PERFORMANCE AUDIT

DEPARTMENT OF CORRECTIONS

FACILITIES AND CONSTRUCTION DIVISION

Report to the Arizona Legislature
By the Auditor General
February 1985
85-2

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AUDITOR GENERAL

STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

February 1, 1985

Members of the Arizona Legislature
The Honorable Bruce Babbitt, Governor
James G. Ricketts, Ph.D.
Director, Department of Corrections

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Department of Corrections Facilities and Construction Division. This report is in response to the November 16, 1984, resolution of the Joint Legislative Budget Committee.

My staff and I will be pleased to discuss or clarify items in the report.

Respectfully submitted,

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SUMMARY

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Corrections (DOC), Division of Facilities and Construction. This audit was conducted in response to a November 16, 1984, resolution of the Joint Legislative Budget Committee, and in accordance with Arizona Revised Statutes (A.R.S.) §41-1279.

From 1973 to January 1, 1985, the Department of Corrections had a Division of Facilities and Construction that was responsible for the planning, construction and maintenance of all prison facilities. On January 1, 1985, most Division responsibilities and personnel were transferred to the Department of Administration (DOA), because it was believed that transfer to an independent department would expedite prison construction. The transfer divided the Division's duties between DOC and DOA. DOA assumed responsibility for directing, managing, and coordinating major prison construction and renovation projects. DOC retained responsibility for overseeing minor construction projects, maintenance efforts and long-range planning for construction.

The transfer of the Division occurred in the midst of a massive construction program designed to meet needs caused by substantial inmate population growth. The Legislature passed two bills relating to prison construction during a 1983-84 Special Session. House Bill 2003 appropriated $15,819,700 for facilities operation and construction, and Senate Bill 1027 established a Corrections Fund, from which $72 million was appropriated for prison facilities construction.

Because The Department Of Corrections' Long-Range Planning For Inmate Housing Needs Has Been Insufficient, Overcrowding May Continue Beyond 1987 (see pages 5-18)

The Department of Corrections has not adequately planned to provide permanent inmate housing. DOC used inmate population forecasting methods that lacked long-term reliability. Linear projection models used prior

to 1982 consistently underestimated inmate population growth. In addition, several unforseen factors such as changes in the criminal code and in the age of majority accelerated inmate population growth, making original projections even less accurate. Although current models are improvements over previous methods, long-term forecasts could be improved by combination with qualitative methods such as the Delphi technique. DOC is also unable to make informed facilities decisions, because the facilities master plan it presently uses contains incorrect and incomplete information. Moreover, DOC has not followed its own policy for updating the plan annually. Current data now show that prisons will remain overcrowded even after completion of the current construction program.

DOC should: 1) supplement its current inmate population projection models with qualitative methods, 2) develop a new facilities master plan to include information that would allow DOC to make informed decisions, and 3) update this plan annually as required by Department policy.

The Department of Corrections Does Not Have Adequate Prison Site Evaluation And Budget Development Processes (see pages 19-31)

DOC's prison site evaluation process needs improvement. Even though DOC has developed criteria for site selection, recent prison sites were selected without sufficient site evaluation. As a result, decisions on prison sites have been revised causing projects to be delayed and additional costs to be incurred. The budget development process should also be improved, demonstrated by the fact that recent DOC construction budgets were not based on realistic cost estimates. A lack of technical input, inadequate funding for the construction of additional beds and other incidents made the budgets for the Douglas and the $72 million construction program projects insufficient. Budget limitations have required the implementation of extensive cost saving measures, including the constant redesign of facilities to reduce costs and the reduction or elimination of support buildings in plans.

The Legislature should consider appropriating funds for new prison facilities in two phases. The first appropriation should be allocated for

obtaining a construction manager, architectural and engineering services to evaluate the site, program the project, design the facilities, and prepare a detailed budget estimate. Several alternative plans and funding levels for legislative consideration could be prepared along with detailed budgets. The second appropriation should be allocated for actual construction based on the detailed budget of the plan selected. The Department of Corrections should ensure adequate site evaluation by requiring a soil, water and sewer analysis prior to budget preparation.

The State's $72 Million Prison Construction Program May Be Delayed (see pages 33-41)

The schedule for the $72 million construction program may not be met. Projects may not be completed within the contract time frame because schedules are overly optimistic and the projects have already been delayed significantly. Delays could increase project management fees because the current contract does not require the project manager to perform additional services if any schedule delays occur; instead it allows for the release of the project manager from any obligations if the project is delayed. Furthermore, delays may exacerbate the temporary bed problem by increasing DOC's need for additional temporary facilities.

The State of Arizona should require that future project manager contracts grant the State the option to retain the project manager for a reasonable period of time. DOC should ask the project manager to evaluate alternatives for using more private contractors and less inmate labor. DOC should also evaluate the effects of delays on their needs for inmate housing and make provisions to meet those needs.

DOC Does Not Exercise Adequate Controls Over Construction-Related Activities (see pages 43-59)

DOC does not exercise sufficient controls over construction. This has limited the capacity of DOC and other responsible parties to control DOC construction. DOC has not consistently complied with statutes requiring DOA review and approval of facilities construction plans, which has resulted in unapproved and possibly unsafe construction. DOC's decision

to act as its own project manager and contractor has also hampered DOA and responsible design professionals in their attempts to ensure that construction is done according to approved plans and specifications. Using inmate labor in critical construction activities has further restricted DOC's capacity to control construction. In addition, low inmate productivity and inmate sabotage have contributed significantly to construction delays and additional costs. Insufficient control over project activity costs and inventories further limits Department control over construction. DOC does not use a financial information system such as that used by private companies to properly monitor costs. The current systems do not provide adequate information on project costs. Finally, DOC improperly used Arizona Correctional Enterprises (ARCOR) for construction of Arizona State Prison - East, which resulted in the improper use of the ARCOR revolving fund, the circumvention of State purchasing requirements, and the unnecessary expenditure of land, building, and improvement funds. ARCOR also double billed DOC in some instances. The extent to which the recent transfer of DOC's Facilities and Construction staff to DOA will alleviate these problems is unknown.

The Department of Corrections should: 1) institute procedures to ensure that all construction and changes to construction are reported to DOA for review and approval, 2) implement a satisfactory construction cost information system and proper inventory controls, 3) limit its role in acting simultaneously as construction manager, contractor/builder and agency in charge of construction, 4) limit its use of inmate labor to activities that would not delay project completion, and 5) not use ARCOR to construct prison facilities.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Corrections (DOC) Division of Facilities and Construction in response to a November 16, 1984, resolution of the Joint Legislative Budget Committee, and in accordance with the provisions of Arizona Revised Statutes (A.R.S.) §41-1279.

Division History

Before January 1, 1985, the Department of Corrections had a Division of Facilities and Construction responsible for the planning, construction and maintenance of all prison facilities. The Division was created within the Department in 1973, and supervised all prison construction except cellblocks five and six at Florence. However, on January 1, 1985, most Division responsibilities and personnel were transferred to the Department of Administration (DOA), and it is now referred to as the DOA-Prison Construction Division. The transfer occurred because of the perception that construction could be expedited by giving the authority to an independent department. DOA already oversees construction for most State agencies.

Transfer Divides Duties

The transfer agreement divided prison construction duties between DOA and DOC. DOA assumed the responsibility for major prison construction and renovation projects. Two bureaus within the DOC Prison Construction Division execute these responsibilities. The Construction Support Bureau plans, coordinates and manages a variety of activities in support of current projects. The Construction Management Bureau directs general contractors and inmate labor groups in the completion of construction and renovation projects.

The Department of Corrections will continue to oversee minor construction projects and all maintenance. In addition, DOC will retain responsibility for long-range planning.

New Prison Construction

Arizona has instituted a massive construction program to meet the substantial increase in inmate population. Inmate population has increased since September 1983 through December 1984 at a rate of approximately 75 inmates per month, and is forecasted to increase at the same rate over the next few years. Several factors have contributed to this increase, including a lower age of majority and a stricter criminal code.

To address the problem of the need for additional beds for the prison system, the Legislature met in the 1984 First Special Session and passed two bills, House Bill 2003 and Senate Bill 1027. House Bill 2003 appropriated $15,819,700 for construction and operation of prison facilities in the following areas.

Facility	Number And Types Of Beds
Douglas Facility	100 Minimum Security
Douglas Facility	800 Medium Security
Douglas DWI #1	150 DWI
Douglas DWI #2	100 DWI
Flamenco Mental Health Treatment Unit	200 Medium Security
Picacho	100 Minimum Security

Senate Bill 1027 established a corrections fund, from which $72 million was appropriated for construction of prison facilities by July 1, 1988, in the following areas.

Facility	Number And Types Of Beds
Arizona State Prison	768 Maximum Security
Arizona Corrections Training Center	744 Medium Security
Winslow Conservation Camp	150 Minimum Security
Yuma Conservation Camp	150 Minimum Security
Winslow Facility	400 Medium Security
Winslow Facility	100 Minimum Security
Yuma Facility	100 Minimum Security

Budget And Personnel

Prior to its transfer to DOA, DOC Facilities and Construction Division had 10 budgeted full-time equivalent positions (FTEs) plus two positions funded by Juvenile Services and 24 limited appointments working on the three major Division-managed construction projects. The Division budget for fiscal year 1984-85 is shown below.

TABLE 1

DEPARTMENT OF CORRECTIONS
DIVISION OF FACILITIES AND CONSTRUCTION
1984-85 BUDGET(1)

FTEs	36
Personal Services	$ 869,600
Employee Related	220,500
In-State Travel	7,500
Other Operating	20,000
Total	$1,114,600

(1) Budget data for previous years is not available. Prior to fiscal year 1984-85 Division responsibilities were included within various DOC administrative organizations and not separated into construction-related staffing.

Source: DOC budget information and interviews with DOC staff

Audit Scope And Purpose

Our audit focuses on the Division's ability to perform its statutory functions in an efficient and effective manner. The audit report presents findings and recommendations in four major areas.

- The effectiveness of DOC's long-range planning for construction;
- The ability of DOC to adequately evaluate and budget for construction sites;
- The feasibility of the project schedule and the appropriateness of the project manager contract for DOC's $72 million construction program; and
- The adequacy of DOC's construction and expenditure controls.

Due to severe time constraints, we were unable to address all potential issues identified during our preliminary audit work. The section Areas For Further Audit Work describes these potential issues.

The Auditor General and staff express appreciation to both DOC and DOA staff for their cooperation and assistance during the audit.

FINDING I

BECAUSE THE DEPARTMENT OF CORRECTIONS' LONG-RANGE PLANNING FOR INMATE HOUSING NEEDS HAS BEEN INSUFFICIENT, OVERCROWDING MAY CONTINUE BEYOND 1987

The Department of Corrections has not adequately planned to provide permanent housing for inmates. Previous inmate population forecasting methods have lacked long-term reliability. In addition, the Department of Corrections has not maintained an adequate, comprehensive facilities master plan. As a result, even with the current construction program prisons may remain overcrowded for the foreseeable future.

Planning to provide sufficient inmate housing is not a new problem facing the Arizona Department of Corrections (DOC). In October 1981 DOC had approximately 512 inmates housed in temporary facilities. Although DOC created 3,207 new beds for male inmates between January 1978 and March 1982, the number of inmates housed in temporary facilities was approximately 626 by January 1983.* At the close of 1984 DOC had 1,260 inmates in temporary beds, and was approximately 20 percent over its permanent bed capacity. During the 1984 First Special Session, the Legislature approved approximately $88 million for the construction of 3,862 new beds, which DOC estimates will meet inmate housing needs through 1987.

DOC's Inmate Population Forecasting Methods Have Lacked Long-Term Reliability

DOC's past methods of forecasting inmate population have lacked long-term reliability. Events prior to 1982 and models used by outside consultants in developing the 1982 Facilities Master Plan provided inaccurate, low forecasts. Although DOC's current inmate population forecasts are developed from superior quantitative models, their long-term application may be limited.

* All projections and analyses presented in this finding are based on DOC's male inmate population.

DOC Used Inaccurate Projections - DOC's inmate population projections prior to 1982 provided inaccurate forecasts due to two factors. First, linear models were used to project Arizona's inmate population. In addition, the models did not consider several factors that led to an unexpected increase in inmate population.

The linear models used to predict inmate population growth prior to 1982 did not provide accurate forecasts. These models did not meet statistical requirements for acceptance, such as standards for building the models and conditions calling for no significant relationships among the variables.* As a result, DOC used low forecasts from the 1982 Facilities Master Plan in developing its budget requests.** The consultants' projections for 1982 through 1984 were well below the actual inmate population, as shown in Table 2.

TABLE 2

PROJECTED INMATE POPULATION VERSUS ACTUAL POPULATION, 1982 THROUGH 1984

	Projected Population	Actual Population	Difference
1982	5,358	5,577	219
1983	5,934	6,566	632
1984	6,336	7,482	1,146

Source: Compiled by Auditor General staff from DOC's 1982 Facilities Master Plan and inmate population reports

Several additional factors compounded the forecasting problem. The amended criminal code requiring mandatory sentencing and confinement for certain crimes became effective in 1978. The age of majority was lowered to 18 in 1979, placing 18- through 20-year-olds in the adult system. Also, work furlough programs were restricted in 1982. These factors, largely external to the corrections system, led to significantly increased

* For a more detailed explanation of the forecasting models see Appendix I.

** The 1982 inmate population projections and the Facilities Master Plan were prepared for DOC by the consulting groups of Rosser, White, Hobbs, Davidson, McClellan, Kelly, Inc. and Justice Systems, Inc.

inmate population. These factors combined with the limitations of the models used at that time prevented DOC from planning for the major changes that were on the horizon.

Current Model Superior, But Has Limitations - Although DOC's present inmate population forecasting method uses superior methodology for 2-year forecasts, its long-term accuracy may be limited. The projections should be combined with qualitative methodology to improve forecasts beyond a 2-year period.

ARIMA models* are able to successfully deal with the statistical assumptions violated when linear models are used for prison forecasting. Therefore, they are superior for forecasting prison population. Since late 1981 DOC has been using ARIMA models to forecast inmate population. DOC used univariate ARIMA models from 1981 through 1983. A bivariate ARIMA model was developed in early 1983,** and in 1984 DOC began using multivariate ARIMA models. The error rate for these models between July 1983 and December 1984 was 1.3 percent, an exceptionally low rate.

The multivariate ARIMA models provide accurate short- and intermediate-term forecasts, however, their accuracy beyond a 2-year period may be limited for two reasons. First, according to leading authorities on forecasting, quantitative applications are generally limited to short- or medium-term forecasts. Additionally, several factors outside DOC's control greatly influence the State's inmate population. Actions by the court system, prosecutors, parole boards, law enforcement agencies, and the legislative and executive branches affect the number of commitments and the length of an inmate's stay. For example, a change in parole policy could result in fewer inmates leaving the system than anticipated and lead to an increasing prison population.

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* ARIMA is an acronym for Auto Regressive Integrated Moving Average statistical models. For further explanation see Appendix I.

** This model provided the population projections upon which Crisis in Corrections is based.

To ensure more precise inmate population forecasts beyond a 2-year period, the ARIMA models should be combined with qualitative methods. Several methods could improve long-term inmate population projections by promoting greater coordination among criminal justice agencies. Alternatives include using the Delphi technique,* establishing a Governor's Special Task Force, or establishing a Criminal Justice Coordinating Commission. According to an expert in the field of criminal justice, it is imperative that experts in all fields of criminal justice be included so complete information is obtained. A 1983 National Institute of Corrections report, Towards A Nationwide Corrections Policy, stated that:

> "Accomplishing the purpose of effective operations requires a criminal justice coordinating body established at several levels of government. . . . The corrections component - probation, institutions, parole, and community programs - are interdependent elements, and must be cooperative and supportive of each other."

Methods used in other states to improve coordination among criminal justice agencies or supplement quantitative models include:

- Texas' Criminal Justice Coordinating Council, which collects and analyzes information from the entire criminal justice system;

- Delaware's Sentencing Accountability Commission, which determines guidelines for sentencing sanctions and probation, and alternatives to incarceration; and

- North Carolina's Crime Commission, which coordinates criminal justice activities by bringing together members of different criminal justice agencies.

DOC Has Not Developed And Maintained An Adequate, Comprehensive Facilities Master Plan

The Department of Corrections has not maintained a complete and current facilities master plan. The 1982 Facilities Master Plan does not include

* For an explanation of the Delphi technique see Appendix I.

sufficient information to provide for informed facilities decisions. In addition, DOC has not updated the plan annually, as required by its own policy. Master planning is essential for a successful prison system. The lack of long-range plans has resulted in crisis management in prison systems across the nation, according to the president of a national prison consulting firm. For example, one California corrections official attributes their current overcrowding to the lack of long-range facilities plans. Thus, corrections officials must address long-term needs and problems to develop solutions to prevent future crises.

1982 Master Plan Insufficient - DOC's 1982 Facilities Master Plan does not provide sufficient information for facilities decisions. The plan does not contain accurate and adequate information necessary for a complete plan. Compounding this problem, while DOC used the plan extensively to develop Land, Building and Improvement (LB&I) requests, funds were not appropriated to meet the projected needs.

The 1982 Facilities Master Plan contains incorrect and incomplete information. The forecasts for inmate population are well below the actual inmate population. As a result, future facilities requirements are understated. In addition, the plan lacks the necessary information in the following areas to provide direction for facilities decisions.

- Facility location alternatives - The plan contains few new facility alternatives. Site selection can significantly impact cost considerations, however, the facilities are not evaluated on this basis. In addition, staff availability for proposed and existing facilities is not addressed in any detail.* If a community's work force has not been thoroughly evaluated, funds may be committed to a facilty that cannot be staffed. For example, although DOC's new Florence facility has sufficient land for expansion, some DOC personnel have questioned whether the new facility can be adequately staffed. According to the president of

* According to DOC officials, some economic and labor force data has been used to evaluate staff availability, however, this information is not included in the plan.

a national prison consulting firm, because criminal justice policy changes can have rapid, long-standing effects, it is necessary to have current information for evaluating facilities alternatives.

- Alternatives to incarceration - These factors should be considered because of their impact on facilities decisions. In addition, information on possible changes in law enforcement, judiciary and corrections activities is necessary to determine how these changes may affect the prison population and the need for facilities. These alternatives need to be included and considered in a facilities master plan because of the impact they can have on facilities requirements. Both Kansas and North Carolina use simulation models to show their legislatures how various alternatives have affected or will affect inmate population growth and facilities needs. The Illinois corrections department uses simulation models to develop its facilities action plans, evaluating criminal justice policy changes outside of the department.

- Activities of other entities - Information about the activities of other entities is necessary to identify current or proposed actions that affect projections and create additional needs or negate perceived needs. For example, although the Perryville facility was originally planned to contain 1,600 inmates, legislation has limited the facility to 1,400 inmates. Therefore, the facility cannot be expanded beyond the 1,400 statutory limitation.

Although DOC used the 1982 Facilities Master Plan to develop its fiscal year 1983-84 budget request, funds for several priority facilities were not approved. During this time the State was facing a severe budget crisis and the Governor ordered all agencies to cut their budgets by approximately 10 percent. DOC's LB&I requests for the following projects necessary to meet the needs identified by the plan did not receive funding:

- Arizona Correctional Training Center - Tucson - request for approximately $26 million for the addition of 576 beds*

- Arizona State Prison - request for $1.4 million for architectural and engineering fees for 384-bed closed security facility

- Alhambra Reception Center - request for $1.3 million for architectural and engineering fees for 324 bed facility

Master Plan Not Updated - DOC has failed to maintain an updated master plan and, therefore, does not have a current facilities master plan to assist it in making long-term facilities decisions. Although DOC has established a policy to update the master plan each year, this has not been done. The most recent plan developed by DOC, Crisis in Corrections, serves only as an action plan and contains limited information. Consequently, DOC is operating with outdated or incomplete facility information.

Although DOC has an established policy to update its master plan annually, DOC has not updated its facilities master plan since 1982. DOC Policy 105 requires that the plan be updated annually, however, this has not been done since the Facilities Master Plan was prepared in 1982. In fact, DOC's facilities master planning committee has not even met for more than 1 year. Meetings were discontinued in October 1983 by executive staff when DOC's attention was focused on the overpopulation situation and the 1984 First Special Session.

The forecasts of increasing inmate population and the lack of funding for a construction program providing long-term solutions led to the inmate housing crisis. DOC developed Crisis in Corrections as an action plan to guide the Legislature in its funding decisions during the 1984 First Special Session. DOC's more sophisticated projections showed that by June 30, 1987, DOC would have 4,923 more inmates than permanent beds. At that time, DOC's only long-term solution to the bed requirements was the Tucson project.

* $750,000 was appropriated for architectural and engineering fees for Tucson for fiscal year 1983-84.

Because Crisis in Corrections was developed as an action plan it does not provide all the information necessary for a complete facilities master plan. While Crisis in Corrections was based on superior models, it was specifically developed to identify short- and long-term solutions to the current and anticipated overcrowding problems through 1987. For this reason, Crisis in Corrections does not evaluate the existing facilities, conditions, alternatives to incarceration, or the impact that changes in the criminal justice system would have on the overpopulation problems.

Without a current master plan, DOC is operating with outdated facility information. For example, since the 1982 Facilities Master Plan was prepared, the Legislature passed the multiple confinement law requiring that more than one inmate be confined in a cell except in specific instances. However, the plan is still largely based on the premise of one inmate per cell.* In addition, several facilities now require funding to meet code requirements, but without a current, comprehensive plan these needs cannot be prioritized relative to other facilities' needs.

Arizona's Prisons May Remain Overcrowded

Because previous projection models were not accurate and the Department lacked a comprehensive plan, the State's prison system may remain overcrowded into the foreseeable future. DOC currently has approximately 1,260 inmates in temporary beds, and DOC's ARIMA projections indicate an increasing inmate population through 1992.** In addition, some permanent beds will need premature replacement. As a result, DOC may face problems with inmates and outside intervention over the next two decades.

1,260 Inmates In Temporary Beds - Currently, 1,260 inmates are in temporary beds, but by 1986 DOC expects to have all inmates in permanent beds. However, DOC's inmate population projections show a need for approximately 1,200 additional beds each year from 1987 through 1992.

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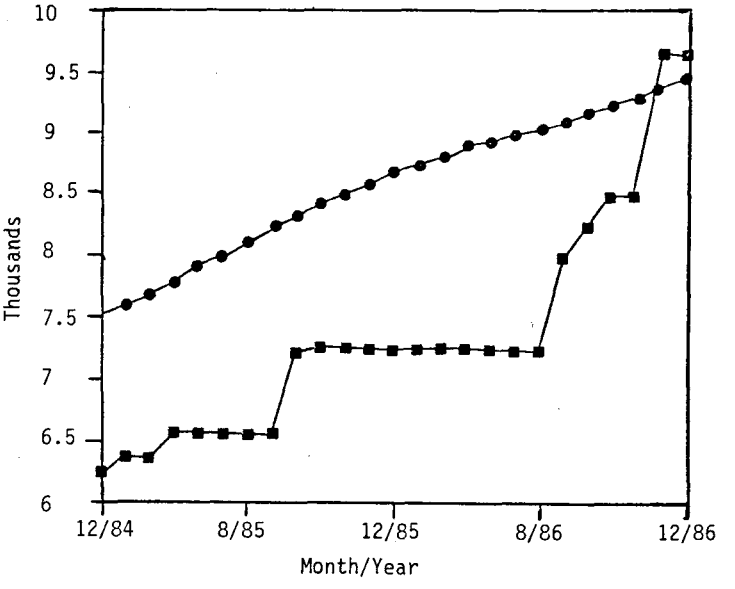
* Since the implementation of this law DOC's LB&I requests have been based on multiple confinement.

** DOC is no longer overseeing the prison construction program, however, DOC is still responsible for long-range facility analysis and new facility planning. DOC plans to begin updating the facilities master plan during 1985, according to DOC officials.

Although DOC is currently housing approximately 1,260 inmates in temporary beds, DOC expects to provide permanent beds to all inmates by November 1986, as shown in Figure 1. DOC's plans are based on current construction projects, which should provide the Department with 3,962 new beds between 1984 and 1986.*

FIGURE 1

PROJECTED INMATE POPULATION VERSUS BEDS
1984 TO 1986



Legend: Beds

Population

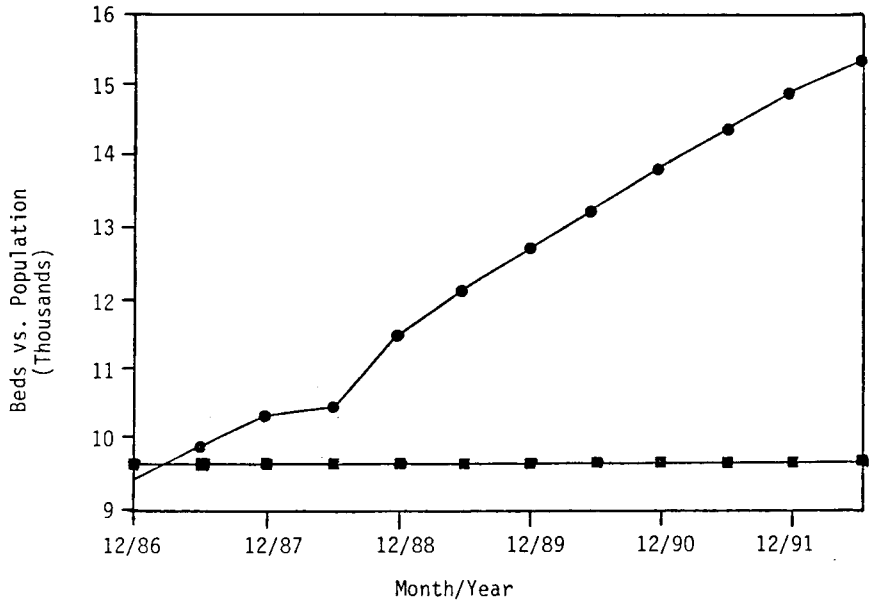
Source: Prepared by Auditor General staff from DOC's inmate projections and construction schedules

* The number of inmates in temporary beds until 1986 is largely dependent upon the scheduled completion of the $72 million construction projects. If these facilities are not completed on schedule, DOC will be faced with a greater number of inmates in temporary facilities. The current projected completion dates for the $72 million projects are questionable, as indicated in Finding III, page 33.

DOC's forecasts point to steadily increasing inmate population from 1987 through 1992. Although these projections should be combined with qualitative methods to evaluate the need for additional facilities, the projections, if accurate, show that inmate population will continue to increase steadily. The State has not made any provisions for new beds past 1986.* As a result, as early as March 1987 DOC may face another inmate population crisis, as shown in Figure 2.

FIGURE 2

PROJECTED INMATE POPULATION
VERSUS BEDS - 1987 TO 1992



Legend: Beds

Inmates

Source: Prepared by Auditor General staff from DOC's inmate projections and DOC's planned operating capacity

* DOC included LB&I needs through 1991 in "Information for the Joint Select Committee on Corrections," dated October 24 and 25, 1983. However, these projects were not funded and DOC has not subsequently requested funds for facilities beyond 1986.

Facilities Require Premature Replacement - Because some of the new and proposed prisons have shorter useful lives, DOC will have to replace these prisons prematurely. Because no long term solutions were funded, DOC has used quonset huts and preengineered buildings to provide additional operating capacity in a relatively short time. Although they provide permanent housing for the inmates, the useful life of these structures is shorter than that of other prison facilities. In addition, inmates destroyed two quonset huts in less than a year. Prisons built from precast concrete have a life expectancy of approximately 60 years, while quonset-type structures will need replacement in approximately 10 years. Because of the shorter life of less expensive structures, the State will have to replace approximately 1,416 beds over the next 25 years, as shown in Table 3. (Five hundred of these beds will be due for replacement in approximately 10 years). These replacements will be in addition to any construction needed to meet the increasing inmate population projected in Figure 2.

TABLE 3

FUNDS APPROPRIATED OR EXPENDED ON SHORT-TERM SOLUTIONS
1980 THROUGH 1984

Year Funds Approved And Total Dollars		Number Of Beds	Facility	Projected Year Of Replacement
1981-82	$3,450,000	270	ASP-East Unit-Phase I	1992
1982-83	30,000(1)	36	Safford	1993
1982-83	1,614,000	210	ASP-East Unit-Phase II	1995
1983-84	752,800	100	Douglas	2009
1983-84	6,975,500(2)	800	Douglas	2010

(1) These structures were built with operating funds.

(2) Additional funds will be required to complete this facility (see Finding II, page 25).

Source: Compiled by Auditor General staff from DOC Facilities Documents and Appropriations Reports

DOC Faces Continued Problems - Because of the overcrowding problem DOC faces problems with inmate security, court orders and State agency intervention. DOC estimates that as of January 1985 approximately 240 inmates are in temporary beds that are not considered manageable.* DOC expects to have approximately 1,035 inmates in temporary unmanageable beds by July 1985.

Temporary beds decrease DOC's control over the inmates. If DOC officials need the isolation rooms to keep unmanageable inmates away from the others, they are prevented from doing so. In addition, these inmates would be in close proximity to other inmates and could start a disturbance. DOC estimates that as of February 1985, 239 inmates will be housed in temporary unmanageable beds, and 716 inmates will be housed in tents and quonsets. This could create problems because of the large number of inmates in close quarters. According to DOC's director, if the Department needs to lock a facility down,** it cannot do so with these structures.

Overcrowding at DOC's correctional facilities could also lead to court and State agency intervention. The courts have held that confinement in extremely small and/or crowded spaces can be construed as "cruel and inhumane" punishment in violation of the inmates' Eighth Amendment rights guaranteed by the U.S. Constitution. Multiple occupancy aggravates this problem because no assurance can be made concerning the compatability of inmates who might be confined together in limited space. Filling prisons beyond their design capacity and housing inmates in temporary facilities can also violate State codes. For example, Arizona Center for Women has been cited for fire code violations because of the overcrowded conditions.

* DOC differentiates between temporary manageable beds and temporary beds. Temporary manageable beds include tents, trailers, multiple occupancy rooms and dayrooms. Other temporary beds, not classified as manageable because the inmates cannot be properly supervised, include placing several inmates in isolation rooms, laundry cages and auditoriums. These beds will be referred to as temporary unmanageable for purposes of discussion.

** A lock-down exists when the inmates are restricted to their cells. When cells are not available for all inmates, the only real control DOC officials have over the inmates are the fences, according to DOC's director.

The Center houses several inmates in each room, thus increasing the fire hazard and preventing the inmates from exiting the building quickly.

CONCLUSION

DOC has not sufficiently planned to provide necessary housing for inmates. Inmate population forecasts have been low and inaccurate. In addition, DOC has not maintained a comprehensive facilities master plan to assist in evaluating its funding needs and making recommendations about facilities. As a result, DOC's prison system may remain overcrowded into the foreseeable future.

RECOMMENDATIONS

1. DOC should supplement its inmate population projections with qualitative methods. This can be accomplished through the use of consensus building methods such as the Delphi technique. In addition, the Governor should consider establishing a Special Task Force made up of experts in all fields of criminal justice, or the Legislature should consider establishing a Criminal Justice Coordinating Commission to provide qualitative input to supplement statistical forecasts.

2. DOC should develop a new facilities master plan, taking into account the multiple confinement law, and update the plan annually as required by Policy 105. The plan should address new facility needs and replacement based on the inmate population projections in combination with qualitative methodology. In addition to the types of information included in the 1982 Facilities Master Plan, the new plan should include:

    a. Several alternate locations for new facilities and comparative costs for the alternatives. In addition, construction costs and operating costs over the life of a facility should be compared. The plan should specifically analyze the advantages and disadvantages of long and short-term solutions.

b. A staffing needs analysis for the alternative sites and the availability of staff from the community.

c. Information on and an evaluation of the measures taken by agencies outside DOC and the effects these actions will have on DOC's facilities needs.

d. Information on the alternatives to incarceration. DOC should use simulation models to present the effects these alternatives may have on DOC's facilities needs.

FINDING II

THE DEPARTMENT OF CORRECTIONS DOES NOT HAVE ADEQUATE PRISON SITE EVALUATION AND BUDGET DEVELOPMENT PROCESSES

The Arizona Department of Correction's (DOC) prison site evaluation and budget development processes need improvement. Recent prison sites were selected without proper analyses. In addition, budgets were not based on realistic cost estimates. DOC should receive construction appropriations in two phases to conduct needed analyses.

Prison Site Evaluation Has Been Insufficient

The site evaluation process needs improvement. DOC has developed criteria for site selection. However, new prison sites have not been selected based on sufficient site evaluation. As a result, selection decisions have been revised, projects have been delayed, and additional costs have been incurred.

DOC Site Selection Criteria - DOC has developed criteria for site selection.* According to the 1982 DOC Facilities Master Plan, there are four main factors in prison site selection. These include: procurement of vital services, recruitment of qualified staff, support of institutional mission/objective, and the limitations of construction and/or site. Other criteria developed relating to site selection are as follows.

- Institutions of 500 inmates require a site of at least 60 acres.
- The site selected should be publicly owned property.
- The topography of the site should be such that major construction costs do not result from site work. Drainage and erosion should be considered in the evaluation of the topography.
- Public power and gas should be available.

* In Arizona, as in other states, the selection of a general area as a possible new prison site generally also involves significant input from policy making officials at both the State and local levels.

- Public sewerage should be available.
- Public water should be available.
- Fire protection should be available.

In addition, a DOC Internal Management Policy effective September 1983 requires that a team be developed to conduct site visits and compile comprehensive reports. The team is to include representatives from Facilities and Construction, Business and Finance, Adult Institutions, Juvenile Services, and/or Community Services.

Sites Lack Preselection Analysis - In spite of DOC's selection criteria and policy, the Douglas and Winslow prison sites did not have sufficient presite selection analyses. Failure to perform sufficient analyses of specific sites has resulted in revised site decisions, significant site preparation costs, and project delays. Problems resulting from insufficient site evaluation are presented for the Douglas and Winslow sites.

DOUGLAS

The Douglas prison construction has had significant problems due to the lack of sufficient presite selection analysis. DOC originally planned to use the Douglas airport as a quick-fix solution to ease prison overcrowding by renovating existing hangars to house inmates. However, 1 week before the Special Legislative Session that would appropriate funds for the prison site, the Fire Marshal found the hangars unusable due to fire hazard. Therefore, DOC had to develop plans for building the prison based on new construction rather than renovation. In addition, site selection analysis conducted after the appropriation was made revealed that the site had extensive soil, water and sewer system problems. According to DOC estimates, the soil, water and sewer system problems will result in the need for an additional $1,906,900. A general lack of technical input early in the site review process prevented these problems from being discovered sooner.

- Soil - DOC's failure to identify soil problems at the Douglas site has delayed construction and increased costs. The Douglas

site was approved by the Legislature in October 1983. However, proposals for a soil analysis were not requested until January 1984. The results of the analysis, obtained in March 1984, showed the soil to be highly expansive. Due to the soil condition, DOC estimates the additional construction cost at $321,900. In addition, the soil problems delayed construction because a decision as to what alternative to take to correct the soil problem was not made until April 1984. According to DOC officials, the soil was not originally tested since the existing hangars were to be renovated. In addition, since there were already buildings at the site, DOC believed there was no reason to question the soil condition. However, if a soil test had been conducted originally, the related problems could have been incorporated into time and budget estimates.

- Water And Sewer System - The Douglas site also had extensive problems with the water and sewer systems, which were not identified prior to site selection. Although the water system is sufficient most of the year, the system becomes inadequate during the months when a chili plant located next to the airport is in operation. In addition, the sewage treatment system was found to be inadequate to handle the sewage for both the chili plant and the prison. Further, leaks were found in the concrete joints for the utilities. Expenditures needed to correct these problems have been estimated by DOC to be $1,585,000. According to DOC officials, DOC had been informed that the water and sewer systems had been upgraded and would accomodate 8,000 individuals. However, DOC did not verify the condition of these systems.

- Lack of Technical Input - DOC did not have individuals with technical expertise visit the site early in the site review process. Although DOC has a policy requiring a representative from its Facilities and Construction section to be included in site visits, the Facilities and Construction representative was not included in early site visits. According to an official from the Facilities and Construction section, he may have been able to

detect the soil, water and sewer system problems had he been included on a site visit. In addition, the fire hazards may have been detected sooner if the Fire Marshal had been included on earlier site visits. Although DOC staff visited the site in June 1983, the Fire Marshal did not visit the site until September 27, 1983.

WINSLOW

DOC failed to evaluate site availability and soils conditions at the Winslow site. In Senate Bill 1027 the Legislature prescribed the Winslow prison site in January 1984 and made an appropriation for construction.* DOC had conducted a preliminary analysis of the site in November 1983, but did not verify that the site was available. Subsequent to legislative selection, DOC found the site was too small and had ownership problems. Therefore, House Bill 2407 was enacted in May 1984 to amend Senate Bill 1027. The new bill allowed the director of DOC to locate a new site in the Winslow area. DOC, with the assistance of the Town of Winslow, chose the new Winslow prison site. The construction manager identified problems with the site that will necessitate substantial costs to install the water, sewer, gas and electrical lines. According to the construction manager's latest estimates, actual costs will be $420,000 over the original May 1984 estimates. Due to land conditions it is anticipated that extensive dynamiting may be required to run utilities to the site. However, as of January 15, 1985, the geotechnical report that would give the detailed costs of installation had not been completed. According to the architectural firm overseeing the project, the costs for bringing utilities to a site are normally $15 per linear foot, however, in Winslow the costs may be double the normal cost.

Recent DOC Prison Construction Budgets Have Been Unrealistic

Recent DOC prison construction budgets have not been based on realistic estimates. Even after excluding the additional costs resulting from poor

* The appropriation was a lump sum of $72 million to build prison sites in Florence, Yuma, Winslow and Tucson.

site evaluation, the budgets for the Douglas and the Senate Bill 1027 projects ($72 million) are not sufficient. The projects would require significant design changes to stay within the original appropriation.

Douglas Prison Budget Problems - The Douglas budget is insufficient for several reasons. These reasons include failure to revise the initial budget once it was determined the hangars could not be renovated and inadequate funding for construction of 200 additional beds. Due to the insufficient budget, extensive cost saving measures have had to be implemented.

- Costs Based on Renovation - DOC failed to significantly revise the initial budget based on new construction rather than renovation. The initial DOC budget estimate in Crisis in Corrections* for the 600-bed medium security facility site at Douglas airport was prepared by a DOC warden on the assumption that the airplane hangars would be renovated. The site was not visited by construction experts prior to selection, nor did any technical experts contribute to the budget preparation. Once the Fire Marshal visited the prison site and found the hangars to be unusable, the budget was not significantly revised based on construction of new buildings. The Governor had notified the Legislature prior to the Fire Marshal's visit that the cost was estimated at $5.8 million for the facility. Therefore, according to DOC officials, they felt they needed to stay within the original estimate.

  The budget for the Douglas site for new construction was far below historical construction costs. As calculated from figures in Crisis in Corrections, the cost per bed for hangar renovation is $9,990. However, when DOC found that the hangars were unusable and costs would have to be based on new construction, the cost per bed was not significantly revised. According to a

* DOC prepared the Crisis in Corrections document for the October 3, 1983, Special Legislative Session. The document contains budget requests for several prison facilities.

report by N. R. Cox Associates,* DOC estimated costs per bed for more recent projects ranged from $27,118 per bed to $33,045 per bed for medium security facilities. The report also indicates the 1983 national average for medium security construction was $51,334 per bed.

- Funding For Additional Construction May Not Be Adequate - The funds allocated for additional bed needs may not be sufficient. Although the initial budget was for construction of 600 beds, the Legislature increased the number of beds to 800. Prior to the increase, legislators and legislative staff asked the director of DOC what funds would be needed to increase the Douglas 600 bed medium security facility by 200 beds. According to the director of DOC, as he was under time constraints and was therefore unable to obtain supporting data, he estimated that the additional beds would require a $2 million increase in the appropriation. However, the difference between the original estimate of $5,993,700 for 600 beds, and the final appropriation of $6,975,500 for 800 beds was only $981,800.

As a result of the underbudgeting for the Douglas facility, extensive cost saving measures have had to be implemented. These measures have resulted in the elimination of buildings from the plans and constant redesign of the facility to reduce costs. As part of the redesign, support facilities were cut from the plan since they could not be built within the budget. According to DOC estimates, an additional $5,486,000 will be required to construct needed support facilities.** The additional support facility

* N. R. Cox, a Texas consultant, was contracted by DOC to conduct an overview of system implementation planning in response to the rapid inmate population growth.

** DOA officials indicated an additional $110,000 would be required to complete the control tower and to cover contract extensions for inmate housing construction. Extensions are needed because of delays caused by use of inmate labor and by weather conditions. These funds, in conjunction with the additional funds required for support facilities and to correct soil, sewer, and water system problems will raise the total completion cost of the Douglas site to $14,478,400, as opposed to the $6,975,500 originally appropriated.

funds are needed to complete the facilities and construct numerous buildings, including structures for vocational education, Arizona Correctional Enterprises (ARCOR), a chapel, a laundry, inmate crafts, academic education/library, additional freezer and cold storage space, vehicle maintenance, administration complex, athletic fields, and staff housing.

Senate Bill 1027 Projects' Budget Problems - The budget for the Winslow, Florence, Yuma and Tucson sites is also inadequate. Senate Bill 1027 enacted in January 1984 appropriated a lump sum of $72 million for prison facilities as shown in Table 4.

TABLE 4

$72 MILLION PROJECTS BY
FACILITY, AND NUMBER AND TYPES OF BEDS

Facility	Number And Types Of Beds	LB&I
Arizona State Prison	768 maximum security	$31,314,000
Arizona Corrections Training Center	744 medium security	22,521,356
Winslow Conservation Camp	150 minimum security	2,195,000
Yuma Conservation Camp	150 minimum security	2,684,100
Winslow Facility	400 medium security	9,807,000
Winslow Facility	100 minimum security	1,599,544
Yuma Facility	100 minimum security	1,879,000
TOTAL	2,412	$72,000,000

Source: Senate Bill 1027 specified the location and number and types of beds. The Bill also provided a lump sum appropriation of $72 million. The allocation of the $72 million land, building and improvement (LB&I) monies by facility was obtained from the Facilities and Construction Division of DOC.

Although preliminary estimates for all the above sites were not prepared, the original budget estimates by DOC for only two of the sites were more than the total appropriation. According to budget estimates in the DOC publication Crisis in Corrections, DOC staff estimated the facility costs for the Florence and Tucson sites to total $83,636,000, as shown in Table 5. The estimate was based on construction of 1,512 beds, or 900 beds less than the 2,412 contained in the $72 million appropriation.

TABLE 5

CRISIS IN CORRECTIONS ESTIMATES FOR
TUCSON AND FLORENCE PRISON CONSTRUCTION

Facility	Number And Types Of Beds	LB&I
Arizona State Prison	768 maximum security	$53,548,000
Arizona Corrections Training Center	744 medium security	30,088,000
TOTAL	1,512	$83,636,000

In December 1983 a revised budget of $82.7 million for these sites was developed by representatives from the Joint Legislative Budget Committee, the Executive Budget Office, the Department of Administration, and the Department of Corrections. The $82.7 million estimate was based on construction of a total of 2,237 beds. However, the budget was further reduced in the legislative process to $72 million and the number of beds required was increased by 175 from 2,237 beds to 2,412 beds.

Effects of Inadequate Funding - Due to inadequate funding, facility plans for the prisons to be constructed with the $72 million appropriation have undergone extensive changes.* According to a study by N. R. Cox Associates, the reductions caused significant revisions to the facility planning estimates.

> ". . . The result was a considerable reduction in total square footage of housing, support, and program space per inmate and a corresponding reduction in the cost per bed . . . These reductions were a direct result of the limited funding appropriated for the construction of the 2,412 beds.
>
> Although the reductions meet the cost saving requirements of the statutes, the department will be considerably handicapped in any attempt to meet the requirements for the provision of work opportunities for inmates once the facilities are completed. The reduced space allocations do not provide sufficient areas for vocational training, institutional maintenance or prison industries."

* According to a DOA official, in order to remain within the $72 million appropriation, inmate labor may need to be used extensively. The extensive use of inmate labor may impact project timeliness (see Finding IV).

Even though N. R. Cox has indicated facilities will be insufficient, the construction management firm and architects are not clear as to what the final effects of reduced funding will be. As programming and design of the facilities has not yet been completed, the effects of remaining within the appropriation are unknown. However, preliminary indications are that there could be reduction or elimination of support facilities. In an attempt to meet the budget constraints, DOC eliminated four buildings - an isolation unit, a vocational education building, a maintenance shop and an administration building - from the plan for the Tucson facility. However, these buildings were necessary and had to be reinstated, thus increasing design fees. An official from one of the construction management firms overseeing the projects has indicated that the appropriation may not be adequate to construct complete facilities. The inadequate funding may necessitate size reduction or elimination of support buildings at Yuma, Winslow and Florence. In addition, according to an official from the architectural firm responsible for design of the Tucson facility, there have been reductions in square footage.

Two-Phase Appropriations Could Improve Budget Accuracy

DOC's prison construction budgets would be more accurate if funds were appropriated in two phases. Currently, appropriations for new prison construction are appropriated in a lump sum, with DOC budget estimates usually based on historical expenditures of costs per bed. Funds should be appropriated for site analysis, programming, facility design and budgeting prior to the actual construction appropriation so as to provide for more reliable and accurate budget requests.

Current DOC Budget Process - DOC generally requests appropriations based on historical construction costs. DOC is responsible for prison population projections, resulting long-term planning, and developing prison construction estimates for obtaining appropriations. Construction cost estimates for new prisons are usually prepared by DOC Facilities and Construction staff. According to an official from the Division, estimates

are developed based on historical information on costs per bed.* Also included in the estimates is an adjustment for the type of security level for the prison, for actual site conditions, and for economic trends in the construction industry. This estimated amount is then requested through the legislative process for a lump sum construction appropriation. Once the construction monies are appropriated, DOC hires a construction manager, and architectural and engineering firms to evaluate the site, prepare facility designs and develop a detailed project budget based on the designs. As DOC does not generally receive funding for hiring construction managers, architects and engineers prior to submitting budget construction estimates to the Legislature, detailed budgets are not developed until after the construction appropriation has been made. As a result, appropriations have not been based on detailed cost estimations.

DOC Should Obtain Funds Prior To The Construction Appropriation For Accurate Estimate Preparation - DOC should be appropriated funds for conducting detailed analyses prior to submitting appropriation requests. The funds should be used to retain construction manager, architectural and engineering services as well as other essential professional services. The construction manager, architects and engineers should be responsible for analyzing the site, designing the facilities, and preparing detailed budgets based on the design. These services would increase the accuracy of DOC's requests and subsequent appropriations. Some other states have developed this type of phased appropriation processes.

Preconstruction appropriations should be used for hiring the construction manager responsible for overseeing the entire project, including site evaluation, planning, design and budgeting. Technical site evaluation should be conducted prior to budget preparation since it impacts site preparation costs. The site analysis should include thorough review of utilities and soil conditions. During planning, the construction manager, architect and engineer should assist DOC in technical development of facility needs and preliminary costs. Facility design should involve the

* Although the Facilities and Construction Division is generally responsible for budget preparation, the budget for the Douglas facility was prepared by the warden of the Alhambra Reception and Treatment Center.

development of housing and support building design. These designs should be prepared by the architect and construction manager. Finally, after site evaluation, planning and facility designs have been completed, the information should be used to prepare detailed cost estimates for the appropriation request.

Hiring construction managers before preparing appropriation requests could provide for early cost saving measures. Construction managers can implement cost saving changes in materials or design during preparation of designs and preliminary budgets. In addition, the construction manager can develop several alternatives with resulting projected costs. For example, at the Winslow site the construction manager found that approximately $5.6 million could be saved if the Winslow medium and minimum security prisons were built in Tucson. However, this occurred after the site had been selected and incorporated in statute, making it far more difficult to change. In fact, when DOC expressed a desire to move the site, it was informed that the Governor would veto any legislation to do so since the Town of Winslow had received a commitment from the Governor for a facility.

Other states have developed phased appropriation processes that could improve the budget estimation process if implemented in Arizona. Our Office contacted California, Colorado, New Mexico and Illinois to learn details of construction budget processes. Although the preconstruction appropriation methods varied, all four states have used phased appropriations. Summaries of the states' processes are as follows.

- California - California receives funding for prison construction in phases. The initial appropriation is allocated for architecture and engineering, land acquisition and an environmental impact report. California uses a private construction management firm to assist the corrections department and the architects and engineers in the design of a prototypical prison and development of a construction budget. This budget is then used to obtain the construction appropriation. On recent projects, the construction manager overseeing the prison budget

provided the California legislature with several design and cost alternatives before the appropriation amount was finally determined.

- Colorado - Colorado receives funds for prison construction in phases. The Colorado Department of Corrections employs a project manager to oversee projects. It also uses the State Building Division to assist in project management. The initial appropriation is used to hire architects and engineers to assist in site evaluation and prison design. After designs are complete, a request is made for funds to construct the facility.

- New Mexico - New Mexico also uses phased appropriations. The Department uses a private construction management firm to oversee projects. It also uses the General Services Administration, another state agency, to deal with architectural and engineering contracts and design review. Once designs are complete, the department and the architect develop a preliminary budget. The project is then let out to bid. The lowest bid is used to complete the actual construction appropriation request. Site evaluation including soil and utility analysis is conducted prior to final site selection.

- Illinois - Illinois receives phased appropriations. An initial estimate for construction is prepared by a separate planning agency. The estimate is used to determine architectual and engineering fees. Generally, a 1-year appropriation is then made for land acquisition and architectural and engineering fees. The architect and engineer develop various alternatives for prison design. The state planning agency assists the architect and engineer in developing a detailed construction estimate, which is used in conjunction with the original state planning agency estimate for the second-year construction appropriation request.

CONCLUSION

DOC does not have adequate prison site evaluation and budget development processes. Several of the recent prison sites have insufficient budgets because of the lack of presite evaluation and a poor budget process. DOC could improve its budget estimation by obtaining construction manager and architectural and engineering services prior to development of the construction appropriation request.

RECOMMENDATIONS

1. The Legislature should consider appropriating funds for new prison construction in two phases. The first appropriation should be allocated for obtaining construction manager, architectural and engineering services to evaluate the site, plan the project, design the facilities and prepare a detailed budget estimate. The designs could include alternatives with resulting cost estimations. The second appropriation should be allocated for construction based on the detailed budget.

2. DOC should ensure that site evaluation is adequate by requiring a soil, water and sewer analysis and requiring technical experts to visit sites prior to preparation of the appropriation request.

FINDING III

THE STATE'S $72 MILLION PRISON CONSTRUCTION PROGRAM MAY BE DELAYED

The schedules for the $72 million prison construction program may not be met. The present schedule is overly optimistic. Any delays in meeting this schedule will result in increased costs. Furthermore, additional actions may be needed to address any overcrowding that might result from delays.

The Department of Corrections (DOC) hired a project manager (PM) to oversee the $72 million prison construction program. Project managers represent the owner's best interests in both the design and construction phases of the project. This includes assisting the owner with architect selection and program development. During the construction phase the project manager prepares schedules and budgets, performs engineering, and coordinates the activities of all those involved in the construction program.

Projects May Not Be Completed Within Contracted Time Frame

The $72 million construction program may not be completed within the contracted time frame for two reasons. First, schedules are overly optimistic for the project size. In addition, the schedule has already been delayed significantly.

Schedules Are Overly Optimistic - The schedules for the $72 million prison construction program are very optimistic. An independent engineering review indicates that the projects may not be completed within the contract time frame.

The Office of the Auditor General retained a consultant to analyze the schedules set forth in the contract between DOC and the PM of the $72 million prison construction program. In addition, the consultant analyzed the PM's two most recent schedules dated September 28, 1984 and November 6, 1984. See Appendix II for the consultant's report.

The PM's schedules may not be feasible because of the scope of the projects. Both the Tucson and Florence projects will cost between $20 million and $25 million to build. For this reason, the schedules may not be reasonable.* The more probable schedules developed by our consultant would add 11 months to the total project period. Most of this increase occurs during the construction phase. According to our consultant, ". . . a preliminary expected duration of 24 months for the construction effort is much more realistic than [the] anticipated 16.5 months, in fact the 24 month period may be rather optimistic." The more probable completion dates for each facility would add between 7 and 11 months to each project's schedule, as shown in Table 6.

TABLE 6

CONTRACT SCHEDULES VERSUS PROBABLE SCHEDULES

Project	Contract Completion Date	Probable Completion Date	Variance (months)
Yuma	7-30-86	3-1-87	+7
Tucson	4-10-86	4-1-87	+11.67
Florence	10-10-86	9-1-87	+10.67
Winslow	10-30-86	10-1-87	+11

Source: Compiled by Auditor General staff from DOC/PM contract and the consultant's report

Project Has Been Delayed - The $72 million prison construction program has already been delayed. DOC delayed the construction program by withdrawing its request for funds for the architecture contracts. In addition, delays also resulted from the architects opposition to signing contracts that do not contain reuse clauses.

DOC withdrew its October 1984 request for funds for the architects' contracts from the Joint Legislative Budget Committee (JLBC). This request

* Inmate labor and material purchasing are two additional factors that if not monitored could delay construction. According to our consultant, detailed construction schedules for phases using inmate labor and identification of owner purchased materials should be completed as soon as possible.

was withdrawn because of concerns surrounding the previously signed PM contract.*

The PM expressed concern over this delay. In a letter to DOC dated October 16, 1984, the PM stated:

> "The design phase is very tightly scheduled and is on the critical path. Delays in signing the contract will result in delays in bidding the construction and may effect the final completion dates. We have prepared the contracts and their execution is now apparently being delayed for reasons beyond our control."**

DOC waited until November 1984 to request the architectural funds.

Another major delay resulted from the architects reluctance to sign contracts not containing reuse clauses.*** DOC did not include reuse clauses because of legislative concern regarding the reuse clause in the architect's contract for a previous project. However, architects believe these clauses are necessary because of their liability for their designs. It took a month of negotiations with the architects before an acceptable position was reached.**** To protect architects who prepare the original designs, the State will require the architects who reuse the plans to assume all liabilty.

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* Several questions were raised by legislators and legislative staff regarding the appropriateness of the project manager selection (see Other Pertinent Information, page 61). The absence of a penalty clause in the contract, provisions for payment to the PM both before and after the contract period, and a change in the PM's personnel were questioned.

** Another factor that could increase the design phase review time is the involvement of the The Public Institutions Ad Hoc Committee. During the design phase of the Arizona Correctional Training Center - Tucson project, the Committee's review required approximately 3 months. A similar situation occurred with the Joint Legislative Prison Committee in California. For this reason, the California legislature limited its committee's review time to 30 days.

*** A reuse clause provides the architects with an additional payment each time their design is used.

**** According to the PM, this delay was compounded by the fact that the architects' contracts were signed shortly before the Christmas and New Years holidays. Thus, the architects were not able to meet with DOA and DOC personnel to discuss design requirements until after the first of the year.

Delays May Result In Increased Costs

Delays in the $72 million project construction schedule could increase the project management costs. If the projects are delayed, paying the PM at the current contract rate would result in increased project management fees. In addition, the contract's provisions release the PM if the project is delayed for any reason. As a result, the State may be at a disadvantage in obtaining continued project management services.

Increased Project Management Fees- If the PM is paid for the delays at the current monthly rate, the cost of the project management services would increase by 47 percent. The total cost for the project manager's services would escalate to almost $2.5 million, as shown in Table 7.*

TABLE 7

PROJECTED COST RESULTING FROM PROJECT DELAYS

Project	Variance	Monthly Rate	Additional Cost
Yuma	+7 months	$10,500	$ 73,500
Tucson	+11.67 months	18,000	210,060
Florence	+10.67 months	16,300	173,921
Winslow	+11 months	18,000	198,000
Program Mgt.	+11 months	12,977	142,747
Total additional costs			798,228
Payment to PM under current contract			1,698,600
Possible total cost for PM's services through 12-1-87			$2,496,828

Source: Compiled by Auditor General staff from consultant's probable schedules and DOC/PM contract

Delays Release PM From Obligations - Provisions in the contract release the PM from any obligations in the event of delays, and place the State in an inferior bargaining position. Although construction contracts typically obligate the project manager to provide additional services resulting from delays, the PM is not required to provide such services

* Projected costs are based on monthly construction and program management fees, if the delays are through no fault of the PM and the post-contract payment provisions are agreed to by DOC and the PM.

under the current contract. As a result, the State is placed in an inferior bargaining position if the projects are delayed. Therefore, future contracts should bind the project manager for a reasonable period of time.

The Office of the Auditor General retained an expert in contract law to analyze the contract between DOC and the PM for the $72 million prison construction program.* The attorney reported that construction contracts typically require a project manager to provide additional services related to the project if delays occur. According to our attorney, "a construction contract will typically obligate a project manager or contractor to perform additional services that are later determined to be necessary, and will state at least a general method for determining the compensation for the additional services."**

The current contract releases the PM from any obligations if the project is delayed.*** According to our attorney, the most likely interpretation of the contract is that:

> "PM has no responsibilty for additional services and expenditures unless it voluntarily assumes them by entering into a separate agreement that amends the original AGREEMENT. At most, the original AGREEMENT may implicitly impose upon the parties a duty to exercise good faith in attempting to negotiate an amendment. However, the AGREEMENT almost certainly does not obligate either party to reach final agreement on the amendment."

The contract leaves no margin for even insubstantial delays. Any delay

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* The contract attorney's analysis is in Appendix III.

** According to our attorney, although the additional services and compensation are indefinite when the contract is formed, these provisions would be "sufficiently definite to enforce, because the stated method of determining compensation gives the court a reasonable basis for determining each party's obligations" and determining a remedy in the case of a breached contract.

*** The provisions releasing the PM from its obligations were included because DOC, legislative and gubernatorial staff wanted the contract to limit the PM's fees.

releases the project manager from the project.* According to our attorney:

> "[O]nce a project is delayed beyond a scheduled completion date, OWNER must use a different project manager to supervise the completion of the project, unless OWNER induces PM to continue its services by negotiating an amendment to the AGREEMENT."

Because the PM is not obligated to perform additional services, the PM is in a strong bargaining position to obtain higher fees.** According to our attorney:

> "OWNER likely would find itself in a greatly inferior bargaining position in negotiating an amendment to the agreement. For example, if the additional services are closely related to the services that PM has agreed to perform in the original agreement, a desire for simplicity, uniformity, or minimization of transaction costs would encourage OWNER to retain PM, rather than a new project manager, for the additional services, even if that required payment of a premium fee that exceeds the fee for commensurate services under the original contract."

Although the contract contains provisions for payment if the project is delayed, these provisions are not enforceable. According to our attorney:

> ". . . the AGREEMENT's provisions for additional compensation are not enforceable; instead, they are unenforceable recommendations for the terms of a subsequent agreement to amend the original AGREEMENT. If completion of a project or phase of a facility is delayed beyond its scheduled completion date, PM would have no obligation under the original AGREEMENT to continue performing any services . . . [m]oreover, even if PM and OWNER successfully negotiated an amendment, neither of them would be obligated by the original AGREEMENT to agree to the particular 'additional installments' recommended in the original AGREEMENT; instead, they could agree upon any compensation necessary to induce PM to continue its services." (emphasis added)

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* Although the project has already been delayed, the PM is currently working on the project without an amended agreement. The PM informed the Department of the need to amend the contract in a November 21, 1984 letter, however, this has not been done..

** If DOC and the PM did not reach an agreement, DOC could hire a new project manager or be its own project manager. In either case, the disruptions to the project completion schedule may be severe.

In contrast, most project management contracts provide some flexibility. For example, contracts typically grant the owner the option to retain the project manager for a period of 90, 120 or 180 days. In addition, an option to retain the PM for additional services is enforceable if it obligates:

> ". . . (1) PM to perform the additional services and incur the additional expenses and (2) OWNER to pay for those services and to reimburse the PM for the expenditures, both obligations subject only to the condition that OWNER request those services in writing after determining the need for additional services."

Delays May Extend The Temporary Bed Problem

Delays in the prison construction program could extend the temporary bed problem. DOC's need for additional temporary facilities may increase as a result of the construction program's delays. Several alternatives could be considered to meet DOC's need for inmate housing.

Additional Temporary Facilities May Be Needed - DOC may face a critical need for additional temporary beds, if the schedules are not met.* As of December 1984, DOC had approximately 1,260 male inmates in temporary beds. However, DOC estimated that all inmates would be in permanent beds by November 1986 as a result of the current construction program. If the schedules are delayed, DOC could have approximately 2,367 inmates in temporary beds by February 1987, as shown in Table 8.

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* For a discussion of problems with temporary beds, see Finding I, page 5.

TABLE 8

POSSIBLE OPERATING CAPACITY AND INMATE PROJECTIONS
JULY 1986 THROUGH JUNE 1987

	Operating Capacity	Projected Population	Temporary Beds Needed
July 1986	7,254	9,117	1,863
August 1986	7,254	9,177	1,923
September 1986	7,254	9,240	1,986
October 1986	7,254	9,309	2,055
November 1986	7,254	9,379	2,125
December 1986	7,254	9,470	2,216
January 1987	7,254	9,542	2,288
February 1987	7,254	9,621	2,367
March 1987	7,504	9,715	2,211
April 1987	8,248	9,797	1,549
May 1987	8,248	9,870	1,622
June 1987(1)	8,248	9,939	1,691

(1) Current DOC monthly projections extend to June, 1987. Projections extending beyond June, 1987 are forecast at six month intervals.

Source: Compiled by Auditor General staff from DOC's inmate projections and consultant's projected completion dates in Appendix II

Inmate Housing Alternatives Needed - Several alternatives need to be examined to determine how inmate housing needs can be met if projects go beyond schedules. One alternative would be additional use of private contractors in place of inmate labor to expedite the construction program. However, while this alternative would save time, it would also increase costs. DOC could also make provisions to obtain additional temporary housing such as tents and trailers. However, this alternative may strain the existing facilities and could create additional problems with inmate security.

CONCLUSION

The schedules for the $72 million prison construction program may not be met. Delays in the construction program would result in increased project

management costs. Moreover, if the projects are not completed on schedule additional actions may be necessary to address the increased prison overcrowding.

RECOMMENDATIONS

1. The State should require that future project manager contracts include provisions that grant the State the option to retain the project manager for a reasonable period of time.

2. The Department of Administration should ask the PM to evaluate the alternative of using more private contractors and less inmate labor. This evaluation should be based on time savings and added costs.

3. DOC should evaluate the effects that delays will have on their need for inmate housing and make provisions to meet those needs.

FINDING IV

THE DEPARTMENT OF CORRECTIONS DOES NOT EXERCISE ADEQUATE CONTROLS OVER CONSTRUCTION-RELATED ACTIVITIES

The Arizona Department of Corrections (DOC) does not always exercise sufficient controls over construction. Unauthorized construction and other construction problems have limited the capacity of DOC and other parties to control DOC facilities construction. Construction cost systems do not provide adequate financial control information, and controls over inventory are weak. Further, the Department encountered problems when using Arizona Correctional Enterprises (ARCOR) in the construction of the East Unit at Arizona State Prison (ASP-East).

Unauthorized Construction And Other Problems Have Limited Control Over Construction Projects

Unauthorized construction and other problems have limited the ability of the Department of Corrections and other responsible parties to control and monitor DOC facilities construction. Although statutes relating to the Department of Administration (DOA) require DOA to review and approve plans and changes to plans, the Department of Corrections has failed to consistently submit plans and changes for DOA review and approval. In acting as its own construction manager and contractor, DOC has undermined controls that normally exist among the various parties involved in public facilities construction. Moreover, the use of inmate labor in critical construction activities has restricted DOC's control over project progress.

Failure To Comply With Statutes Relating To DOA Review And Approval - The Department of Corrections has not consistently complied with statutes requiring DOA review and approval of facilities construction plans. As a result, DOC has built unapproved structures, some of which may be unsafe. Poor communication between DOC Facilities Construction staff and Operations staff has been a primary factor limiting DOC's ability to monitor construction changes and report those changes to DOA.

Statutory requirements mandate that DOA review and approve new construction projects, improvement projects and changes to construction work in progress. Within the Department of Administration, review and approval authority is vested with the Division of Facilities Planning. A.R.S. §41-726.A. states:

> "The [D]epartment [of Administration] shall have the following facilities planning and construction powers and duties:
>
> . . . 2. Review all proposed projects and improvements of state agencies . . .
> 3. Review all architectural, engineering, and construction contracts prior to submission to the Department of Law . . .
> 4. Approve plans and specifications and changes thereof for all projects and improvements for which funds are appropriated by the legislature . . .
> 5. Review and approve all progress payments on all major projects and improvements . . .
> 6. Make regular inspections of all projects and improvements during the course of construction to insure compliance with the plans and specifications approved by the director . . ."

Although changes to plans and specifications during construction are not uncommon, DOC's failure to inform DOA of them as required by law results in inadequate review of changes, which may lead not only to unapproved, but also to unsafe construction. For example, DOA inspection of the Douglas 60-man dormitory revealed several deviations from plans and specifications. Only one layer of sheet rock was used in actual construction, although plans required two layers to comply with fire codes. Specifications also required 20 ampere commercial outlets for this facility; yet, inspection reports show that 15 ampere residential outlets were delivered and installed at the site instead. In expressing their concerns regarding the ability of residential outlets to hold up during expected usage, the architectural firm responsible for the project stated:

> "The state has contracted and paid for the preparation of these drawings and specifications . . . If the state wishes to deviate from the plans and specifications without prior approvals, we will not be held

> responsible for those items bid . . . [R]esidential type outlet boxes are not in keeping with the quality required by this building type . . . 24 inmates are sharing approximately 1900 s.f. and each inmate is liable to have . . . electrical appliances. This is a very heavy concentration of electrical usage and residential type materials are not made for this type usage . . ."

In yet another recent case, DOA discovered that a vent stack to a gas-fired hot water heater had not been vented to the outside. Rather, it appeared to terminate within the building, posing a serious fire hazard to future occupants. DOC may not have been aware of and may not have corrected this hazard had DOA not discovered this problem on routine inspection. Thus, the degree to which there may have been undiscovered design changes leading to unsafe construction is unknown.

Evidence shows that poor communication within DOC itself has limited DOC's ability to monitor construction changes and report them to DOA. In August 1984 the DOC director found it necessary to formally remind staff that no changes were to be made to projects without specific written authority. In some cases Operations staff have made changes without informing DOC Facilities Construction staff. Certain changes to the Douglas warden's house, including the installation of an "extravagant" fireplace, were apparently made without Facilities Construction staff being informed.* One case involved not merely a change, but the construction of an entire building without the knowledge or approval of either DOC Facilities Construction staff or DOA. Facilities Construction staff apparently had no knowledge of construction on a Florence trustee shower building, which was already being built when DOA inspectors found it in mid-1984. Again, had DOA not reviewed plans for this building, the welfare of future occupants could well have been jeopardized. An inmate had drawn the original plans, which were implemented without review by a design professional. DOA inspection of the plans revealed that they were unacceptable. Among other things:

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* DOC is currently performing an internal misconduct investigation of the circumstances surrounding these modifications. In yet another case involving construction at Safford, a DOC official has requested an internal review to determine whether DOC approved funding for these construction activities.

- Drawings showed trusses conflicting with (going through) the guard house on top of the building;

- No specifications accompanied the drawings, thus giving no indication of quality and standards for building materials to be used;

- Little provision for lighting and ventilation existed even though this was a windowless building; and

- Plans were neither signed nor sealed by a registrant of the Board of Technical Registration, as required by A.R.S. §32-142.A.

According to a DOA official, DOC has taken steps to correct these plans. In addition, DOC subsequently developed Field Change forms in an attempt to improve internal communication and authorization of changes relating to construction.

Simultaneous Role As "Owner," Construction Manager And Contractor Undermines External Control - DOC's decision to act as its own project manager and contractor has undermined checks and balances that ordinarily exist among major participants in the construction of State buildings. Under normal conditions, each participant contributes its own talents as part of the construction team. When DOC acts as its own project manager and contractor, however, DOA Facilities Planning is hampered in attempting to ensure that construction takes place according to approved plans and specifications. Input from the design professional is also limited, and in one case DOC may have violated Board of Technical Registration statutes. The extent to which the recent transfer of DOC's Facilities Construction staff to DOA will alleviate these problems is unknown at this time.

Under ordinary conditions involving facilities construction, the owner in charge of construction, the architect, the construction manager, the contractor and DOA Facilities Planning each play special roles in the

process, making contributions as part of a team. The owner, for example, makes all decisions after weighing the recommendations of the architect and the construction manager. The architect conceives and develops designs for structures subject to the owner's approval. The construction manager is responsible for ensuring that the contractor follows plans and specifications. The contractor performs the actual construction. Finally, DOA Facililties Planning reviews and approves plans and changes in accordance with A.R.S. §41-726.A.

However, when DOC has both overseen construction and built a structure, DOA is less able to ensure builder compliance with specifications and plans. DOC has been its own construction manager and builder/contractor for smaller projects, and for the Douglas project when contract provisions prohibited DOC from replacing the original construction management company after its termination. When DOC is owner, construction manager and contractor, however, DOA is limited in its ability to induce compliance.

- Normally DOA can work through the owner, who may refuse to allow the contractor to go to the next construction phase until the contractor has made the corrections. In this case, working through the owner may result in limited success, because the owner <u>is</u> the contractor.

- Ordinarily DOA can enlist the assistance of the architect, who may refuse to approve changes to plans made by the contractor. Working with the architect is less effective, however, because the architect is under contract with and works for the owner/contractor.

- Normally DOA can also withhold payments to the contractor until corrections have been made. Withholding payment to DOC is not possible in this case, since State funds have already been appropriated to the owner/contractor.

When DOC is its own construction manager, builder and agency in charge of construction, the primary alternative DOA has is to effect compliance mainly through persuasion.

The design professional is similarly limited in ensuring that construction occurs in accordance with plans and specifications, which in at least one case may have led to a violation of the Board of Technical Registration statutes. In this case, DOC received a request from the Douglas warden to expand the dining facility. Drawing modifications completed by on-site personnel without input from the architectural firm were attached. The firm expressed its concerns regarding this change request in an August 14, 1984, letter to DOC.

> ". . . The original mechanical and electrical loads were based on a capacity of 50 people. By increasing the size of the dining area, these design loads may not be adequate to heat, cool and light the area . . . Architecture One, Ltd. will not take any responsibility for changes made by the State to our design without our review and approval . . ."

However, because DOC was the owner as well as the contractor and construction manager, it could, and did, override the design firm's recommendation. Since DOC has no registered architect or engineer on staff, this specific change is not being made under the auspices of any registered design professional. This action is an apparent violation of Board of Technical Registration statutes relating to public works (A.R.S. §32-142.A.).

> "Drawings, plans, specifications, and estimates for public works of the state . . . involving architecture, engineering, . . . landscape architecture or land surveying, shall be prepared by or under the personal direction of, and the construction of such works shall be executed under the direct supervision of a qualified registrant . . ."

The recent transfer of the DOC Facilities Division to DOA may help alleviate some of these problems, as DOA will assume a more direct role in

construction management. However, we cannot project at this time the extent to which the transfer will address the problems due to the recentness of the transfer and the fact that DOC will continue to manage some construction projects.

Use Of Inmate Labor Has Restricted DOC's Project Control - The use of inmate labor has restricted DOC's capacity to control construction progress. Legislative intent mandates DOC to build prison facilities expeditiously and inexpensively using inmate labor. Although use of inmate labor was originally intended to keep costs down, it has contributed significantly to construction delays and reduced DOC's capacity to control construction progress effectively.

Due to the urgent need to enlarge prison capacity in the State, minimizing the time to complete projects and keeping costs down has been most important. Legislative intent relating to Title 41, Article 5 ("Corrections Fund"), requires that:

> ". . . Prison labor be utilized to the fullest extent to help keep costs down and . . . [t]he construction schedule be implemented as expeditiously as possible . . ."

However, it has been difficult to both save time and money using inmate labor. According to knowledgeable people, productivity of inmates used for construction projects is extremely low. For this reason, when time is important, inmates should be used only in activities that are not part of a "critical path." A critical path consists of those activities on which delays would significantly affect the completion time of the overall project. However, DOC has used inmate labor in critical path activities (presumably to keep costs down). This has delayed the work of private contractors working on different portions of the same job in the Douglas project, resulting in additional contractor costs to DOC.

Delays have resulted not only because of low productivity, but also because of inmate sabotage. Inmate sabotage has also resulted in unnecessary costs when materials must be replaced or equipment must be

rented to correct damage. For example, inmates torched plastic plumbing pipes in a Florence shower building, resulting in the warping of the pipes and a possible need to replace or repair them. In the Douglas 60-man dorm, wires were cut where they came out of the conduit, requiring 2 hours of rewiring work for each outlet. The delays resulting from this incident were particularly serious because of ongoing problems with delays in materials procurement. Delay in obtaining the wire was holding up completion of a particular job. To expedite job completion, the superintendent borrowed some wire from Operations personnel at the site. After the sabotage, however, the superintendent was unable to obtain enough additional wire to complete the job. The superintendent estimated that this incident held up the job for at least a month.

Additional supervision required for inmate laborers also adds to the costs of using inmate labor. In one case in which there was inadequate supervision, inmates working at the Douglas site excavated soil to a depth of 9 feet in some areas rather than the specified 4 feet. As a result, workers had to use additional gravel to fill the site, requiring more materials, more time and additional costs. Two additional foremen have since been hired in Douglas especially to supervise inmates.

A.R.S. §34-201.B., relating to doing work without advertising for bids, and A.R.S. §41-2572.B., relating to construction of public facilities by inmates, both state that inmate labor may be used if such use would be advantageous. Yet, Norman R. Cox Associates, in a consultant report completed for the Arizona Department of Corrections in September 1984, expressed serious doubts as to whether using inmate labor would substantially reduce construction costs.

> ". . . the use of inmate labor in construction may contribute to reducing overall costs; <u>however, if projects performed by inmates take longer to complete, those cost savings may be offset</u> . . ." [emphasis added]

Inmate labor problems have not been limited to this State. Other states have recognized some of the problems in using inmate labor and have consequently limited their use of inmate labor. A Colorado official

characterized one project using inmate labor as a "disaster." Subsequently, the State used no inmates at all for one project and limited its use in another to the destruction of existing facilities. California restricts its use of inmate labor to jobs such as pouring sidewalks and painting, in part because prison overcrowding demands that projects be completed as quickly as possible. Finally, Texas correctional officials have stated that the Texas inmate labor program has not been nearly as successful as has been said. In fact, Texas is seriously considering eliminating all inmate labor because of construction delays, sabotage and problems with the quality of work. Inmate labor has delayed construction at a time when Texas, like most other states, is experiencing overcrowding.

Little Control Over Construction Costs And Inventories

The Department does not have enough control over project activity costs or inventories. DOC lacks the financial information system needed to control costs. In addition, we found inadequate inventory controls at the Douglas facilities site.

Department Lacks Adequate Cost Information System - The Department lacks an adequate construction cost control system. The Arizona Financial Information System (AFIS) and DOC's manual system do not provide enough information on project costs. Experts recommend that construction companies use cost control information systems to track detailed project activity costs.

Although the final cost of a project cannot be determined or forecasted accurately until the project is substantially complete, successful cost control depends largely on how well cost control techniques are employed as management tools. Forecasting dollar obligations and comparing costs to budget amounts or forecasts helps project managers control actual costs. Information developed by review and analysis of these comparisons provides both timely and accurate cost data, and helps signal potential problems.*

* Construction Management and Engineering, Principles and Practices, Goldhaber, Jha, Macedo Jr. John Wiley & Sons, Inc. 1977, p. 107, p. 87.

Although DOC uses both AFIS and a manual system to track costs, AFIS does not provide all the information necessary for an effective construction management information system. Currently, AFIS accumulates expenditures and encumbrances by project total only, and supplies monthly reports. In addition, the manual system used has not always supplied detailed budgeted, expended and obligated cost data for DOC-managed construction projects. As a result, some Land, Buildings and Improvements (LB&I) project budgets do not provide sufficient detail and costs are not consistently captured by activities within a project.

Timely, detailed information by project/activity would be useful to: 1) identify variances between budgeted amounts (actual or estimated) and expended amounts (actual costs) in the various project areas, and 2) allow project managers to compare actual costs to estimated costs. For example, the ability to track whether a project is over budget on the heating and air conditioning systems, under budget on fencing, and close to budget on the sewer system adds to project control. The current method, often simply tracking of total expenditures by project, allows for considerable freedom in spending and does not provide the comparisons needed to assess performance. Further, interviews with some DOC emloyees indicate that daily project budget status information is not available, making it difficult for construction-related personnel to keep current on a project's financial status.* For example, during mid-1984 work was stopped at ASP-East for several weeks because of the uncertainty of the budget balance.**

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* At the time of our report, budget/expenditure amounts by activity for ACW, Flamenco, and Douglas (medium, minimum) were not readily obtainable. However, DOC expects this to be available once individually coded source documents are entered into the new computerized information system.

** In addition to the lack of a formal cost information system, our review of DOC's cost system indicated that costs are not always allocated among projects. For example, according to accounting personnel, several trucks purchased with ASP-East LB & I funds were subsequently moved from ASP-East to other construction sites for use. No allocation of the trucks' costs has been made between ASP-East and the other projects now utilizing them. All equipment purchases are charged to the project buying the equipment without regard to the life of the project or equipment, or direct benefits to other projects utilizing the equipment.

Private construction companies depend on cost control (information) systems to ensure proper monitoring of costs. These systems provide detailed cost information on projects/activities, including comparisons to budgets and forecasts. If DOC is to exercise the same level of control as exercised by private companies it will need control systems that provide similar information.

DOA's Prison Construction Division is developing a computerized construction information system using a personal computer and package software designed for construction purposes. When functioning, it is expected to assist in tracking expenditures and encumbrances by activity, controlling inventory and equipment, and monitoring labor costs and personnel scheduling. However, because the system is not yet operative, we are unable to evaluate it.

Lack Of Inventory Controls - DOC has insufficient controls over supplies and materials inventory at the Douglas site.* First, written inventory listings are not maintained, although more than $150,000 of goods were present during our review of the warehouse. Instead, the construction superintendent mentally keeps track of inventory on hand because he feels staff is not available for this task. Written listings would help monitor inventory usage and could also provide support for maintaining optimum supply and material levels. Second, inventory is not properly physically protected from possible theft or environmental damage. The inventory warehouse was not kept locked during the day of our review, which could allow easy access to unauthorized people. Some large dollar items such as heaters are being stored outside the warehouse due to lack of storage space. Access to materials should be restricted to help prevent potential misuse, and materials should be physically protected from the elements to prevent deterioration.

* Due to time limitations, we limited our review of inventory to the Douglas site only.

The Use Of ARCOR In ASP-East Construction Was Not Proper

The Department of Corrections improperly used ARCOR for the construction of the Arizona State Prison East Unit. DOC violated two statutes by using ARCOR to complete construction of the Arizona State Prison East Unit in Florence. In addition, DOC unnecessarily paid ARCOR administrative fees for services DOC would normally have performed. In some instances, ARCOR double billed DOC, and there are still disagreements regarding amounts owed to ARCOR.

DOC's Use Of ARCOR Enterprises - In late 1982 DOC administration and ARCOR administration entered into an oral agreement to have ARCOR take over construction of the ASP-East facility. DOC started the project but felt that using ARCOR would facilitate construction because use of ARCOR's revolving fund would help expedite purchases and payments for the project, and ARCOR has a buyer and a warehouse in Florence. No written agreement or contract for services to be provided was prepared. However, a DOC purchase order dated November 30, 1982, listed ARCOR as the vendor and provided the following description.

> "[ARCOR is to] [p]rovide all labor, materials, equipment and necessary plant to construct a medium custody unit utilizing quonset huts provided by the Department to ARCOR Enterprises. The Facility will be constructed in accordance with plans provided ARCOR that have been approved by the Arizona Department of Corrections. The Department requires occupancy of the first unit by no later than April 1, 1983. Total cost of this agreement shall not exceed $1,500,000.00 and ARCOR shall be reimbursed on a cost-reimbursement basis, based on a 1.5% fee for administration and overhead."

Lack Of Compliance With Statutes - Two State statutes were violated and LB&I monies were unnecessarily expended because of ARCOR's role in ASP-East construction. Use of the ARCOR revolving fund for a DOC prison facility was improper. ARCOR did not always follow State bidding procedures for procuring goods for construction. Additionally, DOC paid ARCOR administrative fees for services, resulting in unnecessary expenditure of LB&I monies.

- Improper Use Of Revolving Fund - DOC's use of the ARCOR revolving fund for prison construction violated statutory requirements. Arizona Revised Statutes §41-1624.A states that the ARCOR revolving fund is to be used to pay expenses "for the purchase of materials and supplies to be used for the production of food and other items to be sold by the Department's ARCOR enterprises . . . [and] . . . [f]or the purchase or rental of equipment to be used by the Department's ARCOR enterprises." ARCOR used the revolving fund to purchase ASP-East construction supplies and materials. DOC reimbursed ARCOR's revolving fund upon receipt of a claim for payment from ARCOR.

  The Legislative Council in its Interpretation O-85-4,* concluded that the ARCOR revolving fund was used improperly.

  > ". . . [T]he use of the ARCOR revolving fund for prison construction unrelated to ARCOR is not authorized by A.R.S. section 41-1624. The fund is for the production of ARCOR products, the compensation of prisoners employed in ARCOR enterprises and related ARCOR expenses."

- State Purchasing Requirements Circumvented - ARCOR did not always follow State purchasing laws regarding bidding during the ASP-East construction. In some instances, "written quotes"** rather than sealed, competitive bids were used to procure goods. ARCOR used written quotes to expedite the procurement process in emergency cases when the project was at a standstill. Two examples we reviewed include an $8,900 expenditure for fencing and a $6,200 expenditure for security plumbing fixtures.

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* Appendix V contains the full body of the Legislative Council memorandum.

** Written quotes, as defined by the ARCOR purchaser for ASP-East, are prepared the same as bids except that responses are not sealed or opened publicly.

For purchases over $5,000 A.R.S. §41-730 requires:

> ". . . all purchases of supplies, materials, equipment . . . and contractual services made by any budget unit having an estimated cost in excess of $5,000 per transaction shall be based on sealed, competitive bids . . ."

Section D of this statute provides for a waiver by DOA of such bidding.

> ". . . if there exists a threat to public health, welfare or safety . . . The state budget unit shall request approval and provide written documentation of the existence of a threat to public health, welfare or safety. The budget unit shall keep on file the written documentation and authorization by the director."

ARCOR did not follow these emergency procedures on this DOC project. In cases in which sealed bidding was not used, project costs could have increased due to lack of competition.

LB&I Funds Expended Unnecessarily - DOC paid ARCOR an administrative fee for services, based on a percentage of expenditures made for ASP-East. Initially, as indicated in the November 30, 1982, purchase order, ARCOR received a fee of 1.5 percent of claims submitted to DOC for reimbursement. Later, this fee was increased to 3 percent.* According to an ARCOR fiscal officer, an estimated $74,000 was received in administrative fees** during ARCOR's role with ASP-East construction. Had DOC used its existing employees to perform the duties it requested of ARCOR, this LB&I money would not have been spent.

ARCOR Double Billed Some Claims To DOC And Some Financial Disagreements Still Exist - In some instances ARCOR billed DOC twice for the same claims, and disagreements still exist over monies (not directly related to the double billings) possibly due to ARCOR. First, some claims of ARCOR

* The increase to 3 percent was requested by ARCOR because of the large amount of time spent processing purchase and billing documents.

** The exact amount was not readily available due to ARCOR's record-keeping system.

expenditures regarding ASP-East have been submitted to DOC for reimbursement more than once. According to a review of these double billings performed by DOA in mid-1984, ARCOR double billed DOC by about $40,000.* Our limited test review of DOA's work supports the conclusion that double billing did occur. Although the exact cause of this is not evident, ARCOR procedures for billing DOC and filing ASP-related expenses may have contributed to the double billings. According to an ARCOR official, the double billed receivable has been written off, and both DOC and ARCOR agree that this problem has been resolved.

Secondly, disagreements still exist over some claims ARCOR submitted to DOC for payment. DOC claims responsibility for some small labor claims received from ARCOR. However, according to ARCOR records about $87,000 in receivables are due from DOC. Included in this total receivable are two unresolved claims (billings) totaling $26,700 from ARCOR to DOC for laserplane land leveling services during November and December of 1982. DOC contends that an oral agreement was made between ARCOR and DOC's Division of Facilities and Construction that allowed ARCOR to use for its own purposes some equipment rented by DOC in exchange for the use of ARCOR's laserplane leveler for the East Unit. Since the agreement was not in writing, current ARCOR management considers the leveling performed for ASP-East an outstanding receivable for services rendered. Due to time limitations, we were unable to verify any amounts that DOC may owe ARCOR.

CONCLUSION

Control of DOC construction projects is inadequate. Unauthorized construction and other problems have limited the ability of the Department and other responsible parties to control and monitor DOC facilities construction. Construction cost information and inventory controls are deficient. Further, DOC weakened controls over ASP-East construction by improperly using ARCOR.

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* This amount is not exact because DOA performed a review, not an audit, of billings.

RECOMMENDATIONS

The Department of Corrections should:

1. Institute procedures to ensure that all construction and changes to construction are reported to DOA Facilties Planning for review and approval.

2. Limit its role in acting simultaneously as construction manager, contractor/builder, and agency in charge of construction to small and circumscribed construction projects.

3. Limit its use of inmate labor in construction to those activities that do not affect the overall completion time of projects.

4. Develop and maintain a cost information system to capture all construction-related financial information. The system should supply accurate, up-to-date and detailed information on each construction project and the activities within the projects. Additionally, it should include cost estimates and be capable of providing cost-to-complete forecast information.

5. Implement proper internal controls over construction inventories including:
   a. written inventory listings, and
   b. adequate physical safeguards over inventory items by limiting access to inventory and by storing items inside a warehouse.

6. Not use ARCOR Enterprises to construct prison facilities.

OTHER PERTINENT INFORMATION

During the audit, we developed pertinent information on the selection of the project manager for the $72 million prison construction program and the Corrections Fund.

Project Manager Selection

In April 1984 the Department of Corrections (DOC) issued a request for proposals (RFP) for the $72 million prison construction program's project management. DOC issued an addendum to its RFP on May 2, 1984. This addendum included estimated individual project completion dates between January 1986 and September 1987, a total construction program length of 39 months.

DOC used the appropriate statutes and complied with RFP requirements to obtain the project management services. In a memorandum* dated December 26, 1984, the Legislative Council stated:

> "[t]he state department of corrections has complied with both the requirement of requesting proposals outside professional services under ARS section 41-1051 et seq. and the estimated time schedule requirements of ARS section 41-1052 in implementing the contract for the project manager . . ."

DOC received 15 proposals in response to the RFP. Three proposals included construction program schedules of less than 30 months, two schedules were between 30 and 35 months, and the remaining proposals included 38 or 39 month schedules, except for one in which the bidder did not include a schedule.

A selection committee reviewed the different project management proposals. The committee consisted of six members: three DOC personnel, an Arizona Department of Transportation employee, a Department of

* See Appendix IV for the Legislative Council Memorandum.

Administration employee, and one public member.* During its initial review the committee analyzed each firm's previous prison construction experience, proposed staff, company references, and ability to complete the job. In addition, each bidder's schedule was reviewed to determine whether it met the 39 month time frame outlined in the RFP. After its review, the committee selected the five firms that were determined to be the most qualified.

The committee interviewed representatives of the five selected firms to ascertain their knowledge of prison construction, ability to meet budget constraints, and experience with inmate labor. Following the interviews, the committee concurred that the top firm, which is now the project manager (PM), had an impressive prison construction record. In addition, its staff had experience handling inmate labor and multiproject contracts, and it offered several ways to use prototypes and shorten the project's schedule.** Although initially some committee members were uncertain whether the project could be completed within the time frame proposed by the PM, after the interviews they were confident that the PM could meet the schedule.***

After the committee summarized its analysis of the presentations, the firms' bids were reviewed. At this point it was determined that the committee's No. 1 recommendation also had the lowest bid. Although the committee did not account for the time differences of bids, our present value analysis determined that the current PM's bid also had the lowest present value.****

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* The public member did not join the selection committee until after the top five firms were selected.

** These criteria were considered essential because of the requirements of Senate Bill 1027. This bill requries DOC to use prototypes, construct with inmate labor and complete the construction as expeditiously as possible.

*** Some of the committee members work in construction, however, none are directly involved in project management.

**** A present value analysis takes into account the value of money over time and the interest that could be earned on that money.

DOC's director made the final selection based on the committee's recommendation. However, before informing the PM of the final selection, DOC's director informed the Governor of his choice.* The Governor requested that final selection be delayed until some additional information could be obtained. This information pertained to alleged problems regarding the performance of one of the joint venture partners on another prison project.** The subsequent investigation concluded that the allegations were unfounded. After this information was obtained, the director finalized the selection.

Corrections Fund

During the 1984 First Special Session, the Legislature established the Corrections Fund to finance the construction of several new prison facilities throughout the State. In addition, the Fund includes a provision that the director of the Department of Corrections may use monies in the Fund for the maintenance and operation of Corrections facilities.

Revenues to the Fund consist of vehicle resale, and cigarette and liquor taxes. It is anticipated that approximately $31.8 million will be deposited in the Fund yearly. Currently, the actual deposits in the Fund are close to the projected revenues. If the yearly deposits to the Fund continue to meet the projections, the Fund will have adequate revenues to finance the $72 million, 30 month construction program. However, if the Fund is used for operational purposes, expenditures from the Fund will exceed revenues after May 1986.

The total cost of the seven facilties authorized to be funded from the Corrections Fund is not to exceed $72 million. Although the statute establishing the Fund includes a delayed repealer set at June 30, 1988, our audit work shows that additional prisons may need to be constructed after the $72 million program is completed.

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* According to DOA officials, its is not unusual for the agency director to inform the Governor. This protects individuals from being placed in a conflict of interest position if, for example, the Governor has plans to appoint them to a board or commission.

** The selected PM is a two-firm partnership.

AREAS FOR FURTHER AUDIT WORK

During the course of the audit we identified several potential issues that we were unable to pursue because they were beyond the scope of our audit or we lacked sufficient time.

- Does this State need a contract negotiation office?

  Finding III presents problems with the provisions of the project manager contract. This is the second case in recent months - the other being the Arizona Health Care Cost Containment System - in which problems have developed due to the inadequacy of a major contract. Some governmental units (notably at the Federal level) have developed special contract offices. These offices contain experts in contracting and assume a major role in negotiating and drafting contracts. Further audit work is needed to determine whether such an office should be created to assist State departments in contracting matters, and if created, where it should be placed.

- Has the present prison overcrowding resulted in increased security risks through misclassification of prisoners?

  All custody, security and program decisions with respect to inmates depend on the inmate classification system. Yet, the inmate classification process is highly subjective once the prisoner leaves the Alhambra Reception Center. The fact that the prison system in Arizona is presently operating over capacity results in misclassification after prisoners leave Alhambra. This is because classifications are made based on institutional constraints rather than the specific security and supervision needs of each inmate. The current population management crisis has resulted in the underclassification of many categories of inmates. According to a systems overview report by N. R. Cox associates to Arizona Department of Corrections (DOC), inmates in the system should carry a classification based on their specific security and supervision needs,

and not based on the type of bed to which they are assigned. A medium custody inmate, for example, should remain classified as such even though the inmate may be assigned temporarily to a minimum custody bed. To do otherwise creates a classification system that is unusable for management purposes. The arbitrary nature of the current inmate classification system has further implications in decisions regarding inmate release into community based programs. One alternative DOC has to relieve overcrowding is to put people into community programs. However, the current system may result in the placement of people into the community who should not be at low security levels. Further audit work is needed to determine the extent of these misclassifications and their impact upon the safety of prison staff and the community at large.

- Has the Department properly maintained existing prison facilities?

  There are some indications that Arizona State Prison has deteriorated to the point that some facilities could be considered safety hazards. Further audit work is needed to determine what actions DOC has taken to maintain existing facilities.

- Why have the Tucson architectural contract fees nearly doubled?

  The appropriation for the architectural contract for the Tucson medium security facility increased from the appropriated amount of $750,000 to $1,373,000. Part of this increase resulted from the implementation of the multiple bed law. Other increases resulted from design fees for the sewage treatment plant. This plant was included in the original proposal, but may have subsequently been billed separately. Further audit work is needed to identify the reasons for the total increase in the contract fee.

- Is operating fund money being used for prison land, buildings and improvements (LB&I) purposes to supplement LB&I shortfalls on some projects?

Some information indicates that operating funds have been used to pay for items relating to the construction of prison buildings. Further audit work is needed to determine the extent and propriety of this use of operating monies.

- Should more planning be required when funds are requested for construction?

  Funds were appropriated for fiscal year 1984-85 for the Globe Juvenile and the Tucson DWI projects. However, little work has been performed or scheduled for these projects. Unused funds are to be reverted at the end of the fiscal year. Further audit work is needed to determine why this will occur and what could help prevent this in the future.

- Should the procurement system be simplified?

  The procurement system may cause some prison construction delays. There have been indications that materials have not been obtained in a timely manner, because the procurement system is too cumbersome. Also, site personnel are not ordering items in a timely manner. Additionally, since vendors are allowed to bid on any number of items on a purchase order and delivery dates are not synchronized, jobs are delayed because items do not arrive when needed. Further audit work is needed to determine how to simplify the procurement system for prison construction and what policies and procedures would help alleviate construction delays.

- Are current State salaries for construction personnel sufficiently competitive with private sector salaries to attract experienced and qualified staff?

  Concerns have been raised regarding the ability of the State to attract sufficiently experienced and qualified construction staff, since State salaries are considerably lower than those of private sector positions requiring similar experience and qualifications. For

example, two foremen at Douglas were recently hired at salaries of $28,500 per year. Yet, the job superintendent indicated that similar positions in the private sector would pay $16 per hour (equivalent to $33,280 per year), and that these foremen could not be expected to stay long at current salary levels. One construction management company stated that they pay their engineers a minimum of $40,000 per year, project managers get $60,000 per year, and architects receive $55,000 per year and up. Further audit work is needed to determine what salary differentials do exist and whether such differentials impact DOC's ability to recruit qualified and experienced construction staff.

- Is inventory internal control adequate at construction sites?

  Our review of the internal controls over supplies and materials inventory at the Douglas site leads us to question the adequacy of such controls at Douglas and at other construction sites. Further audit work is needed to determine if DOC utilizes proper internal controls over inventory at the various construction sites.

BRUCE BABBITT
GOVERNOR

JAMES G. RICKETTS, Ph.D.
DIRECTOR

Arizona Department of Corrections

321 WEST INDIAN SCHOOL ROAD
PHOENIX, ARIZONA 85013
(602) 255-5536

January 30, 1985

Mr. Douglas R. Norton
Auditor General's Office
111 West Monroe
Suite #600
Phoenix, Arizona 85003

RE: Department of Corrections
Facilities and Construction Division
Report 85-2

Dear Mr. Norton:

The attached comments are provided in accordance with your letter of January 28, 1985. These comments are provided for inclusion in the text of the final published report of the Performance Audit of the Department of Corrections, Facilities and Construction Division. The comments are based on the revised preliminary draft, which was forwarded with your January 28, 1985 letter.

You will note that we have not addressed each of the recommendations and have not provided dates of implementation of your recommendations. This is due to the fact that the Facilities and Construction Division is no longer a part of this Department and we cannot comment concerning the dates that DOA would implement your recommendations.

Sincerely,

for

Lt. Colonel Samuel A. Lewis
Deputy Director

SAL/RHA/g

AUDITOR GENERAL REPORT - COMMENTS

Summary Sheet - Page 2

"DOC should: 1) supplement its current inmate population projection models with qualitative methods, 2) develop a new facilities master plan to include information that would allow DOC to make informed decisions, and 3) update this plan annually as required by Department policy."

DC COMMENT

Recommendation 2 & 3 - With the move of the Construction Division to DOA, DC has created a Planning and Maintenance Bureau. This Bureau will handle long-range planning and maintenance projects utilizing existing functional divisions and personnel and supplementing those with a professional trained staff of seven.

Summary Sheet - Page 2
The Department of Corrections Does Not Have Adequate Prison Site Evaluation and Budget Development Processes

"DOC's prison site evaluations process needs improvement. Even though Doc has developed criteria for site selection, recent prison sites were selected without sufficient site evaluation. As a result, decisions on prison sites have been revised causing projects to be delayed and additional costs to be incurred. The budget development process should also be improved, demonstrated by the fact that recent DOC construction budgets were based on realistic cost estimates. A transcription error in recording budget figures, inadequate funding for the construction of additional beds and other incidents made the budgets for the Douglas and the $72 Million Construction Program Projects insufficient. Budget limitations have required the implementation of extensive cost saving measures, including the constant re-design of facilities to reduce costs, the reduction or elimination of support buildings in plans, and significant revisions in facility planning estimates."

DC COMMENT

The Legislature reduced the DC's already revised LB&I request from $82,700,000 to $72 million and increased the number of beds to be built by 175. The DC had itemized estimates indicating that an additional $16,657,146 was required to build long-term facilities that were considered to be austere but managable.

Summary Sheet - Page 3

"The Legislature should consider appropriating funds for new prisons in two phases. The first appropriation should be allocated for obtaining a construction manager, architectural and engineering services to evaluate the site, program the project, design the facilities, and prepare a detailed budget estimate. Several alternative plans and funding levels for Legislative consideration could be prepared, along with detailed budgets. The second appropriation should be allocated for actual construction based on the detailed budget of the plan selected. The Department of Corrections should ensure adequate site evaluation by requiring a

soil, water and sewer analysis prior to budget preparation.

DC COMMENT

The Department will provide program planning and space analysis for new institutions to reduce cost of construction services and to more accurately describe architect and engineering and project manager services required for new institutional design/construction projects.

Site investigations will be performed according to the DC policy and will include soil, water, sewer and utility (electric and gas availability) analysis.

Summary Sheet - Page 4

"DOC has not consistently complied with statutes requiring DOA review and approval of facilities construction plans, which has resulted in approved and possibly unsafe construction. DOC's decision to act as its own projected manager and contractor has also hampered DOA and responsible design professionals in their attempts to ensure that construction is done according to approved plans and specifications."

DC COMMENT

It is our understanding that DOA does not have plan review professionals in all major professions (electrical, mechanical, etc.) to review plans and revisions. The architect is responsible, by contract and professional licensing statutes, for supervising construction and advising the owner in writing if any work being done does not conform to contract requirements. The Project Manager is not responsible contractually or professionally for plan deviations but has a secondary role of insuring compliance with contract documents. All other inspections tend to be redundant. Finally, there are several regulatory agencies who ensure compliance with specialized code and operational requirements.

Summary Sheet - Page 4

The Department of Corrections should: 1) institute procedures to ensure that all construction and changes to construction are reported to DOA for review and approval, 2) implement a satisfactory construction cost information system and proper inventory controls, 3) limit its role in acting as construction manager, contractor/builder and agency in charge of construction, 4) limit its use of inmate labor to activities that would not delay project completion and 5) not use ARCOR to construct prison facilities."

DC COMMENT

Item # 1 - All major and the majority of minor changes are processed through DOA. Non advice of changes to DOA is the exception, not the rule.

Item # 3 - This recommendation opposes the intent of SB 1027 which requires the DC to "utilize inmate labor to the fullest extent".

Item # 5 - ARCOR can and should, based on competitive bids, continue to furnish owner manufactured items to contractors. This will assist the DC to employ additional inmates, reduce total construction costs and allow ARCOR to have the ability to make a

reasonable profit while training inmates.

Page 12, Paragraph 2

> "Without a current master plan, DOC is operating with outdated facility information. For example, since the 1982 Facilities Master Plan was prepared, the Legislature passed the multiple confinement law requiring that more than one inmate be confined in a cell except in specific instances. However, the plan is still largely based on the premise of one inmate per cell. In addition, several facilities now require funding to meet code requirements, but without a current, comprehensive plan, these needs cannot be prioritized relative to other facilities' needs."

DC COMMENT

The DC has updated the inmate population projections through 1992 and matching facilities that accounts for the increased male and female population levels by custody level requirements. The new revised plan includes the requirements of the multiple confinement law.

Page 14

> "DOC has not made any provisions for new beds past 1986. As a result, as early as March, 1987, DOC may face another inmate population crisis, as shown in Figure 2."

DC COMMENT

DC has projected inmate populations through 1992 or a period of 8 years. This projection was made in order to produce a 5-year LB&I Request which is for new facility requirements based on the required number of maximum, medium, minimum and community correctional center bed requirements. An addendum to the Department's LB&I Request has been prepared and submitted to the Executive Budget Office. A preliminary copy of this amended LB&I Request was provided on January 18, 1985, as well as the 8-year inmate projections.

Page 15

> "Filling prisons beyond their designed capacity and housing inmates in temporary facilities can also violate State codes. For example, Arizona Center for Women has been cited for fire code violations because of the overcrowded conditions. The center houses several inmates in each room, thus increasing the fire hazard and preventing the inmates from existing the building safety."

DC COMMENTS

ACW is not overcrowded and there is absolutely no "existing" violation from the inmate room areas as the rooms open directly to a safe, open courtyard where inmates can retreat at least fifty feet from the building as the code requires.

Page 24, Paragraph 2

> "Funding for additional construction may not be adequate. - The funds allocated for additional beds may not be sufficient. Although the initial budget was for

construction of 600 beds, the Legislature increased the number of beds to 800. Prior to the increase, Legislators and the Legislative staff asked the Director of DOC what funds would be needed to increase the Douglas 600-bed medium facility by 200 beds. According to the Director of DOC, as he was under time constraints and was therefore unable to obtain supporting data, he "guessed" that the additional beds would require a two million dollar increase in the appropriation. However, the difference between the original estimate of $5,993,700 for a 600-bed, and the final appropriation of $6,975,500 for 800 beds was only $981,800."

DC COMMENT

The circumstances surrounding the Director's estimate of two million dollars for the increase of 200 beds needs to be more fully explained. The Legislators and Legislative staff were told that in order to obtain a good estimate for the cost of the 200 beds, additional research would be required in order to provide a good substantiated estimate. Time constraints did not allow this and the Director was requested to provide his figure on the spot, without obtaining any additional information. The Department agrees with the assessment that even though the estimate was two million dollars, the additional dollars were reduced substantially.

Page 26

"Affects of inadequate funding - due to inadequate funding, facility plans for the prison to be constructed with the $72 million appropriation have undergone extensive changes."

DC COMMENT

Senate Bill 1027 appropriated $72 million dollars for the construction of 2,412 beds. The Department re-analyzed minimum funding requirements to build complete facilities, excluding ARCOR facilities, and presented the Ad Hoc Prison Institutions Committee a list of construction proposed to be accomplished at each institution totaling $72 million dollars, plus a list of "required but not funded construction totaling $16,657,146. Although the Department indicated that funding was insufficient to build complete, manageable facilities, the options of realizing cost savings by deleting construction at the Winslow/Yuma sites temporarily was not accepted.

Page 31 - Recommendations, Item #3

"The Legislature should consider appropriating funds for new prisons in two phases. The first appropriation should be allocated for obtaining construction manager, architectural and engineering services to evaluate the site, plan the project, design the facilities and prepared a detailed budget estimate. The designs could include alternatives with resulting cost estimations. The second appropriation should be allocated for construction based on the detailed budget."

DC COMMENT

The Department agrees that this process should be implemented for all major prison design/construction projects. The Department had obtained funds for the design of the Tucson facility and for new administration and support services at the Florence facility in two phases and has implemented the design and construction very successfully. It should be noted that, although the Department has been an advocate of two-phased funding, the Department has been discouraged from

seeking two-phased funding in the past due to the fact that an appropriation made by one legislative implies and puts a burden on the next legislative to carry through with the construction funding for the project.

Page 39

"Additional temporary facilities may be needed.

DC COMMENT

The Department of Corrections, in conjunction with the Department of Administration, formed a committee in early November, 1984, to review current scheduled completion of all projects presently appropriated as compared to the forecast of the number of inmate beds required. All available options were reviewed by both departments and a plan was approved by the Governor's Office on November 26. The Temporary Emergency Bed Plan called for double-bunking 224 inmates at the ACTC-Perryville facility, construction of an ARCOR Industries building at the ACTC-Tucson site to be used temporarily to house 400 medium custody inmates, and construction of a quonset hut facility at the Safford Conservation Center to house 100 inmates. This project is currently being handled by DOA.

Page 43

"Unauthorized construction and other problems have ##?limitee control over construction projects."

DC COMMENT

The architect/engineer hired for the project and the Department of Administration Facilities Planning and Construction Office have statutory control over the Department's building program. The architect/engineer must sign a certificate of substantial completion prior to the Department occupying a building constructed with inmate labor.

The Department of Administration, Facilities Planning and Construction Office must review/approve in accordance with A.R.S. 41-726, all contracts, changes to contracts and all purchase orders for purchase of material/equipment on a DC construction project prior to the purchase order being issued. This provides monetary control over the Department of Corrections projects and, thus, if the Department does not heed DOA concerns, the DOA can shut the project down by not allowing additional materials to be furnished to the job. Likewise, architectural and construction progress payments may be held by DOA if problems are noted on a project.

The Department, in meeting statutory/regulatory requirements, requires that the State Fire Marshall's Office, DOA Facilities Planning and Construction Office, the Department of Health Services and Risk Management inspect a facility prior to the occupancy by inmates. Written approvals are required of the structure's conformance with the specific regulations enforced by each regulatory agency.

Page 47

Paragraph 2, Bullet #3

"Ordinarily DOA can enlist the assistance of the architect who may refuse to approve changes to plans made by the contractor. Working with the architect is

> less effective, however, because the architect is under contract with and works for the owner/contractor."

DC COMMENT

The architect, not the construction manager, is responsible statutorily for ensuring that the contractor follows plans and specifications.

Page 47, Paragraph 2, Bullet #3

> "Normally DOA can also withhold payments to the contractor until corrections have been made. Withholding payment to DOC is not possible in this case, since State funds have already been appropriated to the owner/contractor."

DC COMMENT

DOA Facilities Planning and Construction can withhold approval of all pay requests, or purchases of supplies as they have the authority per A.R.S. 41-725 and 726 to do so. This includes pay requests of contractors, architects, engineers and all other services and purchases made against LB&I accounts.

Page 58, Item 1

> "Institute procedures to ensure all construction and changes in construction are reported to DOA Facilities Planning for review and approval."

DC COMMENT

Procedures exist for reporting both contract and non-contract changes to DOA.

Page 58, Item 2

> "Limit its role in acting simultaneously as construction manager, contractor/builder and agency in charge of construction to small and circumscribed construction projects."

DC COMMENT

All construction is performed under the supervision of a registered professional architect or engineer.

Page 58, Item 3

> "Limit its use of inmate labor in construction to those activities that do not affect the overall completion time of projects."

DC COMMENT

The Department agrees with this recommendation in principle and if funding limitations permit. This recommendation, however, places the Department in an awkward position in that Senate Bill 1027 mandates that, "3. Prison labor be utilized to the fullest extent to help keep costs down and to provide valuable training to inmates." Minimizing the use of inmate labor would seem to go against the intent of the language in this law.

Page 58, Item 4

> "Develop and maintain a cost information system to capture all construction related financial information. This system should supply accurate, up-to-date and detailed information on each construction project and the activities within the project. Additionally, it should include cost estimates and be capable of providing costs to complete forecast information."

DC COMMENT

A cost information system is being implemented and includes all recommended activities.

Page 58, Item 5

> "Implement proper internal controls over construction inventory including: a) written inventory listings, and b) adequate physical safeguards over inventory items by limiting access to inventory and by storing items inside a warehouse."

DC COMMENT

A warehouseman is on staff at Douglas and formal inventory controls and safeguards will be implemented at future sites.

Page 57 - CONCLUSION

> "Control of DOC construction programs is inadequate. Unauthorized construction and other problems have limited the ability of the Department and other parties to control and monitor DOC facilities construction costs. Information and inventory controls are deficient. Further, weakened controls over ASP east construction by improperly using ARCOR.

DC COMMENT

The construction of the ASP East Unit took place in 1982. The Director of the Department and the Assistant Director for ARCOR Enterprises determined that the statutes which existed at that time could be interpreted to allow ARCOR to act as construction manager and the ARCOR Revolving Fund could be used to purchase supplies and materials used for constructing the quonset huts. The statutes which existed at the time were interpreted to allow ARCOR to be exempt from the purchasing statutes, and ARCOR could enter into any kind of enterprise and produce a product. In this case, the product was the construction. Since that time, ARCOR statutes have undergone substantial revision. Further, the Director of the Department and the Director of ARCOR Enterprises have also changed.

Page 8, Paragraph 2, Bullet 3

> "North Carolina's Crime Commission, which coordinates criminal justice activities by bringing together member of different criminal justice agencies".

DC COMMENT

The Department concurs, in general, with the recommendations as outlined above. There is currently in the planning stages a conference to be held in the May/June time period which will call together officials from cities, towns, the State and Legislature, as well as

private citizens, individuals from the criminal justice fields and others, who will be asked to assist the Department in applying the qualitative input suggested by the Auditor General's Office. It must be remembered that population forecasts are just that - forecasts and, as are all forecasts, subject to error and external forces. This also applies to the Department's inmate projections.

CHANEN/3D

3300 North Third Avenue
P.O. Box 33967
Phoenix, Arizona 85067
602-266-3600

January 29, 1985

JAN 1985
RECEIVED
AUDITOR
GENERAL

Mr. Douglas R. Norton
Auditor General
State of Arizona
111 West Monroe, Ste. 600
Phoenix, Arizona 85003

Re: Prison Construction Program

Dear Mr. Norton:

We have carefully reviewed the preliminary draft report you sent us relating to the Chanen/3D portion of the performance audit of the Department of Corrections Facilities and Construction Division. We are impressed by the thoroughness of this effort and by the insight into complex issues which your staff has achieved in a very short period of time.

We would like to provide additional information on the following points:

Schedules - We believe the schedules we have prepared for the $72 million prison construction program are realistic. They are based on our performance on similar projects.

We completed the first phase of the Ellis II prison for the Texas Department of Corrections 20 months after start of design. The construction of this 1,040 bed, $ 23 million prison took 13 months. The construction materials and systems are similar to those planned for the $72 million program.

Two Hughes helicopter assembly and flight test facilities were constructed in Mesa, each in 9 months. Phase IA was 260,000 square feet with a cost of $15 million and Phase IB was 275,000 square feet at a cost of $12 million. These projects are comparable in scope to the prisons in the $72 million program. Both use extensive precast structural/enclosure systems.

Project delays - The program has been delayed approximately two months. One month due to delay in approval of funding for the architect's contract and one month for the start of work during the holidays and due to discussion regarding the reuse provision of the architect's contract. We believe we can recover one month of this delay. The schedules have been adjusted to reflect the affect of the other month delay.

Contract delay provisions - Provisions in our contract require us to obtain a written agreement prior to continuing working if delays occur. We were not in favor of these provisions and they were not in the draft agreement we reached with the Department of Corrections. These provisions were added during the review of the contract by other State officials.

We have every intention of providing whatever services are required to complete the projects and will negotiate in good faith any amendments for additional services due to delays or other reasons.

While we do not concur with Mr. Gordon G. Peterman's evaluation of the schedule, his report is excellent. We are attaching additional information regarding the six points raised in the Summary Section of his report.

We concur with the recommendations contained in your report. In regard to item 2, a copy of our 15 January 1985 evaluation of the use of private contracts versus inmate labor is attached.

Please contact us if we can provide additional information regarding these issues.

Sincerely,

CHANEN/3D

Ronald Schappaugh
Vice President

RS/fg
Enclosures
cc: Verne Doyle
Herman Chanen
Ed Gillam

Comments of
Mr. Gordon G. Peterman's
8 January 1985 Report

****

Mr. Peterman made several recommendations in the summary of his report. Following is a brief description of the status of these items:

1. Prepare detailed schedules of design phase.
   Working with the two architects we have prepared schedules for the design phases. These schedules contain approximately fifty activities and have been included in paragraph 15.5 of the architect's contracts.

2. Prepare a network schedule for Tucson.
   We have prepared a CPM schedule for Tucson and are using it to manage the project.

3. Prepare a network schedule for Florence, Winslow and Yuma.
   We have prepared CPM schedules for these projects. The schedules will be updated as the work progresses.

4. Prepare a detailed schedule for inmate construction.
   We agree with Mr. Peterman that such a schedule is required. Although it is out of the scope of our contract, we would welcome the opportunity to add it to our contract.

5. Prepare preliminary cost estimate for Florence, Winslow and Yuma.
   These estimates are a part of our contract and will be made when the schematic designs are available.

6. Prepare definitive construction schedule for Tucson.
   The prepartion of the definitive schedule of the contractors operations is not in our contract. We will add this to our contract if desired by the State.

3330 North Third Avenue
P.O. Box 33967
Phoenix, Arizona 85067
602-266-3500

January 15, 1984

Mr. Verne Doyle, Assistant Director
Facilities & Construction - DC
1700 West Washington
The State Capitol Building
West Wing/Room 310
Phoenix, Arizona 85007

Re: ACTC - Tucson
Free World/Inmate Labor Comparison

Dear Verne:

In accordance with section 2.4.4 of our contract we have reviewed the use of inmate labor at the Tucson facility and how it would affect the budget and schedule. The following is a comparison of various combinations of free world and/or inmate construction:

A. All Free World

The scheduled time period for use of all free world labor on Phase II consists of 3 months of site work followed by 12 months of building construction. The site work and building work would be overlapped by approximately 3 weeks. The Phase III building work could be accomplished in 8 months, the isolation building in 10 months and the WWT plant in 10 months (see attached schedule).

The cost of work would be as follows:

AE Fee	$ 450,000
Consultant	524,700
Utilities	1,432,000
Construction	22,030,000
Reimbursables	125,000
ADC Equipment	105,000
Contingency	1,233,300
	$ 25,900,000

B. Inmate Labor with Contract Supervision

The scheduled time period for all use of inmate labor on Phase II would consist of 5 months of site work followed by 18 months of building work. The sitework and building work would overlap each by 2 months. The Phase III building work could be accomplished in 13 months, the

isolation building in 16 months and the WWT plant in 16 months (see attached schedule).

The above schedule was based on six-hour workday with between 75-60 percent efficiency of free world personnel. Cost of the facility is estimated as follows:

AE Fees	$ 450,000
Consultants	524,700
Utilities	1,013,600
Construction	14,909,200
Reimbursable	125,000
ADC Equipment	105,000
Contingency	846,400
	$ 17,983,900

C. Combination of Free World/Inmate Labor

The current program of inmate labor on sitework, precast panel fabrication, fence and buildings 9 and 10 was the combination reviewed.

The scheduled time period for this combination has a 5 month sitework (inmate) and a 12 month Phase II building (free world). Phase III building (combination of inmate and free world) will be 13 months, the isolation building (free world) 10 months and the WWT plant (free world) 10 months. The cost of the work is as shown on the December 31, 1984 budget and is as follows:

AE Fee	$ 450,000
Consultants	524,700
Utilities	1,432,000
Construction	20,357,000
Reimbursable	125,000
ADC Equipment	105,000
Contingency	1,219,600
	$ 24,213,300

The above cost and schedule is based on the scope of work program as of December 31, 1984. This combination will be adjusted after the final estimate and bids are received.

Very truly yours,

C. Edward Gillam Jr.

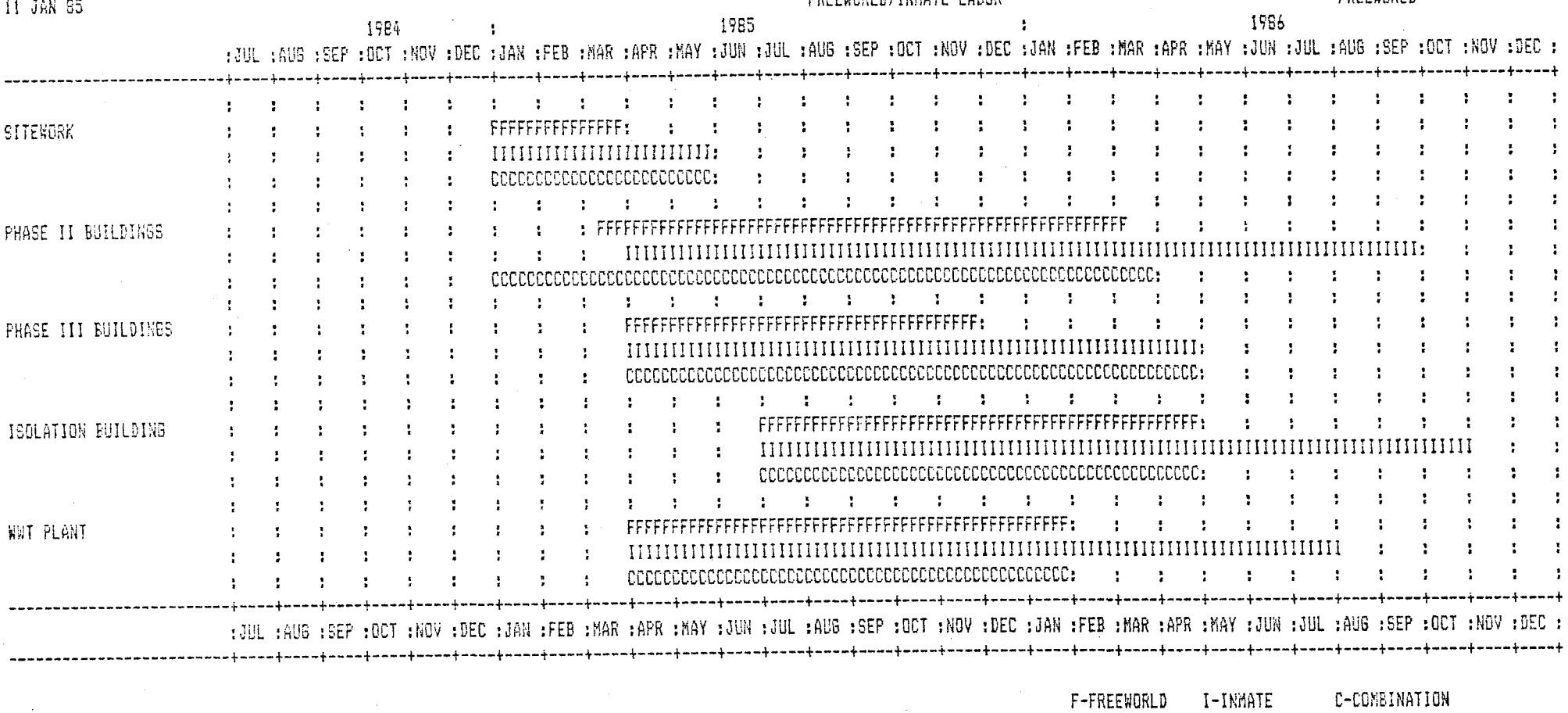
C. Edward Gillam, Jr.
Program Manager

CEG/f
cc: Ron Schappaugh
Jim Kirsch
John Moore

ARIZONA DEPARTMENT OF CORRECTIONS
PRISON CONSTRUCTION PROGRAM
11 JAN 85

TUCSON SUMMARY BARCHART
FREEWORLD/INMATE LABOR

CHANEN/3D
FREEWORLD



F-FREEWORLD I-INMATE C-COMBINATION

PROJECT
COST

AREA	FREEWORLD	INMATE	COMBINATION
A-E FEE	450,000	450,000	450,000
CONSULTANTS	524,700	524,700	524,700
UTILITIES	1,432,000	1,013,600	1,432,000
CONSTRUCTION	22,030,000	14,909,200	20,357,000
REIMBURSABLES	125,000	125,000	125,000
ADC EQUIPMENT	105,000	105,000	105,000
CONTINGENCY	1,233,300	856,400	1,219,600
	25,900,000	17,983,900	24,213,300

APPENDIX I

The forecasting recommendations of Finding I are based on three main points.

1. Linear or regression models require certain statistical assumptions to be met, and because of this the Department of Corrections (DOC) has recognized that they are not the preferred technique for forecasting Arizona prison populations.

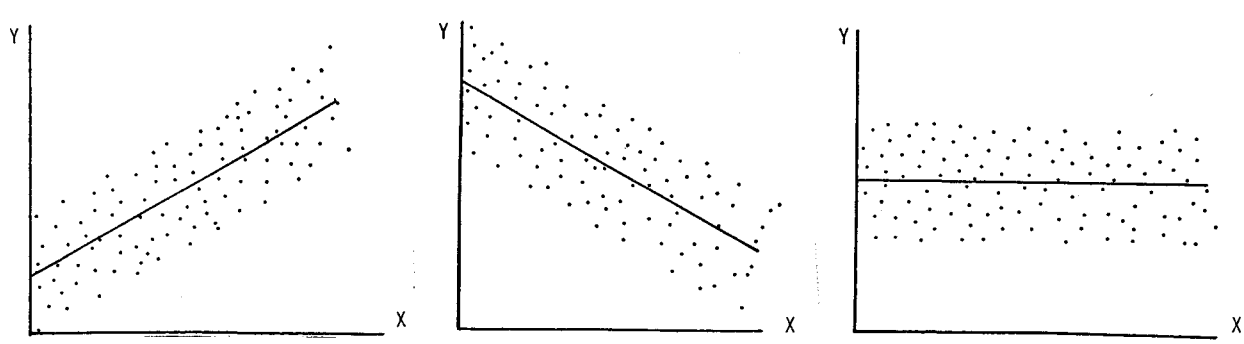
2. Box-Jenkins AutoRegressive Integrated Moving Average (ARIMA) models are considered state-of-the-art methodology, and DOC is using them to provide more acccurate forecasts of Arizona prison populations.

3. Supplementing the ARIMA models with a qualitative technique involving key individuals in the criminal justice system and State government could result in more accurate long-term planning.

Each of these points is described below.

Linear Models

Linear models are most appropriately used when the pattern of the data (in this case, prison population growth) is best described by a straight line.



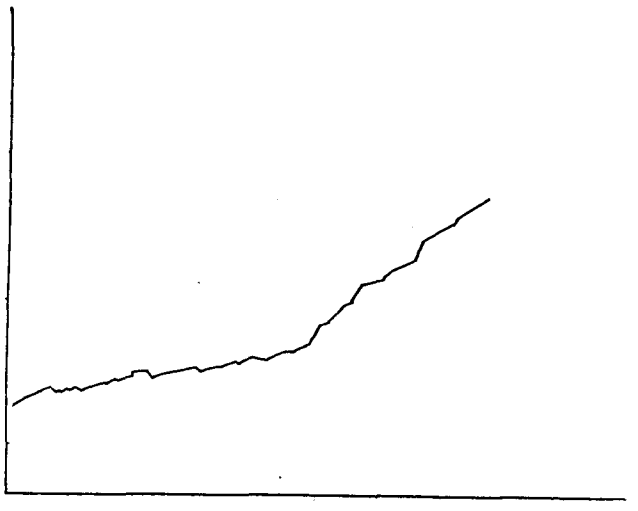
Y = the dependent variable

X = the independent variable(s)

Linear models are prediction models - if we know what X is, we can predict what Y will be. Forecasting with linear models requires certain conditions. In order for the model to be acceptable, there must be no unimportant independent variables in the formula and it must include all the important independent variables. In the case of projecting prison populations, it is difficult to ensure that these conditions are met because of all the unknown and unmeasurable factors affecting the growth of prison populations. Other problems that limit the effectiveness of linear models pertain to unacceptable correlations among the variables, which are known as autocorrelation and multicollinearity. (See especially Lewis-Beck, 1980 for a more complete explanation of the conditions necessary for using linear models).

Box-Jenkins ARIMA Models

ARIMA models are built by analyzing the pattern of the data. The data need not exhibit a straight line pattern as with linear models. Arizona prison populations exhibit the following pattern.

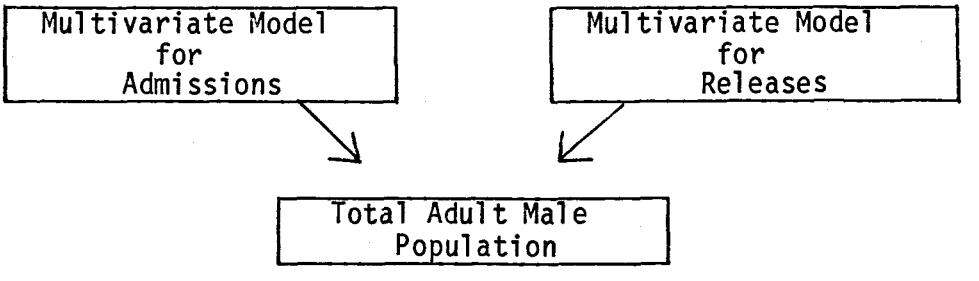


ARIMA models assign the greatest impact to the most recent data, whereas linear models weight all data points equally. (McCleary and Hay, 1980, p. 19). Consequently, the technique is more immediately responsive to change. Further, the ARIMA models have statistical properties that control most of the above-mentioned unacceptable correlations of linear

models. Several experts in the forecasting field have found that the Box-Jenkins methodology is considerably more accurate than econometric (linear) models (Makridakis and Wheelwright, 1978; Nelson, 1972; Naylor et al, 1972; Cooper, 1972).

While details of the modeling technique are too complex for the present discussion, McCleary and Hay, 1980; Makridakis and Wheelwright, 1978; and Bowerman and O'Connell, 1979 provide practical and understandable explanations of the ARIMA models.

DOC develops prison forecasts using the ARIMA modeling techniques. A univariate (one variable) model was initially built in 1981 by the DOC research manager, using prison populations as its only variable. Forecasts from this model did not reach the desired level of accuracy. A bivariate (two variable) model was developed in 1983, using prison admissions as the independent variable that caused (the dependent variable) - prison population growth. These forecasts proved more accurate than those from the univariate model. From this point, efforts of DOC's research manager focused on the development of a refined multivariate ARIMA model. By early 1984 a sophisticated model was developed, using two multivariate models to provide external forecasts into a third predicting model.



<u>Variables In The Multivariate Model For Admissions</u>

Uniform Crime Rates Part I (felonies)

Adult male releases

Onset of The Supreme Court lowering the age of majority from 21 to 18

Adult male admissions.

Variables In The Multivariate Model For Releases

An interaction term using time to expiration of sentence multiplied by number of admissions

Onset of the Parole Suspension Act (A.R.S. §31-233G)

Adult male releases

Variables In The Total Adult Male Population Model

Adult male admissions (actual)

Adult male releases (actual)

Adult male population

Measurement standards are available to test the accuracy of models' forecasts. A commonly used diagnostic tool is the Mean Absolute Percent Error (MAPE). Prison forecasters generally accept a MAPE of 5 percent as a benchmark for accuracy. The MAPE of the multivariate ARIMA forecasting models was 1.3 percent for the period it has been in use (July 1983 through December 1984). This is a good indication of the superior accuracy of the models presently used by DOC. To further ensure accuracy, DOC is now updating prison population forecasts every 3 months. This is necessary because any changes in resources, personnel or policies of the criminal justice system (police, courts, probation, corrections), and/or changes in law have a potential impact on the models and their forecasts.

Qualitative Forecasting

Researchers in diverse disciplines acknowledge the need to combine quantitative and qualitative techniques in order to better understand complex environments. This combination of theory, methods and data is known as triangulation (Denzin, 1970; Hollister et al, 1979; Jick, 1979; Reichart and Cook, 1979; Palumbo and Musheno, 1984). Inherent limitations of all quantitative models make long-term forecasts (more than 2 years) questionable. Therefore, supplementing the ARIMA models with a qualitative technique would strengthen confidence in long-term forecasts through a triangulation of research methods.

One of the most commonly used qualitative forecasting methods is the Delphi technique. Developed by Rand Corporation, the Delphi uses a panel of experts to predict future developments. Participants respond to a series of questionnaires and return the completed questionnaires to a panel coordinator. Subsequent questionnaires are accompanied by information and opinions of the group as a whole. After several rounds of questionnaires, the group response usually converges on consensus that can be used as a forecast. This technique eliminates the influence of undesirable psychological factors such as domination by one individual or a small group of individuals, unwillingness to abandon publicly expressed opinions, and the bandwagon effect of majority opinion (Helmer and Rescher, 1959; Makridakis and Wheelwright, 1978; Bowerman and O'Connell, 1979). In the case of prison projections, the major problem or theme might be reflected in questions asking what future events are most likely to impact prison populations. A further area for investigation would be to ask how to handle rapidly growing inmate populations. Key individuals in the criminal justice system, the Legislature and the executive branch of State government could view future problems from their own particular perspective and contribute to enlightenment about future trends. This would supplement the Box-Jenkins methodology as a forecasting and planning tool. A similar mix of qualitative and quantitative methods is being used by the Bureau of Business and Economic Research at Arizona State University. Acknowledging that a source of difficulty lies in the inability of any statistical model to incorporate new information on changes in human behavior, the Bureau is comparing econometric model forecasts to those of a panel of economists and real estate analysts. We suggest a similar triangulation approach to supplement DOC's state-of-the-art statistical models with a qualitative technique, because of the inherent limitations of relying on only one method for long-term forecasts.

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REVIEW

of

PROJECT MANAGEMENT SCHEDULES

for

STATE OF ARIZONA
DEPARTMENT OF CORRECTIONS

:

:

:

PRISON CONSTRUCTION PROGRAM

at

Tucson
Florence
Winslow
Yuma

for

Office of the

AUDITOR GENERAL

by

Gordon G. Peterman,PE,CCE

08 January 1985

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INTRODUCTION

Section 3.0 of the Project Management Services Request for Proposals lists three main areas as the goals of the Project Management phase. These are:

3.1 To manage and complete projects within time schedules.

3.2 To manage and complete projects within given budgets.

3.3 To manage and complete projects within quality and program guidelines.

These same three areas, while perhaps ranked in a different order, determine from an owner's point of view at completion how successful the development of the project has been:

a. Does the project meet the desired quality and program guidelines, that is, does the project function as anticipated?

b. Was the project completed within the allotted cost budgets?

c. Was the project completed within the desired time frame?

If, after the project is completed and operational, the above questions can all be answered with a "yes" the owner can be satisfied that the project was a success.

During the progress of the design and construction phase it may be necessary to limit or revise the project scope in order to maintain a given quality level and a certain budget restraint.

At other times it may be realistic to relax a desired time frame in order to achieve the quality level within the desired budget for the project. This decision process by the owner is an ongoing dynamic process continuing throughout the design /construction phase, or until the project is operational.

The ability for the owner to make an intelligent decision is determined by the timely and accurate information provided. For this reason it is important that the owner receive not only correct and accurate information but also timely information from the Project Manager, Architect/Engineers, and all others associated with the project.

ANALYSIS OF PROJECT WORK TO DATE

This analysis and report is in response to your December 26, 1984 letter requesting that I review various documents provided on the ADC Prisons Program and determine whether the projects can be completed within the scheduled time frame of 30 months ending December 31, 1986. In addition, you asked me to consider several specific questions; these are as follows:

A. The current material purchasing procedures require approximately six to eight weeks for lead time.

At this time proposals have been received for the owner-purchase materials on the Tucson project. It is important to have this information available for general contractors bidding on the construction of this project. It is also important that responsibility is assigned for expediting, changes, revisions, and deliveries of materials in order that the correct material is delivered when and where needed. If not the potential exists of charges from the supplier, or general contractor. On the other three projects (Florence, Winslow, Yuma) it is important that these proposed owner-purchased materials be identified just as early as possible in the design process. The MTO (material take-off) and specification can then be sent to the procurement division in order that timely information can be returned to the architect. In this way information concerning these owner-purchased materials can be

incorporated into the bidding documents. It must be recognized that with owner-purchased materials, especially items such as the security devices, require a considerable amount of expediting and material control in order to insure that the correct materials are delivered to the project when and where needed. Only by doing this will the owner eliminate potential claims from the general contractors for alleged additional costs due to owner-provided materials.

B. Plans include the use of inmate labor for all five(?) projects, as shown on the schedules.

This may be one of the major factors impacting the construction schedule and will require a substantial additional amount of planning and scheduling on each project; it would be expected that this detail scheduling is the responsibility of the Project Manager. It would seem reasonable that additional time should be allowed for the construction of this phase of the work, since the emphasis is on training rather than productivity. Nothing was provided in the information given that indicates how the management and supervision of this operation will be handled. The summary level schedules provided by Chanen/3D in their monthly reports indicate that this work will occur early in the project. If this is so, then this phase of the work should be well defined very soon.

C. Several of the projects are being built in non-metropolitan areas of the State. Are the workforces in

these areas sufficient to complete the projects within the scheduled time periods?

I don't see this as a problem for any site except perhaps the Winslow site; most of our skilled work forces in the State will come out of Phoenix, Tucson, or Flagstaff and these crews commonly travel to the various sites within the area. The semi- and unskilled crafts are commonly available on a local basis or again travel the same as the skilled crafts.

D. A prototype design will be used for the medium housing facilities and some support facilities. Contracts for prototype site adaptation and design of prototypical minimum, maximum, and conservation camp housing facilities and other support facilities were signed on December 6, 1984.

There is not sufficient information available at this time to comment on the schedule impact of standard type housing facilities. There are two important items that should be considered that might prevent much of a time compression on the projects; these are: 1) there is a substantial amount of other construction at each site in addition to the housing facilities, and 2) it is probable that different general contractors will be constructing each of the facilities.

E. Based on the schedule and the construction budget, approximately $2,500,000 will be spent each month. Is it possible to expend that much money monthly in Arizona to

construct these facilities?

I would not anticipate that this would be a problem. While it is anticipated that construction will be ongoing at all four sites at the same time these sites are widely scattered throughout the state. Therefore any impact would be limited to one site and one area.

F. If it is determined that the schedule is not feasible, what is a more accurate estimate of the time needed to complete the projects?

In my opinion, the most recent schedules indicated in the Chanen/3D 6 November 1984 Report represent a very optimistic condition. Based on the indicated scope of the projects I would expect a more resonable completion time to be as follows:

Tucson	1 April 1987
Florence	1 September 1987
Winslow	1 October 1987
Yuma	1 March 1987

Two general reasons offered in support of these delayed completion dates are:

1. Scope of the projects. The Tucson and Florence sites are in the 20 - 25 million dollar size. It appears to me that a preliminary expected duration of 24 months for the construction effort is much more realistic than anticipated 16.5 months, in fact the 24 month period may be rather optimistic.

2. The Project Management contract is in Month 7; at this time it appears that the design phases on Florence, Winslow, and Yuma have slipped 4 months. This delay in the design phase has not been reflected in the project summary schedules to date.

If sufficient information is available at this time, or if not available then just as soon as possible, the Project Manager should develop a preliminary network schedule (with perhaps 50-100 activities) in sufficient detail to identify major construction milestones and confirm a realistic construction period of time. If time becomes a real consideration to the project, then the owner might want to incorporate these milestones into the contract documents with associated liquidated damages for each milestone point.

Also, if it appears that the construction phases must be accelerated in order to recover some of the time lost in slippage it may be feasible to consider using more contract work and less inmate construction work. While saving time this decision would result in increased construction costs to the projects.

G. Are post-contractual payments normally included in project management contracts, or are penalty clauses used?

In my opinion it is not reasonable to expect that a penalty clause be included in a service contract such as this Project Management contract with Chanen/3D. In essence it is a best efforts contract, and the scope of work is not defined so that a penalty clause could ever be used. The contract is

for services provided during the design/construction of a given project. It seems that the completion of the project becomes the important date, rather than a before the fact date.

In order to identify if post-contractual payments were to made, it would appear that an audit of the Project Manager's costs would be important. The fact that an additional length of time was required does not mean that the PM incurred additional costs.

H. Other items that are normally included and reviewed in project schedules.

There are three items that are important at this time:

1. Since the design contracts have now been signed for all projects, it is important that the project manager prepare detail network schedules for the design effort. These should be in sufficient detail and appropriate milestones so that the design phase can be monitored and information given to the architect to control the design effort in order to meet the desired end dates. This monitoring is especially important since these design contracts contain liquidated damages clauses. These liquidated clauses are difficult to enforce unless the work is well monitored and time delays are accurately identified and documented.

2. Preliminary network schedules should be developed for each project just as soon as sufficient schematic design information has been developed. These should be in sufficient detail to identify major project milestones and to

confirm a reasonably expected contruction period. The proposed construction contracts should be identified.

3. As a parallel task, major work element(i.e. foundations, structural frame, walls, roof, etc.) cost estimates should be prepared. As additional design information becomes available it may be necessary to revise these preliminary estimates several times before a complete construction estimate can be prepared based on completed working drawings. It should be noted that the architect has responsibility for preparation of cost estimates as well.

I. Based on the staff included in the contract, does the project manager have enough personnel in the appropriate areas to oversee/manage the construction of the facilities?

An analysis was made of the project management schedule and expected earning schedule, both a part of the project management contract (included in appendix). Based on an expected average cost of $6,500/man-month it appears that the project management contract would cover approximately 261 man-months. The first five months (July-November 1984) would require approximately 5.8 man-months/month. This requirement would then increase until approximately 12 persons were fully occupied in the project management work during the construction phases. Given that the original schedule was met it appears that this would be a reasonable work effort on the part of the project manager.

With the delays in the design effort, it is questionable that the expected amount of project management effort has

been required as of this date, therefore based on the original schedule it would appear probable that the project manager may be prepaid. If the Project Manager continues to be paid on the existing contract schedule they would be fully paid at the end of the 30-month period, whether or not the total prison program was complete. It is recommended that a audit be requested of the man-months used to date by the project manager and the future payments be made on the basis of actual man-month costs until a new total schedule has been developed for expansion program.

J. Other Comments.

1. It appears that the project manager has submitted two progress reports to date, 28 September 1984, and 6 November 1984. These reports summarize the total expansion program, and as a final summary for this purpose they are acceptable. Up to now this may have been the best information available to the project manager. However, in a short period of time a substantial amount of information should be developed.

To track this information a monthly, or quarterly, report procedure plan should be developed. This report should not only summarize the total program, but should then provide summary analysis of each phase of each project. The project analysis should compare the current status with the original planned status (28 Sept 84 Report ??), identify the variances and show what actions are proposed to be taken to put the project back on the original schedule (if slipped), maintain the schedule (if ahead).

In addition the report should comment on the effectiveness of the actions taken for the previous period. In addition on the monitoring and control of time, the report should also analysis the cost position of the project in the same manner. This would include the cost status of all phases of the project.

SUMMARY

Based on our analysis of the status of this expansion program we recommend that consideration be given to the following:

1. Project manager should prepare complete detailed schedules of the design phases for Florence, Winslow, and Yuma as soon as possible. This should include major milestone points and should include monitoring procedures to measure the work effort completed. Notice to Proceed date should be identified.

2. Project manager should prepare a network summary level construction schedule for the Tucson project as soon as possible. Identify major milestones and reasonable time expected for a firm price contract. Identify methods to be used to monitor and control construction time.

3. Project manager should prepare preliminary network summary level construction schedules for Florence, Winslow, and Yuma as soon as schematic designs available. Establish milestones for owner-purchased equipment. Identify reasonable construction time.

4. Project manager should prepare detailed construction schedules for construction phases using inmate personnel.

5. Prepare preliminary cost estimates for Florence, Winslow, and Yuma as soon as schematic designs available.

6. Prepare definitive construction schedule for Tucson.

7. Project manager should initiate procedure for standard monthly (or quarterly) status report of the total expansion program. The report should be reviewed with the owner and other members of the project team in a formal meeting. The status report should identify deviations from the original schedule and the last report schedule, and should identify plans to recover lost time and/or dollars.

8. Owner should request audit of Project manager costs to date. If necessary request that a revised billing schedule be submitted to owner.

Submitted by,

Gordon G. Peterman,PE,CCE

08 January 1985

COST TRENDS PROJECT: FLORENCE
AREA: BEDS: 768

#	#	TYPE	GROUP	1 28SEP84	PER CENT GROUP	PER CENT TOTAL	2 06NOV84	==DOLLARS VARIATION	=====PERCENT===
1	01	A-E FEES	PRISON DESIGN	1,003,300	86.99%	3.55%	1,003,300	0	0.00%
	02		REUSE FEE	40,000	3.47%	0.14%	40,000	0	0.00%
	03		SEWER PLANT	110,000	9.54%	0.39%	110,000	0	0.00%
			SUBTOTAL	1,153,300	100.00%	4.08%	1,153,300	0	0.00%
2	01	CONSULTANTS	CHANEN/3D	500,735	93.12%	1.77%	500,735	0	0.00%
	02		SURVEY/TOPO	9,000	1.67%	0.03%	9,000	0	0.00%
	03		GEOTECH	7,000	1.30%	0.02%	7,000	0	0.00%
	04		TESTING/QC	10,000	1.86%	0.04%	10,000	0	0.00%
	05		ARCH.STUDY	10,000	1.86%	0.04%	10,000	0	0.00%
	06		LEASE	1,000	0.19%	.00%	1,000	0	0.00%
			SUBTOTAL	537,735	100.00%	1.90%	537,735	0	0.00%
3	01	OFF-SITE UT	WATER/WELL	125,000	18.12%	0.44%	125,000	0	0.00%
	02		SEWER/PLANT	510,000	73.91%	1.81%	510,000	0	0.00%
	03		GAS	0	0.00%	0.00%	0	0	0.00%
	04		ELECTRICAL	0	0.00%	0.00%	0	0	0.00%
	05		TELEPHONE	5,000	0.72%	0.02%	5,000	0	0.00%
	06		ACCESS ROAD	50,000	7.25%	0.18%	50,000	0	0.00%
			SUBTOTAL	690,000	100.00%	2.44%	690,000	0	0.00%
4	01	CONSTRN	SITEWORK	3,500,000	14.40%	12.39%	3,500,000	0	0.00%
	02		SUPPORT BLDG	3,236,400	13.31%	11.46%	3,236,400	0	0.00%
	03		HOUSING MIN	0	0.00%	0.00%	0	0	0.00%
	04		HOUSING MED	0	0.00%	0.00%	0	0	0.00%
	05		HOUSING MAX	17,575,000	72.29%	62.22%	16,575,125	(999,875)	-5.69%
			SUBTOTAL	24,311,400	100.00%	86.07%	23,311,525	(999,875)	-4.11%
5	01	REIMBURS	CHANEN/3D	30,000	26.09%	0.11%	30,000	0	0.00%
	02		ARCHITECTS	30,000	26.09%	0.11%	30,000	0	0.00%
	03		ADC	55,000	47.83%	0.19%	55,000	0	0.00%
			SUBTOTAL	115,000	100.00%	0.41%	115,000	0	0.00%
6	01	ADC EQUIP	CONSTR EQUIP	87,500	94.59%	0.31%	100,000	12,500	14.29%
	02		PRECAST SETUP	5,000	5.41%	0.02%	5,000	0	0.00%
	03		FURNITURE	0	0.00%	0.00%	0	0	0.00%
	04		ARCOR	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	92,500	100.00%	0.33%	105,000	12,500	13.51%
7	01	ADC INDIR***	SUPR-BATCH PL	18,000	20.83%	0.06%	18,000	0	0.00%
	02		SUPR-INMATES	54,000	62.50%	0.19%	54,000	0	0.00%
	03		INMATE PAY	14,400	16.67%	0.05%	14,400	0	0.00%
			SUBTOTAL	86,400	100.00%	0.31%	86,400	0	0.00%
8	01	CONTINGY	TOTAL(5%)	1,344,997		4.76%	1,295,628	(49,369)	-3.67%
		TOTAL		28,244,932	XXXXXXXXXXXX	100.00%	27,208,188	(1,036,744)	-3.67%

PRELIMIN ESTIMATE $31,314,000

PERCENT OF PRELIM EST	90.20%	86.89%
EST COST/BED	$36,777	$35,427
EST COST/SQ FT		

COST TRENDS PROJECT: TUCSON
AREA(SQ FT): 205,945 BEDS: 744

#	#	TYPE	GROUP	1 28SEP84	PER CENT GROUP	PER CENT TOTAL	2 06NOV84	==DOLLARS=====PERCENT=== VARIATION	
1	01	A-E FEES	PRISON DESIGN	265,000	81.04%	1.15%	350,000	85,000	32.08%
	02		REUSE FEE	0	0.00%	0.00%	0	0	0.00%
	03		SEWER PLANT	62,000	18.96%	0.27%	100,000	38,000	61.29%
			SUBTOTAL	327,000	100.00%	1.42%	450,000	123,000	37.61%
2	01	CONSULTANTS	CHANEN/3D	489,690	96.45%	2.13%	489,690	0	0.00%
	02		SURVEY/TOPO	1,000	0.20%	.00%	1,000	0	0.00%
	03		GEOTECH	7,000	1.38%	0.03%	7,000	0	0.00%
	04		TESTING/QC	10,000	1.97%	0.04%	10,000	0	0.00%
	05		ARCH.STUDY	0	0.00%	0.00%	0	0	0.00%
	06		LEASE	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	507,690	100.00%	2.20%	507,690	0	0.00%
3	01	OFF-SITE UT	WATER/WELL	150,000	9.65%	0.65%	127,000	(23,000)	-15.33%
	02		SEWER/PLANT	1,400,000	90.03%	6.08%	1,300,000	(100,000)	-7.14%
	03		GAS	0	0.00%	0.00%	0	0	0.00%
	04		ELECTRICAL	0	0.00%	0.00%	0	0	0.00%
	05		TELEPHONE	5,000	0.32%	0.02%	5,000	0	0.00%
	06		ACCESS ROAD	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	1,555,000	100.00%	6.75%	1,432,000	(123,000)	-7.91%
4	01	CONSTRN	SITEWORK	2,636,000	13.64%	11.44%	2,636,000	0	0.00%
	02		SUPPORT BLDG	6,750,000	34.92%	29.30%	8,143,335	1,393,335	20.64%
	03		HOUSING MIN	0	0.00%	0.00%	0	0	0.00%
	04		HOUSING MED	9,945,000	51.45%	43.17%	9,609,600	(335,400)	-3.37%
	05		HOUSING MAX	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	19,331,000	100.00%	83.92%	20,388,935	1,057,935	5.47%
5	01	REIMBURS	CHANEN/3D	30,000	24.00%	0.13%	30,000	0	0.00%
	02		ARCHITECTS	40,000	32.00%	0.17%	40,000	0	0.00%
	03		ADC	55,000	44.00%	0.24%	55,000	0	0.00%
			SUBTOTAL	125,000	100.00%	0.54%	125,000	0	0.00%
6	01	ADC EQUIP	CONSTR EQUIP	87,500	94.59%	0.38%	100,000	12,500	14.29%
	02		PRECAST SETUP	5,000	5.41%	0.02%	5,000	0	0.00%
	03		FURNITURE	0	0.00%	0.00%	0	0	0.00%
	04		ARCOR	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	92,500	100.00%	0.40%	105,000	12,500	13.51%
7	01	ADC INDIR***	SUPR-BATCH PL	14,000	12.82%	0.06%	14,000	0	0.00%
	02		SUPR-INMATES	84,000	76.92%	0.36%	84,000	0	0.00%
	03		INMATE PAY	11,200	10.26%	0.05%	11,200	0	0.00%
			SUBTOTAL	109,200	100.00%	0.47%	109,200	0	0.00%
8	01	CONTINGY	TOTAL(5%)	1,096,910		4.76%	1,150,431	53,521	4.88%
		TOTAL		23,035,100	XXXXXXXXXXXX	100.00%	24,159,056	1,123,956	4.88%

PRELIMIN ESTIMATE $22,521,000

PERCENT OF PRELIM EST	102.28%	107.27%
EST COST/BED	$30,961	$32,472
EST COST/SQ FT	$111.85	$117.31

COST TRENDS PROJECT: WINSLOW
AREA(SQ FT): BEDS: 650

#	#	TYPE	GROUP	1 28SEP84	PER CENT GROUP	PER CENT TOTAL	2 06NOV84	==DOLLARS===== VARIATION	PERCENT===
1	01	A-E FEES	PRISON DESIGN	744,000	91.37%	4.57%	744,000	0	0.00%
	02		REUSE FEE	70,280	8.63%	0.43%	69,800	(480)	-0.68%
	03		SEWER PLANT	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	814,280	100.00%	5.01%	813,800	(480)	-0.06%
2	01	CONSULTANTS	CHANEN/3D	502,044	94.18%	3.09%	502,044	0	0.00%
	02		SURVEY/TOPO	13,000	2.44%	0.08%	13,000	0	0.00%
	03		GEOTECH	7,000	1.31%	0.04%	7,000	0	0.00%
	04		TESTING/QC	10,000	1.88%	0.06%	10,000	0	0.00%
	05		ARCH.STUDY	0	0.00%	0.00%	0	0	0.00%
	06		LEASE	1,000	0.19%	0.01%	1,000	0	0.00%
			SUBTOTAL	533,044	100.00%	3.28%	533,044	0	0.00%
3	01	OFF-SITE UT	WATER/WELL	300,000	27.17%	1.84%	518,500	218,500	72.83%
	02		SEWER/PLANT	500,000	45.29%	3.07%	518,500	18,500	3.70%
	03		GAS	250,000	22.64%	1.54%	150,000	(100,000)	-40.00%
	04		ELECTRICAL	24,000	2.17%	0.15%	50,000	26,000	108.33%
	05		TELEPHONE	30,000	2.72%	0.18%	30,000	0	0.00%
	06		ACCESS ROAD	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	1,104,000	100.00%	6.79%	1,267,000	163,000	14.76%
4	01	CONSTRN	SITEWORK	2,692,000	20.98%	16.55%	2,692,000	0	0.00%
	02		SUPPORT BLDG	4,251,000	33.13%	26.14%	4,090,500	(160,500)	-3.78%
	03		HOUSING MIN	1,248,000	9.73%	7.67%	1,248,000	0	0.00%
	04		HOUSING MED	4,640,000	36.16%	28.53%	4,640,000	0	0.00%
	05		HOUSING MAX	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	12,831,000	100.00%	78.89%	12,670,500	(160,500)	-1.25%
5	01	REIMBURS	CHANEN/3D	30,000	26.09%	0.18%	30,000	0	0.00%
	02		ARCHITECTS	30,000	26.09%	0.18%	30,000	0	0.00%
	03		ADC	55,000	47.83%	0.34%	55,000	0	0.00%
			SUBTOTAL	115,000	100.00%	0.71%	115,000	0	0.00%
6	01	ADC EQUIP	CONSTR EQUIP	87,500	94.59%	0.54%	100,000	12,500	14.29%
	02		PRECAST SETUP	5,000	5.41%	0.03%	5,000	0	0.00%
	03		FURNITURE	0	0.00%	0.00%	0	0	0.00%
	04		ARCOR	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	92,500	100.00%	0.57%	105,000	12,500	13.51%
7	01	ADC INDIR***	SUPR-BATCH PL	16,000	12.82%	0.10%	16,000	0	0.00%
	02		SUPR-INMATES	96,000	76.92%	0.59%	96,000	0	0.00%
	03		INMATE PAY	12,800	10.26%	0.08%	12,800	0	0.00%
			SUBTOTAL	124,800	100.00%	0.77%	124,800	0	0.00%
8	01	CONTINGY	TOTAL(5%)	774,491		4.76%	775,217	726	0.09%
		TOTAL		16,264,315	XXXXXXXXXXXX	100.00%	16,279,561	15,246	0.09%

PRELIMIN ESTIMATE $13,502,000

PERCENT OF PRELIM EST	120.46%	120.57%
EST COST/BED	$25,022	$25,045
EST COST/SQ FT		

COST TRENDS PROJECT: YUMA
AREA(SQ FT): BEDS: 250

#	#	TYPE	GROUP	1 28SEP84	PER CENT GROUP	PER CENT TOTAL	2 06NOV84	==DOLLARS VARIATION	=====PERCENT===
1	01	A-E FEES	PRISON DESIGN	223,700	100.00%	5.02%	223,700	0	0.00%
	02		REUSE FEE	0	0.00%	0.00%	0	0	0.00%
	03		SEWER PLANT	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	223,700	100.00%	5.02%	223,700	0	0.00%
2	01	CONSULTANTS	CHANEN/3D	206,130	83.07%	4.63%	206,130	0	0.00%
	02		SURVEY/TOPO	9,000	3.63%	0.20%	9,000	0	0.00%
	03		GEOTECH	7,000	2.82%	0.16%	7,000	0	0.00%
	04		TESTING/QC	5,000	2.02%	0.11%	5,000	0	0.00%
	05		ARCH.STUDY	20,000	8.06%	0.45%	20,000	0	0.00%
	06		LEASE	1,000	0.40%	0.02%	1,000	0	0.00%
			SUBTOTAL	248,130	100.00%	5.57%	248,130	0	0.00%
3	01	OFF-SITE UT	WATER/WELL	75,000	11.81%	1.68%	75,000	0	0.00%
	02		SEWER/PLANT	125,000	19.69%	2.81%	125,000	0	0.00%
	03		GAS	0	0.00%	0.00%	0	0	0.00%
	04		ELECTRICAL	75,000	11.81%	1.68%	75,000	0	0.00%
	05		TELEPHONE	45,000	7.09%	1.01%	45,000	0	0.00%
	06		ACCESS ROAD	315,000	49.61%	7.07%	315,000	0	0.00%
			SUBTOTAL	635,000	100.00%	14.25%	635,000	0	0.00%
4	01	CONSTRN	SITEWORK	308,000	10.53%	6.91%	308,000	0	0.00%
	02		SUPPORT BLDG	1,368,000	46.79%	30.70%	1,255,500	(112,500)	-8.22%
	03		HOUSING MIN	1,248,000	42.68%	28.01%	1,248,000	0	0.00%
	04		HOUSING MED	0	0.00%	0.00%	0	0	0.00%
	05		HOUSING MAX	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	2,924,000	100.00%	65.62%	2,811,500	(112,500)	-3.85%
5	01	REIMBURS	CHANEN/3D	10,000	16.67%	0.22%	10,000	0	0.00%
	02		ARCHITECTS	10,000	16.67%	0.22%	10,000	0	0.00%
	03		ADC	40,000	66.67%	0.90%	40,000	0	0.00%
			SUBTOTAL	60,000	100.00%	1.35%	60,000	0	0.00%
6	01	ADC EQUIP	CONSTR EQUIP	87,500	94.59%	1.96%	100,000	12,500	14.29%
	02		PRECAST SETUP	5,000	5.41%	0.11%	5,000	0	0.00%
	03		FURNITURE	0	0.00%	0.00%	0	0	0.00%
	04		ARCOR	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	92,500	100.00%	2.08%	105,000	12,500	13.51%
7	01	ADC INDIR***	SUPR-BATCH PL	0	0.00%	0.00%	0	0	0.00%
	02		SUPR-INMATES	0	0.00%	0.00%	0	0	0.00%
	03		INMATE PAY	0	0.00%	0.00%	0	0	0.00%
			SUBTOTAL	0	0.00%	0.00%	0	0	0.00%
8	01	CONTINGY	TOTAL(5%)	272,323		6.11%	269,864	(2,459)	-0.90%
		TOTAL		4,455,653	XXXXXXXXXXXX	100.00%	4,353,194	(102,459)	-2.30%

PRELIMIN ESTIMATE $4,563,000

PERCENT OF PRELIM EST	97.65%	95.40%
EST COST/BED	$17,823	$17,413
EST COST/SQ FT		

FLORENCE — 768 BEDS. — ARCHITECT: HNC

5 Jan 85

1984: J F M A M J J A S O N D
1985: J F M A M J J A S O N D
1986: J F M A M J J A S O N D
1987: J F M A M J J A S O N D

SITE ADAPTION SCHEMATICS
REVIEW
CONSTRUCTION DOCUMENTS
REVIEW
BID PERIOD
BID EVALUATION
7-15-86 CONSTRUCTION (14 mo)

} CHANEN/3D PROPOSAL

→ TO 11-19-84 PRE-DESIGN
11-20-84 to 6-9-85 DESIGN.
6-10-85 TO 10-10-86 CONSTN EST. COST = 31,314,000
16 MO.

} CHANEN/3D CONTRACT

8-3-84 RFP 2636 SPACE/FUNC. PROGRAMMING SERVICES
COMPLETE BY 12-21-84

12-3-84 DESIGN CONTRACT TO HNC — DESIGN FEE 804,564 — TIME LIMIT 28 MONTHS
PROGRAM'G 68,750
PROJ. REP 130,000 (15 mo) — CONST. BUDGET* 23,500,000

169 → 5-21-85 BID PACKAGES: SITE CONSTRUCTION
170 → 5-22-85 DIRECT PURCHASE MAT'L
173 → 6-14-85 SECURITY SYSTEMS
180 → 6-1-85 INMATE CONSTN
193 → 6-14-85 BLDG CONSTN

} HNC CONTRACT.

HNC CONTRACT 28 MONTHS

3.5 SITE CONST $ 690,000 $ 24,311,400 } $ 25,001,400 — C/3D 28 SEP 84 REPORT
BLDG CONST 13

3.5 SITE $ 690,000 $ 23,311,525 } $ 24,001,525 — C/3D 6 NOV 84 REPORT
BLDG 13

POSSIBLE EARLY SCHEDULE 16 MONTHS

PROBABLE CONSTN PERIOD 24 MONTHS — 9-1-87 OPERATIONAL

} FORECAST

SECURITY	3000 $
ADMIN	9000
FACILITIES	24000
WAREHOUSE	15000
MAINT.	5000
	56 000

TUCSON 744 BEDS ARCHITECT: VSLA

5 JAN 84

1984 J F M A M J J A S O N D | 1985 J F M A M J J A S O N D | 1986 J F M A M J J A S O N D | 1987 J F M A M J J A S O N D

SCHEMATIC DESIGN
REVIEW
DESIGN DEVELOPMENT
REVIEW
CONSTRUCTION DOCUMENTS
REVIEW
BID PERIOD
BID EVALUATION
4-30-86 CONSTRUCTION (14 MONTHS)

} PROPOSAL CHANEY/3D

1-31-85 COMPLETE DESIGN
2-1-85 TO 4-10-86 14 1/2 MONTH.
CONSTRUCTION EST'D COST $22,521,000

} CHANEY/3D CONTRACT.

▲ 1-13-84 CONCEPTUAL SPACE PROGRAM STUDY (744 BEDS. 205,945#, $28,955,000

DESIGN
5-13-85 4-7-86 CONSTRUCTION (220 W. DAYS) ≈ 11 MO.

SCHEMATIC $ 381 788-
W. DRAWINGS 576 690-
ADDL SERVICE 14 300-
972,778-

} VSLA CORRESPONDENCE

12-26-84 BID PACKAGES OPENED (SECURITY GLASS, DOOR/FRAMES, HARDWARE)
SECURITY HARDWARE
SECURITY HOLLOW METAL (DOOR/FRAMES)
SECURITY GLASS
MATERIAL PROCUREMENTS
"
"

} PROCUREMENT

2 SITE CONSTR. $ 1,555,000
BLDG CONSTR (13 MO) $ 19,331,000 } $ 20,886,000 } C/3D 28 SEP 84 REPORT.
2.5 SITE $ 1,432,000
BLDG (13 MO) $ 20,388,935 } 21,820,935 } C/3D 6 NOV 84 REPORT.
6 MO INMATE CONSTR.

POSSIBLE EARLY SCHEDULE
15 MONTH.

PROBABLE CONST. PERIOD
24 MONTH
4/1/87 OPERATIONAL.

} FORECAST

WINSLOW 650 BEDS

ARCHITECT: VSLA.

5 JAN 85

1984 J F M A M J J A S O N D | 1985 J F M A M J J A S O N D | 1986 J F M A M J J A S O N D | 1987 J F M A M J J A S O N D

SITE ADAPTION SCHEMATICS
REVIEW
CONSTRUCTION DOCUMENTS
REVIEW
BID PERIOD.
BID EVALUATION
5-30-86 CONSTR. MEDIUM SECURITY (13 mo)
CONSTR. MIN. SECURITY & COMP. (10 mo)

} CHANEN/3D PROPOSAL.

TO 11-19-84 PRE-DESIGN.
11-20-84 TO 5-19-85 DESIGN.
5-20-85 TO 10-30-86 CONSTR
17½ mo.

EST COST MED SEC. 9,807,000
MIN SEC 1,500,000
11,307,000

} CHANEN/3D CONTRACT.

8-3-84 RFP 2636 SPACE/FUNC. PROGRAMMING SERVICES
COMPLETE BY 12-21-84

12-3-84 DESIGN CONTRACT TO VSLA

DESIGN FEE 497,800.
PROGRAM 20 000
PROJ. REP. 151,700 MED SEC
68 000 MIN. SEC.
737,500

TIME LIMIT 28 Mo.
LIQ DAMAGES: +1,000-/CAL DAY
PRELIM COST EST (CONST): 14,000,000

133 — 4-15-85 BID PACKAGE: SITE CONSTR
14 — 5-13-85 DIRECT PURCHASE MAT'L
189 — 6-10-85 BLDG CONSTR.
} MED. SECURITY
175 — 5-28-85 SITE CONSTR
168 — 5-22-85 DIRECT PURCHASE
210 — 7-1-85 INMATE CONSTR
231 — 7-22-85 BLDG CONSTR
} MIN SECURITY.

VSLA CONTRACT
28 mo

} VSLA CONTRACT

16.5 * 13,935,000
16.5 * 13,937,500

POSSIBLE EARLY SCHEDULE
18 MONTHS
2/1/87

PROBABLE CONST. PERIOD.
24 MONTHS.
10/1/87
GREENTOWN

} FORE CAST

AREA	MED. SEC.	MIN.
SECURITY CONTROL	2000#	
ADMINISTRATION	10000	9000#
FACILITIES	26000	9100
	38000#	18100#
COMB: WAREHOUSE	10500#	
MAINTENANCE	6000	
MOTOR POOL	6500	
	61000	18100
	79100#	

} C/3D 28 SEP 84 REPORT
} C/3D 6 NOV 84 REPORT

YUMA FACILITIES. 250 BEDS. ARCHITECT: VSLA

4 JAN 85

1984 J F M A M J J A S O N D | 1985 J F M A M J J A S O N D | 1986 J F M A M J J A S O N D | 1987 J F M A M J J A S O N D

- SITE ADAPTION SCHEMATICS
- REVIEW
- CONSTRUCTION DOCUMENTS
- REVIEW
- BID PERIOD
- BID EVALUATION
- CONSTRUCTION (10 mo)

CUDDEN/3D PROPOSAL

→ TO 12.31.84 PRE-DESIGN.

1.1.85 TO 7.9.85 DESIGN.

7.10.85 TO 7.30.86 CONSTRUCTION.

12½ MONTHS EST COST = MIN SECURITY = $1,879,000 100 BEDS

CAMP = 2,684,000 150 BEDS

4,563,000

PM CONTRACT

8.3.84 RFP 2636 SPACE/FUNC. PROGRAMMING SERVICES.

COMPLETE BY 12.21.84

12.3.84 DESIGN CONTRACT TO VSLA.

DESIGN FEE $120,800-

PROGRAMMING 15,000

PRO. REP 86,800 (12 mo MAX)

ACCESS RD 7,600

$230,200

TIME LIMIT 28 MONTHS

LIQ. DAMAGES $1,000-/DAY

PRELIM CONST. EST. COST = $3,500,000

DAY 203 → 6.24.85 BID PACKAGES COMPLETE.: SITE CONSTRUCTION

170 → 5.22.85 DIRECT PURCHASE: MAT'L & EQUIP.

210 → 7.1.85 INMATE CONSTRUCTION

266 → 8.26.85 BUILDING CONSTRUCTION.

VSLA CONTRACT

LIMIT 28 mo.

VSLA CONTRACT

AREA

ADMIN.	9,000	SF
KITCHEN	13,000	
WAREHOUSE	4,000	
MAINTENANCE	3,000	
MOTOR POOL	2,000	
	31,000	SF

HOUSING 250 UNIT

SITE 7/1/85 BLDG $635,000 2,924,000 3,559,000

SITE 8/1/85 BLDG $635,000 2,811,500 3,446,500

C/3D 28 SEP 84 REPORT

C/3D. 6 NOV 84 REPORT

POSSIBLE EARLY SCHEDULE

13 MONTHS

11/1/86

PROBABLE CONSTR. PERIOD

16 MONTH.

3/1/87

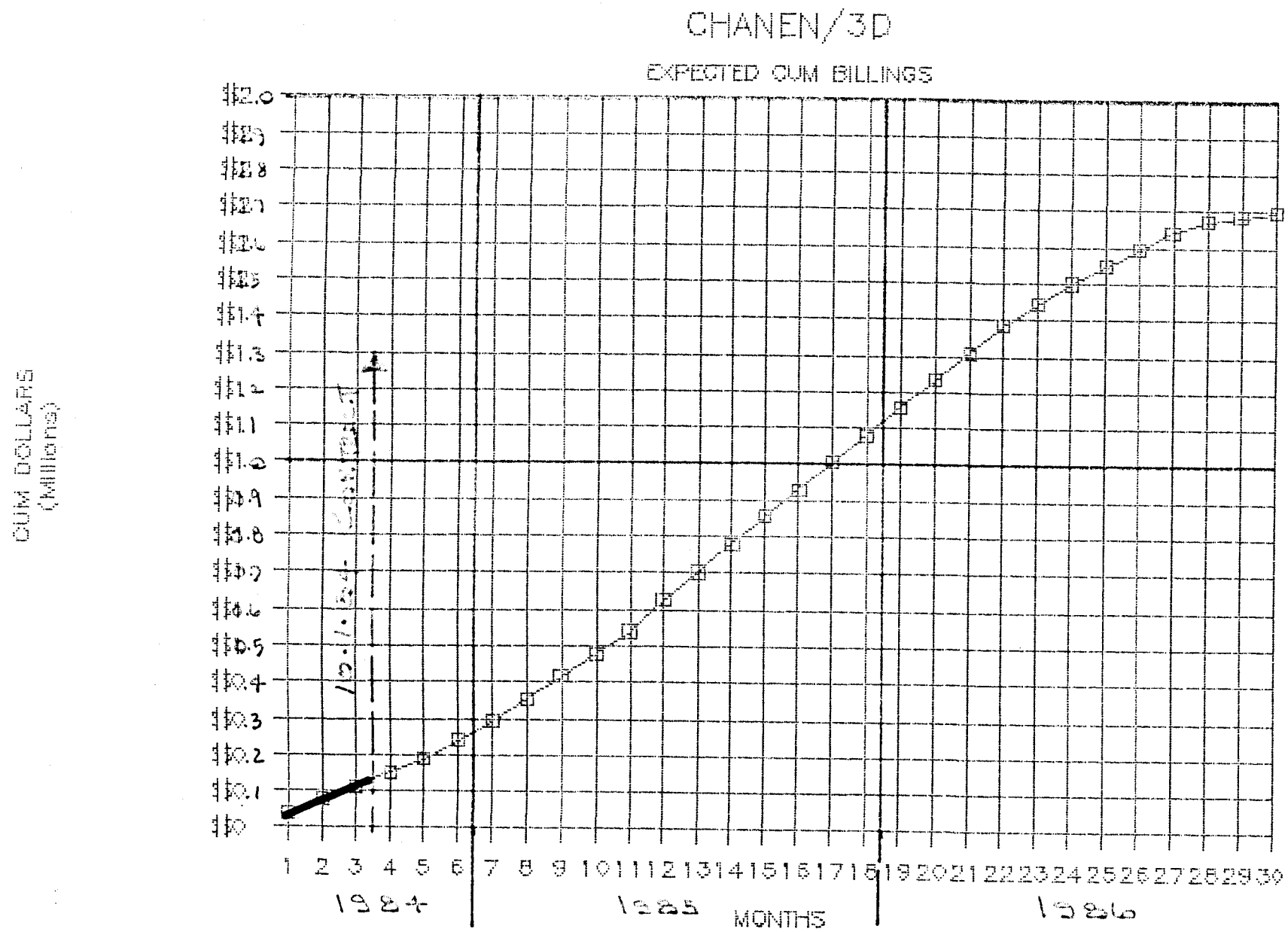
OPERATIONAL.

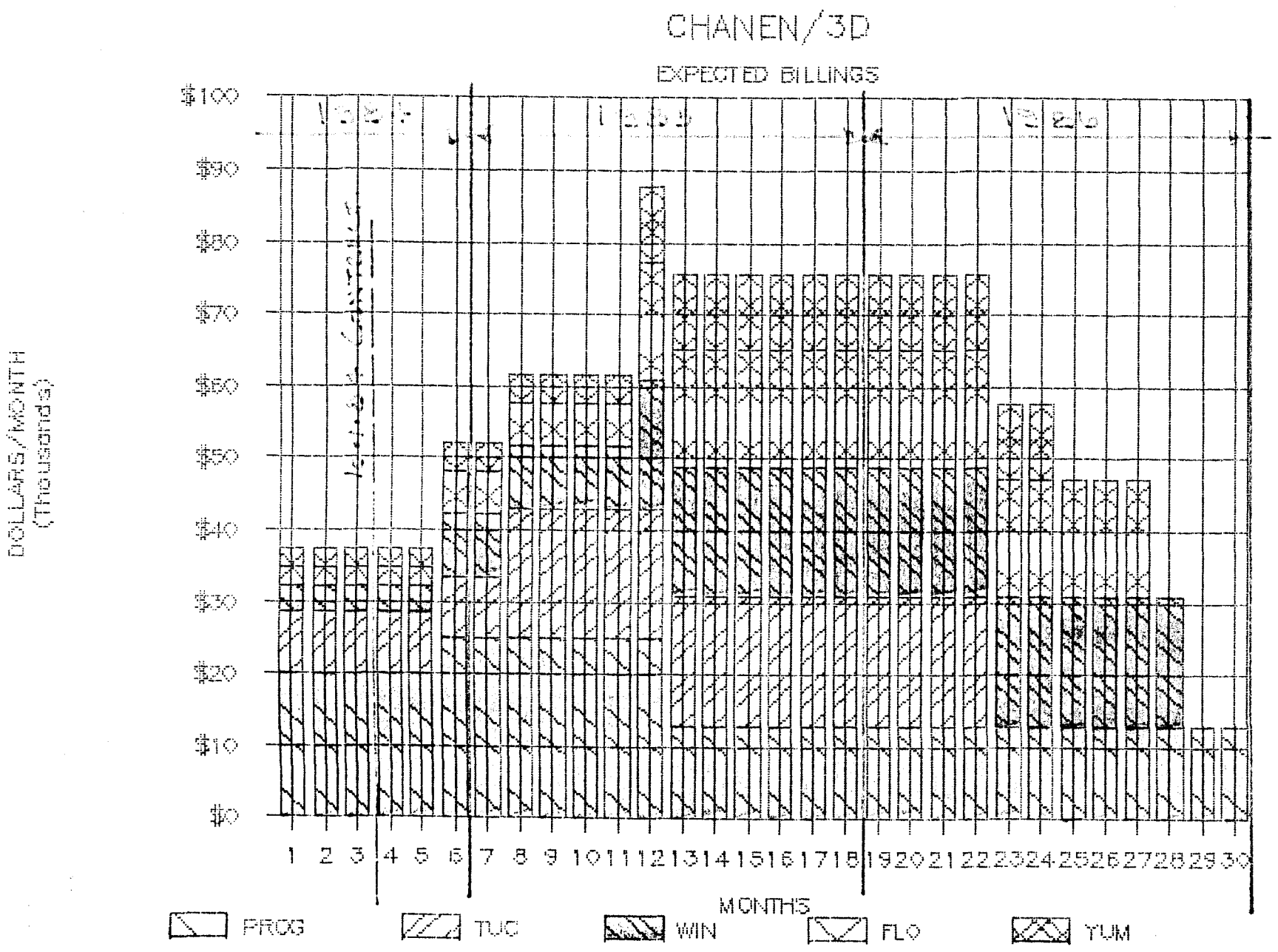
FORECAST

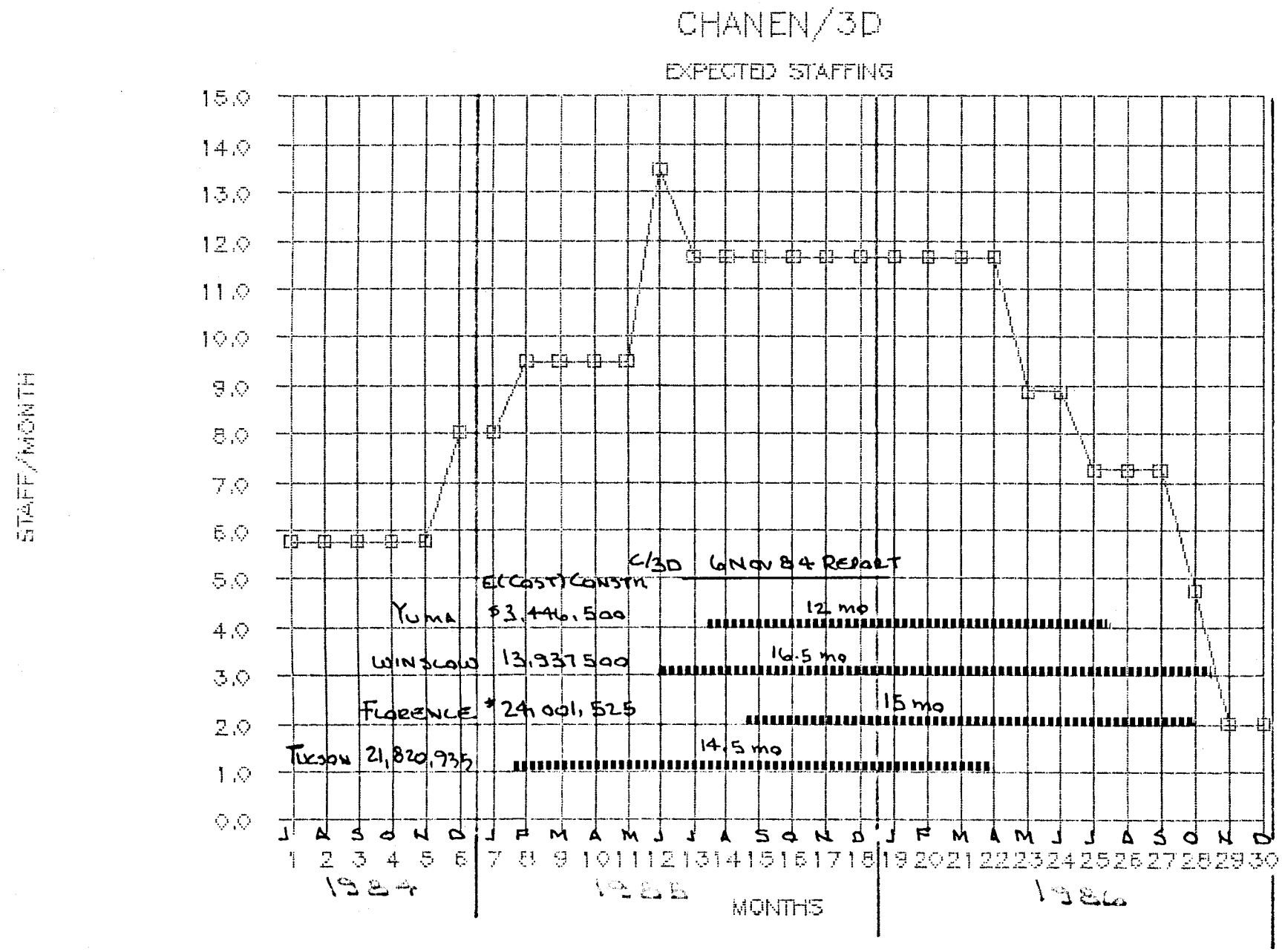
ANALYSIS OF CHANEN/3D BILLING SCHEDULE

MO #	PROGRAM MMGT-$	TUCSON $	WINSLOW $	FLORENCE $	YUMA $	TOTAL $	STAFF (MAN-MONTH)	CUM DOLLARS	CUM M-M
1 JUL/84	19,960	8,480	3,780	2,520	2,788	37,528	5.8	37,528	5.8
2 AUG	19,960	8,480	3,780	2,520	2,788	37,528	5.8	75,056	11.5
3 SEP	19,960	8,480	3,780	2,520	2,788	37,528	5.8	112,584	17.3
4 OCT	19,960	8,480	3,780	2,520	2,788	37,528	5.8	150,112	23.1
5 NOV	19,960	8,480	3,780	2,520	2,788	37,528	5.8	187,640	28.9
6 DEC	24,900	8,480	8,900	5,900	4,000	52,180	8.0	239,820	36.9
7 JAN/85	24,900	8,480	8,900	5,900	4,000	52,180	8.0	292,000	44.9
8 FEB	24,900	18,000	8,900	5,900	4,000	61,700	9.5	353,700	54.4
9 MAR	24,900	18,000	8,900	5,900	4,000	61,700	9.5	415,400	63.9
10 APR	24,900	18,000	8,900	5,900	4,000	61,700	9.5	477,100	73.4
11 MAY	24,900	18,000	8,900	5,900	4,000	61,700	9.5	538,800	82.9
12 JUN	24,900	18,000	18,000	16,300	10,500	87,700	13.5	626,500	96.4
13 JUL	12,977	18,000	18,000	16,300	10,500	75,777	11.7	702,277	108.0
14 AUG	12,977	18,000	18,000	16,300	10,500	75,777	11.7	778,054	119.7
15 SEP	12,977	18,000	18,000	16,300	10,500	75,777	11.7	853,831	131.4
16 OCT	12,977	18,000	18,000	16,300	10,500	75,777	11.7	929,608	143.0
17 NOV	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,005,386	154.7
18 DEC	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,081,164	166.3
19 JAN/86	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,156,942	178.0
20 FEB	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,232,720	189.6
21 MAR	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,308,498	201.3
22 APR	12,978	18,000	18,000	16,300	10,500	75,778	11.7	1,384,276	213.0
23 MAY	12,978		18,000	16,300	10,500	57,778	8.9	1,442,054	221.9
24 JUN	12,978		18,000	16,300	10,500	57,778	8.9	1,499,832	230.7
25 JUL	12,978		18,000	16,300		47,278	7.3	1,547,110	238.0
26 AUG	12,978		18,000	16,300		47,278	7.3	1,594,388	245.3
27 SEP	12,978		18,000	16,300		47,278	7.3	1,641,666	252.6
28 OCT	12,978		18,000			30,978	4.8	1,672,644	257.3
29 NOV	12,978					12,978	2.0	1,685,622	259.3
30 DEC	12,978					12,978	2.0	1,698,600	261.3
31									
32									
33	507,700	329,360	378,300	308,800	174,440	1,698,600	261.3		
34									

STAFFING CALCULATED AT $6,500/MAN-MONTH


CHANEN/3D
EXPECTED CUM BILLINGS
CUM DOLLARS (Millions)
$2.0
$1.4
$1.3
$1.2
$1.1
$1.0
$0.9
$0.8
$0.7
$0.6
$0.5
$0.4
$0.3
$0.2
$0.1
$0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
1984
1985
1986
MONTHS


CHANEN/3D
EXPECTED BILLINGS
DOLLARS/MONTH
(Thousands)
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MONTHS
PROG
TUC
WIN
FLO
YUM


CHANEN/3D
EXPECTED STAFFING
STAFF/MONTH
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
1984
1985
1986
MONTHS
C/3D 6 NOV 84 REPORT
E(COST)CONSTR
YUMA $3,446,500
12 mo
WINSLOW 13,937,500
16.5 mo
FLORENCE *24,001,525
15 mo
TUCSON 21,820,935
14.5 mo

ARIZ. DEPT OF CORRECTIONS
FACILITIES PLANNING & CONSTRUCTION OFFICE
SENATE BILL 1027 (SIGNED 1.20.84)

1/
31 DEC 84

1984 | 1985 | 1986 | 1987 | 1988
J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D

RFP

- 4.20.84 } RFP PUB. (PM SERVICES FOR 72 MIL PROGRAM. (11 SHEETS.)
- 4.27.84 }
- 5.11.84 PROPOSALS REC'D (4 PM)
- APPROPRIATION $72,000,000 JULY 1, 84 → JULY 1, 1988
- 5.18.84 DC SCREEN PROPOSALS (ESTABLISH SHORT LIST)
- 5.24.84 DC INTERVIEWS & REQ. FEE PROPOSALS
- 5.29.84 FEE PROPOSAL DUE
- 6.4.84 AWARD & NEGOTIATE

ADDENDUM TO RFP

- 5.2.84 ADDENDUM TO RFP.

		ALLOCATION
ACTC. TUCSON		22,521,000
ASP. FLORENCE		31,314,000
WINSLOW.	MED	9,807,000
	MIN	1,500,000
	C. CAMP	2,195,000
YUMA	MIN	1,879,000
	C. CAMP.	2,684,000
		72,000,000

COMPLETION DATES
- ▲ JULY 86
- ▲ SEP 87

PROPOSAL

- 5.11.84 CHANEN/3D PROPOSAL (JOINT VENTURE)
  - ACTC. TUCSON
  - ASP. FLORENCE
  - MED WINSLOW
  - MIN & CAMP. WINSLOW
  - YUMA

CONSTRUCTION

CONTRACT

TUCSON
FLORENCE
WINSLOW
YUMA.
PROGRAM

- 10.1.84 CONTRACT

CONSTRUCTION

PRE-DESIGN — DESIGN — +6

30 MONTH CONTRACT

- 9.28.84 CONST. PROGRAM STATUS REPORT (#1)
- 11.6.84 " " " " (#2)

Ariz. Dept of Corrections
Facilities Planning & Const Office.

VSLA Varney, Sexton, Lunsford, Aye
C/3D Chanen

2/
31 Dec 84

1984 J F M A M J J A S O N D	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D	1987 J F M A M J J A S O N D	1988 J F M A M J J A S O N D
O 1.13.84 Varney, etal	Conception Space Program Study. 744 Beds, 205,945 sq ft	ACTC · Tucson (Phase II) Prelim Est.	28,959,000- (D & C)	
▲ 8.3.84 Information Package (Winslow, Yuma, Florence) RFP #2636 For Space/Func. Programming Services. Winslow/Florence (Complete by 11.24.84) Yuma (Complete by 12.21.84				
△ 8.15.84 Pre-Proposal Conf.				
△ 8.24.84 Proposals Received				
△ 10.1.84 D.O.C → C/3D	Re Billing on ACTC·T Project. E Design Schedule & Cash Flow.			
● 11.14.84 C/3D → Varney		Por Request #12 - Cost Breakdown.		
● 11.19.84 C/3D → ADOC	Schedule For Bldg 11 (Isolation) ACTC·T			
O 11.29.84 VSLA → C/3D	Progress on ACTC·T		E (Complete) 17 Dec 84	
● 12.7.84 C/3D → ADOC	Bid Package Revision - Various materials. A. Hardware. B Security Hollow Metal C Security Glass		Bid Dec 11 1984	(Bid Date Changed To 12.26.84)
● 12.7.84 C/3D → ADOC	Rev'd Spec For Inmate Rm Toilet Bldg Fixtures.			

GORDON G. PETERMAN
Professor of Construction

Degrees:

B.S.C.E. University of Iowa, 1949

Academic Experience:

1978-	Professor, Division of Construction, College of Engineering & Applied Sciences, Arizona State University
1974-78	Associate Professor, Division of Construction, College of Engineering & Applied Sciences, Arizona State University
1973-74	Professor and Associate Head of Department of Architecture, Louisiana State University
1966-73	Associate Professor, Division of Construction, College of Engineering & Applied Sciences, Arizona State University

Construction Experience:

1980-81	Sabbatical leave; with Fluor Mining & Metals, Inc., San Mateo, California and Fluor - Briones, LTDA., in Santiago, Chile
1958-66	President and General Manager of construction company engaged in construction of industrial, commercial, residential and institutional buildings. Licenses: Class A Engineering and Class B General Building.
1952-58	Area Manager, Superintendent, Estimator for Peter Kiewit Sons' Company in the area of heavy construction (highways, irrigation, flood control, airports, dams, tunnels).
1949-52	Field Engineer in city engineering and reclamation projects.

Conferences, Seminars and Continuing Education:
Managing Microcomputer Projects Seminar. Scottsdale. 1981
Fifth ICE Congress (Speaker). Utrecht, The Netherlands. 1978
AACE Conference (Speaker). San Francisco. 1978
Planning & Scheduling Seminars (Seminar Sponsor). Tempe and Las Vegas. 1977
State-of the Art of Power Plant Construction Seminar. Penn State Univ. 1976
American Institute of Constructors Conference (Speaker). Phoenix. 1976
American Association of Cost Engineers Conference. Boston. 1976 Co
International Cost Engineering Congress (Speaker). Mexico City. 1972
CM Conference on Computer Utilization (Speaker). Texas A & M. 1972

Multi-National Engineering and Construction Conference. San Francisco. 1972
Trenching and Excavation Workshop. Phoenix. 1971
Estimating Seminar (Sponsor). Phoenix. 1967
Construction Engineering and Management Conference. 1967, 1969

Consulting Experience:
Construction management and engineering consultant to various local and national construction and manufacturing firms. Construction claims.

Gordon G. Peterman

Principal Areas of Research or Teaching Interest:
Teaching: Planning and Scheduling, Cost Engineering and Estimating, Construction Economy and Finance, Construction Management, Methods Analysis and Design, Foundation Construction, Project Operations.

Research: Planning and Scheduling Methods, Cost Forecasting and Estimating Systems, Cost Engineering and Financial Controls. Micro/Mini Computer Utilization in the Construction Industry. Construction Contract Claims.

Publications and Papers:
"Cost Engineering Applications for the Microcomputer," 7th International Cost Engineering Congress. 1982
"Highway Contract Claims", Arizona Conference on Roads and Streets. 1982.
"Computer Estimating", American Association of Cost Engineers, 1982.
"Adversity Management", Project Management Institute, 1982.
Building Cost Estimating: A Computer Program. " 1981.
"Problems in Increasing the Effectiveness of the Project Planning/Scheduling Effort", Fifth International Cost Engineering Congress. The Netherlands. 1978.
"Construction Engineering and Management Education in the United States', Fifth International Cost Engineering Congress. Utrecht, The Netherlands. 1978.
"Who Owns Float?" American Association of Cost Engineers Conference. 1978.
"Studies in Planning and Scheduling", AACE. San Francisco. 1978.
Basic Scheduling Methods for Construction Management. 1977.
Construction Material Resources on the San Carlos Indian Reservation. (w/Jack Ward).
Construction Cost Accounting & Workbook. 1973, 1975.
"A Way to Forecast Cash Flow", World Construction (English Edition), October 1973.
"Un Medio de Pronostcar los desembolsos", World Construction (Spanish Edition), October 1973.
Construction Company Financial Forecasting. 1972
A Time-Share Method to Prepare the Application for Payment for General Building Construction Projects. 1972.
Cost Estimating Forms of Heavy and Highway Construction. 1968, 1969, 1972.
Conac Company - Case Study for Construction Accounting. 1968, 1971.
Environmental Degradation During Construction Operations. 1971. (w/Jack Ward)
The Development of Reinforced Earth Structures. 1972. (w/Jack Ward)

Membership in Professional Societies and Programs:

American Association of Cost Engineers, American Society of Civil Engineers, American Institute of Constructors, Project Management Institute, Sigma Lambda Chi, Theta Tau

Other:

Professional Engineer, Arizona
Professional Engineer, Iowa
Certified Cost Engineer, AACE

9/83

TO: Office of Auditor General

FROM: Charles R. Calleros Charles R. Calleros

RE: Evaluation of the Dep't of Corrections Construction Contract

DATE: January 3, 1985

I. INTRODUCTION

You have asked me to evaluate several provisions of the construction agreement (the AGREEMENT) for the Dep't of Corrections's $72,000,000 construction project, A.G. Contract #1158. My analysis is based solely on my review of the language on the face of the written contract; I have not considered any extrinsic evidence of negotiations or other circumstances of contract formation. My analysis includes information about custom in the construction industry that I obtained over the telephone from Robert L. Johnson, an attorney who currently practices with the law firm of Jennings, Strouss & Salmon, and who specializes in construction contracts.

II. DISCUSSION

You have raised specific questions about sections 8.2, 8.3, and 8.4. In addition, I see some problems in sections 6.1 and 6.2.

A. General Legal Standards

Each party to an enforceable contract is entitled to performance of the other party's contractual obligations and may

sue to recover the value of the promised performance if those obligations are breached. E.A. Farnsworth, Contracts §§ 12.1 & 12.2, at 811-16 (1982). A contractual obligation is not enforceable unless the expressions of the parties or the circumstances of contract formation define the obligation with sufficient definiteness to enable a court to fashion a remedy for breach. See, e.g., Pyeatte v. Pyeatte, 135 Ariz. 346, 661 P.2d 196 (Ct. App. 1982) (contractual promise to pay spouse's expenses for graduate education was insufficiently definite to enforce). Any reasonable basis for determining the scope of the breaching party's obligation, however, will provide sufficient definiteness. See generally Arizona Board of Regents v. Arizona York Refrigeration Co., 115 Ariz. 338, 565 P.2d 518, 521 (Ariz. 1977) (owner was liable to contractor for the "reasonable value" of additional repairs, even though the implied-in-fact contract didn't provide any rate of compensation); Purvis v. United States ex rel. Associated San & Gravel Co., 344 F.2d 867, 869-70 (9th Cir. 1965) (enforcing an "agreement to agree" on an insignificant portion of a construction contract by imposing an obligation to pay "fair" compensation for concrete work).

If the parties dispute the meaning of an agreement and litigate their dispute, a court will seek to interpret it in a manner that reflects the parties' intent, as expressed by the language of the agreement. See Shattuck v. Precision-Toyota, Inc., 115 Ariz. 586, 566 P.2d 1332 (Ariz 1977); Knight v. Metropolitan Life Insurance Co., 103 Ariz. 100, 437 P.2d 416 (Ariz. 1968). The court will seek to interpret the agreement as

whole, rather than interpret a particular provision in isolation. See, e.g., Cavanagh v. Schaeffer, 112 Ariz. 600, 545 P.2d 416, 418 (Ariz. 1976); Newmont Exploration Ltd. v. Siskon Corp., 125 Ariz. 267, 609 P.2d 82, 84 (Ct. App. 1980). Unambiguous language will be given its plain, ordinary meaning. E.g., Divizio v. Kewin Enterprises, Inc., 136 Ariz. 476, 666 P.2d 1085, 1090 (Ct. App. 1983) (language in deed restrictions).

B. Sections 6.1 and 6.2 -- Additional services or expenditures

Sections 6.1 and 6.2 contemplate the possibility that the project will require services and reimbursable expenditures beyond those specifically contracted for, yet PM apparently has no obligation to perform the additional services or incur the necessary additional expenses. Instead, each section provides that PM shall have no additional obligations "unless and until OWNER and PM enter into "a formal written amendment to this AGREEMENT pursuant to which OWNER" agrees "to reimburse PM for such additional" services or expenses.

Sections 6.1 and 6.2 could grant OWNER an "option" to retain PM for additional services if they could be interpreted to obligate (1) PM to perform the additional services and incur the additional expenses and (2) OWNER to pay for those services and to reimburse PM for the expenditures, both obligations subject only to the condition that OWNER request those performances in writing after determining a need for additional services. See generally Yeazell v. Copins, 98 Ariz. 109, 402 P.2d 541, 544

(1965) (defining condition precedent); 3A A. Corbin, Corbin on Contracts § 643, at 75-78 (1960) (obligation to render performance on demand).

The ordinary meaning of the contract language, however, suggests a much more plausible interpretation: PM has no responsibility for additional services or expenditures unless it voluntarily assumes them by entering into a separate agreement that amends the original AGREEMENT. At most, the original AGREEMENT may implicitly impose upon the parties a duty to exercise good faith in attempting to negotiate an amendment. Cf. Itek Corp. v. Chicago Aerial Industries, 248 A.2d 625 (Del. 1968) (express agreement to "make every reasonable effort to agree upon" a sale contract). However, the AGREEMENT almost certainly does not obligate either party to reach final agreement on an amendment.

Assuming these sections do not obligate PM to perform the additional services and incur the necessary additional expenses, OWNER likely would find itself in a greatly inferior bargaining position in negotiating an amendment to the agreement. For example, if the additional services are closely related to the services that PM has agreed to perform in the original agreement, a desire for simplicity, uniformity, or minimization of transaction costs would encourage OWNER to retain PM, rather than a new project manager, for the additional services, even if that required payment of a premium fee that exceeds the fee for commensurate services under the original contract.

Perhaps for those reasons Robert Johnson stated that provisions like those in section 6.1 are not customary in the industry. Instead, a construction contract will typically obligate a project manager or a contractor to perform additional services that are later determined to be necessary, and will state at least a general method of determining the compensation for the additional services. Although the necessary additional services and the compensation for them are indefinite at the time of formation of such a contract, the provision for additional services is sufficiently definite to enforce, because the stated method of determining compensation gives the court a reasonable basis for determining each party's obligations and for fashioning a remedy for breach once the owner specifies the additional services needed. See generally 1 A. Corbin, Corbin on Contracts § 98, at 433-44 (1963).

For example, a prominent legal formbook proposes the following contract language for modification of a project and adjustment of a contractor's compensation:

> Contractor further expressly agrees that owner may make any necessary changes in the plans and specifications for the work covered by this contract that may be deemed necessary during the progress of the work, without invalidating this contract. However, . . . if such change is made resulting in additions to the work and materials required, then the actual cost of such added labor and materials plus _____ per cent (____%) shall be added to the contract price as hereinafter specified.

Am. Jur. 2d Legal Forms § 47:151, at 155 (1971).

A similar provision in a form contract of the American Institute of Architects is less definite in its reference to compensation but illustrates the general principle:

> The Owner, without invalidating the Contract, may order Changes in the Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by written Change Order signed by the Owner and the Architect.

AIA Document A107-1978 § 18.1, reprinted in E.A. Farnsworth, Cases and Materials on Contracts 169 (Supp. 1980).

Contractual provision for additional services is not a novel problem for the Dep't of Corrections. In 1978, it provided for additional services in a contract with its Construction Manager ("CM"), Kitchell Corp.:

> ADDITIONAL SERVICES: In the event the Owner desires that the CM provide services that are not within the scope of this Article 2, then separate agreements will be negotiated, at additional compensation to the CM, for said services.

A.G. Contract No. 1323 § 2.5, at 17 (Sept. 8, 1978). I don't recommend this provision as a substitute for section 6.1 of the AGREEMENT. Admittedly, it overcomes the most serious deficiency of section 6.1 by obligating the parties to reach an agreement for additional services desired by the Owner: "separate agreements will be negotiated." However, the obligation to negotiate an agreement for additional services is only an "agreement to agree" with insufficient objective standards for accurately predicting the substance of the future agreement; that obligation may therefore be insufficiently definite to enforce. See E.A. Farnsworth, Contracts § 3.29, at 202-08 (1982). To be safe, I recommend a more definite provision for additional services, such as the following:

> PM shall provide services additional to those specified in this AGREEMENT upon OWNER's giving PM written notice of the additional services that OWNER requires. OWNER shall pay

> PM for such additional services at a rate and frequency commensurate with PM's fee for similar services under this agreement.

Alternatively, the provision could provide for additional compensation on an even more definite formula, such as the "cost plus" formula in the first sample form quoted above. If the project manager insists upon greater protection, the provision could limit the nature or the amount of additional services that OWNER is entitled to demand. An analogous provision for additional expenditures could substitute for section 6.2 of the Agreement.

C. Section 8.2 -- Abandonment

1. Reimbursement for Costs

The first clause of section 8.2 of the AGREEMENT permits OWNER to abandon any part of the project. Section 8.2(i) & (ii) permits OWNER to reduce its payment obligations accordingly, because it obligates OWNER to compensate PM only for those portions of the fixed fee and reimbursable expenses that PM has earned on the abandoned portion by the date of the abandonment. On the other hand, section 8.2(iii) obligates OWNER to reimburse PM for "actual reasonable costs incurred as a direct result of such abandonment." The next clause of section 8.2 imposes upon PM a duty to endeavor to minimize the costs of abandonment; in doing so, that clause suggests the kinds of costs contemplated by subsection (iii): the future performance of binding commitments that cannot be immediately terminated upon notice of abandonment and the associated expenditures and administrative costs.

Viewed in its context, section 8.2(iii) is reasonable. It provides reasonably definite guidance for the parties and the courts, because it limits "costs" to those that are "reasonable" and that are "a direct result" of the abandonment, and because the next clause suggests some examples of "costs."

If the Dep't of Corrections anticipates disputes about the scope of terms such as "costs" in future contracts, it can specifically provide that certain items are or are not compensable in nonexhaustive, illustrative lists:

> Such costs include, but are not limited to
> (1) the cost of PM's performance, after the date of abandonment, of leases and other contracts that relate to the abandoned portion of the project;
>
> Items that do not constitute compensable costs include, but are not limited to
> (1) any costs that PM could have avoided through reasonable efforts;
> (2) any technical increase in PM's cost of performing on the unabandoned portions of the AGREEMENT resulting from the reallocation of "overhead" expenses from the abandoned portion to the unabandoned portions; . . . .

However, Robert Johnson stated that construction contracts do not often list potential "costs" in this manner; instead, the more general reference to costs in Section 8.2(iii) is customary.

2. <u>Resumption of Abandoned Portion</u>

The second paragraph of section 8.2 contemplates OWNER's resumption of an abandoned portion of a project and the resumption of PM's services in exchange for OWNER's payment of (1) the fixed fees PM would have earned but for the abandonment, (2) reimbursable expenses, and (3) compensation for increases in

the actual, direct cost of PM's performance caused by the abandonment. Those provisions, however, do not clearly serve OWNER's best interests, because they probably do not obligate PM to resume its services at OWNER's request or to agree to an amendment that would impose such an obligation. Instead, they obligate PM to resume services "if, and only if, OWNER and PM enter into a formal written amendment to this AGREEMENT" in which OWNER agrees to compensate PM in the manner described above. That raises problems analogous to those raised by sections 6.1 and 6.2, discussed in section B of this memo: Because OWNER likely would have a strong incentive to retain the same project manager for the entire project, rather than hire a different one for the once-abandoned portion, PM would have the bargaining power to secure a premium fee for its resumption of services. As explained more fully in section D of this memo, if PM has no obligation to agree to an amendment obligating it to resume its services, it is free to insist upon compensation other than that contemplated in the second paragraph of section 8.2 as a condition to such an agreement.

As discussed in an analogous context in section B of this memo, OWNER would avoid these problems if the second paragraph of section 8.2 were interpreted to obligate PM to resume services and OWNER to pay for those services, both performances subject only to the condition that OWNER request those performances in writing. However, under the ordinary meaning of the language of section 8.2, PM has no obligation to resume services unless it

voluntarily assumes that obligation by agreeing to an amendment; moreover, it has no obligation to agree to such an amendment.

If the Dep't of Corrections wishes to bind a project manager in future contracts, I recommend a provision such as the following:

> If OWNER subsequently desires to resume the abandoned portion of the project, it shall notify PM in writing of its intention to resume. Upon such notification, PM shall resume its services with respect to the abandoned portion of the project, and OWNER shall pay PM the following sums, in monthly installments as earned by PM: (1) the fixed fees that would have become payable but for the abandonment, (2) reimbursable expenses, and (3) a further sum representing the increased actual direct cost, if any, of performance incurred by PM due to the abandonment of the project by OWNER.

If the project manager insists upon some limitation on the duration of its potential obligations, the contract could limit the amount of the time that the final completion date could be extended by the OWNER's abandonment and subsequent resumption of a portion of a project.

D. Section 8.3 -- Delay in Scheduled Completion Date

Section 8.3 addresses (1) PM's obligation to continue its performance beyond scheduled completion dates and (2) the compensation that OWNER will pay PM in the event of any delay of a facility.

1. PM's Obligation to Perform Beyond Scheduled Completion Dates

Using language similar to that in sections 6.1, 6.2, and 8.2, section 8.3 apparently releases PM of some or all of its

obligations in the event of a delay in a scheduled completion date:

> [I]f such delay causes delay either in the scheduled completion date of the project or in the scheduled completion date of any phase of any facility, then PM shall have no obligation to perform any services after any such scheduled completion date unless and until PM and OWNER enter into a formal written amendment to this AGREEMENT pursuant to which the OWNER agrees to pay PM additional installments of [either of two fees].

As with the previous sections, this provision would protect OWNER best if it were interpreted to obligate (1) PM to continue to perform for at least a minimum period beyond scheduled completion dates and (2) OWNER to pay PM additional compensation for PM's services during that time, both performances subject only to OWNER's giving written notification of its desire to exercise its option of retaining PM for such services. Giving the language its ordinary meaning, however, I conclude that the provision imposes no obligation upon PM to perform beyond scheduled completion dates unless PM voluntarily agrees to assume such an obligation in a subsequent agreement to amend the original AGREEMENT. Moreover, although section 8.3 contemplates that an amendment would adjust the extra fees for PM's performance in the event that the delay was partly the fault of PM, section 8.3's release of PM from its obligations is not by

its express terms limited to delays caused through no fault of PM.[1]

Unless OWNER's scheduled completion dates already incorporate a generous allowance for delay, section 8.3 probably does not serve OWNER's best interests. Robert Johnson stated that construction contracts customarily release a project manager from further obligations if completion of a project is delayed for a substantial period of time, such as 90, 120 or 180 days; otherwise, the project manager's resources would be committed to the project indefinitely, preventing it from negotiating contracts with other owners for future performance on other projects. Section 8.3, however, leaves OWNER no margin for even insubstantial delay beyond a scheduled completion date. Once a project is delayed beyond a scheduled completion date, OWNER must use a different project manager to supervise the completion of the project, unless OWNER induces PM to continue its services by negotiating an amendment to the AGREEMENT. Like previous sections, section 8.2 purports to dictate the terms of the

---

1. Even more surprising, section 8.3 by its literal terms releases PM from its obligation to perform "any services" in the event of a delay in scheduled completion, even though the delay might affect only a portion of the construction that PM is supervising; if interpreted broadly and literally, that provision could release PM from all its obligations under the entire AGREEMENT in the event of a delay in the scheduled completion date of a single phase of a facility. In the context of the entire AGREEMENT, however, section 8.3 can plausibly be interpreted more narrowly as releasing PM only from its obligation to perform further services on the delayed portion. Section 8.5 releases PM from all its remaining obligations in the event of a delay of more than one year beyond the final completion date. Section 8.3 is most easily reconciled with section 8.5 if section 8.3 is interpreted to address a more limited release of obligations.

amendment; however, the AGREEMENT doesn't obligate PM to agree to an amendment with those terms. Instead, because the AGREEMENT releases PM from further obligation, PM almost certainly is free to insist upon an amendment that obligates OWNER to pay "additional installments" that are greater than those proposed in section 8.2.

In future contracts, OWNER may wish to bind its project manager to perform services beyond scheduled completion dates at a predesignated rate of compensation:

> If the completion of a project is delayed for more than 120 days beyond its scheduled completion date through no fault of PM, PM shall have no further obligations with respect to that project. PM shall continue to perform its services during a period of delay of 120 days or less beyond a scheduled completion date, and OWNER shall pay PM the following additional compensation for such services:
> . . . .

That provision gives OWNER some margin for error, yet it protects PM by limiting its potential obligations in the event of delay. Of course, OWNER and PM would be free to negotiate a separate agreement obligating PM to continue its services after 120 days beyond the scheduled completion date.

2. <u>Payment Provisions</u>

Section 8.3 provides for four different kinds of payment to PM in the event of a delay:

(a) continued payment of fees and reimbursement relating to services and expenses not affected by the delay;

(b) fees relating to the delayed facility during the delay [either (i) the fixed monthly fee for the delayed facility, or (ii) a fee based on personnel and job expenses; whichever is smaller];

(c) resumption of full payment of monthly fees relating to the delayed facility after cessation of the delay; and

(d) additional compensation that a written amendment to the AGREEMENT might obligate OWNER to pay for services that PM agrees to perform after delay beyond a scheduled completion date [additional installments of either (i) Program Management Fee or (ii) fixed monthly fee, depending upon whether the delay in a scheduled completion date relates to a project or a phase of a facility, with a reduction in proportion to PM's relative fault in causing the delay].

You have asked specific questions about the additional compensation referred to in (d) above. In the unlikely event that section 8.3 is interpreted to obligate PM to continue to perform services after a delay in a scheduled completion date in exchange for OWNER's payment of "additional installments," the provisions referred to in (d) above would be fully enforceable upon OWNER's written exercise of its option.

Based on my analysis in the previous few pages, however, I conclude that the AGREEMENT's provisions for additional compensation are not enforceable; instead, they are unenforceable recommendations for the terms of a subsequent agreement to amend the original AGREEMENT. If completion of a project or phase of a facility is delayed beyond its scheduled completion date, PM would have no obligation under the original AGREEMENT to continue to perform any services, and PM would have no obligation to agree to an amendment that would obligate it to continue its services. If PM did not agree to such an amendment after bargaining in good faith; OWNER would not have any recourse against PM, and the provisions in the original AGREEMENT for "additional

installments" would be meaningless. Moreover, even if PM and OWNER successfully negotiated an amendment, neither of them would be obligated by the original AGREEMENT to agree to the particular "additional installments" recommended in the original AGREEMENT; instead, they could agree upon any compensation necessary to induce PM to continue its services. Of course, if the parties voluntarily agreed to an amendment that incorporated section 8.3's description of "additional installments," those provisions would be enforceable; however, they would be enforceable by virtue of the binding agreement to amend the original AGREEMENT and not on the force of the original AGREEMENT itself. I would reach similar conclusions regarding the references in sections 6.1, 6.2, and 8.2 to the terms of amendments to the AGREEMENT.

E. Section 8.4 -- 90-day Delay that Increases Costs

Under the ordinary meaning of its language, section 8.4 releases PM from its obligations to perform further services on any facilty that experiences a delay of more than 90 days beyond its project time schedule, if such a delay causes an increase in PM's actual direct cost of performing the AGREEMENT:

> [In the event of such a delay,] PM shall have no obligation to perform any additional services with respect to any facility affected by such delay unless and until PM and OWNER execute a formal written amendment to this AGREEMENT pursuant to which OWNER agrees to pay, in addition to the fees herein provided, [increased actual direct costs, reduced in proportion to PM's relative fault in causing the delay].

Consistent with my analysis in previous sections, I conclude (1) that the quoted provision releases PM from further

obligations concerning the delayed facility, (2) that the provision does not obligate PM to agree to an amendment, and (3) that PM and OWNER are free to agree to compensation other than those contemplated by the provision in the event that they do successfully negotiate an amendment.

As discussed in section D of this memo, construction contracts customarily release contractors or project managers from further obligations in the event of substantial delays not caused by the contractor or project manager; otherwise, the contractor or project manager would be unable to plan for eventual reallocation of its resources to other contracts. It is not clear, however, that the release of obligations in section 8.4 is necessary to address the legitimate planning needs of PM. In planning for the eventual reallocation of its resources, PM typically would be most concerned with delays in the completion dates of projects, rather than in interim delays that could possibly be made up with accelerated work schedules before the scheduled completion date. A construction contract would reasonably obligate the owner to compensate the project manager for any increased costs of performance caused by any delay for which the project manager is not responsible; however, I question whether PM should be released from further obligations for delays other than those addressed in sections 8.3 or 8.5.

In future contracts I recommend that the Dep't of Corrections try to consolidate its provisions concerning delay into a single section of the agreement that (1) clearly obligates the project manager to continue to perform services in the event

of a delay not longer than a designated period beyond scheduled completion dates, (2) obligates OWNER to pay the project manager appropriate additional compensation for performance during such a period of delay, and (3) releases the project manager from further obligations only in the event of a delay the nature and scope of which would create substantial problems for PM in planning its allocation of resources. My sample provisions for section 8.3, in section D of this memo, would be a reasonable starting place.

III. CONCLUSION

The omission of an itemized statement of compensable costs in section 8.2(iii) is reasonable. More troubling are the references in sections 6.1, 6.2, 8.2, 8.3, and 8.4 to PM's obligations to perform certain services. The Dep't of Corrections may have desired those provisions to obligate PM to perform those services in exchange for specified compensation, conditioned only upon OWNER's exercise of an option by executing a written document to that effect. Such an intention, however, is not reflected by the ordinary meaning of the language of those sections of the contract. Instead, those sections probably release PM from specified obligations upon the occurrence of specified events, placing PM in strong bargaining position in negotiations aimed at inducing PM to voluntarily assume the obligations. Some kinds of delay would justify discharge of some

or all of PM's obligations; however, the identified sections appear to release PM from obligations in broader circumstances than necessary to protect PM's normal business interests.

phase of a facility and the project as a whole. Section 8.3 would apply to the delay in the completion of the phase of the facility, and would contemplate "(ii) additional installments of the fixed monthly fee" for that facility. If the project completion date were also delayed, section 8.3 probably would apply again, and this time would contemplate additional installments of "(i) the Program Management Fee." In the event of an additional delay in the completion date of a phase of a second facility, section 8.3 would probably apply once again, and contemplate additional installments of the fixed monthly fee for that facility.

In other words, the word "or" in line 23 of section 8.3 suggests that PM would be entitled to additional installments of only one kind of fee for a particular delay; however, nothing in the AGREEMENT prevents section 8.3 from applying more than once to different kinds of delay. Therefore, OWNER may be obligated to pay more than one kind of additional installment in the event of multiple delays.

TO: Office of Auditor General

FROM: Charles R. Calleros Charles R. Calleros

RE: Supplement to my Evaluation of Dep't of Corrections Construction Contract, A.G. Contract #1158

DATE: January 10, 1985

You have asked me to supplement section II(D)(2), pp. 13-15, of my January 3 memorandum, by addressing the obligations of OWNER in the event that (1) both a phase of a facility and the entire project are delayed beyond their scheduled completion dates, and (2) OWNER and PM agree to an amendment that incorporates the terms for "additional installments" set forth in section 8.3 of the AGREEMENT.

Section 8.3 contemplates additional installments for a "delay <u>either</u> in the scheduled completion date of the project <u>or</u> in the scheduled completion date of any phase of any facility." [emphasis added]. Therefore, section 8.3 probably contemplates separate additional installments for each delay to which its terms apply.

Section 7.1 suggests that PM's responsibilities and compensation for supervising the entire project are distinct from its responsibilities and compensation for supervising the construction of each facility, because OWNER has agreed to pay PM a Program Management Fee in addition to its fixed monthly fees for each facility. In that light, section 8.3 probably contemplates additional installments of both kinds of fees in the event of delays in the scheduled completion dates of both the

RESUME

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EDUCATION

Law School

University of California at Davis, Class of 1978
Order of the Coif
Phi Kappa Phi Honors
Charter Member of King Hall Legal Foundation

College

University of California at Santa Cruz, Class of 1975
B.A., Economics
Highest Honors in Economics

LEGAL EMPLOYMENT and RELATED EXPERIENCE

Professor of Law, Arizona State University College of Law, Tempe, Arizona 85287. July 1984 - present.

Associate Professor of Law, Arizona State University College of Law, Tempe, Arizona 85287. June 1981 - June 1984.
Courses Taught: Contracts I & II, Civil Rights Legislation, Advanced Writing Seminar, First-year Legal Writing and Moot Court.
Committees: Chair, Judicial Clerkship Committee (1982-84); Chair, Committee on Tutorial Program (1981-84); Appointments Committee (1984-85).
Chair, A.S.U. Board on Equal Opportunity (1982-85).
Faculty Member, C.L.E.O. Institute, Summer 1981, A.S.U.

Law Clerk to Circuit Judge Procter Hug, Jr., United States Court of Appeals, 50 W. Liberty St., Suite 600, Reno, Nevada 89501. Oct. 1979 to April 1981.

Law Clerk; Central Staff, United States Court of Appeals, P.O. Box 547, San Francisco, California 94101. Aug. 1978 to Oct. 1979.

Law Clerk; Beeson, Tayer & Kovach (labor law), 717 K St. Mall, Sacramento, California 95814. June 1977 to May 1978.

LEGAL EMPLOYMENT and RELATED EXPERIENCE (cont.)

Legal Research, Writing and Editing:

Partner in CALLEROS & GORDON, LEGAL WRITING CONSULTANTS, which directs legal writing programs at
Streich, Lang, Weeks & Cardon, 100 West Washington Street, Phoenix, Arizona 85001;
Evans, Kitchel & Jenckes, P.C., 2600 North Central, Phoenix, Arizona 85004; and
O'Connor, Cavanagh, Anderson, Westover, Killingsworth & Beshears, 3003 North Central, Phoenix, Arizona 85012.

Participated in review and editing of
E.A. Farnsworth, Contracts (1982)(treatise).

Assisted in Research for
D. Fessler & P. Loiseaux, Contracts: Morality, Economics and the Marketplace (1982)(casebook); and
H. Edwards, R. Clark & C. Craver, Labor Relations Law in the Public Sector (1979)(casebook).

Quasi-Judicial Experience:

Chair, A.S.U. Board on Equal Opportunity--
Chair rules on procedural motions and objections; presides over hearings; examines witnesses; leads Board in factfinding and in formulation of conclusions and recommendations to President of University; drafts opinion of the Board.

PUBLICATIONS and OTHER PRESENTATIONS

Calleros, Title VII and Rule 52(a): Standards of Appellate Review in Disparate Treatment Cases--Limiting the Reach of Pullman-Standard v. Swint, 58 Tulane L. Rev. 403 (1983).

Calleros, Reconciling the Goals of Federalism with the Policy of Title VII: Subject-matter Jurisdiction in Judicial Enforcement of EEOC Conciliation Agreements (accepted for publication in Hofstra L. Rev.).

Legal Writing in Litigation - The Effective Brief, The Enlightening Judicial Opinion, Speech to A.S.U. Alum ni (Cot. 19, 1984).

PROFESSIONAL AFFILIATIONS

Admissions to Practice

California State Bar
Arizona State Bar
United States Court of Appeals for the Ninth Circuit
United States District Courts for the Northern District of California and the District of Arizona

Other Associations

Board of Governors of Society of American Law Teachers
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REFERENCES

Alan A. Matheson, former Dean of the College of Law, Arizona State University, Tempe, Arizona 85287. (602) 965-6181.

Circuit Judge Procter Hug, Jr., United States Court of Appeals, 50 W. Liberty St., Suite 600, Reno, Nevada 89501. (702) 784-5631.

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ARIZONA LEGISLATIVE COUNCIL

MEMO

December 26, 1984

TO: Douglas R. Norton, Auditor General

FROM: Arizona Legislative Council

RE: Request for Research and Statutory Interpretation (O-85-3)

This memo is sent in response to a request made on your behalf by William Thomson in a memo dated December 17, 1984.

FIRST FACT SITUATION:

Arizona Revised Statutes (A.R.S.) section 41-1651 established the corrections fund and allowed the state department of corrections (DOC) to begin a $72,000,000 construction program aimed at building facilities for 2,412 new prison beds. In order to complete the construction program, DOC hired a firm to act as project manager for these projects. The project management contract was advertised and selected under the professional and outside services statutes, A.R.S. section 41-1051 et seq.

QUESTIONS PRESENTED:

1. Did the state department of corrections use the proper method of awarding the project manager contract when it used the professional and outside services statutes?

2. Do the statutes clearly indicate what types of contracts should be selected under professional and outside services statutes and what types should be selected based on competitive bidding requirements?

ANSWERS:

1. Yes.

2. No.

DISCUSSION:

A.R.S. section 41-730 requires that state budget unit purchases of more than five thousand dollars for "suppplies, materials, equipment, risk management services, insurance and contractual services" be based on competitive, sealed bids. A.R.S. section 41-1051 et seq. establishes proposal request procedures for state budget unit contracts of more than five thousand dollars for "outside professional services". Neither "contractual services" nor "outside professional services" is defined in the statutes.

The initial question is whether the hiring of the project manager by DOC was for contractual services or professional services. There is no case law clearly indicating which statute is applicable to this situation.[1] A review of attorney general opinions and related statutory language shows that the project manager contract was correctly advertised and awarded by a request for proposals under the outside professional services sections (A.R.S. section 41-1051 et seq.).

In Maryland Casualty Co. v. Crazy Water Company, 160 S.W. 2d 102 (Tex. Civ. App. 1942), "profession" is defined as follows:

> (A) vocation, calling, occupation or employment involving labor, skill, education, special knowledge and compensation or profit, but the labor and skill involved is predominately mental or intellectual, rather than physical or manual, the education or special knowledge involved is characterized by its use for others as distinguished from self and the profits are dependent mainly upon the personal qualification of the person by whom it is carried on.

Attorney General Opinion 75-9 (1975) determined that DOC must use the professional services statutes for obtaining the services of doctors, certified psychologists, registered nurses, certified public accountants, certified academic teachers, county guidance centers and professional counselors and treatment agencies. However, the opinion also states that "/a/ determination of which statutory section controls is difficult and depends on a number of considerations and, therefore, can only be decided on a case by case basis." A licensed collection agency has been found not to be "outside professional services" (I79 Op. Att'y. Gen. 281 (1979)) whereas court reporting services have been found to be "professional" (I79 Op. Att'y. Gen. 131 (1979)).

The determining feature in distinguishing professional services from contractual services appears to be whether the services contracted for are based on professionally demonstrated qualifications. It is instructive to note that A.R.S. section 41-730, enacted in 1972, deals with "purchases" and contains language such as "items to be purchased", "price" and "conformity to specification". In determining legislative intent, it has been stated that the meaning that naturally attaches to the words used and best harmonizes with the context should be adopted. State v. Miller, 100 Ariz. 288, 413 P. 2d 757 (1966). The language used in section 41-730 would indicate the supplying of items and services relating to those items.

A.R.S. section 41-1051 et seq. relating to professional services was added in 1973, a year after section 41-730, and Laws 1973, chapter 149, section 1 states:

> The purpose of this act is to prescribe requirements for the selection of outside professional services by any department, agency, board, commission or institution of the state and to provide for contracts for such services on the basis of demonstrated competence and qualification for the type of professional services required and at fair and reasonable prices. (Emphasis added.)

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1 The distinction between "professional services" and "contractual services" will no longer be an issue after January 1, 1985, due to the repeal of A.R.S. sections 41-730 and 41-1051 and the enactment of the Arizona procurement code, which should resolve many of the conflicts raised in this opinion.

This language indicates that the services contracted for are more of a personal nature requiring some special or unique expertise, education or experience. Nothing in the language of section 41-1051 et seq. limits such services to the traditional professions of medicine, law, teaching, etc.

An analysis of the DOC request for proposals in this case indicates that a professional service requiring specialized expertise and experience was requested. The definition of "project manager" in the request for proposals states that:

> The Project Manager represents the Owner's best interest in both design and construction phases of a project. He assists the owner in Architect selection, site evaluations, program development, and overall budget and schedule preparation. In later phases of a project, the Project Manager utilizes his skill and knowledge of general contracting to develop schedules; prepare project construction estimates; analyze alternative designs; study labor conditions; advise on construction techniques; perform value engineering; and coordinate and communicate the activities of the Project Team throughout the design and construction phases. The Project Manager assures that the project meets State statutes and is executed in a timely and efficient manner.

This appears to be the type of service contemplated by the "professional services" language of A.R.S. section 41-1051 et seq.

SECOND FACT SITUATION:

This fact situation is applicable only if the project manager selection was appropriately completed under the professional and outside services requirements.

The professional and outside services statutes include a provision that the request for proposal shall include "/a/ firm or estimated time schedule including dates for . . . /c/ompletion of work." (A.R.S. section 41-1052, paragraph 2, subdivision (e)). The request for proposal (RFP) used by the state department of corrections for the project manager of the $72,000,000 program included the following information:

The state department of corrections has been appropriated $72,000,000 effective July 1, 1984 for the construction of the following (2,412 beds) by July 1, 1988.

The proposals should include (at minimum) a detailed schedule indicating anticipated dates for all major events for each project.

The appropriateness of the project manager selection has been questioned because the state department of corrections received bids from different proposers for project periods as short as 19 months and as long as 39 months.

QUESTIONS PRESENTED:

1. Did the state department of corrections comply with A.R.S. section 41-1052, paragraph 2, subdivision (e) by not clearly including in the RFP a firm or estimated time schedule including dates for completion of work?

2. If the state department of corrections did not comply with A.R.S. section 41-1052, paragraph 2, subdivision (e), has the project manager contract been awarded improperly by the state department of corrections?

ANSWERS:

1. Yes.

2. Not applicable based on answer number 1.

DISCUSSION:

The applicable language of A.R.S. section 41-1052 provides that:

> A state budget unit desiring to contract for services under the provisions of this article shall issue a request for proposals containing but not limited to:
>
> * * *
>
> 2. The information which is to be made publicly available concerning each project under consideration and the manner in which such information shall be made available to interested persons. Such information shall, as applicable, include but not be limited to:
>
> * * *
>
> (e) A firm or estimated time schedule including dates for:
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> * * *
>
> (iv) Completion of work.

It is clear that the original DOC request for proposals contained an overall date for completion of the work. The date was July 1, 1988. However, the statutory language also calls for a "firm or estimated time schedule". An addendum to the request for proposals appeared on May 2, 1984 and provides:

ESTIMATED PROJECT ALLOCATIONS

AND COMPLETION DATES

Location	Cost	Completion Date
Arizona Correctional Training Center - Tucson	$22,521,000	July 1986
Arizona State Prison	$31,314,000	September 1987
Winslow		
Medium	$ 9,807,000	January 1987
Minimum	$ 1,500,000	January 1986
Conservation Ctr.	$ 2,195,000	January 1986
Yuma		
Minimum	$ 1,879,000	January 1986
Conservation Ctr.	$ 2,684,000	February 1986
	$72,000,000	

The question is whether this constitutes a "firm or estimated time schedule." Webster's Third New International Dictionary 2028 (1976) defines schedule as a "timetable" or "to appoint, assign, or designate for a fixed time." A.R.S. section 41-1052 does not require a time schedule for stages in the completion of the project. The dates in the request for proposals for completion of the various portions of the DOC construction projects appear to meet the statutory guidelines.

CONCLUSION:

The state department of corrections has complied with both the requirement of requesting proposals for outside professional services under A.R.S. section 41-1051 et seq. and the estimated time schedule requirements of A.R.S. section 41-1052 in implementing the contract for a project manager under the fact situation as presented.

cc: William Thomson, Manager
Performance Audit Division

ARIZONA LEGISLATIVE COUNCIL

MEMO

January 4, 1985

TO: Douglas R. Norton, Auditor General

FROM: Arizona Legislative Council

RE: Request for Research and Statutory Interpretation (O-85-4)

This memo is sent in response to a request made on your behalf by William Thomson in a memo dated December 27, 1984.

FACT SITUATION:

Arizona Revised Statutes section 41-1624 establishes the Arizona correctional (ARCOR) enterprises revolving fund to be used to pay for certain, specific expenses. For one construction project,* the state department of corrections (DOC) had ARCOR enterprises purchase materials and supplies through the ARCOR revolving fund by transferring project funds into the revolving fund to either fund payments or reimburse the revolving fund if the funds monies were used for purchases.

QUESTIONS PRESENTED:

1. Do the statutes clearly indicate that the revolving fund is for use only by ARCOR enterprises to purchase (or lease) goods for ARCOR enterprises use or in the production of items to be sold by ARCOR enterprises?

2. Did ARCOR and DOC improperly use the ARCOR revolving fund by having ARCOR purchase and pay for prison construction materials and supplies?

ANSWERS:

1. Yes.

2. Yes.

DISCUSSION:

A.R.S. section 41-1624 entitled "ARCOR enterprises revolving fund" provides that the director of DOC may establish a revolving fund from monies received or derived from correctional enterprises to pay the following expenses:

> 1. For the purchase of materials and supplies to be used for the production of food and other items to be sold by the department's ARCOR enterprises.

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*Contact with your office subsequent to the original request for statutory interpretation has indicated that the project for which the ARCOR revolving fund was used was the construction of the east unit of the Arizona state prison and was unrelated to ARCOR enterprises.

2. For the compensation of prisoners and ARCOR enterprises professional and outside services. No state appropriated funds may be utilized for payment of prisoner wages or benefits.

3. For the purchase or rental of equipment to be used by the department's ARCOR enterprises.

4. For the construction or reconstruction of facilities recommended pursuant to section 41-1623.01, subsection D.

5. For other operating expenses and in-state travel.

Subsection A, paragraphs 1, 2 and 3 specifically limit the use of the fund to ARCOR enterprises. Paragraphs 4 and 5 do not mention ARCOR, but when they are read in the context of the other correctional enterprises statutes, it is clear that these paragraphs are also limited to the expenditure of monies for ARCOR enterprises.

A.R.S. section 41-1623.01, subsection D, referred to in subsection A, paragraph 4, states that the ARCOR enterprises board shall "/r/esearch, investigate and recommend policies . . . regarding the . . . construction, reconstruction and leasing of facilities. . . ." Although the execution of these policies is delegated by the board to the director of DOC, the director's powers are specifically limited in this context to establishing, regulating, operating and terminating ARCOR enterprises. A.R.S. section 41-1623. Further, the director's powers in regard to construction, reconstruction or lease of buildings under A.R.S. title 41, chapter 11, article 3 (Arizona correctional enterprises) is limited to establishing and operating a factory or other commercial enterprise for the production of items. A.R.S. section 41-1623, subsection D. Nothing in article 3 appears to authorize the use of the ARCOR fund for purposes other than the enhancement of correctional enterprises.

A similar conclusion is reached in examining A.R.S. section 41-1624, subsection A, paragraph 5. The courts have held that, in determining the intent of the legislature, the meaning that naturally attaches to the words used and best harmonizes with the context should be adopted. State v. Miller, 100 Ariz. 288 (1966). If the legislature had intended to allow the use of the ARCOR revolving fund for prison construction as "other operating expenses" it is unlikely that it would have been done in this context.

CONCLUSION:

When examined in relationship to the other ARCOR enterprises statutes, it is clear that the use of the ARCOR revolving fund for prison construction unrelated to ARCOR is not authorized by A.R.S. section 41-1624. The fund is for the production of ARCOR products, the compensation of prisoners employed in ARCOR enterprises and related ARCOR expenses.

cc: William Thomson, Manager
Performance Audit Division