Judicial Council of California
ADMINISTRATIVE OFFICE OF THE COURTS

455 Golden Gate Avenue • San Francisco, California 94102-3688
Telephone 415-865-4200 • Fax 415-865-4205 • TDD 415-865-4272

TANI G. CANTIL-SAKAUYE
Chief Justice of California
Chair of the Judicial Council

STEVEN JAHR
Administrative Director of the Courts

June 30, 2014

Hon. Hannah-Beth Jackson
Chair, Senate Judiciary Committee
State Capitol, Room 2187
Sacramento, California 95814

Hon. Loni Hancock
Chair, Senate Budget and Fiscal Review
Subcommittee #5
State Capitol, Room 5019
Sacramento, California 95814

Hon. Bob Wieckowski
Chair, Assembly Judiciary Committee
1020 N Street, Room 104
Sacramento, California 95814

Hon. Reginald Jones-Sawyer, Sr.
Chair, Assembly Budget Subcommittee #5
State Capitol, Room 6026
Sacramento, California 95814

Re: *Governor George Deukmejian Courthouse: Evaluation of Cost Effectiveness*, as required under Senate Bill 75 (Committee on Budget and Fiscal Review; Stats. 2013, ch. 31)

Dear Senator Jackson, Senator Hancock, Assembly Member Wieckowski, and Assembly Member Jones-Sawyer:

Attached is the Judicial Council report required under Senate Bill 75 on the cost-effectiveness of the Governor George Deukmejian Courthouse.

If you have any questions related to this report, please contact Ms. Kelly Quinn, Assistant Director, AOC Business and Planning, Judicial Branch Capital Program Office, 818-558-3078, kelly.quinn@jud.ca.gov.

Very truly yours,

Steven Jahr
Administrative Director of the Courts

SJ/PM
Attachment
cc: Members of the Judicial Council
Diane F. Boyer-Vine, Legislative Counsel
Gregory P. Schmidt, Secretary of the Senate
E. Dotson Wilson, Chief Clerk of the Assembly
Margie Estrada, Policy Consultant, Office of Senate President pro Tempore Darrell Steinberg
Fredericka McGee, Deputy Chief of Staff/General Counsel, Office of Assembly Speaker, Toni G. Atkins
Anita Lee, Fiscal & Policy Analyst, Legislative Analyst's Office
Tina McGee, Executive Secretary, Legislative Analyst's Office
Greg Rogers, Asst. Program Budget Manager, Department of Finance
Madelynn McClain, Program Budget Analyst, Department of Finance
Jason Haas, Program Budget Analyst, Department of Finance
Peggy Collins, Principal Consultant, Joint Legislative Budget Committee
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Matt Osterli, Consultant, Senate Republican Fiscal Office
Marvin Deon, Consultant, Assembly Budget Committee
Allan Cooper, Consultant, Assembly Republican Fiscal Office
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Chuck Nicol, Principal Consultant, Assembly Appropriations Committee
Benjamin Palmer, Chief Counsel, Senate Judiciary Committee
Mike Petersen, Consultant, Senate Republican Policy Office
Drew Liebert, Chief Counsel, Assembly Judiciary Committee
Paul Dress, Consultant, Assembly Republican Policy Office
Curtis L. Child, Chief Operating Officer, Administrative Office of the Courts (AOC) Judicial and Court Operations Services Division
Cory T. Jasperson, Director, AOC Office of Governmental Affairs (OGA)

William J. Guerin, Director, AOC Judicial Branch Capital Program Office (JBCPO)
Kelly Quinn, Assistant Director for Business and Planning, AOC JBCPO
Peter Allen, Senior Manager, AOC Office of Communications
Kristine Metzker, Manager of Planning, AOC JBCPO
Clifford Ham, Principal Architect, AOC JBCPO
Teresa Ruano, Supervising Communications Specialist, AOC Office of Communications
Yvette Casillas-Sarcos, Administrative Coordinator, AOC OGA

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Report title: *Governor George Deukmejian Courthouse: Evaluation of Cost Effectiveness*

Statutory citation: Senate Bill 75 (Stats. 2013, ch. 31) Code section: Multiple[1]

Date of report: June 30, 2014

The Judicial Council/Administrative Office of the Courts has submitted a report to the Legislature in accordance with Sen. Bill 75 (Stats. 2013, ch. 31).

The following summary of the report is provided under the requirements of Government Code section 9795.

Senate Bill 75, enacted June 27, 2013, requires the Judicial Council to assess and compare the Governor George Deukmejian Courthouse in Long Beach, a performance-based infrastructure project, with three other court construction projects delivered using traditional procurement methods to address whether the PBI approach for the project was cost-effective compared to the traditional approach for the other projects. Although this report provides information on three other projects, the most valuable comparison is to the San Bernardino Justice Center, which is of a similar quality and scale, with 35 courtrooms. The two other completed projects examined—the Richard E. Arnason Justice Center in Pittsburg and the South County Justice Center in Porterville—are the next largest of the new courthouse projects completed by the judicial branch and have only 7 and 9 courtrooms, respectively.

[1] An act to amend section 116.232 of the Code of Civil Procedure, to amend sections 12419.10, 68086, 68502.5, 68511.7, 70628, and 77203 of, and to add section 68502.6 to, the Government Code; to amend sections 1203.2, 1229, 1230, 1231, 1232, 1233, 1233.1, 1233.15, 1233.2, 1233.3, 1233.4, 1233.6, 1233.61, and 3000.08 of, and to repeal section 1233.8 of, the Penal Code; to amend, repeal, and add section 19210 of the Public Contract Code; and to amend section 903.45 of the Welfare and Institutions Code, relating to courts, and making an appropriation therefor, to take effect immediately, bill related to the budget.

The evaluation of cost-effectiveness is based on a comparison of the following key features of the Governor George Deukmejian Courthouse project and the San Bernardino Justice Center comparator project, which was delivered using the construction manager at risk method:

1. Project schedules
2. Construction costs
3. Design and construction processes
4. Judicial branch project management costs
5. Risk allocation and transfer
6. Operating costs

The report is composed of the main body in 54 pages, including a 4-page executive summary, followed by four appendixes in 36 pages, for a total of 90 pages, and covers approximately $773 million of total project cost.

The full report can be accessed here: *www.courts.ca.gov/7466.htm*. A printed copy of the report may be obtained by calling 415-865-4900.

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ADMINISTRATIVE OFFICE OF THE COURTS

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Administrative Director of the Courts
and Secretary of the Judicial Council

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Administrative Director of the Courts

Curtis L. Child
Chief Operating Officer
JUDICIAL AND COURT OPERATIONS SERVICES DIVISION

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE
William J. Guerin
Director

Kelly Quinn
Assistant Director, Business and Planning Services

Kristine Metzker, RA
Manager, Planning

Paul R. Menard, AIA
Senior Facilities Planner
Primary Author of Report

Governor George Deukmejian Courthouse: Evaluation of Cost-Effectiveness

REPORT TO THE CALIFORNIA LEGISLATURE
AS REQUIRED BY SENATE BILL 75
(STATS. 2013, CH. 31)
JUNE 2014

APPROVED BY THE JUDICIAL COUNCIL:
JUNE 27, 2014

ADMINISTRATIVE OFFICE
OF THE COURTS

JUDICIAL AND COURT OPERATIONS
SERVICES DIVISION

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE

Table of Contents

Executive Summary

Purpose of Report

Senate Bill 75 (Committee on Budget and Fiscal Review; Stats. 2013, ch. 31) requires the Judicial Council to assess and compare the Governor George Deukmejian Courthouse in Long Beach, a performance-based infrastructure (PBI) project, with three other court construction projects delivered using traditional procurement methods to address whether the PBI approach for the project was cost-effective compared to the traditional approach on other projects. Although this report provides information on three other projects, the most valuable comparison is to the San Bernardino Justice Center, which is of a similar quality and scale, with 35 courtrooms. The two other completed projects examined—the Richard E. Arnason Justice Center, in Pittsburg, and the South County Justice Center, in Porterville—are the next largest of the new courthouse projects completed by the judicial branch and have only 7 and 9 courtrooms, respectively.

Key Findings Summary

Schedule

The Governor George Deukmejian Courthouse was designed and constructed nearly two years faster than the San Bernardino Justice Center for two main reasons. First, the design-build (DB) delivery method used as part of the PBI process allowed for design and construction phases to overlap. In addition, construction activities were fast-tracked.[1] The Administrative Office of the Courts' (AOC's) traditional construction manager at risk[2] (CMR) delivery method, which was used by the AOC on the three comparator projects, requires sequential approvals of preliminary design, working drawings, bidding, and construction phases, taking more time to complete than fast-track DB. Second, PBI uses readily available private financing, which is not subject to the timing of state bond sales, which drive the construction start date for state-financed construction projects and can produce delays. The San Bernardino Justice Center construction start was delayed by nine months because of a cancelled bond sale.

Construction Cost

The AOC delivered all four new courthouses under budget, saving the state over $71 million. The hard construction costs of the Governor George Deukmejian Courthouse and the San

[1] When the design and construction phases overlap rather than follow in sequence, the process is called fast-tracking. The overall project calendar is reduced by awarding construction contracts before design documentation is complete. The potential time savings and thus cost savings are offset by risks, which must be carefully considered and allocated by the parties.
[2] An overview of this procurement approach is included in Appendix A.

Bernardino Justice Center are almost identical, with the Governor George Deukmejian Courthouse costing 0.15 percent more per square foot. Three factors add value to the Governor George Deukmejian Courthouse: (1) mechanical and electrical equipment configurations were designed to alleviate failure and avoid service payment deductions; (2) infrastructure was designed for future conversion of leased office space to six courtrooms; (3) and significantly more holding cells are included to accommodate future expansion in the number of courtrooms.

Project Delivery Method

The two methods used to develop the four projects studied, PBI for the Governor George Deukmejian Courthouse and CMR for the other three projects, valued and supported collaboration throughout the design, construction, and operations transition processes, resulting in projects with predictable budget management and minimal change orders related to coordination of documents. Each method relied on competitive procurement with multiple proposers.

Application of the *California Trial Court Facilities Standards*

The Judicial Council's *California Trial Court Facilities Standards* (the Standards) were applied to each project and resulted in new courthouses of predictable quality, function, and cost irrespective of delivery method. The four subject projects align favorably with the target ranges in the Standards for square feet per courtroom, floor area efficiency factors, and volume-to-area ratio.

Judicial Branch Project Management Costs

Project management for courthouse capital projects is provided by the AOC's Judicial Branch Capital Program Office, primarily by AOC employees and sometimes with assistance from outside firms. For the four projects reviewed in this report, judicial branch project management costs accounted for 1.69 percent of the total aggregate project costs or 1.89 percent of the hard construction costs.[3]

Implementation of the Project Agreement

The project company for the Governor George Deukmejian Courthouse, Long Beach Judicial Partners (LBJP), carried out the project agreement effectively and met all of its requirements concerning schedule, design and construction processes, change orders, and quality control.

Value for Money Assumptions

The assumptions about site, timing, and capital costs of the Governor George Deukmejian Courthouse, as defined in the project's final Value for Money (VfM) analysis, dated January 24,

[3] Throughout this report, project management costs are calculated for the development phase of the projects, through occupancy only.

2011, were valid.[4] The assumptions about project risks were also valid, with no additional costs passed to the AOC in excess of the original allocation. The successful refinancing in December 2013 indicates that the financing assumptions were also valid. It is too early in the service period to make definitive assessments of operating costs and revenues.

Operation and Maintenance

The project agreement for the Governor George Deukmejian Courthouse requires the project company to operate and maintain the new courthouse for 35 years and then return it to state ownership in a specified condition[5] and requires that the project payments to the project company be reduced if these terms are not met. The project company, not the AOC, has assumed the risk of operating and maintaining this facility to a high level for the 35-year duration of the project agreement. Because the San Bernardino Courthouse opened in May 2014 and the Governor George Deukmejian Courthouse has been operating for less than one year, a comparison of actual operating and maintenance costs cannot be provided in this report.

Organization and Use of This Report

This report contains this executive summary, a chapter that provides more detail on the cost-effectiveness of the Governor George Deukmejian Courthouse compared to the San Bernardino Justice Center, and four project-specific chapters. The project-specific chapters, 2 through 5, provide key findings and the four categories of information specified in SB 75 for each project. Appendix A contains the text of SB 75 section 27 and definitions of terms used in this report. Appendix B describes the methodology used to normalize construction costs. Appendix C provides the detailed risk table for the Governor George Deukmejian Courthouse. Appendix D describes the methodology used to calculate judicial branch project management costs.

Sources of Information

Information in this report came from the following documents: the annual state Budget Act, agendas and meeting minutes of the State Public Works Board (SPWB) and the Judicial Council, written authorization from the California Department of Finance (DOF) to proceed or encumber funds, correspondence between the AOC's Judicial Branch Capital Program Office (JBCPO) and the DOF, Capital-Outlay Budget Change Proposals (COBCPs), monthly progress reports

[4] This analysis is a comparison of the risk-adjusted whole-life-cycle cost of the project procured as a PBI compared with the risk-adjusted whole life-cycle cost of the project as if it was were procured as a design-bid-build (DBB), which is the public sector comparator (PSC). The comparison is done on a net present value (NPV) basis to facilitate a consistent comparison of costs because the costs to the state occur at different points in time under each procurement option. The NPV of each of the procurement methods is compared to determine which would provide the best value to the State.

[5] The project agreement specifies a facility condition index of 0.15.

completed by the JBCPO project managers, correspondence between the JBCPO and the local courts, interviews with the JBCPO project managers, interviews with staff of the AOC Office of Real Estate and Facilities Management (OREFM), and interviews with key members of the project company.

Chapter 1
Comparative Assessment of Cost-Effectiveness: Governor George Deukmejian Courthouse and San Bernardino Justice Center

Introduction

The most useful comparison for the purpose of this report is to compare the Governor George Deukmejian Courthouse to the San Bernardino Justice Center, which are of a similar quality and size and were built in similar construction markets at roughly the same time. This report presents both quantitative and qualitative factors to determine cost-effectiveness. Table 1.1 presents a summary of key aspects of cost-effectiveness for the Governor George Deukmejian Courthouse and the San Bernardino Justice Center.

Table 1.1
Summary of Comparative Assessment of Cost-Effectiveness

	George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA
Courtrooms	31	35
Court Area (PGSF)	416,000	383,745
Delivery Method	PBI	CMR
Project schedule		
Overall duration[6]	51 months	74 months
Construction[7]	28 months	38 months
Construction costs[8]	$279,280,431	$257,233,486
Hard construction costs per square foot	$671	$670
Risk transfer and allocation[9]	Highly Favorable	Moderately Favorable
Operating Cost	Operating less than one year	Operating less than one year

PGSF = program gross square feet

[6] Release of Governor George Deukmejian Courthouse request for proposals corresponds with the start of the Preliminary Plans phase on CMR projects.
[7] The schedule for the Governor George Deukmejian Courthouse was driven by incentives to receive revenues, which was achievable only upon occupancy.
[8] Hard construction costs spent to date, adjusted for unique features, time, location, and market conditions.
[9] For the San Bernardino Justice Center, the AOC retained all realized major risks and retains future major risks.

Cost-Effectiveness Comparison

The evaluation of cost effectiveness presented below is based on a comparison of the following key features of the Governor George Deukmejian Courthouse project and the San Bernardino Justice Center comparator project, which was delivered using the CMR method:

1. Project schedules
2. Construction costs
3. Design and construction processes
4. Judicial branch project management costs
5. Risk allocation and transfer
6. Operating costs

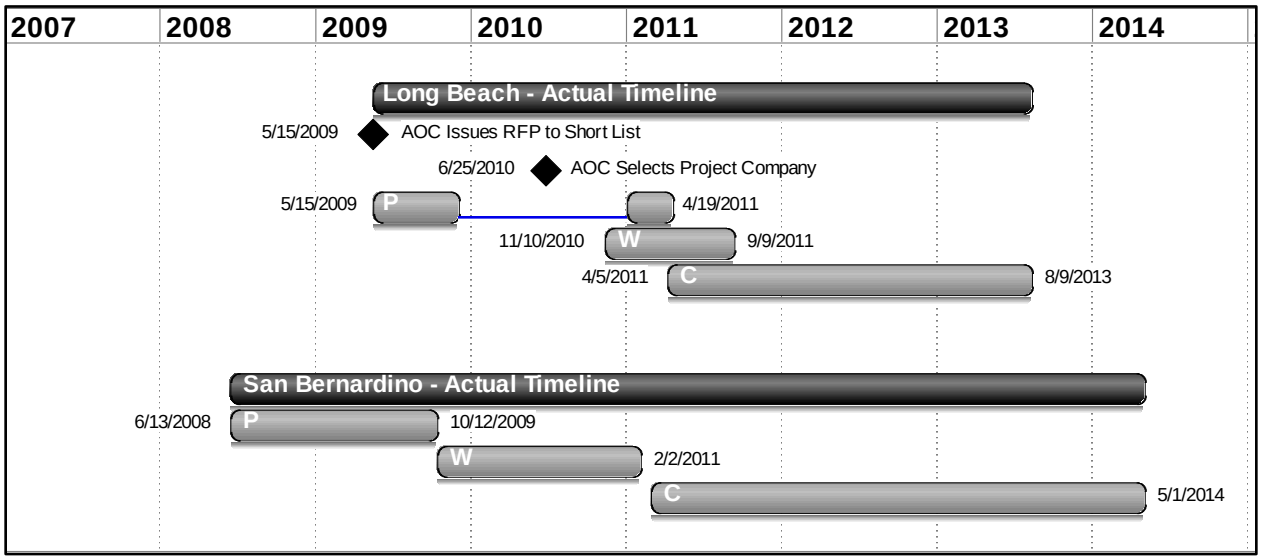
Project Schedules

The Governor George Deukmejian Courthouse was designed and constructed 23 months faster than the San Bernardino Justice Center for two main reasons: first, the DB delivery used within the PBI process allowed for design, approvals, and construction phases to overlap or be fast-tracked. The AOC's traditional CMR delivery method, which was used by the AOC on the San Bernardino Justice Center, requires sequential approvals of Preliminary Plans, Working Drawings, bidding, and Construction phases, taking more time to complete than fast-track DB. Second, PBI used private financing, which was readily available and not subject to the timing of state bond sales that drive the construction start date for state-financed construction projects and can result in delays. The San Bernardino Justice Center construction start was delayed by nine months as a result of a cancelled bond sale. One of the benefits of PBI is that private financing is not subject to twice-per-year bond issuances, which currently affect the schedules of all courthouse capital projects that rely on bond sales to finance construction. With PBI, risk of this type of schedule delay is entirely eliminated.

This analysis considers the starting point for the Governor George Deukmejian Courthouse project as the release date of the request for proposals (RFP), when the design process for the three short-listed proposers and thus for the successful proposer actually began. By comparison, the starting point for the San Bernardino Justice Center is considered to be the start of the Preliminary Plans phase, as shown in the actual timeline (see figure 1.1, Project Timeline Comparisons).[10]

[10] The timelines begin with the start of design because SB 75, section 27(f)(2) requests the timeline information "…for each phase of design and construction ….". Time required for site acquisition and procurement of design services is not included in the project timelines.

Figure 1.1
Project Timeline Comparisons



P = Preliminary Plans phase; W = Working Drawings phase; C = Construction phase.

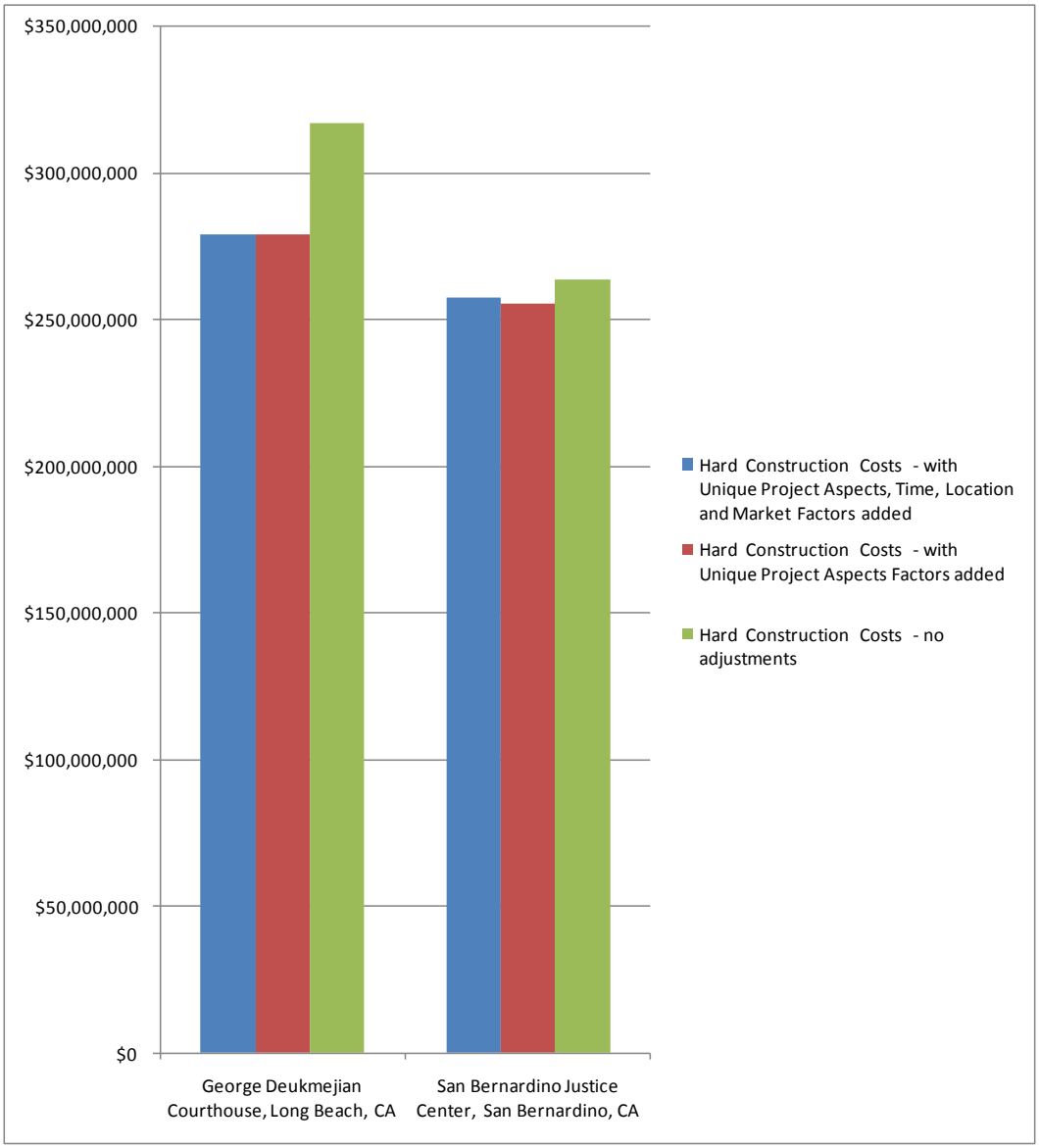
Construction Costs

To provide a meaningful comparison, the AOC adjusted construction costs for both the Governor George Deukmejian Courthouse and the San Bernardino Justice Center to account for differences in unique project features, time, location, and market conditions. See Appendix B for the detailed financial comparison methodology used in this report. Final fully adjusted hard construction costs are shown in table 1.2 and figure 1.2 below.

Table 1.2
Summary of Adjustments for Time, Location, and Market Factors

		George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA
A	Adjusted hard construction cost	$279,280,431	$255,617,772
B	Time factor	1.000	1.065
C	Location factor	1.000	1.000
D	Market factor	1.000	0.945
E	Combined factor (BxCxD=E)	1.000	1.007
F	Total adjustment (AxE=F)	$0	$1,615,714
G	Adjusted hard construction cost normalized for time, location and market (A+F=G)	$279,280,431	$257,233,486

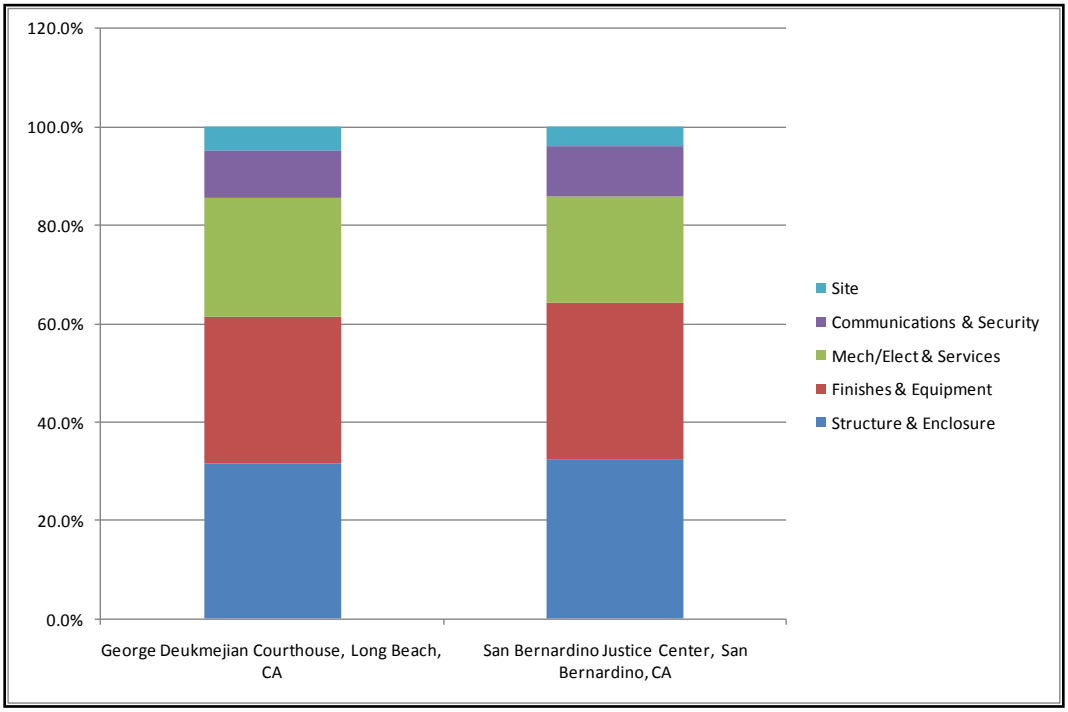
Figure 1.2
Summary of Hard Construction Costs With All Adjustment Factors Applied



Even though the per-square-foot hard construction costs for the Governor George Deukmejian Courthouse and the San Bernardino Justice Center are nearly identical, three factors add value to the Governor George Deukmejian Courthouse: (1) mechanical and electrical equipment configurations were designed to alleviate failure and avoid service payment deductions; (2) infrastructure was designed for future conversion of leased office space to six courtrooms; and (3) significantly more holding cells are included to accommodate future expansion in the number of courtrooms.

The portion of costs allocated to five major building elements is very consistent for both projects. See figure 1.3 below.

Figure 1.3
Allocation of Adjusted Subcontractor Costs by Major Building Elements



Design and Construction Processes

The PBI approach maximizes partnership and collaboration in the design, construction, and operations process. A focus on predictable operations and maintenance over the building lifespan is an inherent quality of the PBI approach and is required because the project company not only must base its design on the needs of the public agency, but is also accountable to meet standards of maintenance, repair, and replacement over an extended period of time. This approach requires maximum collaboration and accountability and demonstrates cost-effectiveness by meeting long-term operations and management obligations over the 35-year term of the project agreement.

The CMR approach to design and construction is considered more effective than less collaborative forms of procurement. The partnership created by preconstruction involvement of the CMR in the design process has been identified as a significant driver for cost-effectiveness because of increased predictability and greater accountability. This process also allows for significant operator input (the AOC representing the *operator* in terms of daily building management and long-term obligations), which is likely to result in reduced long-term operations and maintenance costs.

To ensure competitive construction procurement, a sufficient number of interested and qualified firms must submit proposals on the work. A reasonable industry standard for the minimum number of qualified proposals to produce an acceptably competitive procurement is three for the PBI process and four for the CMR process. The lower industry standard for the PBI process is because PBI proposals are proportionately more expensive for the proposers to produce and for the owner to evaluate. The AOC obtained three qualified proposals for the Governor George Deukmejian Courthouse (PBI), with the proposers selected from a field of 12 firms that submitted qualifications, and four qualified proposals for the San Bernardino Justice Center (CMR), with the proposers selected from a field of 6 firms that submitted qualifications.

The design process for all new courthouses recently completed or now in design and construction in California—regardless of delivery method—is informed by design standards, including sustainability requirements, and complies with applicable codes and ordinances. In April 2006, the Judicial Council adopted the *California Trial Court Facilities Standards,* which are applied to all projects managed by the judicial branch. These Standards promote buildings that have long-term value and attempt to maximize value to the State of California by balancing the aesthetic, functional, and security requirements of courthouse design with the budget realities of initial construction cost and the long-term life-cycle costs of owning and operating institutional buildings. Application of the Standards provides uniform and predictable quality, functionality, and cost.

The Standards require that all new courthouse projects be designed for sustainability and, at a minimum, to the standards of a Leadership in Energy and Environmental Design (LEED™) 2.1 "Certified" rating. Depending on the project's program needs and construction cost budget, projects may be required to meet the standards for a LEED™ 2.2 "Silver" rating. The sustainability levels achieved for the projects are shown in table 1.3 below.

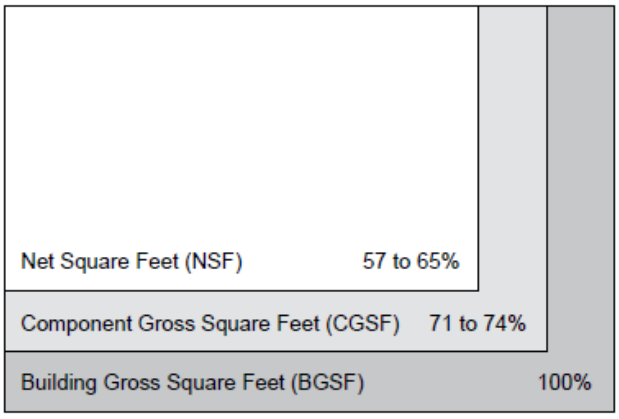
Table 1.3
Achieved Sustainability Levels

Project Name	Sustainability Level Achieved	Certified by U.S. Green Building Council?
Governor George Deukmejian Courthouse	LEED™ Silver	Submitted
San Bernardino Justice Center	LEED™ Silver	Submitted

LEED™ = Leadership in Energy and Environmental Design, a program of the U.S. Green Building Council.

The Standards establish targets for area efficiency factors, relative building volume ratios, and building area per courtroom. Figure 1.4 below illustrates the relationships between net square feet, component gross square feet, and building gross square feet and the resulting target efficiency factors.

Figure 1.4
Courthouse Efficiency Factors



The relative building volume ratio is the result of dividing the building volume (cubic feet) by the building gross square feet, with a target range of 14–16. The target range for building area per courtroom is 9,000 to 14,000 building gross square feet. Table 1.4, below, shows that the subject projects are within the ranges stated in the Standards, with the following exceptions.

The reasons for the building volume ratio of 19 for the Governor George Deukmejian Courthouse are the floor-to-floor heights of 20 feet in the basement and 17.5 feet in the rest of the building, in addition to the multistory public lobby. The height in the basement is required for access by the large vehicles used by the sheriff for in-custody transport. The floor-to-floor heights in the rest of the building were set by the DB team to facilitate the construction operations and future maintenance.

The net and component gross square feet efficiency factors are slightly below the target range in the San Bernardino Justice Center. The variance is in the range of 3 to 5 percent.

Table 1.4
Courthouse Efficiency Table

			Target Ranges From the Standards	George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA
	Court-only space				
A	*Number of courtrooms*			31	36
B	*Net square feet*			251,049	208,483
C	*Component gross square feet*			309,106	264,313
D	*Building gross square feet (court only)*			416,000	383,745
E	*Building gross square feet per courtroom*	(D÷A=E)	9,000 to 14,000	13,419	10,660
	Noncourt space				
F	*Net square feet*			69,400	0
G	*Component gross square feet*			85,450	0
H	*Building gross square feet*			115,000	0
	Entire building				
I	*Total net square feet*	(B+F=I)		320,449	208,483
J	*Net square feet efficiency factor*	(I÷P=J)	57% to 65%	60%	54%
K	*Component gross square feet factor*	(L÷I=K)	1.09 to 1.30*	1.23	1.27
L	*Total component gross square feet*	(C+G=L)		394,556	264,313
M	*Component gross square feet efficiency factor*	(L÷P=M)	71% to 74%	74%	69%
O	*Overall grossing factor*	(P÷L=O)	1.35 to 1.41*	1.35	1.45
P	*Total building gross square feet (court and noncourt)*	(D+H=P)		531,000	383,745
Q	*Building volume (cubic feet)*			10,271,814	6,205,559
R	*Building volume ratio*	(Q÷P=R)	14 to 16	19	16

**Ranges for grossing factors are not stated in the Standards. These grossing factor ranges correspond to the efficiency factor ranges from the Standards.*

Judicial Branch Project Management Costs

As shown in table 1.5 below, the project management costs for the Governor George Deukmejian Courthouse and the San Bernardino Justice Center accounted for 1.48 percent of the total aggregate project costs, or 1.63 percent of the hard construction costs. The project management costs for each project are very similar but a slightly higher percentage for the Governor George Deukmejian Courthouse because of the resources required to create the project agreement. See the Judicial Branch Project Management Costs table in the project-specific

chapters, 2–5, for more detail and Appendix D for a detailed explanation of the methodology used to estimate these costs.

Table 1.5
Judicial Branch Project Management Costs

Project Name/Delivery Method	Employee[11]+ Consultant[12] Costs	Percentage of Project Costs	Percentage of Construction Costs	Total Project Costs	Construction Contract Amount
Governor George Deukmejian Courthouse/PBI[13]	$5,378,754	1.55%	1.70%	$346,725,495	$317,158,517
San Bernardino Justice Center/CMR[14]	$4,095,649	1.39%	1.55%	$295,098,492	$263,644,613
Totals and Averages	$9,474,403	1.48%	1.63%	$641,823,987	$580,803,130

Risk Allocation and Transfer

In the case of the Governor George Deukmejian Courthouse Project, the risks allocated to the project company include those for design, construction, and operations. By contrast, the CMR held risks related only to construction of the San Bernardino Justice Center.

The project company managed its risks exclusively, and the AOC had neither the ability nor the contractual right to track the actual impacts or how they were managed. The project agreement provided adequate commercial protection for both parties, and both parties were responsible to manage their individual internal risks. The project company was wholly responsible for the cost of any such risk that they retained, and no additional costs were passed to the AOC in excess of those that were originally allocated.

In this PBI, a significantly greater proportion of risk was transferred to the project company than was transferred and held by the CMR in the San Bernardino Justice Center. In either procurement approach, bidders quantify their retained risks and build the cost into their bid price. Transferring more risk to the contractor therefore requires the AOC to indirectly fund more risks, whether or not they occur. When risks are transferred, the AOC benefits because the contractor is responsible for any cost in excess of the cost included in the bid. This method also removes the uncertainty of the risks' impacts, which can be substantial and potentially in excess of available AOC funds. In the case of the Governor George Deukmejian Courthouse, cost-effectiveness was achieved not just through greater risk transfer than under the CMR delivery model, but because of the nature and magnitude of the risks transferred. Certain significant risks—such as schedule,

[11] Includes project manager, associate project manager, planner, real estate analyst construction inspector, and all AOC employee positions that support capital project delivery.
[12] Includes outside firms providing project management.
[13] Performance-based infrastructure.
[14] Construction manager at risk.

design review, unforeseen conditions in the renovation of the existing parking structure, parking revenue, and landlord revenue risk for the noncourt space—were in fact realized and absorbed by the project company. Going forward, the project company is responsible for all ongoing maintenance and life-cycle risk. In the PBI delivery method, both the ongoing operating parameters and the condition of the facility at hand-back are defined in the contract, and therefore adequate funding must be provided for operation and maintenance. Transferring these risks is beneficial to the AOC over the long term. See table 1.6 for a summary of project-risk responsibilities and Appendix C for a complete analysis matrix of project risks associated with the Governor George Deukmejian Courthouse.

Table 1.6
Risk Allocation Table

Risk	George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA
Financial security of manufacturers and major subcontractors	LBJP	CMR
Subsurface conditions	LBJP/AOC	AOC
Utility relocation	LBJP/AOC	AOC
Change in law/code	LBJP	AOC
Plan check/permitting uncertainty	LBJP	CMR/AOC
Insurance	LBJP	CMR
County fees	LBJP	AOC
Off-site improvements	LBJP	CMR
Commissioning	LBJP	AOC
Punch list	LBJP	CMR/AOC
Landlord risk	LBJP	N/A
Parking revenue risk	LBJP	N/A
Labor disputes	LBJP	CMR
Post-occupancy AOC involvement	AOC	AOC
Future expansion	LBJP	AOC
Subcontractor cost overruns	LBJP	CMR
Post-warranty work	LBJP	AOC
Life-cycle and maintenance (building degradation)	LBJP	AOC

LBJP[15]/CMR/AOC = Risk Retained by LBJP/CMR/AOC

[15] Long Beach Judicial Partners, the project company.

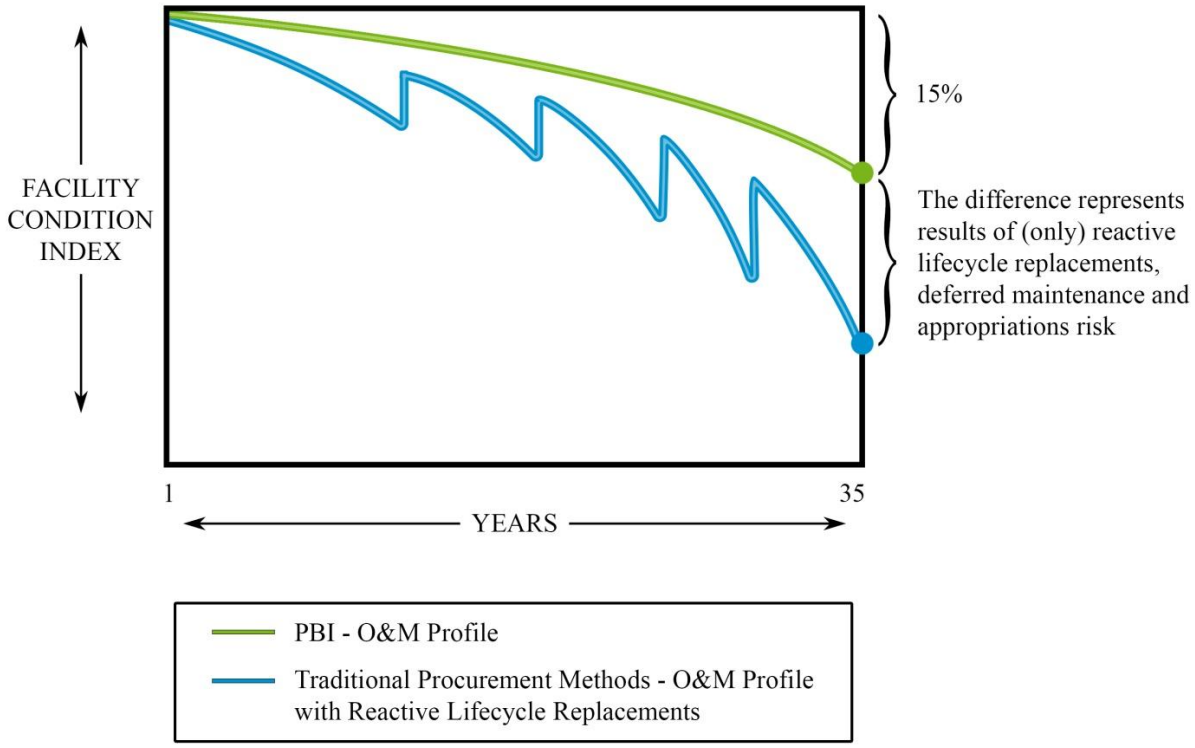
Operating Costs

The project company, not the AOC, has assumed the risk of operating and maintaining the Governor George Deukmejian Courthouse to a specified level for the 35-year duration of the project agreement.[16] This is, in fact, a key feature of the PBI delivery method. Because the San Bernardino Courthouse recently opened and the Governor George Deukmejian Courthouse has been operating for less than one year, a comparison of actual operating and maintenance costs cannot be provided in this report. Future operating-cost obligations are identifiable as part of the Governor George Deukmejian Courthouse service payments; however, the San Bernardino Justice Center opened in May 2014 and has not been in operation long enough to provide any actual cost data.

The AOC retains full cost responsibility under CMR delivery for building life-cycle and ongoing maintenance of the San Bernardino Justice Center. Although the AOC budget requests for routine operation and maintenance are based on comparable facility condition index standards as required for the Governor George Deukmejian Courthouse, such requests are subject to appropriations risk. Furthermore, life-cycle replacements are not included in these annual budget requests but are addressed reactively. By comparison, the Governor George Deukmejian Courthouse is subject to performance and availability requirements, enforced over time through use of the contractually delineated deduction mechanism in which service payments are reduced due to nonperformance. This commercial requirement eliminates appropriations risk and guarantees a level of quality higher than that which can be reasonably expected under the CMR delivery method. The impact of this funding disparity can be seen in Figure 1.5 below, which illustrates how reactive and fluctuating life-cycle investment results in a higher rate of facility condition index degradation over time than does investment under the PBI approach.

[16] The project agreement specifies a facility condition index of 0.15.

Figure 1.5
Effect of Continuous Investment in a Facility Under PBI and Traditional Procurement Methods on Facility Condition Index



Chapter 2
Governor George Deukmejian Courthouse, Long Beach

Project Background

The old Long Beach Courthouse was functionally and physically deficient, ranking among the worst in the State in terms of security and overcrowding. The building was outdated, overcrowded, not able to meet the State's current needs—and therefore incapable of meeting the region's growing demand for court services.[17]

The Governor George Deukmejian Courthouse project was procured under a public-private-partnership delivery method, also referred to as performance-based infrastructure, or PBI, whereby the new courthouse is governed by a long-term agreement between the project company and the AOC. Under this project agreement, the project company is responsible for designing, building, financing, commissioning, operating, and maintaining the new courthouse.

Project Description

The Governor George Deukmejian Courthouse is located at 275 Magnolia Avenue, Long Beach, a six-acre site one block northwest of the previous courthouse. The project site was acquired under a property exchange agreement with the City of Long Beach Redevelopment Agency.[18]

The five-story building houses 31 courtrooms, as well as court administration offices, Los Angeles County judicial agency lease space, and retail leasable space. The building includes below-grade detention facilities and separate secure parking for judges. A five-level, open atrium, enclosed on the two exterior perimeters by a cable-supported glass curtain wall system, serves as the single entry point for all building occupants and provides access to a secured exterior courtyard. Clad in a deeply articulated curtain wall and elements of stone, the project spans two city blocks in downtown Long Beach. In addition to constructing the new building, the project team also renovated and expanded an existing 399,000-square-foot parking structure built in 1974. The courthouse was designed to qualify for the LEED™ Silver certification by the U.S. Green Building Council.

[17] Although an option to renovate and expand the existing facility was considered, it was determined to be infeasible due to the age, physical condition, and functional issues present in the existing courthouse. To address the major functional issues, a complete gutting and renovation would have been required. Furthermore, the temporary relocation of the entire court staff and judicial officers during construction would have been prohibitively expensive.
[18] The agreement executed in September 17, 2009, exchanged existing court building property of approximately three3 acres was for the approximately six-6 acre building site plus a payment of $7 million from the City. The existing parking structure, owned by the State, was not a part of the property exchange agreement.

Design of the new facility is consistent with the Standards, with a scale that is compatible to, and consistent with, nearby office buildings. To manage pedestrian traffic and security, the only public entrance is located near the corner of Magnolia and West Broadway, near the pedestrian entrance to the parking garage.

Security features include:

1. A secured below-ground sally port, enabling sheriff's deputies to drive into and park as many as three prisoner buses in a secured area to transfer in-custody detainees into and out of the courthouse;

2. Electronic security systems for door control, video surveillance, and personal attack alarms throughout the building and site;

3. Separate hallways, exit stairs, and elevators for the public, staff, and in-custody detainees; and

4. Between each pair of courtrooms, seven holding cells that allow separation of different classifications of in-custody detainees for the benefit of improved efficiency and safety of sheriff's deputies.

Project Facts

Location:	275 Magnolia Avenue, Long Beach, California
Capacity:	31 courtrooms, with space for future expansion in 416,000 square feet of court space, plus 115,000 square feet of noncourt lease space, for a total area of 531,000 square feet
Project cost:	$346.7 million for all project costs; $317.2 million for construction (unadjusted)
Funded by:	State Court Facilities Construction Fund (SCFCF) and Trial Court Facilities Act of 2002 (Sen. Bill 1732), which established a revenue source of court user fees for judicial branch courthouse projects
Architect:	AECOM Design
Contractor:	Clark Design/Build of California
Timeline:	Originally funded in fiscal year (FY) 2007–2008; construction start in April 2011, occupancy in September 2013, and final completion in December 2013
More information:	*http://www.courts.ca.gov/facilities-la-longbeach.htm#ad-image-0*

Description of the Project Company

The project agreement was signed between the AOC and the project company, Long Beach Judicial Partners, a single-entity company wholly owned by Meridiam Infrastructure, established specifically as a special-purpose vehicle (SPV) to design, build, finance, operate, and maintain the project. The project company is a consortium of companies made up of Meridiam, Edgemoor Infrastructure & Real Estate, AECOM, Clark Construction, and Johnson Controls Inc. (JCI). For a full description of the project company, please refer to the following webpage: *www.courts.ca.gov/documents/fact_sheet_lbjp.pdf*.

Description of Design-Build Implementation of the Project Agreement

The primary obligations of the project company relating to its full responsibility for design and construction are defined in the project agreement.[19] The responsibilities for design and construction were passed down by the project company to Clark using the design-build agreement. As the design-builder, Clark was responsible for all design and construction obligations as defined in the design-build agreement. These provisions of the project agreement were transferred directly to Clark, as is common in such contracts. Therefore, as the design-builder,[20] Clark became responsible for all project company obligations as defined by the project agreement. Hence, references in this report to *project agreement* and *design-build agreement obligations* and the *project company* and *design-builder* are intended to be the same. AECOM undertook the primary responsibility for design, as Clark's subcontractor. Various other specialty subcontractors were also employed by the design-builder.

In accordance with the requirements of the project agreement, the performance of the project company was overseen by the independent building expert (IBE), TMAD Taylor Gaines (TTG). The IBE monitored and reported on the performance of the project company from the date of notice to proceed in December 2010 to occupancy in September 2013 and final completion of the construction in December 2013.

A project labor agreement (PLA) was used for the Governor George Deukmejian Courthouse. The PLA is dated December 9, 2011, and was executed by Clark, the Los Angeles/Orange Counties Building and Construction Trades Council, and all applicable subcontractors and local unions. Article I, paragraph A of this PLA states: "The purpose of this Agreement is to insure that all work on this Project shall proceed continuously and without interruption."

[19] Article 7: Design and Construction; Article 8: Occupancy Readiness; Appendix 1: Site Related Information; Appendix 2: Governmental Approvals; Appendix 3: Performance Standards; Appendix 4: Design-Build Work Review Procedures; and Appendix 5: Project Commissioning.
[20] Although the project company includes Clark as one of its entities, it is useful to refer to Clark separately as the design-builder in evaluating the design-build process within the overall PBI process.

Below is a summary of the IBE's performance evaluation of the design-builder—and therefore, effectively, of the project company—in its execution of the project agreement's requirements.

Summary of Design-Builder Performance

The performance of the design-builder was measured against criteria agreed to by the AOC, the superior court, the project company, and the IBE. The following general topics were monitored:

1. Summary of construction schedule
2. Design review process
3. Design meetings and reports
4. Design quality management
5. Quality of materials and work
6. Project change orders
7. Correction of deficiencies and unsatisfactory work
8. Testing results

Summary of Construction Schedule

The project schedule that was agreed to and is memorialized in the financial closing documents included the construction duration of 28 months, from April 2011 to August 2013. This period also included the design phase and approvals for code-related items by the authorities having jurisdiction. Design, bidding, and construction phases overlapped, and even though construction commenced in April 2011, the final design activities were completed in March 2012. The design-builder applied a proactive approach using a carefully developed system of phased design approvals and bid package releases that allowed early start on construction elements. Major equipment and materials with long lead times were procured early to keep the project on schedule. This is a key aspect of any DB project, resulting in a compressed design and construction schedule.

Both the design and the construction teams were adequately resourced with skilled personnel to achieve the required results of the contract and meet the project schedule. The number of construction workers increased from an initial 200 to more than 400 as work progressed to ensure that all key scheduled milestones were met.

Design Review Process

An efficient and systematic process was put in place by the design-builder to comply with the design review procedure specified in the project agreement. A two-tiered review process was established, with the initial-tier tasks to be performed by the DB team and the second-tier tasks by the IBE, the operator JCI, other project company members, the AOC, the Superior Court of Los Angeles County, and other stakeholders. A tracking system was used for all comments, and interaction between parties happened daily. Regular design development sessions were held to

complete outstanding design issues. The process complied with the intention of the project agreement.

Design Meetings and Reports

The design-builder held weekly design meetings and workshops with representatives of the key stakeholders to discuss and resolve design options and issues. The design-builder's monthly progress report included a section on design status, activities completed, action items, and deviations from standards. This report was useful in recording and managing the design information and progress.

Quality Management

The project agreement required the project company to appoint a certified quality management consultant to develop a design-build quality management plan. The need for compliance with the plan and quality procedures had a positive effect on the design effort as well as the subsequent construction and associated construction inspections.

Quality of Materials and Work

A systematic quality management approach, developed by the project team, ensured that quality of work and materials were monitored and met high standards. Any identified problems were quickly remedied. One example involved poor quality of work on the stripping and marking of parking stalls, and the subcontractor was immediately removed and replaced. Another example involved the parking structure, where a quality-control check to confirm drainage was overlooked. Testing demonstrated that the performance for the drainage did not meet requirements, resulting in additional work and cost for the design-builder. Because this check happened early in the construction process, the lessons learned were applied by the design-builder into the quality checks for the rest of construction, and when there was any doubt, such as in underground waterproofing, the design-builder undertook rework at its own cost. Another example of quality control was the construction of one complete courtroom before fabrication or installation on site, not for design purposes but to check the quality of work and to resolve conflicting details. The five-month process undertaken by the design-builder allowed the actual in-building construction to proceed with few quality problems.

Project Change Orders

Due to the long-term nature of and the allocation of risks in the project agreement, the change order process was somewhat complex, because many change orders also needed to address downstream operations. Nevertheless, the parties managed the change order process with transparency.

The contract financial model included an allowance of $10 million for owner- (AOC-) directed design change orders. At the end of the construction period, $4,296,000 had been spent, primarily on fulfilling changes to the 2007–2008 performance requirements necessitated by

changes in superior court operations, additional sheriff's requirements, and new technology standards.

Correction of Deficiencies and Unsatisfactory Work

For a project of this size and complexity, some deficiencies and noncompliant work are inevitable. However, the design-builder's quality management system, the oversight and monitoring by the IBE, and inspections and observations by other team members ensured that everyone worked closely to identify, rectify, and close-out deficiencies and unsatisfactory work quality as quickly and practically as possible.

Testing Results

Testing procedures were strictly enforced. Testing showed the work to be of very high quality, with results being well within generally accepted construction industry tolerances. The consistently excellent test results indicate high-quality construction management and a collaborative team of subcontractors.

Article 7 Obligations

In addition to the project company/design-builder's performance on the general criteria described above, the performance of the design-builder was also evaluated with reference to the specific requirements and obligations specified in article 7 of the project agreement. Performances relating to the following sections of article 7 were evaluated:

1. Section 7.1: Design-builder performance;
2. Section 7.2: Access to and suitability of the sites;
3. Section 7.6: Governmental approvals;
4. Section 7.13: Construction monitoring, observations, testing, and uncovering of work;
5. Section 7.15: Correction of work;
6. Section 7.16: Furniture, fixtures, and equipment (FF&E);
7. Section 7.17: Warranties;
8. Section 7.19: Commissioning; and
9. Section 7.21: LEED™ NC silver certification.

Design-builder performance. The project agreement obligated the design-builder to be responsible for practically all aspects of design and construction on behalf of the project company. Overall, the design-builder complied with the requirements of the project agreement. A significant importance was placed on the design review process. Changes to design and deviations were recorded and tracked. The design process was highly interactive and involved all team members.

Access to and suitability of the sites. Many of the access and suitability issues for the project sites—for the courthouse and the parking garage—were resolved in advance by the AOC, for

example during site selection, completion of the CEQA (California Environmental Quality Act) process, and completion of other studies before the execution of the project agreement. Under the project agreement, the design-builder was deemed to have visited the site and to be familiar with all site conditions. The design-builder managed this risk by taking initiative to ensure timely access and use of the courthouse site by proactively relocating utilities and having archaeologists on site during excavation and grading. Storage of materials on site was a challenge that the design-builder managed well.

Governmental approvals. The design-builder was responsible for obtaining all governmental-agency approvals. This activity was included in the form of milestones on the critical path of the project schedule. The design-builder developed and maintained positive relationships with the regulating agencies, which helped with timely approvals. Interaction by phone, weekly meetings, and site visits were used to identify and resolve issues, facilitating timely securing of permits. This proactive approach by the design-builder ensured that progress was maintained to meet the schedule.

Construction monitoring, observations, testing, and uncovering of work. The inspection regime on the project was rigorous and systematic. All parties (architect of record, IBE, inspector of record, engineer of record) cooperated and worked toward solutions to achieve compliance with the requirements of the project agreement. Any necessary corrective actions were implemented by the design-builder, mostly at no additional cost to the contract.

Correction of work. Overall, the correction of work complied with the project agreement as it related to design and construction. No notices to the contrary were issued. The request for information (RFI) process worked well, allowing the designer to respond promptly to requests from the construction team.

Furniture, Fixtures, and Equipment. During the early stages, problems were encountered with respect to coordinating the requirements for furniture and electronic equipment systems in the project agreement. However, with time the design-builder initiated improvement in the management of the FF&E process and made significant progress in selection of FF&E. One example was to use competitive bidding for procurement. Another was to enforce the use of mockups in the selection process. Despite initial difficulties, there was no impact on the schedule and only a minor impact on cost.

Warranties. A main priority of the design-builder was to ensure that all warranties for materials, equipment, and installation work were in place, documented, and filed. This process was managed efficiently by the quality-management team. Warranty requirements in the project agreement were reviewed by the team, which provided an additional confirmation level to identify and verify requirements for warranties.

Commissioning and LEED™ New Construction Silver certification. The project agreement and LEED™ certification requirements required the project company to develop and use a commissioning plan. The project company appointed CT Energetics as the commissioning agent. CT Energetics prepared the commissioning plan using the performance standards and LEED™ requirements for Silver Certification as the basis for the plan. The plan was reviewed by all stakeholders, which also included the operator, Johnson Controls, as well as the design-builder. Timely project registration was submitted to the U.S. Green Building Council, which is still reviewing the project documentation included in the final application. The project agreement includes a provision for $2 million in liquidated damages if the registration is not obtained.

Existing Parking Structure and Court Expansion Space

Two elements that were unique to the project related to the existing parking structure and the requirement for future courtroom expansion within the new court building. The design-builder complied with its obligations regarding these elements efficiently and professionally. Problems encountered during renovation of the parking structure resulted in additional costs to the design-builder, which it absorbed at no cost to the AOC. The project company and the design-builder met with the AOC and stakeholders to discuss the provisions for up to six additional courtrooms and to ensure that the initial construction met the related infrastructure requirements.[21] A state-financed project typically does not provide for future expansion space at the scale provided in this project.

Article 8 Obligations

The scheduled occupancy date of August 31, 2013, was stipulated in the project agreement as when the AOC service payment was to begin. Occupancy readiness[22] was achieved earlier, on August 20, 2013—11 days ahead of schedule—facilitated by management of punch list and closeout activities. For example, of the original 16,000 punch list items, 82 percent were closed out by occupancy readiness, and the rest were closed out in mid-December 2013. The project company was obligated by its lenders to begin payment of the capital costs on the occupancy date regardless of the readiness for occupancy by the AOC (superior court) on that date.

Construction-to-Occupancy Transition

The design-builder has provided a full-time employee for a period of one year following occupancy to address punch list and remaining construction issues. Similarly, the operator (JCI) provided five full-time employees six months before occupancy to smooth the transition to the operating period. This overlap and cooperation is a key differentiator between PBI and CMR in

[21] This infrastructure includes the structural, mechanical, electrical, and plumbing systems; elevators; and exit stairs all designed to handle six additional future courtrooms.

[22] Occupancy readiness is a contract requirement that sets requirements that must be met before final review and acceptance prior to occupancy.

terms of ease of resolving warranty-type issues and facilitating the transition from construction to operations.

Review of Value for Money (VfM) Analysis—Assumptions vs. Actual

SB 75, section 27(b), provides that this report contain as one of its elements the following:

> Comparison of the assumptions included in the project's final value for money analysis, which was submitted to the Legislature in a report dated January 24, 2011, to the project's actual costs to date as well as projected costs incurred under the life of the contract. The comparison shall address assumptions that were made about the project
>
> [¶] site,
> [¶] timing,
> [¶] capital and operating costs,
> [¶] financing and revenues, and
> [¶] project risks.
>
> [¶] The comparison shall describe, for each of the project risks that were identified in the Value for Money analysis, whether the risk was realized and if a cost was imposed on the project company or the Judicial Council as a result.

(Sen. Bill 75, § 27(b))

The objective of the VfM analysis was to compare the estimated risk-adjusted costs for a traditional method of procurement (the public sector comparator) against the estimated risk-adjusted costs under a PBI procurement method (referred to as the *shadow bid*). In the VfM analysis, assumptions were made to estimate the capital, management, operations, maintenance, and renewals and replacements costs over the 35-year life cycle of the project. The resultant quantitative and qualitative assessment of factors associated with the two delivery methods informed the decision making process regarding whether to proceed with the PBI delivery method.

In the final VfM analysis (January 2011), the original estimated shadow bid values were replaced by the actual values submitted and negotiated with the project company. The following factors, which fell into quantitative as well as qualitative categories, were considered in the VfM analysis:

1. Accelerated delivery of infrastructure, early start, and shorter construction duration;
2. Requirement of first payment only on occupancy or service commencement;

3. Optimization of legislative authority to construct expansion space and raise revenue;
4. Certainty of costs;
5. Level of service;
6. Risk transfer to the party best able to control and manage it; and
7. Risk-adjusted cost estimates appropriate to delivery method.

The approach taken by the AOC in carrying out the VfM analysis compares well with the practice elsewhere in the United States and internationally. Although not explicit in the VfM analysis, the CMR delivery method was understood to have been used as the traditional method for the PSC benchmark.

Table 2.1 contains a summary of the comparison of the VfM assumptions to the actual costs or projected costs over the life of the project.

Table 2.1
Summary of Governor George Deukmejian Courthouse VfM Analysis Validation

Item	Comments
Site	VfM assumptions validated.
Timing	VfM assumptions validated.
Capital Costs	VfM assumptions validated.
Operating Costs	Too early in the service period to make a definitive assessment.
Revenue	Too early in the service period to make a definitive assessment.
Financing	It appears from the successful refinancing that the VfM assumptions were valid.
Project Risks	Given that the project company was 100% responsible for the cost of any such risk that they retained, the assumptions made in the VfM analysis have proven accurate in that no additional costs were passed to the AOC in excess of what was originally allocated.

Site

Under PBI projects, owners often transfer a substantial portion of site acquisition risk to the private partner. However, for this project, the AOC was proactive in mitigating this risk. The project site was acquired by the state under a property exchange agreement with the City of Long Beach Redevelopment Agency. The existing courthouse property was exchanged for the new courthouse site and existing parking structure. The potential problems of site location, acquisition, and access were therefore removed before signing of the project agreement.

Initiative was taken by the project company to ensure access to the site by proactively relocating utilities and having archeologists on site during excavation and grading. Because the building occupies a large portion of the site, the storage of materials on site was a challenge. The project company addressed this challenge by using the exterior courtyard area at the northwest corner of

the site to house its construction office trailers and lay-down area for most of the construction period and by moving to nearby rented office space during the closeout period.

Many of the access and suitability issues were eliminated by the AOC during the site selection process and completion of the CEQA process and other studies, before start of construction and execution of the project agreement. These actions by the AOC provided a relatively issue-free environment during design and construction. The AOC's approach and assumptions with respect to the site were validated by what actually occurred.

The costs agreed to under the property exchange deal were as follows:

- City of Long Beach to pay $2 million to the project company for sewer and gas main relocation;

- City of Long Beach to pay $5 million to the project company for off-site public infrastructure improvements over 20 years commencing when the court starts using the new courthouse.

The actual cost to the design-builder of utility relocations exceeded $5 million, which the project company assumed. City requirements were greater than anticipated, and the telecommunication utilities on the existing site proved to take significant management effort and time to relocate The AOC bore no risk for additional time or costs to relocate the utilities, which would not have been true in a traditionally procured project.

Timing

Assumptions relating to project timeline or schedule are always a key factor in VfM analysis when comparing traditional procurement with the PBI method. The VfM analysis assumed that the PBI option, as compared to a traditional procurement, would result in a shorter construction period, leading to early occupancy. The assumed shorter construction period included an overlapping design phase.

Table 2.2 summarizes a comparison between the timing assumed in the VfM analysis and the actual timing for the project:

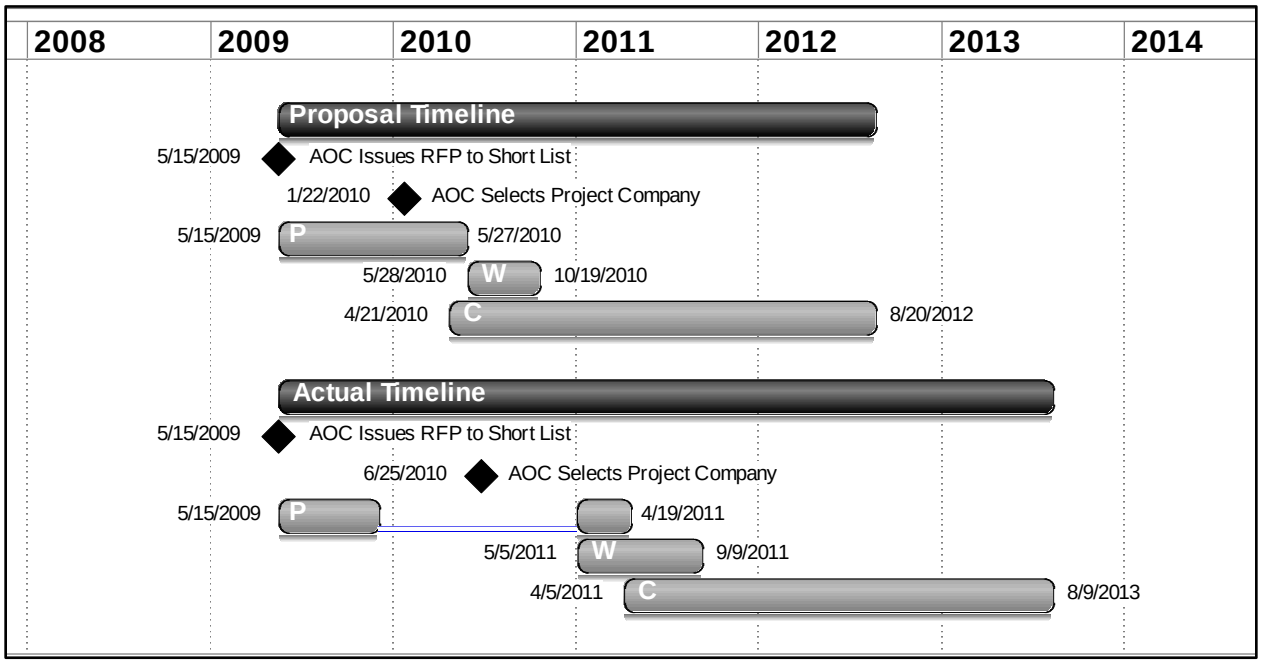
Table 2.2
Governor George Deukmejian Courthouse
VfM Analysis Assumption and Actual Timing

Event	Assumption	Actual
Planning and development commencement	1-Jul-2010	1-Jul-2010
Construction commencement	21-Apr-2010	5-Apr-2011
Construction duration	28 Months	28 Months
Occupancy date	1-Sep-2012	31-Aug-2013
Operations duration	35 Years	No Change
Contract expiration	31-Aug-2048	No Change

The timing assumptions regarding the construction duration were validated, and the court was able to occupy the new courthouse on schedule. The timeline can be seen graphically in figure 2.1.

A unique contract structure necessitated a protracted review and approval of the selected proposal, causing delays to the signing of the project agreement. Once the project agreement was signed, no delays ensued, and construction ended 11 days ahead of schedule. This achievement was the result of the overlapping of design, code review by agencies, and construction; procurement of structural steel and the elevator before completing the design and receiving all approvals; and selection of a building enclosure system that was rapidly erected and therefore minimized the risk of weather-related delay in completing interior construction.

Figure 2.1
Governor George Deukmejian Courthouse Timeline



P = Preliminary Plans phase; W = Working Drawings phase; C = Construction phase.

Capital Costs

The VfM assumptions for capital costs, risk-adjusted for the PBI option, were replaced by the actual and negotiated costs between the AOC and the project company. The VfM analysis therefore included the capital cost figure proposed by the project company. Table 2.3, below, summarizes the key assumptions for the capital costs included in the VfM final analysis—which is the basis for the financial agreement between the State and the project company—and the actual capital costs for the project at the end of the construction period.

Table 2.3
Governor George Deukmejian Courthouse
VfM Analysis Assumption and Actual Capital Costs

Capital Project Costs (nominal unless stated otherwise)	Assumption	Actual
1. Size of Facility (total nominal gross areas)		
a. Superior court facility	416,100 sq ft	416,100 sq ft
b. County justice agencies	73,900 sq ft	73,900 sq ft
c. Probation	31,400 sq ft	31,400 sq ft
d. Commercial	2,100 sq ft	2,100 sq ft
e. Retail	7,500 sq ft	7,500 sq ft
Total Size of Facility.....	531,000 sq ft	531,000 sq ft
2. Court Parking Facility (gross area)	399,052 sq ft	399,052 sq ft
3. Hard Construction Costs		
a. Court building	$ 231,783,520	$ 234,629,660
b. Office	24,920,543	23,249,943
c. Parking structure	8,695,409	8,319,628
d. Site work	13,420,931	13,766,172
e. FF&E	31,000,000	21,183,000
f. Tenant improvements[23]	2,286,082	w/FF&E
g. Contingency allowance – AOC changes	10,000,000	4,296,000
h. Insurances, bonds, and taxes	11,714,114	11,714,114
Subtotal Hard Construction Costs (Item 3).....	$ 333,820,599	$ 317,158,517
4. Other Costs		
a. Architecture and engineering	$ 20,545,933	$ 21,195,933
b. Site acquisition – county equity in existing court building	5,889,000	5,889,000
c. Art in architecture[24]	2,482,045	2,482,045
Subtotal Other Costs (Item 4)	$ 28,916,978	$ 29,566,978
Total Capital Project Costs.....	**$ 362,737,577**	**$ 346,725,495**
5. Fees and Transaction Costs (not included above)		
a. Required and recommended insurance	$ 2,034,684	$ 2,034,684
b. Compensation to unsuccessful proposers	1,000,000	1,000,000
c. Possessory tax (non-reimbursable)	300,000	300,000
d. Nonconstruction administration	10,215,588	10,215,588
e. Independent Building Expert	4,650,000	4,650,000
Subtotal Fees and Transaction Costs (Item 5)..	$ 18,200,272	$ 18,200,272
Total Capital Project Costs, including Fees and Transactions	**$ 380,937,849**	**$ 364,925,767**

[23] An additional $14.995 million was spent by the project company from a county-funded allowance for change orders related to the tenant improvements in the county lease space. This item was not contemplated in the VfM analysis.
[24] The Project Company initiated and provided the public art and will maintain it over the 35-year term of the project agreement.

A comparison of the costs assumed in the VfM analysis and the actual costs incurred in the construction of the Governor George Deukmejian Courthouse shows that the actual costs of the project were 4.4 percent lower than the VfM assumptions.

Operating Costs

The VfM assumptions for operating costs for the PBI option were replaced by the actual and negotiated costs between the AOC and the project company. The VfM analysis therefore included the operating-cost figure proposed by the project company, which is shown in table 2.4. A comparison to actual costs is unrealistic at this stage because the new courthouse has been occupied for less than one year.

Table 2.4
Governor George Deukmejian Courthouse
VfM Analysis Operating Cost Assumptions

Operating Period Cost Category (nominal unless stated otherwise)	Assumption
Facilities management costs:	
Building (per year)	$2,954,000
Parking (per year)	$627,000
Utility costs:	
Building (per year)	$725,000
Parking (per year)	not applicable
General & administration costs:	
Building (per year)	included above
Parking (per year)	not applicable
Tenant improvements for courtroom expansion – if exercised (actual cost over 35-year operating term)	$15,750,000
Annual insurance costs, included in general & administration costs above (per year)	$606,000
Life-cycle/major maintenance costs (actual cost over 35-year operating term)	$71,580,962

Table 2.5 shows the operating-charge portion of the service payments that have been made to date since occupancy, including deductions (one month in arrears):

Table 2.5
Governor George Deukmejian Courthouse
Service Payments and Deductions to Date

Payment Period	O&M Portion of Service Payment Made by AOC	Deduction
September 2013	$1,315,103	
October 2013	$1,305,279	$(9,824)
November 2013	$1,313,376	$(1,728)

Revenue Assumptions

To make a valid assessment of the accuracy of the revenue assumptions would be considered premature. However, both the City and the County payments are fixed in the project agreement and will not change. The revenue assumptions for county space, retail space, and parking fees have not changed. Table 2.6, below, summarizes the comparison between the VfM analysis assumptions regarding revenues and the payments made where known and disclosed, in relation to these assumptions.

Table 2.6
Governor George Deukmejian Courthouse
Payments in Relation to Revenue Assumptions

Period/Description	VfM Revenue Assumption for 35-Year Term of Project Agreement	Payments to Date Through April 2014
Payments by City of Long Beach to AOC		
Utility relocations	$2,000,000	$2,000,000
Public infrastructure improvements	$5,000,000[25]	$333,333
Payments by County for its share of parking structure renovation [26]	$10,907,000	$2,742,676
Other payments to the project company[27] (October 2013 to April 2014)		
County rental revenue	$110,149,000	$1,847,040
Retail rental revenue	$9,504,000	$40,611
Parking fee	$17,900,000	$110,113

The project agreement includes provisions whereby 50 percent of any revenue amounts that exceed those assumed in the financial model (and the VfM report) would be paid to the AOC. The project company carries the full risk of revenues not meeting forecasts. Consequently, the AOC will benefit if revenues are higher than assumed but will be unaffected if revenues fall below projections.

Financing Assumptions

The project agreement stipulates that the project may be refinanced at any time, with the AOC entitled to a share of any resulting gain, in accordance with section 6.5. This ability for the AOC to share in refinancing gain is a unique feature to PBI procurement in this case and occurred in December 2013. The refinancing provided long-term funding through a private placement bond purchased by insurance companies and pension funds. The resulting gain to the project company and the AOC was approximately $200,000, and the AOC's share was applied to reduce the annual service payment. In addition, the project company accepts the risk of any such refinancing and accepts that the AOC is fully insulated from any possible resulting losses. Table

[25] Amount to be paid over 20 years at $250,000 per year.
[26] In accordance with the project agreement, paragraph 13.4(b) and Appendix 16, the County of Los Angeles will contribute 24.74 percent of the capital cost of the parking structure and 24.74 percent of operating, maintenance, and management costs of the parking structure. These payments will be made by the AOC and reimbursed by the County under terms of the Joint Occupancy Agreement for the parking structure.
[27] The other payments to LBJP are estimated based on the VfM assumptions because they are considered commercially sensitive.

2.7 contains a comparison of the VfM analysis against the actual financial terms resulting from the recent refinance of the project company's debt.

Table 2.7
Governor George Deukmejian Courthouse
VfM Analysis Assumption and December 2013 Financing

Financing Structure Component	Assumption	Actual Based on December 2013 Refinance
Outline of equity/subordinated funding	Equity provided	Equity provided
Outline of senior funding	Short-term construction phase financing: taxable bank debt with assumed refinancing with a long-term project finance bank debt facility after 5 years	The bonds will be repaid over 34.1 years with the final repayment made 9 months before the project company finishes operating the Courthouse on behalf of the Administrative Office of the Courts.
Equity internal rate of return requirement	14.00% nominal	Equity internal rate of return postrefinancing is 14.48% nominal.
Term of short-term debt	7 years	Not applicable – the short term debt was repaid as a result of the refinancing.
Swapped London Interbank Offered Rate (LIBOR)	4.42%	
Swap margin	0.25%	
Interest rate credit spread (short-term financing)		The original bank loans were repaid on refinancing, and the spread on the refinance facility was fixed for the duration of the debt at 3.50%.
Construction to Sep-2013	2.75%	
From Sep-2013	3.25%	
From Sep-2016	3.50%	
From Sep-2017	3.75%	
"All in" bank debt interest rate (before refinancing)	7.42% - 8.42%	6.880%
Term of long-term debt	29 years	34.10
Type of debt	Bank	Bond
Interest rate/swap margin/credit spread on long term bank debt, if refinanced	4.42% + 0.25% +2.25% from December 2015	Bond spread was 3.50%
Investment rate on deposit balances	N/A	N/A
Debt to equity ratio target (at financial close)	90:10	93:7
Weighted average cost of capital	7.86%	7.42%

Project Risks

As part of its internal project management process and before retaining the project company, the AOC engaged Ernst & Young to facilitate the process to identify, rank, and determine the

probability of all potential risks related to the project. In general, the intent of this process was to quantify the potential financial impact of project risks if the project were procured under a PBI method and allow for a comparison of the same if the project were procured under other traditional procurement methods (CMR, in this case). The ultimate deliverable resulting from this effort was a document entitled "Risk Allocation Worksheet." Clarifying the purpose of this document is important, as is providing context for understanding the way in which it was applied. The risk management process contributed financial values to the VfM analysis, which provided a comparison between PBI and traditional procurement not only in relation to risks, but also regarding construction, development, finance, and operating costs.

Ernst & Young led the risk management process in a manner consistent with standard industry practice. The first step of this process was to facilitate a risk workshop that identified pertinent risks and their likelihood of occurring. These outcomes were then entered into probability risk management software, which calculated the anticipated financial impact of these risks being realized individually. The risks were categorized generally between (1) project budget; (2) design, bid, and construction; (3) maintenance and operation; and (4) finance and capital markets—each broken down into a specific level of detail. Based on this analysis, risks were allocated between the AOC and the project company that would eventually be awarded the contract. The financial impacts were calculated to demonstrate the importance and severity of certain risks so that the AOC could make an informed decision about whether to transfer those risks to the project company or retain them for internal management.[28]

Based on the project agreement, any risks allocated to the project company are theirs exclusively to manage, and the AOC has neither the ability nor the contractual right to track the actual impacts or how they were or will be managed. The project agreement provides adequate commercial protection for both parties, and both parties have agreed to let the other manage their individual, internal risks. This approach, notably, is featured in PBI projects executed globally.

The project company provided information regarding the most significant risks they faced throughout design and construction. With the exception of the risk that was priced into its bid and subsequently carried in the service payments, the project company was 100 percent responsible for the cost of any such risk that they retained. As such, the assumptions made in the VfM analysis have proven accurate in the sense that no additional costs were passed to the AOC in excess of those that were originally allocated.

[28] Such a risk identification and quantification process is often used on programs or projects as a way to calculate and manage project contingency amounts, but this was not the intent or ultimate use of this process.

The following list identifies and provides a brief description of the most significant of the risks that were realized during design and construction. Appendix C describes the risks in greater detail, identifies to whom the risks were allocated, and identifies the impacts and outcomes.

1. *Financial Security of Manufacturers and Major Subcontractors*. A major installation subcontractor went into bankruptcy during design. The project company accepted the risk of replacing them and managing any schedule implications.

2. *Subsurface Conditions*.[29] The project company performed extensive investigations to best manage the portions for which they were responsible. Any subsurface problems were managed effectively, and the project company was responsible for the costs associated with additional investigations.

3. *Utility Relocation*. The City of Long Beach contributed to the estimated cost of sewer and gas utility relocation, and the project company carried the risk of any costs, in addition to this contribution, that had not been built into the bid.

4. *Change in Law/Code*. The project company absorbed costs associated with the impact of changes to the California Building Code. Even though the project company sought relief from the AOC, the project agreement was structured adequately to hold the project company 100 percent liable. The project company is responsible for 2010–2025 code changes that would affect the use of expansion spaces as courtrooms.

5. *Plan Check/Permitting Uncertainty*. The project company was responsible for managing any delays in the approvals or permitting process, which they accomplished with no impact on project cost or schedule.

6. *Insurance*. The cost of insurance was significantly higher than anticipated. The project company absorbed all such overruns, with no financial impact on the AOC.

7. *County Fees*. The project company submitted its bid with the belief that it was exempt from county fees. This belief proved to be untrue, and the liability was passed down to the construction contractor, with no financial impact on the AOC.

8. *Off-site Improvements*. The project company claimed that the requirements for off-site improvements had increased postcontract but ultimately accepted the obligations and proceeded at its own expense.

[29] Subsurface conditions were a shared risk: hazardous materials and geotechnical risks were held by LBJP; cultural and archeological risks were held by the AOC.

9. *Commissioning*. The project company determined that the commissioning requirements of the project agreement were not adequately rigorous to meet the occupancy requirements and, hence, increased the scope at its own cost to mitigate the risk of not meeting the occupancy requirements.

10. *Punch List*. The independent building expert and its subcontractor exceeded their budgets because their efforts were far greater than anticipated. The project company ultimately settled with both contractors following completion of the process, with no financial impact to the AOC.

11. *Landlord Risk.* Actual rental revenues fell short of the project company projections because of difficulty negotiating leases with the County. The project company absorbed all shortfalls, shielding the AOC from financial risk.

12. *Parking Revenue*. Through its contract with a parking operator, the project company is liable for a fixed amount based on anticipated parking revenues. Despite competition from surrounding facilities, the project company accepts the risk of lost revenue, with no financial impact to the AOC.

13. *Labor Disputes*. The design-builder created a project labor agreement with all trades, at its own cost, to set rules for labor dispute recourse to mitigate potential negative impacts on schedule.

14. *Future Expansion*. The project company's design facilitates future expansion. The cost of modifying space designed to be leased to the county for future court expansion was built in to the service payment, but the AOC benefits from the likely efficiencies and reduction in future costs should expansion take place. The capacities and quality of the building systems for the expansion space, when converted for court use, are required to be the same capacities and quality as for initial court spaces.

15. *Subcontractor Cost Overruns*. The project company absorbed the cost of the architect of record's exceeding its original budget (the liability was passed to the design-builder), with no financial impact on the AOC.

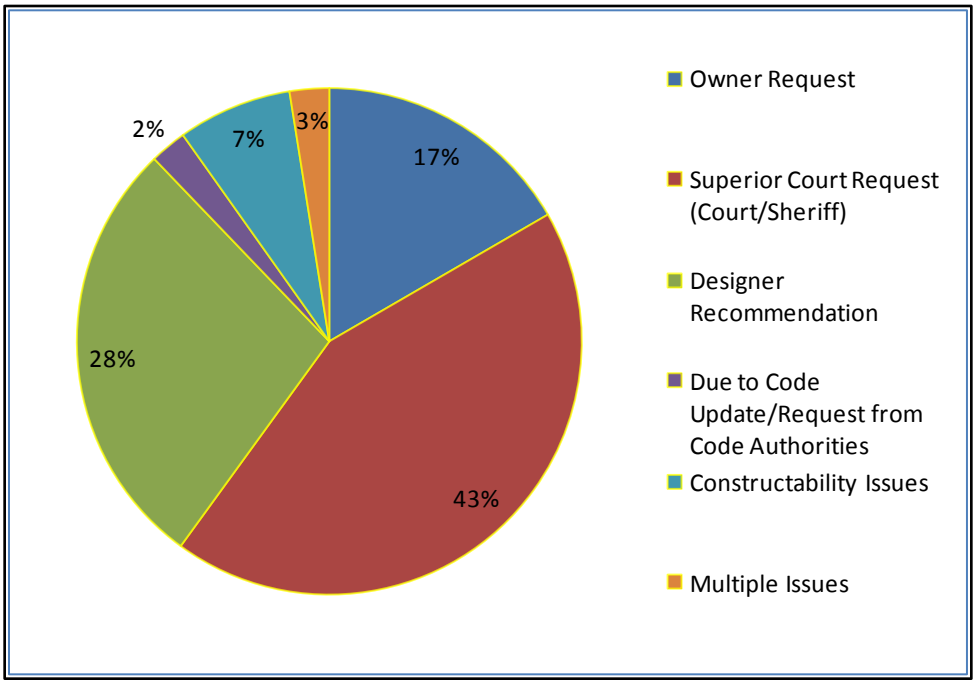
16. *Construction-to-Occupancy Transition*. The design-builder and operator established at their own cost a "cooperation agreement" that holds the construction contractor liable for post-warranty work for two years to mitigate the risk of payment deductions as a result of availability or performance problems due to construction defects.

17. *Life Cycle and Maintenance*. The project company is responsible to address any building degradation, through a maintenance and life-cycle replacement regime, to meet the quality standards laid out in the project agreement.

Changes to Scope, Budget, and Timeline

The project included 55 financial change orders, broken down as illustrated in figure 2.2.

Figure 2.2
Change-Order Summary



No changes were requested as a result of relief events, as specified in the project agreement.[30]

All the change orders initiated by the AOC were deducted from the $10 million allowance for changes that was built into the project construction budget, and the Los Angeles County request came from its budgeted allowance. The cost of remaining changes, including cost overruns in several areas of design or construction, was not passed to the AOC because the risk-transfer mechanism embodied in the project agreement shifted those costs to the project company.

[30] *Relief events* are events that would trigger relief from certain requirements of the project agreement. For example, an earthquake is an event that would allow relief from the agreed-upon construction schedule.

Project Management Costs

Judicial branch project management costs are presented in table 2.8 using the methodology presented in Appendix D. Judicial branch project management costs accounted for 1.55 percent of total cost, or 1.70 percent of the (court and noncourt) construction costs for this project.

Table 2.8
Governor George Deukmejian Courthouse—Judicial Branch Project Management Costs

Description	Acquisition	Preliminary Plans/Schematic Design	Financial Transaction	Preliminary Plans/Design Development	Working Drawings and Construction	Total
AOC employee costs	$1,517,005	$119,339	$209,367	$36,893	$378,197	$2,260,801
Consultant/contractor costs	$169,923	$81,463	$1,979,868	$299,953	$586,746	$3,117,953
Totals	$1,686,928	$200,802	$2,189,235	$336,846	$964,943	$5,378,754

Costs for Contractors

In this report, the costs for contractors are classified and calculated as shown in table 2.9, below. The sum of project contractor and construction contractor costs accounted for 97.6 percent of the total cost of this project. The separate cost of the construction contractor accounted for 91.5 percent of the total aggregate (court and noncourt) project costs.

Table 2.9
Governor George Deukmejian Courthouse—Costs for Contractors

	Acquisition	Design P+W	Construction	Total
Costs for project contractors[31] (excluding construction contractor)	$0	$21,195,933	$0	$21,195,933
Costs for construction contractor[32]	$0	$0	$317,158,517	$317,158,517
Other project costs	$5,889,000	$0	$2,482,045	$8,371,045
Total actual costs	$5,889,000	$21,195,933	$319,640,562	$346,725,495
Sum of project contractor and construction contractor costs as percentage of actual costs (all service providers and vendors)	0.0%	100.0%	99.3%	97.6%
Construction contractor costs as percentage of actual costs	0.0%	0.0%	99.3%	91.5%

[31] *Project contractors*—all service providers and vendors, excluding the construction contractor, with exceptions for the following costs: land purchase price; document review and construction inspection fees charged by the State Fire Marshal, the Division of the State Architect, and the Board of State and Community Corrections; local or regional development fees; and utility connection fees.
[32] *Construction contractor*—the general contractor responsible for constructing the project.

Chapter 3
San Bernardino Justice Center, San Bernardino

Project Description

The San Bernardino Justice Center is located on a 7.1-acre site at 247 West Third Street, directly across from the historic courthouse in downtown San Bernardino. The site for the new justice center was donated to the State by the City of San Bernardino and provides 385 onsite surface parking spaces for visitors, jurors, and staff. This new, seismically safe courthouse has 35 courtrooms plus two hearing rooms, consolidating court operations from nine existing facilities. This modern justice center provides adequate space for courtrooms, judicial support, court administration, facility support, security operations, and secure holding and sally port for in-custody detainees. The justice center serves the residents of the City of San Bernardino and the surrounding communities.

The new justice center is a seismically base isolated 11-story high-rise building with a partially exposed basement level. The architectural design incorporates several innovative features, including ways to draw daylight into the building without heat; reduced water usage in the building and onsite; and energy-efficient heating, ventilation, and air-conditioning systems. The building was designed to qualify for the LEED™ Silver certification by the U.S. Green Building Council.

Project Facts

Location:	247 West Third Street, San Bernardino, California
Capacity:	35 courtrooms plus 2 hearing rooms in 383,745 square feet
Project cost:	$295.1 million for all project costs; $263.6 million for construction (unadjusted)
Funded by:	SCFCF and SB 1732, which established a revenue source of court user fees for judicial branch courthouse projects
Architect:	Skidmore Owings and Merrill LLP
Contractor:	Rudolph and Sletten, Inc.
Timeline:	Originally funded in FY 2007–2008; construction began in November 2011 and was completed in May 2014
More information:	*http://www.courts.ca.gov/facilities-sanbernardino.htm*

Procurement Method

The CMR delivery method was used for this project. Four proposals were received from construction management firms.

Risk Allocation

As a CMR-delivered project, the San Bernardino Justice Center required the AOC to retain the risk of subsurface conditions, whereas this risk was allocated to the project company on the Governor George Deukmejian Courthouse project. In the case of the San Bernardino Justice Center, gas-laden soil was discovered, and the AOC was financially liable for its abatement. Under PBI delivery, the project company would have been responsible for this cost. The AOC also retained the risk associated with life cycle and maintenance, postwarranty work, and future expansion, each of which was transferred to the project company on the Governor George Deukmejian Courthouse project. Although these risks have not yet materialized, they are inevitable and represent typically significant value in terms of risk transfer under PBI procurement.

Project Costs

The AOC delivered this project for $44.7 million less than the final and original appropriation amounts. Project costs are identified in table 3.1.

Table 3.1
San Bernardino Justice Center—Appropriations and Project Costs

		Acquisition	Preliminary Plans	Working Drawings	Construction	Total
A	Original appropriation	$4,774,000	$13,035,000	$17,331,000	$304,682,000	$339,822,000
B	Final appropriation	$4,774,000	$13,035,000	$17,331,000	$304,682,000	$339,822,000
C	Actual expenditure[33]	$552,150	$8,029,288	$9,503,191	$277,013,863	$295,098,492
D	Increase or (savings) from original appropriation (C-A=D)	$(4,221,850)	$(5,005,712)	$(7,827,809)	$(27,668,137)	$(44,723,508)
E	Increase or (savings) from final appropriation (C-B=E)	$(4,221,850)	$(5,005,712)	$(7,827,809)	$(27,668,137)	$(44,723,508)

[33] This project is in the warranty period, and project costs are estimated as of April 2014.

Project Management Costs

Judicial branch project management costs are presented in table 3.2 using the methodology presented in Appendix D. Judicial Branch project management costs accounted for 1.39 percent of total cost, or 1.55 percent of hard construction cost for this project.

Table 3.2
San Bernardino Justice Center—Judicial Branch Project Management Costs

	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
AOC employee costs	$165,519	$213,439	$99,179	$892,072	$1,370,209
Consultant/contractor costs	$0	$0	$0	$2,725,440	$2,725,440
Totals	$165,519	$213,439	$99,179	$3,617,512	$4,095,649

Costs for Contractors by Activity

In this report, the costs for contractors are classified and calculated as shown in table 3.3. The sum of project contractor and construction contractor costs accounted for 99.0 percent of total cost of this project. The separate cost of the construction contractor accounted for 89.8 percent of the total aggregate project costs.

Table 3.3
San Bernardino Justice Center—Costs for Contractors

Description	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
Costs for project contractors[34] (excluding construction contractor)	$418,830	$7,513,788	$8,511,969	$10,541,760	$26,986,347
Costs for construction contractor[35]		$515,500	$945,628	$263,644,613	$265,105,741
Other project costs	$133,320		$45,594	$2,827,490	$3,006,404
Total actual costs	$552,150	$8,029,288	$9,503,191	$277,013,863	$295,098,492
Sum of project contractor and construction contractor costs as percentage of actual costs (all service providers and vendors)	75.9%	100.00%	99.5%	99.0%	99.0%
Construction contractor costs as percentage of actual costs	0.0%	6.4%	10.0%	95.2%	89.8%

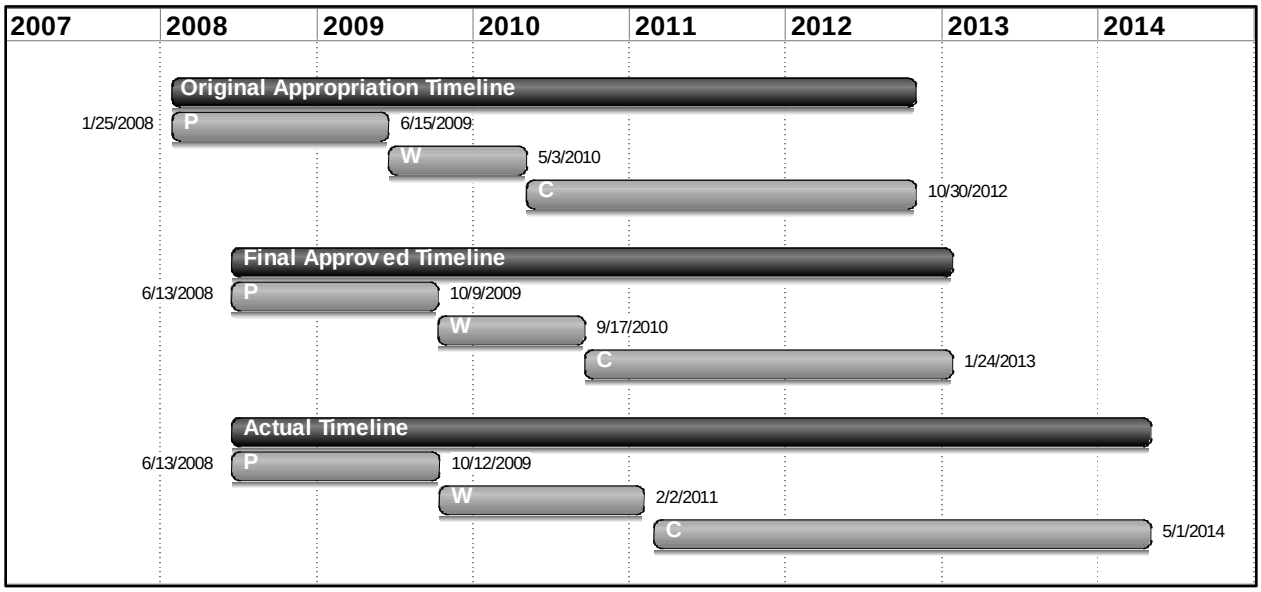
[34] *Project contractors*—all service providers and vendors excluding the construction contractor, with exceptions for the following costs: land purchase price; document review and construction inspection fees charged by the State Fire Marshal, the Division of the State Architect, and the Board of State and Community Corrections; local or regional development fees; and utility connection fees.
[35] *Construction contractor*—the general contractor responsible for constructing the project.

Project Timeline

As shown in figure 3.1, below, this project was completed 63 weeks after the final approved completion date and 75 weeks after the originally scheduled completion date. Delay to the bidding process—which began in February 2011 and is accounted for in the Actual Timeline shown in the figure below—occurred during the Working Drawings phase. This approximate four-month delay was created by extended review periods of the agencies that have review authority over holding facilities (Corrections Standards Authority), Americans with Disabilities Act compliance (Division of the State Architect [DSA]), and fire/life safety requirements (Office of the State Fire Marshal [OSFM]). Consequently, this delay caused the project to miss the fall 2010 bond sale. Cancellation of the anticipated spring 2011 bond sale required the bids to be held until the fall 2011 bond sale. As a result of these delays, the FY 2010–2011 authorized construction-phase funding needed to be reappropriated in FY 2011–2012. The start of construction—which began in November 2011—occurred after the sale of bonds in the fall 2011 bond sale. One of the benefits of PBI is that private financing is not subject to twice-per-year bond issuances, which currently affect the schedules of all courthouse capital projects relying on bond sales to pay for construction. With PBI, risk of this type of schedule delay is entirely eliminated.

Also factored into the length of the Actual Timeline shown in the figure below, and owing to the size and complexity of the project, was the construction contractor–recommended four-month extension of the construction schedule—from 24 to 28 months. This extended schedule, although four months longer than the final approved schedule, was still expedited compared to the 30- or 36-month construction schedule typical for projects of this size and complexity.

Figure 3.1
San Bernardino Justice Center—Timeline Comparison



Final Approved Timeline: Construction phase appropriation 7/1/2011.
P = Preliminary Plans phase; W = Working Drawings phase; C = Construction phase.

Project Development Schedule

Completion dates for the contractor selection process and the project phases are shown in table 3.4.

Table 3.4
San Bernardino Justice Center—Completion Dates for Milestones

Contractor Selection Process	
Request for CMR qualifications/proposals	02/11/2009
Due date for qualifications/proposals	02/24/2009
CMR shortlist	03/16/2009
CMR interviews	03/26/2009
CMR intent to award	03/30/2009
CMR contract executed	04/27/2009

Completion of Project Phases	
Acquisition	06/13/2008
Preliminary Plans	10/12/2009
Working Drawings	02/02/2011
Construction	05/1/2014

Chapter 4
South County Justice Center, Porterville

Project Description

The South County Justice Center is located in downtown Porterville at 300 East Olive Avenue. The courthouse is positioned on an eight-acre site that provides surface parking spaces for visitors, jurors, and staff. This new nine-courtroom courthouse consolidates from the existing Porterville Government Center and the Tulare-Pixley Court operations that are overcrowded, have numerous physical and functional inefficiencies, and suffer from safety and security issues. This modern justice center provides adequate space for courtrooms, judicial support, court administration, security operations, and secure holding and sally port for in-custody detainees. This facility will serve the county's growing need for court services, enabling the court to greatly improve access and services for the southern half of Tulare County.

The 100,299-square-foot building has three stories, with a partial basement. The design incorporates several sun shading solutions, which add to the unique architectural style and significantly improve energy efficiency during the extremely long hot summers in the Porterville area. The majority of service windows are exterior, allowing the public to complete their transactions without processing through the security screening—reducing the burden on security staffing resources and improving access time. The building was designed to qualify for the LEED™ Silver certification by the U.S. Green Building Council.

Project Facts

Location:	300 East Olive Avenue, Porterville, California
Capacity:	Nine courtrooms in 100,299 square feet
Project cost:	$82.6 million for all project costs; $66.7 million for construction
Funded by:	SCFCF and SB 1732, which established a revenue source of court user fees for judicial branch courthouse projects
Architect:	CO Architects
Contractor:	Sundt Construction, Inc.
Timeline:	Initially funded in FY 2007–2008; construction began in September 2011 and was completed in September 2013
More information:	*http://www.courts.ca.gov/facilities-tulare.htm#ad-image-0*

Procurement Method

The CMR delivery method was used for this project. Six proposals were received from construction management firms.

Risk Allocation

Several risks were retained by the AOC for the South County Justice Center that for the Governor George Deukmejian Courthouse were transferred to the project company. The most significant risk was subsurface condition risk. Unanticipated subsurface conditions materialized, and the AOC bore the financial impact. Similarly, the AOC retained the risks associated with life cycle and maintenance, as well as post-warranty work and future expansion, each of which was transferred to the project company for the Governor George Deukmejian Courthouse. This facility has not been in operation long enough to demonstrate definitively the financial impact of these retained risks to the AOC. However, they are guaranteed to be realized, and the funding available to respond to such risks will determine to what extent they can be addressed, potentially affecting building quality and shortening the estimated useful life of the new courthouse.

Project Costs

The AOC delivered this project for $10.8 million less than the final and original appropriation amounts. Project costs are identified in table 4.1. A detailed breakdown of construction costs is provided in Appendix B.

Table 4.1
South County Justice Center—Appropriations and Project Costs

		Acquisition	Preliminary Plans	Working Drawings	Construction	Total
A	Original appropriation	$4,426,000	$3,264,000	$4,619,000	$81,055,000	$93,364,000
B	Final appropriation	$4,426,000	$3,264,000	$4,619,000	$81,055,000	$93,364,000
C	Actual expenditure	$3,365,138	$2,666,446	$2,990,287	$73,582,443	$82,604,314
D	Increase or (savings) from original appropriation (C-A=D)	$(1,060,862)	$(597,554)	$(1,628,713)	$(7,472,557)	$(10,759,686)
E	Increase or (savings) from final appropriation (C-B=E)	$(1,060,862)	$(597,554)	$(1,628,713)	$(7,472,557)	$(10,759,686)

Project Management Costs

Judicial Branch project management costs are presented in table 4.2 using the methodology presented in Appendix D. Judicial branch project management costs accounted for 2.60 percent of total cost, or 3.21 percent of hard construction costs for this project.

Table 4.2
South County Justice Center—Judicial Branch Project Management Costs

Description	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
AOC employee costs	$225,752	$43,540	$91,964	$519,332	$880,588
Consultant/contractor costs	$0	$37,315	$275,970	$950,720	1,264,005
Totals	$225,752	$80,855	$367,934	$1,470,052	$2,144,593

Costs for Contractors

In this report, the costs for contractors are classified and calculated as shown in table 4.3. The sum of project contractor and construction contractor costs accounted for 93.0 percent of the total cost of this project. The separate cost of the construction contractor accounted for 83.7 percent of the total aggregate project costs.

Table 4.3
South County Justice Center—Costs for Contractors

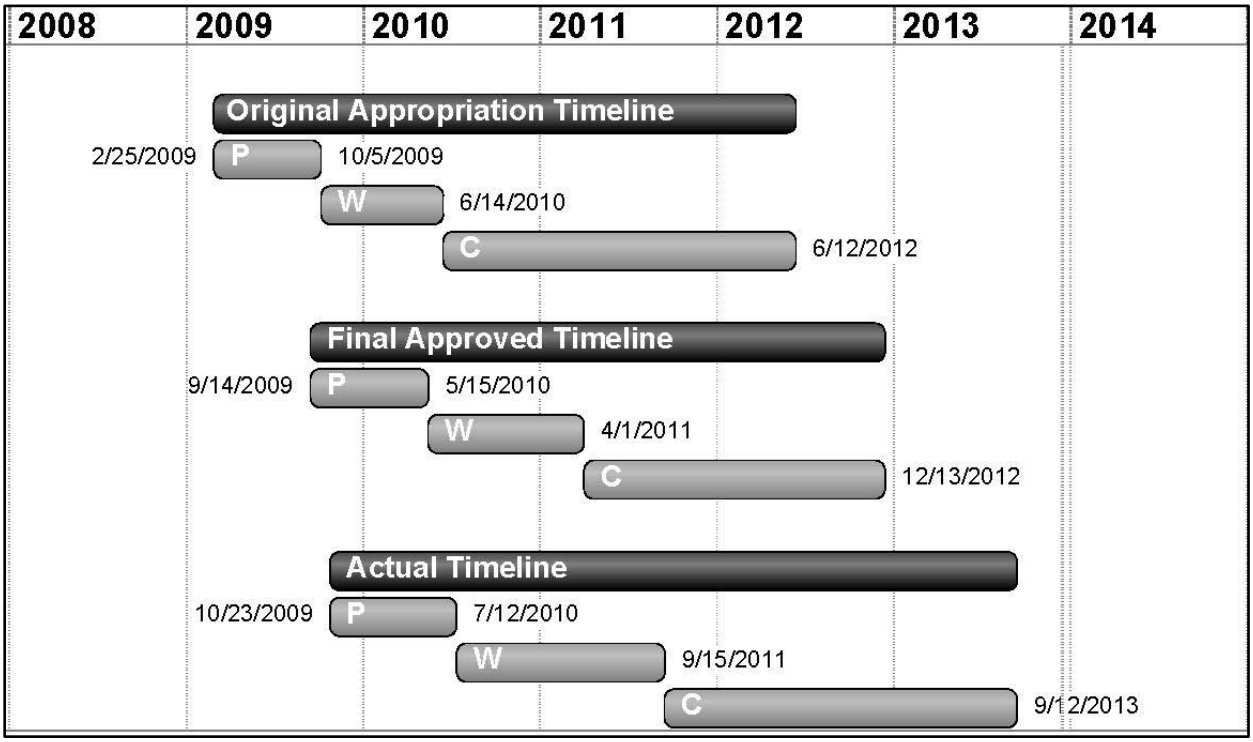
Description	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
Costs for project contractors[36] (excluding construction contractor)	$316,493	$2,334,425	$2,552,670	$2,441,840	$7,645,428
Costs for construction contractor[37]		$212,580	$179,552	$68,748,563	$69,140,695
Other project costs	$3,048,645	$119,441	$258,065	$2,392,039	$5,818,190
Total actual costs	$3,365,138	$2,666,446	$2,990,287	$73,582,442	$82,604,313
Sum of project contractor and construction contractor costs as percentage of actual costs (all service providers and vendors)	9.4%	95.5%	91.4%	96.7%	93.0%
Construction contractor costs as percentage of actual costs	0.00%	8.0%	6.0%	93.4%	83.7%

[36] *Project contractors*—all service providers and vendors, excluding the construction contractor, with exceptions for the following costs: land purchase price; document review and construction inspection fees charged by the State Fire Marshal, the Division of the State Architect, and the Board of State and Community Corrections; local or regional development fees; and utility connection fees.
[37] *Construction contractor*—the general contractor responsible for constructing the project.

Project Timeline

As shown in figure 4.1, this project was completed 38 weeks after the final approved completion date and 64 weeks after the originally scheduled completion date. Delays during the Acquisition phase are attributed to issues with property appraisals and negotiations with the property owner and environmental process details with the Department of General Services and DOF. Delays during the Preliminary Plans phase are attributed to additional time required for SPWB approval. Delays during the Working Drawings phase were due to the additional time required for review and approvals by DSA and the Office of the State Fire Marshal. The delays in starting the Construction phase are attributed to the fact that when the DSA and OSFM approvals were received, the project had to wait until the next available bond sale to allow the project to bid before a bond sale.

Figure 4.1
South County Justice Center—Timeline Comparison



P = Preliminary Plans phase; W = Working Drawings phase; C = Construction phase.

Project Development Schedule

Completion dates for the contractor selection process and the project phases are shown in table 4.4.

Table 4.4
South County Justice Center—Completion Dates for Milestones

Contractor Selection Process	
Request for CMR qualifications/proposals	09/18/2009
Due date for qualifications/proposals	10/09/2009
CMR shortlist	10/29/2009
CMR interviews	11/05/2009
CMR intent to award	11/13/2009
CMR contract executed	01/05/2010

Completion of Project Phases	
Acquisition	10/22/2009
Preliminary Plans	07/12/2010
Working Drawings	09/15/2011
Construction	09/12/2013

Chapter 5
Richard E. Arnason Justice Center, Pittsburg

Project Description

The Richard E. Arnason Justice Center replaced the outdated and undersized four-courtroom Pittsburg-Delta Courthouse, originally constructed in 1952 and demolished after the new courthouse was completed.

The eastern region of Contra Costa County includes the growing communities of Pittsburg, Antioch, Brentwood, and Oakley. Previously served by the outdated and undersized Pittsburg-Delta Courthouse, this region needed a larger, modern facility to meet growing demand for court services and to accommodate three new judicial officers. The previous building was so overcrowded that approximately 6,000 cases had to be reassigned to other courts throughout the county. The Arnason Justice Center has greatly improved access to justice for East County residents.

This courthouse has won numerous awards and was the first judicial branch courthouse to receive LEED™ Silver certification from the U.S. Green Building Council. The building was named in honor of Richard E. Arnason, distinguished jurist and pioneering member of the bar in eastern Contra Costa County.

Project Facts

Location:	1000 Center Drive, Pittsburg, California
Capacity:	Seven courtrooms in 73,500 square feet
Project cost:	$48.6 million for all project costs; $42.3 million[38] for construction
Funded by:	SCFCF and SB 1732, which established a revenue source of court user fees for judicial branch courthouse projects
Architect:	HOK
Contractor:	Sundt Construction, Inc.
Timeline:	Originally funded in FY 2005–2006; to accommodate three new judgeships, funding was increased in the annual budget act for FY 2006–

[38] In the SB 78 report, $45.1 million was used. This represented total construction phase cost. Hard construction cost is used in this report.

2007 to fund a scope change from four to seven courtrooms; construction began in April 2009 and was completed in November 2010

More information: *http://www.courts.ca.gov/facilities-contracosta.htm*

Procurement Method

The CMR delivery method was used for this project. Seven proposals were received from construction management firms.

Risk Allocation

Regarding risk allocation relative to the Governor George Deukmejian Courthouse, notably, the AOC retained the risk of subsurface conditions, which was in fact realized, and the AOC bore the financial responsibility for its mitigation. In this case, asbestos was discovered, and the AOC paid for its abatement. Although this issue was relatively minor, it is an example of a type of risk that could well have had a significant financial impact.

Another risk retained by the AOC was for the punch list. In the case of the Richard E. Arnason Justice Center, the court was allowed to move in to the building on receipt of the Certificate of Occupancy, but this occupancy caused delays in the punch list process because the contractor's movements were restricted for security concerns once the court occupied the space. Under PBI procurement, the project company would retain this risk and therefore would have likely performed greater due diligence regarding the risk of phased occupancy to punch list completion. Under PBI, delays to completing the punch list would delay service commencement, resulting in a delay to the first service fee payment, negatively affecting the project company's ability to meet its debt service obligations.

Also noteworthy in the case of the Richard E. Arnason Justice Center was the AOC's retained risk regarding third-party reviews. Certain authorities having jurisdiction caused delays by not offering exceptions until construction was under way. Under PBI procurement, this risk would likely be shared; however, in this case the AOC accepted full financial responsibility, incurring additional costs and delays.

Project Costs

The AOC delivered this project for $16.1 million less in total project costs than the final appropriation amount and $13.9 million less than the original appropriation amount. Project costs are identified in table 5.1, below.

The cost increases in the Acquisition ($672,000) and Preliminary Plans ($1.56 million) phases were included in the Budget Act of 2006 (FY 2006–2007) to fund a scope change from four to seven courtrooms.

Table 5.1
Richard E. Arnason Justice Center—Appropriations and Project Costs

		Acquisition	Preliminary Plans	Working Drawings	Construction	Total
A	Original appropriation	$6,000,000	$1,237,000	$3,632,000	$51,628,000	$62,497,000
B	Final appropriation	$6,672,000	$2,797,000	$3,632,000	$51,628,000	$64,729,000
C	Actual expenditure	$245,272	$1,494,085	$1,708,361	$45,141,930	$48,589,648
D	Increase or (savings) from original appropriation (C-A=D)	$(5,754,728)	$257,085	$(1,923,639)	$(6,486,070)	$(13,907,352)
E	Increase or (savings) from final appropriation (C-B=E)	$(6,426,728)	$(1,302,915)	$(1,923,639)	$(6,486,070)	$(16,139,352)

Project Management Costs

Judicial branch project management costs are presented in table 5.2 using the methodology presented in Appendix D. Judicial Branch project management costs accounted for 2.95 percent of total cost, or 3.39 percent of construction cost for this project.

Table 5.2
Richard E. Arnason Justice Center—Judicial Branch Project Management Costs

Description	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
AOC employee costs	$353,626	$202,036	$112,928	$766,063	$1,434,653
Consultant/contractor costs	$0	$0	$0	$0	$0
Totals	$353,626	$202,036	$112,928	$766,063	$1,434,653

Costs for Contractors by Activity

In this report, the costs for contractors are classified and calculated as shown in table 5.3, below. The sum of project contractor and construction contractor costs accounted for 99.6 percent of the total cost of this project. The separate cost of the construction contractor accounted for 87.0 percent of the total aggregate project costs.

Table 5.3
Richard E. Arnason Justice Center—Costs for Contractors

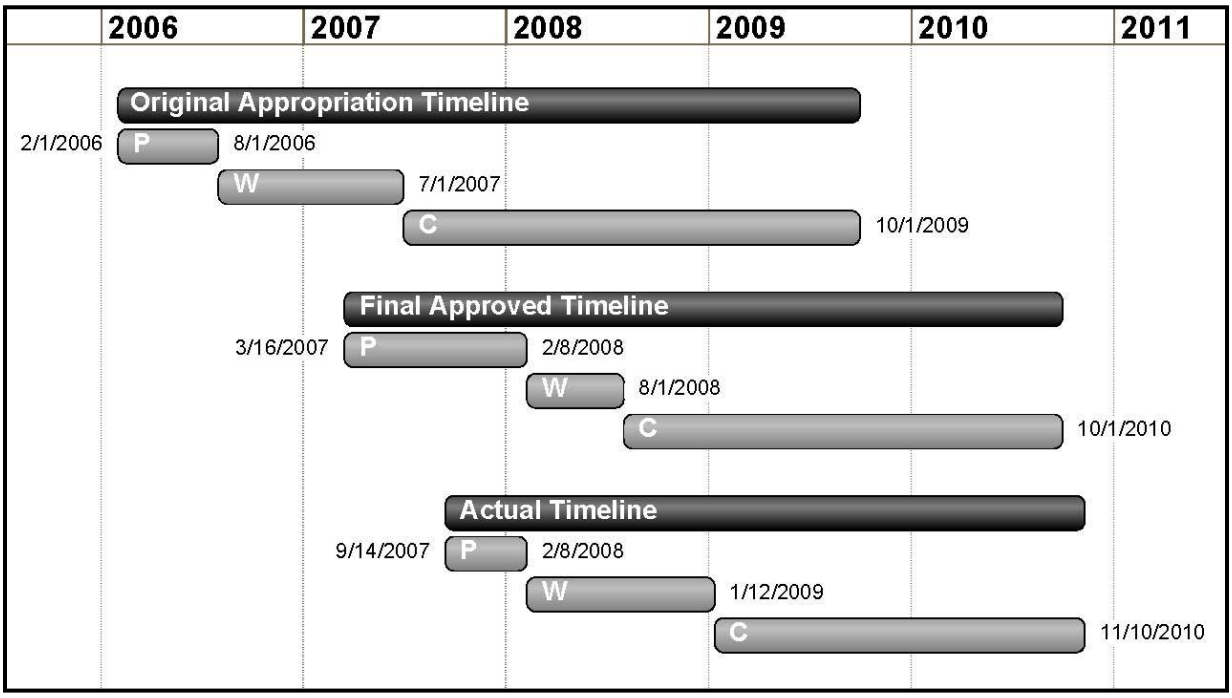
Description	Acquisition	Preliminary Plans	Working Drawings	Construction	Total
Costs for project contractors[39] (excluding construction contractor)	$185,073	$1,469,335	$1,699,459	$2,749,323	$6,103,190
Costs for construction contractor[40]	$0	$0	$0	$42,289,814	$42,289,814
Other project costs	$60,199	$24,750	$8,902	$102,793	$196,644
Total actual costs	$245,272	$1,494,085	$1,708,361	$45,141,930	$48,589,648
Project contractor costs as percentage of actual costs (all service providers and vendors)	75.5%	98.3%	99.5%	99.8%	99.6%
Construction contractor costs as percentage of actual costs	0.0%	0.0%	0.0%	93.7%	87.0%

[39] *Project contractors*—all service providers and vendors, excluding the construction contractor, with exceptions for the following costs: land purchase price; document review and construction inspection fees charged by the State Fire Marshal, the Division of the State Architect, and the Board of State and Community Corrections; local or regional development fees; and utility connection fees.
[40] *Construction contractor*—the general contractor responsible for constructing the project.

Project Timeline

As shown in figure 5.1, below, this project was completed 6 weeks after the final approved completion date and 58 weeks after the originally scheduled completion date. The delay was caused by the change in building size from four to seven courtrooms. The overall actual duration of design and construction was five months less than the final approved timeline allowed.

Figure 5.1
Richard E. Arnason Justice Center—Timeline Comparison



Final Approved Timeline: Construction phase appropriation 7/1/2008.
P = Preliminary Plans phase; W = Working Drawings phase; C = Construction phase.

Project Development Schedule

Completion dates for the contractor selection process and the project phases are shown in table 5.4.

Table 5.4
Richard E. Arnason Justice Center—Completion Dates for Milestones

Contractor Selection Process	
Request for CMR Qualifications/Proposals	06/05/2007
Due Date for Qualifications/Proposals	06/19/2007
CMR Shortlist	07/11/2007
CMR Interviews	07/16/2007
CMR Intent to Award	07/20/2007
CMR Contract Executed	09/17/2007

Completion of Project Phases	
Acquisition	09/14/2007
Preliminary Plans	02/08/2008
Working Drawings	01/12/2009
Construction	11/10/2010

Appendix A
Text of SB 75 Section 27 and Definitions of Terms

SB 75 Section 27

SEC. 27. The Judicial Council shall report to the appropriate budget and policy committees of the Legislature, the Joint Legislative Budget Committee, the Legislative Analyst's Office, and the Department of Finance, on or before June 30, 2014, on an evaluation of the Long Beach court building performance based infrastructure project. The evaluation shall assess the implementation of the project agreement and compare the project to other court construction projects the Judicial Council has pursued using the traditional public sector approach. The evaluation shall address whether the project was a cost-effective approach compared to the Judicial Council's other court construction projects. The evaluation shall include, but not be limited to, all of the following elements:

(a) Evaluation of the project company and its design-build implementation of the project agreement relative to the requirements of the agreement.

(b) Comparison of the assumptions included in the project's final Value for Money analysis, which was submitted to the Legislature in a report dated January 24, 2011, to the project's actual costs to date as well as projected costs incurred under the life of the contract. The comparison shall address assumptions that were made about the project site, timing, capital and operating costs, financing and revenues, and project risks. The comparison shall describe, for each of the project risks that were identified in the Value for Money analysis, whether the risk was realized and if a cost was imposed on the project company or the Judicial Council as a result.

(c) Identification of costs that occurred in the project for the project company and the Judicial Council that were not identified in the value for money analysis.

(d) Description of major challenges encountered by the project and how those issues were resolved.

(e) Description of major changes to the project scope, budget, or timeline during the term of the project agreement, including changes that did or did not require renegotiation of the agreement, and the impact of those changes to the project, including cost impact.

(f) Assessment of the cost-effectiveness of the project compared to a minimum of three projects constructed as part of the courts construction program. The assessment shall consider the costs related to the construction, management, and operation of the court building that were experienced by the project company and the Judicial Council. The assessment shall also consider

the timeliness of construction, the quality of the building, and the level of service provided by the project company in the project compared to buildings constructed and maintained by the Judicial Council. The information presented in this assessment shall include, but not be limited to, all of the following for each court construction project:

(1) Identification of all initial, final approved, and actual project costs for each phase of design and construction, including any cost increases and reasons for those increases.

(2) Identification of the initial, final approved, and actual project timeline for each phase of design and construction, as well as all project delays and the reasons associated in causing the project delays.

(3) The total project management costs incurred by the Judicial Council, including for existing staff who worked on each project, distinguished by project activity.

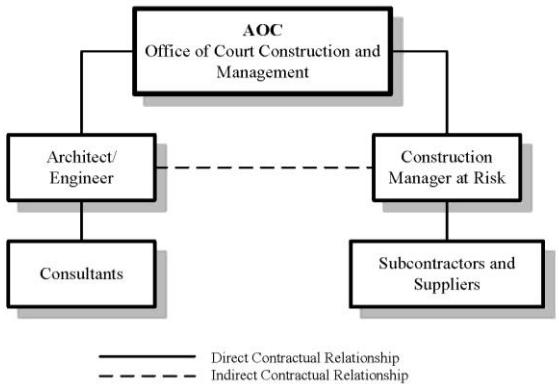
(4) The total costs paid for contractors, distinguished by project activity.

Definitions of Terms and Abbreviations

The following terminology and abbreviations, including terms in SB 75 section 27, are defined below:

Terms and Abbreviations	Definitions
Actual Completion Date	While this term does not occur in the bill, it is defined here to establish the precise end date of the actual project timeline. The completion of the construction phase in the actual timeline shown in the Timeline Comparison Figure in each of the project-specific chapters is the date when occupancy was granted by the State Fire Marshal (SFM) in the form of a Temporary Certificate of Occupancy followed by a Certificate of Occupancy.
Administrative Office of the Courts or AOC	The staff agency to the Judicial Council of California; actions or responsibilities attributed to the AOC, in this report, are on behalf of the Judicial Council.
Architecture Engineering Consulting Operations and Maintenance or AECOM	Architect of record, designer of record, and lead design team member
California Construction Cost Index or CCCI	This index is used by the AOC and the State Department of Finance for project planning and budgeting. See table B.7.
California Environmental Quality Act or CEQA	A California statute passed in 1970 to institute a statewide policy of environmental protection. It requires following a protocol of analysis and public disclosure of environmental impacts of proposed projects and adopting all feasible measures to mitigate those impacts.

Terms and Abbreviations	Definitions
City	City of Long Beach.
Clark	General Contractor and Design-Builder.
Competitive Procurement	Quantity and availability of subcontractors and vendors. In general the greater the number of subcontractors/vendors, the more price-competitive the procurement will be. The economic and market conditions also affect the level of competition.
Construction Costs	Costs incurred during construction.
Construction Manager at Risk or CMR	A project delivery method, also known as Construction Manager/General Manager, allows an owner to engage a private entity/construction manager during the project design process to provide services in two phases: design and construction. During design, the Construction Manager provides preconstruction services. The construction manager provides input regarding pricing, constructability, scheduling, phasing and other input to assist the architect with design and provide the owner with expertise to assist in making decisions that will result in a more cost-effective and constructible project. At approximately 60% to 90% design completion, the Owner and the CM negotiate a 'Guaranteed Maximum Price' (GMP) for the construction of the project based on the defined scope and schedule. If this price is acceptable to both parties, they execute a contract for construction services, and the Construction Manager becomes the general contractor as CMR. The AOC contracts for the GMP with the CMR after the design is 100% complete with all permits and approvals completed, significantly reducing the risk to the CMR contractor. Key aspects of the CMR method are (i) the contract terminates at the end of the construction stage; (ii) the owner retains all financial and funding obligations through the development of the project; and (iii) the owner retains long term operations and maintenance obligations for the life of the building. This approach offers the direct contractual relationship between owner and architect of other traditional methods, the advisory benefits of CM as advisor, and the early cost commitment characteristic of DB. The CMR is hired early in the design process to deliver an early cost commitment and to manage issues of schedule, cost, construction, and building technology. The owner benefits from the simplicity of one contract with a single entity for the entire construction process. The contractual relationships are illustrated in Figure A.1 below.

Terms and Abbreviations	Definitions
	Figure A.1 CMR Relationship Diagram  While some variations are possible based on the individual circumstances of a project, the CMR method is defined by certain characteristics in connection with project risks. The procuring agency will first retain a designer to define the project scope, and subsequently procure a CMR upon or prior to establishment of the initial design. The CMR is responsible for construction, and accepts the financial risk associated with procurement and construction costs, such that they are liable for any cost overrun not associated with an owner-driven change. An important distinguishing characteristic of this delivery method is the relationship between the CMR contractor and the designer. The intent is for the CMR contractor to become involved in the design process, so that they may provide input regarding constructability, construction cost and schedule, and thus improve the efficiency, timeliness and cost effectiveness of design and construction. From a commercial perspective, a CMR contract is based on a GMP or Lump Sum. Unlike more traditional forms of procurement, CMR contracts are awarded based on the combined consideration of both qualifications and price.
Contractor Costs – Section 27(f)(4)	Costs for contractors are taken directly from job cost accounting reports generated by the JBCPO Business and Finance Unit.
Contractors	In connection with SB 75 section 27(f)(4), "contractors" shall be defined as all service providers and vendors involved with the project. In the Costs for Contractors table in each of the project-specific chapters, the separate cost of the construction contractor is also provided.
Corrections Standards Authority or CSA	Replaced by the BSCC, Board of State and Community Corrections, effective July 1, 2012.

Terms and Abbreviations	Definitions
Cost Increase/Total Project Costs/Each Phase of Design and Construction	In connection with section 27(f)(1), a "cost increase" shall be defined as costs exceeding the amount of the original appropriation request for each phase, at the time the subject phase was actually requested. "Total project costs" presented in this report include site acquisition (A) phase costs as well as costs for "each phase of design and construction," which are preliminary plans (P), working drawings (W), and construction (C).
Critical Path	The longest path of planned activities to the completion of construction.
CT Energetics	Commissioning sub-consultant to the design-builder.
Department of Finance or DOF	State of California Department of Finance
Design-Bid-Build or DBB	Traditional method for project delivery. Delivery consists of the design phase, bidding phase and construction phase.
Design-Build or DB	Delivery method by which Clark is responsible for both the design by AECOM and the construction of the facility.
Division of State Architect or DSA	Reviewing agency for access compliance.
Facility Condition Index (FCI)	The ratio of deferred maintenance dollars to replacement dollars. FCI = Total estimated cost of deferred maintenance ÷ Estimated replacement value An FCI of 0.1 signifies a 10 percent deficiency, which is generally considered low, and an FCI of 0.7 means that a building needs extensive repairs or replacement. The lower the FCI, the lower the need for remedial or renewal funding relative to the facility's value.
Furniture, Fixtures and Equipment or FF&E	Furniture, fixtures and equipment, and low-voltage systems, or building systems pertaining to security and access control, fire alarm, audiovisual systems, unified communications, and other technical infrastructure
Guaranteed Maximum Price or GMP	A Guaranteed Maximum Price contract is a cost-type contract (also known as an open-book contract) where the contractor is compensated for actual costs incurred plus a fixed fee subject to a ceiling price. The contractor is responsible for cost over-runs, unless the GMP has been increased via formal change order (only as a result of additional scope from the client, not price overruns, errors, or omissions). Savings resulting from cost under-runs are returned to the owner.
Immediate and Critical Needs Account or ICNA	An account funded by special revenues collected in accordance with SB 1407.

Terms and Abbreviations	Definitions
Independent Building Expert or IBE and Inspector of Record or IOR	A consultant to the AOC and the Project Company jointly, providing peer and code document review, permitting, and field inspection (performed by TMAD Taylor & Gaines or TTG with subcontractors).
Initial Project Timeline and Delay	In connection with SB 75 section 27(f)(2), the "initial project timeline" for the three CMR comparator projects is the timeline presented in the initial COBCP that is the initial basis of the budget act appropriation and "delay" is measured against the original project timeline and is calculated by comparing the original completion date for each phase of design and construction (P, W, and C) with the actual completion dates. The final approved timeline is also represented, along with the original and actual timelines, in the Timeline Comparison figure in each of the project-specific Chapters 3 through 5. The final approved timeline is the timeline presented in the final project action or funding request approved by the DOF or the SPWB. The overall timelines represent the time period between the start of preliminary plans and the completion of construction. As set forth in the State Administrative Manual (SAM), Section 6853 – Award Construction Contract, and Section 6854 – Construction, the construction (C) phase begins with the approval of working drawings and proceed to bid, and thus includes bid and award activities. For the Governor George Deukmejian Courthouse, the initial project timeline is the timeline set forth in the Project Company's proposal.
Johnson Controls Inc. or JCI	Building operator for operations and maintenance and low-voltage subcontractor.
Judicial Branch Capital Program Office or JBCPO	AOC office responsible for all aspects of implementing capital outlay projects.
Judicial Branch Project Management Costs – Section 27(f)(3)	Internal judicial branch project management costs are estimated through a combination of direct estimation for project managers, planners, real estate analysts, and construction inspectors, and a cost model for other AOC staff who contributed to the management of the capital projects. See Appendix D for the calculation methodology.
Leadership in Energy and Environmental Design or LEED™	A program administered by the U.S. Green Building Council (USGBC) to measure and certify the level of construction with respect to energy and the environment.
London Interbank Offered Rate or LIBOR	The rate at which an individual contributor panel bank could borrow funds.

Terms and Abbreviations	Definitions
Long Beach Judicial Partners or LBJP	Project Company responsible for the financing, design, construction, operations and maintenance of the Governor George Deukmejian Courthouse.
Net Present Value or NPV	A comparison of costs on a consistent basis because the costs to the State occur at different points in time under each procurement option. The NPV of each of the procurement methods is compared to determine which would provide the best value to the State.
On site	Elements performed within the property line of the site.
Operating Cost	Facilities Management – The Owners/AOC certainty on annual operational costs (energy, routine maintenance, custodial maintenance). These costs are normally covered under the general fund appropriation to the judicial council. Repair and Replacement (PPP Life-cycle cost) certainty – For replacement of major items, these costs are normally funded from capital improvement fund sources.
Parking Structure	Existing parking structure (built when the existing courthouse was constructed), located one-half block south of Governor George Deukmejian Courthouse site, and which received seismic upgrades, remediation for the leaking top deck, a new elevator/stair tower, a new entrance, and both an internal and external renovation as a part of the project requirements
Performance-Based Infrastructure or PBI	A project delivery method whereby a public entity/owner procures an infrastructure project from a private entity/developer or concessionaire where the private entity is responsible for the design, construction, operation, maintenance and financing of that infrastructure. The PBI contract, or Project Agreement, is output or performance-based as opposed to prescriptive. Key components of a PBI project are (i) the private entity is fully responsible for design and construction; (ii) financing is provided by the private sector; and (iii) the private party has long term obligations to operate and maintain the infrastructure. Payments to the private entity by the public entity are subject to and based on the private party's performance and compliance with the specified requirements of the Project Agreement and availability of the infrastructure at all times. Through the Project Agreement the AOC has the ability to make deductions against its payments to the private party for unavailability of portions of the building due to building performance failures (hence a "performance-based" project); used interchangeably with public-private partnership, or *PPP*.

Terms and Abbreviations	Definitions
Phases of Project Delivery	Site Acquisition (A); Preliminary Plans (P); Working Drawings (W); and Construction (C)
Pre-construction Costs	Costs incurred before construction starts.
Project Activity	In connection with section 22(f)(4), "project activity" shall mean the typical phases of a state capital project, which are site acquisition (A), preliminary plans (P), working drawings (W), and construction (C).
Project Agreement	A design, build, finance, operate, and maintain agreement executed between the AOC and the Project Company including the transaction forms, ground lease, sub-lease, appendices, proposal extract documents, related agreements, and Performance and Management Standards.
Project Company	The entity formed to bid on the Governor George Deukmejian Courthouse project. On the signing of the Project Agreement, Long Beach Judicial Partners was appointed as the Project Company.
Project Costs/Increases – Section 27(f)(1)	Actual project costs are taken directly from job cost accounting reports generated by JBCPO's Business and Finance Unit, with the exception of those for the Governor George Deukmejian Courthouse, which were provided by the Project Company. The Appropriations and Project Costs table in each project-specific chapter shows the original appropriation amount, the final appropriation amount, and the actual expenditure for each as well as increases or savings from appropriation amounts. The original appropriation amount refers to the original amount appropriated in the annual budget act for each phase. The final appropriation amount refers to the sum of the original appropriation amount and all subsequent changes to that amount as contained in the annual budget act or as approved by the DOF or the SPWB. Changes to the original appropriation amount can be augmentations, reversions, or redirections (from one phase to another). Some changes to the original appropriation amount, within the guidelines set forth in the State Administrative Manual (SAM), may be approved independently by the DOF or the SPWB and do not appear in the annual budget act. Cost increases are listed and reasons for cost increases are described.
Project Labor Agreement or PLA	A pre-hire collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for a specific construction project. The terms of the agreement apply to all contractors and subcontractors who successfully bid on the project, and supersede any existing collective bargaining agreements.

Terms and Abbreviations	Definitions
Public-Private Partnership or PPP	The delivery method in which project is designed, financed, constructed, operated, and maintained under a comprehensive project agreement. Used interchangeably with performance-based infrastructure or PBI.
Quality Assurance, Quality Control or QA/QC	Quality Assurance (QA): the planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled. Quality Control (QC): The observation techniques and activities used to fulfill requirements for quality.
Quality Management or QM	Quality management ensures that an organization, product or service is consistent. It has four main components: quality planning, quality control, quality assurance and quality improvement. Quality management is focused not only on product and service quality, but also the means to achieve it. Quality management therefore uses quality assurance and control of processes as well as products to achieve more consistent quality.
Request for Information or RFI	A request from the Contractor to the Architect for information to resolve gaps, conflicts, or subtle ambiguities in the construction documents.
Request for Proposal or RFP	A type of bidding solicitation in which a company or organization announces that funding is available for a particular project or program, and companies can place bids for the project's completion. The Request For Proposal (RFP) outlines the bidding process and contract terms, and provides guidance on how the bid should be formatted and presented. A RFP is typically open to a wide range of bidders, creating open competition between companies looking for work. A Request For Proposal for a specific program may require the company to review the bids not only examine their feasibility, but also the health of the bidding company and the ability of the bidder to actually do what is proposed. The RFP may provide detailed information on the project or program, but can leave leeway for the bidder to fill in the blanks with how the project would be completed or program run.

Terms and Abbreviations	Definitions
Risk Transfer and Risk Allocation	Risk transfer moves the risk to another party, normally the contractor. In the AOC's typical project delivery the CMR's responsibilities are limited to the design and construction phases and for the most part end upon the expiration of the one-year warranty period. In the PBI delivery method, the contractor is part of a team, the project company, with comprehensive and long-term responsibilities to finance, design, build, operate, and maintain the facility. Through the PBI Project Agreement risk can be allocated to include responsibility for pre-construction, design, construction, occupancy, maintenance, and life-cycle replacement.
Senate Bill 1407 or SB 1407	Perata, Stats. 2008, Ch. 311
Senate Bill 1732 or SB 1732	Trial Courts Facilities Act of 2002, Escutia, Stats. 2002, Ch 1082
Shadow Bid	Cost of delivery of the project under a PBI approach, the hypothetical estimation of private sector bid in response to an RFP for a PBI project.
SPV	Special purpose vehicle. It is a legal entity, usually a limited company of some type or, sometimes, a limited partnership; created to fulfill narrow, specific or temporary objectives.
State Administrative Manual or SAM	The State Administrative Manual (SAM) is a reference source for statewide policies, procedures, requirements and information developed and issued by authoring agencies such as the Governor's Office, Department of General Services (DGS), Department of Finance (DOF), and Department of Human Resources (CalHR). In order to provide a uniform approach to statewide management policy, the contents have the approval of and are published by the authority of the DOF Director and the DGS Director.
State Court Facilities Construction Fund or SCFCF	Established by SB 1732 special revenues for Judicial Branch costs associated with supplementing SB 1732 and certain capital outlay projects.
State Fire Marshal or SFM (also known as OSFM, the Office of the State Fire Marshal)	The California agency responsible for fire department approval.

Terms and Abbreviations	Definitions
State Public Works Board or (SPWB)	The State Public Works Board (SPWB) was created by the Legislature to oversee the fiscal matters associated with construction of projects for state agencies, and to select and acquire real property for state facilities and programs. The SPWB is also the issuer of lease-revenue bonds, which is a form of long term financing that is used to pay for capital projects. The Legislature appropriates funds for capital outlay projects such as acquiring land, planning and constructing new buildings, expanding or modifying existing buildings, and/or purchasing equipment related to such construction. Through review and approval processes, the SPWB ensures that capital outlay projects adhere to the Legislature's appropriation intents. Voting members of the SPWB include the Director of Finance (SPWB Chair), the Director of Transportation, and the Director of General Services. When the SPWB deals with matters related to the issuance of revenue bonds the State Controller and the State Treasurer are added as members. Advisory members include the Director of the Employment Development Department, three Senators appointed by the Senate Rules Committee, and three Assembly members appointed by the Speaker of the House.
Superior Court	Superior Court of California, County of Los Angeles; primary project participants included the Court Executive Office; Facilities Department, and the supervising staff at the Governor George Deukmejian Courthouse.
TMAD Taylor & Gaines or TTG	Independent Building Expert/Inspector of Record or IBE/IOR.
Value for Money or VfM	This is a comparison of the risk-adjusted whole life-cycle cost of the project procured as a PBI compared with the risk-adjusted whole life-cycle cost of the project as if it was procured as a CMR, which is the public sector comparator. The comparison is done on a net present value (NPV) basis to facilitate a comparison of costs on a consistent basis because the costs to the State occur at different points in time under each procurement option. The NPV of each of the procurement methods is compared to determine which would provide the best value to the State.

Appendix B
Project Cost Comparison Methodology

Adjustments to Remove Unique Project Costs

To provide a fair comparison of costs, all four projects have been adjusted (see table B.1) to remove unique aspects and to adjust all projects to a common baseline or time frame.

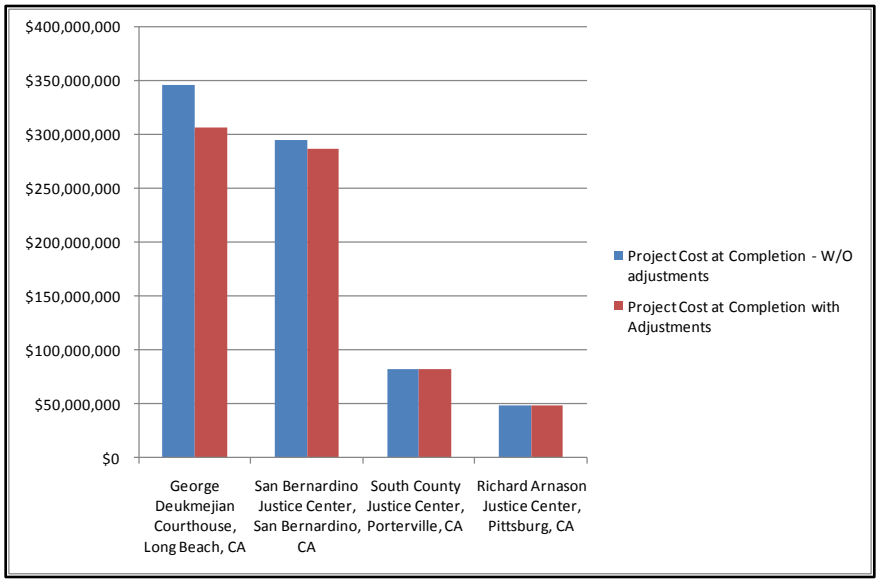
Following are the adjustments for unique project costs:

1. The construction cost of the Governor George Deukmejian Courthouse was adjusted by removing the structured parking and the approximately 115,000 square feet of commercial/retail space that is not part of the court space. This adjustment reduced the cost of the project by approximately $40 million, or 11 percent, for comparative purposes.

2. The cost of the San Bernardino Justice Center was adjusted for the required bid extension and for the impacts of adding specialized, seismic base isolation. These adjustments reduced the cost of the project approximately $9 million, or 3 percent, for comparative purposes.

   Figure B.1 provides an illustrative view of the impact of those adjustments on the project costs for the two directly comparable projects.

Figure B.1
Summary of Adjustments to Remove Unique Project Aspects



3. The cost of the Richard E. Arnason Justice Center was assigned a minor adjustment of approximately $300,000 to account for the cost of building demolition.

4. The cost of the South County Justice Center in Porterville required no adjustments.

Table B.1
Summary of Adjustments to Remove Unique Project Costs

		George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA	South County Justice Center Porterville, CA	Richard Arnason Justice Center Pittsburg, CA
A	Total project cost without adjustments	$346,725,495	$295,098,492	$82,604,314	$48,589,648
B	Adjustments	$39,500,221	$8,570,382	$0	$317,378
C	Adjusted total project cost (A-B=C)	$307,225,274	$286,528,110	$82,604,314	$48,272,270

Tables B.2 through B.5 present detailed costs for each project, showing in columns B and C the adjustments for unique project costs.

Table B.2
George Deukmejian Courthouse, Long Beach

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE
SB 75 LONG BEACH REPORT
GEORGE DEUKMEJIAN COURTHOUSE

LONG BEACH, CA

COURTROOMS:	**31**	
TOTAL AREA:	**531,000 SF**	**(CR)**
COURT AREA:	**416,000 Ft²**	**(TA)**
$-Proj/CR:	**$9,910,493**	**(CA)**
DATE:	**May-14**	**(A3/CR)**

Office Area: **115,000 Ft²**

	DESCRIPTION		Cost A	Adjustments Parking Structure B	Adjustments Less Office C ($200 per Ft²)	Net Courthouse D=A-B-C	% D/D1
	A10 Foundations		$7,827,755	$1,097,409	596,852	$6,133,494	2.6%
	A20 Basement Construction		$5,679,128		503,630	$5,175,499	2.2%
	B10 Superstructure		$33,697,862	$2,021,872	2,809,052	$28,866,937	12.2%
	B20 Exterior Enclosure		$30,670,889	$115,338	2,709,691	$27,845,860	11.8%
	B30 Roofing		$7,218,872		640,175	$6,578,697	2.8%
	C10 Interior Construction		$18,318,911		1,624,536	$16,694,376	7.1%
	C20 Stairs		$2,628,137		233,065	$2,395,071	1.0%
	C30 Interior Finishes		$32,461,004	$1,294,378	2,763,881	$28,402,744	12.0%
	D10 Conveying		$10,370,602	$749,926	853,169	$8,767,507	3.7%
	D20 Plumbing		$6,978,462	$166,443	604,095	$6,207,924	2.6%
	D30 HVAC		$17,817,010		1,580,027	$16,236,983	6.9%
	D40 Fire Protection		$2,372,378	$34,589	207,317	$2,130,472	0.9%
	D50 Electrical - All Excluding Comm. & Sec.		$27,758,410	$1,146,844	2,359,935	$24,251,631	10.3%
	D53 Electrical - Communications & Security		$24,561,802		2,178,160	$22,383,641	9.5%
	E10 Equipment		$11,317,014	$134,141	991,706	$10,191,167	4.3%
	E20 Furnishings		$14,537,974	$592,696	1,236,678	$12,708,600	5.4%
	F10 Special Construction		$0		-	$0	
	F20 Selective Building Demolition		$0		-	$0	
	G10 Building Related Sitework		$13,766,172	$1,271,600	1,108,029	$11,386,544	4.8%
	G20 Non-Building Related Sitework		$0		-	$0	
	G30 Other Sitework		$0		-	$0	
1	**Subcontract Costs**	**A/A1**	**$267,982,382**	**$8,625,236**	**$23,000,000**	**$236,357,146**	**100.0%**
							D/D1
	General Conditions and Profit	18.4%	$49,176,135	$2,075,969	$4,176,881	$42,923,285	18.2%
	Design Change Orders **(*Included in Subcontract Cost Above)**	1.6%	$4,296,000*			$4,296,000*	1.8%
	Construction Contingency - Expended	0.0%					
2	**Hard Construction Cost**	**A/A1**	**$317,158,517**	**$10,701,205**	**$27,176,881**	**$279,280,431**	
							D/D1
	Design	7.9%	$21,195,933	$535,060	$1,087,075	$19,573,798	8.3%
	CM Consulting During Design	0.0%				$0	
	Cost of Art-in-Architecture	0.9%	$2,482,045			$2,482,045	1.1%
	Other Project Costs	2.2%	$5,889,000			$5,889,000	2.5%
3	**Total Project Cost**		**$346,725,495**	**$11,236,265**	**$28,263,956**	**$307,225,274**	

Table B.3
San Bernardino Justice Center, San Bernardino

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE
SAN BERNARDINO JUSTICE CENTER
SAN BERNARDINO, CA

FAITHFUL + GOULD

COURTROOMS:	**35**	
TOTAL AREA:	**383,745 SF**	**(CR)**
COURT AREA:	**383,745 Ft²**	**(TA)**
$-Proj/CR:	**$8,186,517**	**(CA)**
DATE:	**May-14**	**(A3/CR)**

	DESCRIPTION		Cost A	Adjustments Bid Extension B	Adjustments Base Isolation C	Net Courthouse D=A-B-C	% D/D1
	A10 Foundations		4,685,882	$32,547		$4,653,335	2.0%
	A20 Basement Construction		4,711,003	$32,721		$4,678,282	2.0%
	B10 Superstructure		32,645,529	$226,746		$32,418,784	13.7%
	B20 Exterior Enclosure		31,465,964	$218,553		$31,247,411	13.2%
	B30 Roofing		3,997,744	$27,767		$3,969,977	1.7%
	C10 Interior Construction		26,154,251	$181,659		$25,972,592	11.0%
	C20 Stairs		2,516,962	$17,482		$2,499,480	1.1%
	C30 Interior Finishes		29,148,345	$202,455		$28,945,890	12.3%
	D10 Conveying		8,797,747	$61,106		$8,736,641	3.7%
	D20 Plumbing		4,896,863	$34,012		$4,862,851	2.1%
	D30 HVAC		18,331,276	$127,323		$18,203,953	7.7%
	D40 Fire Protection		2,681,346	$18,624		$2,662,723	1.1%
	D50 Electrical - All Excluding Comm. & Sec.		17,053,898	$118,451		$16,935,447	7.2%
	D53 Electrical - Communications & Security		24,102,167	$167,406		$23,934,761	10.1%
	E10 Equipment		2,913,393	$20,236		$2,893,158	1.2%
	E20 Furnishings		14,479,357	$100,569		$14,378,788	6.1%
	F10 Special Construction		4,966,070		4,966,070	$0	
	F20 Selective Building Demolition		-	$0		$0	
	G10 Building Related Sitework		9,186,520	$63,807		$9,122,713	3.9%
	G20 Non-Building Related Sitework		-	$0		$0	
	G30 Other Sitework		-	$0		$0	
1	**Subcontract Costs**	**A/A1**	**$242,734,318**	**$1,651,463**	**$4,966,070**	**$236,116,785**	**100.0%**
							D/D1
	General Conditions and Profit	7.7%	$18,754,145	$127,595	$1,281,712	$17,344,837	7.3%
	Design Change Orders	0.0%				$0	
	Construction Contingency - Expended	0.7%	$2,156,150			$2,156,150	0.9%
2	**Hard Construction Cost**	**A/A1**	**$263,644,613**	**$1,779,058**	**$6,247,783**	**$255,617,772**	
							D/D1
	Design	10.9%	$26,567,517		$543,541	$26,023,976	11.0%
	CM Consulting During Design	0.6%	$1,461,128			$1,461,128	0.6%
	Cost of Art-in-Architecture	0.0%				$0	
	Other Project Costs	1.4%	$3,425,234			$3,425,234	1.5%
3	**Total Project Cost**		**$295,098,492**	**$1,779,058**	**$6,791,324**	**$286,528,110**	

Table B.4
South County Justice Center, Porterville

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE
SOUTH COUNTY JUSTICE CENTER
PORTERVILLE, CA

FAITHFUL+GOULD

COURTROOMS:	**9**	
TOTAL AREA:	**100,299 SF**	**(CR)**
COURT AREA:	**100,299 Ft²**	**(TA)**
$-Proj/CR:	**$9,178,257**	**(CA)**
DATE:	**May-14**	**(A3/CR)**

	DESCRIPTION		Cost A	Adjustments B	Adjustments C	Net Courthouse D=A-B-C	% D/D1
	A10 Foundations		1,667,601			$1,667,601	2.7%
	A20 Basement Construction		1,547,693			$1,547,693	2.5%
	B10 Superstructure		6,436,139			$6,436,139	10.3%
	B20 Exterior Enclosure		7,124,496			$7,124,496	11.4%
	B30 Roofing		2,133,907			$2,133,907	3.4%
	C10 Interior Construction		6,749,231			$6,749,231	10.8%
	C20 Stairs		504,055			$504,055	0.8%
	C30 Interior Finishes		4,933,966			$4,933,966	7.9%
	D10 Conveying		1,521,047			$1,521,047	2.4%
	D20 Plumbing		1,938,502			$1,938,502	3.1%
	D30 HVAC		6,000,920			$6,000,920	9.6%
	D40 Fire Protection		651,719			$651,719	1.0%
	D50 Electrical - All Excluding Comm. & Sec.		5,801,074			$5,801,074	9.3%
	D53 Electrical - Communications & Security		3,001,015			$3,001,015	4.8%
	E10 Equipment		555,127			$555,127	0.9%
	E20 Furnishings		4,603,111			$4,603,111	7.3%
	F10 Special Construction		-			$0	
	F20 Selective Building Demolition		-			$0	
	G10 Building Related Sitework		7,475,336			$7,475,336	11.9%
	G20 Non-Building Related Sitework					$0	
	G30 Other Sitework					$0	
1	**Subcontract Costs**	**A/A1**	**$62,644,939**		**$0**	**$62,644,939**	**100.0%**
							D/D1
	General Conditions and Profit	6.4%	4,018,838			$4,018,838	6.4%
	Design Change Orders	0.0%				$0	
	Construction Contingency - Expended	0.1%	$82,330			$82,330	0.1%
2	**Hard Construction Cost**	**A/A1**	**$66,746,107**	**$0**	**$0**	**$66,746,107**	
							D/D1
	Design	11.7%	$7,328,935			$7,328,935	11.7%
	CM Consulting During Design	3.9%	$2,441,840			$2,441,840	3.9%
	Cost of Art-in-Architecture	0.0%				$0	
	Other Project Costs	9.7%	$6,087,432			$6,087,432	9.7%
3	**Total Project Cost**		**$82,604,314**		**$0**	**$82,604,314**	

Table B.5
Richard Arnason Justice Center, Pittsburg

JUDICIAL BRANCH CAPITAL PROGRAM OFFICE
RICHARD ARNASON JUSTICE CENTER
PITTSBURG, CA

FAITHFUL + GOULD

COURTROOMS:	**7**	
TOTAL AREA:	**73,500 SF**	**(CR)**
COURT AREA:	**73,500 Ft²**	**(TA)**
$-Proj/CR:	**$6,896,039**	**(CA)**
DATE:	**May-14**	**(A3/CR)**

	DESCRIPTION		Cost A	Adjustments B	Demolition C	Net Courthouse D=A-B-C	% D/D1
	A10 Foundations		975,923			$975,923	2.7%
	A20 Basement Construction		919,407			$919,407	2.5%
	B10 Superstructure		3,568,693			$3,568,693	9.8%
	B20 Exterior Enclosure		5,716,621			$5,716,621	15.7%
	B30 Roofing		1,054,638			$1,054,638	2.9%
	C10 Interior Construction		5,446,612			$5,446,612	15.0%
	C20 Stairs		216,412			$216,412	0.6%
	C30 Interior Finishes		3,645,617			$3,645,617	10.0%
	D10 Conveying		677,932			$677,932	1.9%
	D20 Plumbing		899,784			$899,784	2.5%
	D30 HVAC		3,686,347			$3,686,347	10.1%
	D40 Fire Protection		377,951			$377,951	1.0%
	D50 Electrical - All Excluding Comm. & Sec.		2,631,931			$2,631,931	7.2%
	D53 Electrical - Communications & Security		1,462,945			$1,462,945	4.0%
	E10 Equipment		135,438			$135,438	0.4%
	E20 Furnishings		1,502,416			$1,502,416	4.1%
	F10 Special Construction		-			$0	
	F20 Selective Building Demolition		317,378		317,378	$0	
	G10 Building Related Sitework		3,507,559			$3,507,559	9.6%
	G20 Non-Building Related Sitework					$0	
	G30 Other Sitework					$0	
1	**Subcontract Costs**	**A/A1**	**$36,743,603**		**$317,378**	**$36,426,225**	**100.0%**
							D/D1
	General Conditions and Profit	12.0%	4,405,558			$4,405,558	12.1%
	Design Change Orders	0.0%				$0	
	Construction Contingency - Expended	2.3%	1,140,653			1,140,653	3.1%
2	**Hard Construction Cost**	**A/A1**	**$42,289,814**	**$0**	**$317,378**	**$41,972,436**	
							D/D1
	Design	13.2%	$4,841,446			$4,841,446	13.3%
	CM Consulting During Design	0.0%				$0	
	Cost of Art-in-Architecture	0.0%				$0	
	Other Project Costs	4.0%	$1,458,388			$1,458,388	4.0%
3	**Total Project Cost**		**$48,589,648**		**$317,378**	**$48,272,270**	

Table B.6 presents detailed costs for each project, with the adjustments for unique project costs.

Table B.6
Detailed Summary of All Projects—Total Project Costs Minus Costs for Unique Project Aspects

	JUDICIAL BRANCH CAPITAL PROGRAM OFFICE SB 75 LONG BEACH REPORT OVERALL COMPARISON UNIQUE ITEMS EXCLUDED TOTAL PROJECT COST	GEORGE DEUKMEJIAN COURTHOUSE LONG BEACH, CA COURTROOMS: 31 (CR) TOTAL AREA: 531,000 Ft² (TA) COURT AREA: 416,000 Ft² (CA) $-Proj/CR: $9,910,493 (A3/CR) DATE: May-14		SAN BERNARDINO JUSTICE CENTER SAN BERNARDINO, CA COURTROOMS: 35 (CR) TOTAL AREA: 383,745 Ft² (TA) COURT AREA: 383,745 Ft² (CA) $-Proj/CR: $8,186,517 (B3/CR) DATE: May-14		SOUTH COUNTY JUSTICE CENTER PORTERVILLE, CA COURTROOMS: 9 (CR) TOTAL AREA: 100,299 Ft² (TA) COURT AREA: 100,299 Ft² (CA) $-Proj/CR: $9,178,257 (C3/CR) DATE: May-14		RICHARD ARNASON JUSTICE CENTER PITTSBURG, CA COURTROOMS: 7 (CR) TOTAL AREA: 73,500 Ft² (TA) COURT AREA: 73,500 Ft² (CA) $-Proj/CR: $6,896,039 (D3/CR) DATE: May-14	
	DESCRIPTION	Net Courthouse A	% A/A1	Net Courthouse B	% B/B1	Net Courthouse C	% C/C1	Net Courthouse D	% D/D1
	A10 Foundations	$6,133,494	2.6%	$4,653,335	2.0%	$1,667,601	2.7%	$975,923	2.7%
	A20 Basement Construction	$5,175,499	2.2%	$4,678,282	2.0%	$1,547,693	2.5%	$919,407	2.5%
	B10 Superstructure	$28,866,937	12.2%	$32,418,784	13.7%	$6,436,139	10.3%	$3,568,693	9.8%
	B20 Exterior Enclosure	$27,845,860	11.8%	$31,247,411	13.2%	$7,124,496	11.4%	$5,716,621	15.7%
	B30 Roofing	$6,578,697	2.8%	$3,969,977	1.7%	$2,133,907	3.4%	$1,054,638	2.9%
	C10 Interior Construction	$16,694,376	7.1%	$25,972,592	11.0%	$6,749,231	10.8%	$5,446,612	15.0%
	C20 Stairs	$2,395,071	1.0%	$2,499,480	1.1%	$504,055	0.8%	$216,412	0.6%
	C30 Interior Finishes	$28,402,744	12.0%	$28,945,890	12.3%	$4,933,966	7.9%	$3,645,617	10.0%
	D10 Conveying	$8,767,507	3.7%	$8,736,641	3.7%	$1,521,047	2.4%	$677,932	1.9%
	D20 Plumbing	$6,207,924	2.6%	$4,862,851	2.1%	$1,938,502	3.1%	$899,784	2.5%
	D30 HVAC	$16,236,983	6.9%	$18,203,953	7.7%	$6,000,920	9.6%	$3,686,347	10.1%
	D40 Fire Protection	$2,130,472	0.9%	$2,662,723	1.1%	$651,719	1.0%	$377,951	1.0%
	D50 Electrical - All Excluding Comm. & Sec.	$24,251,631	10.3%	$16,935,447	7.2%	$5,801,074	9.3%	$2,631,931	7.2%
	D53 Electrical - Communications & Security	$22,383,641	9.5%	$23,934,761	10.1%	$3,001,015	4.8%	$1,462,945	4.0%
	E10 Equipment	$10,191,167	4.3%	$2,893,158	1.2%	$555,127	0.9%	$135,438	0.4%
	E20 Furnishings	$12,708,600	5.4%	$14,378,788	6.1%	$4,603,111	7.3%	$1,502,416	4.1%
	F10 Special Construction	$0		$0		$0		$0	
	F20 Selective Building Demolition	$0		$0		$0		$0	
	G10 Building Related Sitework	$11,386,544	4.8%	$9,122,713	3.9%	$7,475,336	11.9%	$3,507,559	9.6%
	G20 Non-Building Related Sitework	$0		$0		$0		$0	
	G30 Other Sitework	$0		$0		$0		$0	
1	**Subcontract Costs**	**$236,357,146**	**100.0%**	**$236,116,785**	**100.0%**	**$62,644,939**	**100.0%**	**$36,426,225**	**100.0%**
			A/A1		B/B1		C/C1		D/D1
	General Conditions and Profit	$42,923,285	18.2%	$17,344,837	7.3%	$4,018,838	6.4%	$4,405,558	12.1%
	Design Change Orders * (* Included In Above Subcontract Costs)	$4,296,000*	1.8%	$0	0.0%	$0	0.0%	$0	0.0%
	Construction Contingency - Expended		0.0%	$2,156,150	0.9%	$82,330	0.1%	$1,140,653	3.1%
2	**Hard Construction Cost**	**$279,280,431**		**$255,617,772**		**$66,746,107**		**$41,972,436**	
			A/A1		B/B1		C/C1		D/D1
	Design	$19,573,798	8.3%	$26,023,976	11.0%	$7,328,935	11.7%	$4,841,446	13.3%
	CM Consulting During Design	$0	0.0%	$1,461,128	0.6%	$2,441,840	3.9%	$0	0.0%
	Cost of Art-in-Architecture	$2,482,045	1.1%	$0	0.0%	$0	0.0%	$0	0.0%
	Other Project Costs	$5,889,000	2.5%	$3,425,234	1.5%	$6,087,432	9.7%	$1,458,388	4.0%
3	**Total Project Cost**	**$307,225,274**		**$286,528,110**		**$82,604,314**		**$48,272,270**	
4	**Total Project Cost - W/O Adjustmnts.**	**$346,725,495**		**$295,098,492**		**$82,604,314**		**$48,589,648**	

Adjustments for Schedule, Location, and Market Impacts

The second step in comparing the construction costs of the four subject projects is to normalize schedule, location, and market impacts, given that both the geographic location within the state and the time of procurement affect the construction costs. Because the Governor George Deukmejian Courthouse is the primary subject of this study, its schedule, location, and market are fixed, and those criteria for the other three projects are adjusted.

Schedule differences that affect escalation are addressed by using the California Construction Cost Index (CCCI). This index is used by the AOC and the California Department of Finance for project planning and budgeting. Table B.7 presents the CCCI for January 2004 to January 2014.

Table B.7
California Construction Cost Index—2004 to 2014

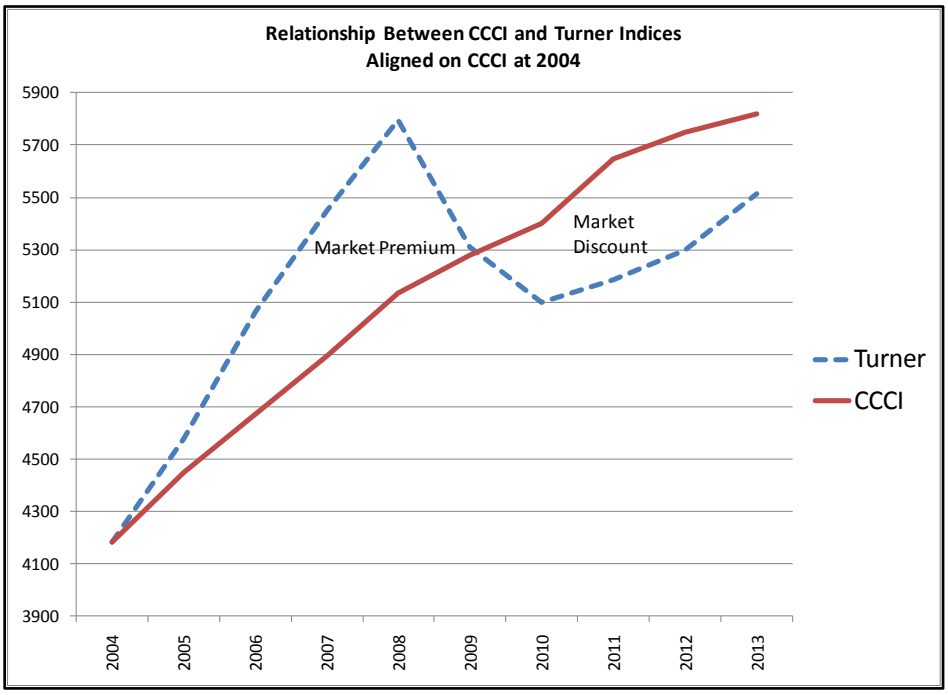
Month		2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
January	1	5898	5774	5683	5592	5260	5309	4983	4869	4620	4339	3978
February	2		5782	5683	5624	5262	5295	4983	4868	4603	4362	4039
March	3		5777	5738	5627	5268	5298	4999	4871	4597	4360	4034
April	4		5786	5740	5636	5270	5296	5004	4872	4600	4393	4125
May	5		5796	5755	5637	5378	5288	5023	4886	4599	4403	4125
June	6		5802	5754	5643	5394	5276	5065	4842	4593	4421	4192
July	7		5804	5750	5654	5401	5263	5135	4849	4609	4411	4194
August	8		5801	5778	5667	5401	5265	5142	4851	4616	4399	4205
September	9		5802	5777	5668	5381	5264	5194	4942	4619	4533	4309
October	10		5911	5780	5675	5591	5259	5393	4943	4867	4554	4310
November	11		5903	5779	5680	5599	5259	5375	4978	4891	4587	4325
December	12		5901	5768	5680	5596	5262	5322	4981	4877	4614	4339
Annual %			2.3%	1.5%	1.5%	6.3%	-1.1%	6.8%	2.1%	5.4%	6.0%	8.3%
Annual Avg.			5820	5749	5649	5400	5278	5135	4896	4674	4448	4181

Location factors that affect costs are addressed by using published information available from the United States General Services Administration and derived from RS Means data. Given that the Governor George Deukmejian Courthouse and the San Bernardino Justice Center required Los Angeles–area materials, suppliers, labor, and many subcontractors, these projects were assigned a location factor of 1.09 for Los Angeles. The South County Justice Center in Porterville is a smaller project and was assigned the Bakersfield adjustment factor of 1.05. The Richard E. Arnason Justice Center in Pittsburg is close to the East Bay area around San Francisco and was assigned a location factor of 1.17.

Market factors also affect project costs. The CCCI does not reflect bidding conditions because it is based on construction inputs (labor and materials costs). To reflect some degree of bidding conditions, the Turner Building Cost Index was used. It is a national index that is based on actual projects and bid prices (construction outputs) and therefore reflects bidding conditions.

Between 2006 and 2010, the construction market experienced a major upswing and then a comparable downswing of both construction activity and bid prices. Figure B.2 compares the Turner Index and the CCCI.

Figure B.2
Relationship between CCCI and Turner Index Aligned With CCCI at 2004



The Turner Index was adjusted to account for differences between delivery methods. The Turner Index tends to be more reflective of design-bid-build projects. The CMR delivery method tends to achieve a higher degree of competitiveness during market premiums compared to design-bid-build projects but likewise tends to mute the benefits of lower costs during market discounts.

The DB construction delivery method associated with the Governor George Deukmejian Courthouse tends to achieve a level of competition closer to CMR than DBB.

To properly reflect market conditions for the four comparator projects, 40 percent of the difference between the CCCI (no market factor) and the Turner Index (full market factor) was used, as displayed in Table B.8. The difference between the Turner Index and the CCCI tends to reflect DBB pricing levels at the high end (100 percent competition) and negotiated work at the low end (0 percent, or no competition), and both CMR and DB methods tend to be around 40 percent.

Table B.8
Market Adjustment Tables

		Year at Project	2006	2007	2008	2009	
Effect Factor	Year at Base	Index	793	854	908	832	
10%	2010	799	1.001	0.993	0.986	0.996	
20%	2010	799	1.002	0.986	0.973	0.992	
30%	2010	799	1.002	0.979	0.959	0.988	
40%	2010	799	1.003	0.972	0.945	0.983	Recommended
50%	2010	799	1.004	0.966	0.932	0.979	
60%	2010	799	1.005	0.959	0.918	0.975	
70%	2010	799	1.005	0.952	0.905	0.971	
80%	2010	799	1.006	0.945	0.891	0.967	
90%	2010	799	1.007	0.938	0.877	0.963	
100%	2010	799	1.008	0.931	0.864	0.959	

In summary, schedule differences are factored into each project's construction costs by using the difference in CCCI between each project's start date and CCCI for the start date of the Governor George Deukmejian Courthouse. Location is factored into each project's construction costs relative to the Governor George Deukmejian Courthouse. And the cost of each project is adjusted for market factors by using 40 percent of the difference between that project's CCCI and Turner Index, based on that project's specific schedule.

The end result of the overall adjustment process for schedule, location, and market factors is outlined below:

1. Governor George Deukmejian Courthouse .....fixed with a factor of 1.000
2. San Bernardino Justice Center.....factor of 1.007
3. South County Justice Center, in Porterville.....factor of 1.047
4. Richard E. Arnason Justice Center .....factor of 0.989

Final fully adjusted project costs are shown in tables B.9 and B.10 based on the adjustment factors listed above.

Table B.9
Summary of Time, Location, and Market Factors

	Description	George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA	South County Justice Center Porterville, CA	Richard Arnason Justice Center Pittsburg, CA
A	Project Cost at Completion With Adjustments for Unique Costs (from Table B.1)	$307,225,274	$286,528,110	$82,604,314	$48,272,270
B	Time Factor	1.000	1.065	1.026	1.091
C	Location Factor	1.000	1.000	1.038	0.932
D	Market Factor	1.000	0.945	0.983	0.972
E	Combined Factor (BxCxD=E)	1.000	1.007	1.047	0.989
F	Total Adjustment	$0	$1,960,671	$3,895,056	$(539,043)
G	Project Cost at Completion With Adjustments for Time, Location and Market	$307,225,274	$288,488,781	$86,499,370	$47,733,228

Table B.10
Overall Project Cost Summary

	JUDICIAL BRANCH CAPITAL PROGRAM OFFICE SB 75 LONG BEACH REPORT OVERALL COMPARISON UNIQUE ITEMS EXCLUDED TOTAL PROJECT COST - ADJUSTED FOR TIME, LOCATION AND MARKET	GEORGE DEUKMEJIAN COURTHOUSE LONG BEACH, CA COURTROOMS: 31 (CR) TOTAL AREA: 531,000 (TA) COURT AREA: 416,000 (CA) $-Proj/CR: 9,910,493 (A3/CR) DATE: May-14			SAN BERNARDINO JUSTICE CENTER SAN BERNARDINO, CA COURTROOMS: 35 (CR) TOTAL AREA: 383,745 (TA) COURT AREA: 383,745 (CA) $-Proj/CR: 8,232,681 (B3/CR) DATE: May-14			SOUTH COUNTY JUSTICE CENTER PORTERVILLE, CA COURTROOMS: 9 (CR) TOTAL AREA: 100,299 (TA) COURT AREA: 100,299 (CA) $-Proj/CR: 9,506,469 (C3/CR) DATE: May-14			RICHARD ARNASON JUSTICE CENTER PITTSBURG, CA COURTROOMS: 7 (CR) TOTAL AREA: 73,500 (TA) COURT AREA: 73,500 (CA) $-Proj/CR: 6,837,930 (D3/CR) DATE: May-14		
		Net Courthouse A	$/Ct Ft² A/CA	% A/A1	Net Courthouse B	$/Ct Ft² B/CA	% B/B1	Net Courthouse C	$/Ct Ft² C/CA	% C/C3	Net Courthouse D	$/Ct Ft² D/CA	% D/D1
	A10 Foundations	$6,133,494		2.6%	$4,685,177		2.0%	$1,746,233		2.7%	$965,025		2.7%
	A20 Basement Construction	$5,175,499		2.2%	$4,710,295		2.0%	$1,620,672		2.5%	$909,140		2.5%
	B10 Superstructure	$28,866,937		12.2%	$32,640,621		13.7%	$6,739,623		10.3%	$3,528,842		9.8%
	B20 Exterior Enclosure	$27,845,860		11.8%	$31,461,233		13.2%	$7,460,439		11.4%	$5,652,785		15.7%
	B30 Roofing	$6,578,697		2.8%	$3,997,143		1.7%	$2,234,528		3.4%	$1,042,861		2.9%
	C10 Interior Construction	$16,694,376		7.1%	$26,150,319		11.0%	$7,067,478		10.8%	$5,385,791		15.0%
	C20 Stairs	$2,395,071		1.0%	$2,516,583		1.1%	$527,823		0.8%	$213,995		0.6%
	C30 Interior Finishes	$28,402,744		12.0%	$29,143,962		12.3%	$5,166,618		7.9%	$3,604,907		10.0%
	D10 Conveying	$8,767,507		3.7%	$8,796,424		3.7%	$1,592,769		2.4%	$670,362		1.9%
	D20 Plumbing	$6,207,924		2.6%	$4,896,127		2.1%	$2,029,909		3.1%	$889,736		2.5%
	D30 HVAC	$16,236,983		6.9%	$18,328,520		7.7%	$6,283,882		9.6%	$3,645,183		10.1%
	D40 Fire Protection	$2,130,472		0.9%	$2,680,943		1.1%	$682,449		1.0%	$373,731		1.0%
	D50 Electrical - All Excluding Comm. & Sec.	$24,251,631		10.3%	$17,051,334		7.2%	$6,074,613		9.3%	$2,602,541		7.2%
	D53 Electrical - Communications & Security	$22,383,641		9.5%	$24,098,544		10.1%	$3,142,522		4.8%	$1,446,609		4.0%
	E10 Equipment	$10,191,167		4.3%	$2,912,955		1.2%	$581,303		0.9%	$133,925		0.4%
	E20 Furnishings	$12,708,600		5.4%	$14,477,180		6.1%	$4,820,162		7.3%	$1,485,638		4.1%
	F10 Special Construction	$0			$0			$0			$0		
	F20 Selective Building Demolition	$0			$0			$0			$0		
	G10 Building Related Sitework	$11,386,544		4.8%	$9,185,139		3.9%	$7,827,822		11.9%	$3,468,391		9.6%
	G20 Non-Building Related Sitework	$0			$0			$0			$0		
	G30 Other Sitework	$0			$0			$0			$0		
1	**Subcontract Costs**	**$236,357,146**		**100.0%**	**$237,732,498**		**100.0%**	**$65,598,847**		**100.0%**	**$36,019,464**		**100.0%**
				A/A3			B/B1			C/C3			D/D1
	General Conditions and Profit	$42,923,285		18.2%	$17,344,837		7.3%	$4,018,838		6.1%	$4,405,558		12.2%
	Design Change Orders * (* Included In Above Subcontract Costs)	$4,296,000*		1.8%	$0		0.0%	$0		0.0%	$0		0.0%
	Construction Contingency - Expended	$0		0.0%	$2,156,150		0.9%	$82,330		0.1%	$1,140,653		3.2%
2	**Hard Construction Cost**	**$279,280,431**	**$671.35**		**$257,233,486**	**$670.32**		**$69,700,015**	**$694.92**		**$41,565,675**	**$565.52**	
				A/A3			B/B1			C/C3			D/D1
	Design	$19,573,798		8.3%	$26,023,976		10.9%	$7,328,935		11.2%	$4,841,446		13.4%
	CM Consulting During Design	$0		0.0%	$1,461,128		0.6%	$2,441,840		3.7%	$0		0.0%
	Cost of Art-in-Architecture	$2,482,045		1.1%	$0		0.0%	$0		0.0%	$0		0.0%
	Other Project Costs	$5,889,000		2.5%	$3,425,234		1.4%	$6,087,432		9.3%	$1,458,388		4.0%
3	**Total Project Cost**	**$307,225,274**			**$288,143,823**			**$85,558,222**			**$47,865,509**		
4	**Total Project Cost - W/O Adjustmnts.**	**$346,725,495**			**$295,098,492**			**$82,604,314**			**$48,589,648**		
	Adjustments **Base** **Factor**	**Project Value**	**Difference**	**Factor**	**Project Value**	**Difference**	**Factor**	**Project Value**	**Difference**	**Factor**	**Project Value**	**Difference**	**Factor**
	Schedule (CCCI): 6/25/2010 5394	6/25/2010	5394	1.000	6/13/2008	5065	1.065	10/23/2009	5259	1.026	9/14/2007	4942	1.091
	Location: US GSA Los Angeles 1.09	1.09	100.00%	1.000	1.09	100.00%	1.000	1.05	96.33%	1.038	1.17	107.34%	0.932
	Market: Based on Turner 6/25/2010 799 Effect Factor= 40%	6/25/2010	799	1.000	6/13/2008	908	0.945	10/23/2009	832	0.983	9/14/2007	854	0.972
	Cumulative Adjustment Factor Applied on this sheet to all Subcontract costs-->			**1.000**			**1.007**			**1.047**			**0.989**

Analysis of Building Component Cost

Examining the projects' construction costs by building component provides a reasonable degree of consistency among the projects. To compare projects by components is difficult because accounting procedures can vary among projects.

Table B.11 presents a high-level summary by major building components.

Table B.11
Subcontract Cost per Square Foot (sf) Summary by Major Building Components

		George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA	South County Justice Center Porterville, CA	Richard Arnason Justice Center Pittsburg, CA
A	Structure and enclosure	31.6%	32.6%	30.2%	33.6%
B	Finishes and equipment	29.8%	31.6%	27.7%	30.1%
C	Mechanical/electrical and services	24.4%	21.8%	25.4%	22.7%
D	Communications & security	9.5%	10.1%	4.8%	4.0%
E	Site	4.8%	3.9%	11.9%	9.6%
F	Total cost/sf (A+B+C+D+E=F)	100%	100%	100%	100%

Appendix C
Governor George Deukmejian Courthouse Risk Table

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
Financial security of manufacturers and major subcontractors	Project Company	Metal panel installation subcontractor went into bankruptcy during design	Schedule delays, increased costs	Contractor in question carried adequate bonding to protect the Project Company. A replacement manufacturer was retained, and the situation was resolved at the Project Company's risk without impact to project cost or schedule	Typically, the contractor retains this risk under CMAR and the public authority retains it under DBB. However, the authority may choose to retain in either case depending on the level of control they wish to exert over the selection of specific equipment and manufacturers.
Subsurface Conditions	Shared	AOC accepted risk for archaeological/cultural issues, and the Project Company accepted risk for Geotechnical, Hazardous Materials and buried utilities	Schedule delays, increased costs, claims, scope increase, change orders	As-built conditions and City records were poorly documented; the Project Company performed extensive investigations prior to starting site utilities. All costs were absorbed by the Project Company at no cost to AOC. No particular subsurface problems were encountered.	Subsurface condition risk is generally not accepted by CMAR or DBB procurement, and represents a significant unique risk transfer for this project.
Utility Relocation	Shared	City of Long Beach agreed to contribute up to $2M or utility relocation	Schedule delays, increased cost	This issue was reported as very difficult to manage. However, none of the relocations were on the critical path, so schedule delays were managed well. There was approximately $5.6M in total costs incurred. While it has not been confirmed whether the construction contractor's cost estimate included allowances for utility relocation costs in excess of $2M, it is confirmed that they carried the risk of this item exceeding the City contribution amount. Ultimately the Project Company retained this risk and passed along any relevant financial impact to the appropriate subcontract, insulating the AOC.	Public agency generally accepts risk for utility relocation in CMAR and DBB. Had the construction contractor not included utility relocation costs in excess of the $2M City contribution, they potentially absorbed the $3.6M differential.

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
Change in Law/Code	Project Company	Elements of the CA building code changed between bid and construction. Project Company is responsible for code changes (between 2010 and 2025) which would impact the expansion spaces use as courtroom occupancy	Design change, scope change, increased costs, schedule delays, claims, building inspector intervention, failure to obtain permits	The construction contractor attempted to obtain relief from the Project Company regarding the resulting cost increase; however the Project Agreement (and subsequent 'back-to-back' subcontracts) held the construction contractor accountable for code changes.	Contractors under CMAR and DBB typically wait until plans have been reviewed and approved by the appropriate authorities prior to proceeding with construction. In this case, the contractor accepted the risk of proceeding in advance, which they mitigated at their own cost through the use of a full-time Independent Building Expert to assist in code compliance.
Plan Check/Permitting Uncertainty	Project Company	The Project Company accepted risk of uncertainty for approvals from the relevant authorities plus the Independent Building Expert	Significant schedule delays, failure to meet Service Commencement	The Project Company managed these risks to no impact on the overall project schedule or Service Commencement	Public Authority accepts this risk under traditional procurement; however, the IBE is unique to the PPP delivery method, adding an additional layer of approvals.
Insurance	Project Company	The cost of insurance was significantly higher than expected	Claims, potential change orders to compensate for cost overruns, Project Company default for breach of Project Agreement insurance requirements	The Project Company absorbed the overrun in the range of approximately $450K with no impact to the AOC or the delivery of the project.	The AOC has historically utilized Owner-Controlled Insurance Programs (OCIP) for its traditional projects, as opposed to Contractor-Controlled Insurance Program (CCIP) in this case (errors and omissions insurance is the responsibility of the Contractor in both cases). OCIP programs are sponsored by the owner to generate efficiencies and transparency. CCIP programs place the burden on the Contractor.

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
County Fees	Project Company	The construction contractor's estimate for sewage and storm drain connections fees was underestimated by approximately $1.3M.	Schedule delay, claims, potential change orders to compensate, financial impact of this magnitude could impact the construction contractor's ability to continue doing business	The Project Company attempted to negotiate with the County on the grounds that they were told they would be exempt from the fees, but could not prove that this was communicated officially. The Project Company pushed this liability back to the construction contractor, who accepted the risk and carried the loss.	Under traditional procurement, utility connection fees are typically carried by the owner.
Off-Site Improvements	Project Company	Certain off-site improvements were necessary pre-requisites for achieving occupancy	Failure to achieve occupancy, schedule delays, claims	There was a significant change in City of Long Beach staff during the process of confirming what was required and what was not. The construction contractor argued that they had been given a different set of requirements following staff turnover, but ultimately accepted the outcome and carried any additional associated financial impact.	Traditional DBB would have specified the requirements clearly in the contracts prior to bid. Similarly, CMAR procurement would likely have required acceptance of this risk. In the case of the PBI, the Project Company assumed the risk.
Commissioning	Project Company	It was perceived that the commissioning requirements in the project Agreement were not adequately rigorous to meet occupancy requirements.	Failure to achieve Service Commencement, schedule delays, claims	The Project Company took it upon themselves to increase the construction contractor's commissioning scope to better align with occupancy requirements. Despite this scope being in excess of the construction contractor's bid, they absorbed all additional costs to no expense of the AOC.	Commissioning risk in traditional procurement is generally shared between the Contractor and the public authority. In the case of PBI, the Project Company assumed the risk.

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
Punch List	Project Company	Punch List process more rigorous than anticipated by the Independent Building Expert (IBE) and Twining (testing and inspection subcontractor under IBE)	Failure to achieve Service Commencement, schedule delays, post-construction deficiencies leading to penalties under the Payment mechanism	The IBE and Twining had underestimated the effort (ultimately 17,000 punch list items). Both sought relief from the Project Company for the additional time. The IBE contract was held by the Project Company, and they ultimately settled with both for the additional time needed once the process had completed. No expense to the AOC and no schedule impact.	In this case, the IBE has a dual duty of care to the Project Company and the AOC, and is responsible for providing the final sign-off on the punch list indicating that Service Commencement has been achieved. Under traditional procurement, the public agency has the ultimate sign-off. In such cases, unless the completion criteria are very clearly defined in the contracts, final sign-off can potentially extend over minor issues and delay completion.
Landlord Risk	Project Company	Failure to meet rental revenue targets	Financial strain to the Project Company, potentially leading to devaluation of the asset and impact on credit, ability to do business	The County was to represent approximately 15% of the building, but there was a significant delay in finalizing this agreement after the Project Agreement was signed, and the Project Company accepted 100% liability for lost revenue. The Project Company Financial Model contained anticipated rental revenue which has not changed despite shortfalls.	Under traditional procurement the DB or construction contractor is not involved with property leasing or landlord risk. Traditionally-procured public facilities are generally built to suit a specific public function, leaving relatively minor elements open for third-party leasing (cafes, small convenience shops, etc.).
Parking Revenue Risk	Project Company	Parking must compete with surrounding local parking.	Financial strain to the Project Company, potentially leading to devaluation of the asset and impact on credit, ability to do business	The Project Company has an agreement with a parking operator for a fixed amount and is liable should actual revenue not meet the agreed pro forma.	Contractor not responsible for parking revenue risk under traditional procurement.

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
Labor Disputes	Project Company	Project Agreement allocated the risk of strikes and other such labor disputes to the Project Company	Schedule delays, failure to meet Service Commencement	The construction contractor executed a Project Labor Agreement with all trades, which set rules for striking, picketing, etc. in order to mitigate the risk of lost time for any potential labor disputes.	Contractor generally does not accept this risk under traditional procurement. The Project Company was motivated to take these preemptive actions as achieving Service Commencement was prerequisite to the start of Service Payments under the PA. Any delay to Service Commencement would result in delayed payment and potential financial stress to the Project Company.
Future Expansion	Project Company	The project builds in infrastructure capable of supporting future expansions (for new courtrooms) in space currently occupied by the County, the lease for which expires in 15 years	Life-cycle and maintenance costs for infrastructure for future courthouse is not necessarily required for the adequate operations of the building in its current design and use	The AOC benefits from this flexible design in that the cost of future expansions would theoretically be much less as the infrastructure is already in place.	AOC would absorb the full cost of future expansion under traditional procurement. The flexibility under PBI would not have been designed under traditional procurement in an effort to reduce capital costs. As such, under traditional delivery the design may not be able to accommodate future expansion, requiring an entirely separate project to meet the expansion requirements.
Subcontractor Cost Overruns	Project Company	Architect exceeded its budget	Claims, increased costs	Architect submitted claims upon construction completion, which were passed down to the construction contractor who absorbed the cost	AOC would absorb the full cost of such claims under traditional procurement
Post-warranty work	Project Company	Resolution of construction defects beyond the warranty period	Failure to meet performance criteria resulting in deductions under the Payment mechanism	The construction contractor and operator have a “cooperation agreement” where there is a 2-year commitment of resources from the construction contractor to manage and correct post-construction issues related to failures, deficiencies, etc.	Under traditional procurement the public agency owns all post-warranty risk, owning responsibility for any failures or defects that occur beyond the warranty period.

RISK	RETAINED BY	DESCRIPTION	POTENTIAL IMPACT	OUTCOME	PPP*/PBI VS. TRADITIONAL
Building degradation (general)	Project Company	Building must meet quality and performance standards under the PA throughout the life of the contract. Project Company must turn over the expansion space (after 5 yrs) with a Facility Condition Index of 15, which is not a requirement of the retail or County Justice Agency spaces	Failure to meet performance metrics leading to deductions under the Payment mechanism, failure to achieve handover criteria	The Project Company established a regime of maintenance and life-cycle replacements in order to maintain the appropriate level of quality and performance throughout the life of the building. The cost of doing so was built into the bid cost.	Under traditional procurement the public authority is 100% responsible for the condition and performance of the building. Under PBI delivery, the building must be in a predetermined condition at handover at the end of the contract. Under traditional procurement, the building would be run to failure, and would be subject to annual budget constraints, appropriations risk, deferred maintenance, etc. A higher level of performance and quality is generally delivered under PBI.
Design Management	Project Company	Control and responsibility of the performance and speed of design	Schedule delay, cost overruns	There were no design delays which impacted achieving occupancy.	Under PBI, utilizing DB, the Project Company accepts risk of design delay. Traditional DBB leaves the responsibility with the public agency.
Life cycle and Maintenance (general)	Project Company	Failure to maintain physical infrastructure and provide life-cycle replacements over time	Failure to meet performance criteria and suffering deductions to service payments, accelerated building degradation	Project Agreement contains requirements in this regard, supported by financial penalty under the Payment mechanism. The Project Company absorbed this risk, and mitigated it by bringing the operator to participate in the design and construction process to ensure operational concerns were adequately addressed.	Public authority retains 100% of this risk under traditional procurement. We note that under PBI the level of expenditures in this regard are pre-agreed and guaranteed over the life of the contract. Under traditional procurement, expenditures in this regard are subject to appropriations, deferred maintenance, etc.

* PPP = public-private partnership.

Appendix D
Judicial Branch Project Management Costs

Introduction

The purpose of this appendix is to explain how the judicial branch project management costs for the branch's Capital Construction Program (Capital Program) were allocated to the four subject projects. These costs are displayed in chapter 1, table 1.5 (Governor George Deukmejian Courthouse−San Bernardino Justice Center comparison) and in the Judicial Branch Project Management Costs tables in each of the project-specific chapters, 2–5.

The Capital Program is one of the responsibilities of the AOC, the staff agency of the Judicial Council. The AOC has one office dedicated to the Capital Program, the Judicial Branch Capital Program Office (JBCPO); some offices that support the Capital Program, although not as their primary mission (see note 2 under table D.1); and some offices that have no connection to the Capital Program.

The fall 2012 reorganization of the AOC included dividing the former Office of Court Construction and Management (OCCM) into the JBCPO and the Office of Real Estate and Facilities Management (OREFM). Together these offices oversee all aspects of the Judicial Branch Facilities Program (JBFP). To accurately present the full project management costs of the four projects reviewed in this report, the analysis includes staff costs as attributed to JBFP.

Judicial branch project management costs comprise the sum of the four components displayed in table D.1, below. The direct and indirect costs for AOC employees include salaries and wages, all employee benefits, and the standard allocation of operating expenses and equipment.

Table D.1
Cost Components of Judicial Branch Project Management Costs

	Cost Type	Judicial Branch Program	Allocation Basis	Description
A	Direct	JBFP	Actual Hours Worked	AOC JBFP employees: project managers, associate project managers, planners, real estate analysts, and construction inspectors
B	Direct	JBFP	Actual Cost	Outside firms providing project management services in support of the AOC JBFP project manager
C	Indirect	JBFP	Pro Rata Share	AOC JBFP units[41] that provide support functions to the capital projects
D	Indirect	AOC (Non-JBFP)	Pro Rata Share	Non-JBFP AOC units[42] that provide support functions for the capital projects

[41] AOC JBFP units that provide support functions to the capital projects:
1. Executive Management Team
2. Risk Management
3. Business and Finance
4. Environmental Analysis and Compliance
5. Appellate and AOC Facilities

[42] Non-JBFP AOC units that provide support functions to the capital projects:
1. Security and Emergency Response
2. Legal Services – Real Estate Unit
3. Governmental Affairs – Facilities
4. Education – Court Facilities
5. Fiscal Services – Accounting
6. Fiscal Services – Business Services
7. Fiscal Services – Budget
8. Information Technology Services – Technical Support – JBFP
9. Information Technology Services – Desktop Support – JBFP
10. Human Resources Services – Labor and Employee Relations
11. Human Resources Services – Recruitment, Classification, Strategy, and Policy Development

For the four subject projects, direct project management costs accounted for 87 percent and indirect project management costs 13 percent of the total judicial branch project management costs, as displayed in table D.2.

Table D.2
Judicial Branch Project Management Costs—Proportion Direct/Indirect

	George Deukmejian Courthouse Long Beach, CA	San Bernardino Justice Center San Bernardino, CA	South County Justice Center Porterville, CA	Richard Arnason Justice Center Pittsburg, CA	Totals
Delivery method	PBI	CMR	CMR	CMR	
Total project management costs	$5,378,755	$4,095,649	$2,144,593	$1,434,653	$13,053,650
Direct costs	$4,640,447	$3,733,290	$1,939,970	$1,042,304	$11,356,011
Percentage for direct cost	86%	91%	90%	73%	87%
Indirect costs	$738,308	$362,358	$204,623	$392,349	$1,697,638
Percentage for indirect cost	14%	9%	10%	27%	13%
Total Percentage	100%	100%	100%	100%	100%

Note: PBI = performance-based infrastructure; CMR = construction manager at risk.

Definitions

Direct Costs

Direct costs are costs that can easily be ascribed to a program. For this report, direct costs are developed from the actual hours worked by project managers, associate project managers, planners, real estate analysts, and construction inspectors and the actual costs charged by outside firms providing project management services in support of the AOC JBCPO project managers.

Indirect Costs

Indirect costs are costs that by their nature cannot be readily associated with a specific organization unit or program. Like general administrative expenses, indirect costs are distributed, through the use of a formula, to the organizational units or programs that benefit from their incurrence. See notes for table D.1 for functional units that contributed indirect costs to the Capital Program.

Calculation of Judicial Branch Project Management Costs

Judicial branch project management costs include direct and indirect components. The direct costs—such as those for project managers, associate project managers, planners, real estate analysts, construction inspectors, and outside firms providing project management services—are added to the indirect costs to yield the total project management costs. Below is a description of how the indirect costs are distributed to the projects.

The indirect component of judicial branch project management costs was calculated by the process described below.

1. Obtain from accounting reports the cost of non-JBFP AOC units that provide support functions for the Capital Program.

2. Obtain from accounting reports the total cost of all JBFP units.

3. Calculate the cost of each JBFP unit as a percentage of JBFP's total cost as displayed in table D.3. For example, as shown in table D.3, in FY 2010–2011, the JBFP Executive Management Team accounted for 4.56 percent of JBFP's total cost. This percentage is used in the next step to calculate the pro rata share of the non-JBFP AOC support units' costs to be distributed to each JBFP unit.

4. To obtain the total indirect cost of each JBFP unit by fiscal year, distribute the pro rata share of the total cost of the non-JBFP AOC support units to each JBFP unit based on its percentage of JBFP's total cost (calculated in step 3). For example, as shown in table D.3, in FY 2010–2011, the JBFP Executive Management Team accounted for 4.56 percent of JBFP's total cost, so 4.56 percent of the non-JBFP AOC support unit costs for FY 2010–2011 were distributed to the JBFP Executive Management Team.

5. Add the total indirect costs (calculated in step 4) of the JBFP units that support the Capital Program (see first footnote under table D.1, above) to obtain the total indirect costs to be distributed to the project phases.

6. Because of the bifurcation of the former OCCM, and in order to spread the overhead costs of the Facilities Management and Environmental Compliance and Sustainability units to the projects, add these overhead costs to the total indirect costs (derived in step 5) and spread to the projects.

7. Calculate the direct project management cost of each project phase as a percentage of JBFP's total cost, as displayed in table D.4. For example, in FY 2010–2011 the direct project management cost of the Construction phase of the Governor George Deukmejian Courthouse accounted for 0.05 percent of JBFP's total cost.

8. To obtain the pro rata share of the total indirect costs for each project phase, multiply the total indirect costs calculated in steps 5 and 6 by the percentage calculated in step 7. These indirect costs are displayed in table D.2, above.

Table D.3
Proportional Cost of JBFP Functional Units by Fiscal Year

	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
1. Executive Management Team	8.35%	8.91%	8.38%	4.48%	5.19%	4.56%	5.72%		
2. Executive Management Team – OREFM								2.18%	1.91%
3. Executive Management Team – JBCPO								3.54%	2.87%
4. Risk Management		0.00%	2.13%	3.33%	4.38%	6.60%	4.15%	5.23%	7.05%
5. Business and Finance	4.40%	4.07%	4.80%	5.21%	5.23%	6.22%	7.90%	7.99%	6.27%
6. Planning and Policy	2.10%	3.49%	1.76%	6.28%	5.07%	4.46%	4.24%	4.23%	2.72%
7. Advisory Committee								0.11%	0.22%
8. Design and Construction	22.34%	24.96%	23.54%	19.95%	19.88%	18.88%	18.75%	17.21%	14.59%
9. Real Estate	9.13%	10.83%	8.76%	7.06%	7.03%	5.78%	4.67%	5.17%	5.47%
10. Facilities Management AOC Statewide Operating Unit	23.11%	22.47%	21.09%	27.14%	37.52%	35.30%	40.62%	38.57%	36.85%
11. Environmental Analysis and Compliance	4.76%	5.02%	3.74%	1.80%	2.43%	2.40%	2.58%	3.63%	4.41%
12. Portfolio Administration	1.48%	2.68%	11.90%	18.11%	7.49%	10.45%	6.80%	7.15%	8.78%
13. Security and Emergency Response									4.89%
14. Appellate and AOC Facilities	24.32%	17.58%	13.90%	6.65%	5.78%	5.36%	4.59%	4.99%	3.96%
Totals	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table D.4
Proportional Cost of Direct Staff Time by Project and Phase

George Deukmejian Courthouse Long Beach, CA (Los Angeles)	Direct Costs	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Acquisition	$ 944,919	0.19%	0.17%					
Preliminary Plan-SD	96,358		0.02%	0.02%				
Financial Transaction	165,724			0.03%	0.03%			
Preliminary Plan-DD	29,190				0.01%			
Construction	286,303				0.05%	0.05%	0.05%	0.06%
Project Total – Los Angeles	$1,522,494							

San Bernardino Justice Center San Bernardino, CA (San Bernardino)	Direct Costs	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Acquisition	$ 81,560	0.02%						
Preliminary Plans	170,092	0.03%	0.03%	0.03%				
Working Drawings	79,237			0.0%1	0.01%			
Construction	676,962				0.12%	0.12%	0.13%	0.15%
Project Total – San Bernardino	$1,007,851							

South County Justice Center Porterville, CA (Tulare)	Direct Costs	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Acquisition	$ 174,796	0.04%	0.03%	0.03%				
Preliminary Plans	35,080			0.01%	0.01%			
Working Drawings	72,463				0.01%	0.01%		
Construction	393,626					0.07%	0.08%	0.09%
Project Total – Tulare	$ 675,965							

Richard E. Arnason Justice Center Pittsburg, CA (Contra Costa)	Direct Costs	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11
Acquisition	$ 234,045	1.05%	1.08%	0.19%			
Preliminary Plans	99,554			0.81%			
Working Drawings	92,127				0.53%		
Construction	606,578				0.76%	1.91%	0.69%
Project Total – Contra Costa	$1,042,304						