

**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

September 17, 1993

To: Board of Directors (Engineering & Operations Committee-Action)
(Organization & Personnel Committee-Action)
From: General Manager (Finance & Insurance Committee--Action)

Subject: Authorization of increases in Appropriations 099 and 634 and delegation of authority to the General Manager to enter into contracts required to implement Phase One of the Information Systems Strategic Plan.

Summary

The process of replacing core business systems began with your Board's authorization of the Phase Zero project of the Information Systems Strategic Plan (Phase Zero Project) in February of 1992. In April of 1993, the Phase Zero Project completed the design of a comprehensive systems solution which incorporates industry standard software and hardware at a cost of approximately \$5.8 million. Consistent with the automation program outlined in the Capital Projects Program, funding of an additional \$23.2 million is now requested to implement nineteen (19) key business applications over the next 40 months. Consultants experienced with the selected software packages will lead the implementation process. Performance and contract costs will be strictly monitored. Major milestone review points have been established at which contractor performance will be evaluated and all contracts will be cancelable. The first checkpoint will be nine months into the project with subsequent check points every six months.

Detailed Report

Due to their age, and the increasing volume of business activity, the capacity of Metropolitan's existing information systems to adequately support business operations continues to decline. This was the central finding of the Information Systems Strategic Plan (Andersen Report) prepared by Andersen Consulting in May 1991. This finding was confirmed by the priorities identified in the Phase Zero project and by our recent Strategic Plan.

The Andersen Report and Phase Zero generated the following conclusions:

- Thirty-five out of 43 business applications need improvement and 12 of these are in "acute need for improvement"
- The most significant of the "acute need for improvement" core business applications are in Finance; Human Resources; Health, Safety and Environmental and Materials

The selection and installation of effective core business systems is a prerequisite to achieving the strategic objectives of productivity enhancement, cost control and management accountability that are outlined in the Strategic Plan dated July 1, 1993.

The proposed Phase One work builds on the Phase Zero effort funded by your board in February of 1992. Over the past two years, Metropolitan has engaged in:

- **Priority setting:** A rigorous process to prioritize critical systems needs
- **Competitive search:** A competitive search for software application packages with solid marketplace acceptance that meet Metropolitan's basic functional requirements
- **Industry standard methods:** An assessment of industry standard approaches to application development to arrive at an efficient strategy for implementing the Phase One packages
- **Project management:** Establishment of project management control processes to increase the effectiveness of software development projects

The scope of Phase One is now established, consistent with our commitment to your Board in February 1992 when funding for the \$5.6 million Phase Zero project was approved. The requested increase in the existing appropriation is required to proceed with the next phase of Information Systems Strategic Plan implementation in accordance with the multi-year project scope outlined in Metropolitan's Capital Program.

A program management structure has been established to promote accountability of the Phase One project teams. It includes the following features:

- A sponsoring business division will have primary responsibility for the day-to-day management of each of the Phase One application development projects.
- Information Systems division has established a "program office" that will administer all Phase One activities to ensure that applications are implemented in an integrated fashion; that quality products are developed and implemented; and that project schedules and budgets are met.
- A Steering Committee comprised of senior management representatives and the Audit Department will provide project oversight and involvement to ensure that corporate policies are complied with and that strategic and project objectives are attained.
- Quarterly reports will be submitted to your Board throughout the duration of Phase One that outline the status of the project, including costs incurred and applications delivered.
- Major milestone review points will be established at which contractor performance will be evaluated and all contracts will be cancelable. The first checkpoint will be nine months into the project with subsequent check points every six month.

The total capital cost of the Phase One program is estimated to be \$23.2 million over its scheduled 40 month duration. While the fully implemented systems are expected to yield a total payback over ten years of about \$64 million, the intangible benefit of serving as a catalyst for widespread organizational changes is likely to be more extensive. Full benefits of the Phase One project will be achieved when all applications are fully implemented, although partial benefits will accrue prior to this time as systems are brought on-line. The detailed business case to justify the approval of Phase One is outlined in Attachment "A" to this letter.

The estimated cost of the Phase One program includes all activities necessary to fully install and implement the hardware and software selected for the core business areas. The program estimates do not include costs for the anticipated business productivity improvement efforts outlined in the draft Strategic Plan. The separate productivity improvement projects, which will be performed by individual divisions or by multi-divisional teams, will be proceeding prior to or concurrent with the implementation of Phase One projects outlined in Attachment "B".

The Phase One implementation plan developed during Phase Zero requires a steady deployment of the 19 key business applications on a prioritized but concurrent basis. The proposed implementation plan takes into account the condition of systems currently in use, application and technical requirements, and the need for early, tangible returns on Metropolitan's investment. The implementation plan leverages the skills and expertise of current staff by supplementing Metropolitan resources with significant consulting resources. A summary overview (Gantt Chart) of the Phase One Program Implementation Plan is outlined in Attachment "B" to this letter.

During Phase One, resources will be integrated across Metropolitan to create a strong partnership between personnel from the Information Systems division, other Metropolitan organizations, and the various consultants selected to assist on the projects. It is anticipated that completion of the Phase One Program will result in improvements in business processes and productivity enhancements that will result in personnel savings equivalent to forty-three (43) full-time positions throughout the organization when all applications are fully implemented. It is management's intention to utilize any personnel gains obtained through automation improvements to meet other future critical business needs, to perform more productive work activities, and to offset future pressures to increase permanent staffing levels. Any reduction in staff will be accomplished through attrition.

It is also expected that Phase One implementation will bring the so-called "shadow" Information Systems personnel out of the background and fully integrate such staff in the District's new distributed information systems environment. This will eliminate the need to maintain redundant data or staffing and is a recognized benefit of the program.

During Phase Zero, staff identified and evaluated a number of alternative hardware, software, and scheduling strategies for accomplishing the Phase One objectives.

Attachment "A" outlines these various alternatives for your Board's information, as well as the conclusions reached as to preferable vendors.

Formal requests for proposal and other applicable competitive bidding procedures were, or will be, utilized in the acquisition of Phase One hardware, software and consultant services. However, in order to facilitate contracting efforts, staff requests that the Board delegate to the General Manager the authority to enter into all agreements necessary to complete the program. Factors that influence the decision to seek the delegation of contractual authority to the General Manager include:

- Direct contracting authority increases staff's negotiating leverage with vendors and should result in some lowering of costs.
- The number and interrelationship of hardware vendors, software vendors, and consulting firms that will be involved with the projects indicates that coordinating start dates with board dates may cause unnecessary or costly delays.
- Attaining early benefits through this program will require timely commencement of contracts to begin work, meet schedules and control costs.
- Work requirements have been defined in increments to promote business opportunities for smaller vendors with specific expertise, including minority and woman owned business enterprises.

Appropriation 634, which was established at the start of Phase Zero, will continue to be used to collect all applicable costs of the Phase One program. Appropriate work orders will be established for each major application project within the scope of the total program. While most project costs will be capitalized as part of continuing Capital Budget Appropriation 634, certain support and training costs may be charged to annual operations and maintenance work orders in accordance with established policy. Current cost estimates, excluding operating equipment costs, for Phase One total approximately \$21.1 million. Attachment "A" provides further detail on the breakdown of this cost estimate for the project.

As shown in Attachment "A", major additional components of computer hardware, costing approximately \$2.1 million, will also be required during the next fiscal year to successfully implement Phase One business applications. Accordingly, an increase of approximately \$2.1 million in continuing Appropriation 099, Operating Equipment, to a total of \$12,186,800 is required. This increase was not included in the operating equipment appropriation approved by your Board in June as part of the fiscal 1993-94 annual budget process.

Funds for the recommended increases to appropriations will be derived from the General Fund.

Board Committee Assignments:

This letter is referred for action to:

The Engineering and Operations Committee because it has jurisdiction over the contracting programs and the ordering of equipment or materials and selection of consultants to be used pursuant to Administrative Code Section 2431 (b) (h);

The Organization and Personnel Committee because it has jurisdiction over the selection of management and personnel consultants and the determination of the scope of their assignments pursuant to Administrative Code Section 2471(f); and

The Finance and Insurance Committee because it has jurisdiction over appropriations pursuant to Administrative Code Section 2441(d).

Recommendations:

ENGINEERING AND OPERATIONS, ORGANIZATION AND PERSONNEL COMMITTEES FOR ACTION:

It is recommended that the General Manager:

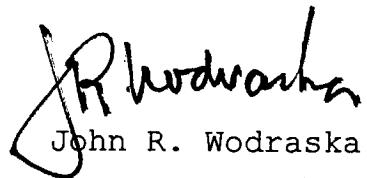
1. Be delegated the authority by the Board to enter into agreements without regard to the limitations contained in Administrative Code Sections 8115(b) and 8117 and inform approved by the General Counsel, for purchases of equipment or hiring of consultants consistent with the cost estimates shown in Attachment "A", and as necessary to complete the Phase One tasks as outlined in Attachment "B" to this letter;

2. Use formal requests for proposals and other applicable competitive bidding procedures to acquire the necessary Phase One hardware, software and services;
3. Issue quarterly reports to the Board on all contracts awarded by the General Manager that exceeded \$250,000; and
4. Issue quarterly reports to the Board on the status and costs incurred on the Phase One program activities.

FINANCE AND INSURANCE COMMITTEE FOR ACTION:

It is recommended that the Board authorize an increase in:

1. Continuing Appropriation 099 by the amount of \$2,100,000, to a total of \$12,186,800, for equipment purchases related to Phase One implementation; and
2. Appropriation 634 by approximately \$21.1 million, for a total of \$26.8 million, to fund the estimated cost of implementing Phase One of the Information Systems Strategic Plan.



John R. Wodraska

DJS:sm
Attachments

Attachment "A" - Business Case Supporting Phase One Proposal

Overview Of The Needs For The Phase One Program

The proposed Phase One program encompasses the implementation of a series of core business applications designed to aid the transformation of the District's standard business and administrative processes. Phase One facilitates the implementation of District's Strategic Plan and builds upon work completed during the two prerequisite projects previously approved by the Board.

The first study, conducted by Andersen Consulting, developed the Information Systems Strategic Plan (ISSP) in 1991. This plan assessed the District's 43 applications as being inadequate to support the business and laid out a plan for addressing the situation. Listed below are the grades the applications received:

- Eight (8) in good shape
- Twenty-three (23) need improvement
- Twelve (12) have acute need for improvement

Subsequently, District staff examined the applications in the "acute need for improvement category" to identify priorities for proceeding. Applications from the Finance, Human Resources, Materials and Health, Safety and Environmental areas became the focus for continued work. A second study, Phase Zero, which was authorized by the board in early 1992, was conducted with the assistance of IBM and Deloitte & Touche. Phase Zero resulted in the identification of specific application software and hardware necessary to meet the District's requirements in these four core business areas.

The motivation stimulating these prerequisite projects was the recognition that the District's current business practices are no longer adequate and these efforts identified ways to effect the needed changes. The need for change is driven by a shifting political and economic climate, the impact of the drought, an aggressive capital expansion program, general productivity expectations and the impossibility of the existing business systems to support the ongoing business operations. A complete overhaul of the District's existing business systems, coupled with a strong management directive to improve administrative and business practices, offers the best opportunity for achieving the level of productivity and cost containment implied by current objectives stated in the

recently developed Strategic Plan. While a systems upgrade alone will lead to minor efficiency gains, the selected applications serve as a catalyst in creating far greater benefit opportunities. The Strategic Plan's guiding principles cannot be supported with current applications, procedures, and policies.

The District's existing core administrative applications are incapable of supporting the transformation of the business. This is because they are decades old, difficult to maintain and are technologically obsolete. These weaknesses manifest themselves as follows:

- Information produced may be inaccurate or its reliability may be questioned
- Significant time delays incurred waiting for information
- Information from various applications is inconsistent
- Gaps in necessary information depth and detail
- System users are required to develop extensive work around systems and procedures
- The difficulty and cost to maintain the systems.

Completion of the outlined Phase One projects will provide:

- The ability to manage an increasing workload with no or minimal staffing increases
- The ability to address the information needs of management and key decision makers by providing them timely, accurate, and consistent information
- Increased control and management accountability over the District resources applied to both capital and operational activities
- An opportunity to modify business processes, in conjunction with application implementation, to streamline inappropriate business practices and controls
- A suite of core business systems to replace our current ineffective systems and obviate the need for independent development and operation of localized business systems by multiple District organizations

- A standard for project management, systems development, and systems management that will facilitate increased accountability and cooperation across the District.

Management believes that for the foregoing reasons alone, and without regard to the significant cost/benefits to be realized by the implementation of Phase One, this essential program should be funded and completed as soon as possible.

Selected Software and Hardware Solutions

The preferred software packages for the core business functions were selected during Phase Zero via a comprehensive process that involved individuals from across the District to ensure the systems will address the entire organization's needs. The rigorous process utilized a Package Selection Committee to oversee and guide activities. The committee was made up of representatives from seven (7) divisions including Operations, Engineering and the Audit Department. The selected software is listed below.

Finance

The selected financial packages, Oracle's Financials, represent a comprehensive, flexible solution to the District's accounting and financial reporting requirements. The projects in this area will address the budget and cost reporting functions, project accounting, accounts receivable, and all standard, ad hoc, and Board level reporting.

Materials Management and Accounts Payable

The selected materials management packages, Oracle's Financials, address the District's business needs related to inventory control, purchasing, and accounts payable. These packages are completely integrated with the accounting packages and will allow for complete encumbrance accounting and other advanced materials management functions.

Human Resources and Payroll

The selected package, PeopleSoft's Human Resources and Payroll, will address the processing and information requirements related to payroll, personnel management, benefits administration, training and development, and medical records.

Health, Safety and Environmental

The selected packages, General Research's Flow Gemini, represent a comprehensive and flexible solution to the District's environmental compliance information needs. The projects in this area will establish a single health, safety and environmental database. In addition, they will address the areas of permits, hazardous materials inventory tracking, environmental audit, surface/waste water, air emission monitoring, asbestos monitoring, job hazard analysis and employee hazard communication.

The preferred hardware for the core business functions was selected during Phase Zero via a comprehensive process that involved individuals from across the District to ensure the systems will address the entire organization's needs. The process utilized a Technical Committee to oversee and guide activities. The committee was made up of representatives from seven (7) different divisions including Operations, Engineering and the Audit Department. The selected type of hardware is listed below.

Client Server Hardware

The type of hardware that has been selected is consistent with the ISSP developed by Andersen Consulting. The hardware conforms to the open systems standard, it is not proprietary to any vendor, and it utilizes the client - server approach to computing. This course of action is consistent with industry trends as it will result in significantly lower cost of operation versus the other possibilities, i.e., IBM mainframes.

A wide variety of technology, hardware and software alternatives were evaluated during Phase Zero. The solutions above were derived from a rigorous process based on established needs and criteria and are believed to be optimum solutions to meet the District's current and future automation needs.

Estimated Phase One Cost Summary

The following table is a summary cost estimate for the implementation of the Phase One Program. The bulk of the program consists of capital costs, although some related costs for things such as user training will be treated as O&M expense in accordance with established policy. Funding for related O&M costs will be provided during the annual budgetary process.

Appropriation Summary	
Appropriation 634	\$21,100,000
Appropriation 099	<u>\$ 2,100,000</u>
 Estimated Total Phase One Capital Costs	 \$23,200,000
 Estimated Related O&M Cost to Implement Phase One	 <u>\$ 1,400,000</u>
 Program Cost Summary	 \$24,600,000

The required Phase One capital costs are detailed on the next page, by year for each of the four areas, as well as for Program Office administration, ISD's Service Delivery and the hardware and software acquisitions. For program management purposes, the Program Office is chartered to oversee all Phase One projects from a budgetary and a technical perspective.

ESTIMATED PHASE ONE CAPITAL COSTS BY YEAR

Area	Year 1	Year 2	Year 3	Year 4	Totals
FINANCE	442,000	1,944,000	780,000	0	3,166,000
MATERIALS MANAGEMENT & ACCOUNTS PAYABLE	801,000	1,737,000	0	0	2,538,000
HUMAN RESOURCES & PAYROLL	911,000	1,443,000	226,000	0	2,580,000
HEALTH, SAFETY & ENVIRONMENTAL	538,000	922,000	922,000	449,000	2,831,000
PROGRAM OFFICE	1,027,000	2,258,000	440,000	160,000	3,885,000
ISD's SERVICE DELIVERY	923,000	764,000	413,000	0	2,100,000
HARDWARE & SOFTWARE ACQUISITION	6,100,000	0	0	0	6,100,000
ANNUAL TOTAL	10,742,000	9,068,000	2,781,000	609,000	23,200,000

Note, at the end of three years there may be a few systems running on the mainframe that will need to be migrated off.

Summary of Benefits To Implement Phase One

To the extent reasonably possible, the proposed \$23.2 million capital cost to implement Phase One has been justified based on projected savings from the reduced cost of ongoing operations. In addition, the overriding need to sponsor this investment comes from the essentially intangible nature of improved timeliness, quality, consistency and availability of data which will enable effective execution of the District's transformation strategies.

Computed Phase One benefits for the four core areas are detailed on the following pages, by year, for ten years. The information on each of the areas is broken into the following parts:

- FTE Dollar Savings -- refer to page 8 for a summary perspective on this area
- Other Dollar Savings
- Intangible benefits

Based upon the detail provided on pages 9 through 14, potential tangible dollars savings, in the four application areas, of approximately \$54 million have been projected. The downsizing of the IBM host will result in an additional \$9.5 million savings. The total potential savings of \$64 million excludes the value of the significant intangible benefits cited. The projected annual net benefits to ongoing O&M costs, which are summarized on page 17, approximate \$54 million over ten (10) years. Amortization expenses for Phase One Program costs are excluded from this analysis since they are a non-cash item. Even if the dollar projections included in this document are substantially discounted, management believes they provide strong justification for supporting and funding Phase One efforts as soon as possible.

Phase One Benefits -- FTE Savings			
Area	Year 1	Years 2 To 10	Division(s) Impacted
I. MATERIALS AND ACCOUNTS PAYABLE			
Paperless Receiving	2	2	Admin. Services - 2
Automatic back orders	1	1	Admin. Services - 1
Exception report monitoring	0.5	0.5	Admin. Services - 0.5
Key punch	1	1	Admin. Services - 1
Accounts Payable clerks	4	4	Finance - 4
Subtotal Existing FTE Elimination	8.5	8.5	
II. HUMAN RESOURCES AND PAYROLL			
Centralized labor cost analysis	12.25	12.25	Operations - 5.5 Engineering - 1.5 Others - 5.25
New payroll system	3.35	3.35	Info. Systems - 2.5 Finance - 0.85
Reports on-line & less data entry	3	3	Info. Systems - 0.67 Personnel - 0.33 Others - 2.0
Re-engineer Personnel	3.5	3.5	Personnel - 3.5
Subtotal Existing FTE Elimination	22.1	22.1	
III. FINANCE			
Eliminate the need for "shadow" cost/budget systems	3	7	Finance - 1 Operations - 2 Engineering - 1 Others - 3
Reduce the effort required to maintain the Cost Ledger	1	3	Finance - 3
Reduce the effort required to maintain the General Ledger	1.5	1.5	Finance - 1.5
Reduce the effort required to maintain Accounts Receivable	1	1	Finance - 1
Subtotal Existing FTE Elimination	6.5	12.5	
TOTALS	37.1	43.1	

Note: The FTE savings in this document represent a reduced cost of future operations. It is management's intent to reinvest these savings in productive activities and thereby avoid future increases in FTEs. Any reduction in staff will be accomplished through attrition.

MATERIALS MANAGEMENT AND ACCOUNTS PAYABLE BENEFITS

I. FTE DOLLAR SAVINGS

Benefit Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
Paperless Receiving	0	146,970	152,114	157,438	162,948	168,651	174,554	180,664	186,987	193,531	1,523,858
Automatic back orders	0	73,485	76,057	78,719	81,474	84,326	87,277	90,332	93,493	96,766	761,929
Exception report monitoring	0	36,743	38,028	39,359	40,737	42,163	43,639	45,166	46,747	48,383	380,964
Key punch	0	73,485	76,057	78,719	81,474	84,326	87,277	90,332	93,493	96,766	761,929
Accounts Payable clerks	0	293,940	304,228	314,876	325,897	337,303	349,109	361,327	373,974	387,063	3,047,716
Subtotal FTE Savings	0	624,623	646,484	669,111	692,530	716,769	741,856	767,821	794,694	822,509	6,476,396

II. OTHER DOLLAR SAVINGS

Stores inventory reductions	0	540,000	540,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	2,340,000
TOTAL DOLLAR SAVINGS	\$0	\$1,164,623	\$1,186,484	\$849,111	\$872,530	\$896,769	\$921,856	\$947,821	\$974,694	\$1,002,509	\$8,816,396

III. INTANGIBLE BENEFITS

Opportunity for Material Requirements Planning (MRP)	* Automatic generation of requisitions from bills of material with due dates calculated from scheduled event dates (e.g., assembly, fabrication)
Opportunity for immediate identity of obsolete materials	* Associate spare parts with equipment immediately dispose of spare parts when equipment is disposed
Opportunity for interface between Materials Management and Project Management	* Project Management system automatically feeds due dates to Materials Management system, the Materials Management feeds order status back to Project Management
Opportunity for productivity gains from bar coding	* On-line, real-time system provides environment suitable for bar coding several Materials Management transactions (e.g., inventory withdrawal, cycle count)
Opportunity for Electronic Data Interchange (E.D.I.) with vendors	* Form trading partnerships with vendors so that all business is transacted electronically. Ultimately, this includes P.O., shipping advice, receipt, invoice and payment
Improved management of resources resulting from integrated, on-line data and ad hoc inquiry	* E.g., immediate information regarding on hand and on order status of material will provide a level of confidence that material will be available when required, thus reducing the need for "safety" stock.
Improved vendor management	* Tracking vendor on time deliveries, rejection percentage, etc., will improve ability to select and retain competent vendors
Improved inventory and procurement service levels	* Enhanced ability to identify future requirements, rather than assume that demand patterns of the past accurately predict the future, will allow Purchasing and Stores to focus on real needs.

MATERIALS MANAGEMENT AND ACCOUNTS PAYABLE BENEFITS [continued]

III. INTANGIBLE BENEFITS [continued]

Easier identification of items appropriate to Just-In-Time buys or Multi-Year contracts
* Improved ability to track usage, future requirements, material interchangeability, lead times and vendor performance enhance the ease of identifying candidates for Just-In-Time or Multi-Year procurement
Reduced potential for hazardous material liability.
* Some of the inventory reduction will be hazardous materials ... the less hazardous materials in stock, the less handling thus less potential for liability
Opportunity for standardization
* Integrated systems demand standard methods of operation. This standardization enhances efficiencies by improving communications and information flow reduces the training requirements, and simplifies re-engineering and development of procedures
Reducing paperwork
* Some of the saving due to reduced paperwork is reflected in FTE reduction estimates attributable to paperless receiving. However, significant other savings of manpower and filing equipment will result from reduced paperwork due to immediate on-line access of real-time data
Reduced Accounts Payable process time
* Accounts Payable processing efficiencies will expedite employee expense claims and vendor payment, thus reducing time required to make inquiries, and respond to them (This is in addition to estimated A/P clerk FTE savings)
Improved cash management
* More effective Procurement and Accounts Payable systems provide greater opportunity to manage cash to take advantage of discounts, and invest funds more efficiently

HEALTH, SAFETY AND ENVIRONMENT

I. FTE DOLLAR SAVINGS

Benefit Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
None											

II. OTHER DOLLAR SAVINGS

Improved Job Safety -- Reduction in Lost Time Injury Costs	155,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	309,000	2,936,000
Improved ECD efficiency accommodating the District's CIP	25,000	60,000	116,000	222,000	316,000	411,000	519,000	519,000	519,000	519,000	3,226,000
Hazardous Materials Physical Inventory Cost Reduction	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	800,000
TOTAL DOLLAR SAVINGS	\$260,000	\$449,000	\$505,000	\$611,000	\$705,000	\$800,000	\$908,000	\$908,000	\$908,000	\$908,000	\$6,962,000

III. INTANGIBLE BENEFITS

AN MWD - ECD PERSPECTIVE:

- * MWD is regulated by over 50 different Federal, State and Local agencies
- * MWD is subject to and must respond to over 20,000 different environmental, health and safety agency requirements
- * MWD engages in over 40 activities CAL OSHA regulates as "industrial"
- * MWD uses over 7,000 hazardous and extremely hazardous chemicals which are stored and used at 30,000 different locations around the district
- * MWD disposes over 1,000 tons of hazardous waste per year
- * ECD conducts nearly 500 industrial surveys annually
- * ECD maintains over 700 permits, pays \$250,000 in fees and produces 34 business plans per year
- * ECD provides approximately 40 different health and safety training programs
- * ECD analyzes and reports on over 700 proposed new and changes to existing EH&S laws and regulations per year

THE INTANGIBLE BENEFITS ARE:

- * Facilitate compliance with Federal, State and Local regulations
- * Reduce potential long term environmental liabilities -- toxic tort suit costs associated with potential remediation projects and superfund sites
- * Support the District's mission and facilitate the accomplishment of the environment and work force guiding principles as outlined in the Strategic Plan
- * Provide "process improvements" in District-wide acquisition, use, storage & tracking of hazardous materials -- reduce the number of materials and minimize the storage and handling risks

HEALTH SAFETY AND ENVIRONMENTAL BENEFITS [continued]

III. INTANGIBLE BENEFITS [continued]

HOW THE BENEFITS ARE ACHIEVED:

- * Leverage targeted processes to protect public health and the environment
- * Provide exposure & hazard information related to job duties and descriptions & medical surveillance to supervisors & employees so as to facilitate a safe working environment
- * Access environmental, health and safety records at appropriate district locations for regulatory inspection on demand, i.e., monitoring equipment maintenance and calibration records and air emission records.
- * Facilitate the standardization of common work functions and improve efficiency through the creation and availability of environmental, health and safety databases
- * Reduce the time and effort required to perform many analyses and prepare regulatory reports due to the availability of data on-line

HUMAN RESOURCES AND PAYROLL BENEFITS

I. FTE DOLLAR SAVINGS

Benefit Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
Centralized labor cost analysis	869,750	900,191	931,698	964,307	998,058	1,032,990	1,069,145	1,106,565	1,145,295	1,185,380	10,203,379
New payroll system	237,850	246,175	254,791	263,709	272,938	282,491	292,378	302,612	313,203	324,165	2,790,312
Reports on-line & less data entry	213,000	220,455	228,171	236,157	244,422	252,977	261,831	270,995	280,480	290,297	2,498,787
Re-engineer Personnel	248,500	257,198	266,199	275,516	285,159	295,140	305,470	316,161	327,227	338,680	2,915,251
Subtotal FTE Savings	1,569,100	1,624,019	1,680,859	1,739,689	1,800,578	1,863,599	1,928,825	1,996,333	2,066,205	2,138,522	18,407,729

II. OTHER DOLLAR SAVINGS

Reports on-line -- reduce the number of copies of computer reports	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	744,000
Recruitment -- shorten the recruitment time by one week	247,500	247,500	247,500	247,500	247,500	247,500	247,500	247,500	247,500	247,500	2,475,000
Sick leave tracking	713,550	713,550	713,550	713,550	713,550	713,550	713,550	713,550	713,550	713,550	7,135,500
TOTAL DOLLAR SAVINGS	\$2,604,550	\$2,659,469	\$2,716,309	\$2,775,139	\$2,836,028	\$2,899,049	\$2,964,275	\$3,031,783	\$3,101,655	\$3,173,972	\$28,762,229

III. INTANGIBLE BENEFITS

* Managers having access to timely and accurate information for decision making
1. The new labor distribution reporting could provide managers with immediate access on their projects status. The current process does not allow a manager to see his/her project labor costs until at least six weeks after those costs have been incurred, resulting in possible cost overruns.
* Reduction in the number of lost time injuries as a result of implementing a medical and job hazard analysis system
1. An average back injury costs over \$50,000

2. The average death benefit exceeds \$100,000 on top of legal fees, medical costs, lost time and disability payments leading up to the industrial death

FINANCE BENEFITS

I. FTE DOLLAR SAVINGS

Benefit Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
Eliminate the need for "shadow" cost/budget systems	213,000	514,395	532,399	551,033	570,319	590,280	610,940	632,323	654,454	677,360	5,546,502
Reduce the effort required to maintain the Cost Ledger	71,000	220,455	228,171	236,157	244,422	252,977	261,831	270,995	280,480	290,297	2,356,787
Reduce the effort required to maintain the General Ledger	106,500	110,228	114,085	118,078	122,211	126,489	130,916	135,498	140,240	145,149	1,249,393
Reduce the effort required to maintain Accounts receivable	71,000	73,485	76,057	78,719	81,474	84,326	87,277	90,332	93,493	96,766	832,929

II. OTHER DOLLAR SAVINGS

None											
TOTAL DOLLAR SAVINGS	461,500 918,563 950,712 983,987 1,018,427 1,054,072 1,090,964 1,129,148 1,168,668 1,209,571 9,985,611										

III. INTANGIBLE BENEFITS

Improved management of district resources	<ul style="list-style-type: none"> * Allow MWD to control costs, improve management reporting and budget control accountability through the use of encumbrance accounting * Provide enhanced capability to monitor budget performance and implement performance measures * Facilitate standardization of cost and variance reporting across MWD, thereby improving visibility and communication of performance measures and results across MWD and to the Board
More useful and timely information	<ul style="list-style-type: none"> * Significantly enhanced analysis and reporting capabilities will facilitate improved decision making as a result of an integrated, on-line, real time system * Provide immediate visibility of cost and variance information, versus the six to eight weeks it now takes for information to move through the system * Provide the ability to more quickly respond to special requests for financial information from internal and external parties
Enhanced integrity of financial data	<ul style="list-style-type: none"> * All data entered into the system will be validated at the time of entry thereby reducing errors versus today's night batch system with no input validation * Makes use of a single corporate financial database, thereby reducing/eliminating data redundancy, reducing electronic storage requirements, and providing all users of such data the same information * Allow Audit staff to reduce recurring effort now spent reconciling non-integrated batch systems * Provide assurances that financial data and representations in District-issued annual reports, financial and official statements are consistent, reliable and materially accurate.

Projected Impacts Of The Phase One Program On O&M Costs

The ten (10) year annual impact of Phase One on O&M costs is summarized on page 17. Dollar benefits are specified for each of the four key business areas as well as for ISD. The costs are made up of application software maintenance, hardware maintenance and annual Phase One amortization.

The net effect of this program over ten (10) years provides the District with over a \$54 million net benefit in excess of costs requiring a cash outlay. This information is presented in the graphs on pages 18-20.

Key Assumptions Used In Deriving Phase One Cost And Cost - Benefit Estimates

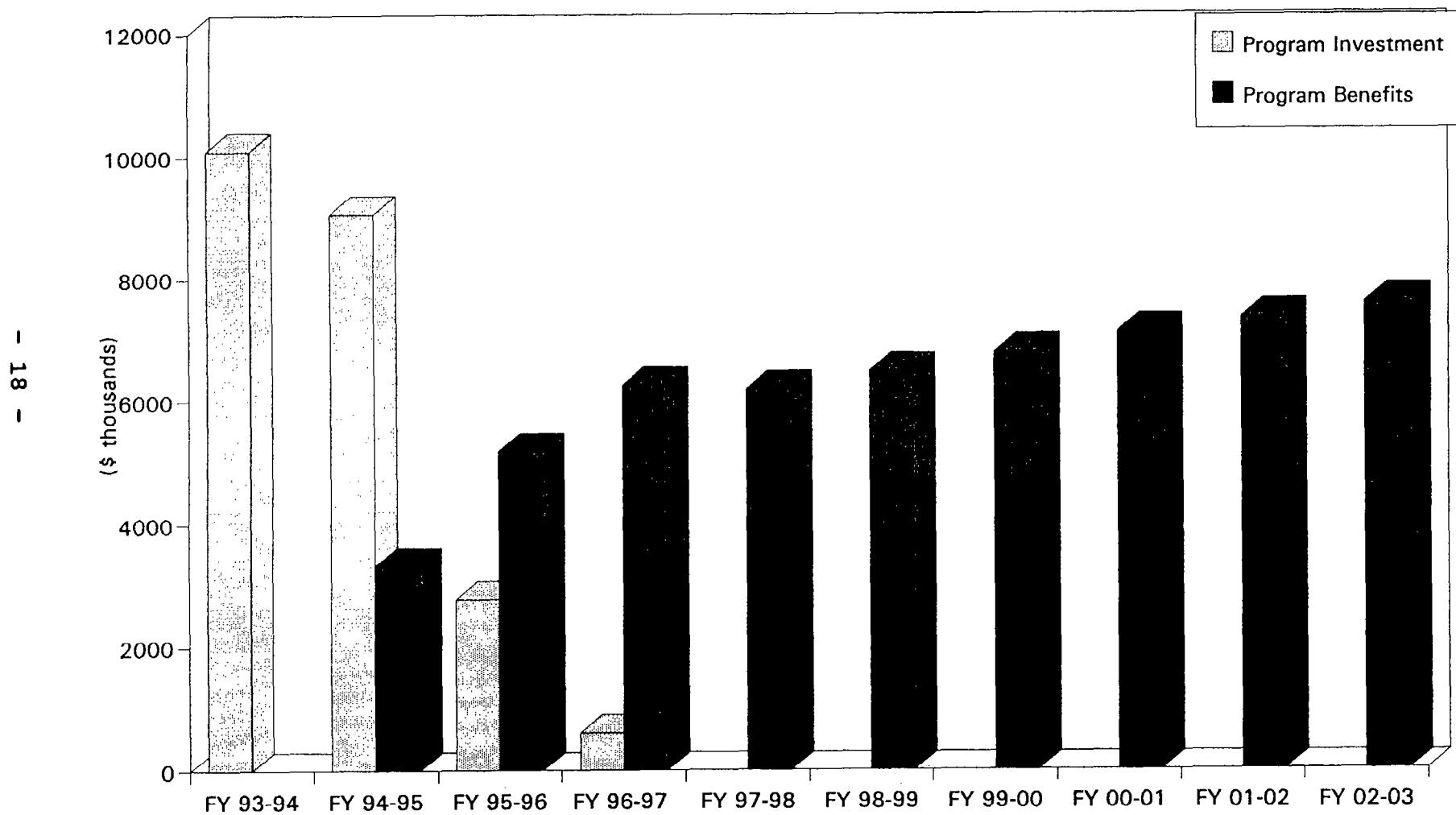
- Purchased application software maintenance charge starts at 18% per year of the purchase price and increases at 3.5% per year starting in year three of the analysis. This is based on the District's intent to negotiate a cap on price increases that is tied to a measure of inflation.
- Purchased UNIX hardware annual maintenance fee starts at 15% of the purchase price and increases at 3.5% per year starting in year three of the analysis. This is based on the District's intent to negotiate a cap on price increases that is tied to a measure of inflation.
- IBM mainframe maintenance cost increases by 8% per year starting in year four of the analysis. This is based on the District's many years of experience with this vendor.
- The current median annual cost of an employee who is expected to be impacted by the benefits of the proposed applications is estimated at \$71,000 including fringe benefits.
- Employee salary and benefits will increase by 3.5% per year starting in year two of the analysis based on expected inflation projection.
- Direct workers compensation costs will increase by 3.5% starting in year two of the analysis based on expected inflation projection.

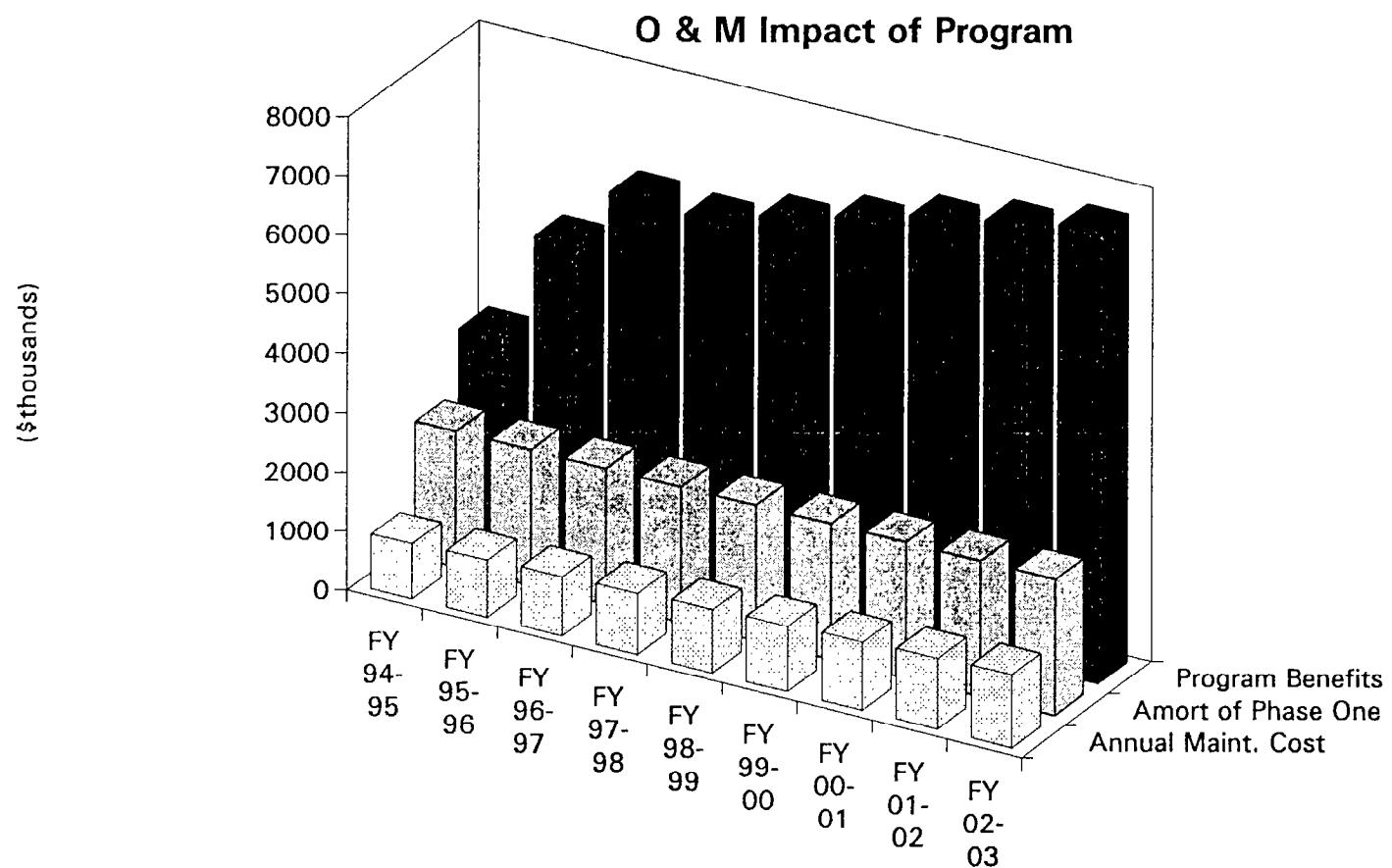
- The Phase 1 program will provide District employees with training over three years in the amount of 27,000 hours. This will be funded out of the existing 1993/1994 and future year O&M budgets.
- The internal labor rate for staff expected to be involved in the Phase One effort is estimated at \$50 per hour including fringe benefits.
- External labor rate for Phase One is estimated to average \$100 per hour.

NET BENEFITS OF PHASE ONE

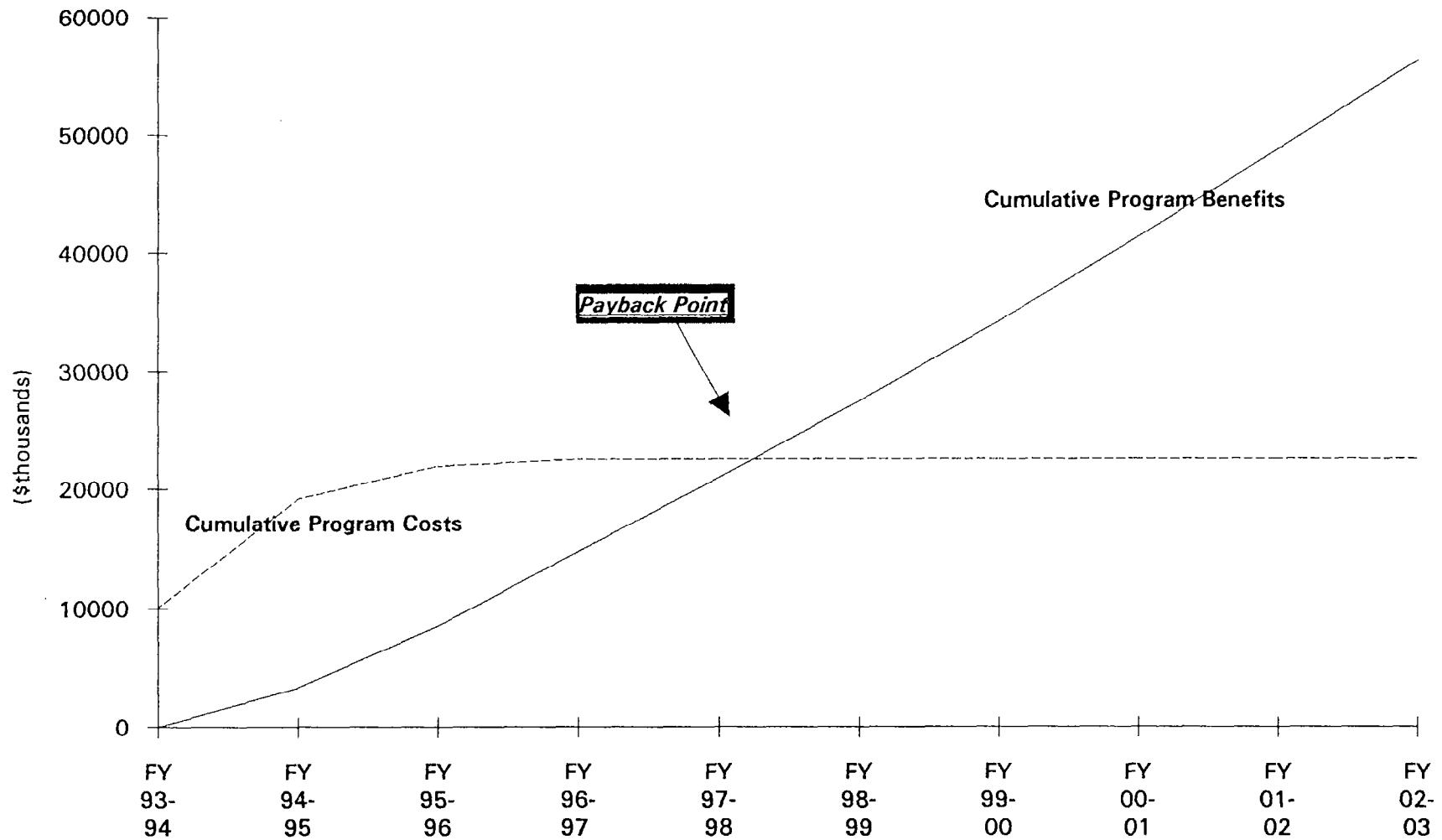
Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Totals
PHASE ONE BENEFITS											
IBM MAINFRAME DOWNSIZING	0	0	900,000	972,000	1,049,760	1,133,741	1,224,440	1,322,395	1,428,187	1,542,442	9,572,965
FINANCE	461,500	918,563	950,712	983,987	1,018,427	1,054,072	1,090,964	1,129,148	1,168,668	1,209,571	9,985,611
MATERIALS MANAGEMENT & ACCOUNTS PAYABLE	0	1,164,623	1,186,484	849,111	872,530	896,769	921,856	947,821	974,694	1,002,509	8,816,396
HUMAN RESOURCES & PAYROLL	2,604,550	2,659,469	2,716,309	2,775,139	2,836,028	2,899,049	2,964,275	3,031,783	3,101,655	3,173,972	28,762,229
HEALTH, SAFETY & ENVIRONMENTAL	260,000	449,000	505,000	611,000	705,000	800,000	908,000	908,000	908,000	908,000	6,962,000
ANNUAL BENEFIT TOTALS	3,326,050	5,191,654	6,258,506	6,191,238	6,481,745	6,783,630	7,109,534	7,339,147	7,581,204	7,836,494	\$64,099,201
ONGOING COSTS*											
APPLICATION SOFTWARE MAINTENANCE	0	720,000	745,200	771,282	798,277	826,217	855,134	885,064	916,041	948,103	7,465,317
UNIX HARDWARE MAINTENANCE	0	210,000	217,350	224,957	232,831	240,980	249,414	258,144	267,179	276,530	2,177,384
ANNUAL TOTAL COSTS	0	930,000	962,550	996,239	1,031,108	1,067,196	1,104,548	1,143,207	1,183,220	1,224,632	9,642,701
ANNUAL NET BENEFITS											
NET BENEFITS	3,326,050	4,261,654	5,295,956	5,194,998	5,450,638	5,716,433	6,004,986	6,195,940	6,397,985	6,611,862	\$54,456,500

Return On Initial Program Investment





Payback Period for Phase One Program



Discussion Of Alternatives To The Proposed Phase One Approach

Management believes the best route to facilitate the accomplishment of the Strategic Plan's guiding principles is to approve and fund the Phase One Program as soon as possible. However, listed below are various alternatives to this plan that have been considered for Phase One.

I. Fund only some of the applications

This alternative was eliminated for the following reasons:

- The four areas within Phase One were picked as a unit because they were the most important to change among all of the areas identified by the ISSP developed by Andersen Consulting. In addition, there is a substantial amount of integration between these four areas from both a business and a computer application standpoint.
- The determination of how to break up Phase One into meaningful pieces is extremely difficult, i.e.,
 1. In order to implement Finance's encumbrance accounting the other areas must be operational first or they must be implemented in parallel
 2. Human Resource's payroll and labor distribution reporting application cannot be implemented before the Finance applications
 3. Materials Management's inventory control and Health, Safety and Environmental's hazardous materials inventory tracking are needed to ensure the management of hazardous materials
 4. Human Resource's medical and Health, Safety and Environmental's job hazard analysis are needed to ensure effective management of employee health and safety
- The total cost of implementing these four areas in some serial fashion will be higher than Phase One's because of:
 1. The significant number of computer interfaces that have to be built and maintained between the new and old systems, e.g., between Finance applications and the existing electronic time keeping system
 2. The increases in cost of vendor and consulting products and services due to smaller commitments

- The existing systems are so unresponsive to current business needs that each area not funded will be required to undertake a significant alternative action to streamline and modernize business operations
- The cost of the hardware and software, currently at \$2.1 million and \$4.0 million respectively will increase; i.e., the District is currently being offered a 40% discount from Oracle Corporation because of the number of modules to be purchased. This discount would shrink significantly if fewer modules were purchased.

II. Fund Phase One on a fiscal year basis

This alternative was eliminated for the following reasons:

- The projects within each of the four areas do not naturally have fiscal year boundaries, thus, this alternative would result in work being partially completed and if approval were not granted for subsequent fiscal years then the value of the completed work would be minimal
- The cost of the hardware and software, currently at \$2.1 million and \$4.0 million respectively will increase; i.e., the District is currently being offered a 40% discount from Oracle Corporation because of the number of modules to be purchased. This discount would shrink significantly if fewer modules were purchased.

III. Approve Phase One but extend the implementation schedule

This alternative was eliminated for the following reasons.

- The overall cost of implementation will be higher than the current plan. This must be expected because a proven information systems methodology is being used to manage the implementations. The methodology breaks up a project into standard tasks and standard deliverables. Thus, splitting up a project into non-standard pieces increases the overall cost and amount of work.

IV. Remain Status Quo

This alternative was rejected as unacceptable due to the exposure it would subject the District to over time. Current systems have been determined to be ineffective in meeting key business requirements. This was a finding of The Information Systems Strategic Plan, The Phase Zero project and The Strategic Plan.

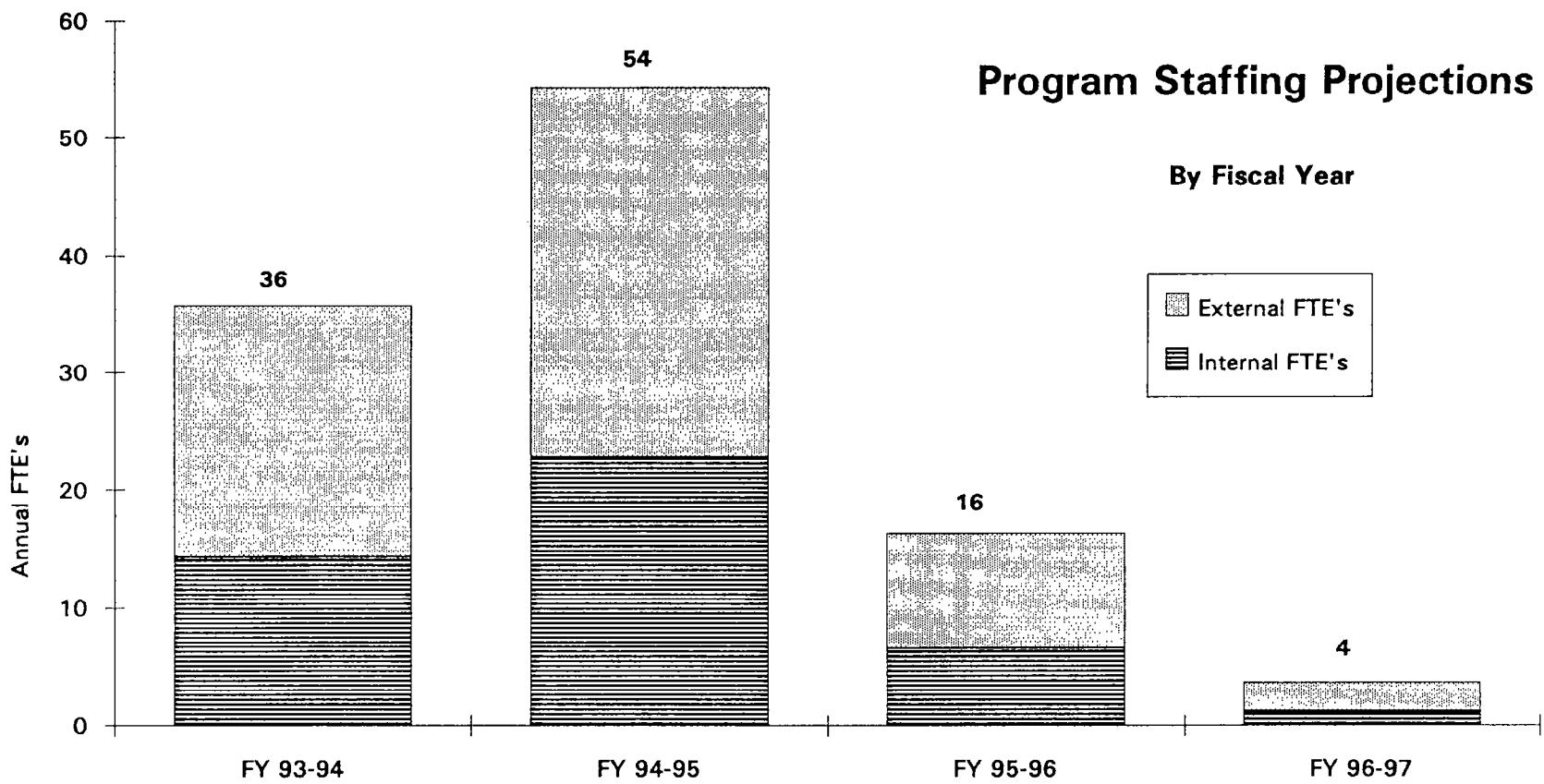
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Task Name	1993		1994		1994		1994		1994		1995		1995		1995		1995		1996		1996		1996		1996		1997		
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
PROGRAM OFFICE																													
Program Management																													
Install Software & Conduct Tests																													
Train Project Team																													
Conduct Conference Room Pilot																													
TECHNICAL PROJECTS																													
Phase 1 Specific IT Transformation																													
Establish Pilot Lab Environment																													
Establish Production Environment																													
Establish UNIX Development/Test Envir																													
HSE PROJECTS																													
Permits & Ground Monitoring																													
Water Monitoring/Equip Tracking																													
Hazardous Materials Inventory Tracking																													
Asbestos Monitoring																													
Audit																													
Air Monitoring & Waste Management																													
JHA & Employee Hazard Communication																													
Complete Windows Implementation																													
Oracle & UNIX Conversion																													
FINANCE PROJECTS																													
Chart of Accounts																													
G/L & Encumbrances																													
Budget Capture																													
Accounts Receivable																													
Fixed Assets																													
Budget Estimating																													
MATERIALS PROJECTS																													
Inventory Control																													
Purchasing																													
Accounts Payable																													
PERSONNEL PROJECTS																													
HR, Benefits, Payroll, & Training & Development																													
Electronic Timesheet System																													
Medical Information System																													

Attachment "C" - Capital Cost Financial Summary

Capital Cost Financial Summary		
Summary by Key Business Area*		
Finance	\$ 7,000,000	
Materials Management	6,600,000	
Human Resources / Payroll	5,200,000	
Health, Safety and Environmental	<u>4,400,000</u>	
TOTAL:	\$23,200,000	
Summary By Cost Detail		
Implementation Services:		
<i>Consulting</i>	\$11,100,000	
<i>Internal Labor</i>	3,900,000	\$15,000,000
Technical Services:		
<i>Consulting</i>	1,700,000	
<i>Internal Labor</i>	400,000	2,100,000
Software Purchases:		4,000,000
Hardware Purchases:		<u>2,100,000</u>
TOTAL:	\$23,200,000	
Summary by Appropriation		
Appropriation 634	\$21,100,000	
Appropriation 099	<u>2,100,000</u>	
TOTAL:	\$23,200,000	

* Includes an allocation of software, hardware and program office and service delivery costs to the respective business areas.



Attachment "E" - Overview of Information Systems Strategic
Plan Estimates and Completed Work

Original Andersen Estimate for ISSP	\$ 37.0 million
Phase Zero Project (completed)	5.8 million
Phase One Project (current proposal)	23.2 million
ISSP Projects remaining* (estimated)	7.0 million
Wide Area Network upgrades** (estimated)	.8-1.4 million

* Projects in the ISSP that will be addressed subsequent to Phase One projects include an Executive Information System, Document Management, Property Management and other minor applications.

** Staff anticipates that a portion of the planned work for implementing the wide area network at all facilities impacted by the Phase One Program may need to be accelerated. Funding for this additional work, if required, will be provided by a separate appropriation established for this purpose.