 3, 4, 6, 7, 8 and 11 of Parts 3 and 4. The basic difficulty with the analysis has been that many documents and databases describing the WCIP projects and their costs are regularly updated to reflect the current situation without any comparison to what was originally planned. Thus, it is necessary to track many projects through successive editions of various documents, taking into account changes of project names, changes of schedules, and merging or splitting of projects. Still another source of difficulty is the inconsistency of the data systems used in different offices that have been developed using personal computers with standard spreadsheet or database software. Data that are supposed to describe the same project are not consistent from one data system to another. Furthermore, if a project continues for several years, the costs listed in the WCIP planning documents issued while it is in progress are a combination of expenditures incurred and estimates for remaining future costs. This practice interferes with efforts to judge the accuracy of the planning process.

The analysis begins with Fiscal Year 88/89 because that is when the present system of nine categories of projects was established. Because of deficiencies in existing WCIP data handling, data from previous fiscal years when fewer categories were used would require extensive resources to track and compare it fairly with the more recent data. Furthermore, as almost five fiscal years have now elapsed since the categories were changed, the most recent data are the best available measure of the program's recent performance.

Two possible measurements of activities are: (1) number of projects, and (2) expenditures. It is informative simply to look at the counts of projects in the different categories, and their outcomes, along with the planned and actual expenditures. Particular attention has been focused on projects that were, or at some time were planned to be, completed by the end of Fiscal Year 92/93. Numbers showing a high frequency of cost overruns, project cancellations, and schedule slippage would indicate that better planning or closer supervision would be desirable. Conversely, good agreement between planning and results would validate the methods currently in use.

Although all of the data have gone through many reviews for accuracy, some errors may still remain. The most important known imperfections in the data are described. First, there are limitations in the data

availability for the completed projects, as shown in Table 15a of the Detailed Report by "Na" entries and further "notes" there. Second, consultant costs are not entered into FMIS until about two months later. Therefore, the M26 of 2/28/93 were used to include the consultants costs. Likewise, the status information obtained by interviews may include some information as late as March or April 1993. However, it is our belief that these imperfections are small enough not to influence the major conclusions of this report.

SECTION 3
SUMMARY OF RESULTS

The results in this Section have been extracted from the much larger analyses in Part 3, in particular Section 3, "Preliminary Integrated Database," and Section 4, "Methods and Analysis." The actual number of projects for each fiscal year, is determined by counting the new projects introduced in that Fiscal Year's planning document. This filtering is necessary because these documents also include projects that are carried over from the previous years. Since Fiscal Year 88/89 is the base year for this analysis, all projects listed for that Fiscal Year are considered new, even if some were listed in earlier documents. However, both planning and actual data reflect the costs incurred before the Fiscal Year 88/89 for some of the longer term projects.

Results of the analyses, on the whole program and by project category, appear in Section 3.1. Growth of the WCIP planned projects is discussed in Section 3.2. Results on detailed comparisons of schedules and costs, for completed projects, are presented in Section 3.3.

3.1 STATUS OF WCIP

3.1.1 OVERALL

3.1.1a All Projects Planned: Table 1 and the corresponding graphs summarize and identify the status as of January 1, 1993, for all projects included in the WCIP planning effort between FY 88/89 and FY 92/93. Corresponding percentages (relative values) are also calculated to adjust for the varying project total counts and expenditures among different fiscal years and status groups. The planning portion of the display, designated "(A)", allows one to see that the majority of the new projects were planned during the first two fiscal years, 88/89 and 89/90. The actual results, designated "(B)", indicate that 18.7% of the projects were completed, 39.1% are in progress, another 29.7% were canceled, and the rest were delayed in some way. Part (C) shows the fractions of the expected total expenditures shown in (A) that were actually expended on the projects in part (B). Part (D) shows the expenditures originally planned for the projects in Part (B).

Part (C) shows that 23.2% of the planned expenditures for the whole program had occurred by the beginning of 1993, although half of the twelve years had elapsed since the reorganization of the program in 1986. However, many of the projects listed in Part (A) were always planned to be completed later. To get a clearer picture of whether this implies that the program is behind schedule, it is necessary to make another comparison, as shown in the next section.

TABLE 1. OVERALL SUMMARY OF THE WCIP 10 YEAR PLANNED PROJECTS AND THE ACTUAL STATUS.

(A) PROJECTS PLANNED BETWEEN FY'S 88/89 THROUGH 92/93.

Yrly Doc	Absolute Values: Number of Projects	Absolute Values: Expenditures (x $1000)	Relative Values (%): Number of Projects	Relative Values (%): Expenditures
88/89	211	2,612,298	45.4%	50.6%
89/90	82	712,725	17.6%	13.8%
90/91	54	236,880	11.6%	4.6%
91/92	66	664,419	14.2%	12.9%
92/93	52	932,158	11.2%	18.1%
Tot Planned	465	5,158,480	100.0%	100.0%

(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.

Status				
CA	138	25,158	29.7%	2.1%
CP	87	302,096	18.7%	25.3%
FU	34	3,391	7.3%	0.3%
IP	182	864,046	39.1%	72.2%
OH	24	1,401	5.2%	0.1%
Tot Actual	465	1,196,092	100.0%	100.0%

(C) ACTUAL COSTS VERSUS TOTAL 10 YR PLANNED WCIP.

%'S
0.5%
5.9%
0.1%
16.8%
0.0%
23.2%

(D) TOTAL WCIP 10 YR PLANNED EXPENDITURES, TPEF.

X $1000
1,013,049
468,631
386,455
3,253,400
36,945
5,158,480

Notations (defined in more detail in Section 1.2, part 3)
CA: Cancelled; CP: Completed; FY: Fiscal Year; FU: Future; IP: In Progress; OH: On Hold; TPEF: Total Planned Expenditures When Projects First Entered WCIP Documents; Tot: Total; WCIP: Wastewater Capital Improvement Program; Yrly Doc: Yearly Document.

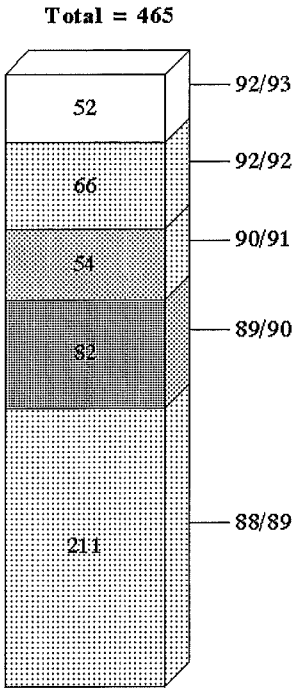
Notes
1. The results in this table are aggregates of the results in Table 3.
2. Yerly Doc refers to Yearly WCIP 10 year planning document published in the indicated FY.

File Name: WSSD\WCIPPR\93-R1\T1ESOPS.WQ1

GRAPH 1. OVERALL SUMMARY OF THE WCIP 10 YEAR PLANNED PROJECTS AND THE ACTUAL STATUS.

(A) PROJECT PLANNED BETWEEN FY'S 88/89 THROUGH 92/93.

Number of Projects



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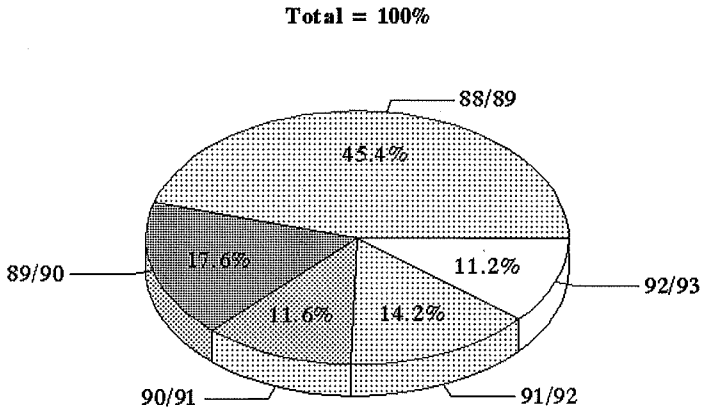
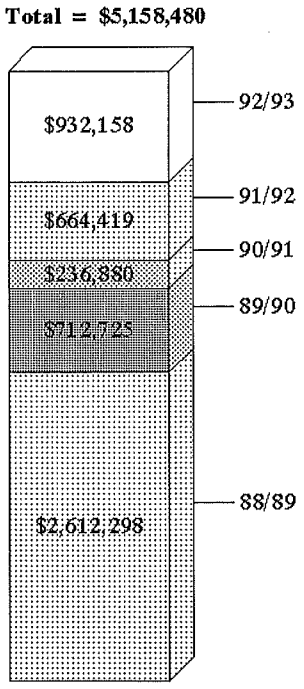


Relative(%)

Expenditure
(x $1,000)



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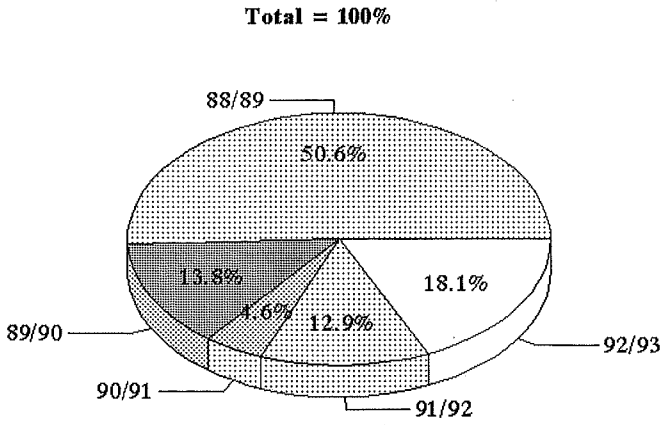

Relative(%)

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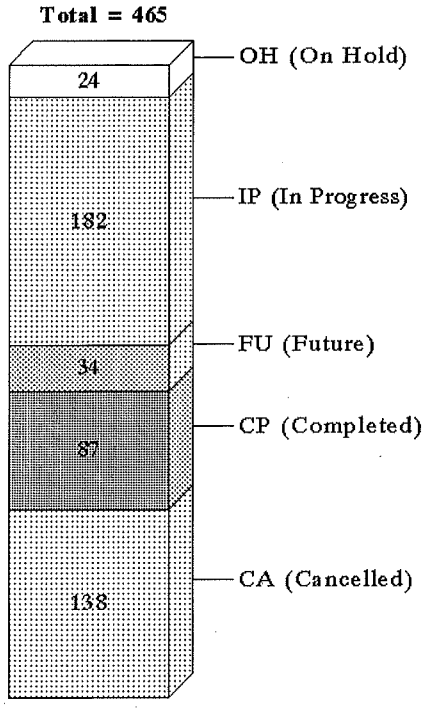
GRAPH 1. CONTINUED.

(B) ACTUAL STATUS OF THE PROJECTS AS OF JANURARY 1, 1993.

Number of Projects



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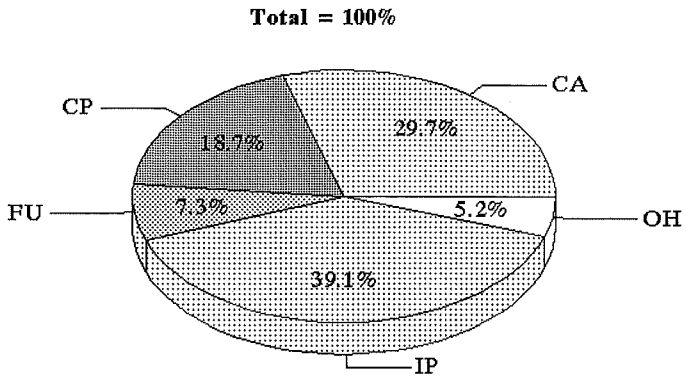
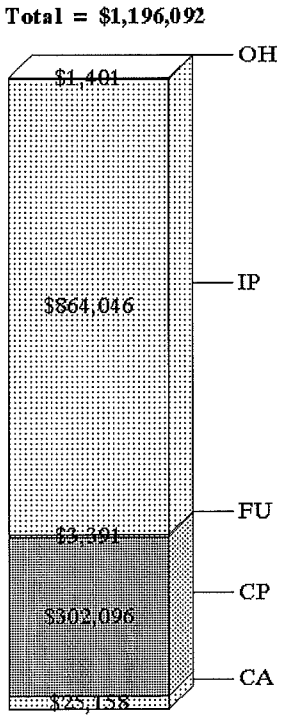


Relative(%)

Expenditures (X $1000)



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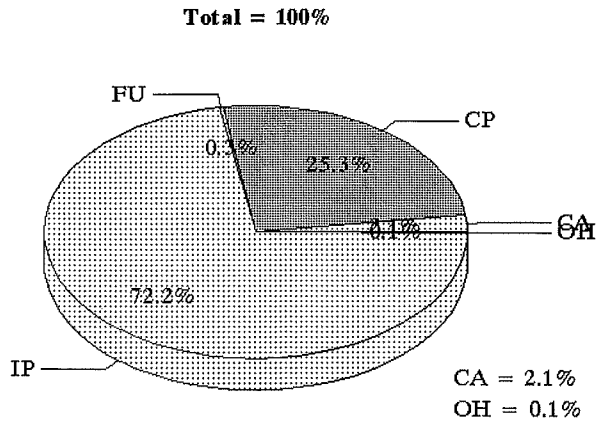

Relative(%)

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3.1.1b Projects Planned to Be Completed: Table 2 and the corresponding graphs summarize and identify the status as of January 1, 1993 of all projects that were planned to be completed by June 30, 1993. Parts (A) through (D) of this table correspond to the respective parts of Table 1. The table shows that during the first three fiscal years, the majority of new projects, both in counts and in dollars, were planned to be completed by the end of FY 92/93. Approximately 26.7% of the projects were completed, 29.9% canceled, and the rest delayed in some way. The actual expenditures were 57.7% of the total planned to be expended.

Parts (A) and (B) of this table provide a more direct comparison between actual and planned progress of a particular set of projects than Table 1 does. Since less than one third of the projects planned to be completed by the end of the fiscal year had been completed by mid of the fiscal year, and since some of these projects originally had been planned for completion in earlier fiscal years, this statistics is clearer evidence of schedule slippage in the program. Additionally, Table 1 indicates a substantial fraction of projects were canceled, suggesting some lack of clarity in the process of implementing the broad purposes of the program for specific projects. On the other hand, the 85 completed projects cost about $150 million less than expected which may be evidence of good efficiency in projects that were actually delivered. Another reason could be low construction bids due to recessionary times.

Since the program is organized into nine categories, breaking down the results of these first two tables by categories should show whether the cancellations and lags are found generally, or only in parts of the program. This breakdown is presented in the two tables in the next subsection.

TABLE 2. OVERALL SUMMARY OF THE WCIP PROJECTS PLANNED TO BE DELIVERED BY JUNE 30, 1993 COMPARED WITH THE ACTUAL STATUS AS OF JANUARY 1, 1993.

(A) PROJECTS PLANNED TO BE DELIVERED BETWEEN FY'S 88/89 THROUGH 92/93.

Yrly Doc	Absolute Values: Number of Projects	Absolute Values: Expenditures (x $1000)	Relative Values (%): Number of Projects	Relative Values (%): Expenditures
88/89	171	1,226,330	53.8%	78.5%
89/90	61	143,474	19.2%	9.2%
90/91	44	118,156	13.8%	7.6%
91/92	32	55,810	10.1%	3.6%
92/93	10	18,827	3.1%	1.2%
Tot Planned	318	1,562,597	100.0%	100.0%

(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.

Status	Absolute Values: Number of Projects	Absolute Values: Expenditures (x $1000)	Relative Values (%): Number of Projects	Relative Values (%): Expenditures
CA	95	10,421	29.9%	1.2%
CP	85	297,644	26.7%	33.0%
FU	9	229	2.8%	0.0%
IP	109	592,564	34.3%	65.7%
OH	20	1,099	6.3%	0.1%
Tot Actual	318	901,957	100.0%	100.0%

(C) ACTUAL COSTS VERSUS TOTAL WCIP PLANNED.

% ' S
0.7%
19.0%
0.0%
37.9%
0.1%
57.7%

(D) TOTAL WCIP PLANNED EXPENDITURES, TPEF.

x $1000
304,159
449,481
17,074
759,284
32,599
1,562,597

Notations (defined in more detail in Section 1.2, part 3)
CA: Cancelled; CP: Completed; FY: Fiscal Year; FU: Future; IP: In Progress; OH: On Hold; TPEF: Total Planned Expenditures When Projects First Entered WCIP Documents; Tot: Total; WCIP: Wastewater Capital Improvement Program; Yrly Doc: Yearly Document.

Notes
1. The results in this table are aggregates of the results in Table 4.
2. Yerly Doc refers to Yearly WCIP 10 year planning document published in the indicated FY.

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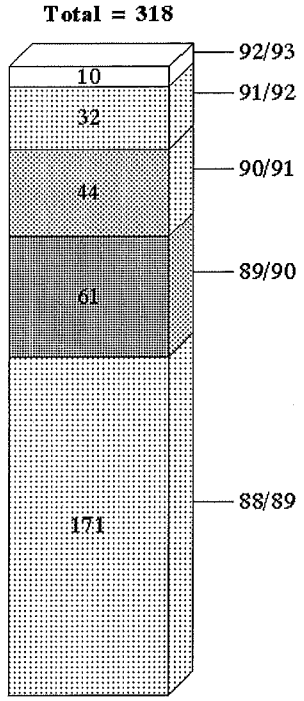
GRAPH 2. OVERALL SUMMARY OF THE WCIP PROJECTS PLANNED TO BE DELIVERED BY JUNE 30, 1993 COMPARED WITH THE ACTUAL STATUS AS OF JANUARY 1, 1993.

(A) PROJECTS PLANNED TO BE DELIVERED BETWEEN FY'S 88/89 THROUGH 92/93.

Number of Projects



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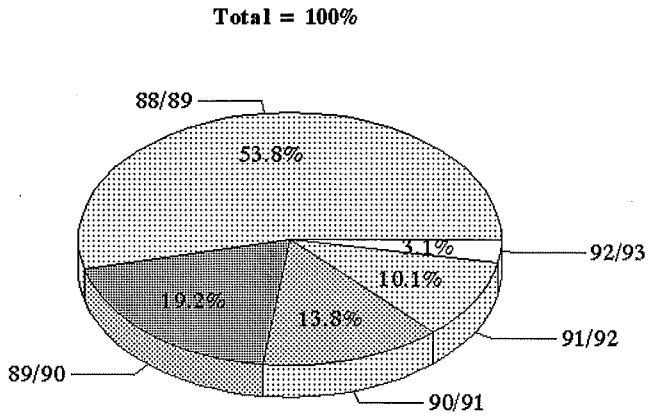
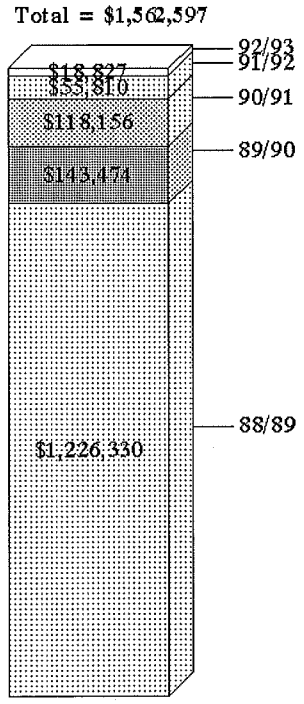


Relative(%)

Expenditures
(X $1000)



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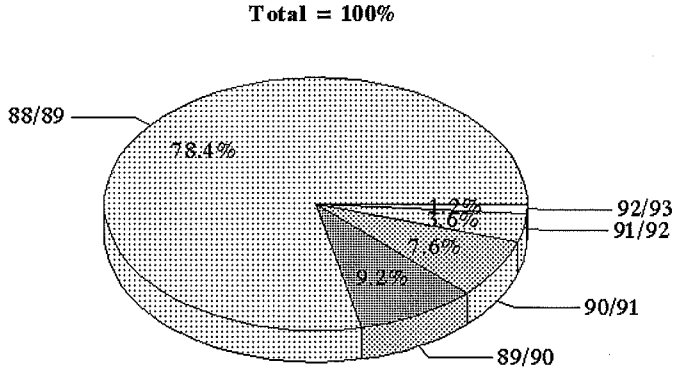

Relative(%)

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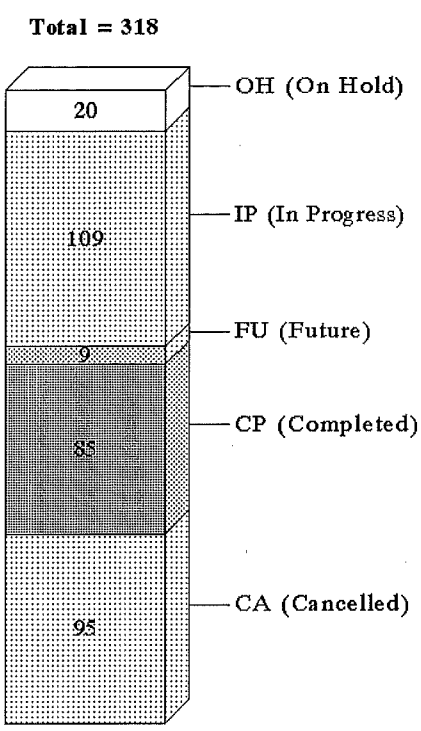
GRAPH 2. CONTINUED.

(A) ACTUAL STATUS OF THE PROJECTS AS OF JANUARY 1, 1993.

Number of Projects



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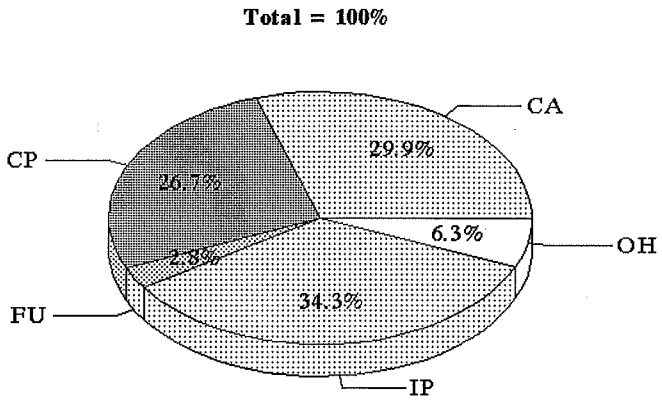
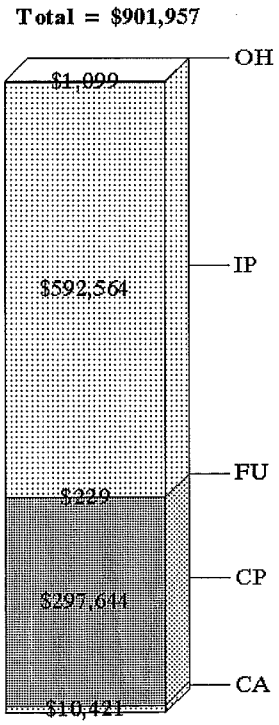


Relative(%)

Expenditures (X $1000)



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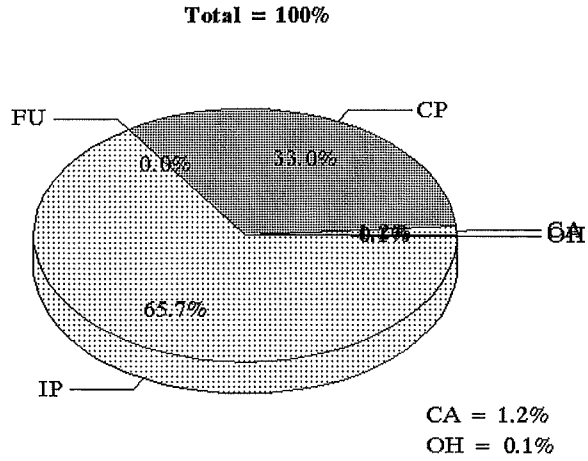

Relative(%)

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3.1.2 BY CATEGORY

3.1.2a All Projects Planned: Table 3 breaks down the data in Table 1, by project categories. Parts (A) through (D) are as in Tables 1 and 2. Owing to the volume of the information in this table, three categories are shown in each of three pages. Comparison of Table 3(C) with Table 1(C) shows that the 23.2% figure for actual versus total planned expenditure in the program is in fact a weighted average of values for individual categories that range from 6.48% to 40.75%. For all the categories but TWRP, which is 36.62%, the projects completed as of January 1, 1993 are less than 10% of the total planned expenditure, but most of the categories have substantial amounts of work in progress.

TABLE 3. SUMMARY OF THE WCIP 10 YEAR PLANNED PROJECTS, BY CATEGORY, AND THE ACTUAL STATUS.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	CS	HFS	HSH	CS	HFS	HSH	CS	HFS	HSH	CS	HFS	HSH
(A) PROJECTS PLANNED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	41	32	10	431,976	1,282,904	171,507	48.2%	65.3%	14.9%	29.5%	76.3%	25.1%
89/90	11	6	38	186,083	54,921	343,986	12.9%	12.2%	56.7%	12.7%	3.3%	50.3%
90/91	9	3	6	35,208	12,335	32,283	10.6%	6.1%	9.0%	2.4%	0.7%	4.7%
91/92	9	7	10	23,515	328,428	135,832	10.6%	14.3%	14.9%	1.6%	19.5%	19.9%
92/93	15	1	3	788,570	3,689	350	17.6%	2.0%	4.5%	53.8%	0.2%	0.1%
Tot Planned	85	49	67	1,465,352	1,682,277	683,958	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	17	9	22	451	2,124	598	20.0%	18.4%	32.8%	0.2%	0.4%	0.4%
CP	11	9	20	19,721	77,712	69,715	12.9%	18.4%	29.9%	8.9%	16.3%	43.1%
FU	12	2	2	75	0	4	14.1%	4.1%	3.0%	0.0%	0.0%	0.0%
IP	44	29	23	201,361	396,530	91,303	51.8%	59.2%	34.3%	90.8%	83.2%	56.5%
OH	1	0	0	83	0	0	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Tot Actual	85	49	67	221,691	476,366	161,620	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notations (defined in more detail in Section 1.2, part 3)
CA: Cancelled; CP: Completed; FU: Future; FY: Fiscal Year; IP: In Progress; OH: On Hold; PID: Preliminary Integrated Database; Tot: Total; WCIP: Wastewater Capital Improvement Program; Yrly Doc: Yearly Document.

Notes

1. The information in the tables is extracted from WSSD WCIP PID, and parts a and b of Tables 9,10,11,12,13, and 14 (Section 4, Part 3).
2. PID (Sections 3 and 11, Part 3) has been assembled from various references on WCIP data (Sections 2 and 14, Part 3).
3. Yrly Doc refers to Yearly WCIP 10 year planning document published for the indicated FY.

(C) ACTUAL EXPENDITURES VERSUS TOTAL 10 YR PLANNED WCIP.

Status	%'S		
CA	0.03%	0.13%	0.09%
CP	1.35%	4.62%	10.19%
FU	0.01%	0.00%	0.00%
IP	13.74%	23.57%	13.35%
OH	0.01%	0.00%	0.00%
Total	15.13%	28.32%	23.63%

(D) TOTAL WCIP 10 YR PLANNED EXPENDITURES, TPEF.

x $1000		
203,849	344,905	63,075
25,563	66,364	184,655
52,115	26,000	41,350
1,182,461	1,245,008	394,878
1,364	0	0
1,465,352	1,682,277	683,958

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TABLE 3. CONTINUED.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	HTP	LAG	PP	HTP	LAG	PP	HTP	LAG	PP	HTP	LAG	PP
(A) PROJECTS PLANNED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	35	15	11	131,129	122,038	68,166	58.3%	50.0%	26.2%	59.7%	70.1%	28.6%
89/90	3	0	3	4,158	0	68,483	5.0%	0.0%	7.1%	1.9%	0.0%	28.7%
90/91	6	7	5	6,050	11,590	32,720	10.0%	23.3%	11.9%	2.8%	6.7%	13.7%
91/92	12	7	0	58,408	40,445	0	20.0%	23.3%	0.0%	26.6%	23.2%	0.0%
92/93	4	1	23	19,895	135	69,062	6.7%	3.3%	54.8%	9.1%	0.1%	29.0%
Tot Planned	60	30	42	219,640	174,208	238,431	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	14	12	23	686	2,044	8,904	23.3%	40.0%	54.8%	0.8%	10.6%	24.1%
CP	16	4	4	20,611	11,097	14,240	26.7%	13.3%	9.5%	24.0%	57.5%	38.5%
FU	6	4	0	0	3,083	0	10.0%	13.3%	0.0%	0.0%	16.0%	0.0%
IP	21	7	15	64,644	2,975	13,831	35.0%	23.3%	35.7%	75.2%	15.4%	37.4%
OH	3	3	0	3	104	0	5.0%	10.0%	0.0%	0.0%	0.5%	0.0%
Tot Actual	60	30	42	85,944	19,303	36,975	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(C) ACTUAL EXPENDITURES VERSUS TOTAL 10 YR PLANNED WCIP.

Status	%'S		
CA	0.31%	1.17%	3.73%
CP	9.38%	6.37%	5.97%
FU	0.00%	1.77%	0.00%
IP	29.43%	1.71%	5.80%
OH	0.00%	0.06%	0.00%
Total	39.13%	11.08%	15.51%

(D) TOTAL WCIP 10 YR PLANNED EXPENDITURES, TPEF.

x $1000		
37,030	33,375	91,209
27,833	8,318	44,095
52,410	114,915	0
101,301	13,106	103,127
1,066	4,494	0
219,640	174,208	238,431

TABLE 3. CONTINUED.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	SW	TITP	TWRP	SW	TITP	TWRP	SW	TITP	TWRP	SW	TITP	TWRP
(A) PROJECTS PLANNED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	24	24	19	149,228	126,675	128,675	58.5%	46.2%	48.7%	67.4%	50.9%	57.4%
89/90	6	13	2	8,936	38,668	7,490	14.6%	25.0%	5.1%	4.0%	15.5%	3.3%
90/91	3	9	6	35,260	63,190	8,244	7.3%	17.3%	15.4%	15.9%	25.4%	3.7%
91/92	7	5	9	25,481	19,717	32,593	17.1%	9.6%	23.1%	11.5%	7.9%	14.5%
92/93	1	1	3	2,502	600	47,355	2.4%	1.9%	7.7%	1.1%	0.2%	21.1%
Tot Planned	41	52	39	221,407	248,850	224,357	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	16	18	7	1,058	1,343	300	39.0%	34.6%	17.9%	1.2%	8.3%	0.3%
CP	4	9	10	2,295	4,552	82,153	9.8%	17.3%	25.6%	2.5%	28.2%	93.5%
FU	2	4	2	226	3	0	4.9%	7.7%	5.1%	0.3%	0.0%	0.0%
IP	18	10	15	86,530	9,621	4,901	43.9%	19.2%	38.5%	95.9%	59.7%	5.6%
OH	1	11	5	119	610	482	2.4%	21.2%	12.8%	0.1%	3.8%	0.5%
Tot Actual	41	52	39	90,228	16,129	87,836	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(C) ACTUAL EXPENDIUTRES VERSUS TOTAL 10 YR PLANNED WCIP.

Status	%'S		
CA	0.48%	0.54%	0.13%
CP	1.04%	1.83%	36.62%
FU	0.10%	0.00%	0.00%
IP	39.08%	3.87%	2.18%
OH	0.05%	0.25%	0.21%
Total	40.75%	6.48%	39.15%

(D) TOTAL WCIP 10 YR PLANNED EXPENDITURES, TPEF.

x $1000		
105,672	118,064	15,870
3,375	18,872	89,556
5,582	21,083	73,000
106,477	68,297	38,745
301	22,534	7,186
221,407	248,850	224,357

3.1.2b Projects Planned to Be Completed: Table 4 is like Table 3 in showing three categories per page. Parts (A) through (D) are as in the previous three tables. As shown in the Table 4, as of January 1, 1993, the CS, SW and TITP categories have the least percentage of expenditures for completed projects versus their planned expenditures in the WCIP, only 6.67%, 1.47% and 2.8%, respectively.

As in the comparison of Table 3(C) with Table 1(C), comparing Table 4(C) with Table 2(C) shows that the 57.7% expenditure figure aggregates a wide range of variation among the categories, from the 9.75% for TITP to 84.68% for HFS. One also observes that LAG, PP, TITP and TWRP are spending little on work in progress, which suggests a low general level of activity in these categories. A similar impression is provided by the corresponding numbers in Table 3.

However, it is possible that these numbers are also affected by systematic overestimation or underestimation of costs in the planning documents. Furthermore, to assess program progress one would like not only cost estimates and costs of completed projects, but information about the accuracy of the time estimates in planning projects. This information is only available for completed projects, so the next section analyzes completed projects in more detail, refining the study of costs and also analyzing project durations.

TABLE 4. SUMMARY OF THE WCIP PROJECTS, BY CATEGORY, PLANNED TO BE DELIVERED BY JUNE 30, 1993, COMPARED WITH THE ACTUAL STATUS.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	CS	HFS	HSH	CS	HFS	HSH	CS	HFS	HSH	CS	HFS	HSH
(A) PROJECTS PLANNED TO BE DELIVERED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	30	14	10	232,605	259,816	171,507	68.2%	56.0%	20.0%	91.7%	79.1%	66.0%
89/90	3	4	32	1,734	46,403	53,786	6.8%	16.0%	64.0%	0.7%	14.1%	20.7%
90/91	7	3	5	9,508	12,335	29,972	15.9%	12.0%	10.0%	3.7%	3.8%	11.5%
91/92	2	3	1	3,092	6,239	4,460	4.5%	12.0%	2.0%	1.2%	1.9%	1.7%
92/93	2	1	2	6,745	3,689	250	4.5%	4.0%	4.0%	2.7%	1.1%	0.1%
Tot Planned	44	25	50	253,684	328,482	259,975	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	8	3	20	91	1,285	598	18.2%	12.0%	40.0%	0.0%	0.5%	0.5%
CP	10	9	19	16,930	77,712	69,054	22.7%	36.0%	38.0%	8.9%	27.9%	56.0%
FU	1	0	1	0	0	3	2.3%	0.0%	2.0%	0.0%	0.0%	0.0%
IP	25	13	10	173,930	199,156	53,613	56.8%	52.0%	20.0%	91.1%	71.6%	43.5%
OH	0	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tot Actual	44	25	50	190,951	278,153	123,268	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notations (defined in more detail in Section 1.2, part 3)
CA: Cancelled; CP: Completed; FU: Future; FY: Fiscal Year; IP: In Progress; OH: On Hold; PID: Preliminary Integrated Database; Tot: Total; WCIP: Wastewater Capital Improvement Program; Yrly Doc: Yearly Document.

Notes
1. The information in the tables is extracted from WSSD WCIP PID, and parts a and b of Tables 9,10,11,12,13, and 14 (Section 4, Part 3).
2. PID (Sections 3 and 11, Part 3) has been assembled from various references on WCIP data (Sections 2 and 14, Part 3).
3. Yrly Doc refers to Yearly WCIP 10 year planning document published for the indicated FY.

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(C) ACTUAL COSTS VERSUS TOTAL WCIP PLANNED.

Status	%'S		
CA	0.04%	0.39%	0.23%
CP	6.67%	23.66%	26.56%
FU	0.00%	0.00%	0.00%
IP	68.56%	60.63%	20.62%
OH	0.00%	0.00%	0.00%
Total	75.27%	84.68%	47.42%

(D) TOTAL WCIP PLANNED EXPENDITURES, TPEF.

x $1000		
13,774	6,368	47,860
22,913	66,364	168,155
919	0	2,300
216,078	255,750	41,660
0	0	0
253,684	328,482	259,975

TABLE 4. CONTINUED.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	HTP	LAG	PP	HTP	LAG	PP	HTP	LAG	PP	HTP	LAG	PP
(A) PROJECTS PLANNED TO BE DELIVERED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	33	12	11	107,234	22,490	68,166	64.7%	50.0%	68.8%	85.0%	57.3%	75.7%
89/90	3	0	1	4,158	0	858	5.9%	0.0%	6.3%	3.3%	0.0%	1.0%
90/91	6	7	1	6,050	11,590	7,860	11.8%	29.2%	6.3%	4.8%	29.5%	8.7%
91/92	9	4	1	8,700	5,018	5,840	17.6%	16.7%	6.3%	6.9%	12.8%	6.5%
92/93	0	1	2	0	135	7,328	0.0%	4.2%	12.5%	0.0%	0.3%	8.1%
Tot Planned	51	24	16	126,142	39,233	90,052	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	13	10	8	686	2,044	3,916	25.5%	41.7%	50.0%	0.9%	12.6%	15.6%
CP	16	4	4	20,611	11,097	14,240	31.4%	16.7%	25.0%	25.6%	68.4%	56.7%
FU	4	0	0	0	0	0	7.8%	0.0%	0.0%	0.0%	0.0%	0.0%
IP	15	7	4	59,300	2,975	6,955	29.4%	29.2%	25.0%	73.6%	18.3%	27.7%
OH	3	3	0	0	104	0	5.9%	12.5%	0.0%	0.0%	0.6%	0.0%
Tot Actual	51	24	16	80,597	16,220	25,111	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(C) ACTUAL COSTS VERSUS TOTAL WCIP PLANNED.

Status	%'S		
CA	0.54%	5.21%	4.35%
CP	16.34%	28.28%	15.81%
FU	0.00%	0.00%	0.00%
IP	47.01%	7.58%	7.72%
OH	0.00%	0.27%	0.00%
Total	63.89%	41.34%	27.88%

(D) TOTAL WCIP PLANNED EXPENDITURES, TPEF.

x $1000		
23,130	13,315	28,905
27,833	8,318	44,095
3,660	0	0
70,453	13,106	17,052
1,066	4,494	0
126,142	39,233	90,052

TABLE 4. CONTINUED.

	Absolute Values						Relative Values (%)					
	Number of Projects			Expenditures (x $1000)			Number of Projects			Expenditures		
Category	SW	TITP	TWRP	SW	TITP	TWRP	SW	TITP	TWRP	SW	TITP	TWRP
(A) PROJECTS PLANNED TO BE DELIVERED BETWEEN FY'S 88/89 THROUGH 92/93.												
Yrly Doc												
88/89	18	24	19	109,162	126,675	128,675	62.1%	53.3%	55.9%	70.1%	77.8%	87.8%
89/90	5	11	2	6,175	22,870	7,490	17.2%	24.4%	5.9%	4.0%	14.1%	5.1%
90/91	2	7	6	20,260	12,337	8,244	6.9%	15.6%	17.6%	13.0%	7.6%	5.6%
91/92	4	2	6	20,111	277	2,073	13.8%	4.4%	17.6%	12.9%	0.2%	1.4%
92/93	0	1	1	0	600	80	0.0%	2.2%	2.9%	0.0%	0.4%	0.1%
Tot Planned	29	45	34	155,708	162,759	146,562	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(B) ACTUAL STATUS OF THE ABOVE PROJECTS AS OF JANUARY 1, 1993.												
Status												
CA	9	17	7	161	1,340	300	31.0%	37.8%	20.6%	0.2%	8.4%	0.3%
CP	4	9	10	2,295	4,552	82,153	13.8%	20.0%	29.4%	2.7%	28.7%	93.7%
FU	2	1	0	226	0	0	6.9%	2.2%	0.0%	0.3%	0.0%	0.0%
IP	13	8	14	82,320	9,430	4,885	44.8%	17.8%	41.2%	96.7%	59.4%	5.6%
OH	1	10	3	119	551	325	3.4%	22.2%	8.8%	0.1%	3.5%	0.4%
Tot Actual	29	45	34	85,121	15,873	87,663	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(C) ACTUAL COSTS VERSUS TOTAL WCIP PLANNED.

Status	%'S		
CA	0.10%	0.82%	0.20%
CP	1.47%	2.80%	56.05%
FU	0.15%	0.00%	0.00%
IP	52.87%	5.79%	3.33%
OH	0.08%	0.34%	0.22%
Total	54.67%	9.75%	59.81%

(D) TOTAL WCIP PLANNED EXPENDITURES, TPEF.

x $1000		
50,764	104,173	15,870
3,375	18,872	89,556
5,582	4,613	0
95,686	14,474	35,025
301	20,627	6,111
155,708	162,759	146,562

3.2 GROWTH OF PLANNED WCIP

The details of the WCIP have changed significantly in past few fiscal years as shown in the tables and graphs in this section. They are based on the same successive yearly planning documents that provided the planning information in the previous tables. Here the emphasis is on the way each document describes planned projects for the ten fiscal years following the date of the document. The ten year intervals described by successive documents thus overlap, but the last document in these tables describes a period beginning almost half way through the period covered by the first.

3.2.1 BY CATEGORY

Table 5 lists, by category, measures of all the subsequent work planned in each yearly document. For each document, the top row shows the counts of projects for the categories. Below each count is its percentage of the total number of projects. Since the total number is around two hundred for each document, the percentages are always around half the counts. The third row for each document is the total expenditures for the projects in the categories and below each expenditure is the corresponding percentage.

This table shows total planned spending over the decade following each document has grown about 80% from 2.6 billion dollars to almost 4.6 billion dollars. Much of this growth came in the 91/92 and 92/93 documents, with substantial increases in all categories in 91/92 and the growth in 92/93 being the result of a further half billion dollars in the CS category, with slight rises in HSH, HTP, LAG and TITP, but larger shrinkage in HFS, PP, SW and TWRP.

Graphs 3(A) and 3(B) show the information in Table 5. The graphs depict the substantial change in the fractions of program cost devoted to CS, HFS, and HSH, the three large categories, and the small amount of expenditure in each of the other six categories.

TABLE 5. NUMBER AND ESTIMATED EXPENDITURES (x$1000) OF PROJECTS, BY CATEGORY, PLANNED TO BE DELIVERED OVER ALL PLANNING FY'S ACCORDING TO EACH SUCCESSIVE YEARLY WCIP 10 YEAR PLANNING DOCUMENTS.

Yrly Doc	Category		CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
88/89	No	Absolute	41	32	10	35	15	11	24	24	19	211
		Relative	19	15	5	17	7	5	11	11	9	100
	Exp	Absolute	434,976	1,282,904	171,507	130,892	122,038	68,103	149,228	126,675	128,674	2,614,997
		Relative	17	49	7	5	5	3	6	5	5	100
89/90	No	Absolute	37	22	40	20	11	8	24	24	16	202
		Relative	18	11	20	10	5	4	12	12	8	100
	Exp	Absolute	639,962	1,087,536	403,015	79,541	117,943	127,205	159,880	110,581	111,631	2,837,294
		Relative	23	38	14	3	4	4	6	4	4	100
90/91	No	Absolute	40	21	37	17	12	11	18	22	18	196
		Relative	20	11	19	9	6	6	9	11	9	100
	Exp	Absolute	649,146	1,070,818	470,730	74,196	131,720	139,914	163,071	96,881	123,688	2,920,164
		Relative	22	37	16	3	5	5	6	3	4	100
91/92	No	Absolute	43	26	21	26	15	10	19	21	22	203
		Relative	21	13	10	13	7	5	9	10	11	100
	Exp	Absolute	1,051,005	1,339,150	820,560	132,494	208,415	177,799	181,093	113,257	143,577	4,167,350
		Relative	25	32	20	3	5	4	4	3	3	100
92/93	No	Absolute	40	20	23	18	13	26	16	20	17	193
		Relative	21	10	12	9	7	13	8	10	9	100
	Exp	Absolute	1,519,970	1,302,162	831,316	146,749	228,946	101,035	180,383	133,812	107,733	4,552,106
		Relative	33	29	18	3	5	2	4	3	2	100

Notations

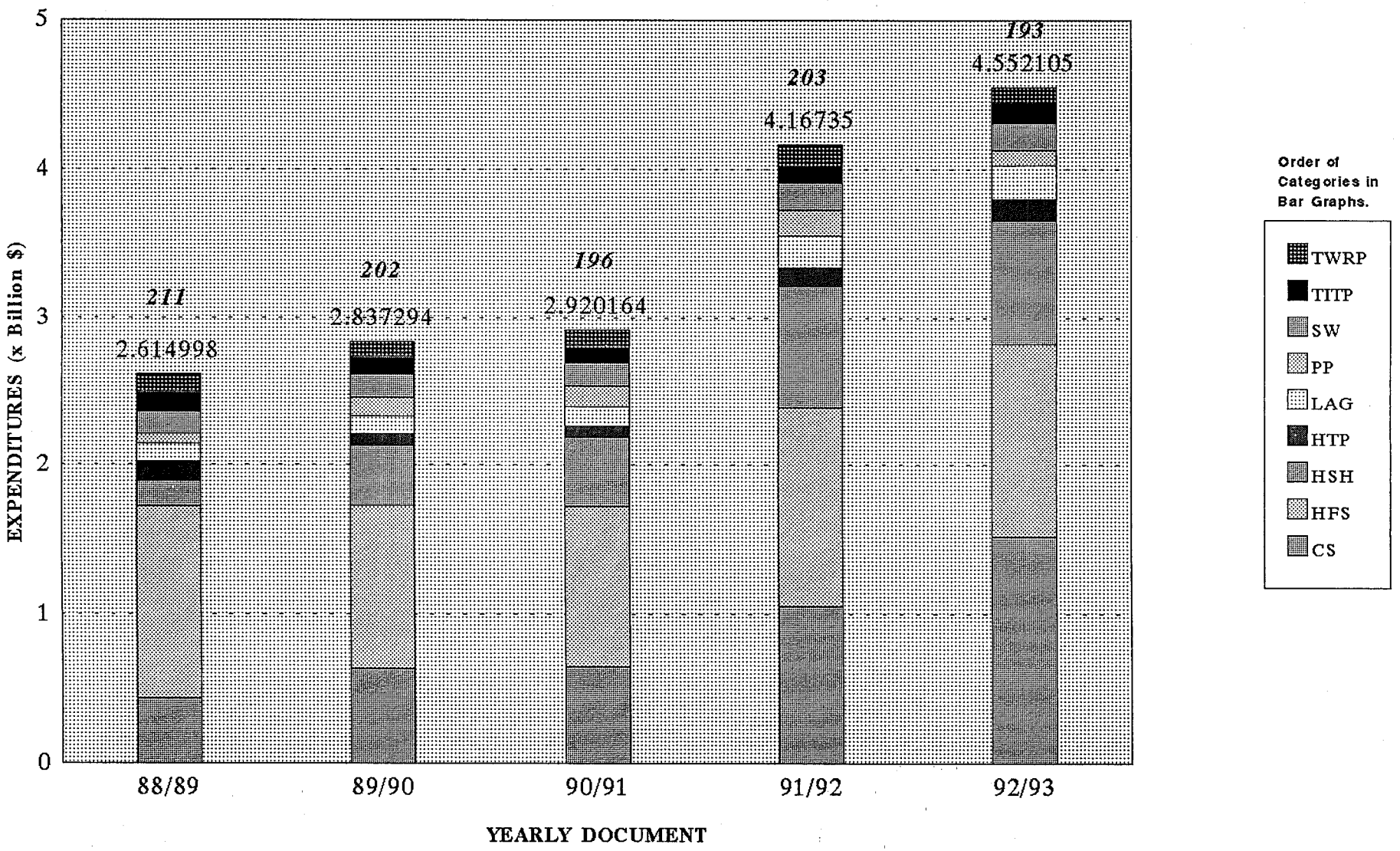
Yrly Doc: Yearly Document; FY: Fiscal Year; No: Number; Exp: Expenditure.

Notes

1. The information in Tables 5 is extracted from Tables 1a,1b,2a and 2b, Section 4, Part 3.
2. The data from each yearly document were collected independent of the data from prior FY's documents.
3. Percentages have been rounded off to whole numbers.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

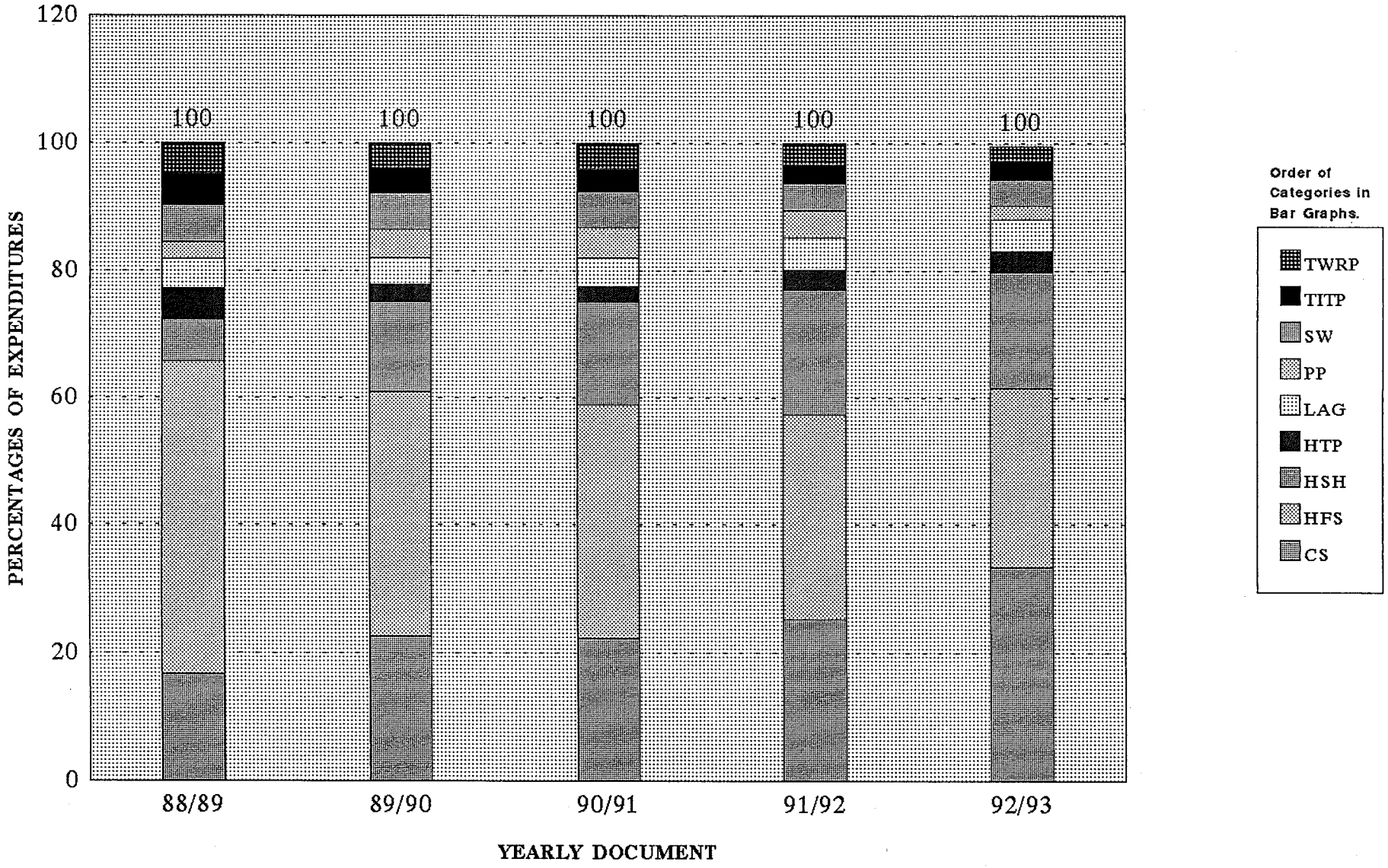
File Name: WSSD\WCIPPR\93-R1\T5ESPCEC.WQ1

GRAPH 3(A). ESTIMATED EXPENDITURES (x BILLION $) FOR THE PROJECTS PLANNED TO BE DELIVERED ACCORDING TO EACH SUCCESSIVE YEARLY WCIP 10 YEAR PLANNING DOCUMENT.



File Name: WSSD\WCIPPR\93-R1\GRAP3AES.CH3

GRAPH 3(B). PERCENTAGES CORRESPONDING TO PLANNED PROJECT EXPENDITURES IN TABLE 3(A).



File Name: WSSD\WCIPPR\93-R1\GRAP3BES.CH3

3.2.2 BY FISCAL YEAR

Table 6 has four rows for each planning document, giving project counts and expenditures by fiscal years. The top two rows contain the differential values which are the projects and expenditures for the individual fiscal years, and the bottom two rows are cumulative values which are successive totals of the differential values. The last entry in each row is for the last five fiscal years in the ten year period. This arrangement reproduces the information provided in the documents, some of which do not give detailed yearly values for the years farther in the future.

This table provides some insight into the magnitude of the management tasks provided by the plans for the future. Table 5 shows that the number of projects grow only modestly in most categories and decreased in a few in 91/92, so the growth in planned costs was the result primarily of enlarging the existing projects or replacing them with new, larger ones. Table 6 shows that the planned yearly expenditures in each document for the years up to 96/97 have always been below 500 million dollars per year, except for the 92/93 document, which plans for $504,369,000 for Fiscal Year 94/95. On the other hand the average expenditure for the last half of the decade in the 91/92 document is over 520 million dollars per year, and the 92/93 document raises this to more than 570 million dollars per year. Since the listings in the Differential (Diff) rows for the earlier fiscal years show substantial variation, it is reasonable to expect that one or more of the years later in the decade will actually have planned expenditures above 600 million dollars. Evidently the program will continue to grow, imposing heavier burdens on WCIP staff than those provided by the present level of work.

Graphs 4(A) and 4(B) depict the data shown in Table 6. It is very easy to see that the last two planning documents contain a great increase in both the number of projects and the expected expense for the period from five to ten years in the future.

TABLE 6. NUMBER AND ESTIMATED EXPENDITURES (x$1000) OF PROJECTS BY FY PLANNED TO BE DELIVERED OVER ALL CATEGORIES ACCORDING TO EACH SUCCESSIVE YEARLY WCIP 10 YEAR PLANNING DOCUMENTS.

	Fiscal Year	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02
Yrly Doc															
88/89	Diff No	41	32	47	26	25					40				
	Diff Exp	192,786	96,283	253,920	186,286	497,705					1,388,018				
	Cum No		73	120	146	171					211				
	Cum Exp		289,069	542,989	729,275	1,226,980					2,614,998				
89/90	Diff No		33	49	44	26	19					31			
	Diff Exp		111,277	198,195	209,029	385,745	332,558					1,600,491			
	Cum No			82	126	152	171					202			
	Cum Exp			309,472	518,501	904,246	1,236,804					2,837,295			
90/91	Diff No			44	59	34	26	13					20		
	Diff Exp			184,125	156,562	491,878	324,659	85,764					1,677,176		
	Cum No				103	137	163	176					196		
	Cum Exp				340,687	832,565	1,157,224	1,242,988					2,920,164		
91/92	Diff No				48	47	32	18	14					44	
	Diff Exp				214,004	315,015	415,559	392,779	193,611					2,636,382	
	Cum No					95	127	145	159					203	
	Cum Exp					529,019	944,578	1,337,357	1,530,968					4,167,350	
92/93	Diff No					43	47	39	11	13					40
	Diff Exp					275,817	312,622	504,369	79,646	498,187					2,881,464
	Cum No						90	129	140	153					193
	Cum Exp						588,439	1,092,808	1,172,454	1,670,641					4,552,105

Notations

Yrly Doc: Yearly Document; FY: Fiscal Year; No: Number; Exp: Expenditure.

Notes

1. The information in Tables 6 is extracted from Tables 3 and 4, Section 4; Part 3.
2. The data from each yearly document were collected independent of the data from prior FY's documents.
3. There are four rows for each Yrly Doc. The first row represents projects to be delivered within a FY. The second row indicates the total number of projects from the year of that document to the indicated FY. The third and fourth rows are corresponded expenditures.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

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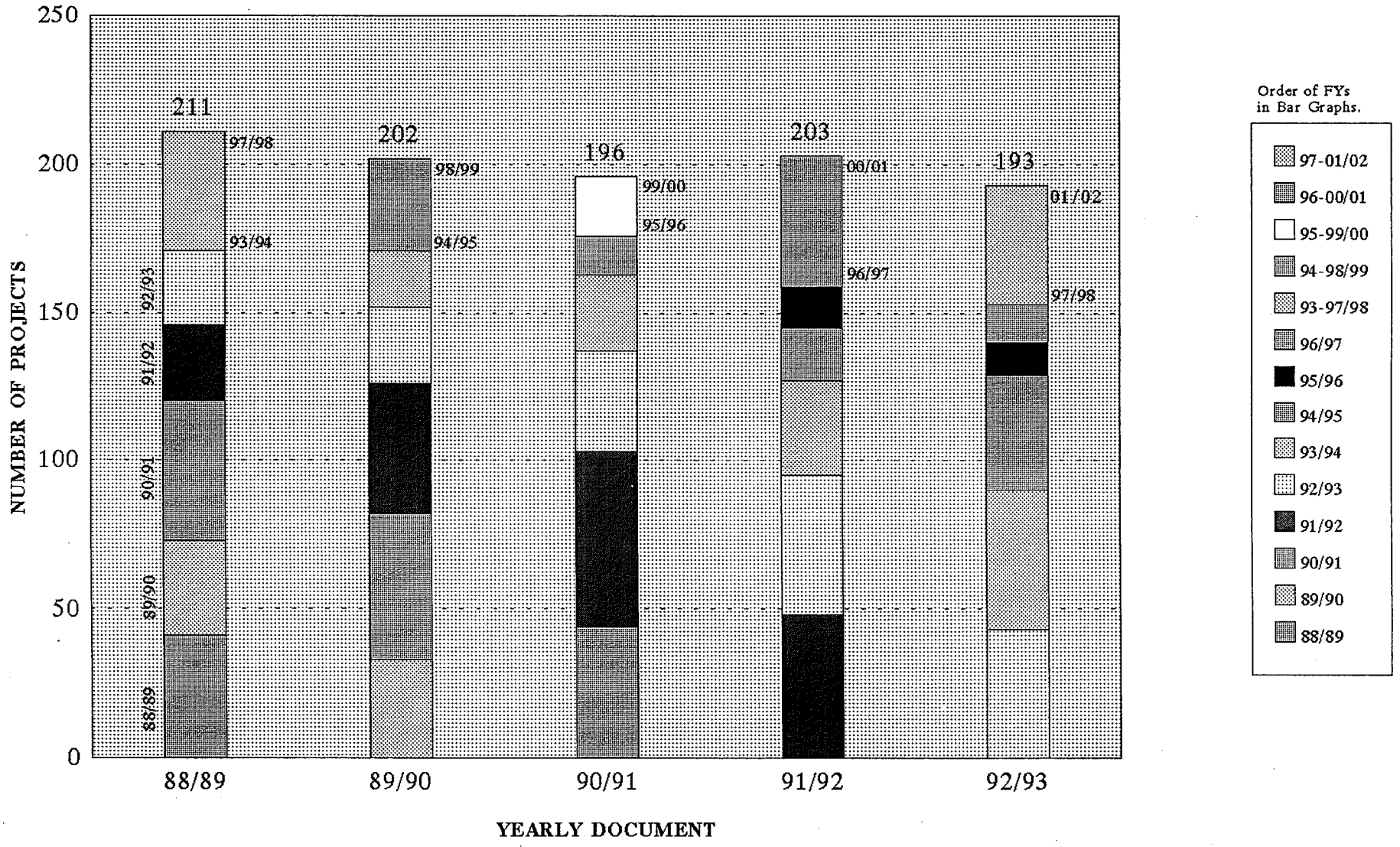
GRAPH 4(A). NUMBER OF PROJECTS BY FY PLANNED TO BE DELIVERED OVER ALL CATEGORIES ACCORDING TO EACH SUCCESSIVE YEARLY WCIP 10 YEAR PLANNING DOCUMENT.



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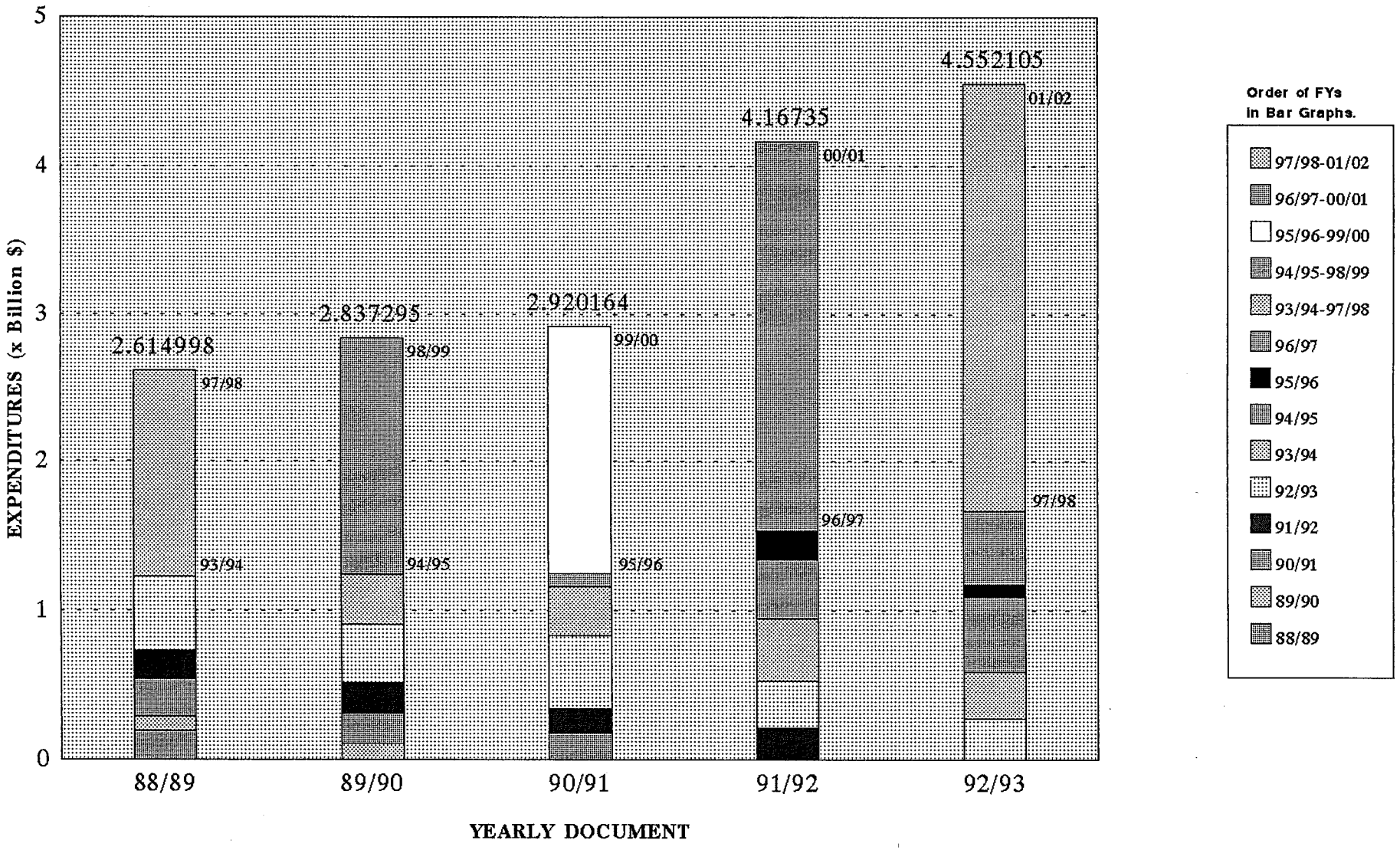
GRAPH 4(B). ESTIMATED EXPENDITURES (x BILLION $) FOR THE PROJECTS PLANNED TO BE DELIVERED, TABLE 4(A), ACCORDING TO EACH SUCCESSIVE YEARLY WCIP 10 YEAR PLANNING DOCUMENT.



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3.3 EVALUATION OF WCIP COMPLETED PROJECTS

3.3.1 OVERALL

Table 7 and Graph 5 summarize and evaluate the expenditures and schedules of all the projects that were completed by January 1, 1993. There are 87 projects completed out of 465 that were planned between FY 88/89 through FY 92/93. Although there are 87 projects completed, not all of them have data for various calculations evaluating expenditures and durations. Therefore, the number of projects used in each calculation is shown below the result in parentheses. For example, 35 projects were used in computing that the ratio of construction costs to bids was 1.16. Several items stand out in this tabulation. One sees immediately that construction costs are higher than bids, but total actual expenditures average roughly two-thirds of planned expenditures. Furthermore, there is a consistent tendency to take longer than planned in both design and construction: 50% longer in design and 30% longer in construction. A more subtle point is that since construction management typically costs about 15% of the construction costs, the CM/CON ratio of .25 is high. As the aggregate values obscure the true range of variation among the categories, a study of the subdivision by category is performed in the next section.

TABLE 7. OVERALL BREAKDOWN AND EVALUATION OF EXPENDITURES AND DURATIONS, FOR THE WCIP PROJECTS COMPLETED AS OF JANUARY 1, 1993.

(A) EXPENDITURES
(x $1000)

CP	87
BID	146,579
	(35)
Breakdown	
CON	169,814
	(35)
CTP	10,765
CTCM	28,271
FAP	10,286
FACM	28,212
TAE	266,774
TPEF	378,883
TPEL	401,133
Evaluation	
CON /BID	1.16
	(35)
P /CON	0.09
	(31)
CM /CON	0.25
	(33)
TAE /TPEF	0.70
TAE /TPEL	0.66

(B) DURATIONS
(Months)

CP		87
Breakdown		
Des	Plan	618
		(47)
	Act	909
		(47)
Con	Plan	512
		(43)
	Act	652
		(43)
Des + Con	Plan	1172
		(55)
	Act	1630
		(55)
Evaluation		
Des	Act-Plan	290.7
	Act /Plan	1.5
Con	Act-Plan	140.6
	Act /Plan	1.3
Des + Con	Act-Plan	457.7
	Act /Plan	1.4

Notations (defined in more detail in Section 1.2, Part 3)
Act: Actual; Con: Construction; CP: Completed Projects; Des: Design; Plan: Planning;
C or CON: Construction (Project); CP: Completed Projects; CTP: Consultant Plan;
CTCM: Consultant Construction Management; FAP: Force Account Plan;
FACM: Force Account Construction Management; NC or NCON: Non Construction (Project);
TAE: Total Actual Expenditures; CM=CTCM+FACM; P=CTP+FAP;
TPEF: Total Planned Expenditures for Projects when they first appeared in WCIP Documents;
TPEL: Total Planned Expenditures for Projects when they last appeared in WCIP Documents.

Notes:
1. Results in this table are aggregates of the results in Tables 8 and 9.
2. A figure in parentheses below a quantity, such as the (35) below the 169,814 CON item, shows the actual number of completed projects used in the computation of that quantity. Differing numbers of projects are used because of missing data or because some items are not relevant to some projects, such as design study projects that have no construction phase.

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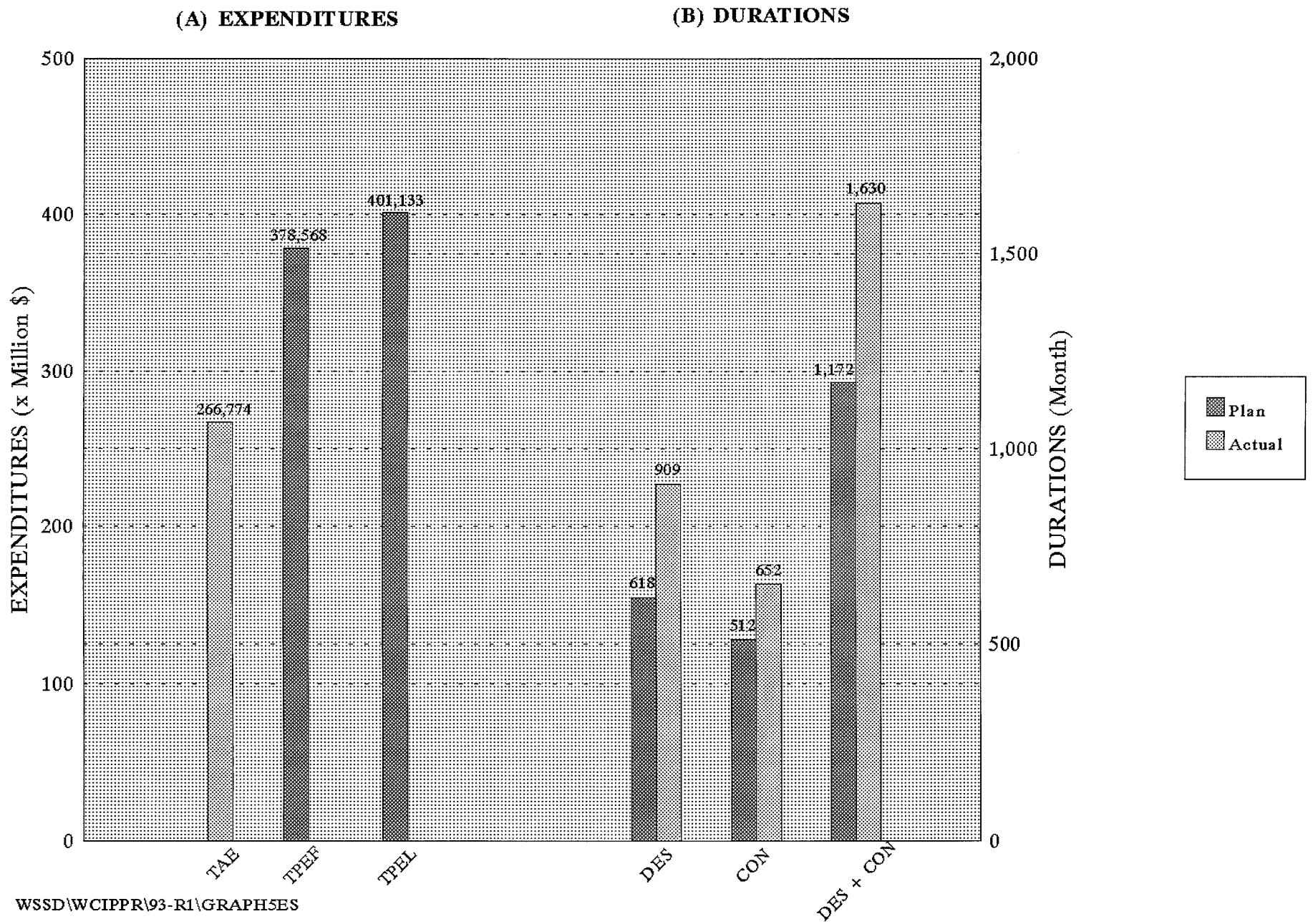
GRAPH 5. OVERALL BREAKDOWN AND EVALUATION OF EXPENDITURES AND DURATIONS FOR THE WCIP PROJECTS COMPELTED AS OF JANUARY 1, 1993.



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3.3.2 BY CATEGORY

3.3.2a Expenditures: Table 8 summarizes and evaluates the expenditures of the projects that were completed by January 1, 1993. As shown the relationship between the total actual expenditures to the total planned expenditures when they first and last appeared in the WCIP, TAE/TPEF and TAE/TPEL, show astonishing variations among the categories. Costs were usually underestimated for LAG and HFS, but overestimated for the other categories, with the overestimating being especially large for TITP, PP and HSH. We thus have an explanation for the aggregate TAE/TPEF and TAE/TPEL ratios in Table 7: several categories typically overestimated their costs by a factor of three or more. We also observe that, contrary to what one might expect, in most categories the last planned cost is no more accurate than the first, and for three categories the accuracy goes down.

These results were sufficiently surprising that the database was examined for examples of large inaccuracies in estimates. The most extreme overestimate is an "Air Diffuser Replacement" at Terminal Island Treatment Plant that was planned to cost $2,200,000 and actually cost $1,000. Another example was the "Pumping Plant Rem/Up Grade" project for Pumping Plants category: the project was planned to cost $30,000,000 and actually costs $1,424,000. In HSH category, the most overestimated case is "CG Deoiling Mods" project that was planned to cost $16,500,000 and actually costs $666,000. Also, the "Bldg Remod & Trailers" at HTP costs only $52,000 while its planned expenditure was $1,000,000. Conversely, a "Dechlorination Facility Improvement" at LAG cost nearly twice the $700,000 planned for it. In addition, a "Prkg Fac & Ped Crossing" in HFS category costs also double the $3,200,000 planned for it.

We also see from this table that CM/CON ratio of .25 in Table 7 results because only HTP has the expected ratio of .15 and only CS, HTP and TWRP are less than .2. Although the data do not explain the large differences between the categories, they suggest that further investigation might be justified.

TABLE 8. BREAKDOWN AND EVALUATION OF EXPENDITURES(x$1000), BY CATEGORY, FOR THE WCIP PROJECTS, COMPLETED AS OF JANUARY 1, 1993.

	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	OVERALL
CP	11	9	21	15	4	4	4	9	10	87
BID	12,902	50,651	0	9,981	6,849	7,672	302	1,449	56,773	
	(10)	(6)	(0)	(4)	(3)	(2)	(1)	(3)	(6)	
Breakdown of expenditures										
CON	11,527	63,721	0	11,326	7,566	9,138	299	1,879	64,358	169,814
	(10)	(6)	(0)	(4)	(3)	(2)	(1)	(3)	(6)	(35)
CTP	5,018	15	800	361	290	555	765	828	2,133	10,765
CTCM	725	1,606	17,769	471	385	1,424	0	671	5,220	28,271
FAP	1,041	1,302	74	804	806	532	471	647	4,609	10,286
FACM	1,409	12,227	1,636	2,468	2,050	2,034	152	527	5,709	28,212
TAE	19,720	77,713	35,098	19,877	11,097	14,240	2,294	4,552	82,153	266,774
TPEF	25,563	66,364	99,084	23,656	8,318	44,095	3,375	18,872	89,556	378,883
TPEL	23,646	72,931	98,707	23,491	10,667	48,599	3,700	31,969	87,423	401,133
Evaluation of expenditures										
CON /BID	0.89	1.25	na	1.13	1.10	1.19	0.99	1.30	1.13	1.16
	(10)	(6)	(0)	(4)	(3)	(2)	(1)	(3)	(6)	(35)
P /CON	0.09	0.02	na	0.07	0.14	0.01	0.37	0.11	0.10	0.09
	(9)	(5)	(0)	(3)	(3)	(2)	(1)	(3)	(5)	(31)
CM /CON	0.19	0.23	na	0.14	0.29	0.27	0.51	0.64	0.17	0.25
	(10)	(5)	(0)	(3)	(3)	(2)	(1)	(3)	(6)	(33)
TAE /TPEF	0.77	1.17	0.35	0.84	1.33	0.32	0.68	0.24	0.92	0.7
TAE /TPEL	0.83	1.07	0.36	0.85	1.04	0.29	0.62	0.14	0.94	0.66

Notations (defined in more detail in Section 1.2, part 3)
C or CON: Construction (Project); CP: Completed Projects; CTP: Consultant Plan;
CTCM: Consultant Construction Management; FAP: Force Account Plan;
FACM: Force Account Construction Management; NC or NCON: Non Construction (Project);
TAE: Total Actual Expenditures;
TPEF: Total Planned Expenditures for Projects when they first appeared in WCIP Documents;
TPEL: Total Planned Expenditures for Projects when they last appeared in WCIP Documents;
CM=CTCM+FACM; P=CTP+FAP.

Notes
1. The information in this table is extracted from Tables 15a,b,c (Section 4, Part 3).
2. Not all completed projects (CP's) have both bid and construction expenditures. Therefore, the number of projects is shown in ( ) directly below the expenditures and ratios if not all completed projects are included in these evaluations, see Tables 15a,b (Section 4, Part 3).
3. TPEF and TPEL are identical for a project that appeared only once in WCIP planning documents.
4. TPEL is a combination of actual expenditures in previous years and the planned future expenditures for a project in a WCIP planning document.

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3.3.2b Schedules: Table 9 summarizes and evaluates the duration of all projects that were planned to be delivered by January 1, 1993. Scheduling data has been studied both in terms of delays of starting and completion dates of phases of projects and by comparing actual and planned durations. According to this table, there is a high frequency of schedule slippage for the completed projects.

As in the previous tables that organize data by category, the relation between the planned and actual duration indicates variations among the categories for the design, construction, and both design and construction. Given the large differences in the magnitude of the categories, as shown by the greatly differing total durations, the ratios offer more information than the differences.

Evidently TITP and LAG have the greatest tendency towards schedule slippage. The overall duration of a project (combining design and construction) in these categories averages 70% longer than planned. As in Section 3.3.2a, the database was searched for examples that might help explain these averages. We found that the Dechlorination Fac Impr at LAG was estimated to complete in 8 months for both design and construction, but actually took 34 months. In addition an Air Pollution Reduction System at TITP was planned to finish in 28 months, but actually took 66 months. There are other examples, but the number of completed projects suitable for this analysis is so small, particularly at LAG, that only one or two problems of such a nature can lead to disappointing averages.

TABLE 9. BREAKDOWN AND EVALUATION OF DURATIONS (MONTHS), BY CATEGORY, FOR THE WCIP PROJECTS COMPLETED AS OF JANUARY 1, 1993.

		CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	OVERALL
	CP	11	9	21	15	4	4	4	9	10	87
Project Phase durations											
Des	Plan	114.8	95.4	52.7	43.6	50.9	57.9	41.6	59.8	101.5	618
		(5)	(9)	(4)	(7)	(4)	(2)	(4)	(7)	(5)	(47)
	Act	160.4	132.8	69.8	96.4	78.1	57.9	58.8	129.9	124.8	909
		(5)	(9)	(4)	(7)	(4)	(2)	(4)	(7)	(5)	(47)
Con	Plan	28.5	137.1	76.1	89.5	24.3	53.8	4.1	47.7	75.0	512
		(4)	(7)	(8)	(8)	(3)	(2)	(1)	(5)	(5)	(43)
	Act	27.4	171.5	112.5	99.5	47.8	69.1	4.1	53.7	114.6	652
		(4)	(7)	(8)	(8)	(3)	(2)	(1)	(5)	(5)	(43)
Des + Con	Plan	143.3	232.5	128.8	151.3	75.2	111.7	45.7	107.4	176.5	1172
		(5)	(9)	(8)	(10)	(4)	(2)	(4)	(7)	(6)	(55)
	Act	187.8	304.3	182.3	224.2	125.8	119.8	62.9	183.6	239.4	1630
		(5)	(9)	(8)	(10)	(4)	(2)	(4)	(7)	(6)	(55)
Evaluation of durations											
Des	Act-Plan	45.6	37.4	17.1	52.7	27.2	0.0	17.2	70.1	23.2	290.7
	Act /Plan	1.4	1.4	1.3	2.2	1.5	1.0	1.4	2.2	1.2	1.5
Con	Act-Plan	-1.1	34.4	36.4	10.0	23.4	8.1	0.0	6.0	39.6	140.6
	Act /Plan	1.0	1.3	1.5	1.1	2.0	1.1	1.0	1.1	1.5	1.3
Des + Con	Act-Plan	44.5	71.8	53.5	72.9	50.6	8.1	17.2	76.1	62.9	457.7
	Act /Plan	1.3	1.3	1.4	1.5	1.7	1.1	1.4	1.7	1.4	1.4

Notations (defined in more detail in Section 1.2, part 3)
Act: Actual; Con: Construction; CP: Completed Projects; Des: Design; Plan: Planning;

Notes
1. Not all completed projects (CP's) have "Plan and Act" durations for a project phase, Des, Con or Des + Con. Therefore, the number of projects is shown in ( ) directly below the durations if all completed projects are not included.
2. The information in this table is identical to that of Table 16c on WCIP Completed Projects, Section 4, Part 3.
3. The absolute values in the rows include only the projects that have nonzero values for both Plan and Actual durations of each phase, Des or Con or Des+Con (Tables 16a and 16b, Part 3).

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SECTION 4
WCIP DATA HANDLING

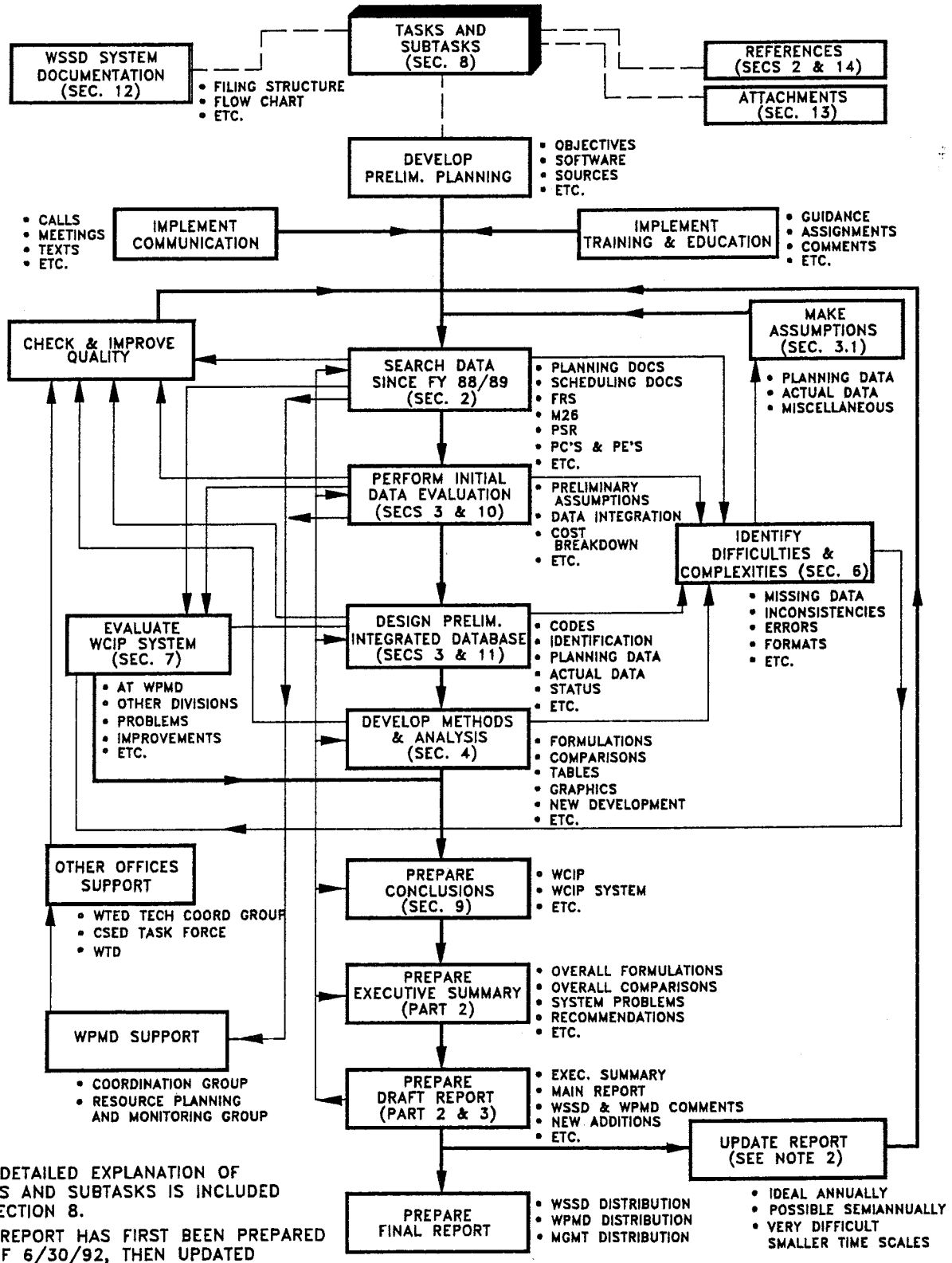
4.1 PRESENT DIFFICULTIES

Another important finding of this report is the need for major rethinking of data handling for the WCIP. A statistical analysis of information system activity was not a part of this project and so no statistics are presently available for describing it. However, this conclusion emerged during the process of accumulating the data in the tables given in more detail in various Sections of Parts 3 and 4.

The present collection of computers, software, and files is not really a system, having grown haphazardly with time and changing concepts as the needs of the WCIP program in various offices change. Many offices have self developed data systems involving spreadsheets or relational databases that were apparently designed by engineers or accountants who were primarily concerned with their immediate needs instead of with questions of compatibility or general usefulness that would contribute to the growth of a system suited for the program as a whole. No one blames them, since their expertise was in other areas, not in office system integration, but the results of the present arrangement suggest that a more global view should be used to seek improvements. Not only is a great amount of time being wasted at present in redundantly entering information into incompatible files on personal computers running different spreadsheets and database software, but the resulting delays in information transmission are inconvenient and many errors are introduced. In particular, the current data handling arrangements are so inconvenient that collecting data for any purpose not anticipated by the providers of the present systems is extremely difficult.

To give a perspective of the level of effort necessary to gather and reduce the data in order to prepare this report, the following flow chart has been prepared and is designated as Figure 1 in this report.

FIGURE 1. TASKS AND SUBTASKS FOR DEVELOPMENT OF THE WCIP AND SIMILAR PROGRESS REPORTS UNDER THE PRESENT SYSTEM.



NOTES:

1. THE DETAILED EXPLANATION OF TASKS AND SUBTASKS IS INCLUDED IN SECTION 8.
2. THE REPORT HAS FIRST BEEN PREPARED AS OF 6/30/92, THEN UPDATED AS OF 1/1/93.
3. VARIOUS SECTIONS IN THE DIAGRAM BELONG TO PART 3.

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Three advantages would be provided by a unified, simplified system. a) some costs would be reduced and efficiency gained by eliminating redundant data processing; b) security would be improved both in the sense of reducing vulnerability to unauthorized access to data, and also reducing vulnerability to loss of data, and c) management would have more flexible access to important information.

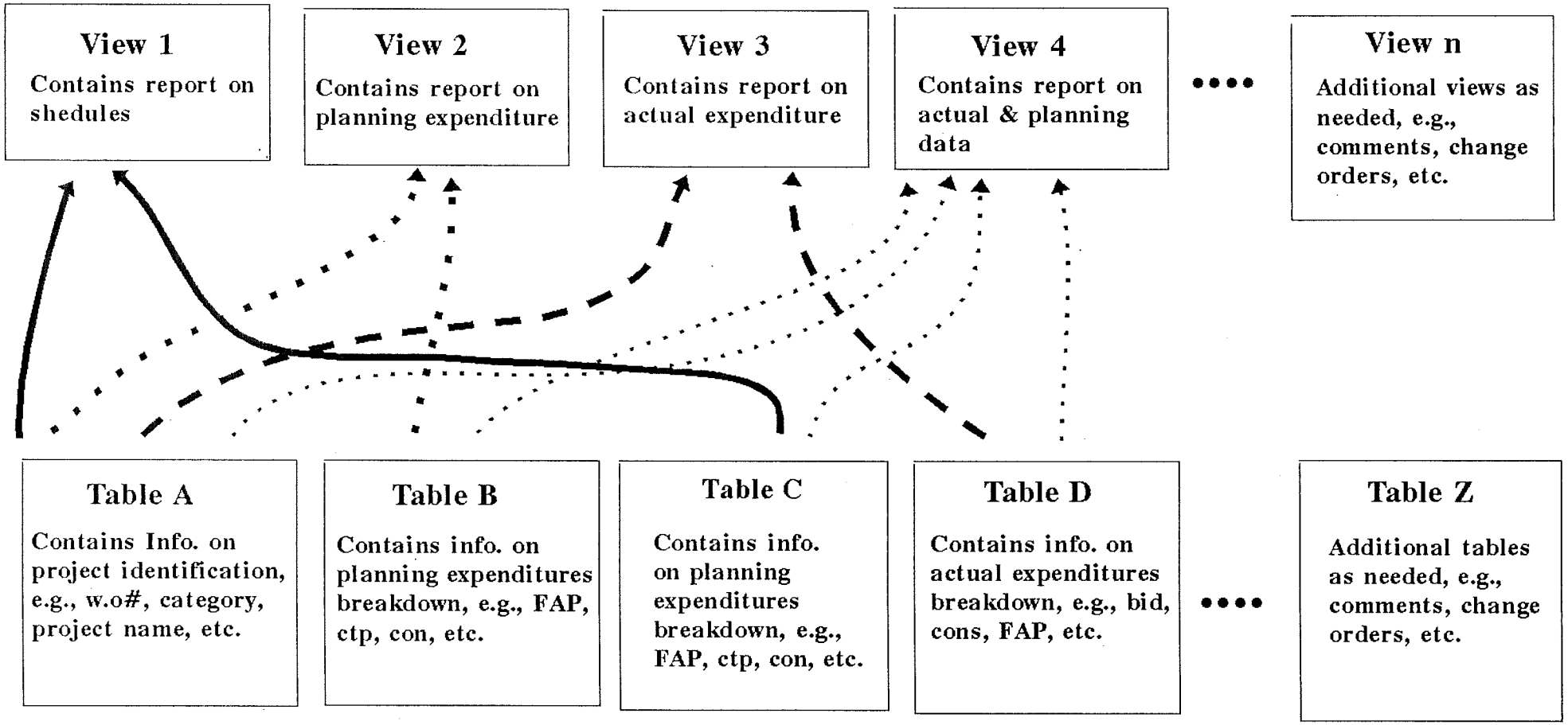
Analysis of the complexity lags and errors of present data handling strongly suggests that adding further software to the present information process, as recommended by other offices proposing improved project management, will not be sufficient to address the program deeper needs.

4.2 A CENTRALIZED RELATIONAL DATABASE SYSTEM

Figure 2 shows an alternative approach in which there would be a single collection of relational tables stored by the system, so that information duplication is minimized or eliminated. Individuals or offices would work with views of the data, constructed for their needs by standard mechanism in the software and easily restructured when necessary. Everyone's views would give access to the most current information and there would be clearly defined procedures for adding or modifying data in the tables. Thus, the view mechanism essentially allows each user to have his or her own virtual database. Consistency is maintained by having only one master instance of each data item, in its appropriate relation table, and data duplication in the different views occurs only temporarily while they are actively being used. Figure 3 is a depiction of the process needed to update the statistical analysis in this report, if a more convenient data system were available. The contrast with Figure 1 is clear.

Establishing a well-centralized data system might allow introducing new management tools, such as defining a single index of completion for each project. Since relational databases are now a well-established technology, and some relational database software is already used in our offices, the WCIP System Group and the Information System Division would be able to build on their present expertise in establishing a new system.

FIGURE 2. STRUCTURE OF TABLES AND VIEWS OF AN ALTERNATIVE IMPROVED SYSTEM FOR THE WCIP.



NOTES

1. The database is composed of several tables, each of which is a separate file.
2. Views are ouput reports of the database.

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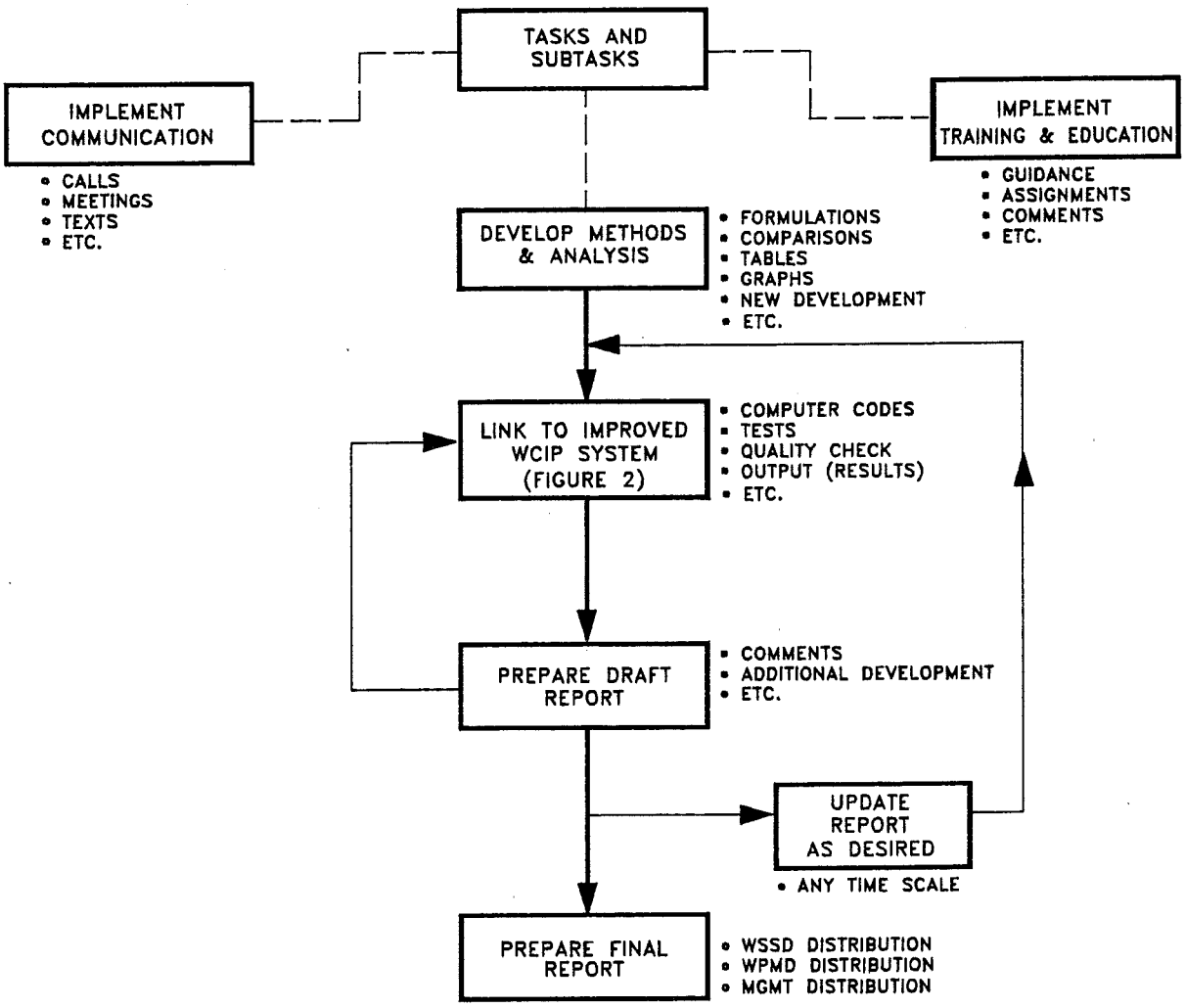
FIGURE 3. TASKS AND SUBTASKS FOR DEVELOPMENT OF THE WCIP AND SIMILAR PROGRESS REPORTS UNDER AN IMPROVED SYSTEM AS IN FIGURE 2.



NOTES:

1. IMPLEMENTING THE TASKS IN THIS DIAGRAM IS EQUIVALENT TO ADDING A FEW "VIEWS" TO AN IMPROVED WCIP SYSTEM AS IN FIGURE 2ES.

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SECTION 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The Tables in this Executive Summary have displayed three main forms of disagreement between planned and actual progress of the program: a) a large fraction of planned projects are canceled; b) projects that are not canceled are often delayed beyond their originally planned completion dates; c) actual and planned costs for completed projects frequently disagree substantially, with overestimation of costs being more common, but wide variations from overestimation to underestimation among categories. Although costs for completed projects are generally less than estimated, costs for construction management are usually higher than the expected level of 15%. The costs of planning as a fraction of construction also show huge variation between the categories.

We note that Tables 1 to 8, Detailed Report in Part II, provide additional evidence for some of these observations. In particular, Table 7 shows that the number of projects planned for completion in FY 91/92 rose in successive planning documents from 26 to 59 and then declined to 48, as projects scheduled for completion in earlier years slipped into and then beyond that year. The shrinking numbers and costs of projects planned for completion by FY 92/93, shown in Tables 5 through 8, can be explained by the tables in this Executive Summary, and the later tables in Part II, as resulting from a combination of project cancellations, overestimates of costs and schedule slippage that differed many projects and their costs until later.

We recommend the actions in the next section as ways to improve the present situation.

5.2 RECOMMENDATIONS

a. Investigation and development should begin on a unified data system to support work on the other recommendations in this section. We suggest that this effort should use as much as possible of the WSSD/WPMD WCIP Preliminary Integrated Database (PID), (Sections 3, and 11, Part II) and consider the study of WCIP hardware and software (Section 7, Part II).

b. Related work done by other groups towards improving the data handling and project control should be coordinated and integrated with the aforementioned effort. For example, software proposed to be used for control at project level by STRR could be adapted. Similarly, more studies and work

done by other groups at WPMD such as the Financial Resource and Monitoring group should be adapted. Financial Reporting System, FRS, is a good example of efforts invested in the right direction of proper system application.

c. Investigations should be undertaken to determine the reasons for the patterns revealed by this study. This should be done by further document and database search and interviews with staff responsible at different levels. Once explanations are found, measures for improving performance should be implemented, prioritized according to the importance of problems they address.

d. Mingling of past actual cost and future estimate in WCIP Planning Documents should cease or a new planning document should be implemented. That is, clear distinction should be made between a Fiscal Yearly expenditure plan, for budget purposes, and a long term project planning document for the program.

e. Existing data should be reviewed to correct the many presently existing errors and inconsistencies. These errors are of many types: project tiles, work order numbers, monetary amounts, etc. This correction task will be needed as part of the conversion to a relational system.

f. Analyses similar to the ones performed on "Completed Projects, CP's" should be implemented for "In Progress projects, IP's." These projects form a large percentage of the WCIP and this will focus attention on improving their performance. In particular the progress of projects with lengthy construction phases needs closer scrutiny.

g. A further analysis, subdividing the projects by magnitude and by function should be implemented. Similar subdivision for projects by function should be implemented. Since the largest projects cost thousands of times more than the smallest ones, neither counts nor expenditures give a fully satisfactory description if project magnitude is not utilized. Also construction projects are not fully comparable to design studies or procurement program.

h. A study to find explanations of specific large differences between planned and actual results should be done by additional reviews of records and interviews with project engineers and other people involved at the project level. The typical threefold overestimation of costs in some categories may be large enough to distort the overall fiscal planning of the program.

i. After WCIP information system is improved, analyses by Fiscal Year should be performed for the actual data similar to the ones done for the planning data. This makes it possible for a fully systematic evaluation of planning versus actual data by fiscal year and by category.

j. A better method of judging the percentage of project completion should be adopted for WCIP. There are several presentations of project percentage completions in various WCIP documents. These methods apply expenditures incurred compared to the total bid, duration used compared to the total scheduled time, or results of consultation with project engineers. We tentatively suggest that the improvement should be based on weighted averaging of the percentage completion of costs and schedules with possible correlations of opinions from PEs. The percentage completions should be aggregated into project categories, and into the whole program.

k. Change order recording and related analyses should be incorporated into future issues of this progress report at project level to category level and the overall program.

l. A more systematic approach to breaking major projects into subprojects and of coding the projects for analyses should be developed.

m. Other offices should make a strong commitment to use the WPMD procedures and guidelines for all project phases from start to completion in order to improve the WCIP performance.

n. Other offices should be mandated to cooperate with WPMD in providing quality planning data for the projects.

o. These analyses should be repeated for later editions of this report. As with many of the other recommendations, timely analysis will depend on information system improvements.

PART 3
DETAILED REPORT

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SECTION 1
INTRODUCTION

At present it is difficult to combine the information from the many projects in the Wastewater Capital Improvement Program to get an overall view of its progress. This report is the first presentation of analyses of project budget and schedule information which may improve the situation.

The tables and graphs in the following sections demonstrate some analyses applicable to all categories. Presently the necessary information is scattered among a number of groups and offices, most of which have their information on computers with hardware network links but with a variety of incompatible types of software. A significant effort has been required to search, assemble and enter the information for various categories.

There are two major aspects to this effort for improving management's overall view of how the program has been going. One aspect is the introduction of ways of aggregating the data to show cost overruns, schedule slippage and changes in project status. The other aspect is a preliminary discussion of a unified data system which would facilitate preparing not only reports like the present one, but also further comprehensive analysis which might be developed in the future.

It also seems reasonable to hope that communication and coordination would be improved by having this information stored electronically in a form suitable for use among the offices involved in WCIP projects.

The information summarized in the following pages has been assembled from documents provided by various groups. The structure of the tables used to present the data lends itself to an extension over projects in all categories. These results should be reviewed for their suitability of application to future reports.

Notations and keywords are defined in Section 1.2. The ones that might not be recognized immediately, with their meanings, are also listed with the related tables and graphs. Data searched and integrated, Sections 2 and 3, are analyzed by methods discussed in Section 4. Difficulties and complexities are discussed in Section 6. Section 7 briefly presents various WCIP systems. Tasks and subtasks for the

report are highlighted in Section 8. Conclusions appear in Section 9. Additional details including WSSD integrated databases that are sources of data for primary tables are covered in several parts that follow Section 9. A brief description of the use of computers for this project is given in Appendix Section 12.

1.1 OUTLINE OF THE DATA ANALYSIS IN SECTION 4

Since the existing data are not organized to provide the information desired for this report a number of new aggregations have been introduced in Section 4.

The basic difficulty that the analysis has had to overcome is that many documents are regularly updated to reflect the situation as of the latest update without any indication of how that compares with what was originally planned. Furthermore many projects take many months or several years to complete even if they are done on time. Hence many of the project listings in successive editions of a document are descriptions of long term projects at successive stages, not descriptions of separate short term projects. In computing some statistics, it has been necessary to search the data to remove such duplicate references to long term projects. On the other hand, successive summaries of the numbers of projects and their expenditures give a view of the changing magnitude of the WCIP's activities and responsibilities. This information is easier to extract from existing documents, so it has also been included.

Two measures of activity are numbers of projects and expenditures. Schedule data are the third area of data analysis. Since detailed comparisons of actual and planned results are most feasible for completed projects, special attention has been focused on projects that were completed by Mid FY 92/93 that were listed in documents as early as FY 88/89. This has also entailed finding projects that were originally planned to be completed by this time, but were not.

The current organization of Section 4 puts the data from WCIP planning documents into Section 4.1. Section 4.1.1 gives yearly data for all the projects, showing the level of activity year by year. Section 4.1.2 does the same for the projects that were supposed to be completed by January 1, 1993. These plots and tables treat the yearly documents separately, instead of tracking the projects through the successive documents. Section 4.1.3 does the tracking for the projects in 4.1.2. Section 4.2 gives summaries of the actual outcomes of the projects in Section 4.1. As not all of them were completed by January 1, 1993, they are classified into different status groups: completed, canceled, on hold, in progress, or

deferred to the future. Section 4.2.1. gives the status as of January 1, 1993 of all the projects, and Section 4.2.2 does the same for the projects that were to be finished by then. For the projects that were actually completed by January 1, 1993, Section 4.3 compares the planned and actual costs and schedules.

For this preliminary study, it has seemed best to use a wide range of displays and listings for the sake of comprehensiveness and providing useful insights. Although all of the results in Section 4 seem to be necessary, it will be important to determine which analyses or displays are the most useful. Similarly it is possible that others will need to be added.

1.2 NOTATIONS AND KEYWORDS

The notations and keywords that are specific to this report follow:

ACT: also denoted Act, for actual (real) data.
BOA: Bureau of Accounting.
BOE: Bureau of Engineering.
BOS: Bureau of Sanitation.
CA: Canceled; projects terminated before or after incurring any costs.
CAT: also denoted Cat, for category.
CB: Combined; projects regrouped with other projects (W.O's).
CC: Changed Category.
CM: Construction Management (costs after award date)
CONS: Construction.
CP: Completed; projects with all phases completed.
CSED: Collection System Engineering Division.
CTCM: Consultant Construction Management.
CT: Consultant, also Changed Title.
CTP: Consultant Plan (consultant design work up to award date)
CUM: Cumulative.
DES: Design.
DIFF: Differential.
DOC: Document.

EXP: Expenditures

FA: Force Account (city design work up to award date)

FAP: Force Account Plan.

FACM: Force Account Construction Management

FMIS: Financial Management Information System

FRS: Financial Reporting System

FU: Future; projects planned to begin in future.

FY: Fiscal Year(s).

IP: In Progress; projects in progress under some phase or ready for the next phase.

MP: Main Project

MR: More Research needed.

MS: Master Schedule; document distributed quarterly by the Scheduling Group at WPMD.

M26: Cost Ledger Summary of Work Order (a FMIS document)

NA: also denoted na, for not applicable.

NC: for projects that are non-construction type.

NO: Number

OH: On Hold.

OPN: Original Project Number.

P: or Plan; Planning

PMD: Project Management Division

PML: Program Master List; documents distributed monthly by Scheduling Group at WPMD.

PR: Progress Report

PSR: Project Status Report distributed by PMD.

R/W: Right of Way

SP: Split; projects broken into several projects (W.O's).

STA: also denoted Sta, for status.

TAE: Total Actual Expenditures.

TOT: Total.

TPEF: Total Planned Expenditures for projects when they first appeared in WCIP documents.

TPEL: Total Planned Expenditures for projects when they last appeared in WCIP documents.

WBS: Work Breakdown Structure; documents distributed monthly by WPMD Financial Group.

WCIP: or CIP for Wastewater Capital Improvement Program; planning documents distributed yearly

by WPMD.

WSSD: Wastewater Support Systems Division.

WPMD: Wastewater Program Management Division.

WTD: Wastewater Treatment Division.

YRLY: Yearly Document, referring to a WCIP planning document published in each Fiscal Year.

It should be noted that five status are of primary importance, i.e., CA, CP, FU, IP, and OH. Status CB, CC, CT, and SP would fall into one of secondary status and are noted under "Comments" in the Preliminary Integrated Database. Further development and revisions of the status classification system will be considered in the future reports.

SECTION 2
WCIP EXISTING DATA

There are several series of documents that contain data on the wastewater projects. These documents have been extensively used as the source of data for this project. Two types of original documents that are citywide and include wastewater data are PSR and documents derived from the FMIS accounting system. After WPMD was created, other documents specifically on wastewater data were implemented, e.g. WCIP Expenditures and Master Lists. The following discussion describes all of the documents primarily in term of the information that they provided for this report.

2.1 PROJECT MANAGEMENT DIVISION

2.1a Project Status Report (PSR)

This report is supposed to present the status to date of each project that is currently in progress. It includes the percentage of completion, bid and award date, contractor name, project engineer, and work order number, etc. This document is managed by PMD of the BOE. The projects are listed alphabetically by category. A sample is inserted in Appendix Section 13.1a.

2.2 BUREAU OF ACCOUNTING

2.2a Cost Ledger Summary of Work Orders (M26)

This document provides actual costs incurred for projects. In this document the projects are tracked by work order. Each page of the document includes ten columns. Each row identifies a project with city related costs and non-city costs in different columns. The document is managed by the BOA and distributed to us on a monthly basis. There are inconsistencies in the data in various printouts of this report that are under investigation and correction at WPMD. A sample page is inserted in Appendix Section 13.1b.

2.3 WASTEWATER PROGRAM MANAGEMENT DIVISION

2.3a Capital Improvement Planning Document (WCIP)

This document gives planning data on budget by FY. Documents from 1988/89 to 1992/93 have been used. The planning counts and estimates in this Report are derived from these sources. Sample pages from various documents are given in the Appendix Section 13.1c.

2.3b Program Master List Documents

Baseline

This report provides information about the actual design and construction dates and duration for each project. Also, it indicates the estimated cost of the accounts such as FAP, CTP, FACM, CTCM, and CON.

Completed Projects

This report provides information about actual cumulative payments to date, original contract amounts and change order totals. In addition, it contains dates for advertising, open bid, award, notice to proceed, construction start and construction completion for completed projects. The contractor's name and the project duration in working days are also noted.

Master Target Schedule

This document contains information on original planning start and finish dates for different project phases. Corresponding original and remaining durations in days are also noted.

Master Schedule

This document, published quarterly in bar chart format, shows current schedules as well as target schedules for different phases of the projects.

Sample pages for various Program Master List documents are inserted in Appendix Section 13.1d.

2.3c Financial Reporting System (FRS)

The FRS reports give actual expenditures by work order, by project number, by major project and by appropriation codes (account numbers). In addition these reports give work breakdown structures that show the relationship between the these identifiers of program activity mentioned above. Additional FRS reports are still in the development phase with the ultimate goal being the accurate capture of all costs,

both hard and soft dollars for the projects. Sample pages are inserted in Appendix Section 13.1e.

SECTION 3
PRELIMINARY INTEGRATED DATABASE (PID)

This section describes the preliminary integrated database that has been assembled from the information listed in Section 2 for the analysis described in Section 4. This database currently exists as a spreadsheet using QPRO Software. Hard copies are attached in Appendix Section 11.2.

It has been designed specifically for the current study to provide important online information that can also be applied directly to calculations. No claim is made that either the organization or the choice of supporting software is optimal. The choice of software and further revisions of the structure of the database are subjects for further study. The spreadsheet software processes a large complicated database like this relatively slowly, so it is possible that transferring the information to a relational database system would be an improvement. This would be more likely to be needed if a unified database system were developed for WPMD as a whole to replace the present complicated collection of databases and files. As described in more detail in Section 7, such a unification seems desirable. Section 3.1 lists the assumptions and Section 3.2 describes the method of assembly.

3.1 ASSUMPTIONS

This section identifies the assumptions used in retrieving and organizing data from documents on WCIP. The assumptions are made to facilitate application of the methods and analyses to the data.

3.1a Planning Data

1) The 88/89 Fiscal Year is used as the baseline for tracking the planning projects. The documents before this year did not have the same format, e.g., there were fewer categories and fewer projects. Consequently, it was very difficult to track planning data before FY 88/89.

2) The planned design starting date for a project is the planned starting date of the design of phase I of that project.

3) The planned construction starting date is the planned starting date of construction of phase I of the

project.

4) The planned design finishing date is the planned finishing date of the design of the last phase of the project.

5) The planned construction finishing date is the planned finishing date of the construction of the last phase of the project.

6) Where a completed project appeared only once in the planning documents, its first and last year planning expenditures are assumed to be the same.

3.1b Actual Data

1) The expenditures show work completed as of January 1, 1993. These data are taken from M26 of 2/28/93, because paperwork for consultant costs is completed approximately two months after work is completed.

2) Assumptions about using data from M26 are discussed in Section 10.2.

3) Assumptions about the actual breakdown of expenditures are also discussed in Section 10.2.

4) For bid, award and completion, the design and construction costs do not exactly reflect cutoff dates taken from the PSR. This is because the M26 documents are only available as of the end of each month.

5) It is assumed that an invoice for design completion is paid within the time before the bid and award date. This is because of a nine month gap between design completion and bid and award date. In general, this assumption is true when the work is done by City staff but may not be true for consultants.

6) The actual design starting date of a project is the actual starting date of the design of phase I of that project.

7) The actual construction starting date is the actual starting date of the construction of phase I of the project.

8) The actual design finishing date is the actual finishing date of the design of the last phase of the project.

9) The actual construction finishing date is the actual finishing date of the construction of the last phase of the project.

10) Where there have been inconsistencies and difficulties in breaking down costs according to Subsection 10.2 for completed projects, some adjustments have been made in computing cost breakdowns for various accounts.

11) For the analysis of completed projects in Subsection 4.3.1 and 4.3.2 the costs for indicated "Ncon" projects are not included in computing the ratios, CON/BID, P/CON, etc.

12) For the analysis of completed projects in Subsection 4.3.2 the total durations include only the projects that have nonzero values in both the Plan and Act columns for each phase of Des or Con or both.

3.1c Miscellaneous

1) If a project changed title, the last title will be used.

2) Since our projects are usually built on City properties, R/W is usually zero. In case where it is not zero, it is included in the total cost.

3) All projects shown in WCIP Planning Documents are assumed to be capital projects even if the associated WO's may have the form of an O&M WO.

4) Where a project has more than one WO, the total cost includes the charges to all WOs. PID shows the latest WO in the column designated for WOs. The column designated for comments reflect the additional WOs as space allows.

3.2 METHOD OF ASSEMBLY

The 5 Year WCIP document for FY 88/89 has been used as the base document for information in the PID. The planning information was obtained by recording all the projects with their planning costs for the document in which they first appeared. The projects were tracked through the succeeding WCIP planning documents until they either no longer appeared, or the most recent one was reached. The actual costs were obtained from M26, PSR and FRS documents. The scheduling data were obtained from Master Lists. As with WCIP planning documents the projects have been tracked through successive versions of these other documents. Extensive cross checking between those documents has been done to detect errors or inconsistencies, and to correct them wherever possible. The assumptions used for resolving inconsistencies are described in Section 3.1. Difficulties and complexities involved are given in Section 6. Assistance from WPMD coordination group and other people with knowledge of these projects have also been needed to make some corrections.

The resulting Preliminary Integrated Database is believed to be more consistent and accurate than any other presently existing documents and corresponding computer files about the WCIP, but some errors may still be present and it is subject to further improvement. In particular, there are many completed projects for which data are missing. Therefore many of the statistical results for the completed projects are actually based on about half of these projects, as is shown in the appropriate places.

3.3 STRUCTURE OF PID

This section describes the major features of the PID as it currently exists. This is a spreadsheet designed to be printed on standard office paper with one line for each project and many columns listing information about the projects.

3.3a Project Codes

This code is for identifying each project and tracking its online information throughout hard copies of the PID. It consists of the first two letters of the category abbreviation followed by a number.

3.3b Project Description

This is the column next to the codes that gives the titles of the projects as they appeared in the WCIP

document. It is intended that they reflect project titles as they last appeared in the documents.

3.3c Project Identification

Two columns are devoted to identify a project by either a work order, WO, or a main project number, MP. In general, each project has one WO, but several similar projects with different WO's could have the same MP, so that they are grouped together. Many groupings are based on subjective judgements and do not result from a uniform procedure.

3.3d Project Status

After all information on a project in the PID is reviewed, a tentative status is decided for that project. This decision is then checked via the latest documents. Further discussions with other WPMD staff is to finalize the status. Although the data for this column come as the last step in preparation of the information for the PID, it was decided that this column should be shown in the first page.

3.3e Actual Expenditure

Three columns define three important parameters of actual expenditures for each project. The parameters are: total, construction, and bid and award costs. This separation allows them to be applied directly to calculations.

3.3f Planning and Actual Schedules

Sixteen columns are designed to give information regarding all the dates for a project. The columns are designed this way so that their contents can be directly used for calculations.

3.3g Planning Years

This column tells when a project first appeared in the planning documents, and records the later fiscal years the project reappeared in the documents until the project was removed from the documents. Although this is the last column, it is the key for organizing the projects in the order given in the "Project Description" column.

3.3h Planning Expenditures

Five columns for each project identify the total planning expenditures that correspond to the "Planning Years" the project appeared in the documents. Again, there have been several application reasons for

designing these columns this way.

3.3i Comments

This column is designed to provide other particular information on the projects. Secondary status for the projects, i,e., a change in category, CC, or a change in title, CT, etc. are also recorded here.

SECTION 4
METHODS AND ANALYSIS

This section analyzes planning and actual data for the projects in the WCIP. The organization provided by these methods makes it possible to see the larger scale evaluation of the program, by category, by FY, and overall. The study by category has been implemented in every section. The FY evaluations were only possible for Sections 4.1.1 and 4.1.2. After system deficiencies are removed, the FY study should also reflect all the subsections of this section.

The planning expenditures are listed for whole fiscal years, but for reasons of availability of data for actual projects at the time of updating the PID, the cutoff date for comparisons between actual and planned results has been the middle of the 1992/93 Fiscal Year on January 1, 1993. Data from planning documents cover all categories and extend a number of years into the future, so the tables of planning data in this report are more extensive than actual results.

The following sections give brief descriptions of the various tables, graphs and the methods by which their entries were calculated. Section 4.1 contains the planning data; Section 4.2 analyzes the corresponding actual data, and Section 4.3 concentrates on the planning versus actual data for the completed projects only. The formulas and more details are given in the Appendix, Section 10.

4.1 SUCCESSIVE WCIP PLANNING DOCUMENTS SINCE FY 1988/89

This section contains data from successive WCIP planning documents. Since each FY's planning document lists all the projects that are in progress or planned as of the time the document is prepared, there is a great deal of duplication from one year to the next. Thus the analysis needs to take this duplication into account. Section 4.1.1 shows all the projects as far into the future as each planning document goes. Section 4.1.2 narrows attention to projects which were listed in some planning document as being planned for delivery by June 30, 1993. In this Section the planning documents are still treated separately, so that many projects are counted in several FY's. Section 4.1.3 lists the projects of Section 4.1.2 with successive documents compared so that duplications are removed. This provides the clearest depiction of the statistics of the actual planned projects, but the two previous sections are needed for

perspective.

4.1.1 PROJECTS PLANNED TO BE DELIVERED OVER ALL PLANNING YEARS ACCORDING TO EACH YEARLY DOCUMENT INDEPENDENTLY

This section contains tables and graphs showing all the projects listed in each planning document. Subsections 4.1.1a and 4.1.1b list the projects by their categories so that the development of plans for different major facilities can be seen. Subsections 4.1.1c and 4.1.1d list the projects according to the future FY's as projected in each document.

4.1.1a Counts by Category, Relative Values

Table 1a gives the counts of projects for the various categories as they appeared in planning expenditure documents for successive fiscal years. Each number is the count of projects planned for that category for the fiscal years after the preparation of the planning document. The documents for FY's 88 to 90 listed plans for five subsequent FY's, and an indefinite period beyond that, but later planning documents list expenditures for ten subsequent FY's.

Table 1b shows the relative number of projects for each category in the planning documents for each fiscal year as a percentage of the approximately two hundred projects listed in each document. This relative comparison cancels out the effects of varying numbers of projects and allows a clearer view of the amount of system resources going to each category. Graphs 1a and 1b plot the data in the corresponding tables.

4.1.1b Corresponding Expenditures, Relative Values

Table 2a gives the planned expenditures for projects, category by category, plan by plan, corresponding to the counts listed in Table 1a. Graph 2a plots these data. Many of these projects were carried out through several years, and were begun during this period, so that the expenditure plans were updated to reflect the expense for the work actually done. Before a project starts, the planned expenditures are purely estimates.

Table 2b gives relative expenditures for each category as percentages of the totals for successive fiscal years. As in Table 1b, this cancels out the overall change in magnitude of the expenditures to show the

allocation of resources to each category. Graphs 2a and 2b plot the data in the tables.

Note that in Table 2a the totals increase substantially, owing to a combination of inflation and requirements for more ambitious projects. Thus the difference between Graphs 2a and 2b is larger than the difference between Graphs 1a and 1b.

TABLE 1a. Number of Projects by Category Planned to be Delivered over all Planning FY's according to Each Successive Yearly WCIP 10 Year Planning Document.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	41	32	10	35	15	11	24	24	19	211
89/90	37	22	40	20	11	8	24	24	16	202
90/91	40	21	37	17	12	11	18	22	18	196
91/92	43	26	21	26	15	10	19	21	22	203
92/93	40	20	23	18	13	26	16	20	17	193

TABLE 1b. Percentages Corresponding to Planned Project Counts in Table 1a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	19	15	5	17	7	5	11	11	9	100
89/90	18	11	20	10	5	4	12	12	8	100
90/91	20	11	19	9	6	6	9	11	9	100
91/92	21	13	10	13	7	5	9	10	11	100
92/93	21	10	12	9	7	13	8	10	9	100

NOTATIONS

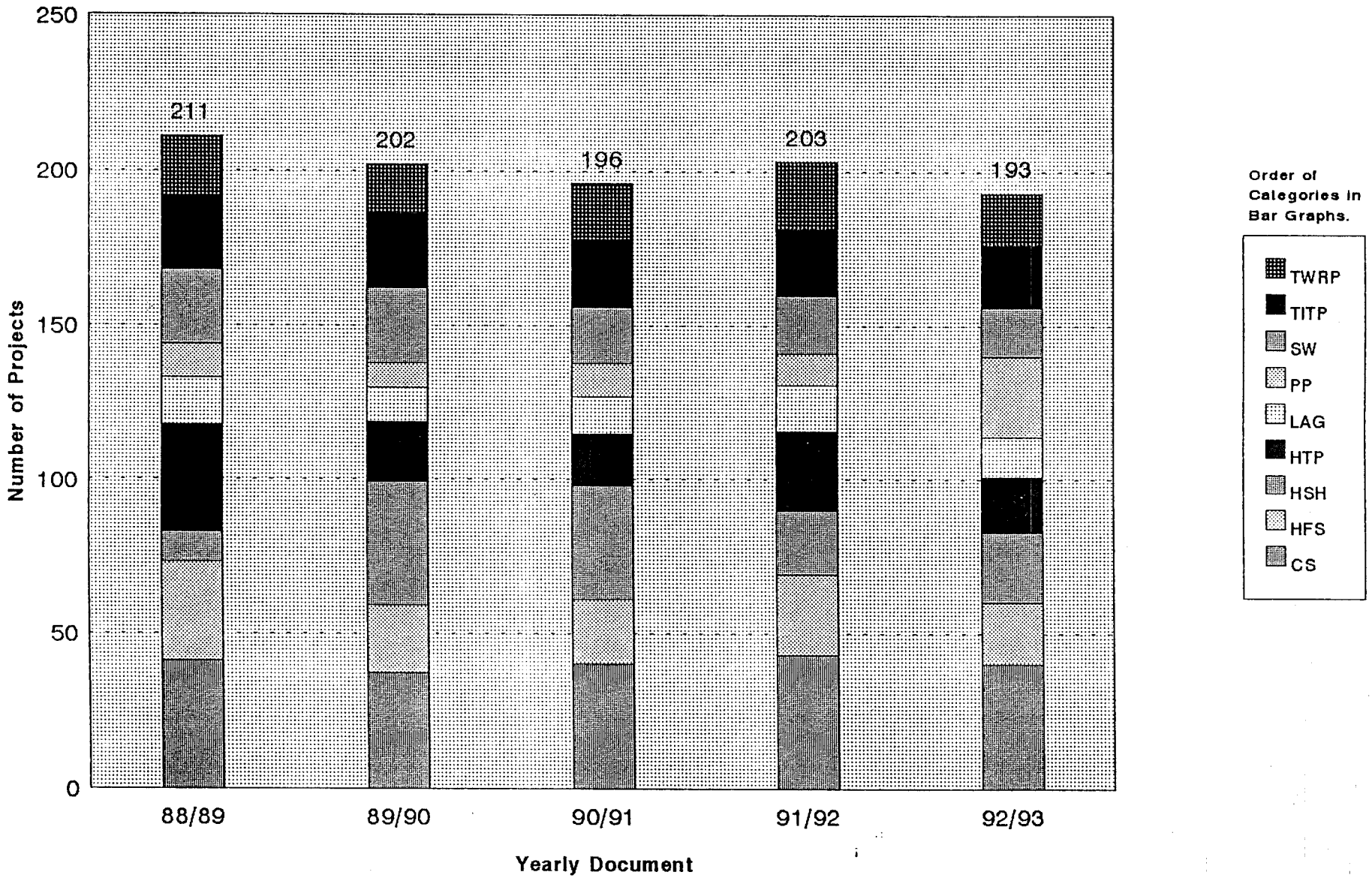
Yrly Doc: Yearly Document; FY: Fiscal Year.

NOTES

1. The information in Table 1a is extracted from Table Ai's, i = 1,..., 5. Table Ai's are included in Appendix Section 11.1a.
2. The data from each yearly document were collected independent of the data from prior FY's documents.
3. Percentages have been rounded off to whole numbers.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

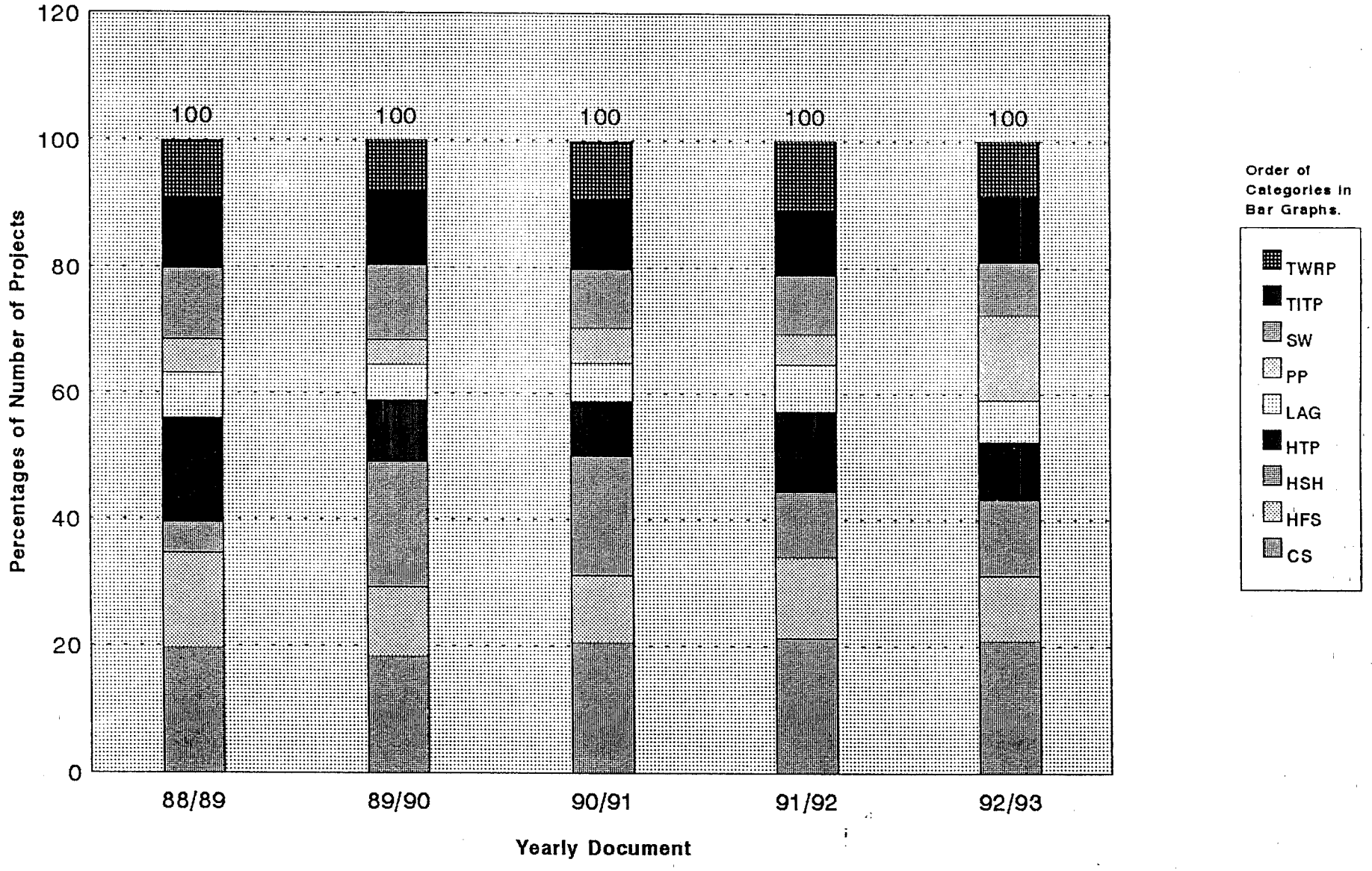
File Name: WSSD\WCIPPR\93-R1\T1PCCD.WQ1

GRAPH 1a. Number of Projects by Category Planned to be Delivered over all Planning FY's according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH1A.CH3

GRAPH 1b. Percentages Corresponding to Planned Project Counts in Table 1a.



File Name: WSSD\WCIPPR\93-R1\GRAPH1B.CH3

TABLE 2a. Estimated Expenditures (x $1000) for the Projects Planned to be Delivered, Table 1a, according to Each Successive Yearly WCIP 10 Year Planning Document.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	434,976	1,282,904	171,507	130,892	122,038	68,103	149,228	126,675	128,674	2,614,998
89/90	639,962	1,087,536	403,015	79,541	117,943	127,205	159,880	110,581	111,631	2,837,294
90/91	649,146	1,070,818	470,730	74,196	131,720	139,914	163,071	96,881	123,688	2,920,164
91/92	1,051,005	1,339,150	820,560	132,494	208,415	177,799	181,093	113,257	143,577	4,167,350
92/93	1,519,970	1,302,162	831,316	146,749	228,946	101,035	180,383	133,812	107,733	4,552,105

TABLE 2b. Percentages Corresponding to Planned Project Expenditures in Table 2a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	17	49	7	5	5	3	6	5	5	100
89/90	23	38	14	3	4	4	6	4	4	100
90/91	22	37	16	3	5	5	6	3	4	100
91/92	25	32	20	3	5	4	4	3	3	100
92/93	33	29	18	3	5	2	4	3	2	100

NOTATIONS

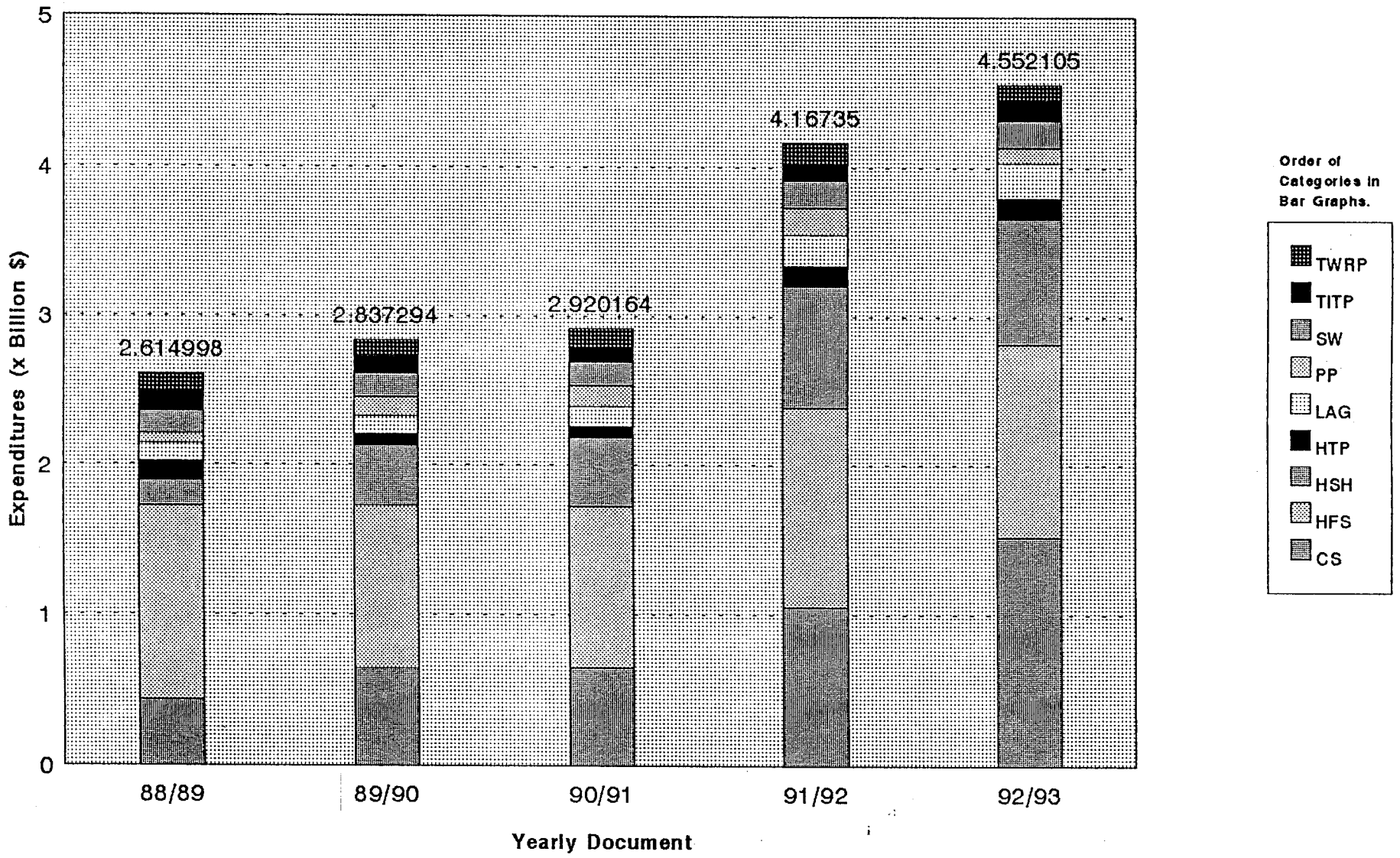
Yrly Doc: Yearly Document.

NOTES

1. Information in Table 2a is extracted from Table Bi's, i=1,..., 5. Table Bi's are included in Appendix Section 11.1a.
2. Percentages have been rounded off to whole numbers.
3. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

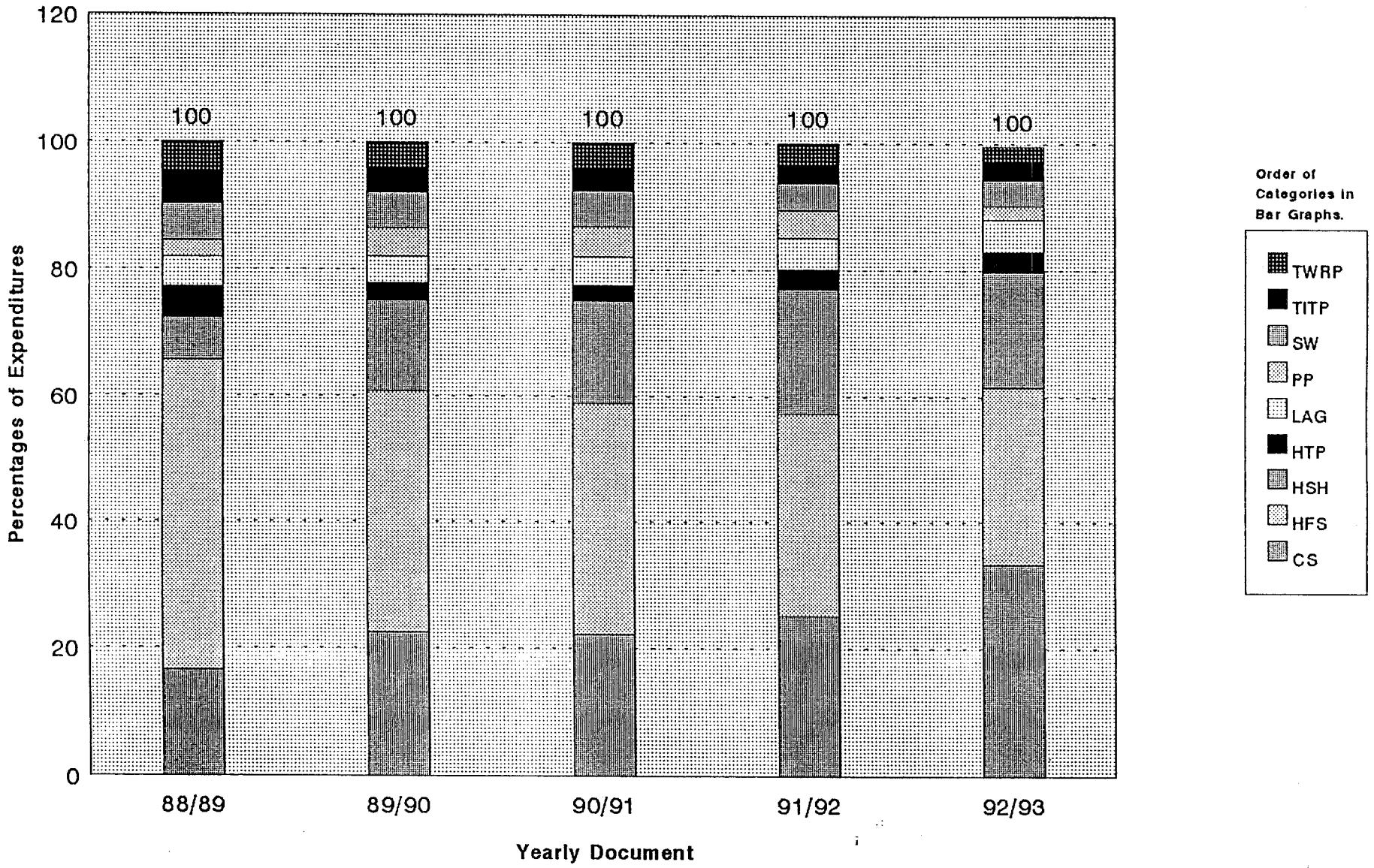
File Name: WSSD\WCIPPR\93-R1\T2PECD.WQ1

GRAPH 2a. Estimated Expenditures (x Billion $) for the Projects Planned to be Delivered, Table 1a, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH2A.CH3

GRAPH 2b. Percentages Corresponding to Planned Project Expenditures in Table 2a.



File Name: WSSD\WCIPPR\93-R1\GRAPH2B.CH3

4.1.1c Counts by Fiscal Year

Table 3 lists the number of projects planned to be delivered in each FY for all categories according to the listings in five consecutive WCIP planning documents. The differential numbers are counts of projects to be delivered in the individual years. For example, the 88/89 planning document listed 25 projects to be completed during the 92/93 FY and the next document for 89/90 listed 26 projects to be completed in FY 92/93. The cumulative values are the running sums of the differential values just above them. The planning documents for 88/89 up to 90/91 listed project expenditures for the five successive FY's. Then they listed more dollars to be expended later, without specifying the times. The planning documents for 91/92 and 92/93 listed project expenditures for ten successive FY's with no indication of dollars beyond the end. For consistency, in each row the project counts after the first five FY's are listed as a differential value for the tenth FY after the publication of the document. It should be noted that the last cumulative number in each row is the same as the total for each row in Table 1a.

Graph 3 illustrates the data for Table 3. In the bar for each yearly document the segments with different types of shading represent the differential values, and the height of the top of a given segment represents the cumulative count of projects up to that time.

4.1.1d Corresponding Expenditures

Table 4 lists the expenditures, in thousands of dollars, expected for the planned projects in Table 3. As in Table 3 the values are listed differentially and cumulatively. The last cumulative value in each row is the same as the total expenditure for each row in Table 2a.

Percentages corresponding to Tables 1b and 2b have not been considered here because the aggregation over all categories eliminates the need to compare allocation of resources to the different categories in the manner done in the first two tables.

Graph 4 shows the differential and cumulative expected expenditures, just as Graph 3 shows the same for the project counts.

TABLE 3. Number of Projects by FY Planned to be Delivered over all Categories according to Each Successive Yearly WCIP 10 Year Planning Document.

	FY	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02
Yrly Doc															
88/89	Diff	41	32	47	26	25					40				
	Cum		73	120	146	171					211				
89/90	Diff		33	49	44	26	19					31			
	Cum			82	126	152	171					202			
90/91	Diff			44	59	34	26	13					20		
	Cum				103	137	163	176					196		
91/92	Diff				48	47	32	18	14					44	
	Cum					95	127	145	159					203	
92/93	Diff					43	47	39	11	13					40
	Cum						90	129	140	153					193

NOTATIONS

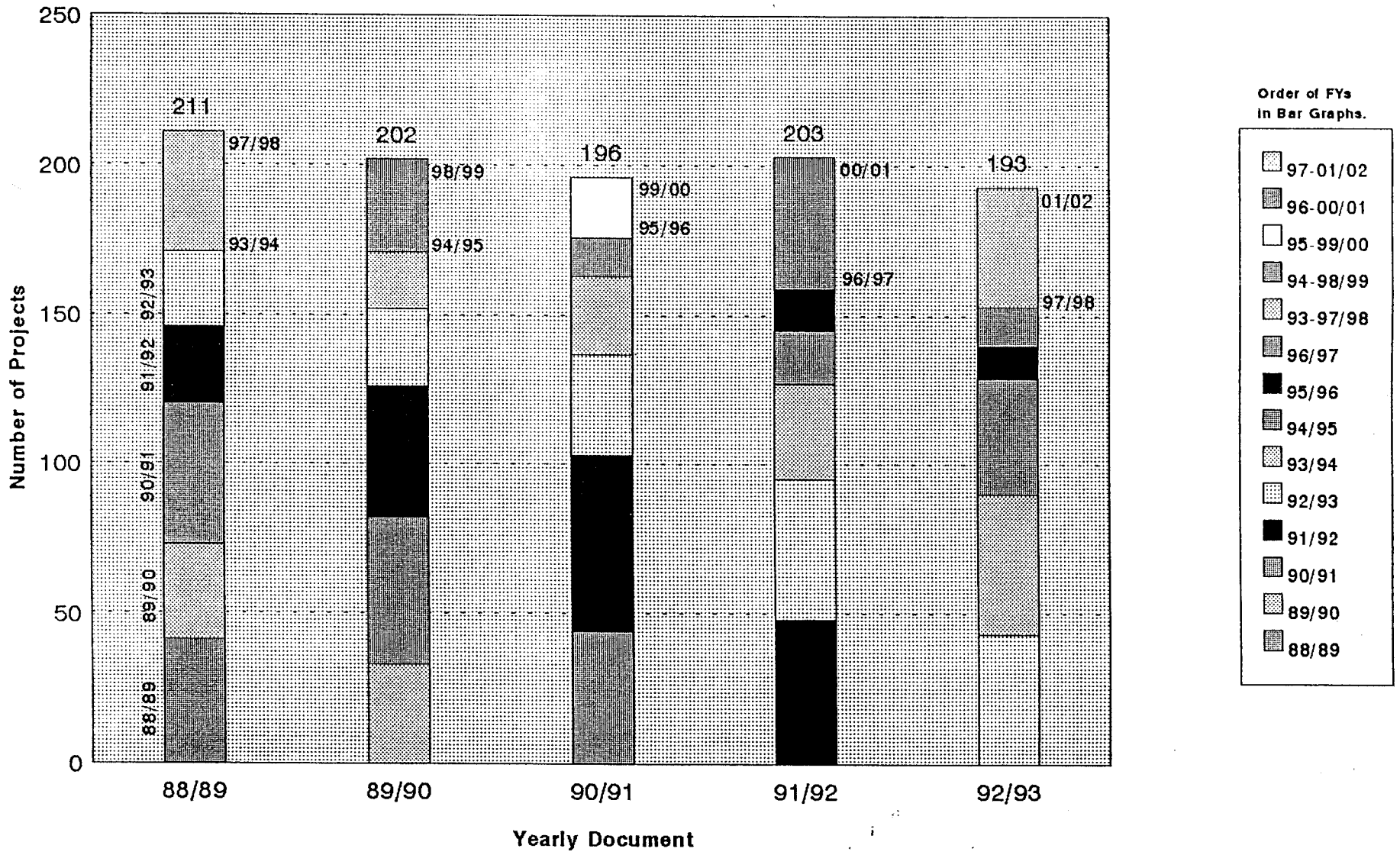
Cum: Cumulative; Diff: Differential; Yrly Doc: Yearly Document; FY: Fiscal Year.

NOTES

1. Information in Table 3 is extracted from Table Ai's, i = 1, . . . , 5. Table Ai's are included in Appendix Section 11.1a.
2. The data from each yearly document were collected independent of the data from prior FY's documents.
3. There are two rows for each Yrly Doc. The first row represents projects to be delivered within a FY. The second row indicates the total number of projects from the year of that document to the indicated FY.
4. The last datum in each row reflects the number of projects planned to be delivered in FY's after the first five FY's.
5. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

File Name: WSSD\WCIPPR\93-R1\T3PCFD.WQ1

GRAPH 3. Number of Projects by FY Planned to be Delivered over all Categories according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH3.CH3

TABLE 4. Estimated Expenditures (x $1000) for the Projects Planned to be Delivered, Table 3, according to Each Successive Yearly WCIP 10 Year Planning Document.

	FY	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02
Yrly Doc															
88/89	Diff	192,786	96,283	253,920	186,286	497,705					1,388,018				
	Cum		289,069	542,989	729,275	1,226,980					2,614,998				
89/90	Diff		111,277	198,195	209,029	385,745	332,558					1,600,491			
	Cum			309,472	518,501	904,246	1,236,804					2,837,295			
90/91	Diff			184,125	156,562	491,878	324,659	85,764					1,677,176		
	Cum				340,687	832,565	1,157,224	1,242,988					2,920,164		
91/92	Diff				214,004	315,015	415,559	392,779	193,611					2,636,382	
	Cum					529,019	944,578	1,337,357	1,530,968					4,167,350	
92/93	Diff					275,817	312,622	504,369	79,646	498,187					2,881,464
	Cum						588,439	1,092,808	1,172,454	1,670,641					4,552,105

NOTATIONS

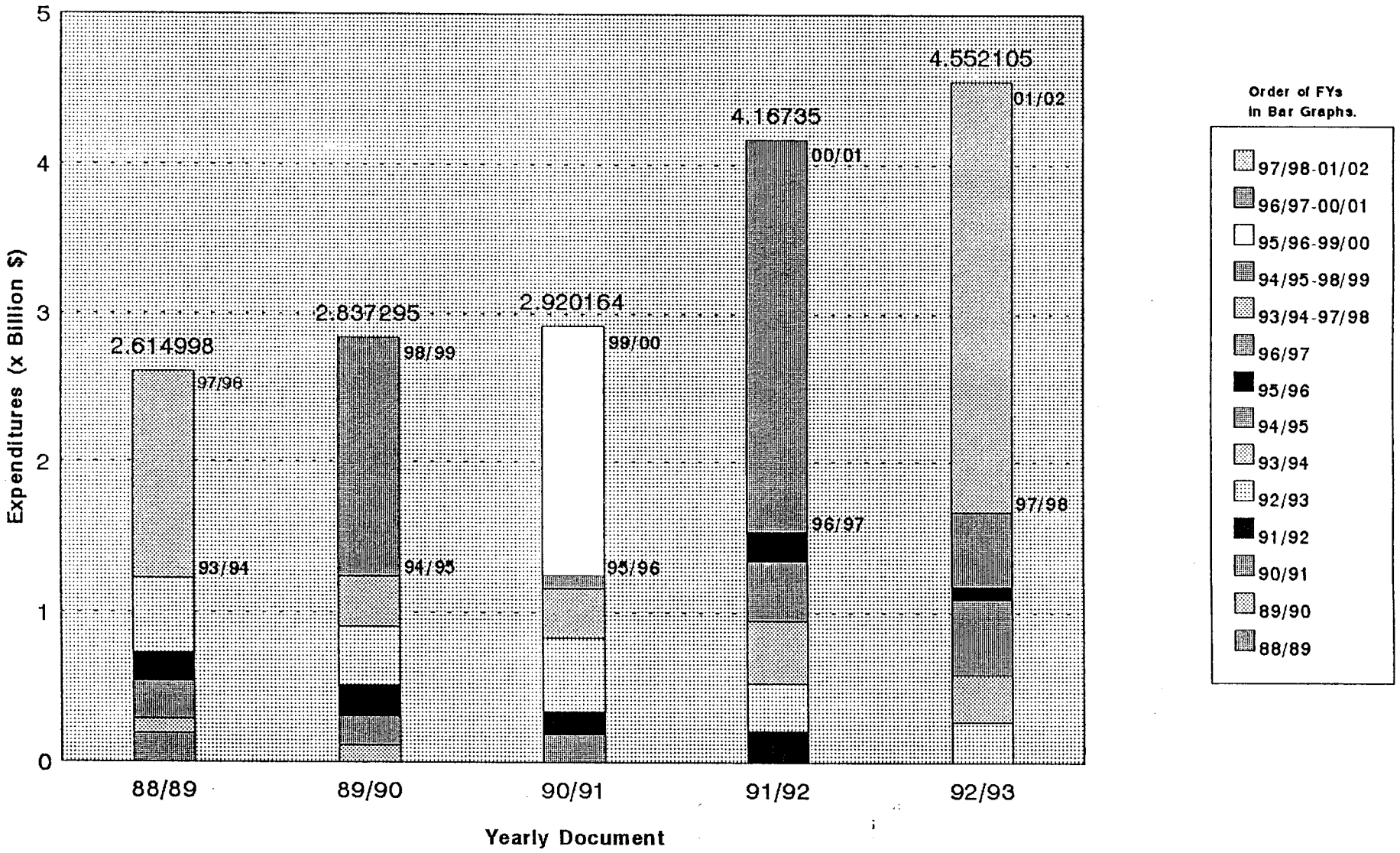
Cum: Cumulative; Diff: Differential; Yrly Doc: Yearly Document; FY: Fiscal Year.

NOTES

1. The information in Table 4 is extracted from Table Bi's, i = 1, . . . , 5. Table Bi's are included in Appendix Section 11.1a.
2. The first and second rows give planned expenditures that correspond to the first and second rows in Table 3 respectively. That is, the data in the first row reflect estimates for one FY, and the ones in the second row are cumulative expenditures.
3. The last datum in each row reflects the expenditures for the projects planned to be delivered in FY's after the first five.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

File Name: WSSD\WCIPPR\93-R1\T4PEFD.WQ1

GRAPH 4. Estimated Expenditures (x Billion $) for the Projects Planned to be Delivered, Table 3, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH4.CH3

4.1.2 PROJECTS PLANNED TO BE DELIVERED BY 6/30/93, ACCORDING TO EACH YEARLY DOCUMENT INDEPENDENTLY

This section contains tables similar to those in Section 4.1.1 except that the only projects listed are those which were planned to be delivered by the end of the 92/93 FY. This is determined by finding the projects for which all planned expenditures in FY's after 92/93 are zero. These project listings are part of the basis for the later sections of analyses of project completion rates and cost changes.

4.1.2a Counts by Category, Relative Values

Table 5a and 5b contain information corresponding to that in Table 1a and 1b, except for the cutoff at the end of FY 92/93. Graphs 5a and 5b are the corresponding tables.

4.1.2b Corresponding Expenditures, Relatives Values

Tables 6a and 6b give expenditures for the projects as listed in Table 5a and 5b. Graphs 6a and 6b are the corresponding graphs.

TABLE 5a. Number of Projects by Category Planned to be Delivered by 6/30/93, according to Each Successive Yearly WCIP 10 Year Planning Document.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	30	14	10	33	12	11	18	24	19	171
89/90	17	12	34	20	10	7	17	19	16	152
90/91	19	11	31	17	11	6	9	15	18	137
91/92	15	8	3	19	11	4	8	10	17	95
92/93	6	3	5	4	6	2	4	7	6	43

TABLE 5b. Percentages Corresponding to Planned Project Counts in Table 5a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	18	8	6	19	7	6	11	14	11	100
89/90	11	8	22	13	7	5	11	13	11	100
90/91	14	8	23	12	8	4	7	11	13	100
91/92	16	8	3	20	12	4	8	11	18	100
92/93	14	7	12	9	14	5	9	16	14	100

NOTATIONS

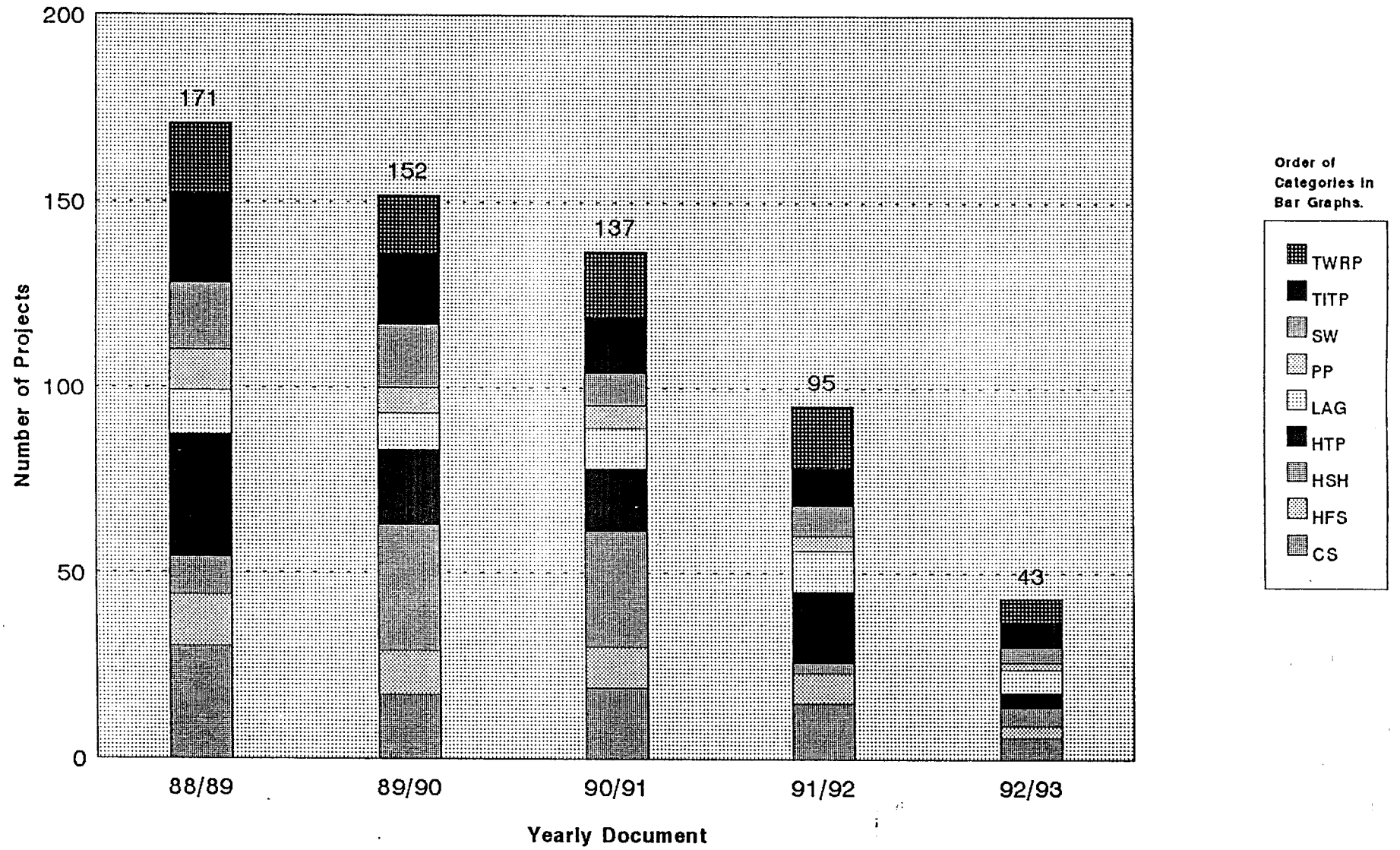
Yrly Doc: Yearly Document.

NOTES

1. The information in Table 5a is extracted from Table Ci's, i = 1, . . ., 5. Table Ci's are included in Appendix Section 11.1b.
2. The data from each yearly document were collected independent of the data from the prior FY's documents.
3. Percentages have been rounded off to whole numbers.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

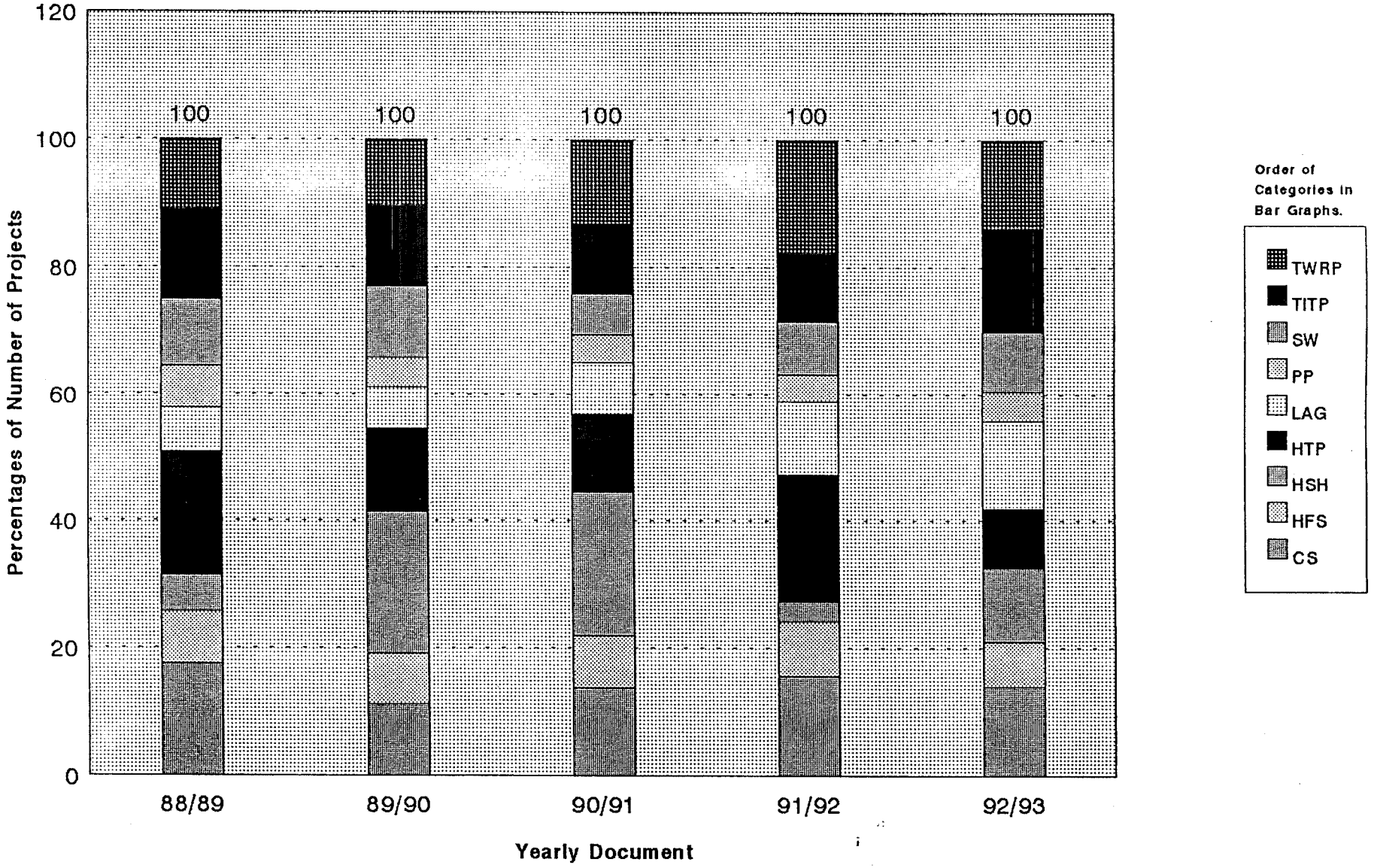
File Name: WSSD\WCIPPR\93-R1\T5PCCD93.WQ1

GRAPH 5a. Number of Projects by Category Planned to be Delivered by 6/30/93, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH5A

GRAPH 5b. Percentages Corresponding to Planned Project Counts in Table 5a.



File Name: WSSD\WCIPPR\93-R1\GRAPH5B.CH3

TABLE 6a. **Estimated Expenditures (x $1000) for the Projects Planned to be Delivered, Table 5a, according to Each Successive Yearly WCIP 10 Year Planning Document.**

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	232,605	260,766	171,507	106,997	22,490	68,103	109,162	126,675	128,674	1,226,979
89/90	195,210	232,798	112,815	79,541	28,263	64,530	44,513	34,944	111,631	904,245
90/91	179,239	249,321	80,813	62,235	27,960	35,314	39,322	22,712	123,688	820,604
91/92	169,893	56,434	21,718	61,766	27,168	19,402	45,710	23,380	103,548	529,019
92/93	152,036	14,777	20,844	37,839	4,131	7,328	27,653	9,197	2,013	275,818

TABLE 6b. **Percentages Corresponding to Planned Project Expenditures in Table 6a.**

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	19	21	14	9	2	6	9	10	10	100
89/90	22	26	12	9	3	7	5	4	12	100
90/91	22	30	10	8	3	4	5	3	15	100
91/92	32	11	4	12	5	4	9	4	20	100
92/93	55	5	8	14	1	3	10	3	1	100

NOTATIONS

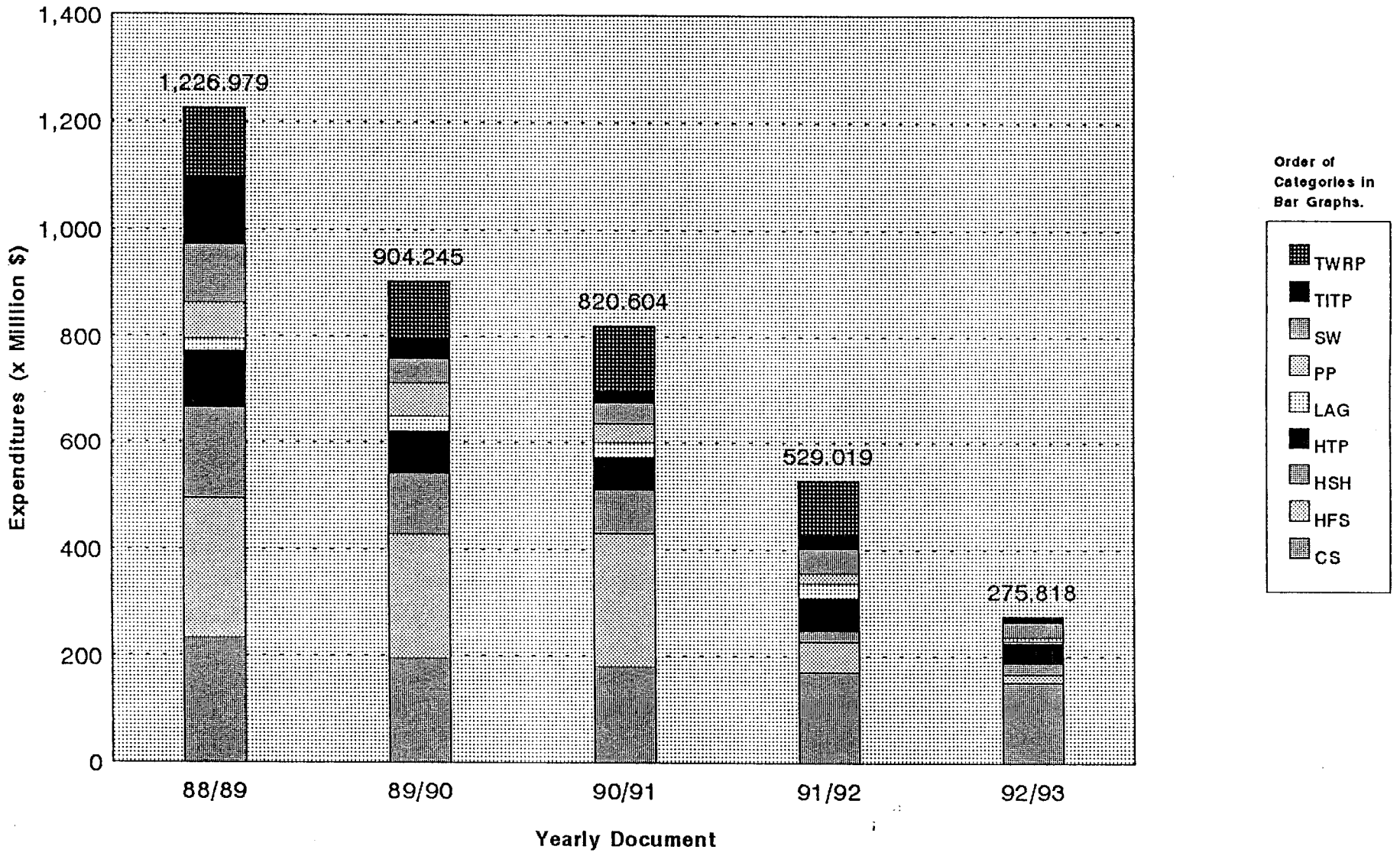
Yrly Doc: Yearly Document.

NOTES

1. Information in Table 6a is extracted from Table Di's, i = 1, . . ., 5. Table Di's are included in Appendix Section 11.1b.
2. Percentages have been rounded off to whole numbers.
3. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

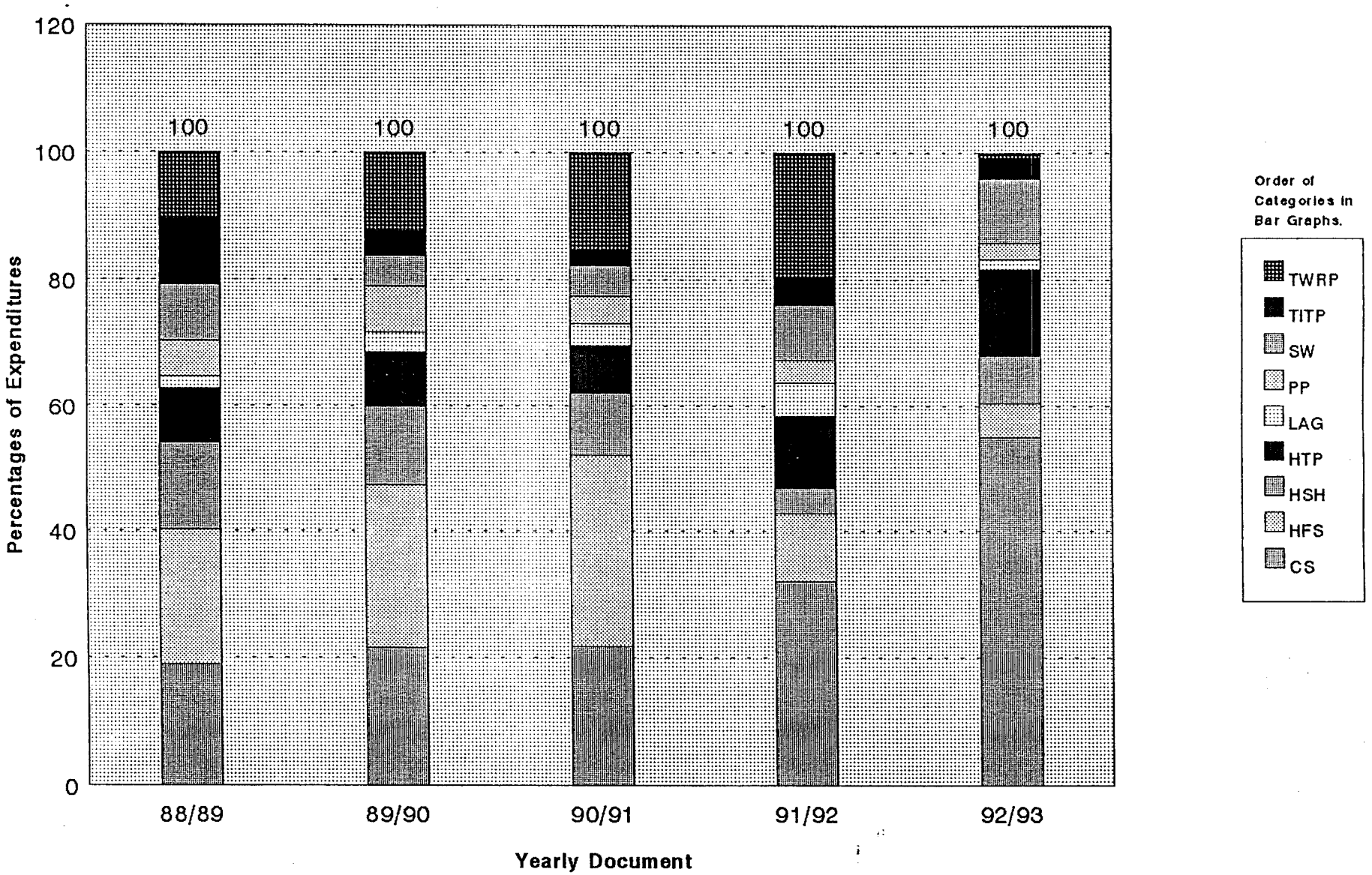
File Name: WSSD\WCIPPR\93-R1\T6PECD93.WQ1

GRAPH 6a. Estimated Expenditures (x Million $) for the Projects Planned to be Delivered, Table 5a, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH6A.CH3

GRAPH 6b. Percentages Corresponding to Planned Project Expenditures in Table 6a.



File Name: WSSD\WCIPPR\93-R1\GRAPH6B.CH3

4.1.2c Counts by Fiscal Year

Table 7 contains data corresponding to that in Table 3 except for the cutoff at the end of FY 92/93. Graph 7 plots the data for this table.

4.1.2d Corresponding Expenditures

Table 8 gives expenditures for the projects, listed in Table 7. Graph 8 plots the data for this table.

TABLE 7. **Number of Projects by FY Planned to be Delivered over all Categories by 6/30/93, according to Each Successive Yearly WCIP 10 Year Planning Document.**

	FY	88/89	89/90	90/91	91/92	92/93
Yrly Doc						
88/89	Diff	41	32	47	26	25
	Cum		73	120	146	171
89/90	Diff		33	49	44	26
	Cum			82	126	152
90/91	Diff			44	59	34
	Cum				103	137
91/92	Diff				48	47
	Cum					95
92/93	Diff					43
	Cum					

NOTATIONS

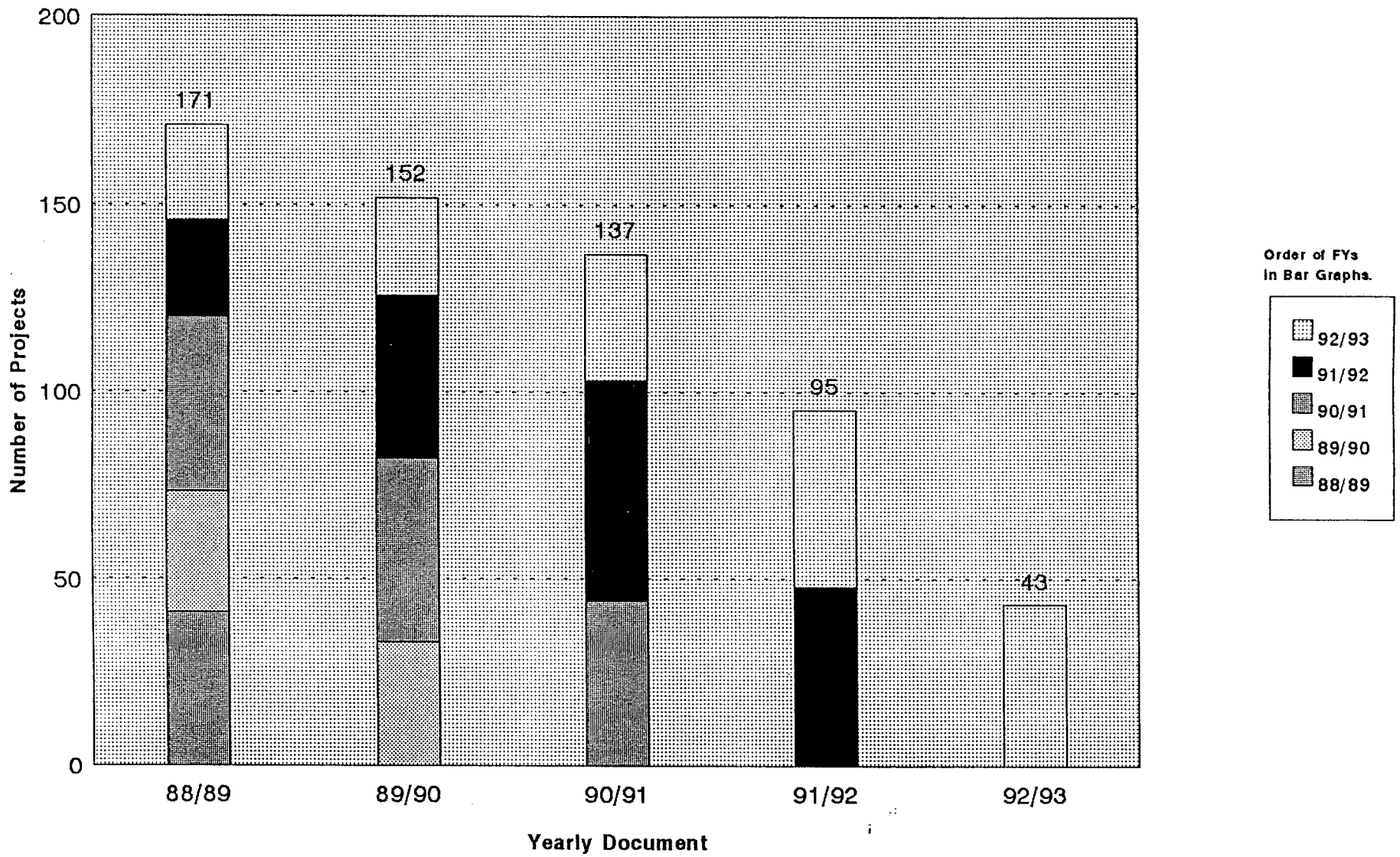
Cum: Cumulative; Diff: Differential; Yrly Doc: Yearly Document; FY: Fiscal Year.

NOTES

1. The information in Table 7 is extracted form Table Ci's, i = 1, . . ., 5. Table Ci's are included in Appendix Section 11.1b.
2. There are two rows for each document year. The first row represents projects to be delivered in one FY. The second row indicates the total number of projects from the year of the document to the indicated FY.
3. The data from each yearly document were collected independent of the data from the prior FY's documents.
4. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

File Name: WSSD\WCIPPR\93-R1\T7PCFD93.WQ1

GRAPH 7. Number of Projects by FY Planned to be Delivered over all Categories by 6/30/92, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH7.CH3

TABLE 8. Estimated Expenditures (x $1000) by FY for the Projects Planned to be Delivered, Table 7, according to Each Successive Yearly WCIP 10 Year Planning Document.

	FY	88/89	89/90	90/91	91/92	92/93
Yrly Doc						
88/89	Diff	192,786	96,283	253,920	186,286	497,705
	Cum		289,069	542,989	729,275	1,226,980
89/90	Diff		111,277	198,195	209,029	385,745
	Cum			309,472	518,501	904,246
90/91	Diff			184,125	156,562	491,878
	Cum				340,687	832,565
91/92	Diff				214,004	315,015
	Cum					529,019
92/93	Diff					275,817
	Cum					

NOTATIONS

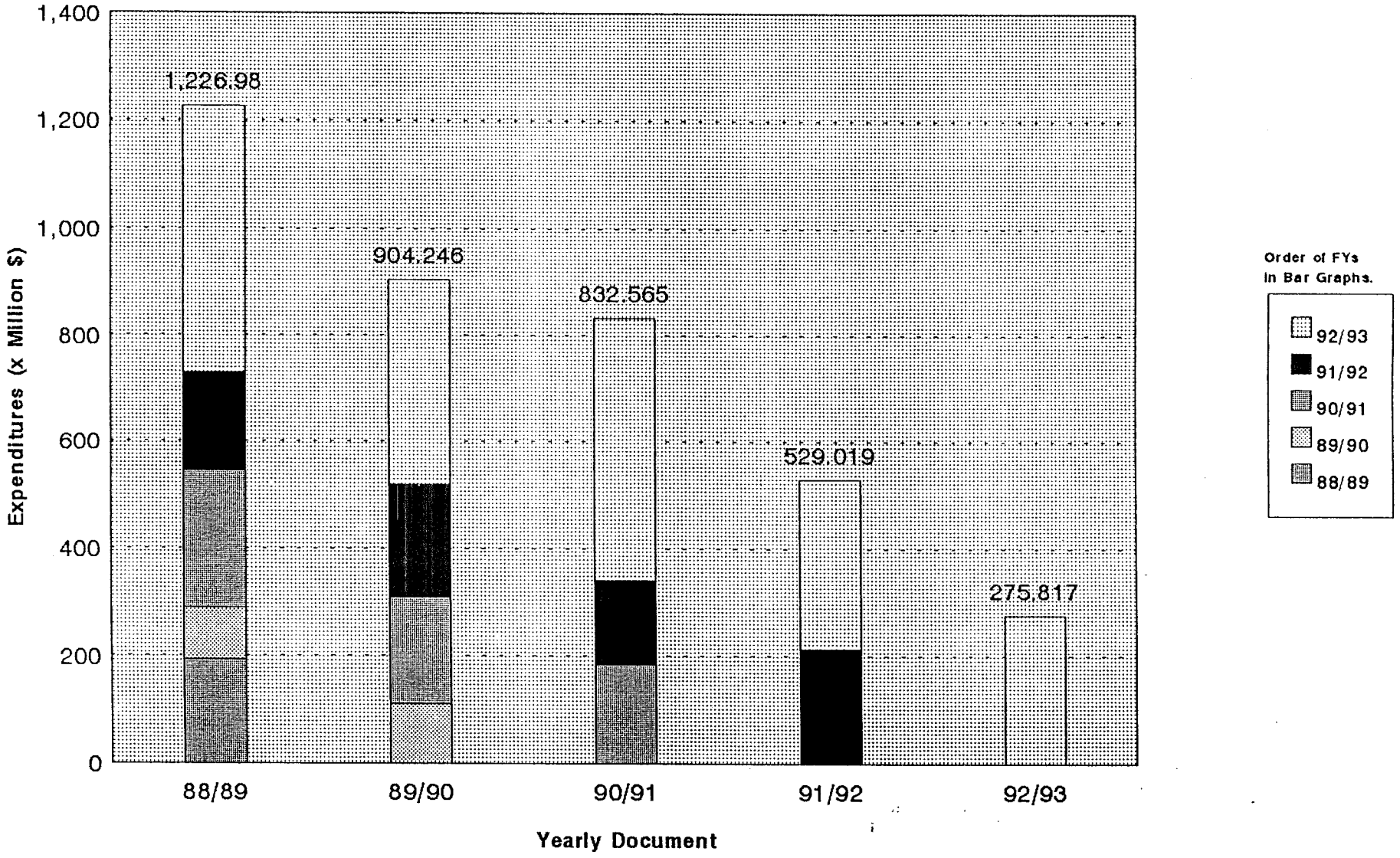
Cum: Cumulative; Diff: Differential; Yrly Doc: Yearly Document; FY: Fiscal Year.

NOTES

1. Information in Table 8 is extracted from Table Di's, i = 1, . . ., 5. Table Di's are included in Appendix Section 11.1b.
2. The first and second rows give planned expenditures that correspond to the first and second rows in Table 7 respectively.
3. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

File Name: WSSD\WCIPPR\93-R1\T8PEFD93.WQ1

GRAPH 8. Estimated Expenditures (x Million $) for the Projects Planned to be Delivered, Table 7, according to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\GRAPH8.CH3

4.1.3 PROJECTS PLANNED TO BE DELIVERED BY 6/30/93

The counts of projects and expenditures in Section 4.1.2 include duplications, because projects lasting more than one year are listed in several successive documents. It is more informative for the purpose of this report to count each project and its expenditures only once, to gain a clearer view of the changes in plans. This is done in this section. It is noted that from this point on no evaluation of the program by FY's has been implemented because of database system deficiencies for the WCIP. However, if this Report is adopted and the system is revised, FY studies like those shown in previous sections should be performed on actual data for this section and Section 4.2.2.

4.1.3a Counts by Category, Relative Values

Table 9a shows the number of projects to be delivered by 6/30/93, which are "additions" in each FY to the ones that were previously listed. Since 1988/89 has been taken as the base FY, all the projects in the corresponding document must be counted, so the numbers in the first row are especially large. These numbers are identical to those listed in the first row of Table 5a. Subsequent rows show only the increments beyond the base year. For example, there were no new LAG projects to be delivered by June 30, 1993, in the 89/90 Planning Document, while seven new projects were added in the 90/91 document. Corresponding relative values are given in Table 9b.

4.1.3b Corresponding Expenditures, Relative Values

Table 10a shows the expenditures corresponding to the projects in Table 9a. Since the information for each project is based on its first appearance in the planning documents, these dollar values show the original estimates of costs, not revised to include the combination of past costs and estimated future expenditures. Thus they can be compared with actual costs to show the accuracy of the estimation process. The corresponding relative values are given in Table 10b.

TABLE 9a. Number of Projects by Category Planned to be Delivered between FY 88/89 to 6/30/93, from Yearly WCIP 10 Year Planning Documents.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	30	14	10	33	12	11	18	24	19	171
89/90	3	4	32	3	0	1	5	11	2	61
90/91	7	3	5	6	7	1	2	7	6	44
91/92	2	3	1	9	4	1	4	2	6	32
92/93	2	1	2	0	1	2	0	1	1	10
Total	44	25	50	51	24	16	29	45	34	318

TABLE 9b. Percentages Corresponding to Planned Project Counts in Table 9a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Yrly Doc									
88/89	68	56	20	65	50	69	62	53	56
89/90	7	16	64	6	0	6	17	24	6
90/91	16	12	10	12	29	6	7	16	18
91/92	5	12	2	18	17	6	14	4	18
92/93	5	4	4	0	4	13	0	2	3
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

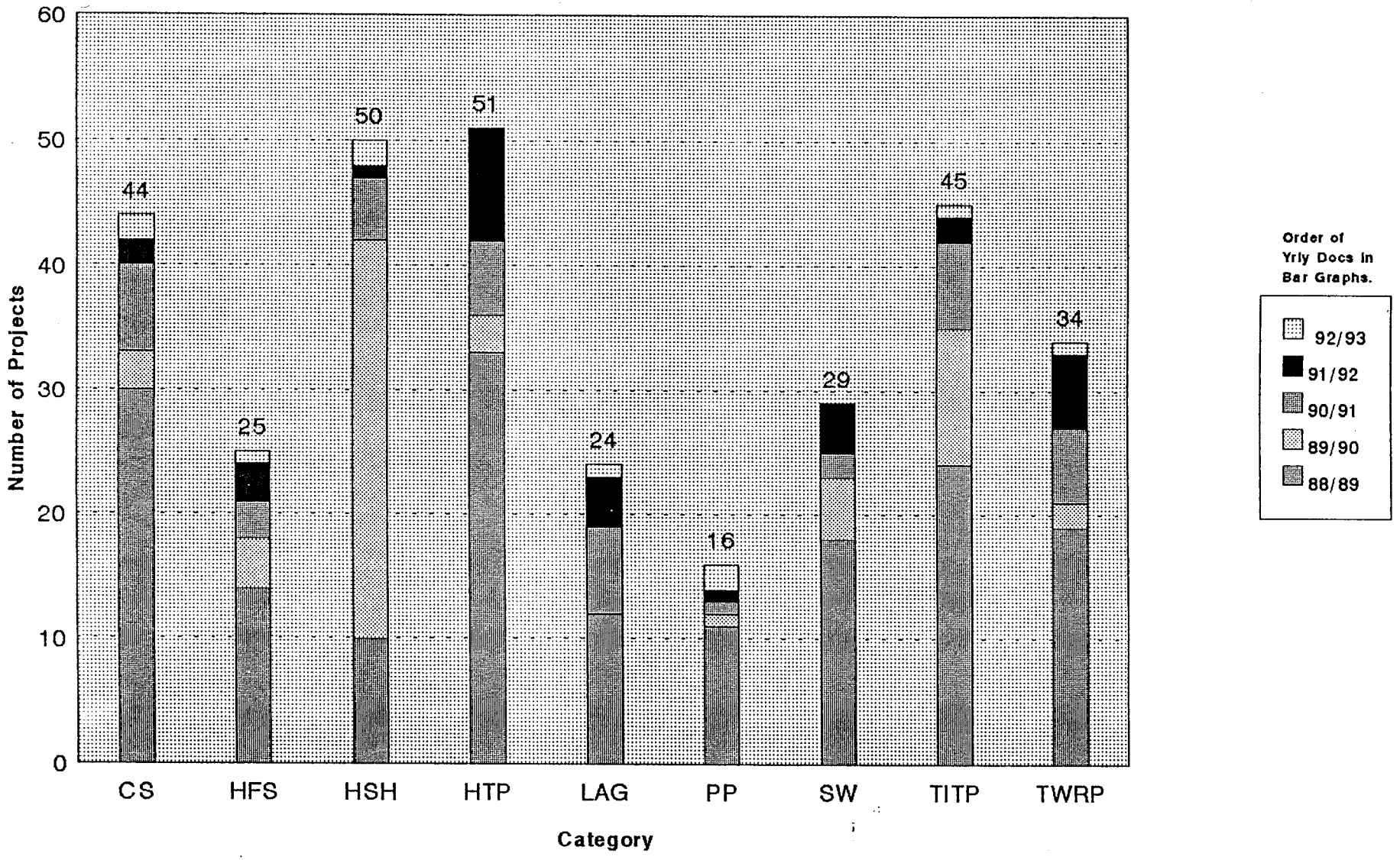
Yrly Doc: Yearly Document.

NOTES

1. Values in Table 9a, after the first row are increments from successive yearly planning documents, i.e., projects that appeared more than once in the FY documents, are not counted again.
2. Percentages have been rounded off to whole numbers.
3. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

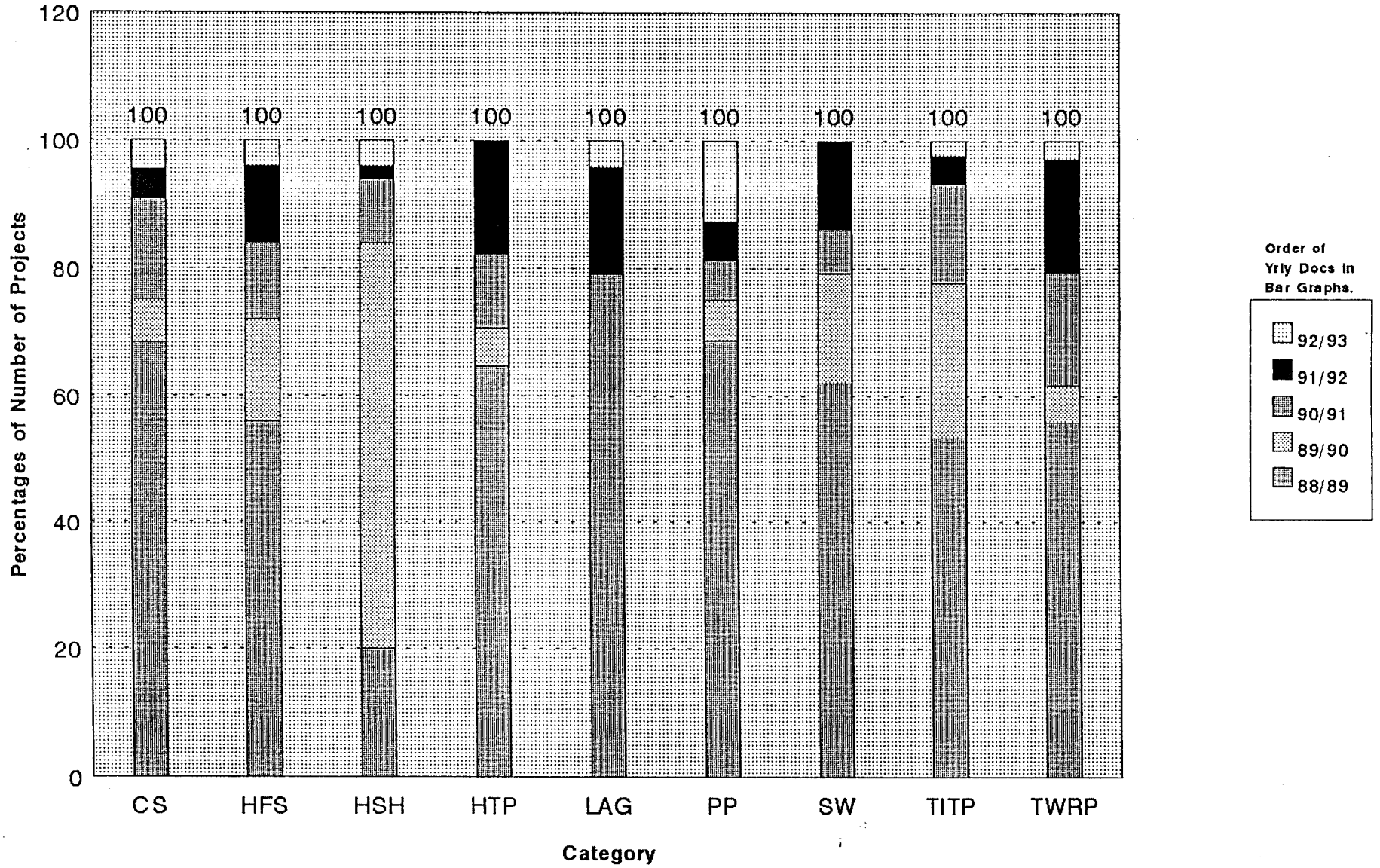
File Name: WSSD\WCIPPR\93-R1\T9PC93D.WQ1

GRAPH 9a. Number of Projects by Category Planned to be Delivered between FY 88/89 to 6/30/93 from Yearly WCIP 10 Year Planning Documents.



File Name: WSSD\WCIPPR\93-R1\GRAPH9A.CH3

GRAPH 9b. Percentages Corresponding to Planned Projects Counts in Table 9a.



File Name: WSSD\WCIPPR\93-R1\GRAPH9b.CH3

TABLE 10a. Estimated Expenditures (x $1000) for the Projects Planned to be Delivered between FY 88/89 to 6/30/93 Table 9a, from Yearly WCIP 10 Year Planning Documents.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Yrly Doc										
88/89	232,605	259,816	171,507	107,234	22,490	68,166	109,162	126,675	128,675	1,226,330
89/90	1,734	46,403	53,786	4,158	0	858	6,175	22,870	7,490	143,474
90/91	9,508	12,335	29,972	6,050	11,590	7,860	20,260	12,337	8,244	118,156
91/92	3,092	6,239	4,460	8,700	5,018	5,840	20,111	277	2,073	55,810
92/93	6,745	3,689	250	0	135	7,328	0	600	80	18,827
Total	253,684	328,482	259,975	126,142	39,233	90,052	155,708	162,759	146,562	1,562,597

TABLE 10b. Percentages Corresponding to Planned Project Expenditures in Table 10a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Yrly Doc									
88/89	92	79	66	85	57	76	70	78	88
89/90	1	14	21	3	0	1	4	14	5
90/91	4	4	12	5	30	9	13	8	6
91/92	1	2	2	7	13	6	13	0	1
92/93	3	1	0	0	0	8	0	0	0
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

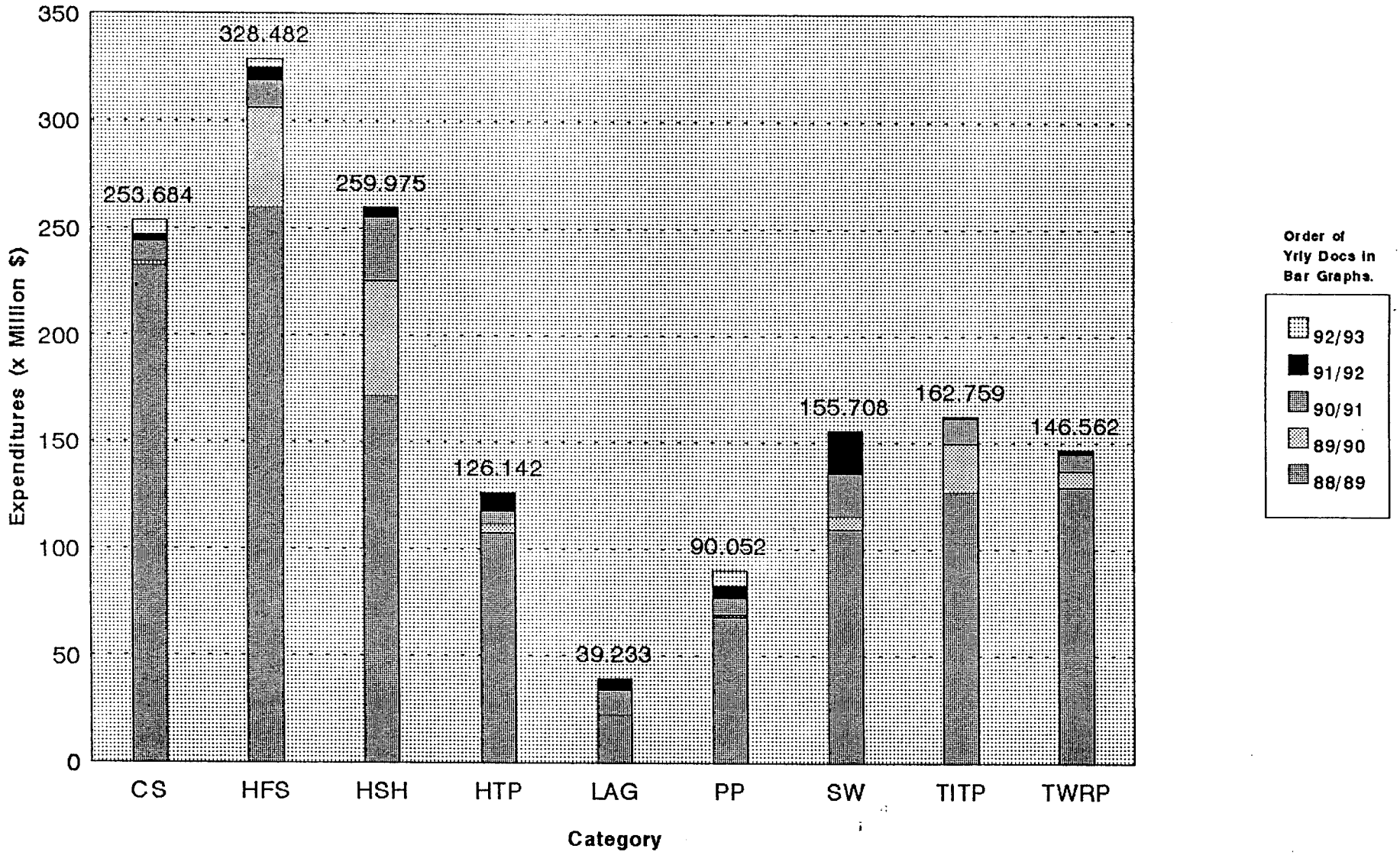
Yrly Doc: Yearly Document.

NOTES

1. Percentages have been rounded off to whole numbers.
2. Yrly Doc refers to the Yearly WCIP 10 Year Planning Document published for the indicated Fiscal Year.

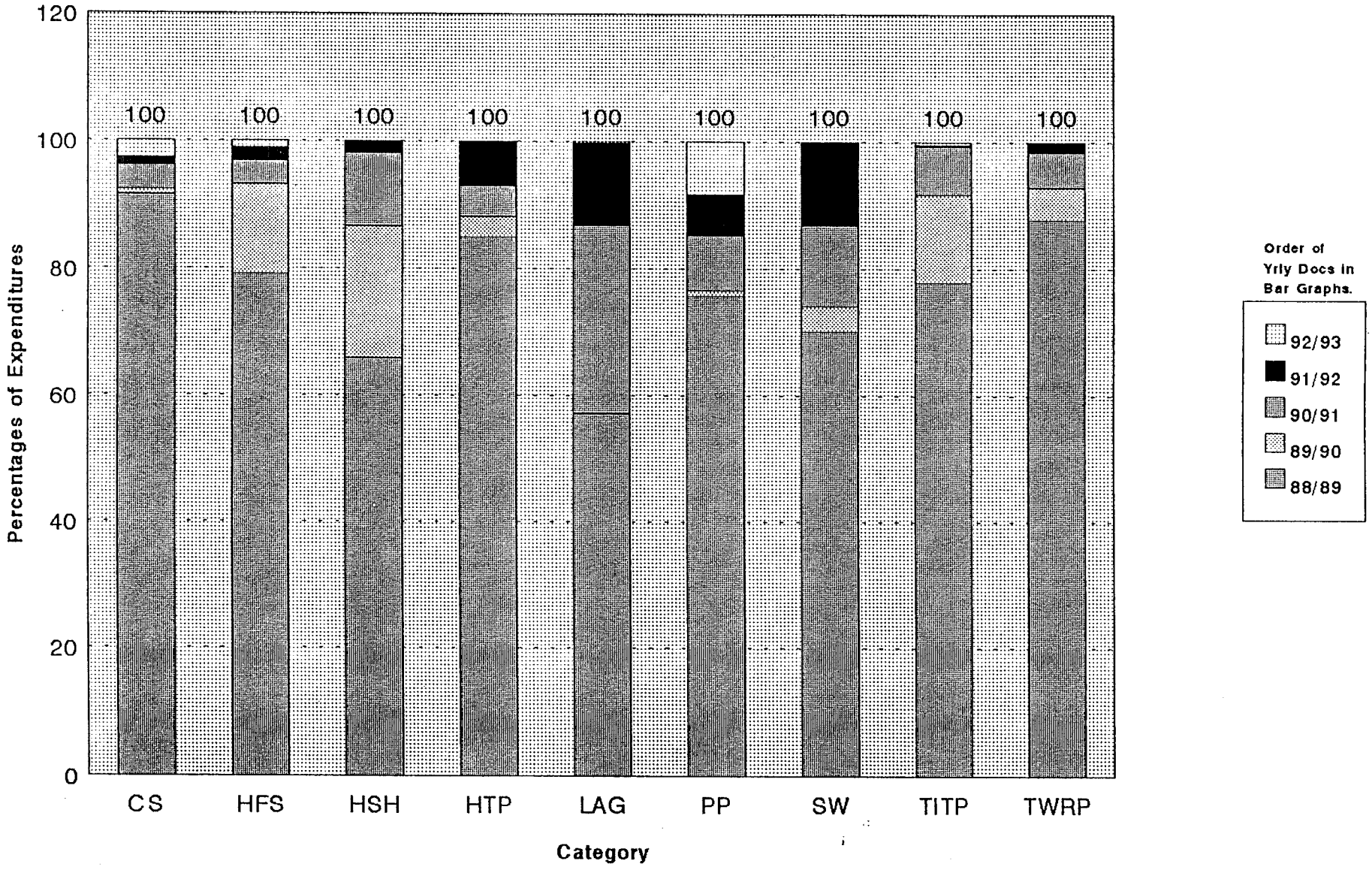
File Name: WSSD\WCIPPR\93-R1\T10PE93D.WQ1

GRAPH 10a. Estimated Expenditures (x Million $) for the Projects Planned to be Delivered between FY 88/89 to 6/30/93, Table 9a, from Yearly WCIP 10 Year Planning Documents.



File Name: WSSD\WCIPPR\93-R1\GRAPH10A.CH3

GRAPH 10b. Percentages Corresponding to Planned Project Expenditures in Table 10a.



File Name: WSSD\WCIPPR\93-R1\GRAPH10B.CH3

4.2 WCIP DOCUMENTS WITH ACTUAL DATA

The projects searched from the planning documents and integrated in the PID are further investigated in this section through the documents with actual data for the WCIP. As in the planning sections, the methods include project counts and expenditures. Further classification of the program has also been implemented in this section. Section 4.2.1 discusses all the projects in the PID; Section 4.2.2 is a subset of 4.2.1 that only considers the projects given in Section 4.1.3, that is, the actual status of the projects planned to be delivered by June 30, 1993.

4.2.1 STATUS BY 1/1/93 OF PLANNED PROJECTS FROM THE PID

Ideally, a wastewater project has a simple history: it is entered into the program, it goes through detailed design, construction is carried out, and that is the end. In real life, of course, things are usually not so simple. Projects may be suspended somewhere in their expected course, or canceled altogether. Furthermore, for the purposes of management, projects may be reassigned from one category to another, given new titles, split into several projects or merged with others into one big project. Many activities, such as design studies or procurement of office furniture, which have to be budgeted as projects, involve no construction. Thus, to get a clearer idea of the development of WCIP projects over the past few years a classification of the projects by status has been devised. The tables and graphs in this section show the status of projects listed in the planning documents since 1988. The status are given as of January 1, 1993.

4.2.1a Counts by Category, Relative Values

Tables 11a and 11b are absolute and relative counts of projects. The counts are grouped by category and status. These data are from the Preliminary Integrated Database, and reflect status as of January 1, 1993. Graphs 11a and 11b are the corresponding plots.

4.2.1b Corresponding Expenditures, Relative Values

Tables 12a and 12b are absolute and relative expenditures, grouped by category and status, for the projects in Tables 11a and 11b. Graphs 12a and 12b are the corresponding plots.

TABLE 11a. Status from PID of all WCIP Projects by Category as of 1/1/93, that were Planned between FY 88/89 to FY 92/93.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Status										
CA	17	7	19	15	12	22	16	18	7	133
CP	11	9	21	15	4	4	4	9	10	87
FU	12	3	2	6	4	0	2	4	2	35
IP	44	30	25	22	7	16	18	10	15	187
OH	1	0	0	2	3	0	1	11	5	23
Total	85	49	67	60	30	42	41	52	39	465

TABLE 11b. Percentages Corresponding to Project Status in Table 11a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Status									
CA	20	14	28	25	40	52	39	35	18
CP	13	18	31	25	13	10	10	17	26
FU	14	6	3	10	13	0	5	8	5
IP	52	61	37	37	23	38	44	19	38
OH	1	0	0	3	10	0	2	21	13
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

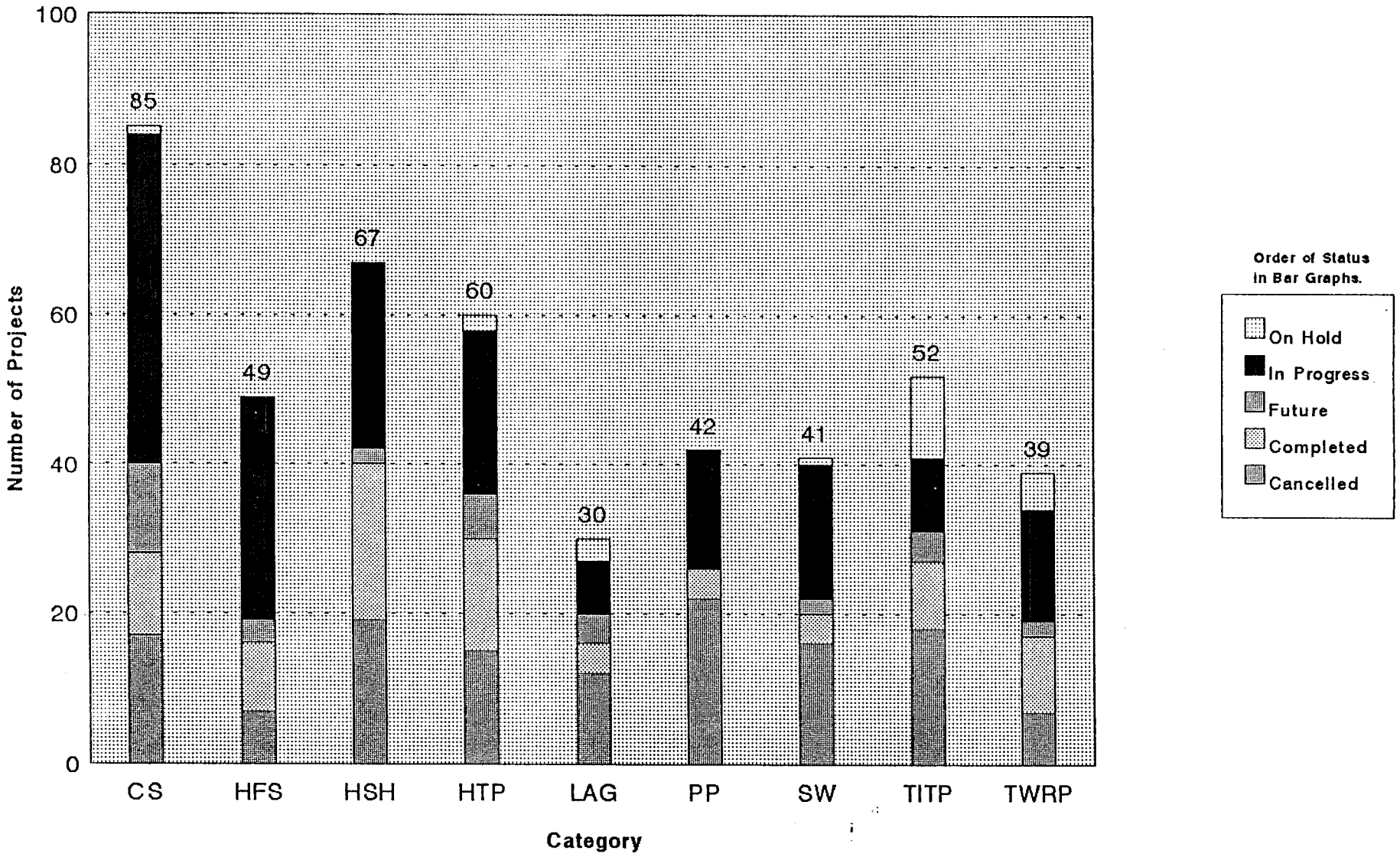
CA: Cancelled; CP: Completed; FU: Future; IP: In Progress; OH: On Hold;
PID: Preliminary Integrated Database.

NOTES

1. PID has been assembled from various documents on WCIP data (see Section 2 and References).
2. Percentages have been rounded off to whole numbers.

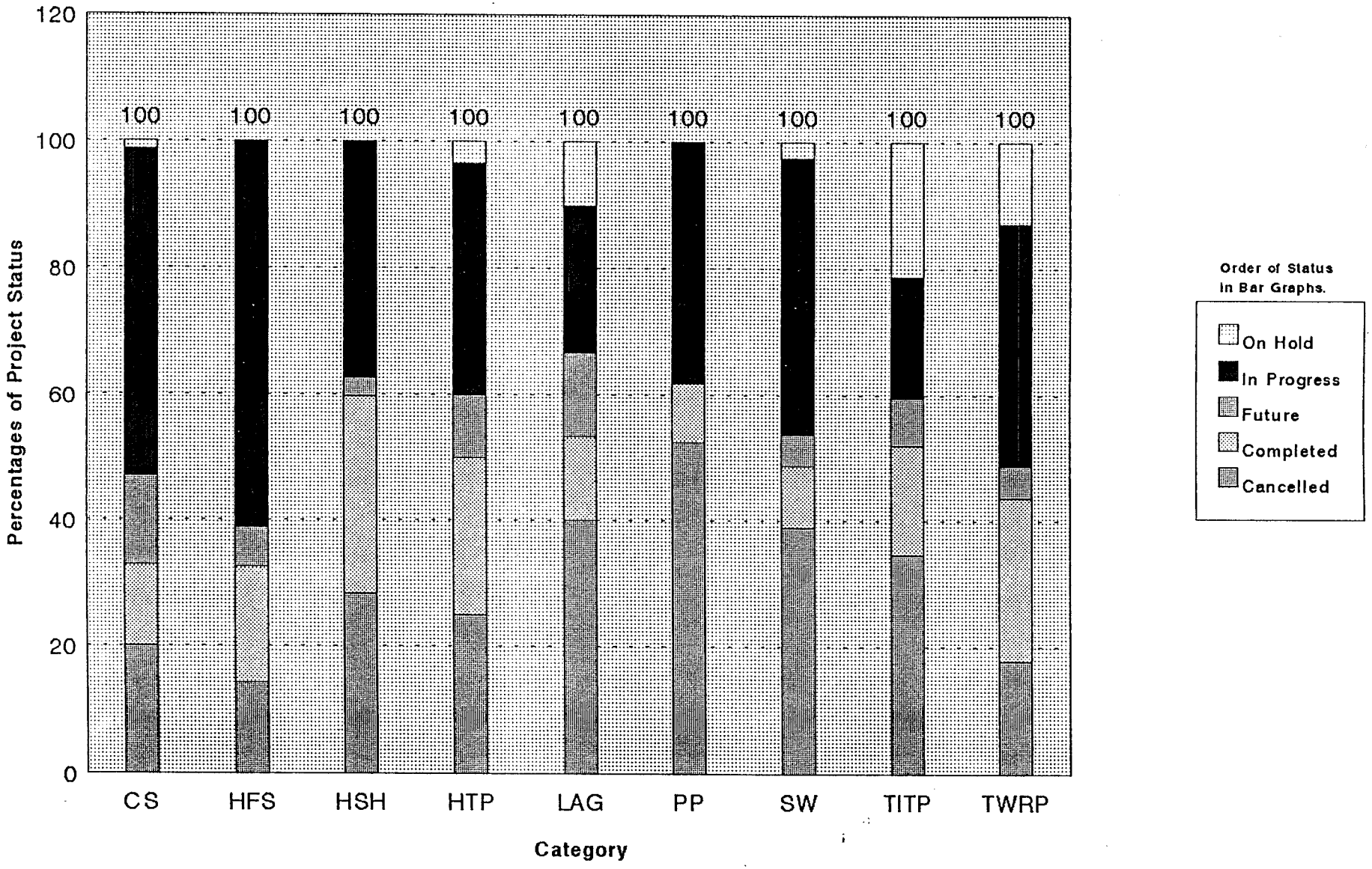
File Name: WSSD\WCIPPR\93-R1\T11SCC93.WQ1

GRAPH 11a. Status from PID of all WCIP Projects by Category as of 1/1/93, that were Planned between FY 88/89 to FY 92/93.



File Name: WSSD\WCIPPR\93-R1\GRAPH11A.CH3

GRAPH 11b. Percentages Corresponding to Project Status in Table 11a.



File Name: WSSD\WCIPPR\93-R1\GRAPH11B.CH3

TABLE 12a. Actual Expenditures (x $1000) from PID of all WCIP Projects, Table 11a, by Category as of 1/1/93, that were planned between FY 88/89 to 6/30/93.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Status										
CA	451	2,071	35,127	1,421	2,044	8,904	1,058	1,343	300	52,719
CP	19,721	77,712	35,093	19,876	11,097	14,240	2,295	4,552	82,153	266,739
FU	75	53	4	0	3,083	0	226	3	0	3,444
IP	201,361	396,530	91,396	64,644	2,975	13,831	86,530	9,621	4,901	871,789
OH	83	0	0	3	104	0	119	610	482	1,401
Total	221,691	476,366	161,620	85,944	19,303	36,975	90,228	16,129	87,836	1,196,092

TABLE 12b. Percentages Corresponding to Actual Project Expenditures in Table 12a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Status									
CA	0	0	22	2	11	24	1	8	0
CP	9	16	22	23	57	39	3	28	94
FU	0	0	0	0	16	0	0	0	0
IP	91	83	57	75	15	37	96	60	6
OH	0	0	0	0	1	0	0	4	1
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

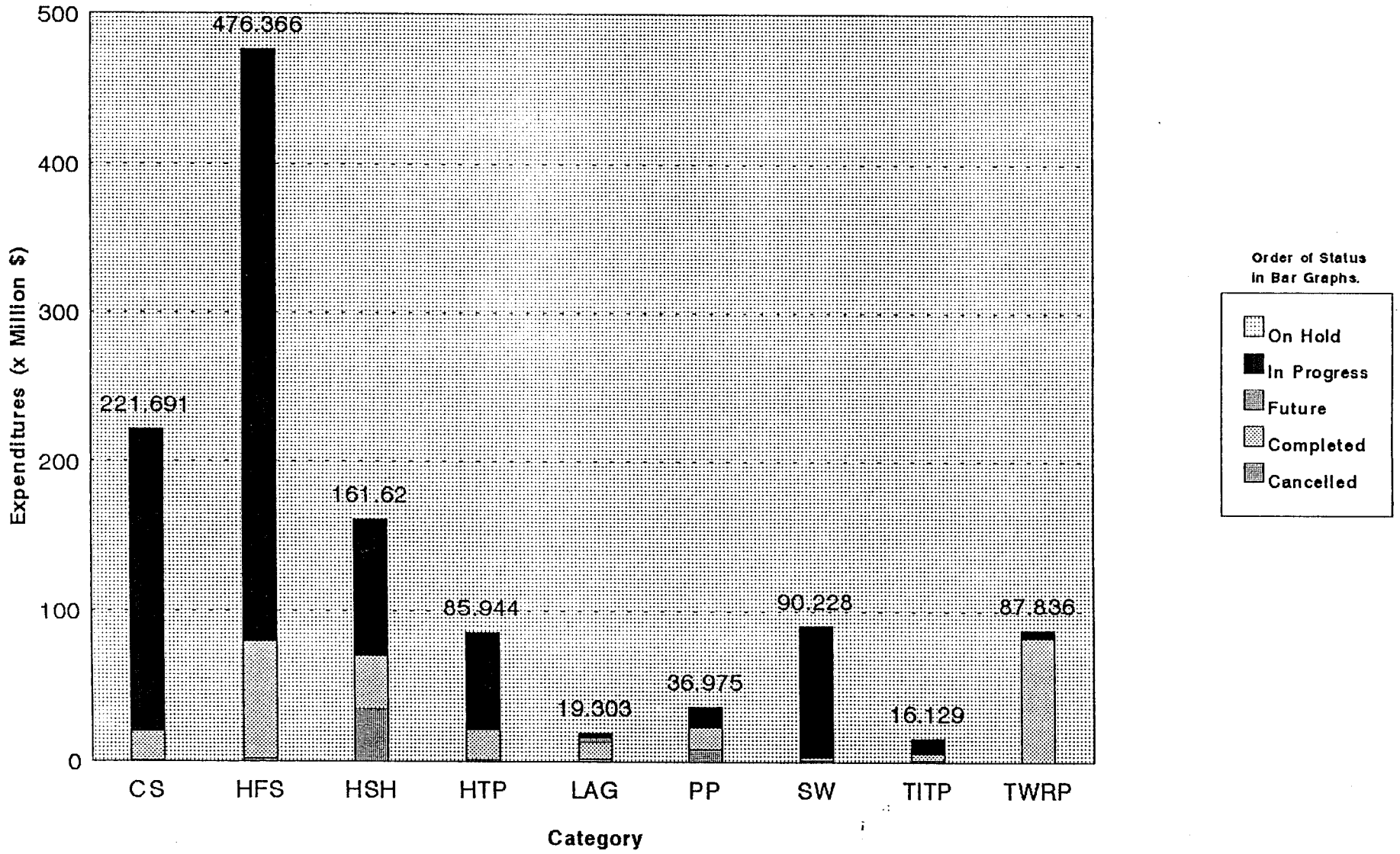
CA: Cancelled; CP: Completed; FU: Future; IP: In Progress; OH: On Hold;
PID: Preliminary Integrated Database.

NOTES

1. PID has been assembled from various documents on WCIP data (see Section 2 and References).
2. Percentages have been rounded off to whole numbers.

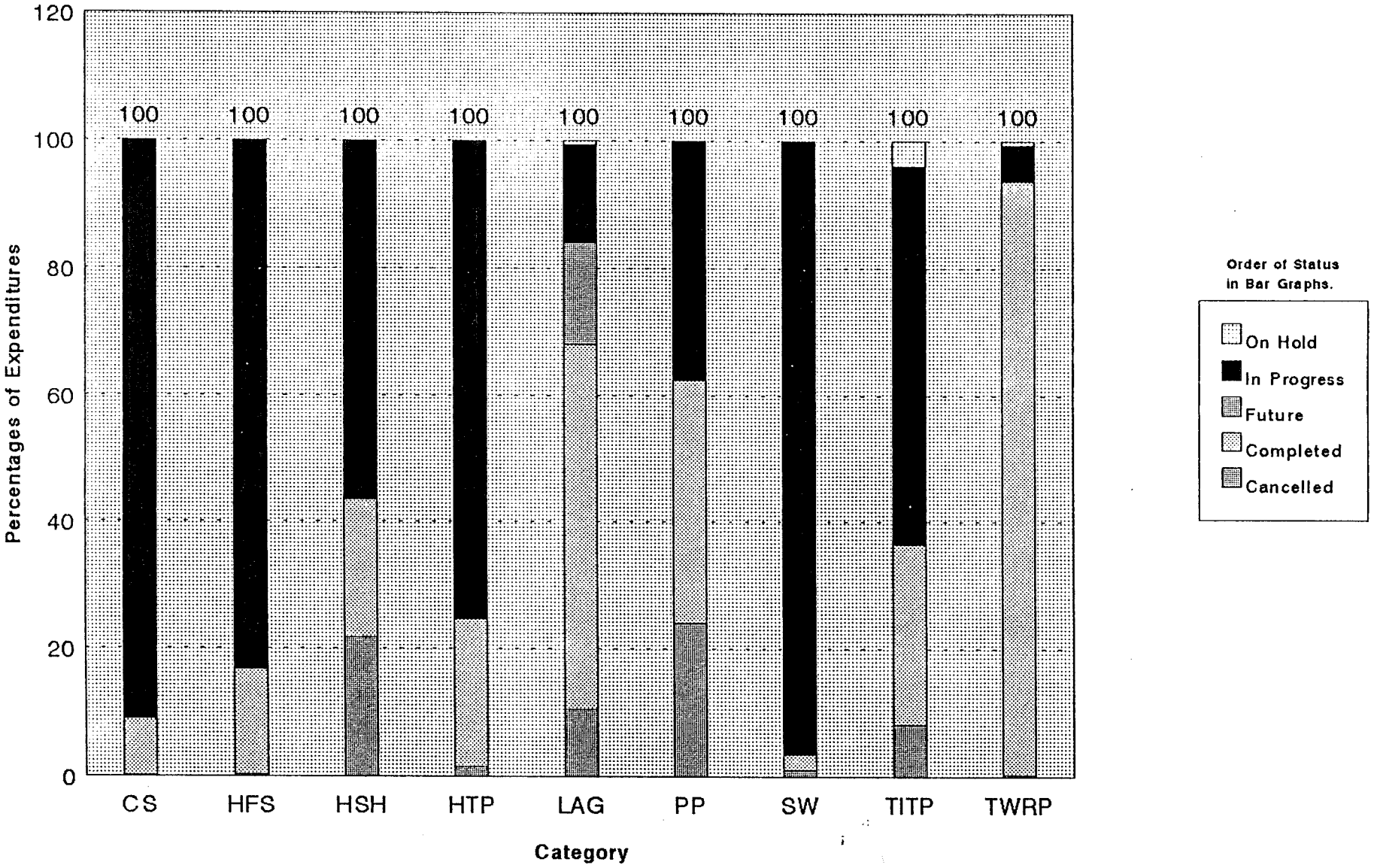
File Name: WSSD\WCIPPR\93-R1\T12SEC93.WQ1

GRAPH 12a. Actual Expenditures (x Million $) from PID of all WCIP Projects, Table 11a, by Category as of 1/1/93, that were Planned between FY 88/89 to 6/30/93.



File Name: WSSD\WCIPPR\93-R1\GRAPH12A.CH3

GRAPH 12b. Percentages Corresponding to Actual Projects Expenditures in Table 12a.



File Name: WSSD\WCIPPR\93-R1\GRAPH12B.CH3

4.2.2 STATUS BY 1/1/93 OF PROJECTS PLANNED TO BE DELIVERED BY 6/30/93

This section contains the tables of the status of the projects listed in Section 4.1.3. As mentioned in that section, the projects were planned to be delivered by June 30, 1993, and are counted without duplications, even if they appeared in more than one planning document. The status classes are the same as in Section 4.2.1. All of these data are from the PID.

4.2.2a Counts by Category, Relative Values

Tables 13a and 13b are absolute and relative counts of projects. These are similar to Tables 11a and 11b except that the listings show projects that were planned to be delivered by June 30, 1993. Tables 11a and 11b include projects that were planned to continue into later FY's. These data are from the PID. Graphs 13a and 13b are the corresponding plots.

4.2.2b Corresponding Expenditures, Relative Values

Tables 14a and 14b are absolute and relative expenditures on projects planned to be delivered by June 30, 1993. They are grouped by category and status as in Tables 12a and 12b. Graphs 14a and 14b are the corresponding plots.

TABLE 13a. Status from PID of WCIP Projects by Category as of 1/1/93, that were Planned to be Delivered between FY 88/89 through FY 92/93, Table 9a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Status										
CA	8	3	17	15	10	7	9	17	7	93
CP	10	9	20	15	4	4	4	9	10	85
FU	1	0	1	4	0	0	2	1	0	9
IP	25	13	12	15	7	5	13	8	14	112
OH	0	0	0	2	3	0	1	10	3	19
Total	44	25	50	51	24	16	29	45	34	318

TABLE 13b. Percentages Corresponding to Project Status in Table 13a.

Cateogry	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Status									
CA	18	12	34	29	42	44	31	38	21
CP	23	36	40	29	17	25	14	20	29
FU	2	0	2	8	0	0	7	2	0
IP	57	52	24	29	29	31	45	18	41
OH	0	0	0	4	13	0	3	22	9
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

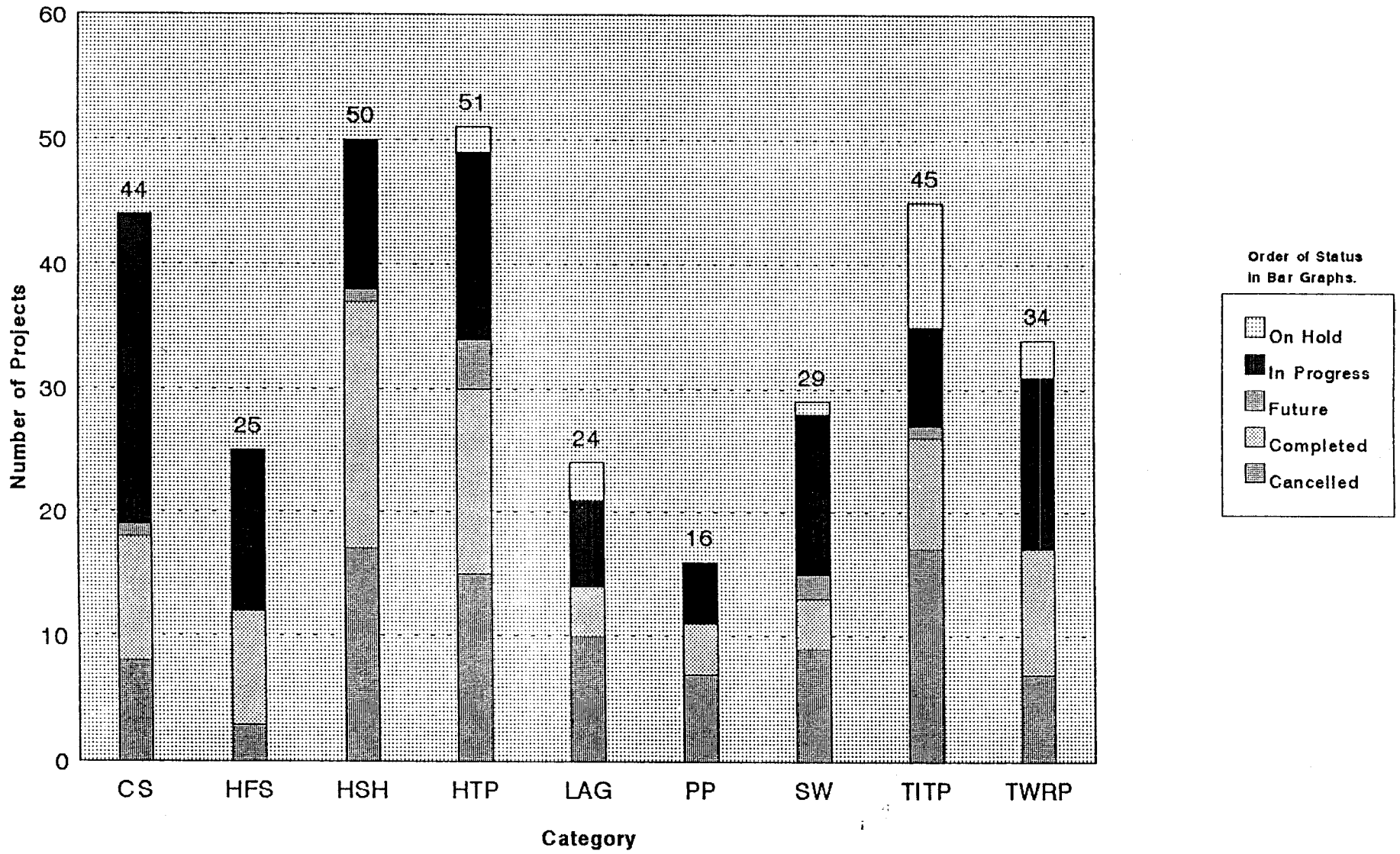
CA: Cancelled; CP: Completed; FU: Future; IP: In Progress; OH: On Hold;
PID: Preliminary Integrated Database.

NOTES

1. PID has been assembled from various documents on WCIP data (see references).
2. Percentages have been rounded off to whole numbers.

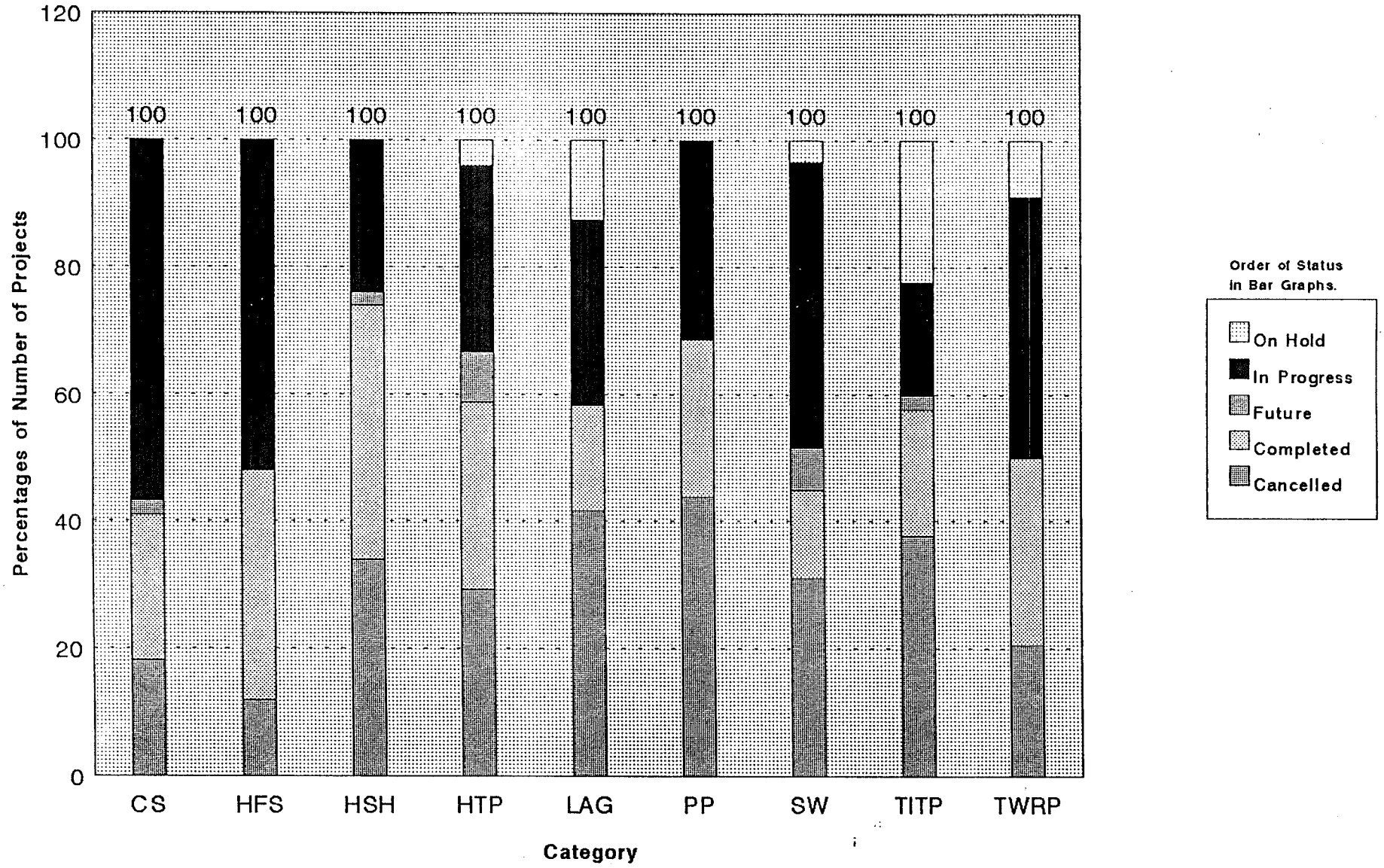
File Name: WSSD\WCIPPR\93-R1\T13SC93D.WQ1

GRAPH 13a. Status from PID of WCIP Projects by Category as of 1/1/93, that were Planned to be Delivered between FY 88/89 to 6/30/93.



File Name: WSSD\WCIPPR\93-R1\GRAPH13A.CH3

GRAPH 13b. Percentages Corresponding to Projects Status in Table 13a.



File Name: WSSD\WCIPPR\93-R1\GRAPH13B.CH3

TABLE 14a. Actual Expenditures (x $1000) of WCIP Projects by Category as of 1/1/93, that were Planned to be Dellivered between FY 88/89 through FY 92/93, Table 9a or 13a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Total
Status										
CA	91	1,285	35,127	1,421	2,044	3,916	161	1,340	300	45,685
CP	16,930	77,712	34,432	19,876	11,097	14,240	2,295	4,552	82,153	263,287
FU	0	0	3	0	0	0	226	0	0	229
IP	173,930	199,156	53,706	59,300	2,975	6,955	82,320	9,430	4,885	592,657
OH	0	0	0	0	104	0	119	551	325	1,099
Total	190,951	278,153	123,268	80,597	16,220	25,111	85,121	15,873	87,663	902,957

TABLE 14b. Percentages Corresponding to Actual Expenditures in Table 14a.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Status									
CA	0	0	28	2	13	16	0	8	0
CP	9	28	28	25	68	57	3	29	94
FU	0	0	0	0	0	0	0	0	0
IP	91	72	44	74	18	28	97	59	6
OH	0	0	0	0	1	0	0	3	0
Total	100	100	100	100	100	100	100	100	100

NOTATIONS

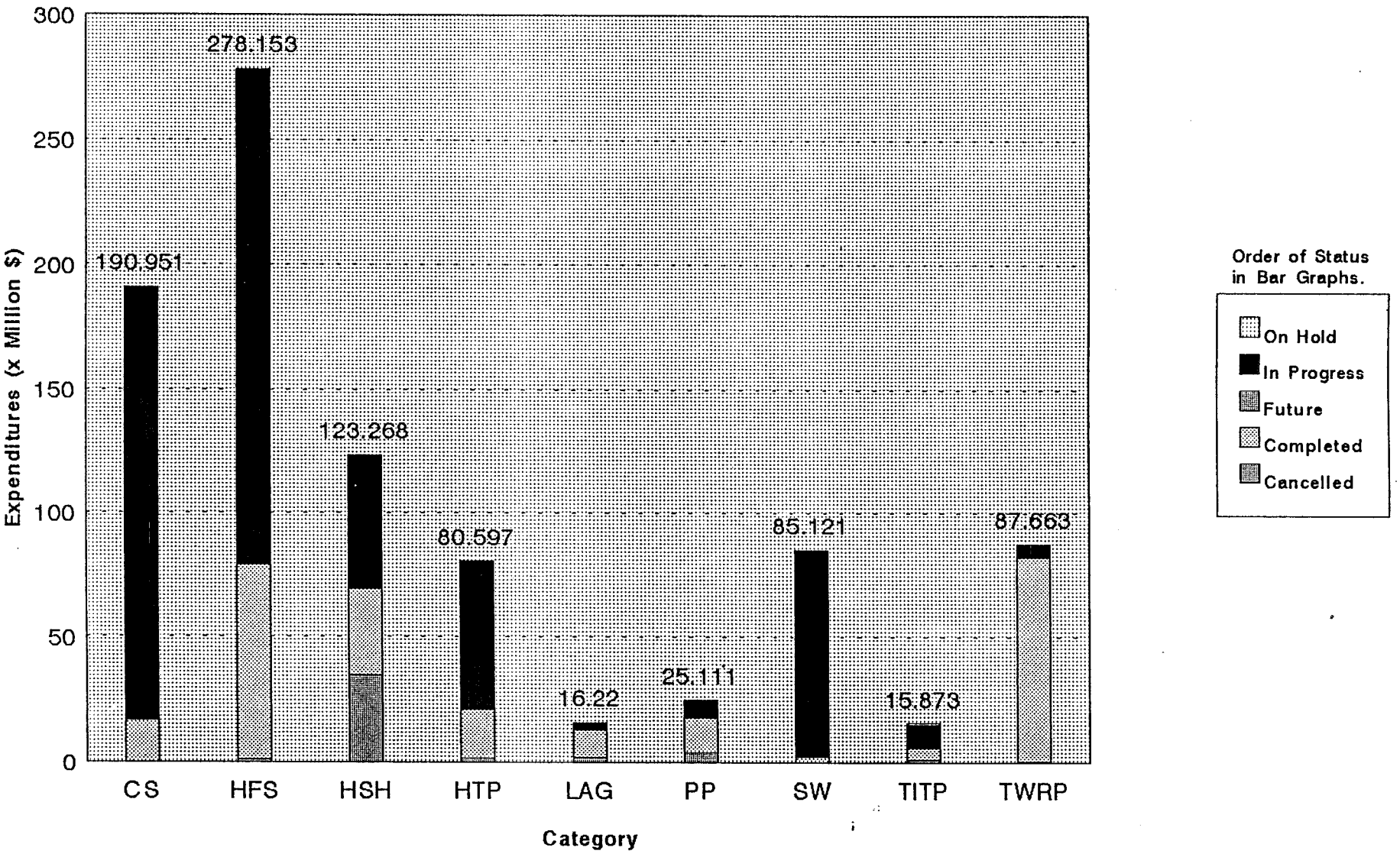
CA: Cancelled; CP: Completed; FU: Future; IP: In Progress; OH: On Hold;
PID: Preliminary Integrated Database.

NOTES

1. PID has been assembled from various documents on WCIP data (see references).
2. Percentages have been rounded off to whole numbers.

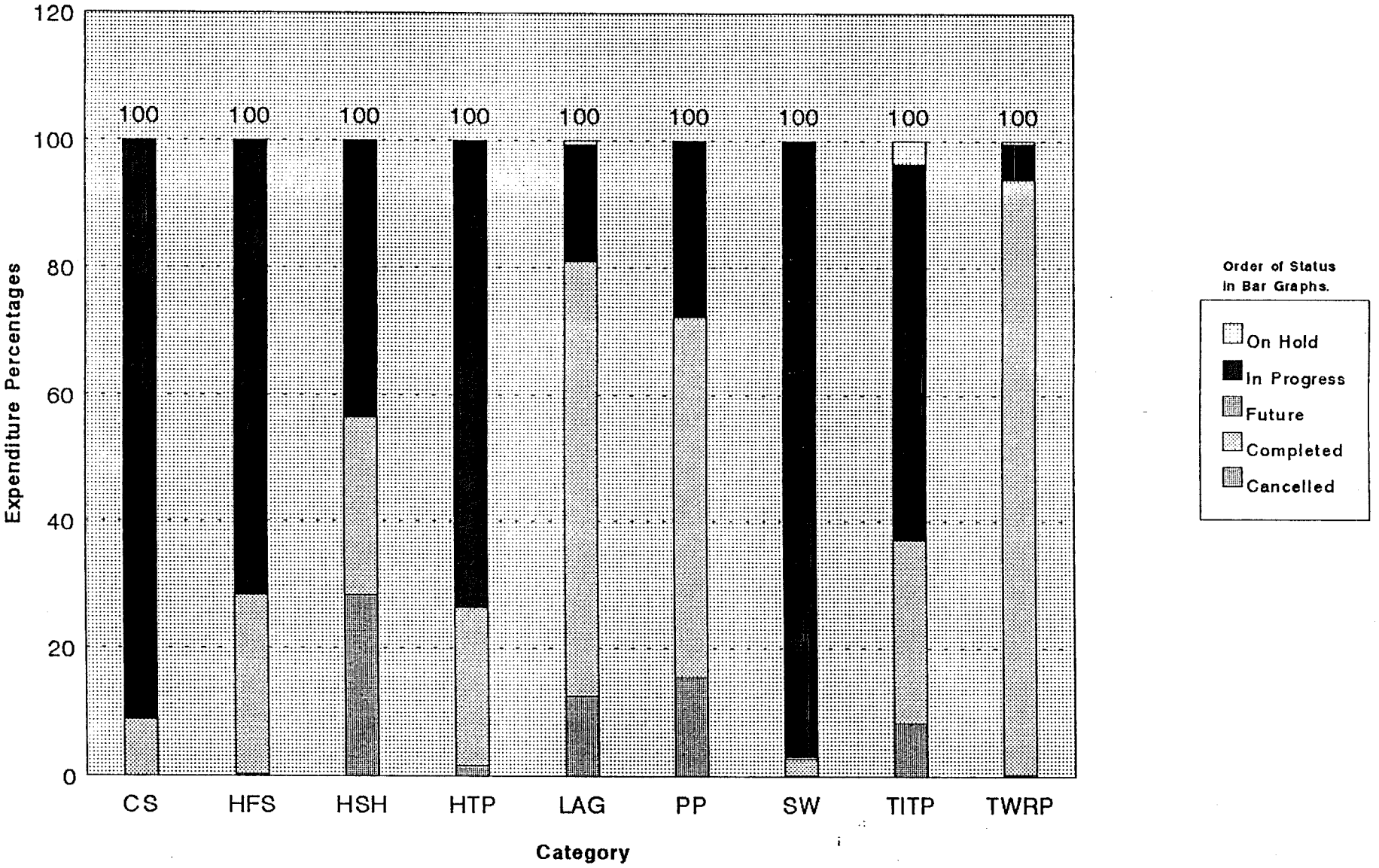
File Name: WSSD\WCIPPR\93-R1\T14SE93D.WQ1

GRAPH 14a. Actual Expenditures (x Million $) of WCIP Projects by Category as of 1/1/93, that were Planned to be Delivered between FY 88/89 to FY 92/93, Table 9a or 13a.



File Name: WSSD\WCIPPR\93-R1\GRAPH14A.CH3

GRAPH 14b. Percentages Corresponding to Actual Project Expenditures in Table 14a.



File Name: WSSD\WCIPPR\93-R1\GRAPH14B.CH3

4.3 PROJECTS COMPLETED BY 1/1/93

One way to judge the accuracy of the planning process is to compare planned costs and durations of projects with the actual values for completed projects. This assumes that the projects completed were the same as the ones planned. The data below are mostly from the Preliminary Integrated Database. The results are for the projects completed as of January 1, 1993.

4.3.1 ACTUAL EXPENDITURES VERSUS PLANNED RECORDS

Three tables introduce the cost comparisons. The first table is at the project level, while the last two show the analysis for the categories.

4.3.1a Breakdown by Project

Table 15a refines the analysis in previous tables by subdividing the costs into those spent directly for construction, and those spent on design and on construction management by the city and by consultants. All of these quantities are given for the actual costs, the first plan, and the last plan and the bids on the projects are included for further comparisons.

TABLE 15a. Expenditure Breakdown (x $1000), by Project, for WCIP Projects Completed by 1/1/93.

Category	Breakdown Expend	Actual Data	Planned Data First Yr	Planned Data Last Yr	Analysis of Actual Data	
CS	BID					
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CT/FA	
					CM/CON	
	TOTAL				P/CON	

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	BID					Actual
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CON/BID	
	TOTAL				CM/CON	
					P/CON	
	BID					Actual
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CON/BID	
	TOTAL				CM/CON	
					P/CON	
	BID					Actual
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CON/BID	
	TOTAL				CM/CON	
					P/CON	
	BID					Actual
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CON/BID	
	TOTAL				CM/CON	
					P/CON	
	BID					Actual
	CON				CT	
	CTP				FA	
	CTCM				P	
	FAP				CM	
	FACM				CON/BID	
	TOTAL				CM/CON	
					P/CON	

NOTATIONS

CON: Construction
CTP: Consultant Plan
CTCM: Consultant Construction Management
FAP: Force Account Plan
FACM: Force Account Construction Management
na: not applicable or not available.
NCon: Non construction
R/W: Right of Way

CT = CTP + CTCM
FA = FAP + FACM
P = CTP + FAP
CM = CTCM + FACM

NOTES

1. The planning document shows no expenditures for R/W for these projects. In general, there is no R/W expenditures for the projects.
2. Where there exists R/W expenditure, it is added to the contruction cost, thus reflects the total costs.
3. Project codes such as LA1 are for identifying the original information in PID.
4. NCon designates the projects with no civil construction phase.
5. The data for the first and last planning years are identical for a project that appeared only once in WCIP planning documents.

File Name: WSSD\WCIPPR\93-R1\T15EB93C.WQ1

Continue next page

CS3	BID	na				Actual	
NCon	CON	0	0	0	CT	5,017	Report only
	CTP	5,017	5,750	5,000	FA	192	
	CTCM	0	0	0	P	5,209	
	FAP	192	350	350	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	5,209	6,100	5,350	CM/CON	na	
					P/CON	na	
CS5	BID	1,833				Actual	
	CON	772	2,249	2,500	CT	0	CON taken from PML was greater than
	CTP	0	0	0	FA	244	the total cost from M26. For cost
	CTCM	0	0	150	P	20	breakdown, assuming that CTCM=0 and
	FAP	20	242	0	CM	224	CON=$772,119 to match the final cost
	FACM	224	200	0	CON/BID	0.42	from M26 as 2/28/93.
	TOTAL	1,016	2,691	2,650	CM/CON	0.29	CTCM+CON=$772,119
					P/CON	0.03	
CS6	BID	1,724				Actual	
	CON	1,690	1,897	1,897	CT	0	FMR as of 2/22/88 did not show any costs.
	CTP	0	0	0	FA	162	Con is assumed to be $1,689,900 to match
	CTCM	0	0	0	P	81	the final cost from M26 as 2/28/93.
	FAP	81	273	273	CM	81	FAP+FACM=$161,721
	FACM	81	235	235	CON/BID	0.98	The cost is distributed equally between
	TOTAL	1,852	2,405	2,405	CM/CON	0.05	those two accounts.
					P/CON	0.05	
CS7	BID	2,322				Actual	
	CON	2,313	2,554	2,554	CT	0	FAP+FACM=$152,414
	CTP	0	0	0	FA	152	FMR as of 12/14/87 did not show any costs.
	CTCM	0	0	0	P	76	The cost is distributed equally between
	FAP	76	321	321	CM	76	those two accounts.
	FACM	76	281	281	CON/BID	1.00	
	TOTAL	2,466	3,156	3,156	CM/CON	0.03	
					P/CON	0.03	
CS8	BID	2,397				Actual	
	CON	2,397	2,383	2,383	CT	395	
	CTP	0	0	0	FA	162	
	CTCM	395	0	0	P	0	
	FAP	0	251	251	CM	558	
	FACM	162	215	215	CON/BID	1.00	
	TOTAL	2,955	2,849	2,849	CM/CON	0.23	
					P/CON	na	
CS10	BID	379				Actual	
	CON	379	1,239	317	CT	0	
	CTP	0	0	0	FA	148	
	CTCM	0	0	0	P	85	
	FAP	85	173	59	CM	63	
	FACM	63	134	44	CON/BID	1.00	
	TOTAL	527	1,546	420	CM/CON	0.17	
					P/CON	0.22	

Continue next page

15a. Continue

CS12	BID	373				Actual	R/W(planned)=20,000.
	CON	307	354	354	CT	0	Unable to run FMR report. Contract's award
	CTP	0	0	0	FA	162	date must be after 7/88(Award date:6/22/88).
	CTCM	0	0	0	P	81	CON+CTP+CTCM=$307,180
	FAP	81	40	40	CM	81	FAP+FACM=$162,436
	FACM	81	46	46	CON/BID	0.82	Since CON taken from PML is greater than
	TOTAL	470	460	460	CM/CON	0.26	$307,180 assuming that CON=$307,180 in o
					P/CON	0.26	to match final cost from M26 as 2/28/93.
CS15	BID	428				Actual	
	CON	428	511	511	CT	15	CTP=$350
	CTP	0	0	0	FA	63	
	CTCM	15	0	0	P	14	
	FAP	14	77	77	CM	64	
	FACM	49	67	67	CON/BID	1.00	
	TOTAL	505	655	655	CM/CON	0.15	
					P/CON	0.03	
CS38	BID	186				Actual	
	CON	44	162	162	CT	0	CON taken from PML is greater than
	CTP	0	0	0	FA	30	(CON+CTCM) from M26, assuming that
	CTCM	0	0	0	P	7	CON=$44,361 in order to match the
	FAP	7	34	34	CM	23	final cost from M26 as 2/28/1993.
	FACM	23	25	25	CON/BID	0.24	
	TOTAL	74	221	221	CM/CON	0.52	
					P/CON	0.15	
CS65	BID	1,683				Actual	
	CON	1,709	2,100	2,100	CT	315	
	CTP	0	0	0	FA	768	
	CTCM	315	0	0	P	295	
	FAP	295	250	250	CM	787	
	FACM	472	300	300	CON/BID	1.01	
	TOTAL	2,791	2,650	2,650	CM/CON	0.46	
					P/CON	0.17	
CS66	BID	1,577				Actual	
	CON	1,488	2,389	2,389	CT	0	CON is ajusted to match the final cost
	CTP	0	0	0	FA	368	from M26 as 2/28/93.
	CTCM	0	0	0	P	191	
	FAP	191	100	100	CM	177	
	FACM	177	341	341	CON/BID	0.94	
	TOTAL	1,856	2,830	2,830	CM/CON	0.12	
					P/CON	0.13	

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15a. Continue

HF2	BID	5,999				Actual
	CON	8,091	6,440	7,640	CT	94
	CTP	0	0	0	FA	2,010
	CTCM	94	0	0	P	89
	FAP	89	69	69	CM	2,015
	FACM	1,921	337	337	CON/BID	1.35
	TOTAL	10,195	6,846	8,046	CM/CON	0.25
					P/CON	0.01
HF7	BID	3,591				Actual
	CON	4,138	2,848	2,848	CT	na
	CTP	0	630	630	FA	11
	CTCM	na	348	348	P	6
	FAP	6	12	12	CM	na
	FACM	5	50	50	CON/BID	1.15
	TOTAL	468	3,888	3,888	CM/CON	na
					P/CON	na
HF11	BID	9,360				Actual
	CON	11,253	9,715	10,300	CT	1,242
	CTP	0	0	0	FA	2,729
	CTCM	1,242	0	0	P	84
	FAP	84	140	140	CM	3,887
	FACM	2,645	510	510	CON/BID	1.20
	TOTAL	15,223	10,365	10,950	CM/CON	0.35
					P/CON	0.01
HF13	BID	25,701				Actual
	CON	33,154	28,589	32,589	CT	169
	CTP	0	0	0	FA	6,130
	CTCM	169	0	0	P	104
	FAP	104	1,815	1,815	CM	6,195
	FACM	6,026	1,605	1,605	CON/BID	1.29
	TOTAL	39,453	32,009	36,009	CM/CON	0.19
					P/CON	0.00
HF14	BID	3,118				Actual
	CON	3,966	3,000	3,920	CT	100
	CTP	0	0	0	FA	1,983
	CTCM	100	0	0	P	646
	FAP	646	35	35	CM	1,437
	FACM	1,337	170	132	CON/BID	1.27
	TOTAL	6,049	3,205	4,087	CM/CON	0.36
					P/CON	0.16
HF34	BID	na				Actual
NCon	CON	771	751	751	CT	na
	CTP	na	0	0	FA	na
	CTCM	na	0	0	P	na
	FAP	na	10	10	CM	na
	FACM	na	10	10	CON/BID	na
	TOTAL	771	771	771	CM/CON	na
					P/CON	na

Inconsistency of the costs between PML & M26. CON taken from PML is greater than the final cost from M26 as 2/28/93. Unable to breakdown. The"TOTAL" shown is taken from M26.

Land Purchase Contract.

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15a. Continue

HF35	BID	na				Actual	
NCon	CON	1,677	5,000	5,000	CT	na	Power Purchase Contract.
	CTP	na	0	0	FA	na	
	CTCM	na	0	0	P	na	
	FAP	na	100	50	CM	na	
	FACM	na	100	50	CON/BID	na	
	TOTAL	1,677	5,200	5,100	CM/CON	na	
					P/CON	na	
HF48	BID	na				Actual	
	CON	76	323	323	CT	0	Procurement contract.
	CTP	0	0	0	FA	185	
	CTCM	0	0	0	P	156	
	FAP	156	32	32	CM	29	
	FACM	29	36	36	CON/BID	na	
	TOTAL	261	391	391	CM/CON	0.39	
					P/CON	2.06	
HF49	BID	2,881				Actual	
	CON	3,120	3,100	3,100	CT	14	CTCM has been assumed zero to avoid
	CTP	14	0	0	FA	482	negative value.
	CTCM	0	0	0	P	232	
	FAP	217	269	269	CM	265	
	FACM	265	320	320	CON/BID	1.08	
	TOTAL	3,616	3,689	3,689	CM/CON	0.08	
					P/CON	0.07	

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15a. Continue

HS4	BID	na				Actual
NCon	CON	0	0	0	CT	14,178
	CTP	0	0	0	FA	1,519
	CTCM	14,178	46,371	46,371	P	0
	FAP	0	0	0	CM	15,697
	FACM	1,519	0	0	CON/BID	na
	TOTAL	15,697	46,371	46,371	CM/CON	na
					P/CON	na
HS8	BID	na				Actual
NCon	CON	337	1,000	1,000	CT	0
	CTP	0	0	0	FA	0
	CTCM	0	0	0	P	0
	FAP	0	0	0	CM	0
	FACM	0	0	0	CON/BID	na
	TOTAL	337	1,000	1,000	CM/CON	na
					P/CON	na
HS9	BID	na				Actual
NCon	CON	0	0	0	CT	1,862
	CTP	0	0	0	FA	11
	CTCM	1,862	8,378	8,001	P	0
	FAP	0	0	0	CM	1,873
	FACM	11	0	0	CON/BID	na
	TOTAL	1,873	8,378	8,001	CM/CON	na
					P/CON	na
HS15	BID	na				Actual
NCon	CON	0	75	75	CT	0
	CTP	0	14	14	FA	0
	CTCM	0	9	9	P	0
	FAP	0	1	1	CM	0
	FACM	0	1	1	CON/BID	na
	TOTAL	0	100	100	CM/CON	na
					P/CON	na
HS16	BID	na				Actual
	CON	198	750	750	CT	340
	CTP	170	132	132	FA	12
	CTCM	170	88	88	P	176
	FAP	6	18	18	CM	176
	FACM	6	12	12	CON/BID	na
	TOTAL	550	1,000	1,000	CM/CON	0.89
					P/CON	0.89
HS18	BID	na				Actual
NCon	CON	0	113	113	CT	19
	CTP	0	20	20	FA	0
	CTCM	19	14	14	P	0
	FAP	0	2	2	CM	20
	FACM	0	1	1	CON/BID	na
	TOTAL	20	150	150	CM/CON	na
					P/CON	na

Procurement contract.

Total cost is 0 in M26.

CTP+CTCM=$339,992
FAP+FACM=$12,508
Thus the cost is distributed equally between those accounts.

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15a. Continue

HS19	BID	na				Actual
NCon	CON	0	1,275	1,275	CT	39
	CTP	0	198	198	FA	0
	CTCM	39	150	150	P	0
	FAP	0	27	27	CM	39
	FACM	0	20	20	CON/BID	na
	TOTAL	39	1,670	1,670	CM/CON	na
					P/CON	na
HS20	BID	na				Actual
	CON	302	375	375	CT	439
	CTP	0	66	66	FA	4
	CTCM	439	44	44	P	0
	FAP	0	9	9	CM	444
	FACM	4	6	6	CON/BID	na
	TOTAL	746	500	500	CM/CON	1.47
					P/CON	na
HS21	BID	na				Actual
	CON	744	829	829	CT	212
	CTP	106	53	53	FA	1
	CTCM	106	98	98	P	106
	FAP	0	7	7	CM	106
	FACM	0	13	13	CON/BID	na
	TOTAL	957	1,000	1,000	CM/CON	0.14
					P/CON	0.14
HS22	BID	na				Actual
	CON	321	12,397	12,397	CT	345
	CTP	0	2,156	2,156	FA	0
	CTCM	345	1,455	1,455	P	0
	FAP	0	294	294	CM	345
	FACM	0	198	198	CON/BID	na
	TOTAL	666	16,500	16,500	CM/CON	1.08
					P/CON	na
HS23	BID	na				Actual
NCon	CON	0	2,870	2,870	CT	78
	CTP	78	291	291	FA	13
	CTCM	0	308	308	P	91
	FAP	13	39	39	CM	0
	FACM	0	42	42	CON/BID	na
	TOTAL	91	3,550	3,550	CM/CON	na
					P/CON	na
HS24	BID	na				Actual
NCon	CON	0	2,003	2,003	CT	1
	CTP	0	344	344	FA	0
	CTCM	1	262	262	P	0
	FAP	0	46	46	CM	1
	FACM	0	35	35	CON/BID	na
	TOTAL	1	2,690	2,690	CM/CON	na
					P/CON	na

CTP+CTCM=$211,716
FAP+FACM=$999
Thus the cost is distributed equally between those accounts.
FAP=$499;FACM=$500

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15a. Continue

HS25	BID	na				Actual	
	CON	403	994	994	CT	40	
	CTP	0	175	175	FA	0	
	CTCM	40	116	116	P	0	
	FAP	0	24	24	CM	40	
	FACM	0	16	16	CON/BID	na	
	TOTAL	443	1,325	1,325	CM/CON	0.10	
					P/CON	na	
HS26	BID	na				Actual	
NCon	CON	0	1,954	1,954	CT	124	Consulting services.
	CTP	0	317	317	FA	4	FAP+FACM=$4275
	CTCM	124	230	230	P	2	Thus the cost is distributed
	FAP	2	43	43	CM	126	equally between those accounts.
	FACM	2	31	31	CON/BID	na	
	TOTAL	128	2,575	2,575	CM/CON	na	
					P/CON	na	
HS27	BID	na				Actual	
	CON	335	926	926	CT	200	CTP+CTCM=$200,328
	CTP	100	132	132	FA	28	FAP+FACM=$28,037
	CTCM	100	110	110	P	114	Thus the cost is distributed
	FAP	14	18	18	CM	114	equally between those accounts.
	FACM	14	14	14	CON/BID	na	
	TOTAL	563	1,200	1,200	CM/CON	0.34	
					P/CON	0.34	
HS28	BID	na				Actual	
	CON	268	750	750	CT	341	CTP+CTCM=$341,395
	CTP	171	88	88	FA	9	FAP+FACM=$9,328
	CTCM	171	88	88	P	175	Thus the cost is distributed
	FAP	5	12	12	CM	175	equally between those accounts.
	FACM	5	12	12	CON/BID	na	
	TOTAL	619	950	950	CM/CON	0.65	
					P/CON	0.65	
HS30	BID	na				Actual	
NCon	CON	0	150	150	CT	3	CTP+CTCM=$3,225
	CTP	2	27	27	FA	2	FAP+FACM=$1,589
	CTCM	2	18	18	P	2	Thus the cost is distributed
	FAP	1	3	3	CM	2	equally between those accounts.
	FACM	1	2	2	CON/BID	na	
	TOTAL	5	200	200	CM/CON	na	
					P/CON	na	
HS39	BID	na				Actual	
NCon	CON	0	193	193	CT	1	
	CTP	1	28	28	FA	0	
	CTCM	0	23	23	P	1	
	FAP	0	3	3	CM	0	
	FACM	0	3	3	CON/BID	na	
	TOTAL	1	250	250	CM/CON	na	
					P/CON	na	

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15a. Continue

HS41	BID	na				Actual	
	CON	173	150	150	CT	345	CONS+CTP+CTCM=$517,578
	CTP	173	4	4	FA	62	FAP+FACM=$61,629
	CTCM	173	18	18	P	203	Thus the cost is distributed
	FAP	31	1	1	CM	203	equally between those accounts.
	FACM	31	2	2	CON/BID	na	
	TOTAL	579	175	175	CM/CON	1.18	
					P/CON	1.18	
HS44	BID	na				Actual	
NCon	CON	0	375	375	CT	0	CTP=$352
	CTP	0	66	66	FA	1	
	CTCM	0	44	44	P	1	
	FAP	1	9	9	CM	0	
	FACM	0	6	6	CON/BID	na	
	TOTAL	1	500	500	CM/CON	na	
					P/CON	na	
HS50	BID	na				Actual	
	CON	11,740	9,000	9,000	CT	0	Cons claims in HERS projects.
	CTP	0	0	0	FA	42	
	CTCM	0	0	0	P	0	
	FAP	0	0	0	CM	42	
	FACM	42	0	0	CON/BID	na	
	TOTAL	11,782	9,000	9,000	CM/CON	na	
					P/CON	na	

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15a. Continue

HT1	BID	na				Actual	
NCon	CON	223	3,910	1,500	CT	0	Cons means removal of asbestos.
	CTP	0	552	225	FA	93	FACM + FAP = $92,953
	CTCM	0	190	75	P	46	Unable to retrieve the cost from
	FAP	46	69	31	CM	46	FRS as of B&A date (5/01/87).
	FACM	46	220	92	CON/BID	na	Thus adjustments made.
	TOTAL	316	4,941	1,923	CM/CON	0.21	
					P/CON	0.21	
HT5	BID	na				Actual	
NCon	CON	0	1,190	916	CT	0	
	CTP	0	150	0	FA	52	
	CTCM	0	58	0	P	52	
	FAP	52	18	21	CM	0	
	FACM	0	67	71	CON/BID	na	
	TOTAL	52	1,483	1,008	CM/CON	na	
					P/CON	na	
HT7	BID	na				Actual	
	CON	1	213	100	CT	2	M26: FAP + FACM = $34,401
	CTP	1	30	170	FA	34	CON+CTCM+CTP=$2,965
	CTCM	1	10	70	P	18	Thus, the cost is distributed equally
	FAP	17	5	23	CM	18	between the accounts.
	FACM	17	12	86	CON/BID	na	
	TOTAL	37	270	449	CM/CON	na	
					P/CON	na	
HT8	BID	na				Actual	
	CON	2,673	3,345	3,345	CT	444	No competitive bid.
	CTP	0	0	0	FA	486	Installation contract.
	CTCM	444	53	53	P	0	
	FAP	0	0	0	CM	930	
	FACM	486	62	62	CON/BID	na	
	TOTAL	3,603	3,460	3,460	CM/CON	0.35	
					P/CON	na	
HT15	BID	823				Actual	
	CON	946	911	911	CT	26	
	CTP	0	45	45	FA	633	
	CTCM	26	44	44	P	51	
	FAP	51	5	6	CM	607	
	FACM	582	51	54	CON/BID	1.15	
	TOTAL	1,604	1,056	1,060	CM/CON	0.64	
					P/CON	0.05	
HT20	BID	3,493				Actual	
	CON	3,860	3,842	3,842	CT	na	PML : WO#: EXX31136
	CTP	na	300	300	FA	404	M26: WO#: EXX31168
	CTCM	na	186	186	P	202	Inconsistency inf. between PML & M26.
	FAP	202	25	25	CM	202	FAP+FACM=$404,424
	FACM	202	217	217	CON/BID	1.11	Thus, the cost is distributed equally between
	TOTAL	4,265	4,570	4,570	CM/CON	0.05	two accounts.
					P/CON	0.05	

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15a. Continue

HT23	BID	3,230				Actual	
	CON	4,274	1,000	4,200	CT	226	CON cost given by PML did not match
	CTP	226	0	0	FA	656	that of M26. We adjust it to match the final
	CTCM	0	48	180	P	384	cost from M26 as 8/31/1992.
	FAP	158	0	0	CM	498	
	FACM	498	57	220	CON/BID	1.32	
	TOTAL	5,156	1,105	4,600	CM/CON	0.12	
					P/CON	0.09	
HT25	BID	na				Actual	
NCon	CON	587	1,864	1,282	CT	0	CON means removal of PCB transformer.
	CTP	0	337	600	FA	209	
	CTCM	0	90	154	P	26	
	FAP	26	46	55	CM	183	
	FACM	183	106	188	CON/BID	na	
	TOTAL	796	2,443	2,279	CM/CON	0.31	
					P/CON	0.04	
HT28	BID	139				Actual	
	CON	na	400	435	CT	na	CON+CTCM = $253,538
	CTP	0	15	15	FA	274	Since CON is unknown, it is impossible
	CTCM	na	20	20	P	28	to break down.
	FAP	28	4	4	CM	246	
	FACM	246	22	22	CON/BID	na	
	TOTAL	528	461	496	CM/CON	na	
					P/CON	na	
HT31	BID	na				Actual	
NCon	CON	na	264	88	CT	na	No information available for this
	CTP	na	35	12	FA	na	project.
	CTCM	na	13	4	P	na	
	FAP	na	5	2	CM	na	
	FACM	na	15	5	CON/BID	na	
	TOTAL	na	332	111	CM/CON	na	
					P/CON	na	
HT32	BID	na				Actual	
NCon	CON	62	788	788	CT	0	Procurement Contract.
	CTP	0	0	0	FA	1	
	CTCM	0	0	0	P	0	
	FAP	0	38	38	CM	1	
	FACM	1	0	0	CON/BID	na	
	TOTAL	63	826	826	CM/CON	0.01	
					P/CON	na	
HT33	BID	2,435				Actual	
	CON	2,246	1,000	1,000	CT	na	Inconsistency between PML and M26.
	CTP	0	0	0	FA	na	Total cost from M26 was less than
	CTCM	0	0	0	P	na	CON exp. from PML.
	FAP	0	0	0	CM	na	We adjust CON to match the final cost
	FACM	0	0	0	CON/BID	0.92	from M26 as 2/28/93.
	TOTAL	2,246	1,000	1,000	CM/CON	na	
					P/CON	na	

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15a. Continue

HT43	BID	na				Actual	
NCon	CON	268	430	430	CT	0	CON means the relocation
	CTP	0	59	59	FA	416	of grid pad.
	CTCM	0	0	0	P	208	
	FAP	208	43	43	CM	208	
	FACM	208	60	60	CON/BID	na	
	TOTAL	683	592	592	CM/CON	0.78	
					P/CON	0.78	
HT49	BID	na				Actual	
NCon	CON	378	700	700	CT	0	Procurement Contract.
	CTP	0	105	105	FA	0	
	CTCM	0	63	63	P	0	
	FAP	0	0	0	CM	0	
	FACM	0	94	94	CON/BID	na	
	TOTAL	378	962	962	CM/CON	na	
					P/CON	na	
HT53	BID	124				Actual	
NCon	CON	na	0	0	CT	135	Report only.
	CTP	135	145	145	FA	15	
	CTCM	0	0	0	P	150	
	FAP	15	10	10	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	150	155	155	CM/CON	na	
					P/CON	na	

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15a. Continue

LA1	BID	3,457				Actual
	CON	3,838	2,200	4,206	CT	45
	CTP	1	0	0	FA	1,734
	CTCM	45	0	0	P	653
	FAP	652	200	380	CM	1,127
	FACM	1,082	220	607	CON/BID	1.11
	TOTAL	5,618	2,620	5,193	CM/CON	0.29
					P/CON	0.17
LA3	BID	348				Actual
NCon	CON	0	280	280	CT	191
	CTP	0	250	174	FA	91
	CTCM	191	0	0	P	10
	FAP	10	31	22	CM	272
	FACM	81	35	41	CON/BID	na
	TOTAL	282	596	517	CM/CON	na
					P/CON	na
LA13	BID	2,792				Actual
	CON	2,833	3,500	3,200	CT	438
	CTP	289	350	369	FA	503
	CTCM	149	212	265	P	378
	FAP	89	110	45	CM	563
	FACM	414	230	378	CON/BID	1.01
	TOTAL	3,774	4,402	4,257	CM/CON	0.20
					P/CON	0.13
LA17	BID	600				Actual
	CON	895	600	600	CT	0
	CTP	0	0	0	FA	528
	CTCM	0	0	0	P	55
	FAP	55	40	40	CM	473
	FACM	473	60	60	CON/BID	1.49
	TOTAL	1,423	700	700	CM/CON	0.53
					P/CON	0.06

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15a. Continue

PP1	BID	4,772				Actual	
	CON	6,653	4,910	4,908	CT	796	CTP=$278
	CTP	0	0	0	FA	1,143	
	CTCM	795	0	0	P	120	
	FAP	120	491	516	CM	1,818	
	FACM	1,023	491	400	CON/BID	1.39	
	TOTAL	8,591	5,892	5,824	CM/CON	0.27	
					P/CON	0.02	
PP7	BID	na				Actual	
NCon	CON	283	25,200	27,500	CT	565	CON+CTP+CTCM=$847,700
	CTP	283	2,150	2,548	FA	577	FAP+FACM=$576,797
	CTCM	283	2,150	1,375	P	571	No inf available on contract
	FAP	288	270	576	CM	571	award date, so the costs are distributed
	FACM	288	270	2,613	CON/BID	na	equally between those accounts.
	TOTAL	1,424	30,040	34,612	CM/CON	2.02	
					P/CON	2.02	
PP8	BID	2,900				Actual	
	CON	2,485	2,900	2,900	CT	74	On Call Contract.
	CTP	0	200	200	FA	625	
	CTCM	74	204	204	P	13	
	FAP	13	25	25	CM	686	
	FACM	612	26	26	CON/BID	0.86	
	TOTAL	3,184	3,355	3,355	CM/CON	0.28	
					P/CON	0.01	
PP10	BID	na				Actual	
	CON	273	4,000	4,000	CT	545	CON+CTP+CTCM=$817,758
	CTP	273	50	50	FA	223	FAP+FACM=$222,754
	CTCM	273	0	0	P	384	No inf available on contract award date,
	FAP	111	350	350	CM	384	so the costs are distributed equally
	FACM	111	408	408	CON/BID	na	between those accounts.
	TOTAL	1,041	4,808	4,808	CM/CON	1.41	
					P/CON	1.41	

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15a. Continue

SW8	BID	493				Actual	
NCon	CON	0	0	0	CT	765	Bid is an estimate for EIR/EIS
	CTP	765	440	765	FA	64	Report.
	CTCM	0	0	0	P	829	
	FAP	64	60	60	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	829	500	825	CM/CON	na	
					P/CON	na	
SW26	BID	302				Actual	
	CON	299	400	400	CT	0	Since CON taken from PML is greater than
	CTP	0	0	0	FA	263	the sum of (CON+CTCM) taken from M26,
	CTCM	0	0	0	P	111	assuming that CTCM=0 and we adjust CON
	FAP	111	0	0	CM	152	$298,846 match the final cost from M26
	FACM	152	0	0	CON/BID	0.99	as 2/28/1993.
	TOTAL	562	400	400	CM/CON	0.51	
					P/CON	0.37	
SW27	BID	na				Actual	
NCon	CON	607	2,100	2,100	CT	0	Procurement Contract.
	CTP	0	0	0	FA	0	Con means water consv
	CTCM	0	0	0	P	0	device purchase.
	FAP	0	0	0	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	607	2,100	2,100	CM/CON	na	
					P/CON	na	
SW28	BID	na				Actual	
NCon	CON	0	100	100	CT	0	
	CTP	0	200	200	FA	297	
	CTCM	0	0	0	P	297	
	FAP	297	75	75	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	297	375	375	CM/CON	na	
					P/CON	na	

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15a. Continue

TI2	BID	513				Actual
	CON	852	630	630	CT	667
	CTP	0	0	0	FA	286
	CTCM	667	0	0	P	26
	FAP	26	0	0	CM	926
	FACM	260	100	100	CON/BID	1.66
	TOTAL	1,804	730	730	CM/CON	1.09
					P/CON	0.03
TI3	BID	592				Actual
	CON	662	850	850	CT	3
	CTP	0	0	0	FA	195
	CTCM	3	0	0	P	21
	FAP	21	0	0	CM	177
	FACM	174	100	100	CON/BID	1.12
	TOTAL	860	950	950	CM/CON	0.27
					P/CON	0.03
TI5	BID	172				Actual
NCon	CON	0	542	542	CT	0
	CTP	0	0	0	FA	89
	CTCM	0	0	0	P	89
	FAP	89	41	41	CM	0
	FACM	0	41	41	CON/BID	na
	TOTAL	89	624	624	CM/CON	na
					P/CON	na
TI6	BID	344				Actual
	CON	365	1,517	380	CT	1
	CTP	0	0	0	FA	252
	CTCM	1	0	0	P	158
	FAP	158	196	57	CM	94
	FACM	94	168	57	CON/BID	1.06
	TOTAL	617	1,881	494	CM/CON	0.26
					P/CON	0.43
TI16	BID	na				Actual
NCon	CON	0	2,303	2,303	CT	107
	CTP	107	208	208	FA	62
	CTCM	0	86	86	P	169
	FAP	62	61	61	CM	0
	FACM	0	142	142	CON/BID	na
	TOTAL	169	2,800	2,800	CM/CON	na
					P/CON	na
TI34	BID	na				Actual
NCon	CON	0	5,000	17,000	CT	0
	CTP	0	0	0	FA	159
	CTCM	0	66	800	P	159
	FAP	159	0	600	CM	0
	FACM	0	300	1,450	CON/BID	na
	TOTAL	159	5,366	19,850	CM/CON	na
					P/CON	na

Procurement Contract.

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15a. Continue

TI36	BID	na				Actual
NCon	CON	0	0	0	CT	721
	CTP	721	721	721	FA	50
	CTCM	0	0	0	P	771
	FAP	50	150	150	CM	0
	FACM	0	0	0	CON/BID	na
	TOTAL	771	871	871	CM/CON	na
					P/CON	na
TI37	BID	na				Actual
NCon	CON	0	0	0	CT	0
	CTP	0	2,850	2,850	FA	82
	CTCM	0	0	0	P	82
	FAP	82	600	600	CM	0
	FACM	0	0	0	CON/BID	na
	TOTAL	82	3,450	3,450	CM/CON	na
					P/CON	na
TI38	BID	na				Actual
NCon	CON	0	2,100	2,100	CT	0
	CTP	0	0	0	FA	1
	CTCM	0	0	0	P	1
	FAP	1	0	0	CM	0
	FACM	0	100	100	CON/BID	na
	TOTAL	1	2,200	2,200	CM/CON	na
					P/CON	na

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15a. Continue

TW3	BID	na				Actual
NCon	CON	0	500	500	CT	0
	CTP	0	0	0	FA	296
	CTCM	0	0	0	P	296
	FAP	296	50	50	CM	0
	FACM	0	50	69	CON/BID	na
	TOTAL	296	600	619	CM/CON	na
					P/CON	na
TW5	BID	2,040				Actual
	CON	2,492	2,000	2,500	CT	1,012
	CTP	0	0	50	FA	2,040
	CTCM	1,012	0	100	P	873
	FAP	873	200	200	CM	2,179
	FACM	1,167	200	250	CON/BID	1.22
	TOTAL	5,545	2,400	3,100	CM/CON	0.87
					P/CON	0.35
TW8	BID	4,720				Actual
	CON	4,788	3,700	7,000	CT	1,844
	CTP	0	0	150	FA	2,862
	CTCM	1,844	0	310	P	1,360
	FAP	1,360	370	350	CM	3,347
	FACM	1,502	370	670	CON/BID	1.01
	TOTAL	9,495	4,440	8,480	CM/CON	0.70
					P/CON	0.28
TW9	BID	3,898				Actual
	CON	3,557	400	4,500	CT	453
	CTP	na	0	0	FA	748
	CTCM	453	0	200	P	na
	FAP	na	50	200	CM	1,201
	FACM	748	40	400	CON/BID	0.91
	TOTAL	4,758	490	5,300	CM/CON	0.34
					P/CON	na
TW12	BID	na				Actual
NCon	CON	0	450	450	CT	140
	CTP	140	250	174	FA	11
	CTCM	0	0	0	P	151
	FAP	11	30	30	CM	0
	FACM	0	50	69	CON/BID	na
	TOTAL	151	780	723	CM/CON	na
					P/CON	na
TW15	BID	44,468				Actual
	CON	50,808	65,054	54,700	CT	3,703
	CTP	1,852	849	848	FA	3,703
	CTCM	1,852	0	2,900	P	3,703
	FAP	1,852	5,930	4,622	CM	3,703
	FACM	1,852	6,505	3,108	CON/BID	1.14
	TOTAL	58,214	78,338	66,178	CM/CON	0.07
					P/CON	0.07

On Call contract.

M 26 data are inconsistent, thus the difference between Total & Cons is equally distributed between accounts.

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15a. Continue

TW19	BID	447				Actual	
	CON	1,212	300	300	CT	0	On Call contract.
	CTP	0	50	50	FA	297	
	CTCM	0	0	0	P	14	
	FAP	14	10	10	CM	284	
	FACM	284	30	30	CON/BID	2.71	
	TOTAL	1,510	390	390	CM/CON	0.23	
					P/CON	0.01	
TW22	BID	1,200				Actual	
	CON	1,501	1,200	1,700	CT	59	On Call contract.
	CTP	0	25	25	FA	280	
	CTCM	59	0	10	P	124	
	FAP	124	120	120	CM	215	
	FACM	156	25	30	CON/BID	1.25	
	TOTAL	1,840	1,370	1,885	CM/CON	0.14	
					P/CON	0.08	
TW29	BID	na				Actual	
	CON	na	450	450	CT	na	Handled by DWP.
	CTP	na	45	45	FA	na	No Data available.
	CTCM	na	55	55	P	na	
	FAP	na	10	10	CM	na	
	FACM	na	17	17	CON/BID	na	
	TOTAL	123	577	577	CM/CON	na	
					P/CON	na	
TW33	BID	136				Actual	
NCon	CON	0	0	0	CT	142	Report only.
	CTP	142	161	161	FA	79	Implementation phase is ongoing.
	CTCM	0	0	0	P	221	
	FAP	79	10	10	CM	0	
	FACM	0	0	0	CON/BID	na	
	TOTAL	221	171	171	CM/CON	na	
					P/CON	na	

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4.3.1b Breakdown by Category

Table 15b has the same structure as Table 15a, except that it groups the data in another way to show costs for all design work (whether done by the city or by consultants); all construction management work (aggregated the same way); all consultant work (both design and construction management) and all city work on design and construction management.

It is possible that a project may have "NA (na)" for its bid but a nonzero CON value. In this case the CON value is not included in the CON total in Table 15b, because this would invalidate the CON/BID ratio in Table 15c. However, the CON value is included in the total value that appears in the actual sections of Table 15b. All other entries in Table 15c are straightforward sums of the corresponding entries in Table 15a.

TABLE 15b. Expenditures Breakdown (x$1000), by Category, for WCIP Projects Completed by 1/1/93.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Actual									
BID	12,902	50,651	0	9,981	6,849	7,672	302	1,449	56,773
CON	11,527	63,721	0	11,326	7,566	9,138	299	1,879	64,358
CTP	5,018	15	800	361	290	555	765	828	2,133
CTCM	725	1,606	17,769	471	385	1,424	0	671	5,220
FAP	1,041	1,302	74	804	806	532	471	647	4,609
FACM	1,409	12,227	1,636	2,468	2,050	2,034	152	527	5,709
Total	19,720	77,713	35,098	19,877	11,097	14,240	2,294	4,552	82,153
CT	5,743	1,620	18,569	832	675	1,980	765	1,499	7,354
FA	2,450	13,529	1,710	3,273	2,856	2,567	623	1,174	10,318
P	6,059	1,317	873	1,166	1,095	1,088	1,236	1,475	6,742
CM	2,134	13,833	19,405	2,939	2,435	3,459	152	1,198	10,929
Plan First Yr									
CON	15,838	59,766	36,179	19,857	6,580	37,010	2,600	12,942	74,054
CTP	5,750	630	4,111	1,773	600	2,400	640	3,779	1,380
CTCM	0	348	57,824	775	212	2,354	0	152	55
FAP	2,111	2,482	556	268	381	1,136	135	1,048	6,780
FACM	1,844	3,138	414	983	545	1,195	0	951	7,287
Total	25,563	66,364	99,084	23,656	8,318	44,095	3,375	18,872	89,556
CT	5,750	978	61,935	2,548	812	4,754	640	3,931	1,435
FA	3,955	5,620	970	1,251	926	2,331	135	1,999	14,067
P	7,861	3,112	4,667	2,041	981	3,536	775	4,827	8,160
CM	1,844	3,486	58,238	1,758	757	3,549	0	1,103	7,342
Plan Last Yr									
CON	15,167	66,471	36,179	19,537	8,286	39,308	2,600	23,805	72,100
CTP	5,000	630	4,111	1,676	543	2,798	965	3,779	1,503
CTCM	150	348	57,447	849	265	1,579	0	886	3,575
FAP	1,755	2,432	556	258	487	1,467	135	1,509	5,602
FACM	1,554	3,050	414	1,171	1086	3,447	0	1,990	4,643
Total	23,646	72,931	98,707	23,491	10,667	48,599	3,700	31,969	87,423
CT	5,150	978	61,558	2,525	808	4,377	965	4,665	5,078
FA	3,309	5,482	970	1,429	1,573	4,914	135	3,499	10,245
P	6,755	3,062	4,667	1,934	1,030	4,265	1,100	5,288	7,105
CM	1,704	3,398	57,861	2,020	1,351	5,026	0	2,876	8,218

NOTATIONS

CON: Construction; CTP: Consultant Plans; CTCM: Consultant Construction Mangement
FAP: Force Account Plans; FACM: Force Account Construction Mangement
CT = CTP + CTCM ; FA = FAP + FACM ; P = CTP + FAP ; CM = CTCM + FACM

NOTES

1. First Yr refers to the planned expenditures when the projects were first shown in WCIP Documents. Last Yr refers to a combination of actual expenditures in previous years and the planned further expenditures for the last year in WCIP Documents.
2. In the Actual section of this table, the BID and CON values are the sums of those values for the projects in Table 15a that have non zero entries in both positions. All other entries are the sums for corresponding entries for all the projects.

File Name: WSSD\WCIPPR\93-R1\T15EB93C.WQ1

4.3.1c Evaluation by Category

Table 15c shows ratios between the construction costs and the bids, the design costs and the construction costs, and the management costs and the construction costs are also included. As above, these quantities are calculated for the actual costs, the first, and the last planning expenditures. The first three ratios reflect the expenditures for the same projects, i.e., projects with both construction and design phases. The last two ratios reflect the totals given in Table 15b, i.e., expenditures for all the projects in Table 15a are included.

TABLE 15c. Evaluation of Expenditure, by category, for WCIP Projects Completed by 1/1/93.

Category	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
CON/BID	0.89	1.26	na	1.13	1.10	1.19	0.99	1.30	1.13
P/CON	0.09	0.02	na	0.07	0.14	0.01	0.37	0.11	0.10
CM/CON	0.19	0.23	na	0.14	0.29	0.27	0.51	0.64	0.17
TAE/TPEF	0.77	1.17	0.35	0.84	1.33	0.32	0.68	0.24	0.92
TAE/TPEL	0.83	1.07	0.36	0.85	1.04	0.29	0.62	0.14	0.94

NOTATIONS

CON: Construction; CTP: Consultant Plans; CTCM: Consultant Construction Mangement
FAP: Force Account Plans; FACM: Force Account Construction Mangement
CT = CTP + CTCM ; FA = FAP + FACM ; P = CTP + FAP ; CM = CTCM + FACM
TAE: Total Actual Expenditure
TPEF: Total Planned Expenditures when the projects were first shown in WCIP Documents.
TPEL: Total Planned Expenditure when the projects were last shown in WCIP Documents.

NOTES

1. The numerator and denominator of the first three ratios reflect expenditures for the same projects, i.e., expenditures for the project with both construction and design phases (see Table 15a). The last two ratios reflect all the projects.

File Name: WSSD\WCIPPR\93-R1\T15EB93C.WQ1

4.3.2 ACTUAL SCHEDULES VERSUS PLANNED RECORDS

The last set of tables summarizes the durations for the projects completed. The first table gives the durations for each project, the next shows the duration slippage and overruns and the last presents these results at category level.

4.3.2a Durations by Project

Table 16a gives the planned and actual times for the design and construction phases of each project. Projects without construction have no values for the construction phase.

There is a linkage between the Plan and Act columns in each group (Des, Con, Des+Con). If "na" appears in either column, then if there is a number in the other column in the same row, then that number is not included in column total at the bottom. For example, projects TI34 and TI38 are not counted in the totals for TITP category. This exclusion guarantees that both the numerator and denominator of the Act/Plan ratios are based on the same projects. Likewise the subtrahend and the minuend of the Act-Plan difference are based on the same projects.

TABLE 16a. Durations in Months,by Project,for WCIP Projects Completed by 1/1/93.

	Phase	Des		Con		Des+Con	
Project	Type	Plan	Act	Plan	Act	Plan	Act
CS							
Total							
TWRP							

NOTATIONS

Act: Actual; Plan: Planning; Des: Design; Con: Construction;
NCon: Non Construction; CS: CS; HF: HFS; HS: HSH; HT: HTP; LA: LAG;
PP: PP; SW: SW; TI: TITP; TW: TWRP.

NOTES

1. The Total rows include only the projects that have non zero values in both the Plan and Act columns for each phase, Des or Con or Des + Con.

File Name: WSSD\WCIPPR\93-R1\T16UB93C.WQ1

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
CS3	NCon	84.2	85.2	na	na	84.2	85.2
CS5	Con	na	na	na	8.2	na	8.2
CS6	Con	na	na	na	11.1	na	11.1
CS7	Con	na	na	na	10.2	na	10.2
CS8	Con	na	na	na	9.2	na	9.2
CS10	Con	11.2	9.1	11.2	3.0	22.3	12.1
CS12	Con	4.1	40.6	4.1	8.1	8.2	48.7
CS15	Con	na	41.6	na	3.0	na	44.6
CS38	Con	na	na	na	2.0	na	2.0
CS65	Con	7.2	19.3	8.2	12.2	15.3	31.5
CS66	Con	8.1	6.1	5.1	4.1	13.2	10.1
Total		114.8	160.4	28.5	27.4	143.3	187.8

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
HF2	Con	11.2	10.2	18.3	26.4	29.5	36.5
HF7	Con	10.1	11.1	14.2	25.4	24.4	36.5
HF11	Con	15.2	10.1	17.3	23.3	32.5	33.4
HF13	Con	13.2	8.1	32.5	37.5	45.7	45.6
HF14	Con	5.1	14.2	9.2	18.3	14.2	32.5
HF34	NCon	11.2	11.2	na	na	11.2	11.2
HF35	NCon	12.2	15.2	21.3	31.5	33.5	46.7
HF48	NCon	9.1	19.3	na	na	9.1	19.3
HF49	Con	8.2	33.4	24.3	9.1	32.5	42.6
Total		95.4	132.8	137.1	171.5	232.5	304.3

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
HS4	NCon	na	na	2.1	12.2	2.1	12.2
HS8	NCon	na	na	26.4	11.2	26.4	11.2
HS9	NCon	na	na	2.1	11.2	2.1	11.2
HS15	NCon	na	na	na	na	na	na
HS16	Con	8.1	8.1	14.1	14.1	22.2	22.2
HS18	NCon	na	na	na	na	na	na
HS19	NCon	28.4	12.2	12.2	10.1	40.6	22.3
HS20	Con	11.1	31.4	0.0	36.5	11.1	67.9
HS21	Con	na	na	na	na	na	na
HS22	Con	na	na	na	na	na	na
HS23	NCon	na	na	na	na	na	na
HS24	NCon	na	na	na	na	na	na
HS25	Con	na	16.2	na	14.2	na	30.4
HS26	NCon	na	na	na	na	na	na
HS27	Con	na	11.1	na	5.0	na	16.2
HS28	Con	na	14.2	na	5.1	na	19.3
HS30	NCon	na	na	na	na	na	na
HS39	NCon	na	na	na	na	na	na
HS41	Con	5.1	18.2	8.1	6.0	13.2	24.2
HS44	NCon	na	na	na	na	na	na
HS50	Con	na	na	11.2	11.2	11.2	11.2
Total		52.7	69.8	76.1	112.5	128.8	182.3

16a. Continue

	Phase	Des		Con		Des+Con	
Project	Type	Plan	Act	Plan	Act	Plan	Act
HT1	NCon	na	na	27.4	na	27.4	na
HT5	NCon	na	na	na	na	na	na
HT7	Con	1.0	23.3	5.1	4.1	6.1	27.4
HT8	Con	2.0	2.0	15.2	15.2	17.2	17.2
HT15	Con	11.2	17.3	15.2	16.2	26.4	33.5
HT20	Con	na	na	11.2	11.2	11.2	11.2
HT23	Con	3.1	12.2	9.1	10.1	12.2	22.3
HT25	NCon	na	na	12.2	15.2	12.2	15.2
HT28	Con	5.1	19.3	9.2	20.3	14.3	39.6
HT31	NCon	na	na	na	na	na	na
HT32	NCon	4.0	4.0	12.2	7.1	16.2	11.1
HT33	Con	18.2	na	na	28.4	18.2	28.4
HT43	NCon	na	na	na	na	na	na
HT49	NCon	na	na	na	3.0	na	3.0
HT53	NCon	17.2	18.2	na	na	17.2	18.2
Total		43.6	96.4	89.5	99.5	151.3	224.2

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
LA1	Con	12.2	21.4	12.2	14.2	24.4	35.6
LA3	NCon	30.5	32.4	na	na	30.5	32.4
LA13	Con	4.1	15.2	8.1	9.2	12.2	24.4
LA17	Con	4.1	9.1	4.1	24.4	8.2	33.5
Total		50.9	78.1	24.3	47.8	75.2	125.8

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
PP1	Con	49.7	49.7	10.2	19.3	59.9	69.0
PP7	NCon	na	na	18.3	na	18.3	na
PP8	Con	8.2	8.2	43.7	42.6	51.8	50.8
PP10	Con	na	na	na	na	na	na
Total		57.9	57.9	53.8	61.9	111.7	119.8

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
SW8	NCon	12.2	20.3	na	na	12.2	20.3
SW26	Con	7.1	7.1	4.1	4.1	11.2	11.2
SW27	NCon	11.2	20.3	na	na	11.2	20.3
SW28	NCon	11.2	11.2	na	na	11.2	11.2
Total		41.6	58.8	4.1	4.1	45.7	62.9

16a. Continue

	Phase	Des		Con		Des+Con	
Project	Type	Plan	Act	Plan	Act	Plan	Act
TI2	Con	5.0	50.7	23.4	15.2	28.4	65.9
TI3	Con	15.3	15.3	5.0	8.1	20.3	23.3
TI5	NCon	3.1	3.1	5.0	6.1	8.1	9.2
TI6	Con	6.0	7.1	2.1	8.1	8.1	15.2
TI16	NCon	na	na	na	na	na	na
TI34	NCon	16.2	na	13.2	na	29.4	na
TI36	NCon	11.1	21.3	na	na	11.1	21.3
TI37	NCon	11.1	21.3	na	na	11.1	21.3
TI38	NCon	8.1	11.1	12.2	16.2	20.3	27.4
Total		59.8	129.9	47.7	53.7	107.4	183.6

16a. Continue

Project	Phase Type	Des Plan	Des Act	Con Plan	Con Act	Des+Con Plan	Des+Con Act
TW3	NCon	na	na	na	na	na	na
TW5	Con	27.4	38.6	11.2	22.3	38.6	60.9
TW8	Con	8.1	12.2	17.2	22.3	25.3	34.5
TW9	Con	5.1	16.2	8.1	23.3	13.2	39.5
TW12	NCon	na	na	na	na	na	na
TW15	Con	23.4	17.3	na	na	23.4	17.3
TW19	Con	3.1	na	6.1	na	9.1	na
TW22	Con	5.1	8.1	6.0	14.2	11.1	22.3
TW29	Con	na	na	na	na	na	na
TW33	NCon	32.5	32.5	32.5	32.5	64.9	64.9
Total		101.5	124.8	75.0	114.6	176.5	239.4

4.3.2b Evaluation by Project

Table 16b compares the actual and the planned values for the durations of construction projects in two ways: the difference between actual and planned durations, and the ratio of actual over planned durations. Overall values are also computed by adding up the differences, and by taking the ratios of the total actual durations to the total planned durations from Table 16a. Thus the overall ratios are equivalent to averages of the individual project ratios, weighted by the planned durations of the projects.

TABLE 16b. Duration Differences (months) And Ratios, by Project, for WCIP Projects Completed by 1/1/93.

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
CS						
.	.		.		.	
.	.		.		.	
Overall						
TRWP						

NOTATIONS
Act: Actual; Plan: Planning; Des: Design; Con: Construction;
NCon: Non Construction; CS: CS; HF: HFS; HS: HSH; HT: HTP; LA: LAG;
PP: PP; SW: SW; TI: TITP; TW: TWRP.

NOTES
1. The Overall ratio Act/Plan is computed by dividing Total of the Act durations over the Total of the Plan durations from Table 16a.

File Name: WSSD\WCIPPR\93-R1\T16UB93C.WQ1

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
CS3	1.0	1.0	na	na	1.0	1.0
CS5	na	na	8.2	na	8.2	na
CS6	na	na	11.1	na	11.1	na
CS7	na	na	10.2	na	10.2	na
CS8	na	na	9.2	na	9.2	na
CS10	-2.1	0.8	-8.1	0.3	-10.2	0.5
CS12	36.5	9.9	4.0	2.0	40.5	5.9
CS15	41.6	na	3.0	na	44.6	na
CS38	na	na	2.0	na	2.0	na
CS65	12.2	2.7	4.0	1.5	16.2	2.1
CS66	-2.0	0.7	-1.0	0.8	-3.0	0.8
Overall	45.6	1.4	-1.1	1.0	44.5	1.3

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
HF2	-1.0	0.9	8.1	1.4	7.0	1.2
HF7	1.0	1.1	11.1	1.8	12.1	1.5
HF11	-5.1	0.7	6.1	1.4	1.0	1.0
HF13	-5.1	0.6	5.0	1.2	-0.1	1.0
HF14	9.1	2.8	9.1	2.0	18.3	2.3
HF34	0.0	1.0	na	na	0.0	na
HF35	3.0	1.2	10.2	1.5	13.2	1.4
HF48	10.2	2.1	na	na	10.2	2.1
HF49	25.3	4.1	-15.2	0.4	10.1	1.3
Overall	37.4	1.4	34.4	1.3	71.8	1.3

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
HS4	na	na	10.1	5.9	10.1	5.9
HS8	na	na	-15.2	0.4	-15.2	0.4
HS9	na	na	9.1	5.4	9.1	5.4
HS15	na	na	na	na	na	na
HS16	0.0	1.0	0.0	1.0	0.0	1.0
HS18	na	na	na	na	na	na
HS19	-16.2	0.4	-2.1	0.8	-18.3	0.5
HS20	20.3	2.8	36.5	na	56.8	6.1
HS21	na	na	na	na	na	na
HS22	na	na	na	na	na	na
HS23	na	na	na	na	na	na
HS24	na	na	na	na	na	na
HS25	16.2	na	14.2	na	30.4	na
HS26	na	na	na	na	na	na
HS27	11.1	na	5.0	na	16.2	na
HS28	14.2	na	5.1	na	19.3	na
HS30	na	na	na	na	na	na
HS39	na	na	na	na	na	na
HS41	13.1	3.6	-2.1	0.7	11.0	1.8
HS44	na	na	na	na	na	na
HS50	na	na	0.0	1.0	0.0	1.0
Overall	17.1	1.3	36.4	1.5	53.5	1.4

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
HT1	na	na	na	na	na	na
HT5	na	na	na	na	na	na
HT7	22.3	22.6	-1.0	0.8	21.3	4.5
HT8	0.0	1.0	0.0	1.0	0.0	1.0
HT15	6.1	1.5	1.0	1.1	7.1	1.3
HT20	na	na	0.0	1.0	na	1.0
HT23	9.1	4.0	1.0	1.1	10.1	1.8
HT25	na	na	3.1	1.3	3.1	1.3
HT28	14.2	3.8	11.1	2.2	25.3	2.8
HT31	na	na	na	na	na	na
HT32	0.0	1.0	-5.1	0.6	-5.1	0.7
HT33	na	na	na	na	na	na
HT43	na	na	na	na	na	na
HT49	na	na	na	na	na	na
HT53	1.0	1.1	na	na	1.0	1.1
Overall	52.7	2.2	10.0	1.1	72.9	1.5

TABLE 16b. Duration Differences (months) And Ratios, by Project, for WCIP Projects Completed by 1/1/93.

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
CS						
LA1	9.2	1.8	2.0	1.2	11.2	1.5
LA3	2.0	1.1	na	na	2.0	1.1
LA13	11.1	3.7	1.1	1.1	12.2	2.0
LA17	5.0	2.2	20.3	6.0	25.3	4.1
Overall	27.2	1.5	23.4	2.0	50.6	1.7

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
PP1	0.0	1.0	9.1	1.9	9.1	1.2
PP7	na	na	na	na	na	na
PP8	0.0	1.0	-1.0	1.0	-1.0	1.0
PP10	na	na	na	na	na	na
Overall	0.0	1.0	8.1	1.1	8.1	1.1

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
SW8	8.1	1.7	na	na	8.1	1.7
SW26	0.0	1.0	0.0	1.0	0.0	1.0
SW27	9.1	1.8	na	na	9.1	1.8
SW28	0.0	1.0	na	na	0.0	1.0
Overall	17.2	1.4	0.0	1.0	17.2	1.4

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
TI2	45.7	10.1	-8.2	0.7	37.5	2.3
TI3	na	1.0	3.0	1.6	3.0	1.1
TI5	na	1.0	1.1	1.2	1.1	1.1
TI6	1.1	1.2	6.0	3.9	7.1	1.9
TI16	na	na	na	na	na	na
TI34	na	na	na	na	na	na
TI36	10.1	1.9	na	na	10.1	1.9
TI37	10.1	1.9	na	na	10.1	1.9
TI38	3.0	1.4	4.1	1.3	7.1	1.4
Overall	70.1	2.2	6.0	1.1	76.1	1.7

16b. Continue

Phase	Des		Con		Des+Con	
Project	Act-Plan	Act/Plan	Act-Plan	Act/Plan	Act-Plan	Act/Plan
TW3	na	na	na	na	na	na
TW5	11.1	1.4	11.2	2.0	22.3	1.6
TW8	4.1	1.5	5.1	1.3	9.2	1.4
TW9	11.1	3.2	15.2	2.9	26.3	3.0
TW12	na	na	na	na	na	na
TW15	-6.1	0.7	na	na	na	na
TW19	na	na	na	na	na	na
TW22	3.0	1.6	8.1	2.3	11.1	2.0
TW29	na	na	na	na	na	na
TW33	0.0	1.0	0.0	1.0	0.0	1.0
Overall	23.2	1.2	39.6	1.5	62.9	1.4

4.3.2c Evaluation by Category

The total values from Table 16a and the overall values from Table 16b are reproduced in the columns of Table 16c for each category to give a synoptic view of the schedule performance for the program. It should be noted that the results in this table only include those projects that had duration values in both the Plan and Act columns for any phase, Des or Con or Des+Con.

TABLE 16c. Durations And Differences (months) And ratios of WCIP Completed Construction Projects, by Category, from Tables 16a & 16b.

Category		CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP
Des	Plan	114.8	95.4	52.7	43.6	50.9	57.9	41.6	59.8	101.5
	Act	160.4	132.8	69.8	96.4	78.1	57.9	58.8	129.9	124.8
Con	Plan	28.5	137.1	76.1	89.5	24.3	53.8	4.1	47.7	75.0
	Act	27.4	171.5	112.5	99.5	47.8	61.9	4.1	53.7	114.6
Des + Con	Plan	143.3	232.5	128.8	151.3	75.2	111.7	45.7	107.4	176.5
	Act	187.8	304.3	182.3	224.2	125.8	119.8	62.9	183.6	239.4
Des	Act-plan	45.6	37.4	17.1	52.7	27.2	0.0	17.2	70.1	23.2
	Act/Plan	1.4	1.4	1.3	2.2	1.5	1.0	1.4	2.2	1.2
Con	Act-Plan	-1.1	34.4	36.4	10.0	23.4	8.1	0.0	6.0	39.6
	Act/Plan	1.0	1.3	1.5	1.1	2.0	1.1	1.0	1.1	1.5
Des + Con	Act-Plan	44.5	71.8	53.5	72.9	50.6	8.1	17.2	76.1	62.9
	Act/Plan	1.3	1.3	1.4	1.5	1.7	1.1	1.4	1.7	1.4

NOTATIONS
Act: Actual; Plan: Planning; Des: Design; Con: Construction;
NCon: Non Construction.

NOTES
1. The results in this table are taken from the Total and Overall values from Tables 16a and 16b.

File Name: WSSD\WCIPPR\93-R1\T16UB93C.WQ1

SECTION 5
PROJECTS WITH NO PLANNING DATA

A few projects have been found in the other documents but not in the planning documents, and therefore appear to have been carried out without the usual planning process. Presumably they are projects that were introduced on short notice, and were planned and constructed between the times when the planning documents were published. There may also be other reasons why they appeared in this manner. In the PID, a few of them are listed at the bottom of the table for some categories under a horizontal line, e.g., for LAG. These projects should be listed for completeness but since no planning data are available, they could not have been included in the analysis or searched extensively. The presence of such projects is another indication of the deficiency of present data handling methods for WCIP.

SECTION 6
DIFFICULTIES AND COMPLEXITIES

This section describes the difficulties and complexities that were faced during the process of data collection and includes examples for some of the cases. The assumptions discussed in Section 3 were required primarily because of these difficulties and complexities.

1) Work order for the same project differs in different documents.

Example 1. WCIP 89/90, WPMD
TITP Liquid Process Imp
W.O.#: E 2000079

M 26 (6/30/92), Bureau of Accounting
TITP Liquid Process Improve
W.O.#: SZT 11122.

See Appendix Section 13.2a.

2) There exists inconsistencies of actual cost from one document to another that are not small enough to be ignored. Note that Example 2b shows errors compounded among the documents after several cross checkings.

Example 2a. PSR (8/31/92), PMD
TWRP PH2 Const Mgmt Cnslt.
Non City expenditures: $1,581,016

M26 (8/31/92), Bureau of Accounting
TWRP PH2 Const Mgmt Cnslt.
Total expenditures: $106,077

See Appendix Section 13.2b.

Example 2b. M26 (8/31/92), Bureau of Accounting

HTP Interim Imprvmnt Prog Ads

Total expenditures: $375,626

W.O.#: EXX31168

Program Master List (8/31/92), WPMD

Check same title

HTP Interim Imprvmnt Prog Ads

Cumulative payment: $3,860,366

W.O.#: EXX31136 (note different W.O.)

M26 (8/31/92), Bureau of Accounting

Check W.O. # EXX31136

HTP Areation System Improv (note different title)

Total Expenditures: $4,289,159

"HTP Aeration System Improv" does not appear in the Program Master List as of 8/31/92.

See Appendix Section 13.2c.

3) There are different project titles for the same W.O. in different documents.

Example 3. WCIP 90/91, WPMD

TITP Air Diffuser Replacement

W.O.#: SZT 11126

M 26 (6/30/92), Bureau of Accounting

TITP Air Headers Modification

W.O.#: SZT 11126

See Appendix Section 13.2d.

4) Different documents did not reflect the same number of project phases.

Example 4. WCIP 88/89, WPMD
HFS Primary Batteries Mod
2 phases: Unit 1, Unit 2

Program Master List (6/30/92), WPMD
HFS Primary Batteries Mod
3 phases: Unit 1, Unit 2, Unit 3

See Appendix Section 13.2e.

5) At times, BOA M26 expenditures for recent dates are higher than older documents. Sometimes large discrepancies found indicate that these reflect errors rather than usual adjustments.

Example 5. M26 (4/30/93), Bureau of Accounting
HFS Step 2 General
W.O. #: EXX41162
Total Expenditures: $15,157,663
M26 (7/31/92), Bureau of Accounting
HFS Step 2 General
W.O. #: EXX41162
Total Expenditure: $67,468,349
See Appendix Section 13.2f

6) The format for breakdown of actual expenditures (M26) does not match the format for breakdown of planning expenditures (WCIP planning document).

7) Expenditure data retrieved through the FRS System does not match perfectly with the M26 printed by the Bureau of Accounting.

8) Different documents show different numbers of projects.

9) Different document show mismatches among schedule dates.

10) Not all hard copies of M26 are available from 1988 to present.

11) Insufficient information for the projects, even completed projects for which the data is needed for analysis (see Section 4.3.1. and 4.3.2).

12) The present expenditure breakdown, in the planning documents, is suited to construction projects and their associated activities. These expenditure categories are not well suited to the numerous present WCIP computer projects of which there will be more in the future. Accordingly, for these and other projects, procurement, testing, etc. the cost breakdown has been difficult and at times may have been based on subjective judgement.

SECTION 7
BRIEF SYSTEM STUDIES IN RELATION TO WCIP DATA

This section gives some of the system information related to the WCIP data discussed in Section 2. The information is preliminary and somewhat incomplete. It is only meant to be used as a guide line for a task force that should be formed to identify more efficient ways to meet present and future WCIP data needs. The system personnel and ISD should be the final authority for accepting and implementing the conclusions of the task force.

7.1 WASTEWATER PROGRAM MANAGEMENT DIVISION

Presently at WPMD the data are stored on various PC's using software packages that were selected based on the immediate needs of the different groups. The following briefly describes each system.

7.1.1 HARDWARE

The system includes a LAN (local area network), with PC's linked to a file server with approximately 1 GB of storage and to the City's Mainframe. The LAN operating system is Novell Netware, version 3.11 that can support a hundred nodes. Copies of all the software used in the division are on the server. Several laser printers, some other printers and a few plotters are also in the system.

7.1.2 TYPES OF SOFTWARE

The present purchased software packages can be classified as spreadsheets, database managers, graphics packages, and project managers. It is important to remember that as each software package was originally designed to be self-contained, provisions for transferring data between them are often poor or absent. Thus, transferring data among copies of the same software on different machines is usually far easier with the aid of Netware or any similar product than transferring data between different software packages on the same machine. Each type of software is briefly described in the following sections.

7.1.2a General

Both spreadsheet software and database management systems organize data in tabular form, but there are significant differences in the assumptions that are applied to the tables so that they are used in different ways.

A spreadsheet is an electronic version of the accountant's columnar pad, pencil, and calculator, the basic assumption being that it is a rectangular array of cells that can contain numerical information or character strings for labeling. Some newer versions allow a wider range of data types in the cells. Formulas can be entered to define dependencies between the numerical values, and when values in independent cells are changed the software automatically revises the values in all the other cells depending on the ones that are changed. This makes the spreadsheet an example of what mathematicians call a "cellular automaton" and a suitable collection of formulas allows a spreadsheet to implement a complex financial model. The usual method of displaying a spreadsheet is to show the array of cells, or as many as will fit on the screen, according to the user's request.

A relational database manager, by contrast, may organize a collection of data into several relation tables, and displays the information in tables that are derived from the original ones by select and join operations from the theory of relational algebras. Since these operations are expressed in a query language with sequencing capabilities comparable to other computer languages, relational database managers are generally much more powerful than spreadsheets for organizing and displaying data. However, since a database manager is not designed to work as a cellular automaton, it is usually not used to implement financial models.

7.1.2b Spreadsheets

Lotus 1-2-3

This is the best known spreadsheet for desktop computers from Lotus Development Inc. In addition to the basic capabilities of a spreadsheet it has a few simple query commands for operations similar to those used in relational databases. It also has some very simple statistical functions.

Limits: max number of rows 256;
max number of columns 8192;
column width from 1 to 240 characters.

Quattro Pro (Qpro)

This is a spreadsheet from Borland International that offers some improvements over Lotus 1-2-3. Data entries can be labels or numerical values. There are no provisions for special forms for data entry, but it is possible to save data in a form that can be read by Paradox, Borland's relational database product. The data are stored in an area called the worksheet that grows at a high rate as records are added. This results in space problems in disk and memory.

Limits: Max number of rows 8191;
Max number of columns 256;
Column width from 1 to 253.

7.1.2c Database Managers

Paradox

The only relational database used at WPMD is Paradox, also from Borland International. It provides both indexed and nonindexed tables, and allows the user to design forms for entering data into tables and formats for reports generated from the data. The query language allows for the standard select and join operations. The limitation on the number of fields and maximum size of a field is subject to the overall limitation on the size of a record, so that one could have no more than 15 fields in a nonindexed record if each were a full 255 characters long.

Limits: Max number of fields 255;
Max number of characters per field 255;
Max number of characters per nonindexed record 4000;
Max number of characters per indexed record 1350;
Max number of tables joined in a single query 24;
Max number of input forms per table 15;
Max number of report formats per table 15.

7.1.2d Graphics Packages

Harvard Graphics

This package is used to create figures for reports. Its capabilities are not a significant concern for the effort to improve WCIP planning and budgeting.

Project Managers

These are software systems that are built on database management systems. They attempt to incorporate more specific knowledge about the activities described by the data than what is provided by general database management programs.

Primavera

This is a Primavera System, Inc. product that acts as a database and also provides graphics specific for displaying scheduling of projects. Horizontal bars and lines display target and actual progress of a project. This software can accept files generated by Lotus 1-2-3 as input.

7.1.2e Financial Management Reporting System (FRS)

Developed at WPMD by the Financial Management group using a language called Focus, this is a program to retrieve summary tables and details from files on the mainframe. These are the ledger files, the Financial Management Information System (FMIS) and the Clean Water Grant (CWG) tables. This program is primarily used to make inquiries of particular types and to display the results in a standard form on a screen or hardcopy.

7.1.3 FILES

7.1.3a Planning File

The planned WCIP expenditure data is stored in a Qpro file. This is a list of the projects in the WCIP and the estimated costs for them during the next ten FY's. This information is used to produce the 10 Year Expenditure Planning Document by transferring the data from Qpro to Paradox and then printing it using a report format designed with the output formatting capabilities of Paradox. The sketch of the file structure and related specifications for the Qpro file is shown in Figure 1.

7.1.3b Scheduling Files

There are three files being maintained on PC's using Lotus 1-2-3. This information is manually input from various other sources of WCIP data. Thus these files reorganize information from other databases. One file contains project cost estimates, schedules and additional information that are mostly reflections of PSR data. The monthly Master List, the Baseline, is the output of this file. Another is a file containing the data on projects that are removed from the Master List file, when they are completed. The

third is a list of all projects with their planning dates, the Target Dates.

The Quarterly Schedule is the another product that gives schematic bar graphs of different activities for the projects. The information is printed by Primavera using a file that has been assembled from data kept in Lotus 1-2-3. The sketch of the file structure and related specifications are shown in Figure 2.

FIGURE 1. Structure of the 10 Years WCIP Panning File on Qpro at WPMD.

a

Field Name	PA INT	PA COMPL	WORK ORDER	DESCRIP-TION	CATEGORY	SEGMENT	PRIORITY	ENG. DIST.
Width	8	8	10	33	9	9	8	12
Data Type	date	date	3 ch 5 num	33 ch	3 ch	1 ch	1 num	2 num

... **Continue to b**

b

FAP	CTP	R/W COST	CONST COST	FACM	CTCM	TOTAL COST
14	14	14	16	14	14	19
num	num	num	num	num	num	num

... ... **Continue to c**

c

First Year

FAP	CTP	R/W COST	CONST COST	FACM	CTCM	TOTAL COST
14	14	14	16	14	14	19
num	num	num	num	num	num	num

... . . . **repeat 10 years**

NOTATIONS

ch: character; num: numeric.

SPECIFICATIONS AND NOTES

1. Capacity: 598104 bytes; Number of Records: 200 to 250; Number of Fields: 100.
2. Due to limitation of space the structure is broken in three parts, a, b and c.
3. Part c of the above is repeated 10 times to contain expenditure data for 10 years.

File Name: WSSD\WCIPPR\93-R1\F1SPWPMD.WQ1

FIGURE 2. Structure of 10 Year WCIP Program Master List File on LOTUS at WPMD.

a

Field Name	Project Name	Sub-Proj Name	Cat	Mima No.	W.O. No.	CRP Code	FAP	CTP	R/W	FACM	CTCM	Constr	Total Cost	Constr($) (x 1000)
Width	10	33	3	4	10	4	9	9	8	9	9	11	12	9
Data Type	ch	ch	ch	num	ch num	num ch	num	num	num	num	num	num	num	num

... Continue to b

b

...

Design Start	Design Finish	Des Dur	Constr Start	Constr Finish	Cons Dur	Grn Y/N	Priority	Proj Engineer	Proj Eng Phon	Engrn Dist	Council Dist
12	12	4	12	12	4	3	4	10	14	6	6
date	date	num	date	date	num	ch	num	ch	ch num	num ch	num ch

NOTATIONS

ch: character; num: numeric.

SPECIFICATIONS AND NOTES

1. Capacity: 319716 bytes; Number of Records: 294; Number of Fields: 25.
2. Due to limitation of space the structure is broken in two parts, a and b.

File Name: WSSD\WCIPPR\93-R1\F2SMWPMD.WQ1

7.2 OTHER DIVISIONS

There are other divisions that handle data related to WCIP. Two that are involved with WPMD are the Project Management Division and the Bureau of Accounting. A summary of their systems is given below.

7.2.1 HARDWARE

The system used by these divisions is the City's Host IBM Mainframe system 370, submodel 3080. The system has been divided into systems A and B: A for line processes and B for batch processes. The operating system is OS/MVS. The mainframe can be accessed by any individual who has a terminal with a user ID number or a personal computer with proper communication software. As proper communication software is available at WPMD, any user at WPMD can access the mainframe through the LAN system.

7.2.2 TYPE OF SOFTWARE AND FILES

7.2.2a Financial Management Information And Clean Water Grant Systems (FMIS CWG System)

This system consists of a series of database related files that are maintained by BOA and the Controller. This system is in COBOL, but downloaded in Focus so that different City user groups can have their own reporting system. The system has carried forward the total past expenditures from the old accounting system and contains all the costs since FY 1988. The system is an online inquiry system organized under IMSP on the City's mainframe computer that is used to access individual records in some of the key FMIS tables, e.g., APPR, a table that shows the financial status of individual appropriation accounts. The screen can be viewed online or screen prints developed for records.

7.2.2b Project Status Report (PSR)

This system, originally in PL1, is in the Focus language. It provides reports from a large database of all City projects. The Project Management Division (PMD) is in charge of this system, except for the wastewater portion. This portion of the system is updated through the Scheduling Group at WPMD.

7.3 WPMD SYSTEM IMPROVEMENT

As the City moves toward greater efficiency, the prospect of more demands and tight budgets implies that an information system that could help control costs and improve efficiency would be a necessary investment.

7.3.1 PRESENT DIFFICULTIES

There are many inconveniences and difficulties with the present mix of hardware, software, and data files. For example, the process of preparing the 10 Year Expenditure Document by storing data under Qpro transferring it to Paradox, and printing it using a Paradox report form actually involves 20 to 30 steps. The FRS has been designed to provide more flexibility and reports in a more timely manner than the Bureau of Accounting. However, there are inconsistencies between the FRS output reports and the outputs from the Bureau of Accounting, that are not understood at the present. Presumably, they result from slight errors in the code used to reorganize the data from the FMIS and CWG tables, but finding the errors may be difficult. The Scheduling Group's documents, the various master lists, are minor rearrangements of information found in the planning documents and the PSR.
In general when multiple copies of the same information are kept on different systems, especially if they are under incompatible software packages, inconsistencies are almost inevitable. Another way to view this problem is to see that data are often not transmitted or converted in a timely manner.

It is easy to see in the abstract that a unified database would eliminate present problems with duplication accuracy and timeliness of transmission. Similarly, software that provided a combination of services better suited to the WCIP needs would greatly improve work efficiency (not only is the combination of Qpro and Paradox inconvenient to use for the 10 Year Expenditure Document, but this report has had to be prepared by using Word Perfect for the text, Qpro for the tables and Harvard Graphics for the figures). However, the way to attain these goals is much less obvious, given the commitment of many offices to their present systems. The procedures involving Qpro, Paradox, Primavera, and FRS were planned around the characteristics of each.

7.3.2 FUTURE CONSIDERATIONS

It is even more difficult if one reflects on further enhancements of information system capabilities that seem likely to be valuable. For example, the present study has dealt with projects in terms of relatively

crude analyses of start and stop times of various phases and yearly total expenditures. Access to more timely information about the completion of various phases of projects might be desirable for management. Also, if some interface could be provided to online storage of the drawings of a project, it might be possible to get a better understanding of the changes that incur added costs. A system designed that allowed for adding capabilities later seems preferable to still another closed standalone system.

7.3.3 A MULTIPHASE STRATEGY

The best strategy visible at present is to allow for several phases of system development. Establishing a more regular information flow among existing systems could probably be done quite quickly. For example, if project engineers would directly update the PSR, then if a program were written to download PSR data to Lotus 1-2-3 then it would propagate easily to Primavera and perhaps with comparatively little difficulty to other types of software that have been written to read Lotus 1-2-3 files. (Because of 1-2-3's early dominance of the spreadsheet market, a number of other PC packages for business purposes have such compatibility.) Since the PC's at WPMD are connected in a LAN (local area network) with links to a file server with 1 GB storage, and to a mainframe, this hardware configuration should be adequate for the near future unless more storage is needed for the server. This approach would work almost exclusively with software and hardware that are already in place.

For a more comprehensive and enduring solution it is probably best to look at a wider range of options. It appears likely that a large fraction of the present collection of equipment should eventually be replaced for greater efficiency and capability. Two recently published books offer abundant detail about currently available technology, and developments expected in the next few years; *Enterprise-Wide Networking* by Patricia Schnaidt, Sams Publishing, Carmel, Indiana, ISBN 0-672-30173-3, and *Client/Server Computing* by Patrick Smith and BSG, also from Sams Publishing, ISBN 0-672-30065-6. Patrick Smith is a senior executive at System House, Incorporated, and has apparently been involved with information system development for the LA Fire Department, the LA County Superior Court, and the LA County Department of Public Social Services. Descriptions of the systems in these agencies are among the case studies at the end of Client/Server Computing. These books offer a far more extensive basis for understanding many issues involved in developing a unified information system than what can be offered here. They or others like them should be studied before substantial commitments are made for developing a new system.

The software challenge of establishing a centralized database is likely to be much greater. At present different groups use Quattro Pro, Paradox and Primavera on their PC's and other software on the mainframe. Each of these packages has its own strength and limitation; each was chosen to perform a certain task and the procedures involving each have been planned around these characteristics. It would be desirable to introduce a unified database which could combine the information that spread among these packages, but also to minimize disruption of these established procedures.

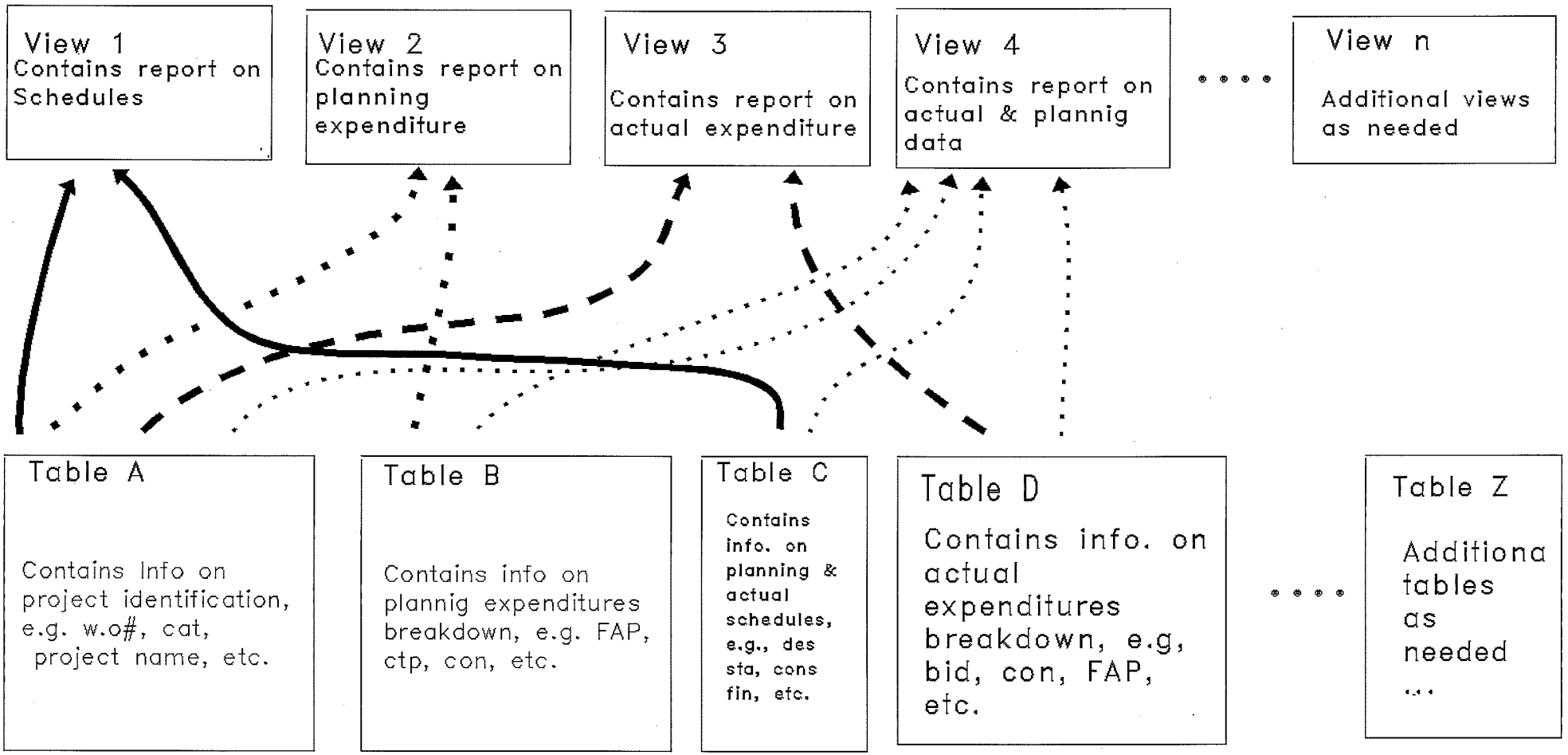
However, these goals are partly contradictory, since it would now be necessary to replace each package's references to its own data storage by calls to the central database which might be in a different format. At the moment software for convenient conversion between these data package formats is not available. Thus providing this capability would require a substantial programming project, probably lasting for a number of months.

7.3.3a An Alternative for the Near Future

An alternative system that implements a centralized database for WPMD is described in this section. This elaborates on the remarks above about an approach and it could be used with existing software and hardware.

A relational database such as Paradox should be used for all the wastewater related data. This makes it possible to design several different files each of which contains a different table with little or no overlap. Each table has enough capacity for data, covering several years and the information is not stored several times. This is an integrated system with a view mechanism so that any presently used report could be formed containing information from the tables. To input information into this integrated system, one can easily design the forms for entering the data into each table. Figure 3 is a tentative design of a system for Wastewater Capital Improvement Program data. It shows the tables in the data system and the data flows from them to the views that are presently expected.

FIGURE 3. Structure of Tables and Views of an Alternative Improved System for the WCIP.



NOTES

1. The database is composed of several Tables, each of which is a seperate file.
2. Views are output reports of the database.

File Name: WSSD\WCIPPR\F3RDBSAI.CH3

7.3.3b Long Term Solution

For the long term it probably would be good to migrate from a relational database system to an object-oriented database system. This would allow reproducing the structure of the relational system proposed for the near future, but also to augment it with other capabilities that seem desirable. As noted above, access to online storage of drawings of a project seems desirable, because it would allow for more specific information about the project's progress and the changes made during its course. If some scheme were devised to indicate by colors how a project was progressing, such as by coloring the finished parts red and the unfinished parts blue, then management would have a way to judge progress that would be more rapid or precise than by the use of present types of displays.

The use of drawings would not replace the present use of timelines, etc., but augment them. Present technology makes it easy to put corresponding displays into separate windows on the screen. However, the complex hierarchical data structures needed for storing engineering drawings, and the large pixel sets needed for image storage, if images of a site or the progress of a project were used, would be accommodated more easily in an object-oriented database system than in present relational systems.

An object-oriented system would also allow more easily for incorporating a hypertext capability into the program's data handling. Since nothing like this has been available in past management information systems, the value of including such a capability is less immediately obvious than in the case of incorporating access and display of drawings. However, it is a way to address the issues of convenience and flexibility that lie at the bottom of conflicts over centralized versus personal computer systems.

It is a common experience that situations eventually arise that are not easily accommodated within an established system of tables or classifications. Hypertext system by design allow the incorporation of links from standard types of reports to additional data or explanations that suit individual cases. The general goal is to have a data system capable of capturing at least a portion of the knowledge of individual projects and events that engineers accumulate as they gain experience. This experience is lost when they retire or transfer to new jobs. It is impossible to know how much loss of efficiency a large long term program suffers by this dilution of experience, but in many cases it must be substantial.

We note that the WCIP is comparable in a number of respects to a large number of other environmental

and civil engineering programs throughout USA. It is possible that technology developed for one such project could be adapted to others, with attendant benefits in the form of licensing payments or consulting fees for the organization that pioneers a system that provides a significant benefit. This would add to the value of developing this capability for our own use.

Returning to the main subject of flexibility and extendibility of an object-oriented database system, especially one with hypertext capabilities, we note the great convenience of personal computing is what has led to its widespread adoption in offices, despite a number of disadvantages from the viewpoint of overall organization. The redundancy and inefficiency problems of current arrangements at WPMD have been discussed, but little or nothing has been said about problems of security in various forms. Data spread among large numbers of PC's are not only more vulnerable to unauthorized access than data in more elaborately protected system, but conversely also more vulnerable to loss by inadvertent deletion or hardware malfunction. Also, personally designed programs and data storage schemes are usually not well documented. These are familiar concerns for corporate data managers, but the pressure to keep using PC's will persist as long as they are so much more convenient than centralized system. Object-oriented database system with hypertext capabilities promise a greater combination of convenience and security than anything else presently foreseen, and thus appear to be the best software framework for long term solution to the program's needs.

SECTION 8
TASKS AND SUBTASKS

This section is to identify all the activities carried out to date to prepare this edition of the "WCIP Progress Report." The major tasks are listed more or less in the order in which they have had to be performed. In particular, the preliminary planning, searching for data, database construction and development of analysis method were done in that order, but the main principle of organization has been to group activities that are functionally related. Thus various tasks can be classed as developmental, communicative, implementational, etc. activities, conforming with conventional practice. As it is often difficult to say precisely where development ends and improvement begins in designing tables and analysis methods, the times required for development and for improvement must be estimates which might be more informative if added together than if considered separately.

Although not noted here, related estimates of the aggregate times for completion of all tasks are available. The details for completion of Task 10 requires major effort from WPMD computer users in conjunction with wastewater system group and ISD.

We believe that the value of increased clarity of management oversight of the WCIP will strongly justify implementing a centralized data system for preparing better documentation, and updated editions of this and other reports in future years.

8.1 LIST OF TASKS AND SUBTASKS

The following discusses briefly the tasks and subtasks involved in this project.

Task 1. Develop Preliminary planning for the Project.

1.1 Identify initial activities:
1.1a definition of goals and objectives;
1.1b preliminary selection of information sources;
1.1c preliminary selection of suitable types of software.

1.2 Set initial schedule for initial activities.

1.3 Define tasks and subtasks.

1.4 Update tasks and subtasks.

Task 2. Search for needed data among the WCIP data at WPMD and other offices.

2.1 Search and collect data from various groups at WPMD:
2.1a WCIP 10 year planning documents over successive years since 1988;
2.1b Scheduling documents showing planned and actual schedules;
2.1c Financial Reporting System/Work Breakdown Structure documents on actual expenditures.

2.2 Search and collect data from other offices:
2.2a Cost Ledger Summary of Work Orders, M-26, from Bureau of Accounting;
2.2b Project Status Report, PSR, from Project Management Division;
2.2c other documents as future needs arise.

Task 3. Perform Initial data evaluations and design of preliminary databases based on Task 2.

3.1 Make various assumptions necessary to complete all other tasks.

3.2 Implement a temporary database, containing planning monetary information to be incorporated into a Preliminary Integrated Database (PID).

3.3 Design PID, by tracking projects from 2.1 and 2.2:
3.3a project titles and related identifying information;
3.3b planning data;
3.3c actual data;
3.3d project status assignments;
3.3e other pertinent information.

3.4 Transfer information on delivered projects to Database for completed projects:

3.4a actual cost components as in Subtask 4.4;

3.3b cost components as of the first and last planning years from Subtask 2.1a.

Task 4. Develop methods of analyses for the information in Task 3, with design provisions for inclusion of data from all categories.

4.1 Formulate and design preliminary tables to present overall results on planning data in a proper manner:

4.1a by category;

4.1b by fiscal year.

4.2 Perform similar work on actual data as in Subtask 4.1:

4.2a by category;

4.2b by fiscal year.

4.3 Analyze planning results, project status and make comparisons.

4.4 Formulate and design tables for cost components and durations of delivered projects as compared to their Planned Records:

4.4a by project;

4.4b by category;

4.4c evaluation by category.

4.5 Implement graphics for some of the tables in Subtasks 4.1, 4.2 and 4.3.

4.6 Identify difficulties and complexities encountered in performing Tasks 2, 3 and 4.

Task 5. Perform communication activities.

5.1 Develop preliminary Table of Contents.

5.2 Draft text according to Table of Contents.

5.3 Write text for tables and graphs.

5.4 Assemble progress reports.

5.5 Make telephone calls.

5.6 Hold meetings.

Task 6. Check quality of work and implement training and education needed.

Task 7. Improve information in the above tasks and related data handling.

7.1 Improve the quality of the data in Task 2 and 3.

7.2 Improve the methods, formulations and designs in Task 4.

7.3 Improve Table of Contents and the text.

7.4 Search for more efficient ways of handling data.

7.5 Improve consistency maintenance among files containing corresponding data but accessed by different software packages.

Task 8. Present Tasks 1 to 7 with data from LAG, TITP, and TWRP categories for WSSD Management preliminary reviews and comments.

Task 9. Implement WSSD Management comments for projects in other categories.

9.1 Complete present work on HFS, HSH and HTP.

9.2 Repeat all Tasks for project in other categories, CS, PP and SW.

Task 10. Perform brief evaluations of WCIP system and suggest preliminary improvement:

10.1 Study hardware, types of software and files at WPMD.

10.2 Study hardware, types of software and files at other Divisions.

10.3 Suggest a better alternative for the present system at WPMD.

Task 11. Document the system developed at WSSD for this project:

11.1 Types of Software.

11.2 Files.

Task 12. Develop an Executive Summary for the report:

12.1 Design summary tables for project categories on the important results.

12.2 Design summary tables for the whole WCIP program.

12.3 Include short section on results of Task 10.

12.4 Prepare text and recommendations.

12.5 Integrate Executive Summary into the report.

Task 13. Prepare draft report with results reflecting 6/30/92:

13.1 Distribute report to WSSD & WPMD management.

13.2 Incorporate WPMD management comments.

Task 14. Update Report as of 1/1/93:

14.1 Distribute PID's to WPMD coordinators for data quality check.

14.2 Distribute PID's to other offices for data quality check.

14.3 Revise PID's as necessary.

14.4 Update report according to PID's.

Task 15. Distribute the report.

15.1 Distribute to WSSD staff.

15.2 Distribute to WPMD staff.

15.3 Distribute to Bureaus' Management.

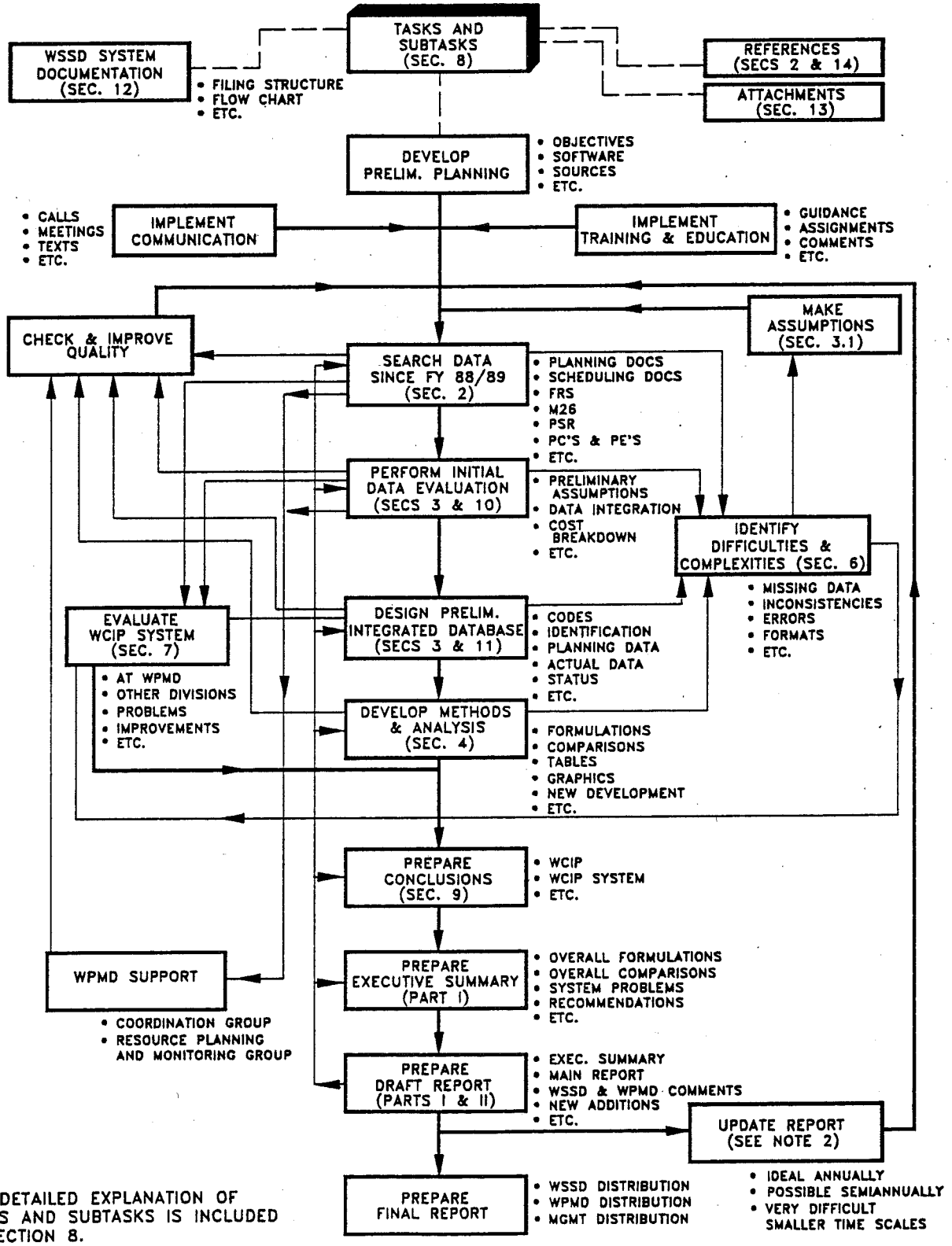
Task 16. Incorporate comments from all parties and further improve the Report:

16.1 Revise the Report based on management comments.

16.2 Develop the Report with additional displays that will contain other important information.

Figure 4 sketches the tasks and subtasks involved with designated sections in the Report. Their relationship is also shown.

FIGURE 4. TASKS AND SUBTASKS FOR DEVELOPMENT OF THE WCIP AND SIMILAR PROGRESS REPORTS UNDER THE PRESENT SYSTEM.



NOTES:

1. THE DETAILED EXPLANATION OF TASKS AND SUBTASKS IS INCLUDED IN SECTION 8.
2. THE REPORT HAS FIRST BEEN PREPARED AS OF 6/30/92, THEN UPDATED AS OF 1/1/93.

FILENAME: WSSD\WCIPPR\93-RI\F4TASKS.DWG (RI504C.DWG)

SECTION 9
CONCLUSIONS

It appears that the methods formulated for the present Report are adequate to extract useful parameters from a complex database of information about a highly diverse collection of projects. A number of observations may be made about the results in individual tables.

Table 1 shows that the total number of projects planned for the foreseeable future has stayed nearly constant over the five planning documents analyzed. This observation suggests that as some projects are completed, other projects were added. Actually, later tables show a more substantial turnover among the projects because of large numbers of cancellation not evident in Table 1. The numbers of projects in each category are usually stable with some large changes, such as the quadrupling of the number of projects in HSH from the 88/89 to the 89/90 documents.

Table 2 shows a substantial growth in overall costs from 2.6 billion dollars to nearly 4.6 billion dollars, but the rate of growth is not uniform. Total cost growth was modest in the first years, then there was a large rise in all categories in the 91/92 document. Further growth in 92/93 is the result of adding nearly half a billion dollars more to the CS category. Smaller shifts in the other categories combine for a net decrease, slightly counteracting the rise in CS.

Table 3 depicts the shifting distributions of projects planned to be completed at various times after the date of each planning document. The rise in planned project costs in the 91/92 document was accompanied by a doubling of the number of projects planned to be completed more than five years later. Table 4, the costs associated with these collections of projects, shows that the long term projects in the last two documents are the most expensive, the differential entries for the 00/01 and 01/02 FY's being bigger than the cumulative for 97/98 planned in the 88/89 FY document. Since Table 2 shows that a large part of this growth is in the CS category, evidently the most recently added collection system projects are expected to be both slow and costly.

Table 5 is like Table 1, but for projects planned to be delivered by the end of FY 92/93. Likewise, Table 6 bears the same relation to Table 2: as Table 2 shows the cost for the projects listed in Table 1, Table

6 shows the costs for the projects in Table 5. The shrinkage of the numbers of projects and their associated costs is evident, but it is not possible to tell from these data if the shrinkage is the result of completing projects or because some of them are cancelled or in some way delayed for eventual completion later.

Table 7 is like Table 3, showing the shifting distributions of counts of projects due to be completed by the end of FY 92/93, and Table 8 is like Table 4, since Table 8 shows the costs of the projects in Table 7. One can observe that Table 7 does provide hints of schedule slippage, since the numbers of projects planned for completion in FY 91/92 (the "DIff" entries in that column) rise from 26 to 44 to 59 in successive planning documents, then drops to 48. Correspondingly the "Diff" entries in the 92/93 column rise from 25 to 47.

Table 9 provides more perspective on the results in Table 5 through 8 by counting the numbers of projects that were ever planned to be delivered by the end of FY 92/93 according to successive planning documents and Table 10 shows the costs of the projects in Table 9. Two point are evident here. One is that more than a 1/2 of the projects and roughly 4/5 of the planned costs were already in the 88/89 document that established the current system of categories, and the other is that substantial numbers of projects were added later, so that the lesser numbers of projects in Tables 5 through 8 imply that significant fractions of the total numbers of projects must have been cancelled, or delayed. This impression is strengthen by Table 11, which breaks down the projects in the PID according to their status as of January 1, 1993, or within a few months depending on data availability. We see that only a modest fraction of the projects (less than 1/5) were completed, although doubtless some "In Progress" projects would be completed by the end of the FY, some months later. However, the projects deferred to the "Future" or "On Hold" would not be done by then, and more than a quarter of the projects were cancelled. Table 12 gives the costs for the projects in Table 11.

Since Tables 11 and 12 depict the collection of all projects in the WCIP during these FY's, they are most usefully compared with Tables 1 through 4. We see that the approximate constancy of the numbers of projects shown in Table 1 is explained by the addition of some 200 more projects to take the places of the 220 that were cancelled or completed. Of the projects thus removed from the planning documents, we note that about 3/5 were cancelled, and only 2/5 were completed.

Tables 13 and 14 are like Tables 11 and 12, respectively, but described the projects that were planned to be completed by the end of FY 92/93. They thus show the status as of the beginning of 1993 of the 318 projects in Tables 9 and 10. The pattern seen in Tables 11 and 12 is seen here, also: large numbers of projects "Cancelled," some projects "On Hold" or deferred to the "Future," and many projects still "In Progress," with only a little more than a quarter actually completed.

Further comparing Tables 11 and 12 with 13 and 14 shows that nearly all (85 out of 87) of the projects completed by the beginning of 1993 were projects planned to be completed by the end of FY 92/93, as one would expect, but also that the projects planned for completion by June 30, 1993 are in the majority in the other status classes, except for status "Future." However, the total expenditures on these projects is well below 1/2 of the projected totals of 2.6 to 4.6 billion dollars shown in Table 2. Evidently, the relatively smaller number of projects scheduled for later completion are on the average larger and more expensive. Since Table 7 suggest that the many relatively small projects scheduled for relatively early completion have suffered schedule slippage on the average, these results raise the question of whether similar difficulties are also occurring in the larger ones. Only a more detailed analysis of the "In Progress" projects using information not in the current PID can answer questions like these.

Table 15 consists of three parts. Table 15a is a listing of all the projects completed as of early 1993; Table 15b is a summary of the actual costs for various aspects of these projects and the corresponding planned costs according to the first and last plans containing each project, all listed by category; and Table 15c presents several ratios between quantities in Tables 15b. These ratios provide aggregate measures of the quality of planning. We note that because of imperfections in the data system, some of the data for completed projects are still not available, as shown in Table 15a by "Na" entries and various notes. We first observe that actual construction costs tend to be above bids. Only CS has CON/BID significantly less than 1. Costs in three categories (HFS, PP, and TITP) tend to run 20 to 30% over bids. Planning costs are less than 15% of construction cost, except in the SW category, but all categories except HTP exceed the expected CM/CON ratio of 15%. At SW and TITP the percentages are especially high, at 51 and 64% respectively. The TAE/TPEF and TAE/TPEL ratios measure the accuracy of the monetary estimates made in the planning process, and they show two striking results; one is that in most categories the accuracy of the planning estimates does not improve significantly with time and the other is that in three categories (HSH, PP, and TITP) the typical planned costs of a project is roughly 3 times the actual costs, and often the difference is even greater. These results suggest that there is substantial

room for improvement in the planning process, but this is another area where more information is needed.

Table 16 also consists of three parts. Like Table 15 it shows data for all the projects completed by early 1993, but Table 16 shows duration data. Table 16a lists the planned and actual durations for the design and construction phases of each completed project, and also the total time for both phases. Table 16b lists the difference between the actual and planned durations for each phase of each project, and the ratio of actual over planned times. Table 16c aggregates the data from Table 16b, listing the data by categories. Since the listings of individual projects in Tables 16a and 16b show large numbers of "na" entries for some categories, this table describes only the projects for which numerical values are available. Table 16c shows that on average the projects take substantially longer to complete than is planned, confirming the inferences made from the previous tables. It also shows that the average percentage of delay is highly variable between categories, and that design and construction in a given category may have different average delays. For example at TITP design took more than twice as long as planned, but construction was quite close to schedule. Also because of the greatly differing magnitudes of the categories, the absolute numbers are important. For example, the percentage of delay at HFS is not as large as at LAG, but because HFS is a much larger category, the actual number of months of delay is larger.

The data collected so far suggest the actual progress of the program diverges substantially from program planning in several ways: First, in the cancellation of a large fraction of planned projects; second, large differences between planned and actual costs; and third, in numerous delays of projects that are not cancelled. These results raise the possibility that other information potentially important to management is waiting to be found if more data were gathered and additional analyses are performed. As noted in Section 7, we also believe that if an improved data system were implemented for the WCIP, it would be possible not merely to document and analyze the difficulties of the program but to find ways to overcome these difficulties so that the program can achieve its legally mandated goals and deadlines.

PART 4
APPENDICES

TABLE OF CONTENTS

LIST OF TABLES, FIGURES AND GRAPHS

LIST OF TABLES, GRAPHS AND FIGURES

Tables

C1 Number of Projects Planned to be Completed per Cat pe FY as of 6/30/93 from 1988/89...1992/93 WCIP Planning Document.

D1 Planned Expenditures (x$1000) for the Projects in Table C1 from 1988/89...1992/93 WCIP Planning Document.

C2 Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1989/90...1993/94 WCIP Planning Document.

D2 Planned Expenditures ($1000) for the Projects in Table C2 from 1989/90...1993/94 WCIP Planning Document.

C3 Number of Projects planned to be competed per Cat per FY as of 6/30/93 from 1990/91...1994/95 WCIP Planning Document.

D3 Planned Expenditures (x$1000) for the Projects in Table C3 from 1990/91...1994/95 WCIP Planning Document.

C4 Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1991/92...2000/01 WCIP Planning Document.

D4 Planned Expenditures (x$1000) for the Projects in Table C4 from 1991/92...2000/01 WCIP Planning Document.

C5 Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1991/92...2001/02 WCIP Planning Document.

D5 Planned Expenditures (x$1000) for the Projects in Table C5 from 1992/93...2001/02
WCIP Planning Document.

Figures

SECTION 10
FORMULATIONS FOR SECTION 4

This section gives the full details of the formulas used in calculating the quantities that appear in the tables in Section 4.

10.1 ABSOLUTE AND RELATIVE VALUES

The absolute values are primarily taken directly from the PID. The relative values are computed by dividing those absolute values by the total number of projects for each year or each category and converting those fractions into percentages. The percentage are rounded to the nearest integer.

10.2 PROCEDURES FOR EXPENDITURE BREAKDOWN

This section discusses briefly the methodology used to figure out expenditure breakdowns for the WCIP projects that have been delivered. Presently, there are two types of expenditures, a) City costs and b) consultant costs.

The City costs include three accounts: FAP, FACM, and R/W that are defined in Section 1.1. Also defined in the same section, are the consultant costs that include three accounts: CTP, CTCM, and CON.

The document "Cost Ledger Summary of Work Orders, "abbreviated
M26", distributed by the Bureau of Accounting at the end of each month, is the source of the data used for the aforementioned breakdowns. Each page of the document has ten columns:

Column 1, titled "TOTAL COSTS" gives total expenditures;

Column 2, titled "TOTAL CREDIT" is for expenditure adjustments;

Columns 3 to 9, titled under City's various Departments and Bureaus, give their related expenditures;

and

Column 10, titled "OTHERS" gives non-city expenditures.

10.2a Procedures for the Completed Projects

For the application of the procedures to each completed project, two volumes of M-26 have been used: one that gives costs of the project as of the bid and award date, another that represents the costs as of the completion date. It should therefore be noted that all the costs before the bid and award date are planning and design related; the expenditures after bid and award date are taken to be construction related. It should also be mentioned that some City offices may divide design and construction expenditures at the notice to proceed instead of the bid and award date. Since the notice to proceed usually comes only a month or two after the bid and award date and since little is usually done between the two dates, the difference in the two methods of classifying the costs is usually negligible.

The following summarizes the procedures used for cost breakdown for a completed project:

Step 1. Search for the project bid and award date from Project Status Report (PSR). This date should be rounded off to the end of the month in order to select M-26 when it is available.

Step 2. Search for two volumes of M-26, one as of the bid and award date, the other as of 8/31/92. If the documents that would correspond to bid and award date are not available, one can use the documents for the nearest subsequent date.

Step 3. Using the work order number (W.O #), search for the related costs in the two documents. From the document as of the B&A date, we have:

EQ.1 Column 1 = Total costs (B&A) = FAP+CTP

EQ.2 Sum of Column 3 to 9 = FAP

EQ.3 Column 10 = CTP

From M-26 as of 8/31/92, we have:

EQ.4 Col.1 = Tot costs(8/31)=FAP+CTP+R/W+CON+CTCM+FACM

EQ.5 Sum of Column 3 to 9 = FAP + R/W + FACM

EQ.6 Column 10 = CON + CTCM + CTP

Step 4. In general R/W = 0. Thus

EQ.7 EQ.5 - EQ.2 = FACM

EQ.8 EQ.6 - EQ.3 = CON + CTCM

Step 5. From the 6/30/92 PSR document, we have the construction costs, that is CON. This gives

EQ.8 - CON = CTCM.

Thus, all the cost components for the completed project are identified: FAP, CTP, FACM, CON, CTCM.

EXAMPLE 1:

Project Name: LAG Additional Chlorine Contact Tank

W.O.#: EXX 31388

Date of Completion: 6/30/92 (M26 as of 8/31/92)

Step 1. Bid and Award date is 5/26/89, but we use 5/30/92 from PSR of 6/30/92, see Appendix Subsection 13.3a.

Step 2. M-26 as of 5/30/89, see Appendix Subsection 13.3a, continue 1, and M-26 as of 8/31/92, see Appendix Subsection 13.3a, continue 2.

Step 3. From the document M-26 as of 5/30/89:

EQ.1 Column 1 = $ 652,678 = FAP + CTP

EQ.2 Sum of Column 3 to 9 = $ 652,001 = FAP

EQ.3 Column 10 = $ 677 = CTP

From the document M-26 as of 8/31/92, we have:

EQ.4 Col. 1=$ 5,676,240=FAP+CTP+R/W+CON+CTCM+FACM

EQ.5 Sum of Column 3 to 9: $ 1,792,653 = FAP+R/W+FACM

EQ.6 Column 10: $ 3,883,587 = CON + CTCM + CTP

Step 4. In general, R/W = 0. Thus

EQ.7 EQ.5 - EQ.2 = 1,792,653-652,001 = $1,140,652 = FACM

EQ.8 EQ.6 - EQ.3 = 3,883,587-677 = $ 3,882,910 = CON+CTCM

Step 5. From the 6/30/92 PSR document, we have the construction costs, that is CON. This gives

CON = $ 3,838,154

EQ.8 - CON = 3,882,910 - 3,838,154 = $ 44,756 = CTCM

Consequently, all cost components for this project have been identified:

FAP = $ 652,001

FACM = $ 1,140,652

R/W = $ 0

CTP = $ 677

CTCM = $ 44,756

CON = $ 3,838,154

Notes:
1. If completed projects do not have the construction phase, CON = 0. This simplifies the cost breakdown processes
2. The above methodology applies only to the completed projects. For the projects that are in progress, the breakdowns are slightly different.

10.2b Procedures for the Projects in Progress

For the projects that are in progress, we can distinguish two different cases using the date 6/30/92 as a base line for the presence.

1. Case 1: Bid and Award date was before 6/30/92.

In order to determine all cost components FAP, FACM, CTP, CON, CTCM and R/W, we follow the same methodology as mentioned above, but:

a. FAP and CTP accounts indicate final costs.
b. CON, CTCM, and FACM accounts indicate the costs as of 6/30/92.

2. Case 2: Bid and Award date will be after 6/30/92.

The cost breakdown procedure is the same as case 1, but,

a. FAP and CTP accounts indicate design costs as of 6/30/92.
b. No costs for CON, CTCM, and FACM as of 6/30/92 because the bid and award has not occurred yet.

10.3 TOTALS, DIFFERENCES AND RATIOS

For each completed project the costs are added to determine both the total actual cost and the total planned cost as of the first and last years for which the project appears in the planning documents. They breakdown expenditures for planning and construction for both the city and consultants are also shown. The estimates and the actual costs are compared by computing the difference and the ratio of the costs and the total time for each project. These formulations are then aggregated into the related category. After data analysis for all categories are completed the same formulations could be applied to the whole program. This makes possible comparisons over a range of scales, that is, from project to category to whole program.

SECTION 11

HARD COPIES OF WSSD WCIP PRELIMINARY DATABASE

11.1 Source of Data for the Main Planning Tables

The sources of the date in the following tables are the different WCIP documents since FY 1988/89. The data is arranged in the tables by category and by fiscal year. The information here is used in the tables in Part 3.

11.1a TABLES Ai, i=1,...,5

11.1b TABLES Bi, i=1,...,5

11.1c TABLES Ci, i=1,...,4

11.1d TABLES Di, i=1,...,4

11.1a Tables Ai, Bi, i= 1, ... , 5.

TABLE A1. Number of Projects Planned to be Delivered per Cat per FY from 1988/89 ... 1992/93 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Tot per FY for all cats
88/89	8	1	7	11	1	1	4	5	3	41
89/90	4	4	1	6	3	4	1	5	4	32
90/91	5	4	1	10	4	4	7	5	7	47
91/92	5	1	0	5	3	0	5	3	4	26
92/93	8	4	1	1	1	2	1	6	1	25
.										
.										
.										
97/98	11	18	0	2	3	0	6	0	0	40
Tot per cat For all FYs	41	32	10	35	15	11	24	24	19	211

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The information in this table covers only the planning document issued for FY 1988/89.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE B1. Planned Expenditures (x $1000) for the Projects in Table A1 from 1988/89 ... 1992/93 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
88/89	3,156	3,888	224	270	596	800	1,500	730	865	
	2,849		1,700	3,460			500	950	150	
	2,691		46,371	630			950	624	390	
	2,405		650	4,570			400	840		
	460		86,321	714				860		
	655		1,000	608						
	6,795		8,378	1,105						
	221			1,223						
				461						
				826						
				1,000						Tot for FY 88/89 for all cats
Total	19,232	3,888	144,644	14,867	596	800	3,350	4,004	1,405	192,786
89/90	964	6,846	5,088	4,941	2,620	5,892	1,100	3,308	2,400	
	6,100	10,365		3,651	452	3,127		1,881	4,080	
	1,500	3,205		2,434	2,295	607		2,493	490	
	500	10,985		1,483		3,355		105	780	
				1,056				660		
				1,520						Tot for FY 89/90 for all cats
Total	9,064	31,401	5,088	15,085	5,367	12,981	1,100	8,447	7,750	96,283
90/91	858	2,090	6,700	2,130	550	2,870	1,942	2,800	1,200	
	7,324	17,665		710	2,143	88	3,640	635	4,440	
	185	1,430		4,177	4,402	8,866	5,550	6,549	3,400	
	1,480	32,009		277	440	4,808	1,440	2,554	800	
	2,513			2,406			1,080	3,990	1,500	
				2,443			110		78,338	
				546			12,000		6,302	
				868						
				332						
				5,340						Tot for FY 90/91 for all cats
Total	12,360	53,194	6,700	19,229	7,535	16,632	25,762	16,528	95,979	253,920
91/92	934	31,306		6,637	3,692		979	421	600	
	1,546			1,620	1,562		3,780	15,978	12,000	
	2,322			7,488	2,242		31,490	824	420	
	776			36,971			8,400		9,500	
	397			4,100			301			Tot for FY 91/92 for all cats
Total	5,975	31,306	0	56,816	7,496	0	44,950	17,223	22,520	186,286

CONTINUE NEXT PAGE

CONTINUE, 1988/89 ... 1992/93 Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
92/93	4,450	19,339	15,075	1,000	1,496	30,040	34,000	2,390	1,020	
	1,513	107,216				7,650		2,492		
	146,100	12,422						4,613		
	25,330	2,000						50,118		
	3,603							10,260		
	3,372							10,600		
	406									
	1,200									Tot for FY 92/93 for all cats
Total	185,974	140,977	15,075	1,000	1,496	37,690	34,000	80,473	1,020	497,705
.										
.										
.										
97/98	6,897	68,120		9,995	8,560		896			
(Required	38,395	58,464		13,900	79,488		2,260			
in later	12,000	39,770			11,500		510			
years)	2,350	14,000					6,000			
	13,309	312,515					25,000			
	16,200	4,212					5,400			
	2,280	9,004								
	2,092	213,795								
	34,713	9,200								
	40,135	9,760								
	34,000	67,660								
		45,100								
		500								
		1,050								
		47,793								
		3,000								
		65,195								
		53,000								Tot for Remaining FYs for all cats
Total	202,371	1,022,138	0	23,895	99,548	0	40,066	0	0	1,388,018

Tot per cat for all FYs										Tot for all FYs for all cats
	434,976	1,282,904	171,507	130,892	122,038	68,103	149,228	126,675	128,674	2,614,998

NOTATIONS

Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES

1. The last column of the spreedsheets of 88/89 ... 92/93 Planning Document, titled "Required in later years" is assumed to cover the remaining 5 years, from 92/93 to 97/98, for a 10 year program.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE A2. Number of Planned Projects to be Delivered per Cat per FY from 1989/90 ... 1993/94 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Tot per FY for all cats
89/90	4	4	7	7	1	0	6	2	2	33
90/91	4	4	12	8	3	3	5	7	3	49
91/92	4	2	12	5	3	2	2	6	8	44
92/93	5	2	3	0	3	2	4	4	3	26
93/94	9	3	3	0	0	0	1	3	0	19
.										
.										
.										
98/99	11	7	3	0	1	1	6	2	0	31
Tot per cat for all FYs	37	22	40	20	11	8	24	24	16	202

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The information in this table covers only the planning document issued for FY 1989/90.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE B2. Planned Expenditures (x $1000) for the Projects in Table A2 from 1989/90 ... 1993/94 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
89/90	2,650	8,046	150	1,923	517		2,902	660	130	
	1,602	771	1,670	1,008			825	231	723	
	375	10,950	950	449			400			
	19	3,205	51,028	4,600			95			
			8,001	1,015			2,100			
			175	496			1,500			
			2,000	111						Tot for FY 89/90 for all cats
Total	4,646	22,972	63,974	9,602	517	0	7,822	891	853	111,277
90/91	964	5,200	100	4,034	5,173	6,138	1,100	1,196	360	
	646	3,018	500	2,239	2,494	3,241	1,480	1,210	3,510	
	450	1,730	1,000	1,201	1,610	858	1,080	5,770	67,829	
	6,795	36,009	200	1,600			375	1,800		
			2,400	778			355	871		
			600	2,902				3,450		
			500	546				2,493		
			1,500	5,340						
			250							
			3,000							
			2,200							
			100							Tot for FY 90/91 for all cats
Total	8,855	45,957	12,350	18,640	9,277	10,237	4,390	16,790	71,699	198,195
91/92	6,100	4,150	3,450	1,620	7,031	14,071	5,529	389	619	
	7,324	36,282	3,651	8,113	4,394	4,950	1,800	1,635	2,476	
	2,513		800	38,186	440			1,203	4,710	
	1,173		1,000	1,271				1,048	2,480	
			1,000	2,109				701	433	
			2,690					5,366	2,300	
			1,325						6,302	
			2,575						3,770	
			1,200							
			5,100							
			500							
			5,250							Tot for FY 91/92 for all cats
Total	17,110	40,432	28,541	51,299	11,865	19,021	7,329	10,342	23,090	209,029
92/93	858	109,031	2,100		567	660	5,910	570	3,720	
	158,100	14,406	3,550		3,773	34,612	7,157	1,523	8,060	
	1,069		2,300		2,264		3,505	945	4,210	
	3,372						8,400	3,883		
	1,200									Tot for FY 92/93 for all cats
Total	164,599	123,437	7,950	0	6,604	35,272	24,972	6,921	15,990	385,745

CONTINUE NEXT PAGE

CONTINUE, 1989/90 ... 1993/94 Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
93/94	1,296	59,066	10,000				54,740	6,139		
	306	600	8,000					43,440		
	934	70,620	16,500					10,260		
	624									
	39,356									
	4,450									
	2,092									
	3,603									
	532									Tot for FY 93/94 for all cats
Total	53,193	130,286	34,500	0	0	0	54,740	59,839	0	332,558
.	64,000	97,660	20,000		89,680	62,675	2,260	13,891		
.	11,250	5,500	70,700				896	1,907		
.	6,897	162,700	165,000				510			
98/99	4,216	39,770					9,200			
(Required	60,650	13,710					2,761			
in later	46,139	379,349					45,000			
years)	26,995	25,763								
	34,713									
	84,000									
	2,296									Tot for remaining FYs for all cats
	50,403									
Total	391,559	724,452	255,700	0	89,680	62,675	60,627	15,798	0	1,600,491
Tot per cat for all FYs	639,962	1,087,536	403,015	79,541	117,943	127,205	159,880	110,581	111,632	Tot for all FYs for all cats 2,837,295

NOTATIONS

Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES

1. The last column of the spreedsheets of 89/90 ... 93/94 Planning Document, titled "Required in later years" is assumed to cover the remaining 5 years, from 93/94 to 98/99, for a 10 year program.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE A3. Number of Planned Projects to be Delivered per Cat per FY from 1990/91 ... 1994/95 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Tot per FY for all cats
90/91	3	3	13	6	6	1	3	6	3	44
91/92	10	5	14	5	2	3	4	6	10	59
92/93	6	3	4	6	3	2	2	3	5	34
93/94	9	4	2	0	0	4	1	6	0	26
94/95	4	0	2	0	0	0	7	0	0	13
.										
.										
.										
99/00	8	6	2	0	1	1	1	1	0	20
Tot per cat for all FYs	40	21	37	17	12	11	18	22	18	196

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The infromation in this table covers only the planning document issued for FY 1990/91.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE B3. Planned Expenditures (x $1000) for the Projects in Table A3 from 1990/91 ... 1994/95 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
90/91	1,602	5,100	1,372	240	5,193	888	20,000	2,200	116	
	420	36,009	100	211	200		260	310	140	
	945	4,087	150	225	383		2,100	494	66,178	
			500	1,370	700			4,677		
			1,325	1,060	650			635		
			200	1,200	1,420			231		
			600							
			500							
			1,500							
			4,420							
			9,000							
			2,700							
			2,514							Tot for FY 90/91 for all cats
Total	2,967	45,196	24,881	4,306	8,546	888	22,360	8,547	66,434	184,125
91/92	1,029	5032	1,670	1,604	350	5,824	355	826	1,370	
	6,018	4493	1,000	2,236	3,992	4,717	1,037	2,768	2,160	
	7,300	2810	2,690	2,100		954	1,800	680	360	
	712	4150	2,575	546			1,480	4,880	535	
	525	1730	1,200	5,475				2,700	3,100	
	250		1,000					132	6,540	
	6,795		2,400						3,620	
	2,012		7,061						620	
	919		250						2,950	
	139		1,600						14,017	
			3,276							
			5,978							
			1,920							
			300							Tot for FY 91/92 for all cats
Total	25,699	18,215	32,920	11,961	4,342	11,495	4,672	11,986	35,272	156,562
92/93	298	7,529	3,550	12,886	6,802	7,860	8,035	1,855	2,520	
	956	112,031	500	3,737	7,520	15,071	4,255	90	609	
	142,368	66,350	11,932	38,069	750			234	9,300	
	1,981		7,030	1,045					4,210	
	2,784			592					5,343	Tot for FY 92/93 for all cats
	2,186			1,600						
Total	150,573	185,910	23,012	57,929	15,072	22,931	12,290	2,179	21,982	491,878
93/94	20,000	4,200	16,500			2,230	86,740	2,425		
	934	55,032	2,300			6,500		7,795		
	6,000	61,800				5,840		4,880		
	4,420	600				10,290		750		
	7,658							2,016		
	3,389							6,200		
	3,107									
	740									
	2,313									Tot for FY 93/94 for all cats
Total	48,561	121,632	18,800	0	0	24,860	86,740	24,066	0	324,659

CONTINUE NEXT PAGE

CONTINUE, 1990/91 ... 1994/95 Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
94/95	1,590		15,115				3,402			
	5,700		23,651				15,000			
	773						5,669			
	3,296						1,312			
							7,565			
							530			Tot for FY 94/95 for all cats
							2,161			
Total	11,359	0	38,766	0	0	0	35,639	0	0	85,764
.	10,230	87,860	86,079		103,760	79,740	1,370	50,103		
.	7,527	52,844	246,272							
.	63,420	25,660								
99/00	51,946	416,675								
(5 Year	217,805	20,942								
Program	29,300	95,884								
Carryover)	28,209									Tot for remaining FYS for all cats
	1,550									
Total	409,987	699,865	332,351	0	103,760	79,740	1,370	50,103	0	1,677,176
Tot per cat for all FYs	649,146	1,070,818	470,730	74,196	131,720	139,914	163,071	96,881	123,688	Tot for all FYs for all cats 2,920,164

NOTATIONS

Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES

1. The last column of the spreedsheets of 90/91 ... 94/95 Planning Document, titled "5 Year Program Carryover" is assumed to cover the remaining 5 years, from 94/95 to 99/00, for a 10 year program.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE A4. Number of Planned Projects to be Delivered per Cat per FY from 1991/92 ... 2000/01 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Tot per FY for all cats
91/92	7	5	1	8	5	3	5	3	11	48
92/93	8	3	2	11	6	1	3	7	6	47
93/94	6	5	3	4	0	4	4	3	3	32
94/95	5	3	2	2	0	1	1	3	1	18
95/96	5	0	5	0	0	0	3	1	0	14
.										
.										
.										
00/01	12	10	8	1	4	1	3	4	1	44
Tot per cat for all FYs	43	26	21	26	15	10	19	21	22	203

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The information in this table covers only the planning document issued for FY 1991/92.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE B4. Planned Expenditures (x $1000) for the Projects in Table A4 from 1991/92 ... 2000/01 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
91/92	2,650	2,848	8,496	216	730	5,824	300	2,800	1,885	
	712	36,009		211	200	5,299	2,064	635	3,100	
	945	4,087		2,236	522	1,659	1,069	167	577	
	250	391		962	156		20,000		149	
	6,795	285		325	4,257		2,100		8,480	
	2,136			2,279					5,300	
	944			155					116	
				6,468					551	
									66,178	
									315	Tot for FY 91/92 for all cats
									171	
Total	14,432	43,620	8,496	12,852	5,865	12,782	25,533	3,602	86,822	214,004
92/93	1,114	3,854	4,460	688	2,703	6,620	2,430	1,004	784	
	5,350	4,026	8,762	2,226	281		14,772	110	1,490	
	2,830	4,934		34,891	1,637		2,975	3,341	632	
	977			3,400	7,062			95	9,300	
	579			1,572	7,670			1,130	4,210	
	142,368			325	1,950			248	310	
	1,981			950				13,850		
	262			2,170						
				1,492						
				960						Tot for FY 92/93 for all cats
				240						
Total	155,461	12,814	13,222	48,914	21,303	6,620	20,177	19,778	16,726	315,015
93/94	2,325	6,260	4,045	13799		8,060	5,777	120	2,160	
	7,658	1,969	4,549	2446		31,250	1,125	2,016	3,720	
	2,891	134,312	7,332	958		8,110	3,635	6,300	7,349	
	2,288	66,350		2475		17,370	11,900			
	3,394	41,196								Tot for FY 93/94 for all cats
	2,420									
Total	20,976	250,087	15,926	19,678	0	64,790	22,437	8,436	13,229	415,559
94/95	1,530	6,500	18,097	3,250		34,300	2,145	3,200	800	
	4,820	1,150	10,890	2,300				3,720		
	4,904	281,252						1,980		
	4,440									Tot for FY 94/95 for all cats
	7,501									
Total	23,195	288,902	28,987	5,550	0	34,300	2,145	8,900	800	392,779

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CONTINUE, 1991/92 ... 2000/01 Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
95/96	23,378		7,495				2,100	5,620		
	9,500		1,327				300			
	8,822		23,465				95,230			
	5,268		5,603							
	1,203		4,300							Tot for FY 95/96 for all cats
Total	48,171	0	42,190	0	0	0	97,630	5,620	0	193,611
.	3,168	163,795	16,994	45,500	9,100	59,307	10,105	3,225	26,000	
.	17,670	1,163	160,936		18,987		2,296	15,600		
.	934	19,500	39,050		145,820		770	47,106		
00/01	11,000	50,344	114,388		7,340			990		
	1,240	88,223	20,385							
	79,641	31,500	250,429							
	2,460	296,876	35,119							
	94,400	6,258	74,438							
	329,468	20,581								
	186,000	65,487								
	34,200									Tot for remaining FYs for all cats
	28,589									
Total	788,770	743,727	711,739	45,500	181,247	59,307	13,171	66,921	26,000	2,636,382

Tot per cat for all FYs										Tot for all FYs for all cats
	1,051,005	1,339,150	820,560	132,494	208,415	177,799	181,093	113,257	143,577	4,167,350

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE A5. Number of Planned Projects to be Delivered per Cat per FY from 1992/93 ... 2001/02 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	Tot per FY for all cats
92/93	6	3	5	4	6	2	4	7	6	43
93/94	10	4	1	9	1	10	3	3	6	47
94/95	5	4	5	4	1	12	2	4	2	39
95/96	0	0	4	0	1	1	3	1	1	11
96/97	4	5	1	0	1	0	1	1	0	13
.										
.										
.										
01/02	15	4	7	1	3	1	3	4	2	40
Tot per cat for all FYs	40	20	23	18	13	26	16	20	17	193

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The information in this table covers only the planning document issued for FY 1992/93.

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1a Continue.

TABLE B5. Planned Expenditures (x $1000) for the Projects in Table A5 from 1992/93 ... 2001/02 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
92/93	2,456	6154	2,690	401	325	6,740	2,064	1,170	355	
	712	4934	125	34,891	561	588	20,000	1,640	155	
	4,420	3689	8,256	377	200		2,739	97	173	
	1,981		125	2,170	960		2,850	4,150	940	
	142,368		9,648		1,950			1,290	80	
	99				135			250	310	Tot for FY 92/93 for all cats
								600		
Total	152,036	14,777	20,844	37,839	4,131	7,328	27,653	9,197	2,013	275,817
93/94	920	7,020	100	2,140	3,040	852	5,787	1,350	2,160	
	260	5,730		1,395		1,182	1,125	14,720	1,490	
	7,700	106,669		14,440		6,607	3,685	690	8,980	
	977	66,774		4,229		500			275	
	579			105		2,080			4,070	
	1,364			253		1,389			551	
	4,558			2,112		1,659				
	3,600			1,920		2,218				
	7,200			2,475		3,696				Tot for FY 93/94 for all cats
	262					1,735				
Total	27,420	186,193	100	29,068	3,040	21,918	10,597	16,760	17,526	312,622
94/95	7,282	2,186	11,978	19,707	8,196	736	2,145	130	747	
	23,350	6,500	4,033	3,695		7,000	14,585	3,220	7,497	
	2,961	238,981	20,286	3,250		4,096		3,720		
	1,152	54,261	5,203	1,190		4,418		1,980		
	8,440		6,219			3,389				
						4,568				
						991				
						1,056				
						1,251				
						6,319				
						4,510				Tot for FY 94/95 for all cats
						3,141				
Total	43,185	301,928	47,719	27,842	8,196	41,475	16,730	9,050	8,244	504,369
95/96			7,376		8,789	21,008	2,502	5,640	3,700	
			1,836				2,100			
			22,469				300			
			3,926							Tot for FY 95/96 for all cats
Total	0	0	35,607	0	8,789	21,008	4,902	5,640	3,700	79,646

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CONTINUE, 1992/93 ... 2001/02 Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TITP	TWRP	
96/97	20,000	963	20,385		7,340		107,130	19,850		
	21,000	50,344								
	12,421	102,740								
	11,000	18,067								
		106,947								Tot for FY 96/97 for all cats
Total	64,421	279,061	20,385	0	7,340	0	107,130	19,850	0	498,187
.	3,888	163,795	13,852	52,000	9,100	9,306	10,305	3,225	29,250	
.	17,756	19,500	163,050		2,820		2,296	19,500	47,000	
.	26,150	31,500	39,050		185,530		770	49,600		
01/02	639,021	305,408	116,605					990		
	24,200		261,096							
	1,360		38,570							
	114,894		74,438							
	7,400									
	70,950									
	9,828									
	186,000									
	27,789									
	9,280									
	85,070									Tot for remaining FYs for all cats
	9,322									
Total	1,232,908	520,203	706,661	52,000	197,450	9,306	13,371	73,315	76,250	2,881,464
Tot per cat for all FYs	1,519,970	1,302,162	831,316	146,749	228,946	101,035	180,383	133,812	107,733	Tot for all FYs for all cats 4,552,105

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES

File Name: WSSD\WCIPPR\93-R1\TAiBiPCE.WQ1

11.1b Tables Ci, Di, i=1, ... , 5.

TABLE C1. Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1988/89 ... 1992/93 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	Tot per FY for all cats
88/89	8	1	7	11	1	1	4	5	3	41
89/90	4	4	1	6	3	4	1	5	4	32
90/91	5	4	1	10	4	4	7	5	7	47
91/92	5	1	0	5	3	0	5	3	4	26
92/93	8	4	1	1	1	2	1	6	1	25
Tot per cat for 5 FYs	30	14	10	33	12	11	18	24	19	171

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The data reflect the planning document as of 6/30/93.

File Name: WSSD\WCIPPR\93-R1\TCiDiPCE.WQ1

11.1b Continue.

TABLE D1. Planned Expenditures (x $1000) for the Projects in Table C1 from 1988/89 ... 1992/93 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	
88/89	3,156	3,888	224	270	596	800	1,500	730	865	
	2,849		1,700	3,460			500	950	150	
	2,691		46,371	630			950	624	390	
	2,405		650	4,570			400	840		
	460		86,321	714				860		
	655		1,000	608						
	6,795		8,378	1,105						
	221			1,223						
				461						
				826						Tot for FY 88/89 for all cats
				1,000						
Total	19,232	3,888	144,644	14,867	596	800	3,350	4,004	1,405	192,786
89/90	964	6,846	5,088	4,941	2,620	5,892	1,100	3,308	2,400	
	6,100	10,365		3,651	452	3,127		1,881	4,080	
	1,500	3,205		2,434	2,295	607		2,493	490	
	500	10,985		1,483		3,355		105	780	
				1,056				660		Tot for FY 89/90 for all cats
				1,520						
Total	9,064	31,401	5,088	15,085	5,367	12,981	1,100	8,447	7,750	96,283
90/91	858	2,090	6,700	2,130	550	2,870	1,942	2,800	1,200	
	7,324	17,665		710	2,143	88	3,640	635	4,440	
	185	1,430		4,177	4,402	8,866	5,550	6,549	3,400	
	1,480	32,009		277	440	4,808	1,440	2,554	800	
	2,513			2,406			1,080	3,990	1,500	
				2,443			110		78,338	
				546			12,000		6,302	
				868						
				332						Tot for FY 90/91 for all cats
				5,340						
Total	12,360	53,194	6,700	19,229	7,535	16,632	25,762	16,528	95,979	253,920
91/92	934	31,306		6,637	3,692		979	421	600	
	1,546			1,620	1,562		3,780	15,978	12,000	
	2,322			7,488	2,242		31,490	824	420	
	776			36,971			8,400		9,500	Tot for FY 91/92 for all cats
	397			4,100			301			
Total	5,975	31,306	0	56,816	7,496	0	44,950	17,223	22,520	186,286
92/93	4,450	19,339	15,075	1,000	1,496	30,040	34,000	2,390	1,020	
	1,513	107,216				7,650		2,492		
	146,100	12,422						4,613		
	25,330	2,000						50,118		
	3,603							10,260		
	3,372							10,600		
	406									Tot for FY 92/93 for all cats
	1,200									
Total	185,974	140,977	15,075	1,000	1,496	37,690	34,000	80,473	1,020	497,705
Tot per cat for 5 FYs	232,605	260,766	171,507	106,997	22,490	68,103	109,162	126,675	128,674	Tot for 5 FYs for all cats 1,226,980

11.1b Continue.

TABLE C2. Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1989/90 ... 1993/94 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTIP	TWRP	Tot per FY for all cats
89/90	4	4	7	7	1	0	6	2	2	33
90/91	4	4	12	8	3	3	5	7	3	49
91/92	4	2	12	5	3	2	2	6	8	44
92/93	5	2	3	0	3	2	4	4	3	26
Tot per cat for 4 FYs	17	12	34	20	10	7	17	19	16	152

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The data reflect the planning document as of 6/30/93.

File Name: WSSD\WCIPPR\93-R1\TCiDiPCE.WQ1

11.1b Continue.

TABLE D2. Planned Expenditures (x $1000) for the Projects in Table C2 from 1989/90 ... 1993/94 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	
89/90	2,650	8,046	150	1,923	517		2,902	660	130	
	1,602	771	1,670	1,008			825	231	723	
	375	10,950	950	449			400			
	19	3,205	51,028	4,600			95			
			8,001	1,015			2,100			
			175	496			1,500			
			2,000	111						Tot for FY 89/90 for all cats
Total	4,646	22,972	63,974	9,602	517	0	7,822	891	853	111,277
90/91	964	5,200	100	4,034	5,173	6,138	1,100	1,196	360	
	646	3,018	500	2,239	2,494	3,241	1,480	1,210	3,510	
	450	1,730	1,000	1,201	1,610	858	1,080	5,770	67,829	
	6,795	36,009	200	1,600			375	1,800		
			2,400	778			355	871		
			600	2,902				3,450		
			500	546				2,493		
			1,500	5,340						
			250							
			3,000							
			2,200							
			100							Tot for FY 90/91 for all cats
Total	8,855	45,957	12,350	18,640	9,277	10,237	4,390	16,790	71,699	198,195
91/92	6,100	4,150	3,450	1,620	7,031	14,071	5,529	389	619	
	7,324	36,282	3,651	8,113	4,394	4,950	1,800	1,635	2,476	
	2,513		800	38,186	440			1,203	4,710	
	1,173		1,000	1,271				1,048	2,480	
			1,000	2,109				701	433	
			2,690					5,366	2,300	
			1,325						6,302	
			2,575						3,770	
			1,200							
			5,100							
			500							
			5,250							Tot for FY 91/92 for all cats
Total	17,110	40,432	28,541	51,299	11,865	19,021	7,329	10,342	23,090	209,029
92/93	858	109,031	2,100		567	660	5,910	570	3,720	
	158,100	14,406	3,550		3,773	34,612	7,157	1,523	8,060	
	1,069		2,300		2,264		3,505	945	4,210	
	3,372						8,400	3,883		
	1,200									Tot for FY 92/93 for all cats
Total	164,599	123,437	7,950	0	6,604	35,272	24,972	6,921	15,990	385,745
Tot per cat for 4 FYs	195,210	232,798	112,815	79,541	28,263	64,530	44,513	34,944	111,632	Tot for 4 FYs for all cats 904,246

11.1b Continue.

TABLE C3. Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1990/91 ... 1994/95 WCIP Planning Document.

FY	CS	HPS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	Tot per Fy for all cats
90/91	3	3	13	6	6	1	3	6	3	44
91/92	10	5	14	5	2	3	4	6	10	59
92/93	6	3	4	6	3	2	2	3	5	34
Tot per cat for 3 FYs	19	11	31	17	11	6	9	15	18	137

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The data reflect planning document as of 6/30/93.

File Name: WSSD\WCIPPR\93-R1\TCiDiPCE.WQ1

11.1b Continue.

TABLE D3. Planned Expenditures (x $1000) for the Projects in TABLE C3 from 1990/91 ... 1994/95 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	
90/91	1,602	5,100	1,372	240	5,193	888	20,000	2,200	116	
	420	36,009	100	211	200		260	310	140	
	945	4,087	150	225	383		2,100	494	66,178	
			500	1,370	700			4,677		
			1,325	1,060	650			635		
			200	1,200	1,420			231		
			600							
			500							
			1,500							
			4,420							
			9,000							
			2,700							Tot for FY 90/91 for all cats
Total	2,967	45,196	24,881	4,306	8,546	888	22,360	8,547	66,434	184,125
91/92	1,029	5032	1,670	1,604	350	5,824	355	826	1,370	
	6,018	4493	1,000	2,236	3,992	4,717	1,037	2,768	2,160	
	7,300	2810	2,690	2,100		954	1,800	680	360	
	712	4150	2,575	546			1,480	4,880	535	
	525	1730	1,200	5,475				2,700	3,100	
	250		1,000					132	6,540	
	6,795		2,400						3,620	
	2,012		7,061						620	
	919		250						2,950	
	139		1,600						14,017	
			3,276							
			5,978							
			1,920							
			300							Tot for FY 91/92 for all cats
Total	25,699	18,215	32,920	11,961	4,342	11,495	4,672	11,986	35,272	156,562
92/93	298	7,529	3,550	12,886	6,802	7,860	8,035	1,855	2,520	
	956	112,031	500	3,737	7,520	15,071	4,255	90	609	
	142,368	66,350	11,932	38,069	750			234	9,300	
	1,981		7,030	1,045					4,210	
	2,784			592					5,343	Tot for FY 92/93 for all cats
	2,186			1,600						
Total	150,573	185,910	23,012	57,929	15,072	22,931	12,290	2,179	21,982	491,878
Tot per cat for 3 FYs	179,239	249,321	80,813	74,196	27,960	35,314	39,322	22,712	123,688	Tot for 3 FYs for all cats 832,565

11.1b Continue.

TABLE C4. Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1991/92 ... 2000/01 WCIP Planning Document.

	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	Tot per FY for all cats
FY										
91/92	7	5	1	8	5	3	5	3	11	48
92/93	8	3	2	11	6	1	3	7	6	47
Tot per cat for 2 FY	15	8	3	19	11	4	8	10	17	95

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The data reflect planning document as of 6/30/93.

File Name: WSSD\WCIPPR\93-R1\TCiDiPCE.WQ1

11.1b Continue.

TABLE D4. Planned Expenditures (x $1000) for the Projects in TABLE C4 from 1991/92 ... 2000/01 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	
91/92	2,650	2,848	8,496	216	730	5,824	300	2,800	1,885	
	712	36,009		211	200	5,299	2,064	635	3,100	
	945	4,087		2,236	522	1,659	1,069	167	577	
	250	391		962	156		20,000		149	
	6,795	285		325	4,257		2,100		8,480	
	2,136			2,279					5,300	
	944			155					116	
				6,468					551	
									66,178	
									315	Tot for FY 91/92 for all cats
									171	
Total	14,432	43,620	8,496	12,852	5,865	12,782	25,533	3,602	86,822	214,004
92/93	1,114	3,854	4,460	688	2,703	6,620	2,430	1,004	784	
	5,350	4,026	8,762	2,226	281		14,772	110	1,490	
	2,830	4,934		34,891	1,637		2,975	3,341	632	
	977			3,400	7,062			95	9,300	
	579			1,572	7,670			1,130	4,210	
	142,368			325	1,950			248	310	
	1,981			950				13,850		
	262			2,170						
				1,492						
				960						Tot for FY 92/93 for all cats
				240						
Total	155,461	12,814	13,222	48,914	21,303	6,620	20,177	19,778	16,726	315,015

Tot per cat for 2 FY's										Tot for 2 FY for all cats
	169,893	56,434	21,718	61,766	27,168	19,402	45,710	23,380	103,548	529,019

11.1b Continue.

TABLE C5. Number of Projects Planned to be Completed per Cat per FY as of 6/30/93 from 1991/92 ... 2001/02 WCIP Planning Document.

	CS	HFS	HSH	HTP	LAG	PP	SW	TTIP	TWRP	Tot per FY for all cats
FY										
92/93	6	3	5	4	6	2	4	7	6	43
Tot per cat for 1 FY	6	3	5	4	6	2	4	7	6	43

NOTATIONS
Cat: Category; FY: Fiscal Year; Tot: Total.

NOTES
1. The data reflect planning document as of 6/30/93.

File Name: WSSD\WCIPPR\93-R1\TCiDiPCE.WQ1

11.1b Continue.

TABLE D5. Planned Expenditures (x $1000) for the Projects in TABLE C5 from 1992/93 ... 2001/02 WCIP Planning Document.

FY	CS	HFS	HSH	HTP	LAG	PP	SW	TTTP	TWRP	
92/93	2,456	6154	2,690	401	325	6,740	2,064	1,170	355	
	712	4934	125	34,891	561	588	20,000	1,640	155	
	4,420	3689	8,256	377	200		2,739	97	173	
	1,981		125	2,170	960		2,850	4,150	940	
	142,368		9,648		1,950			1,290	80	
	99				135			250	310	Tot for FY 92/93 for all cats
								600		
Total	152,036	14,777	20,844	37,839	4,131	7,328	27,653	9,197	2,013	275,817

Tot per cat for 1 FY's										Tot for 1 FY for all cats
	152,036	14,777	20,844	37,839	4,131	7,328	27,653	9,197	2,013	275,817

11.2 PRELIMINARY INTEGRATED DATABASE

11.2.1 ALL WCIP PROJECTS

The following pages constitutes the PID for all the categories. The design and different sections of the PID were explained in Section 3, Part 3. The data for PID were retrieved from the references given in Section 2 of Part 3 and Section 14 of Part 4.

11.2.1a CS Category

11.2.1b HFS Category

11.2.1c HSH Category

11.2.1d HTP Category

11.2.1e LAG Category

11.2.1f PP Category

11.2.1g SW Category

11.2.1h TITP Category

11.2.1i TWRP Category

11.2.1a CS Category.

File Name: WSSD\WCIPPR\93-R1\PIDCS.WQ1

Cat	Project Description	Identification			Act Cost (x1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
CS1	BUNDY DR & TENNE REL SWR PH 1	CS0005	EXX31390	IP	241		
CS2	CLAY SEWER ASSESSEMENT	CS0087	E2000340	IP	0		
CS3	CEMENT SEWER ASSESSMENT	CS0062	EXX31111	CP	5,209		
CS4	EAGLE ROCK & HIGHLAND PK REL SW	CS0013	EXX41406	CA	72		
CS5	EVIS UNIT 2A	CS0014	EXX31373	CP	1,016	1,852	1,833
CS6	EVIS UNIT 2B	CS0014	EXX41257	CP	1,852	1,724	1,724
CS7	EVIS UNIT 2C	CS0014	EXX41258	CP	2,466	2,313	2,322
CS8	EVIS UNIT 2D	CS0014	EXX41259	CP	2,955	2,397	2,397
CS9	EVRS TO LC & SFVRS DIVER STR	CS0015	EXX31245	IP	3,052		1,237
CS10	FOX ST INTER SWR	CS0018	EXX31434	CP	527	379	379
CS11	GLENDALE-BURBANK RELIEF SWR	CS0021	Mult	IP	950		
CS12	LA CIENEGA & SAN FERNAN SWR	CS0027	EXX31669	CP	470	427	373
CS13	LAKE ST & RAMPART BL INT SWR	CS0029	EXX31911	IP	565		
CS14	LINCOLN BL SWR-MILFORT/VENICE	CS0031	E2000233	IP	184		
CS15	MAGNOLIA BLVD INT SWR	CS0033	EXX31398	CP	505	428	428
CS16	MANHOLE RESETTING	CS0034	Mult	IP	2,435		
CS17	NOS REHAB PH I	CS0086	E2000336	IP	916		
CS18	NORS	CS0036	EXX31392	IP	148,373		
CS19	NORTH HOLLYWOOD INT SWR U 1	CS0038	EXX31479	IP	1,047		
CS20	NOS-ACCESS STRUCT	CS0086		CA	0		
CS21	NOS-BLANKETING	CS0086		CA	0		
CS22	NOS-CLEANING	CS0086		CA	0		
CS23	NOS-VENTILATION	CS0086		CA	0		
CS24	NOS/NCOS SYS IMPRV-UNIT 1	CS0078	E2000225	IP	na		
CS25	NOS/NCOS SYS IMPRV-UNIT 2	CS0078	E2000225	IP	na		
CS26	NOS/NCOS SYS IMPRV-UNIT 3	CS0078	E2000225	IP	1,063		
CS27	S.E.WILMINGTON INTER SWR U 3	CS0053	EXX41311	IP	395		
CS28	SWR MONI SYSTEM DEVELOPMENT	CS0043	EXX41368	IP	2,074		
CS29	SOTO ST. INTER SEWER	CS0046	EXX31921	CA	73		
CS30	EMERGENCY SWR REPLACEMENT	CS0079	Mult	IP	2,653		
CS31	SWR RETAIN STR OXNARD/SEPULV			CA			
CS32	SWR-I/I REDUCT PROG	CS0052	EXX31356	IP	6,269		
CS33	SWR-I/I REHAB PROG			IP	na		
CS34	VARIEL AVE INTER SEWER	CS0055	EXX41185	CA	na		
CS35	VENICE BLVD INTER SEWER U 1	CS0057	EXX41306	IP	1,039	774	811
CS36	WASTEWATER SYS SMOKE TEST PG	CS0064	E2000047	IP	4,066		
CS37	WW SYSTEM CCTV & MAIN SWR ASSESS	CS0062	E2000048	IP	2,413		
CS38	WILLIS & BLYTH INTER SWR	CS0060	EXX31374	CP	74	186	186
CS39	WINNETKA/SATICOY INT SWR U 2	CS0061	EXX31705	CA	9		
CS40	WINNETKA/SATICOY INT SWR U 3	CS0061	EXX31706	CA	9		
CS41	Z CS/CATEGORY RESERVE			CA			
CS42	ASSESSMENT ACT SEWERS	CS0073	Mult	IP	4,012		

11.2.1a Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
CS1	na		na		3	87	6	93	na		na		12	93	5	95	88,9,0,1,2	920	1,114	1,029	964	964
CS2	1	91	1	92	1	91	3	93	na		na		na		na		88,9,0			934	934	934
CS3	7	85	6	92	6	85	6	92	na		na		na		na		88,9,0,1		5,350	7,300	6,100	6,100
CS4	na		na		na		na		na		na		na		na		88,9,0,1		8,822	7,527	6,897	6,897
CS5	na		na		na		na		na		na		6	88	2	89	88,9				2,650	2,691
CS6	na		na		na		na		na		na		4	88	3	89	88					2,405
CS7	na		na		na		na		na		na		3	88	1	89	88					3,156
CS8	na		na		na		na		na		na		5	88	2	89	88					2,849
CS9	11	87	4	88	9	85	4	88	1	89	10	89	10	89	4	93	88,9,0			1,602	1,602	1,500
CS10	7	89	6	90	11	88	8	89	4	91	3	92	9	90	12	90	88,9,0			420	375	1,546
CS11	5	89	7	94	5	89	8	1	3	95	3	98	5	2	5	5	88,9,0,1,2	114,894	79,641	63,420	39,356	38,395
CS12	7	86	11	86	7	83	11	86	7	88	11	88	8	88	4	89	88					460
CS13	2	90	6	91	2	90	3	93	4	92	4	93	10	93	12	94	88,9,0,1,2	7,700	4,820	4,420	4,450	4,450
CS14	1	89	12	89	7	89	7	93	10	90	9	91	5	94	11	94	88,9,0,1,2	977	977	956	858	858
CS15	na		na		9	84	2	88	na		na		1	89	4	89	88					655
CS16	6	87	3	94	6	87	6	2	6	87	3	97	6	87	6	2	88,9,0,1		2,460	3,296	4,216	1,513
CS17	1	92	5	92	1	92	5	92	3	93	4	94	3	93	4	94	88,,,,2	23,350				12,000
CS18	3	87	6	88	2	87	7	88	6	89	1	93	11	89	3	93	88,9,0,1,2	142,368	142,368	142,368	158,100	146,100
CS19	1	89	12	89	6	89	4	93	11	90	10	91	5	94	10	95	88,9,0,1,2	4,558	7,658	7,658	7,324	7,324
CS20																	88					2,350
CS21																	88					13,309
CS22																	88					13,200
CS23																	88					2,280
CS24																	88					185
CS25																	88					1,480
CS26																	88,9,0,1		329,468	217,805	26,995	25,330
CS27	10	87	9	88	10	87	4	93	8	90	8	91	6	95	4	96	88,9,0,1,2	2,961	2,891	2,784	2,513	2,513
CS28	4	88	5	92	4	88	6	2	2	90	6	94	2	90	6	2	88,9,0,1,2	9,280	4,440	3,389	2,092	2,092
CS29	1	90	12	90	12	96	3	98	10	91	8	93	12	98	6	0	88,9,0,1,2	11,000	2,288	2,186	2,296	2,322
CS30									7	90	6	98	7	90	6	2	88,9,0,1,2	24,200	34,200	29,300	34,713	34,713
CS31																	88,9				450	500
CS32	12	82	6	90	12	82	7	92	na		na		na		na		88,9,0,1		6,795	6,795	6,795	6,795
CS33	1	90	12	0	7	90	1	0	7	91	6	1	7	91	6	0	88,9,0,1,2	27,789	28,589	28,209	50,403	40,135
CS34																	88,9,0,1		3,394	3,107	3,603	3,603
CS35	3	89	3	90	7	90	6	91	1	91	6	91	4	92	3	93	88,9,0,1		2,136	2,012	3,372	3,372
CS36	7	88	6	94	7	88	6	94	7	88	6	94	7	88	6	94	88,9,0,1		203	740	532	406
CS37	7	88	7	93	7	88	6	2	7	88	7	93	7	88	6	2	88,9,0,1,2	9,322	5,268	1,550	1,200	1,200
CS38													3	89	5	89	88					221
CS39																	88,9,0,1		2,420	2,313	1,173	776
CS40																	88					397
CS41																	88					34,000
CS42					4	87	6	2					7	89	6	2	89,0,1,2	3,888	3,168	1,590	1,296	

11.2.1a – Continue.

Cat	Comments
CS1	
CS2	Pilot Study only.
CS3	Closed Circuit TV & VIS Insp (88).
CS4	Eagle Rock Relief Sewer (88).
CS5	
CS6	
CS7	
CS8	
CS9	
CS10	Fox St & Lemona Inter Swr (88).
CS11	E2000097/E2000050.
CS12	
CS13	
CS14	
CS15	Different than Magnolia Blvd Rel Swr.
CS16	Main Project; E2000060, E2000061, E2000273, EXX41522, EXX31311.
CS17	
CS18	
CS19	
CS20	Under NOS 88/89 WCIP; no Appropriation.
CS21	Under NOS 88/89 WCIP; no Appropriation.
CS22	Under NOS 88/89 WCIP; no Appropriation.
CS23	Under NOS 88/89 WCIP; no Appropriation.
CS24	Regrouped under NOS/NCOS Syst Imprv.
CS25	Regrouped under NOS/NCOS Syst Imprv.
CS26	Regrouped under NOS/NCOS Syst Imprv.
CS27	Different than Swr Replc Wilmington U 3.
CS28	Swr Moni Equi (88) or Swr Moni System (89).
CS29	Replaced by S. Boyls Heights Swr Syst Relief W.O. E2000649.
CS30	Swr Replace/Repair Prog (88) or Replc Swr (89) or Swr Replc Prog (90).
CS31	
CS32	Study of I/I Reduction by CH2M Hill.
CS33	PH1, E2000223; PH2, E2000224.
CS34	
CS35	Cons means testing.
CS36	Also known as Wastewater Smoke Testing Prog.
CS37	Wastewater System CCTV (88).
CS38	
CS39	
CS40	
CS41	Switched to Major Cat Reserves in SW Cat.
CS42	Main Project; Assessment Swr (89); EXX31399,357,360 etc... .

11.2.1a CS Category.

File Name: WSSD\WCIPPR\93-R1\PIDTWRP.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
CS43	BASSETT ST. INTER SEWER			FU			
CS44	SEWER REPLC & REHAB PROGR	CS0040	Mult	IP	12,464		
CS45	COMMUNITY SEWER SYS MASTER PLA		E2000217	CA	na		
CS46	FREEWAY SEWERS	CS0020	Mult	IP	224		
CS47	NEW INTERCEPTOR PROJECTS			CA	0		
CS48	NORS-SCHEDULING CONSULTANT	CS0036	E2000103	IP	1,349		
CS49	NORTH OUTFALL SEWER	CS0086	Mult	CA	288		
CS50	SEPULVEDA BLVD RELIEF SEWER	CS0083	E2000200	IP	67		
CS51	SEWER CAPACITY CORRECTION PH 1		Mult	FU	na		
CS52	SIGNATURE DR. RELIEF SEWER			CA	0		
CS53	CBD EMERGENCY SEWER			CA	0		
CS54	CENTRAL BUSINESS DST REL SWR			IP			
CS55	EMERGENCY SEWER REPAIRS	CS0079	Mult	IP	751		
CS56	HENRY FORD AV SWR REHAB	CS0074	E2000208	IP	105		
CS57	INDEP & CHATSWORTH INT SWR			IP	na		
CS58	NOS IMPR-HTP TO VS DL MAR LN	CS0071	E2000159	IP	111		
CS59	SEA WTR I/I STDY-VENICE AREA	CS0052	E2000206	IP	33		
CS60	VENICE BL INTER SWR U 2			FU	na		
CS61	ZELZAH AV SWR NR RINALDI ST			CA	0		
CS62	ARCHWOOD ST INTER SWR			FU	na		
CS63	CHANDLER-CORTEEN RELIEF SWR			FU	na		
CS64	FIGUEROA & 4TH ST RELIEF SWR	CS0077	E2000343	IP	724		1,961
CS65	FIGUEROA & 8TH ST RELIEF SWR	CS0077	E2000297	CP	2,791	1,709	1,683
CS66	FIGUEROA & NAGOYA RELIEF SWR	CS0077	E2000344	CP	1,856	1,877	1,577
CS67	MANGOLIA BLVD RELIEF SWR	CS0091	E2000403	IP	8		
CS68	PIERCE ST RELIEF SWR			FU	na		
CS69	RAYEN ST RLF SWR	CS0090	E2000402	IP	31		
CS70	TUJUNGA AVE INTER SWR			FU	na		
CS71	BUNDY DR & TENNE REL SWR PH 2			FU	na		
CS72	CENTRAL BUS DST RLF SWR PH5	CS0077	E2000269	IP	402		
CS73	COLL SYS CONCEPT REPORTS	CS0092	Mult	IP	878		
CS74	EAGLE RK/HIGHLD PK RLF SWR	CS0092	E2000462	IP	9		
CS75	ECIS	CS0103	Mult	IP	1,268		
CS76	FIGUEROA FLOWER RLF SWR	CS0077	E2000474	IP	358		
CS77	HOLLYWOOD SWR SYS RLF	CS0092	E2000423	IP	236		
CS78	MAINTENANCE HOLE SEALING U 2	CS0035	E2000335	OH	83		
CS79	N. HOLLYWOOD INTER SWR U 2			FU	na		
CS80	NCOS-NOS MAZE REHAB PH 1	CS0078	E2000377	IP	368		
CS81	NCOS-NOS MAZE REHAB PH 2	CS0078	E2000481	IP	136		
CS82	NOS REHAB PH 2	CS0080	Mult	FU	na		
CS83	S. WILSHIRE SWR SYS RLF PH 1	CS0092	E2000436	FU	75		
CS84	S. WILSHIRE SWR SYS RLF PH 2	CS0092		FU	na		
CS85	VENICE OUTFALL RLF SWR PH 1 & 2	CS0092	E2000406	IP	92		

11.2.1a Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
CS43																	89,0			298	306	
CS44	7	93	1	97	7	88	6	95	1	95	7	98	7	89	6	1	89,0,1,2	85,070	17,670	10,230	64,000	
CS45																	89,0,1		9,500	6,000	11,250	
CS46	7	89	6	95	7	89	6	2	7	89	6	98	7	89	6	2	89,0,1,2	1,360	1,240	773	624	
CS47																	89				60,650	
CS48	na		na		na		na		11	89	1	93	11	89	3	93	89,0,1,2	1,981	1,981	1,981	1,069	
CS49																	89,0,1		94,400	51,946	46,139	
CS50	11	89	6	92	11	89	9	92	3	93	3	93	7	93	9	93	89,,,2	99			646	
CS51	7	98	6	0	7	98	1	1	7	98	6	1	7	98	6	1	89,,1,2	186	186		84	
CS52																	89				19	
CS53																	90			6,018		
CS54																	90,1		23,378	20,000		
CS55	3	90	3	91	3	90	10	91	3	90	8	91	3	90	8	91	90,1		11,000	5,700		
CS56	6	90	3	91	9	90	8	91	1	92	6	92	3	93	8	93	90,1,2	712	712	712		
CS57																	90			525		
CS58	8	89	11	90	8	89	11	90									90,1		945	945		
CS59	1	90	10	92	1	90	10	92	na		na		na		na		90,1		250	250		
CS60	7	90	2	91	7	93	12	93	12	91	6	92	10	94	6	95	90,1,2	1,152	944	919		
CS61																	90			139		
CS62																	91		1,530			
CS63																	91		934			
CS64	11	90	8	91	11	90	10	91	3	92	11	92	1	93	6	93	91,2	2,456	2,325			
CS65	7	90	2	91	5	91	12	92	6	90	2	91	7	91	7	92	91		2,650			
CS66	10	90	6	91	10	90	4	91	11	91	4	92	3	92	7	92	91		2,830			
CS67	10	92	4	93	1	93	4	93	2	94	5	94	2	94	5	94	91,2	579	579			
CS68																	91		4,904			
CS69																	91,2	262	262			
CS70																	91		7,501			
CS71																	92	260				
CS72	7	98	6	99	7	98	6	99	4	0	6	1	4	0	6	1	92	17,756				
CS73	7	91	6	2	7	91	6	2	na		na		na		na		92	26,150				
CS74	7	91	12	93	7	91	9	94	10	94	10	95	7	95	6	97	92	20,000				
CS75	2	92	12	97	2	92	12	97	4	95	9	0	4	95	9	0	92	639,021				
CS76					2	92	6	93					3	94	3	95	92	7,282				
CS77	7	93	1	95					11	95	6	97					92	21,000				
CS78	10	90	3	91	10	90	5	91	11	91	5	92	na		na		92	1,364				
CS79	7	89	8	92	7	89	5	93	5	93	11	94	3	94	9	95	92	3,600				
CS80	3	90	1	92	3	90	1	92	6	92	11	92	3	93	10	93	92	4,420				
CS81	3	90	12	92	5	90	3	93	10	93	6	94	9	93	10	94	92	7,200				
CS82	6	95	12	96	6	95	12	96	9	97	6	0	9	97	6	0	92	9,828				
CS83	7	92	6	94	3	93	6	94	7	95	7	97	7	95	7	97	92	12,421				
CS84	7	96	6	98	7	96	6	98	4	99	6	0	4	99	6	0	92	9,828				
CS85	7	92	7	93	3	91	10	98	5	94	6	95	5	94	6	0	92	8,440				

11.2.1a Continue.

Cat	Comments
CS43	
CS44	Cement Sewer Replacement (89). W.O's: EXX31706,707,708 etc... .
CS45	
CS46	E2000198/273/280 & EXX31365/371/665/667/668/791/792/794/796.
CS47	Replaced by Swr Capacity Correction.
CS48	
CS49	E2000337 EXX31384(MR); Splitted into NOS Ph1 & Ph2 in 92/93 WCIP.
CS50	
CS51	Proposed.
CS52	
CS53	
CS54	Included 4 phases; CS75 is Phase 5.
CS55	Many subprojects.
CS56	
CS57	Private Development.
CS58	
CS59	
CS60	
CS61	
CS62	
CS63	
CS64	
CS65	
CS66	
CS67	
CS68	
CS69	
CS70	Proposed.
CS71	Proposed.
CS72	
CS73	E2000423/406/436/438/459/460/461/467.
CS74	
CS75	Prel Engr completed; four segments of Swr for ECIS; E2000456.
CS76	Same as Venice Grand Rlf Swr .
CS77	Concept report is completed.
CS78	Cons is on hold.
CS79	
CS80	
CS81	
CS82	
CS83	
CS84	Just proposed.
CS85	

11.2.1b HFS Category.

File Name: WSSD\WCIPPR\93-R1\PIDHFS.WQ1

Cat	Project Description	Identification			Act Cost (x$1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
HF1	CHLOR/SERVICE WATER FAC	HF0004	EXX31472	IP	675		
HF2	CONST MGMT BLDG	HF0006	EXX31461	CP	10,195	8,090	5,999
HF3	DIGESTER EXPANSION		EXX31522	IP	18,961		
HF4	GARDENER WORK FACILITY			CA			
HF5	HEADWORKS & SERVICE FAC		EXX31213	IP	117,129		
HF6	INTERMED PUMPING STATION	HF0019	EXX41552	IP	38		
HF7	OCEAN MONITORING VESSEL	HF0023	EXX41503	CP	468	4,138	3,591
HF8	OCEAN OUTFALL	HF0024	EXX31482	CA	53		
HF9	OCEAN OUTFALL EIR/EIS	HF0024	E2000032	CA	1,210		
HF10	OXY GENER & DISOLUT EQUIP	HF0022	EXX31465	IP	19,411		
HF11	PRIM BATTERIES MOD U1	HF0028	EXX31141	CP	15,223	11,253	9,360
HF12	PRIM BATTERIES MOD U2	HF0029	EXX31712	IP	6,038		
HF13	PRIMARY BATTERY "D"	HF0030	Mult	CP	39,453	33,154	25,701
HF14	PRKG FAC & PED CROSSING		EXX31460	CP	6,049	3,966	3,118
HF15	SCHEDULING CONSULTANT	HF0036	E2000102	IP	8,789		
HF16	SECONDARY FACILITIES	HF0036	E2000038	IP	17,193		
HF17	SITE GRADING CLARIF EXP		EXX41313	IP	11,932		
HF18	SITE IMPROVEMENTS	HF0041	EXX31812	IP	23,398		
HF19	SITE UTILITIES	HF0042	EXX31822	IP	214		
HF20	SOLIDS HANDLING		E2000036	CA	1		
HF21	SPARE PARTS & STARTUP EQ		E2000037	IP	6		
HF22	STEP 2 DES REL ACT/EQUIP			CA			
HF23	DESIGN/CM CONSULTANT		Mult	IP	108,270		
HF24	STEP 2 EQUIPMENT	HF0045	E2000034	IP	6		
HF25	STEP 3 CONST MGMT CNSLT			IP			
HF26	STEP 3 CONST REL ACT/UTIL			CA			
HF27	STEP 3 EQUIPMENT	HF0047	E2000033	IP	20		
HF28	TECH SUPPRT & OPER. UN1	HF0050	EXX31512	IP	4,298		
HF29	TECH SUPPRT & OPER. UN2	HF0051	E2000041	IP	74		
HF30	VALUE ENGINEERING	HF0052	EXX41302	IP	371		
HF31	WAS THICK & CHEM FEED	HF0053	E2000035	IP	137		
HF32	CATEGORY RESERVE			CA	na		
HF33	DISTRIBUTED CONTROL SYSM	HF0008	EXX41492	IP	810		
HF34	DWP LAND AC/UNDRGND ESMT			CP	771		
HF35	DWP POWER SUPPLY		E2000042	CP	1,677		
HF36	GARDENER/SANDBLAST FACILITY		E2000019	CA	785		
HF37	IPS & SWITCHYARD FAC	HF0019	E2000040	IP	54,237		
HF38	HEADWORKS & SERV FAC EQ		E2000043	IP	122		
HF39	AIR GAP RESERVR/PUMP HSE	HF0058	E2000272	IP	1,249		
HF40	DIVISION MAINT ANNEX	HF0061	E2000293	IP	2,569		
HF41	EPP/OUTFALL CONDUIT MOD		E2000263	IP	478		
HF42	DISTRIBUTED CONTROL SYS P2		E2000530	IP	na		

11.2.1b Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HF1																	88					19,339
HF2	5	87	4	88	5	87	3	88	8	88	2	90	8	88	10	90	88,9				8,046	6,846
HF3																	88					68,120
HF4																	88					2,090
HF5									7	88	3	93	8	88	1	93	88,9,0,1,2	106,669	134312	112031	109,031	107,216
HF6	7	87	8	88	7	87	8	89									88					17,665
HF7	8	86	6	87	8	86	7	87	7	88	9	89	7	88	8	90	88					3,888
HF8																	88,9				162,700	58,464
HF9					5	89	5	91									88,9,0			1,730	1,730	1,430
HF10	11	87	8	88	1	88	3	89	5	89	3	92	11	89	4	97	88,9,0,1,2	50,344	50,344	52,844	39,770	39,770
HF11	9	86	12	87	9	86	7	87	6	88	11	89	7	88	6	90	88,9				10,950	10,365
HF12	10	89	8	90	10	88	11	92	5	91	11	92	9	93	8	95	88,9,0,1,2	102,740	88,223	55,032	14,406	12,422
HF13	9	86	10	87	9	86	5	87	5	88	1	91	6	88	7	91	88,9,0,1		36,009	36,009	36,009	32,009
HF14	1	88	6	88	8	88	10	89	3	89	12	89	5	90	11	91	88,9,0,1		4,087	4,087	3,205	3,205
HF15	7	87	6	92									7	87	6	98	88,9,0,1,2	31,500	31,500	25,660	13,710	14,000
HF16													9	91	11	94	88,9,0,1,2	238,981	281,252	416,675	379,349	312,515
HF17									1	88	7	89					88,9,0,1,2					10,985
HF18					9	86	11	90									88					4,212
HF19	7	86	6	94	4	86	6	94	7	96	1	99	7	96	12	98	88,,,1		6,258			9,004
HF20																	88					213,795
HF21									7	90	9	98	7	90	12	98	88					9,200
HF22																	88					9,760
HF23	7	87	6	92	7	87	6	92									88	163,795	163,795	87,860	97,660	67,660
HF24																	88					2,000
HF25									6	90	11	98	7	90	12	98	88					45,100
HF26																	88					500
HF27																	88					1,050
HF28	2	88	2	90	2	88	11	92	10	90	6	93	9	93	12	95	88,9,0,1,2	54,216	41,196	61,800	59,066	31,306
HF29	4	88	4	90	4	88	11	92	8	95	12	97	9	97	8	99	88,9,0,1,2	18,067	20,581	20,942	25,763	47,793
HF30	7	87	4	96													88,9,0,1		285	600	600	3,000
HF31									3	92	8	95	6	93	12	96	88,9,0,1,2	106,947	65,487	95,884	70,620	65,195
HF32																	88					53,000
HF33	4	88	8	90	4	88	6	92	7	94	6	97	11	92	6	96	89,0,1,2	7,020	6,260	4,200	5,500	
HF34	7	89	6	90	7	89	6	90									89				771	
HF35	4	88	4	89	4	88	7	89	7	89	4	91	7	89	2	92	89,0			5,100	5,200	
HF36																	89,0			7,529	3,018	
HF37	7	88	7	89					3	90	9	91	5	90	9	93	89,0,1,2	66,774	66,350	66,350	36,282	
HF38									4	88	10	89	7	87	10	93	89,0,1,2	4,934	4,934	4,150	4,150	
HF39	7	89	12	90					10	91	6	92					90,1,2	6,154	3,854	5,032		
HF40	6	90	12	90	6	90	7	91	9	91	6	92	6	92	6	92	90,1,2	5,730	4,026	4,493		
HF41	12	89	3	91					4	92	6	93	9	93	9	95	90,1,2	2,186	1,969	2,810		
HF42	4	88	8	90					4	91	6	97	1	95	5	98	91,2	963	1,163			

11.2.1b Continue.

Cat	Comments
HF1	
HF2	also EXX31438; Follow up to HT49.
HF3	
HF4	no WO issued; Moved eventually, HF36.
HF5	also HF38.
HF6	part of IPS Switchyard Facility; see HF37.
HF7	inconsistency between M26 & WPMD regarding actual expenditure.
HF8	may be used in future if funds available.
HF9	to eliminate effluent pumps.
HF10	Cryogenic Facility C109 and Mixers for reactors C117.
HF11	also EXX31162; structural rehab on A,B,C & equip.
HF12	also EXX 31713;3 new tasks with B & C;struct. work on A;const. pack. w/ TSF U1.
HF13	EXX 41333, EXX 41332; Follow up work (93/94); E2000415/445; also HT 60.
HF14	Change of scope by County & Cultural Affair; also HF46.
HF15	
HF16	to pull designs together for bid.
HF17	for C109.
HF18	portion is included in the other projects; will continue till 98.
HF19	portion is included in the other projects; will continue until 98.
HF20	move to HSH, see HS20 (?).
HF21	step 3.
HF22	part of DESIGN/CM CONSULTANT.
HF23	orig STEP 2 DES CONSULTANT; the expend is given by T. Maughmer .
HF24	
HF25	part of DESIGN/CM CONSULTANT.
HF26	part of DESIGN/CM CONSULTANT.
HF27	
HF28	
HF29	
HF30	HFS Value Eng. One contract to do HFS projects C104, 106, 109, etc.
HF31	step 3, part of FS.
HF32	shown up in SW Cat as Major Project Reserves. Status: Active; no W.O. issued.
HF33	phase I only; instrumentation ad control for plant; also HF42.
HF34	purch. contr.;W.O. shown in WCIP was wrong(EXX41162);south end plant bought for DWP.
HF35	step 2 & 3; power feed to switch yard.
HF36	splitted in HTP-Gardener/Laborer Fac,(HF3),W.O.E2000385;Sand blast (HT54);sever. des..
HF37	see also HF6.
HF38	see HF5.
HF39	packaged with Dig Exp HF3.
HF40	annex to Service Fac HF5.
HF41	
HF42	not shown in M26 as of 2/28/93; follow up to HF33.

11.2.1b HFS Category.

File Name: WSSD\WCIPPR\93-R1\PIDHFS.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HF43	INPLANT STORAGE			FU	na		
HF44	NORTH BEACH PARKING		E2000345	CA	75		
HF45	ONE MILE OUTFALL MODIF			FU	na		
HF46	PKG FAC & PED CROSSING U2	HF0032	E2000496	IP	105		
HF47	SECONDARY FACILITIES PH2	HF0036		IP			
HF48	TEMPORARY WASTE STORAGE FA		E2000128	CP	260		
HF49	WATER SUPPLY PIPELINE	HF0063	E2000039	CP	3,616	3,200	2,881

11.2.1b Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HF43	7	93	12	93	7	93	12	93	10	94	6	95	10	94	6	95	91,2	6,500	6,500			
HF44																	91		2,848			
HF45	7	96	6	97	7	96	6	97	1	98	1	99	1	98	6	99	91,2	19,500	19,500			
HF46																	91		1,150			
HF47	6	93	12	93	11	92	2	94	10	94	7	95	1	95	5	98	91,2	305,408	296,876			
HF48	1	90	10	90	6	89	1	91									91		391			
HF49	5	88	1	89	8	88	5	91	7	89	7	91	1	92	10	92	92	3,689				

11.2.1b Continue.

Cat	Comments
HF43	for primary effluent in case of electrical failure.
HF44	proposed for contractor parking north of Imperial on coast side.
HF45	modify discharge end from plug to diffuser.
HF46	renamed Dockweiler Beach Impr; see HF14.
HF47	in Design. Phase I is completed.
HF48	procurement contract.
HF49	inconsistency between M26 & WPMD regarding actual expenditure (S2 & S3).

11.2.1c HSH Category.

File Name: WSSD\WCIPPR\93-R1\PIDHSH.WQ1

Cat	Project Description	Identification			Act Cost (x$1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
HS1	AIR QUAL TEST RISK			CA			
HS2	CARVER/GREEN PAT LIC			CA			
HS3	COMPRESSOR FACILITY	HS0005	E2000068	CA	15		
HS4	CONST ENGR CONSULTANTS	HS0005	EXX31593	CP	15,697		
HS5	HERS CLOSEOUT/GRANT FUNDING	HS0005	Mult	IP	2,691		
HS6	PROCS MOD & STARTUP EQP	HS0005	EXX31423	CA	1		
HS7	SLUDGE DRYING BUILDING	HS0005	EXX31693	CP	34,624		
HS8	SPARE PARTS		Mult	CP	337		
HS9	HERS CONSTR SCHED CNSLT	HS0005	EXX31953	CP	1,873		
HS10	HERS/CATEGORY RESERVE			CA	0		
HS11	ASH/WET CAKE MIXING FAC			CA			
HS12	BASE LOAD BOILER			CA			
HS13	DEWATERING TEST FACILITY	HS0030	E2000142	IP	8,833	3,998	3,757
HS14	CF ELECTRICAL UPGRADES	HS0010	E2000166	CA	136		
HS15	CF FLOOR DRAINS	HS0010	E2000167	CP	0		
HS16	SCF OPTIMIZATION PH I	HS0023	E2000168	CP	550	198	
HS17	SCF OPTIMIZATION PH II	HS0024	E2000169	IP	12,241		6,000
HS18	CF SO2 SCUBBER DRAIN	HS0010	E2000170	CP	20		
HS19	CG ADDBACK COOLING	HS0021	E2000172	CP	39		
HS20	CG BUILDING MODS	HS0009	E2000173	CP	746	302	
HS21	CG COND/COALESCER MODS	HS0009	E2000174	CP	957	744	
HS22	CG DEOILING MODS	HS0009	E2000176	CP	666	321	
HS23	CG DRY/WET SIDE SEPAR	HS0009	E2000181	CP	91		
HS24	CG EVAPOR/HEATER UPGR	HS0009	E2000177	CP	1		
HS25	CG OIL DISTILLATION MODS	HS0009	E2000178	CP	443	403	
HS26	CG TRANSPORT SYS MODS	HS0009	E2000163	CP	128		
HS27	CG VACUUM SYSTEM MODS	HS0009	E2000179	CP	563		
HS28	CG WET CAKE FEED MODS	HS0009	E2000180	CP	619		
HS29	CG/CF COOLING WAT SUP UG			CA	na		
HS30	CG/CF DUST CONTROL	HS0012	E2000171	CP	5		
HS31	COG DEMINERAL SYS UPG	HS0018	E2000148	IP	802		
HS32	COG DESUPRHTR & BFW MOD	HS0020	E2000149	CA	290		
HS33	COG HIGH PRESS COMPRS	HS0017	Mult	IP	206		
HS34	COGENERATION EXPANSION	HS0018	Mult	IP	2,189		
HS35	COOL WAT SUP TO GAS COMP		E2000151	CA	93		
HS36	DESULFUR PLANT EXPANSION	HS0016	E2000153	FU	3		
HS37	DESULFUR PLANT MODS	HS0012	E2000152	IP	1,518		
HS38	DEWATERING SYSTEM EXPAND	HS0033	Mult	IP	5,665		
HS39	DIG GAS CONDENSATE REMOVAL	HS0012	E2000155	CA	1		
HS40	DIGESTER EXPANSION		Mult	IP	19,247		
HS41	LABORATORY VENTILATION	HS0012	E2000156	CP	579		
HS42	LOW PR GAS COMP PH 2		E2000157	CA	na		

11.2.1c Continue

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HS1	10	88	12	89		na		na		na		na		na		na	88					224
HS2		na		na		na		na		na		na		na		na	88					1,700
HS3		na		na		na		na		na		na		na		na	88					5,088
HS4		na		na		na		na	7	88	9	88	7	88	7	89	88					46,371
HS5		na		na		na		na		na		na		na		na	88,9, ,1,2	20,286	18,097		51,028	650
HS6		na		na		na		na		na		na		na		na	88					15,075
HS7		na		na		na		na	10	83	5	96		na		na	88					86,321
HS8		na		na		na		na	7	88	9	90	7	88	6	89	88					1,000
HS9		na		na		na		na	7	88	9	88	7	88	6	89	88,9				8,001	8,378
HS10		na		na		na		na		na		na		na		na	88					6,700
HS11		na		na		na		na		na		na		na		na	89				3,450	
HS12		na		na		na		na		na		na		na		na	89				3,651	
HS13	7	89	12	89	7	89	3	90	1	90	4	91	8	90	10	91	89,0,1		8,496	4,420	8,000	
HS14		na		na		na		na		na		na		na		na	89				800	
HS15		na		na		na		na		na		na		na		na	89,0			100	100	
HS16	11	89	7	90	11	89	7	90	1	90	3	91	1	90	3	91	89				1,000	
HS17	7	89	12	94	7	89	10	92	10	89	6	95	10	89	10	92	89, ,1,2	8,256	7,332		2,100	
HS18		na		na		na		na		na		na		na		na	89,0			150	150	
HS19	3	89	7	91	6	89	6	90	7	91	7	92	10	89	8	90	89,0			1,670	1,670	
HS20	2	89	1	90	2	89	9	91	7	89	7	89	10	89	10	92	89,0			500	500	
HS21		na		na		na		na		na		na		na		na	89,0			1,000	1,000	
HS22		na		na		na		na		na		na		na		na	89,0			16,500	16,500	
HS23		na		na		na		na		na		na		na		na	89,0			3,550	3,550	
HS24		na		na		na		na		na		na		na		na	89,0			2,690	2,690	
HS25		na		na	1	89	5	90		na		na	6	89	8	90	89,0			1,325	1,325	
HS26		na		na		na		na		na		na		na		na	89,0			2,575	2,575	
HS27		na		na	1	89	12	89		na		na	11	89	4	90	89,0			1,200	1,200	
HS28		na		na	3	89	5	90		na		na	9	90	2	91	89				950	
HS29		na		na		na		na		na		na		na		na	89,0			1,000	1,000	
HS30		na		na		na		na		na		na		na		na	89,0			200	200	
HS31	2	89		89	2	89	7	93	7	90	2	91	4	94	8	95	89,0			2,400	2,400	
HS32		na		na		na		na		na		na		na		na	89,0			600	600	
HS33		na		na		na		na		na		na		na		na	89,0			7,061	5,100	
HS34	7	90		98	12	89	6	94	4	94	7	1	1	95	6	97	89,0,1,2	163,050	160,936	23,651	20,000	
HS35		na		na		na		na		na		na		na		na	89,0			500	500	
HS36	4	88		89	3	94	8	95	4	90	10	91	4	96	10	97	89,0			2,300	2,300	
HS37	4	89		91	7	90	7	92	9	90	9	91	8	90	4	94	89,0			1,500	1,500	
HS38	5	90		92	5	90	7	94	12	92	10	97	11	92	3	98	89,0,1,2	116,605	114,388	86,079	70,700	
HS39		na		na		na		na		na		na		na		na	89,0			250	250	
HS40	8	89		92	8	89	6	92	11	92	12	96	2	93	2	98	89,0,1,2	261,096	250,429	246,272	165,000	
HS41	4	89	9	89	2	89	8	90	1	90	9	90	9	90	3	91	89				175	
HS42		na		na		na		na		na		na		na		na	89,0			5,978	3,000	

11.2.1c Continue

Cat	Comments
HS1	project was canceled; no WO issued; air pollution baseline measurement.
HS2	dollars for CG patent license.
HS3	CA as of 8/89. See HS33,42 and 61.
HS4	WO title HERS FACILITIES-STEP 3 ONLY.
HS5	WO's EXX31643/723/733/753. Was CONST RPTS/CL OUT(88);CONST CL OUT SVS(89).
HS6	WO title is HERS STRTUP EQPMNT & SUPPLIES.
HS7	also HERS SLDG DRYNG BLDG-ELEM 8;major work done but there are still charges to the WO.
HS8	HTP Project?; WO's EXX31402/403.
HS9	was STEP3 CONST SCHED CNSLT (88); HERS CONSTR SCHED CNSLT (89).
HS10	same as Major Cat. Reserves in S.W. Cat..
HS11	no WO issued; See HS52,55.
HS12	shifted from HTP Cat; no WO. Also HT3; see HS34 which now incl equiv.
HS13	was CENTRIF TESTING(89). WO title is DWTR TEST FAC PROCU.
HS14	was subproject of CF UPGRADE MODIFICATIONS(90). Scope changed. Planning $ only.
HS15	M26 shows zero expenditure.
HS16	was CF INSTR UPGRADES(89); was subproject of CF UPGRADE MODIF(90).
HS17	was CF MECH UPGRADES(89); was subproject of CF UPGRADE MODIF(90).
HS18	
HS19	WO title is CG WET SIDE IMPR.
HS20	
HS21	project was completed; but no sched shown.
HS22	project was completed; but no sched shown.
HS23	project was completed; but no sched shown.
HS24	project was completed; but no sched shown.
HS25	
HS26	project was completed; but no sched shown.
HS27	
HS28	
HS29	no WO issued.
HS30	project was completed; but no sched shown.
HS31	subproject of COG EXPANSION(HS34).
HS32	subproject of COG AUXILIARIES(HS50).
HS33	orig WO's E2000068/150;068 completed,150 split to GAS COMPRESSION,HS61(91);see HS3 & 42.
HS34	WO's E2000147/347/348/349/350/351; see HS31.
HS35	subproject of COG AUXILIARIES(HS50).
HS36	subproject of DIGAS HANDLING(HS61).
HS37	subproject of DIGAS HANDLING(HS61).
HS38	was DEWATERING CENT EXPAN(88); WO's E2000154/367/368/369/370/382 (382 cancelled).
HS39	
HS40	WO's EXX31522,E2000301-13/80/92; (03-13:closed, no cost).
HS41	
HS42	subproject of GAS COMPRESSION(HS61).

11.2.1c HSH Category.

File Name: WSSD\WCIPPR\93-R1\PIDHSH.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HS43	POWER AND INSTRUMENTATION	HS0019	Mult	IP	4,078	0	2,455
HS44	REBOILER UPGRADE	HS0011	E2000160	CA	1		
HS45	AIR EMISSIONS CONTROL	HS0032	Mult	IP	4,583		
HS46	STEAM DRYER SYSTEM	HS0031	Mult	IP	16,268		
HS47	WAS DEWATERING/DEHYDRATION	HS0008	E2000164	CA	60		
HS48	WASTE RESIDUAL COLL & DISPSL	HS0012	E2000165	CA	1		
HS49	COGENERATION AUXILIARIES	HS0020	Mult	IP	816		
HS50	HERS CONSTRUCTION CLAIMS	HS0015	E2000322	CP	11,782		
HS51	TRUCK LOADING FAC MODS	HS0032	E2000261	IP	6,511		5,780
HS52	ASH CHEM FIX SYSTEM			CA	0		
HS53	CF UPGRADE MODIFICATIONS		Mult	CA			
HS54	DIG GAS PIPING RPLMNT			CA	na		
HS55	ASH HANDLING MODIF	HS0027	E2000144	IP	514		
HS56	CG OPTIMIZATION PH II	HS0022	E2000357	IP	147		
HS57	COG SITE PREP	HS0018	E2000333	IP	2,393	1,059	1,677
HS58	COMB FAC EXP	HS0029	E2000361	FU	1		
HS59	DIGAS HANDLING	HS0016	Mult	IP	810		
HS60	FEASIBILITY STUDIES	HS0034	E2000371	IP	133		
HS61	GAS COMPRESSION	HS0017	Mult	IP	1,232		
HS62	SCF ALTERNATE FUELS PROG	HS0026	E2000359	IP	95		
HS63	SCF OPTIMIZATION PH III	HS0025	E2000358	IP	267		
HS64	THERMAL CAKE CONVERSION	HS0028	E2000360	IP	64		
HS65	ERB FILTRATION SYS UPGR			CA	na		
HS66	ERB STACK HATCH MODIF			CA	na		
HS67	SLDGE DRY FAC LIFT EQUIP			CA	na		

11.2.1c Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HS43	2	89	8	89	3	89	1	91	9	89	5	90	4	92	6	93	89,0,1,2	22,469	23,465	2,700	2,200	
HS44		na		na		na		na		na		na		na		na	89,0			500	500	
HS45		na		na	1	90	6	99		na		na		na		na	89, ,1,2	11,978	10,890		5,250	
HS46	7	89	9	90	7	89	3	91	12	90	2	94	1	92	6	93	89,0,1,2	74,438	74,438	11,932	10,000	
HS47		na		na		na		na		na		na		na		na	89,0			2,514	2,000	
HS48		na		na		na		na		na		na		na		na	89,0			300	100	
HS49	7	90	6	91	7	90	2	93	3	92	6	93	10	93	7	94	90,1,2	7,376	7,495	3,276		
HS50		na		na		na		na	7	90	6	91	7	90	6	91	90			9,000		
HS51	7	89	3	90	7	90	4	91	12	90	11	91	9	91	4	93	90,1,2	9,648	8,762	1,920		
HS52		na		na		na		na		na		na		na		na	90			1,372		
HS53		na		na		na		na		na		na		na		na	90			15,115		
HS54		na		na		na		na		na		na		na		na	90			1,600		
HS55	1	92	3	93	7	89	7	93	12	93	7	94	9	90	4	95	91,2	4,033	4,045			
HS56	12	91	12	93	12	91	3	93	9	94	5	95	9	94	5	95	91,2	13,852	16,994			
HS57	9	90	5	91	9	90	7	91	1	92	10	92	2	92	10	92	91,2	2,690	4,460			
HS58	8	93	6	95	8	96	6	98	10	95	8	97	4	99	2	1	91,2	39,050	39,050			
HS59		na		na		na		na		na		na		na		na	91,2	20,385	20,385			
HS60	7	91	6	96	3	91	6	96		na		na		na		na	91,2	1,836	1,327			
HS61		na		na		na		na		na		na		na		na	91,2	38,570	35,119			
HS62	8	90	6	92	11	91	10	93	11	92	8	94	8	94	8	95	91,2	5,203	4,549			
HS63	1	91	6	93	4	91	6	93	3	94	11	95	4	94	10	95	91,2	6,219	5,603			
HS64	7	92	10	93	4	92	7	93	5	94	1	96	7	93	4	95	91,2	3,926	4,300			
HS65		na		na		na		na		na		na		na		na	92	100				
HS66		na		na		na		na		na		na		na		na	92	125				
HS67		na		na		na		na		na		na		na		na	92	125				

11.2.1c Continue.

Cat	Comments
HS43	WO's E2000158/352/353/354;Power Restart Facility-WO 158 (89). Sim to HT 27,4.
HS44	
HS45	WO's E2000161/364/365/366; Was SLDS HAND ODOR CTRL-WO 161(89); ODOR CTRL(91).
HS46	E2000162/362/363/404/405. Was STEAM DRY PILOT INST-WO 162 (89).
HS47	
HS48	WO title WASTE OIL COLL & DISPSL.
HS49	WO's E2000175/355/356; See HS32,35; was ERB CTRL CENTER EXPAN-WO 175 (90).
HS50	
HS51	see also HT38; not included in AIR EMISSIONS CTRL.
HS52	no WO issued; See HS11,55.
HS53	considered in HS14,16,17.
HS54	abandoned.
HS55	see HS11,52.
HS56	
HS57	
HS58	
HS59	WO E2000346; see HS36,37.
HS60	
HS61	E2000388/458; see HS33,42.
HS62	
HS63	
HS64	
HS65	done by O&M Funds.
HS66	done by O&M Funds.
HS67	done by O&M Funds.

11.2.1d HTP Category.

File Name: WSSD\WCIPPR\93-R1\PIPHTP.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HT1	ASBESTOS REMOVAL (NEW)	HP0048	SZH11117	CP	316	246	na
HT2	ASH PROCESSING FACILITY	HP0035	E2000420	CA	6	na	na
HT3	BASE LOAD BOILER			CA	na		
HT4	BLACK START GENERATOR		E2000029	IP	47		
HT5	BLDG REMOD & TRAILERS	HP0047	SZH11116	CP	52	na	na
HT6	BLENDING TANKS	HP0055	E2000264	IP	253		
HT7	CATHOD PROTECT 7 MI OF	HP0003	E2000104	CP	37	29	24
HT8	CENTRIF-PROCURE & INSTALL C73	HP0004	EXX31155	CP	3,603	2,673	na
HT9	CHEM IMPR PRIMARIES/DIG	HP0005	SZH11113	CA	400		
HT10	CLN WTR SUPPLY-RAW GAS COMP			CA	na		
HT11	CONSTR RELATED ACTIV/UTIL			CA	na		
HT12	DCF & SSF IMPROVEMENTS	HP0007	SZH11118	IP	3,559		
HT13	DIVERSION OF STORM DRAIN FLO	HP0008	E2000025	OH	0		
HT14	EAST & WEST HDWRKS IMPROV	HP0011	Mult	CP	735		
HT15	PLANT EFFLUENT WATER SYSTEM	HP0027	EXX31355	CP	1,604	946	823
HT16	EPP PUMP, MOTOR & BLDG	HP0012	Mult	IP	22,339		
HT17	GRIT LIFT STA (DRY PAD)			CA	na		
HT18	HDWKS/SER FAC EQ & SUPP		E2000043	CA	122		
HT19	HIGH PRESS EFFL PIPE	HP0015	EXX31659	CA	na		
HT20	INTERIM IMPRV PROG ADS	HP0016	EXX31136	CP	4,265	3,860	3,493
HT21	LABORATORY INFO MGMT SYSTEM	HP0018	SZH11114	IP	169		
HT22	LEGAL REPTS/PROCESS MONITORING		SZH11115	IP	3,559		
HT23	MOD TO C-7 BELT CONVEYORS	HP0021	E2000051	CP	5,156	4,275	3,230
HT24	OUTFALL REHAB			FU	na		
HT25	PCB TRANSFORMER REMOVAL	HP0025	EXX31892	CP	796		
HT26	PIPING VAULTS			CA	na		
HT27	POWER SUPPLY AND DISTRIBUTION		E2000353	IP	1,077		
HT28	RAW SLUDGE PUMP CONTR MOD	HP0031	EXX31440	CP	528		139
HT29	SAFETY CNSLT AND EQUIPMENT	HP0049	SZH11119	IP	521		
HT30	SANDBLAST FACILITY		E2000018	CA	125		
HT31	UNDERGROUND TANK REMOVAL			CP	na		
HT32	VAX CLUSTER UPGRADE	HP0043	SZH11112	CP	62		
HT33	WASTE GAS BURNERS	HP0045	EXX31106	CP	2,246	2,623	2,435
HT34	WATER SUPPLY PIPE LINE		E2000039	IP	3,616		
HT35	CATEGORY RESERVE			CA	na		
HT36	NETWORKING SYSTEMS		SZH11122	IP	1,239		
HT37	TECHNICAL INFORMATION CENTER			FU	na		
HT38	TRUCK LOADING FAC MODERNI		E2000261	IP	6,511		
HT39	ADMINISTRATION BLDG REMODEL		see note	CA	na		
HT40	CENTRIF FAC RECY FLH WTR			OH	na		
HT41	DIGESTER MODIFICATION	HP0056	E2000211	IP	1,796		
HT42	EX DIGESTERS STRUCTURAL MOD	HP0056	E2000328	IP	14		

11.2.1d Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HT1		na		na		na		na	4	88	7	90		na		na	8,9				1,923	4,941
HT2	2	89	3	90		na		na		na		na		na		na	8					6,637
HT3		na		na		na		na		na		na		na		na	8					3,651
HT4		na		na		na		na		na		na		na		na	8					2,434
HT5		na		na		na		na		na		na		na		na	8,9				1,008	1,483
HT6	11	89	3	91	11	89	5	92		na		na		na		na	8,9,0,1,2	401	688	1,604	1,620	1,620
HT7	8	88	9	88	8	87	7	89	3	89	8	89	5	90	9	90	8,9				449	270
HT8	1	88	3	88	1	88	3	88	8	88	11	89	8	88	11	89	8					3,460
HT9	10	88	7	89	11	88	5	92		na		na		na		na	8					2,130
HT10		na		na		na		na		na		na		na		na	8					710
HT11		na		na		na		na		na		na		na		na	8					1,000
HT12	8	88	7	89	8	89	2	92		na		na		na		na	8,9,0,1,2	19,707	13,799	12,886	8,113	7,488
HT13	7	87	3	88		na		na	7	88	3	89		na		na	8					630
HT14	2	88	10	88	11	88	11	91		na		na		na		na	8,9,0,1		2,236	2,236	4,034	4,177
HT15	5	87	4	88	5	87	10	88	11	88	2	90	8	89	12	90	8,9,0			1,060	1,015	1,056
HT16	10	87	8	88	10	87	10	88	5	88	6	89	4	89	9	92	8,9,0,1,2	34,891	34,891	38,069	38,186	36,971
HT17		na		na		na		na		na		na		na		na	8					277
HT18		na		na		na		na		na		na		na		na	8					4,100
HT19		na		na		na		na		na		na		na		na	8,9				2,239	2,406
HT20		na		na		na		na	3	88	2	89	3	88	2	89	8					4,570
HT21		na		na		na		na		na		na		na		na	8,9,0,1		2,300	1,600	1,201	951
HT22	1	88	7	88	10	89	6	90	1	90	9	90	3	91	12	93	8,9,0,1,2	2,112	2,446	2,100	1,600	608
HT23	3	88	6	88	3	88	3	89	12	88	9	89	5	89	3	90	8,9				4,600	1,105
HT24	7	87	5	88		na		na	4	88	9	88		na		na	8					1,223
HT25		na		na		na		na	8	90	8	91	8	90	11	91	8,9, ,1		2,279		2,902	2,443
HT26		na		na		na		na		na		na		na		na	8,9,0			546	546	546
HT27		na		na		na		na		na		na		na		na	8					9,995
HT28	3	87	8	87	3	87	10	88	5	88	2	89	8	89	4	91	8,9				496	461
HT29	4	88	2	89	8	90	12	92		na		na		na		na	8					1,520
HT30		na		na		na		na		na		na		na		na	8					868
HT31		na		na		na		na		na		na		na		na	8,9				111	332
HT32	1	88	5	88	1	88	5	88	7	88	7	89	12	88	7	89	8					826
HT33	1	87	7	88		na		na		na		na	2	87	6	89	8					1,000
HT34		na		na		na		na		na		na		na		na	8,9,0,1		6,468	5,475	5,340	5,340
HT35		na		na		na		na		na		na		na		na	8					13,900
HT36	7	88	6	89	7	88	6	89	7	88	6	89	9	90	4	92	9,0,1,2	2,170	2,170	1,370	778	
HT37	7	88	6	90	7	90	6	94		na		na		na		na	9,0,1,2	2,475	2,475	1,200	1,271	
HT38		na		na		na		na		na		na		na		na	9				2,109	
HT39	7	90	9	90		na		na	10	90	2	91		na		na	0			240		
HT40	7	90	9	90		na		na	10	90	2	91		na		na	0,1		211	211		
HT41	7	89	7	90	10	90	5	92	4	91	6	92	12	92	4	94	0,1,2	4,229	2,226	3,737		
HT42	7	90	1	91	4	90	5	92		na		na		na		na	0,1,2	253	1,572	1,045		

11.2.1d Continue.

Cat	Comments
HT1	no design consultant utilized; done by General Services.
HT2	Ash Disp/Recov Study II in HSH. Resulted studies on going.
HT3	Cogen Expension modified to include this, HS34; see HS12.
HT4	Power Restart Facilities in HS43 .
HT5	on Call; See WO E2000145; Admin Temp Annex Site Prep; scope change.
HT6	it was built under HERS for sludge blending & not used.
HT7	carbon cathode weld and Electrical wiring to protect the pipe.
HT8	major Title. On call contract; WAS centrifuges in P&B building.
HT9	major Title.
HT10	see HS35.
HT11	related to D Street Utility.
HT12	STRR worked as Des. Cons. for BOS. Packaged with HT58 for Cons. Phase in C164.
HT13	major Title. See also SZH 11120.
HT14	EXX31670/671.
HT15	major Title.
HT16	E2000129/130/131. See HT47.
HT17	
HT18	see HF5.
HT19	total cost is not shown in M26; deleted from CIP.
HT20	diff in titles & WO's in M26 vs PML. Judgment applied.
HT21	
HT22	
HT23	on call contract.
HT24	
HT25	same as PCB Transformer Disposal; WO SZH 11123; No planning in 1990; illegal.
HT26	vaults constructed under various other projects.
HT27	see HS43.
HT28	control and monitoring for primary tank.
HT29	
HT30	now, part of HT54.
HT31	incorporated into other projects, e.g., IPS & Switch Yard Fac.
HT32	equipment procurement contract.
HT33	completed but to be replaced by new project.
HT34	see HF49; to bring water to air gap.
HT35	also Major Project Reserves in SW Category; no W.O. issued.
HT36	
HT37	
HT38	
HT39	no WO issued. O&M project, done in house by BOS.
HT40	low priority project; no WO issued.
HT41	same as DIG MOD.
HT42	

11.2.1d HTP Category.

File Name: WSSD\WCIPPR\93-R1\PIPHTP.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HT43	GRIT PAD RELOCATION	HP0014	E2000017	CP	683		
HT44	LAB BLDG MODERNIZATION		E2000338	OH	3		
HT45	AUTOMATIC SAMPLING			FU	na		
HT46	CAPITAL EQUIPMENT REPLACEMENT			FU	na		
HT47	EPP PUMPS AND MOTOR REFURB	HP0012	EXX31442	IP	15,497		
HT48	FURNISH TECH SUPPORT FACILITY			FU	na		
HT49	HCD BLDG MODERNI FOR STRR		E2000449	CP	378		
HT50	UPGRADE PUMP, SLUDGE DEW FAC			CA	na		
HT51	INTERIM FERRIC CHLORIDE FAC	HP0005	E2000424	CA	33		
HT52	LOCKOUT TAGOUT SYSTEM		E2000532	FU	na		
HT53	RISK MANAGEM & PREVENT PROG	HP0064	E2000230	CP	150	na	124
HT54	ABRASIVE BLAST & STEAM CLEANING	HP0033	E2000451	IP	141		
HT55	SLUDGE DRYING FACILITIES MODS	HP0036	E2000022	IP	141		
HP56	CHEM INJECTION FACILITY	HP0005	E2000409	IP	817		
HT57	CONCEPT REPORTS		Mult	IP	238		
HT58	D STREET UTILITY	HP0006	E2000417	IP	2,788		
HT59	DIG PIPING SEISMIC BRCNG	HP0056	E2000327	IP	39		
HT60	PRIMARY BATTERY D IMPRS	HP0020	E2000447	IP	283		

11.2.1d Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
HT43		na		na		na		na		na		na		na		na	0			592		
HT44	7	90	12	90		na		na	1	91	7	91		na		na	0,1		325	225		
HT45		na		na		na		na		na		na		na		na	1		216			
HT46	7	95	6	2	7	95	6	2	7	95	6	2	7	95	6	2	1,2	52,000	45,500			
HT47	7	91	6	92	7	93	6	92	7	91	6	92	7	93	9	94	1,2	3,695	3,400			
HT48		na		na		na		na		na		na		na		na	1,2	3,250	3,250			
HT49		na		na		na		na		na		na	2	92	5	92	1		962			
HT50	7	91	12	91	7	91	12	91	9	92	6	93	9	92	6	93	1		240			
HT51		na		na		na		na		na		na		na		na	1,2	377	325			
HT52	7	91	11	91	7	91	12	91	3	92	6	93	3	92	6	93	1,2	1190	950			
HT53	1	90	6	91	1	90	7	91		na		na		na		na	1		155			
HT54	11	91	11	92	8	92	5	93	9	93	8	94	1	94	7	94	1,2		958			
HT55		na		na		na		na		na		na		na		na	1		960			
HP56		na		na		na		na		na		na		na		na	2	2,140				
HT57		na		na		na		na		na		na		na		na	2	1,395				
HT58		na		na		na		na		na		na		na		na	2	14,440				
HT59	10	90	9	91		na		na		na		na		na		na	1,2	105	1,492			
HT60		na		na	10	91	9	92		na		na	6	93	3	94	2	1,920				

11.2.1d Continue.

Cat	Comments
HT43	being redesigned under E2000534. See HT17.
HT44	
HT45	
HT46	
HT47	see HT16.
HT48	Sanitation to furnish after TSF built.
HT49	same as Harrington Bldg Mod Furn.
HT50	no W.O. issued.
HT51	same as Ferrous Chloride Fac. Part of HT14.
HT52	
HT53	
HT54	Sandblast & Steam Clean Fac (91).
HT55	
HP56	packaged with Dice 1.
HT57	E2000479, 446 & 454.
HT58	packaged with HT12 for Cons phase, in C164.
HT59	same as Seismic Bracing.
HT60	major Title

11.2.1e LAG Category.

File Name: WSSD\WCIPPR\93-R1\PIDLAG.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
LA1	ADD'L CHLOR CONTACT TANK	LG0001	EXX31388	CP	5,618	3,838	3,457
LA2	BULK CHLOR STOR TANK	LG0003	EXX31404	OH	80		
LA3	CAPACITY IMPR TEST PROG	LG0002	SZL11111	CP	282	na	348
LA4	CAPACITY IMPROVEMENTS	LG0002	SZL11115	OH	3		
LA5	CONST MGMT CNSLT EXP			CA			
LA6	DES REL ACT/EQUIP			CA			
LA7	EXPANSION TO 50 MGD	LG0003	E2000062	FU	3,083		
LA8	GRIT REMOVAL FACILTIY	LG0004	EXX31511	CA	611		
LA9	MOD & EQUIP UPGRADE			CA			
LA10	NEW LABORATORY FAC	LG0005	EXX31386	CA	5		
LA11	NEW WAREHOUSE BLDG	LG0003	EXX31401	CA			
LA12	PROCESS CONTROL SYST	LG0006	EXX31105	CA	1,427		
LA13	SEC PROCESS IMPROVE	LG0007	SZL11113	CP	3,774	2,833	2,792
LA14	VALUE ENGINEERING			CA			
LA15	CATEGORY RESERVE			CA			
LA16	ADMIN CHLORIN BLDGS	LG0003	EXX31301	CA	1		
LA17	DECHLORINATION FAC IMPR	LG0003	SZL11120	CP	1,423	895	600
LA18	ODOR CONT PROG INTE FAC	LG0014	SZL11119	OH	21		
LA19	REPLACEMENT FILTERS	LG0018	E2000331	IP	339		
LA20	SCHED & C/M CONSULTANT			CA			
LA21	SLUDGE COLL SYST REPLT	LG0016	E2000318	IP	544		
LA22	BAR SCREEN RENOVATION	LG0021	E2000411	IP	516		
LA23	CAPITAL EQUIP REPLAC			FU			
LA24	DUAL POWER SUPPLY			FU			
LA25	LAB TRS(EMD TEMP LAB TR)	LG0013	SZL11116	IP	392		
LA26	NEW BLOWER INSTALLATION			CA			
LA27	POND RECONSTRUCTION	LG0019	E2000374	IP	993		
LA28	RISK MGMT & PREVENT PROG	LG0020	E2000232	IP	126	na	121
LA29	SUPPORT FACILITIES			FU			
LA30	TEMP WAREHOUSE FAC	LG0009	E2000470	IP	65		
LA31	MAINT STAFF TRAILERS		SZL11122	CP	392	94	119
LA32	LAB ASBESTOS REMOVAL	LG0011	SZL11118		4		
LA33	CABLE REPLACEMENT	LG0017	E2000126		26		
LA34	PCB TRANSFORMER REMOVAL	LG0015	SZL11121	CP	173		
LA35	INSTRUMENTATION & CNTRL		E2000537	IP	44		

11.2.1e Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
LA1	3	87	3	88	3	87	12	88	10	88	10	89	8	89	10	90	88,9,0			5,193	5,173	2,620
LA2	7	88	3	89	3	90	11	90	11	89	11	90					88,9				567	452
LA3	8	88	2	91	8	88	4	91	na		na		na		na		88,9				517	596
LA4	6	89	12	89	3	92	11	92	4	88	9	88	5	92	12	93	88,9,0,1,2	325	281	383	3,773	3,692
LA5																	88					8,560
LA6																	88					550
LA7	1	90	12	90	7	99	6	2	10	91	9	93	7	93	6	96	88,9,0,1,2	185,530	145,820	103,760	89,680	79,488
LA8	5	87	8	88	5	87	1	90	6	89	12	89					88,9				2,494	2,295
LA9																	88					1,496
LA10																	88,9				1,610	1,562
LA11																	88,9				2,264	2,242
LA12	5	88	6	89	4	88	5	92	4	90	3	91	2	93	2	95	88,9,0,1,2	8,789	7,062	6,802	7,031	2,143
LA13	10	88	2	89	12	88	3	90	12	89	8	90	5	91	2	92	88,9,0,1		4,257	3,992	4,394	4,402
LA14																	88,9				400	440
LA15																	88					11,500
LA16																	90			200		
LA17	5	90	9	90	2	90	11	90	9	90	1	91	5	90	5	92	90			700		
LA18	11	89	9	91	11	89	5	92	1	91	6	92	9	90	11	92	90,1,2	200	200	350		
LA19	3	90	9	91	3	90	8	93	7	92	7	93	5	94	5	95	90,1,2	8,196	7,670	7,520		
LA20																	90			750		
LA21	3	90	12	90	3	90	8	91	1	91	10	92	4	91	9	93	90,1,2	1,950	1,950	1,420		
LA22	1	91	6	91	8	91	10	92	3	92	12	92	7	93	4	94	91,2	3,040	2,703			
LA23	7	94	6	2					7	94	6	2					91,2	9,100	9,100			
LA24	7	93	6	95	7	95	2	98	4	96	4	99	12	98	6	1	91,2	2,820	18,987			
LA25	9	89	9	92	9	89	6	92	2	93	8	93	10	92	6	93	90,1,2	561	730	650		
LA26																	91		1,637			
LA27	10	90	1	91	10	90	10	91	6	91	9	91	7	92	2	93	91,2	960	522			
LA28	11	90	10	91	11	90	5	92	na		na		na		na		91		156			
LA29	12	89	6	94	12	89	6	94	5	95	5	96	1	96	12	96	91,2	7,340	7,340			
LA30	12	91	6	92	12	91	9	92	11	92	2	93	11	92	2	93	92	135				
LA31	9	89	5	91	9	91	11	91	3	93	8	93	2	92	6	92	na					
LA32																	na					
LA33					na		na		5	89	9	89	5	89	9	89	na					
LA34					na		na		4	91	7	92	8	90	8	91	na					
LA35																	na					

11.2.1e Continue.

Cat	Comments
LA1	
LA2	Con on hold.
LA3	Testing only.
LA4	
LA5	No appropriation; now included with each project.
LA6	
LA7	Several projects with same MP #'s.
LA8	Only screening facility was improved.
LA9	
LA10	Active before contract with Weston; major change, CB with Exp.
LA11	Same as above. WO is NA in M26 as 8/30/92.
LA12	Replaced by I & C Project.
LA13	
LA14	
LA15	No appropriation; changed to major project reserve in SW.
LA16	Switched from CIP to O&M.
LA17	
LA18	
LA19	In design.
LA20	
LA21	In construction.
LA22	In design.
LA23	
LA24	
LA25	Also called Personnel Tr; SP into EMD and Maint Staff Tr.
LA26	
LA27	
LA28	Report completed; Implementation ongoing; Same WO.
LA29	Concept report is being prepared.
LA30	
LA31	Did not appear in CIP's yearly documents.
LA32	
LA33	
LA34	
LA35	

11.2.1f PP Category.

File Name: WSSD\WCIPPR\93-R1\PIDPP.WQ1

Cat	Project Description	Identification			Act Cost (x1000)		
		MP #	WO #	Sta	Total	Con	Bid
PP1	BALLONA CR F.M. & GRAV SWR	PP0002	EXX31972	CP	8,591	6,653	4,772
PP2	BALLONA CRK PP RECON	PP0001	EXX31962	CA	3,816		4,555
PP3	FRIES AVE PP RECON	PP0003	EXX31409	CA	99		
PP4	I ST SWR & PP E/O DOMINGUEZ	PP0004	EXX31604	CA	na		
PP5	PORTS OF CALL PP REMOD	PP0006	EXX31594	CA	1		
PP6	PP 39 NORTH PULGA REPLACE			CA	na		
PP7	PUMPING PLANT REM/UPGRADE	PP0008	EXX31411	CP	1,424		
PP8	PUMPING PLANT STANDBY POWER	PP0009	E2000020	CP	3,184	2,485	2,900
PP9	SUNSET TO TEMESCAL CYN PP/FM	PP0011	EXX31458	IP	3,242		
PP10	VENICE PUMPING PLANT RECONST	PP0012	EXX31932	CP	1,041		
PP11	Z PP/CATEGORY RESERVE			CA			
PP12	PP-SCADA SYS UPGRADE	PP0016	E2000442	IP	622		811
PP13	PUMPING PLANT REM/UPGRD PH II	PP0008	Mult	IP	6		
PP14	VENICE PP RECON PH 2	PP0012	E2000241	CA	5		
PP15	PP REM/UPGRADE PH I-CITY WIDE			CA	na		
PP16	PP REM/UPG PH I-HARBOR I			CA	na		
PP17	PP REM/UPG PH I-HABOR II			CA	na		
PP18	PP REM/UPG PH I-VAL/CEN			CA	na		
PP19	PP REM/UPG PH I-WESTERN			CA	na		
PP20	11TH & SANTA FE PP610 REHAB	PP0008	E2000258	IP	340		
PP21	190TH & VERMONT PP 674 REHAB	PP0008	E2000244	IP	593		
PP22	22ND & SIGNAL INTER SWR	PP0019	E2000139	CA	200		
PP23	AIRPORT PUMPING STATIONS			CA	na		
PP24	BALLONA CRK PP RECONS 2	PP0001	E2000441	IP	2,577		3,673
PP25	DACOTAH PP606 REPLC	PP0008	E2000246	IP	1,317		
PP26	E WILMINGTON PP676 REHAB	PP0022	E2000133	CA	799		
PP27	FORCE MAIN EVAL STDY			IP			
PP28	FRIES AV PP666 REHAB	PP0008	E2000134	CA	713		
PP29	HARRIES PL PP669 REHAB	PP0020	E2000135	CA	192		
PP30	HAWAIIAN & B PP667 REHAB	PP0023	E2000132	CA	564		
PP31	HIGHBURY PP604 REHAB	PP0008	E2000247	IP	943		
PP32	LANKERSHIM PP616 REHAB	PP0008	E2000249	CA	64		
PP33	MARINA/VENICE	PP0008	Mult	IP	868		
PP34	PCH & FIGUEROA PP675 REHAB	PP0021	E2000251	CA	246		
PP35	PORTS O'CALL PP681 REHAB	PP0006	E2000252	CA	729		
PP36	ROSCOMARE PP624 REHAB	PP0008	E2000138	IP	514		
PP37	SAN PEDRO PP691 REHAB	PP0018	E2000253	CA	763		
PP38	SIGSBEE PP682 REHAB	PP0008	E2000202	IP	853		
PP39	STA BARBARA & BUCK/MANCH	PP0008	E2000254	IP	706		
PP40	TERMINAL WY PP 671 REHAB	PP0017	E2000255	CA	713		
PP41	THOMPSON PP648 REPLC	PP0008	E2000112	IP	548		
PP42	UNION PACIFIC PP602 REHAB	PP0008	E2000256	IP	702		

11.2.1f Continue.

	Plan Des				Act Des				Plan Con				Act Con				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
PP1	5	85	6	89	5	85	6	89	8	91	6	92	8	90	3	92	88,9,0,1		5,824	5,824	6,138	5,892
PP2	1	83	6	89	1	83	6	89	6	92	7	93					88,9,0,1		5,299	4,717	3,241	3,127
PP3																	88					2,870
PP4																	88,9,0			954	660	670
PP5																	88					88
PP6	3	85	3	88	3	85	3	88	6	88	10	89	6	88	1	90	88					800
PP7									8	93	2	95					88,9				34,612	30,040
PP8	3	88	11	88	3	88	11	88	7	88	2	92	8	88	2	92	88					3,355
PP9	7	91	11	94	7	91	3	93	11	95	11	97	11	93	11	95	88,9,0,1,2	21,008	17,370	15,071	14,071	8,866
PP10																	88					4,808
PP11																	88					7,650
PP12		na		na		na		na	12	91	6	92	5	92	12	92	89,0,1,2	1,659	1,659	888	858	
PP13	7	91	12	93					9	93	6	1					89,0,1,2	9,306	59,307	79,740	62,675	
PP14																	89				4,950	
PP15																	90,1		8,060	2,230		
PP16													3	94	5	95	90,1		34,300	6,500		
PP17									2	94	2	96	3	94	5	95	90,1		3,250	7,860		
PP18																	90,1		6,620	5,840		
PP19																	90,1		8,110	10,290		
PP20	1	90	3	91	1	90	6	92	12	91	8	92	3	93	11	93	92	852				
PP21	11	91	9	92	11	91	3	93	7	93	12	93	12	93	12	94	92	1,182				
PP22					5	91	6	93									92	736				
PP23					11	91	1	94	8	93	8	94	11	94	2	96	92	7,000				
PP24					1	83	11	91					6	92	7	93	92	6,740				
PP25	11	89	9	91	11	89	9	92	7	92	7	93	4	93	7	94	92	6,607				
PP26	3	91	11	92	3	91	6	93									92	4,096				
PP27	7	92	6	94	10	92	6	94		na		na		na		na	92	500				
PP28	3	91	11	92	3	91	6	93									92	4,418				
PP29	4	92	4	93	3	91	6	93									92	3,389				
PP30	3	91	11	92	3	91	6	93									92	4,568				
PP31	6	90	10	91	6	90	6	92	6	92	6	93	3	93	1	94	92	2,080				
PP32					7	92	6	94					10	94	6	96	92	991				
PP33	11	89	10	92	11	89	3	93	7	93	1	94	1	94	1	95	92	1,389				
PP34	3	91	11	92	6	91	6	93									92	1,056				
PP35	4	92	4	93	3	91	6	93									92	1,251				
PP36	10	89	5	91	10	89	3	92	1	92	7	92	2	93	2	94	92	588				
PP37	4	92	4	93	6	91	6	93									92	6,319				
PP38	11	89	4	91	11	89	4	92	1	92	10	92	4	93	5	94	92	2,218				
PP39	2	91	11	92	2	91	2	93	8	93	1	94	11	93	11	94	92	3,696				
PP40	4	92	4	93	6	91	6	93									92	4,510				
PP41	1	92	5	93	2	92	6	93	1	94	1	95	3	94	7	95	92	3,141				
PP42	6	90	8	91	6	90	12	92	5	92	12	92	7	93	5	94	92	1,735				

11.2.1f Continue.

Cat	Comments
PP1	
PP2	
PP3	
PP4	
PP5	
PP6	
PP7	Same as Sewage Pumping Plant Upgrading.
PP8	
PP9	Same as Sunset PP & FM in PCH. Design 95 % completed.
PP10	
PP11	Also Major Project Reserves in SW Category.
PP12	Cons means installation of new system.
PP13	E2000556. WO's did not show in WCIP(92/93) documents.
PP14	PP # 646
PP15	
PP16	
PP17	
PP18	
PP19	
PP20	
PP21	
PP22	Replaced by 22nd & Signal; E2000488.
PP23	Shifted to CS Category.
PP24	
PP25	
PP26	
PP27	
PP28	
PP29	
PP30	
PP31	
PP32	
PP33	E2000136 for Marina and E2000257 for Venice.
PP34	
PP35	
PP36	
PP37	
PP38	
PP39	E2000254 for Sta Barbara and E2000558 for Buck/Manch.
PP40	
PP41	
PP42	

11.2.1g SW Category.

File Name: WSSD\WCIPPR\93-R1\PIDSW.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
SW1	CLAIMS MITIGATION SERV			CA			
SW2	CLEAN WATER COST ACCTG CNSLT		EXX31595	IP	5,245		
SW3	FACILITIES PLAN UPDATE	SW0009	EXX31389	IP	1		
SW4	GRANT PROJECTS-DOCUMENTATION		E2000141	IP	1,462		
SW5	PRETREAT ENFORC FAC (HQ)			FU			
SW6	PRETREAT ENFORC FAC (N. AREA)	SW0010	E2000063	FU	226		
SW7	L.A. ZOO WASTEWATER SYSTEM	SW0012	E2000064	IP	115		
SW8	OFFSITE SLDG DISP DR EIR/EIS		EXX31418	CP	829		493
SW9	SECUR CESSPOOL DUMP FAC(TWRP)	SW0044	EXX31132	IP	2,553		
SW10	STORM WATER CONSENT DECREE C	SW0024	Mult	IP	762		
SW11	VISTA DEL MAR S/O IMP HWY U2	SW0026	EXX31640	IP	225		
SW12	WASTEWATER DISPOSAL AGRMNTS		EXX31322	IP	1,088		
SW13	WASTEWATER PROG MGT CNSLT		EXX11125	IP	68,914		
SW14	WASTEWATER PROG-UNRESOLVED C			CA			
SW15	WASTEWATER SYS FINANCE CNSLT	SW0029	EXX31400	IP	2		
SW16	WASTEWATER SYS TRAINING PROG			CA			
SW17	WASTEWATER SYSTEM AUDITOR		E2000140	IP	1		
SW18	WW PROG DOCUMENTATION SYS			CA			
SW19	WW PROGRAM CAD SYSTEMS	SW0030	E2000028	IP	2,884		
SW20	WW PROGRAM INSURANCE	SW0031	E2000026	CA	897		
SW21	WW PSR DATA BASE CONVERSION			CA			
SW22	WWS AUTOMATED MAPPING	SW0034	Mult	IP	2,051		
SW23	CORROSION ENGINEER	SW0035	EXX31432	OH	119		
SW24	Z SYST/CATEGORY RESERVE			CA			
SW25	SECUR CESSPOOL DUMP FAC(HTP)			CA			
SW26	VISTA DEL MAR & GRAND WIDEN	SW0026	E2000012	CP	562	315	302
SW27	WATER CONSV DEVICES	SW0027	E2000059	CP	607		
SW28	WW PROGRAM PSR ENHANCEMENT	SW0033	E2000054	CP	297		
SW29	WW PROG PERS RELOC	SW0039	E2000445	IP	127		
SW30	WW PROG REL SUPPORT			CA			
SW31	MAJOR PROJECT RESERVE			IP			
SW32	RISK MGMT AND PREVENTION PROG			CA			
SW33	SAN NON LABOR BDGT CAP EQUIP			CA			
SW34	ENF RELOCATION MASTER PLAN			CA			
SW35	ENF TEMP OFFICE TRAILERS(LAG)	SW0046	SZL11123	CA	161		
SW36	SAFETY ENG MOD PROJECT			CA			
SW37	SEPUL BASIN RECL WATER	SW0047	EXX31351	IP	82		
SW38	SETTLEMENT AGREEMENTS		Mult	IP	236		
SW39	TRAINING PROG PERMANENT FAC			CA			
SW40	WEST BASIN RECL PUMP STA	SW0045	E2000383	IP	782		
SW41	LABORATORY INFO MGMT SYS			CA			

11.2.1g Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
SW1	8	88	7	89	7	88	6	89	na	na	na	na	na	na	na	na	88					1,500
SW2	4	88	3	91	7	87	12	94	na	na	na	na	na	na	na	na	88,9,0			3,402	2,902	979
SW3	7	91	6	96	7	91	6	96	na	na	na	na	na	na	na	na	88,9,0			1,370	896	896
SW4	4	89	10	90	9	89	6	96	na	na	na	na	na	na	na	na	88,9,0,1		1,069	1,037	1,100	1,100
SW5	12	88	6	89	7	98	6	99	7	90	2	91	4	0	4	1	88,9, ,1,2	10,305	10,105		7,157	1,942
SW6	4	88	6	89	7	98	6	99	4	90	3	91	4	0	4	1	88,9, ,1,2	2,296	2,296		5,910	3,640
SW7	7	88	6	89	1	89	12	92	3	90	6	91	6	93	6	94	88,9,0,1,2	5,787	5,777	8,035	5,529	5,550
SW8	6	88	6	89	11	87	7	89	na	na	na	na	na	na	na	na	88,9				825	500
SW9	4	88	6	89	4	88	7	91	4	90	9	90	8	92	6	93	88,9,0,1,2	2,739	2,430	1,480	1,480	1,440
SW10	10	89	6	91	10	89	4	93	4	92	5	94	9	92	8	94	88,9,0,1,2	3,685	3,635	4,255	3,505	3,780
SW11																	88,9				1,080	1,080
SW12	na	na	na	na	na	na	na	na	7	87	7	91	7	87	6	95	88,9,0			1,312	2,260	2,260
SW13	3	87	6	89	3	87	6	97	na	na	na	na	na	na	na	na	88,9,0,1,2	107,130	95,230	86,740	54,740	34,000
SW14																	88					31,490
SW15	7	87	6	89	7	87	6	90	na	na	na	na	na	na	na	na	88,9, ,1,2	300	300		95	110
SW16																	88					12,000
SW17	7	89	6	98	7	89	6	1	na	na	na	na	na	na	na	na	88,9,0,1,2	770	770	530	510	510
SW18																	88					950
SW19	7	88	6	90	7	88	6	90	7	88	7	95	7	88	6	95	88,9,0			7,565	9,200	6,000
SW20																	88					25,000
SW21																	88					400
SW22	5	88	12	91	5	88	6	95	na	na	na	na	na	na	na	na	88,9,0,1,2	14,585	11,900	5,669	8,400	8,400
SW23	7	87	7	91	7	87	8	92	na	na	na	na	na	na	na	na	88,9,0			355	355	301
SW24																	88,9				45,000	5,400
SW25																	89,0			1,800	1,800	
SW26	6	88	1	89	6	88	1	89	6	89	10	89	8	89	12	89	89				400	
SW27	7	89	6	90	7	89	3	91	na	na	na	na	na	na	na	na	89				2,100	
SW28	7	89	6	90	7	89	6	90	na	na	na	na	na	na	na	na	89				375	
SW29	na	na	na	na	na	na	na	na	12	90	6	92	12	90	6	92	89,0,1		2,100	2,100	1,500	
SW30	na	na	na	na	na	na	na	na	9	89	6	95	9	89	6	95	89,0			2,161	2,761	
SW31	7	90	6	95	7	90	6	93	7	90	6	95	7	90	6	93	90,1,2	20,000	20,000	20,000		
SW32																	90			260		
SW33	na	na	na	na	na	na	na	na	7	90	6	95	7	90	6	95	90			15,000		
SW34																	91		300			
SW35																	91,2	2,064	2,064			
SW36																	91,2	2,100	2,100			
SW37	4	88	5	88	1	93	12	93	4	88	5	88	1	93	12	93	91		14,772			
SW38	7	89	6	94	7	89	6	94	7	89	6	94	7	89	6	94	91,2	1,125	1,125			
SW39	7	92	3	93					1	94	6	95					91,2	2,145	2,145			
SW40																	91,2	2,850	2,975			
SW41	4	89	11	89					9	93	3	95					92	2,502				

11.2.1g Continue.

Cat	Comments
SW1	No WO issued; no cost.
SW2	
SW3	Facilities Plan Stdy for Wastewater Treat.
SW4	Report.
SW5	Changed from Ind. Waste Bldg LAG (88) & Pretreatment Enf Fac LAG(89).
SW6	Changed from Ind. Waste Bldg TWRP (88) & Pretreatment Enf Fac TWRP(89).
SW7	
SW8	Name changed as HERS Sldg Disp Env Doc.
SW9	
SW10	Storm Water Pollution Reduction Study (88), EXX31414,E2000298/431/432/433.
SW11	Same as Vista del Mar Widening U 2.
SW12	EXX31322/321/315/329/330.
SW13	EXX11105/25/51/53 & E2000184/185/195/187/190/191/192/193.
SW14	
SW15	
SW16	Possible changes in project title if appeared in future WCIP.
SW17	
SW18	
SW19	
SW20	Shifted to Sanitation Budjet.
SW21	
SW22	EXX31252 & E2000030/289/376.
SW23	Same as WWS Corrosion Engineer(88). Feasibility Stdy.
SW24	Project replaced with SW31.
SW25	
SW26	
SW27	Procurement Contract.
SW28	
SW29	Same as WW 7th & Spring Blvd Move (89) or Spring St Move (90).
SW30	
SW31	
SW32	Shifted to each Treatment Plant Cat. e.g., LAG, TITP, TWRP.
SW33	Not to be funded by WCIP.
SW34	
SW35	
SW36	Replaced by HTP Safety Haz Mitig Program.
SW37	
SW38	E2000299/296/284.
SW39	No PA submitted.
SW40	
SW41	

11.2.1h TITP Category.

File Name: WSSD\WCIPPR\93-R1\PIDTITP.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
TI1	ADMIN BLDG REHAB		EXX31118	IP	0		
TI2	AIR POLL REDUCT SYS		EXX31676	CP	1,804	852	513
TI3	DIGESTER DEMO		E2000023	CP	860	663	592
TI4	INDUSTRIAL WATER PREP		E2000003	OH	82		
TI5	INTERIM PERS FAC		SZT11114	CP	89	na	172
TI6	SITE LANDSCAPING	TI0004	EXX31214	CP	617	365	344
TI7	OPERATIONS CONTROL BLDG	TI0004	E2000072	OH			
TI8	AERATION TANK MOD		SZT11111	OH	358		
TI9	COMPOSTING FACILITIES			CA			
TI10	OUTFALL EXT CONST MGT/CNSLT	TI0014	E2000074	FU			
TI11	OUTFALL EXT/DIFUSER	TI0014	E2000073	CA			
TI12	PERM MAINT FAC			OH			
TI13	PROCESS CONTROL SYSTEM			CA			
TI14	SOLID PROCESSING MOD			CA			
TI15	CATEGORY RESERVE			CA			
TI16	ELEC & STRUCT MOD		EXX31678	CP	169	na	na
TI17	EQUIP & PROCESS MOD	TI0009	SZT11113	CA	13		
TI18	LABORATORY BUILDING	TI0004	E2000071	OH	15		
TI19	LIFT & SAMPLING STATION		EXX31699	IP	5,002		
TI20	REMED PLANT IMPROV PROJ			CA			
TI21	OUTFALL EXT VALUE ENG	TI0014	E2000075	CA	1		
TI22	PLANT EVALUATION STUDY	TI0004	SZT11115	OH	2		
TI23	RESEARCH DIV TRAILERS	TI0015	SZT11117	CA	7		
TI24	TEMP OUTFALL DIFUSER			CA			
TI25	AIR HEADER MOD	TI0001	SZT11126	CA	814		
TI26	CHEMICAL FAC	TI0004	E2000076	CA	79		
TI27	ELEC SYS IMPR	TI0008	E2000078	CA			
TI28	I&C SYSTEM IMPR	TI0017	E2000083	CA	115		
TI29	IND WAST TRTMT FAC		E2000085	CA	3		
TI30	INTERIM OUTFALL DIFFUSER	TI0014	EXX31447	CA	237	na	na
TI31	LIQUID PROCESS IMP		E2000079	OH			
TI32	EFFLUENT MGMT EIR	TI0014	E2000093	IP	2,124		
TI33	SEISMIC ANALYSIS & IMPR		E2000087	OH	59		
TI34	SLUDGE HANDLING IMP		E2000088	CP	159		
TI35	STRUCTURAL IMPROVEMENTS		E2000089	OH	26		
TI36	TITP TASK FORCE I		SZT11125	CP	771	na	na
TI37	TITP TASK FORCE II		E2000091	CP	82	na	na
TI38	AIR DIFFUSER REPL		E2000096	CP	1	na	na
TI39	ELEC SYS IMPR PH I		SZT11121	IP	1,563	na	897
TI40	ELEC SYS IMPR PH II		SZT11129	IP	130		
TI41	GENERATOR BLDG MOD	TI0004	E2000080	IP			
TI42	LAB FACILITY(TEMP)		SZT11128	CA	74		

11.2.1h Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
TI1	2	89	2	92	7	93	9	94	12	92	6	94	7	95	12	97	88,9,0,1,2	3,225	3,225	2,425	570	421
TI2	11	89	4	90	8	83	10	87	10	90	9	92	9	88	12	89	88					730
TI3	7	87	10	88	7	87	10	88	6	89	11	89	6	89	1	90	88					950
TI4	3	88	10	88	4	88	7	90									88,9				1,523	635
TI5	7	88	10	88	7	88	10	88	1	89	6	89	7	89	1	90	88					624
TI6	9	88	3	89	6	88	1	89	12	89	2	90	9	90	5	91	88,9,0			494	701	1,881
TI7																	88,9				1,048	824
TI8	12	88	3	89					1	90	10	90					88,9,0,1,2	1,170	1,004	826	1,196	3,308
TI9																	88					15,978
TI10																	88,9				6,139	4,613
TI11																	88,9				43,440	50,118
TI12																	88,9				10,260	10,260
TI13																	88					6,549
TI14																	88					3,990
TI15																	88					10,600
TI16																	88					2,800
TI17																	88					2,390
TI18	10	89	9	90	7	93	12	93	7	91	10	92	5	94	12	95	88,9,0,1,2	5,640	5,620	4,880	3,883	2,492
TI19	9	85	6	88	9	85	3	89	4	89	9	90	1	90	1	93	88,9,0, ,2	4,150		4,677	2,493	2,493
TI20																	88					2,554
TI21	1	89	4	89													88, ,0			132		105
TI22																	88					840
TI23	7	88	2	89					1	90	6	91					88,9,0,1,2	690	635	635	660	660
TI24																	88					860
TI25					11	89	10	90					3	90	7	91	89				1210	
TI26																	89				389	
TI27	8	89	9	92	4	89	12	90	2	91	6	94	8	91	1	93	89				1,635	
TI28	4	89	6	90					3	91	8	91					89,0,1,2	3,220	3,200	7,795	5,770	
TI29																	89				13,891	
TI30																	89				945	
TI31	2	89	2	90	2	89	8	92	12	90	9	91	6	93	9	94	89,0,1,2	1,290	1,130	680	1,203	
TI32	11	88	12	90	10	89	12	93									89,0,1		2,800	2,700	1,800	
TI33	2	89	11	89					9	90	3	91					89,0,1,2	1,980	1,980	2,016	1,907	
TI34	2	89	6	90					5	91	6	92					89,0,1,2	19,850	6,300	6,200	5,366	
TI35	2	89	11	89	2	89	12	89	9	90	3	91	10	89	10	92	89,0			231	231	
TI36	2	89	1	90	2	89	11	90									89				871	
TI37	2	89	1	90	2	89	11	90									89				3450	
TI38	7	89	3	90	11	89	10	90	3	90	3	91	3	90	7	91	90			2,200		
TI39																	90,1,2	1,640	3,341	2,768		
TI40	12	89	9	92					7	93	7	94					90,1,2	1,350	2,016	1,855		
TI41	2	89	2	92					12	92	6	93					90,1,2	90	95	90		
TI42																	90			310		

11.2.1h Continue.

Cat	Comments
TI1	
TI2	
TI3	
TI4	
TI5	Procurement contract.
TI6	
TI7	
TI8	
TI9	
TI10	
TI11	Replaced by Effluent Mgt.
TI12	
TI13	
TI14	
TI15	
TI16	Same as Elec Mtc Impr Sldg Drn.
TI17	
TI18	Awaiting completion of Master Site Plan.
TI19	No planning data in WCIP 91/92 document.
TI20	
TI21	No planning data in WCIP 89/90 document.
TI22	
TI23	Awaiting preparation of PA package.
TI24	
TI25	Replaced by Air Diffuser Repl.
TI26	
TI27	
TI28	
TI29	
TI30	Replaced by Mod Exist Outfall.
TI31	
TI32	Originally it was " OUTFALL EIR/EIS."
TI33	No PA yet.
TI34	Replaced by Biosolid Management.
TI35	No PA yet.
TI36	
TI37	Same as SZT 11125.
TI38	
TI39	
TI40	
TI41	
TI42	

11.2.1h TITP Category.

File Name: WSSD\WCIPPR\93-R1\PIDTITP.WQ1

Cat	Project Description	Identification		Sta	Act Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
TI43	LANDSCAPING PH II		E2000207	FU	2		
TI44	MAINTENANCE FAC IMPROVS		E2000283	OH	68		
TI45	MOD EXIST OUTFALL		E2000215	IP	500		
TI46	EFFLUENT MGMT		E3000030	IP	81		
TI47	CAPITAL EQUIPMENT REPLAC			FU			
TI48	DIG GAS SCRBR UPGRA			CA			
TI49	EFFLUENT MGMT VALUE ENGR		E2000075	FU	1		
TI50	ODOR & EMISSION CONTROL		E2000593	IP	110		
TI51	RISK MGMT & PREVENT PROG	TI0023	E2000274	IP	111	na	121
TI52	MISC NPDES PERM COMPL			OH			
TI53	PILOT TREATMENT STDY I	TI0024	E2000498	IP	176		
TI54	DEWATERING CTRFG REPLACEMENT		E2000282	IP	414		
TI54	DEWATERING CTRFG PROCUREMEN		E2000508	IP	11		
TI55	DAF BACKUP SYS		E2000281	OH	141		
TI56	WATER RECLAMATION CON RPT		E2000631	IP			
TI57	DWP POWER RELIABILITY STUDY		E2000695	FU			

11.2.1h Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
TI43	7	92	1	93	7	95	3	96	11	93	6	94	1	97	6	98	90,1,2	990	990	750		
TI44	7	90	8	91					6	92	6	93					90,1,2	250	248	234		
TI45	7	90	2	91					11	91	6	92					90,1,2	14,720	13,850	4,880		
TI46	11	89	7	90	7	93	9	96	5	91	2	93	7	97	6	0	90,1,2	49,600	47,106	50,103		
TI47	7	98	6	2	7	98	6	2	7	98	6	2	7	98	6	2	91,2	19,500	15,600			
TI48																	91		110			
TI49	2	90	4	90	7	94	6	95									91,2	130	120			
TI50	7	91	12	91	7	91	12	92	10	92	6	94	10	93	6	95	91,2	3,720	3,720			
TI51	3	91	7	91	3	91	6	92									91		167			
TI52	7	92	6	93					7	92	6	93					92	600				
TI59					6	92	6	93		na		na		na		na						
TI60					8	92	11	92					11	92	5	93						
TI61																						
TI62																						
TI63																						
TI64																						

11.2.1h Continue.

Cat	Comments
TI43	
TI44	Awaiting completion of Master Site Plan.
TI45	
TI46	Originally it was " OUTFALL EXTENSION."
TI47	
TI48	
TI49	Originally it was " OUTFALL EXT VALUE ENGR."
TI50	Same as Emissions Mgmt Program.
TI51	Report completed; Implementation ongoing; same WO.
TI52	Part of this project is covered by TI32
TI59	Feasibility Study.
TI60	
TI61	
TI62	
TI63	
TI64	

11.2.1i TWRP Category.

File Name: WSSD\WCIPPR\93-R1\PIDTWRP.WQ1

Cat	Project Description	Identification			Act Cost (x1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
TW1	AVORS DIVER STRC BYPASS	TW0002	E2000000	IP	129		
TW2	CATEGORY RESERVE			CA			
TW3	CHLORINATION SYSTEM MOD	TW0007	EXX41452	CP	296		
TW4	COMPENS EXCAV FLOOD PROT	TW0003	EXX31872	IP	1,980		
TW5	DECHRINATION FACILITY	TW0014	EXX31378	CP	5,545	2,492	2,040
TW6	DES REL ACT/EQUIP PH2			CA			
TW7	EFFLUENT LINE EXTENSION	TW0003	EXX31235	IP	966		
TW8	HEADWORKS MODIFICATION	TW0002	E2000027	CP	9,495	4,788	4,720
TW9	INF PUMPS REL/UPGRADE	TW0004	E2000101	CP	4,758	3,557	3,898
TW10	LEVEL MONITORING	TW0005	SZD11111	IP	134		
TW11	MODE EQUIP UPGRADE		SZD11112	CA	9		
TW12	PH1 CAP IMPR TEST PROG	TW0006	SZD11113	CP	151		
TW13	PH1 CAP IMPR	TW0006	SZD11115	OH	1		
TW14	PH2 CONST REL ACT/UTIL			CA			
TW15	PH2 PLANT EXPANSION	TW0007	E2000095	CP	58,214	50,337	44,686
TW16	PH2 SCHED CONSLT	TW0007	E2000094	IP	106		1,990
TW17	PRODUCT WATER EQUIP MOD			CA			
TW18	SEPUL BASIN RECL WATER	TW0009	EXX31351	IP	95		
TW19	STANDBY INFL PUMPS	TW0010	E2000016	CP	1,510	1,212	447
TW20	ADMIN BLDG EXPANSION	TW0001	E2000058	IP	17		
TW21	WAREHOUSE MAINTENANCE FACI	TW0018	E2000220	IP	1,012		
TW22	ADDL PROCESS AIR COMPRS	TW0016	E2000218	CP	1,840	1,501	1,200
TW23	AERATN CHLOR TANK GATES	TW0002	E2000124	IP	222		
TW24	AIR POLLUTION CONTROL SYS		E2000106	OH	144		
TW25	CHLORINE STORAGE UPGR	TW0017	E2000219	IP	72		
TW26	NIWA ROAD WIDENING		E2000519	IP			
TW27	SCHED & C/M CONSULT	TW0021	E2000321	CA	1		
TW28	CAPITAL EQUIPMENT REPLAC			FU			
TW29	DUAL POWER FEED SYSTEM		E2000329	CP	123		
TW30	EVIS ELEC & I/C UPGRADE	TW0025	E2000413	IP	60		
TW31	PH1 BAR SECEENS INSTALL	TW0006	E2000319	OH	180		
TW32	PHASE II SPARE PARTS	TW0007	E2000384	CA	290	na	na
TW33	RISK MGMT & PREV PROG	TW0023	E2000275	CP	221	na	136
TW34	SUPPORT FAC REM & UPGRADE		E2000058	IP	16		
TW35	U/G FUEL STORAGE TANK	TW0012	E2000237	IP	38		
TW36	WATER RECLAM VISTOR CENTER			OH			
TW37	COMPRESSOR COOLING SYS UPGR	TW0011	E2000238	OH	157		
TW38	RMPP IMPLEMENTATION		E2000275	IP	54		
TW39	TOXICITY REDUCTION			FU			

11.2.1i Continue.

	Des Plan				Des Act				Con Plan				Con Act				Planning	Expenditures from WCIP Documents (x1000)				
Cat	S		F		S		F		S		F		S		F		Years	1992/93	1991/92	1990/91	1989/90	1988/89
TW1	9	88	8	89	5	92	1	93	6	90	5	91	11	93	5	94	88,9,0,1,2	1,490	1,490	360	360	1,200
TW2																	88					9,500
TW3																	88,9				619	600
TW4	3	87	9	89	3	87	1	92	7	90	5	91	1	93	1	94	88,9,0,1,2	8,980	9,300	9,300	8,060	12,000
TW5	7	86	10	88	11	86	1	90	5	89	4	90	7	90	5	92	88,9,0,1		3,100	3,100	2,476	2,400
TW6																	88					865
TW7	2	88	12	88	2	88	1	92	7	90	5	91	1	93	1	94	88,9,0,1,2	4,070	4,210	4,210	4,210	4,080
TW8	7	88	3	89	12	88	12	89	11	89	4	91	7	90	5	92	88,9,0,1		8,480	6,540	4,710	4,440
TW9	1	88	6	88	2	89	6	90	4	88	12	88	6	90	5	92	88,9,0,1		5,300	3,620	2,480	490
TW10																	88,9,0,1,2	173	116	116	130	150
TW11	7	88	6	93													88					1,020
TW12					8	88	12	90									88,9				723	780
TW13	11	88	5	89	8	88	12	90									88,9,0			140	3,510	3,400
TW14																	88					800
TW15	7	86	6	88	3	87	8	88	4	89	6	91	3	89	4	91	88,9,0,1		66,178	66,178	67,829	78,338
TW16									4	89	6	91	1	89	12	91	88,9				2,300	1,500
TW17																	88,9				433	420
TW18																	88,9,0			14,017	6,302	6,302
TW19	5	88	8	88					10	88	4	89					88					390
TW20	1	89	7	89					9	89	2	90					89,0			2,520	3,720	
TW21	9	89	4	90	6	91	12	92	2	91	5	92	10	93	10	94	89,0,1,2	7,497	7,349	5,343	3,770	
TW22	7	90	12	90	7	90	3	91	1	91	7	91	2	91	4	92	90,1		1,885	1,370		
TW23	1	90	6	90	2	90	6	91	6	92	12	92	6	92	6	93	90,1,2	355	784	609		
TW24	5	90	8	90	5	90	10	90	9	90	3	91					90,1,2	2,160	2,160	2,160		
TW25	7	90	1	91	7	92	7	93	11	91	6	92	5	94	5	95	90,1,2	747	632	535		
TW26																	90, ,1	940		620		
TW27																	90			2950		
TW28	7	94	6	1	7	94	6	2	7	94	6	1	7	94	6	2	91,2	29,250	26,000			
TW29																	91		577			
TW30																	91,2	155	149			
TW31	3	90	11	90	7	90	5	92	12	90	1	92	3	93	5	93	91,2	551	551			
TW32																	91		315			
TW33	10	90	6	93	10	90	6	93	10	90	6	93	10	90	6	93	91		171			
TW34	10	89	8	90	10	92	7	93	7	91	10	92	6	94	4	95	91,2	3,700	3,720			
TW35	3	89	10	90	3	89	5	90	9	91	6	92					91,2	310	310			
TW36																	91		800			
TW37																	92	275				
TW38																	92	80				
TW39																	92	47,000				

11.2.1i Continue.

Cat	Comments
TW1	
TW2	Combined with Major Project Reserves in SW Cat.
TW3	Design only.
TW4	
TW5	On Call.
TW6	
TW7	
TW8	
TW9	
TW10	Part of EXX31132 (Cesspool Facilities).
TW11	
TW12	Testing only.
TW13	Project suspended.
TW14	Many subprojects related to this main project.
TW15	
TW16	
TW17	
TW18	
TW19	
TW20	
TW21	
TW22	On Call.
TW23	
TW24	
TW25	
TW26	
TW27	
TW28	
TW29	Handled by DWP; no data available.
TW30	
TW31	
TW32	Shifted to O&M category. WO closed.
TW33	Report completed. Title changed to RMPP IMPLEMENTATION, same WO.
TW34	Many subprojects. TW20 is one of them.
TW35	Same as U/G Fuel Tank Rplc.
TW36	
TW37	
TW38	Need to merge with report, see TW33; cost adjusted.
TW39	

11.2.2 COMPLETED PROJECTS

This section has been retrieved from the PID by sorting the projects by status. It gives the completed projects (CP's) in one list for convenience of analysis of these projects.

11.2.2a CS Category

11.2.2b HFS Category

11.2.2c HSH Category

11.2.2d HTP Category

11.2.2e LAG Category

11.2.2f PP Category

11.2.2g SW Category

11.2.2h TITP Category

11.2.2i TWRP Category

11.2.2a CS Category.

File Name: WSSD\WCIPPR\93-R1\PIDCSCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
CS3	CEMENT SEWER ASSESSMENT	CS0062	EXX31111	CP	5,209		
CS5	EVIS UNIT 2A	CS0014	EXX31373	CP	1,016	1,852	1,833
CS6	EVIS UNIT 2B	CS0014	EXX41257	CP	1,852	1,724	1,724
CS7	EVIS UNIT 2C	CS0014	EXX41258	CP	2,466	2,313	2,322
CS8	EVIS UNIT 2D	CS0014	EXX41259	CP	2,955	2,397	2,397
CS10	FOX ST INTER SWR	CS0018	EXX31434	CP	527	379	379
CS12	LA CIENEGA & SAN FERNAN SWR	CS0027	EXX31669	CP	470	427	373
CS15	MAGNOLIA BLVD INT SWR	CS0033	EXX31398	CP	505	428	428
CS38	WILLIS & BLYTH INTER SWR	CS0060	EXX31374	CP	74	186	186
CS65	FIGUEROA & 8TH ST RELIEF SWR	CS0077	E2000297	CP	2,791	1,709	1,683
CS66	FIGUEROA & NAGOYA RELIEF SWR	CS0077	E2000344	CP	1,856	1,877	1,577

11.2.2a Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
CS3	7	85	6	92	6	85	6	92		na		na		na		na	88,9,0,1
CS5		na		na		na		na		na		na	6	88	2	89	88,9
CS6		na		na		na		na		na		na	4	88	3	89	88
CS7		na		na		na		na		na		na	3	88	1	89	88
CS8		na		na		na		na		na		na	5	88	2	89	88
CS10	7	89	6	90	11	88	8	89	4	91	3	92	9	90	12	90	88,9,0
CS12	7	86	11	86	7	83	11	86	7	88	11	88	8	88	4	89	88
CS15		na		na	9	84	2	88		na		na	1	89	4	89	88
CS38													3	89	5	89	88
CS65	7	90	2	91	5	91	12	92	6	90	2	91	7	91	7	92	91
CS66	10	90	6	91	10	90	4	91	11	91	4	92	3	92	7	92	91

11.2.2b HFS Category.

File Name: WSSD\WCIPPR\93-R1\PIDHFSCP.WQ1

Cat	Project Description	Identification			Actual Cost (x$1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
HF2	CONST MGMT BLDG	HF0006	EXX31461	CP	10,195	8,090	5,999
HF7	OCEAN MONITORING VESSEL	HF0023	EXX41503	CP	468	4,138	3,591
HF11	PRIM BATTERIES MOD U1	HF0028	EXX31141	CP	15,223	11,253	9,360
HF13	PRIMARY BATTERY "D"	HF0030	Mult	CP	39,453	33,154	25,701
HF14	PRKG FAC & PED CROSSING		EXX31460	CP	6,049	3,966	3,118
HF34	DWP LAND AC/UNDRGND ESMT			CP	771	na	na
HF35	DWP POWER SUPPLY		E2000042	CP	1,677	na	na
HF48	TEMP WASTE STORAGE FACILITY		E2000128	CP	260		
HF49	WATER SUPPLY PIPELINE	HF0063	E2000039	CP	3,616	3,200	2,881

11.2.2b Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
HF2	5	87	4	88	5	87	3	88	8	88	2	90	8	88	10	90	88,9
HF7	8	86	6	87	8	86	7	87	7	88	9	89	7	88	8	90	88
HF11	9	86	12	87	9	86	7	87	6	88	11	89	7	88	6	90	88,9
HF13	9	86	10	87	9	86	5	87	5	88	1	91	6	88	7	91	88,9,0,1
HF14	1	88	6	88	8	88	10	89	3	89	12	89	5	90	11	91	88,9,0,1
HF34	7	89	6	90	7	89	6	90									89
HF35	4	88	4	89	4	88	7	89	7	89	4	91	7	89	2	92	89,0
HF48	1	90	10	90	6	89	1	91									91
HF49	5	88	1	89	8	88	5	91	7	89	7	91	1	92	10	92	92

11.2.2c HSH Category.

File Name: WSSD\WCIPPR\93-R1\PIDHSHCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HS4	CONST ENGR CONSULTANTS	HS0005	EXX31593	CP	15,697	na	
HS8	SPARE PARTS		Mult	CP	337		
HS9	HERS CONSTR SCHED CNSLT	HS0005	EXX31953	CP	1,873	na	
HS15	CF FLOOR DRAINS	HS0010	E2000167	CP	0	na	
HS16	SCF OPTIMIZATION PH I	HS0023	E2000168	CP	550	198	
HS18	CF SO2 SCRUBBER DRAIN	HS0010	E2000170	CP	20	na	
HS19	CG ADDBACK COOLING	HS0021	E2000172	CP	39		
HS20	CG BUILDING MODS	HS0009	E2000173	CP	746	302	
HS21	CG COND/COALESCER MODS	HS0009	E2000174	CP	957	744	
HS22	CG DEOILING MODS	HS0009	E2000176	CP	666	321	
HS23	CG DRY/WET SIDE SEPAR	HS0009	E2000181	CP	91	na	
HS24	CG EVAPOR/HEATER UPGR	HS0009	E2000177	CP	1	na	
HS25	CG OIL DISTILLATION MODS	HS0009	E2000178	CP	443	403	
HS26	CG TRANSPORT SYS MODS	HS0009	E2000163	CP	128	na	
HS27	CG VACUUM SYSTEM MODS	HS0009	E2000179	CP	563	na	
HS28	CG WET CAKE FEED MODS	HS0009	E2000180	CP	619	na	
HS30	CG/CF DUST CONTROL	HS0012	E2000171	CP	5	na	
HS39	DIG GAS CONDENSATE REMOVAL	HS0012	E2000155	CP	1	na	
HS41	LABORATORY VENTILATION	HS0012	E2000156	CP	579	na	
HS44	REBOILER UPGRADE	HS0011	E2000160	CP	1		
HS50	HERS CONSTRUCTION CLAIMS	HS0015	E2000322	CP	11,782		

11.2.2c Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
HS4		na		na		na		na	7	88	9	88	7	88	7	89	88
HS8		na		na		na		na	7	88	9	90	7	88	6	89	88
HS9		na		na		na		na	7	88	9	88	7	88	6	89	88,9
HS15		na		na		na		na		na		na		na		na	89,0
HS16	11	89	7	90	11	89	7	90	1	90	3	91	1	90	3	91	89
HS18		na		na		na		na		na		na		na		na	89,0
HS19	3	89	7	91	6	89	6	90	7	91	7	92	10	89	8	90	89,0
HS20	2	89	1	90	2	89	9	91	7	89	7	89	10	89	10	92	89,0
HS21		na		na		na		na		na		na		na		na	89,0
HS22		na		na		na		na		na		na		na		na	89,0
HS23		na		na		na		na		na		na		na		na	89,0
HS24		na		na		na		na		na		na		na		na	89,0
HS25		na		na	1	89	5	90		na		na	6	89	8	90	89,0
HS26		na		na		na		na		na		na		na		na	89,0
HS27		na		na	1	89	12	89		na		na	11	89	4	90	89,0
HS28		na		na	3	89	5	90		na		na	9	90	2	91	89
HS30		na		na		na		na		na		na		na		na	89,0
HS39		na		na		na		na		na		na		na		na	89,0
HS41	4	89	9	89	2	89	8	90	1	90	9	90	9	90	3	91	89
HS44		na		na		na		na		na		na		na		na	89,0
HS50		na		na		na		na	7	90	6	91	7	90	6	91	90

11.2.2d HTP Category. File Name: WSSD\WCIPPR\93-R1\PIDHTPCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
HT1	ASBESTOS REMOVAL (NEW)	HP0048	SZH11117	CP	316	246	na
HT5	BLDG REMOD & TRAILERS	HP0047	SZH11116	CP	52		
HT7	CATHOD PROTECT 7 MI OF	HP0003	E2000104	CP	37	29	24
HT8	CENTRIF-PROCURE & INSTALL C73	HP0004	EXX31155	CP	3,603	2,673	na
HT15	PLANT EFFLUENT WATER SYSTEM	HP0027	EXX31355	CP	1,604	946	823
HT20	INTERIM IMPRV PROG ADS	HP0016	EXX31136	CP	4,265	3,860	3,493
HT23	MOD TO C-7 BELT CONVEYORS	HP0021	E2000051	CP	5,156	4,275	3,230
HT25	PCB TRANSFORMER REMOVAL	HP0025	EXX31892	CP	796	na	na
HT28	RAW SLUDGE PUMP CONTR MOD	HP0031	EXX31440	CP	528	na	139
HT31	UNDERGROUND TANK REMOVAL			CP	na	na	na
HT32	VAX CLUSTER UPGRADE	HP0043	SZH11112	CP	62	na	na
HT33	WASTE GAS BURNERS	HP0045	EXX31106	CP	2,246	2,623	2,435
HT43	GRID PAD RELOCATION	HP0014	E2000017	CP	683		
HT49	HCD BLDG MODERNIZATION FOR S		E2000449	CP	378	na	na
HT53	RISK MANAG & PREV PROG	HP0064	E2000230	CP	150	na	124

11.2.2d Continue.

	Plan Des		Actual Des		Plan Con		Actual Con		Planning
Cat	S	F	S	F	S	F	S	F	Years
HT1	na	na	na	na	4 88	7 90	na	na	88,9
HT5	na	na	na	na	na	na	na	na	88,9
HT7	8 88	9 88	8 87	7 89	3 89	8 89	5 90	9 90	88,9
HT8	1 88	3 88	1 88	3 88	8 88	11 89	8 88	11 89	88
HT15	5 87	4 88	5 87	10 88	11 88	2 90	8 89	12 90	88,9,0
HT20	na	na	na	na	3 88	2 89	3 88	2 89	88
HT23	3 88	6 88	3 88	3 89	12 88	9 89	5 89	3 90	88,9
HT25	na	na	na	na	8 90	8 91	8 90	11 91	88,9
HT28	3 87	8 87	3 87	10 88	5 88	2 89	8 89	4 91	88,9, ,1
HT31	na	na	na	na	na	na	na	na	88,9
HT32	1 88	5 88	1 88	5 88	7 88	7 89	12 88	7 89	88
HT33	1 87	7 88	na	na	na	na	2 87	6 89	88
HT43	na	na	na	na	na	na	na	na	88
HT49	na	na	na	na	na	na	2 92	5 92	91
HT53	1 90	6 91	1 90	7 91	na	na	na	na	91

11.2.2e LAG Category.

File Name: WSSD\WCIPPR\93-R1\PIDLAGCP.WQ1

CAT	Project Description	Identification			Actual Cost (x1000)		
		MP # EW	WO #	Sta	Total	Con	Bid
LA1	ADD'L CHLOR CONTACT TANK	LG0001	EXX31388	CP	5,618	3,838	3,457
LA3	CAPACITY IMPR TEST PROG	LG0002	SZL11111	CP	282	na	348
LA13	SEC PROCESS IMPROVE	LG0007	SZL11113	CP	3,774	2,833	2,792
LA17	DECHLORINATION FAC IMPR	LG0003	SZL11120	CP	1,423	895	600

11.2.2e Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
CAT	S		F		S		F		S		F		S		F		Years
LA1	3	87	3	88	3	87	12	88	10	88	10	89	8	89	10	90	88,9,0,1
LA3	8	88	2	91	8	88	4	91	na		na		na		na		88,9
LA13	10	88	2	89	12	88	3	90	12	89	8	90	5	91	2	92	88,9,0,1
LA17	5	90	9	90	2	90	11	90	9	90	1	91	5	90	5	92	90

11.2.2f PP Category.

File Name: WSSD\WCIPPR\93-R1\PIDHSHCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
PP1	BALLONA CR F.M. & GRAV SWR	PP0002	EXX31972	CP	8,591	6,653	4,772
PP7	PUMPING PLANT REM/UPGRADE	PP0008	EXX31411	CP	1,424		
PP8	PUMPING PLANT STANDBY POWER	PP0009	E2000020	CP	3,184	2,485	2,900
PP10	VENICE PUMPING PLANT RECONST	PP0012	EXX31932	CP	1,041		

11.2.2f Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
PP1	5	85	6	89	5	85	6	89	8	91	6	92	8	90	3	92	88,9,0,1
PP7									8	93	2	95					88,9
PP8	3	88	11	88	3	88	11	88	7	88	2	92	8	88	2	92	88
PP10																	88

11.2.2g SW Category.

File Name: WSSD\WCIPPR\93-R1\PIDSWCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x$1000)		
		MP # EW	WO #		Total	Con	Bid
SW8	OFFSITE SLDG DISP DR EIR/EIS		EXX31418	CP	829		493
SW26	VISTA DEL MAR & GRAND WIDEN	SW0026	E2000012	CP	562	315	302
SW27	WATER CONSV DEVICES	SW0027	E2000059	CP	607		
SW28	WW PROGRAM PSR ENHANCEMENT	SW0033	E2000054	CP	297		

11.2.2g Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
SW8	6	88	6	89	11	87	7	89	na	na	na	na	na	na	na	na	88,9
SW26	6	88	1	89	6	88	1	89	6	89	10	89	8	89	12	89	89
SW27	7	89	6	90	7	89	3	91	na	na	na	na	na	na	na	na	89
SW28	7	89	6	90	7	89	6	90	na	na	na	na	na	na	na	na	89

11.2.2h TITP Category.

File Name: WSSD\WCIPPR\93-R1\PIDTITPCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
TI2	AIR POLL REDUCT SYS		EXX31676	CP	1,804	852	513
TI3	DIGESTER DEMO		E2000023	CP	860	663	592
TI5	INTERIM PERS FAC		SZT11114	CP	89	na	172
TI6	SITE LANDSCAPING	TI0004	EXX31214	CP	617	365	344
TI16	ELEC & STRUCT MOD		EXX31678	CP	169	na	na
TI34	SLUDGE HANDLING IMP		E2000088	CP	159	na	na
TI36	TITP TASK FORCE I		SZT11125	CP	771	na	na
TI37	TITP TASK FORCE II		E2000091	CP	82	na	na
TI38	AIR DIFFUSER REPL		E2000096	CP	1	na	na

11.2.2h Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
TI2	11	89	4	90	8	83	10	87	10	90	9	92	9	88	12	89	88
TI3	7	87	10	88	7	87	10	88	6	89	11	89	6	89	1	90	88
TI5	7	88	10	88	7	88	10	88	1	89	6	89	7	89	1	90	88
TI6	9	88	3	89	6	88	1	89	12	89	2	90	9	90	5	91	88,9,0
TI16		na		na		na		na		na		na		na		na	88
TI34	2	89	6	90		na		na	5	91	6	92		na		na	89,0,1,2
TI36	2	89	1	90	2	89	11	90		na		na		na		na	89
TI37	2	89	1	90	2	89	11	90		na		na		na		na	89
TI38	7	89	3	90	11	89	10	90	3	90	3	91	3	90	7	91	90

11.2.2i TWRP Category.

File Name: WSSD\WCIPPR\93-R1\PIDTWRPCP.WQ1

Cat	Project Description	Identification		Sta	Actual Cost (x1000)		
		MP # EW	WO #		Total	Con	Bid
TW3	CHLORINATION SYSTEM MOD	TW0007	EXX41452	CP	296	na	na
TW5	DECHRINATION FACILITY	TW0014	EXX31378	CP	5,545	2,492	2,040
TW8	HEADWORKS MODIFICATION	TW0002	E2000027	CP	9,495	4,788	4,720
TW9	INF PUMPS REL/UPGRADE	TW0004	E2000101	CP	4,758	3,557	3,898
TW12	PH1 CAP IMPR TEST PROG	TW0006	SZD11113	CP	151	na	na
TW15	PH2 PLANT EXPANSION	TW0007	E2000095	CP	58,214	50,337	44,686
TW19	STANDBY INFL PUMPS	TW0010	E2000016	CP	1,510	1,212	447
TW22	ADDL PROCESS AIR COMPRS	TW0016	E2000218	CP	1,840	1,501	1,200
TW29	DUAL POWER FEED SYSTEM		E2000329	CP	123	na	na
TW33	RISK MGMT & PREV PROG	TW0023	E2000275	CP	221	na	136

11.2.2i Continue.

	Plan Des				Actual Des				Plan Con				Actual Con				Planning
Cat	S		F		S		F		S		F		S		F		Years
TW3																	88,9
TW5	7	86	10	88	11	86	1	90	5	89	4	90	7	90	5	92	88,9,0,1,2
TW8	7	88	3	89	12	88	12	89	11	89	4	91	7	90	5	92	88,9,0,1
TW9	1	88	6	88	2	89	6	90	4	88	12	88	6	90	5	92	88,9,0,1
TW12					8	88	12	90									88,9
TW15	7	86	6	88	3	87	8	88	4	89	6	91	3	89	4	91	88,9,0,1
TW19	5	88	8	88					10	88	4	89					88
TW22	7	90	12	90	7	90	3	91	1	91	7	91	2	91	4	92	90,1
TW29																	91
TW33	10	90	6	93	10	90	6	93	10	90	6	93	10	90	6	93	91

SECTION 12
WSSD SYSTEM

This section briefly documents the system that has been developed by the WSSD CIP-Coordination Group at WPMD. It is not claimed that this is an efficient system but rather it has been developed to respond to the project needs as quickly as possible, constrained by software available and our computer knowledge.

A much more efficient system can be developed as discussed in Section 7. Within the constraints, we believe that this system is a very organized and efficient enough that should be considered partly in conjunction with recommendations to system development in Section 7.

12.1 Types of Software Used

Three different types of software have been utilized, Word Perfect (WP51) for text, Quattro Pro (QPro) for tables and databases and Harvard Graphics (HG3) for graphs. It is noted that QPro should not have been used for the integrated WCIP databases, but limitation with time was the reason for using it. Section 7 explains this further.

12.2 Filing Structures

12.2a Notations

Considering the 8 character limitation allowed for file names in these software used, several notations have been used. These notations have been carefully chosen to explain the content of the files. The filing notations are defined below:

ACAD:	for Autocad
B:	for Breakdown by project
C:	first C for project Count
C:	second C for project Category
CP:	for Completed Project

D:	for yearly Document
DIR:	Directory
DR:	for Detailed Report
DRA:	for Detailed Report Appendices
E:	for project Expenditures
ES:	for Executive Summary
F:	for Fiscal year
Fi:	for Figure i, e.g., F1 for Figure 1
HG:	for Harvard Graphics
MAC:	for Macintosh
93C:	for projects that have been Completed by 1/1/93
93D:	for projects planned to be Delivered by 6/30/93
93-R1:	for project planned to be delivered by 1/1/93, first Revision
94-R1:	for projects planned to be delivered by 1/1/94, first Revision
O:	for Overall
PID:	for Preliminary Integrated Database
PREDGE:	for title file for the cover EDGE
PRPARTS:	for file identifying the various PARTS of the report
PRST:	for PRESTation
QPRO:	for Quattro Pro
S:	Status or actual
SA:	for Structure of an Alternative improvement
SM:	for Structure of WCIP Master files
SP:	for Structure of WCIP Planning files
Ti:	for Table i, e.g., T1 for Table 1
U:	for Duration
TAiBi:	for Table Ai or Table Bi, e.g., TA1 for Table A1
TCiDi:	for Table Ci or Table Di, e.g., TC1 for Table C1
WCIP:	Wastewater Capital Improvement Program
WCIPPR:	WCIP Progress Report
WSSD:	Wastewater System Supports Division
WP51:	for Word Perfect 51

12.2b Structure

As there have been a growing number of files associated with this project, an organized filing system has been necessary. The filing structure has gone through several revisions to date. It is believed that the structure in the following figure, with the explanations of the notations above, should be very helpful for those who will be responsible for implementation of future editions.

FIGURE 5. STRUCTURE OF VARIOUS FILES IN WSSD/WCIPPR DIRECTORY.

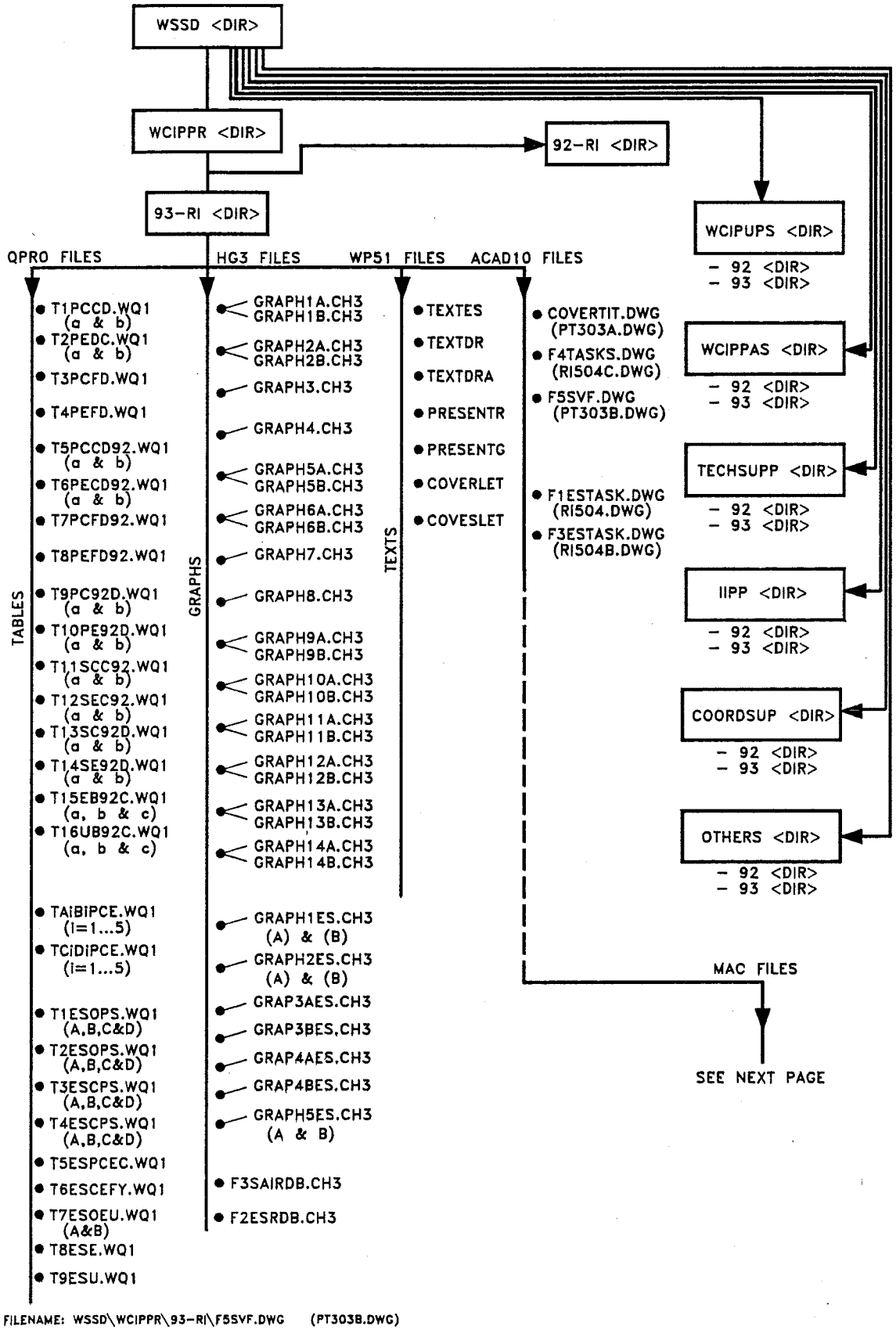
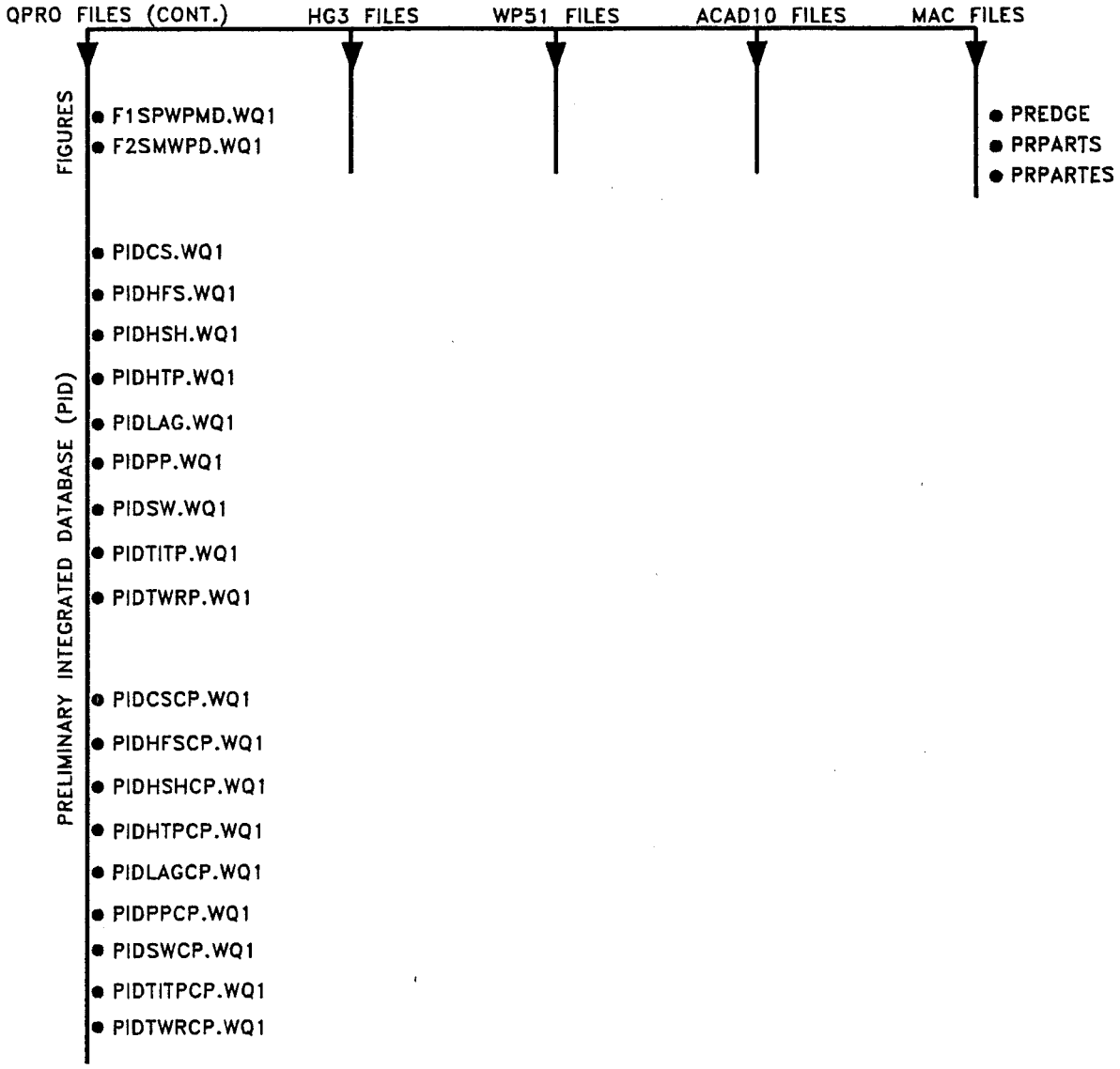


FIGURE 5. Continue.



FILENAME: WSSD\WCIPPR\93-RI\F5SVF.DWG (PT303C.DWG)

SECTION 13

ATTACHMENTS REFEREED TO IN OTHER SECTIONS

13. ATTACHMENTS REFERRED TO IN OTHER SECTIONS

13.1 ATTACHMENTS FOR SECTION 2

13.1a PSR Sample Page for Subsection 2.1a
13.1b M26 Sample Page for Subsection 2.2a
13.1c WCIP Planned Expenditure Sample Pages for Subsection 2.3a
13.1d Program Master List Sample Pages for Subsection 2.3b
13.1e FMR Sample Pages for Subsection 2.3c

13.2 ATTACHMENTS FOR SECTION 6

13.2a Attachments for Example 1
13.2b Attachments for Example 2a
13.2c Attachments for Example 2b
13.2d Attachments for Example 3
13.2e Attachments for Example 4
13.2f Attachments for Example 5

13.3 ATTACHMENTS FOR SECTION 10

13.3a Attachments for Example 1 of Subsection 10.2a

13.1a PSR Sample Page for Subsection 2.1a

EAST VALLEY INTCPTR SEW UN 1-B
EVIS
COLLECTION SYSTEM
THIS IS DESIGN W.O. ONLY
FOR CONSTR SEE W.O. EXX31433

WORK ORDER: EXX41318 MINIS#: 3367 R/W: 30427
PROJ: EWCS0014
MAJOR PROJ: CS

WORK PGM: 50 - SEWERS
ED: 56, 81, 77
CD: 02

VS:16

(X) STANDARD ( ) NON-STANDARD

PLAN NO. D-24410(14)
FILE# 296 STATUS - CONSTRUCTION BAR CHART - PRIORITY NO: 0 FISCAL YEAR:
ACCELERATE FOR SPECIAL

FED AID PROGRAM: CWG FED AID NO. C-06-1146-110 COMBINED ROAD PLAN:
PROJECT ENGINEER
56 - BROGAN (213)687-0259 81 - VEGA (818)989-8768 77 - GARY (213)485-2720

	ESTIMATED	SCHEDULED	EXPENDITURES (IF OPENED AFTER 6/30/88)	
FAP	374,000		PLAN	0
R/W	74,000			
CON	0	85-86	CONST	0
TOTAL	448,000		TOTAL	0

4040	WORK ORDER OPENED	10-22-71A CF 78-232	7730	R/W AVAIL FOR CONST	07-05-83A TITLE CLEARANCE 7-5-83
5400	NOD/NOE FILED	03-17-77A EIR-EVIS	7760	CNST/PRJ TITLE CLEAR	07-05-83A PROJ TITLE CLEARANCE
5990	DESIGN STARTED	04-15-72A	7820	CONST ESTIMATE COMP	12-06-85A REV $3,052,000/ORIG 8-74
6050	PRELIM R/W MAP COMP	01-31-73A	8010	PS&E PKG COMP	04-08-85A
6380	TITLE SEARCH COMP	04-13-73A 8 PARCELS	8040	PS&E PKG TO STATE	04-09-85A
6480	PLANS SIGNED BY DE	06-05-73A	8320	UTILITY SUMMARY COMP	06-27-85A REV/ORIG 5-4-83
6570	6620S SIGNED BY CE	07-27-73A	8350	FINAL BID PKG TO PMD	10-21-85A
6640	REV DE/DH SIGNATURE	06-11-82A	8370	ADVERTISED BY BPW	10-21-85A SEE WO EXX31433 FOR CONST.
6670	REV CE SIGNATURE	04-25-83A	8430	OPEN BIDS	12-18-85A
6700	FINAL R/W MAP COMP	07-05-73A	8580	STATE APVL TO AWARD	02-20-86A RQSTD 1-2-86
6760	QUANTY TAKE-OFF COMP	04-20-83A	8680	CONTR AWARD BY BPW	03-03-86A S A HEALEY $2,890,604 C-64884
7300	CONDEMN ORD ADOPTED	12-15-82A REVSN/ORIG 5-27-78A	8960	WORK ORDER CLOSED	HOLD OPEN FOR GRANT AUDITING
7360	REQUEST OIP	05-05-83A			

03-01-92: PROJECT IS BEING CLOSED.
01-02-91: IN AUGUST 1990 THE JUDGE S. A HEALY RENDERED A PRELIMINARY DECISION IN FAVOR OF THE CITY FINAL JUDGEMENT IS PENDING ANY APPEALS.
11-01-90: PROJECT CHANGED FROM FILE 296 TO 298 (ROUTINE).

13.1b Mz6 Sample Page for Subsection 2.2a

CLEAN WATER GRANT [illegible] ACCOUNTING SUBSYSTEM
[illegible]DGER SU[illegible]ARY OF WORK ORDERS
AS OF 08/31/92

NO: 53
RE[illegible] NO: M-2
PERIOD ENDING: 08/31/9

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: C0033164			WORK ORDER TITLE : ANNUAL PAVING CONTRACT 92-93						
90.95	0.00	0.00	90.95	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXXX1777			WORK ORDER TITLE : NOT IN TABLE						
0.00	205.98-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX01001			WORK ORDER TITLE : STREET IMPROVEMENTS INDIRECT						
7,706,874.44	0.00	7,699,814.93	1,254.08	0.00	756.97	0.00	1,678.16	3,370.30	0.00
WORK ORDER NUMBER: EXX01002			WORK ORDER TITLE : ASSESSMENT WORK (INDIRECT)						
2,770,337.00	0.00	2,767,654.94	0.00	0.00	0.00	0.00	262.94	2,419.12	0.00
WORK ORDER NUMBER: EXX01003			WORK ORDER TITLE : STREET MAINTENANCE (INDIRECT)						
1,384,955.49	0.00	1,384,471.71	0.00	0.00	0.00	0.00	431.47	52.31	0.00
WORK ORDER NUMBER: EXX01004			WORK ORDER TITLE : FLOOD CONTROL (INDIRECT)						
3,358,542.71	0.00	3,355,662.64	0.00	0.00	0.00	0.00	712.62	2,167.45	0.00
WORK ORDER NUMBER: EXX01005			WORK ORDER TITLE : WASTEWATER FACILITIES (IND)						
77,363,036.82	0.00	3,067,633.18	0.00	3,827.13	0.00	0.00	40,565.77	19,787.41	54,231,223.33
WORK ORDER NUMBER: EXX01006			WORK ORDER TITLE : MUNICIPAL FACILITIES (INDIRCT)						
3,244,451.42	0.00	3,235,367.29	0.00	0.00	0.00	0.00	930.79	8,153.34	0.00
WORK ORDER NUMBER: EXX01007			WORK ORDER TITLE : PRIVATELY FINANCED (INDIRECT)						
5,266,859.84	0.00	5,263,350.80	0.00	0.00	0.00	0.00	2,485.41	1,023.63	0.00
WORK ORDER NUMBER: EXX01008			WORK ORDER TITLE : GENERAL SURVEY SUPPORT (IND)						
4,638,124.58	0.00	4,571,060.14	0.00	0.00	0.00	0.00	38,456.26	28,608.18	0.00
WORK ORDER NUMBER: EXX01009			WORK ORDER TITLE : GEN MAPPING SUPPORT (INDIRECT)						
2,082,404.20	0.00	2,024,272.23	0.00	0.00	0.00	0.00	0.00	58,131.97	0.00
WORK ORDER NUMBER: EXX01011			WORK ORDER TITLE : B PERMIT						
1,233,403.81	0.00	1,211,573.68	0.00	0.00	0.00	0.00	54.29	21,775.84	0.00
WORK ORDER NUMBER: EXX01013			WORK ORDER TITLE : POLICY DIRECTION						
9,616,096.99	0.00	9,599,309.63	0.00	0.00	0.00	0.00	6,886.81	301.01	9,599.54
WORK ORDER NUMBER: EXX01014			WORK ORDER TITLE : GEN ADMINISTRATION & SUPPORT						
32,537,507.41	0.00	2,380,955.86	264.92	0.00	0.00	0.00	12,797.25	26,450.45	17,038.93
WORK ORDER NUMBER: EXX01015			WORK ORDER TITLE : SPECIALIZED ENGINEERING						
4,838,179.60	0.00	4,796,804.25	0.00	0.00	0.00	0.00	1,836.42	23,718.92	15,820.01
WORK ORDER NUMBER: EXX01016			WORK ORDER TITLE : ACQUISITION & SALES (INDIRECT)						
5,753,919.43	0.00	5,749,702.62	0.00	0.00	0.00	0.00	3,534.80	682.01	0.00

13.1c WCIP Planned Expenditure Sample Pages for Subsection 2.3a

ROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
UNDY DR &TENNESSEE REL SWR	SCM	0	PLANS:							
	SC	0	FAP	107,000						
	BOND 87	0	CIP	0						
	EF	0	R/W	0						
			CONST.	767,000	511,000	256,000	0	0	0	0
	AF	0	CONST. MGT:							
			FACM	90,000	C	C				
	ANTICIPATED FUNDS		CTCM	0						
ROJECT INFORMATION										
	FA--	197,000	TOTAL COST	964,000						
lork Order: EXX31390	ST--	0								
ng. Dist: 85	US--	0	REQUIRED CITY FUNDS							
ouncil District: 11	PVT-	135,000								
imis: 4213	-R	135,000	AMOUNT:	767,000						

ROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
LAY SEWER ASSESSMENT	SCM	0	PLANS:							
	SC	0	FAP	85,000						
	BOND 87	0	CIP	849,000						
	EF	0	R/W	0						
			CONST.	0	0	283,000	283,000	283,000	0	0
	AF	0	CONST. MGT:							
			FACM	0		CIP	CIP	CIP		
	ANTICIPATED FUNDS		CTCM	0						
ROJECT INFORMATION										
	FA--	85,000	TOTAL COST	934,000						
'ork Order: _____	ST--	0								
ng. Dist: 52	US--	0	REQUIRED CITY FUNDS							
ouncil District: ALL	PVT-	131,000								
imis: 8430	-R	131,000	AMOUNT:	849,000						

ROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
LOSED CIRCUIT TV & VIS INSP	SCM	2,300,000	PLANS:							
	SC	700,000	FAP	350,000						
	BOND 87	0	CIP	5,750,000						
	EF	0	R/W	0						
			CONST.	0	2,000,000	750,000	0	0	0	0
	AF	3,000,000	CONST. MGT:							
			FACM	0	CIP	CIP				
	ANTICIPATED FUNDS		CTCM	0						
ROJECT INFORMATION										
	FA--	350,000	TOTAL COST	6,100,000						
'ork Order: EXX31111	ST--	0								
ng. Dist: 52	US--	0	REQUIRED CITY FUNDS							
ouncil District: ALL	PVT-	854,000								
imis: 7370	-R	854,000	AMOUNT:	2,750,000						

13.1c Continue 1

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
ASSESSMENT SEWERS	SC	0	PLANS:							
	BOND 87	0	FAP	108,000						
	BOND 88	0	CTP	0						
			R/W	0						
	AF	0	CONST.	1,080,000	200,000	200,000	220,000	220,000	240,000	0
			CONST. MGT:							
			FACM	108,000	C	C	C	C	C	
	ANTICIPATED FUNDS		CTCM	0						
PROJECT INFORMATION										
	FA--	216,000	TOTAL COST	1,296,000						
Work Order: _____	ST--	0								
Eng. Dist:	US--	0	REQUIRED CITY FUNDS							
Council District:	PVT-	0								
Mimis: 8790	-R	0	AMOUNT:	1,080,000						

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
BASSETT ST. INTERCEPTOR SEWER	SC	0	PLANS:							
	BOND 87	0	FAP	40,000						
	BOND 88	0	CTP	0						
			R/W	0						
	AF	0	CONST.	237,000	0	0	0	0	237,000	0
			CONST. MGT:							
			FACM	29,000					C	
	ANTICIPATED FUNDS		CTCM	0						
PROJECT INFORMATION										
	FA--	69,000	TOTAL COST	306,000						
Work Order: _____	ST--	0								
Eng. Dist: 81	US--	0	REQUIRED CITY FUNDS							
Council District: 3	PVT-	0								
Mimis: 8791	-R	0	AMOUNT:	237,000						

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
BUNDY DR & TENNESSEE REL SWR	SC	0	PLANS:							
	BOND 87	0	FAP	107,000						
	BOND 88	0	CTP	0						
			R/W	0						
	AF	0	CONST.	767,000	640,000	127,000	0	0	0	0
			CONST. MGT:							
			FACM	90,000	C	C				
	ANTICIPATED FUNDS		CTCM	0						
PROJECT INFORMATION										
	FA--	197,000	TOTAL COST	964,000						
Work Order: EXX31390	ST--	0								
Eng. Dist: 85	US--	0	REQUIRED CITY FUNDS							
Council District: 11	PVT-	0								
Mimis: 4213	-R	0	AMOUNT:	767,000						

13.1c Continue 2

FIVE YEAR WASTEWATER CAPITAL IMPROVEMENT PROGRAM

PROJECT TITLE

ASSESSMENT SEWERS

PROJECT INFORMATION

Work Order: VARIOUS
Eng. Dist: 52
Council District: ALL
Mimis: 8790

ANTICIPATED FUNDS	
FA--	270,000
ST--	0
US--	0
PVT-	0
-R	0

APPROPRIATED FUNDS	
AMOUNT:	200,000

COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
PLANS:							
FAP	112,000	20,000	22,000	22,000	24,000	24,000	0
CTP	0	0	0	0	0	0	0
R/W	0	0	0	0	0	0	0
CONST.	1,320,000	200,000	220,000	220,000	240,000	240,000	0
CONST. MGT:							
FACM	158,000	28,000	31,000	31,000	34,000	34,000	0
CTCM	0	0	0	0	0	0	0
TOTAL COST	1,590,000						
REQUIRED CITY FUNDS							
AMOUNT:	1,120,000	200,000	220,000	220,000	240,000	240,000	0

PROJECT TITLE

BASSETT ST INTER SWR

PROJECT INFORMATION

Work Order:
Eng. Dist: 81
Council District: 3
Mimis: 8791

ANTICIPATED FUNDS	
FA--	72,000
ST--	0
US--	0
PVT-	0
-R	0

APPROPRIATED FUNDS	
AMOUNT:	0

COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
PLANS:							
FAP	40,000	0	40,000	0	0	0	0
CTP	0	0	0	0	0	0	0
R/W	0	0	0	0	0	0	0
CONST.	226,000	0	0	226,000	0	0	0
CONST. MGT:							
FACM	32,000	0	0	32,000	0	0	0
CTCM	0	0	0	0	0	0	0
TOTAL COST	298,000						
REQUIRED CITY FUNDS							
AMOUNT:	226,000	0	0	226,000	0	0	0

PROJECT TITLE

BUNDY DR & TENNESSEE REL SWR

PROJECT INFORMATION

Work Order: EXX31390
Eng. Dist: 85
Council District: 11
Mimis: 4213

ANTICIPATED FUNDS	
FA--	224,000
ST--	0
US--	0
PVT-	0
-R	0

APPROPRIATED FUNDS	
AMOUNT:	0

COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
PLANS:							
FAP	111,000	0	0	0	0	0	0
CTP	0	0	0	0	0	0	0
R/W	0	0	0	0	0	0	0
CONST.	805,000	405,000	400,000	0	0	0	0
CONST. MGT:							
FACM	113,000	57,000	56,000	0	0	0	0
CTCM	0	0	0	0	0	0	0
TOTAL COST	1,029,000						
REQUIRED CITY FUNDS							
AMOUNT:	805,000	405,000	400,000	0	0	0	0

(1) Category cost totals may not equal the sum of annual costs because of previous appropriations.

EXPENDITURE PLAN
WASTEWATER CAPITAL IMPROVEMENT PROGRAM
FY 1991/92 – FY 2000/01

13.1c Continue 3

PROJECT TITLE	PROJECT COSTS		1ST YEAR 91/92	2ND YEAR 92/93	3RD YEAR 93/94	4TH YEAR 94/95	5TH YEAR 95/96	6TH YEAR 96/97	7TH YEAR 97/98	8TH YEAR 98/99	9TH YEAR 99/2000	10TH YEAR 2000/01
ARCHWOOD ST INTERCEPT SWR												
	PLANS CITY	180,000	0	135,000	45,000	0	0	0	0	0	0	0
Work Order: _____	PLANS CONSLT	0	0	0	0	0	0	0	0	0	0	0
Eng. Dist: 81	R/W	0	0	0	0	0	0	0	0	0	0	0
	CONST.	1,150,000	0	0	0	1,150,000	0	0	0	0	0	0
	CM CITY	200,000	0	0	0	200,000	0	0	0	0	0	0
	CM CONSLT	0	0	0	0	0	0	0	0	0	0	0
	EST. COST	1,530,000	0	135,000	45,000	1,350,000	0	0	0	0	0	0
ASSESSMENT ACT SEWERS												
	PLANS CITY	264,000	22,000	22,000	24,000	24,000	24,000	29,000	29,000	30,000	30,000	30,000
Work Order: VARIOUS	PLANS CONSLT	0	0	0	0	0	0	0	0	0	0	0
Eng. Dist: 52	R/W	0	0	0	0	0	0	0	0	0	0	0
	CONST.	2,640,000	220,000	220,000	240,000	240,000	240,000	290,000	290,000	300,000	300,000	300,000
	CM CITY	264,000	22,000	22,000	24,000	24,000	24,000	29,000	29,000	30,000	30,000	30,000
	CM CONSLT	0	0	0	0	0	0	0	0	0	0	0
	EST. COST	3,168,000	264,000	264,000	288,000	288,000	288,000	348,000	348,000	360,000	360,000	360,000
BUNDY DR & TENNESSEE REL SWR												
	PLANS CITY	110,000	0	0	0	0	0	0	0	0	0	0
Work Order: EXX31390	PLANS CONSLT	0	0	0	0	0	0	0	0	0	0	0
Eng. Dist: 85	R/W	0	0	0	0	0	0	0	0	0	0	0
	CONST.	846,000	700,000	146,000	0	0	0	0	0	0	0	0
	CM CITY	158,000	130,000	28,000	0	0	0	0	0	0	0	0
	CM CONSLT	0	0	0	0	0	0	0	0	0	0	0
	EST. COST	1,114,000	830,000	174,000	0	0	0	0	0	0	0	0
CEMENT SEWER ASSESSMENT												
	PLANS CITY	350,000	35,000	10,000	0	0	0	0	0	0	0	0
Work Order: EXX31111	PLANS CONSLT	5,000,000	900,000	300,000	0	0	0	0	0	0	0	0
Eng. Dist: 52	R/W	0	0	0	0	0	0	0	0	0	0	0
	CONST.	0	0	0	0	0	0	0	0	0	0	0
	CM CITY	0	0	0	0	0	0	0	0	0	0	0
	CM CONSLT	0	0	0	0	0	0	0	0	0	0	0
	EST. COST	5,350,000	935,000	310,000	0	0	0	0	0	0	0	0
CEMENT SEWER REPLACEMENT												
	PLANS CITY	1,470,000	150,000	160,000	160,000	250,000	250,000	250,000	250,000	0	0	0
Work Order: VARIOUS	PLANS CONSLT	0	0	0	0	0	0	0	0	0	0	0
Eng. Dist: 52	R/W	0	0	0	0	0	0	0	0	0	0	0
	CONST.	14,200,000	1,000,000	1,600,000	1,600,000	2,500,000	2,500,000	2,500,000	2,500,000	0	0	0
	CM CITY	2,000,000	0	200,000	200,000	400,000	400,000	400,000	400,000	0	0	0
	CM CONSLT	0	0	0	0	0	0	0	0	0	0	0
	EST. COST	17,670,000	1,150,000	1,960,000	1,960,000	3,150,000	3,150,000	3,150,000	3,150,000	0	0	0

EXPENDITURE PLAN
WASTEWATER CAPITAL IMPROVEMENT PROGRAM
FY 1992/93 - FY 2001/02

13.1c Continue 4

PROJECT TITLE	PROJECT COSTS		1ST YEAR 92/93	2ND YEAR 93/94	3RD YEAR 94/95	4TH YEAR 95/96	5TH YEAR 96/97	6TH YEAR 97/98	7TH YEAR 98/99	8TH YEAR 99/2000	9TH YEAR 2000/01	10TH YEAR 2001/02
ASSESSMENT ACT SEWERS												
Work Order: VARIOUS	PLANS CITY	(FAP)	324,000	22,000	24,000	24,000	24,000	29,000	29,000	30,000	30,000	30,000
Eng. Dist: ALL	PLANS CONSLT	(CTP)	0	0	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY	(R/W)	0	0	0	0	0	0	0	0	0	0
	CONST.	(CONS)	3,240,000	220,000	240,000	240,000	240,000	290,000	290,000	300,000	300,000	300,000
	CM CITY	(FACM)	324,000	22,000	24,000	24,000	24,000	29,000	29,000	30,000	30,000	30,000
	CM CONSLT	(CTCM)	0	0	0	0	0	0	0	0	0	0
	EST. COST		3,888,000	264,000	288,000	288,000	288,000	348,000	348,000	360,000	360,000	360,000
BUNDY DR & TENN RLF SWR PH1												
Work Order: EXX31390	PLANS CITY	(FAP)	110,000	0	0	0	0	0	0	0	0	0
Eng. Dist: 85	PLANS CONSLT	(CTP)	0	0	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY	(R/W)	0	0	0	0	0	0	0	0	0	0
	CONST.	(CONS)	700,000	500,000	200,000	0	0	0	0	0	0	0
	CM CITY	(FACM)	110,000	80,000	30,000	0	0	0	0	0	0	0
	CM CONSLT	(CTCM)	0	0	0	0	0	0	0	0	0	0
	EST. COST		920,000	580,000	230,000	0	0	0	0	0	0	0
BUNDY DR & TENN RLF SWR PH2												
Work Order: _____	PLANS CITY	(FAP)	30,000	30,000	0	0	0	0	0	0	0	0
Eng. Dist: 85	PLANS CONSLT	(CTP)	0	0	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY	(R/W)	0	0	0	0	0	0	0	0	0	0
	CONST.	(CONS)	200,000	0	200,000	0	0	0	0	0	0	0
	CM CITY	(FACM)	30,000	0	30,000	0	0	0	0	0	0	0
	CM CONSLT	(CTCM)	0	0	0	0	0	0	0	0	0	0
	EST. COST		260,000	30,000	230,000	0	0	0	0	0	0	0
CENTRAL BUS DST RLF SWR PH5												
Work Order: _____	PLANS CITY	(FAP)	1,555,000	0	0	0	0	0	0	1,555,000	0	0
Eng. Dist: 51	PLANS CONSLT	(CTP)	0	0	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY	(R/W)	0	0	0	0	0	0	0	0	0	0
	CONST.	(CONS)	14,210,000	0	0	0	0	0	0	6,085,000	8,125,000	0
	CM CITY	(FACM)	1,991,000	0	0	0	0	0	0	853,000	1,138,000	0
	CM CONSLT	(CTCM)	0	0	0	0	0	0	0	0	0	0
	EST. COST		17,756,000	0	0	0	0	0	0	1,555,000	6,938,000	9,263,000
COLL SYS CONCEPT REPORTS												
Work Order: VARIOUS	PLANS CITY	(FAP)	25,120,000	1,640,000	2,380,000	2,490,000	2,600,000	2,750,000	2,500,000	2,500,000	2,500,000	2,500,000
Eng. Dist: 56	PLANS CONSLT	(CTP)	1,030,000	630,000	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY	(R/W)	0	0	0	0	0	0	0	0	0	0
	CONST.	(CONS)	0	0	0	0	0	0	0	0	0	0
	CM CITY	(FACM)	0	0	0	0	0	0	0	0	0	0
	CM CONSLT	(CTCM)	0	0	0	0	0	0	0	0	0	0
	EST. COST		26,150,000	2,270,000	2,380,000	2,490,000	2,600,000	2,750,000	2,500,000	2,500,000	2,500,000	2,500,000

13.1d Program Master List Sample Pages for Subsection 2.3b

BaseLine

MID CONSTRUCTION DOLLAR

PROJECT NAME	SUB-PROJECT NAME	C A T	MINIS No.	W.O. NUMBERS	GRP CODE	ESTIMATED COST 1000X FAP	CTP	R/W	FACN	CTCM	CONSTR	TOTAL COST	JAN. 1988 CONSTR ($) (1000X)	SCHEDULE INPUT DESIGN START	DESIGN FINISH	DES DUR	CONSTR START	CONSTR FINISH	CONS DUR	GRN Y/N
	WAS Thck & Chem.Fd & Stge Fac.	HFS	7885	E20 00035	400	$3,547	$0	$0	$9,400	$2,950	$94,000	$109,997	$46,700				21-Jun-93	02-Dec-96	41	
	Chem Feed & Storage Fac Stp 2	HFS	8296	EXX 41542	100	$0	$450	$0	$0	$0	$0	$450	$0	01-Oct-87	09-Oct-92	60				
	WAS Thickener Expansion Step 2	HFS	7885	EXX 31652	400	$0	$3,100	$0	$0	$0	$0	$3,100	$0	01-May-87	09-Oct-92	65	INCLUDED IN C-112			
	Water Supply Pipeline	HFS	8466	E20 00039	600	$269	$0	$0	$320	$0	$3,100	$3,689	$4,000	15-Aug-88	10-May-91	33	23-Jan-92	30-Oct-92	9	
	HFS TOTALS					$37,687	$36,968	$0	$100,142	$30,935	$992,017	$1,197,749	$500,620							
	Acccounts																			
	Const. Mgmt. Consultant	HFS	7366		300	$0	$0	$0	$0	$90,622	$0	$90,622	$0				01-Jul-90	30-Dec-98	102	
	Design Consultant	HFS	7364		300	$0	$73,173	$0	$0	$0	$0	$73,173	$0	01-Jul-87	30-Jun-92	60				
	Scheduling Consultant	HFS	8303	E20 00102	300	$0	$0	$0	$0	$31,500	$0	$31,500	$0				01-Jul-87	30-Jun-98	132	
	SUBTOTALS					$0	$73,173	$0	$0	$122,122	$0	$195,295	$0							
HYPERION TREATMENT PLANT (HTP)																				
	Capital Equipment Replac.	HTP			CIP	$6,000	$0	$0	$6,000	$0	$40,000	$52,000	$0	01-Jul-95	30-Jun-2002	84	01-Jul-95	30-Jun-2002	84	
	Digester Modification	HTP	9030	E20 00211		$372	$0	$0	$443	$0	$3,413	$4,228	$0	31-Oct-90	19-May-92	19	04-Jan-93	01-Jun-94	17	
	Blending Tanks Mod	HTP	8452	E20 00264	600	$118	$0	$0	$13	$0	$270	$401	$1,120	13-Nov-89	19-May-92	30	IN E2000211			
	Digestr Piping Seismic Bracing	HTP	9263	E20 00327		$50	$0	$0	$17	$0	$38	$105	$0	19-Jul-90	19-May-92	22	IN E2000211			
	Existng Digester Struct Mod	HTP	9139	E20 00328		$165	$0	$0	$20	$0	$68	$253	$0	15-Apr-90	19-May-92	25	IN E2000211			
	Ferrous Chloride Facil.	HTP		E20 00424 /SZH11113		$16	$0	$0	$45	$0	$316	$377	$0	09-Nov-88	19-May-92	42	IN E2000211			
	Digester Screening Facil	HTP				$0	$0	$0	$0	$0	$0	$0	$0				10-Aug-92	10-Mar-94	19	
	D Street Utilities (Elem 2)	HTP		E20 00417		$500	$0	$0	$2,240	$500	$11,200	$14,440	$0	04-Apr-91	20-Feb-92	11				
	DCF & SSF Improvements (Elem 1)	HTP	8455	SZH 11118	400	$60	$1,132	$0	$1,075	$440	$17,000	$19,707	$5,174	21-Aug-89	20-Feb-92	30				
	East & West Headworks Improv.	HTP	6851	EXX 31670	100	$70	$502	$0	$157	$47	$1,460	$2,236	$3,075	02-Nov-88	02-Nov-91	36	IN E2000211			
	Chem Imprvmnts Primary/Digestrs	HTP	7909	SZH 11113	100	$0	$0	$0	$0	$0	$0	$0	$0	09-Nov-88	12-May-92	42	IN E2000211			
	EPP Pmps/Mtrs, Var DR, & Bldg	HTP	7905		300	$785	$5,754	$0	$2,458	$2,009	$23,885	$34,891	$0	01-Oct-87	30-Oct-88	13	03-Apr-89	15-Sep-92	41	
	Bldg Refurb	HTP		E20 00129	300	$0	$0	$0	$0	$0	$0	$0	$0				03-Apr-89	15-Sep-92	41	
	Mtr & Pumps Procurement/Instl	HTP		E20 00130	300	$0	$0	$0	$0	$0	$0	$0	$0				28-Apr-88	26-Jun-91	38	
	Var Freq Mtr Drvs Proc/Instl	HTP		E20 00131	300	$0	$0	$0	$0	$0	$0	$0	$0				10-Oct-88	29-Jan-92	40	
	EPP Pumps & Motor Refurb.	HTP			CIP	$330	$0	$0	$165	$0	$3,200	$3,695	$0	01-Jul-93	30-Jun-94	12	01-Jul-93	30-Sep-94	15	
	Furnish Tech Support Fac	HTP			CIP	$375	$0	$0	$125	$0	$2,750	$3,250	$0	01-Jul-93	28-Feb-94	8	15-Dec-94	30-Jun-95	6	
	Harrington Bldg Modl Furn	HTP	9532	E20 00449		$17	$0	$0	$0	$0	$440	$457	$0				19-Feb-92	12-May-92	3	
	Hazardous Waste Stge Fac	HTP				$450	$50	$0	$280	$0	$2,000	$2,780	$0							
	HCD Document Tracking Sys	HTP	9505	E20 00412		$600	$0	$0	$0	$0	$0	$600	$0	NO SCHEDULE						
	HTP Concept Reports	HTP		VARIOUS		$1,043	$352	$0	$0	$0	$0	$1,395	$0							
	Hydraulic Analysis	HTP	9535	E20 00446		$1,800	$0	$0	$0	$0	$0	$1,800	$0							
	Legal Rpts/Proc Monit Sftware	HTP	7375	SZH 11115	600	$50	$0	$0	$153	$0	$1,909	$2,112	$550	09-Oct-89	30-Jun-90	9	01-Mar-91	31-Dec-93	34	
	Lockout Tagout System	HTP			CIP	$90	$100	$0	$100	$50	$850	$1,190	$0	01-Jul-91	01-Dec-91	5	01-Mar-92	30-Jun-93	16	
	Networking Systems	HTP	8469	SZH 11122		$0	$0	$0	$0	$70	$2,100	$2,170	$0	01-Jul-88	30-Jun-99	12	30-Sep-90	17-Apr-92	19	
	Prim Eff Divr Chan Stabil	HTP	9528	E20 00437		$81	$0	$0	$70	$0	$540	$691	$0	19-Sep-91	20-Dec-91	3	24-Mar-92	19-Jun-92	3	
	Primary Battery 'D' Imprvmts	HTP	9536	E20 00447		$225	$0	$0	$195	$0	$1,500	$1,920	$0	18-Oct-91	16-Nov-92	13	30-Jul-93	18-Mar-94	8	
	Primary Batt. Prestartup Impv.	HTP	9508	E20 00415		$202	$30	$0	$0	$45	$362	$639	$0	06-Feb-91	05-Nov-91	9	20-Apr-92	01-Sep-92	4	
	Retain Wall Monit. DWP Twv.	HTP	9545	E20 00455		$0	$0	$0	$175	$0	$0	$175	$0	SEVEN YRS MONIT BY SURVEY DIV.						
	Risk Mgmt Prevention Prog HTP	HTP	9150	E20 00230		$10	$145	$0	$0	$0	$0	$155	$0	01-Jan-90	10-Jul-91	18	N/A	N/A		
	Safety Consult. & Eq. Stage Area	HTP	7908	SZH 11119		$21	$173	$0	$68	$59	$1,200	$1,520	$0	06-Aug-90	01-Dec-92	28				
	Safety Process Reliability	HTP		EXX 31569		$65	$0	$0	$0	$0	$0	$65	$0							
	Sandblast & Steam Cleaning Facil	HTP	9538	E20 00451	600	$223	$72	$0	$339	$57	$2,100	$2,791	$0	13-Aug-92	12-Jul-93	11	11-Apr-94	14-Apr-95	12	
	Sludge Drying Fac Mods	HTP			CIP	$120	$0	$0	$40	$0	$800	$960	$0	01-Jul-91	01-Dec-91	5	01-Sep-91	31-Dec-92	16	
	Technical Information Center	HTP	9941			$0	$2,475	$0	$0	$0	$0	$2,475	$0	01-Jul-93	30-Jun-94	48				
	Upgrade Pump, Sludge Dewtr Fac	HTP			CIP	$30	$0	$0	$10	$0	$200	$240	$0	01-Jul-91	30-Dec-91	6	15-Sep-92	15-Jun-93	9	
	Vehicle Wash Facility	HTP	9542	E20 00454		$40	$0	$0	$0	$0	$0	$40	$0	01-Nov-92	10-Oct-93	11	10-Jul-94	05-Mar-95	8	

13.1d Continue 1

WASTEWATER PROGRAM MANAGEMENT DIVISION
CITY OF LOS ANGELES
MASTER FILE PRIOD ENDING 30-JUNE-92
07-Aug-92 RUN DATE

RUN DATE

COMPLETED PROJECTS
** BASELINE **
*** PROGRAM MASTER LIST ***
*** FY-88/89...FY-97/98 ***

PROJECT NAME	SUB-PROJECT NAME	TO CONSTR DIVISION	ADVERTISE DATE	OPEN BIDS	AWARD DATE	NTP DATE	CONSTR START	CONSTR COMPL	DURATION WKG/CALEN (W/C)DAYS	ORIGINAL CONTRACT AMOUNT	CONTRACTOR	C.O. TOTALS TO DATE	CONSTRUCTION GRAND TOTAL	CUMM. PAYMENTS TO-DATE
HYPERION FULL SECONDARY (HFS)														
	COMPLETED PROJECTS HFS													
	Const. Mgmt. Bldg.		04-Apr-88 A	04-May-88 A	08-Jul-88 A	28-Jul-88 A	12-Aug-88 A	19-Oct-90 A		$5,999,000	FTR INT'L INC.	$2,090,755	$8,089,755	$8,089,755
	DWP Land Ac/Undrgrnd Esmt.												$0	
	DWP Power Supply	N/A					10-Jul-89 A	01-Feb-92 A					$0	
	EIR/EIS Wastewtr Fac Stg 1						N/A	N/A					$0	
	Gardener/Sandblast Facility													
	Gas Surge Drum		C.O. TO EXX31983 (HERS)							ON-CALL	SCHNEIDER INC.			
	HCD Management Bldg Reloc		14-Oct-87 A	04-Nov-87 A	14-Dec-87 A	26-Jan-88 A	05-Feb-88 A	11-Aug-89 A	150 C	$1,549,000	SCHNEIDER INC.	$79,094	$1,628,094	$2,579,889
	HCD Trailer Removal		O N - C A L L		11-Jun-91 A	14-Aug-91 A	26-Aug-91 A	30-Jan-92 A		$167,322	ARROW (ON-CALL)	$31,565	$198,887	$195,557
	Imp.Hwy & Pershng Irrig & Lndscp	GEN SVCS	15-Aug-88 A	05-Oct-88 A	28-Nov-88 A	04-Jan-89 A	11-Jan-89 A	04-Apr-90 A	70 W	$127,740	TERRA-CAL CONST.INC.	$10,470	$138,210	$138,210
	Ocean Monitoring Vessel		27-Jan-88 A	05-May-88 A	16-Jun-88 A	16-Jun-88 A	01-Jul-88 A	06-Aug-90 A	321 W	$3,591,497	KNIGHT & CARVER	$546,550	$4,138,047	$3,591,497
	Ocean Monitoring Vessel Modif				01-May-90 A	01-May-90 A	01-Oct-90 A	15-Apr-91 A		$445,000	SAN PEDRO BOAT			
	PCB Transformer Removal Unit 1	20-Jun-88 A	18-Jul-88 A	17-Aug-88 A	02-Nov-88 A	18-Jan-89 A	09-Mar-89 A	02-May-90 A	282 W	$42,408	WESTINGHOUSE		$42,408	$32,688
	Parking Facility & Ped. Crossing	12-Oct-89 A	08-Nov-89 A	27-Dec-89 A	23-Mar-90 A	19-Apr-90 A	03-May-90 A	30-Nov-91 A	129 W	$3,118,448	KIEWIT PACIFIC	$664,967	$3,783,415	$2,308,587
	Power-Blower/Centrif Bldg Platfor						11-Oct-89 A	17-Apr-90 A			NARGATE CONSTR (ON CALL)		$0	$251,972
	Primary Battery "D"		28-Oct-87 A	16-Dec-87 A	15-Apr-88 A	17-May-88 A	03-Jun-88 A	17-Jul-91 A	706 W	$25,700,777	BRINDERSON CORP.		$25,700,777	$30,694,070
	Primary Battery Mod Unit#1		25-Nov-87 A	20-Jan-88 A	27-Apr-88 A	13-Jun-88 A	12-Jul-88 A	29-Jun-90 A	686 C	$9,360,000	ZIEBARTH & ALPER	$1,892,671	$11,252,671	$10,052,319
	Air Scrubbing Facilities Stg 2												$0	
	Service Water Bypass		24-Jul-87 A	16-Sep-87 A	30-Oct-87 A	17-Dec-87 A	17-Dec-87 A	02-Nov-88 A	180 C	$719,800	ADVANCO CONSTRUCTORS	$776,387	$1,496,187	$1,496,188
	Site Grading - Clarifier Exp				18-Sep-87 A	01-Dec-87 A	01-Jan-88 A	12-Mar-90 A	386 W	$9,085,702	CHADWICK & BUCHANAN	$626,797	$9,712,499	$8,810,822
	Traffic Signal-VDN & 11TH STR.		O N C A L L				26-May-89 A	17-Jan-91 A		$120,000	KIEWIT PACIFIC		$120,000	
	Value Engineering												$0	
HYPERION TREATMENT PLANT (HTP)														
	COMPLETED PROJECTS HTP													
	Admin Bldg. Remodel		O N C A L L O R H T P C R E W				01-Feb-91 A	15-Mar-91 A						
	Asbestos Removal		G E N E R A L S E R V I C E S				01-May-87	15-Feb-91 A			LATCH-ON INCORP		$0	$245,744
	Ash Disp./Resource Recov. Study													
	Bar Screen Mod.		O N C A L L				26-Jun-89 A	08-Sep-89 A			ADVANCO CONSTR (ON-CALL)		$0	$199,141
	Bldg Remod & Trailers												$0	
	Admin. Temp Annex												$0	
	Admin Temp Annex Site Prep		O N C A L L		13-Sep-89 A	13-Sep-87 A	27-Sep-89 A	20-Dec-89 A		$131,600	NARGATE (ON-CALL)		$131,600	$214,434
	Cathodic Protect 7-Mile Outfall	15-Aug-89 A	29-Sep-89 A	01-Nov-89 A	17-Jan-90 A	23-Apr-90 A	08-May-90 A	28-Sep-90 A	180 C	$24,150	AMERICAN CONSTR & SUPPLY		$24,150	$29,260
	Centrif Fac-Fec. Fln Wtr	B Y H T P M A I N T E N A C E					15-Oct-90 A	15-Mar-91 A						

COLLECTION SYSTEM PROJECTS

ACTIVITY ID	ORIG DUR	REM DUR	%	CODE	ACTIVITY DESCRIPTION	SCHEDULED START	SCHEDULED FINISH
CS00510002	335	1736*	0	.000M	PRELIM ENGR - ECIS	1FEB92A	31DEC92
CS00510003	640	640*	0		ENVIRON DOCUMENTS E/W - ECIS	1APR92*	31DEC93
CS00510004	547	547*	0		ENVIRON DOCUMENTS N/S - ECIS	1OCT92*	31MAR94
CS00519003	456	456*	0		DESIGN - SEGMENT 1 - ECIS	1APR93*	30JUN94
CS00519007	274	274*	0		BID & AWARD - SEGMENT 1 - ECIS	1JUL94	31MAR95
CS00519008	731	731*	0		CONSTRUCTION - SEGMENT 1 - ECIS	1APR95	31MAR97
CS00520003	731	731*	0		DESIGN - SEGMENT 2 - ECIS	1MAR94*	29FEB96
CS00520007	275	275*	0		BID & AWARD - SEGMENT 2 - ECIS	1MAR96	30NOV96
CS00520008	820	820*	0		CONSTRUCTION - SEGMENT 2 - ECIS	1DEC96	28FEB99
CS00530003	456	456*	0		DESIGN - SEGMENT 3 - ECIS	1JAN96*	31MAR97
CS00530007	275	275*	0		BID & AWARD - SEGMENT 3 - ECIS	1APR97	31DEC97
CS00530008	761	761*	0		CONSTRUCTION - SEGMENT 3 - ECIS	1JAN98	31JAN00
CS00540003	365	365*	0		DESIGN - SEGMENT 4 - ECIS	1JAN97*	31DEC97
CS00540007	273	273*	0		BID & AWARD - SEGMENT 4 - ECIS	1JAN98	30SEP98
CS00540008	731	731*	0		CONSTRUCTION - SEGMENT 4 - ECIS	1OCT98	30SEP00
CS00550007	148	61	59		BID & AWARD - EAST VALLEY INTERCEPTOR SEWER 2A	8APR87A	31MAY88
CS00550008	380	380	0	.500M	CONSTRUCTION - EAST VALLEY INTERCEPTOR SEWER 2A	1JUN88	15JUN89
CS00600007	509	61*	88		BID & AWARD - EAST VALLEY INTERCEPTOR SEWER 2B	9JAN87A	31MAY88
CS00600008	395	395*	0	.897M	CONSTRUCTION - EAST VALLEY INTERCEPTOR SEWER 2B	1JUN88	30JUN89
CS00650007	395	0	100		BID & AWARD - EAST VALLEY INTERCEPTOR SEWER 2C	20MAR87A	25JAN88A
CS00650008	493	426	14	.554M	CONSTRUCTION - EAST VALLEY INTERCEPTOR SEWER 2C	25JAN88A	31MAY89
CS00700007	229	0	100		BID & AWARD - EAST VALLEY INTERCEPTOR SEWER 2D	14AUG87A	23MAR88A

13.1d Continue 3

CITY OF LOS ANGELES — PRIMAVERA PROJECT PLANNER — WASTEWATER CAPITAL IMPROVEMENTS

REPORT DATE 5FEB93 10:21 RUN NO. 94 — WASTEWATER CAPITAL IMPROVEMENT PROGRAM SCHEDULE — START DATE 1JUL72 FIN DATE 2AUG06*

COMPARISON — DATA DATE 1JAN93 PAGE NO. 19

HYPERION SOLIDS HANDLING PROJECTS

ACTIVITY ID	ORIG DUR	REM DUR	%	CODE	ACTIVITY DESCRIPTION	SCHEDULED START	SCHEDULED FINISH
HS00900003	1716*	603*	65	$4.297M	DESIGN - COGENERATION EXPANSION PH-1	15DEC89A	26AUG94
HS00900007	237*	237*	0		BID & AWARD - COGENERATION EXPANSION PH-1	27AUG94	20APR95
HS00900008	732*	732*	0	$22.000M	CONSTRUCTION - COGENERATION EXPANSION PH-1	21APR95	21APR97
HS00910013	365*	365*	0		DESIGN - COGENERATION EXPANSION PH-2	1DEC97*	30NOV98
HS00910017	270*	270*	0		BID & AWARD - COGENERATION EXPANSION PH-2	1DEC98	27AUG99
HS00910018	732*	732*	0		CONSTRUCTION - COGENERATION EXPANSION PH-2	28AUG99	28AUG01
HS01010003	272	0	100	$0.349M	DESIGN - COGENERATION SITE PREP	1SEP90A	3JUL91A
HS01010007	226	0	100		BID & AWARD - COGENERATION SITE PREP	4JUL91A	13FEB92A
HS01010008	259	0	100	$1.677M	CONSTRUCTION - COGENERATION SITE PREP	14FEB92A	2NOV92A
HS01011003	975*	578*	41	$0.430M	DESIGN - COGEN RETROFIT PH-1	1DEC91A	1AUG94
HS01011007	273*	273*	0		BID & AWARD - COGEN RETROFIT PH-1	2AUG94	1MAY95
HS01011008	155*	155*	0	$1.000M	CONSTRUCTION - COGEN RETROFIT PH-1	2MAY95	30CT95
HS01020003	905*	905*	0	$1.416M	DESIGN - COGEN RETROFIT PH-2	1MAY00*	22OCT02
HS01020007	292*	292*	0		BID & AWARD - COGEN RETROFIT PH-2	23OCT02	10AUG03
HS01020008	1031*	1031*	0	$9.300M	CONSTRUCTION - COGEN RETROFIT PH-2	11AUG03	6JUN06
HS01050003	1683*	161*	90	$0.984M	DESIGN - COGENERATION DEMINERALIZATION (ON HOLD)	1NOV88A	10JUN93
HS01050007	239*	239*	0		BID & AWARD - COGENERATION DEMINERALIZ (ON HOLD)	11JUN93	4FEB94
HS01050008	538*	538*	0	$4.805M	CONSTRUCTION - COGENERATION DEMINERALIZ (ON HOLD	5FEB94	27JUL95
HS01150003	686*	686*	0	$3.760M	DESIGN - COMBUSTION FACILITY EXP.	9AUG96*	25JUN98
HS01150007	284*	284*	0		BID & AWARD - COMBUSTION FACILITY EXPANSION	26JUN98	5APR99
HS01150008	676*	676*	0	$26.800M	CONSTRUCTION - COMBUSTION FACILITY EXP.	6APR99	9FEB01
HS01200008	365	0	100		CONSTRUCTION - CONST ENGINEERING CONSULTANT	1JUL88A	30JUN89A
HS01300003	505*	505*	0	$1.204M	DESIGN - DESULFURIZATION PLANT EXPANSION	17MAR94*	3AUG95
HS01300007	250*	250*	0		BID & AWARD - DESULFURIZATION PLANT EXPANSION	4AUG95	9APR96

FMR Sample Pages for Subsection 2.3c

* WASTEWATER PROGRAM *
* WPMD FINANCIAL REPORTING SYSTEM * FMR
WORK BREAKDOWN STRUCTURE (WBS)
DATA FROM THE 'FMRWORK' TABLE
AS OF 01/07/93

MAJOR PROJECT CS : COLLECTION SYSTEM

PROJECT TITLE	ORIG PROJECT NUMBER	WORK ORDER TITLE	WORK ORDER NUMBER	DEPARTMENTS 50	76	78	82	84
ADD'L VALLEY RELIEF SEWER	EWCS0001	ADD'L VALLEY RELIEF SEWER	EXX31217	X	X	X		
BROADWAY SWR BTW 3RD & 4TH ST	EWCS0004	BRDWY SEWER BTW 3RD & 4TH ST	EXX31367	X		X	X	
BUNDY DR & TENNESSEE REL SWR	EWCS0005	BNDY DR & TNNSSE AV RELIEF SWR	EXX31390	O		O	O	
CAHUENGA WEST SWR REALIGN	EWCS0006	CHNG BL WST SWR RLGN-HLL PK DR	EXX31348	X		X	X	
CAMROSE DR R/W LA PRESA SWR	EWCS0007	CMRS DR-R/W/N/)& L PRS DR SWER	EXX31607	X		X	X	
CASITAS AVE NR FLTCHT SRP	EWCS0008	CSTS AV-FLTCHR DR T GLNDALE FW	EXX31307	X	X	X	X	
CASITAS AV NR SLVRKL SRP	EWCS0009	CSTS AV-SLVRLK BL. TO FLETCHER	EXX31308	X	X	X	X	
CITY OUTFALL SEWERS STUDY	EWCS0010	CITY OUTFALL SEWERS STUDY	EXX31396	O		O	O	
CRSCNT VLLY CNTY WTER DISTR	EWCS0011	CRSCNT VLLY CNTY WTER DISTRICT	EXX31397	O		O	O	
DCKWLR SWR ABNDMNT RPR DAMAG	EWCS0012	DCKWLR SWR ABNDNMNT RPIR DAMAG	EXX31410	X	X	X	X	
EAGLE ROCK RELIEF SEWER	EWCS0013	EAGLE ROCK RELIEF SWR	EXX41406	O		O	O	
EVIS	EWCS0014	VALLY INTRCPTR SEWER UNIT II A	EXX31373	X	X	X	X	
		VALLY INTRCEPTOR SEWER UNIT IA	EXX31413	X	X	X	X	
		VLLY INTRCEPTOR SEWER UNIT IB	EXX31433	X	X	X	X	
		VALLY INTRCEPTOR SEWER UNIT IC	EXX31443	X	X	X	X	
		VLLY INTRCEPTOR SEWER UNIT ID	EXX31453	X	X	X	X	
		ST VLLY INTRCEPTOR SEW UN II B	EXX41257	X	X	X	X	X
		EAST VLY INTERCEPTR SEW UN IIC	EXX41258	X	X	X	X	X
		ST VLLY INTRCEPTOR SEW UN II D	EXX41259	X	X	X	X	X
		EAST VALLEY INTCPTR SEW UN I-A	EXX41317	X	X	X	X	X
		EAST VALLEY INTCPTR SEW UN 1-B	EXX41318	X	X	X	X	
		EAST VALLEY INTCPTR SEW UN 1-C	EXX41319	X	X	X	X	X
		EAST VALLEY INTCPTR SEW UN 1-D	EXX41320	X	X	X	X	X
EVRS TO LC & SFVRS DIVER STR	EWCS0015	EVRS LC&SFVRS DIVR STR RECONS	EXX31245	O	O	O	O	X
FAC PLAN-OVERLO/DETERIOR SWR	EWCS0016	FACILITIES PLN/F OVRLD/DET SWR	EXX31517	X		X	X	

** = Work Order added since last accounting period.
* = Work Order record changed since last accounting period.
O = Work Order has been opened.
X = Work Order has been closed.

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ATM ON-DEMAND REPORT #5

* WASTEWATER PROGRAM *
* WPMD FINANCIAL REPORTING SYSTEM *
SELECTED TRANSACTION EXPENDITURES BY FISCAL YEAR
FOR WORK ORDER # E2000179
AS OF 02/26/93

RECORD DATE	AUTHORITY	WORK ORDER	WORK ORDER TITLE	TRANSACTION NUMBER	VENDOR	DESCRIPTION	FUND	ACCT	EXPENDITURE AMOUNT
90/05/11	C0080803	E2000179	HSH CG VACUUM SYSTEM	S1005363798	JAMES MONTGOMERY CONSULTING	050390	759	CK40	80,052.03
90/05/30	C0080803	E2000179	HSH CG VACUUM SYSTEM	S1073366757	JAMES MONTGOMERY CONSULTING	052290 PYMT #2 & 3	759	CK40	25,723.86
90/06/22	C0061830	E2000179	HSH CG VACUUM SYSTEM	S1160371774	KIEWIT PACIFIC CO	S 6283	759	CK15	65,222.00
90/06/26	C0080803	E2000179	HSH CG VACUUM SYSTEM	S1148371784	JAMES MONTGOMERY CONSULTING	S 6216	759	CK40	21,563.43
						** FISCAL YEAR 90 TOTAL :			192,561.32
90/08/01	C0061830	E2000179	HSH CG VACUUM SYSTEM	S0092378504	KIEWIT PACIFIC CO	S 6283	759	CK15	15,870.00
90/08/31	C0080803	E2000179	HSH CG VACUUM SYSTEM	S0183383270	JAMES MONTGOMERY CONSULTING	S 6216	759	CK40	32,418.21
90/10/01	C0080803	E2000179	HSH CG VACUUM SYSTEM	S0274389041	JAMES MONTGOMERY CONSULTING	063090	70F	EK40	16,659.78
				S0275389042	JAMES MONTGOMERY CONSULTING		70F	EK40	8,696.85
90/11/06	C0080803	E2000179	HSH CG VACUUM SYSTEM	S0363393669	JAMES MONTGOMERY CONSULTING		70F	EK40	335.65
90/12/03	C0080803	E2000179	HSH CG VACUUM SYSTEM	S0444397428	JAMES MONTGOMERY CONSULTING		70F	EK40	1,309.54
91/01/10	C0061830	E2000179	HSH CG VACUUM SYSTEM	S0559400269	KIEWIT PACIFIC CO	S-5542 W.O. E2000179	70F	EK15	253,681.00
91/02/05	C0080803	E2000179	HSH CG VACUUM SYSTEM	9170F5S0669	JAMES MONTGOMERY CONSULTING	S-5627 TO INCREASE ENCUMBRANCE	70F	EK40	1,920.16
91/02/28	C0080803	E2000179	HSH CG VACUUM SYSTEM	9170F5S0757	JAMES MONTGOMERY CONSULTING	S-5627 TO INCREASE ENCUMBRANCE	70F	EK40	11,307.35
91/03/15	C0080803	E2000179	HSH CG VACUUM SYSTEM	9170F5S0825	JAMES MONTGOMERY CONSULTING	S-5627 TO INCREASE ENCUMBRANCE	70F	EK40	341.39
						** FISCAL YEAR 91 TOTAL :			342,539.93
						** REPORT TOTAL :			535,101.25

KIEWIT: 334,773

13.1e Continue 2

* WASTEWATER PROGRAM *
* WPMD FINANCIAL REPORTING SYSTEM *
COST LEDGER SUMMARY FOR SELECTED PROJECTS
AS OF 06/30/88

Note: This report should be consider valid for department 50 (OTHER) only. Please refer to the FMIS M-26 report for other departments

	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER	TOTAL
WORK ORDER NUMBER: EXX41503	.00	.00	5,631.69	WORK ORDER TITLE: .00	.00	.00	.00	.00	5,631.69
PROJECT: EWHF0023				PROJECT DESCRIPTION:					
TOTAL	.00	.00	5,631.69	.00	.00	.00	.00	.00	5,631.69

EWATER CAPITAL IMPROVEMENT PROGRAM

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
TITP-LABORATORY BUILDING	SC	0	PLANS:							
	BOND 87	0	FAP	70,000						
	BOND 88	0	CTP	242,000						
			R/W	0						
	AF	0	CONST.	3,119,000	0	242,000	2,284,000	1,038,000	0	0
			CONST. MGT:							
			FACM	249,000		CTP	C/CTCM	C/CTCM		
	ANTICIPATED FUNDS		CTCM	203,000						
PROJECT INFORMATION										
	FA--	319,000	TOTAL COST	3,883,000						
Work Order: E2000071	ST--	0								
Eng. Dist: 52	US--	0	REQUIRED CITY FUNDS							
Council District: 15	PVT-	0								
Mimis: 8493	-R	0	AMOUNT:	3,564,000						

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
TITP-LIFT STA & SAMPL STAT	SC	0	PLANS:							
separate project - mimis 8978	BOND 87	0	FAP	250,000						
	BOND 88	10,000	CTP	0						
	" 89	2,034,000	R/W	4,067,000 0	2,034,000	2,023,000				
	AF	2,044,000 10,000	CONST.	-2,031,000	-1,516,000	-505,000	0	0	0	0
			CONST. MGT:	425,000						
			FACM	-212,000	C	C				
	ANTICIPATED FUNDS		CTCM	0						
PROJECT INFORMATION				4,742,000						
	FA--	67,000 462,000	TOTAL COST	-2,493,000						
Work Order: EXX31699	ST--	0								
Eng. Dist: 52	US--	0	REQUIRED CITY FUNDS							
Council District: 15	PVT-	0								
Mimis: 7583	-R	0	AMOUNT:	-2,021,000 2,023,000						

9/20 Low Bid (8th Bid) = $3,697,000 (Amended bid incl. I&C work)
LB + 10% = $4,067,000
ST CONSTR = 12-1-89 ± 240 DAYS = 48 weeks -
50% @ 89-90 50% @ 90-91

PROJECT TITLE	APPROPRIATED FUNDS		COSTS		1ST YEAR 89/90	2ND YEAR 90/91	3RD YEAR 91/92	4TH YEAR 92/93	5TH YEAR 93/94	REQ'D IN LATER YEARS
* TITP-LIQUID PROCESS IMP	SC	0	PLANS:							
	BOND 87	0	FAP	0						
	BOND 88	0	CTP	0						
			R/W	0						
	AF	0	CONST.	1,050,000	0	895,000	224,000	0	0	0
			CONST. MGT:							
			FACM	84,000		C/CTCM	C/CTCM			
	ANTICIPATED FUNDS		CTCM	69,000						
PROJECT INFORMATION										
	FA--	84,000	TOTAL COST	1,203,000						
Work Order: E2000079	ST--	0								
Eng. Dist:	US--	0	REQUIRED CITY FUNDS							
Council District: 15	PVT-	0								
Mimis: 8589	-R	0	AMOUNT:	1,119,000						

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: SZT11119			WORK ORDER TITLE : TITP CATAGORY RESERVE						
3,029.44	0.00	0.00	0.00	3,029.44	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11120			WORK ORDER TITLE : TITP ELEC POWER PROG (STUDY)						
5,547.89	0.00	0.00	0.00	5,547.89	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11121			WORK ORDER TITLE : TITP ELEC SYSTEM IMPROVEMENT						
487,003.59	0.00	234,972.70	78,956.97	91,907.75	0.00	0.00	3,663.62	1,597.67	75,904.88
WORK ORDER NUMBER: SZT11122			WORK ORDER TITLE : TITP LIQUID PROCESS IMPROV						
219,170.60	0.00	77,906.38	0.00	140,880.96	0.00	0.00	383.26	0.00	0.00
WORK ORDER NUMBER: SZT11123			WORK ORDER TITLE : TITP HDWKS ODOR CONTROL						
11,034.54	0.00	4,213.30	0.00	6,821.24	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11124			WORK ORDER TITLE : TITP FORCE MAIN SAMPLING PROG						
43,782.82	0.00	1,674.99	0.00	42,107.83	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11125			WORK ORDER TITLE : TITP TASK FORCE I						
779,219.73	0.00	17,340.51	0.00	36,026.05	0.00	0.00	42.52	0.00	725,810.65
WORK ORDER NUMBER: SZT11126			WORK ORDER TITLE : TITP AIR HEADER MODS						
814,354.69	0.00	56,253.81	6,433.43	10,184.31	0.00	0.00	154.51	0.00	741,328.63
WORK ORDER NUMBER: SZT11127			WORK ORDER TITLE : TITP ASBESTOS REMOVAL						
5,070.99	0.00	0.00	0.00	2,070.99	0.00	0.00	0.00	0.00	3,000.00
WORK ORDER NUMBER: SZT11128			WORK ORDER TITLE : TITP TEMP LAB FACILITIES						
74,190.01	0.00	3,113.12	530.83	70,526.63	0.00	0.00	19.43	0.00	0.00
WORK ORDER NUMBER: SZT11129			WORK ORDER TITLE : TITP ELEC SYM IMPRV PH#2						
37,414.05	0.00	0.00	0.00	32,014.26	0.00	0.00	0.00	0.00	5,399.79
WORK ORDER NUMBER: SZT11130			WORK ORDER TITLE : TITP PCB TRANSFORMER REMOVAL						
199,021.30	0.00	17,961.36	2,048.13	5,730.25	0.00	0.00	80.16	0.00	173,201.40
WORK ORDER NUMBER: SZT11131			WORK ORDER TITLE : TITP DIG GAS SCRBR UPGRDE						
2,719.73	0.00	520.72	0.00	2,199.01	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11132			WORK ORDER TITLE : TITP STORM DRAINSYSTEM MOD						
11,021.21	0.00	0.00	0.00	11,021.21	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: W9$BONUS			WORK ORDER TITLE : DEFAULT FOR TEMP BONUSES						
3,368,734.86	0.00	1,248,785.17	239,845.89	1,816,628.85	63,474.95	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: W9BENEFT			WORK ORDER TITLE : ACCUMULTR FOR EMPLOYEE BENEFIT						
4,555,229.28	0.00	4,396,181.21	2,990,955.64	5,612,311.45	1,555,780.98	0.00	0.00	0.00	0.00

TWRP PH2 CONST MGMT CNSLT
TWRP - PHASE 2
TILLMAN WATER RECLAMATION PLANT
(CONST WORK ORDER)

WORK ORDER: E2000094 MIMIS#: 8319 R/W:
PROJ: EWTW0007
MAJOR PROJ: TWRP

WORK PGM: 50 - SEWERS
ED: 44
CD: 03

VS:48

PROVIDE CONSTRUCTION SCHEDULING AND MONITORING, TRAINING SERVICES, CHANGE ORDERS AND CLAIMS ASSISTANCE FOR THE TWRP PROJECTS

( ) STANDARD (X) NON-STANDARD

PLAN NO. NOT APPLIC
FILE# 296 STATUS - CONSTRUCTION BAR CHART - PRIORITY NO: 0 FISCAL YEAR:
PROJECT ENGINEER
44 - MORIMOTO (818)904-1434

	ESTIMATED	SCHEDULED	EXPENDITURES (IF OPENED AFTER 6/30/88)	
PLAN	0		PLAN	102,106
FACM	300,000			
CTCM	1,990,194		CONST	0
TOTAL	2,290,194		TOTAL	102,106

4040 WORK ORDER OPENED	01-24-89A	4350 PAYMENT TO CONSULTNT	05-15-91A $1,581,016
4250 CONTRACT EXECUTED	03-02-89A #C-69198 $1,990,194	4370 CONSULT CONTRCT END	12-13-91A O'BRIEN-KREITZBERG
4260 CONSULT CONTRCT STRT	01-03-89A EARLY START GRANTED BPW	8960 WORK ORDER CLOSED	

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: E2000070			WORK ORDER TITLE : TURP DCS PH2 EQPT & SRVCS						
2,904,912.48	0.00	263,610.25	0.00	0.00	0.00	0.00	449.13	0.00	2,640,853.10
WORK ORDER NUMBER: E2000071			WORK ORDER TITLE : TITP LABORATORY BUILDING						
14,919.77	0.00	14,919.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000073			WORK ORDER TITLE : TITP OUTFALL EXT-DIFFUSER						
9.66	0.00	0.00	0.00	0.00	0.00	0.00	9.66	0.00	0.00
WORK ORDER NUMBER: E2000075			WORK ORDER TITLE : TITP OUTFALL EXT VALUE ENG						
639.94	0.00	631.35	0.00	0.00	0.00	0.00	8.59	0.00	0.00
WORK ORDER NUMBER: E2000076			WORK ORDER TITLE : TITP CHEMICAL FACILITIES						
86,878.09	0.00	59,126.40	0.00	27,751.69	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000083			WORK ORDER TITLE : TITP I&C SYST IMPRV						
128,936.06	0.00	4,171.80	0.00	124,755.24	0.00	0.00	9.02	0.00	0.00
WORK ORDER NUMBER: E2000085			WORK ORDER TITLE : TITP IND WASTE TREATMENT FAC						
3,077.64	0.00	3,064.22	0.00	0.00	0.00	0.00	13.42	0.00	0.00
WORK ORDER NUMBER: E2000086			WORK ORDER TITLE : TITP VOC EMISSION STUDY						
1,296.02	0.00	1,296.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000087			WORK ORDER TITLE : TITP SEISMIC ANALYSIS						
59,050.32	0.00	59,035.38	0.00	0.00	0.00	0.00	14.94	0.00	0.00
WORK ORDER NUMBER: E2000088			WORK ORDER TITLE : TITP SLUDGE HANDLING IMPROV						
233,869.76	0.00	45,943.02	0.00	187,926.74	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000089			WORK ORDER TITLE : TITP STRUCTURAL IMPROVEMENTS						
29,173.99	0.00	5,520.85	0.00	23,653.14	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000090			WORK ORDER TITLE : TITP STEP I DESIGN-M & E						
2,040.64	0.00	2,040.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: E2000091			WORK ORDER TITLE : TITP TASK FORCE II (JV)						
81,872.21	0.00	81,849.66	0.00	0.00	0.00	0.00	22.55	0.00	0.00
WORK ORDER NUMBER: E2000092			WORK ORDER TITLE : UTILITY TIE-INS TO TRAILERS						
295,848.95	0.00	85,639.55	19,188.63	0.00	0.00	0.00	584.69	0.00	190,436.08
WORK ORDER NUMBER: E2000093			WORK ORDER TITLE : TITP OUTFALL EXT EIR EIS						
1,802,446.25	0.00	202,612.16	0.00	1,296.84	0.00	0.00	257.54	0.00	1,598,279.71
WORK ORDER NUMBER: E2000094			WORK ORDER TITLE : TURP PH2 CONST MGMT CNSLT						
106,077.07	0.00	6,077.07	0.00	0.00	0.00	0.00	0.00	0.00	100,000.00

13.2c Attachments for Example 2b, Section 6

...RANT C... ACCOUNTING SUBSYSTEM
...R SUMM...Y OF WORK ORDERS
AS OF 08/31/92

P... NO: 65
REP... NO: M-2
PERIOD ENDING: 08/31/9

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX31159			WORK ORDER TITLE : WORK ORDER TO COME						
20.78	0.00	0.00	0.00	0.00	0.00	0.00	20.78	0.00	0.00
WORK ORDER NUMBER: EXX31162			WORK ORDER TITLE : HFS PBM U1 STP 2						
173,722.54	0.00	64,890.56	0.00	30,760.20	0.00	0.00	424.63	97.44	77,549.71
WORK ORDER NUMBER: EXX31163			WORK ORDER TITLE : HFS PBM UNIT 1						
14,268.46	0.00	1,911.24	0.00	12,357.22	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31168			WORK ORDER TITLE : HTP INTERIM IMPRVMNT PROG ADS						
375,626.08	0.00	32,681.29	20,001.50	11,338.36	0.00	0.00	895.76	0.00	310,709.17
WORK ORDER NUMBER: EXX31172			WORK ORDER TITLE : HFS MPLY & PLNT VHICLE PARKING						
26,031.06	0.00	109.47	0.00	22,684.86	0.00	0.00	5.35	0.00	3,231.38
WORK ORDER NUMBER: EXX31173			WORK ORDER TITLE : WILDWOOD AV & LA TUNA AV						
157.90	0.00	0.00	157.90	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31182			WORK ORDER TITLE : HFS DMLTN//W HEADWKS & LAUNDER						
4,222.90	0.00	0.00	0.00	4,222.90	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31192			WORK ORDER TITLE : HFS SIDESTREAM PROCESS FACILTY						
173.52	0.00	169.85	0.00	0.00	0.00	0.00	3.67	0.00	3.00
WORK ORDER NUMBER: EXX31202			WORK ORDER TITLE : HFS AIR SCRUBBING FACILITIES						
24,670.74	0.00	12,880.49	0.00	10,901.88	0.00	0.00	78.37	0.00	810.00
WORK ORDER NUMBER: EXX31211			WORK ORDER TITLE : TWRP PH2 2-PRL DSGN & INV						
4,980.56	0.00	1,609.26	0.00	3,324.98	0.00	0.00	46.32	0.00	0.00
WORK ORDER NUMBER: EXX31212			WORK ORDER TITLE : TWRP PH2 2-VL ENGINEERING						
38,233.43	0.00	2,844.11	0.00	35,388.44	0.00	0.00	0.88	0.00	0.00
WORK ORDER NUMBER: EXX31213			WORK ORDER TITLE : HFS HDWKS & SVC FACILITY						
12,928,910.65	24,402,600.00	-8,620,298.31	3,760,091.64	915,328.96	0.00	0.00	88,715.94	4,416.27	99,540,059.53
WORK ORDER NUMBER: EXX31214			WORK ORDER TITLE : TITP SITE LANDSCAPING						
639,335.07	0.00	214,336.55	23,584.26	34,186.32	0.00	0.00	785.87	663.53	365,778.54
WORK ORDER NUMBER: EXX31218			WORK ORDER TITLE : HFS SERVICE WATER BYPASS						
1,832,654.08	0.00	212,268.18	68,248.28	53,810.76	0.00	0.00	2,139.13	0.00	1,496,187.73
WORK ORDER NUMBER: EXX31222			WORK ORDER TITLE : HFS REACTORS STP 2						
9,536,268.39	0.00	848,602.39	456,011.55	140,660.28	0.00	0.00	11,722.72	0.00	8,079,271.45
WORK ORDER NUMBER: EXX31232			WORK ORDER TITLE : HFS FINAL CLARIFIERS						
7,719,066.22	0.00	753,740.96	451,706.03	251,625.19	0.00	0.00	10,384.35	0.00	6,251,609.69

13.2c Continue 1

CONTRACTOR SELECTION SCHEDULE

PROJECT NAME	SUB-PROJECT NAME	TO CONSTR DIVISION	ADVERTISE DATE	OPEN BIDS	AWARD DATE	NTP DATE	CONSTR START	CONSTR COMPL	DURATION WKG/CALEN (W/C)DAYS	ORIGINAL CONTRACT AMOUNT	CONTRACTOR	C.O. TOTALS TO DATE	CONSTRUCTION GRAND TOTAL	CUMM. PAYMENTS TO-DATE
	Centrifuges Procure & Install C73		ON CALL				22-Aug-88 A	29-Nov-89 A		ON CALL	NMR WALLACE		$0	$2,673,261
	DCF Conv. Belt Replacement				20-Apr-88 A	17-May-88 A	29-Aug-88 A	09-May-89 A	120 C	$56,795	GIERLICH-MITCHELL		$56,795	
	DCF Imprv - Two Clarifiers						03-Jan-91 A	19-Mar-91 A		ON CALL	MARGATE CONSTRUCTION			$404,431
	Detritor Chanl Odor Cntrl		ON CALL		29-Aug-90 A	29-Aug-90 A	08-Oct-90 A	05-Sep-91 A		$704,569	T & K MECH. INC.		$0	$1,841,520
	Detritor/Aeration Tank Enclosures		ON CALL		29-Aug-90 A	08-Aug-90 A	08-Oct-90 A	05-Sep-91 A		ON CALL	T & K MECH. INC.		$0	$1,510,158
	Digester Gas Meters												$0	
	Digestr 1A Dome Repair				14-Dec-87 A	28-Jan-88 A	08-Feb-88 A	02-Jun-88 A	90 C	$298,000	SCHNEIDER INC.	$12,709	$310,709	
	Diversion of Storm Drain Flows (S		CHANGE ORDER				18-Apr-88 A	30-Jul-88 A					$0	
	East Headworks Odor Control		22-Feb-88 A	09-Mar-88 A	04-Apr-88 A	04-Jun-88 A	17-May-88 A	24-Apr-90 A		$783,260	KIEVITT-PAC; On-Call		$783,260	$828,637
	Electrical Substation (Temp.)												$0	
	HRD Facil Modif C-141		ON CALL		28-Aug-90 A	28-Aug-90 A	01-Oct-90 A	30-Apr-91 A			SC ENGINEERING (ON-CALL)			$296,876
	HTP STRR Div Reloc													
	High Pressure Efflnt Pipe												$0	
	Interim Imprv Proj ADC		26-Oct-87 A	25-Nov-87 A	20-Jan-88 A	22-Feb-88 A	08-Mar-88 A	16-Feb-89 A	365 C	[illegible]	ADVANCO CONSTRUCTORS	[illegible]	[illegible]	[illegible]
	Interim WAS Thickening		03-Jun-87 A	01-Jul-87 A	29-Jul-87 A	02-Sep-87 A	09-Sep-87 A	28-Mar-90 A	365 C	$1,549,136	SCHNEIDER INC.	$413,173	$1,962,309	$1,891,079
	Lab Building Mod						15-Jan-91 A	30-Jun-91 A						
	Mod To C-7 Belt Conveyors (C-81)				14-Apr-89 A		08-May-89 A	31-Mar-90 A	225 W	$3,230,000	WALLACE (ON-CALL)		$3,230,000	$4,720,269
	Mod of EPP Wound Rtr Motor Drive												$0	
	Outfall Rehab						01-Jul-87 A	30-Aug-89 A					$0	
	PCB Transformer Disposal	31-Jul-89 A	16-Oct-89 A	29-Nov-89 A	20-Apr-90 A	24-Jul-90 A	08-Aug-90 A	27-Mar-91 A	365 C	$1,024,000	NIRON CONSTR		$1,024,000	
	PCB Transformer Removal						08-Aug-90 A	21-Nov-91 A			NIRON CONSTRUCTION			
	Phosphorus Removal System												$0	
	Plant Effluent Water System	28-Oct-88 A	27-Feb-89 A	26-Apr-89 A	21-Jun-89 A	18-Jul-89 A	03-Aug-89 A	21-Dec-90 A	346 W	$823,000	KIEWIT PACIFIC	$122,789	$945,789	$818,004
	Raw Sludge Pump Control Mod.	28-Oct-88 A	09-Jan-89 A	22-Feb-89 A	17-Apr-89 A	20-Jul-89 A	04-Aug-89 A	30-Apr-91 A	285 C	$138,634	SASSO ELECTRIC		$138,634	
	Sec Eff By-Pass Mod.		ON-CALL		04-Apr-90 A		19-Apr-90 A	01-Jul-91 A		$950,000	SC ENGINEERING (ON-CALL)		$950,000	$1,459,398
	Secondary Clarifiers Rehab.												$0	
	Secondary Sys,HPE & Ltg Imprvs												$0	
	Security Improvements												$0	
	Sludge Hopper & Trk Load. Fac.						12-Sep-87 A	01-Sep-88 A					$0	
	Sludge Scrng Fac/Wetwell F/Centr												$0	
	Sludge Trk Fac Conveyr & Stm Sys												$0	
	Study Secnd Affluent F/Hwy Irrig												$0	
	Sub-structure Mapping												$0	
	Temp Tech Support Bldg Ph 1 & 2						01-Nov-87 A	31-Mar-90 A					$0	
	Trailer Inst.		ON-CALL		11-Jun-91 A	14-Aug-91 A	23-Aug-91 A	03-Dec-91 A		$55,118	ARROW (ON-CALL)	$1,046	$56,164	$56,164
	Truck Wash/Service Facility												$0	
	VAX Cluster Upgrade	EQ PROC				30-Nov-88 A	01-Dec-88 A	20-Jul-89 A					$0	
	Waste Gas Burners				10-Jan-87 A	10-Feb-87 A	25-Feb-87 A	30-Jun-88 A	225 C	$2,434,969	KIEWIT PACIFIC CO.	$187,720	$2,622,689	$4,021,705
	West Launder Covers (Temp.)												$0	
HYPERION SOLIDS HANDLING (HSH)													$0	
	COMPLETED PROJECTS HSH													
	Air Emission Mgmt Prog.													
	Air Quality Testing Risk Assess												$0	
	CG Addback Cooling						01-Oct-89 A	15-Aug-90 A						
	CG Building Mods.													

See next page
Continue →

13.2c Continue 2

NID CONSTRUCTION DOLLAR

PROJECT NAME	SUB-PROJECT NAME	C A T	NIMIS No.	W.O. NUMBERS	GRP CODE	ESTIMATED COST 1000X FAP	CTP	R/W	FACN	CTCN	CONSTR	TOTAL COST	JAN. 1988 CONSTR ($) (1000X)	SCHEDULE INPUT DESIGN START	DESIGN FINISH	DES DUR	CONSTR START	CONSTR FINISH	CONS DUR	GRN Y/N
	Detritor/Aeration Tank Enclosures	HTP	9190	E20 00295 Closed		$0	$0	$0	$0	$0	$0	$0	0	15-Apr-90	19-Jun-91	14	08-Oct-90	05-Sep-91	11	
	Digester Gas Meters	HTP		EXX 31650	400	$20	$70	$0	$30	$26	$538	$684	$538					FY-1987/88		
	Digestr 1A Dome Repair	HTP	7803	EXX 31168	400	$12	$0	$0	$20	$15	$330	$377	$330				08-Feb-88	02-Jun-88	4	
	Diversion of Storm Drain Flows (50.	HTP	8456	SZH 11120	600	$6	$44	$0	$30	$25	$525	$630	$500	01-Jul-87	30-Jan-88	7	18-Apr-88	30-Jul-88	3	
	East Headworks Odor Control	HTP		EXX 31456 /31457	Closed	$12	$100	$0	$40	$35	$700	$887	$700				17-May-88	24-Apr-90	23	
	Electrical Substation (Temp.)	HTP			600	$12	$100	$0	$114	$96	$2,000	$2,322	$2,000		FY 87/88			FY 87/88		
	HRD Facil Modif C-141	HTP	9261	E20 00325 Closed		$171	$0	$0	$0	$0	$382	$553	$0	N/A	N/A		01-Oct-90	30-Apr-91	7	
	HTP STRR Div Reloc	HTP	9483	E20 00390 Closed		$6	$132	$0	$27	$90	$700	$957	$0	PROJECT	CANCELLED		PROJECT	CANCELLED		
	High Pressure Effint Pipe	HTP	8459	EXX 31659 Deleted	frm CI	$0	$0	$0	$0	$0	$0	$0	$0							
	Interim Imprv Prog ADS	HTP	8460	EXX 31136	600	$25	$300	$0	$217	$186	$3,842	$4,570	$3,842		FY 87/88		08-Mar-88	16-Feb-89	11	
	Interim WAS Thickening	HTP		EXX 31430	400	$30	$220	$0	$88	$75	$1,550	$1,963	$1,550		FY 87/88		09-Sep-87	26-Mar-90	31	
	Lab Building Mod	HTP	9140	E20 00338		$17	$23	$0	$27	$8	$250	$325	$0	01-Jul-90	15-Dec-90	5	15-Jan-91	30-Jun-91	5	
	Mod To C-7 Belt Conveyors (C-81)	HTP	8482	E20 00051 Closed		$0	$0	$0	$220	$180	$4,200	$4,600	$1,000	08-Mar-88	24-Mar-89	13	08-May-89	31-Mar-90	11	
	Mod of EPP Wound Rtr Motor Drive	HTP		EXX 31244	300	$52	$0	$0	$0	$0	$420	$472	$0	COMPLETED						
	Outfall Rehab	HTP	8483	E20 00008	600	$6	$44	$0	$60	$50	$1,083	$1,223	$1,000	N/A	N/A		01-Jul-87	30-Aug-89	26	
	PCB Transformer Disposal	HTP	7806	EXX 31892 Closed	600	$55	$405	$0	$188	$154	$2,100	$2,902	$1,650	01-Mar-88	08-Aug-89	17	08-Aug-90	27-Mar-91	8	
	PCB Transformer Removal	HTP		SZH 11123		$55	$600	$0	$198	$154	$1,282	$2,279	$0	N/A	N/A		08-Aug-90	21-Nov-91	15	
	Phosphorus Removal System	HTP		EXX 31363 Closed	200	$0	$0	$0	$0	$0	$0	$0	$0							
	Plant Effluent Water System	HTP	8464	EXX 31355 Closed	600	$6	$45	$0	$54	$44	$911	$1,060	$889	01-May-87	03-Oct-88	17	03-Aug-89	21-Dec-90	17	
	Raw Sludge Pump Control Mod.	HTP	8466	EXX 31440 Closed	600	$4	$15	$0	$22	$20	$435	$496	$374	01-Mar-87	03-Oct-88	19	04-Aug-89	30-Apr-91	21	
	Sec Eff By-Pass Mod.	HTP	9081	E20 00109		$485	$0	$0	$0	$0	$1,400	$1,885	$0	21-Feb-89	07-Apr-90	13	19-Apr-90	01-Jul-91	14	
	Secondary Clarifiers Rehab.	HTP		EXX 31372	200	$0	$0	$0	$0	$0	$0	$0	$0							
	Secondary Sys,HPE & Ltg Imprvs	HTP	6850	EXX 31650 Closed	600	$0	$0	$0	$0	$0	$0	$0	$0							
	Security Improvements	HTP	7390	EXX 31115 Closed	600	$0	$0	$0	$0	$0	$0	$0	$0							
	Sludge Hopper & Trk Load. Fac.	HTP			500	$60	$500	$0	$205	$240	$5,000	$6,005	$5,000				12-Sep-87	01-Sep-88	12	
	Sludge Scrng Fac/Wetwell F/Centr	HTP	8653		500	$16	$130	$0	$0	$0	$0	$146	$0							
	Sludge Trk Fac Conveyr & Stm Sys	HTP		EXX 31555	500	$42	$0	$0	$0	$0	$0	$42	$0							
	Study Secad Affluent F/Hwy Irrig	HTP		EXY 31551	700	$0	$0	$0	$0	$0	$0	$0	$0							
	Sub-structure Mapping	HTP		EXX 31130	700	$32	$238	$0	$0	$0	$0	$270	$0		FY-87/88					
	Temp Tech Support Bldg Ph 1 & 2	HTP	7668	EXX 31127 /31138	600	$18	$134	$0	$104	$88	$1,830	$2,174	$1,772		FY 87/88		01-Nov-87	31-Mar-90	29	
	Trailer Inst.	HTP	9491	E20 00401		$47	$0	$0	$71	$0	$405	$523	$0	01-Nov-90	07-Jun-91	7	23-Aug-91	03-Dec-91	3	
	Truck Wash/Service Facility	HTP	7362	EXX 31352 /31353	600	$40	$240	$0	$46	$40	$823	$1,189	$823		FY-87/88			FY 87/88		
	VAX Cluster Upgrade	HTP	8469	SZH 11112	600	$38	$0	$0	$0	$0	$788	$826	$750	01-Jan-88	30-May-88	5	01-Dec-88	20-Jul-89	8	
	Waste Gas Burners	HTP	7372	EXX 31106	400	$30	$240	$0	$140	$120	$2,435	$2,965	$2,435		28-Jul-86		25-Feb-87	30-Jun-89	28	
	West Launder Covers (Temp.)	HTP			100	$5	$20	$0	$5	$5	$100	$135	$100					FY-1987/88		
[redacted]																				
(HSH)																				
	COMPLETED PROJECTS HSH																			
	Air Emission Mgmt Prog.	HSH	9299	E20 00364	3031	$0	$900	$0	$0	$0	$116	$1,016	$0	01-Jan-90	01-Aug-91	19	N/A	N/A		
	Air Quality Testing Risk Assess	HSH	8293		500	$24	$200	$0	$0	$0	$0	$224	$0	24-Oct-88	01-Dec-89	13				M
	CG Addback Cooling	HSH		E20 00172 Closed		$0	$0	$0	$0	$0	$0	$0	$0	01-Jan-89	18-Jun-90	18	01-Oct-89	15-Aug-90	10	
	CG Building Mods.	HSH		E20 00173 Closed		$9	$66	$0	$6	$44	$375	$500	$0	01-Feb-89	30-Sep-91	32	CONSTR IN E2000169			
	CG Cond/Coalescer Mods.	HSH		E20 00174 Closed		$0	$0	$0	$0	$0	$0	$0	$0	01-Jan-89	18-Jun-90	18				
	CG Deoiling Mods.	HSH		E20 00176 Closed		$0	$0	$0	$0	$0	$0	$0	$0							
	CG Dry/Wet Side Separation	HSH		E20 00181 Closed		$0	$0	$0	$0	$0	$0	$0	$0							
	CG Evaporator/Heater Upgrades	HSH		E20 00177 Closed		$0	$0	$0	$0	$0	$0	$0	$0							
	CG Oil Distillation Mods.	HSH		E20 00178 Closed		$0	$0	$0	$0	$0	$0	$0	$0	01-Jan-89	15-May-90	16	01-Jun-89	01-Aug-90	14	
	CG Transport Sys Mods.	HSH		E20 00163 To Be Canceled		$0	$0	$0	$0	$0	$0	$0	$0							
	CG Vacuum System Mods.	HSH		E20 00179 Closed		$18	$132	$0	$14	$110	$926	$1,200	$0	01-Jan-89	18-Dec-89	12	15-Nov-89	27-Apr-90	5	
	CG Wet Cake Feed Mods	HSH		E20 00180 Closed		$12	$88	$0	$12	$88	$750	$950	$0	03-Mar-89	10-May-90	14	03-Sep-90	22-Feb-91	6	
	Carver/Greenfld Patent -Lic.	HSH	6804			$0	$1,700	$0	$0	$0	$0	$1,700	$0							Y
	Centrifuge Proc.	HSH			3011	$0	$0	$0	$0	$0	$0	$0	$0	01-Aug-89	31-Oct-89	3	04-Apr-90	17-May-91	13	

13.2c Continue 3

CLEAN WATER GRANT [illegible] ACCOUNTING SUBSYSTEM
COST LEDGER SUMMARY OF WORK ORDERS
AS OF 08/31/92

[illegible] NO: 6
REPORT NO: M-
PERIOD ENDING: 08/31/

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX31119			WORK ORDER TITLE : SS &SD RCNSTRCTN S/ WRIGHTWOOD						
3,038.13	0.00	2,130.10	193.50	702.82	0.00	0.00	4.68	7.03	0.00
WORK ORDER NUMBER: EXX31120			WORK ORDER TITLE : CNCRT SWR RPLCEMENT PROGRAM-WL						
186.79	0.00	186.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31121			WORK ORDER TITLE : SN FRNND RD GRNDWTER IMPROVEME						
121,764.24	0.00	108,388.15	0.00	0.00	0.00	0.00	55.71	670.38	12,650.00
WORK ORDER NUMBER: EXX31122			WORK ORDER TITLE : HSM 301H						
17,086,904.33	0.00	143.58	94.74	0.00	0.00	0.00	0.00	41.51	17,086,624.50
WORK ORDER NUMBER: EXX31124			WORK ORDER TITLE : NRMND AV RRR MLRS AV TO BEV ST						
401,884.38	774,454.31-	10,096.39	33,463.01	0.00	0.00	0.00	505.89	7.03	357,812.06
WORK ORDER NUMBER: EXX31125			WORK ORDER TITLE : 7TH ST SRP ALAMEDA-CENTRAL						
628,345.06	98,889.27-	39,429.58	14,573.51	267.13	0.00	0.00	408.08	298.65	573,368.11
WORK ORDER NUMBER: EXX31127			WORK ORDER TITLE : HTP TEMP TECH SUPP BLD & EQP						
256,736.59	0.00	0.00	9,224.78	34,603.64	0.00	0.00	254.87	0.00	212,653.30
WORK ORDER NUMBER: EXX31129			WORK ORDER TITLE : VRL AV NAR HART ST IMPROV. NO.						
20,677.48	0.00	10,583.74	5,851.69	277.19	0.00	0.00	197.47	103.33	3,664.06
WORK ORDER NUMBER: EXX31130			WORK ORDER TITLE : HTP SUBSTRUCTURE MAPPING						
247,796.65	0.00	246,028.80	0.00	1,720.48	0.00	0.00	47.37	0.00	0.00
WORK ORDER NUMBER: EXX31132			WORK ORDER TITLE : SECUR CESSPL DUMP FAC (TWRP)						
1,196,798.08	0.00	1,146,197.33	14,808.18	13,296.46	0.00	0.00	310.14	7,353.36	14,832.61
WORK ORDER NUMBER: EXX31133			WORK ORDER TITLE : HERS SLUDGE POWER EMER REC SYS						
3,395.19	0.00	0.00	0.00	3,395.19	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31134			WORK ORDER TITLE : CLLNS ST (NR WDLK)-IMPROV. NO.						
56,809.75	0.00	41,407.74	14,642.03	0.00	0.00	0.00	467.67	292.31	0.00
WORK ORDER NUMBER: EXX31135			WORK ORDER TITLE : NCHLS CYN RD NR L CSTN DR-MPRO						
6,406.85	0.00	6,404.87	0.00	0.00	0.00	0.00	1.98	0.00	0.00
WORK ORDER NUMBER: EXX31136			WORK ORDER TITLE : HTP AERATION SYSTEM IMPROV						
4,289,158.90	0.00	292,572.08	105,986.30	33,190.99	0.00	0.00	2,201.19	42.61	3,855,165.73
WORK ORDER NUMBER: EXX31137			WORK ORDER TITLE : TWRP ONGOING DESIGN MODS						
30,052.25	0.00	27,615.40	0.00	1,293.63	0.00	0.00	80.22	0.00	1,063.00
WORK ORDER NUMBER: EXX31138			WORK ORDER TITLE : HTP TMP TECH SUP BLD & EQ PH2						
1,105,890.63	0.00	0.00	13,242.95	193,004.07	0.00	0.00	140.59	0.00	899,503.02

Ex 3

WASTEWATER CAPITAL IMPROVEMENT PROGRAM

PROJECT TITLE	ANTICIPATED FUNDS		COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
TITP-ADMN & OPR CONTROL BLDG	FA--	469,000	PLANS:							
	ST--	0	FAP	195,000	98,000	97,000	0	0	0	0
	US--	0	CTP	0	0	0	0	0	0	0
	PVT-	0	R/W	0	0	0	0	0	0	0
	-R	0	CONST.	1,956,000	0	0	500,000	1,456,000	0	0
			CONST. MGT:							
			FACM	274,000	0	0	50,000	224,000	0	0
PROJECT INFORMATION			CTCM	0	0	0	0	0	0	0
			TOTAL COST	2,425,000						
Work Order: EXX31118										
Eng. Dist: 56	APPROPRIATED FUNDS		REQUIRED CITY FUNDS							
Council District: 15										
Mimis: 8489	AMOUNT:	0	AMOUNT:	1,956,000	0	0	500,000	1,456,000	0	0

PROJECT TITLE	ANTICIPATED FUNDS		COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
TITP-AERATION TANK MOD	FA--	59,000	PLANS:							
	ST--	0	FAP	23,000	23,000	0	0	0	0	0
	US--	0	CTP	130,000	130,000	0	0	0	0	0
	PVT-	0	R/W	0	0	0	0	0	0	0
	-R	0	CONST.	637,000	100,000	320,000	0	0	0	0
			CONST. MGT:							
			FACM	36,000	10,000	26,000	0	0	0	0
PROJECT INFORMATION			CTCM	0	0	0	0	0	0	0
			TOTAL COST	826,000						
Work Order: SZT11111										
Eng. Dist: SAN	APPROPRIATED FUNDS		REQUIRED CITY FUNDS							
Council District: 15										
Mimis: 8490	AMOUNT:	217,000	AMOUNT:	550,000	230,000	320,000	0	0	0	0

PROJECT TITLE	ANTICIPATED FUNDS		COSTS (1)		1ST YEAR 90/91	2ND YEAR 91/92	3RD YEAR 92/93	4TH YEAR 93/94	5TH YEAR 94/95	5 YEAR PROG. CARRYOVER
* TITP-AIR DIFFUSER REPL	FA--	100,000	PLANS:							
	ST--	0	FAP	0	0	0	0	0	0	0
	US--	0	CTP	0	0	0	0	0	0	0
	PVT-	0	R/W	0	0	0	0	0	0	0
	-R	0	CONST.	2,100,000	1,300,000	0	0	0	0	0
			CONST. MGT:							
			FACM	100,000	60,000	0	0	0	0	0
PROJECT INFORMATION			CTCM	0	0	0	0	0	0	0
			TOTAL COST	2,200,000						
Work Order: SZT11126										
Eng. Dist: 52	APPROPRIATED FUNDS		REQUIRED CITY FUNDS							
Council District: 15										
Mimis: 8851	AMOUNT:	800,000	AMOUNT:	1,300,000	1,300,000	0	0	0	0	0

(1) Category cost totals may not equal the sum of annual costs because of previous appropriations.

Ex 5 cont'

13.2d Continue

CLEAN WATER GRANT CO ACCOUNTING SUBSYSTEM
COST LEDGER SUMMARY OF WORK ORDERS
AS OF 06/30/92

PAGE NO: 1,663
REPORT NO: M-26
PERIOD ENDING: 06/30/92

ENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: SZT11119			WORK ORDER TITLE : TITP CATAGORY RESERVE						
3,029.44	0.00	0.00	0.00	3,029.44	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11120			WORK ORDER TITLE : TITP ELEC POWER PROG (STUDY)						
5,547.89	0.00	0.00	0.00	5,547.89	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11121			WORK ORDER TITLE : TITP ELEC SYSTEM IMPROVEMENT						
487,003.59	0.00	234,972.70	78,956.97	91,907.75	0.00	0.00	3,663.62	1,597.67	75,904.88
WORK ORDER NUMBER: SZT11122			WORK ORDER TITLE : TITP LIQUID PROCESS IMPROV						
219,170.60	0.00	77,906.38	0.00	140,880.96	0.00	0.00	383.26	0.00	0.00
WORK ORDER NUMBER: SZT11123			WORK ORDER TITLE : TITP HDWKS ODOR CONTROL						
11,034.54	0.00	4,213.30	0.00	6,821.24	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11124			WORK ORDER TITLE : TITP FORCE MAIN SAMPLING PROG						
43,782.82	0.00	1,674.99	0.00	42,107.83	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11125			WORK ORDER TITLE : TITP TASK FORCE I						
779,219.73	0.00	17,340.51	0.00	36,026.05	0.00	0.00	42.52	0.00	725,810.65
WORK ORDER NUMBER: SZT11126			WORK ORDER TITLE : TITP AIR HEADER MODS						
814,354.69	0.00	56,253.81	6,433.43	10,184.31	0.00	0.00	154.51	0.00	741,328.63
WORK ORDER NUMBER: SZT11127			WORK ORDER TITLE : TITP ASBESTOS REMOVAL						
5,070.99	0.00	0.00	0.00	2,070.99	0.00	0.00	0.00	0.00	3,000.00
WORK ORDER NUMBER: SZT11128			WORK ORDER TITLE : TITP TEMP LAB FACILITIES						
74,190.01	0.00	3,113.12	530.83	70,526.63	0.00	0.00	19.43	0.00	0.00
WORK ORDER NUMBER: SZT11129			WORK ORDER TITLE : TITP ELEC SYM IMPRV PH#2						
37,414.05	0.00	0.00	0.00	32,014.26	0.00	0.00	0.00	0.00	5,399.79
WORK ORDER NUMBER: SZT11130			WORK ORDER TITLE : TITP PCB TRANSFORMER REMOVAL						
199,021.30	0.00	17,961.36	2,048.13	5,730.25	0.00	0.00	80.16	0.00	173,201.40
WORK ORDER NUMBER: SZT11131			WORK ORDER TITLE : TITP DIG GAS SCRBR UPGRDE						
2,719.73	0.00	520.72	0.00	2,199.01	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: SZT11132			WORK ORDER TITLE : TITP STORM DRAINSYSTEM MOD						
11,021.21	0.00	0.00	0.00	11,021.21	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: W9$BONUS			WORK ORDER TITLE : DEFAULT FOR TEMP BONUSES						
3,368,734.86	0.00	1,248,785.17	239,845.89	1,816,628.85	63,474.95	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: W9BENEFT			WORK ORDER TITLE : ACCUMULTR FOR EMPLOYEE BENEFIT						
44,555,229.28	0.00	4,396,181.21	2,990,955.64	5,612,311.45	1,555,780.98	0.00	0.00	0.00	0.00

13.2e Attachments for Example 4, Section 6

IPROVEMENT PROGRAM

PROJECT TITLE (X)
HFS-OXY GENER & DISOLUT EQUIP

PROJECT INFORMATION
Work Order: EXX31465
Eng. Dist: 58
Council District: ALL
Mimis: 8446

APPROPRIATED FUNDS	
SCM	0
SC	0
BOND 87 88	1,000,000 0
EF	0
AF	5,631,000 0

ANTICIPATED FUNDS	
FA--	2,230,000
ST--	0
US--	0
PVT-	5,568,000
-R	5,568,000

COSTS	
PLANS:	
FAP	100,000
CTP	0
R/W	0
CONST.	37,540,000
CONST. MGT:	
FACM	2,130,000
CTCM	0
TOTAL COST	39,770,000
REQUIRED CITY FUNDS	
AMOUNT:	37,540,000

	1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
PLANS:	6-1-89			4-30-92	93-94	Later
FAP	4-21-89			3-22-92	↓	* 95-97
CTP						
R/W	1,000,000	0	5,631,000	11,200,000	11,200,000	0
CONST.	-5,631,000-	-22,524,000-	-3,754,000-	-0-	-22,400,000- -0-	-5,631,000-
CONST. MGT:						
FACM	C	C	C	C		
CTCM						
TOTAL COST						
REQUIRED CITY FUNDS						
AMOUNT:	0		Later Years Spread →	*95-96 96-97 3,400,000	*96-97 97-98 5,189,000	

PROJECT TITLE
HFS-PRIM BATTERIES MOD U1 *

761/4028 5000
780/AC08 3,795,000

PROJECT INFORMATION
Work Order: EXX31162
Eng. Dist: 58
Council District: ALL
Mimis: 7881

APPROPRIATED FUNDS	
SCM	250,000
SC	5000 0
BOND 87 88	3,795,000 -0-
EF	0
AF	3,809,000 250,000

ANTICIPATED FUNDS	
FA--	650,000
ST--	811,000 -810,000-
US-	4,865,000 4,860,000
PVT-	738,000 657,000
-R	6,414,000 6,327,000

COSTS	
PLANS:	
FAP	140,000
CTP	0
R/W	10,300,000 0
CONST.	-9,715,000-
CONST. MGT:	
FACM	510,000
CTCM	0
TOTAL COST	10,950,000 -10,365,000-
REQUIRED CITY FUNDS	
AMOUNT:	-9,465,000- 6,500,000

	1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
PLANS:	6/18/88	11/12/90				
FAP						
CTP						
R/W	3,800,000	6,509,000				
CONST.	-6,840,000-	-2,625,000-	0	0	0	0
CONST. MGT:						
FACM	C	C				
CTCM						
TOTAL COST						
REQUIRED CITY FUNDS						
AMOUNT:						

PROJECT TITLE
HFS-PRIM BATTERIES MOD U2 *

PROJECT INFORMATION
Work Order: EXX31712-3
Eng. Dist: 58
Council District: ALL
Mimis: 8297

APPROPRIATED FUNDS	
SCM	0
SC	0
BOND 87	0
EF	0
AF	0

ANTICIPATED FUNDS	
FA--	806,000
ST--	0
US--	0
PVT-	2,017,000 1,739,000
-R	2,017,000 1,739,000

COSTS	
PLANS:	
FAP	116,000
CTP	0
R/W	13,600,000 0
CONST.	-11,616,000-
CONST. MGT:	
FACM	690,000
CTCM	0
TOTAL COST	14,406,000 -12,422,000-
REQUIRED CITY FUNDS	
AMOUNT:	-11,616,000- 13,600,000

	1ST YEAR 88/89	2ND YEAR 89/90	3RD YEAR 90/91	4TH YEAR 91/92	5TH YEAR 92/93	REQ'D IN LATER YEARS
PLANS:			5-1-91		8-31-92	
FAP						
CTP						
R/W			2,300,000	9,000,000	2,300,000	
CONST.	0	0	-2,800,000-	-4,800,000-	-4,016,000-	0
CONST. MGT:						
FACM			C	C	C	
CTCM						
TOTAL COST						
REQUIRED CITY FUNDS						
AMOUNT:			21/12	12/12	2/12	

Ex 4 cont

13.2e Continue

WASTEWATER ... ENT DIVISION
CITY OF LOS ANGELES
MASTER FILE PERIOD ENDING 30-JUN-92
06-Aug-92 RUN DATE

* * BASELINE * *
* * * PROGRAM MASTER LIST * * *
* * * FY-88/89...FY-97/98 * * *

MID CONSTRUCTION DOLLAR

PROJECT NAME	SUB-PROJECT NAME	C A T	MMIS No.	W.O. NUMBERS	GRP CODE	ESTIMATED COST 1000X FAP	CTF	R/W	FACM	CTEN	CONSTR	TOTAL COST	JAN. 1988 CONSTR ($) (1000X)	SCHEDULE INPUT DESIGN START	DESIGN FINISH	DES DUR	CONSTR START	CONSTR FINISH	CONS DUR	GRN Y/N
HYPERION FULL SECONDARY (HFS)																				
	Distributed Control System	HFS	7001	EXX 41492	200	$200	$0	$0	$620	$0	$6,200	$7,020	$0	14-Apr-88	05-Jun-92	50	27-Nov-92	30-Jun-96	43	
	Distributed Control Sys Ph-2	HFS			CIP	$26	$0	$0	$85	$0	$852	$963	$0				01-Jul-96	30-Jun-97	36	
	Division Maint Annex	HFS	9187	E20 00293	100	$150	$300	$0	$480	$0	$4,800	$5,730	$0	15-Jun-90	10-Jul-91	13	11-Jun-92	13-Jun-92	0	
	EPP/Outfall Conduit Mod	HFS	9131	E20 00263 (see PMB U2)		$534	$0	$0	$193	$0	$1,459	$2,186	$0	01-Dec-89	16-Nov-92	36	01-Sep-93	29-Mar-94	7	
	Headworks & Service Facility	HFS	6651	EXX 31213	100	$0	$0	$0	$5,488	$5,180	$99,150	$109,738	$91,000				11-Aug-88	05-Jan-93	53	Y
	Employee/Plant Vehicle Parking	HFS	8295	EXX 31172	600	$130	$460	$0	$0	$0	$0	$590	$0		FY 87/88		INCLUDED IN C-104			
	New Hdwks & Demo E.Hdwk Step 2	HFS	6651	EXX 31142 Closed	100	$1,000	$3,100	$0	$0	$0	$0	$4,100	$0		FY 87/88		INCLUDED IN C-104			Y
	Plant Infint Swr Reloc Stp 2	HFS	8294	EXX 31852 Closed	100	$271	$0	$0	$0	$0	$0	$271	$0		FY 87/88		INCLUDED IN C-104			Y
	Service Bldg & Warehouse	HFS	6821	EXX 41342	600	$630	$1,600	$0	$0	$0	$0	$2,230	$0		FY 87/88		INCLUDED IN C-104			
	Headwrks/Svc Fac Equip	HFS	8458	E20 00043	100	$189	$0	$0	$245	$0	$4,500	$4,934	$3,600		FY 87/88		07-Jul-87	18-Oct-93	75	
	Inplant Storage	HFS			CIP	$750	$0	$0	$750	$0	$5,000	$6,500	$0	01-Jul-93	30-Dec-93	6	15-Oct-94	30-Jun-95	8	
	IPS & Switchyard Fac	HFS	8999	E20 00040	200	$0	$0	$0	$7,744	$1,340	$58,595	$67,679	$14,600				29-May-90	11-Sep-93	39	Y
	Interm Pump Station (Elem 108)	HFS		EXX 41152	200	$260	$1,560	$0	$0	$0	$0	$1,820	$0	01-Jul-87	23-Aug-89	26				
	N. Loop Duct Bank & EPF Feeders	HFS		E20 00408 Closed		$0	$0	$0	$0	$0	$3,000	$3,000	$0	01-Apr-91	09-Jul-91	3	C.O. to C-106			
	Switchyard Facil (Elem 116)	HFS		E20 00031	200	$175	$1,285	$0	$0	$0	$0	$1,460	$0	25-Jul-88	23-Aug-89	13				
	North Beach Parking	HFS		E20 00345 Cancelled		$27	$0	$0	$0	$0	$0	$27	$0							
	Ocean Outfall	HFS	7884	EXX 31482		$0	$0	$0	$0	$0	$0	$0	$0	NO LONGER IN CIP						
	Ocean Outfall EIR/EIS	HFS	8445	E20 00032 TERMINATED		$193	$891	$0	$0	$0	$0	$1,084	$0	03-May-89	20-May-91	25	To Be Terminated			
	One Mile Outfall Modif.	HFS			CIP	$2,250	$0	$0	$2,250	$0	$15,000	$19,500	$0	01-Jul-96	30-Jun-97	12	01-Jan-98	30-Jun-99	18	
	Oxygen Gen & Dissol Eq (Elem 110)	HFS	8446	EXX 31465	200	$100	$750	$0	$3,900	$1,800	$46,344	$52,894	$34,050	30-Jan-88	17-Mar-89	14	15-Nov-89	01-Apr-97	89	Y
*	Primary Battery Mod Unit#2	HFS	8297	EXX 31712 /31713	100	$1,540	$1,100	$0	$9,200	$690	$92,000	$104,530	$12,340	11-Oct-88	16-Nov-92	49	01-Sep-93	15-Aug-95	23	N
*	Primary Battery Mod Unit#3	HFS				$0	$0	$0	$0	$0	$0	$0	$0	01-Dec-92	15-Feb-94	14	15-Feb-95	15-Jul-98	41	
	Demo W Hdwks/Launder Bldg Stp2	HFS	6651	EXX 31182	100	$0	$0	$0	$0	$0	$0	$0	$0	09-Jun-86	14-Jul-87	13				
	Secondary Facilities-Phase 1	HFS	8299	E20 00038	200	$10,032	$0	$0	$21,449	$15,050	$207,500	$254,031	$222,100				09-Sep-91	28-Nov-94	39	
	Chlor & Service Fac (Elem 113)	HFS	6645	EXX 31282	300	$40	$550	$0	$0	$0	$0	$590	$0	01-Jun-87	01-Aug-90	38				
	Clarifier Control	HFS	7883	EXX 31292	200	$0	$0	$0	$0	$0	$0	$0	$0	01-Mar-87	06-Nov-90	44				
	Cryo Fac & Op Center (Elem 112)	HFS	6730	EXX 31272	200	$0	$0	$0	$0	$0	$0	$0	$0	01-Nov-87	11-Dec-90	37				
	Effluent Conduit (Elem 111)	HFS		EXX 31262	300	$0	$0	$0	$0	$0	$0	$0	$0	01-Mar-87	06-Nov-90	44				
	Final Clarifiers (Elem 115)	HFS	6647	EXX 31232	200	$1,030	$7,030	$0	$0	$0	$0	$8,060	$0	01-Mar-87	06-Nov-90	44				Y
	Interim Hypochlorite Fac	HFS	8469	E20 00375		$0	$0	$0	$0	$0	$800	$800	$0				Add By Addendum #7			
	Oxygen Reactors (Elem 114)	HFS	6730	EXX 31222	200	$1,465	$10,725	$0	$0	$0	$0	$12,190	$0	01-Mar-87	09-May-90	38				Y
	Process Wtr Screening Fac.	HFS	7982	EXX 31472	600	$40	$665	$0	$0	$0	$0	$705	$0	01-Jun-87	01-Aug-90	38				
	Scattergood Site Impv (Elem 121)	HFS		E20 00024	600	$0	$0	$0	$0	$0	$3,000	$3,000	$0	13-Jul-88	01-May-90	22				
	Site Work (Elem 111)	HFS	7002	EXX 31812	200	$59	$0	$0	$0	$0	$0	$59	$2,410	22-Sep-86	20-Nov-90	50				N
	Temp Waste Storage Fac.	HFS	8997	E20 00128		$32	$0	$0	$36	$0	$323	$391	$0	12-Jun-89	23-Jan-91	19	By Addendum #3			
	Vista Del Mar Widening M-2	HFS	7049	EXX 31640	200	$90	$0	$0	$110	$0	$880	$1,080	$796	14-Dec-82	20-Nov-90	95				
	West Basin Recl Pmp Sta.	HFS	9474	E20 00383		$125	$0	$0	$225	$0	$2,500	$2,850	$0				By Addendum #4			
	Utility Compressor Fac.	HFS	8299	E20 00127		$0	$0	$0	$0	$0	$0	$0	$0	22-Jan-90	31-Oct-90	9				
	Secondary Facilities Phase 2	HFS				$9,508	$0	$0	$26,900	$0	$269,000	$305,408	$0	01-Nov-92	01-Feb-94	15	15-Jan-95	15-May-98	40	
	Site Utilities	HFS	7353	EXX 31822	600	$722	$0	$0	$722	$410	$4,814	$6,668	$6,580	10-Apr-86	07-Jun-94	98	01-Jul-96	31-Dec-98	30	
	Spare Parts & Start Up Equip.	HFS	8445	E20 00037	600	$0	$0	$0	$0	$0	$9,200	$9,200	$9,200				01-Jul-90	30-Dec-98	102	
	Tech Support & Oper Unit 1	HFS	7877	EXX 31512	600	$2,081	$1,636	$0	$9,386	$1,420	$42,800	$57,317	$25,600	01-Feb-88	16-Nov-92	56	01-Sep-93	15-Dec-95	27	
	Tech Support & Oper Unit 2	HFS	8296	E20 00041	600	$222	$1,795	$0	$645	$2,175	$17,200	$22,008	$27,644	01-Apr-88	07-Nov-92	55	01-Sep-97	01-Aug-99	23	

: CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX41123 WORK ORDER TITLE : HERS DGSTR GAS HYDROGEN SULFID									
452,443.46	0.00	22,228.96	0.00	219,933.74	0.00	0.00	0.00	0.00	210,280.76
WORK ORDER NUMBER: EXX41132 WORK ORDER TITLE : HERS TRUCK SVC FAC S2-E16E									
593.27	0.00	0.00	0.00	593.27	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41133 WORK ORDER TITLE : HERS MOBILE EQUIP PROC-E16									
4,567.60	0.00	4,345.00	0.00	222.60	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41142 WORK ORDER TITLE : HERS PAVING & LANDSCAPING 2									
889.44	0.00	786.18	0.00	103.26	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41143 WORK ORDER TITLE : HERS PAVING & LANDSCAPING 3									
4,118.91	0.00	3,902.61	158.77	0.00	0.00	0.00	57.53	0.00	0.00
WORK ORDER NUMBER: EXX41152 WORK ORDER TITLE : HERS FINAL PAVNG & LANDSCAPNG2									
151,203.87	0.00	134,698.19	0.00	12,084.04	0.00	0.00	381.55	0.00	4,040.09
WORK ORDER NUMBER: EXX41162 WORK ORDER TITLE : HFS STEP 2 GENERAL									
15,157,662.78	0.00	3,139,325.22	1,446.90	360,207.42	0.00	0.00	3,051.84	1,324.33	11,652,307.07
WORK ORDER NUMBER: EXX41183 WORK ORDER TITLE : HSM CLAR EXP S3									
223.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	223.92	0.00
WORK ORDER NUMBER: EXX41192 WORK ORDER TITLE : HSM CHLOR & CNTRL BLD S2									
34.42	0.00	0.00	0.00	34.42	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41213 WORK ORDER TITLE : HSM-CLAR MOD S3									
620.19	0.00	186.79	0.00	433.40	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41242 WORK ORDER TITLE : HSM PROCESS CNTRL SYS S2									
610.11	0.00	0.00	0.00	610.11	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41252 WORK ORDER TITLE : HSM W HDWKS & LAUNDERS S2									
286.12	0.00	0.00	0.00	286.12	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX41257 WORK ORDER TITLE : ST VLLY INTRCEPTOR SEW UN II B									
1,851,621.35	0.00	86,146.15	73,285.97	0.00	0.00	0.00	1,964.79	324.21	1,689,900.23
WORK ORDER NUMBER: EXX41258 WORK ORDER TITLE : EAST VLY INTERCEPTR SEW UN IIC									
2,465,889.90	0.00	96,712.83	54,849.29	0.00	86.69	0.00	765.59	0.00	2,313,475.50
WORK ORDER NUMBER: EXX41259 WORK ORDER TITLE : ST VLLY INTRCEPTOR SEW UN II D									
2,954,658.57	0.00	112,925.48	46,383.63	0.00	0.00	0.00	1,975.42	1,041.54	2,792,332.50
WORK ORDER NUMBER: EXX41262 WORK ORDER TITLE : HSM EAST HEADWORKS S2									
87,647.94	0.00	6,097.94	0.00	0.00	0.00	0.00	0.00	0.00	81,550.00
WORK ORDER NUMBER: EXX41264 WORK ORDER TITLE : NRTH OUTFALL SEWER REPLACEMENT									
54,811.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54,811.09
WORK ORDER NUMBER: EXX41302 WORK ORDER TITLE : HFS VALUE ENGINEERING									
370,815.26	0.00	119,549.98	0.00	562.38	0.00	0.00	112.49	0.00	250,590.41
WORK ORDER NUMBER: EXX41306 WORK ORDER TITLE : VENICE BL INTERCEPTOR SEWER									
1,038,827.22	0.00	214,040.34	42,303.97	0.00	1,925.07	0.00	1,343.29	1,351.84	777,862.71
WORK ORDER NUMBER: EXX41311 WORK ORDER TITLE : S E WILMINGTON INTER SWR U3									
413,371.10	0.00	413,189.52	0.00	0.00	0.00	0.00	54.32	127.26	0.00
WORK ORDER NUMBER: EXX41312 WORK ORDER TITLE : HERS SITE GRDNG FR CLRF EXPAN									
35,429.82	0.00	26,159.68	0.00	7,207.08	0.00	0.00	7.64	0.00	2,055.42
WORK ORDER NUMBER: EXX41313 WORK ORDER TITLE : HFS ST GRD'G FR CLRFR EXPNSION									
11,945,804.20	362,800.00-	1,716,632.32	587,398.71	14,638.34	0.00	0.00	24,779.68	1,266.84	9,601,088.31

13.2f Continue

CLEAN WATER GRAN. .OST ACCOUNTING SUBSYSTEM
COST LEDGER SUMMARY OF WORK ORDERS
AS OF 07/31/92

AGE NO:
REPORT NO:
PERIOD ENDING: 07/3

AGENCY : CITYLA

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX41152			WORK ORDER TITLE : HERS FINAL PAVNG & LANDSCAPNG2						
180,969.19	0.00	134,698.19	0.00	41,600.82	0.00	0.00	381.55	0.00	4,288.
WORK ORDER NUMBER: EXX41162			WORK ORDER TITLE : HFS STEP 2 GENERAL						
67,468,349.47	0.00	3,026,921.74	1,446.90	509,584.44	0.00	0.00	3,023.04	1,324.33	63,926,049.
WORK ORDER NUMBER: EXX41183			WORK ORDER TITLE : HSM CLAR EXP S3						
223.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	223.92	0.
WORK ORDER NUMBER: EXX41192			WORK ORDER TITLE : HSM CHLOR & CNTRL BLD S2						
140.60	0.00	0.00	0.00	140.60	0.00	0.00	0.00	0.00	0.
WORK ORDER NUMBER: EXX41213			WORK ORDER TITLE : HSM-CLAR MOD S3						
620.19	0.00	186.79	0.00	433.40	0.00	0.00	0.00	0.00	0.
WORK ORDER NUMBER: EXX41242			WORK ORDER TITLE : HSM PROCESS CNTRL SYS S2						
610.11	0.00	0.00	0.00	610.11	0.00	0.00	0.00	0.00	0.
WORK ORDER NUMBER: EXX41252			WORK ORDER TITLE : HSM W HDWKS & LAUNDERS S2						
797.73	0.00	0.00	0.00	797.73	0.00	0.00	0.00	0.00	0.
WORK ORDER NUMBER: EXX41257			WORK ORDER TITLE : ST VLLY INTRCEPTOR SEW UN II B						
1,851,621.35	0.00	86,146.15	73,285.97	0.00	0.00	0.00	1,964.79	324.21	1,689,900.
WORK ORDER NUMBER: EXX41258			WORK ORDER TITLE : EAST VLY INTERCEPTR SEW UN IIC						
2,465,889.90	0.00	96,712.83	54,849.29	0.00	86.69	0.00	765.59	0.00	2,313,475.
WORK ORDER NUMBER: EXX41259			WORK ORDER TITLE : ST VLLY INTRCEPTOR SEW UN II D						
2,954,658.57	0.00	112,925.48	46,383.63	0.00	0.00	0.00	1,975.42	1,041.54	2,792,332.
WORK ORDER NUMBER: EXX41262			WORK ORDER TITLE : HSM EAST HEADWORKS S2						
87,647.94	0.00	6,097.94	0.00	0.00	0.00	0.00	0.00	0.00	81,550.
WORK ORDER NUMBER: EXX41264			WORK ORDER TITLE : NRTH OUTFALL SEWER REPLACEMENT						
54,811.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54,811.
WORK ORDER NUMBER: EXX41302			WORK ORDER TITLE : HFS VALUE ENGINEERING						
372,529.88	0.00	119,549.98	0.00	2,277.00	0.00	0.00	112.49	0.00	250,590.
WORK ORDER NUMBER: EXX41306			WORK ORDER TITLE : VENICE BL INTERCEPTOR SEWER						
1,039,378.44	0.00	214,556.92	42,338.61	0.00	1,925.07	0.00	1,343.29	1,351.84	777,862.
WORK ORDER NUMBER: EXX41311			WORK ORDER TITLE : S E WILMINGTON INTER SWR U3						
374,475.28	0.00	374,441.31	0.00	0.00	0.00	0.00	15.60	18.37	0.
WORK ORDER NUMBER: EXX41312			WORK ORDER TITLE : HERS SITE GRDNG FR CLRF EXPAN						
53,084.68	0.00	26,159.68	0.00	24,861.94	0.00	0.00	7.64	0.00	2,055.

KEN ROSE

LAG ADD'L CHLOR CONT TNK — WORK ORDER: EXX31388 MIMIS#: 7875 R/W: — WORK PGM: 50 - SEWERS
LAG - ADD'L CHLOR CONT TNK — PROJ: EWLG0001 — ED: 44 — VS:44
L.A./GLENDALE WATER RECLAMATION PLANT — MAJOR PROJ: LAG — CD: 04

CONST ADDL CHLORINE TANK AND TANK COVERS @ LAGWRP TO PROVIDE
OPERATIONAL FLEXIBILITY TO PREVENT PLANT SHUT-DOWN DURING
CLEANING OPERATIONS OF THE CHORINE CONTACT TANK.

(X) STANDARD ( ) NON-STANDARD

PLAN NO. D-29068
FILE# 296 STATUS - CONSTRUCTION BAR CHART - PRIORITY NO: 0 FISCAL YEAR:
PROJECT ENGINEER
44 - MAJEWSKI (818)904-1440

	ESTIMATED	SCHEDULED	EXPENDITURES (IF OPENED AFTER 6/30/88)	
FAP	380,000		PLAN	0
CON	4,186,000			
FACM	607,000		CONST	0
TOTAL	5,173,000		TOTAL	0

4040	WORK ORDER OPENED	03-10-86A	6570	PLANS SIGNED BY CE	12-28-88A REDSGN/ORIG 4-1-88
4060	STUDY STARTED	04-07-86A	6760	QUANTY TAKE-OFF COMP	01-23-89A REDSGN/ORIG 4-20-88
4080	STUDY COMPLETED	01-23-87A	7810	TO CONSTRUCTION DIV	01-06-89A
5400	NOD/NOE FILED	07-06-87A EXEMPT CAT	7820	CONST ESTIMATE COMP	02-15-89A REDSGN 2ND REV $3,914,000
5810	DESIGN SURVEY COMP	04-20-87A REQUEST 2-16-87A	8350	FINAL BID PKG TO PMD	02-16-89A REDSGN/ORIG 6-8-88
5850	GEO/TECH RPT RQSTD	03-23-87A S-1506	8370	ADVERTISED BY BPW	02-24-89A REDSGN/ORIG 6-13-88
5860	TEST RQST TO GEN SRV	03-26-87A	8430	OPEN BIDS	04-05-89A REOPN/ORIG 07-27-88
5890	TEST RESULTS FRM GSD	06-23-87A	8680	CONTR AWARD BY BPW	05-26-89A ADVANCO CONST $3,457,480
5900	FINAL GEO/TECH RPT	07-28-87A	8720	CONTRACT EXECUTED	06-28-89A #C-69569
5960	FINAL DESIGN CONFR	11-17-88A REDSGN/ORIG 4-22-87	8740	NOTICE TO PROCEED	08-09-89A
5990	DESIGN STARTED	11-01-88A REDSGN/ORIG 3-14-87	8760	START CONSTRUCTION	08-28-89A
6160	CIVIL DESIGN COMP	12-28-88A REDSGN/ORIG 1-29-88	8780	PAYMENT TO CONTRACTR	06-19-91A $3,830,909 FINAL
6180	ELECTRICAL DSGN COMP	02-13-89A REDSGN/ORIG 1-11-88	8800	CONSTRUCTION COMP	12-20-90A 31 C.O. $380,674.88 11% INCR
6190	INSTRUMNTN DSGN COMP	02-13-89A REDSGN/ORIG 1-6-88	8940	BPW ACCEPTS CONTRACT	02-05-92A $3,838,154.88 TOTAL VALUE
6200	STRUCT DSGN COMP	12-20-88A REDSGN/ORIG 3-15-88	8960	WORK ORDER CLOSED	
6480	PLANS SIGNED BY DE	12-28-88A REDSGN/ORIG 3-31-88			

01-01-92: PER JOINT RPT JAN 8, 1992, TAKEN UNDER ADVISEMENT UNTIL JAN 22, 1992, CONTRACTOR IS BEING ASSESSED A PENALTY OF $66,000.00 FOR FAILURE TO SUBMIT CERTIFIED PAYROLL DOCUMENTATION WHEN REQUESTED.
03-01-91: CON. AD. IS PREPARING BOARD REPORT FOR BPW ACCEPTANCE
11-01-90: INSTALLATION OF ALUMINUM COVERS FOR EXISTING CHLORINE CONTRACT TANK COMPLETED ON 10-26-90. PROJECT SUBSTANTIALLY COMPLETED.
10-01-90: ALUMINUM COVERS INSTALLATION FOR EXISTING CHLORINE CONTACT TANK DELAYED DUE TO MANUFACTURER'S ERROR.
09-01-90: PROJ ENG CHANGED FROM MORIMOTO (818) 904-1434, TO MAJEWSKI (818) 904-1440.

13.3a Continue 1

* WASTEWATER PROGRAM *
* WPMD FINANCIAL REPORTING SYSTEM *
COST LEDGER SUMMARY FOR SELECTED PROJECTS
AS OF MAY 89

Note: This report should be consider valid for department 50 (OTHER) only. Please refer to the FMIS M-26 report for other departments

	TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX31388				WORK ORDER TITLE: LAG ADD'L CHLOR CONT TNK						
	652,678.22	.00	651,609.02	.00	.00	.00	.00	29.48	362.47	677.25
PROJECT: EWLG0001				PROJECT DESCRIPTION: LAG - ADD'L CHLOR CONT TNK						
TOTAL										
	652,678.22	.00	651,609.02	.00	.00	.00	.00	29.48	362.47	677.25

13.3a Continue 2

TOTAL COSTS	TOTAL CREDITS	ENGINEERING	CONTRACT ADMIN	SANITATION	STREET LIGHTING	STREET MAINTENANCE	TRANS-PORTATION EXPENSE	REPRO-DUCTION EXPENSE	OTHER
WORK ORDER NUMBER: EXX31377			WORK ORDER TITLE : LRKSPR ST NR EL DRD AV ID A'11						
2,695.73	0.00	2,610.26	69.80	0.00	0.00	0.00	0.00	15.67	0.00
WORK ORDER NUMBER: EXX31378			WORK ORDER TITLE : TWRP-DECHLORINATION FACILITIES						
5,467,347.61	0.00	1,744,040.49	216,165.50	70,416.45	0.00	0.00	5,658.83	1,972.03	3,429,094.31
WORK ORDER NUMBER: EXX31379			WORK ORDER TITLE : BRDWLL ST /R/W NW// NR HGH ST/						
28.92	0.00	0.00	28.92	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31382			WORK ORDER TITLE : L A CO COMPOSTING PLANT						
1,668.49	0.00	1,168.60	496.63	0.00	0.00	0.00	3.26	0.00	0.00
WORK ORDER NUMBER: EXX31383			WORK ORDER TITLE : LAG DECHLOR FAC						
279.27	0.00	279.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31386			WORK ORDER TITLE : LAG NW LAB BLG						
5,414.69	0.00	5,414.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31387			WORK ORDER TITLE : LAG SLUICE GATES-AER TANKS						
184,296.20	0.00	15,927.03	3,301.18	0.00	0.00	0.00	225.99	0.00	164,842.00
WORK ORDER NUMBER: EXX31388			WORK ORDER TITLE : LAG ADD'L CHLOR CONT TNK						
5,676,239.59	0.00	1,397,333.20	224,283.80	156,273.96	0.00	0.00	5,279.16	9,482.46	3,883,587.01
WORK ORDER NUMBER: EXX31389			WORK ORDER TITLE : FCLTS PLAN STDY FOR WSTWTR TRT						
572.92	0.00	572.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31390			WORK ORDER TITLE : BUNDY DR & TENN RLF SWR PH1						
225,043.55	0.00	213,809.74	0.00	10,937.34	0.00	0.00	2.68	293.79	0.00
WORK ORDER NUMBER: EXX31391			WORK ORDER TITLE : BRBNK SNGE CONTRACT LITIGATION						
3,487.86	0.00	3,487.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31392			WORK ORDER TITLE : NORS						
43,772,135.01	0.00	7,989,283.08	4,707,119.96	110,095.84	7,199.31	0.00	6,561.24	3,017.13	30,848,858.45
WORK ORDER NUMBER: EXX31395			WORK ORDER TITLE : CLEAN WATER GRANT SPECIALIST						
553.45	0.00	553.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31396			WORK ORDER TITLE : CITY OUTFALL SEWERS STUDY						
8,882.77	0.00	8,882.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WORK ORDER NUMBER: EXX31397			WORK ORDER TITLE : CRSCNT VLLY CNTY WTER DISTRICT						
900.53	0.00	890.47	0.00	0.00	0.00	0.00	10.06	0.00	0.00
WORK ORDER NUMBER: EXX31398			WORK ORDER TITLE : MAGHOLIA BL INTERCEPTOR SWR						
505,011.33	0.00	45,478.67	16,713.16	0.00	0.00	0.00	342.76	143.71	442,333.03

SECTION 14

ADDITIONAL INVESTIGATION ON PID

(under preparation)

This section is prepared to provide important information on projects beyond what is noted in the comments of PID. This is to help the reader to better understand the relations of the projects in a category and the overall program. It also includes adjustments that were not known when the last edition of this report was prepared.

14.1 RELATIONS AMONG PROJECTS

The staff is presently arranging meetings with experts in various divisions for this implementation. These meetings have lead to finding additional information that has been or to be added to PID. These are discussed in the next section.

14.2 ADJUSTMENTS FOR THE NEXT WCIPPR EDITION

Minor adjustments have been found that should be applied to project status. These should reflect the results shown in various sections. Due to time constraints, these have been applied to PID of Part 4 and major sections of Part 2. The following gives a listing of the adjustments that have been found to date.

TABLE ?. Adjustments Resulted from Additionnal Investigations Todate on the PID.

Cat	Last Edition	Adjusment	Act Exp	Planned Exp
CS	no change			
HF8	FU	CA	53	58,464
HF32	IP	CA	0	53,000
HS7	CA	CP	34,624	86,321
HS10	IP	CA	0	6,700
HS35	IP	CA	93	500
HS39	CP	CA	1	250
HS44	CP	CA	1	500
HT13	CA	OH	0	630
HT14	CA	CP	735	4,177
HT35	IP	CA	0	13,900
LAG	no change			
PP11	IP	CA	0	7,650
SW	no change			
TITP	no change			
TWRP	no change			

Notations

Notes

File Name: WSSD\WCIPPR\93-R1\T?P4

14.2a Application to Part 4

The PID reflects the adjustments. The PIDCP needs to be adjusted.

14.2b Application to Part 3

The tables analyzing status, related counts and expenditures must be slightly modified.

14.2c Application to Part 2

All the tables and graphs containing information for the overall program and categories reflect the changes. Slight modifications should be applied to the results for completed projects.

SECTION 15
TEXT FOR PRESENTATION

INTRODUCTION

☞ BEGINNING A BOND FUNDED WASTEWATER PROGRAM

★ Court Ordered Requirements

Cease and Desist Order

Amended Consent Decree

☞ WASTEWATER PROGRAM MANAG DIV IS FORMED

★ Direct Program Planning Efforts

Develop System Wide Master Plan

★ Manage Program Financial Requirements

Assure that the Required Projects are on Schedule and within Budget

☞ PROPER AND CORRECT INFO IS THE KEY TO SUCCESS

★ Information Existed at the Beginning of the Program

Five Year Capital Improvement Program Document

★ Information Developed Since the Beginning of the Program

Ten Year Expenditure Plan; *Master Schedule*

Project Status Reports; *FMIS Reports*

Advanced Planning Reports; *Procedural Memorandums*

Etc.

☞ NO DOCUMENT CAN PROVIDE A GLOBAL REVIEW OF WCIP

★ **Necessary to Handle Multiple Documents to Get a good Understanding of the Overall Program**

Many Individual Data Sets Created To Accomplish Bureau And Division Tasks

☞ NEED A SINGLE REPORT FOR THE ENTIRE PROGRAM

★ **Wastewater Capital Improvement Program Progress Report**

WASTEWATER CAPITAL IMPROVEMENT PROGRAM PROGRESS REPORT

FISCAL YEARS 88/89 THROUGH 92/93

I. WHAT IS THE PURPOSE OF THIS REPORT?

☞ **TO EVALUATE ALL PROJECTS WITHIN PROGRAM FROM FY 88/89 THROUGH 92/93 AND IDENTIFY THEIR PROGRESS IN TERMS OF EXPENDITURES AND SCHEDULES**

- ★ **WWW / WWA**
- ★ **Unprecedented Report**
- ★ **Identifies Each Project's STATUS INTO ONE OF**

  CP - Completed Project

  IP - In Progress Project

  FU - Future Project

  OH - On Hold Project

  CA - Canceled Project

☞ **EXECUTIVE CONTROL**

To Provide Management with a Single Executive Summary Report Identifying the Status of the Entire Wastewater Program in an Understandable Manner Using a Series of Tables and Graphs.

☞ **IDENTIFY AREAS WHERE IMPROVED PROGRAM CONTROL IS NECESSARY**

II. WHO IS RESPONSIBLE FOR THIS REPORT?

☞ DEVELOPMENT

SSG

WPMD

☞ COORDINATION

SSG

WPMD

☞ QUALITY CHECK

SSG

WPMD

WTED

WTD

CSED

STRR

III. HOW IS THIS REPORT FORMATTED?

☞ **PART 1. COVER LETTER AND DISTRIBUTION**

☞ **PART 2. EXECUTIVE SUMMARY**
(Sections 1-5)

☞ **PART 3. DETAILED REPORT**
(Sections 1-9)

☞ **PART 4. APPENDICES**
(Sections 10-16)

☞ **PART 5. COMMENTS AND RESPONSES**
(Section 17)

IV. WHAT ARE THE RESULTS OF THIS REPORT?

☞ STATUS OF WCIP (COUNTS & EXPENDITURES)

★ Overall

Projects Planned to be Delivered in 10 Years (T, G)

Projects Planned to be Delivered by 1/1/93 (T, G)

★ By Category

Projects Planned to be Delivered in 10 Years (T)

Projects Planned to be Delivered by 1/1/93 (T)

☞ GROWTH OF PLANNED WCIP (COUNTS & EXPENDITURES)

★ By Category (*T, G*)

★ By Fiscal Year (*T, G*)

☞ EVALUATION OF WCIP COMPLETED PROJECTS

★ Overall

Expenditures and Durations (T, G)

★ By Category

Expenditures (T)

Durations (T)

☞ SYSTEM DATA HANDLING

Present Difficulties (F)

A Centralized Relational Database System (F)

V. WHAT ARE THE CONCLUSIONS?

☞ RAPID CHANGES IN PROGRAM

CA Projects from Substantial Fraction of Planned Program

CP and CA Projects Replaced with New Ones

Planned Expenditures Nearly Doubled in the Past 5 FY's

Documents Indicate Large Variations in Project Estimates

☞ DATA HANDLING IN PROGRAM

Data Duplication between Offices

Time Lost in Entering Data

Numerous Errors and Inconsistencies

☞ DIFFICULTIES WITH PROGRAM

Planned and Actual Expenditures Disagree

Millions of Dollars Spent on CA Projects

Most CP Projects Delayed in Schedule

CP Construction Cost Exceeded Standards

CP Construction Management Cost Exceeded Standards

VI. WHAT ARE THE RECOMMENDATIONS?

☞ IMPLEMENT UNIFIED DATA SYSTEM

Apply PID

Integrate Related Work by Others

Eliminate Existing Redundancies

Continue Improving Quality of Data

Build on Adequate Database Software

☞ ADJUST CURRENT PRACTICES

Implement a New Planning Document (Separate from WCIP Expenditure Plans)

Formulate Systematic Ways to Break Large Projects into Subprojects

Improve Coding for Data

Develop Better Formulation for Judging % Completion

☞ PERFORM ADDITIONAL ANALYSES FOR FUTURE EDITIONS

Perform IP Analyses Similar to CP's

Subdivide Projects by Magnitude and Function

Extend Analysis by FY and by Category

Analyze Change Orders and Record Responsibility

Investigate Causes of Results

☞ ADAPT WCIPPR FOR FUTURE YEARS

SECTION 16

REFERENCES USED AND PERSONS CONTACTED

References

All the WCIP documents used for this report are given in Section 2. The WCIP databases (files) used are given in Section 7.

Persons

Brogan, Chuck	Bright, Bill	Buenaventura, Dominic
Carayon, Ann	Chang, R.C.	Cheung, David
Cuny, Jo	Dombrower, Mario	Domingo, Jaime
Fareed, Rashad	Farhang, Farshid	Garnas, Gil
Gillis, Paul	Hagekhalil, Adel	Hanna, Victor
Hoeptner, Fred	Incardona, Angelo	Irvin, Bob
Izzat, Bruce	Jacklich George	Karaioannoglou, Phaedon
Kharaghani, Shahram	Kovacs, Cindy	Kvasnicka, Ken
LaFrance, Bob	Lawson, Bob	Lejano, Raoul
Ludwig, Ken	Malali, Prem	Malkoun, Gus
Maughmer, Terry	Moghaddam, Omar	Nebedum, Ed
Nelson, Carl	Pang, Elaine	Pettee, Steve
Reveles, Raoul	Savaria, Wayne	Schellhase, Larry
Sedrak, Morad	Shu, Susan	Tardini, Roger
Trejo, Horacio	Vasa, Kiran	Vega, Bob
Yoest, David		

TABLE ? Comparison of 88/89 Expenditure Document Provided by Riaz versus the WCIPPR PID.

Category: HTP			Planned Expenditures(x1000)				
Codes	Project Titles	First Shown	WCIP	CH2M HILL	ED's Doc.	Cap Labor	Comments
HT1	ASBESTOS REMOVAL (NEW)	88/89	4,941	4,941	4,504	289	
HT2	BLACK START GENERATOR	88/89	2,434	2,297		137	
HT3	BLDG REMOD & TRAILERS	88/89	1,483	1,273	1,415	85	
HT4	BLENDING TANKS MOD	88/89	1,620	1,527	1,656	93	
HT5	CATHOD PROTECT 7 MI OF	88/89	270	218	335	17	
HT6	CENTRIF-PROCURE & INSTALL C73	88/89	3,460	857	3,015	62	
HT7	CHEM IMPR PRIMARIES/DIG	88/89	2,130	1,782	2,178	123	
HT8	CLN WTR SUPPLY-RAW GAS COMP	88/89	710	668	724	42	
HT9	CONSTR RELATED ACTIV/UTIL	88/89	1,000	1,000		0	
HT10	DCF & SSF IMPROVEMENTS	88/89	7,488	6,278	7,488	433	
HT11	DIVERSION OF STORM DRAIN FLO	88/89	630	544	630	36	
HT12	EAST & WEST HDWRKS IMPROV	88/89	4,177	3,469	4,120	245	
HT13	PLANT EFFLUENT WATER SYSTEM	88/89	1,056	955	1,056	56	
HT14	EPP PUMP, MOTOR & BLDG	88/89	36,971	30,625	25,676	2,194	
HT15	GRIT LIFT STA (DRY PAD)	88/89	277	90	283	17	
HT16	HDWKS/SER FAC EQ & SUPP	88/89	4,100	2,800		100	
HT17	HIGH PRESS EFFL PIPE	88/89	2,406	2,005	2,406	151	
HT18	INTERIM IMPRV PROG ADS	88/89	4,570	1,615	5,123	242	
HT19	LABORATORY INFO MGMT SYSTEM	88/89	951	650	714	32	
HT20	LEGAL REPTS/PROCESS MONITORING	88/89	608	552	608	28	
HT21	MOD TO C-7 BELT CONVEYORS	88/89	1,105	1,048		57	
HT22	OUTFALL REHAB	88/89	1,223	1,157		66	
HT23	PCB TRANSFORMER REMOVAL	88/89	2,443	2,125	2,443	152	
HT24	PIPING VAULTS	88/89	546	514	558	32	
HT25	POWER SUPPLY AND DISTRIBUTION	88/89	9,995	9,435		560	
HT26	RAW SLUDGE PUMP CONTR MOD	88/89	461	420	461	26	
HT27	SAFETY CNSLT AND EQUIPMENT	88/89	1,520	1,258	1,557	89	
HT28	SANDBLAST FACILITY	88/89	868	818	887	50	
HT29	UNDERGROUND TANK REMOVAL	88/89	332	312	338	20	
HT30	VAX CLUSTER UPGRADE	88/89	826	788	826	38	
HT31	WASTE GAS BURNERS	88/89	1,000	1,000	2,965	0	
HT32	WATER SUPPLY PIPE LINE	88/89	5,340	5,000	4,495	340	or Water Supply Pipeline; move to HFS
HT33	TRUCK LOADING FAC MOD	89/90	2,109			119	
HT34	CATEGORY RESERVE	88/89	13,900			0	
		Subtotal	122,950	88,021	76,461	5,931	
	WEST LAUNDER COVERS	88/89			135		
	EAST HEADWORKS ODOR CONTROL	88/89			887		under HT12
	MOD OF EPP WOUND RTR MOTOR DRIVE	88/89			472		under HT14
	DIGESTER 1A DOME REPAIR	88/89			377		under HS Digester Expansion
	DIGESTER AREA IMPROV	88/89			146		under HS Digester Expansion
	INTERIN WAS THICKENING	88/89			1,963		under HF WAS Thick & Chem Feed
	DIGESTER GAS METER	88/89			684		under HS Digester Expansion
	SLUDGE SCRNG FAC/WETWELL F/CENTR	88/89			146		under HS Sludge Drying Bldg
	SLUDGE TRK FAC CONVRYR & STM SYS	88/89			42		under HT33
	SLUDGE HOPPER & TRK LOAD FAC.	88/89			6,085		under HT33
	TEMP TECH SUPPORT BLDG PH 1 & 2	88/89			2,174		under HF Tech Supp & Oper U1 & U2
	TRUCK/WASH SERVICE FAC	88/89			1,189		under HT33
	STAND BY GENERATOR	88/89			3,181		under HT25
	ELECTRICAL SUBSTATION	88/89			2,322		
	COVER FOR FINAL SETTLING BASIN	88/89			4,755		under HF Secondary Fac
	UNANTICIPATED PROJECTS	88/89			17,211		under HF34
	OPERATIONAL PROBLEM CONSULTANT	88/89			75		under SW Wastewater Prog Manag Cons
	SAFETY PROCESS RELIABILITY	88/89			65		under SW Safety Eng Mod Proj
	CLAIMS MITIGATION SERVICES	88/89			1,500		move to SW Cat
	OFFSITE PLANT SLDG DEPOSAL EIR	88/89			500		move to SW Cat
	SUB STRUCTURE MAPPING	88/89			270		under SW Automated Mapping
	START UP & CONTENGENCY	88/89			33,000		
		Subtotal			77,179		
		Grand total			153,640		

File Name: WSSD\WCIPPR\93-R1\T?P5

Category: HFS

Codes	Project Titles	First Shown	Planned Expenditures(x1000) WCIP	CH2M HILL	ED's Doc.	Cap Labor	Comments
HF1	CHLOR/SERVICE WATER FAC	88/89	19,339	18,225	20,139	1,114	
HF2	CONST MGMT BLDG	88/89	6,846	6,440	5,631	406	
HF3	DIGESTER EXPANSION	88/89	68,120	64,100	74,716	4,020	
HF4	GARDENER WORK FACILITY	88/89	2,090	1,972	N/A	118	
HF5	HEADWORKS & SERVICE FAC	88/89	107,216	98,185	116,450	8,031	
HF7	OCEAN MONITORING VESSEL	88/89	3,888	2,047	1,905	62	
HF8	OCEAN OUTFALL	88/89	58,464	54,800	65,804	3,664	
HF9	OCEAN OUTFALL EIR/EIS	88/89	1,430	1,300	1,120	130	
HF10	OXY GENER & DISOLUT EQUIP	88/89	39,770	37,540	N/A	2,230	
HF11	PRIM BATTERIES MOD U1	88/89	10,365	9,465	11,150	650	
HF12	PRIM BATTERIES MOD U2	88/89	12,422	11,616	17,012	806	
HF13	PRIMARY BATTERY "D"	88/89	32,009	27,556	34,340	3,420	
HF14	PRKG FAC & PED CROSSING	88/89	3,205	3,000	7,390	205	
HF15	SCHEDULING CONSULTANT	88/89	14,000	14,000	11,000	0	step 3 SCHED/COST CONSUL
HF16	SECONDARY FACILITY	88/89	312,515		324,190	19,135	
HF17	SITE GRADING CLARIF EXP	88/89	10,985	5,494	11,727	991	
HF18	SITE IMPROVEMENTS	88/89	4,212	3,930	4,402	282	
HF19	SITE UTILITIES	88/89	9,004	8,400	9,414	604	
HF20	SOLIDS HANDLING	88/89	213,795	201,015	235,005	12,780	
HF21	SPARE PARTS & STARTUP EQ	88/89	9,200	9,200	N/A	0	
HF22	STEP 2 DES REL ACT/EQUIP	88/89	9,760	7,700	5,100	1,360	
HF23	DESIGN/CM CONSULTANT	88/89	67,660	52,849	67,657	0	
HF24	STEP 2 EQUIPMENT	88/89	2,000	1,000	1,400	0	
HF25	STEP 3 CONST MGMT CNSLT	88/89	45,100	45,100	45,089	0	
HF26	STEP 3 CONST REL ACT/UTIL	88/89	500	450	500	0	
HF27	STEP 3 EQUIPMENT	88/89	1,050	1,000	500	0	
HF28	TECH SUPPRT & OPER. UN1	88/89	31,306	29,440	34,362	1,866	
HF29	TECH SUPPRT & OPER. UN2	88/89	47,793	45,030	51,734	2,763	
HF30	VALUE ENGINEERING	88/89	3,000	2,500	400	500	
HF31	WAS THICK & CHEM FEED	88/89	65,195	61,075	67,485	4,120	
HF32	CATEGORY RESERVE	88/89	53,000			0	
		Subtotal	1,265,239	824,429	1,225,622	69,257	
	NEW HDWKS & DEMO E.HDWK S 2	88/89			4,100		under HF5
	PLANT INFL SWR RELOC S 2	88/89			271		under HF5
	PRIM BATT B&C INTRM WIRNG	88/89			59		part of C-140
	CHEM FEED & STORAGE FAC S 2	88/89			500		under HF31
	CHLORINATION FACILITY S 2	88/89			610		under HF16
	EMPLOYEE/PLANT VEHICLE PAR	88/89			590		covered under HF14
	SERVICE BUILDING & WAREHOUSE	88/89			2,230		under HF15
	CLARIFIER MODIF & EXPAN S 2	88/89			8,000		under HF16
	REACTOR & CRYOGEN FAC.	88/89			12,190		under HF16
	CRYOGENIC FAC EQUIP	88/89			42,320		under HF16?
	PROCESS WATER SCREENING FAC S	88/89			745		under HF16
	SERVICE WATER BYPASS	88/89			850		under HF16
	STEP 2 GENERAL	88/89			1,240		under HF23
	EIR/EIS WASTEWTR FAC S 1	88/89			1,120		under HF23
	UNANTICIPATED PROJECTS	88/89			178,645		under Category Reserve type;HF32
		Subtotal			253,470		
		Grand total			1,479,092		

Category: HSH

Codes	Project Titles	First Shown	Planned Expenditures(x1000) WCIP	CH2M HILL	ED's Doc.	Cap Labor	Comments
HS1	AIR QUAL TEST RISK	88/89	224	200	224	24	
HS2	CARVER/GREEN PAT LIC	88/89	1,700	200	1,700	0	
HS3	COMPRESSOR FACILITY	88/89	5,088	4,800		288	
HS4	CONST ENGR CONSULTANTS	88/89	46,371	1,565		0	
HS5	HERS CLOSEOUT/GRANT FUNDING	88/89	650	300	650	350	
HS6	PROCS MOD & STARTUP EQP	88/89	15,075	10,410	8,050	665	
HS7	SLUDGE DRYING BUILDING	88/89	86,321	26,545		6,174	
HS8	SPARE PARTS	88/89	1,000	1,000		0	
HS9	HERS CONSTR SCHED CNSLT	88/89	8,378	641		0	
HS10	HERS/CATEGORY RESERVE	88/89	6,700			0	
HS11	ASH/WET CAKE MIXING FAC	89/90	3,450	6,265	6,637	114	was Ash Processing Facility
HS12	BASE LOAD BOILER	89/90	3,651	3,445	3,651	206	
HS13	ASH CHEM FIX SYSTEM	90/91	1,372			15	
		Subtotal	179,980	55,371	20,912	7,836	
	ALT SLUDGE & ASH DISP STUDY	88/89			560		under HS11
	LAX-CHEM. FIX.	88/89			785		under HS13
	TERMINAL ISLAND COMPOST-HYP SL	88/89			1,338		same as TITP Composting Fac;TI8
	UNANTICIPATED PROJECTS	88/89			6,085		same as HS10
	BLACK START GENERATOR	88/89		2,297	2,434		move to HTP Category;HT2
		Subtotal			11,202		
		Grand total			32,114		

Category: LAG

Codes	Project Titles	First Shown	Planned Expenditures(x1000) WCIP	ED's Doc.	Comments
LA1	ADD'L CHLOR CONTACT TANK	88/89	2,620	2,620	
LA2	BULK CHLOR STOR TANK	88/89	452	447	
LA3	CONST MGMT CNSLT EXP	88/89	8,560	8,432	
LA4	EXPANSION TO 50 MGD	88/89	79,488	80,918	
LA5	GRIT REMOVAL FACILTIY	88/89	2,295	2,217	
LA6	MOD & EQUIP UPGRADE	88/89	1,496	1,496	
LA7	NEW WAREHOUSE BLDG	88/89	2,242	2,236	
LA8	PROCESS CONTROL SYST	88/89	2,143	2,222	
LA9	SEC PROCESS IMPROVE	88/89	4,402	4,309	
LA10	ADMIN CHLORIN BLDGS	90/91	200	1,926	
LA11	DECHLORINATION FAC IMPR	90/91	700	1,126	
		Subtotal	104,598	107,949	
	AERATION TANK SLUICE GATES	88/89		181	
		Subtotal		181	
		Grand total		108,130	

Category: NONPLANT (SW,PP,CS)			Planned Expenditures(x1000)		
Codes	Project Titles	First Shown	WCIP	ED's Doc.	Comments
CS1	BUNDY DR & TENNE REL SWR PH I	88/89	964	964	
CS2	CLAY SEWER ASSESSEMENT	88/89	934	934	
CS3	CEMENT SEWER ASSESSMENT	88/89	6,100	6,100	same as Cl. Circuit TV & Visl Insp. Swr
CS4	EAGLE ROCK & HIGHLAND PK REL S	88/89	6,897	6,897	same as Eagle Rock Relief Swr.
CS5	EVIS UNIT 2A	88/89	2,691	2,691	
CS6	EVIS UNIT 2B	88/89	2,405	2,318	
CS7	EVIS UNIT 2C	88/89	3,156	3,039	
CS8	EVIS UNIT 2D	88/89	2,849	2,849	
CS9	EVRS TO LC & SFVRS DIVER STR	88/89	1,500	1,500	
CS10	FOX ST INTER SWR	88/89	1,546	1,546	same as Fox and Lemona Interc Swr
CS11	GLENDALE-BURBANK RELIEF SWR	88/89	38,395	33,000	
CS12	LA CIENEGA & SAN FERNAN SWR	88/89	460	460	
CS13	LAKE ST & RAMPART BL INT SWR	88/89	4,450	4,450	
CS14	LINCOLN BL SWR-MILFORT/VENICE	88/89	858	858	
CS15	MAGNOLIA BLVD INT SWR	88/89	655	655	
CS16	MAINTENANCE HOLE RESETTING	88/89	1,513	1,413	
CS17	NOS REHAB PH I	88/89	12,000	12,000	
CS18	NORS	88/89	146,100	145,100	
CS19	NORTH HOLLYWOOD INT SWR U 1	88/89	7,324	7,324	
CS20	NOS-ACCESS STRUCT	88/89	2,350	2,350	
CS21	NOS-BLANKETING	88/89	13,309	13,309	
CS22	NOS-CLEANING	88/89	13,200	16,200	
CS23	NOS-VENTILATION	88/89	2,280	2,280	
CS24	NOS/NCOS SYS IMPRV-UNIT 1	88/89	185	185	
CS25	NOS/NCOS SYS IMPRV-UNIT 2	88/89	1,480	1,481	
CS26	S.E.WILMINGTON INTER SWR U 3	88/89	2,513	2,513	
CS27	SWR MONI SYSTEM DEVELOPMENT	88/89	2,092	1,510	same as Swr Monitoring Eq
CS28	SOTO ST. INTER SEWER	88/89	2,322	2,322	
CS29	EMERGENCY SEWER REPAIRS	90/91	5,700	1,295	
CS30	EMERGENCY SWR REPLACEMENT	88/89	34,713	34,713	
CS31	SWR-I/I REDUCT PROG	88/89	6,795	6,430	
CS32	SWR-I/I REHAB PROG	88/89	40,135	40,135	
CS33	VARIEL AVE INTER SEWER	88/89	3,603	3,603	
CS34	VENICE BLVD INTER SEWER U 1	88/89	3,372	3,372	
CS35	WILLIS & BLYTH INTER SWR	88/89	221	221	
CS36	WINNETKA/SATICOY INT SWR U 2	88/89	776	776	
CS37	WINNETKA/SATICOY INT SWR U 3	88/89	397	397	
PP1	BALLONA CR F.M. & GRAV SWR	88/89	5,892	5,892	
PP2	BALLONA CRK PP RECON	88/89	3,127	3,127	
PP3	FRIES AVE PP RECON	88/89	2870	2,870	
PP4	I ST SWR & PP E/O DOMINGUEZ	88/89	670	607	
PP5	PORTS OF CALL PP REMOD	88/89	88	88	
PP6	PUMPING PLANT REM/UPGRADE	88/89	30040	27,000	
PP7	PUMPING PLANT STANDBY POWER	88/89	3355	3,000	
PP8	SUNSET TO TEMESCAL CYN PP/FM	88/89	8866	800	
SW1	COMPUTER MAPPING SYSTEM	88/89	8400	8,400	in SW Cat; Same as WWS Automated Mapping.
SW2	CORROSION ENGINEER	88/89	301	301	in SW Cat.
SW3	MAINHOLE SEALING U2	92/93	1,364	685	same as Mainhole Sealing Projects
SW4	SEPUL BASIN RECL WATER	90/91	14,772	13,700	
SW5	STORM WATER CONSENT DECREE	88/89	3780	3500	same as Storm Water Poll Red Study
SW6	VISTA DEL MAR S/O IMPER HWY U2	88/89	1080	1,080	
SW7	VISTA DEL MAR WIDEN S/O 5TH U1	89/90	400	535	
SW8	WASTEWATER SYS SMOKE TEST PG	88/89	406	406	
SW9	WW SYSTEM CCTV & MAIN SWR ASSE	88/89	1,200	1,000	
		Subtotal	462,851	440,181	
	SLAUSON AVE WIDENING @ RTE 90			8	
	SOUTHERLAND DRNGE PMP PLT DIE			65	
	SWR FLOW DATA BASE			106	move to CS Cat
	SUNSET & PCH PMP PLT & FM			8,246	covered under PP8
	TEMECAL CYN PUMP PL REMODEL			618	
	PUMPING PLANT MODERNIZATION			3086	covered under PP6
	LOPEZ CYN LANDFILL ACCESS RD			1121	
		Subtotal		13,250	
		Grand total		453,431	

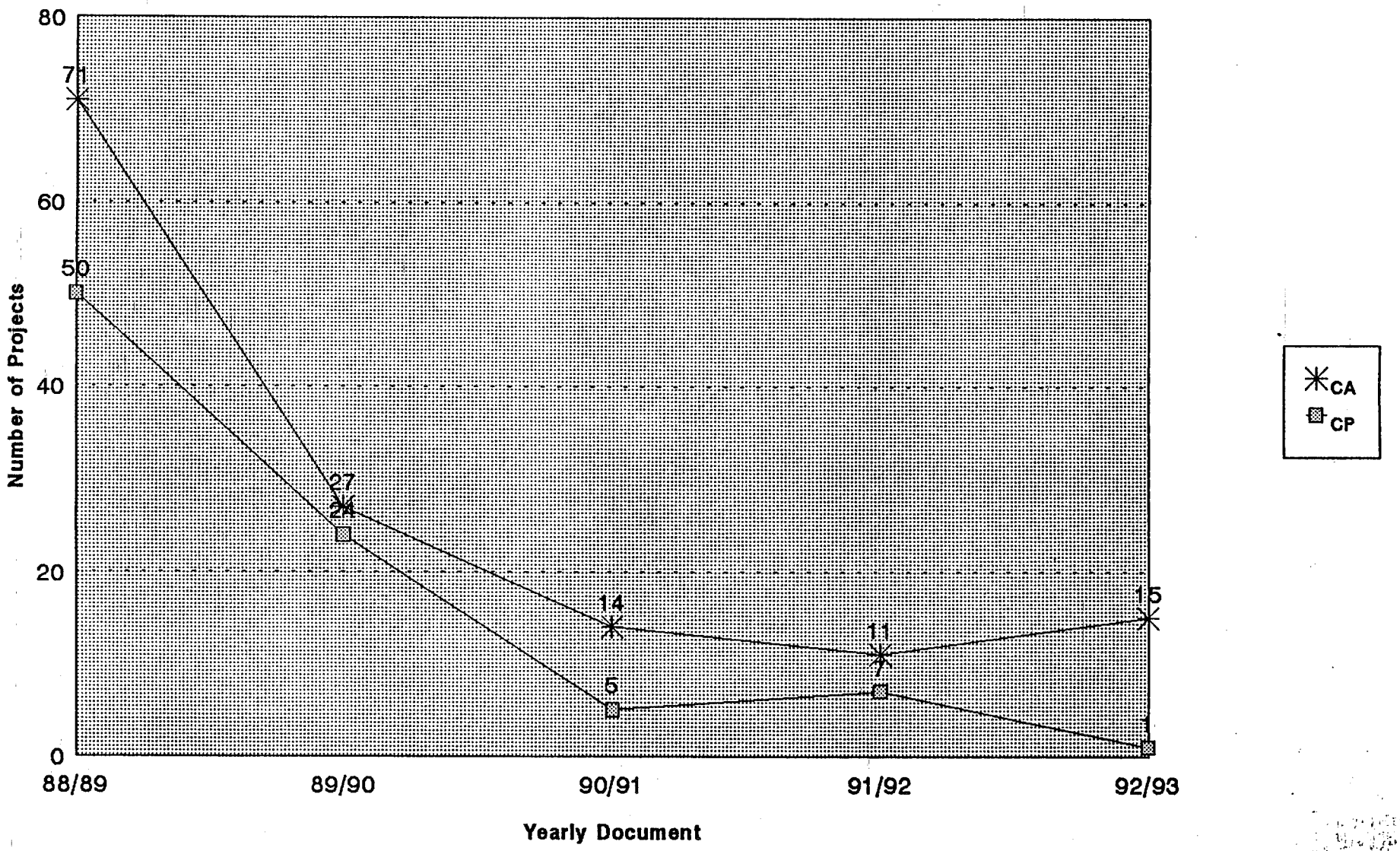
Category: SW		Planned Expenditures(x1000)		
Project Titles	First Shown	WCIP	Consultant	
CLAIMS MITIGATION SERV	88/89	1,500	1,500	
CLEAN WATER COST ACCTG CNSLT	88/89	979	500	
FACILITIES PLAN UPDATE	88/89	896	800	
GRANT PROJECTS-DOCUMENTATION	88/89	1,100	1,100	
PRETREAT ENFORC FAC (HQ)	88/89	1,942	1,750	
PRETREAT ENFORC FAC (N. AREA)	88/89	3,640	3,300	
OFFSITE SLDG DISP DR EIR/EIS	88/89	500	440	
SECUR CESSPOOL DUMP FAC(TWRP)	88/89	1,440	1,200	
STORM WATER CONSENT DECREE CONTROL	88/89	3,780	3,400	
VISTA DEL MAR S/O IMP HWY U2	88/89	1,080	880	
WASTEWATER DISPOSAL AGRMNTS	88/89	2,260	1,720	
WASTEWATER PROG MGT CNSLT	88/89	34,000	28,900	
WASTEWATER PROG-UNRESOLVED C.O.	88/89	31,490	24,501	
WASTEWATER SYS FINANCE CNSLT	88/89	110	100	
WASTEWATER SYS TRAINING PROG	88/89	12,000	8,391	
WASTEWATER SYSTEM AUDITOR	88/89	510	510	
WW PROG DOCUMENTATION SYS	88/89	950	900	
WW PROGRAM CAD SYSTEMS	88/89	6,000	5,900	
WW PROGRAM INSURANCE	88/89	25,000	25,000	
WW PSR DATA BASE CONVERSION	88/89	400	300	
WWS AUTOMATED MAPPING	88/89	8,400	7,636	
CORROSION ENGINEER	88/89	301	273	
		138,278	119,001	Total

Category: TITP

Codes	Project Titles	First Shown	Planned Expenditures(x1000) WCIP	ED's Doc.	Comments
TI1	ADMIN BLDG REHAB	88/89	421	435	
TI2	AIR POLL REDUCT SYS	88/89	730	730	
TI3	INDUSTRIAL WATER PREP	88/89	635	603	
TI4	INTERIM PERS FAC	88/89	624	488	
TI5	SITE LANDSCAPING	88/89	1,881	1,820	
TI6	OPERATIONS CONTROL BLDG	88/89	824	1,074	
TI7	AERATION TANK MOD	88/89	3,308	3,250	
TI8	COMPOSTING FACILITIES	88/89	15,978	16,332	
TI9	OUTFALL EXT CONST MGT/CNSLT	88/89	4,613	4,613	
TI10	OUTFALL EXT/DIFUSER	88/89	50,118	51,073	
TI11	PERM MAINT FAC	88/89	10,260	8,640	
TI12	PROCESS CONTROL SYSTEM	88/89	6,549	6,676	
TI13	SOLID PROCESSING MOD	88/89	3,990	3,960	
TI14	ELEC & STRUCT MOD	88/89	2,800	2,743	
TI15	EQUIP & PROCESS MOD	88/89	2,390	2,100	
TI16	LABORATORY BUILDING	88/89	2,492	2,193	
TI17	LIFT & SAMPLING STATION	88/89	2,493	1,888	
TI18	REMED PLANT IMPROV PROJ	88/89	2,554	2,384	
TI19	OUTFALL EXT VALUE ENG	88/89	105	105	
TI20	PLANT EVALUATION STUDY	88/89	840	840	
TI21	RESEARCH DIV TRAILERS	88/89	660	620	
TI22	TEMP OUTFALL DIFUSER	88/89	860	860	
		Total	115,125	113,427	

Category: TWRP			Planned Expenditures(x1000)		
Codes	Project Titles	First Shown	WCIP	ED's Doc.	Comments
TW1	AVORS DIVER STRC BYPASS	88/89	1,200	1,200	
TW2	CATEGORY RESERVE	88/89	9,500		
TW3	CHLORINATION SYSTEM MOD	88/89	600	600	
TW4	COMPENS EXCAV FLOOD PROT	88/89	12,000	12,000	
TW5	DECHRINATION FACILITY	88/89	2,400	1,200	
TW6	DES REL ACT/EQUIP PH2	88/89	865	1,100	
TW7	EFFLUENT LINE EXTENSION	88/89	4,080	4,080	
TW8	HEADWORKS MODIFICATION	88/89	4,440	4,440	
TW9	INF PUMPS REL/UPGRADE	88/89	490	500	
TW10	LEVEL MONITORING	88/89	150	150	
TW11	MODE EQUIP UPGRADE	88/89	1,020	780	
TW12	PH1 CAP IMPR TEST PROG	88/89	780		
TW13	PH1 CAP IMPR	88/89	3,400		
TW14	PH2 CONST REL ACT/UTIL	88/89	800	800	
TW15	PH2 PLANT EXPANSION	88/89	78,338	71,638	
TW16	PH2 SCHED CONSLT	88/89	1,500	1,500	
TW17	PRODUCT WATER EQUIP MOD	88/89	420	420	
TW18	SEPUL BASIN RECL WATER	88/89	6,302		
TW19	STANDBY INFL PUMPS	88/89	390		
TW20	ADMIN BLDG EXPANSION	89/90		3,640	
		Subtotal	128,674	104,048	
	SECURED CESSPOOL DUMPING FA	88/89		1,440	shifted to SW Cat.
	CONSTRUC. ENG. CONSULTANT PH	88/89		7,312	
		Subtotal		8,752	
		Grand total		112,800	

GRAPH ?. Number of Projects Cancelled or Completed Over All Planning FY's According to Each Successive Yearly WCIP 10 Year Planning Document.



File Name: WSSD\WCIPPR\93-R1\NEWGRAPH.CH3

TABLE? Comparison of Revenue Program And Expenditure (in Billion $) Plans for WCIP.

	FY	88/89	89/90	90/91	91/92	92/93
Revenue Program	5yr+	n/a	n/a	n/a	n/a	n/a
	10yr	3.120	3.093	3.379	3.931	3.881
	12yr	3.442	3.450	n/a	n/a	n/a
Expenditure Plan	5yr+	2.615	2.837	n/a	n/a	n/a
	10yr	n/a	n/a	2.920	4.167	4.552
	12yr	n/a	n/a	n/a	n/a	n/a

Notations:

Notes:

1) The 10 yr Revenue Program for 88/89 and 89/90 are adjusted from 12yr to 10yr.
2) The 88/89 and 89/90 5yr Expenditure Plan reflect more than 5 years.

File Name:

TABLE? Number of Projects & Expenditures (x$1000) for 85/86 ... 89/90 WCIP Document.

FY 85/86

1	75,000	51	2,209,000	101	300,000	151	420,000
2	1,588,000	52	39,406,000	102	180,000	152	800,000
3	1,582,000	53	16,533,000	103	850,000	153	700,000
4	607,000	54	2,500,000	104	1,164,000	154	8,400,000
5	260,000	55	6,468,000	105	1,760,000	155	840,000
6	90,000	56	3,076,000	106	1,200,000	156	120,000
7	847,000	57	5,925,000	107	489,000	157	149,000
8	920,000	58	29,239,000	108	500,000	158	960,000
9	4,400,000	59	9,804,000	109	526,000	159	500,000
10	6,568,000	60	5,600,000	110	1,800,000	160	1,200,000
11	6,521,000	61	42,176,000	111	1,800,000	161	840,000
12	4,399,000	62	22,300,000	112	395,000	162	72,413,000
13	3,270,000	63	10,288,000	113	326,000	163	420,000
14	3,823,000	64	870,000	114	14,900	164	3,164,000
15	2,016,000	65	3,600,000	115	11,160,000	165	3,178,000
16	2,262,000	66	8,000,000	116	2,400,000	166	2,153,000
17	3,103,000	67	600,000	117	13,309,000	167	5,036,000
18	2,136,000	68	450,000	118	16,800,000	168	580,000
19	1,200,000	69	4,500,000	119	90,000,000	169	250,000
20	1,050,000	70	480,000	120	2,280,000	170	19,000,000
21	982,000	71	150,000	121	88,000	171	152,000
22	1,404,000	72	4,800,000	122	144,511	172	1,124,000
23	820,000	73	500,000	123	3,600,000	173	717,000
24	1,725,000	74	3,096,000	124	7,127,000	174	566,000
25	17,369,000	75	1,056,000	125	560,000	175	546,000
26	33,298,000	76	720,000	126	28,800,000	176	87,208
27	18,733,000	77	2,400,000	127	2,229,000		
28	5,181,000	78	480,000	128	1,524,000		
29	23,517,000	79	1,050,000	129	2,207,000		
30	1,270,000	80	7,129,000	130	5,760,000		
31	16,800,000	81	814,000	131	1,200,000		
32	12,274,000	82	840,000	132	699,000		
33	1,956,000	83	350,000	133	13,603,000		
34	18,102,012	84	720,000	134	2,218,000		
35	8,100,000	85	600,000	135	1,800,000		
36	26,100,000	86	1,080,000	136	720,000		
37	605,000	87	18,000,000	137	1,200,000		
38	485,000	88	3,625,000	138	938,000		
39	1,614,000	89	525,000	139	45,679,000		
40	4,672,000	90	2,400,000	140	700,000		
41	150,000	91	282,000	141	100,000		
42	1,800,000	92	3,938,000	142	720,000		
43	750,000	93	832,000	143	2,400,000		
44	1,364,000	94	600,000	144	660,000		
45	61,000	95	1,052,000	145	1,612,000		
46	2,500,000	96	480,000	146	480,000		
47	1,446,000	97	250,000	147	2,400,000		
48	120,000	98	480,000	148	468,000		
49	463,000	99	480,000	149	2,231,670		
50	3,200,000	100	43,000	150	50,000		
Sub total	253,578,012		272,796,000		279,172,081		124,315,208

No of Projects: 176

Grand total: 929,861,301

TABLE? Number of Projects & Expenditures (x$1000) for 86/87 ... 90/91 WCIP Document.

FY86/87

1	120,000	51	500,000	101	840,000	151	699,000
2	75,000	52	5,282,000	102	3,758,000	152	13,603,000
3	2,280,000	53	1,174,000	103	1,080,000	153	660,000
4	5,892,000	54	94,630,000	104	360,000	154	2,800,000
5	620,000	55	2,836,000	105	852,000	155	757,000
6	936,000	56	6,000,000	106	10,378,000	156	720,000
7	220,000	57	40,124,000	107	525,000	157	1,800,000
8	5,600,000	58	17,386,000	108	8,403,000	158	8,400,000
9	6,897,000	59	31,680,000	109	22,000,000	159	938,000
10	5,584,000	60	2,500,000	110	25,000	160	46,329,000
11	3,936,000	61	46,618,000	111	282,000	161	700,000
12	3,035,000	62	93,393,000	112	3,938,000	162	100,000
13	3,684,000	63	5,160,000	113	820,000	163	720,000
14	2,218,000	64	3,115,000	114	2,400,000	164	2,400,000
15	2,490,000	65	36,293,000	115	240,000	165	420,000
16	3,104,000	66	10,858,000	116	230,000	166	1,812,000
17	2,138,000	67	2,075,000	117	300,000	167	1,749,000
18	1,200,000	68	23,276,000	118	480,000	168	2,231,670
19	1,250,000	69	12,324,000	119	480,000	169	870,000
20	982,000	70	10,053,000	120	988,000	170	2,850,000
21	1,345,000	71	3,131,000	121	300,000	171	130,000
22	861,000	72	7,047,000	122	1,800,000	172	840,000
23	10,670,000	73	600,000	123	850,000	173	1,200,000
24	500,000	74	20,000,000	124	1,164,000	174	840,000
25	3,600,000	75	700,000	125	1,760,000	175	72,413,000
26	1,725,000	76	32,714,000	126	420,000	176	500,000
27	17,961,000	77	150,000	127	1,200,000	177	420,000
28	21,566,000	78	4,400,000	128	610,000	178	390,000
29	5,858,000	79	7,700,000	129	600,000	179	300,000
30	38,949,000	80	840,000	130	618,000	180	68,000
31	1,270,000	81	1,750,000	131	1,800,000	181	110,000
32	13,152,000	82	720,000	132	150,000	182	3,227,000
33	2,383,000	83	750,000	133	108,000,000	183	2,728,000
34	13,400,000	84	1,250,000	134	2,350,000	184	4,932,000
35	38,050,000	85	500,000	135	13,309,000	185	1,206,000
36	42,671,000	86	1,056,000	136	2,550,000	186	390,000
37	4,750,000	87	1,800,000	137	16,200,000	187	500,000
38	30,161,000	88	3,200,000	138	2,780,000	188	6,385,000
39	605,000	89	1,630,000	139	2,280,000	189	1,750,000
40	485,000	90	215,000	140	6,501,000	190	500,000
41	1,614,000	91	5,500,000	141	88,000	191	205,881
42	5,372,000	92	814,000	142	3,600,000	192	1,058,000
43	52,000	93	425,000	143	560,000	193	672,000
44	1,500,000	94	865,000	144	32,400,000	194	343,000
45	600,000	95	1,160,000	145	2,322,000	195	150,000
46	3,410,000	96	10,000,000	146	1,734,000	196	87,208
47	17,400,000	97	440,000	147	2,339,000		
48	4,173,000	98	7,839,000	148	5,760,000		
49	1,791,000	99	350,000	149	420,000		
50	18,150,000	100	3,800,000	150	1,200,000		
Sub total	356,285,000		566,623,000		274,044,000		191,903,759

No of Projects: 196

Grand total: 1,388,855,759

TABLE7 Number of Projects & Expenditures (x$1000) for 87/88 ... 91/92 WCIP Planning Document.

NPP		HERS		HFS		HTP		LAG		TIP		TWRP	
1	225,000	1	220,000	1	8,400,000	1	1,500,000	1	365,000	1	1,900,000	1	1,350,000
2	2,280,000	2	500,000	2	5,600,000	2	796,000	2	2,000,000	2	14,105,000	2	700,000
3	5,692,000	3	6,000,000	3	43,200,000	3	3,630,000	3	1,550,000	3	2,340,000	3	2,650,000
4	620,000	4	1,700,000	4	7,000,000	4	164,000	4	1,250,000	4	2,100,000	4	18,000,000
5	936,000	5	26,525,000	5	49,200,000	5	50,000	5	1,200,000	5	997,000	5	2,450,000
6	479,000	6	46,550,000	6	1,200,000	6	1,725,000	6	2,500,000	6	2,760,000	6	1,953,000
7	6,100,000	7	15,549,000	7	3,230,000	7	4,755,000	7	260,000	7	1,650,000	7	1,760,000
8	6,897,000	8	13,400,000	8	9,000,000	8	1,760,000	8	1,900,000	8	46,329,000	8	6,300,000
9	9,652,000	9	44,966,000	9	37,200,000	9	3,536,000	9	65,500,000	9	700,000	9	800,000
10	1,200,000	10	52,481,000	10	6,100,000	10	7,450,000	10	1,950,000	10	100,000	10	1,100,000
11	1,250,000	11	44,055,000	11	9,600,000	11	23,834,000	11	3,000,000	11	6,000,000	11	73,673,000
12	1,477,000	12	625,000	12	313,200,000	12	500,000			12	500,000	12	1,500,000
13	861,000	13	8,377,002	13	26,760,000	13	720,000			13	5,000,000	13	435,000
14	24,000,000			14	10,666,000	14	1,323,000			14	2,050,000	14	500,000
15	200,000			15	3,131,000	15	4,660,000					15	1,450,000
16	525,000			16	7,047,000	16	2,550,000						
17	6,430,000			17	39,600,000	17	1,395,000						
18	33,000,000			18	144,000,000	18	3,560,000						
19	302,000			19	5,100,000	19	12,000,000						
20	3,934,000			20	39,000,000								
21	620,000			21	1,400,000								
22	699,000			22	50,000,000								
23	140,300,000			23	500,000								
24	2,350,000			24	500,000								
25	13,305,000			25	11,000,000								
26	14,200,000			26	19,200,000								
27	12,000,000			27	28,000,000								
28	2,200,000												
29	7,433,000												
30	44,000												
31	3,000,000												
32	560,000												
33	32,000,000												
34	2,322,000												
35	2,339,000												
36	3,360,000												
37	618,000												
38	3,328,000												
39	3,009,000												
40	7,864,000												
41	140,000												
42	1,000,000												
43	1,140,000												
44	31,000,000												
45	32,000,000												
46	332,340												
47	218,500												
48	250,000												
49	516,000												
50	6,345,000												
51	1,000,000												
52	189,000												
53	761,000												
54	387,000												
TOTALS	435,916,000		244,591,000		853,114,000		65,845,000		90,484,000		87,859,000		113,353,000

No of Projects: 153

Grand Total: 1,899,086,800