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APPLICATION OF THE
COMMERCIAL OR INDUSTRIAL ACTIVITIES PROGRAM
TO PUBLIC WORKS CENTERS

by

Thomas Daniel McClure

and

Clifford Clemens Newton

March 1977

Thesis Advisor: J. C. Tibbits

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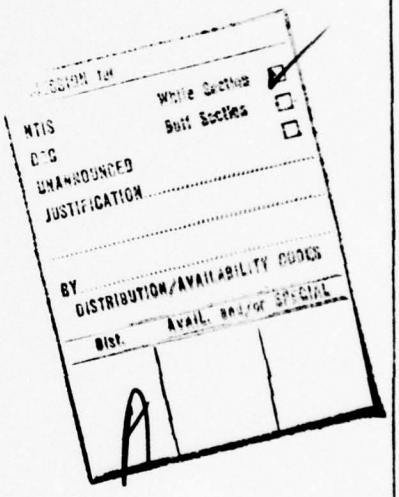
development of detailed compliance and reporting procedures are traced through the Department of Defense to the level of the individual PWC. A sample submission prepared by PWC San Francisco Bay is presented to demonstrate some of the problems encountered. Following this are the results of a study to demonstrate the potential effect on PWC San Francisco Bay overhead rates if various functions are contracted as a result of the C/I Program. Conclusions and recommendations are intended to simplify compliance at the PWC level.



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Application of the Commercial or Industrial Activities Program to Public Works Centers

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ABSTRACT

This thesis explores the application of the Commercial or Industrial Activities Program to Navy Public Works Centers with particular emphasis on problems encountered at Public Works Center San Francisco Bay. Initial discussion covers the evolution of the program at the national level and addresses some of the current controversy raised with the recently renewed emphasis on the program. Next the development of detailed compliance and reporting procedures are traced through the Department of Defense to the level of the individual PWC. A sample submission prepared by PWC San Francisco Bay is presented to demonstrate some of the problems encountered. Following this are the results of a study to demonstrate the potential effect on PWC San Francisco Bay overhead rates if various functions are contracted as the result of the C/I Program. Conclusions and recommendations are intended to simplify compliance at the PWC level.

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I. INTRODUCTION

It is the stated policy of the Government of the United States to rely upon the private enterprise system to supply its needs, except where it is in the National interest for the Government to provide directly the products and services it uses. Procedures for establishing a formal program for implementation of this policy on a National level were published by the Bureau of the Budget on 30 August 1967 in BOB Circular A-76 (Revised). Within the Navy, this program is referred to as the Commercial or Industrial Activities Program. The intent of the program cannot be questioned if one accepts the premise that the Government should not compete with private enterprise; however, attempts to implement the program have resulted in numerous problems in both interpretation and application of the procedures.

The primary goal of the authors was to explore the potential impact of fully implementing the program requirements at PWC San Francisco Bay and other PWCs. In attempting to accomplish this goal, information was obtained primarily from library research and personal interviews with personnel from three PWCs and the Naval Audit Service.

Initially, discussion will concern the development of current policies and procedures; this section will include a history of the program and will trace the application instructions through the military chain of command. Next, a brief background discussion of Public Works Centers is

presented. Following these two background presentations, discussion will progress to the primarily administrative difficulties of applying the Commercial or Industrial Activity Program at an individual Public Works Center; specific examples from PWC San Francisco Bay are discussed. Discussion will then move to an investigation of the potential impact upon the overhead rates charged by a Public Works Center with emphasis on the inequities of the allocation system. Next, non-economic factors that might support in-house vice commercial operations are sought, but without significant results. Finally, recommendations and conclusions are presented.

II. DEVELOPMENT AND IMPLEMENTATION OF THE COMMERCIAL OR INDUSTRIAL ACTIVITIES PROGRAM

A. GENERAL

The purpose of this section is to provide the general background of the Commercial or Industrial Activities Program. First, the current policy of the Federal Government will be presented. Following the current policy will be a brief history of the evolution of the policy. Next will be the tracing of the various implementing directives and instructions within the Department of Defense down to the level of the individual Navy Public Works Center. Following discussion of the implementing directives and instructions will be the presentation of more recent developments on the national level. Finally, there will be a brief discussion of the controversy raised by the recent developments.

B. CURRENT FEDERAL GOVERNMENT POLICY

The formal statement of the current Federal Government policy is contained in the Bureau of the Budget Circular A-76 (Revised), Transmittal Memorandum No. 1 of August 30, 1967; SUBJECT: Policies for acquiring commercial or industrial products and services for Government use.[1]

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[1]Since the Bureau of the Budget has been superseded by the Office of Management and Budget, this publication will in the future be referred to as OMB Circular A-76 or merely Circular A-76.

Under the heading "Policy", Circular A-76 states:

> The guidelines in this Circular are in furtherance of the Government's general policy of relying on the private enterprise system to supply its needs.
>
> In some instances, however, it is in the national interest for the Government to provide directly the products and services it uses. These circumstances are set forth in paragraph 5 of this circular.

In order to examine the extent of this Government policy, it is useful to quote portions of the paragraph entitled "Scope":

> This Circular is applicable to commercial and industrial products and services used by executive agencies, except that it:
>
> a. Will not be used as authority to enter into contracts if such authority does not otherwise exist nor will it be used to justify departure from any law or regulation, including regulations of the Civil Service Commission or other appropriate authority, nor will it be used for the purpose of avoiding established salary or personnel limitations.
>
> b. Does not alter the existing requirement that executive agencies will perform for themselves those basic functions of management which they must perform in order to retain essential control over the conduct of their programs. These functions include selection and direction of Government employees, assignment of organizational responsibilities, planning of programs, establishment of performance goals and priorities, and evaluation of performance.

As a final quotation from Circular A-76, paragraph 5 gives circumstances under which the Government may provide the goods and services it uses:

a. Procurement of a product or service from a commercial source would disrupt or materially delay an agency's program.

b. It is necessary for the Government to conduct a commercial or industrial activity for purposes of combat support or for individual and unit retraining of military personnel or to maintain or strengthen mobilization readiness.

c. A satisfactory commercial source is not available and cannot be developed in time to provide a product or service when it is needed.

d. The product or service is available from another Federal Agency ..... In such instances, the agency supplying a product or service to another agency is responsible for compliance with this Circular.

e. Procurement of the product or service from a commercial source will result in a higher cost to the Government. A Government commercial activity may be authorized if a comparative cost analysis prepared as provided in this Circular indicates that the Government can provide or is providing a product or service at a cost lower than if the product or service were obtained from commercial sources.

No cost comparison is required if an existing in-house provision of goods or services can be justified under any of the first four circumstances presented above. If the activity under question is estimated to cost less than $50,000 per year, again no cost comparison is required; commercial sources should be relied upon without incurring the delay and cost of performing the cost comparison. If the activity under question is estimated to cost over $50,000 per year, a cost comparison should be made.

Since the Government does not incur many of the costs incurred by a contractor and since other costs are not visible due to the differences in accounting, the Circular provides guidance for the consideration of costs which should be included in order to compare the Government and contractor costs on a more equitable basis. Additionally, guidance is given to the effect that incremental or additional costs incurred by the Government in providing the goods or service should be the basis for considering the Government's cost.

In administration of the stated policy, each agency is required to compile and maintain an inventory of its commercial or industrial activities whose costs exceed $50,000 annually or whose capital investments exceed $25,000. Additionally, each agency is tasked with performing a systematic review of all of its commercial or industrial activities at least once every three years. If the activity cannot be justified under one of the first four circumstances, an economic analysis must be prepared to determine whether the activity is to continue in-house or to be contracted out. Furthermore, "new starts" are additionally required to have the approval of the agency

head, an assistant secretary, or other official of equivalent rank before the activity can be commenced in-house.[2]

Each agency is tasked with the responsibility for the preparation of implementing instructions and the provision of copies to the Bureau of the Budget (now OMB). Overall responsibility for compliance rests with the agency head.

C. HISTORY AT THE NATIONAL LEVEL

While Congressional inquiries concerning the reliance on the private sector for products and services needed by the Government were made as early as 1932, the establishment of policy has come predominately from within the Executive Branch. One of the earliest, if not the first, public announcement on the subject occurred in President Eisenhower's initial budget address when he stated that his budget would mark the beginning of a movement to shift to private enterprise those Federal activities which could be more appropriately or efficiently carried on that way. In furtherance of this stated policy, the Bureau of the Budget (BOB) published BOB Bulletin 55-4 in January of 1955,

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[2] A "new start" is defined as a reactivated, expanded, modernized, or replaced activity whose cost is expected to exceed $100,000 annually or whose investment is expected to exceed $50,000 or a completely new activity costing over $50,000 annually or having an investment cost of over $25,000. As part of the economic analysis for "new starts", in-house approval should normally only be given when in-house is at least 10% cheaper than by contract; this percentage is not fixed.

stating as a general policy that the Federal Government would not start or carry on any commercial activity to provide products or services available from private enterprise unless it was clearly demonstrated that it was not in the public interest to procure such a product or service from private enterprise. While each agency head was tasked with inventorying and evaluating commercial or industrial activities, it was emphasized that cost should not usually be the deciding factor in determining whether the activity should be retained in-house. Furthermore, there was no definitive guidance as to the intent of the phrase "not in the public interest".[3]

Superseding BOB Bulletin 55-4, BOB Bulletin 57-7 (published in February of 1957) expressed a policy identical to its predecessor but softened the emphasis against cost comparison by stating that in-house provision of goods or services was justified for the following reasons:

(1) goods or services were not available on a competitive basis or at a reasonable price; or

(2) goods or services should not be procured due to overriding considerations of law, national security or national policy.[4]

---

[3]Wildermuth, John G., "Contracting-Out: A Case for Realistic Contract Vs. In-House Decision-Making", Military Law Review, v. 49, p. 1-43, July 1970.

[4]Ibid.

The evolution of policy to further discussion of economic analysis of contract versus in-house performance continued with the publication of BOB Bulletin 60-2 in September of 1959. This bulletin listed three exceptions under which an activity could be performed in-house:

(1) National security; or

(2) Relatively large and disproportionately higher costs; or

(3) Clear infeasibility.

However, the term "relatively large and disproportionate cost" was not explained; the bulletin further stated that the general policy had not been altered and that a finding of relatively large and disproportionately higher cost did not prohibit procurement from a more costly commercial source.[5]

With the increasing popularity of cost-benefit type analysis and increasing Congressional interest, BOB Bulletin 60-2 was superseded by BOB Circular A-76 in March 1966. Circular A-76 was modified slightly and reissued in August 1967 under Transmittal Memorandum no. 1. Even though Circular A-76 states that it is a "furtherance of the Government's general policy of relying upon the private enterprise system to provide its needs", wording of the circumstance under which the Government may provide goods

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[5] Ibid.

or services due to economic reasons has been greatly expanded. The last circumstance listed now merely requires that the commercial source result in higher costs to the Government when the cost analysis is prepared in accordance with the provisions of the circular. Furthermore, fully 60% of Circular A-76 (Revised) is devoted to discussion of cost comparisons.[6]

D. IMPLEMENTING DIRECTIVES

This section will trace the development of the current implementing instructions from the level of the Department of Defense, as the agency responsible to OMB, through the chain of command down to a Navy Public Works Center level. Discussion of the content of the individual instruction will follow when there is an apparent interpretation or extension of policy beyond that expressed in CIRCULAR A-76 Revised.

1. Department of Defense Directive 4100.15 of July 8, 1971

This directive is of significance in that it prescribes Department of Defense policy governing the establishment and operation of DOD Commercial or Industrial Program. This directive also assigns responsibilities and delegates authority within DOD. The following comments

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[6]OMB Circular A-76 (Revised).

pertain to policy exceptions, interpretations, or extensions observed in comparing this directive with OMB CIRCULAR No. A-76:

a. Exceptions

Under authority of an OMB letter of 7 June 1971, the Secretary of Defense was granted an exception to the provisions of OMB Circular A-76 (Revised) which required approval for "new starts" or continuance of existing commercial or industrial activities by the agency head, an assistant secretary, or other official rank. Accordingly, DOD Directive 4100.15 provides for the delegation of such authority to officials in the Military Departments and Defense Agencies.

b. Policy Extensions

While this directive does restate the policy presented in OMB Circular A-76 (Revised), greater emphasis has been made with respect to economics of the decision as evidenced by this quotation from a portion of the section entitled "Policy":

> "In conformance with this principle, the Department of Defense will depend upon both private and Government commercial or industrial sources for the provision of products and services, with the objective of meeting its military readiness requirements with maximum cost effectiveness, as follows: ....."[7]

---

[7] DOD Directive 4100.15 dated 8 July 1971, para IV.B., (underlining added for emphasis).

c. Assignment of Responsibilities

Primary responsibility within DOD for the development and implementation of the commercial or industrial activities program was assigned to the Assistant Secretary of Defense (Installations and Logistics). ASD (I&L) was also delegated authority to exempt selected DOD commercial or industrial activities from review, as provided by section 7c(1) of OMB Circular A-76 (Revised); however, this authority is questionable due to wording of the referenced clause.[8]

Military Departments and Defense Agencies are instructed to comply with instructions issued by ASD (I&L) and are delegated authority to act for the Secretary of Defense in making certain decisions in compliance with the program. With respect to "new starts", they may approve or disapprove proposals subject to criteria contained in DOD Directive 4100.15 and may redelegate this authority down to the assistant secretary or equivalent rank; however, approval authority will be retained by ASD (I&L) for industrial facility modernization, expansion, or replacement.

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[8]Paragraph 7c(1) of OMB Circular A-76 (Revised) contains only one sentence pertaining to exemption; that sentence states: "The agency head or his designee may exempt designated activities if he decides that such reviews are not warranted in specific instances."

With respect to existing DOD operation of a commercial or industrial activity, they may make decisions to continue, discontinue, or curtail those activities operated by their respective Departments or Agencies; furthermore, this authority may be redelegated down to the level of the Commanding Officer of a major command.

2. Department of Defense Instruction 4100.33, "Commercial or Industrial Activities - Operation of" dated July 16, 1971

This instruction is of significance in that it contains the detailed implementation procedures necessary to comply with the policy statement of DOD Directive 4100.15. Further assignments of responsibility are made, and several extensions are made to the policy contained in higher level publications. Two of the most significant extensions result from the definition of DOD Commercial or Industrial Activities and from the establishment of a requirement to review the cost of procurement of goods and services from commercial sources.

DOD Commercial or Industrial Activities are defined as those 101 functional areas contained in a listing which is an enclosure to DOD Instruction 4100.33. This restricted definition has resulted in the exclusion of many "white collar" activities from consideration under the Commercial or Industrial Activities Program; this extension of policy appears to be in conflict with OMB Circular A-76 (Revised).

The second major policy extension contained in this instruction is the requirement to perform an economic review of both existing and planned contract procurement of goods and services which are described by the list of 101 functional areas discussed above. In addition to the requirement to inventory the in-house operation of Commercial or Industrial Activities, this instruction also extends the inventory requirements of OMB Circular A-76 (Revised) to include contract operations. Though not intended as defense of DOD's extension of policy, it would appear that inventory information on the amount of contract effort should be available for purposes of showing DOD progress toward the overall intent to rely more upon commercial sources.[9]

In addition to the policy extensions discussed above, this instruction levies the requirement for an additional report associated with the inventory requirement. A separate report listing C/I Activities or contract support activities which have been discontinued, curtailed (by a minimum of 15%), or converted to another method of performance is now required annually.

While DOD Instruction 4100.33 provides further elaboration and explanation of the circumstance codes under which

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[9]At this point, the authors which to clarify any possible confusion concerning the use of the word "activities"; within the Navy, individual commands are frequently referred to as activities, thus introducing possible confusion with C/I Activities. Such confusion does not generally occur with Army or Air Force since their individual commands are usually referred to as installations.

in-house operation may be justified, no apparent deviation from the intent of OMB Circular A-76 (Revised) exists in this area. The same general comment applies to delegation of authority and responsibility when comparing DOD Instruction 4100.33 to DOD Directive 4100.15. DOD Instruction does provide, for the first look, very detailed instructions for the preparation of the annual inventory and the periodic reviews required; however, discussion of the mechanics of these reporting requirements will be reserved for a later section in which examples taken from PWC San Francisco Bay will be used to demonstrate ambiguities in the instructions.

3. SECNAV INSTRUCTION 4860.44A, "Commercial or Industrial Activities Program" dated 27 October 1971.

The purpose of this instruction is to assign responsibilities for implementation of the C/I Activities Program within the Department of the Navy. As such, no policy extensions are made and no new reporting requirements are levied. Significant responsibility assignments occur in the areas of review approval levels and audit of the program.

In the first mention of methodology for enforcement of the C/I Activities Program, this instruction tasks the Comptroller of the Navy with the responsibility for reviewing the actions by Naval and Marine Corps installations in fulfilling their responsibilities for the review of

commercial or industrial activities in regularly scheduled audits. Furthermore, the Comptroller of the Navy is tasked to audit new starts and conversions to contract when specifically requested.

Starting at the lowest level of review authority permitted, this instruction limits approval authority to the following:

a. Commanding Officer of a Shore (Field) Activity

Authority to approve reviews recommending the continuance of contract support for reasons of cost effectiveness is delegated to this level and may not be redelegated to a subordinate.

b. Major Navy Command (i.e., echelon 3 Command) or Commanding General of a Major Marine Command.

Authority to approve reviews recommending total continuance of in-house effort, total or partial discontinuance of in-house effort and the conversion of such effort to contract support, or the continuance of contract support for reasons other than lower cost is delegated to this level and many not be redelegated to a subordinate command. (For purposes of investigating the impact on Public Works Centers, the Naval Facilities Engineering Command is the echelon 3 command.)

c. Assistant Secretary of the Navy (Installations and Logistics)

Authority to approve reviews recommending "new starts" to the extent permitted by DOD Directive 4100.15 is delegated to this level.

4. OPNAV Instruction 4860.6, "Commercial or Industrial Activities Program", dated 30 November 1971.

This instruction is primarily significant in that it delegates responsibility for implementing the Commercial or Industrial Activities Program within the Navy to the Chief of Naval Material.

5. NAVMAT INSTRUCTION 4860.12A, "Commercial or Industrial (C/I) Activities Program", dated 25 January 1972.

This instruction provides the detailed guidance by which the Commercial or Industrial Activities Program is implemented within the Navy. By format and arrangement, it is intended as a manual of operating procedures for use by persons involved in the program at the local shore commands as well as at the major claimant level. While there are no new policy extensions, this instruction does continue with guidance which reflects the policy extensions discussed in the previous instructions. Discussion in this section will be limited to relatively general aspects of the instruction. As previously stated, a later section of this thesis will discuss the details of the mechanics involved in preparation of the various reports required.[10]

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[10]Due to length of NAVMATINST 4860.12A (88 pages), it has not been included as an appendix. A copy should be available for review at any Naval shore activity.

As observed in the discussion of DOD Instruction 4100.33, the listing of the 101 functional areas to be reported upon has been interpreted to be the limit of the C/I Activities Program. This is evidenced by the discussion of the management function in the section of NAVMATINST 4860.12A entitled "Navy Policy" which, in part, states:

> "These management functions do not relate to the functional areas described in Appendix A, and therefore, need not be justified on the basis of a compelling reason for in-house continuance."

This limitation is further evidenced in the definition section of NAVMATINST 4860.12A which defines a Commercial or Industrial Activity as:

> A function or operation performed or conducted by civil service and/or military personnel to provide a product or perform a service in support of the functional areas listed in Appendix A.

While the delegation of review authority contained in NAVMATINST 4860.12A is consistent with previously discussed instructions, such authority has not been redelegated to the maximum extent permitted. Specifically, the heads of 21 major commands (designated by title) are authorized to approve or disapprove recommendations for the in-house continuance of a C/I Activity, the discontinuance and/or conversion of such an activity to contract support, and the continuance of contract support for reasons other than lower cost. As an exception, the Chief of Naval Material

reserves this authority in the K, M, and X functional area categories.[11] Furthermore, the section "Review of Contract Support" requires that a comparative cost analysis be conducted prior to the award or renewal of a contract for products or services in the list of C/I functions.

Though implied in previous instructions, NAVMATINST 4860.12A is the first instruction which specifically addresses the procedures for converting a contracted function to an in-house C/I Activity. This is accomplished by the addition of a single sentence which states that the term "new start" includes "a partial or total conversion of contract support to a commercial or industrial activity which meets or exceeds the dollar criteria of paragraphs 2.a. or 2.b."[12] Conversion from contract to in-house then requires the same approval route as any other "new start" with the minimum approval level being the Assistant Secretary of the Navy (Installations and Logistics).

NAVMATINST 4860.12A tasks every shore activity commanding officer to fully implement the C/I Activities

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[11]Functional area categories K and M pertain to depot level repair, maintenance, modification, alteration, and/or rebuild of both mission-essential and nonmission-essential equipment; category X pertains to products manufactured/fabricated in-house.

[12]NAVMATINST 4860.12A, Chapter V, Section A, para 2.c. Paragraphs referenced in the quote pertain to the previously stated dollar value criteria for a "new start".

Program and further tasks the Naval Material Industrial Resources Office (NAVMIRO) with the responsibility to monitor the program, compile and distribute consolidated reports, and provide assistance and guidance to the various commands relative to the procedures contained in the instruction.

6. NAVFAC Instruction 4860.16, "Commercial or Industrial Activities Program", dated 28 November 1972.

This instruction from the Naval Facilities Engineering Command applies only to its own field activities (Public Works Centers, Construction Battalion Centers, and Engineering Field Divisions). No policy extensions are made. The primary significance of this instruction is the modification of routing on the submission of reports; reports are to be forwarded to NAVFAC via the Engineering Field Divisions who are tasked with technical review. In addition, further guidance on the preparation of the economic review is given with emphasis on the unique aspects of the Public Works Centers; specifically, the PWCs are instructed not to use their overhead rates or applied overhead charged to customer activities since the intent of the program is to compare incremental costs only.

E. RENEWED PROGRAM INTEREST

During the past four years, the Department of Defense has reported an increase in contract procurement from 23.9% to 26% of the total support needed to supply their

needs in the functional areas reportable under the Commercial or Industrial Activities Program.[13] Without any specific targets, this increase has little significance other than as an indicator of lack of emphasis on the program. The lack of literature available and the lack of current instructions or directives in the past four years seems to further support this observation. It was not until the summer of 1976 that the program received new vigor and interest.

The public was made aware of a revival of emphasis on the program by the release of an OMB memorandum dated July 27, 1976. In this memorandum, the Director of OMB, James T. Lynn, called for the heads of 20 major federal agencies to submit by August 23 initial plans for increasing their reliance upon the private sector in compliance with OMB Circular A-76 (Revised). President Ford's Management Initiatives Meeting of July 23, 1976 was cited as the source of this renewed interest. Lynn's memorandum also stated that each agency was expected to identify at least five functions presently performed in-house that will be reviewed, together, together with timetables for action, by OMB. Furthermore, each agency was tasked to review and revise by September 21, 1976, their implementing instructions and procedures to ensure compliance with OMB Circular A-76 (Revised).[14]

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[13] Federal Contracts Report, Bureau of National Affairs, number 639, p. A-15, July 12, 1976.

[14] Ibid.

Some other later developments concerning the Commercial or Industrial Activities Program are as follows, including the major provisions of a modification to Circular A-76, some of the interim procedures to be followed by the Department of Defense, and a discussion of the resulting controversy.

1. OMB Circular A-76 (Revised) Transmittal Memorandum No. 2

First published in the Federal Register on August 23, 1976, as a proposal for which comments were solicited from interested parties, Transmittal Memorandum No. 2 to OMB Circular A-76 (Revised) became effective October 18, 1976. This memorandum directs executive agencies to use factors of 24.7% for civil service retirement cost and 4% for civil service insurance cost when making analyses under provisions of Circular A-76. Factors previously specified were 7% and 1.4% respectively. The higher factors were developed by Civil Service Commission actuaries on the basis of a "dynamic" rather than a "static" approach to reflect the result of anticipated changes in salaries, interest rates, and retirement benefits. The Transmittal Memorandum further provides that copies of cost comparisons made under provisions of Circular A-76 will be made available to interested persons when requested under the provisions of the Freedom of Information Act.

2. Department of Defense Interim Procedures

Presumably as the result of the memorandum by OMB on the Presidential Management Initiatives meeting, the

Defense Department has developed procedural changes which have been agreed upon by the Office of Federal Procurement Policy.[15] These changes are intended to more effectively implement the requirements of Circular A-76 and have been published as interim procedures for implementation by the Assistant Secretaries (Installations and Logistics) of the Army, Navy, and Air Force and the Director, Defense Supply Agency. The changes which appear to be the most significant are as follows:

a. New factors have been developed for use in all new cost studies. In addition to the new retirement and insurance factors resulting from modification of OMB Circular A-76, revised factors are given for taxes foregone, inflation projections, government wage increases, and the cost of money.

b. A "firm offer" concept of securing competitive bids from industry has been developed for use throughout DOD. Under this concept, the activity will develop an in-house estimate (including such factors necessary to make the estimate comparable to private industry) which will be validated by an independent Service Agency (such as the Service auditor). This estimate will then be sealed and will become the government estimate and the government bid in a subsequent solicitation of bids from private contractors.

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[15]Memorandum dated 23 August 1976 signed by John J. Bennett, Principal Deputy Assistant Secretary of Defense (Installations and Logistics).

This will place the activity in direct competition with the private contractors. All bids including the government estimate will be opened and will be available for examination at the bid opening. Coupled with the "firm offer" bid concept is the guidance to the effect that efforts should be made to contract for a minimum of three year periods (or a one-year period with two one-year priced options) in order to avoid the expense of converting a C/I Activity each three years.

c. Maintenance of real property is now defined to be a part of one of the functional categories specified in the DOD instructions. Previous instructions were ambiguous on the subject of facility maintenance. Furthermore, it was stated that the "DOD real property maintenance centralization effort of the past few years should provide ample opportunity for contracting out."

d. Consolidation of functions to make a larger, more attractive contract solicitation is directed in those cases where adequate competition for small or potentially unprofitable activities might result in lack of contractor interest or competition.

e. Inventory reports will still be required annually at the DOD level, but Service components should collect and analyze information quarterly.

f. The "new start" definition has been reworded to remove from consideration those expenditures which are necessary to comply with Environmental Protection or

Occupational Safety and Health Acts or energy requirements applicable to certain functions pertaining to on-base operations, approved C/I Activities, and Government owned and operated activities.

g. Functions which are subject to the C/I program may now be contracted out without first performing a cost study whenever adequate competition exists unless there is substantial reason to believe that the government in-house cost is substantially less costly due to some unusual reason.

3. Current Controversy

The lack of publicity concerning the Commercial or Industrial Activities Program in recent years is by no means an indicator that the program has been accepted by either labor or contractor affiliation groups. On the contrary, it appears that the lack of public criticism was a function of the relatively unenthusiastic manner by which the program was implemented within the Federal Government. There was little to be gained in public challenge of an inactive or ineffective program.

Though not widely publicized, specific applications of the program were being challenged in the courts during this period. The American Federation of Government Employees challenged both NASA and the U.S. Army's Ballistic Missile Defense Systems Command with apparently conflicitng

results. Both cases seem headed to the U.S. Supreme Court for final decision.[16]

The long silence on this controversy was ended on August 23, 1976, when OMB's Director, James T. Lynn, publicly released the memorandum on President Ford's Management Initiatives Meeting held July 23 and the OMB's Administrator for Federal Procurement Policy, Hugh I. Witt, released the proposed revision to civil service retirement and insurance factors. Since that time, there have been numerous public proclamations by members of Congress, labor union representatives, and contractor organization spokesmen. The remainder of this section will be devoted to the presentation of positions taken by various interested parties.

a. Organized Labor

The American Federation of Government Employees (AFGE), an affiliate of the AFL-CIO, appears to be the most vocal element in opposition to the renewed emphasis on the Commercial or Industrial Activities Program. Citing the

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[16]The AFGE won against NASA with the court ruling that NASA's contract was null and void on the grounds that NASA had direct supervision of the contractor's employees; NASA was ordered to reinstate employees and give them back pay from 1967. In the case Against the Army, the AFGE lost the argument to replace contractor personnel with Civil Service on the Army's argument that its ability to effectively and efficiently manage the program would be impaired. From Scheibla, Shirley, "Private vs. Public Sector – The Government Wants to 'Contract Out' More Work", Barron's National Business and Financial Weekly, p. 11, Oct. 25, 1976.

increased factors for use in computing retirement and insurance when making cost comparisons, the AFGE estimates that as many as 170,000 federal employee jobs could be contracted out immediately. AFGE spokesmen have said that the new factors are meaningless unless similar factors are applied to compensate for the added unemployment compensation and social security costs which would result from increased contracting out.[17] Additionally, AFL-CIO spokesmen have attacked the factors as being arbitrarily high.[18]

The AFGE is reportedly considering legal action to halt accelerated contracting out functions currently performed in-house by civil service employees.[19] Further legal challenge on the Commercial or Industrial Activities program would be consistent with their past actions.

b. Contractor Organizations

The organization which appears to be most vocal in support of acceleration of the conversion of in-house functions to contract is the National Council of

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[17]"170,000 Job Loss Seen", Federal Employees' News Digest, v. 26, no. 15, p. 2, 8 November 1976.

[18]"Contract Services: Most Comments Favor Proposed OMB A-76 Supplement Raising Retirement Cost Factors", Federal Contracts Report, no. 650, p. A-20, 4 October 1976.

[19]Mace, Don; "Contract Rules Stalled", Federal Times, v. 12, no. 41, p. 1, 13 December 1976.

Technical Services Industries (NCTSI). The NCTSI responded to OMB's invitation for interested parties to comment on the proposed Transmittal Memorandum by stating that the increases in the factors were appropriate and long overdue.[20] Their letter also observed that the basic Circular A-76

> "clearly contemplates that the full cost of Government in-house support services activities be included when making comparisons with the cost to the taxpayers of having the same services provided by contracts with private industry. But it has been long recognized by private industry people, and by many Government officials as well, that full Government in-house costs have not been included in many of these studies."[21]

The NCTSI further noted the provision in the proposed Transmittal Memorandum which would make Government cost comparisons available to interested persons under the Freedom of Information Act and proposed that similar disclosure be made of the supporting rationale used when in-house performance is justified on the basis of a circumstance not involving a cost comparison.

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[20] "Contract Services: NCTSE Urges Prompt Issuance of Proposed Circular A-76 Amendment Without Material Changes", Federal Contracts Report, no. 649, p. A-16, 27 September 1976.

[21] Ibid. It should be noted that Circular A-76 does not call for full costs, but calls for an analysis which "will disclose as accurately as possible the difference between the cost which the Government is incurring or will incur under each alternative"; thus, A-76 requires the use of incremental costing.

In the only reported response by a single contractor, the Vought Corporation stated that even though its original reaction to the proposed retirement factor was favorable, a more detailed analysis led them to the conclusion that the factor should be increased to 43.6% in lieu of the proposed 24.7%. Vought cited Cost Accounting Standard 412, "Composition and Measurement of Pension Costs", and stated that it would only be fair that costs of Government retirement be determined in a like manner.[22]

c. Congressional Members

Not surprisingly, Congressional reaction to the renewed emphasis and proposed changes to the program is mixed. With 13 to 15 Congressional comments in response to the proposed changes, five of them spoke in favor of going slow, giving Congress time to hold hearings, and/or having the General Accounting Office study the matter.[23] A sample of the reactions is presented below:

(1) Favorable. Representative Jack Kemp (D-NY) said that the proposed changes would have the support of nearly 80 House members. Though supporting this change, Rep. Kemp had previously stated in a speech on the floor of the House of Representatives that he would soon introduce

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[22]Federal Contracts Report No. 650, p. A-20.

[23]Ibid.

legislation because changes to Circular A-76 would not be sufficient to assure compliance and that the Office of Federal Procurement Policy was not the appropriate enforcement agency to ensure compliance with the intent of Circular A-76.[24]

(3) Unfavorable. Representative Christopher J. Dodd (D-Conn) and Representative Morris K. Udall (D-Ariz) have indicated their skepticism about the renewed emphasis and proposed changes by asking GAO to review the economic analysis which led OMB to conclude that the higher cost factors were more accurate and determine if OMB is correct. They further asked GAO to determine whether the five-function increase in contracting-out was reasonable or even achievable within the near future, whether the private sector could provide the appropriate services, and whether the specific functions selected were the proper ones to contract out.[25]

Representative Spark M. Matsunaga (D-HI) expressed his reaction by introducing a resolution (HCon Res. 727) requiring the OMB Director to defer implementation of the proposed new rules until Congress has an opportunity to review the proposed changes.[26]

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[24]Text of speech given by Rep. Kemp on 15 March 1976 from Federal Contracts Report, no. 623, p. E-1 to E-5, 22 March 1976.

[25]"Contract Services: Rep. Udall Asks GAO to Investigate OMB Contracting-Out Move", Federal Contracts Report, no. 647, p. A-30, 13 September 1976.

[26]Ibid.

d. General Accounting Office

In response to the request discussed above, GAO reported to Representatives Dodd and Udall that the estimates upon which OMB based the proposed new retirement and insurance factors could be considered reasonable if the assumptions upon which they were based were accepted. GAO further stated that the cost to the Government for civil service retirement exceeded 7% regardless of the method of computation and expressed a belief that similar computations of social security costs were in order. While acknowledging the difficulty in determining the true cost of social security, GAO stated that similar difficulties are encountered in determining civil service retirement costs and that the same basis of calculation should be applied to each. GAO further reported that the OMB staff would not release responses from the various agencies concerning the five functions to be contracted out. OMB argued that the data should not be made available until it was presented to the President and some decisions had been made; GAO disagrees with this position and intends to pursue the matter.[27]

e. Office of Management and Budget

In summarizing and reporting the results of the more than 80 comments received when the Transmittal

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[27]"Contract Services: GAO Analysis of 'A-76' Increase in Gov't Personnel Retirement Costs Questions Some Aspects", Federal Contracts Report, no. 656, p. A-23, 15 November 1976.

Memorandum to Circular A-76 was initially proposed, OMB stated that the basic policy of Government reliance on the private sector was not at issue and stated that the only effect of applying the changes to ongoing activities will be the reversal of those Government decisions made on the basis of inaccurate cost data. In defense of the proposed cost factors, OMB states that in every case in which there was a reasonable range of choices in making economic assumptions, the assumption that would produce the lowest cost factor was used. The argument for revision of social security costs for the private sector was dismissed on the grounds that the general fund of the Treasury has only reimbursed the Social Security trust funds in two specific instances, i.e., payments to non-insured persons over the age of 72 and noncontributary credits for military service.

In response to questioning at an interview, OMB General Counsel William M. Nichols stated that the list of functions earmarked for contracting out will probably not be available to the public until the fiscal year 1978 budget submission has been made to Congress.[28] This list is a compilation of the responses from the various agencies resulting from the Presidential Management Intiatives Meeting in which each agency was tasked to submit a list of five functions for review by OMB.

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[28]Mace, Don, "Contract Rules Stalled", Federal Times, v. 12, no. 41, p. 1, 13 Dec 1976.

III. PUBLIC WORKS CENTER BACKGROUND

A. INTRODUCTION

In order to give the reader an understanding of how the C/I Program might impact on a Navy Public Works Center this section gives a brief overview of Public Works Center (PWC) organization and operations.

A PWC is an organization which provides public works services including utilities, public housing, transportation support, facilities maintenance, engineering services, and shore facilities planning to its customers. Its customers may include both Naval and other Department of Defense commands located in the same geographical area. PWCs are generally Navy Industrial Fund (NIF) activities, i.e., a PWC uses a revolving fund to finance its operations. It is reimbursed by its customers from appropriated funds as work is completed.[29]

Where there are several Department of Defense activities requiring public works support in the same geographical area, there are at least two basic reasons why a PWC may have advantages over individual Public Works Departments at each of the activities. The first is the economies of scale realized by consolidating the public works management

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[29]Department of the Navy, Office of the Comptroller, NAVSO P-1718, Navy Industrial Fund Handbook for Public Works Centers, p. 1-9, 1972.

and operating forces into one organization. The second is the closer identification of full costs which result from the NIF accounting system.

The first Public Works Center was established at Naval Base Norfolk, Virginia in 1948. There are now nine Public Works Centers located in areas of large concentrations of Naval shore activities.

B. PWC ORGANIZATION

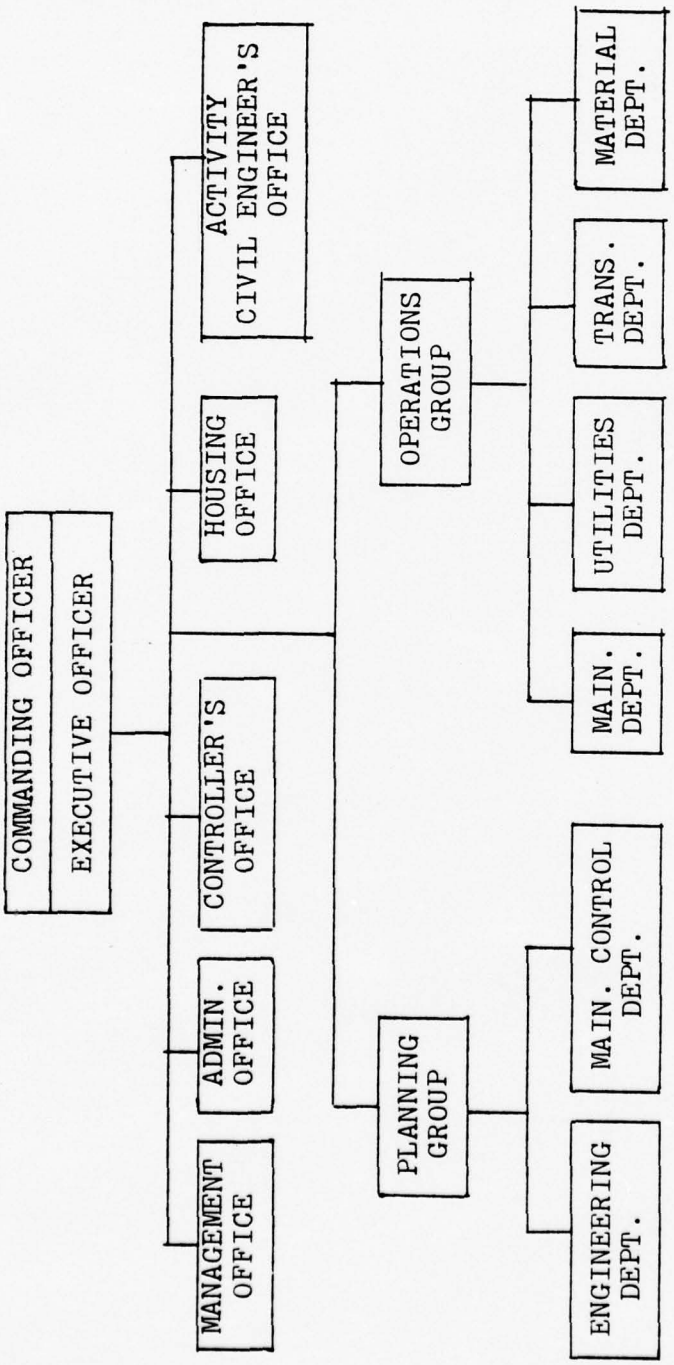
The Commanding Officer of a Public Works Center reports to the Naval Facilities Engineering Command via the appropriate Engineering Field Division. The PWC's relationship to its customers is that of a service organization. In general, the PWC is not in the same chain of command with its customers. Most PWC customers have no in-house facilities maintenance capability and are required to obtain their public works services through the PWC. The PWC may perform the work in-house or by contract. A few customers have their own public works capability and use the PWC only to augment their own effort.

Internally most PWCs are organized as shown in Figure 1. Under the Commanding Officer and the Executive Officer there are five basic groups: Planning, Operations, Housing, Activity Civil Engineer's Office, and staff.

The staffs of Administration, Management, Comptroller, Safety, Civilian Personnel, and Equal Employment Opportunity

FIGURE 1

PWC SAN FRANCISCO BAY ORGANIZATION CHART



support the Commanding Officer and other groups within the PWC in management of the PWC workload and resources. The Housing Department administers the DOD family housing which is under the PWC's jurisdiction. The Activity Civil Engineer's Office provides liaison between the PWC and its customers.

The Planning Group includes two departments, Maintenance Control and Engineering, and is the central point for receiving customer requirements. The Maintenance Control Department provides periodic inspection of facilities, inspection of maintenance service contracts, prepares job orders with estimates, and schedules the workload of the Maintenance Department. The Engineering Department does production design work and provides facilities planning assistance to the PWC customers.

The Operations Group consists of the Maintenance, Utilities, Transportation, and Materials Departments. The Maintenance Department performs maintenance, repair and alteration services for the customers' facilities. The Utilities Department purchases or generates utilities for distribution to customers. The Transportation Department provides transportation support to customers as well as to other PWC departments. The Material Department provides material support to the other PWC departments.

C. PWC OPERATIONS

The central facet of PWC operations is that they are Navy Industrial Fund activities. They operate in many ways that are similar to the operation of a private business. The important differences between PWC operation and that of a private business are:

1. A PWC has no profit incentive, its goal is zero profit.
2. PWCs pay no taxes.
3. PWCs make no expenditures for equipment costing over $1,000 or for improvements or additions to facilities.
4. Costs do not include depreciation on equipment or facilities.
5. Military salaries and wages are not included as part of operating costs.
6. PWCs receive some "free" support from other activities.
7. PWCs provide some "free" inspection and engineering support to commands and are reimbursed with annual appropriations by the Naval Facilities Engineering Command.

The capitalization of the PWC is the revolving fund or corpus. Once the PWC is established the corpus should remain fairly constant. Its size is initially determined by the anticipated payroll, material, and equipment the PWC requires to serve its customers. As the corpus is spent on labor and material it is replenished by reimbursement from the customers. The PWC receives no annual appropriations itself, but receives its income from its customers.[30]

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[30]There are some exceptions, the main one being mission management money received from the Naval Facilities Engineering Command to reimburse the corpus for free facilities inspection and engineering support the PWC provides its customers.

The NIF cycle begins with the customer's order in the form of a funding document. As the order is received by the PWC, it is assigned one or more job orders. All costs incurred in providing the service to the customer are collected on the job orders. The costs collected include direct labor, acceleration, material, and overhead. Acceleration is a percentage of the direct labor costs for such items as annual leave, sick leave, and retirement. Overhead is charged to the job order to recover indirect costs. A later section will explain how overhead costs are determined and allocated.

Periodically the customers are billed for the costs collected on the job orders. When the customers pay the bills, the corpus is replenished.

Work performed by the PWC for its customers can be categorized into emergency work, service work, recurring work, minor work, and specific work. Emergency work is work requiring immediate action to correct an emergency. Service work is work that can be accomplished within 16 manhours. Recurring work is generally repetitive work that can be well controlled such as janatorial service, gardening, or trash collection. Minor work is work that requires between 16 and 80 manhours to accomplish. Specific work requires more than 80 manhours to accomplish.

Emergency work, service work, and minor work are generally performed without the benefit of detailed advance planning. Detailed planning would require a greater

investment of money or time than is generally warranted for this type of work. Problems associated with contracting work which is not well defined will be discussed later.

D. PWC SAN FRANCISCO BAY

PWC San Francisco Bay was established in 1974 to consolidate all the public works operation carried out by the Public Works offices at Oakland Army Military Traffic Management and Terminal Service, Oakland Naval Supply Center, Alameda Naval Air Station, the current Treasure Island Naval Support Activity, Oakland Naval Regional Medical Center, and Hamilton Air Force Base.

Because PWC San Francisco Bay was recently established, it has yet to complete the entire three year C/I review cycle specified in the earlier section on Current Federal Government Policy.

In addition, many of the recurring job orders which were inherited upon the establishment of the PWC are written in terms of input requirements instead of being written in terms of output performance. This acknowledged deficiency creates two related problems. First, it will be difficult to estimate the cost of contracting on a performance basis for the C/I Review. Secondly, it will be more difficult to write specifications if contracting becomes necessary. PWC San Francisco Bay is now in the process of correcting this deficiency.

IV. IMPLEMENTATION OF THE C/I PROGRAM AT THE PWC LEVEL

A. PURPOSE

The purpose of this section is to discuss problems that are encountered when attempting to implement the Commercial or Industrial Activities Program at the local Public Works Center level. The necessity for this discussion is perhaps best demonstrated by the observation of one Navy auditor that he had not seen the same approach taken at any two Naval activities.

Earlier discussion provided a relatively broad overview of the C/I Program within the Navy. In this section, specific difficulties encountered in the implementation of the C/I Program at an individual Public Works Center will be presented. Discussion will focus upon the technical difficulties associated with compliance with the reporting requirements of the current instructions rather than questioning any of the concepts of the program.

Reports are required on the review of both in-house and contract performance of the 101 functions defined in Appendix A of NAVMATINST 4860.12A. An Annual Inventory Report is also required. The term "review" is somewhat misleading, since the "review" at the local command level is actually the initial step in the analysis to determine the preferred method of accomplishing a reportable function. The report of review contains the local commanding officer's

recommendation and justification on the method of performance in the future. The Annual Inventory Report does not enter into the decision process, but does provide historical data on the past year's method of performance, approvals from higher authority, and dollar-value of effort.

Information upon which this discussion of the reporting requirements is based was obtained from the analysis of the implementation instructions, discussion with personnel involved with the administration of the C/I Program at NAVFAC and NAVMIRO, discussion with personnel who actually prepared the reports at PWC San Francisco Bay, and discussion with auditors from the Naval Audit Service (Western Region) who were actually performing an audit of the program.

B. REVIEW PROCEDURES AND REPORTING REQUIREMENTS

A C/I Review is defined in Chapter III of NAVMATINST 4860.12A as "an analysis or evaluation of a commercial or industrial activity to determine whether it should be continued, discontinued, curtailed, or converted to another method of performance." Each Public Works Center is required to conduct a review of every function performed in-house at least once in each three-year cycle. The applicable functional areas along with the required reporting schedule for PWC San Francisco Bay are shown on Figure 2. As previously stated, the PWC report on the C/I Review must furnish a recommendation on the method of performance of the function. Figure 3 has been included to show the specific Circumstance Codes from which one must be selected as the

FIGURE 2

LIST OF FUNCTIONAL AREAS AND REVIEW SCHEDULES OF NAVY C/I ACTIVITIES AND CONTRACT SUPPORT SERVICES REPORTABLE BY PWC SAN FRANCISCO BAY

FUNCTIONAL AREA		YEAR IN REVIEW CYCLE		
		1st	2nd	3rd
MNTCE/REPAIR OF EQUIPMENT				
J510	Railway Equipment			X
J511	Special Equipment	X		
INSTALLATION SERVICES				
S709	Custodial Services	X		
S710	Insect & Rodent Control			X
S712	Refuse Collection & Disposal Svc			X
S716	Motor Vehicle Operations			X
S717	Motor Vehicle Maintenance		X	
S725	Electrical Plants & Systems*			X
S726	Heating Plants & Systems*			X
S727	Water Plants & Systems"			X
S728	Sewage & Waste Plants & Systems*			X
S729	Air Conditioning & Refrigeration Plants*			X
S730	Other Services or Utilities	X		
REPAIR ALTERATION & MINOR CONSTRUCTION OF REAL PROPERTY				
Z992	Buildings & Structures			X
Z993	Grounds (Improved)		X	
Z994	Surfaced Areas		X	
Z996	Grounds (Other Than Improved)		X	
Z997	Railroad Facilities	X		
Z998	Waterways and Waterfront Facilities	X		
Z999	Other	X		

* Government owned systems

Source: Table 2, Chapter III, NAVMATINST 4860.12A

FIGURE 3

SUMMARY OF CIRCUMSTANCE CODES FOR JUSTIFICATION OF IN-HOUSE PERFORMANCE OF C/I TYPE FUNCTIONS

CIRCUMSTANCE CODE A. Procurement of a product or service from a commercial source would disrupt or materially delay an essential program.

CIRCUMSTANCE CODE B. It is necessary for the government to conduct a commercial or industrial activity for purposes of combat support or for individual and unit retraining of military personnel or to maintain or strengthen mobilization readiness.

CIRCUMSTANCE CODE C. A satisfactory commercial source is not available and cannot be developed in time to provide a product or service when it is needed and the product or service is not available from another government agency.

CIRCUMSTANCE CODE D. Procurement of a product or service from a commercial source would result in higher total cost to the government.

SUMMARY OF CIRCUMSTANCE CODES FOR CONTRACT PERFORMANCE

CIRCUMSTANCE CODE E. Procurement of a product or service from commercial sources is less costly to the government.

CIRCUMSTANCE CODE F. Procurement of a product or service from commercial sources was based on reason(s) other than cost.

Source: Chapters III & IV of NAVMATINST 4860.12A.

most descriptive and supportable for the method recommended. Of the possible Circumstance Codes for supporting in-house performance, the first three require narrative justification. Only Circumstance Code D requires the preparation of an economic analysis comparing in-house performance to contract operation. A recommendation for conversion to contract operation would necessarily require the economic analysis.

In addition to the C/I Review which is technically only a review of functions currently performed in-house, a similar review is required prior to entering into or renewing any contract for the performance of any function which would be reportable if performed in-house. All contract reviews must be accompanied by an economic analysis; as in the case of the C/I Review, the recommendation must include one of the Circumstance Codes presented on Figure 3. Although the procedures for a "new start" are not emphasized in this thesis, it is significant that a recommendation to convert from contract to in-house performance is, by definition, a recommendation for a "new start".

Three of the six Circumstance Codes presented by Figure 3 require the preparation of an economic analysis whereas the remaining three require only a narrative justification. Since the applicable instructions pertaining to the circumstance codes which require only the narrative justifications are quite specific, further discussion of problems associated with the review procedures will be

limited to a discussion of the preparation and evaluation of the economic analysis.[31]

In emphasizing the economic analysis portion of the review procedure, the primary intent is to point out potential problems which arise in the course of preparing and evaluating an economic analysis. In general, the applicable instructions are reasonably clear on the preparation, but are ambiguous on the evaluation technique. In order to highlight some of the problems an actual analysis prepared by PWC San Francisco Bay personnel will be presented as a sample. While this sample will be useful for demonstrating some of the basic problems, it is not intended to be representative of the degree of complexity which may be experienced with other functional areas. The functional area Z993, Improved Grounds (essentially gardening and groundskeeping) to be presented is, in fact, one of the least complex of the functions performed by a PWC.

The sample will be used in discussion of the preparation of the Comparative Cost Analysis Worksheet, evaluation of the Worksheet, and a demonstration of the effect of applying the factors from the latest revision of OMB Circular A-76.

1. Cost Analysis Worksheet Preparation

Detailed instructions for the preparation of the Cost Analysis Worksheet are contained in Appendix C to NAVMATINST 4860.12A. Further guidance for PWCs is contained

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[31]The Circumstance Codes requiring only a narrative justification are further discussed in a later section of this thesis.

in NAVFACINST 4860.16. A sample completed worksheet (without narrative supporting comments) appears as Figure 4; the worksheet is repeated with the narrative justification as Appendix A. As previously stated, the instructions for completion of the worksheet are generally clear; therefore, examination of the worksheet will be limited to comment on cost elements which present problems and to discussion of out-year costs.

a. Individual Cost Elements

The following discussion of individual cost elements is keyed to the Cost Analysis Worksheet:

(1) Contract Cost (Price Paid to Supplier). While it is not the intent of this thesis to belabor the difficulties in the preparation of a reasonably accurate estimate for contract effort, this item is predictably singled out by the auditors as the one most subject to question. From the PWC standpoint, preparation of this estimate is the most expensive element of the program as measured in labor expended.

For the sample case, Z993, the most obvious approach seemed to be to examine each of the customer work requests involving groundskeeping and summarize all of the work units in terms of output quantities since each work request has a description of the work to be accomplished. For those readers familiar with the "real world", the results should have been anticipated; most of the work requests descriptions were written in terms of input rather than output. It should further be evident that the simplified

COST ANALYSIS WORKSHEET

Name of Installation: Navy Public Works Center, S.F. Bay Function: Grounds Maintenance Z993

Cost Elements	1st Yr. of Operation	2nd Yr. of Operation	3rd Yr. of Operation	4th & Following Yrs. of Operation
CONTRACT OPERATIONS				
1. Contract Cost (Price Paid to Supplier)	$ 366,912	$ 366,912	$ 366,912	$ 366,912
2. Transportation	-0-	-0-	-0-	-0-
3. Contract Administration & Related Costs	55,693	55,693	55,693	55,693
4. Government-Furnished Materials and Supplies	-0-	-0-	-0-	-0-
5. Contractor Use of Government-Owned Equipment and Facilities	720	720	720	720
6. Rehabilitation, Modification, or Expansion of Government-Owned Equipment and Facilities	-0-	-0-	-0-	-0-
7. Incentive or Premium Costs	-0-	-0-	-0-	-0-
8. Standby Maintenance Cost	-0-	-0-	-0-	-0-
9. Other Costs	178,017	-0-	-0-	-0-
9A. TOTAL	$ 601,342	$ 423,325	$ 423,325	$ 423,325
GOVERNMENT OPERATIONS (IN-HOUSE)				
10. Military Personnel Services	$ -0-	$ -0-	$ -0-	$ -0-
11. Civilian Personnel Services	396,142	396,142	396,142	396,142
12. Other Personnel Costs	-0-	-0-	-0-	-0-
13. Materials, Supplies, Utilities and Other Services	11,236	11,236	11,236	11,236
14. Maintenance and Repair	1,750	1,750	1,750	1,750
15. Overhead Costs	31,432	31,432	31,432	31,432
15A. SUBTOTAL (Sum of Elements 10 through 15)	$ 440,560	$ 440,560	$ 440,560	$ 440,560
16. Federal Taxes	7,778	7,778	7,778	7,778
17. Depreciation	8,742	-0-	-0-	-0-
18. Interest	-0-	-0-	-0-	-0-
19. Insurance	1,322	1,322	1,322	1,322
20. Other Indirect Costs	8,811	8,811	8,811	8,811
20A. TOTAL	$ 467,213	$ 458,471	$458,471	$ 458,471

GOVERNMENT OPERATIONS - OTHER (ISS/IDS/IAS)

Items 21 through 26A have been omitted since this section is not generally applicable to PWCs.

FIGURE 4

Cost Analysis Prepared at PWC San Francisco Bay

approach of summarizing work units from the work requests would become an almost insurmountable task for the more complex functional areas even if all work requests were written in terms of a measureable output.

Due to the difficulties encountered in attempting to derive output quantities and definitions upon which to base an estimate, the approach taken by PWC San Francisco Bay was to summarize the input units from all job orders and assume that contractor productivity would be equal to that of the government personnel. While applicable instructions caution that this method is likely to produce highly inaccurate results, a closer look at Figure 4 indicates that the contract cost may vary over a relatively wide range without necessarily having a decisive effect on the overall analysis.

(2) This item is not generally applicable to PWC functions.

(3) Contract Administration and Related Costs. The instructions for this item are quite clear. Even though real costs would be incurred, $16,250 of the sample entry would most likely be denied by an audit since this amount is the result of applied contract administration overhead rates and cannot be segregated under the current accounting system.

(4) through (8) No explanation is warranted.

(9) Other Costs. This item which consists primarily of costs associated with the termination or

transfer of government personnel is very much subject to interpretation and manipulation. While it may be possible for the civilian personnel office to make a reasonable estimate of these costs for a small number of personnel there are simply too many variables for accurate projections when large numbers of personnel are involved.

The sample entry, which was furnished by the civilian personnel office, demonstrates the relative significance of this entry.

(9A) and (10) No explanation is warranted.

(11) Civilian Personnel Services. For a function currently performed in-house, this entry is the most accurate (and auditable) on the worksheet since it consists of a total of the input labor costs compiled by the PWC Management System.

(12) through (16) No explanation is warranted since instructions are quite clear.

(17) Depreciation. The instructions for computation of depreciation are explicit. When considering new equipment and facilities, the instructions to use the Internal Revenue Service publication, Depreciation: Guidelines and Rules, assure that uniform results will be attained. However, the instructions for depreciation or "opportunity costs" state that the current market value should be used for existing equipment or facilities which may be sold or used elsewhere; in the absence of specific guidelines or sources for obtaining the current fair market value, these

instructions permit tremendous leeway in establishing this value. Accordingly, this item is subject to error or manipulation.

In the sample entry, the value of this item is not a significant portion of the Government Operation cost. In other cases, however, the opportunity costs could have a significant effect upon the analysis.

(18) through (20A) No explanation is warranted.

(21) through (26A) This section is generally not applicable to Public Works Centers.

b. Multi-Year Costing

The subject of multi-year costing raises some troublesome questions when preparing the economic costs analysis. While the worksheet has four columns for presentation of costs in different years, the accompanying instructions are completely silent on the application and use of these columns. As a result, questions arise when completing the worksheet entries and again when attempting to evaluate the worksheet.

In the absence of guidance, PWC San Francisco Bay chose not to inflate outyear costs on the reasonable assumption that the effect would be negligible since inflation rates for both methods of operation would be approximately equal.

In addition, no specific reference is made to one-time costs. While PWC San Francisco Bay's interpretation of cost elements 9 and 17 as one time costs is certainly

reasonable, the result is to make the worksheet appear to indicate that outyear total costs for each year are less than the first year's cost.

2. Worksheet Evaluation

Justification of a recommendation for continuance of an in-house operation on the basis of Circumstance Code D, must include a determination that the amount of cost savings achieved by in-house operation is sufficient to justify the disadvantages, risks and uncertainties of continuing such an activity. Furthermore, the general guideline is that approval should only be given if the cost of the in-house operation is at least 10% less than the cost of contracting.[32]

Perhaps the most uncertain aspect of the economic analysis results from attempts to apply the above criteria to a completed Cost Analysis Worksheet. While the obvious intent is to compare the cost of contract to in-house operation on some basis other than the first year's operation, the lack of guidance raises the question of how the multi-year costs should be aggregated for comparison purposes.

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[32]NAVMATINST 4860.12A, p. III-11, states that this percentage is intended to cover the dsadvantages, risks and uncertainties of continuing a C/I activity or initiating a new start. DOD Instruction 4100.33 (Encl 3, para II.C.3) states that the 10% is not intended to be a fixed differential and may vary in either direction.

Specifically, questions concerning the number of years to be used in the analysis and whether any technique such as present value analysis should be used are left unanswered. Though somewhat trivial in view of the minimum 10% savings differential, Figure 5 is presented to show the slight effect on the sample analysis which will result from the use of various techniques which would appear to be reasonable. At the risk of presenting the obvious, it should be noted that these various techniques become significant only in cases where the steady state costs are relatively close to the same value and one-time costs are appreciable.

3. Impact of OMB Circular A-76 Revision

As discussed earlier, the recent revision to OMB Circular A-76 has resulted in an increase in the factor for civil service retirement from 7% to 24.7% and an increase in the civil service insurance factor from 1.4% to 4% for purposes of Commercial or Industrial Activities Program evaluations. Since PWC's compute acceleration on the basis of productive labor hours as opposed to actual payroll hours, this 20.3% increase appears to be even greater. As an example, the acceleration rate for PWC San Francisco Bay will increase from 35.8% to 60.2% for purposes of the C/I Review.[33] Figure 6 reflects the effect of applying this

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[33]Productive labor hours per year average 1734 hours as opposed to 2080 payroll hours; using ratio of payroll to productive hours times the 20.3% increase yields an increase of 24.4%. This increase added to current acceleration rate of 35.8% results in increased acceleration rate of 60.2%.

FIGURE 5

Possible Outcomes of Analysis Depending on Method of Aggregating Total Costs Used

(Costs in $1,000)

Method of Aggregation	Contract Cost	In-House Costs	Ratio (Gov't/ Contract)
Total costs for three years, disregarding inflation, disregarding time-value of money	1,448	1,384	.96
Total costs for four years, disregarding inflation, disregarding time-value of money	1,871	1,842	.98
Present value based on three years, discount rate assumed to be 10%, disregarding inflation	1,336	1,263	.95
Present Value based on four years, discount rate assumed to be 10%, disregarding inflation	1,654	1,607	.98

Based upon data contained in Figure 4.

FIGURE 6

PWC San Francisco Bay Analysis Revised to Meet New OMB Factors

(Entries denoted by an asterisk are directly affected by changed factors)

COST ANALYSIS WORKSHEET

Name of Installation: Navy Public Works Center, S.F. Bay Function: Grounds Maintenance Z993

Cost Elements	1st Yr. of Operation	2nd Yr. of Operation	3rd Yr. of Operation	4th & Following Yrs. of Operation
CONTRACT OPERATIONS				
1. Contract Cost (Price Paid to Supplier)	$ 366,912	$ 366,912	$366,912	$ 366,912
2. Transportation	-0-	-0-	-0-	-0-
3. Contract Administration & Related Costs	65,700*	65,700*	65,700*	65,700*
4. Government-Furnished Materials and Supplies	-0-	-0-	-0-	-0-
5. Contractor Use of Government-Owned Equipment and Facilities	720	720	720	720
6. Rehabilitation, Modification, or Expansion of Government-Owned Equipment and Facilities	-0-	-0-	-0-	-0-
7. Incentive or Premium Costs	-0-	-0-	-0-	-0-
8. Standby Maintenance Cost	-0-	-0-	-0-	-0-
9. Other Costs	178,017	-0-	-0-	-0-
9A. TOTAL	$ 611,349	$ 433,332	$433,332	$ 433,332
GOVERNMENT OPERATIONS (IN-HOUSE)				
10. Military Personnel Services	$ -0-	$ -0-	$ -0-	$ -0-
11. Civilian Personnel Services	467,319*	467,319*	467,319*	467,319*
12. Other Personnel Costs	-0-	-0-	-0-	-0-
13. Materials, Supplies, Utilities and Other Services	11,236	11,236	11,236	11,236
14. Maintenance and Repair	1,750	1,750	1,750	1,750
15. Overhead Costs	37,079*	37,079*	37,079*	37,079*
15A. SUBTOTAL (Sum of Elements 10 through 15)	$ 517,384	$ 517,384	$517,384	$ 517,384
16. Federal Taxes	7,778	7,778	7,778	7,778
17. Depreciation	8,742	-0-	-0-	-0-
18. Interest	-0-	-0-	-0-	-0-
19. Insurance	1,560	1,560	1,560	1,560
20. Other Indirect Costs	10,394	10,394	10,394	10,394
20A. TOTAL	$ 545,858	$ 537,116	$537,116	$ 537,116

GOVERNMENT OPERATIONS - OTHER (ISS/IDS/IAS)

Items 21 through 26A have been omitted since this section is not generally applicable to PWCs.

revision to the sample presented earlier; the obvious impact is that even the substantial first year contract cost became insignificant.

4. Impact of DOD Interim Procedures

Even though the Interim Procedures for Implementation of OMB Circular A-76 (discussed in an earlier section) place greater emphasis on the C/I Program and introduce numerous new factors, the basic requirement and procedures for performing the economic analysis will undergo only minor changes. Specifically, the "firm offer" concept of securing competitive offers from industry will remove the uncertainty of estimating contract bid costs, but a format similar to the Cost Analysis Worksheet will still be required for the purpose of assembling and comparing total costs of the contract and in-house operations. Significantly, the new factors presented will remove much of the uncertainty in completing the outyear cost entries on the Cost Analysis Worksheet. However, questions involving the technique of aggregating the multi-year costs for comparison were not specifically addressed in the Interim Procedures.

C. ANNUAL INVENTORY REPORTING REQUIREMENTS

Specific annual inventory reporting requirements are contained in Chapter II of NAVMATINST 4860.12A. Significantly, there is no direct correlation between the inventory requirements and the economic analysis required by the review process. While the annual inventory reports do not

directly into the decision process, these reports do become the basis for statistics upon which the progress of the Commercial or Industrial Program is evaluated. In addition, the annual inventory provides a starting point for auditing the activity's compliance with the C/I Program.

Though supplemental information is required, the primary submission of the annual inventory report consists of a standard 80 character punched EAM card for each functional area performed in-house or contracted by the activity.

For ease of discussion, the format of the punched card is shown in Figure 7. It is significant that most of the data required to prepare this report is available through the automated Public Works Center Management System. However, there is no program for retrieval of this data in a summary form.

The following discussion and critique is keyed directly to the fields described in Figure 7:

Fields 1 through 3. Instructions are clear; no difficulties are encountered.

Field 4, Civilian Man-Years. While the intent is clear, problems are encountered in matching data from the management reports to the instructions. Management reports list by job order the direct labor hours charged to the job; summarizing data from all job orders associated with the function should result in an accurate total of direct labor hours expended in that functional area. This total will not include any overhead labor even though the instructions

FIGURE 7

ANNUAL INVENTORY PUNCHED CARD FORMAT

FIELD	DESCRIPTION	CARD COLUMNS	NUMBER OF COLUMNS	TYPE
1	Name & Location of Installation	1-26	26	A
1A	Command Code	27	1	A/N
2	State or Country Code	28-29	2	A/N
3	Function Code	30-33	4	A/N
4	Civilian Man-Years	34-37	4	N
5	Military Man-Years	38-41	4	N
6	Cost of Civ/Mil Man-Years	42-48	7	N
7	Cost of Supplies & Materials	49-55	7	N
8	Plant & Equipment Investment	56-62	7	N
9	Compelling Reason for Operation	63-66		
9a	In-house Reason Code	63	1	A
9b	In-house Reviewed & Approved	64	1	N
9c	Contract Reason Code	65	1	A
9d	Contract Reviewed & Approved	66	1	N
10	Contract Man-Years Employed	67-72	6	N
11	Contract Cost	73-79	7	N
12	Service Code	80	1	A

Source: NAVMATINST 4860.12A, Chapter II, pII-1.

require that any overhead man-years wholly chargeable to the function be included. Additionally, the specific guidance to compute man-years by dividing man-hours by 2080 hours results in even further inaccuracy in the case of PWC's, since reports compile only productive labor hours. Since the number of productive labor hours for an individual will necessarily vary as a result of his entitlement to annual leave and his use of sick leave, this factor is a function of the composition of the work force at each PWC. For PWC San Francisco Bay, the average number of productive direct labor hours per year has been calculated to be 1734 hours. Accordingly, the direct labor man-years was understated by approximately 17% as a result of using the 2080 hour factor. While this error does not affect the decision-making process, it does produce inconsistent statistical data.

Field 5, Military Man-Years. As in the case of most industrial type activities, military personnel at PWC San Francisco Bay are middle management and above. Since their duties are not limited to a single function, this field is insignificant.

Field 6, Cost of Civilian/Military Man-Years. Though potentially the most meaningful data contained in the report, instructions for this entry are vague and merely state "Enter the cost of the civilian and military man-years shown in fields 4 and 5". The individual preparing the report must decide what the composition of the cost will

be. He must decide whether the intent is to include acceleration (for fringe benefits and non-productive time), direct supervision (though not wholly chargeable to the function on a man-year basis), service support costs (such as transportation and supply procurement), and general administrative costs. All of these costs could justifiably be included if the intent is to collect "full costs". In fact, all of these costs are available from the Public Works Management System 3A77 report and were included in the cost reported by PWC San Francisco Bay for this entry.

Field 7, Cost of Supplies and Materials. While the total cost of supplies and materials used in support of a function are generally available, confusion is introduced with the instruction to exclude the cost of any supplies and materials which under a contract operation would be provided by the government. Until the specific provisions of a contract have been determined, it is difficult to make this determination.

Field 8, Plant and Equipment Investment. While the property records of an activity should provide the initial cost of the capital investment at that activity, attempts to divide these costs into the functional areas supported by the investment necessarily results in a number of judgment decisions. Furthermore, the initial cost bears little relationship to the present value of the property due to the age of most of the Navy's plant property. This field is therefore ambiguous in intent and provides no apparent useful information.

Field 9, Compelling Reason(s) for Operation. This entry is fully explained.

Field 10, Contract Man-Years. Since this figure must normally be an estimate by the activity (unless the work is being performed under an illegal personal services contract), it has the potential for distorting the statistical information used to evaluate the program.

Field 11, Contract Costs. As in the case of other cost figures required, the intent of the instructions is not clear. While the actual contract award cost is readily available, the preparer of the report must decide whether to include costs such as inspection, contract preparation, and contract administration. Instructions say to "enter the total annual cost to the government of contracts supporting the function being reported", but do not define "total costs".

Field 12, Service Code. Instructions are explicit.

V. EFFECT OF C/I PROGRAM ON PWC OVERHEAD

A. INTRODUCTION

At Public Works Centers overhead costs are collected by job orders in three different types of cost centers: general and administrative, service, and productive. At PWC San Francisco Bay the three general and administrative cost centers allocate their costs to all productive cost centers. The service cost centers allocate their costs to the productive cost centers they serve. Within each productive cost center the productive overhead costs are allocated to the jobs performed by the cost center. All overhead is allocated by direct labor hours. Overhead rates are established for each overhead and productive cost center. The rates are determined by dividing the budgeted overhead costs by the budgeted direct labor hour base.

Direct labor hours (DLH) is a sound basis for allocation as long as most of the work is done by in-house labor. However, if through implementation of the C/I program a PWC is required to contract much that is now done in-house, the direct labor base will shrink. It would be unrealistic to expect the total overhead costs to diminish at the same rate as the direct labor hour base. Since only the overhead costs that can be identified as contract administrative costs can be charged to the customer along with the contract

costs, it is likely that the overhead rates for the functions remaining in-house will rise.

It is the intent of this section to examine the rise in overhead rates at a PWC as various functional areas are contracted.

B. APPROACH

The Public Works Center San Francisco Bay was used as the model for this study. The functional areas considered were:

J510 Maintenance and Repair of Railway Equipment

J511 Maintenance and Repair of Special Equipment

S710 Insect and Rodent Control

S712 Refuse Collection and Disposal Services

S716 Motor Vehicle Operation

S717 Motor Vehicle Maintenance

Repair, Alteration, and Minor Construction of Real Property

Z992 Building and Structures

Z993 Grounds (Improved)

Z994 Surfaced Areas

Z997 Railroad Facilities

Z998 Waterways and Waterfront Facilities.

This list represents all functional areas presently performed in-house by the Transportation Maintenance, Transportation Operations, and Maintenance cost centers. It does not include those performed by the Utilities cost centers. Since overhead costs represents such a minor portion of

the total utilities expenditures, an analysis of the utility functional areas was not expected to produce informative results. Minor functions which would not contribute any significant information independently were combined with larger functions in order to simplify the analysis.

Fiscal year 1977 was used as the time period for analysis. The FY 1976 C/I Annual Inventory Report and the FY 1977 Financial and Operating Budget for PWC San Francisco Bay were used as a basis for projecting the FY 1977 direct labor hours in each functional area. The DOD Interim Procedures previously discussed has redefined the Z category to include maintenance. In order to be consistent with this change the data for Emergency/Serivces was moved in the Annual Inventory from function S730, Other Services or Utilities, to function Z992, Buildings and Structures. Appendix B gives background information on calculations for this section. Figure 8 shows the PWC cost centers, the functions in each cost center, and the projected direct labor hours for each function. Function Z994, Surfaced Areas, is divided between the Transportation Operations and the Maintenance cost centers.

In order to determine the overhead costs that would be eliminated if each function were contracted, interviews were held with the Operations Officer, Transportation Superintendent, Maintenance Superintendent, Maintenance Control Director, Material Department Supervisor, and the Comptroller. Much of the discussion concerned which overhead billets

FIGURE 8

OVERHEAD RELATIONSHIPS

1	2	3	4	5	6
Cost Center	Function	Proj. FY77 DLH (1000 hr)	Budgeted O/H ($1000)	Increm. O/H ($1000)	Unalloc. O/H ($1000)
Trans. Main.	J510/J511 RR & Spec Equipment	110	980	563	417
	S717 Motor Veh Main	54	481	482	(1)
Trans. Ops.	S716 Motor Veh Ops	213	1,225	582	643
	S712 Garbage & Refuse	37	213	0	213
	Z994 Surfaced Areas	6	34	0	34
Main.	Z994 Surfaced Areas	26	183	27	156
	Z993 Grounds (Imp)	61	428	25	403
	S710,Z992 Z997,Z998 (note)	753	5,286	4,043	1,243

Note: Insect & Rodent Control, Buildings & Structures, RR Facilities, and Waterfront Facilities.

Column 1 - PWC Cost Centers

Column 2 - C/I Functions

Column 3 - FY 1977 DLH for each function (projected)

Column 4 - Budgeted O/H for each function

Column 5 - O/H that will be eliminated as each function is contracted

Column 6 - O/H which would be unallocated if each function is contracted [(Column 4) - (Column 5)]

would be discontinued or retained if each functional area were contracted. Whenever possible the actual labor rate of the person filling the billet was determined. If the step level of the person was unknown a step level of four was assumed. The non-labor overhead items were allocated to the functions on the basis of DLH and were eliminated accordingly as the function was contracted. The overhead costs that would remain, but could be identified as part of the contract administration, were also identified. Column 4 of Figure 8 shows the budgeted overhead for each function. Column 5 shows the overhead costs of each functional area that can be eliminated or charged with the contract if the functional area were to be performed by contract. Column 6 contains the overhead costs that would be unallocated if the functional area were contracted.

C. PROJECTED OVERHEAD RATES

As each function or combination of functions is contracted the unallocated overhead shown in column 6 of Figure 8 must be reallocated to the functions remaining in-house. Column 3 of Figure 9 contains the current overhead rates for FY 1977. Columns 4 through 10 show the overhead rates that would result if the functions which have a "C" in the column were contracted. The C/I Reviews presently being submitted by PWC San Francisco Bay indicate that the functions shown contracted in column 4 will likely be contracted in the near future. While no C/I Review has yet been

FIGURE 9

OVERHEAD RATES

			Overhead rates which result when "C" functions are contracted						
1 Cost Center	2 Function	3 Current O/H Rates	4	5	6	7	8	9	10
Trans. Main.	J510/J511 RR & Spec Equipment	G&A 1.49 MTL .92 PRD 6.50 8.91	G&A 1.59 MTL .99 PRD 6.50 9.08	G&A 1.62 MTL 1.01 PRD 6.50 9.13	C	G&A 1.49 MTL 1.01 PRD 5.85 8.54	C	G&A 1.89 MTL 1.19 PRD 8.26 11.34	G&A 3.25 MTL 1.47 PRD 6.50 11.22
	S717 Motor Veh Main	G&A 1.49 MTL .92 PRD 6.50 8.91	G&A 1.59 MTL .99 PRD 6.50 9.08	G&A 1.62 MTL 1.01 PRD 6.50 9.13	G&A 1.75 MTL 1.01 PRD 11.50 14.26	C	C	G&A 1.89 MTL 1.19 PRD 8.26 11.34	G&A 3.25 MTL 1.47 PRD 6.50 11.22
Trans. Ops.	S716 Motor Veh Ops	G&A 1.49 MTL .92 PRD 3.34 5.75	G&A 1.59 MTL .99 PRD 3.90 6.48	G&A 1.62 MTL 1.01 PRD 4.01 6.64	G&A 1.75 MTL 1.01 PRD 4.01 6.77	G&A 1.68 MTL 1.01 PRD 4.01 6.70	G&A 1.82 MTL 1.01 PRD 4.49 7.32	C	G&A 3.25 MTL 1.47 PRD 4.01 8.73
	S712 Garbage & Refuse	G&A 1.49 MTL .92 PRD 3.34 5.75	C	C	C	C	C	C	C
	Z994 Surfaced Areas	G&A 1.49 MTL .92 PRD 3.34 5.75	G&A 1.59 MTL .99 PRD 3.90 6.48	C	C	C	C	C	C
Main.	Z994 Surfaced Areas	G&A 1.49 MTL .92 MCD 1.41 PRD 3.20 7.02	G&A 1.59 MTL .99 MCD 1.52 PRD 3.41 7.51	C	C	C	C	C	C
	Z993 Grounds (Imp)	G&A 1.49 MTL .92 MCD 1.41 PRD 3.20 7.02	C	C	C	C	C	C	C.
	S710,Z992 Z997,Z998	G&A 1.49 MTL .92 MCD 1.41 PRD 3.20 7.02	G&A 1.59 MTL .99 MCD 1.52 PRD 3.41 7.51	G&A 1.52 MTL 1.01 MCD 1.57 PRD 3.50 7.70	G&A 1.75 MTL 1.01 MCD 1.57 PRD 3.50 7.83	G&A 1.68 MTL 1.01 MCD 1.57 PRD 3.50 7.76	G&A 1.82 MTL 1.01 MCD 1.57 PRD 3.50 7.90	G&A 1.89 MTL 1.19 MCD 1.57 PRD 3.50 8.15	C
Util. Ops.		G&A 1.49 MTL .92 PRD 3.39 5.80	G&A 1.59 MTL .99 PRD 3.39 5.97	G&A 1.62 MTL 1.01 PRD 3.39 6.02	G&A 1.75 MTL 1.01 PRD 3.39 6.15	G&A 1.68 MTL 1.01 PRD 3.39 6.08	G&A 1.82 MTL 1.01 PRD 3.39 6.22	G&A 1.89 MTL 1.19 PRD 3.39 6.47	G&A 3.25 MTL 1.47 PRD 3.39 8.11
Util. Commun.		G&A 1.49 PRD 3.09 4.58	G&A 1.59 PRD 3.09 4.68	G&A 1.62 PRD 3.09 4.71	G&A 1.75 PRD 3.09 4.84	G&A 1.68 PRD 3.09 4.77	G&A 1.82 PRD 3.09 4.91	G&A 1.89 PRD 3.09 4.98	G&A 3.25 PRD 3.09 6.34
Hsg.		G&A 1.49 1.49	G&A 1.59 1.59	G&A 1.62 1.62	G&A 1.75 1.75	G&A 1.68 1.68	G&A 1.82 1.82	G&A 1.89 1.89	G&A 3.25 3.25
Eng.		G&A 1.49 PRD 4.25 5.74	G&A 1.59 PRD 4.25 5.84	G&A 1.62 PRD 4.25 5.87	G&A 1.75 PRD 4.25 6.00	G&A 1.68 PRD 4.25 5.93	G&A 1.82 PRD 4.25 6.07	G&A 1.89 PRD 4.25 6.15	G&A 3.25 PRD 4.25 7.50
Inspec.		G&A 1.49 PRD 4.10 5.59	G&A 1.59 PRD 4.10 5.69	G&A 1.62 PRD 4.10 5.72	G&A 1.75 PRD 4.10 5.85	G&A 1.68 PRD 4.10 5.78	G&A 1.82 PRD 4.10 5.92	G&A 1.89 PRD 4.10 5.99	G&A 3.25 PRD 4.10 7.35

prepared on function Z994, it is reasonable to expect that contracting will prove to be favorable. Z994 is shown as contracted in column 5 of Figure 9. Columns 6 through 10 show selected combinations of contracting the larger functional areas at PWC San Francisco Bay. Background information on calculations for Figure 9 is included in Appendix B.

D. DISCUSSION

The overhead rates shown in Figure 9 demonstrate that as functions are contracted the rates will increase for the remaining in-house effort. Since most PWC customers purchase a general mix of public works functions, a decrease in the costs for a function contracted should offset the slight increase in the costs for other public works services purchased. The customers total costs for public works services should decrease. However, if the function contracted is large and since the customers do not all purchase the same mix of public works services, it is likely that the cost savings would not be equitably distributed to the customers. Customers that receive little or none of the contracted function will experience higher public works costs even though the overall cost to the government is lower.

This inequity could be reduced if the PWC could allocate some overhead costs to the contract. However,

allocating overhead to direct labor hours is the only method available to PWCs at this time.[35]

The recent introduction of the rate stabilization program for industrially funded activities may create further problems for the PWC in implementing the C/I Program.[36] The rate stabilization program requires the PWC to establish rates for the upcoming fiscal year six months before the start of the year. Once the rates are established they cannot be changed. If a functional area is unexpectably contracted after the rates have been established, the non-incremental overhead costs which would normally be charged to that function might have to be absorbed by the PWC corpus. The costs could not be reallocated to the other functions until the start of the following budget cycle.

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[35] Ibid., p. 3-32.

[36] Comptroller of the Navy, Rate stabilization program for industrially funded activities; policy and procedures for, NAVCOMPT INST 7600.23, 26 July 1976.

VI. NON-ECONOMIC FACTORS SUPPORTING IN-HOUSE C/I OPERATIONS

A. PURPOSE

The intent of this section is to explore those factors which could legitimately be used to justify in-house operations for reasons other than economics. Such justification would avoid the expense and difficulty of attempting to define the more ambiguous tasks included in a functional area well enough to prepare an economic analysis. This point will become even more significant upon the implementation of the "firm offer" concept of procurement solicitation since the functional area must then be sufficiently defined to prepare contract specifications.

This section consists of a review of the current criteria under which an economic analysis is not required, and presentation and discussion of the results of informal field interviews seeking legitimate areas of non-economic justification for continued in-house operation.

B. CRITERIA FOR NON-ECONOMIC JUSTIFICATION

In reviewing the applicable instructions, the current criteria under which an economic analysis can be avoided are limited to specific Circumstance Codes, specific exclusions, or possible waivers.

1. Circumstance Codes

The three Circumstance Codes which require no economic analysis were presented in earlier discussion of

C/I Review requirements. While the reader is invited to refer to NAVMATINST 4860.12A or DOD Instruction 4100.33 for a full discussion of each Circumstance Code, a brief summary of each will be presented with comments pertaining to a PWC.

a. Circumstance Code A

This circumstance code permits the justification of in-house operation on the basis of a finding that procurement from a commercial source would disrupt or materially delay an essential program. As such, it appears that this code may have some limited application at a PWC in those cases where support of a customer's mission requires an especially high degree of responsiveness or flexibility. This code is not generally applicable when considering only the mission of the PWC.

b. Circumstance Code B

This Circumstance Code pertains to justification based upon combat support, military training, or mobilization readiness. Specific guidance states that this code is not generally applicable to those functions which are partially or wholly performed by civil service personnel. Accordingly, this Circumstance Code is unlikely to be applicable to functions performed by a PWC.

c. Circumstance Code C

This code permits justification on the basis that satisfactory service is not available from commercial sources. Since almost all conceivable functions performed

by a PWC are routinely performed by civilian contractors for private enterprise, this code cannot be realistically considered as justification for in-house performance of PWC functions.

2. Exclusions

NAVMAT INST 4860.12A presents a list of seven specific conditions under which certain functions are excluded from provisions of the C/I Program and therefore exempt from the economic analysis. Of these, the only one which seems to apply to a PWC is the one describing "those functions which are performed by professional, staff and managerial advisory units, e.g., an accounting department, etc."

This exclusion is currently the justification for not reporting such functions as maintenance control and engineering. However, even this exclusion might be revised as the result of the DOD Interim Procedures which require an expansion of the program to other areas.

3. Waivers

In the search for further justification under which the economic analysis could legitimately be avoided, no provision for a waiver was found in any instruction or document below the level of DOD Directive 4100.15. That document does contain provisions for the Assistant Secretary of Defense (I&L) to exempt selected C/I activities in accordance with Section 7c(1) of OMB Circular A-76

(Revised).[37] The likelihood of obtaining an exemption for any function performed in the routine mission of a PWC seems extremely remote in view of the level of approval required.

C. FIELD INVESTIGATION

In attempts to identify functions performed by PWCs which could be justified for retention in-house for reasons other than cost the authors conducted several interviews. Those interviewed included key personnel from three PWCs and auditors from the Naval Audit Service (Western Region). The initial intent was to identify any functions or portions of functions performed by PWC's for which non-economic justification could be provided for retention in-house.

The persons interviewed were asked if they could identify any work now being performed by the PWC which could be justified for retention in-house even if contracting was the less expensive option. In general, those interviewed were familiar with the concept of the C/I Program if not the mechanics of how it is applied. The attitude of those interviewed was generally receptive, and all seemed to agree that the PWC had a responsibility to the customers and to the government to contract a function when contracting was

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[37]Section 7c(1) of OMB Circular A-76 permits the agency head or his designee to exempt designated activities when he decides that reviews are not warranted, but gives no other guidance.

cost-effective and the level of service to the customer could be maintained. There was some concern that if some functions were contracted the level of service would be difficult to ensure because of the problems of preparing contract specifications in sufficient detail.

1. PWC San Francisco Bay

The interviews at PWC San Francisco Bay were held with the Operations Officer and the productive cost center supervisors.

The overall result of the interviews was that no complete functions at PWC San Francisco Bay were identified which could be justified for retention in-house for non-economic reasons. However, non-economic justification may be possible for specific portions of some functions.

a. Maintenance Department

Discussions with the Operations Officer and the Maintenance Superintendent revealed that there were no significant tasks performed by the Maintenance Department which could not be performed by a contractor. Concern was expressed that it would be difficult to prepare adequate contract specifications because of the range, complexity, and uncertainty in defining some maintenance service. More specifically, avoidance of a personal services contract would be a formidable task.

b. Utilities Department

In discussion with the Utilities Superintendent, problems in contracting functions within the Utilities

Department were identified. The first is the degree of close control required in operation and maintenance of the electrical distribution system. The second is the more general problem of defining some tasks well enough to avoid a personal services contract.

c. Transportation Department

There are portions of functions performed by the Transportation Department which could use non-economic justification for retention of an in-house activity.

The Transportation Department operates trucks which deliver high priority items to customers of the Naval Supply Center, Oakland. The use of government trucks and drivers is necessary to ensure that there would be no disruption of this essential program. Circumstance Code A discussed above would appear to apply in this case.

The Transportation Department also operates a 100 ton floating crane to load and off-load Navy ships. The material handled includes ammunition and other essential cargo. The time period in which the ship is available for loading is generally short and advance scheduling is not always possible or accurate. Circumstance Code A would again appear to apply since contracting could materially delay an essential program.

2. PWC San Diego and PWC Pensacola

The purpose of discussions with PWC San Diego and PWC Pensacola was to broaden the background of information

gained in interviews at PWC San Francisco Bay. Informal interviews were held with personnel from the Production and Management Offices. Again it was concluded that there were no significant areas where in-house performance of a function could be justified when contracting is more economical. However, the problem of personal service contracts was again addressed.

3. Naval Auditors

Several discussions were held with Naval Auditors who were conducting an audit of the C/I Program at PWC San Francisco Bay. During these discussions no new possibilities for non-economic justification of in-house operation were discovered. The auditors also pointed out the general problem of avoiding personal services contracts.

D. DISCUSSION

The results of the personal interviews indicate that there are only relatively minor tasks performed by PWC San Francisco Bay which could be justified under Circumstance Code A. Attempts to find areas common to PWCs for which in-house performance could be supported by non-economic justification under the current criteria were unsuccessful. Furthermore, no plausible justification for seeking a waiver was discovered.

The recurring problem discussed in almost every interview was the difficulty of preparing a contract specification capable of defining tasks, performance levels, and frequencies sufficiently well to insure performance comparable

to the in-house performance. In effect the real problem is that of avoiding a personal services contract in most cases. While this problem is certainly not a unique result of the application of the C/I Program and is well recognized within the NAVFAC community, it is aggravated by the current C/I procedures and will increase in magnitude if the "firm offer" concept of procurement solicitation is widely implemented.

The problem of personal services contracting is not addressed in any of the implementing instructions concerning the C/I Program. However, OMB Circular A-76 (Revised) specifically states that it "will not be used as authority to enter into contracts if such authority does not otherwise exist nor will it be used to justify departure from any law or regulation, including regulations of the Civil Service Commission or other appropriate authority, nor will it be used for the purpose of avoiding established salary or personnel limitations." This point is demonstrated by the recent court decisions which have ruled certain NASA service contracts to be illegal on the basis of being personal services contracts, and other Navy service contracts to be invalid because of violations of Executive Order 11491.[38]

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[38]The readers attention is addressed to Section II for further discussion on the subject of recent court decisions on the C/I Program.

VII. CONCLUSIONS

The Commerical or Industrial Activities Program falls within the exclusive jurisdiction of the Executive Branch of the Federal Government. As such, the vigor with which the program is pursued is highly dependent upon the mood of the administration in power. This is evidenced by the apparent lack of Executive interest between 1972 and the summer of 1976. Since July 1976, the C/I Program has undergone a period of high visibility and rapid development due to renewed Executive interest.

The new Administration has not indicated what degree of importance it will place on the program. It has indicated an intent to create more jobs and, at the same time, has stressed the necessity to reduce Department of Defense spending.

If the C/I program remains viable and the current emphasis is continued, the impact on PWCs must be recognized as a source of increasing concern to NAVFAC. It is imperative that the magnitude of the potential impact be considered and that procedures be developed to more effectively implement the program in an orderly manner to minimize the traumatic effect on PWC operations.

One primary impact of the program is that PWCs will inevitably be forced to increase the number of service contracts which they must award and administer. There will

be an increasing number of these contracts for which performance goals are more difficult to define. As discussed in Section II of this thesis, recent court cases involving the C/I Program demonstrate the importance of avoiding personal services contracts. Furthermore, the difficulty of preparing contract specifications which ensure a level of service comparable to in-house performance was expressed as a major concern by many of those interviewed.

It is therefore concluded that NAVFAC can best prepare for the future impact of the C/I Program by placing even greater emphasis on developing model specifications and standardized contract procedures applicable to service contracting, and by addressing the other specific recommendations set forth in the remainder of this section. Primary emphasis must be placed on resolving the dilemna of the Commanding Officer of a PWC whereby he has no justification for retaining a service in-house but is unable to prepare a contract solicitation which both adequately specifies the work to be performed and avoids becoming a personal services contract. Resolution of this dilemna may require either a waiver under the C/I Program or a change in current contracting procedures.

Specific recommendations for resolution of detailed problems discussed earlier are as follow..

A. ADMINISTRATIVE PROCEDURES/INSTRUCTIONS

1. Discussion

Within the general category of administrative procedures, there are a number of ambiguities which result in a wide range of interpretations by different activities; consequently, results are far from consistent. Greater emphasis will most probably result in increased legal action concerning implementation of the C/I Program. It has become imperative that the language of the applicable instructions be clear to those preparing economic analyses since the latest revision to OMB Circular A-76 specifically requires the release of the economic analysis under provisions of the Freedom of Information Act.

2. Recommendations (for NAVFAC)

a. Develop more definitive guidelines for the computation of depreciation or opportunity costs for plant or equipment which would become available for disposition as the direct result of conversion to contract. (See page 56.)

b. Provide guidance and specific factors for use in computing outyear costs on the cost analysis worksheet. (See pages 57 and 58.)

c. Provide guidance on the preferred technique for overall evaluation of the completed Cost Analysis Worksheet. (See page 58.)

d. Provide amplifying guidance on composition of each cost figure on the Annual Inventory Report. (See pages 63 through 67.)

e. Investigate the possibility of revising PWCMS to automate the preparation of the Annual Inventory Report. (see page 63.)

f. Establish a differential percentage at a level less than the standard 10% for use in comparison of the government and contract costs in the economic analysis based upon the relatively low risk and degree of uncertainty in PWC operations. (See page 58.)

B. RISING OVERHEAD RATES

As discussed in Section V, PWCs face rising overhead rates as implementation of the C/I Program results in contracting a larger number of functions. Further problems may result from the rate stabilization program.

1. Discussion

There are basically two facets of the problem of rising overhead rates. First, PWC customers are already concerned over what they perceive to be exhorbitant overhead rates. Their concern may turn into alarm if overhead rates make a quantum jump when a large C/I function is contracted. Secondly, this overhead rate increase may not be equitably shared by all PWC customers as discussed in Section V.

One method of alleviating the problem would be to divide the existing cost centers into smaller ones. The limit to this approach is to have one cost center for each C/I function. Then as each function is contracted, most of the productive overhead cost items will be eliminated and only the General and Administrative and Service overhead

costs must be reallocated. For example, it may be desirable to split the Transportation Maintenance cost center into Automotive Maintenance and Heavy Equipment Maintenance. However, each additional cost center adds more complexity to the PWC organization and there exists a strong tendency to add additional overhead personnel to cope with the new cost centers. This approach should be limited to those cases where creation of the additional costs centers clearly results in more equitable overhead allocation.

Another approach would be to have the Naval Facilities Engineering Command centrally fund certain overhead items with annually appropriated money. This would defeat the concept of attempting to show the full costs of facilities maintenance through the NIF accounting procedures at PWCs.

A third approach would be to burden contract costs to recover a share of the overhead. As discussed in Section V, allocation of overhead by DLH is the only method which PWCs are currently authorized to use. The use of any other basis of allocation of overhead would require a specific waiver by the Comptroller of the Navy.[39] If such a waiver were obtained, overhead costs could be divided between contracts and in-house effort by the direct-dollar value of contract versus in-house effort.

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[39] NAVSO P-1718, p. 1-1.

Still another approach would be to avoid the allocation of costs associated with contracting by extending the existing accounting system to the degree necessary to identify those costs associated with each specific contract and bill the customer directly for these total costs.

2. Recommendations (for PWCs)

a. To minimize customer misunderstanding, any increase in overhead rates because of the C/I Program should be explained in advance to customers. Emphasis should be placed on customer evaluation of their entire facilities costs since the customer's total facilities costs should decrease as the direct result of applying the C/I Program.

b. A greater effort should be made to identify all costs associated with contracting. As more of these costs are identified and charged to the contracts, the impact on overhead rates will be minimized and the costs will be more equitably distributed.

c. Extreme care must be exercised to anticipate the possible effects of the C/I Program when setting stabilized rates.

C. SPLITTING VERSUS COMBINING C/I FUNCTIONS

1. Discussion

The DOD Interim Procedures previously discussed argued that certain functions are so narrow in scope that it is difficult to find adequate competition among contractors. To remedy this situation, it was directed that functions be combined to the extent practicable to provide a more

attractive procurement package. However, within the PWCs there exists a situation where splitting functions instead of combining functions might be justified.

The DOD Interim Procedures require a title change to the "Z" functional category so that it now reads "Maintenance, Repair, Alteration, and Minor Construction of Real Property". This change has the effect of clearly placing most of the emergency and minor service work in the Z992 functional area (Buildings and Structures) with the result that one function (Z992) now comprises the major effort of PWCs. In addition to jeopardizing the PWC concept should this entire function be contracted out, the performance of a realistic economic analysis of a functional area of this complexity (both in size and range of tasks) does not appear to be feasible. While the myriad of individual tasks could undeniably be performed adequately by contractor personnel, extreme difficulty arises in specifying the required work in such a manner necessary to avoid personal service contracts.

NAVMATINST 4860.12A does not prohibit splitting functions for analysis even though the thrust of the DOD Interim Procedures is toward further consolidation of functions. If the Z992 function were split into three parts: recurring work (well defined and scheduled), service work (includes emergency work, service work, and minor work), and specific work (on a job by job basis), a more easily definable and economic combination of contracting and in-house performance might be found. While this approach would

not eliminate the problem of personal services contracts, it would greatly reduce the scope of the ambiguous portions.

2. Recommendation (for NAVFAC)

In light of the above discussion, it is recommended that NAVFAC examine the acceptability of splitting functions such as Z992 into several sub-functional areas and provide specific guidance to PWCs.

COST ANALYSIS WORKSHEET

Name of Installation: Navy Public Works Center, S.F. Bay Function: Grounds Maintenance Z993

Cost Elements	1st Yr. of Operation	2nd Yr. of Operation	3rd Yr. of Operation	4th & Following Yrs. of Operation
CONTRACT OPERATIONS				
1. Contract Cost (Price Paid to Supplier)	$ 366,912	$ 366,912	$ 366,912	$ 366,912
2. Transportation	-0-	-0-	-0-	-0-
3. Contract Administration & Related Costs	55,693	55,693	55,693	55,693
4. Government-Furnished Materials and Supplies	-0-	-0-	-0-	-0-
5. Contractor Use of Government-Owned Equipment and Facilities	720	720	720	720
6. Rehabilitation, Modification, or Expansion of Government-Owned Equipment and Facilities	-0-	-0-	-0-	-0-
7. Incentive or Premium Costs	-0-	-0-	-0-	-0-
8. Standby Maintenance Cost	-0-	-0-	-0-	-0-
9. Other Costs	178,017			
9A. TOTAL	$ 601,342	$ 423,325	$ 423,325	$ 423,325
GOVERNMENT OPERATIONS (IN-HOUSE)				
10. Military Personnel Services	$ -0-	$ -0-	$ -0-	$ -0-
11. Civilian Personnel Services	396,142	396,142	396,142	396,142
12. Other Personnel Costs	-0-	-0-	-0-	-0-
13. Materials, Supplies, Utilities and Other Services	11,236	11,236	11,236	11,236
14. Maintenance and Repair	1,750	1,750	1,750	1,750
15. Overhead Costs	31,432	31,432	31,432	31,432
15A. SUBTOTAL (Sum of Elements 10 through 15)	$ 440,560	$ 440,560	$ 440,560	$ 440,560
16. Federal Taxes	7,778	7,778	7,778	7,778
17. Depreciation	8,742	-0-	-0-	-0-
18. Interest	-0-	-0-	-0-	-0-
19. Insurance	1,322	1,322	1,322	1,322
20. Other Indirect Costs	8,811	8,811	8,811	8,811
20A. TOTAL	$ 467,213	$ 458,471	$ 458,471	$ 458,471

GOVERNMENT OPERATIONS - OTHER (ISS/IDS/IAS)

Items 21 through 26A have been omitted since this section is not generally applicable to PWCs.

Z993 - GROUNDS MAINTENANCE

CONTRACT OPERATIONS

Line 1. Contract Cost (Price Paid to Supplier)

Due to the difficulties in establishing units of measure and unit prices common to both contract and in-house performance, the contract cost is estimated based on the assumption of equal productivity for both forces. The Department of Labor Wage determination for grounds maintenance laborer is $4.60 per hour. This base labor rate can be expanded to a contractor hourly cost as follows:

Base Rate	$4.60
Fringe Benefits	.53
	$5.13
Insurance, workman comp. etc(16%)	.82
Overhead and profit (20%)	1.02
	$6.96
Equipment and supplies (12%)	.84
	$7.80

Direct labor hours to perform in-house ground maintenance in Fy 1976 was 47,040. Therefore, contract cost would be (47,040 X $7.80) $366,912.

Line 2. Transportation

None

Line 3. Contract Administration

(a) Per PWCSFRANINST 7820, Change Transmittal Sheet 3 dated 10 June 1975: Administrative Charges for Contract costing over $100,000 is $990.00.

(b) It will take 10.5 productive hours daily to inspect this contract work. This then will compute to 2,730 hours annually at a cost of $19,656 plus acceleration cost (35.8%) of $7,037 and indirect overhead costs of $15,260 for a total of $41,953

(c)	Sum of Line Item 1	$ 425,007
	Multiplied by Cost Factor for Contract Administration*	.03
	Product	$ 12,750

*See WESTNAVFACENGCOMINST 7820.1A

(d) Total of item 3a thru 3c equals $55,693 per year.

Line 4. Government-Furnished Materials

None

Line 5. Contractor Use of Government-Owned Equipment and Facilities

It is assumed that there will be at least four (4) buildings that the contractor(s) may use to store his light equipment and other gardening tools and supplies. Again, using the size of space (300 SF) assigned the contractor at Oakland Army Base as a basis, the total square footage will equate to 1200 square feet. The average rental rate of $ .05 (Oakland Army Base) per square foot applied to the area size, will compute to $60 per month or an annual rent of $720.00.

Line 6. Rehabilitation, Modification, or Expansion of Government-Owned Equipment and Facilities

None

Line 7. Incentive or Premium Costs

None

Line 8. Stand-by Maintenance Cost

None

Line 9. Other Costs

There are thirty (30) employees presently assigned as gardeners. One of the 30 is a Gardener Supervisor with the grade of WS-6, four (4) are Leaders with the equitable grades of WL-6 and, twenty-five (25) are all grades WG-6's classified under the Gardening Series of WG-5003. To terminate this function, it is assumed that four (4) temporary assigned employees will be released immediately at practically no cost to the government. Thirteen (13) will be offered Optional Retirement (OR) and eight (8) will be given a chance to retire on the Discontinued Service Retirement (DSR) Program.

The remaining five (5) employees will draw severance pay and the eight (8) DSR's will probably draw 3½ years annuities. Computed, these cost totaled to $178,017.

Line 9a. Total

Sum of Lines 1 through 9: $481,420

GOVERNMENT OPERATIONS

Line 10. Military Personnel Services

None

Line 11. Civilian Personnel Services

The following information was extracted from the 3A77 Job Order Cost Report for Fiscal Year 1976 published on 30 June 1976.

ACTIVITY	JOB ORDER SERIES	DIRECT LABOR COST	ACCEL-ERATION COST	TOTAL COST
NRMC	1104155-1104158	$ 42,911	$ 17,151	$ 60,062
OARB	1084024-1084025	28,152	10,049	38,201
NSC	1064088-1064089	46,205	16,563	62,858
NAS	1034039	44,223	15,830	60,053
FHA	2714001-2714580	127,574	45,047	172,621
Sub-Total		$289,155	$104,640	$393,795
Labor Cost for Code 62 Type Service (Emergency Chits)				2,347
Total				$396,142

Line 12. Other Personnel Services

None

Line 13. Materials, Supplies, Utilities and Other Services

Material Cost per 3A77 Report	$ 5,136
Equipment Rental (Type B & C Rentals)	5,823
Utilities (Cost of Water usage to clean up equipment, estimate only @ $.632/MGAL)	20
5% of Material Cost above per NAVMATINST 4860.12A	257
Total Line Item 13	$11,236

AD-A040 206 NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF F/G 5/4
APPLICATION OF THE COMMERCIAL OR INDUSTRIAL ACTIVITIES PROGRAM --ETC(U)
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Line 14. Maintenance and Repair

Roof maintenance and repair at $99.712 per square (see cost analysis conducted in FY 76) assuming the utilization of four (4) buildings for 1200 (see Line Item 5) square feet. Also an estimated 8 hours per building for structural and utilities repairs @$17.28 (See PWCSFRANINST 7030.1A) per hour. The computed total will equate to $1,750 per year.

Line 15. Overhead Costs

a. Code 500, Maintenance Department budgeted for 518 employees for Fiscal Year 1976 of which 4 percent is assigned to maintain grounds throughout. Expense Class Code 34, Overhead Work Performed by Productive Workers, amounted to an actual cost of $53,273.26. Expense Code 36, Allowed Time, amount to $23,798.39 and, Expense Class Code 37, Traumatic Injuries, costed to $25,186.12. The total of these 3 Expense classes came to $102,257.77. Therefore, 4 percent of this amount or $4,090 can be safely assumed to be the share of the Grounds Maintenance crew.

b. Salary of one (1) Gardener Supervisor WS-5003-6/3 @ $27,342 (including accelerated cost).

c. Total of items 15a + 15b $ 31,432

Line 15a. Sub-Total

Sum of Line Items 10 through 15: $440,560

Line 16. Federal Taxes

Total of Line Item 1 above multiplied by the percentage factor of 1.83% (see NAVMATINST 4860.12A) $ 7,778

Line 17. Depreciation

EQUPT. S/N	DESCRIPTION	SALVAGE VALUE/ OPPORTUNITY COST
57-03819	Lawn Sweeper/Vacuum	$ 448.00
48-11814	Tractor Mower	519.00
48-14967	Tractor Mower	3,350.00
56-12840	Power Lawn Mower	239.00
56-12841	Power Lawn Mower	239.00
56-12860	Power Lawn Mower	348.00

EQUPT. S/N	DESCRIPTION	SALVAGE VALUE/ OPPORTUNITY COST
56-12861	Power Lawn Mower	$ 319.00
56-13148	" " "	365.00
56-13149	" " "	475.00
56-13230	" " "	219.00
56-13329	" " "	165.00
56-13424	" " "	168.00
56-13556	" " "	217.00
56-13617	" " "	199.00
56-13618	" " "	199.00
56-13619	" " "	137.00
56-13651	" " "	350.00
56-13031	" " "	786.00
	TOTAL	$8,742.00

Line 18. Interest

None

Line 19. Insurance (Property and Employees Liability)

Sum of Line Item 15a	$ 440,560.00
Multiplied by the Percentage Cost Factor (per NAVMATINST)	. 3%
Product	1,322.00

Line 20. Other Indirect Costs

Sum of Line Item 15a	$ 440,560.00
Multiplied by the Cost Factor	2%
Product	$ 8,811.00

Line 20a. Total

Sum of Line Items 15 through 20	$ 467,312.00

Line 21-26 (Not applicable to PWCSFBAY Operation)

Note: Cost shown for Line 9 and 17 were not carried over to the second and succeeding years as these costs are incurred only on a one time basis. Other costs remained constant and were extended throughout the reported columns of the cost analysis form.

APPENDIX B

OVERHEAD CALCULATIONS

1. Figure 8

In order to find the amount of overhead costs that would be unallocated if a function were contracted the DLH, budgeted O/H, and incremental O/H (O/H costs that could be avoided or charged with the contract if the function were contracted) must be calculated. FY 1977 was chosen as the period for analysis.

The calculations for Transportation Maintenance cost center are shown below as a sample of the calculations required to prepare Figure 8.

Data compiled by PWC San Francisco Bay Comptroller staff from the 3A77 computer print-out in preparation of the FY 1976 C/I Inventory shows that the functions in the Transportation Maintenance cost center had the following direct labor hours (DLH):

S717	76,058	DLH	=	33% of total Trans. Main.
J510/J511	154,209	DLH	=	67% of total Trans. Main.
	230,267	DLH		

From the FY 1977 PWC San Francisco Bay Financial and Operating Budget the projected DLH for Transportation Maintenance in FY 1977 is 163,605. It was assumed that there would be the same ratio of DLH for each function within

a cost center in FY 1977. For simplification numbers will be rounded and shown in 1000 DLH units.

164 x .33 = 54 for S717

164 x .67 = 110 for J510/J511

To establish the budgeted overhead the actual FY 1977 O/H rates were multiplied by the projected DLH (again numbers will be in 1000's).

54 x $8.91 = $481 for S717

110 x $8.91 = $980 for J510/J511

To find the incremental O/H first the O/H costs that could be eliminated were calculated. Data was obtained from the FY 1977 Budget and labor rates. Positions eliminated were determined in interviews.

For S717

Productive O/H eliminated:

Supervisors

grade	Base pay	Accelerated (BP x 1.358)	Annual (Acc. x 1734)
WS 10/5	$11.97/hr	$16.26	$28,195
WS 10/5	11.97	16.26	28,195
WS 10/4	11.54	15.67	27,172
Tool room Mechanic			
WG 9/4	8.45	11.48	19,906
		total O/H labor eliminated	$103,468

Non-labor productive O/H

$489,000 x .33 = $161,000

total productive O/H eliminated $264,468

Material O/H eliminated:

Equipment Specialist

GS 7/4	$6.24	$8.48	$14,694

Share of non-labor material O/H*

.33 x .25 x 553,792 = $45,688

total material O/H eliminated $60,382

O/H chargeable with contract

7 Inspectors

WG 11/5	$9.56	$12.98	$22,507 x 7

total O/H chargeable to contract $157,549

Summary for S717 (rounded)

Summary for S717 (rounded)

Productive O/H eliminated	$264,500	
Material O/H eliminated	60,300	
O/H chargeable to contract	157,500	
total incremental O/H	$482,300 say	$482,000

Similarly for J510/J511

Productive O/H eliminated	$379,800	
Material O/H eliminated	107,500	
O/H chargeable to contract	75,800	
total incremental O/H	$563,100 say	$563,000

*Material non-labor overhead was assumed to be reduced by 25% if Transportation Maintenance were contracted, 25% if Utilities were contracted, and 50% if Maintenance were contracted.

Note: The incremental O/H for function S717 exceeds the budgeted O/H (482,000 vs. 481,000). This is largely attributed to the Automotive Repair Inspectors which are partially subsidized by functions J519/J511 due to the method of O/H allocation. This will cause the O/H rates for functions J510/J511 to decrease if function S717 is contracted.

2. Figure 9

As a sample of the calculations required for Figure 9 the calculations done to determine the O/H rates that result when function Z994 (Surfaced Areas) is contracted when functions Z712 and Z993 are already contracted are shown. The results are displayedin column 5 of Figure 9. Data is from Figure 8 and from calculations based on the FY 1977 San Francisco Bay Budget.

From column 3 of Figure 8, function Z994 has:

6,000 DLH in the Transportation Operations cost center

26,000 DLH in the Maintenance cost center

32,000 DLH

General and Administrative (G & A) O/H

With S712 and Z993 contracted the G & A O/H is based on 1,533251 DLH with a rate of $1.59 per DLH. The O/H costs are $2,437,869.

The new O/H base is 1,501,251 DLH (1,533,251 - 32,000).

The new O/H rate is $1.62 per DLH ($2.437,869/1,501,251 DLH).

Material (MTL) O/H

The Mtl O/H base is 1,372,903 DLH (S712, Z993 contracted). The O/H rate is $.99 per DLH; the O/H costs are $1,359,174. The new O/H base is 1,340,903 DLH (1,372,903 - 32,000). The new O/H rate is $1.01 per DLH ($1,359,174/1,340,903 DLH).

Maintenance Control Department (MCD) O/H

The MCD O/H base is 778,956 DLH (S712, Z993 contracted). The O/H rate is $1.52 per DLH; the O/H costs are $1,184,013. The new O/H base is 752,956 DLH (778,956 - 26,000). The new O/H rate is $1.57 per DLH ($1,184,013/752,956 DLH).

Transportation Operations productive O/H

The O/H rate is based on 219,000 DLH (S712, Z993 contracted). The O/H rate is $3.90 per DLH; the O/H costs are $854,100. The new O/H base is 213,000 DLH (219,000 - 6,000). The new O/H rate is $4.01 per DLH ($854,100/213,000 DLH).

Maintenance productive O/H

The O/H base is 778,956 DLH (S712, Z993 contracted). The O/H rate is $3.42 per DLH; the O/H costs are $2,664,030. The new O/H costs are $2,637,030 ($2,664,030 less incremental O/H from column 5 of Figure V-1). The new O/H base is 752,956 DLH (778,956 - 26,000). The new O/H rate is $3.50 per DLH ($2,637,030/752,956 DLH).

To prepare column 5 the following calculations are made:

Transportation Maintenance cost center

G & A	$1.62
MTL	1.01
PROD	6.50
	$9.13

Transportation Operations cost center

G & A	$1.62
MTL	1.01
PROD	4.01
	$6.64

Maintenance cost center

G & A	$1.62
MTL	1.01
MCD	1.57
PROD	3.50
	$7.70

Utility Operations cost center

G & A	$1.62
MTL	1.01
PROD	3.39
	$6.02

Utility Communications cost center

G & A	$1.62
PROD	3.09
	$4.71

Housing cost center

G & A	$1.62
	$1.62

Engineering cost center

G & A	$1.62
PROD	4.25
	$5.87

Inspection cost center

G & A	$1.62
PROD	4.10
	$5.72

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