# DECISION MAKING AND ORGANIZATION
# LOS ANGELES COUNTY GOVERNMENT

REPORT OF THE TASK FORCE
CHIEF ADMINISTRATIVE OFFICE
JUNE, 1983

VOLUME III
REPORT OF THE FIELD STUDY TEAM

June, 1983

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1938-1942

There are forty-five major County departments each operating more or less independently, each with separate business managers, recquisition officers, and accounting systems. Studies should be made to determine which if these functions can be merged or eliminated. I am convinced that any private business, functioning under such a system, would eventually face bankruptcy."

Honorable Roger Jessup
Supervisor
Los Angeles County
1939

"No savings have been made at the expense of desirable public service. This we shall never do."

Wayne Allen
Chief Administrative Officer
Los Angeles County
1942

1973-1983

"Administratively the Board of Supervisors should reorganize the various 54 departments into nine agencies."

Honorable Kenneth Hahn
Supervisor
Los Angeles County
1973

"Time is running out. In 1983-84 there simply may not be enough local County revenues to continue to match State mandates and fund the Justice system at adequate levels."

Harry L. Hufford
Chief Administrative Officer
Los Angeles County
1983

# PREFACE

In September, 1982, following consultation with each Supervisor, our commission initiated an analysis of the Chief Administrative Office (CAO) of Los Angeles County. Our objective was to determine what, if any, changes in the roles of the CAO and expectations for CAO performance could improve the County's ability to overcome the crises it is facing. In December, 1982, on motion of Supervisor Antonovich, the Board of Supervisors asked our commission to investigate the feasibility of consolidating County departments.

Our task force, chaired by Robert J. Lowe, has examined both questions in detail. This report contains its conclusions and recommendations. The report reflects the results of nine task force meetings, commissioners' interviews of elected officials regarding these issues, and a review of contemporary and past research on the executive structure of County governments.

For the third time in four years, we have been fortunate to have the assistance of a Field Study Team from the Graduate School of Management at UCLA. As part of the requirements for earning the MBA, the students reviewed administrative processes in seven County departments to determine the potential for achieving economies of size by merger or standardization. We have incorporated their results in our report.

Our report answers both questions in the affirmative. We propose changes in the roles and expectations of the Chief Administrative Office which will improve the Board’s ability to plan for and respond to changing conditions affecting the County's governance and service functions. We have found that consolidation of County departments into a simplified structure is both feasible and desirable, and we propose a four year program to restructure the system. The Board should achieve major gains in both cost and efficiency in the first year.

We present our report in three volumes. Volume I contains a summary of our proposed program. Volume II contains an expanded summary of our conclusions and recommendations, followed by a detailed description of the current structure, its problems, major alternatives for reform, and our preferences. Volume III is the report of our field study team. Volumes II and III represent working papers the task force used in formulating the conclusions and recommendations presented in Volume I.

Reforming organizational structure and executive decision making systems in local government is a complex and difficult problem. There are no panaceas.

Corporate rules of organization do not necessarily apply. They rely on the ability of a chief executive to adopt a system of explicit goals and objectives and to organize people who agree in the ways best designed to meet them.

In contrast, County government cannot always decide its own goals and objectives. Some are established by Federal and State law. Moreover, the executive of the County consists of two groups in continual tension with one another. The first is a board of five Supervisors elected to represent five extremely diverse communities, whose views of what government is about do not necessarily coincide. The second is a group of more than forty operating executives who have fixed legal responsibilities and who consider it part of their responsibility to temper the entrepreneurial enthusiasm of elected officials.

What is needed is a long range road map for structural reform and executive decision making, together with processes to support sustained effort to achieve it.

In this report, we propose such a plan. We do not supply final answers. County Counsel advises that restructuring County government is subject to a number of legal limitations, and that each detail must be carefully reviewed before it can be implemented. The long-range structures that might result from the program recommended in this report will require detailed legal review.

Nevertheless, we are convinced that professional County executives can and will cooperate to find ways to improve the structure. The County already has good people. Further gains are possible. But the executives must first recognize that the overall structure of the County system is at least as important as employing good people. Reform is both feasible and necessary. The plan we propose provides the framework in which the County's people can accomplish desirable structural reform.

UNIVERSITY OF CALIFORNIA, LOS ANGELES UCLA

BERKELEY DAVIS IRVINE LOS ANGELES RIVERSIDE SAN DIEGO SAN FRANCISCO SANTA BARBARA SANTA CRUZ

MANAGEMENT FIELD STUDY

GRADUATE SCHOOL OF MANAGEMENT
LOS ANGELES, CALIFORNIA 90024

Letter of Transmittal

June 13, 1983

Mr. John J. Campbell
Executive Secretary
Los Angeles County Citizens
Economy and Efficiency Commission
163 Hall of Administration
Los Angeles, California 90012

Dear Mr. Campbell:

This letter of transmittal accompanies our final report on the economic impacts of reorganizing the seven "general services" County departments into a single consolidated entity. More specifically, the study systematically identified and examined scale economies realizable through reduced duplication in labor, systems, and equipment and facilities usage.

The central finding of the study is that there are substantive scale economies realizable through consolidation. The study, however, further notes that these savings are not all presently quantifiable, or immediately realizable.

Our team is available to answer any questions you may have about our final report.

We want to thank the County and you for the opportunity to perform this study. The study was extremely enlightening, and contributed greatly to our management education.

Sincerely,

CooChung (JJ)Chao

Siwei Cheng

Mimi (Lan Phuong)Dangtu

Suzzane Hsiu-Chung Wang

**(Please note: Signatures of the above individuals can be found on original copy, on-file at the LA-EEC office.)**

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# EXECUTIVE SUMMARY

At the request of the Los Angeles County Economy and Efficiency Commission, this study examined the economic impacts, particularly as they relate to economy of scale issues, of reorganizing seven "general services" departments into a single consolidated entity. More specifically, scale economies realizable through reduced duplication in labor, automated Systems, and facilities usage were systematically identified and analyzed.

With regard to labor economies, duplicated job functions have been found in the seven departments. These functions, ranging from accounting to secretarial positions, however, have been specifically adapted to individual department work structures. Though basic processes are similar, the work forms, documents and internal procedures differ across departments. It is not clear that each department must structure its duplicated work functions according to its idiosyncrasies. Consolidation, which would facilitate the restructuring of jobs into more uniform work Systems, would allow for substantive reductions in the number of duplicated positions.

Three types of automated Systems were examined - accounting, inventory control, and automated payroll and timekeeping. In analyzing the effects of developing and integrating these Systems on a County-wide basis, each would provide savings through elimination of redundant system development and maintenance costs presently expended on the multiple non-standardized Systems operating within the County. Besides these general savings, standardization of these three Systems would provide additional savings. Increased utilization of a County-wide accounting System such as the Financial Information and Resources Management System (FIRMS), would eliminate redundant data input and human error costs by allowing for automated interface between aggregate County and departmental accounting data Systems. An integrated automated inventory control System would facilitate the centralization of inventory management and policies. Such centralized inventory management would allow for

decreased inventory levels and associated labor support and warehouse facilities space needed. And, simplification of the existing payroll structures such that an integrated automated payroll timekeeping system could be developed, would provide savings to the County of up to $11 million per year.

The functions of purchasing and inventory management have been studied in detail. These functions were chosen because they are performed by each of the seven general services departments, and appear to be good candidates for further consolidation within DPS. In analyzing the purchasing function, it was found that the distributed purchasing occurring outside of DPS can be further centralized within that department. Benefits from such consolidation would be in reduced procurement handling positions, and cost savings through discounts on larger quantity purchases. And finally, it was determined that centralization of inventory management Systems and policies would allow for reductions in the total County inventory level of about 12%. This reduction would release up to 48 inventory related support positions, and free about 141,600 square feet of warehouse facility space.

# I. INTRODUCTION

The passage of Proposition 13 in 1978 severely constrained the County's tax raising prerogatives, placing a finite lid upon the County's available revenue. For a while, state surpluses were able to artificially support program maintenance and "deficit" spending. Those resources, however, have since been used up, and no further state bail outs can be expected. With revenues limited by Proposition 13, County operations are now zero sum equations -- one dollar spent on one program means, by definition, one dollar less to spend on others.

On May 2, 1983, Los Angeles County Chief Administrative Officer (CAO) Harry L. Hufford released the recommended 1983-84 County budget which conceivably, will require $143.7 million in program cuts, and elimination of about 1400 County positions [1]. This study identifies organizational changes which, if adopted by the Board of Supervisors, and properly implemented, will facilitate the reduction of financial pressure on the County.

In organizational theory, there is a school of thought which contends that the primary benefit associated with organizations stems from decreased transactional friction within organizations as opposed to markets. These "transaction cost" theorists conclude that organizations are superior to markets in managing complex and uncertain economic transactions by reducing the costs of such transactions [2]. Thus, the benefits of organization are associated to the closer relations afforded by it.

In the course of this study, one fact that struck the field study team was the enormous size of the County government. With an average size of about 1200 employees, each of the fifty-eight County departments operate like business entities in and of themselves. Indeed, in studying the interactions between departments, transactions much like those that would be found in a free market, are found. Departments bill, and are billed for services rendered to and from each other. Examining this situation from a transaction

cost orientation, it is apparent that some of the frictional costs associated to the separate departments doing business with each other can be saved through closer relations between the entities. Such closer relations can be afforded through consolidation of functions or departments.

In the past, Los Angeles County has achieved a mixed degree of success in its consolidation efforts. For example, in 1981, the Building Services Department effected savings to the County of $1 million per year by taking over the custodial functions in the Department of Health Services facilities. While in 1974, the merger of Hospitals, Mental Health, public Health, and the County Veterinarian Departments into the Department of Health Services met with somewhat less than resounding success. The attempt to consolidate all County health services was aborted as a result of conflicts in treatment styles between Mental Health and Hospitals. These professional (medical versus mental health) conflicts eventually led to the splintering off of Mental Health into a separate department. Whether better initial implementation planning could have averted this internal discord is debatable. What should be noted here, is that consolidation cannot work unless details such as differing styles, be they treatment or management styles, are previously considered and accounted for. This factor has a bearing on the conclusions ultimately drawn in this study.

At the request of the Economy and Efficiency Commission (EEC) this study examines economies of scale that might be realized through consolidation within the County government. Public sector consolidation is a subject which has been academically well studied. Unfortunately, the findings in these academic studies are often inconclusive, and sometimes conflicting. For example, one study of the impact of seven metropolitan centralization efforts resulted in the finding that relative to achieving economies of scale, "centralization may contribute to the efficiency of metropolitan government, but experience provides relatively little incontrovertible evidence" [3]. And contesting the popular, albeit hard to substantiate, belief that centralization promotes efficiency, economist William Niskanen contends that because

government often is not clear on what is best, some conflict and redundancy is probably beneficial [4]. Given the academic differences in opinion on the subject, the field study team arrived at its own assessment of the benefits to be achieved from consolidation.

If properly prepared for and implemented, consolidation will provide both qualitative and quantitative benefits. Qualitatively, consolidation will increase managerial control and operational effectiveness by respectively, decreasing excessive spans of control, and allowing for specialization of functions. Regarding managerial control, the Board of Supervisors are presently informally addressing the issue through assignment of departmental chairmanships to individual Supervisors. As departmental chairman, each Supervisor nominally oversees about twelve departments, alleviating some of the problems associated to managing fifty-eight departments. Consolidation would combine departments into fewer organizational units, and thus formally address the Board's excessively large span of control.

The specialization of functions leading to increased operational effectiveness comes about as a result of a larger consolidated body reaching a "critical mass" that is able to support many specialized functions that cannot be supported in a smaller organizational unit. For example, fiscal planning, systems and work measurement, or safety of officers who presently are not be supported in a smaller department, can be made available to that entity when it is part of a larger consolidated body. By providing such access to specialized functions, consolidation will qualitatively improve the operational effectiveness of the County government as a whole.

Quantitatively, properly effected consolidations will provide cost saving economies of scale through reduced duplication of labor, increased standardization of systems, and decreased equipment and facility needs. Because the essentially autonomous County departments operate like businesses in and of themselves, each must support basic functions, such as accounting and payroll, subject to the demands of its operations. In order to meet the fluctuations in operational demands, each department must also carry a certain

amount of slack, or excess capacity in these basic functions. Consolidation of separate departments into a single entity would reduce the total amount of slack necessary, as demand fluctuations would be smoothed over the larger body. The excess capacity needed for this consolidated entity then would be less than the sum of the slack necessary for the seven separate departments. Thus, the net cost savings from consolidation-smoothed operational demands will be directly measurable in terms of reductions in presently duplicated positions.

A second quantitative benefit achievable through consolidation is the standardization of systems. As separate entities, departments presently operate independent systems (i.e. accounting, payroll, and inventory control). Each of these independent systems require individual development and maintenance. Consolidation would facilitate the standardization of these independent systems into a single integrated system, which, in turn, would save the redundant development and maintenance costs. And finally, consolidation would allow for the sharing of excess equipment and facilities (such as vehicles, or warehouse space) capacities, thus decreasing these total costs to the County.

In this study, to the extent possible, the quantifiable labor, systems, and equipment and facilities scale economies achievable through consolidation will be identified. Where quantification is not possible, the study will discuss conditions that must be satisfied before a consolidation can be properly implemented.

## II. PROJECT SCOPE and DEFINITION

This study is part of a larger study being conducted by the EEC. The scope of this study has been confined to seven County departments considered to be "general services" departments. The departments - Building Services, Collections, Communications, Data Processing, Mechanical, Personnel, and Purchasing and Stores --provide services that are consumed internally within the County government. These departments range in size from about 300 to 1,800 employees, and in gross appropriations from about $10.5 million to $86 million. Appendix II-1 describes the services provided by the seven departments.

The purpose of this study is to examine the economic impact, particularly pertaining to scale, of reorganization of the seven general services departments into a consolidated system. More specifically, the study addresses the following questions:

1) Is there duplication in labor, systems, or equipment and facilities usage within the seven departments such that cost savings can be achieved through consolidation?
2) With regard to the identifiable redundant functions, what preparatory measures must be satisfied prior to implementation of consolidation?

## III. METHODOLOGY

There were three approaches used for data collection in this study - literature research, interviews with individuals, and document requests for work descriptions, forms, and procedures. The literature research included relevant sources found in the UCLA libraries, EEC and County departmental reports and memoranda, academic bibliographies, and journal indices. Interviews and document requests were conducted concurrently, and involved meetings with Departmental representatives (ranging from directors to staff assistants), CAO committee members, UCLA professors, and professional consultants.

The study examined consolidation of the seven general services departments using the following rationale. Potential areas of labor economies of scale were systematically identified through analysis of job classification specifications. These job classifications are defined by the Department of Personnel, and each classification theoretically describes the content of work done by the employees so classified. Job classifications found to be present in more than one of the seven general services departments represent duplications of functions, and thus the most likely areas in which consolidation labor economies of scale can be realized. A discussion of these duplicated functions can be found in Section IV.A.

In the course of the study three automated systems with potential for County-wide integration were found. Discussion of economies of scale through standardization of these systems are examined in Section IV.B.

Sections V and VI discuss two of the systematically identified duplicated functions, purchasing and inventory management, in greater detail. Purchasing and inventory management were selected for detailed study because, despite the theoretical County-wide centralization of these functions within the Department of Purchasing and Stores (DPS), the functions are nonetheless performed in all seven general services departments. Thus, similar to the successful Building Services acquisition of Health Services

custodial functions, the purchasing and inventory functions appear to be good candidates for further consolidation within DPS.

## IV. A POTENTIAL FOR LABOR CONSOLIDATION

### Overview

The economic benefits associated to consolidation of work positions come from reduced duplication in labor. In order to realize these reductions, duplications of work functions must be identified. In this study, a systematic approach for identifying duplicated functions was utilized. Potential "like-functions" were identified through computer sort of the 7000 general service department job position classifications. Those classifications found in more than one department, "common-classifications," then represent the potential like-functions which can then be considered for consolidation.

This systematic classification sort approach makes the initial assumption that the duties specified within the job classifications are truly representative of work performed. However, recognizing that the classifications are not always indicative of the nature of work performed, the identified common-classifications were studied in greater detail.

### Discussion of Identified Common Job Classifications

The computer sort of the approximate 7000 general services positions produced eighteen "common-classifications" (appendix IV-I). These potential "like-functions" are:

- Accounting
- Administrative Assistants/Staff Aides
- Data Analysis
- Data Entry and Keypunch
- Drivers
- Equipment Maintenance
- Fiscal Planning

- Inventory Control
- Payroll
- Personnel
- Procurement
- Safety Inspection
- Secretaries.
- Statistics and Graphics Support
- Stenographers
- Student Workers
- Systems and Work Measurement Analysis
- Fiscal-Clerks

Of these eighteen functions, ten were eliminated from consolidation consideration for a variety of reasons. Fiscal planning, systems and work measurement analysis, equipment maintenance, statistics and graphics support, though provided for by the County salary ordinance in multiple general services departments, were found to be unfunded in many cases. Key punching is being phased out, with that work now being contracted out to private firms. And examination of the class specifications (descriptions) showed the functions of stenographers, student workers, typist-clerks, administrative assistants, staff aides, and secretaries to be jobs that must be distributed. These jobs require specific assignment to an office, or knowledge of office details, such as locations of files and reports. As such, these are functions that cannot be consolidated.

The eight functions remaining under consideration for consolidation are accounting, payroll, inventory control, procurement, data analysis, driving, safety inspection and personnel. (The procurement and inventory control functions are examined in greater detail in Sections V and VI.) These functions represent relatively small portions of departmental operations. The ratio of these functions to total budgeted departmental personnel for the general services is shown in appendix IV-2. For these eight functions, data regarding work processes, job inputs and outputs, and performance evaluation procedures was collected from the departments.

Examination of the job descriptions returned show that there are generic similarities in work processes performed within the eight functions in the general services departments. For example, a portion of accounting activities (40%-lOO%) within the departments are devoted to interface with the County-wide Financial Information and Resources Management System (FIRMS), and all department payroll units interface with the County-wide Payroll system (CWPAY). The generic work process for drivers is in driving vehicles on routes to deliver goods. In developing departmental personnel programs, personnel officers are constrained by the same civil service regulations.

However, though work process similarities exist (justifying the common classifications), the input/output work forms and documents returned show significant differences in the manner in which these functions are structured within the individual departments. There is little standardization in documents, forms, or work structure. For example, driving routes, destinations and schedules for drivers differ significantly between departments. And in accounting and payroll, varying departmental concerns, such as, state and federal subvention of funding or project related billing and cost accounting, result in department specific accounting and payroll systems. Overall, these eight functions were found to be enmeshed within systems that are specifically adapted to the respective departments.

The specific adaptation of the eight examined functions within individualized departmental working systems would seem to indicate that the functions are not exactly "like-functions". Thus, if the existing idiosyncratic systems are indeed necessary, then the distribution of these functions within those systems would appear to be necessary. Necessary distribution of these functions, in turn, would indicate that the cost savings that might be realized from consolidation of these differentiated functions would be minimal.

However, it is not entirely clear that the functions examined must operate in departmentally individualized ways. If the departments could restructure their job functions to operate in a more uniform manner County-wide, then consolidation would facilitate

the immediate realization of labor-related economies of scale cost savings. Without restructuring, realization of such savings require time. Unfortunately, at the present, there are no incentives for departments to structure their jobs in any manner, save what would be best suited to their own departments.

## IV. POTENTIAL FOR AUTOMATED SYSTEMS CONSOLIDATION

### Overview

As noted in the study of administrative functions above, cost effective consolidation requires structuring jobs and functions in an integrated and uniform manner throughout the County units to be consolidated. The current movement toward increased automation in the work environment provides an opportunity to effect such uniformity. As automated systems are introduced, job functions are changed to accommodate those systems. And, although computers allow for sane substitution of capital for labor, eliminating sane jobs and staff, they also require new staff, or retraining of old staff to do new jobs. Work is performed in different ways, new forms and operational procedures are utilized, and in short, entire job functions are restructured.

It should be noted that the value added by automation is not usually the result of eliminating the labor factor, but rather, of altering it. Labor productivity remains a key to the value of technology. If introduction of automated Systems can be integrated within the County, then the automation-motivated restructuring of job functions can be effected in a County-wide coordinated and uniform manner. This, in turn, would facilitate easy and cost effective realization of consolidation benefits.

However, in the course of this study, it was found that many of the existing automated systems were for the most part, developed independently within individual departments. As such, there presently exist multiple non-integrated automated Systems performing similar functions for different departments. Like the administrative Systems discussed in the section IV.A, these automated systems operate according to their own peculiar programming, and thus require individualized maintenance. Integration would save much of the cost associated with the development and maintenance of these similar, but differentiated automated systems.

This study identified three areas in which there are potentials

for County wide application of generic automated systems. These areas are accounting, inventory control, and payroll.

## Discussion of existing Accounting, Inventory Control, and Payroll Systems

### Accounting- Financial Information and Information Systems (FIRMS)

FIRMS is a centralized computer-based system with financial, program performance, and cost accounting capabilities. The system is designed to assist the Auditor-Controller in maintaining control over and accountability of revenue and expenditures, the Chief Administrative Office in maintaining budgetary control over County resources, and the departments in managing their operations.

The FIRMS users include all of the fifty-eight County departments. However, most of the departments still maintain their own satellite accounting systems. The degree to which FIRMS is utilized varies from 40% to 100% of each department's accounting activities, depending on the complexity of its accounting function.

At present, source data for FIRMS is prepared by the individual departments and sent to the Auditor-Controller. The system processes input daily and generates reports on daily interim, monthly, and annual bases. The annual operating cost for FIRMS is about one million dollars.

Currently, FIRMS provides comprehensive aggregate accounting data to the County Administrative officer (CAO) from the fifty-eight departments. In addition, recent software development of a billing and cost accounting module allows FIRMS to address sane more detailed accounting requirements within departments. However, to date, these newly added FIRMS capabilities have not been well

publicized. As such, only the Auditor-Controller and Mechanical departments have incorporated these modules into their accounting systems. However, if fuller utilization of the FIRMS cost accounting capabilities can be effected, the cost savings would be substantial. County wide use of the FIRMS billing and cost accounting module (as opposed to use of sane other unrelated system) would allow for automated interface between the FIRMS aggregate data arid individual department cost accounting systems. Such automated interface would eliminate the redundant data input and human error costs currently incurred due to manual reconciliation of FIRMS with the individualized cost accounting systems.

Inventory Control Systems

Of the seven general services departments, three maintain automated inventory control systems. The stores division of the department of Purchasing and Stores (DPS) maintains a mini-computer based system on site, containing data for about 10,000 stock items. Mechanical department inventory is handled through a batch oriented system maintained at the Data Processing Department (DPD) Downey facility, and keeps records for about 11,000 stock items. DPD also maintains its own inventory control system at its Downey facility, and is currently in the process of converting it from a batch orientation to an online system.

The benefits associated to integration of these three separate automated inventory control systems are linked to the scale economies realizable through centralization of inventory management arid policies. These cost savings include decreased inventory levels, and the associated labor support and warehouse facility space needed. Consolidation of inventory management is discussed in detail in Section VI. Given centralization of inventory management, there are no extraordinary factors that would prohibit standardization of the automated inventory control systems.

## Payroll Systems- Payroll and Personnel System (PRPS) and Automated Timekeeping/Personnel System (ATFS)

PAPS is a data base system used by six departments to provide front-end (preliminary) processing of timekeeping, payroll, and personnel data for input to the County-wide Payroll system (CWPAY; Auditor-Controller system used to issue all county paychecks). PAPS also generates various personnel and management reports.

The PAPS users include the Data Processing, Mechanical, County Engineer, Flood Control, Parks and Recreation, and Roads departments. The information contained in PAPS includes:

- personnel data for employees
- work schedules, time worked, and time variances
- data on positions and classifications
- salary ordinance and Memoranda of Understanding (MOU)
- provisions, and logic for payment of salary, bonuses,
- overtime, sick leave, etc...

The data are entered either directly from remote terminals, or by key punched forms.

PAPS contains data for the 7,985 employees in the six user departments at an annual operating cost of about $1,154,OOO. Overall, PAPS provides satisfactory services at a reasonable cost. But, on-going efforts are required to maintain the system, and address needs for new reports. PAPS is especially difficult to maintain when addressing salary ordinance modifications.

ATPS is a distributed mini-computer based network which provides a combination of on-line and batch functions for entry and inquiry of payroll and personnel data. ATPS is used only by the Sheriff's department, and it is still in the developmental stage.

The key strength associated to ATPS is its on-line capability. All input is edited and validated on-line. It provides for high speed, very accurate, and remote access to data. The on- line accessibility of data allows for greater utility of critical information on a department-wide basis. The weakness of ATPS is

that it is not a complete system, and must interface with the Sheriff's department Automated Personnel Information System (APIS) and Automated Sheriff' S Interim System for Timekeeping (ASSIST).

The information contained in ATFS includes:

- a subset of APIS personnel information
- ASSIST employment information
- ATPS unique personnel information
- ASSIST benefit balances
- employee time variances
- employee schedule information

ATFS contains data for the 9,108 employees in the Sheriff's department, and has an annual operating cost of about $1,889,000.

The payroll system as it exists within the County today is ripe for integration and consolidation. This fact has not escaped the attention of the County. In March, 1982, the County Electronic Data Processing Advisory Committee (EDPAC) formed a subcommittee to determine whether any of the County's existing automated payroll systems, PAPS and ATPS in particular, can be applied for County-wide use. That study found that neither PAPS, nor ATPS is suitable or ready for such County-wide use. PAPS is slow and inflexible, and ATPS is costly and still not fully developed. Additionally, the EDPAC study determined the County cost associated to payroll to be about $13.3 million per year ($12.3 million for the various manual, semi-automated, and automated front-end systems, and $1 million for CWPAY). And finally, the study identified an overly complex salary ordinance and the hard-to-systematize plethora of memoranda of understanding (MOUs) as the root causes for difficulty in automation of a County-wide payroll system.

The $13.3 million County-wide payroll related expenditures represent about $190 spent annually per County employee. This cost to pay employees varies from department to department, depending on department size, payroll reporting complexities (i.e. subvention of paying funds), and system complexion (manual, semi-automated, or automated). Within the seven general services departments, the cost

to pay employees varies from about $79/year for the 1,826 employees in Building Services to about $168/year for 285 employees in Purchasing and Stores (see appendix IV-3).

In order to gauge the extent of the County's cost to pay its employees, Bank of America's Business Services division (B of ABS) was contacted for estimates regarding typical private industry payroll costs. The B of ABS is the largest payroll service in California, paying an estimated one out of every five paychecks issued in the state [1]. Services provided by B of ABS involve primarily, check writing and summary report generation (equivalent to CWPAY), and the software necessary for an integrated automated system.

For a company of approximately 70,000 employees (the size of the County), B of ABS estimated the cost of its service to be about $40,000 per month, or $480,000 per year (see appendix IV-4). This $480,000 cost, which is associated to services provided similar to those currently handled within the County by CWPAY, would represent a savings of about $520,000 over the $1 million presently expended on CWPAY. However, even greater differences between the County's existing payroll operations and that of private industry are apparent in the front end costs associated to calculating the payroll. The B of ABS estimated the front end cost of maintaining its system for a 70,000 employee private firm to be about 55 employees, or $1,320,000 total per year [1]. This figure is sharply contrasted and dwarfed by the County's existing front end payroll costs of $12.3 million [2].

In the EDPAC subcommittee interim report, the root cause of the difficulty in developing a County-wide automated payroll system was identified as an overly complex salary ordinance, and the plethora of MOUs. This salary ordinance complexity and the non-systematic nature of the MOUs complicates and inhibits the calculation of the payroll, and severely constricts the systematic automation of that front end process. The tenfold difference in the existing County front end operation, and that typical of private industry (as estimated by B of ABS) then represents the actual cost of the County's payroll idiosyncrasies. And although consolidation would

not effect the current salary ordinance complexities, the fewer organizational units that would result from consolidation would reduce the number of MOUs necessary to be integrated into the automated payroll system. Thus, if as recommended by EDPAC, the County would simplify its payroll structure and consolidate into fewer organizational units with fewer MOUs, a systematic automation of the front end payroll process could then be expedited at a potential cost savings to the County of up to $11 million per year.

## V. PURCHASING

### Overview

The Purchasing Division of the Department of Purchasing and Stores (DPS) acts as a middleman between vendors and all County departments to purchase goods and services at the lowest possible costs. But despite the availability of this centralized procurement function, individual procurement units are found in each of the general services departments. Given this apparent duplication of function, procurement presents itself as a likely candidate for further consolidation within DPS.

The duties of the procurement units found within the general services departments vary from interfacing with DPS to effect procurement of items, to in some ways, independent purchasing of items. The degree of DPS involvement in the purchasing process depends on the procurement method used. Procurement methods used include procurement of items stocked in the DPS Stores Division, procurement requiring bidding, and procurement not requiring bidding.

About 20% of County departmental procurements come from items stocked by the DPS Stores Division. These are typically items that are used by more than two County departments, and as such, can be purchased in large quantities by DPS. In procuring such stocked items, departments issue a requisition to Stores, and receive shipment of the item directly from the Stores delivery service.

Items for which bids are solicited include one time purchases which have values exceeding $500, are not stocked, and are not supplied by a contract vendor. If the item value is between $500 and $5,000, only an informal bid (i.e. telephone quotation or letter) is necessary. But for requisition amounts over $5000, formal bids with deadlines and public readings are required.

"No bid" situations include Contract Agreement, Non-agreement, Prior Bid or Last Purchase, Monopoly, Confirming, and Petty Cash

methods of procurement. These cases are explained below.

– Contract Agreement: Contract Agreements, also called Agreement Various Vendor Order (AVVO) are made with vendors in order to guarantee the supply of those items that are known to be needed periodically, but whose annual quantity needed cannot be a priori determined. DPS effects the AVVOs by selecting one or more vendors through the bidding process at the beginning of a year. The selected vendors then become regular suppliers of a particular item for the whole year, at a prenegotiated item price. Thus, when a need for the item arises, departments request that item from the contract agreement vendors. There is no minimum purchase required from the vendors.

– Non-Agreement: Items under $500 and not stocked can be purchased using the Non-Agreement Various Vendor Order (NAVVO). User departments are authorized to deal directly with vendors, without the involvement of a DPS buyer in selection of the vendor and negotiation of the price. Items between $250 and $499 however, do require a DPS buyer's approval.

– Prior Bid and Last Purchase: Items bought from a vendor that had been previously awarded a bid or had supplied a previous purchase.

– Monopoly: Items procured by a vendor That is a monopolist source for the items. For example, parts for an IBM system can only be purchased from IBM Corp.

– Confirming: Items that need to be delivered before the purchase order is issued (emergency situations only). This emergency procurement method is coordinated by a DPS buyer.

– Petty Cash: This method involves the petty cash purchases of miscellaneous items of small value. The values can range up to $100 depending on individual departmental policies, and the vendors selected are at the discretion of the departments.

As described above, Non-Agreement Various Vendor Orders (NAVV s)and Petty Cash are the only procurement methods in which user departments are authorized to select vendors and negotiate prices. Departmental interface with vendors involves the tasks of searching

for the vendors, requesting and negotiating prices, ordering, and follow up. In analyzing the costs and benefits of consolidation of the purchasing function, the NAVVO procurement method in particular, will be examined. The analysis of the NAVVO is motivated by the fact that it represents the majority of the buying functions still distributed in user departments. Petty Cash procurement was not examined because the purchase amounts of items so procured are insubstantial, and so would not provide any significant savings if consolidated.

Research Objectives

To evaluate consolidation of the purchasing function, particularly as it relates to NAVVOS, the following issues were addressed because they represent sources of potential savings to the County:

- the number of procurement positions within the seven general services departments
- the tasks performed the lead time and consequently the degree of flexibility to departments, and
- the changes that would result from consolidation of this buying method.

Representatives from the procurement units in each of the general services departments were interviewed. With DPS, only the internal usage portion of the procurement function was considered.

Summary of Findings

We found that the primary costs associated with procurement are labor costs. These labor costs range from $22,147 to $487,824 across the general services departments, and total nearly $1 million for the seven altogether (see appendix V-I). Other costs associated to procurement include equipment usage and facility space needs. Equipment used for procurement, such as typewriters and microfiche readers, are shared with other departmental functions (i.e. typist-clerks). Thus, procurement equipment can be considered overhead items which would be maintained regardless of the existence of procurement within a department. The space occupied by departmental procurement units are minimal, except in the Mechanical department, where its procurement unit occupies an estimated 1000 square foot area. However, insofar as these areas, according to departmental officials interviewed, do not have any alternative use, there are no foregone benefits associated to their assignments to procurement. Consequently, equipment and space are fixed costs, and would be unaffected by consolidation. And labor represents the primary area in which consolidation scale economies can be realized.

Purchasing tasks performed by departmental procurement units can be classified into clerical, accounting, search, specifications writing, and miscellaneous activities categories (see appendix V-2). Procurement personnel generally spend over 50% of their procurement time performing searches. The items bought under the NAVVO method vary within the departments, but are similar to items bought from vendors on AVVO contracts with the County. Appendix V-3 provides a sample list of items bought under both methods. In general, departmental procurement units exercise the NAVVO prerogative more than necessary, utilizing that method even in cases where an AVVO contract has already been set up by DPS. For example, whereas most office items can be bought with an AVVO from a contracted vendor, departments often nonetheless procure those items through an independent NAVVO.

The lead time necessary for the NAVVO method is strictly a function of the time a vendor takes to deliver the goods. With no

formal interface with DPS, no extra lead time is incurred waiting for the order to be processed through that department. NAVVOs are also quicker than effecting purchases through the informal bids which are required for requisition amounts over $500. As such, it is not surprising that we found it to be standard practice for departments to effect larger procurements through multiple incremental NAVVOs, instead of a single informally bid purchase. Given the time advantages associated to NAVVOs, this method was found to be preferred by user departments who feel that shorter lead times are necessary for their internal planning and operations.

The actual workload done by these procurement units could not be estimated, as departments do not keep records of their purchases by method of procurement. These are also no standard format of control in the seven general service procurement units. However, in order to gauge the work done within the respective departmental units, the ratio of the number of employees per one procurement position was used as a workload indicator. Using this proxy measure, workloads were found to range from one position per 82 employees to one position per 580 employees (see appendix V-4). In general, this data indicates that the larger the departmental size, the larger the number of departmental employees served by one procurement position.

Finally, we found that for the fiscal year 1981-82, the number of documents processed within the general services departments through NAVVOs exceeded the total documents submitted to DPS for all centralized buying methods (using DPS as a middleman) by a factor of 1.84. This abundance of NAVVO purchases however, amounted to only about 6.9% of the value of the total general services departmental purchases for that year (appendix V-5).

Analysis

Given the above findings, the following issues are relevant to consolidation of the purchasing function:

1. reduced duplications in procurement labor functions;
2. cost savings through larger quantity purchases;
3. minimization of longer lead time costs and shortage costs;
4. simplification of the purchasing process.

A discussion of each of these issues follows.

1. Reduced duplications in procurement labor functions:

The ratio of total department positions per procurement position reported in appendix V-4 shows that the larger departments tend to have more employees per procurement position. This indicates greater efficiency of these larger departmental procurement units, as the one procurement position serves a larger number of employees. The wide range of these ratios imply that sane procurement units may not be operating at maximum efficiency. This less-than-optimum efficiency may be due to the smaller scale of operation. This, in turn, would tend to indicate that there should be economies of scale realizable through combining the smaller procurement units into larger units.

There are two categories of tasks performed by the departmental procurement units, routine clerical tasks and selection of a vendor. Clerical tasks include preparation of requisitions, checking invoices, typing, and filing requisitions. Vendor selection involves tasks such as field searches and calling up vendors, and presently accounts for more than 50% of procurement time. With centralization for the NAVVO method within DPS, the search task will be eliminated at the user departments. Such consolidation would produce a single larger scale procurement operation, thus allowing for demand smoothed reductions in excess labor capacity. This reduction can be measured in terms of decreased procurement positions. However, given the existing department specific procurement structures, the exact number of positions that might be saved cannot be estimated.

2. Cost savings through larger quantity purchases:

In examining the various procurement units, we found that items bought through NAVVOs are often the same as items bought from vendors on contract agreement (AVVO). Through interviews, we found two explanations for the excessively utilized NAVVO purchases. First, procurement personnel at user departments are often unaware of existing agreement contracts with vendors for particular items.

And DPS does not generally make any special effort to keep departments up to date with the most current AVVO lists. The second reason relates to a lack of standardization in the demand for generic items. For example, in procuring ball point pens, the AVVO contract vendor might supply BICs, while the procuring department prefers Papermates. In order to purchase the Papermates, the procuring department effects a NAVVO with a Papermate supplier. Thus, demand for a specific brand of an otherwise generic item results in over use of NAVVOs. If demand for generic items (such as pens) can be standardized throughout the County, then larger quantity purchases will be possible, and the County will be able to take advantage of quantity discounts and cash discounts offered on these larger quantity purchases.

If the purchasing system is set so that payments can be disbursed very quickly, the County can take advantages of cash discounts by prompt payment. The most common cash discount offered at the present time to the County is 2/10 net 30. This means that if the invoice is paid within 10 days of invoice date, there is a 2% discount off this price. If the invoice is paid after 10 days but within 30 days, the full price is due. These cash discounts are mostly offered with large quantity purchases only. With a total of $5,123,698 in general service departmental NAWO, the potential cash discount savings at 2% is $102,474 per year. It should be noted that because the County is a public organization with a separate department serving as a "cashier" (Auditor-Controller) a centralized purchasing system will be more likely to have payments disbursed promptly. In a decentralized system invoices would have to be processed up the hierarchy in user departments, then sent to DPS and

the Auditor-Controller. In brief, a larger procurement scale seems to offer economies of scale in labor & efficiency and more discounts because of large scale purchases.

3. Minimization of longer lead time costs and shortage costs:

Of all procurement methods involving vendors, the NAVVO was found to have the shortest lead time necessary to effect procurement of an item. If this method is consolidated, its associated lead time will probably increase, becoming similar to that of the informal bidding method used for items between $500 and $5,000 in value. Lead times for informal bids, though somewhat unpredictable, were found through a sample to range from two to four months (appendix V-6). This long and unpredictable lead time is very inconvenient for user departments since demand for many items, especially low valued ones, cannot be anticipated those months in advance. In the seven general services departments, the only quantifiable costs of long lead times are costs associated with higher inventory levels which will be discussed in section VI.

Shortage costs consist of inefficiencies and delays in daily operations for internally consumed services departments. Low quality public services, on the other hand, is the shortage cost for those departments who provide externally consumed (public) services. Although in both cases shortage costs are non-quantifiable, they are estimated to be fairly high.

Since departments cannot anticipate when goods will be available, they hedge against uncertainty by excessively stocking items whenever they can. Interviews confirm that this a major reason for overstocking. Because of high costs of lead time and shortage, consolidation of this NAVVO method should be accompanied by an accurate forecast of usage. This is commonly done in private industry by a small staff group responsible for collecting data about usage from all departments to develop material needs forecasts. This group would also perform the function of value analysis, researching cost effective substitution possibilities for items currently used [1). Both the forecast and value analysis functions are very important in purchasing departments in profit oriented

organizations. However, they are almost non-existent in the County purchasing system. In short, a forecast function is a prerequisite to successful consolidation. And value analysis would provide the additional benefit of facilitating large scale cost saving substitutions.

4. Simplification of the purchasing process:

The processing of documents is another major cost to the County at the present time. In fiscal year 1981-82, the number of documents processed at departmental level for this NAVVO method ranges from 102% to 622% more than the total number of documents submitted to DPS for all "centralized" methods. And the purchase values associated with these documents range from 6% to 37% of total purchases. Since the clerical and accounting time devoted to the processing of one document is the same regardless of the value of the purchase, spending too much time to process documents for purchases of very little value is an inefficient allocation of resources. It is very common for an organization to accumulate paper work for procurement of low value items. In the private sector, most companies have developed simplified methods to deal with this paperwork issue. For example, Kaiser Aluminum instituted a purchase order draft system which is now widely used in industrial, commercial and institutional purchasing departments (2). This is a "guaranteed payment" similar to the County's purchase order check (POC) except that the POC is used only when prepayment is required. Kaiser and other large companies now use it for all purchases under $2,000. Another paper saving system in use by a number of companies does away with the purchase order and vendor invoices. Instead a multiple-copy snapout form that serves all purposes in the order cycle is used. See table V-I for details of the two systems described above.

A significant aspect of the two systems described here is the assumption that both parties to the transactions are trustworthy and reliable and that both are interested in long term association with each other [3]. Therefore the larger the organization, the more important it is to develop long term relationships with vendors. In

the County's case, this type of relationship already has its foundation through the Contract Agreement relationships since Contract Agreement vendors are normally long term suppliers.

Table V-I
2 simplified systems for purchasing low value items.

* The Kaiser Aluminum purchase order draft.

The supplier receives a blank check as part of the purchase order a detachable portion of the form that is an envelope in addition to being a check. After shipping the order, the vendor puts one copy of the invoice inside the check envelope, enters the net amount, endorses it and deposits it in the bank as an immediate cash payment. The check envelope canes back to Kaiser from the bank just as ordinary checks do.

* Multiple-purpose requisition:

Requisitioners indicate the type of material and quantity needed by simply filing in a multiple-copy snapout form that serves all purposes in the order cycle. The requisitioner then removes one copy of the form for his records and sends other copies to the buyer, to finance, and to accounts payable. The order is placed orally, no invoice is needed. As soon as the item is delivered, a check is issued to the vendor. This system is used for items with values under $2,000. No price changes, partial deliveries or substitution are permitted.

E. Conclusions and recommendations.

From the analysis presented, it appears that consolidation of the NAVVO method would yield savings from reduced labor and large quantity discount purchases. However, because of high costs associated with longer lead times, a planning and forecasting unit should be established to monitor demand from user departments and supply performance. , thus minimizing the effect of the consolidation. It should be noted that longer lead times are costly only when they are unknown, since lead times can be integrated into planning and operations. The large amount of paperwork associated with this method is unjustified and should be reduced by simplification of the ordering and paying process.

Therefore we recommend the following actions:

(1) Simplification of the non agreement VVO method of procurement. Two alternatives were suggested, the purchase order draft and the multiple-purpose requisition. County officials can select the one that best fits the County's needs.

(2) Establishment of a planning/forecasting/value analysis unit in purchasing to help set the foundation for more rational and economic buying and also develop historical data on consumption in anticipation of future automation of the process.

(3) Consolidation of the Non-agreement VVO method in DPS. This alternative should yield savings in numerous areas: labor, large quantity discounts and lead time costs represented by overstockage. But successful consolidation can only be implemented in conjunction with the above recommendations (1) and (2).

Epilogue: the argument for automation.

The information given was insufficient to make judgement about the alternative of a fully automated on line system for the procurement function. In the long run, however, as a means for labor savings, efficiency and control improvement, it is conceivable to establish a fully automated purchasing system within the County. This system

will share hardware and software with other functions such as accounting, finance, inventory control and payroll etc. The initial investment would be too high relatively to potential benefits for a single function but can be justified if shared with other functions in the County. This investment would yield high returns for many generations to cane. The most admired purchasing systems in the private sector at the present time are those of General Motors and Ford Corporations. Incidentally, both systems were decentralized when first set up but both were centralized in the seventies. They were both entirely automated after the centralization with sophisticated material requirements planning support Systems. These examples are comparable to the County of Los Angeles because of the scale involved and large number of user departments as well as the diversity of types of items purchased.

## VI. INVENTORY MANAGEMENT

### A. Overview

Although inventory management is primarily the duty of lower level management, and is not considered an important function by top County administrators, the need to maintain a large and diversified inventory for all of the fifty-eight County departments makes it an area to which a large amount of resources are devoted. The County's inventory includes more than 10,000 items with a total value of about $40 million, and the annual usage value for the County is estimated to be about $100 million [1]. The County has 2032 warehouses and storage rooms, occupying a total area of 3,321,895 square feet [2].

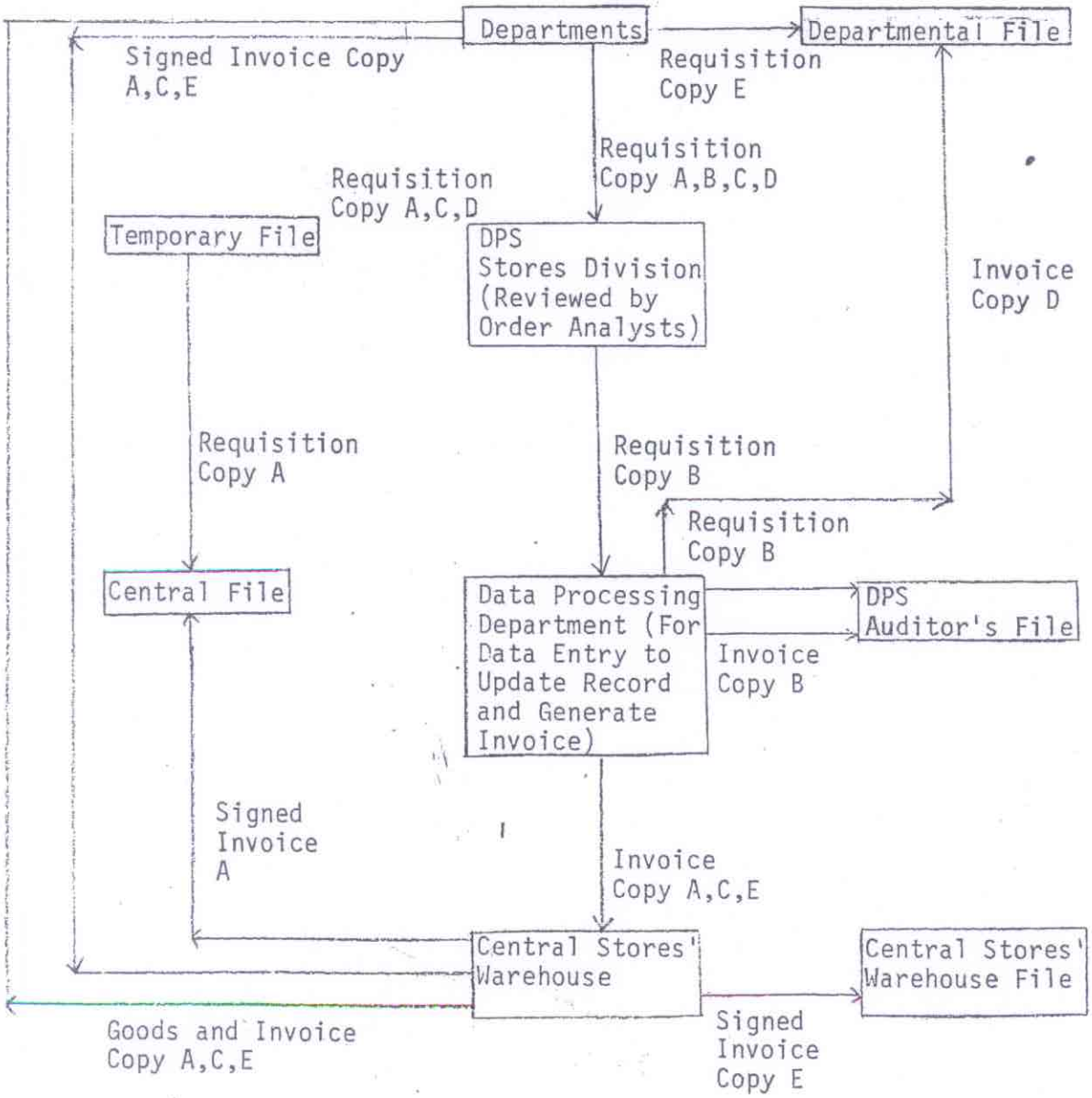
The purpose of this section is to review the inventory management function within the seven general services departments, and to determine whether any cost savings can be achieved through consolidation of the function. The review concentrated on the inventory management system, identifying its components, inputs, outputs, and processes. The study further determines the degree of stores usage centralization, evaluates system performance, and estimates the potential benefits of consolidation.

### B. Inventory Levels and Inventory Management Systems

The central stores warehouse of the Department of Purchasing and Stores (DPS) stores 20% of the total County inventory [3]. Its 282,000 square feet of warehouse area represents 8.5% of the total County warehouse area, and it stocks about 8,400 items. Items stocked include goods such as food, furniture, office supplies, and miscellaneous other items needed to operate County facilities. Goods are supplied to other departments according to their requisitions. The average central stores warehouse inventory is $8.5 million, and

the annual gross issue from the central warehouse is about $36 million. Shipments from the central stores warehouse to up to 2400 County facilities are handled by twenty trucks [4].

A unified and internally consistent inventory classification and stock coding system is used throughout the County. Stock items are classified into 57 classes with the first two digits of each item code indicating the stock class. The name, dollar value, and number of items in each class are shown in appendix VI-1.



Replenishment of central stores warehouse items is handled by order analysts who make decisions on how much, and when to buy items. Factors involved in these replenishment decisions include usage forecasting, lead times, and reorder points and quantities. The DPS automated inventory control system aids in inventory management, generating up to 144 different kinds of reports daily, weekly, monthly, or on request. The Stores Division work process is shown as follows.

In addition to the central stores warehouse in the DPS, each of the other six general services departments maintain their own departmental inventories. The departments manage their inventories independently, stocking items through requisitions issued to the Purchasing Division of the DPS for purchase and direct shipment of items to their warehouse(s), or requisitions to the Stores Division of the DPS for replenishment of centrally stored items. Additionally, departments can in some instances purchase and store items without interface with the DPS. The degree of usage centralization (defined as the percentage of items received from the central DPS stores warehouse versus direct delivery items) varies from 16 to 86%, with the weighted average being about 20%. Appendix VI-2 shows the average inventory value, number of stock items, and degree of usage centralization found in each of the seven general services departments.

The totals for the seven general services departments include an average inventory value of about $13,493,000 (34% of the average County inventory value), about 411,320 square feet of warehouse space (12.4% of the total County warehouse area), and 135 employees involved in inventory activities.

## C. Performance evaluation

Several factors make performance evaluation of County inventory management extremely difficult. These factors include:
1) County laws/rules governing purchasing are extremely stringent and process inhibiting. As such the lead times cannot be compared

with those of private firm, and quantification of ordering costs are difficult to calculate.

2) The public/non-for-profit nature of County governance make output measures difficult to quantify, and shortage costs of given items difficult to estimate.

Recognizing the difficulties mentioned above, the performance evaluation criteria were nonetheless developed for the factors of cost (holding and ordering) and service quality (lead time and level)

Holding costs (Cv) are usually estimated as:

$$Cv = r \times Va,$$

where Va equals the average inventory value and r is the inventory holding charge. The Stores Division uses the figure r=0.25 per year in the inventory control calculation. Checking this figure against DPS and the Mechanical Departments data, this estimate was found to be reasonable [5] (Appendix VI-3 and VI-4). It should be noted, however, that this r=0.25 figure is greater than the r=0.2 per year value commonly used in private industry inventory control calculations [6]. The County's higher r-value is due primarily to higher labor costs. Using r=0.25, the holding cost for the DPS Stores Division is found to be about $8,500,000 x 0.25=$2,125,000, and for the whole County Government, about $40,000,000 x 0.25=$10 million. Under this fixed r value, the holding cost is entirely a function of average inventory value (Va). This however, leaves the question of how to evaluate the appropriateness of an average inventory level under varying circumstances unsolved, and subject to the basic inventory policy.

The Inventory Policy Index (IPI) performance measure [7] was used to gauge the effectiveness of basic inventory policies, and the overall quality of the inventory management system. From a sample of 125 DPS Central Stores Warehouse stock items (see appendix VI-5 for procedure) only 50 items (40.0%) were found to be in the regular range, with 21 items (16.8%) under and the remaining 54 items (43.2%) over the regular range (see appendix VI-6 for this data).

"Regular” in this case, is defined as what DPB order analysts consider acceptable according to the current inventory policy. We found that 43.2% of the items have exhausting time which exceed twenty months (see Appendix VI-7). Insofar as private industry exhausting times rarely exceeds 6 months, an inventory policy which tolerates 20 months should be considered unnecessarily conservative [7].

Ordering costs include the costs associated to order approval, order placement, shipment, receipt of order, incoming inspection and billing. Given that these costs are difficult to sum, ordering costs (Cp) are estimated as:

$$Cp = p \times N,$$

where p is the average cost per order and N is the number of orders issued annually.

Because of a lack of data to determine otherwise, the following calculations will use the figure of p = $30 per order that is used by the DPS Stores Division for its inventory control calculations. With a fixed p value, ordering costs become a function of N. Last year, DPS issued about 15,000 replenishing purchase orders and a total of 134,562 purchase orders [8] (also see Appendix VI-8). Thus, the annual ordering cost for replenishing the inventory in Stores Division is estimated to be about $450,000, and about $1.7 million Countywide [9].

Conceivably, order cost savings would result if increased order quantities reduced the number of orders (N). However, given an absence of criteria to evaluate the appropriateness (whether orders can wait to be aggregated into larger orders) of orders, it is difficult to determine whether such savings could be achieved.

The service quality of an inventory management system is generally evaluated in terms of lead time and service level. Lead time is defined as the time interval from issuance of a requisition to the receipt of the requested goods. For the DPS Stores Division, the further distinction between the external lead time (the time from the initial order to the IPS Purchasing Division to the receipt

of the goods in the DPS Central Stores Warehouse) from the in internal lead time (the time from receipt of a department's requisition to delivery of these goods to that department) was made. External lead time includes the time in issuing a purchase order to a vendor (tl) and the time for shipment from the vendor to the DPS Central Stores Warehouse (t2) Typically, for an item ordered from a contracted vendors, the bidding selection of a vendor increases tl to about 30 days and t2 to 60 days, and the total external lead time to about 90 days. Historically, the average total external lead time has been about 45 days.

Internal lead time includes the filling time (time from receipt of requisition to when the goods are ready for shipment) and the delivery time. Filling times are typically 3 days and the delivery times range from 1 to 7 days, subject to the delivery schedule. Thus, internal lead times range from 4 to 10 days. Historically, the average internal lead time has been 5 days.

Service level, defined as the percentage of time that the users' requisitions can be satisfied, is usually expressed as (100-backorder percentage). Appendix VI-9 shows the DPS Stores Division backorder percentages and service levels for each item class. The average service level was found to be 95%. Because warehouses maintained by other departments generally keep large safety stock levels, the Stores Division service level does not influence the service level of the other departments (see Appendix VI-10).

## D. Potential Inventory Control Consolidation Benefits

Although the unique characteristics of public administration prevent comparison of the County's inventory management with that of private industry, the sample finding that about 43.2% of all items are overstocked (see appendix VI-6), in and of itself indicates that the system can be improved. An analysis and estimate of potential consolidation benefits follows. Reduced inventory levels and associated inventory support can be effected through centralization of the inventory management

system. With an integrally consolidated inventory management system, the DPS Inventory Policy Index (IPI) can be adjusted, and departmental safety stock levels maintained according to the total inventory within the County as a whole. Using IPI levels suggested for private industry [7], if DPS adjusted its warehouse levels such that IPIs were maintained at 10% under, 80% regular, and only 10% over regular levels the effect of such a policy change on the IPS inventory levels (which represents about 20% of total County inventory,) would be a decrease of about 20% [10]. Additionally, centralized management of inter-departmental inventory safety stock levels would allow for a demand smoothing decrease in County inventory levels for the rest of the County of perhaps 10% [11]. Thus, the overall County inventory level would be reduced by about 12% ([20% x 0.20] + [10% x 0.80]).

The effect of this 12% inventory reduction can be determined when it is reconciled with the average County inventory level of $40 million, the labor/inventory level, and the warehouse area/inventory level ratios. For this study, the respective labor and warehouse area per inventory level ratios were determined for the seven general services departments (see appendix VI-II). These departments vary in degree of capital intensity and encompass a wide range of departmental sizes. As such, they can be considered representative of the County, and the ratios determined from them, applicable to the County as a whole. Given the average labor/inventory level ratio of 10 positions per $1 million inventory value, County labor position savings can be calculated as 12% x $40 million x 10 positions/$1 million = 48 inventory related positions. And with an average warehouse area/inventory level ratio of 29,500 square feet per $1 million inventory value, County warehouse area savings would be 12% x $40 million x 29,500 square feet/$1 million = 141,600 square feet. Thus, centralization of the inventory management system would allow for County reductions of 12% in inventory levels, 48 inventory related manpower positions, and about 141,600 square feet of warehouse area. We must emphasize that these savings can be achieved only if an integrated inventory management system is established.

On a more non-quantifiable and qualitative level, benefits can also conceivably be realized through better control of the system, fewer reorders, and discounts associated to larger reorder quantities. The costs associated to centralization would relate primarily to the adaptation and unification of the existing decentralized systems.

E. Recommendations

Consolidation of inventory management systems has been defined as the centralization and linkage of the inventory management systems currently existing within Individual departments. Study recommendations are as follows:

1) Set up a unified inventory management policy and unified inventory management strategy guidelines.
2) Numerically quantify values for variables such as holding charge (r), cost per order (p), desired service level, desired lead time, and cost associated to order expedition according to the unified inventory management policy.
3) Improve demand forecasts and determine the mean absolute deviation of forecast errors.
4) Implement the policy that items with commonality of use for more than one department must be stocked and issued from the DPS Central Stores Warehouse. This would allow for buying economies of scale, and reduce the total inventory levels of those items through integration of safety stock levels.
5) In order to realize consolidation benefits indicated possible n the previous section, centralization of the inventory management system is required. To facilitate the design of this centralized system, a detailed study of all existing departmental inventory management systems within the County should be completed. The task force conducting this study should include system analysts and inventory managers.

## VII. CONCLUSION

In this study, the economic impacts of reorganizing the seven general services departments into a single consolidated entity have been examined. More specifically, scale economies realizable through reduced duplication in labor, systems, and equipment and facilities needs have been systematically identified and analyzed.

With regard to labor economies, it was found that duplicated job classifications and functions do exist within the seven departments. Given these redundancies, consolidation of the seven into a single larger entity will result in smoothing of operational demands and decreased excess capacity necessary for the duplicated functions. The number of positions that will be saved however, cannot be quantified at this time, as differences in how the functional work processes are structured across the seven departments preclude such estimation.

The duplicated functions found were specifically adapted to individual department needs, with each department claiming the necessity of doing things in its own idiosyncratic way. As long as these redundant functions are structurally differentiated, regardless of consolidation, operational demands for the functions will remain constant and "unsmoothable", and labor economies of scale will be difficult to realize. It is however, not clear that the existing department specific work structures are necessary.

Indeed, that work structures are not presently standardized is probably attributable more to entropy (the natural tendency for objects to seek randomness) and the fact that there has never been a requirement for uniformity, than to the necessity for differentiation. Consolidation would require the restructuring of jobs into more uniform systems, thus eliminating the quirks that presently differentiate functions between departments just enough to inhibit the immediate realization of labor economies of scale.

Examining scale economies realizable through standardization of automated systems, three systems were identified. For each of these

systems, integration and standardization would eliminate redundant system development and maintenance costs. But in addition to these universal savings, system specific benefits can be identified for each of the three systems. First, the FIRMS accounting system was found to be under-publicized in its capabilities, and given no requirements for departments to consider its utilization, also under-utilized. More extensive use of FIRMS would allow for integration of intra-departmental accounting with the aggregate data supplied to the CAO. This would allow for automated interface between these previously non-integrated systems, thus eliminating redundant data input and human error costs presently incurred due to manual reconciliation of data.

A second integrated system can be achieved through standardization of the three independent automated inventory control systems presently maintained by the Purchasing and Stores, Mechanical, and Data Processing departments. Benefits associated to standardization of these automated systems are linked to the scale economies realizable through consolidation of inventory management and policies. These cost savings include decreased inventory levels, and the associated inventory handling personnel and warehouse facility space. Given centralization of inventory management, there are no extraordinary factors that would prohibit the standardization of the automated inventory control systems.

The third system examined was automated payroll and timekeeping. The County-wide savings that can be realized from standardization of this function are estimated through comparison of the County's front-end payroll handling costs against typical private industry payroll costs for a similar sized operation. These standardization savings estimates amounted to $11 million per year. It must be noted that standardization of the automated payroll Systems requires the simplification of the overly complex salary ordinance, and the plethora of non-systematic memoranda of understanding (MOUs). Such simplifications are not solely managerial issues. Rather, given the union interests in the salary structures, modification to the existing ordinance and MOUs become political issues. Whether these political hurdles can be overcome is subject to a lot of

negotiation. But if they are, the savings would amount to up to $11 million per year. Stated more appropriately, the cost of not addressing the standardization of payroll systems is about $11 million per year.

In analyzing the purchasing functions within the seven general services departments, it is apparent that the distributed purchasing prerogatives found outside of DPS can be further centralized within that department. The benefits that would result from this functional consolidation would be both in reduced procurement handling labor positions, and savings through discounts on larger quantity purchases. However, it must be cautioned that this further purchasing centralization would tend to increase necessary lead times and inventory shortages. To minimize these costs, better planning and forecasting of purchase requirements will be necessary. To accomplish this, a procurement planning and forecasting function must be established. And finally, in order to maximize and accelerate realization of the above mentioned benefits, the non-agreement various vendor ordering and paying processes must by simplified.

Standardization of County inventory management policies will lead to substantial cost savings. Integration of the County's presently independent inventory management systems will allow for centralized management of all County inventory. Such centralized management will allow for reductions in the total County inventory of about 12%. This reduction will release up to 48 related support positions, and free about 141,600 square feet of warehouse facility space.

Finally, the findings of this study are that there are substantive scale economies realizable through consolidation. However, in pursuing consolidation, the County must especially remember two lessons learned from previous consolidation efforts. First, it should be noted from the 1981 centralization of the Health Services custodial functions into the Building Services Department, that claims of differentiated departmental requirements for otherwise generic functions, are not always valid. Hospitals had

claimed that consolidation of its custodial function would not be feasible because the requirements for sanitary conditions in hospitals are different than those of other facilities. However, as proven by Building Services' effective takeover of the hospital custodial functions, those claimed differences are not as pronounced as Health Services believed. Indeed, by consolidating those functions within the larger Building Services custodial functions, scale economies of $1 million per year are realized. The lesson to be learned from this episode is that claims of the necessity of departmentally differentiated functions, such as accounting or truck delivery, cannot be considered prima facie cause for discounting consolidation. And relative to consolidation of the general services departments, the field study team found no extraordinary reasons why any of the identified duplicated functions cannot be consolidated.

The second lesson is that proper implementation of consolidation requires commitment to change and consideration of details such as differences in style. In the abortive (1971-1974) attempt to consolidate mental health with the other health services, professional (medical versus mental health) differences in treatment styles were initially overlooked, and as indicated by the absence of a compromise, the commitment to change was lacking. Future County consolidation efforts must avoid repeating those failings. With regard to the consolidation of the general services departments, care must be taken in addressing and integrating the managerial styles of each of the seven entities. And just as important, a willingness to make changes and compromises is necessary. This commitment must be shared by all individuals involved, ranging from the Board of Supervisors who will have to be patient in their expectations of cost savings, to the employees in the consolidated entities who must maintain open and cooperative minds in adapting to the work standardizations brought about by consolidation. With careful attention to details, and shared commitment to change, consolidation of the seven general services departments will not fail.

REFERENCES


Section I

[1] Los Angeles Times, Metro Section, pg. 1, May 3, 1983.

[2] Arrow, Kenneth J., The Limits of Organization, 1974. Williamson, Oliver E., Corporate Control and Business Behavior, 1970.

[3] Wilken, William H., The Impact of Centralization on Effectiveness, Economy, and Efficiency. (article in: Murphy, Warren, Organizing Public Services in Metropolitan America, 1974.)

[4] Reference found in: Alexander, Tom, Why Bureaucracy Keeps Growing, Fortune, May 7, 1979.

Section IV

[1] Steve Kemp, Senior Sales Representative, Bank of America Business Services Marketing.

[2] EDPAC Subcommittee County-wide Timekeeping and Personnel Interim Report, Sept. 16, 1982.

Section V

[1] Jergensen, Bob., Bendix's experience with a new purchasing philosophy. Purchasing Magazine. July 16, 1982. pp 82-85.

[2] Heinrizt, Stuart. Purchasing, Principles and applications. Second edition. New York Prentice Hall 1981. pp 52-56.

[3] Kudrna, D., Purchasing Manager's handbook. 3rd edition, Boston, Canners Books, 1982. pp 159-170.

Section VI

[1] Data received from a CAO Principal Administrative Analyst, indicated the average County inventory level to be about 40 million dollars, and the average County turnover rate to be 2.5. Thus, the annual usage value is about $100 million.

[2] April 27, 1983, CAO study.

[3] 1977 CAO study.

[4] DPS Stores Division 1982 Information Brochure.

[5] DPS Stores Division data indicates total expenditures to be $2,611,883 (approximately 80% of the total expenditure). Given that 60% of DPS Stores employees are involved in inventory processing, the cost of holding the inventory can be calculated as $2,611,883 x 60% /0.8 = $2 million. With the average inventory value in the Central Stores Warehouse being $8.5 million, "r" can then be calculated as r = 2/8.5 = 0.235.

[6] The total salaries of inventory holding related employees in the Mechanical Department was found to be $706,046, and its average inventory value was found to be $3.56 million.
So, for the Mechanical Department, r can be calculated as

r = 706,046/3,560,000 = 0.251.

Given these two estimates of r = 0.235 and r = 0.251, the general use of r = 0.25 is reasonable.

[4] Brown, R.G., Decision Rules for Inventory Management. Holt, Rinehart and Wiston, 1967, p.28.

[5] Higgins M.J.Jr., New Inventory Performance Measures, Production and Inventory Management, 1980, Third Quarter, p.11-15.

[6] Purchasing and Stores Department Operations Report, Mar.1983.

[7] The annual ordering cost for replenishing the inventory in the whole County government is estimated to be Annual Inventory Usage $100

[8] N x $30 x Annual Purchase Value = 134562 x $30 x $288 $1.4 million.

[9] This is estimated from the sample distribution chart in appendix VI-11.

[10] According to our survey, the average degree of centralization was found to be 20%, and the average service level was found to be over 99% for the departmental warehouses. Because the Central Stores' Warehouse has enough storage (usually over three months' usage) for replenishment of usage, the departmental storage could be viewed as excess safety stock. Thus, if departmental inventories were integrally managed in conjunction with that, of the Central Stores Warehouse, the departmental inventory levels could be reduced by perhaps 20% x 1/2 = 10%.

# BUILDING SERVICES

| | | |
|---|---|---|
| **Legal Authority:** | County Administrative Code, Ordinance 4000, Art. XIII, Sections 961-963 | |
| **1981-82 Budget:** | Gross Appropriation | $31,263,803 |
| | Net County Cost | 12,101,802 |
| **Budgeted Personnel:** | 1,464.9 | |

## FUNCTIONS:

Maintains a safe and sanitary working environment for County employees and the general public and preserves the County's capital investment by providing custodial cleaning maintenance, window washing, lighting fixture cleaning, pest extermination, carpet cleaning, elevator operator services, and parking lot cleaning in and immediately adjacent to County facilities, which include both office buildings and hospitals.

Reviews County-owned and leased facility plans to assure adequacy of custodial space and the installation of low-maintenance materials, including, but not limited to, floor and wall coverings, restroom fixtures, handplates and kickplates on restroom doors, ceiling and lighting fixtures, recessed entrance floor matting and window installation.

Continuously reviews modern custodial maintenance systems, procedures, and devices to assure their application in the most cost-effective means possible.

Consults with the Board of Supervisors, Chief Administrative Officer and affected department heads on the application of modern, efficient custodial management systems, procedures, and devices as required to meet County needs.

## CUSTODIAL SERVICES DIVISIONS:

Provide the full range of custodial related services in over 400 County-owned and leased buildings in the Los Angeles Civic Center and outlying areas.

Special Services: Provides a variety of specialized services, including lighting fixture and parking lot cleaning, window washing, pest extermination and elevator operator services for manual and selected automatic elevators.

## ADMINISTRATIVE SERVICES DIVISION:

Provides staff support services including budget preparation and control, internal auditing, equipment inventories and repair, personnel management, training, planning, payroll, procurement, warehousing, accounting, and testing and evaluation of new equipment.

# COLLECTIONS

| | | |
|---|---|---|
| **Legal Authority:** | Welfare and Institutions Code, Sections 903 914, 11457-11487<br>Penal Code, Section 987.4 | |
| **1981-82 Budget:** | Gross Appropriation<br>Net County Cost | $11,864,888<br>3,153,495 |
| **Budgeted Personnel:** | 481.2 | |

## FUNCTIONS:

Provides centralized collection services for current and/or delinquent accounts receivable to all County departments except the Treasurer-Tax Collector; develops and maintains centralized billing and collection systems for departments; provides cash management controls for revenue due the County for subvented programs; and recommends new revenue sources. Also performs the Court Trustee function of collecting child support payments.

## ADMINISTRATIVE SERVICES BRANCH:

Provides personnel, payroll and staff services functions.

BILLING DIVISION: Receives, evaluates and inputs required data to generate automatic billing account statements. Provides program support services to Department collection divisions.

## COLLECTIONS BRANCH:

COURT TRUSTEE DIVISION: Bills, collects, and disburses all child support and domestic relations payments, and refers delinquent payors to the District Attorney.

PUBLIC SERVICES DIVISION: Handles all public generated inquiries related to current billings; interviews clients to determine ability to pay, payment plans and potential third party payors.

SPECIAL ACCOUNTS DIVISION: Pursues collection of specialized service related accounts; files suits against debtors for all accounts; prepares accident compromise referrals for Board approval.

DELINQUENT ACCOUNTS DIVISION: Responsible for generating contact with clientele on delinquent accounts.

## TECHNICAL SERVICES BRANCH:

FISCAL SERVICES DIVISION: Maintains centralized accounting records; transfers trust fund collections to originating referral departments.

SYSTEMS DIVISION: Develops new systems and coordinates all data processing activities with the Department of Data Processing. A Revenue Task Force reviews and audits county-wide collection programs and makes recommendations to improve revenue collections.

# COMMUNICATIONS

| | | |
|---|---|---|
| **Legal Authority:** | Administrative Code, Article XXIV, Sections 324-330 | |
| **1981-82 Budget:** | Gross Appropriation | $21,740,534 |
| | Net County Cost | 10,571,258 |
| | Telephone Utility | 486,675 |
| **Budgeted Personnel:** | 648.9 | |

**FUNCTIONS:**

Responsible for planning, installing and maintaining communications equipment purchased for all County departments. In addition to the functions described below, the department manages the Telephone Utility appropriation for the County.

**TELEPHONE AND MAIL SERVICES BRANCH:**

TELEPHONE OPERATIONS & MAIL SERVICES DIVISION: Staffs all switchboard locations and handles County mail between approximately 456 County facilities.

TELEPHONE SERVICES DIVISION: Responsible for the planning, installation and order activity on 55,000 telephones in the County system; provide training to user departments in all types of telecommunication equipment.

TELEPHONE FACILITIES DIVISION: Handles capital projects and orders telecommunications equipment. Works closely with the Telephone Company and vendors of communication equipment.

TELEPHONE ENGINEERING DIVISION: Designs and engineers systems; and engineers, constructs and maintains outside plants.

**TELECOMMUNICATIONS ENGINEERING SYSTEMS BRANCH:**

PUBLIC SAFETY AND GENERAL GOVERNMENT SYSTEMS ENGINEERING DIVISION: Responsible for systems engineering of major projects, such as Sheriff, Fire, and Paramedics.

TRANSMISSION, DATA, FACILITIES ENGINEERING DIVISION: Provides design and engineering activities of microwave, digital data, and communications facilities.

shop services.

TRANSMISSION SYSTEMS MAINTENANCE DIVISION: Installs and maintains various transmission systems.

AUDIO/VIDEO TEST SYSTEMS MAINTENANCE DIVISION: Installs and maintains audio and video equipment.

**MANAGEMENT SYSTEMS AND ADMINISTRATIVE SUPPORT BRANCH:**

FISCAL AND BUDGET SERVICES DIVISION: Handles all budget matters and fiscal transactions.

CONTRACT SERVICES DIVISION: Represents the County before the FCC, PUC, and other agencies; coordinates contracts and grants.

MANAGEMENT INFORMATION SYSTEMS DIVISION: Prepares and analyzes management information.

PERSONNEL & PAYROLL ADMINISTRATION: Maintains employee records, recruitment, training, safety programs and payroll.

# DATA PROCESSING

| | | |
|---|---|---|
| **Legal Authority:** | Administrative Code, Sections 1370-1375 | |
| **1981-82 Budget:** | Gross Appropriation | $73,429,642 |
| | Net County Cost | 916,916 |
| **Budgeted Personnel:** | 1426.5 | |

**FUNCTIONS:**

Responsible for the planning, acquisition, installation, maintenance, programming, operation and custody of all data processing and data communications systems and equipment.

**OPERATIONS BRANCH:**

Provides computer processing and data conversion services to County departments.

**SYSTEMS AND PROGRAMMING BRANCH:**

Conducts feasibility studies for new application areas, designs and implements new data processing systems, and implements mandatory and emergency maintenance programming modifications for production applications.

**TECHNOLOGY BRANCH:**

Provides technical direction and systems programming support to the other branches, and ensures that each system utilizes technically correct and up to date technology.

**ADMINISTRATIVE SERVICES:**

Provides contract administration, office systems automation, and support staff functions to the Department and recommends policies to management in fiscal, personnel and other related areas.

# MECHANICAL

| | | |
|---|---|---|
| **Legal Authority:** | County Administrative Code, Art. XIV, Sections 212-218 | |
| **1981-82 Budget:** | Gross Appropriation | $85,881,688 |
| | Net County Cost | 36,205,209 |
| **Budgeted Personnel:** | 1,799.2 | |

## FUNCTIONS:

Maintains, repairs, and makes alterations to County-owned and leased facilities; performs construction within legal limitations; maintains and repairs County automotive vehicles; maintains and repairs business machines and office furniture; moves County departments; provides building security service; operates public and employee parking lots; and pays utility bills for general County functions.

## EXECUTIVE AND STAFF ACTIVITIES:

Establishes and enforces Department's administrative and operating policies; maintains liaison with other County Departments and other jurisdictions; evaluates Department's operating effectiveness, making changes as needed; prepares annual budget request; operates Department's personnel program, conducts the safety program for Department employees and facilities; operates a construction standards program; maintains payroll records.

## BUSINESS AND BUDGET & MANAGEMENT SERVICES DIVISION:

Maintains accounting control over budget appropriation, material and property inventory; provides cost accounting system for craft and automotive services; issues work orders; pays County's utilities bills, prepares requisitions for services, supplies and equipment; participates in preparation of annual budget request.

## BUILDING CRAFTS DISTRICT, SUPPORT AND TECHNICAL SERVICES DIVISIONS:

Provides craft maintenance and repair services for County buildings and equipment; performs craft construction, fabrication and alteration; services and repairs office furniture,

## PARKING SERVICES & SECURITY SERVICES DIVISIONS:

Regulates and operates County employee and public pay parking lots at County facilities; provides building security for main County facilities.

## BUSINESS MACHINES SERVICES DIVISION:

Services and repairs office and business machines for all County departments; operates a pool loan machine service; evaluates machine purchase order bids; makes recommendations for machine replacements.

## POWER PLANT DIVISON:

Operates the Central Heating and Refrigeration Plant in the Civic Center and 13 smaller plants at various locations, providing heating, cooling and hot water to County facilities.

## STORES & PROCUREMENT DIVISIONS:

Operates and stocks a central material warehouse and 4 branch warehouses; operates a tool room for Departmental crafts personnel.

# PERSONNEL

| | | |
|---|---|---|
| **Legal Authority:** | County Charter, Sections 22 3/4, 32, 35 and 36.<br>County Administrative Code, Sections 22.5, 160 and others | |
| **1981-82 Budget:** | Gross Appropriation | $15,752,083 |
| | Net County Cost | 5,829,943 |
| **Budgeted Personnel:** | 452.4 | |

## FUNCTION:

Administers a comprehensive Civil Service system with the fundamental purpose of assisting the Board of Supervisors, the Chief Administrative Office and County Departments and districts to obtain, develop, utilize and retain an effective and efficient workforce.

## DIRECTOR OF PERSONNEL:

Has immediate charge of the Department of Personnel, which administers programs of position classification, recruitment, selection, performance evaluation, training, discipline, occupational health and safety, workers' compensation, employee health and life insurance.

## CLASSIFICATION/COMPENSATION OPERATIONS BRANCH:

Provides a system of position classification which is the basis for equitable selection, compensation and management of employees. Classifies positions on the basis of duties and responsibilities. Prepares and revises duty statements and training and experience requirements. Assists Employee Relations in developing salary recommendations and in negotiations. Provides classification data used in negotiations. Administers the Employee Benefits Program.

## EMPLOYMENT AND TRAINING BRANCH:

EMPLOYEE DEVELOPMENT DIVISION: Assists departments in ensuring that employees are trained to work at their maximum capability, by means of such programs as management and organizational development, performance evaluation, apprenticeship, conferences and institutes, and tuition reimbursement. Coordinates the County's participation in federally-funded employment opportunity programs.

EMPLOYEE PLACEMENT DIVISION: Develops, administers and coordinates placement programs designed to secure well-qualified persons for employment or promotion. Recruits, screens and tests applicants. Maintains resulting lists of eligibles and refers them to County departments.

APPEALS DIVISION: Resolves promptly and equitably, complaints and appeals related to the selection process. Investigates and resolves complaints filed against the County alleging violations of civil rights and assists in the defense of those proceeding to litigation. Identifies ways in which the selection process can be improved and prepares proposals for their implementation.

## WORKERS' COMPENSATION BRANCH:

CLAIMS DIVISION: Investigates workers' compensation claims and determines the County's liability for all alleged job-related injuries and illnesses. Provides statutory workers' compensation benefits for all injury claims determined to be job-related. Defends questionable claims and pursues subrogation recoveries from negligent third parties.

## OCCUPATIONAL HEALTH SERVICE:

Conducts pre-employment and periodic medical exams, and medical reevaluations. Provides cardiopulmonary laboratory services. Administers an Employee Assistance Program and provides psychological reevaluations.

## SAFETY, REHABILITATION AND COST CONTROL DIVISIONS:

Coordinates vocational rehabilitation/return-to-work programs for employees in compliance with State law. Provides fiscal control over all expenditures from the Workers' Compensation Trust Fund. Gathers and analyzes injury statistics and develops medical standards. Investigates and recommends programs to prevent occupational illnesses resulting from work contacts with toxic materials or hazardous environments. Coordinates County safety and health/disease/injury prevention programs.

# PURCHASING AND STORES

| | | |
|---|---|---|
| **Legal Authority:** | Government Code, Sections 25500, 25501<br>County Administrative Code, Sections 2001-2722<br>County Charter, Art. IV, Section 14 | |
| **1981-82 Budget:** | Gross Appropriation | $10,453,532 |
| | Net County Cost | 5,671,500 |
| **Budgeted Personnel:** | 306.0 | |

**FUNCTIONS:**

**PURCHASING DIVISION:**

Leases or purchases goods and certain services at the lowest possible cost for the continued operation of all County programs.

**STORES DIVISION:**

Receives, stores and delivers supplies County-wide to maintain optimum inventory levels, and conducts sales of surplus equipment.

**PRINTING DIVISION:**

Provides printing and duplicating services for County departments and special districts.

**ADMINISTRATIVE SERVICES DIVISION:**

Provides administrative support to the above divisions through the following major functions:

- Executive Office
- Management Services
- Personnel/Payroll
- Fiscal Services
- Special Audit Services
- Traffic Section

| | DEPT | CLASS NUM | SALARY ORDINO | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 1) | B S | 0048A | 11 | 11. | PEST EXTERMINATOR |
| 2) | B S | 0049A | 1 | 1. | PEST EXTERMINATOR SKG SUPVR |
| 3) | B S | 0577A | 1 | -0- | ACCOUNT CLERK I |
| 4) | COLL | 0577A | 9 | 8.5 | ACCOUNT CLERK I |
| 5) | COMM | 0577A | 8 | 6. | ACCOUNT CLERK I |
| 6) | D P | 0577A | 3 | 2. | ACCOUNT CLERK I |
| 7) | MECH | 0577A | 3 | 3. | ACCOUNT CLERK I |
| 8) | P S | 0577A | 1 | 1. | ACCOUNT CLERK I |
| 9) | COLL | 0578A | 15 | 9. | ACCOUNT CLERK II |
| 10) | COMM | 0578A | 3 | 3. | ACCOUNT CLERK II |
| 11) | D P | 0578A | 2 | 2. | ACCOUNT CLERK II |
| 12) | MECH | 0578A | 21 | 19. | ACCOUNT CLERK II |
| 13) | P S | 0578A | 2 | 2. | ACCOUNT CLERK II |
| 14) | COLL | 0642A | 1 | 1. | ACCOUNTING TECHNICIAN I |
| 15) | COMM | 0642A | 2 | 1. | ACCOUNTING TECHNICIAN I |
| 16) | D P | 0642A | 5 | 4. | ACCOUNTING TECHNICIAN I |
| 17) | MECH | 0642A | 2 | 1. | ACCOUNTING TECHNICIAN I |
| 18) | PERS | 0642A | 1 | 1. | ACCOUNTING TECHNICIAN I |
| 19) | PERS | 0642N | 2 | 1.5 | ACCOUNTING TECHNICIAN I |
| 20) | B S | 0643A | 1 | 1. | ACCOUNTING TECHNICIAN II |
| 21) | COLL | 0643A | 2 | 1. | ACCOUNTING TECHNICIAN II |
| 22) | COMM | 0643A | 2 | 2. | ACCOUNTING TECHNICIAN II |
| 23) | MECH | 0643A | 8 | 6.5 | ACCOUNTING TECHNICIAN II |
| 24) | B S | 0647A | 1 | 1. | ACCOUNTANT II |
| 25) | COLL | 0647A | 1 | 1. | ACCOUNTANT II |
| 26) | COMM | 0647A | 1 | 1. | ACCOUNTANT II |
| 27) | D P | 0647A | 2 | 2. | ACCOUNTANT II |
| 28) | MECH | 0647A | 4 | 4. | ACCOUNTANT II |
| 29) | P S | 0647A | 1 | 1. | ACCOUNTANT II |
| 30) | PERS | 0647A | 1 | 1. | ACCOUNTANT II |
| 31) | B S | 0648A | 1 | 1. | ACCOUNTANT III |
| 32) | COLL | 0648A | 2 | 1. | ACCOUNTANT III |
| 33) | D P | 0648A | 1 | 1. | ACCOUNTANT III |
| 34) | MECH | 0648A | 1 | 1. | ACCOUNTANT III |
| 35) | MECH | 0656A | 2 | 2. | ACCOUNTING OFFICER I |
| 36) | COMM | 0657A | 1 | 1. | ACCOUNTING OFFICER II |
| 37) | MECH | 0658A | 1 | 1. | ACCOUNTING OFFICER III |
| 38) | COLL | 0661A | 1 | 1. | FISCAL OFFICER I |
| 39) | D P | 0661A | 1 | 1. | FISCAL OFFICER I |
| 40) | MECH | 0665A | 1 | 1. | ACCOUNTING SYSTEMS TECHNICIAN |
| 41) | COLL | 0666A | 3 | 3. | SENIOR ACCOUNTING SYSTEMS TECH |
| 42) | COLL | 0708A | 1 | 1. | CHIEF, FISCAL SERVICES, COLLECTIONS |
| 43) | PERS | 0721A | 1 | 1. | WORKERS' COMPENSATION FUND MANAGER |
| 44) | COMM | 0735A | 2 | 1. | INVENTORY CONTROL ASSISTANT I |
| 45) | D P | 0735A | 1 | 1. | INVENTORY CONTROL ASSISTANT I |
| 46) | MECH | 0735A | 1 | 1. | INVENTORY CONTROL ASSISTANT I |
| 47) | P S | 0735A | 2 | 2. | INV CONTROL ASST I |
| 48) | P S | 0736A | 1 | 1. | INV CONTROL ASST II |
| 49) | MECH | 0739A | 1 | 1. | SENIOR INVENTORY CONTROL ASSISTANT |
| 50) | P S | 0739A | 1 | 1. | SR INV CONTROL ASSISTANT |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 51) | P S | 0741A | 1 | 1. | HEAD, INVENTORY CONTROL |
| 52) | P S | 0759A | 2 | 1.5 | ASST CHIEF, PRINTING SERVICES |
| 53) | COLL | 0879A | 2 | 2. | SYSTEMS & WORK MEASMT ANALYST I |
| 54) | MECH | 0879A | 1 | -0- | SYSTEMS & WORK MEASMT ANALYST I |
| 55) | P S | 0879A | 1 | 1. | SYSTEMS & WK MEASMT ANALYST I |
| 56) | COMM | 0880A | 2 | 1. | SYSTEMS & WORK MEASMT ANALYST II |
| 57) | D P | 0887A | 1 | 1. | ADMIN ASSIST I |
| 58) | B S | 0888A | 1 | 1. | ADMINISTRATIVE ASSISTANT II |
| 59) | COLL | 0888A | 1 | 1.0 | ADMINISTRATIVE ASSISTANT II |
| 60) | COMM | 0888A | 4 | 1.7 | ADMINISTRATIVE ASSISTANT II |
| 61) | D P | 0888A | 5 | 3. | ADMINISTRATIVE ASSISTANT II |
| 62) | MECH | 0888A | 5 | 3. | ADMINISTRATIVE ASSISTANT II |
| 63) | COLL | 0891A | 1 | 1. | ADMINISTRATIVE ASSISTANT III |
| 64) | COMM | 0891A | 1 | 1. | ADMINISTRATIVE ASSISTANT III |
| 65) | D P | 0891A | 3 | 3. | ADMINISTRATIVE ASSISTANT III |
| 66) | MECH | 0891A | 4 | 3. | ADMINISTRATIVE ASSISTANT III |
| 67) | P S | 0891A | 1 | 1. | ADMINISTRATIVE ASSISTANT III |
| 68) | B S | 0895A | 1 | 1. | SUPVG ADMINISTRATIVE ASSISTANT I |
| 69) | D P | 0897A | 2 | 2. | SUPVG ADMINISTRATIVE ASST II |
| 70) | MECH | 0897A | 1 | 1. | SUPERVISING ADMINISTRATIVE ASSISTANT IIM |
| 71) | P S | 0906A | 1 | -0- | STAFF AID |
| 72) | P S | 0907A | 3 | 3. | SENIOR STAFF AID |
| 73) | COMM | 0909A | 2 | -0- | STAFF ASSISTANT I |
| 74) | MECH | 0909A | 2 | 2. | STAFF ASSISTANT I |
| 75) | B S | 0913A | 1 | -0- | STAFF ASSISTANT II |
| 76) | COLL | 0913A | 1 | 1. | STAFF ASSISTANT II |
| 77) | COMM | 0913A | 3 | -0- | STAFF ASSISTANT II |
| 78) | D P | 0913A | 2 | 2. | STAFF ASSISTANT II |
| 79) | MECH | 0913A | 2 | 1. | STAFF ASSISTANT II |
| 80) | P S | 0913A | 1 | 1. | STAFF ASST II |
| 81) | COLL | 0939A | 1 | 1. | HEAD, STAFF SERVICES |
| 82) | P S | 0952A | 1 | -0- | EXECUTIVE ASST, PURCHASING & STORES |
| 83) | COMM | 1005A | 1 | 1. | ADMINISTRATIVE DEPUTY, COMM |
| 84) | D P | 1043A | 1 | 1. | HD, BUDGET, FISCAL & MGT SVCS, D P |
| 85) | COMM | 1078A | 1 | 1. | HD, FISCAL AND MGT SVCS, COMMUNIC |
| 86) | MECH | 1081A | 1 | 1. | HEAD, BUDGET & MGMT SERVICES, MECHANICAL |
| 87) | B S | 1093A | 1 | 1. | HD, BUDG & FISCAL SERVS, BUILDING SERVS |
| 88) | B S | 1136A | 1 | 1. | CLERK |
| 89) | COLL | 1136A | 12 | 12. | CLERK |
| 90) | D P | 1136A | 31 | 1.33 | CLERK |
| 91) | D P | 1136B | 1 | -0- | CLERK |
| 92) | COLL | 1136C | 9 | -0- | CLERK |
| 93) | COLL | 1136E | 1 | -0- | CLERK |
| 94) | COLL | 1136F | 4 | -0- | CLERK |
| 95) | B S | 1138A | 1 | 1. | INTERMEDIATE CLERK |
| 96) | COLL | 1138A | 16 | 16. | INTERMEDIATE CLERK |
| 97) | COMM | 1138A | 15 | 8. | INTERMEDIATE CLERK |
| 98) | D P | 1138A | 16 | 8.67 | INTERMEDIATE CLERK |
| 99) | MECH | 1138A | 1 | -0- | INTERMEDIATE CLERK |
| 100) | P S | 1138A | 20 | 14.25 | INTERMEDIATE CLERK |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 101) | PERS | 1138A | 11 | 10. | INTERMEDIATE CLERK |
| 102) | COLL | 1140A | 1 | 1. | SENIOR CLERK |
| 103) | D P | 1140A | 3 | 2.5 | SENIOR CLERK |
| 104) | PERS | 1140A | 34 | 33. | SENIOR CLERK |
| 105) | COMM | 1167A | 3 | 2. | INVOICE CLERK |
| 106) | MECH | 1167A | 9 | 7. | INVOICE CLERK |
| 107) | COLL | 1174A | 5 | 5. | SUPERVISING CLERK |
| 108) | D P | 1174A | 1 | 1. | SUPERVISING CLERK |
| 109) | P S | 1174A | 3 | 3. | SUPERVISING CLERK |
| 110) | PERS | 1174A | 3 | 3. | SUPERVISING CLERK |
| 111) | COLL | 1176A | 2 | 2. | INTERMEDIATE SUPERVISING CLERK |
| 112) | COLL | 1179A | 4 | 3. | HEAD CLERK |
| 113) | P S | 1182A | 1 | 1. | CHIEF CLERK |
| 114) | PERS | 1211A | 4 | 4. | HD, CENTRAL RECORDS, PERSONNEL |
| 115) | PERS | 1212A | 1 | 1. | SUPVR, CLASS & COMP RECORDS |
| 116) | PERS | 1214A | 1 | 1. | SUPVR, OFFICE SVS, PERSONNEL |
| 117) | COLL | 1251A | 5 | 5. | CASHIER-CLERK |
| 118) | COLL | 1253A | 18 | 13. | CASHIER |
| 119) | MECH | 1253A | 2 | -0- | CASHIER |
| 120) | COLL | 1254A | 2 | 2. | INTERMEDIATE CASHIER |
| 121) | COLL | 1255A | 1 | 1. | SENIOR CASHIER |
| 122) | PERS | 1289A | 3 | 3. | EXAMINATION PROCTOR |
| 123) | PERS | 1289C | 6 | -0- | EXAMINATION PROCTOR |
| 124) | PERS | 1290A | 1 | -0- | SENIOR EXAMINATION PROCTOR |
| 125) | PERS | 1291A | 1 | 1. | HEAD EXAMINATION PROCTOR |
| 126) | MECH | 1328A | 2 | 2. | ASSISTANT PAYROLL CLERK I |
| 127) | B S | 1329A | 3 | 3. | ASSISTANT PAYROLL CLERK II |
| 128) | COLL | 1329A | 1 | 1. | ASSISTANT PAYROLL CLERK II |
| 129) | COMM | 1329A | 3 | 2. | ASSISTANT PAYROLL CLERK II |
| 130) | D P | 1329A | 5 | 5. | ASSISTANT PAYROLL CLERK II |
| 131) | MECH | 1329A | 6 | 5. | ASSISTANT PAYROLL CLERK II |
| 132) | P S | 1329A | 1 | 1. | ASSISTANT PAYROLL CLERK II |
| 133) | PERS | 1329A | 1 | -0- | ASSISTANT PAYROLL CLERK II |
| 134) | B S | 1334A | 1 | 1. | PAYROLL CLERK II |
| 135) | COLL | 1334A | 1 | 1. | PAYROLL CLERKII |
| 136) | D P | 1334A | 1 | 1. | PAYROLL CLERK II |
| 137) | P S | 1334A | 1 | 1. | PAYROLL CLERK II |
| 138) | PERS | 1334A | 1 | 1. | PAYROLL CLERK II |
| 139) | B S | 1338A | 1 | 1. | SUPERVISING PAYROLL CLERK I |
| 140) | COMM | 1338A | 1 | 1. | SUPERVISING PAYROLL CLERK I |
| 141) | D P | 1338A | 1 | 1. | SUPERVISING PAYROLL CLERK I |
| 142) | MECH | 1338A | 1 | 1. | SUPERVISING PAYROLL CLERK I |
| 143) | COMM | 1352A | 1 | -0- | STATISTICAL CLERK |
| 144) | PERS | 1352N | 4 | 3. | STATISTICAL CLERK |
| 145) | PERS | 1353A | 1 | 1. | SENIOR STATISTICAL CLERK |
| 146) | P S | 1373A | 2 | 2. | TRAFFIC RATE CONSULTANT |
| 147) | P S | 1374A | 1 | 1. | HEAD, TRAFFIC MANAGEMENT |
| 148) | P S | 1384A | 1 | 1. | TRAFFIC RATE CLERK |
| 149) | P S | 1385A | 1 | 1. | ASSISTANT TRAFFIC RATE CLERK |
| 150) | P S | 1386A | 1 | 1. | SENIOR TRAFFIC RATE CLERK |

APPENDIX IV-1: COMPUTER SORT (CONTINUED)

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 151) | PERS | 1394A | 1 | 1. | MEDICAL RECORDS DIRECTOR I |
| 152) | COLL | 1521A | 6 | -0- | CLCIMS INVESTIGATOR |
| 153) | COLL | 1522A | 1 | 1. | SUPERVISING CLAIMS INVESTIGATOR |
| 154) | COLL | 1527A | 40 | 11. | COLLECTIONS INVESTIGATOR I |
| 155) | COLL | 1528A | 61 | 56. | COLLECTIONS INVESTIGATOR II |
| 156) | COLL | 1529A | 12 | 11. | COLLECTIONS INVESTIGATOR III |
| 157) | COLL | 1533A | 5 | 4. | COLLECTIONS INVESTIGATOR IV |
| 158) | COLL | 1545A | 4 | 4. | ASST DIVISION CHIEF, COLLECTIONS |
| 159) | COLL | 1546A | 6 | 5. | DIVISION CHIEF, COLLECTIONS |
| 160) | COLL | 1547A | 3 | 3. | DEPUTY DIRECTOR, COLLECTIONS |
| 161) | COLL | 1548A | 1 | 1. | SPECIAL ASSISTANT COLLECTIONS |
| 162) | COLL | 1549A | 1 | 1. | CHIEF DEPUTY DIRECTOR, COLLECTIONS |
| 163) | COLL | 1550L | 1 | 1. | DIRECTOR OF COLLECTIONS |
| 164) | COLL | 1584A | 1 | 1. | INTERMEDIATE PROPERTY TITLE INVR |
| 165) | COLL | 1641A | 1 | 1. | REAL ESTATE INVESTIGATOR |
| 166) | PERS | 1652A | 26 | 26. | WORKERS COMP REP I |
| 167) | PERS | 1653A | 9 | 9. | WORKERS COMP REP II |
| 168) | PERS | 1656A | 5 | 50. | HEAD WORKERS' COMP REPRESENTATIVE |
| 169) | PERS | 1659A | 5 | 5. | CHIEF, WORKERS COMPENSATION REP |
| 170) | PERS | 1699A | 1 | 1. | STATISTICAL ANALYST |
| 171) | PERS | 1723A | 1 | 1. | EPIDEMIOLOGY ANALYST |
| 172) | P S | 1739A | 1 | -0- | ADDRESSING MACHINE OPERATOR |
| 173) | P S | 1760A | 1 | -0- | CALCULATING MACHINE OPERATOR |
| 174) | P S | 1762A | 3 | 2. | INTERMEDIATE CALCULATING MACH OPR |
| 175) | P S | 1764A | 1 | 1. | SENIOR CALCULATING OPERATOR |
| 176) | COLL | 1842A | 1 | 1. | DEPARTMENTAL PERSONNEL ASSISTANT |
| 177) | COMM | 1842A | 1 | 1. | DEPARTMENTAL PERSONNEL ASSISTANT |
| 178) | MECH | 1842A | 2 | -0- | DEPARTMENTAL PERSONNEL ASSISTANT |
| 179) | D P | 1843A | 2 | 2. | SENIOR DEPARTMENTAL PERSONNEL ASST |
| 180) | P S | 1843A | 1 | 1. | SENIOR DEPARTMENTAL PERSONNEL ASST |
| 181) | P S | 1845A | 1 | 1. | PRINCIPAL DEPTL PERSONNEL ASST |
| 182) | COLL | 1848A | 1 | 1. | DEPARTMENTAL PERSONNEL TECHNICIAN |
| 183) | COMM | 1848A | 1 | 1. | DEPARTMENTAL PERSONNEL TECHNICIAN |
| 184) | MECH | 1848A | 1 | 1. | DEPARTMENTAL PERSONNEL TECHNICIAN |
| 185) | P S | 1849A | 1 | 1. | SENIOR DEPARTMENTAL PERSONNEL TECH |
| 186) | COMM | 1849A | 1 | 1. | SENIOR DEPARTMENTAL PERSONNEL TECH |
| 187) | D P | 1849A | 2 | 2. | SENIOR DEPARTMENTAL PERSONNEL TECH |
| 188) | MECH | 1849A | 2 | 2. | SENIOR DEPARTMENTAL PERSONNEL TECH |
| 189) | COLL | 1852A | 1 | 1. | PERSONNEL OFFICER I |
| 190) | P S | 1852A | 1 | 1. | PERSONNEL OFFICER I |
| 191) | P S | 1853A | 1 | 1. | PERSONNEL OFFICER II |
| 192) | COMM | 1853A | 1 | 1. | PERSONNEL OFFICER II |
| 193) | D P | 1854A | 1 | 1. | PERSONNEL OFFICER III |
| 194) | MECH | 1854A | 1 | 1. | PERSONNEL OFFICER III |
| 195) | MECH | 1862A | 1 | -0- | TRAINING COORDINATORK, MECHANICAL |
| 196) | PERS | 1889A | 5 | -0- | PERSONNEL TRAINEE |
| 197) | PERS | 1890A | 13 | 13. | PERSONNEL ASSISTANT |
| 198) | PERS | 1896A | 53 | 27.75 | PERSONNEL ANALYST II |
| 199) | PERS | 1896N | 18 | 6.5 | PERSONNEL ANALYST II |
| 200) | PERS | 1897A | 36 | 13. | PERSONNEL ANALYST III |

APPENDIX IV-1: COMPUTER SORT (CONTINUED)

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 201) | PERS | 1897N | 5 | 0.5 | PERSONNEL ANALYST III |
| 202) | PERS | 1899A | 1 | 1. | OCCUPATIONAL HEALTH SERV MGR |
| 203) | PERS | 1900A | 15 | 6. | CHIEF PERSONNEL ANALYST |
| 204) | PERS | 1904A | 15 | 15. | PERS MGT SPEC I |
| 205) | PERS | 1905A | 15 | 15. | PERS MGT SPEC II |
| 206) | MECH | 1908A | 1 | 1. | SR DEPTL EMP RELS REPRESENTATIVE |
| 207) | PERS | 1909A | 1 | 1. | ASST EMPLOYEEE INSURANCE MANAGER |
| 208) | PERS | 1910A | 1 | 1. | EMPLOYEE INSURANCE MANAGER |
| 209) | PERS | 1911A | 15 | 10. | PERS MGT SPEC III |
| 210) | PERS | 1912A | 7 | 3. | DIVISION CHIEF, PERSONNEL |
| 211) | PERS | 1912N | 1 | 1. | DIVISION CHIEF, PERSONNEL |
| 212) | PERS | 1913A | 5 | 5. | PERS MGT SPEC IV |
| 213) | PERS | 1917A | 3 | 2.5 | DEPUTY DIRECTOR OF PERSONNEL |
| 214) | PERS | 1918A | 1 | 1. | CHIEF DEPUTY DIRECTOR, PERSONNEL |
| 215) | PERS | 1920 | 1 | 1. | DIRECTOR OF PERSONNEL |
| 216) | PERS | 1980N | 9 | 3. | PERSONNEL ASSISTANT |
| 217) | COLL | 2095A | 1 | 1. | SECRETARY II |
| 218) | COMM | 2095A | 3 | 2. | SECRETARY II |
| 219) | P S | 2095A | 2 | 1. | SECRETARY II |
| 220) | PERS | 2095A | 1 | 1. | SECRETARY II |
| 221) | COMM | 2096A | 1 | 0.3 | SECRETARY III |
| 222) | PERS | 2096A | 13 | 12. | SECRETARY III |
| 223) | PERS | 2096N | 2 | 2. | SECRETARY III |
| 224) | PERS | 2098A | 9 | 9. | SECRETARY V |
| 225) | B S | 2101A | 1 | 1. | SENIOR SECRETARY II |
| 226) | COLL | 2101A | 8 | 7. | SENIOR SECRETARY II |
| 227) | COMM | 2101A | 9 | 4. | SENIOR SECRETARY II |
| 228) | D P | 2101A | 2 | 2. | SENIOR SECRETARY II |
| 229) | P S | 2101A | 4 | 4. | SENIOR SECRETARY II |
| 230) | D P | 2102A | 17 | 16. | SENIOR SECRETARY III |
| 231) | PERS | 2104A | 3 | 3. | SR SEC V |
| 232) | B S | 2108A | 4 | 4. | MANAGEMENT SECRETARY II |
| 233) | COLL | 2108A | 3 | 3. | MANAGEMENT SECRETARY III |
| 234) | COMM | 2108A | 4 | 4. | MANAGEMENT SECRETARY II |
| 235) | D P | 2109A | 4 | 4. | MANAGEMENT SECRETARY III |
| 236) | PERS | 2111A | 2 | 1. | MGT SECRETARY V |
| 237) | B S | 2115A | 1 | 1. | SENIOR MANAGEMENT SECRETARY II |
| 238) | COLL | 2115A | 1 | 1. | SENIOR MGT SECRETARY II |
| 239) | COMM | 2115A | 1 | 1. | SENIOR MANAGEMENT SECRETARY II |
| 240) | D P | 2116A | 1 | 1. | SENIOR MANAGEMENT SECRETARY III |
| 241) | B S | 2121A | 1 | 1. | EXECUTIVE SECRETARY II |
| 242) | COLL | 2121A | 1 | 1. | EXECUTIVE SECRETARY II |
| 243) | COMM | 2121A | 1 | 0. | EXECUTIVE SECRETARY II |
| 244) | P S | 2121A | 1 | 1. | EXEC SECRETARY II |
| 245) | D P | 2122A | 1 | 1. | EXECUTIVE SECRETARY III |
| 246) | PERS | 2135A | 1 | 1. | MEDICAL SECRETARY |
| 247) | COLL | 2170A | 1 | 1. | STENOGRAPHER |
| 248) | D P | 2170A | 2 | -0- | STENOGRAPHER |
| 249) | COLL | 2170C | 1 | -0- | STENOGRAPHER |
| 250) | B S | 2172A | 3 | 2. | INTERMEDIATE STENOGRAPHER |

APPENDIX IV-1: COMPUTER SORT (CONTINUED)

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 251) | COLL | 2172A | 24 | 24. | INTERMEDIATE STENOGRAPHER |
| 252) | COMM | 2172A | 7 | 2. | INTERMEDIATE STENOGRAPHER |
| 253) | D P | 2172A | 27 | 21.75 | INTERMEDIATE STENOGRAPHER |
| 254) | MECH | 2172A | 9 | 4. | INTERMEDIATE STENOGRAPHER |
| 255) | PERS | 2172A | 4 | 3.5 | INTERMEDIATE STENOGRAPHER |
| 256) | PERS | 2172N | 1 | -0- | INTERMEDIATE STENOGRAPHER |
| 257) | D P | 21720 | 1 | 0.5 | INTERMEDIATE STENOGRAPHER |
| 258) | PERS | 2174A | 1 | 1. | SENIOR STENOGRAPHER |
| 259) | PERS | 2180A | 2 | 2. | MEDICAL STENOGRAPHER |
| 260) | PERS | 2201A | 1 | 1. | TRANSCRIBER TYPIST |
| 261) | PERS | 2209A | 1 | 1. | MEDICAL TRANSCRIBER-TYPIST |
| 262) | B S | 2212A | 2 | 1.5 | TYPIST-CLERK |
| 263) | COLL | 2212A | 16 | 11. | TYPIST-CLERK |
| 264) | D P | 2212A | 3 | -0- | TYPIST-CLERK |
| 265) | MECH | 2212A | 3 | 1. | TYPIST-CLERK |
| 266) | COLL | 2212C | 16 | 11. | TYPIST-CLERK |
| 267) | COLL | 2212C | 4 | 0. | TYPIST-CLERK |
| 268) | MECH | 2212C | 2 | -0- | TYPIST-CLERK |
| 269) | B S | 2214A | 21 | 18. | INTERMEDIATE TYPIST-CLERK |
| 270) | COLL | 2214A | 184 | 145.83 | INV TYPIST-CLERK |
| 271) | COMM | 2214A | 34 | 11. | INTERMEDIATE TYPIST-CLERK |
| 272) | D P | 2214A | 15 | 15. | INTERMEDIATE TYPIST-CLERK |
| 273) | MECH | 2214A | 18 | 11. | INTERMEDIATE TYPIST-CLERK |
| 274) | P S | 2214A | 10 | 6. | INTERMEDIATE TYPIST-CLERK |
| 275) | PERS | 2214A | 60 | 56. | INTERMEDIATE TYPIST-CLERK |
| 276) | PERS | 2214N | 10 | 6. | INTERMEDIATE TYPIST-CLERK |
| 277) | COMM | 2216A | 2 | 2. | SENIOR TYPIST-CLERK |
| 278) | D P | 2216A | 2 | 2. | SENIOR TYPIST-CLERK |
| 279) | MECH | 2216A | 15 | 15. | SENIOR TYPIST-CLERK |
| 280) | PERS | 2216A | 12 | 9. | SENIOR TYPIST-CLERK |
| 281) | PERS | 2216N | 2 | -0- | SENIOR TYPIST-CLERK |
| 282) | COLL | 2219A | 19 | 14. | SUPERVISING TYPIST-CLERK |
| 283) | D P | 2219A | 1 | -0- | SUPERVISING TYPIST-CLERK |
| 284) | MECH | 2219A | 1 | 1. | SUPERVISING TYPIST-CLERK |
| 285) | PERS | 2219A | 4 | 3. | SUPERVISING TYPIST-CLERK |
| 286) | B S | 2221A | 1 | 1. | INT SUPERVISING TYPIST-CLERK |
| 287) | COLL | 2221A | 1 | 1. | INT SUPERVISING TYPIST-CLERK |
| 288) | P S | 2221A | 1 | 1. | INT SUPERVISING TYPIST-CLERK |
| 289) | PERS | 2221A | 1 | 1. | INT SUPERVISING TYPIST-CLERK |
| 290) | P S | 2223A | 6 | 6. | PROGRAMMED TYPEWRITER OPERATOR |
| 291) | P S | 2224A | 1 | 1. | SUPVG PROGRAMMED TYPEWRITER OPR |
| 292) | P S | 2226A | 3 | 2.5 | REPRODUCTION TYPIST |
| 293) | COMM | 2234A | 1 | 0. | WORD PROCESSOR I |
| 294) | D P | 2234A | 4 | 4. | WORD PROCESSOR I |
| 295) | P S | 2234A | 4 | 4. | WORD PROCESSOR I |
| 296) | COLL | 2235A | 3 | 3. | WORD PROCESSOR II |
| 297) | D P | 2235A | 10 | 10. | WORD PROCESSOR II |
| 298) | P S | 2235A | 8 | 8. | WORD PROCESSOR II |
| 299) | COLL | 2237A | 1 | 1. | SUPERVISING WORD PROCESSOR |
| 300) | D P | 2237A | 2 | 2. | SUPERVISING WORD PROCESSOR |

| | DEPT | CLASS NUM | SALARY ORDINO | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 301) | P S | 2237A | 2 | 2. | SUPERVISING WORD PROCESSOR |
| 302) | P S | 2259A | 1 | 1. | DEPUTY PURCH AGENT AID |
| 303) | P S | 2263A | 23 | 17. | DEPUTY PURCHASING AGENT I |
| 304) | P S | 2264A | 13 | 12. | DEPUTY PURCHASING AGENT II |
| 305) | P S | 2265A | 9 | 9. | DEPUTY PURCHASING AGENT III |
| 306) | P S | 2266A | 7 | 4. | SUPERVISING DEPUTY PURCHASING AGENT |
| 307) | P S | 2267A | 4 | 4. | ASST DIVISION CHIEF, PURCH & STORES |
| 308) | P S | 2270A | 28 | 22. | STORE HELPER |
| 309) | P S | 2272A | 23 | 22. | STOREKEEPER I |
| 310) | P S | 2273A | 9 | 3. | STOREKEEPER II |
| 311) | P S | 2274A | 10 | 6. | STOREKEEPER III |
| 312) | P S | 2275A | 1 | 1. | STOREKEEPER IV |
| 313) | P S | 2276A | 4 | 4. | SUPERVISING STOREKEEPER |
| 314) | P S | 2286A | 3 | 2. | ASSISTANT CHIEF, STORES |
| 315) | P S | 2288A | 3 | 2. | PRODUCTS TESTING AID |
| 316) | P S | 2289A | 1 | 1. | SENIOR PRODUCTS TESTING AID |
| 317) | P S | 2290A | 1 | 1. | PRODUCTS TESTING SUPERVISOR |
| 318) | P S | 2309A | 1 | -0- | ADMV INVESTIGATOR, PURCH & STORES |
| 319) | P S | 2310A | 4 | 4. | DIVISION CHIEF, PURCHASING & STORES |
| 320) | P S | 2312A | 1 | 1. | CHIEF DEPUTY PURCHASING AGENT |
| 321) | P S | 2314I | 1 | 1. | PURCHASING AGENT |
| 322) | B S | 2329A | 1 | 1. | WAREHOUSE WORKER AID |
| 323) | COLL | 2329A | 1 | 1. | WAREHOUSE WORKER AID |
| 324) | COMM | 2329A | 2 | 0. | WAREHOUSE WORKER AID |
| 325) | D P | 2329A | 5 | 5. | WAREHOUSE WORKER AID |
| 326) | MECH | 2329A | 8 | 5. | WAREHOUSE WORKER AID |
| 327) | B S | 2331A | 2 | 2. | WAREHOUSE WORKER I |
| 328) | COMM | 2331A | 1 | 0. | WAREHOUSE WORKER I |
| 329) | MECH | 2331A | 14 | 8. | WAREHOUSE WORKER I |
| 330) | COMM | 2332A | 2 | 2. | WAREHOUSE WORKER II |
| 331) | MECH | 2332A | 3 | 3. | WAREHOUSE WORKER II |
| 332) | B S | 2333A | 1 | 1. | WAREHOUSE WORKER III |
| 333) | MECH | 2333A | 1 | 1. | WAREHOUSE WORKER III |
| 334) | MECH | 2334A | 2 | 1. | WAREHOUSE WORKER IV |
| 335) | COLL | 2343A | 1 | 1. | PROCUREMENT AID |
| 336) | D P | 2343A | 1 | 1. | PROCUREMENT AID |
| 337) | MECH | 2343A | 2 | 2. | PROCUREMENT AID |
| 338) | P S | 2343A | 17 | 6. | PROCUREMENT AID |
| 339) | COMM | 2344A | 1 | 1. | PROCUREMENT ASSISTANT I |
| 340) | D P | 2344A | 1 | 1. | PROCUREMENT ASSISTANT I |
| 341) | P S | 2344A | 6 | 4. | PROCUREMENT ASSISTANT I |
| 342) | MECH | 2346A | 9 | 5.5 | PROCUREMENT ASSISTANT II |
| 343) | P S | 2346A | 1 | 1. | PROCUREMENT ASSISTANT II |
| 344) | MECH | 2347A | 2 | 2. | PROCUREMENT ASSISTANT III |
| 345) | P S | 2347A | 2 | 1. | PROCUREMENT ASSISTANT III |
| 346) | P S | 2387A | 10 | 6. | ORDER ANALYST |
| 347) | P S | 2388A | 2 | 2. | SENIOR ORDER ANALYST |
| 348) | P S | 2390A | 1 | 1. | HEAD ORDER ANALYST |
| 349) | COMM | 2417A | 8 | 4. | RADIO TELEPHONE OPERATOR |
| 350) | MECH | 2417A | 6 | 6. | RADIO TELEPHONE OPERATOR |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 351) | COMM | 2420A | 320 | 159.5 | TELEPHONE OPERATOR |
| 352) | COMM | 2420F | 126 | ??. | TELEPHONE OPERATOR |
| 353) | COMM | 2420D | 17 | 17. | TELEPHONE OPERATOR |
| 354) | COMM | 2423A | 26 | 16. | SENIOR TELEPHONE OPERATOR |
| 355) | COMM | 2424A | 17 | 12. | TELEPHONE OPERATIONS SUPERVISOR I |
| 356) | COMM | 2425A | 19 | ?. | TELEPHONE OPERATIONS SUPERVISOR II |
| 357) | COMM | 2427A | 18 | 10. | TELEPHONE OPERATIONS SUPERVISOR III |
| 358) | COMM | 2431A | 4 | 2. | CHIEF, TELEPHONE OPERATIONS |
| 359) | COMM | 2435A | 6 | 2. | TELEPHONE SERVICE INSTRUCTOR |
| 360) | COMM | 2438A | 1 | 0.5 | SENIOR TELEPHONE SERVICE INSTRUCTOR |
| 361) | COMM | 2440A | 1 | 1. | TELEPHONE DIRECTORY SUPERVISOR |
| 362) | COMM | 2443A | 3 | 1. | TELEPHONE TRAFFIC INVESTIGATOR |
| 363) | COMM | 2445A | 1 | 1. | SUPVG, TELEPHONE SUPPORT SERVICES |
| 364) | PERS | 2449A | 1 | 1. | HD, DATA PROCESSING UNIT, PERSONNEL |
| 365) | D P | 2495A | 1 | -0- | TABULATING MACHINE OPERATOR |
| 366) | PERS | 2495A | 1 | -0- | TABULATING MACHINE OPERATOR |
| 367) | D P | 2496A | 6 | 4. | INT TABULATING MACHINE OPERATOR |
| 368) | PERS | 2496A | 1 | 1. | INTERMEDIATE TABULATING MACHINE OPR |
| 369) | D P | 2497A | 1 | 1. | SUPVG TAPULATING MACHINE OPERATOR |
| 370) | D P | 2498A | 1 | 1. | HEAD TABULATING MACHINE OPERATOR |
| 371) | D P | 2505A | 103 | 70. | COMPUTER EQUIPMENT OPERATOR |
| 372) | D P | 2505D | 18 | 0. | COMPUTER EQUIPMENT OPERATOR |
| 373) | D P | 2506A | 33 | 29.5 | COMPUTER SYSTEM OPERATOR |
| 374) | D P | 2506D | 15 | 12. | COMPUTER SYSTEM OPERATOR |
| 375) | D P | 2510A | 8 | 8. | COM RECORDING TECHNICIAN I |
| 376) | D P | 2511A | 5 | 4.25 | COM RECORDING TECHNICIAN II |
| 377) | D P | 2513A | 34 | 34. | COMPUTER OPERATIONS SPECIALIST |
| 378) | D P | 2515A | 10 | 10. | COMPUTER SYSTEMS SCHEDULER |
| 379) | D P | 2515D | 4 | 3.5 | COMPUTER SYSTEMS SCHEDULER |
| 380) | D P | 2518A | 6 | 6. | SUPERVISING COMPUTER OPERATOR |
| 381) | D P | 2520A | 20 | 19. | SUPERVIOSR, COMPUTER OPERATIONS |
| 382) | COMM | 2526A | 1 | 1. | EDP PROGRAMMER ANALYST I |
| 383) | D P | 2527A | 257 | 222.75 | EDP PROGRAMMER ANALYST II |
| 384) | D P | 2527D | 1 | 1. | EDP PROGRAMMER ANALYST II |
| 385) | D P | 2528A | 122 | 66.42 | EDP SENIOR PROGRAMMER ANALYST |
| 386) | D P | 2529A | 11 | 7.5 | EDP PRINCIPAL PROGRAMMER ANALYSY |
| 387) | D P | 2530A | 72 | 61.17 | DATA PROCESSING SUPERVISOR |
| 388) | D P | 2530D | 1 | 1. | DATA PROCESSING SUPERVISOR |
| 389) | D P | 2534A | 2 | 2. | EDP SUPPORT ANALYST I |
| 390) | D P | 2535A | 15 | 13.33 | EDP SUPPORT ANALYST II |
| 391) | D P | 2536A | 3 | 3. | EDP SENIOR SUPPORT ANALYST |
| 392) | D P | 2537A | 8 | 5.75 | EDP SUPERVISING SUPPORT ANALYST |
| 393) | D P | 2540A | 43 | 32. | EDP SYSTEMS PROGRAMMER |
| 394) | D P | 2541A | 28 | 27. | EDP SENIOR SYSTEMS PROGRAMMER |
| 395) | D P | 2542A | 1 | 1. | EDP SUPERVISING SYSTEMS PROGRAMMER |
| 396) | D P | 2552A | 48 | 43.83 | DATA PROCESSING MANAGER I |
| 397) | D P | 2552D | 1 | 1. | DATA PROCESSING MANAGER I |
| 398) | D P | 2553A | 16 | 16. | DATA PROCESSING MANAGER II |
| 399) | D P | 2554A | 3 | 3. | DATA PROCESSING MANAGER III |
| 400) | D P | 2555A | 1 | 1. | EDP SYSTEMS SECURITY SPECIALIST |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 401) | D P | 2556A | 1 | 1. | SR DATA PROCESS CONTRACTS ANALYST |
| 402) | D P | 2557A | 3 | 3. | DATA PROCESSING CONTRACTS ANALYST |
| 403) | D P | 2559A | 30 | 27. | DATA PROCESSING SPECIALIST I |
| 404) | D P | 2560A | 17 | 16. | DATA PROCESSING SPECIALIST II |
| 405) | D P | 2561A | 6 | 6. | DATA PROCESSING SPECIALIST III |
| 406) | D P | 2563A | 1 | 1. | DEPUTY DIRECTOR, EDP OPERATIONS |
| 407) | D P | 2564A | 1 | 1. | DEPY DIR, EDP SYSTEMS & PROGRAMMING |
| 408) | D P | 2565A | 1 | 1. | DEPUTY DIRECTOR, EDP TECHNOLOGY |
| 409) | D P | 2568A | 1 | 1. | CHIEF DEPY DIR OF DATA PROCESSING |
| 410) | D P | 2569L | 1 | 1. | DIRECTOR OF DATA PROCESSING |
| 411) | COLL | 2584A | 1 | 1. | SYSTEMS AID |
| 412) | D P | 2584A | 52 | 48.25 | SYSTEMS AID |
| 413) | D P | 2584D | 3 | 1.5 | SYSTEMS AID |
| 414) | COLL | 2585A | 1 | 1. | SENIOR SYSTEMS AID |
| 415) | D P | 2585A | 9 | 8. | SENIOR SYSTEMS AID |
| 416) | COLL | 2590A | 3 | 3. | DATA SYSTEMS ANALYST I |
| 417) | P S | 2591A | 1 | 1. | DATA SYSTEMS ANALYST II |
| 418) | COLL | 2592A | 5 | 5. | DATA SYSTEMS ANALYST II |
| 419) | PERS | 2592A | 3 | 3. | DATA SYSTEMS ANALYST II |
| 420) | COMM | 2593A | 1 | 1. | DATA SYSTEMS COORDINATOR |
| 421) | MECH | 2593A | 2 | 2. | DATA SYSTEMS COORDINATOR |
| 422) | PERS | 2593A | 1 | 1. | DATA SYSTEMS COORDINATOR |
| 423) | COLL | 2595A | 1 | 1. | DATA SYSTEMS SUPERVISOR I |
| 424) | COLL | 2596A | 2 | 2. | DATA SYSTEMS SUPERVISOR II |
| 425) | PERS | 2600A | 1 | 1. | CHIEF, PERSONNEL INFORMATION SYSTEMS |
| 426) | COLL | 2603A | 1 | 1. | CHIEF, SYSTEMS DIVISION, COLLECTIONS |
| 427) | COLL | 2627A | 36 | 26.5 | DATA CONTROL CLERK |
| 428) | COMM | 2627A | 3 | 1. | DATA CONTROL CLERK |
| 429) | D P | 2627A | 87 | 76.25 | DATA CONTROL CLERK |
| 430) | MECH | 2627A | 1 | 1. | DATA CONTROL CLERK |
| 431) | D P | 2627D | 1 | 0.5 | DATA CONTROL CLERK |
| 432) | D P | 2628A | 27 | 27. | SENIOR DATA CONTROL CLERK |
| 433) | COLL | 2630A | 4 | 3. | SUPERVISING DATA CONTROL CLERK I |
| 434) | D P | 2630A | 2 | 2. | SUPERVISING DATA CONTROL CLERK I |
| 435) | D P | 2630D | 1 | 1. | SUPERVISING DATA CONTROL CLERK I |
| 436) | D P | 2631A | 13 | 13. | SUPERVISING DATA CONTROL CLERK II |
| 437) | D P | 2633A | 3 | 3. | HEAD, DATA CONTROL |
| 438) | D P | 2635A | 22 | 22. | DATA LIBRARIAN |
| 439) | D P | 2635D | 5 | 4.42 | DATA LIBRARIAN |
| 440) | D P | 2636A | 6 | 4. | EDP SENIOR TAPE LIBRARIAN |
| 441) | D P | 2636D | 5 | 5. | EDP SENIOR TAPE LIBRARIAN |
| 442) | D P | 2638A | 3 | 3. | EDP HEAD TAPE LIBRARIAN |
| 443) | COLL | 2646A | 1 | 1. | DATA CONVERSION EQUIPMENT OPR I |
| 444) | D P | 2646A | 126 | 95. | DATA CONVERSION EQUIPMENT OPR I |
| 445) | PERS | 2646A | 1 | 1. | DATA CONVERSION EQUIPMENT OPR I |
| 446) | D P | 2646B | 66 | 0. | DATA CONVERSION EQUIPMENT OPR I |
| 447) | D P | 2647A | 8 | 8. | DATA CONVERSION EQUIPMENT OPR II |
| 448) | PERS | 2647A | 1 | 1. | DATA CONVERSION EQUIP OPR II |
| 449) | COLL | 2648A | 1 | 1. | SENIOR DATA CONVERSION EQUIPMENT OPR I |
| 450) | D P | 2648A | 31 | 28. | SENIOR DATA CONVERSION EQUIP OPR |

APPENDIX IV-1: COMPUTER SORT (CONTINUED)

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 451) | D P | 2650A | 14 | 13. | DATA CONVERSION SUPERVISOR I |
| 452) | PERS | 2650A | 1 | 1. | DATA CONVERSION SUPERVISOR |
| 453) | D P | 2651A | 3 | 2. | DATA CONVERSION SUPERVISOR II |
| 454) | D P | 2652A | 3 | 2. | DATA CONVERSION SUPERVISOR III |
| 455) | MECH | 2822A | 174 | 51. | SECURITY OFFICER I |
| 456) | MECH | 2823A | 39 | 33.5 | SECURITY OFFICER II |
| 457) | MECH | 2824A | 29 | 29. | SECURITY OFFICER III |
| 458) | MECH | 2835A | 6 | 6. | SECURITY SERVICES SUPERVISOR I |
| 459) | MECH | 2836A | 5 | 5. | SECURITY SERVICES SUPERVISOR II |
| 460) | MECH | 2850A | 1 | 1. | ASST CHIEF, SECURITY SERVICES DIV |
| 461) | MECH | 2853A | 1 | 1. | CHIEF, SECURITY SERVICES DIVISION |
| 462) | COMM | 3033A | 1 | 0. | SAFETY ASSISTANT |
| 463) | B S | 3034A | 2 | -0- | SAFETY INSPECTOR |
| 464) | B S | 3036A | 1 | 1. | SAFETY OFFICER |
| 465) | MECH | 3038A | 1 | 1. | SAFETY OFFICER, MECHANICAL |
| 466) | COMM | 3298A | 1 | 1. | DEPUTY DIR, COMMUNICATION |
| 467) | COMM | 3300A | 1 | 1. | DEPUTY DIR, TELECOM SYS ENGINEERING |
| 468) | COMM | 3347A | 1 | 1. | CHF DEPY DIRECTOR OF COMMUNICATIONS |
| 469) | COMM | 3364L | 1 | 1. | DIRECTOR OF COMMUNICATIONS |
| 470) | COMM | 3393A | 1 | -0- | TELECOM ENGINEERING SCHEDULER |
| 471) | COMM | 3395A | 3 | 2. | DIV CHIEF, TELECOMM CORPORATIONS & SVCS |
| 472) | COMM | 3403A | 1 | 0. | TELECOM CONTRACTS ANALYST |
| 473) | COMM | 3404A | 1 | 0. | TELECOM CONTRACTS MANAGER |
| 474) | COMM | 3408A | 1 | 1. | MANAGER, EMERGENCY TELECOM SYSTEMS |
| 475) | COMM | 3482A | 6 | -0- | ELECTRICAL ENGINEERING ASSISTANT |
| 476) | COMM | 3484A | 12 | -0- | SENIOR ELECTRONICAL ENGINEERING ASST |
| 477) | COMM | 3514A | 23 | 8. | PRIN ELECTRONICS ENGINEERING ASST |
| 478) | COMM | 3521A | 3 | 2. | DATA COMMUNICATIONS ENGINEER |
| 479) | COMM | 3522A | 11 | 8.4 | ELECTRONICS ENGINEER I |
| 480) | COMM | 3532A | 7 | 6.7 | ELECTRONICS ENGINEER II |
| 481) | COMM | 3536A | 4 | 2. | DIV CHF, TELECOMMUNICATIONS ENGRG |
| 482) | COMM | 3719A | 5 | 3. | COMMUNICATIONS DESIGN TECHNICIAN |
| 483) | COMM | 3720A | 1 | 1. | SUPVG COMMUNICATIONS DESIGN TECH |
| 484) | COMM | 3721A | 14 | 9.5 | TELEPHONE SERVICES ANALYST |
| 485) | COMM | 3723A | 3 | 2. | SUPVG TELEPHONE SERVICES ANALYST |
| 486) | COMM | 3725A | 3 | 2. | COMMUNICATIONS SERVICES ANALYST |
| 487) | COMM | 3726A | 1 | 0. | SPECIAL ASSISTANT, COMMUNICATION |
| 488) | COMM | 3728A | 8 | 3. | TELEPHONE ENGINEER |
| 489) | PERS | 4385A | 3 | 3. | OCCUPATIONAL ENVIRONMENTALIST |
| 490) | PERS | 4390A | 1 | 1. | SR OCCUPATIONAL ENVIRONMENTALIST |
| 491) | PERS | 4803A | 1 | 1. | NUTRITIONIST II |
| 492) | PERS | 4866A | 3 | 3. | OCCUPATIONAL HEALTH PHYSIOLOGIST |
| 493) | PERS | 4868A | 4 | 3. | EXERCISE PHYSIOLOGY TECHNICIAN |
| 494) | PERS | 5094A | 1 | 1. | CLINIC LICENSED VOCATIONAL NURSE II |
| 495) | PERS | 5215A | 1 | 1. | NURSE TRAINING CONSULTANT |
| 496) | PERS | 5255A | 5 | 3. | OCCUPATIONAL HLTH NURSE SPECIALIST |
| 497) | PERS | 5256A | 2 | 2. | SUPVG OCCUPATIONAL HEALTH NURSE |
| 498) | PERS | 5293A | 1 | 1. | DIRECTOR, OCCUPATIONAL HEALTH NURSING |
| 499) | PERS | 5311A | 1 | 1. | ASST DIR, OCCUP HEALTH NURSING |
| 500) | PERS | 5469G | 20 | 60.17 | CLINIC PHYSICIAN, M.D. |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 501) | PERS | 5469J | 1 | 17.25 | CLINIC PHYSICIAN MD |
| 502) | PERS | 5471G | 9 | 39.33 | CONSULTING SPECIALIST, M.D. |
| 503) | PERS | 5477A | 3 | 1.5 | PHYSICIAN SPECIALIST, M.D. |
| 504) | PERS | 5478A | 1 | 1. | SENIOR PHYSICIAN, MD |
| 505) | PERS | 5480A | 1 | -0- | CHIEF PHYSICIAN II, M.D. |
| 506) | PERS | 5567A | 1 | 1. | PULMONARY PHYSIOLOGY TECHNICIAN I |
| 507) | PERS | 5609A | 4 | 4. | OCCUPATIONAL HEALTH TECHNICIAN |
| 508) | PERS | 5798A | 2 | 1. | RADIOLOGIC TECHNOLOGIST |
| 509) | MECH | 5976A | 4 | 1. | TRANSPORTATION SERVS SUPVR I |
| 510) | P S | 5976A | 1 | 1. | TRANSPORTATION SUPVR I |
| 511) | MECH | 5978A | 1 | -0- | TRANSPORTATION SERVS SUPVR II |
| 512) | P S | 5978A | 1 | 1. | TRANSPORTATION SUPVR II |
| 513) | MECH | 5980A | 1 | -0- | TRANSPORTATION SERVS MGR, MECH |
| 514) | MECH | 5993A | 74 | 36.5 | PARKING LOT ATTENDANT |
| 515) | MECH | 5993F | 121 | 308.8 | PARKING LOT ATTENDANT |
| 516) | MECH | 5996A | 14 | 1. | PARKING SUPERVISOR I |
| 517) | MECH | 5998A | 7 | 5. | PARKING SUPERVISOR II |
| 518) | MECH | 6003A | 3 | -0- | MANAGER, PARKING OPERATIONS, MECH |
| 519) | MECH | 6005A | 2 | 1. | PARKING SYSTEMS DESIGNER |
| 520) | MECH | 6012A | 33 | 22. | GARAGE ATTENDANT I |
| 521) | MECH | 6012D | 3 | -0- | GARAGE ATTENDANT I |
| 522) | MECH | 6014A | 5 | 5. | GARAGE ATTENDANT II |
| 523) | MECH | 6015A | 7 | 7. | TIRE REPAIR WORKER |
| 524) | MECH | 6016A | 1 | 1. | SUPVG TIRE REPAIR WORKER |
| 525) | MECH | 6017A | 4 | 4. | GARAGE ATTENDANT WORKING SUPVR |
| 526) | MECH | 6020A | 1 | 1. | GARAGE & SERVICE WORKING SUPERVISOR |
| 527) | COLL | 6022A | 1 | -0- | LIGHT VEHICLE DRIVER |
| 528) | COMM | 6022A | 1 | -0- | LIGHT VEHICLE DRIVER |
| 529) | D P | 6022A | 7 | 7. | LIGHT VEHICLE DRIVER |
| 530) | MECH | 6022A | 3 | 2. | LIGHT VEHICLE DRIVER |
| 531) | P S | 6022A | 3 | 2. | LIGHT VEHICLE DRIVER |
| 532) | MECH | 6022D | 25 | -0- | LIGHT VEHICLE DRIVER |
| 533) | COMM | 6026A | 59 | 37. | COMMUNICATIONS MESSANGER DRIVER |
| 534) | COMM | 6029A | 4 | 3. | SUPERVISOR, MAIL & DELIVERY SERVICE |
| 535) | B S | 6049A | 3 | 2. | MEDIUM TRUCK DRIVER |
| 536) | MECH | 6049A | 7 | 0.5 | MEDIUM TRUCK DRIVER |
| 537) | P S | 6049A | 1 | -0- | MEDIUM TRUCK DRIVER |
| 538) | MECH | 6049D | 5 | -0- | MEDIUM TRUCK DRIVER |
| 539) | MECH | 6051A | 9 | 3. | HEAVY TRUCK DRIVER |
| 540) | P S | 6051A | 12 | 10. | HEAVY TRUCK DRIVER |
| 541) | MECH | 6051D | 5 | -0- | HEAVY TRUCK DRIVER |
| 542) | MECH | 6052A | 2 | 2. | REFUSE TRUCK DRIVER |
| 543) | MECH | 6053A | 2 | 1. | COMBINATION TRUCK DRIVER |
| 544) | P S | 6053A | 9 | 9. | COMBINATION TRUCK DRIVER |
| 545) | MECH | 6053D | 5 | -0- | COMBINATION TRUCK DRIVER |
| 546) | MECH | 6057A | 3 | -0- | TRUCK HELPER |
| 547) | MECH | 6069A | 5 | 3. | CHAUFFEUR |
| 548) | MECH | 6110A | 3 | 2. | WELDER |
| 549) | MECH | 6110D | 5 | -0- | WELDER |
| 550) | MECH | 6117A | 10 | 6. | WELDER-FITTER |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 551) | MECH | 61170 | 20 | -0- | WELDER-FITTER |
| 552) | MECH | 6121A | 1 | 1. | WELDER-FITTER SUPERVISOR |
| 553) | MECH | 6157A | 8 | 0.5 | HOD CARRIER |
| 554) | MECH | 61570 | 5 | -0- | HOD CARRIER |
| 555) | MECH | 6160A | 3 | 2. | BRICKLAYER |
| 556) | MECH | 61600 | 6 | -0- | BRICKLAYER |
| 557) | MECH | 6166A | 3 | 1. | METAL LATHER |
| 558) | MECH | 61660 | 5 | -0- | METAL LATHER |
| 559) | MECH | 6169A | 10 | 2. | PLASTERER |
| 560) | MECH | 6169D | 15 | -0- | PLASTERER |
| 561) | MECH | 6175A | 3 | 0.5 | TIRE SETTER |
| 562) | MECH | 61750 | 7 | -0- | TIRE SETTER |
| 563) | MECH | 6181A | 6 | 2. | MASON WORKING SUPERVISOR |
| 564) | MECH | 6184A | 2 | 1. | MASON SUPERVISOR |
| 565) | MECH | 6254A | 1 | -0- | CARPENTER APPRENTICE |
| 566) | MECH | 6257A | 69 | 33. | CARPENTER |
| 567) | MECH | 62570 | 18 | -0- | CARPENTER |
| 568) | MECH | 6260A | 1 | -0- | CARPENTRY MILL SETUP-OPERATOR |
| 569) | MECH | 6263A | 3 | 2. | CARPENTER WORKING SUPERVISOR |
| 570) | MECH | 6266A | 6 | 5. | CARPENTER SUPERVISOR |
| 571) | MECH | 6280A | 1 | -0- | CARPET & LINOLEUM LAYER APPRENTICE |
| 572) | MECH | 6281A | 14 | 4.25 | CARPET & LINOLEUM LAYER |
| 573) | MECH | 62810 | 5 | -0- | CARPET & LINOLEUM LAYER |
| 574) | MECH | 6285A | 1 | -0- | CARPET & LINOLEUM LAYER SUPERVISOR |
| 575) | MECH | 6289A | 1 | -0- | ROOFER APPRENTICE |
| 576) | MECH | 6290A | 11 | 8. | ROOFER |
| 577) | MECH | 62900 | 15 | -0- | ROOFER |
| 578) | MECH | 6292A | 1 | 1. | ROOFER WORKING SUPERVISOR |
| 579) | MECH | 6294A | 1 | 1. | ROOFER SUPERVISOR |
| 580) | MECH | 6326A | 6 | 6. | CEMENT & CONCRETE WORKER |
| 581) | MECH | 63260 | 5 | -0- | CEMENT & CONCRETE WORKER |
| 582) | MECH | 6329A | 14 | 7.75 | CEMENT & CONCRETE FINISHER |
| 583) | MECH | 63290 | 9 | -0- | CEMENT & CONCRETE FINISHER |
| 584) | MECH | 6349A | 10 | 4. | HELPER, ELECTRICAL |
| 585) | MECH | 6351A | 3 | -0- | HELPER, MASONRY |
| 586) | MECH | 6352A | 4 | 4. | HELPER, METAL WORKING |
| 587) | MECH | 6354A | 1 | 1. | HELPER, PAINTING |
| 588) | MECH | 6355A | 8 | 3. | HELPER, PIPE TRADES |
| 589) | MECH | 6359A | 7 | 2. | HELPER, REFRIGERATION |
| 590) | MECH | 6360A | 2 | 1. | HELPER, ROOFING |
| 591) | MECH | 6454A | 2 | -0- | POWER LINE WORKER |
| 592) | MECH | 64540 | 5 | -0- | POWER LINE WORKER |
| 593) | MECH | 6456A | 1 | -0- | POWER LINE WORKING SUPERVISOR |
| 594) | MECH | 6468A | 1 | -0- | ELECTRICIAN APPRENTICE |
| 595) | MECH | 6471A | 138 | 117.3 | ELECTRICIAN |
| 596) | MECH | 64710 | 15 | -0- | ELECTRICIAN |
| 597) | MECH | 6477A | 1 | -0- | ELECTRICIAN WORKING SUPERVISORK |
| 598) | MECH | 6480A | 8 | 8. | ELECTRICIAN SUPERVISOR |
| 599) | MECH | 6484A | 1 | 1. | HEAD, ELECTRICAL CRAFTS, MECHANICAL |
| 600) | MECH | 6504A | 73 | 70. | ELEVATOR MECHANIC |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 601) | MECH | 6504D | 12 | 7. | ELEVATOR MECHANIC |
| 602) | MECH | 6510A | 5 | 5. | ELEVATOR MECHANIC SUPERVISOR |
| 603) | MECH | 6514A | 1 | 1. | HEAD, ELEVATOR CRAFTS, MECHANICAL |
| 604) | COMM | 6522A | 13 | 8. | COMMUNICATIONS SYSTEMS TECHNICIAN |
| 605) | COMM | 6525A | 1 | 1. | SUPVG COMMUNICATIONS SYSTEMS TECH |
| 606) | COMM | 6526A | 1 | 0. | SENIOR DIGITAL SYSTEM TECHNICIAN |
| 607) | COMM | 6527A | 21 | 16. | DIGITAL SYSTEMS TECHNICIAN |
| 608) | COMM | 6529A | 2 | 2. | SUPVG DIGITAL SYSTEMS TECHNICIAN |
| 609) | COMM | 6535A | 24 | 11. | ELECTRONICS AUDIO TECHNICIAN |
| 610) | COMM | 6536A | 2 | -0- | SENIOR ELECTRONICS AUDIO TECHNICIAN |
| 611) | COMM | 6538A | 2 | 2. | ELECTRONICS AUDIO TECHNICIAN SUPVR |
| 612) | COMM | 6540A | 2 | -0- | ELECTRONICS COMM TECH TRAINEE |
| 613) | COMM | 6541A | 85 | 62. | ELECTRONICS COMMUNICATIONS TECH |
| 614) | COMM | 6542A | 6 | 4. | SR ELECTRONICS COMMUNICATIONS TECH |
| 615) | COMM | 6543A | 1 | -0- | ELECTRONICS COMM TECH WKG SUPVR |
| 616) | COMM | 6544A | 6 | 6. | ELECTRONICS COMM TECH SUPERVISOR |
| 617) | COMM | 6550A | 3 | 1. | DIV CHIEF, TELECOMMUNICATIONS MAINT |
| 618) | B S | 6552A | 29 | 11. | ELEVATOR OPERATOR |
| 619) | B S | 6552C | 8 | 60. | ELEVATOR OPERATOR |
| 620) | B S | 6558A | 8 | 3. | ELEVATOR STARTER |
| 621) | B S | 6561A | 1 | 1. | HEAD, ELEVATOR SERVICES |
| 622) | MECH | 6593A | 3 | 0.7 | SIGN ENGRAVING MACHINE OPERATOR |
| 623) | MECH | 6601A | 41 | 5. | CONSTRUCTION & REPAIR LABORER |
| 624) | MECH | 6601D | 67 | -0- | CONSTRUCTION & REPAIR LABORER |
| 625) | MECH | 6604A | 2 | -0- | CONSTRUCTION & REPAIR LABORER SUPVR |
| 626) | COMM | 6607A | 4 | -0- | EQUIPMENT MAINTENANCE HELPER |
| 627) | MECH | 6607A | 8 | 4. | EQUIPMENT MAINTENANCE HELPER |
| 628) | B S | 6610A | 1 | 1. | EQUIPMENT MAINTENANCE WORKER |
| 629) | COMM | 6610A | 6 | 4. | EQUIPMENT MAINTENANCE WORKER |
| 630) | MECH | 6610A | 5 | 5. | EQUIPMENT MAINTENANCE WORKER |
| 631) | MECH | 6610D | 5 | 1. | EQUIPMENT MAINTENANCE WORKER |
| 632) | B S | 6613A | 1 | 1. | SENIOR EQUIPMENT MAINTENANCE WORKER |
| 633) | COMM | 6613A | 1 | 1. | SR EQUIPMENT MAINTENANCE WORKER |
| 634) | MECH | 6613A | 7 | 7. | SENIOR EQUIPMENT MAINTENANCE WORKER |
| 635) | MECH | 6619A | 73 | 50.2 | GENERAL MAINTENANCE WORKER |
| 636) | MECH | 6619D | 4 | -0- | GENERAL MAINTENANCE WORKER |
| 637) | MECH | 6625A | 7 | 7. | GENERAL MAINTENANCE SUPERVISOR |
| 638) | MECH | 6628A | 1 | 1. | HEAD, GENERAL MAINTENANCE, MECHANICAL |
| 639) | MECH | 6630A | 1 | 1. | AIR DUCT MAINTENANCE SUPERVISOR |
| 640) | MECH | 6637A | 1 | 1. | WATCHMAKER |
| 641) | MECH | 6658A | 13 | 12. | ASST MANAGER, BLDG, CRAFTS, MECHANICAL |
| 642) | MECH | 6662A | 9 | 9. | MANAGER, BUILDING CRAFTS, MECHANICAL |
| 643) | MECH | 6667A | 3 | 3. | DIV CHIEF, BUILDING CRAFTS, MECH |
| 644) | MECH | 6671A | 3 | 3. | DEPUTY DIRECTOR, MECHANICAL |
| 645) | MECH | 6673A | 1 | 1. | CHIEF DEPUTY DIRECTOR, MECHANICAL |
| 646) | MECH | 6674L | 1 | 1. | DIRECTOR, MECHANICAL DEPARTMENT |
| 647) | MECH | 6696A | 2 | -0- | LOCKSMITH APPRENTICE |
| 648) | MECH | 6701A | 18 | 10.75 | LOCKSMITH |
| 649) | MECH | 6701D | 4 | -0- | LOCKSMITH |
| 650) | MECH | 6703A | 3 | 1. | LOCKSMITH WORKING SUPERVISOR |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 651) | MECH | 6707A | 1 | 1. | LOCKSMITH SUPERVISOR |
| 652) | B S | 6711A | 23 | 22. | HOUSEKEEPER |
| 653) | B S | 6713A | 3 | 3. | INTERMEDIATE HOUSEKEEPER |
| 654) | B S | 6715A | 1 | 1. | SENIOR HOUSEKEEPER |
| 655) | B S | 6757A | 22 | 21.67 | PARKING LOT SWEEPER OPERATOR |
| 656) | B S | 6758A | 4 | 4. | PARKING LOT SWEEPER WKG SUPVR |
| 657) | B S | 6759A | 1 | 1. | PARKING LOT SWEEPER SUPERVISOR |
| 658) | B S | 6766A | 34 | 32. | INSTITUTIONAL LABORER |
| 659) | B S | 6769A | 130 | 39. | FLOOR CARE SPECIALIST |
| 660) | B S | 6774A | 2041 | 1273.33 | CUSTODIAN |
| 661) | B S | 6774C | 26 | -0- | CUSTODIAN |
| 662) | B S | 6776A | 27 | 27. | CUSTODIAN WORKING SUPERVISOR |
| 663) | B S | 6778A | 236 | 117. | CUSTODIAN, SUPERVISOR |
| 664) | B S | 6780A | 78 | 34. | SENIOR CUSTODIAN SUPERVISOR |
| 665) | B S | 6781A | 6 | 5. | HEAD CUSTODIAN SUPERVISOR |
| 666) | B S | 6783A | 3 | 1. | ASST CUSTODIAL SERV COORDINATOR |
| 667) | B S | 6787A | 5 | 3. | LIGHTING FIXTURE CLEANER |
| 668) | B S | 6788A | 2 | 1. | LIGHTING FIXTURE CLEANER WKG SUPVR |
| 669) | B S | 6789A | 2 | 1. | STAFF TRAINER, BUILDING SERVS |
| 670) | B S | 6790A | 44 | 16. | WINDOW WASHER |
| 671) | B S | 6794A | 1 | -0- | WINDOW WASHER SUPERVISOR |
| 672) | B S | 6800A | 1 | 1. | HEAD CUSTODIAL SERVICES COORDINATOR |
| 673) | B S | 6805A | 21 | 21. | MANAGER, AREA CUSTODIAL OPERATIONS |
| 674) | B S | 6806A | 4 | 4. | ASSISTANT DIVISION CHIEF, BUILDING SERVICES |
| 675) | B S | 6807A | 1 | 1. | SPECIAL ASSISTANT, BUILDING SERVS |
| 676) | B S | 6811A | 4 | 3. | DIVISION CHIEF, BUILDING SERVICES |
| 677) | B S | 6812A | 4 | 4. | DEPUTY DIRECTOR, BUILDING SERVICES |
| 678) | B S | 6814A | 1 | 1. | CHF DEPUTY DIRECTOR, BUILDING SERVS |
| 679) | B S | 6816L | 1 | 1. | DIRECTOR, BUILDING SERVICES |
| 680) | MECH | 6917A | 2 | -0- | BUSINESS MACHINES TECHNICIAN APP |
| 681) | MECH | 6919A | 27 | 12. | BUSINESS MACHINES TECHNICIAN I |
| 682) | MECH | 6920A | 8 | -0- | BUSINESS MACHINES TECHNICIAN II |
| 683) | MECH | 6921A | 14 | 5. | BUSINESS MACHINES TECHNICIAN III |
| 684) | MECH | 6922A | 8 | 3. | BUSINESS MACHINES TECHNICIAN IV |
| 685) | MECH | 6923A | 5 | 3. | SUPVG BUSINESS MACHINES TECHNICIAN |
| 686) | MECH | 6927A | 1 | -0- | ASST CHF, BUSINESS MACHINES SERVS DIV |
| 687) | MECH | 6934A | 1 | 1. | CHIEF, BUSINESS MACHINES SERVICES DIV |
| 688) | MECH | 6970A | 2 | -0- | PAINTER APPRENTICE |
| 689) | MECH | 6973A | 100 | 25.4 | PAINTER |
| 690) | MECH | 6973N | 2 | -0- | PAINTER |
| 691) | MECH | 6973O | 20 | -0- | PAINTER |
| 692) | MECH | 6976A | 6 | 3. | SIGN PAINTER |
| 693) | MECH | 6976O | 5 | -0- | SIGN PAINTER |
| 694) | MECH | 6977A | 1 | 1. | SENIOR SIGN PAINTER |
| 695) | MECH | 6979A | 2 | -0- | PAINTER WORKING SUPERVISOR |
| 696) | MECH | 6982A | 6 | 5. | PAINTER SUPERVISOR |
| 697) | MECH | 7000A | 8 | 3. | POWER EQUIPMENT PAINTER |
| 698) | MECH | 7004A | 1 | -0- | POWER EQUIPMENT PAINTER SUPERVISOR |
| 699) | P S | 7045A | 2 | -0- | MICROFILM CAMERA OPERATOR I |
| 700) | P S | 7074A | 2 | 1.5 | COPY CAMERA OPERATOR |

| | DEPT | CLASS NUM | SALARY ORDINO | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 701) | MECH | 7193A | 12 | 5. | STATIONARY ENGINEER HELPER |
| 702) | MECH | 7196A | 3 | -0- | STATIONARY ENGINEER APPRENTICE |
| 703) | MECH | 7197A | 17 | 3. | STATIONARY ENGINEER I |
| 704) | MECH | 7198A | 109 | 103. | STATIONARY ENGINEER II |
| 705) | MECH | 7200A | 4 | 4. | STATIONARY ENGINEER CONTROLS SPEC |
| 706) | MECH | 7214A | 1 | 1. | ASST CHIEF, POWER PLANT DIVISION |
| 707) | MECH | 7215A | 1 | 1. | CHIEF, POWER PLANT DIVISION |
| 708) | MECH | 7224A | 9 | 8. | WASTE WATER TREATMENT PLT OPR |
| 709) | MECH | 7227A | 1 | 1. | WASTE WATER TREATMENT PLT OPR SUPVR |
| 710) | MECH | 7266A | 2 | -0- | PLUMBER APPRENTICE |
| 711) | MECH | 7269A | 95 | 64.5 | PLUMBER |
| 712) | MECH | 7269D | 17 | 4. | PLUMBER |
| 713) | MECH | 7272A | 2 | -0- | PLUMBER WORKING SUPERVISOR |
| 714) | MECH | 7275A | 6 | 6. | PLUMBER SUPERVISOR |
| 715) | MECH | 7365A | 1 | 1. | UTILITY TRACTOR OPERATOR |
| 716) | MECH | 7365D | 5 | -0- | UTILITY TRACTOR OPERATOR |
| 717) | MECH | 7425A | 14 | 9. | POWER EQUIPMENT MECHANIC HELPER I |
| 718) | MECH | 7427A | 13 | 11. | POWER EQUIPMENT MECHANIC HELPER II |
| 719) | MECH | 7430A | 2 | -0- | POWER EQUIPMENT MECHANIC APPRENTICE |
| 720) | MECH | 7433A | 129 | 102.4 | POWER EQUIPMENT MECHANIC |
| 721) | MECH | 7436A | 6 | 5. | POWER EQUIPMENT MECHANIC WKG SUPVR |
| 722) | MECH | 7437A | 9 | 9. | POWER EQUIPMENT MECHANIC SUPERVISOR |
| 723) | MECH | 7451A | 1 | 1. | ASST DIV CHIEF, AUTO SERVICES, MECH |
| 724) | MECH | 7452A | 1 | 1. | DIVISION CHIEF, AUTO SERVICES, MECH |
| 725) | MECH | 7460A | 1 | -0- | BODY & FENDER APPRENTICE |
| 726) | MECH | 7461A | 17 | 11. | BODY & FENDER MECHANIC |
| 727) | MECH | 7464A | 10 | 7. | AUTOMOTIVE BODY BUILDER |
| 728) | MECH | 7465A | 2 | 2. | BODY & FENDER MECHANICAL WORKING SUPVR |
| 729) | MECH | 7472A | 18 | 17. | FIRE EQUIPMENT MECHANIC |
| 730) | MECH | 7472A | 1 | 1. | HEAD, PLUMBING CRAFTS, MECHANICAL |
| 731) | MECH | 7481A | 1 | 1. | FIRE EQUIPMENT MECHANIC WKG SUPVR |
| 732) | MECH | 7484A | 1 | 1. | FIRE EQUIPMENT MECHANIC SUPVR |
| 733) | MECH | 7521A | 26 | 22.25 | MILLWRIGHT |
| 734) | MECH | 7521D | 5 | 1. | MILLWRIGHT |
| 735) | MECH | 7523A | 3 | 2. | MILLWRIGHT WORKING SUPERVISOR |
| 736) | P S | 7552A | 26 | 11.5 | INTERMEDIATE BINDERY WORKER |
| 737) | P S | 7569A | 6 | 4.5 | POWER PAPER CUTTER OPERATOR |
| 738) | P S | 7572A | 15 | 8.75 | PRINTER HELPER |
| 739) | P S | 7580A | 9 | 5. | OFFSET-PRESS OPERATOR |
| 740) | P S | 7586A | 8 | 6.5 | PRINTING SERVICES SUPERVISOR I |
| 741) | P S | 7587A | 4 | 3.2 | PRINTING SERVICES SUPERVISOR II |
| 742) | P S | 7590A | 2 | -0- | ASSISTANT CHIEF, PRINTING SERVICES |
| 743) | P S | 7594A | 16 | 3. | OFFSET DUPLICATOR OPERATOR |
| 744) | P S | 7597A | 1 | 0.6 | SUPERVISOR, OFFSET DUPLICATING |
| 745) | MECH | 7620D | 6 | -0- | CANVAS WORKER |
| 746) | MECH | 7659A | 2 | -0- | SHEET METAL APPRENTICE |
| 747) | MECH | 7662A | 79 | 44.7 | SHEET METAL WORKER |
| 748) | MECH | 7662D | 16 | -0- | SHEET METAL WORKER |
| 749) | MECH | 7665A | 2 | 1. | SHEET METAL WORKING SUPERVISOR |
| 750) | MECH | 7668A | 6 | 5. | SHEET METAL SUPERVISOR |

| | DEPT | CLASS NUM | SALARY ORDIND | FUNDED | JOB TITLE |
|---|---|---|---|---|---|
| 751) | MECH | 7670A | 1 | 1. | HEAD, SHEET METAL CRAFTS, MECHANICAL |
| 752) | MECH | 7739A | 3 | 1. | INSULATOR |
| 753) | MECH | 7739D | 7 | 1.5 | INSULATOR |
| 754) | MECH | 7744A | 1 | -0- | REFRIGERATION MECHANIC APPRENTICE |
| 755) | MECH | 7745A | 80 | 71. | REFRIGERATION MECHANIC |
| 756) | MECH | 7745D | 9 | -0- | REFRIGERATION MECHANIC |
| 757) | MECH | 7751A | 4 | -0- | STEAM FITTER APPRENTICE |
| 758) | MECH | 7754A | 25 | 20. | STEAM FITTER |
| 759) | MECH | 7754D | 11 | 2. | STEAM FITTER |
| 760) | MECH | 7760A | 2 | 1. | STEAM FITTER & REFRIGERATION WKG SUPV |
| 761) | MECH | 7763A | 6 | 6. | STEAM FITTER & REFRIGERATION SUPVR |
| 762) | COMM | 7816A | 4 | -0- | COMMUNICATIONS TOWER & LINE HELPER |
| 763) | COMM | 7818A | 11 | 5.5 | COMMUNICATIONS TOWER & LINE WORKER |
| 764) | COMM | 7820A | 1 | 0.5 | SR COMMUNICATIONS TOWER & LINE WORKER |
| 765) | COMM | 7822A | 2 | 2. | COMMUNIC TOWER & LINE WORKING SUPVR |
| 766) | COMM | 7824A | 1 | 1. | COMMUNICATIONS TOWER & LINE SUPVR |
| 767) | D P | 7959A | 1 | 0. | GRAPHIC ARTIST |
| 768) | P S | 7959A | 1 | 1. | GRAPHIC ARTIST |
| 769) | PERS | 7960A | 1 | 1. | GRAPHIC ARTIST PERSONNEL |
| 770) | B S | 8025A | 4 | 4. | GENERAL SERVICES MANAGER I |
| 771) | B S | 8026A | 3 | 3. | GENERAL SERVICES MANAGER II |
| 772) | B S | 8029A | 1 | 1. | ASST CHF, HOUSEKPG & CUSTODIAL SERVS |
| 773) | B S | 8030A | 1 | 1. | CHF, HOUSEKEEPING & CUSTODIAL SERVS |
| 774) | PERS | 8105A | 1 | 1. | SENIOR COMMUNITY WORKER II |
| 775) | PERS | 8108N | 1 | 1. | COMMUNITY SERVICES COUNSELOR |
| 776) | COLL | 8242F | 9 | 829.33 | STUDENT WORKER |
| 777) | COMM | 8242F | 1 | -0- | STUDENT WORKER |
| 778) | D P | 8242F | 12 | 693.33 | STUDENT WORKER |
| 779) | MECH | 8242F | 2 | -0- | STUDENT WORKER |
| 780) | P S | 8242F | 16 | 4. | STUDENT WORKER |
| 781) | COLL | 8243F | 2 | 143.33 | STUDENT PROFESSIONAL WORKER |
| 782) | MECH | 8243F | 3 | -0- | STUDENT PROFESSIONAL WORKER |
| 783) | PERS | 8243F | 30 | -0- | STUDENT PROFESSIONAL WORKER |
| 784) | PERS | 8245J | 1 | -0- | GUEST INSTRUCTOR |
| 785) | PERS | 8593N | 3 | 3. | REHABILITATION COUNSELOR II |
| 786) | PERS | 8697N | 2 | 2. | CLINICAL PSYCHOLOGIST II |
| 787) | PERS | 8699A | 1 | 1. | HEAD CLINICAL PSYCHOLOGIST |
| 788) | PERS | 8971N | 1 | 1. | RES ANALYST I, BEHAVIORAL SCIENCES |
| 789) | PERS | 8972A | 1 | 1. | RES ANALYST II, BEHAVIORAL SCIENCES |
| 790) | B S | 9306F | 60 | 4621.83 | CUSTODIAN, NC |
| 791) | MECH | 9330F | 2 | -0- | POWER EQUIPMENT OPR (OAA) NC |
| 792) | MECH | 9331F | 2 | -0-1 | POWER EQUIPMENT OPR HELPER (OAA) NCM |
| 793) | MECH | 9348F | 2 | -0- | TRUCK DRIVER (OAA) NC |
| 794) | P S | 9474 | 50 | -0- | DEPUTY PURCHASING AGENT, W/O COMP |
| 795) | PERS | 9535 | 5 | 0. | VOLUNTEER WORKER W/O COMP |

Appendix IV-2 Ratio of function to total departmental personnel 1983-84

| Functions / Departments | Accounting | Payroll | Inventory | Procurement | Data Analysis | Drivers | Safety Inspection | Personnel | Total |
|---|---|---|---|---|---|---|---|---|---|
| Building Services (1739.6) | 0.17 (3) | 0.29 (5) | 0.23 (4) | 0 (0) | 0 (0) | 0.11 (2) | 0.06 (I) | 0.17 (3) | 1.03 (18) |
| Collections (455.9) | 3.51 (16) | 0.44 (2) | 0.22 (1) | 0.22 (1) | 3.07 (14) | 0.22 (1) | 0 (0) | 0.66 (3) | 8.34 (38) |
| Communi-cations (576.7) | 2.43 (14) | 0.52 (3) | 0.52 (3) | 0.17 (1) | 0.36 (2) | 6.94 (40) | 0 (0) | 0.69 (4) | 11.62 (67) |
| Data Processing (1283.0) | 0.86 (11) | 0.55 (7) | 0.47 (6) | 0.16 (2) | 4.50 (54.75) | 0.55 (7) | 0 (0) | 0.39 (5) | 7.46 (95.75) |
| Mechanical (1524.2) | 2.46 (37.5) | 0.52 (8) | 1.31 (20) | 0.62 (9.5) | 0.20 (3) | 0.43 (6.5) | 0.07 (1) | 0.20 (3) | 5.81 (88.5) |
| Personnel (402.8) | 0.62 (2.5) | 0.25 (1) | 0 (0) | 0 (0) | 0.74 (3) | 0 (0) | 0 (0) | 0.12 (0.5) | 1.74 (7) |
| Purchasing & Stores (288) | 1.39 (4) | 0.69 (2) | 20.83 (60) | 4.17 (12) | 0.35 (1) | 7.29 (21) | 0 (0) | 0.69 (2) | 35.42 (102) |
| Total (6270.2) | 1.40 (88) | 0.45 (28) | 1.50 (94) | 0.41 (25.5) | 1.29 (80.75) | 1.24 (77.5) | 0.03 (2) | 0.33 (20.5) | 6.64 (416.25) |

Note: Numbers in parenthesis represent total functional positions.
Numbers above parenthesis represent percentage of those positions to total department size.

Appendix IV-3: 1982-1983 Payroll costs

| Departments | Number of employees | Estimated CWPAY cost | Front-end costs | System complexion | Average cost per employee |
|---|---|---|---|---|---|
| Building Services | 1,826 | $26,086 | $118,741 | manual | $79.31 |
| Collections | 454 | 6,486 | 55,789 | manual | 137.17 |
| Communica-tions | 583 | 8,329 | 55,823 | manual | 110.04 |
| Data Pro-cessing | 1,288 | 18,400 | 167,362 | automated (PAPS) | 144.23 |
| Mechanical | 1,616 | 23,086 | 221,610 | automated (PAPS) | 151.42 |
| Personnel | 440 | 6,286 | 45,006 | manual | 116.57 |
| Purchasing & Stores | 285 | 4,071 | 43,926 | manual | 168.40 |
| Total County | 70,000 | 1,000,000 | 12,300,000 | - | 190.00 |
| BOABS estimates | 70,000 | 480,000 | 1,320,000 | - | 25.71 |

Appendix IV-4 : Bank of America Business Services
Payroll cost estimates

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COUNTY OF LOS ANGELES

PAYROLL SPECIFICATIONS

1. 70,000 Employees Semi-Monthly
2. 58 Departments
3. 650 New Hires Monthly
4. 300 Adjustments/Handwrites Monthly
5. 1000 File Changes Monthly
6. Year-To-Date Earnings Statements
7. Envelopes
8. Address on Checks
9. 2.5 Lines Average input per Employee

## PAYROLL FEES

### SEMI-MONTHLY CHARGES

| | |
|---|---|
| Flat Charge | $ 1,160.00 |
| Check Charge 70,000 x .35 | 24,500.00 |
| Accelerated Processing | 30.00 |
| New Employee Set-up 325 x 1.35 | 438.75 |
| Master/File Changes 500 x .14 | 70.00 |
| Year-To-Date Earnings Statements | -0- |
| Address on Checks | -0- |
| Envelopes (includes stuffing & sealing checks) | 4,200.00 |
| | $ 30,398.75 |

PAYROLL FEES

MONTHLY CHARGES

| | | |
|---|---|---|
| Semi-Monthly Charges x 2 | | $ 60,797.50 |
| Employee Data Maintenance | | 2,800.00 |
| Company Payroll Maintenance | | 12.50 |
| | Sub-Total | $ 63,610.00 |
| * Magnetic Tape/Terminal Reduction | | 25,074.50 |
| | Monthly Total or 27.5¢ per check per employee per pay period | $ 38,535.50 |

## MAGNETIC TAPE/TERMINAL REDUCTION

| | |
|---|---|
| Accelerated Processing | 60.00 |
| New Hires 650 x (7 lines Avg) x .07 | 318.50 |
| Pay Lines 5 x (70,000 Emp.) x .07 | 24,500.00 |
| Adjustments 300 x ( 6 Lines Ave) x .07 | 126.00 |
| Master Changes 1000 x .07 | 70.00 |
| Total Reduction | $ 25,074.50 |

STANDARD FEATURES INCLUDE:

- Year-To-Date Earnings Statements
- Earnings Registers
- Voluntary Deduction Registers
- Automatic Checking & Savings Deposits
- Automatic Tax Deposits & Filing of Returns

APPENDIX V-1

Purchasing LABOR COSTS

NUMBER OF POSITIONS AND
EXPENSES ASSOCIATED

| Department | Number of positions | Expenses associated |
|---|---|---|
| Building Services | 3 | $ 63,841 |
| Collections | 3 | $ 61,244 |
| Communications | 7 | $173,326 |
| Data Processing | 2.6 | $ 56,995 |
| Personnel | 3.5 | $ 64,933 |
| Purchasing & Stores | 2 | $ 22,147 |
| Mechanical | 18.5 | $487,824 |
| Total | 39.5 | $930,310 |

Source: Information supplied by Departments.

APPENDIX V-2

## LIST OF TASKS COMMONLY CITED

Clerical/Accounting:

- Typing requisitions
- Filing requisitions
- Verifying invoices
- Processing of payments
- Verifying Purch & Stores charges

Search tasks:

- Calling vendors
- Writing to vendors
- Magazines & other publications review
- Trips to vendors

Specifications:

- Writing of routine specifications

Miscellaneous:

- Xeroxing
- Mailing

## SAMPLE LIST OF ITEMS PURCHASED

Various Vendor Order - Non Agreement

Electric
Elevator
Plumbing
Masonry
Paint
Steamfitting
Sheetmetal
Roofing
Lock
Carpentry
Milwright
Tools
General Maintenance

Various Vendor Order - Contract Agreement

Elevator
Plumbing
Masonry
Paint
Sheetmetal
Roofing
Lock
Carpentry
Milwright
Tools
General Maintenance

Source: Mechanical Department.

## NUMBER OF EMPLOYEES PER ONE PROCUREMENT POSITION

| Department | Total proc. positions | Total # of employees | # of employees per one proc. position |
|---|---|---|---|
| Building Services | 3 | 1,740 | 580 |
| Collections | 3 | 456 | 152 |
| Communications | 7 | 577 | 82 |
| Data Processing | 2.5 | 1,283 | 513 |
| Personnel | 3.5 | 403 | 115 |
| Purchasing & Stores | 2 | 288 | 144 |
| Mechanical | 18.5 | 1,524 | 82 |
| Average | | | 159 |

APPENDIX V-5

NUMBER OF DOCUMENTS PROCESSED & AMOUNTS PURCHASED
FOR NON-AGREEMENT V.V.O.

| Department | # doc N-A VVO | Tot # doc to DPS | N-A VVO doc as % of tot to DPS | N-A VVO amt purch. | Tot purch. for dept. | N-A VVO purch as % of tot purch. |
|---|---|---|---|---|---|---|
| Building Services | 181 | 1302 | 13.0 | $ 85,776 | $ 2,726,537 | 3.1 |
| Collections | 173 | 230 | 75.0 | $ 29,476 | $ 464,780 | 6.3 |
| Communications | 1690 | 603 | 280.0 | $ 315,360 | $ 1,191,500 | 37.0 |
| Data Processing | 312 | 557 | 56.0 | $ 45,600 | $ N/A | N/A |
| Personnel | 278 | 273 | 102.0 | $ 69,899 | $ N/A | N/A |
| Purchasing & Stores | 660 | 465 | 142.0 | $ 232,156 | $ 1,900,000 | 12.2 |
| Mechanical | 7175 | 1153 | 622.0 | $ 1,507,191 | $25,000,000 | 6.0 |

Notes:

- Data provided by departments and DPS for Fiscal Year 1982-83.
- # doc N-A VVO: number of documents processed for this procurement method.
- Tot # doc to DPS: Total number of requisitions submitted to DPS for all " central buying " methods.
- N-A VVO amt purch: Total amount of purchases using this method.
- Tot purch for dept: Total amount of purchases for the whole department.

APPENDIX V-6

SAMPLING OF LEAD TIME
INFORMAL BIDDING.

METHOD:

We called up the procurement units of all 7 departments and asked each of them to randomly pull out 3 requisitions from their files for Fiscal Year 1981-82.
Next we asked them to check the value of the requisitions: this has to be between $500 and $5,000 ( lower and upper limit for informal bidding). If a requisition did not meet this criterion, we asked the person to pull out another one until all three requisitions met these value limits.

Then we took the time differences between the requisition date and the delivery date as the lead time for all requisitions pulled out.

We found that this time period ranged from 2 to 4 months for this sample of requisitions.

Appendix VI-1

Inventory Classification and Level in Central Stores Warehouse

(March, 1983)

| Item | Class | Dollar Value | Number of Items |
|---|---|---|---|
| 1. | Auto. Equpt. and Supp. | 47,219.85 | 43 |
| 2. | Bldg. and Const. Mat. | 52,606.69 | 74 |
| 4. | Oil and Greases. Petroleum and Gas | 38,619.40 | 36 |
| 5. | Drugs | 74,185.63 | 742 |
| 6. | Chemicals | 103,429.44 | 81 |
| 10. | Photo Chemicals and Supplies | 144,448.51 | 26 |
| 11. | Dental Equpt. and Supplies | 1,166.04 | 5 |
| 13. | First Aid and Safety Equpt.and supp. | 48,636.19 | 66 |
| 14. | Paint | 94,721.47 | 170 |
| 18. | Kicthen Ware | 130,435.99 | 215 |
| 22. | Hardware | 229,458.48 | 669 |
| 23. | Tools | 81,843.84 | 522 |
| 24. | Tools | 150,667.91 | 402 |
| 25. | Electrical | 141,704.80 | 325 |
| 26. | Electrical | 96,473.57 | 164 |
| 27. | Pipe Fittings | 164,139.55 | 520 |
| 28. | Plumbing Fixt. and Supp. | 55,622.35 | 127 |
| 31. | Metals, Iron, Steel and Wire | 19,927.80 | 61 |
| 35. | Sporting Goods | 27,084.54 | 57 |
| 38. | Welding Supplies | 196.62 | 2 |
| 40. | Air Condition | 3,227.02 | 4 |
| 44. | Laundry Equpt. and Supp. | 43,055.57 | 17 |
| 45. | Barber and Beauty | 19,800.84 | 50 |
| 47. | Agri. Farm and Dairy Supp. | 7,057.14 | 16 |
| 49. | Cereuls, Paste and Flour | 111,546.95 | 52 |
| 50. | Staple Food | 853,220.10 | 384 |
| 51. | Perishable Fresh | 310,218.91 | 217 |
| 52. | Fresh Meats | 165,140.11 | 61 |
| 53. | Chocolate | 3,363.04 | 6 |
| 54. | U.S.D.A. Foods | 0.00 | 0 |
| 55. | Textiles | 573,429.13 | 132 |
| 56. | Clothing | 637,441.55 | 283 |
| 58. | Washing Compouds and supplies | 110,518.89 | 67 |
| 59. | Janitorial Equpt. and Supp. | 128,434.81 | 133 |
| 69. | Paper | 550,830.88 | 182 |
| 70. | Stationary | 827,723.00 | 829 |
| 71. | Paper Products | 483,092.98 | 128 |
| 72. | Floor Cov. Window and upholdstery Supp. | 7,487.64 | 11 |

| | | | |
|---|---|---|---|
| 74. | Duplicating | 15,120.80 | 29 |
| 76. | Coast Forms | 512.41 | 233 |
| 78. | Furniture and Office Machines | 28,931.65 | 33 |
| 80. | Printed Forms | 28,144.72 | 30 |
| 81. | Printed Forms | 4,790.52 | 15 |
| 82. | Printed Forms | 20,133.62 | 35 |
| 83. | Printed Forms | 40,758.90 | 27 |
| 84. | Printed Forms | 16,379.34 | 16 |
| 85. | Printed Forms | 25,714.27 | 18 |
| 86. | Printed Forms | 8,246.36 | 27 |
| 87. | Printed Forms | 14,754.29 | 23 |
| 88. | Printed Forms | 25,836.02 | 35 |
| 89. | Printed Forms | 1,833.21 | 9 |
| 90. | Hospital | 1,384,543.60 | 473 |
| 91. | Hospital | 277,381.29 | 203 |
| 93. | Lab. Supplies | 91,797.34 | 148 |
| 95. | X Ray Supplies | 2,894.42 | 3 |
| 98. | Resale-Suplus | 0.00 | 62 |
| 99. | Resale Items | 9,419.83 | 9 |

Appendix VI-2

Some Inventory-Related Data in the Seven Departments

| Department | Average Inventory Value ($'000) | Number of Items | Warehouse Area (sq. ft.) | Labor | Inventory Control System | Degree of Centralization (%) |
|---|---|---|---|---|---|---|
| Purchasing and Stores | 8,500 | 8,400 | 282,000 | 87 | Automatic | |
| Mechanical | 3,500 | 10,500 | 102,083 | 22 | Automatic | 17 |
| Communication | 820 | | 10,370 | 10 | Automatic | 29 |
| Data Processing | 500 | 1,500 | 9,750 | 8 | Automatic | 20 |
| Collection | 61 | 200 | 2,305 | 3 | Manual | 16 |
| Building Service | 30 | 800 | 3,643 | 4 | Manual | 86 |
| Personnel | 25 | 200 | 1,169 | 1 | Manual | 43 |
| Total | 13,493 | | 411,320 | 135 | Weighted Average | 20 |

Appendix VI-3

Budget of Purchasing and Stores Department, Store Division
(July, 1982-- June, 1983 )

| | |
|---|---|
| Salaries | 1,952,504 |
| Overtime | 11,395 |
| Bonus | 15,820 |
| Employee Benefits | 632,164 |
| Total salaries | 2,611,883 |
| **Service & Supplies** | |
| Maintainance - Equipment | 72,800 |
| Maintainance - SIG | 4,700 |
| Stock Obsolescence | 30,000 |
| Store Loss | 10,000 |
| Office Supplies - Misc. | 13,000 |
| Prof. & Special Service | 21,000 |
| Data Processing | 400,591 |
| Special Dept. Expense | 20,000 |
| Pallets | 23,162 |
| Auto Services (Mech.) | 168,943 |
| All Others - Operating Sup. | 8,100 |
| Total S & S | 772,696 |
| Total Expenditures | 3,384,579 |

Appendix VI-4

Total Salaries of Inventory Related Employees in Mechanical Department

| Title | Number of Positions | Gross Salary (col.3) | Employee Benefits | S&S | Total |
|---|---|---|---|---|---|
| A | 1.0 | $23.912 | $7.482 | $5.981 | $37.375 |
| B | 5.0 | 92.400 | 31.134 | 29.906 | 153.440 |
| C | 8.0 | 156.192 | 51.744 | 47.850 | 255.786 |
| D | 3.0 | 65.376 | 20.974 | 179.944 | 104.294 |
| E | 1.0 | 23.028 | 7.278 | 5.981 | 36.287 |
| F | 1.0 | 18.527 | 6.238 | 5.981 | 30.746 |
| G | 1.0 | 25.704 | 7.896 | 5.981 | 39.581 |
| H | 1.0 | 32.979 | 9.577 | 5.981 | 48.537 |
| I | 21.0 | 438.118 | 142.323 | 125.605 | 706.046 |

A: Sr. Equip. Maint. Worker
B: Warehouse Wrker Aid (40A)
C: Warehouse Wrker I (42A)
D: Warehouse Wrker II (46A)
E: Warehouse Wrker III (48A)
F: Secretary III
G: Warehouse Wrker IV (52A)
H: Mgr. Warehouse Operater
I: Total Stores

## Appendix VI-5

## The Procedure to Determine Inventory Policy Index

Step 1:

A sample of every fiftieth item on the stock item list is selected for the study. This represents about two percent of the stocked items.

Step 2:

Determine the current stock level for each of those items. Identify the idel on-hand quantity which has already been determined by existing inventory policy.

Step 3:

Determine the desired quantity range for each item to be surveyed. The desired quantity range is that range of stock between the acceptable on-hand quantity and the replenishment point.

Step 4:

Divide all surveyed items into three categories, those items which are within range, those items which are under-range, and those items which are over-range. Calculate the percentage of each category.

Appendix VI-6

The sample data for determining the Inventory Policy Index

| Item Code | On-Hand Quantity (unit) | Average Monthly Comcumption (unit) | Exhausting Time (Month) | Inventory Level Status |
|---|---|---|---|---|
| 0155846 | 18 | 2.50 | 7.2 | U |
| 0365353 | 1376 | 312.83 | 4.4 | R |
| 0426304 | 4 | 0.83 | 4.8 | R |
| 0889204 | 2 | 0.83 | 2.4 | R |
| 0898486 | 168 | 9.00 | 18.7 | O |
| 1094606 | 240 | 0.83 | 289.2 | O |
| 1132406 | 42 | 1.00 | 42 | O |
| 1380757 | 7 | 0.00 | infinite | O |
| 1423805 | 403 | 319.42 | 1.3 | U |
| 1473156 | 29 | 1.25 | 23.2 | O |
| 1486109 | 7 | 4.25 | 1.6 | U |
| 1836261 | 57 | 8.50 | 6.7 | R |
| 1850486 | 55 | 469.08 | 0.1 | U |
| 1868306 | 29 | 2.25 | 12.9 | R |
| 2210128 | 22 | 1.33 | 16.5 | R |
| 2215358 | 23 | 0.25 | 92 | O |
| 2224756 | 67 | 0.91 | 73.6 | O |
| 2229110 | 222 | 43.50 | 5.1 | U |
| 2241842 | 78 | 0.25 | 312 | O |
| 2255297 | 68 | 4.33 | 15.7 | R |
| 2268720 | 2390 | 50.00 | 47.8 | O |
| 2283307 | 89 | 5.83 | 15.3 | R |
| 2299295 | 99 | 20.66 | 4.8 | R |
| 2299436 | 94 | 8.08 | 11.6 | R |
| 2331643 | 65 | 0.00 | infinite | O |
| 2356020 | 46 | 5.00 | 9.2 | R |
| 2367779 | 17 | 1.33 | 12.8 | R |
| 2377588 | 95 | 0.00 | infinite | O |
| 2385581 | 30 | 0.00 | infinite | O |
| 2395515 | 9 | 0.417 | 21.6 | R |
| 2399905 | 30 | 2.33 | 12.9 | R |
| 2399962 | 18 | 2.00 | 9.0 | R |
| 2405348 | 212 | 29.83 | 7.1 | R |
| 2414506 | 49 | 0.08 | 612.5 | O |
| 2423424 | 60 | 1.25 | 48 | O |
| 2444412 | 48 | 0.16 | 300 | O |
| 2486652 | 65 | 7.16 | 9.1 | R |
| 2495935 | 1370 | 107.08 | 12.8 | R |
| 2524452 | 105 | 0.00 | infinite | O |
| 2546042 | 24 | 0.83 | 28.9 | R |
| 2559771 | 85 | 0.41 | 207.3 | O |
| 2580462 | 18 | 0.50 | 36 | R |

| | | | | |
|---|---|---|---|---|
| 2597193 | 91 | 3.33 | 27.3 | O |
| 2624906 | 2 | 0.83 | 2.4 | U |
| 2650067 | 61 | 0.08 | 762.5 | O |
| 2670750 | 35 | 4.16 | 8.4 | R |
| 2707578 | 118 | 1.80 | 65.6 | R |
| 2712065 | 389 | 4.25 | 91.5 | O |
| 2718682 | 264 | 0.50 | 528 | O |
| 2723526 | 162 | 0.50 | 324 | O |
| 2728012 | 296 | 18.91 | 15.6 | R |
| 2752251 | 20 | 0.00 | infinite | O |
| 2795235 | 0 | 0.01 | 0 | U |
| 2795458 | 208 | 32.33 | 6.4 | U |
| 2846665 | 23 | 0.41 | 56.1 | R |
| 2886083 | 18 | 2.58 | 7.0 | R |
| 3180106 | 0 | 1.08 | 0 | U |
| 3570363 | 234 | 285.50 | 0.8 | U |
| 3820156 | 1 | 0.33 | 3.0 | R |
| 4025789 | 174 | 71.50 | 2.4 | R |
| 4409132 | 32 | 3.00 | 10.7 | O |
| 4540654 | 0 | 146.00 | 0 | U |
| 4725057 | 60 | 7.66 | 7.8 | R |
| 4918801 | 327 | 33.50 | 9.8 | O |
| 5021100 | 74 | 3.91 | 18.9 | O |
| 5032222 | 148 | 163.16 | 0.9 | R |
| 5056601 | 74 | 22.41 | 3.3 | R |
| 5061585 | 99 | 30.16 | 3.3 | R |
| 5094321 | 25 | 16.83 | 1.5 | U |
| 5099411 | 125 | 0.41 | 304.9 | O |
| 5130430 | 0 | 674.66 | 0 | U |
| 5135421 | 128 | 75.50 | 1.7 | R |
| 5223482 | 50 | 9.33 | 5.4 | U |
| 5341201 | 39 | 0.75 | 52 | O |
| 5517248 | 116 | 16.16 | 7.2 | R |
| 5590898 | 152 | 1.66 | 91.6 | O |
| 5621735 | 425 | 8.08 | 52.6 | O |
| 5633458 | 1 | 0.00 | infinite | O |
| 5656434 | 0 | 9.66 | 0 | U |
| 5693106 | 811 | 19.50 | 41.6 | O |
| 5826557 | 55 | 11.00 | 5 | R |
| 5925201 | 13 | 6.75 | 1.9 | R |
| 5950902 | 10 | 1.91 | 5.2 | R |
| 6938401 | 42480 | 4718.33 | 9.1 | R |
| 6965024 | 15 | 47.58 | 0.3 | U |
| 7012610 | 357 | 4.58 | 80 | O |
| 7019359 | 81 | 14.91 | 5.4 | R |
| 7027311 | 101 | 0.83 | 121.7 | O |
| 7031222 | 85 | 15.00 | 5.7 | R |
| 7039167 | 283 | 33.58 | 8.4 | R |
| 7048275 | 70 | 0.00 | infinite | O |
| 7057854 | 379 | 10.41 | 36.4 | O |
| 7066913 | 132 | 3.00 | 44 | O |
| 7076300 | 215 | 3.91 | 55 | O |
| 7087406 | 276 | 9.41 | 29.3 | R |
| 7094147 | 228 | 184.08 | 1.2 | U |

| | | | | |
|---|---|---|---|---|
| 7096308 | 222 | 33.25 | 6.7 | O |
| 7140627 | 15 | 3.50 | 4.3 | R |
| 7220403 | 17 | 0.08 | 212.5 | O |
| 7426526 | 86 | 0.50 | 172 | O |
| 7899917 | 124 | 5.16 | 24 | O |
| 8089930 | 24 | 0.00 | infinite | O |
| 8151672 | 1084 | 0.00 | infinite | O |
| 8298861 | 37 | 1.66 | 22.3 | R |
| 8384455 | 5 | 4.16 | 1.2 | U |
| 8497703 | 105 | 6.25 | 16.8 | O |
| 8590143 | 1972 | 59.00 | 33.4 | O |
| 8698706 | 10 | 0.00 | infinite | O |
| 8799462 | 2267 | 123.33 | 18.4 | O |
| 8890204 | 89 | 7.75 | 11.5 | R |
| 9012360 | 72 | 43.33 | 1.7 | R |
| 9026048 | 106 | 16.33 | 6.5 | R |
| 9047184 | 89 | 4.00 | 22.3 | R |
| 9061201 | 11 | 0.00 | infinite | O |
| 9076167 | 92 | 25.91 | 3.6 | O |
| 9095225 | 225 | 231.66 | 1 | U |
| 9099870 | 20 | 4.91 | 4.1 | R |
| 9115072 | 23 | 1.41 | 16.3 | O |
| 9136052 | 7 | 0.75 | 9.3 | R |
| 9199506 | 203 | 0.00 | infinite | O |
| 9332909 | 16 | 0.00 | infinite | O |
| 9395963 | 296 | 5.75 | 51.5 | O |
| 9535857 | 12 | 0.00 | infinite | O |
| 9869223 | 0 | 1.83 | 0 | U |
| 9945759 | 5 | 0.50 | 10 | R |

| | | |
|---|---|---|
| U - Under range, | 21 items | 16.8% |
| R - Within range, | 50 items | 40.0% |
| O - Over range, | 54 items | 43.2% |
| Total | 125 items | 100.0% |

Appendix VI-7

The Distribution of Inventory Exhausting Times (months) of Central Stores' Warehouse

| Range | Number of Items | Percentage |
|---|---|---|
| 0 | 6 | 4.8 |
| 0.1-0.9 | 4 | 3.2 |
| 1.0-2.9 | 12 | 9.6 |
| 3.0-9.9 | 32 | 25.6 |
| 10.0-19.9 | 17 | 13.6 |
| 20.0-99.9 | 27 | 21.6 |
| >=100 | 27 | 21.6 |
| Total | 125 | 100 |

Appendix VI-8

The Value and Number of Purchasing Orders in Last Fiscal Year
( July, 1981 to June, 1982 )

| | Dollars | Documents |
|---|---|---|
| Direct Purchasing Order | 203,726,997 | 18,679 |
| Stores Purchasing Order | 36,403,698 | 4,662* |
| Purchasing Order Check Direct | 8,082,334 | 6,023 |
| Purchasing Order Check Stores | 172,558 | 349* |
| Department Sub Order | 40,256,124 | 104,849 |
| Total | 288,641,741 | 134,562 |

* On average, each document of stores purchasing order contains three lines of replenishing orders. Therefore, the number of replenishing orders (N) is estimated at three times the number of stores purchasing orders.

Appendix VI-9

The Backorder Percentage and Service Level of Stores Division

| | Number of Orders | Number of Backorders | Backorder Percentage (%) | Service Level |
|---|---|---|---|---|
| Jan, 1983 | 20197 | 1205 | 5.97 | 94.03 |
| Feb, 1983 | 18320 | 1322 | 7.22 | 92.78 |
| March, 1983 | 21870 | 507 | 2.32 | 97.68 |
| Total | 60387 | 3034 | 4.99 | 95.01 |

Appendix VI-10

The Backorder Percentage and Service Level of Several Dept.

(Estimated)

| | Backorder Percentage (%) | Service Level (%) |
|---|---|---|
| Mechanical | 0.02 | 99.98 |
| Data Processing | < 5.0 | > 95.0 |
| Collection | < 5.0 | > 95.0 |
| Building Service | < 5.0 | > 95.0 |
| Personnel | < 5.0 | > 95.0 |
| Weighted Average | < 1.0 | > 99.0 |

Appendix VI-11

The Labor/Inventory Level Ratio and Warehouse Area/Inventory Level Ratio of Seven Departments

| Department | Average Inventory ($Million) | Labor/Inventory Level Ratio (Men/$Million) | Area/Inventory Level Ratio (sq. ft./$Million) |
|---|---|---|---|
| Purchasing and Stores | 8.500 | 33,200 | 10.2 |
| Mechanical | 3.560 | 28,700 | 6.1 |
| Communication | 0.820 | 12,600 | 12.2 |
| Data Processing | 0.500 | 19,500 | 16 |
| Collection | 0.061 | 37,800 | 49 |
| Building service | 0.030 | 121,400 | 133.3 |
| Personnel | 0.025 | 46,700 | 40 |
| Average | | 29,500 | 10 |